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Appendix J

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Appendix J
to the International Sporting Code, 2001
(classifications, definitions and specifications of cars)

In the case of differences of interpretation as regards the terms used in the various translations of official FIA regulations, only the French text will be considered authentic, unless other formal and specific provisions are laid down.

TEXTS OF THE VARIOUS REGULATIONS DRAFTED BY THE FIA (International Sporting Code and its Appendices and regulations of the FIA International Championships) APPEARING IN THIS YEARBOOK ARE THOSE DRAWN UP ON 4 OCTOBER 2000.

ANY AMENDMENTS WILL BE PUBLISHED AFTER THIS DATE IN THE FIA MONTHLY OFFICIAL BULLETIN.

Annexe J
to the International Sporting Code

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ARTICLE 251 - CLASSIFICATION AND DEFINITIONS

ARTICLE 1 : CLASSIFICATION

1.1 Categories and groups

The cars used in competition shall be divided up into the following categories and groups:

Category I:	
- Group N:	Production Cars
- Group A:	Touring Cars
- Group B:	Grand Touring Cars
- Group SP:	Super Production Cars
- Group ST:	Super Touring Cars
- Group CL1:	Class 1 Cars
- Group T1:	Series Cross-Country Cars
- Group T2:	Improved Cross-Country Cars
Category II:	
- Group T3:	Prototype Cross-Country Cars
- Group N-GT:	Series Grand Touring Cars
- Group GT:	Grand Touring Cars
- Group C:	Sports Cars
- Group D:	International Formula Racing Cars
- Group E:	Free Formula Racing Cars
Category III:	
- Group F:	Racing Trucks
- Group T4:	Cross-Country Trucks

1.2 Cubic capacity classes

The cars will be divided up into the following classes according to their cubic capacity:

1.	up to	500 cm^3		
2.	over	500 cm^3	and up to	600 cm^3
3.	over	600 cm^3	and up to	700 cm^3
4.	over	700 cm^3	and up to	850 cm^3
5.	over	850 cm^3	and up to	1000 cm^3
6.	over	1000 cm^3	and up to	1150 cm^3
7.	over	1150 cm^3	and up to	1400 cm^3
8.	over	1400 cm^3	and up to	1600 cm^3
9.	over	1600 cm^3	and up to	2000 cm^3
10.	over	2000 cm^3	and up to	2500 cm^3
11.	over	2500 cm^3	and up to	3000 cm^3
12.	over	3000 cm^3	and up to	3500 cm^3
13.	over	3500 cm^3	and up to	4000 cm^3
14.	over	4000 cm^3	and up to	4500 cm^3
15.	over	4500 cm^3	and up to	5000 cm^3
16.	over	5000 cm^3	and up to	5500 cm^3
17.	over	5500 cm^3	and up to	6000 cm^3
18.	over	6000 cm^3		

Unless otherwise specified in special provisions imposed by the FIA for a certain category of events, the organisers are not bound to include all the above-mentioned classes in the Supplementary Regulations and, furthermore, they are free to group two or more consecutive classes, according to the particular circumstances of their events.

No Class can be subdivided.

ARTICLE 2 : DEFINITIONS

2.1 General conditions

2.1.1) Series Production cars (Category I):

Cars of which the production of a certain number of identical examples (see definition of this word hereinafter) within a certain period of time has been verified at the request of the manufacturer, and which are destined for normal sale to the public (see this expression).

Cars must be sold in accordance with the homologation form.

2.1.2) Competition cars (Category II):

Cars built as single examples and destined solely for competition.

2.1.3) Trucks (Category III)

2.1.4) Identical cars:

Cars belonging to the same production series and which have the same bodywork (outside and inside), same mechanical components and same chassis (even though this chassis may be an integral part of the bodywork in case of a monocoque construction).

2.1.5) Model of car:

Car belonging to a production-series distinguishable by a specific conception and external general lines of the bodywork and by an identical mechanical construction of the engine and the transmission to the wheels.

2.1.6) Normal sale:

Means the distribution of cars to individual purchasers through the normal commercial channels of the manufacturer.

2.1.7) Homologation:

Is the official certification made by the FIA that a minimum number of cars of a specific model has been made on series-production terms to justify classification in Production Cars (Group N), Touring Cars (Group A), Grand Touring Cars (Group B), Super Touring Cars (Group ST), Class 1 Cars (Group CL1), Series Cross-Country Cars (Group T1) of these regulations.

Application for homologation shall be submitted to the FIA by the ASN of the country in which the vehicle is manufactured and shall entail the drawing up of a homologation form (see below).

It must be established in accordance with the special regulations called "Regulations for homologation", laid down by the FIA.

Homologation of a series-produced car will become null and void 7 years after the date on which the series-production of the said model has been stopped (series-production under 10 % of the minimum production of the group considered).

The homologation of a model can only be valid in one group, Production Cars (Group N)/Touring Cars (Group A)/Series Cross-Country Cars (Group T1) or Grand Touring Cars (Group B). If a model already homologated in Grand Touring Cars (Group B) passes into Production Cars (Group N)/Touring Cars (Group A)/Series Cross-Country Cars (Group T1), the first homologation is cancelled.

2.1.8) Homologation forms:

All cars recognised by the FIA will be the subject of a descriptive form called homologation form on which shall be entered all data enabling identification of the said model.

This homologation form defines the series as indicated by the manufacturer.

According to the group in which the competitors race, the modification limits allowed in international competition for the series are stated in Appendix J.

The presentation of the forms at scrutineering and/or at the start may be required by the organisers who will be entitled to refuse the participation of the entrant in the event in case of non-presentation.

Likewise, if a Group A car fitted with a kit variant (see below) concerning the chassis/shell is used, the original certificate supplied at the time of mounting by a centre approved by the manufacturer must be presented.

Should the date for the coming into force of a homologation form fall during an event, this form will be valid for that event throughout the duration of the said event.

With regard to Production Cars (Group N), apart from the specific form for this group, the Touring Cars (Group A) form must also be submitted.

In case of any doubt remaining after the checking of a model of car against its homologation form, the scrutineers should refer either to the maintenance booklet published for the use of the make's distributors or to the general catalogue in which are listed all spare parts.

In case of lack of sufficient accurate documentation, scrutineers may carry out direct scrutineering by comparison with an identical part available from a concessionaire.
It will be up to the competitor to obtain the homologation form concerning his car from his ASN.

Description: A form breaks down in the following way:

1) A basic form giving a description of the basic model.
2) At a later stage, a certain number of additional sheets describing "homologation extensions", which can be "variants", or "errata" or "evolutions".

a - Variants (VF, VO, VK)
These are either supply variants (VF) (two suppliers providing the same part for the manufacturer and the client does not have the possibility of choice), or options (VO) (supplied on request and available at the concessionaires), or "kits" (VK) supplied on request and available at the concessionaires.
b - Erratum (ER)
Replaces and cancels an incorrect piece of information previously supplied by the constructor on a form.
c - Evolution (ET, ES)
Characterises modifications made on a permanent basis to the basic model (complete cessation of the production of the car in its original form in the case of the evolution of the type (ET), or sporting evolution (ES) intended to render a model more competitive.

Use:

1) Variants (VF, VO, VK)
The competitor may use any variant or any part of a variant as he wishes, only on condition that all the technical data of the vehicle, so designed, conforms to that described on the homologation form applicable to the car, or expressly allowed by Appendix J.
The combination of several VOs on the following parts is prohibited: Turbocharger, brakes and gearbox.
For example, the fitting of a brake caliper as defined on a variant form is only possible if the dimensions of the brake linings, etc. obtained in this way, are indicated on a form applicable to the car in question. (For Production Cars (Group N), see also Art. 254.2).
As far as kit-variants (VK) are concerned, they may not be used only under the conditions indicated by the manufacturer on the homologation form.
This concerns in particular those groups of parts which must be considered as a whole by the competitor, and the specifications which are to be respected, if applicable.
2) Evolution of the type (ET)
(For Production Cars - Group N, see also Art. 254.2)
The car must comply with a given stage of evolution (independent of the date when it left the factory), and thus an evolution must be wholly applied or not at all.
Besides, from the moment a competitor has chosen a particular evolution, all the previous evolutions should be applied, except where they are incompatible: for example, if two brake evolutions happen one after another, only that corresponding to the date of the stage of evolution of the car will be used.
3) Sporting evolution (ES)
Since the ES form refers to a previous extension, or to the basic form, the car must correspond to the stage of evolution corresponding to this reference ; moreover, the Sporting Evolution must be applied in full.
2.1.9) Mechanical components:
All those necessary for the propulsion, suspension, steering and braking as well as all accessories whether moving or not which are necessary for their normal working.
2.1.10) Original or series parts:
A part which has undergone all the stages of production foreseen and carried out by the manufacturer of the vehicle concerned, and originally fitted on the vehicle.
2.1.11) Composite:
Material formed from several distinct components, the association of which provides the whole with properties which none of the components taken separately possesses.

2.2 Dimensions

Perimeter of the car seen from above:
The car as presented on the starting grid for the event in question.

2.3 Engine

2.3.1) Cylinder capacity:
Volume V generated in cylinder (or cylinders) by the upward or downward movement of the piston(s).
$V = 0.7854 \times b^2 \times s \times n$
where: b = bore
s = stroke
n = number of cylinders
2.3.2) Supercharging:
Increasing the weight of the charge of the fuel-air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust systems) by any means whatsoever.
The injection of fuel under pressure is not considered to be supercharging (see article 3.1 of the General Prescriptions for Groups N, A, B).
2.3.3) Cylinder block:
The crankcase and the cylinders.
2.3.4) Intake manifold:
In the case of a carburettor induction system :
- Part collecting the air-fuel mixture from the carburettor(s) and extending to the cylinder head gasket face.
In the case of a single-valve injection induction system :
- Part extending from the body of the butterfly valve inclusive to the cylinder head gasket face, collecting and regulating the air or the air-fuel mixture flow.
In the case of a multi-valve injection induction system :
- Part extending from the butterfly valves inclusive to the cylinder head gasket face, collecting and regulating the air or the air-fuel mixture flow.
In the case of a diesel engine :
- Part collecting the air at the air filter outlet and extending to the cylinder head gasket face.
2.3.5) Exhaust manifold:
Part collecting together at any time the gases from at least two cylinders from the cylinder head and extending to the first gasket separating it from the rest of the exhaust system.
2.3.6) For cars with a turbocharger, the exhaust begins after the turbocharger.
2.3.7) Sump:
The elements bolted below and to the cylinder block which contain and control the lubricating oil of the engine.
These elements must not have any mounting part of the crankshaft.
2.3.8) Engine compartment:
Volume defined by the structural envelope closest to the engine.
2.3.9) Lubrication by dry sump:
Any system using a pump to transfer oil from one chamber or compartment to another, to the exclusion of the pump used for the normal lubrication of the engine parts.
2.3.10) Engine joint
Point of connection or articulation between two contiguous parts of an assembly which does not modify the overall geometry of this assembly in any way.
2.3.11) Exchanger:
Mechanical part allowing the exchange of calories between two fluids.
For specific exchangers, the first-named fluid is the fluid to be cooled and the second-named fluid is the fluid that allows this cooling.
e.g. Oil/Water Exchanger (the oil is cooled by the water).
2.3.12) Radiator:
This is a specific exchanger allowing liquid to be cooled by air.
Liquid / Air Exchanger.
2.3.13) Intercooler or Supercharging Exchanger:
This is an exchanger, situated between the compressor and the engine, allowing the compressed air to be cooled by a fluid.
Air / Fluid Exchanger.

2.4 Running gear

The running gear includes all parts totally or partially unsuspended.

2.4.1) Wheel:
Flange and rim ; by complete wheel is meant flange, rim and tyre.
2.4.2) Friction surface of the brakes:
Surface swept by the linings on the drum, or the pads on both sides of the disc when the wheel achieves a complete revolution.
2.4.3) Mac Pherson suspension:
Any suspension system in which a telescopic strut, not necessarily providing the springing and/or damping action, but incorporating the stub axle, is anchored on the body or chassis through single attachment point at its top end, and pivots at its bottom end either on a transversal wishbone locating it transversally and longitudinally, or on a single transversal link located longitudinally by an anti-roll bar, or by a tie rod.

2.5 Chassis - Bodywork

2.5.1) Chassis:
The overall structure of the car around which are assembled the mechanical components and the bodywork including any structural part of the said structure.
2.5.2) Bodywork:
- externally: all the entirely suspended parts of the car licked by the airstream.
- internally: cockpit and boot.

Bodywork is differentiated as follows:
1) completely closed bodywork
2) completely open bodywork
3) convertible bodywork with the hood in either supple (drop-head) or rigid (hardtop) material.

2.5.3) Seat:
The two surfaces making up the seat cushion and seatback or backrest.
Seatback or backrest:
Surface measured from the bottom of a normally seated person's spine.
Seat cushion:
Surface measured from the bottom of the same person's spine towards the front.
2.5.4) Luggage compartment:
Any volume distinct from the cockpit and the engine compartment inside the vehicle.
These volumes are limited in length by the fixed structures provided for by the manufacturer and/or by the rear of the seats and/or, if this is possible, reclined at a maximum angle of 15° to the rear.
These volumes are limited in height by the fixed structures and/or by the detachable partitions provided for by the manufacturer, or in the absence of these, by the horizontal plane passing through the lowest point of the windscreen.
2.5.5) Cockpit:
Structural inner volume which accommodates the driver and the passengers.
2.5.6) Bonnet:
Outer part of the bodywork which opens to give access to the engine.
2.5.7) Mudguard:
A mudguard will be considered to be the area defined according to drawing 251-1.
Front mudguard: The area defined by the inner face of the complete wheel of the standard car (C1/C1), the front edge of the front door (B1/B1), and situated below the plane parallel to the door sills and tangent to the lower corners of the visible part of the windscreen (A1/A1).
Rear Mudguard: the area defined by the inner face of the complete wheel of the standard car (C2/C2), the rear edge of the rear door (B2/B2), and situated below the lower edge of the visible part of the window of the rear side door, and below the tangent to the lower corner of the visible part of the rear windscreen and to the lower rear corner of the visible part of the side window of the rear door (A2/A2).
In the case of a two-door car, B1/B1 and B2/B2 will be defined by the front and rear of the same door.

2.6 Electrical system

Headlight: Any signal the focus of which creates an in-depth luminous beam directed towards the front.

2.7 Fuel tank

Any container holding fuel likely to flow by any means whatsoever towards the main tank or the engine.

ARTICLE 252 - GENERAL PRESCRIPTIONS FOR PRODUCTION CARS (GROUP N), TOURING CARS (GROUP A), GRAND TOURING CARS (GROUP B)

ARTICLE 1 : GENERAL REMARKS

1.1 All modifications are forbidden unless expressly authorised by the regulations specific to the group in which the car is entered or by the general prescriptions below or imposed under the chapter "Safety Equipment".
The components of the car must retain their original function.

1.2 Application of the general prescriptions
The general prescriptions must be observed in the event that the specifications of Production Cars (Group N), Touring Cars (Group A), Grand Touring Cars (Group B) do not lay down a more strict prescription.

1.3 Material
The use of a material which has a specific yield modulus greater than 40 GPa/g/cm³ is forbidden for the making of all the parts that are free or homologated as a Variant-Option.
This restriction does not concern the parts homologated with the standard vehicle.
The use of magnesium alloy sheet metal with a thickness less than 3 mm is prohibited.

1.4 It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the meeting that his automobile complies with these regulations in their entirety at all times during the event.

1.5 Damaged threads can be repaired by screwing on a new thread with the same interior diameter ("helicoil" type).

1.6 Any Group A car, homologated after 01.01.99, with the exception of kit variants, and competing in rallies must not be wider than 1770 mm.
Group N cars may compete in their integral version.

ARTICLE 2 : DIMENSIONS AND WEIGHT

2.1 Ground clearance
No part of the car must touch the ground when all the tyres on one side are deflated.
This test shall be carried out on a flat surface under race conditions (occupants on board).

2.2 Ballast
It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility to fix seals, placed on the floor of the cockpit, visible and sealed by the scrutineers.
Application: Touring Cars (Group A), Grand Touring Cars (Group B) ; no kind of ballast is authorised in Production Cars (Group N).
In rallies, however, the carrying of tools and spare parts for the car will be allowed under the conditions laid down in article 253.

ARTICLE 3 : ENGINE

3.1 Supercharging
In case of supercharging, the nominal cylinder-capacity will be multiplied by 1.7 for petrol engines and by 1,5 for diesel engine, and the car will pass into the class corresponding to the fictive volume thus obtained.
The car will be treated in all respects as if its cylinder-capacity thus increased were its real capacity.
This shall particularly be the case for assigning the car to its cylinder-capacity class, its interior dimensions, its minimum number of places, its minimum weight, etc.

3.2 Equivalence formula between reciprocating piston and rotary engines
(of the type covered by the NSU Wankel patents)
The equivalent cubic capacity is equal to the volume determined by the difference between the maximum and minimum capacities of the combustion chamber.

3.3 Equivalence formula between reciprocating piston and turbine engines
The formula is the following:

$$C = \frac{S(3.10 \times R) - 7.63}{0.09625}$$

S = High pressure nozzle area - expressed in square centimetres by which is meant the area of the airflow at the exit from the stator blades (or at the exit from the first stage if the stator has several stages).
Measurement is done by taking the area between the fixed blades of the high-pressure turbine first stage.
In cases where the first stage turbine stator blades are adjustable, they must be opened to their greatest extent.
The area of the high-pressure nozzle is thus the product of the height (expressed in cm²) by the width (expressed in cm²) and by the number of blades.
R = The pressure ratio is the ratio of the compressor of the turbine engine.
It is obtained by multiplying together the value for each stage of the compressor, as indicated hereafter:
Subsonic axial compressor: 1.15 per stage
Trans-sonic axial compressor: 1.5 per stage
Radial compressor: 4.25 per stage.
Thus a compressor with one radial and six axial subsonic stages will be designated to have a pressure ratio of:
4.25 x 1.15 x 1.15 x 1.15 x 1.15 x 1.15 x 1.15 or 4.25 x (1.15)6.
C = Equivalent cubic capacity for reciprocating piston engines in cm³.

3.4 All engines into which fuel is injected or in which fuel is burned after an exhaust port are prohibited.

3.5 Equivalencies between reciprocating piston engines and new types of engines
The FIA reserves the right to make modifications on the basis of comparisons established between classic engines and new types of engines, by giving a two-year notice from the 1st January following the decision taken.

3.6 Exhaust system and silencer
Even when the specific provisions for a group allow the replacement of the original silencer, the cars competing in an open-road event shall always be equipped with an exhaust silencer complying with the traffic regulations of the country(ies) through which the event is run.
For all cars used in Rallies and unless the limits imposed by the local authorities are lower, the noise level on the open road must not exceed 103 dB(A) for an engine rotation speed of 3500 rpm for petrol engines and 2500 rpm for diesel engines.
The orifices of the exhaust pipes shall be placed at a maximum of 45 cm and a minimum of 10 cm from the ground.
The exit of the exhaust pipe must be situated within the perimeter of the car and less than 10 cm from this perimeter, and aft of the vertical plane passing through the centre of the wheelbase.
Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns.
The exhaust system must not be provisional.
Exhaust gas may only exit at the end of the system.
Parts of the chassis must not be used to evacuate exhaust gasses.
Catalytic exhausts:
Should two possible versions of one car model be homologated (catalytic and other exhaust), the cars must comply with one or other version, any combination of the two versions being prohibited.
All cars equipped with a kit (VK) must be fitted with a homologated catalytic exhaust.

For all groups, all cars must be fitted with a homologated catalytic exhaust if this is obligatory in the country in which they are registered, unless the catalytic exhaust is not obligatory in the organising country, in which case it may be removed.

3.7 Starting on board the vehicle

Starter with electric or other source of energy on board operable by the driver when seated in the seat.

3.8 Cylinders

For non-sleeved engines, it will be possible to repair the cylinders by adding material, but not parts.

ARTICLE 4 : TRANSMISSION

All cars must be fitted with a gearbox including a reverse gear which must be in working order when the car starts the event, and be able to be operated by the driver when he is normally seated.

ARTICLE 5 : SUSPENSION

Suspension parts made partially or entirely from composite materials are prohibited.

ARTICLE 6 : WHEELS

Wheels made partially or entirely from composite materials are prohibited.

Measuring wheel width:

The width is to be measured with the wheel mounted on the car, on the ground, the vehicle in race condition, driver aboard, at any point along the circumference of the tyre, except in the area in contact with the ground.

When multiple tyres are fitted as part of a complete wheel, the latter must comply with the maximum dimensions for the Group in which these tyres are used (see article 255.5.4 and article 256.5).

ARTICLE 7 : COACHWORK

7.1 Convertible vehicles must comply in all respects with the specifications applying to open cars.

7.2 Minimum inside dimensions

If a modification authorised by Appendix J affects a dimension stated on the homologation form this dimension may not be retained as an eligibility criterion for the car.

7.3 Cockpit

Only the following accessories may be installed in the cockpit: spare wheels, tools, spare parts, safety equipment, communication equipment, ballast (if permitted), windscreen washer water container (Touring Cars (Group A) and Grand Touring Cars (Group B) only). The passenger area and seat of an open car must in no way be covered.

Containers for helmets and tools situated in the cockpit must be made of non-inflammable material and they must not, in case of fire, give off toxic vapours.

The original fitting of the air bags may be removed, without modifying the appearance of the bodywork.

7.4 All body panels of the vehicle must be at all times of the same material as those of the original homologated car and must be of the same material thickness as that of the original homologated car (tolerance ± 10 %).

7.5 Headlamp mounting and protection

The boring of holes in the front bodywork for light brackets is authorised, limited solely to mountings.

In rallies, non-reflecting protectors made from flexible material may be mounted on the headlamps ; they must not protrude forwards beyond the headlamp glass by more than 10 cm.

7.6 Any object of a dangerous nature (battery, inflammable products, etc.) must be carried outside the cockpit.

7.7 Mud flaps (in Rallies only)

If the supplementary regulations of the event authorise them or impose them, transversal mud flaps will be accepted under the following conditions:

- They must be made from flexible material.
- They must cover at least the width of each wheel, but at least one third of the width of the car (see drawing 252-6) must be free behind the front wheels and the rear wheels.
- There must be a gap of at least 20 cm between the right and left mud flaps in front of the rear wheels.
- The bottom of these mud flaps must be no more than 10 cm from the ground when the car is stopped, with nobody on board.
- In vertical projection, these mud flaps must not protrude beyond the bodywork.

Mud flaps to prevent splashing towards the front, made from flexible material, may be installed at the front of the vehicle, if the supplementary regulations of the event authorise them or impose them.

They must not protrude beyond the overall width of the vehicle, or beyond the original overall length by more than 10 cm, and at least one third of the width of the car must be free in front of the front wheels.

ARTICLE 8 : ELECTRICAL SYSTEM

8.1 Lighting

A fog light may be changed for another light, and vice versa, provided that the original mounting remains the same.

8.2 The mounting of the alternator is free.

8.3 Horn

In rallies only, the noise level produced by the horn must be greater than or equal to 97 dB during at least 3 seconds, measured 7m in front of the vehicle.

ARTICLE 9 : FUEL - COMBUSTIVE

9.1 The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:

- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.

100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.

The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.

- Specific gravity between 720 and 785 kg/m³ at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.

The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.

- Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 33-82).
- Maximum lead content: 0.40 g/l or the standard of the country of the event if it is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % -47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180° C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).

The fuel being accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.

For vehicles with a catalytic converter, leaded petrol is forbidden.

If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.

9.2 Diesel

For Diesel engines, the fuel must be gas oil corresponding to the following specifications:

- Hydrocarbon level, % by weight 99.0 min.
- Specific gravity, kg/m³ 860 max.
- Cetane number (ASTM D 613) 55 max.

- Calculated cetane number 55 max.
(ASTM D 976-80)

9.3 Only air may be mixed with the fuel as an oxidant.

9.4 Refuelling procedure

Standardised coupling

- In case of a centralised system provided by the circuit or a system provided by the competitors, the refuelling hose shall be provided with a leak-proof coupling to fit the standardised filler mounted on the car (in accordance with drawing 252-5; the interior diameter D must not exceed 50 mm).
- All cars must be provided with a fuel filler complying with this diagram.

This leak-proof fitting must comply with the dead man principle and must not therefore incorporate any retaining device when in an open position (spring-loaded, bayonet, etc.).

- The air vent(s) must be equipped with non return and closing valves having the same closing system as that of the standard filler and having the same diameter.

During refuelling the outlets of the air-vents must be connected with the appropriate coupling either to the main supply-tank or to a transparent portable container with a minimum capacity of 20 litres provided with a closing system rendering it completely leak-proof.

The venting catch tanks must be empty at the beginning of the refuelling operation.

In the cases where the circuits are unable to provide the entrants with a centralised system, they will have to refuel according to the above procedure.

The level of the reserve tank may in no case be more than 3 metres above the level of the track where the refuelling is effected.

This applies to the whole duration of the event.

The overflow bottles must conform to one of the drawings 252-1 or 252-2.

The reserve tank and all metal parts of the refuelling system from the coupling over the flow meter up to the tank and its rack must be connected electrically to the earth.

The application of the following is recommended:

1. Each pit should be equipped with two aircraft type grounding connections.
2. The refuelling system (including tower, tank, hose, nozzle, valves and vent bottle) should be connected to one of the above grounding connections for the entire duration of the race.
3. The car should be connected, at least momentarily, to the other grounding connection as soon as it stops in the pit.
4. No fuel hose connection (fill or vent) unless and until conditions 2 and 3 have been fulfilled.
5. All fuel-handling pit crew members should wear non-static protective clothing.

The refuelling tank may be one of the following:

- models made of rubber, of the type FT3 or FT3 1999, built by an approved manufacturer, or
- tanks conforming to one of the drawings 252-3 or 252-4.

Application: For Touring Cars (Group A), Grand Touring Cars (Group B), refer to the general prescriptions of the FIA Championships.

9.5 Tank ventilation

It is authorised to equip a tank with ventilation exiting through the car roof.

9.6 Installation of the FT3 or FT3 1999 tank

The FT3 or FT3 1999 tank may be placed either in the original location of the tank or in the luggage compartment.

There must be an orifice to evacuate any fuel which may have spread into the tank compartment.

The position and the dimension of the filler hole as well as that of the cap may be changed as long as the new installation does not protrude beyond the bodywork and guarantees that no fuel shall leak into one of the interior compartments of the car.

If the filler hole is situated inside the car, it must be separated from the cockpit by a liquid-tight protection.

ARTICLE 10 : BRAKES

Carbon brake discs are forbidden.

ARTICLE 253 - SAFETY EQUIPMENT (GROUP N, A, B, ST)

ARTICLE 1 :

A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

ARTICLE 2 :

If a device is optional, it must be fitted in a way that complies with regulations.

ARTICLE 3 : LINES AND PUMPS

3.1 Protection

Fuel, oil and brake lines must be protected externally against any risk of deterioration (stones, corrosion, mechanical breakage, etc.) and internally against all risks of fire.

Application: Optional for Group N, obligatory for Group ST, obligatory for the other Groups if the series production fitting is not retained.

In the case of fuel lines, the metal parts which are isolated from the shell of the car by non-conducting parts must be connected to it electrically.

Application: All groups, unless the series production fitting is maintained.

3.2 Specifications and installation

The fittings must comply with the specifications concerning them below:

- Fuel and lubricating oil lines: these must have a minimum burst pressure of 70 bar (1000 psi) and a minimum operating temperature of 135°C (250°F).

When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).

- Lines containing hydraulic fluid: with the exception of lines under gravity head only, these must have a minimum burst pressure of 70 bar (1000 psi) or higher according to operating pressure, and a minimum operating temperature of 232°C (450°F).

When flexible, these lines must have threaded or self-sealing connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).

- Lines containing cooling water or lubricating oil: these must be outside the cockpit.
- Lines containing fuel or hydraulic fluid: these may pass through the cockpit, but without any connectors inside except on the front and rear bulkheads according to drawings 253-1 and 253-2, and on the braking circuit.

Application: Obligatory for Group ST, obligatory for the other Groups if the series fitting is not retained.

3.3 Automatic fuel cut-off

All fuel feed pipes going to the engine must be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.

All the fuel pumps must only operate when the engine is running, except during the starting process.

Application: Recommended for all the groups and obligatory for Super Touring.

3.4 Fuel cell ventilation

The ventilation line of the fuel cell must be fitted with a system complying with the following conditions :

Gravity activated roll-over valve

Float chamber ventilation valve

Blow-off valve with a maximum over pressure of 200 mbar, working when the float chamber ventilation valve is closed.

ARTICLE 4 : BRAKING SAFETY SYSTEM

Double circuit operated by the same pedal: the pedal shall normally control all the wheels ; in case of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal shall still control at least two wheels.

If this system is fitted in series production, no modifications are necessary.

ARTICLE 5 : ADDITIONAL FASTENERS

At least two additional safety fasteners must be fitted for each of the bonnet and boot lids.

The original locking mechanisms will be rendered inoperative or removed.

Large objects carried on board the vehicle (such as the spare wheel, tool-kit, etc.) must be firmly fixed.

Application: Optional for Group N, obligatory for the other Groups.

ARTICLE 6 : SAFETY BELTS

6.1 Belts

Wearing of two shoulder straps and one lap strap ; anchorage points on the shell: two for the lap strap, two or possibly one symmetrical about the seat for the shoulder straps.

These belts must be homologated by the FIA and comply with FIA standard n°8853/98 or 8854/98.

Furthermore, the belts used in circuit competitions must be equipped with turnbuckle release systems.

On the other hand, it is recommended that for competitions which include public road sections, the belts be equipped with push button release systems.

The ASNs may homologate mounting points on the rollcage when this cage is being homologated (see art 253.8.4), on condition that they are tested.

6.2 Installation

- A safety harness must be installed on the anchorage points of the series car.

The recommended geometrical locations of the anchorage points are shown in drawing n° 253-42.

In the downwards direction, the shoulder straps must be directed towards the rear and must be installed in such a way that they do not make an angle of more than 45° to the horizontal from the upper rim of the backrest, although it is recommended that this angle should not exceed 10°.

The maximum angles in relation to the centre-line of the seat are 20° divergent or convergent.

If possible, the anchorage point originally mounted by the car manufacturer on the C-pillar should be used.

Anchorage points creating a higher angle to the horizontal must not be used unless the seat meets the requirements of the FIA standard.

In that case, the shoulder straps of 4-point safety harnesses must be installed on the rear seat lap strap anchorage points originally mounted by the car manufacturer.

For a 4-point harness, the shoulder straps must be installed crosswise symmetrically about the centre-line of the front seat.

A safety harness must not be installed on a seat having no head restraint or having a backrest with integrated head restraint (no opening between backrest and head restraint).

The lap and crotch straps should pass not over the sides of the seat but through the seat, in order to wrap and hold the pelvic region over the greatest possible surface.

The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh. Under no conditions must they be worn over

the region of the abdomen.
Holes may be made in the series seat if this proves to be necessary in order to avoid such an occurrence. Care must be taken that the straps cannot be damaged through chafing against sharp edges.
- If installation on the series anchorage points is impossible for the shoulder and/or crotch straps, new anchorage points must be installed on the shell or the chassis, as near as possible to the centre-line of the rear wheels for the shoulder straps.
The shoulder straps may also be fixed to the safety rollcage or to a reinforcement bar by means of a loop, and may also be fixed to the top anchorage points of the rear belts, or be fixed or leaning on a transversal reinforcement welded to the backstays of the rollbar.
In this case, the use of a transversal reinforcement is subject to the following conditions:
- The transversal reinforcement shall be a tube measuring at least 38 mm x 2.5 mm or 40 mm x 2 mm, made from cold drawn seamless carbon steel, with a minimum yield strength of 350 N/mm².
- The height of this reinforcement must be such that the shoulder straps, towards the rear, are directed downward with an angle of between 10° and 45° to the horizontal from the rim of the backrest, an angle of 10° being recommended.
- The straps may be attached by looping or by screws, but in the latter case an insert must be welded for each mounting point (see drawings 253-17C and 253-53 for the dimensions).
These inserts will be positioned in the reinforcement tube and the straps will be attached to them using bolts of M12 8.8 or 7/16UNF specification.
- Each anchorage point must be able to withstand a load of 1470 daN, or 720 daN for the crotch straps. In the case of one anchorage point for two straps, the load considered will be equal to the sum of the required loads.
- For each new anchorage point created, a steel reinforcement plate with a surface area of at least 40 cm² and a thickness of at least 3 mm must be used.
- Principles of mounting to the chassis / monocoque:
1) General mounting system: see drawing 253-43.
2) Shoulder strap mounting: see drawing 253-44.
3) Crotch strap mounting: see drawing 253-45.

6.3 Use

A safety harness must be used in its homologation configuration without any modifications or removal of parts, and in conformity with the manufacturer's instructions.
The effectiveness and longevity of safety belts are directly related to the manner in which they are installed, used and maintained.
The belts must be replaced after every severe collision, and whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.
They must also be replaced if metal parts or buckles are bent, deformed or rusted.
Any harness which does not function perfectly must be replaced.

ARTICLE 7 : EXTINGUISHERS - EXTINGUISHING SYSTEMS

The use of the following products is prohibited: BCF, NAF.

7.1

In rallies :
Articles 7.2 and 7.3 apply.
In circuit events, slaloms, hillclimbs :
Hand-operated extinguishers are compulsory.
In place of one of the extinguishers mentioned above, it is permitted to fit an automatic extinguisher system which conforms to the specifications of article 259.14

7.2 Systems mounted

7.2.1) All cars must be equipped with an extinguishing system homologated by the FIA in accordance with the following standard, in force on the date of homologation of the vehicle: "FIA standard for plumbed-in fire extinguisher systems in competition cars".
7.2.2) All extinguishers must be adequately protected and must be situated within the cockpit. In all cases their mountings must be able to withstand a deceleration of 25 g.
All extinguishing equipment must withstand fire.
Plastic pipes are prohibited and metal pipes are obligatory.
7.2.3) The driver must be able to trigger all extinguishers manually when seated normally with his safety belts fastened and the steering wheel in place.
Furthermore, a means of triggering from the outside must be combined with the circuit-breaker switch, or situated close to it. It must be marked with a letter "E" in red inside a white circle of at least 10 cm diameter with a red edge.
7.2.4) The system must work in all positions.
7.2.5) Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the occupants' heads.
7.3 Manual extinguishers
7.3.1) All cars must be fitted with one or two fire extinguishers.
7.3.2) Permitted extinguishants: AFFF, powder or any other extinguishant homologated by the FIA.
7.3.3) Minimum extinguisher capacity:
In case of use of powder: 2.60 litres for the quantities specified hereafter.
7.3.4) Minimum quantity of extinguishant:
AFFF: 2.4 litres
Powder: 2.0 kg
7.3.5) All extinguishers must be pressurised according to the contents:
AFFF: in accordance with the manufacturer's instructions
Powder: 13.5 bar
Furthermore, each extinguisher when filled with AFFF must be equipped with a means of checking the pressure of the contents.
7.3.6) The following information must be visible on each extinguisher:
- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check.
7.3.7) All extinguishers must be adequately protected. Their mountings must be able to withstand a deceleration of 25 g. Furthermore, only quick-release metal fastenings, with metal straps, will be accepted.
7.3.8) The extinguishers must be easily accessible for the driver and the co-driver.

ARTICLE 8 : ROLLOVER STRUCTURES

8.1 Definitions

8.1.1) Safety cage:
A structural framework designed to prevent serious bodyshell deformation in the case of a collision or of a car turning over.
8.1.2) Rollbar:
Structural frame or hoop and mounting points.
8.1.3) Rollcage:
Structural framework made up of a main rollbar and a front rollbar (or of two lateral rollbars), their connecting members, one diagonal member, backstays and mounting points. (For example, see drawings 253-3 and 253-4).
8.1.4) Main rollbar:
Structure consisting of a near-vertical frame or hoop located across the vehicle just behind the front seats.
8.1.5) Front rollbar:
Similar to main rollbar but its shape follows the windscreen pillars and top screen edge.
8.1.6) Lateral rollbar:
Structure consisting of a near-vertical frame or hoop located along the right or left side of the vehicle.
The rear legs of a lateral rollbar must be just behind the front seats. The front leg must be against the screen pillar and the door pillar such that it does not unduly impede the entry or exit of driver and co-driver.
8.1.7) Longitudinal member:
Longitudinal tube which is not a part of the main, front or lateral rollbar and linking them, together with the backstays.
8.1.8) Diagonal member:
Transverse tube between a top corner of the main rollbar or upper end of a backstay and a lower mounting point on the other side of

the rollbar of backstay.
8.1.9) Framework reinforcement:
Reinforcing member fixed to the rollcage to improve its structural efficiency.
8.1.10) Reinforcement plate:
Metal plate fixed to the bodyshell or chassis structure under a rollbar mounting foot to spread load into the structure.
8.1.11) Mounting foot:
Plate welded to a rollbar tube to permit its bolting or welding to the bodyshell or chassis structure, usually onto a reinforcement plate.
8.1.12) Removable members:
Structural members of a safety cage which must be able to be removed.

8.2 Specifications

8.2.1) General comments:
8.2.1.1 Safety cage must be designed and made so that, when correctly installed, they substantially reduce bodyshell deformation and so reduce the risk of injury to occupants.
The essential features of safety cages are sound construction, designed to suit the particular vehicle, adequate mountings and a close fit to the bodyshell.
Tubes must not carry fluids.
The safety cage must not unduly impede the entry or exit of the driver and co-driver.
Members may intrude into the occupant's space in passing through the dashboard and front side-trim, as well as through the rear side-trim and rear seats.
The rear seat may be folded down.
Longitudinally, the safety cage must be entirely contained between the top mounting points of the front suspension and the top mounting points of the rear suspension.
Any modification to a homologated safety cage is forbidden.
8.2.1.2 Basic safety cage:
Only rollcages must be used.
8.2.1.3 Compulsory diagonal member:
Different ways of fitting the compulsory diagonal member: see drawings 253-3 to 253-5.
The combination of several members is permitted according to drawings 253-3 and 253-5.
The fitting of a second diagonal member, according to drawing 253-4, is recommended, and mandatory for all new cars homologated as from 1 January 2002.
The connection between the two members must be reinforced by a gusset.
8.2.1.4 Optional reinforcing members:
Each type of reinforcement (drawings 253-6 to 253-17, 253-17A and 253-17C) may be used separately or combined with others.
8.2.2) Technical specifications:
8.2.2.1 Main, front and lateral rollbars:
These frames or hoops must be made in one piece without joints.
Their construction must be smooth and even, without ripples or cracks.
The vertical part of the main rollbar must be as straight as possible and as close as possible to the interior contour of the bodyshell.
The front leg of a front rollbar or of a lateral rollbar must be straight, or if it is not possible, must follow the windscreen pillars and have only one bend with its lower vertical part.
Where a main rollbar forms the rear legs of a lateral rollbar (drawing 253-4), the connection to the lateral rollbar must be at roof level.
To achieve an efficient mounting to the bodyshell, the original interior trim may be modified around the safety cages and their mountings by cutting it away or by distorting it.
However, this modification does not permit the removal of complete parts of upholstery or trim.
Where necessary, the fuse box may be moved to enable a rollcage to be fitted.
8.2.2.2 Mounting of rollcages to the bodyshell:
Minimum mountings are:
- 1 for each leg of the main or lateral rollbar ;
- 1 for each of the front rollbar ;
- 1 for each backstay (see 8.2.2.3).

Each mounting foot of the front, main and lateral rollbars must include a reinforcement plate, of a thickness of at least 3 mm which must not be less than that of the tube onto which it is welded.
Each mounting foot must be attached by at least three bolts on a steel reinforcement plate at least 3 mm thick and of at least 120 cm^2 area which is welded to the bodyshell.
Examples are shown in drawings 253-18 to 253-24.
This does not necessarily apply to backstays (see below).
Bolts must be of at least M8 size of ISO standard 8.8 or better.
Fasteners must be self-locking of fitted with lock washers.
These are minimum requirements.
In addition to these requirements, more fasteners may be used, the rollbar legs may be welded to reinforcement plates, the rollcage may be welded to the bodyshell.
Rollbar mounting feet must not be welded directly to the bodyshell without a reinforcement plate.
8.2.2.3 Backstays:
These are compulsory and must be attached near the roofline and near the top outer bends of the main rollbar on both sides of the car.
They must make an angle of at least 30° with the vertical, must run rearwards and be straight and as close as possible to the interior side panels of the bodyshell.
Their materials specification, diameter and thickness must be as defined in 8.3.
Their mountings must be reinforced by plates.
Each backstay should be secured by bolts having a cumulative section area at least two thirds of that recommended for each rollbar leg mounting in 8.2.2.2 above, and with identical reinforcement plates of at least 60 cm^2 area (see drawing 253-25).
A single bolt in double shear is permitted, provided it is of adequate section and strength (see drawing 253-26) and provided that a bush is welded into the backstay.
8.2.2.4 Diagonal members:
At least one diagonal member must be fitted.
Their location must be in accordance with drawings 253-3 to 253-5 and they must be straight, not curved.
The attachment points of the diagonal members must be so located that they cannot cause injuries.
They may be made removable but must be in place during events.
The lower end of the diagonal must join the main rollbar of backstay not further than 100 mm from the mounting foot.
The upper end must join the main rollbar not further than 100 mm from the junction of the backstay joint, or the backstay not more than 100 mm from its junction with the main rollbar.
They must comply with the minimum specification set out in 8.3.
Diagonal members fixed to the bodyshell must have reinforcement plates as defined in 8.2.2.3 above.
8.2.2.5 Optional reinforcement of the rollcage:
The diameter, thickness and material of reinforcements must be as defined in 8.3.
They shall be either welded in position or installed by means of dismountable joints.
8.2.2.5.1) Transverse reinforcing members:
The fitting of two transverse members as shown in drawing 253-7 is permitted.
The transverse member fixed to the front rollbar must not encroach upon the space reserved for the occupants.
It must be placed as high as possible but its lower edge must not be higher than the top of the dashboard.
8.2.2.5.2) Doorbars (for side protection):
One or more longitudinal members may be fitted at each side of the vehicle (see drawings 253-7, 253-8, 253-12, 253-17).
They may be removable.
If these upper attachment points are located in front of or behind the door opening, this height limitation is also valid for the corresponding intersection of the strut and the door opening.
In the case of doorbars in the form of an "X" (cross-struts), it is recommended that the lower attachment points of the cross-struts be fixed directly onto the longitudinal member and that at least one part of the "X" be a single-piece bar.
8.2.2.5.3) Roof reinforcement:
Reinforcing the upper part of the rollcage by adding members as shown in drawings 253-9 and 253-9A is permitted.
8.2.2.5.4) Reinforcement of bends and junctions:
It is permitted to reinforce the junction of the main rollbar or the front

rollbar with the longitudinal struts (drawings 253-10 and 253-16), as well as the top rear bends of the lateral rollbars and the junction between the main rollbar and the backstays.
The ends of these reinforcing tubes must not be more than half way down or along the members to which they are attached, except for those of the junction of the front rollbar, which may join the junction of the door strut/front rollbar.
A reinforcement as in drawing 253-17B may be added on each side of the front rollbar between the upper corner of the windscreen and the base of this rollbar.
For all the safety rollcages for Super Production Cars, homologated as from 1 January 2000 and for all the safety rollcages for rally cars homologated as from 1January 2001, the presence of the rollcage in the door aperture must comply with the following criteria (see drawing 253-17D) :
- Dimension A must be a minimum of 300 mm
- Dimension B must be a maximum of 250 mm
- Dimension C must be a maximum of 300 mm
- Dimension D (measured from the upper corner of the windscreen, without the seal) must be a maximum of 100 mm
- Dimension E must not be more than the half height of the door aperture (H).

8.2.2.6 Protective padding:
Where the occupants' bodies or their crash helmets could come into contact with the safety cage, non-flammable padding must be provided for protection.
8.2.2.7 Removable members:
Should removable members be used in the construction of a rollcage, the dismountable joints used must comply with a type approved by the FIA (see drawings 253-27 to 253-36). They must not be welded.
The screws and bolts must be of ISO standard 8.8 or better.
It should be noted that dismountable joints must not be used as part of a main, front or lateral rollbar because they act as hinges in the principal structure and allow deformation.
Their use is solely for attaching members to the rollbars and for attaching a lateral rollbar to a main rollbar (drawing 253-4).
In this last case, hinged joints illustrated in drawings 253-30, 253-33 and 253-36 must not be used.
8.2.2.8) Guidance on welding:
All welding must be of the highest possible quality with full penetration and preferably using a gas-shielded arc.
Although good external appearance of a weld does not necessarily guarantee its quality, poor looking welds are never a sign of good workmanship.
When using head-treated steel the special instructions of the manufacturers must be followed (special electrodes, gas protected welding).
It must be emphasised that the use of heat-treated or high carbon steels may cause problems and that bad fabrication may result in a decrease in strength (caused by brittle heat-affected zones) or inadequate ductility.

8.3 Material specifications

Specifications of the tubes used:

Material	Minimum tensile strength	Dimensions (mm)	Use
Cold drawn seamless unalloyed carbon steel (see below) containing a maximum of 0.3 % of carbon	350 N/mm²	45(1.75") x 2.5 or 50(2.0") x 2.0	Main rollbar (drawing 253-38) Lateral rollbar and their connection (drawing 253-39) according to construction
		38(1.5") x 2.5 or 40(1.6") x 2.0	Others parts of the safety cage

For an unalloyed steel, the maximum content of additives is 1% for manganese and 0.5% for other elements.
In selecting the steel, attention must be paid to obtaining good elongation properties and adequate weld ability.
The tubing must be bent by a cold working process and the centreline bend radius must be at least 3 times the tube diameter.
If the tubing is ovalised during bending, the ratio of minor to major diameter must be 0.9 or greater.
Articles 8.1 to 8.3 inclusive concern rollbars manufactured without a certificate from an ASN (article 8.4) or from the FIA (article 8.5).

8.4 Homologation by an ASN

Not valid for the safety cages for World Rally Cars that must be mandatorily homologated by the FIA according to an article 8.5.
Safety cage manufacturers may submit a safety cage of their own design to an ASN for approval as regards the quality of steel used with or without welding, the dimensions of the tubes, the optional reinforcing members (according to article 8.2.2.5) and the mounting to the vehicle, provided that the construction is certified to withstand the stress minima given hereafter in any combination on top of the safety cage:
- 1.5 W* lateral ;
- 5.5 W fore and aft ;
- 7.5 W vertical.

(*W = weight of the car + 150 kg).
The use of cold finished welded tubes is authorised on the sole condition that the structure is homologated by an ASN (article 8.4) and that this is specified on the homologation certificate.
Longitudinal rollcage extensions are allowed up to the level of the original suspension mounting points on the shell.
There must not be direct connection between the top extension and the bottom extension.
A homologation certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the event's scrutineers.
It must contain drawings or photos of the safety cage in question including its fixation and particularities, and must declare that the rollcage can resist the forces specified above.
Any new cage which is homologated by an ASN and is on sale, as from 01.01.97, must be identified by means of an individual number affixed to it by the manufacturer; this number must be neither copied nor moved.
A certificate bearing the same number will be attached to each of the cages by the manufacturer.
This certificate must also be presented to the event's scrutineers.
These safety cages must not be modified in any way.
To obtain the ASN's approval, a manufacturer must have demonstrated his consistent ability to design and manufacture rollcages which comply with the specifications approved by the FIA.
Manufacturers approved by the ASN shall supply customers only with products designed and manufactured to the approved standards.
Each ASN-approved manufacturer shall demonstrate to the ASN:
- that the material he uses has a certificate of origin or of traceability, and is kept segregated from other batches or material ;
- that the welding methods he uses produce consistent and sound welds and are regularly checked by laboratory tests ;
- that he operates and maintains auditable in-house quality standards and procedures, updated regularly.

Rollcages made up of a basic structure as per articles 253.8.1 to 8.3, or of a structure already tested and homologated by the ASN concerned and coming from the same manufacturer, and on which the only modifications carried out will have been the addition of parts, may be homologated directly by the ASN concerned, once the resistance has been tested and the manufacturer has supplied a certificate.
For the other rollcages, the ASNs may carry out a static test as follows (see drawing 253-37):
1 - Rollcage to be considered:
As the total function of a rollcage must be considered only in its entirety, the test must be carried out on the complete rollcage.
2 - Testing device:
This must be constructed in such a way that none of the loads has any influence on its structure.

3 - Mountings:
The rollcage must be fitted to the testing device by its original mountings.
4 - Test:
A vertical load of 7.5 w (W being the weight of the car + 150 kg) is to be applied with a stamp with minimum area 500 x 200 mm on the main rollbar behind the driver's seat.
5 - Accepted distortion:
This test must not produce, in the total safety structure, any breakage or any plastic distortion of more than 50 mm.

8.5 FIA homologation

FIA suggests that each car manufacturer should recommend a type of safety cage complying with FIA standards, as defined in 8.4 above.
This safety cage must be described on a homologation extension form presented to FIA for approval and the safety cage must not be modified (see 8.2.1.1) in any way.
All World Rally Car safety cages homologated as from 1 January 2001 must be homologated by the FIA.

ARTICLE 9 : REAR VIEW

This shall be provided by an inside mirror commanding a rear window with at least a 10 cm vertical opening, maintained along a width of at least 50 cm.
However, if the straight line connecting the upper and lower edges of the rear window opening makes an angle inferior to 20° with the horizontal, the rear view must be efficiently obtained by other means (two outside mirrors or any other system of equivalent efficiency).
Furthermore, all these cars should be equipped with two outside mirrors for circuit events.
Application: Groups N, A, B. For ST, see specific regulations.

ARTICLE 10 : TOWING-EYE

All cars will be equipped with a rear and front towing-eye for all events.
This towing-eye will only be used if the car can move freely .
It will be clearly visible and painted in yellow, red or orange.

ARTICLE 11 : WINDOWS / NETS

The windows must be certified for road use, their marking standing as proof.
The windshield must be made of laminated glass.
In rallies only :
The use of translucent and colourless anti-shatter films on the side windows is mandatory if silvered or tinted films are not used.
The use of silvered or tinted films is authorised in rallies only, on the side and rear windows, and on the following conditions:
- Openings in these films must allow a person outside the car to see the driver as well as the contents of the car.
- This authorisation must be mentioned in the supplementary regulations of the event.
Application: Groups N, A, B. For ST, see specific regulations.
For events on circuits, the use of nets affixed to the safety roll-cage is mandatory.
These nets must have the following characteristics :
Width of the strips : 19 mm
Minimum size of the meshes : 25 x 25 mm.
Maximum size of the meshes : 60 x 60 mm.
and must close up the window opening to the centre of the steering wheel.
For Supertouring cars, it is possible to locally modify the net, in order to preserve rearward visibility for the driver.

ARTICLE 12 : SAFETY FIXING DEVICES FOR WINDSHIELD

Such devices may be used freely.
Application: Groups N, A, B. For ST, see specific regulations.

ARTICLE 13 : GENERAL CIRCUIT BREAKER

The general circuit breaker must cut all electrical circuits, battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc.) and must also stop the engine.
It must be a spark-proof model, and will be accessible from inside and outside the car.
As for the outside, the triggering system of the circuit breaker will compulsorily be situated at the lower part of the windscreen mounting of the driver's side for closed cars. It will be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.
This outside triggering system only concerns closed cars.

Application: Compulsory fitting for all cars taking part in speed events on circuits or hill-climbs. The fitting is recommended for other events.

ARTICLE 14 : FIA APPROVED SAFETY FUEL TANKS

Whenever a competitor uses a safety fuel tank, it must come from a manufacturer approved by the FIA.
In order to obtain the FIA's agreement, a manufacturer must have proved the constant quality of its product and its compliance with the specifications approved by the FIA.
Safety tank manufacturers recognised by the FIA must undertake to deliver to their customers exclusively tanks complying with the norms approved.
To this end, on each tank delivered the name of the manufacturer, the model, the exact specifications according to which this tank has been manufactured, the date of the manufacturing, and the series number, shall be printed.

14.1 Technical specifications

The FIA reserves the right to approve any other set of technical specifications after study of the dossier submitted by the manufacturers concerned.

14.2 Specifications FIA/FT3 or FIA/FT3 1999

The technical specifications for these tanks are available, on request, from the FIA Secretariat.

14.3 Ageing of tanks

The ageing of safety tanks entails a considerable reduction in the strength characteristics after approximately five years.
No bladder shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another two years.

14.4 Applications of these specifications

Group N, Group A and Group B cars may be equipped with an FT3 or FT3 1999 safety fuel tank if the modifications necessary do not exceed those allowed by the regulations. Group ST cars must be equipped with an FT3 or FT3 1999 tank.
As far as Group N cars are concerned, the maximum capacity of the FT3 or FT3 1999 tanks must be that of the homologated tank, except for rallies (see article 254.6.8.).
The use of safety foam in FT3 or FT3 1999 tanks is recommended.

14.5 Fuel tanks with filler necks, Groups A and N

All cars fitted with a fuel tank with filler neck passing through the cockpit must be equipped with a non-return valve homologated by the FIA. This valve, of the type (with one or two flaps(, must be installed in the filler neck on the tank side."
The filler neck is defined as being the means used to connect the fuel filler hole of the vehicle to the fuel tank itself.

ARTICLE 15 : PROTECTION AGAINST FIRE

An efficient protective screen must be placed between the engine and the occupant's seat, in order to prevent the direct passage of flames in case of fire.
Should this screen be formed by the rear seats, it is advisable to cover them with a flameproof coating.

ARTICLE 16 : SEATS, ATTACHMENTS AND SUPPORTS

If the original seat attachments or supports are changed, the new parts must either be approved for that application by the seat manufacturer or must comply with the following specifications (see drawing 253-52):

1) Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counterplates, according to the drawing.
The minimum area of contact between support, shell/chassis and counterplate is 40 cm^2 for each mounting point.
If quick release systems are used, they must capable of withstanding vertical and horizontal forces of 18000 N, applied non-simultaneously. If rails for adjusting the seat are used, they must be those originally supplied with the homologated car or with the seat.
2) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat.
Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.
3) The minimum thickness of the supports and counterplates is 3 mm for steel and 5 mm for light alloy materials.
The minimum longitudinal dimension of each support is 6 cm.
All the occupants' seats must be either original, modified only through the addition of accessories with a registered trademark, or homologated by the EEC, the FMVSS or the FIA (8855/1992 or 8855/1999 standards), and not modified. In all these cases, a headrest must be present for each occupant.

ARTICLE 17 : PRESSURE CONTROL VALVES

Pressure control valves on the wheels are forbidden

ARTICLE 254 - SPECIFIC REGULATIONS FOR PRODUCTION CARS (GROUP N)

ARTICLE 1 : DEFINITION

Large scale series production touring cars.

ARTICLE 2 : HOMOLOGATION

At least 2500 identical units must have been produced in 12 consecutive months and homologated by the FIA in Touring Cars (Group A).
The Supply Variants (VF) homologated in Touring Cars (Group A) are also valid in Production Cars (Group N).
The Optional Variants (VO) of the Touring Cars (Group A) form shall not be valid in Production Cars (Group N), unless they refer to:
- engine flywheel of the same diameter and the same weight as the original, if and only if this original flywheel is made up of two parts.
- fly-wheel for automatic gearboxes ;
- fuel tank ;
- automatic gearboxes ;
- sun roof ;
- safety rollcage ;
- seat supports and anchorages;
- safety harness mounting points;
- 2/4 doors versions.

The specific Option-Variants (VO) for Group N may be used.
The use of tanks homologated in VO on the Touring Car (Group A) form must be carried out under the conditions laid down in article 5.9.2 of the Touring Car (Group A) regulations, and article 254.6.8.
Evolutions of the type (ET), kit variants (VK) or sporting evolutions (ES) homologated in Touring Cars (Group A) are not valid in production Cars (Group N).
Nevertheless, evolutions of the type and the sporting evolutions homologated, as from 01.01.97 in Group A, are valid in Group N.

ARTICLE 3 : NUMBER OF SEATS

Cars must have at least four places, in accordance with the dimensions defined for Touring Cars (Group A).

ARTICLE 4 : MODIFICATIONS AND ADJUNCTIONS ALLOWED OR OBLIGATORY

All the modifications which are not allowed by the present regulations are expressly forbidden.
The only work which may be carried out on the car is that necessary for its normal servicing, or for the replacements of parts worn through use or accident.
The limits of the modifications and fittings allowed are specified hereinafter. Apart from these, any part worn through use or accident can only be replaced by an original part identical to the damaged one.
The cars must be strictly series production models identifiable by the homologation form data.

ARTICLE 5 : MINIMUM WEIGHT

Cars must have at least the weight appearing on the homologation form plus the weight of the safety devices
As far as rollcages which cannot be removed from the car and which were manufactured in accordance with articles 253.8.2 and 8.3 of Appendix J are concerned, the following weights will be taken as a basis:
- Rollcage according to drawings 253-3/4: 30 kg
- Rollcage according to drawings 253-5 to 17C: 35 kg

This is the real weight of the empty car (without persons or luggage aboard) without tools, jack.
All the liquid tanks (lubrication, cooling, braking, heating where applicable) must be at the normal level foreseen by the manufacturer, with the exception of the windscreen wiper or headlight wiper, brake cooling system, fuel and water injection tanks, which shall be empty.
Additional headlights which do not appear on the homologation form must be removed before weighing.

ARTICLE 6 :

6.1 Engine

- Engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic function.
- The accelerator cable may be replaced or doubled by another one regardless of whether it comes from the manufacturer or not.

If the series vehicle is fitted with a motorised throttle valve, a throttle kit with a mechanical linkage, homologated in Group N, may be used.
- The screws and bolts may be changed, provided that the replacements are made from ferrous material.
- Ignition: The make and type of the spark plugs, rev. limiter and high-tension leads are free.

The electronic control unit and the ignition components in the electronic control unit are free, nevertheless the system must be entirely interchangeable with the original unit (i.e. the engine must work when the unit is replaced with the series unit).
Sensors and actuators on the input side must be standard, as must their function.
No sensor may be added, even for the purpose of data recording.
- Any data recording system is forbidden unless fitted on the homologated vehicle.
- Cooling system: The thermostat is free as is the control system and the temperature at which the fan cuts in.

Locking system for the radiator cap is free.
- Carburettors: The original system must be retained.

The components of the carburettor which control the quantity of petrol entering the combustion chamber may be modified, provided that they do not have any influence over the quantity of air admitted.
Replacement air filter cartridges are accepted in the same way as the original ones.
- Injection: The original system must be retained.

Components of the injection system situated downstream of the airflow measuring device, and which control the quantity of petrol entering the combustion chamber may be modified but not replaced, provided that they do not have any influence over the quantity of air admitted.
The interior of the electronic control unit for the injection is free.
Inputs to the electronic control unit (sensors, actuators, etc.), including their function, must remain as standard.
Outputs from the electronic control unit must retain their original functions in accordance with the homologation form.
The injectors may be modified or replaced in order to modify their flow rate, but without modifying their operating principle and their mountings.
Replacement air filter cartridges are accepted in the same way as the original ones.
- Lubrication: The fitting of baffles in the oil sump is authorised.

Replacement oil filter cartridges are accepted in the same way as the original ones.
- The material of the elastic part of the engine and gearbox mountings is free, but not the number of mountings.
- Exhaust :

It will be possible either to remove the inside of the original silencer, or to modify the exhaust from the first silencer to the exit, the

maximum dimensions of the duct being those of the pipe situated upstream of the first silencer (see drawing 254-3).
Should two inlets exist in the first silencer, the section of the modified duct must be less than or equal to the total of the two original sections. Only one pipe may be present at the exit, unless the original part is used. The exit should be situated in the same position as that of the series production exhaust system.
These liberties must not entail any bodywork modifications and must respect the laws of the country in which the event is run with regard to noise levels.
Additional parts for the mounting of the exhaust are authorised.
A muffler is a section of the exhaust system that must reduce the exhaust noise level of the vehicle.
The cross section of the muffler must be at least 170% of that of the inlet pipe and contain sound deadening material. The sound deadening material may take the form of a 45% perforated tube or synthetic packing.
The length of the muffler must be between 3 and 8 times the inlet diameter.
The muffler may be supplied as a series part welded to a pipe but the pipe is not considered as part of the muffler.
If it is fixed directly onto the manifold, the catalyst may be replaced with a conical part of the same length and with the same inlet and outlet diameters.
After this part, the exhaust will be free with a tube diameter no greater than that of the outlet from the catalyst.
The catalytic converter is considered as a silencer.
All cars must be fitted with a homologated catalytic exhaust if this is obligatory in the country in which they are registered, unless the catalytic exhaust is not obligatory in the organising country, in which case it may be removed.
- Cylinder head gasket: The material is free, but not the thickness.
- Cruising speed controller: This controller may be disconnected.
- In rallies only:
The number of cylinders is limited to 6.
The cubic capacity is limited as follows for normally aspirated engines:
a) Normally aspirated engines
. 3 l maximum for two valves per cylinder.
. 2.5 l maximum for more than two valves per cylinder.
b) Supercharged engines
The nominal cylinder capacity is limited to 2500 cm^3 maximum.
The supercharged system must comply with that of the homologated engine.
All supercharged cars must be fitted with a restrictor fixed to the compressor housing.
All the air necessary for feeding the engine must pass through this restrictor which must respect the following:
The maximum internal diameter of the restrictor is 32 mm, maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).
This diameter must be complied with, regardless of the temperature conditions.
The external diameter of the restrictor at its narrowest point must be less than 38 mm, and must be maintained over a distance of 5 mm to each side.
The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor.
Attachment by means of a needle screw is not authorised.
For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing.
The heads of the screws must be pierced so that they can be sealed.
The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment) (see drawing 254-4).
In case of an engine with two parallel compressors, each compressor must be limited to a maximum intake diameter of 22.6 mm.
- Diesel engine :
For vehicles with Diesel engines, the restrictor must have a maximum internal diameter of 35 mm and an external diameter of 41 mm, in the conditions set out above (this diameter may be revised at any moment without notice).
This restrictor, which is compulsory in rallies and in the European Hill-Climb Championship, is not prohibited in other events, should a competitor decide to use it.

6.2 Transmission

6.2.1) Clutch:
The disc is free, including the weight, with the exception of the number and diameter.
6.2.2) Gearbox:
The interior of the gearbox is free.
The number of teeth and ratios homologated in Group N must be retained.
The joints of the gearbox linkage are free.
6.2.3) Differential:
The use of a mechanical type limited slip differential is authorised, provided that it can be fitted in the series housing and is homologated in Group N.
In order to allow its fitting, the interior of the original differential's housing may be modified.
"Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system.
A viscous clutch is not considered to be a mechanical system.
If the homologated vehicle is fitted with a viscous clutch, it may be retained but it will not be possible to add another differential.

6.3 Suspension

The reinforcing of the suspension and its anchorage points by the addition of material is allowed.
- Springs:
The spring seats may be adjustable if the adjustable structural part is a part of the spring seat and is separated from the original suspension parts/bodywork (it may be removed).
Coil springs: The length is free, as are the number of coils, the wire diameter, the external diameter, the type of spring (progressive or not) and the shape of the spring seats.
The number of springs is free provided the springs are mounted in series.
Leaf springs: The length, width, thickness and vertical curvature are free.
Torsion bars: The diameter is free.
These freedoms on the suspension springs do not authorise one to disregard article 205 of the homologation form (minimum height of the centre of the hubcap, wheel passage opening).
- Shock absorbers:
Free, provided that their number, their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.), and their attachment points remain unchanged.
The damper tanks may be attached onto the unmodified shell of the cars.
A silent block may be replaced by a "Uniball" joint, but only on condition that the shock absorber has no guiding function.
Gas filled dampers, regarding their working principle, will be considered as hydraulic dampers.
If, in order to change the damping element of a Mac Pherson suspension, or a suspension operating in an identical manner, it is necessary to replace the entire Mac Pherson strut, the replacement parts must be mechanically equivalent to the original ones and have the same mounting points.
For McPherson suspensions, the shape of the spring seats is free. Their material is free.
In the case of oil-pneumatic suspension, the spheres may be changed as regards their dimension, shape and material, but not their number.
A tap, adjustable from outside of the car, may be fitted on the spheres.
- Silent blocks:

The elastomer of a silent block may only be replaced with an elastomer (maximum hardness 80 Shores).

6.4 Wheels and tyres

6.4.1) Wheels:

The wheels are free, respecting the homologated maximum diameter (article 801.a), and maximum width (article 801.b).

The use of wheels with lesser dimensions is permitted.

They must be covered by the wings (same checking system as in Group A, article 255.5.4), and the maximum track given on the homologation form must be respected.

Wheels fixations by bolts may be changed to fixations by pins and nuts provided that the number of attachment points and the diameter of the threaded parts as indicated on drawing 254-1 are respected.

Air extractors added on the wheels are forbidden.

6.4.2) Tyres:

Tyres are free provided that they can be mounted on those wheels.

The use of any device for maintaining the performance of the tyre with an internal pressure equal to or less than the atmospheric pressure is forbidden. The interior of the tyre (space between the rim and internal part of the tyre) must be filled only with air.

6.4.3) Spare wheel:

The spare wheel (wheels) is (are) compulsory if mentioned in the homologation form.

The spare wheel may be brought inside the driving compartment, on condition that it is firmly secured there and that it is not installed in the space reserved for the occupants.

6.5 Braking system

Brake linings are free, as well as their mountings (riveted, bonded, etc.) provided that the contact surface of the brakes is not increased.

Protection plates may be removed or bent.

In the case of a car fitted with servo-assisted brakes, this device may be disconnected. The same applies for anti-lock braking systems.

If the anti-lock braking system (ABS) is disconnected or removed, the use of a mechanical rear braking distributor homologated by the manufacturer in VO is authorised.

It is permitted to add a spring in the bore of the calipers.

Brake lines may be changed for aviation type lines.

A device for scraping away the mud which collects on the brake discs and / or the wheels may be added.

6.5.1) Handbrake:

The mechanical handbrake may be replaced with a hydraulic system and this must be homologated in Group N.

This system must be completely independent of the vehicle's normal braking system.

The lever may be modified but it must remain in the original location.

6.6 Bodywork

6.6.1) Exterior :

Hubcaps must be removed.

Protective headlight covers may be fitted provided that their only function is to cover the glass, and that they have no influence on the car's aerodynamics.

The fitting of underbody protections is authorised in rallies only, provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts: engine, radiator, suspension, gearbox, tank, transmission, steering, exhaust, extinguisher bottles.

Any locking system may be used for the cap of the petrol tank.

The fitting of external rear view mirrors is authorised, as is the changing of the windscreen wiper blades both front and rear.

6.6.2) Interior :

The front seats may be moved backwards but not beyond the vertical plane defined by the front edge of the original rear seat.

The limit relating to the front seat is formed by the height of the seat without the headrest, and if the headrest is incorporated into the seat, by the rearmost point of the driver's shoulders.

The rear seats may be removed.

The rear safety belts may be removed.

6.6.2.1 Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.

In the case of twin-volume cars it will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.

6.6.2.2 Dashboard:

The dashboard and the central console must remain original.

6.6.2.3 Doors - Side trim:

It is permitted to remove the soundproofing material from the doors, provided that this does not modify the shape of the doors.

In the case of a two-door car, the trim situated beneath the rear side windows is also subject to the above rule.

It is permitted to remove the trim from the door together with the side protection bar in order to install a side protection panel which is made from composite materials.

The minimum configuration of this panel must comply with that shown on drawing 255-14.

The minimum height of this panel must extend from the base of the door to the maximum height of the door strut.

It is permitted to replace electric winders with manual ones.

6.6.2.4 Floor

Carpets are free and may thus be removed.

6.6.2.5 Other sound-proofing materials and trim:

Other soundproofing materials and trim, except for those mentioned under articles 6.6.2.3 (Doors) and 6.6.2.2 (Dashboard), may be removed.

6.6.2.6 Heating system:

The original heating equipment must be retained.

6.6.2.7 The removable rear shelf in twin-volume cars may be removed.

6.6.3) Additional accessories:

All those which have no influence on the car's behaviour, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.), are allowed without restriction. In no case may these accessories increase the engine power or influence the steering, transmission, brakes, or roadholding, even in an indirect fashion. All controls must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.

The following is allowed:

1) Measuring instruments such as speedometers etc. may be installed or replaced, and possibly have different functions. Such installations must not involve any risk. However, the speedometer may not be removed if the supplementary regulations of the event prevent this.

2) The horn may be changed and/or an additional one added, within reach of the passenger.

The horn is not compulsory on closed roads.

3) The handbrake locking mechanism may be removed in order to obtain instant unlocking (fly-off handbrake).

4) The steering wheel is free.

The locking system of the anti-theft steering lock may be rendered inoperative.

5) Additional compartments may be added to the glove compartment and additional pockets in the doors, provided that they use the original panels.

6) Insulating material may be added to the existing bulkheads to protect the passengers from fire.

6.6.4) Reinforcements :

Reinforcement bars may be fitted on the suspension mounting points to the bodyshell or chassis of the same axle, on each side of the car's longitudinal axis, on condition that they are removable and are attached by means of bolts.

The distance between a suspension attachment point and an anchorage point of the bar cannot be more than 100 mm, unless the bar is a transversal strut homologated with the rollbar, or unless it is an upper bar attached to a MacPherson suspension or similar.

In the latter case, the maximum distance between an anchorage point of the bar and the upper articulation point will be 150 mm (drawings 255-4 and 255-2).

Apart from these points, this bar must not be mounted on the bodyshell or the mechanical parts.

Strengthening of the suspended part is allowed provided that the material used follows the original shape and is in contact with it.

6.6.5) When the spare wheel is originally set in a closed accommodation, and when this wheel is changed for a thicker one (see article 6.4), situated in this space, it is possible to remove from the cover of the location of the wheel the surface induced by the diameter of the new wheel (drawing 254-2).

6.7 Electrical system

- Battery: The make, capacity, and battery cables are free. The tension and the site of the battery must be retained.

A power take-off connected to the battery is permitted in the passenger space.

- Generator: May be replaced by a more powerful one. A dynamo may not be replaced by an alternator and vice-versa.
- Lighting system: Additional headlights including the corresponding relays are allowed, provided that the total does not exceed eight (tail and parking lights not included) and that this is accepted by the laws of the country.

They may not be housed within the bodywork. Headlights and other exterior lights must always exist in pairs.

The original headlights can be made inoperative and covered with adhesive tape.

They can be replaced by other headlights, in compliance with this article.

A reversing light may be fitted provided it can only be used when the gear lever is in the "reverse" position, and provided that the police regulations on this subject are observed.

- Fuses may be added to the electrical system.

6.8 Fuel circuit

Providing the original tank is equipped with an electric pump and an interior filter, it is possible when using an FT3 or FT3 1999 tank or another tank homologated by the manufacturer on the car's homologation form to place a filter and a pump with identical characteristics to the homologated one outside.

These parts must be protected in adequate fashion.

The fitting of a second fuel pump is authorised, but this must be only a spare fuel pump, i.e. it cannot operate in addition to the authorised pump. It must be connectable only when the car is immobile and by means of a purely mechanical device situated beside the pumps.

The filler holes may not be located in the window panels.

Fuel lines must be changed for aviation type lines if an FT3 or FT3 1999 tank is used, the route of these lines being free.

Should a series production tank be used, this change is optional.

The total capacity of the tanks must not exceed that indicated in article 401.d of the Group N homologation form, except for rallies, if the car is fitted with FT3 or FT3 1999 tanks.

In this case, the total capacity of the tanks must not exceed the following limits, in relation to the engine capacity:

up to	700 cm^3:			60 l
over	700 cm^3	and up to	1000 cm^3:	70 l
over	1000 cm^3	and up to	1400 cm^3:	80 l
over	1400 cm^3	and up to	1600 cm^3:	90 l
over	1600 cm^3	and up to	2000 cm^3:	100 l
over	2000 cm^3	and up to	2500 cm^3:	110 l
over	2500 cm^3:			120 l

For twin-volume cars homologated from 01.01.98 with a fuel tank installed in the luggage compartment, a fireproof and liquid-proof case must surround the fuel tank and its filler holes.

For three-volume cars homologated from 01.01.98, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank. Nevertheless, it is recommended that this liquid-proof bulkhead be replaced by a liquid-proof case as for twin-volume cars.

6.9 Jack

The jacking points may be strengthened, moved and increased in number. These modifications are limited exclusively to the jacking points.

ARTICLE 7 : MODIFICATIONS FOR 01/01/2002

6.3 Suspension

The reinforcing of the suspension and its anchorage points by the addition of material is allowed.

The suspension reinforcements must not create hollow bodies.

ARTICLE 255 - SPECIFIC REGULATIONS FOR TOURING CARS (GROUP A)

ARTICLE 1 : DEFINITION

Large scale series production Touring Cars.

ARTICLE 2 : HOMOLOGATION

At least 2,500 identical examples of these cars must have been manufactured in 12 consecutive months.
A "World Rally Car" (WR) is a variant of a fixed model of car, previously homologated in Group A and must therefore be assembled like a Group A vehicle.
All the parts homologated on the "World Rally Car" (WRC) form must be used in their entirety.
In order for a Group A car to take part in rallies, its characteristics and the dimensions of its parts must always be less than or equal to the characteristics and dimensions specified for a World Rally Car.
If a Group A car does not originally comply with the above point, it must, by means of a VO type homologation, conform to the dimensions and characteristics specified for a World Rally Car, in order to take part in rallies.

ARTICLE 3 : NUMBER OF SEATS

Touring cars must have 4 seats minimum.

ARTICLE 4 : WEIGHT

4.1 Weight
Cars are subject to the following scale of minimum weights in relation to their cubic capacity (see article 4.2 for exception):
In rallies:

up to	1000 cm³:			720 kg
over	1000 cm³	and up to	1150 cm³:	790 kg
over	1150 cm³	and up to	1400 cm³:	840 kg
over	1400 cm³	and up to	1600 cm³:	920 kg
over	1600 cm³	and up to	2000 cm³:	1000 kg
over	2000 cm³	and up to	2500 cm³:	1080 kg
over	2500 cm³	and up to	3000 cm³:	1150 kg
over	3000 cm³	and up to	3500 cm³:	1230 kg
over	3500 cm³	and up to	4000 cm³:	1310 kg
over	4000 cm³	and up to	4500 cm³:	1400 kg
over	4500 cm³	and up to	5000 cm³:	1500 kg
over	5000 cm³	and up to	5500 cm³:	1590 kg
over	5500 cm³:			1680 kg

For other events:

up to	1000 cm³:			670 kg
over	1000 cm³	and up to	1400 cm³:	760 kg
over	1400 cm³	and up to	1600 cm³:	850 kg
over	1600 cm³	and up to	2000 cm³:	930 kg
over	2000 cm³	and up to	2500 cm³:	1030 kg
over	2500 cm³	and up to	3000 cm³:	1110 kg
over	3000 cm³	and up to	3500 cm³:	1200 kg
over	3500 cm³	and up to	4000 cm³:	1280 kg
over	4000 cm³	and up to	4500 cm³:	1370 kg
over	4500 cm³	and up to	5000 cm³:	1470 kg
over	5000 cm³	and up to	5500 cm³:	1560 kg
over	5500 cm³:			1650 kg

4.2 In rallies, for 4-wheel drive cars with either a naturally aspirated engine with a cylinder capacity of between 1600 and 3000 cm³ or a turbocharged engine and a restrictor imposed by art. 5.1.8.3 and an equivalent cylinder capacity of less than or equal to 3000 cm³, the minimum weight is set at 1230 kg.
4.3 This is the real weight of the car, without driver nor co-driver nor their equipment.
In case of a dispute during weighing, the full equipment of the driver and co-driver will be removed; this includes the helmet, but the headphones external to the helmet may be left in the car.
At no time during the event may a car weigh less than the minimum weight stated in this article.
In case of doubt, and except in Rallies, the Scrutineers may drain the tanks containing consumable liquids to check the weight.
The use of ballast is permitted in the conditions provided for under article 252.2.2 of the "General Prescriptions".

ARTICLE 5 : MODIFICATIONS AND ADJUNCTIONS ALLOWED GENERAL CONDITIONS

Irrespective of the parts for which the present article lays down freedom of modification, the original mechanical parts necessary for the propulsion as well as all accessories necessary for their normal functioning, excepting any steering, braking, or suspension part, having undergone the normal machining operations laid down by the manufacturer for series production may be subjected to all tuning operations through finishing, scraping but not replacement.
In other words provided that the origin of the series production part may always be established, its shape may be ground, balanced, adjusted, reduced or modified through machining.
Chemical and heat treatment are allowed, in addition to the above.
However, the modifications defined by the above paragraph are allowed on condition that the weights and dimensions mentioned on the homologation form are respected.
Nuts and bolts: Throughout the car, any nut, bolt, screw may be replaced by any other nut, any other bolt, any other screw and have any kind of locking device (washer, lock nut, etc.).
Addition of material and parts: Any addition of material or parts is forbidden unless it is specifically allowed by an article in these regulations.
Any material removed is not to be reused.
Restoration of body shape and chassis geometry, following accidental damage, is permissible by the addition of the materials necessary to effect the repairs (body filler, weld metal, etc.) ; other parts which are worn or damaged are not to be repaired by the addition or attaching of material unless an article in these regulations allows appropriate freedom.

5.1 Engine

5.1.1) Cylinder-block - Cylinder-head:
It is permitted to close the unused apertures in the cylinder block and cylinder head, if the only purpose of this operation is that of closing.
A rebore of 0.6 mm maximum is allowed in relation to the original bore without this leading to the capacity class limit being exceeded.
The resleeving of the engine is allowed within the same conditions as for reboring, and the sleeve material may be modified.
Planing of the cylinder-block and of the cylinder head is allowed.
In the case of rotary engines, on condition that the original dimensions of the intake inlet ports and of the exit of the exhaust are respected, the dimensions of the inlet and exhaust ducts into the engine block are free.
5.1.2) Compression ratio: Free.
5.1.3) Cylinder head gasket: Free.
5.1.4) Pistons:
Free as well as the piston-rings, gudgeon pins and their securing mechanism.
5.1.5) Connecting rods, crankshaft:
Apart from the modifications permitted by the above paragraph "General Conditions", additional mechanical treatments, different from those carried out on the series production part, are allowed to be made to the crankshaft and the con rods.

5.1.6) Bearings shells:
Make and material are free ; they must however retain their original type and dimensions.
5.1.7) Flywheel:
It may be modified in accordance with the above paragraph "General Conditions" provided that the original flywheel may still be identified.
5.1.8) Fuel and air feed:
Drawings I and II on the Group A/B homologation form must be respected.
The accelerator cable and its cable sleeve stop are free.
The air filter, including the filter box and the plenum chamber, is free.
The air filter along with its box may be removed, moved in the engine compartment or replaced by another (see drawing 255-1).
In Rallies only, it is possible to cut out a part of the bulkhead situated in the engine compartment for the fitting of one or more air filters or for the intake of air ; however, such cut-outs must be strictly limited to those parts necessary for this installation (see drawing 255-6).
Furthermore, if the air intake ventilating the driving compartment is in the same zone as the air intake for the engine, this zone must be isolated from the air filter unit, in case of fire.
The pipe between the air filter and the carburettor(s) or the air-measuring device (injection) is free.
Likewise, the pipe between the air measuring device and the intake manifold or the supercharging device is free.
The air intake may be fitted with a grill.
Anti-pollution parts may be removed provided that this does not lead to an increase in the quantity of air admitted.
Fuel pumps are free. They may not be fitted in the cockpit unless this is an original fitting, in which case they must be well protected.
Petrol filters, with a maximum unit capacity of 0.5 l may be added to the fuel feed circuit.
The accelerator linkage is free.
The original heat exchangers and intercoolers, or any other device fulfilling the same function, must be retained, and remain in their original location, which means that their supports and position must remain original.
The pipes between the supercharging device, the intercooler and the manifold are free, but their only function must be to channel air.
In the case of air-water intercoolers, the pipes connecting the intercooler and its radiator are free, but their only function must be that of channelling water.
Any water injection fitted must be homologated and must not be modified.
The use of any other substance or device to reduce the temperature of the mixture is forbidden.
The inner dimensions of the ports are free in the rotary chambers for rotary engines and for 2-stroke engines.
The drive pulley of the "G" compressor is free.
For African rallies only: It is possible to make a hole, with a maximum diameter of 10 cm, in the engine bonnet in order to provide air for the engine, and to place a pipe, with a maximum internal diameter of 10 cm, in this hole (see drawing 255-13).
5.1.8.1 Carburettor:
The carburettors are free, but the original number of carburettors and their working principle must be retained and they must remain in their original location.
Furthermore, the diameter and number of the butterflies as stated on the homologation form must be respected.
5.1.8.2 Injection:
The original system and its type, as specified on the homologation form of the vehicle (such as K-Jetronic) must be retained, as must its location.
The elements of the injection device regulating the metering of the quantity of fuel admitted to the engine may be modified, but not the diameter of the opening of the butterfly.
The air-measuring device is free.
The injectors are free, except for their number, their position, their assembly axis and their operating principle.
The petrol lines feeding them are free.
The electronic box is free, insofar as it does not incorporate more data.
The fuel pressure regulator is free.
5.1.8.3 Limitation in rallies:
The number of cylinders is limited to 6.
The cubic capacity is limited as follows :
a) Normally aspired engines
- 3 l maximum for two valves per cylinder.
- 2.5 l maximum for more than two valves per cylinder.

All 2 wheel-drive cars, with a cylinder capacity greater than 1600 cm^3 and using parts homologated in Kit Variant (VK) must be fitted with an intake restrictor according to their homologation forms.
b) Supercharged engines
The nominal cylinder capacity is limited to 2500 cm^3 maximum.
The supercharged system must comply with that of the homologated engine.
All supercharged cars must be fitted with a restrictor fixed to the compressor housing.
All the air necessary for feeding the engine must pass through this restrictor which must respect the following:
The maximum internal diameter of the restrictor is 34 mm, maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).
This diameter must be complied with, regardless of the temperature conditions.
The external diameter of the restrictor at its narrowest point must be less than 40 mm, and must be maintained over a distance of 5 mm to each side.
The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor. Attachment by means of a needle screw is not authorised.
For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing.
The heads of the screws must be pierced so that they can be sealed.
The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment) (see drawing 254-4).
For vehicles with Diesel engines, the restrictor must have a maximum internal diameter of 37 mm and an external diameter of 43 mm in the conditions set out above (this diameter may be revised at any moment without notice).
In case of an engine with two parallel compressors, each compressor must be limited by a restrictor with a maximum internal diameter of 24.0 mm and a maximum external diameter of 30 mm, in the conditions set out above..
This restrictor, which is compulsory in rallies and in the European Hill-Climb Championship, is not prohibited in other events, should a competitor decide to use it.
5.1.9) Camshaft(s):
Free, except the number and number of bearings ; Timing is free.
The material, type and dimensions of the pulleys, chains and belts for driving the camshafts are free.
The material of the gearing and sprockets associated with the camshaft is free.
The route and the number of belts and chains are free.
The guides and tensioners associated with these chains or belts are also free, as are protective covers.
5.1.10) Valves:
The material and the shape of the valves are free, as is the length of the valve stem.
The characteristic dimensions, mentioned on the homologation form, must be retained, including the respective angles of the valves axis. Valve lift is free.
With regard to the cylinder head orifices (inner side of the engine), in the case of rotary engines, only those dimensions which have

been entered on the homologation form have to be respected.
The cups, cotters and guides (even if they do not exist as original parts) are not subject to any restriction. Shims may be added under the springs.
The material of the seats is free.
5.1.11) Rocker arms and tappets:
Rocker arms may only be modified in accordance with article 5 "General conditions" above.
The diameter of the tappets as well as the shape of the tappets and rocker arms are free, but the rocker arms must be interchangeable with the original ones.
It is possible to use backing plates to adjust them.
5.1.12) Ignition:
The ignition coil(s), condenser, distributor, interrupter and plugs are free subject to the ignition system (battery/coil or magneto), remaining the same as provided by the manufacturer for the model concerned.
The fitting of an electronic ignition system, even without a mechanical interrupter, is allowed provided no mechanical part other than those mentioned here above is modified or changed, with the exception of the crankshaft, the flywheel or the crankshaft pulley, for which modifications limited to the necessary additions will be possible. In the same conditions, it shall be possible to change an electronic ignition for a mechanical ignition.
The number of plugs may not be modified ; that of the coils is free.
5.1.13) Cooling:
Provided the original fitting on the car is retained, the radiator and its fixation are free, as are the lines linking it to the engine.
A radiator screen may be fitted. The fan and its drive system can be changed freely, or be withdrawn. It is allowed to add a fan per function.
Thermostat is free.
Dimensions and material of the fan/turbine are free, as are their number.
The fitting of a water catch tank is allowed. The radiator cap may be locked.
The water injection devices may be disconnected, but not removed.
The expansion chamber may be modified ; if one does not exist originally, one may be added.
5.1.14) Lubrication:
Radiator, oil/water exchanger, lines, thermostat, sump and pump filter are free, without modifying the bodywork.
However, the fitting of an oil radiator outside the bodywork is only allowed below the horizontal plane passing through the hub in such a way that it does not protrude beyond the general perimeter of the car seen from above as it stands on the starting line, without modifying the bodywork.
Fitting an oil radiator in this manner does not allow the addition of an enveloping aerodynamic structure.
All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator, and must not have any aerodynamic effect.
Oil pressure may be increased by changing the discharge valve spring.
If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank. This must have a capacity of 2 litres for cars with a cubic capacity equal to or below 2,000 cm^3, and 3 litres for cars with a cubic capacity of over 2,000 cm^3.
This container shall be made either out of plastic or shall include a transparent window.
An air/oil separator can be mounted outside the engine (maximum capacity 1 litre), in accordance with the drawing 255-3. The oil must only flow from the oil catch tank towards the engine by the force of gravity alone.
A fan may be fitted for cooling the engine oil, but must have no aerodynamic effect.
5.1.15) Engine: Mountings - Angle and position:
Mountings are free (but not their number) provided that the angle and position of the engine within its compartment are not modified, and that articles 5.7.1 and 5- General Conditions are respected. Supports may be welded to the engine and to the bodywork and their position is free.
5.1.16) Exhaust:
Drawings III and IV on the Group A/B homologation form must be respected.
Downstream the exhaust manifold exit the exhaust is free provided that the maximum sound levels permitted in the country(ies) crossed are not exceeded if it is an event on open roads.
he exhaust exit must be inside the car's perimeter (see General Prescriptions, article 252.3.6).
For cars with turbocharged engines the exhaust can only be modified after the turbocharger.
In the case of rotary engines, and on condition that the original dimensions of the inlet ports of the exhaust manifold are respected, the dimensions of the ducts in the manifold are free.
The gas flow must never be modified by means of electronic or mechanical devices.
Thermal screens may be fitted on the exhaust manifold, the turbocharger and on the exhaust device, with, however, the sole function of thermal protection.
5.1.17) Driving pulleys, belts and chains for ancillaries situated outside the engine:
The material, type and dimensions of the pulleys, chains and belts for driving the ancillaries are free. The route and the number of belts and chains are free.
5.1.18) Gaskets: Free.
5.1.19) Engine springs:
Springs are not subject to any restrictions but they must keep their original functioning principle.
5.1.20) Starter:
It must be retained, but its make and type are free.
5.1.21) Supercharging pressure:
This pressure may be modified by article 5.1.19 and article 5- General Conditions.
The connection between the housing and the waste-gate may be made adjustable if it is not originally so.
The original system of operation of the waste-gate may be modified and be rendered adjustable but this system must be retained.
A mechanical system must remain mechanical, an electrical system must remain electrical, etc.
5.1.22) Locking screw
For the sole purpose of fixing a cover on the engine block, a locking screw may be used.
This screw must on no account be used to fix other parts.

5.2 Transmission

5.2.1) Clutch:
Clutch is free, but the homologated bell housing must be retained, together with the operation type.
5.2.2) Gearbox:
Converter gearboxes are authorised.
An additional lubrication and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car) in the same conditions as for article 5.1.14, but the original lubrication principle must be retained.
However, a gearbox homologated as an additional one with an oil pump can be used without this pump.
A fan may be fitted for cooling the gearbox oil, but must have no aerodynamic effect.
The gears of the additional gearbox on the homologation form may be changed, provided that they respect the information given on this form.
Gearbox supports are free, but not their number.
May be used:
- the series housing with series ratios or one of the two sets of additional ratios ;
- one of the additional housings only with one of the additional sets of ratios.

5.2.3) Final drive and differential:
A limited-slip differential is allowed provided that it can be fitted into the original housing without any modification other than those laid down in the above paragraph "General Conditions". The original differential may also be locked.
The original lubricating principle for the rear axle must be retained. However an additional lubricating and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car)

under the same conditions as for article 5.1.14.
The differential supports are free.
The use of active differentials, i.e. any system acting directly on the differential adjustments (initial stress, pressure...), is forbidden for all 2-wheel drive cars.

5.3 Suspension

The position of the rotational axles of the mounting points of the suspension to the wheel uprights and to the shell (or chassis) must remain unchanged.
In the case of an oil-pneumatic suspension, lines and valves connected to the spheres (pneumatic parts) are free.
5.3.1) Reinforcement bars may be fitted on the suspension mounting points to the bodyshell or chassis of the same axle, on each side of the car's longitudinal axis.
The distance between a suspension attachment point and an anchorage point of the bar cannot be more than 100 mm, unless the bar is a transversal strut homologated with the rollbar, or unless it is an upper bar attached to a MacPherson suspension or similar.
In the latter case, the maximum distance between an anchorage point of the bar and the upper articulation point will be 150 mm (drawings 255-4 and 255-2).
Apart from these points, this bar must not be mounted on the bodyshell or the mechanical parts.
5.3.2) Strengthening of the mounting points and of the running gear, by adjunction of material, is allowed.
5.3.3) Anti-roll bar:
The anti-roll bars homologated by the manufacturer may be replaced or removed, provided that their mounting points on the chassis remain unchanged.
These anchorage points can be used for the mounting of reinforcement bars.
5.3.4) The joints may be of a different material from the original ones.
The suspension mounting points to the bodyshell or chassis may be modified:
- by using a "Uniball" joint. The original arm can be cut and a new seat for the "Uniball" welded. Braces will be used next to the "Uniball" itself.
- by using a screw with a greater diameter.
- by reinforcing the anchorage point through the addition of material.
The position of the centre of the articulation cannot be changed (see drawing 255-5).
5.3.5) The material and main spring dimensions are free (but not the type).
The spring seats may be made adjustable even if this includes the adjunction of material.
A coil spring may be replaced with two or more springs of the same type, concentric or in series, provided that they can be fitted without any modifications other than those specified in this article.
5.3.6) Shock Absorbers:
Make is free, but not the number, the type (arm, etc.), the system of operation (hydraulic, friction, mixed, etc.) nor the supports.
With regard to their principle of operation, gas-filled shock absorbers will be considered as hydraulic shock absorbers.
If in order to change the damping element of a Mac Pherson suspension, or suspension working on an identical principle, it is necessary to replace the entire Mac Pherson strut, the replacement part must be mechanically equivalent to the original one, except for the damping element, and the spring cup.
If the shock absorbers have separate fluid reserves located in the cockpit, or in the boot if this is not separated from the cockpit, these must be strongly fixed and must have a protection.
A suspension travel limiter may be added.
Only one cable per wheel is allowed, and its sole function must be to limit the travel of the wheel when the shock absorber is not compressed.

5.4 Wheels and tyres

Complete wheels are free provided that they may be housed within the original bodywork ; this means the upper part of the complete wheel, located vertically over the wheel hub centre, must be covered by the bodywork, when measured vertically.
Wheel fixations by bolts may be freely changed to fixations by pins and nuts.
The use of tyres intended for motor cycles is forbidden.
In no case may the width of the rim-tyre assembly in relation to the cubic capacity of the car, exceed the following:
In rallies:

up to	1000 cm³:			7"
over	1000 cm³	and up to	1150 cm³:	7"
over	1150 cm³	and up to	1400 cm³:	8"
over	1400 cm³	and up to	1600 cm³:	8"
over	1600 cm³	and up to	2000 cm³:	9"
over	2000 cm³	and up to	2500 cm³:	9"
over	2500 cm³	and up to	3000 cm³:	9"
over	3000 cm³	and up to	3500 cm³:	9"
over	3500 cm³	and up to	4000 cm³:	9"
over	4000 cm³	and up to	4500 cm³:	9"
over	4500 cm³	and up to	5000 cm³:	9"
over	5000 cm³	and up to	5500 cm³:	9"
over	5500 cm³:			9"

For other events:

up to	1000 cm³:			7"
over	1000 cm³	and up to	1150 cm³:	7"
over	1150 cm³	and up to	1400 cm³:	8"
over	1400 cm³	and up to	1600 cm³:	8"
over	1600 cm³	and up to	2000 cm³:	9"
over	2000 cm³	and up to	2500 cm³:	9"
over	2500 cm³	and up to	3000 cm³:	9"
over	3000 cm³	and up to	3500 cm³:	10"
over	3500 cm³	and up to	4000 cm³:	10"
over	4000 cm³	and up to	4500 cm³:	11"
over	4500 cm³	and up to	5000 cm³:	11"
over	5000 cm³:			12"

For the World Rally Car and the Kit Car, the rim diameter is free but must not exceed 18".
For the other cars, the rim diameter may be increased or reduced by up to 2 inches in relation to the original dimensions. However, the rim diameter must not exceed 18".
In addition, for all cars and only for events on gravel, the dimensions of the wheels are limited as follows :
- If the width of the wheel is less than or equal to 6", its maximum diameter is limited to 16".
- If the width of the wheel is more than 6", its maximum diameter is limited to 15".
In rallies, the maximum diameter of the complete wheels is 650 mm, not including the studs if studded tyres are used.
The wheels do not necessarily have to be of the same diameter.
In Rallies only :
Forged magnesium is forbidden for wheels with a diameter of less than 18,
For 8x18 (wheels, forged magnesium and a weight of less than 7.8 kg are forbidden, as from 1 January 2001 in the World Rally Championship for priority drivers, and as from 1 January 2003 for all other events.
Should the wheel be fixed using a central nut, a safety spring must be in place on the nut throughout the duration of the event and must be replaced after each wheel change.
The springs must be painted "Dayglo" red. Spare springs must be available at all times.

5.5 Braking system

5.5.1) Brake linings:
Material and mounting method (riveted or bonded) are free provided that the dimensions of the linings are retained.
5.5.2) Servo brakes, braking force adjusters, anti-locking devices:
Servo-brakes may be disconnected and removed; braking force adjusters and antilocking devices may be disconnected, but not removed. The adjusting device is free.
The braking force adjusters may not be moved from the compartment in which they are originally situated (cockpit, engine compartment, exterior, etc.).
5.5.3) Cooling of brakes:
Protection shields may be modified or removed, but material may not be added.
Only one flexible pipe to bring the air to the brakes of each wheel is

allowed, but its inside section must be able to fit into a circle with a 10 cm diameter.
The air pipes must not go beyond the perimeter of the car, seen from above.
5.5.4) Brake discs:
The only operation allowed is rectification.
A device for scraping away the mud that collects on the brake discs and / or the wheels may be added.
5.5.5) The handbrake device may be disconnected but only for closed course races (circuit, hill climbs, slaloms).
5.5.6) Hydraulic pipes:
Hydraulic pipes may be replaced by lines of aircraft quality.
5.5.7) Brake calipers:
"All brake calipers must be made from aluminium material with a modulus of elasticity no greater than 80 Gpa.
Only one caliper is authorised on each wheel. The section of each caliper piston must be circular."

5.6 Steering

Power steering may be disconnected but not removed.

5.7 Bodywork - Chassis

5.7.1) Lightening and reinforcements:
Strengthening of the sprung parts of the chassis and bodywork is allowed provided that the material used follows the original shape and is in contact with it.
Reinforcements by composite materials are allowed in accordance with this article, whatever their thickness, according to the drawing 255-8.
Insulating material may be removed from under the car floor, from the engine compartment, the luggage boot, and the wheel arches.
Unused supports (e.g. spare wheel) situated on the chassis/bodywork can be removed, unless they are supports for mechanical parts which cannot be moved or removed.
It is possible to close the holes in the cockpit, the engine and luggage compartments, and in the wings.
The holes may be closed using sheet metal or plastic materials, and may be welded, stuck or riveted.
The other holes in the bodywork may be closed, by adhesive tape only.
5.7.2) Exterior:
5.7.2.1 Bumpers:
Overriders may be removed.
5.7.2.2 Hub-caps and wheel embellishers:
Hub-caps may be removed. Wheels embellishers must be removed.
5.7.2.3 Windscreen wipers:
Motor, position, blades and mechanism are free but there should be at least one windscreen wiper provided for the windscreen.
The windscreen washer device may be dismounted.
The capacity of the washer tank may be increased and the tank may be moved inside the cockpit in accordance with article 252.7.3.
5.7.2.4 External decorative strips may be removed.
Any parts following external contour of the bodywork and less than 25 mm high will be considered as decorative strips.
5.7.2.5 Jacking points may be strengthened, moved, and increased in number.
5.7.2.6 Headlight covers may be fitted provided their sole aim is to protect the headlight glass and they have no effect on the car's aerodynamics.
5.7.2.7 Taking into account the different police regulations in each country, registration plate locations and type are free.
5.7.2.8 The registration plate mountings may be dismounted but not their lighting system.
5.7.2.9 Additional safety fastenings for the windscreen and the side windows may be fitted provided they do not improve the aerodynamic qualities of the car.
5.7.2.10 The fitting of underbody protections is authorised in rallies only, provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts: engine, radiator, suspension, gearbox, tank, transmission, exhaust, extinguisher bottles.
5.7.2.11 It is permitted to fold back the steel edges or reduce the plastic edges of the wings and the bumpers if they protrude inside the wheel housing.
The plastic soundproofing parts may be removed from the interior of the wheel passages.
These plastic elements may be changed for aluminium elements of the same shape.
It is possible to fit plastic protection parts in the wings, on the same ground as aluminium parts.
The attachment of the wings by welding may be changed for attachment by bolts/screws.
5.7.2.12 Removable pneumatic jacks are permitted, but without the compressed air bottle on board (circuits only).
5.7.2.13 "Skirts" are banned. All non-homologated devices or constructions designed so as to fully or partially fill the space between the sprung part of the car and the ground is forbidden in all circumstances.
No protection authorised by article 255.5.7.2.10 can play a role in the aerodynamics of the car.
5.7.2.14 The door hinges must not be modified.
The hinges and/or joins of the bonnet, boot lid and tailgate are free, but it is not possible to change or add their locations or to change their functions.
5.7.2.15 The external rear-view mirror are free, if they are only rear-view mirrors. However, the external rear-view mirror on the driver's side, if it is modified or changed, must have a reflecting surface of at least 90 cm^2.
5.7.3) Cockpit:
5.7.3.1 Seats:
The front seats may be moved backwards but not beyond the vertical plane defined by the front edge of the original rear seat.
The limit relating to the front seat is formed by the height of the seatback without the headrest, and if the headrest is incorporated into the seat, by the rearmost point of the driver's shoulders.
The passenger's seat may be removed as well as the rear seats.
5.7.3.2 Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.
In the case of twin-volume cars it will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.
For twin-volume cars homologated from 01.01.98, with a fuel tank installed in the luggage compartment, a fireproof and liquid-proof case must surround the fuel tank and its filler holes.
For three-volume cars homologated from 01.01.98, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank. Nevertheless, it is recommended that this liquid-proof bulkhead be replaced by a liquid-proof case as for twin-volume cars.
5.7.3.3 Dashboard:
The trimmings situated below the dashboard and which are not a part of it may be removed.
It is permitted to remove the part of the centre console which contains neither the heating nor the instruments (according to the drawing 255-7).
5.7.3.4 Doors - Side trim:
It is permitted to remove the soundproofing material from the doors, provided that this does not modify the shape of the doors.
In the case of a two-door car, the trim situated beneath the rear side windows may also be removed but must be replaced with panels made from composite material.
It is permitted to remove the trim from the door together with the side protection bar in order to install a side protection panel which is made from composite materials.
The minimum configuration of this panel must comply with that shown on drawing 255-14.
The minimum height of this panel must extend from the base of the door to the maximum height of the door strut.
It is permitted to replace electric winders with manual ones.
5.7.3.5 Floor
Carpets are free and may thus be removed.
5.7.3.6 Other sound proofing materials and trim:
Other padding materials, except for those mentioned under articles 5.7.3.4 (Doors) and 5.7.3.3 (Dashboard), may be removed.
5.7.3.7 Heating system:
The original heating equipment may be replaced by another also provided by the manufacturer, and mentioned in his catalogue as

supplied on demand.
It is permitted to blank off the water supply of the internal heating device, in order to prevent water spillage during an accident, providing an electric demist system or similar is available.
5.7.3.8 Air-conditioning:
May be added or removed but heating must be assured.
5.7.3.9 Steering wheel:
Free ; the anti-theft device may be removed.
The steering can be on either the right or left provided that it is a question of a simple inversion of the steered wheels control, laid down and supplied by the manufacturer without any other mechanical modifications except those made necessary by the inversion.
5.7.3.10 A rollcage may be fitted (see article 253.8).
5.7.3.11 The rear removable window shelf in two-volume cars may be removed.
5.7.3.12 Air pipes:
Air pipes may only pass through the cockpit if these are intended for the ventilation of the cockpit.
5.7.3.13 Inside rear view mirrors:
If there are two efficient outside rear view mirrors (one on each side), the inside rear view mirror is optional.
5.7.4) Additional accessories:
All those which have no influence on the car's behaviour are allowed, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.).
In no case may these accessories increase the engine power or influence the steering, transmission, brakes, or road holding even in an indirect fashion.
All controls must retain the role laid down for them by the manufacturer.
They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.
The following is allowed:
1) The original windows of the homologated vehicle may be modified but must be homologated by the FIA and form the subject of a homologation form.
2) Measuring instruments such as speedometers etc. may be installed or replaced, and possibly have different functions.
Such installations must not involve any risk.
However, the speedometer may not be removed, if the supplementary regulations of the event prevent this.
3) The horn may be changed or an additional one added, within reach of the passenger.
The horn is not compulsory on closed roads.
4) Circuit breakers may be freely changed vis-à-vis their use, position, or number in the case of additional accessories.
5) A "fly-off" hand brake may be installed.
6) Spare wheel(s) is not compulsory.
However if there are any, they must be securely fixed, and not installed in the space reserved for the occupants of the vehicle.
No exterior modification of the bodywork must result from this installation.
7) Additional compartments may be added to the glove compartment and additional pockets in the doors provided they use the original panels.
8) Insulating material may be added to the existing bulkhead to protect the passengers from fire.
9) It is permitted to change the joints of gearbox change systems.

5.8 Electrical system

5.8.1) The nominal voltage of the electrical system including that of the supply circuit of the ignition must be retained.
5.8.2) The addition of relays and fuses to the electrical circuit is allowed as is the lengthening or addition of electric cables.
Electric cables and their sleeves are free.
5.8.3) Battery:
The make and capacity of the battery(ies) are free.
Each battery must be securely fixed and covered to avoid any short-circuiting or leaks.
The number of batteries laid down by the manufacturer must be retained.
Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts.
For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt, a counterplate at least 3 mm thick and with a surface of at least 20 cm^2 beneath the metal of the bodywork.
The battery must be covered by a leak proof plastic box, attached independently of the battery.
Its location is free, however if in the cockpit it will only be possible behind the front seats.
In this case, the protection box must include an air intake with its exit outside the cockpit (see drawings 255-10 and 255-11).
If the battery situated in the cockpit is a dry battery, it must be protected electrically by a cover which covers it completely.
5.8.4) Generator and voltage regulator:
Free, but neither the position nor the driving system of the generator may be modified.
The position of the voltage regulator may be changed but it may not be placed in the cockpit unless it was placed there originally.
5.8.5) Lighting - Indicating:
All lighting and signalling devices must comply with the legal requirements of the country of the event or with the International Convention on Road Traffic.
Taking this into account the location of the indicators and parking lights may be modified, but the original orifices must be sealed.
The make of the lighting devices is free.
Lighting devices which are part of the standard equipment must be those laid down by the manufacturer and must comply where their functioning is concerned with what the manufacturer has laid down for the model in question.
Original headlamps can be replaced by others having the same lighting functions as long as there is no cutout in the bodywork and the original holes are completely closed.
The operating system of the retractable headlights, as well as its energy source, may be modified.
Freedom is granted with regard to the frontal glass, the reflector and the bulbs.
The mounting of additional headlights is authorised provided that the total number of headlights equipping the car does not exceed 8 (parking lights and sidelights not included) and provided that the total is an even one.
They may, if necessary, be fitted in the front part of the coachwork or in the radiator grille, but such openings as needed in this case must be completely filled by the headlights.
Original headlights may be rendered inoperative and may be covered with adhesive tape.
The replacement of a rectangular headlight by two circular ones, or vice-versa, fitted on a support corresponding to the dimensions of the aperture and sealing it completely is allowed.
The fitting of a reverse-light is authorised, if necessary by embedding it into the coachwork, provided that it will only switch on when the reverse gear is engaged and that the police regulations are respected.
If a new registration plate support is provided for with lighting, the original system (support and lighting) may be removed. Except in rallies, plate lighting is not compulsory.
The Supplementary Regulations of an event may give waivers to the above mentioned prescriptions.

5.9 Fuel tanks

5.9.1) The total capacity of the fuel tanks must not exceed the following limits, in relation to the engine capacity:

up to	700 cm^3:			60 l
over	700 cm^3	and up to	1000 cm^3:	70 l
over	1000 cm^3	and up to	1400 cm^3:	80 l
over	1400 cm^3	and up to	1600 cm^3:	90 l
over	1600 cm^3	and up to	2000 cm^3:	100 l
over	2000 cm^3	and up to	2500 cm^3:	110 l
over	2500 cm^3:			120 l

5.9.2) The fuel tank may be replaced by a safety fuel tank homologated by the FIA (specification FT3 or FT3 1999) or by another tank homologated by the car manufacturer.
In this case, the number of tanks is free and the tank must be placed inside the luggage compartment or in the original location.
The construction of collector tanks with a capacity of less than

1 litre is free.
The various homologated tanks and the FT3 or FT3 1999 tanks may also be combined (including the standard tank), insofar as the total of their capacities does not exceed the limits determined by article 5.9.1.
The position of the original tank may only be modified in cars of which the tank has been placed by the manufacturer inside the cockpit or close to the occupants.
In this case it shall be permissible either to install a protective device between the tank and the occupants of the car, or to place the tank in the luggage compartment, and, if need be, to modify its supplementary accessories (refuelling orifice, petrol pump, overflow pipe).
In any case, these changes of the position of the tanks should not give rise to any lightenings or reinforcements other than those provided for under article 5.7.1 but the opening remaining after the removal of the original tank may be closed by the installation of a panel.
The filler holes may be located in the window panels.
It is possible to fit a radiator in the fuel circuit (maximum capacity one litre).
The use of an increased-capacity fuel tank may be authorised by an ASN with the agreement of the FIA for events organised under special geographic conditions (crossing desert or tropical country for example).

ARTICLE 6: RESTRICTIONS FOR CARS HOMOLOGATED IN THE SUPER 1600 KIT VARIANT

6.1 Definition
A Super 1600 Kit variant (VK-S1600) is a variant of a fixed model of car previously homologated in Group A and must therefore be assembled like a Group A vehicle. Eligible vehicles are models with front-wheel drive and a normally aspirated engine with a cylinder capacity of up to 1.6 litres in kit variant.
All the parts homologated in the "Super 1600 Kit variant" (VK-S1600) form must be used in their entirety.

6.2 Weight
The minimum weight is 950 kg under the conditions of article 4.3.
The combined minimum weight of the car (under the conditions of article 4.3) and crew (driver + co-driver) is 1100 kg.

6.3 Restrictions
6.3.1) Engine :
a) Compression ratio : The maximum compression ratio is 13/1.
b) Any water spraying system is prohibited.
c) Variable timing systems (valve timing and valve lift) are prohibited.
d) Variable geometry intake and exhaust manifolds are prohibited. If the series-produced car is equipped with one, it has to be deactivated. Intake manifold and exhaust manifolds must be homologated.
6.3.2) Transmission :
a) Clutch
The minimum diameter of the clutch is 150 mm for cars homologated prior to 01.01.2001; it must be 184 mm for cars homologated after 01.01.2001 and for all cars as from 2002.
The friction disc(s) must not be made from carbon.
b) Gearbox
Only one gearbox may be homologated, with a maximum of 6 forward gears and 1 reverse gear.
A single set of 6 ratios and 1 reverse gear as well as 3 axle ratios may be homologated.
The gearbox housing must imperatively be made from aluminium alloy.
The minimum weight of the complete gearbox (complete gearbox with mounted differential, without supports, without oil, without clutch, without external control, without half-shafts) is 35 kg.
c) Differential
A mechanical type limited slip differential with plates must be homologated ; it is the only differential that may be used.
This means that no other differential may be added.
"Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system.
A viscous clutch is not considered to be a mechanical system.
Any differential with electronic management is prohibited. The number and the type of the plates are free.
d) Gearbox control
Contactors allowing the engine to be cut at the moment of a gear change are prohibited.
6.3.3) Suspension :
a) Anti-roll bar
Anti-roll bars that are adjustable from the cockpit are prohibited.
b) Shock absorbers
Must be homologated; only one shock absorber is permitted per wheel. The water cooling system used must be the one homologated.
6.3.4) Wheels and tyres :
a) For rallies on gravel, only 6" x 15" rims may be used. For rallies on asphalt, only 7" x 17" rims may be used. As from 01.01.2002, the rims must imperatively be made from cast aluminium.
b) the use of any device for maintaining the full performance of the tyre with an internal pressure equal to or less than the atmospheric pressure is forbidden. The interior of the tyre (space between the rim and the internal part of the tyre) must be filled only with air.
6.3.5) Braking system :
The only brake discs and calipers that may be used are those listed for the Super 1600 Kit Variant. The maximum diameter of the discs for the front brakes is 300 mm for rallies on gravel and 355 mm for rallies on asphalt. The maximum diameter of the discs for the rear brakes is 300 mm.
6.3.6) Any electronic driving aid system (as well as its sensors) is prohibited (ABS / ASR / EPS ...).
6.3.7) Bodywork :
a) No new car homologated as a "Super 1600 Kit Variant" (VK-S1600) may have a width of more than 1805 mm.
b) The rear aerodynamic device (with the exception of the supports) must be made from fibreglass.
6.3.8) Material :
a) The use of titanium and magnesium is prohibited except for parts mounted on the (series) model from which the VK-S1600 extension is derived.
b) The use of carbon or kevlar is authorised on condition that only one layer of fabric is used and is affixed to the visible face of the part.
6.3.9) Rollcage :
Must be homologated by the FIA. Only one rollcage may be used with the Super 1600 Kit Variant (VK-S1600); it must be mentioned in the supplementary information of the VK-S1600 extension. Specifications of the tube for the main rollcage : minimum diameter 45 mm, minimum thickness 2.5 mm, and minimum tensile strength 50 daN/mm^2.
6.3.10) Fuel tanks :
The fuel tanks must come from an FIA-approved manufacturer (FIA/FT3 and FIA/FT3 1999 minimum specifications). These fuel tanks must be homologated and the minimum capacity is 45 litres.

ARTICLE 256 - SPECIFIC REGULATIONS FOR GRAND TOURING CARS (GROUP B)

ARTICLE 1 : DEFINITION

Grand Touring Cars.

ARTICLE 2 : HOMOLOGATION

At least 200 identical units (minimum 2 seats) of these cars must have been built in 12 consecutive months.

ARTICLE 3 : FITTINGS AND MODIFICATIONS ALLOWED

All those allowed for Touring Cars (Group A) with the following modifications.
However, article 255.5.1.8.3 (Restrictor) has not to be applied, but these cars will be accepted in rallies only on condition that their cylinder capacity, after correction if necessary (see article 252, 3.1 to 3.5), is less than 1600 cm³.

ARTICLE 4 : WEIGHT

Cars are subjected to the following minimum weight scale in relation to their cubic capacity.

up to	1000 cm³:			620 kg
over	1000 cm³	and up to	1400 cm³:	700 kg
over	1400 cm³	and up to	1600 cm³:	780 kg
over	1600 cm³	and up to	2000 cm³:	860 kg
over	2000 cm³	and up to	2500 cm³:	940 kg
over	2500 cm³	and up to	3000 cm³:	1020 kg
over	3000 cm³	and up to	3500 cm³:	1100 kg
over	3500 cm³	and up to	4000 cm³:	1180 kg
over	4000 cm³	and up to	4500 cm³:	1260 kg
over	4500 cm³	and up to	5000 cm³:	1340 kg
over	5000 cm³	and up to	5500 cm³:	1420 kg
over	5500 cm³:			1500 kg

ARTICLE 5 : WHEELS AND TYRES

Same text as for Touring Cars (Group A - art. 5.4) except for the rim diameter and the maximum widths (in rallies only).
In relation to the cubic capacity, the total of the widths of two rim-tyre assemblies on one and the same side of the car must be less than or equal to :

up to	1000 cm³:			13"
over	1000 cm³	and up to	1400 cm³:	14"
over	1400 cm³	and up to	1600 cm³:	15"
over	1600 cm³	and up to	2000 cm³:	17"
over	2000 cm³	and up to	2500 cm³:	18"
over	2500 cm³	and up to	3000 cm³:	18"
over	3000 cm³	and up to	3500 cm³:	20"
over	3500 cm³	and up to	4000 cm³:	20"
over	4000 cm³	and up to	4500 cm³:	22"
over	4500 cm³	and up to	5000 cm³:	22"
over	5000 cm³:			24"

In rallies :
The rim diameter cannot exceed 16" (or 415 mm for metric dimensions).

ARTICLE 257 - TECHNICAL REGULATIONS FOR SERIES GRAND TOURING CARS (N-GT))

SUMMARY

ARTICLE 1 : DEFINITIONS

1.1 Series Grand Touring Car (N-GT)
An open or closed automobile which has no more than one door on each side and a minimum of two seats situated one on each side of the longitudinal centre line of the car; these two seats must be crossed by the same transversal plane.
This car must be adapted for racing on circuits or closed courses.

1.2 Automobile
A land vehicle running on at least four non-aligned complete wheels, of which at least two are used for steering and at least two for propulsion.

1.3 Land vehicle
A locomotive device, propelled by its own means, moving by constantly taking real support on the earth's surface, and of which the propulsion and steering are under the control of a driver aboard the vehicle.

1.4 Main structure
Entirely sprung part of the structure of the vehicle, to which all the suspension and/or spring loads are transmitted, extending longitudinally from the foremost suspension mounting point on the chassis to the rearmost suspension mounting point on the chassis.

1.5 Bodywork
All entirely sprung parts of the car in contact with the external air stream, except the parts definitely associated with the mechanical functioning of the engine, transmission and running gear. Any air intake shall be considered to be part of the bodywork.

1.6 Original
As fitted to the FIA-homologated car.

1.7 Event
An event shall consist of official practice and the race.

1.8 Weight
Is the weight of the car without the driver at any time during the event.

1.9 Racing weight
Is the weight of the car in running order with the driver aboard and the fuel tank full.

1.10 Wheel
Wheel: Flange and rim.
Complete wheel: Flange, rim and tyre.

1.11 Door
That part of the bodywork that opens to give access to the driver and passenger compartments.

1.12 Cockpit
The volume of the main structure which is reserved for the occupants. Its limits are defined by the roof, the floor, the doors, the lateral parts, the glazed parts and the front and rear bulkheads.

1.13 Supercharging
Increasing the weight of the charge of the fuel/air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever. The injection of fuel under pressure is not considered to be supercharging.

1.14 Sprung suspension
The means whereby all complete wheels are suspended from the body/chassis unit by a spring medium.

1.15 Active suspension
Any system which allows control of the flexibility of any part of the suspension or of the trim height when the car is moving.

1.16 Mechanical components
All those necessary for the propulsion, suspension, steering and braking, as well as all accessories, whether moving or not, which are necessary for their normal working.

1.17 Telemetry
The transmission of data between a moving car and anyone connected with the entry of that car.

1.18 Semi-automatic gearbox
One which, when the driver calls for a gear change, takes over the control of one or more of the engine, clutch and gear selectors momentarily to enable the gear to be engaged.

1.19 Brake calipers
All parts of the braking system outside the survival cell, other than brake discs, brake pads, caliper pistons, brake hoses, master cylinder and fittings, which are stressed when subjected to the braking pressure.

1.20 Location
A site defined relative to the original : centre line of the car, axles centre (middle of the wheelbase on the centre line), cockpit, luggage compartment and engine compartment.
Location within the engine compartment is a site defined relative to the crank case and cylinder head(s).

1.21 Position
The site defined by dimensions from the original vehicle data, e.g. axles centre and centre line of the car.

1.22 Orientation
Is the relationship of the component to the longitudinal and transversal axes of the vehicle. If the component is turned 180°, this will be regarded as a change in orientation.

ARTICLE 2 : REGULATIONS

2.1 Role of the FIA
The following technical regulations for Series Grand Touring Cars are issued by the FIA.

2.2 Permitted modifications
All modifications not allowed by these regulations are expressly forbidden.

2.3 Vehicle type eligibility
Vehicles will be eligible in the Series Grand Touring class.
For a vehicle to be eligible in the Series Grand Touring class, it must be a car homologated by the FIA or a car from the list of acceptable cars drawn up by the FIA.

2.4 Eligible cars
The lists of homologated cars and acceptable cars will be published by the FIA.

2.5 Regulation and eligibility amendments
Each year in October at the latest the FIA will publish changes made to these regulations. All such changes will take effect on the second 1st of January following their publication.
Changes for safety reasons may be made without notice.
Changes covered by Articles 4.1.2, 5.3.4, 5.4.5 and 6.5.2 will be made in accordance with the period of notice specified in the relevant Sporting Regulations, save in circumstances deemed to be exceptional by the governing body of the relevant Championship.

2.6 Compliance with the regulations
It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his car complies with these regulations in their entirety at all times during an event.
A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

2.7 Measurements
All measurements must be made while the car is stationary on a flat horizontal surface or as provided in the Sporting Regulations of the relevant Championship.

2.8 Electronic system
Any automatic or electronic chassis control system or function is forbidden even if it is fitted on the original car.
This includes anti-lock braking, traction control, damper, suspension or ride height adjustment, power braking, four-wheel steering, movable ballast.
Semi-automatic or automatic gearboxes, power-driven clutches with electronic or pneumatic control are forbidden unless they are fitted on the series vehicle homologated by the FIA or from the list of acceptable cars drawn up by the FIA.
In this case, the manufacturer must provide the FIA with the system for checking the whole control system of the series gearbox and/or the series clutch.
Differentials with electronic, pneumatic or hydraulic slip control are forbidden.
Closed-loop electronically controlled systems are prohibited.
A simple open-loop electrical switch activated by the driver acting on a system is not considered to be an electronic control.
Power steering may be employed as long as it is a simple system, without programmable control.

2.9 Material

Titanium is not permitted unless used in the original car or with explicit authorisation by the current regulations.
The use of a material which has a specific yield modulus greater than 40 GPa/g/cm³ is forbidden for the making of all parts that are free or homologated as an Option Variant.
This restriction does not concern the parts homologated with the standard vehicle.
The use of magnesium sheet less than 3 mm thick is forbidden.

2.10 Composite chassis

Composite chassis are forbidden.

ARTICLE 3 : BODYWORK AND EXTERIOR DIMENSIONS

3.1 Dimensions

All bodywork dimensions and shape must remain original with the exception of alterations permitted under Article 3.6.

3.2 Overhangs and wheelbase

The front and rear overhangs as well as the wheelbase must remain original.

3.3 Doors

The dimensions and functions of the doors must remain original.

3.4 Windscreen and windows

A windscreen made of one piece of laminated glass (glass/plastic/glass) homologated for road use is compulsory.
The side and rear windows may be replaced with polycarbonate.
Additional fastenings may be used.
Cockpit ventilation :
A scoop may be fitted to each door window provided it complies with the following points :
- it must not exceed the perimeter of the window, must have a maximum height of 150 mm and must not protrude more than 50 mm over the window's surface.
- it must be made from the same material as the window or with translucent polycarbonate if the window is made from glass, and must have the possibility of being closed by a shutter made from the same material as the window.
- it must not obstruct the driver's rearward view.

Door windows may be replaced with nets with characteristics in accordance with article 253-11.
Each rear side window may be partly opened to a maximum of 30 mm at its rear extremity, or may have a circular opening with a maximum diameter of 50 mm.

3.5 Bodywork

3.5.1) The bottom part of the car cannot be modified and must remain identical to that of the original car (including the tunnels if fitted on the original car), with the exception of openings the sole function of which is the cooling of mechanical parts and the total area of which must not exceed 360 cm².

3.5.2) With the exception of the lower half of the complete wheels, the bodywork must cover all mechanical components in vertical projection seen from above.

3.5.3) All parts of the bodywork, including any part having an aerodynamic influence, must be rigidly secured to the entirely sprung part of the car (chassis/body unit), must not have any degree of freedom, must be securely fixed and remain immobile in relation to this part while the car is in motion.

3.5.4) Any device or construction that is designed to bridge the gap between the sprung part of the car and the ground is prohibited under all circumstances.

3.5.5) Material used for the bonnet and boot lids, bumpers, doors and detachable wings is free, but where a panel is replaced, it must be attached in a way which is at least as strong as the original method.
There must be at least two safety fasteners securing bonnet/boot/engine covers, both of which are clearly indicated by red (or contrasting colour) arrows. It must be possible to remove or open the bonnet and boot without the use of tools.

3.5.6) The cockpit opening of open cars must be symmetrical when viewed in plan or left/right elevation. The passenger area must not be covered.

3.5.7) All bodywork joints in the vicinity of the refuelling connections must be designed in such a way as to prevent any leakage of fuel into the engine compartment and/or cockpit during refuelling.

3.5.8) No part of the car must touch the ground when the car is resting on the two wheels (without the tyres) on the same side. This test will be carried out on a flat surface, in race trim, with the driver on board.

3.5.9) Registration plates :
Registration plate mountings may be dismounted, but this must not lead to the removal of parts of the bodywork or give rise to additional air intakes except for those permitted by articles 257.3.6.3 and 257.3.6.6.

3.6 Bodywork and chassis modifications

3.6.1) Strengthening of the chassis and bodywork is allowed provided that the material used follows the original shape and is in direct contact with it.
Furthermore, for each axle, only one reinforcement bar may be fitted on the suspension mounting points to the bodyshell, on each side of the car's longitudinal axis.

3.6.2) A rear wing may be mounted.
The rear wing is made up of the following elements :
Wing ; end plates ; vertical supports.
The rear wing must comply with the following criteria :
- It may replace an existing wing but not be added to it.
- the wing must not include more than one wing section and must be contained within a parallelogram of 450 x 150 mm with a wing section chord of a maximum of 300 mm.
- its overall width must not exceed 90 % of the overall width of the car.
- it must be 50 mm forward of the rearmost point of the bodywork.
- its highest point must be situated 100 mm lower than the highest point of the roof of the car.

If the original car has an air inlet on the roof, this inlet will not be considered for determining the highest point of the roof.
- the maximum authorised dimensions for the end plates are 150 mm in height, 450 mm in length.
- vertical supports must not exceed 520 mm in length, measured horizontally.
- the surfaces of vertical supports and end plates must be flat and parallel to the longitudinal axis of the car.
- the leading edges of the vertical supports and end plates must be rounded with a constant radius and the trailing edges may be bevelled along a 20 mm maximum length.

If the original rear wing is fitted, it must comply with the above points.
In the case of an open car, all the above points must be complied with, the height of the rear wing being measured relative to the highest point of the windscreen surround.

3.6.3) The shapes of the original bumpers must be retained.
The part of the bodywork situated below the horizontal plane of the front wheel axis and forward of the complete front wheels, may be modified through cutting and drilling in order to improve the cooling of mechanical parts. The air inlets obtained in this way must have a wire mesh.
It is possible to add an aerodynamic device, the characteristics of which are as follows :
- its maximum height must be 20 mm relative to the lowest point of the original bodywork, situated in the area described above
-it must not increase the overhang and the perimeter by more than 80 mm relative to the original ones
- its width complies with article 3.6.4 below

It is possible to use the front bumper homologated as a VO.
In this case, the additional aerodynamic device must be the one homologated as a VO.

3.6.4) The width of the bodywork across the front and rear wheel arches may be increased by a maximum of 100 mm.
In all cases, the total width of the car modified in this way must not exceed 2000 mm.
Following these modifications, the bodywork must cover the upper halves of the wheels, keeping apparently the same shapes as the original bodywork, and must not generate any downforce.
Any increasing of the width is forbidden for a car whose original width is over or equal to 2000 mm.
Internal wheel arches may be modified to accommodate larger wheels but must be at least as strong as the original, and must preserve the structural integrity of the car.

The fallen edges of the wheel arches may be cut in order to accommodate larger wheels.
3.6.5) Any parts following the external contour of the bodywork and less than 25 mm high will be considered as decorative strips and may be removed.
3.6.6) Air inlets must :
- have a single, precise function: cooling, ventilation.
- not protrude beyond the outline of the car when viewed from above.
- not extend beyond the surface of the bodywork.

Bodywork may be modified to incorporate louvres above or on the sides of the engine and coolers compartments, for the sole purpose of extracting heat.
They must neither protrude over the original bodywork, nor alter the original external appearance, nor permit a mechanical part to be visible from above or from the side.
3.6.7) Modifications required to fit additional lighting supports and refuelling connectors are permitted.
3.6.8) The original car must have one or two volumes for luggage's, of a minimum total volume of 150 dm^3.
The boot may consist of the space located behind the front seats in their rearmost position and up to the base of the rear window.
In all cases, the remaining volume of the cockpit must comply with the Group B capacity and visibility dimensions.

ARTICLE 4 : WEIGHT

4.1 Minimum weight
4.1.1) The weight of the car must not be less than 1100 kg (see Appendices 1 and 2).
4.1.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the weight of any car to maximise equality of performance.
4.2 Ballast
Ballast must be secured in the cockpit, such that tools are required for its removal and so as to allow the fixing of seals by the scrutineers.
Any movable ballast system when the car is in motion is forbidden.
4.3 Adding during the race
The adding to the car during the race of any solid material whatsoever or the replacement during the race of any part of the car with another which is materially heavier is forbidden.
4.4 Liquids
The weight may be checked at any time during the event with the quantity of liquids remaining in the tanks except after the race where the car will be emptied of all the fuel before weighing.

ARTICLE 5 : ENGINE

5.1 Type and position of engine
The make and type of engine used must remain original.
Its location, position and orientation must remain original, but replacing the original mountings to the chassis is allowed.
5.2 Engine modifications
5.2.1)
The following elements must remain original :
- cylinder block
- valve angles
- number and location of camshafts
- fixations of the crankshaft to the cylinder block
- firing order

The addition of material to the block is not permitted.
However, it is permitted to sleeve a block that originally is not fitted with sleeves, by welding if necessary.
In this case, the original bore must be retained.
The following elements may be modified by machining but the original part must always be identified :
- crankshaft
- connecting rods
-cylinder head(s)

The addition of material to the cylinder heads is not permitted but it is permitted to modify or close the lubrication holes in these and use "helicoils".

The following elements are free :
- belts and pulleys
- camshafts
- valves and their control system
- piston
- sleeves, but the original bore must be retained
- cylinder head gasket
- flywheel, but it must be a single piece flywheel made from steel
- injection and firing systems
- intake manifold

5.2.2) Variable valve timing is permitted only if it is originally fitted.
It may be neutralised but not modified.
5.2.3) Variable intake systems are permitted only if they are originally fitted.
They may be neutralised but not modified.
5.2.4) The use of magnesium part is forbidden unless it is used in the original engine.
5.2.5) The use of any ceramic or ceramic-coated component is forbidden unless used in the original engine.
5.2.6) The use of carbon or composite materials is restricted to clutches and non-stressed covers or ducts.
5.2.7) Only a direct mechanical linkage between the throttle pedal and the engine is permitted.
If the original car is fitted with a system without a mechanical linkage, this system may be retained but not modified.
If a manufacturer intends to use any of the systems listed above in 5.2.2 - 5.2.7, they must appear on the homologation form.
5.3 Normally aspirated engines
5.3.1) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 1.
5.3.2) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.
5.3.3) The entire intake system including manifolds, injectors, airbox and restrictors must be capable of fitting into a box 1000 mm long x 500 mm wide x 500 mm high or into a volume with equivalent dimensions.
5.3.4) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.
5.4 Supercharged engines
The maximum capacity of supercharged engines is 4000 cm^3.
5.4.1) Turbochargers may only be used if fitted to the road car homologated by the FIA or from the list of acceptable cars drawn up by the FIA.
With the exception of exchangers and pipes between the supercharging device, the intercooler and the manifold, the whole original supercharging system must be retained and not modified.
5.4.2) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 2.
5.4.3) All restrictors must be placed no further than 50 mm from the forward face of the compressor wheel blades.
5.4.4) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.
5.4.5) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.
5.4.6) Supercharged cars must not be equipped with any device which allows the boost pressure, or the electronic management system controlling the boost pressure, to be adjusted while the car is in motion.
5.4.7) Variable diameter inlets and adjustable internal vanes on turbochargers are forbidden.
If the original car is fitted with such a system, this system must be neutralised or dismounted.
5.5 Temperature of the charge
5.5.1) Intercoolers may be replaced but their number, their types, their locations and their positions must remain original.
However, any modifications carried out to accommodate a different intercooler must not alter the structural integrity of the car and the bodywork.

Apart from intercoolers, any device, system, procedure, construction or design the purpose and/or effect of which is any decrease whatsoever of the temperature of the intake air and/or of the charge (air and/or fuel) of the engine is forbidden.
The pipes between the supercharging device, the intercooler and the manifold are free, but their only function must be to channel the intake air.
The pipes for channelling air to the exchangers are free, but they must be made from fire-resistant, fibreglass based composite material.
5.5.2) Internal and/or external spraying or injection of water or any substance whatsoever is forbidden (other than fuel for the normal purpose of combustion in the engine).

5.6 Cooling

The method of cooling must be retained.
Water radiators may be replaced but their number, location and position must remain original.
However, any modifications carried out to accommodate a different radiator must not alter the structural integrity of the car and the bodywork.
The pipes for channelling air to the radiators are free but must be made from fire-resistant, fibreglass based composite material.

5.7 Exhaust

Provided the regulations in Articles 5.7.1, 5.7.2, 5.7.3 and 5.7.4 are complied with, the exhaust system is free.
5.7.1) The exhaust system should incorporate one or more homologated catalytic converters, which should be functioning at all times and through which all exhaust gases should pass.
5.7.2) The noise generated by the car is not to exceed 110 dB (A) at 3800 rpm, or at three quarter maximum revs if less.
This will be measured at a distance of 0.5 m and at a 45 degree angle to the point of exit of the exhaust.
All measures which are taken to ensure that the maximum noise limits are not exceeded must be permanent in nature, and must not be removed by the exhaust gas pressure.
5.7.3) The orifices of the exhaust pipes must be placed at a maximum of 450 mm and a minimum of 100 mm from the ground.
The exit of the exhaust pipe must be situated within the perimeter of the car and less than 100 mm from this perimeter, and aft of the vertical plane passing through the centre of the wheelbase.
Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns.
The exhaust system must not be provisional. Exhaust gas may only exit at the end of the system. Parts of the chassis must not be used to evacuate exhaust gases.
5.7.4) The underbody and bulkheads must not be modified for the installation of the exhaust system.
The exhaust system must be adequately isolated from the driver compartment.

5.8 Telemetry

The use of telemetry is forbidden.

ARTICLE 6 : FUEL PIPING, PUMPS AND TANKS

Provided the regulations in Articles 6.1, 6.2 and 6.3 are complied with, the fuel system is free.

6.1 Fuel tanks

6.1.1) All fuel tanks must be placed in the luggage compartment or in the original location and must be separated from the driver and the engine compartment by a firewall.
The tank must be surrounded by a crushable structure at least 10 mm thick.
6.1.2) All fuel tanks must be rubber bladders conforming to or exceeding the specifications of FIA/FT3 or FIA/FT3 1999.
6.1.3) All rubber bladders must be made by manufacturers homologated by the FIA.
6.1.4) All rubber bladders shall have a printed code indicating the name of the manufacturer, the specifications to which the tank has been manufactured and the date of manufacture.
6.1.5) No rubber bladder shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another 2 years.

6.2 Fittings and piping

6.2.1) All fittings which constitute the walls of the tank (including air vents, inlets, outlets, tank fillers, inter-tank connectors and access openings) must be metal or composite fittings bonded into the fuel tank.
6.2.2) All fuel lines between the fuel tank and the engine must have a self-sealing breakaway valve. This valve must separate at less than 50 % of the load required to break the fuel line fitting or to pull it out of the fuel tank.
6.2.3) No lines containing fuel, cooling water or lubricating oil may pass through the cockpit.
In a 2-volume car, the air vent(s) and their valves may pass through the cockpit provided that they are made from aviation type material and do not have any connections, other than to the (tank/roof) bulkheads.
The vent and filler spouts may pass through the cockpit as close to the walls as possible. Their pipes must be made from metal and their connectors from material identical to that used for the walls of the tank. They must be isolated from the cockpit by means of a leakproof protection.
6.2.4) All lines must be fitted in such a way that any leakage cannot result in accumulation of fluid in the cockpit.
6.2.5) When flexible, all lines must have threaded connectors and an outer braid which is resistant to abrasion and flame.
6.2.6) All fuel and lubricating oil lines must have a minimum burst pressure of 41 bar at the maximum operating temperature of 135°C.
6.2.7) All hydraulic fluid lines which are not subjected to abrupt changes in pressure, with the exception of lines under gravity head, must have a minimum burst pressure of 41 bar at the maximum operating temperature of 204°C when used with steel connectors and 135°C when used with aluminium connectors.
6.2.8) All hydraulic fluid lines subjected to abrupt changes in pressure must have a minimum burst pressure of 70 bar at the maximum operating temperature of 204°C.
6.2.9) No hydraulic fluid lines may have removable connectors inside the cockpit.
6.2.10) The vent lines must be fitted with a gravity-activated roll-over valve. All the fuel pumps must operate only when the engine is running, except during the starting process.
6.2.11) The air ducts must be made from a non-flammable material.

6.3 Fuel tank fillers

6.3.1) All cars must be fitted with fuel tank fillers and vents which must be combined or single units, installed or not on both sides of the car (in accordance with drawing 252-5; the interior diameter D must not exceed 50 mm).
Both fillers and air vents must be equipped with leakproof dry break couplings complying with the dead man principle and therefore not incorporating any retaining device when in an open position.
6.3.2) The tank fillers and vent holes must not protrude beyond the bodywork. They may be situated in the rear windows; if so they must be separated from the driver and engine compartments by a firewall.
6.3.3) The tank fillers, vent holes, vents and breathers must be placed where they would not be vulnerable in the event of an accident.
6.3.4) The fuel cell ventilation system must include the following elements :
- a gravity activated rollo-ver valve
- a float chamber ventilation valve
- a blow-off valve with a maximum over pressure of 200 mbar, working when the float chamber ventilation valve is closed.

6.3.5) All cars must be fitted with a self-sealing connector which can be used by the scrutineers to obtain samples of the fuel feeding the engine.
This connector must be of the type approved by the FIA and must be fitted immediately before the injectors.

6.4 Refuelling during the race

6.4.1) Refuelling the car by any other means than gravity, with a maximum height of 2 metres above the track where the refuelling takes place, is forbidden throughout the event.
6.4.2) During the race, only one autonomous supply tank complying with drawing 252-7 must be used per car. This tank must have a simple cylindrical internal shape and must not have any

additional internal parts.
For safety reasons, this tank must be fixed, through a tower, onto a trolley with the following characteristics :
- all the tower components must be mechanically assembled without any degree of freedom in relation to the trolley.
- the base of the trolley must have a surface area of at least 2 m^2 and must be made with a case fitted on 4 self-braking castors, ballasted with a weight greater than that of the tank filled with fuel.
A system for weighing the fuel may be applied through placing a weighing plate underneath the tank, provided that the characteristics set out above are respected.
A member for supporting the refuelling lines and air hoses may be attached to the trolley :
- it must be independent of the tank and of the tower.
- it is recommended that this member be allowed a degree of freedom in relation to the trolley (rotation following a vertical axis).
- it must not exceed 4 m in length and must allow a free passage of a height of 2 m over its entire length, including the accessories.
- an identification plate bearing the race number of the competing car must be fixed to its end.
A flow restrictor with the following dimensions:
- thickness: 2 mm
- maximum internal diameter: 33 mm
must be placed at the exit of the refuelling tank (see drawing 258-4).
6.4.3) Above the tank there must be an air vent system approved by the FIA.
6.4.4) The refuelling pipe, minimum length 250 cm, must be provided with a leakproof coupling to fit the filler mounted on the car, and during refuelling the outlet of the air vent must be connected with an appropriate coupling of the same diameter to the supply tank.
6.4.5) Before refuelling commences, the car and all metal parts of the refuelling system from the coupling to the supply tank and its rack must be connected electrically to earth by a manual contactor having no other function.
6.4.6) A 90° cut-off valve, situated on the outlet of the supply tank and controlling the fuel flow, must be manned at all times during refuelling.
A self-closing valve with an internal diameter of 38 mm must be fixed under the supply tank according to drawing 252-7.
6.4.7) All hoses and fittings from the supply tank to the car and back must have a maximum inside diameter of 1.5".
6.4.8) During practice, the standard supply tank or an unpressurised container not exceeding 25 litres capacity which is vented to air and has a leakproof coupling connecting it to the tank filler on the car can be used.
6.4.9) If a visible level is fitted to the tank, it must be fitted with isolating valves as close as possible to the tank.
6.4.10) The storing of fuel on board the car at a temperature less than 10°C below the ambient temperature is forbidden.
The use of a specific device, whether on board the car or not, to reduce the temperature of the fuel below the ambient temperature is forbidden.

6.5 Fuel capacity

6.5.1) The maximum amount of fuel which may be carried on board is 100 litres. Any device, system, procedure, construction or design, the purpose and/or effect of which is to increase in any way whatsoever, even temporarily, the total fuel storage capacity beyond the maximum of 100 litres, is forbidden.
6.5.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of the fuel tank to maximise equality of performance.

ARTICLE 7 : LUBRICATION SYSTEM

Provided the regulations in this Article are complied with, the lubrication system is free.

7.1 Oil tanks

7.1.1) If the oil tanks are not retained in the original position, they must be surrounded by a 10 mm thick crushable structure.
7.1.2) The oil tank must not be located in the cockpit.

7.2 Catch tank

When a car's lubrication system includes an open type sump breather, it must vent into a catch tank of at least 3 litres capacity.

ARTICLE 8 : ELECTRICAL EQUIPMENT

Provided the regulations in this Article are complied with, the electrical system is free.

8.1 Battery

Batteries must be situated in the cockpit.
Batteries must be securely fixed and completely surrounded by a box made of insulating material that includes an air vent which exits outside the cockpit.
If the battery situated in the cockpit is a dry battery, it must be protected electrically by a cover which covers it completely.

8.2 Windscreen wiper

The car must be fitted with the original windscreen wiper system which must be in working order throughout the event.
Only the blades and arms may be replaced.
The capacity of the windscreen washer tank may be modified.
The headlamp washer device may be dismounted.

8.3 Starting

A starter must be fitted and be in working order at all times during an event. The driver must also be able to operate the starter when seated normally.

8.4 Lighting equipment

8.4.1) All lighting equipment must be in working order throughout the event.
8.4.2) With the exception of the numberplate light, the original function of all exterior lighting equipment must be retained, but supplementary lighting may be added.
For safety reasons, it is obligatory for headlights to produce a yellow beam.
For races run in the daytime, N-GT cars must be equipped with yellow headlight covers.
8.4.3) Reverse lights
The bulbs of the reverse lights must be removed.
8.4.4) Light for rain
All cars must have a red light of at least 21 watts, in working order throughout the event, which:
- is a model approved by the FIA.
- faces rearwards at 90° to the car centre line.
- is clearly visible from the rear.
- is mounted not more than 10cm from the car centre line.
- is at least 35 cm above the reference plane.
- is no less than 45 cm behind the rear wheel centre line, measured to the face of the lens and parallel to the reference plane.
- can be switched on by the driver when seated normally in the car.
The three measurements being taken to the centre of area of the lens.
8.4.5) Retractable headlights
Retractable headlights may be replaced with fixed headlights, on condition that the original location is retained. The original location may be made larger, but the shape of the bonnet must be retained.

ARTICLE 9 : TRANSMISSION

Provided the regulations in this Article are complied with, the transmission system is free.

9.1 Transmission to the wheels

9.1.1) Four-wheel drive is forbidden.
9.1.2) The location, position and orientation of the gearbox must remain original.
The gearbox must comprise a maximum of 6 ratios and a reverse gear.
The chassis and the bodywork must not be modified for the fitting of a gearbox different to the original one.
If the original vehicle is fitted with a semi-automatic or automatic gearbox, the original gearbox and its synchronisers, as well as its whole control system, must be retained (see article 2.8).
In this case, only the ratios may be modified.
If the original vehicle is fitted with a power-driven clutch with electronic or pneumatic control, the mechanism may be replaced but the whole original control system must be retained (see article 2.8).
9.1.3) A mechanical limited slip differential is permitted provided

it fits in the original differential housing.
"Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system.
A viscous clutch is not considered to be a mechanical system.
If the original vehicle is fitted with a viscous clutch, it may be retained but it is not possible to add another differential.
9.1.4) For safety reasons, the transmission must be designed in such a way that should the car be stopped and the engine stalled, it is possible to push or tow it.

9.2 Reverse gear
All cars must have a reverse gear which, at any time during the event, can be selected while the engine is running and used by the driver when seated normally.

ARTICLE 10 : SUSPENSION AND STEERING

10.1 Sprung suspension
Cars must be fitted with sprung suspension.
The springing medium must not consist solely of bolts located through flexible bushes or mountings.
There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.

10.2 Suspension type and mounting
10.2.1) The whole principle of the original suspensions must be retained.
10.2.2) All suspension components, with the exception of parts specifically mentioned below, must be original equipment supplied by the manufacturer and comply with the FIA homologation form or the technical form of the car.
These parts may be strengthened provided the original part can still be identified.
10.2.3) Wheel bearings and wheel hubs may be replaced.
10.2.4) The position of the suspensions anchorage points on the chassis may be changed but the centre of the new anchorage point must be included in a 5 mm radius sphere, the centre of which is the centre of the original anchorage point.
The mountings of these anchorage points on the chassis (brackets...) may be modified but not moved.
Only once per vehicle and only if the suspension mountings are on a separate subframe bolted onto the chassis, a manufacturer may homologate a modification of the position of the anchorage points of the suspensions to the subframe as well as to the hub carrier, within a 20 mm radius sphere, keeping the original suspension components.
The modification of a hub carrier may only be carried out through removing material from the original machined part or through machining the original raw part. Only the machining of cast or forged raw parts is authorised.
The subframes and hub carriers modified this way must be interchangeable with the original subframes and hub carriers.
In addition, the manufacturer must deposit with the FIA one example of the original machined part as well as one example of the original raw part.
Increasing the diameter of the fixing screws of the anchorage points on the chassis is permitted.
10.2.5) Rubber joints may be replaced by ball joints.
10.2.6) Anti-roll bars and their mountings are free, but they must keep the location of the original anti-roll bars.
The addition of an anti-roll bar if the original axle does not have one is permitted, but the mountings of this bar must be bolted or welded to the chassis and must not have any other function.
10.2.7) The material and dimensions of the springs are free.
A maximum of 2 springs per wheel is allowed.
10.2.8) Shock absorbers are free provided their working principle and their number remain original.
If, on the original vehicle, springs and shock absorbers are separated, they may be replaced by combined spring/shock absorber elements, without any other modification.
The modification of spring, shock absorber and anti-roll bars adjustments from the cockpit is prohibited.

10.3 Chromium plating
Chromium plating of steel suspension members is forbidden.

10.4 Suspension members
All suspension members must be made from a homogeneous metallic material.

10.5 Steering
All steering components must be original equipment supplied by the manufacturer but they may be strengthened provided the original parts can still be identified.
The steering lock must be dismounted.
The steering wheel may be replaced and it may be fitted with a quick release system.
For the fitting of such a system, a local modification of the steering column is allowed.

10.6 Power steering
Power steering may be disconnected.
It is possible to replace a mechanical power steering pump with an electrical power steering pump and vice versa.

10.7 Four-wheel steering
The use of four-wheel steering is forbidden.
If the original vehicle is fitted with such a system, it must be rendered inoperative.

ARTICLE 11 : BRAKES

11.1 Separate circuits
With the exception of paragraph 2) below, the complete braking system is free provided it incorporates at least two separate circuits operated by the same pedal. This system must be designed so that if leakage or failure occurs in one circuit, the pedal shall still operate the brakes on at least two wheels.
The balance of the braking forces between the front and rear axles may only be adjusted by the driver through :
- direct intervention on the position of the centre of the joint, on the linkage lever of the hydraulic pumps of the front and rear circuits.
- direct intervention on a proportional valve, in which the intake pressure of the rear circuit is adjusted through a pre-loaded spring, variable according to the position of the manual linkage system (see the drawing of the principle 262-9).
Only one of these two systems is permitted.
If a pressure-limiting valve without any adjustment possibility is fitted on the rear circuit, it may be combined with the first of the two adjustment systems described above.
All other systems are prohibited, including inertial mechanical systems.

11.2 Brake discs
The brake discs must be made from ferrous material. The use of titanium is authorised for the brake pistons.

11.3 Anti-lock braking and power braking
Any anti-lock braking function and any power braking function are forbidden.

11.4 Brake calipers
All the brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 80Gpa. A single caliper, with a maximum of 6 pistons, is permitted on each wheel.
The section of each caliper piston must be circular.

ARTICLE 12 : WHEELS AND TYRES

12.1 Dimensions
12.1.1) Complete wheels
Maximum width: 12" for a weight < 1300 kg
14" for a weight (1300 kg
Maximum diameter: 28".
The maximum authorised diameter of the rims is 18".
12.1.2) Measurements will be taken horizontally at axle centreline's height.

12.2 Wheel visibility
The complete wheel above the hub centre line must not be visible in plan view and viewed from the front, with the wheels aligned for the car to proceed straight ahead.

12.3 Wheel material
Wheels must be made from a homogeneous metallic material.
The front wheel must weigh a minimum of 7.5 kg.
The rear wheel must weigh a minimum of 8 kg.

Forged magnesium is forbidden.

12.4 Number of wheels

The maximum number of wheels is four.

12.5 Wheel attachment

Wheel attachment is free but if a single wheel nut is used, a safety pin fitted with a spring must be in place on the nut or the stub axle whenever the car is running and must be replaced after each wheel change.

These pins must be painted dayglo red or orange.

Alternatively, another method of retaining the wheels attachment system may be used, provided it has been approved by the FIA.

12.6 Pneumatic jacks

Pneumatic jacks may be fitted to the car, but compressed air bottles are not to be carried on board.

12.7 Pressure control valves

Pressure control valves on the wheels are forbidden.

ARTICLE 13 : COCKPIT

13.1 Equipment in the cockpit

The original dashboard must be retained, but not its instrumentation.

Original heating, ventilation and demisting systems may be dismounted, but an adequate ventilation and demisting system must be retained.

13.1.1) The following must be removed from the cockpit:

- Roof padding and lining
- Carpets and insulating material

13.1.2) The following may also be removed from the cockpit:

- Seats
- All trim
- Air conditioning
- Window winding mechanisms, central locking systems and any other systems fitted to the original car solely for the comfort of the driver or passengers.

13.2 Equipment permitted in the cockpit

13.2.1) The only components which can be added in the cockpit are:

- Safety equipment and structures
- Tool kit
- Seat, instruments and any other controls necessary for driving including the brake power distributor switch
- Electronic equipment
- Driver cooling system
- Ballast
- Pneumatic jacks and their pipes
- Battery
- Driver ventilation equipment
- Door trims may be replaced with different material.

13.2.2) None of the above items may hinder cockpit exit or driver's visibility.

13.2.3) The above components must be covered where necessary by a rigid protective material to minimise injury and their mountings must be able to withstand 25 g deceleration.

13.3 Cockpit exit time

13.3.1) The cockpit must be designed so as to allow the driver to get out from his normal driving position in 7 seconds through the driver's door and in 9 seconds through the passenger's door.

13.3.2) For the purposes of the above tests, the driver must be wearing all normal driving equipment, the seat belts must be fastened, the steering wheel must be in place in the most inconvenient position, and the doors must be closed.

ARTICLE 14 : SAFETY EQUIPMENT

14.1 Fire extinguishers

The use of the following products is prohibited: BCF, NAF

All cars must be equipped with an extinguishing system homologated by the FIA in accordance with article 253-7.2, with the exception of the means of triggering.

A means of triggering from the outside, eventually combined with the circuit breaker and operated by a single lever, must be present at the bottom of the windscreen on the left side.

It must be marked with a letter "E" in red inside a white circle of at least 100 mm diameter with a red edge.

14.2 Safety belts

The wearing of two shoulder straps, one abdominal strap and two straps between the legs is compulsory.

These straps must comply with FIA standard N°8853/98.

14.3 Rear view mirrors

Position free.

The car must be fitted with two rear view mirrors, one fitted on each side of the car, in order to give an efficient view to the rear. Each mirror must have a minimum area of 100 cm².

The scrutineers must be assured through a practical demonstration that the driver, seated normally, can clearly see the vehicles following him.

To this end, the driver will be asked to identify letters or figures, 15 cm high and 10 cm wide, displayed at random on boards placed behind the car according to the following instructions :

- Height : Between 40 cm and 100 cm from the ground.
- Width : 2 m one side or the other of the centre line of the car.
- Position : 10 metres behind the centre line of the rear axle of the car.

14.4 Seat and headrest

14.4.1) The driver's seat must either be original, modified only through the addition of accessories with a registered trade mark, or be homologated by the EEC, the FMVSS or the FIA and not modified, with an extension padded with energy-absorbing and non-flammable material around the driver's head and not modified.

If the original attachments or supports are changed, they must comply with the provisions of article 253.16.

It is recommended that the seat attachments be homologated on the car's homologation form.

14.4.2) All cars must be equipped with a headrest which cannot deflect more than 50 mm when a rearward force of 85 daN is applied.

The headrest surface must not be less than 400 cm² and must be continuous and without protruding parts.

It must be positioned so that it is the first point of contact for the driver's helmet in the event of an impact projecting his head backwards when he is seated normally.

14.5 Master switch

14.5.1) The driver, when seated normally with the safety belt fastened and the steering wheel in place, must be able to cut off all the electrical circuits by means of a sparkproof circuit breaker switch. This switch must be clearly marked by a symbol showing a red spark in a white edged blue triangle and be accessible by the driver with his safety belt fastened.

14.5.2) There must also be an exterior switch, with a handle which is capable of being operated from a distance by a hook. This switch must be located at the lower part of the windscreen pillar on the left-hand side.

14.6 Towing eye

14.6.1) A towing eye with a minimum and maximum inner diameter of 80 mm and 100 mm respectively must be securely fitted to the front and rear structures of the car.

14.6.2) The towing eye must be positioned in such a way that they can be used should the car be stopped in a gravel bed.

14.6.3) The towing eyes must be clearly visible and painted in yellow, red or orange.

ARTICLE 15 : SAFETY STRUCTURES

15.1 Rollover structure

The car must be fitted with a rollcage complying with Appendix J Article 253.8.

Longitudinal struts, or an alternative acceptable to the FIA, providing lateral protection, must be included.

It is possible to add three lateral protection bars onto a rollbar homologated by the FIA in accordance with drawing 258-3.

The tubes close to the driver must be padded with non-flammable foam approved by the FIA.

15.2 Firewall and floor

The cars must be equipped with a firewall which is liquid-proof, flame-proof and gas-proof between the driver and engine on the

one hand and between the driver and the fuel tank on the other hand, to prevent the passage of flames from the engine compartment to the cockpit. Any holes in the firewall must be of the minimum size for the passage of controls and wires and must be completely sealed.

ARTICLE 16 : FUEL

16.1 Fuel specification

The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:
- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.

The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.
- Specific gravity between 720 and 785 kg/m3 at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.

The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.
- Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 3382).
- Maximum lead content: 0.40 g/l or the standard of the country of the event if it is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % - 47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180° C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).

The fuel will be accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.

16.2 Air

Only air may be mixed with the fuel as an oxidant.

ARTICLE 17 : FINAL TEXT

The final text of these regulations is the English version which shall be used should any dispute arise over their interpretation.

Appendix 1 : Restrictors for normally aspirated engines

Appendix 2 : Restrictors for supercharged engines

Appendix 1 :
Restrictors for Normally Aspirated Engines
(Series Grand Touring Cars)

Normally aspirated engines with more than 2 valves per cylinder / (ø in mm)										
Cylinder Capacity / Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
up to 3200 cm³	43,8	31,3	44,8	32	45,8	32,7	46,7	33,4	47,7	34,1
over 3200 cm³ up to 3600 cm³	43,1	30,8	44,1	31,5	45,1	32,2	46	32,9	46,9	33,5
over 3600 cm³ up to 4000 cm³	42,5	30,4	43,5	31,1	44,4	31,7	45,4	32,4	46,3	33,1
over 4000 cm³ up to 5000 cm³	41,7	29,8	42,7	30,5	43,6	31,2	44,5	31,8	45,4	32,4
over 5000 cm³ up to 6000 cm³	41	29,3	42	30	42,9	30,7	43,8	31,3	44,6	31,9
over 6000 cm³ up to 7000 cm³	40,4	28,9	41,4	29,6	42,2	30,2	43,1	30,8	44	31,5
over 7000 cm³ up to 8000 cm³	39,5	28,3	40,4	28,9	41,3	29,5	42,2	30,2	43	30,7

Normally aspirated engines with 2 valves per cylinder / (ø in mm)										
Cylinder Capacity / Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
up to 3200 cm³	45,3	32,3	46,3	33,1	47,3	33,8	48,3	34,5	49,3	35,2
over 3200 cm³ up to 3600 cm³	44,5	31,8	45,6	32,5	46,6	33,3	47,5	34	48,5	34,6
over 3600 cm³ up to 4000 cm³	43,9	31,4	44,9	32,1	45,9	32,8	46,9	33,5	47,8	34,2
over 4000 cm³ up to 5000 cm³	43,1	30,8	44,1	31,5	45	32,2	46	32,8	46,9	33,5
over 5000 cm³ up to 6000 cm³	42,4	30,3	43,4	31	44,3	31,7	45,3	32,3	46,1	32,9
over 6000 cm³ up to 7000 cm³	41,7	29,8	42,8	30,6	43,6	31,1	44,5	31,8	45,5	32,5
over 7000 cm³ up to 8000 cm³	40,8	29,1	41,7	29,8	42,7	30,5	43,6	31,1	44,4	31,7

Appendix 2 :
Restrictors for Supercharged Engines
(Series Grand Touring Cars)

Supercharged engines with more than 2 valves per cylinder (ø in mm)										
Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
	41	29,3	42	30	42,9	30,7	43,8	31,3	44,6	31,9

Supercharged engines with 2 valves per cylinder (ø in mm)										
Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
	42,4	30,3	43,4	31	44,3	31,7	45,3	32,3	46,1	32,9

ARTICLE 258 - TECHNICAL REGULATIONS FOR GRAND TOURING CARS

SUMMARY

ARTICLE 1 : DEFINITIONS

1.1 Grand Touring Car (GT)
An open or closed automobile which has no more than one door on each side and a minimum of two seats situated one on each side of the longitudinal centre line of the car; these two seats must be crossed by the same transversal plane.
This car must be able to be used perfectly legally on the open road, and adapted for racing on circuits or closed courses.

1.2 Automobile
A land vehicle running on at least four non-aligned complete wheels, of which at least two are used for steering and at least two for propulsion.

1.3 Land vehicle
A locomotive device, propelled by its own means, moving by constantly taking real support on the earth's surface, and of which the propulsion and steering are under the control of a driver aboard the vehicle.

1.4 Main structure
Entirely sprung part of the structure of the vehicle, to which all the suspension and/or spring loads are transmitted, extending longitudinally from the foremost suspension mounting point on the chassis to the rearmost suspension mounting point on the chassis.

1.5 Bodywork
All entirely sprung parts of the car in contact with the external air stream, except the parts definitely associated with the mechanical functioning of the engine, transmission and running gear.
Any air intake shall be considered to be part of the bodywork.

1.6 Original
As fitted to the FIA-homologated car.

1.7 Event
An event shall consist of official practice and the race.

1.8 Weight
Is the weight of the car without the driver at any time during the event.

1.9 Racing weight
Is the weight of the car in running order with the driver aboard and the fuel tank full.

1.10 Wheel
Wheel: Flange and rim.
Complete wheel: Flange, rim and tyre.

1.11 Door
That part of the bodywork that opens to give access to the driver and passenger compartments.

1.12 Cockpit
The volume of the main structure which is reserved for the occupants.
Its limits are defined by the roof, the floor, the doors, the lateral parts, the glazed parts and the front and rear bulkheads.

1.13 Supercharging
Increasing the weight of the charge of the fuel/air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever.
The injection of fuel under pressure is not considered to be supercharging.

1.14 Sprung suspension
The means whereby all complete wheels are suspended from the body/chassis unit by a spring medium.

1.15 Active suspension
Any system which allows control of the flexibility of any part of the suspension or of the trim height when the car is moving.

1.16 Mechanical components
All those necessary for the propulsion, suspension, steering and braking, as well as all accessories, whether moving or not, which are necessary for their normal working.

1.17 Telemetry
The transmission of data between a moving car and anyone connected with the entry of that car.

1.18 Semi-automatic gearbox
One which, when the driver calls for a gear change, takes over the control of one or more of the engine, clutch and gear selectors momentarily to enable the gear to be engaged.

1.19 Brake calipers
All parts of the braking system outside the survival cell, other than brake discs, brake pads, caliper pistons, brake hoses, master cylinder and fittings, which are stressed when subjected to the braking pressure.

1.20 Location
A site defined relative to the original : centre line of the car, axles centre (middle of the wheelbase on the centre line), cockpit, luggage compartment and engine compartment.
Location within an engine compartment is a site relative to the crankcase and cylinder heads.

1.21 Position
The site defined by dimensions from the original vehicle data.
e.g. axles centre and centre line of the car.

1.22 Orientation
Is the relationship of the component to the longitudinal and lateral axes of the vehicle.
If the component is turned 180°, this will be regarded as a change in orientation.

ARTICLE 2 : REGULATIONS

2.1 Role of the FIA
The following technical regulations for Grand Touring cars are issued by the FIA.

2.2 Permitted modifications
All modifications not allowed by these regulations are expressly forbidden.

2.3 Vehicle type eligibility
Vehicles will be eligible in the Grand Touring class (GT).
For a vehicle to be eligible in the Grand Touring class, it must be an FIA-homologated car in Group GT or N-GT.

2.4 Eligible cars
A list of homologated cars will be published by the FIA.

2.5 Regulation and eligibility amendments
Each year in October at the latest the FIA will publish changes made to these regulations.
All such changes will take effect on the second 1st of January following their publication.
Changes for safety reasons may be made without notice.
Changes covered by Articles 4.1.2, 5.3.4, 5.4.5 and 6.5.2 will be made in accordance with the period of notice specified in the relevant Sporting Regulations, save in circumstances deemed to be exceptional by the governing body of the relevant Championship.

2.6 Compliance with the regulations
It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his car complies with these regulations in their entirety at all times during an event.
A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

2.7 Measurements
All measurements must be made while the car is stationary on a flat horizontal surface or as provided in the Sporting Regulations of the relevant Championship.

2.8 Electronic system
Any automatic or electronic chassis control system or function is forbidden.
This includes anti-lock braking, traction control, automatic or semi-automatic transmissions, power-driven clutches, electronically or automatically adjusted final drive differential systems, damper, suspension or ride height adjustment, power braking, four-wheel steering, moveable ballast.
Semi-automatic or automatic gearboxes and differentials with electronic, pneumatic or hydraulic slip control are forbidden.
Closed-loop electronically controlled systems are prohibited.
A simple open-loop electrical switch activated by the driver acting on a system is not considered to be an electronic control.
Power steering may be employed as long as it is a simple system, without programmable control.

ARTICLE 3 : BODYWORK AND EXTERIOR DIMENSIONS

3.1 Dimensions

All bodywork dimensions and shape must remain original with the exception of alterations required by Article 3.5.1 and those permitted under Article 3.6.

3.2 Overhangs and wheelbase

The front and rear overhangs must remain original.

3.3 Doors

The dimensions and functions of the doors must remain original.
The door hinges may be replaced for the sole purpose of allowing faster evacuation of the driver in the event of an accident.

3.4 Windscreen and windows

A windscreen made of one piece of laminated glass, or of an equivalent material approved by the FIA, is compulsory.
In all cases, this windscreen must respect the homologation regulations of the FIA and of the European Community (Full Type).
The side and rear windows may be replaced with polycarbonate.
Additional fastenings may be used.
Cockpit ventilation :
A scoop may be fitted to each door window provided it complies with the following points :
- it must not exceed the perimeter of the window, must have a maximum height of 150 mm and must not protrude more than 50 mm over the window's surface.
- it must be made from the same material as the window or with translucent polycarbonate if the window is made from glass, and must have the possibility of being closed by a shutter made from the same material as the window.
- it must not obstruct the driver's rearward view.

Door windows may be replaced with nets with characteristics in accordance with article 253-11.
Each rear side window may be partly opened to a maximum of 30 mm at its rear extremity, or may have a circular opening with a maximum diameter of 50 mm.

3.5 Bodywork

3.5.1) Between the front and at least the rear wheel centre lines all bodywork visible from directly beneath the car, with the exception of wheel arches and exhaust tunnels, must lie on one plane.
This plane, called Flat Bottom or Reference Surface, must be a uniform, solid, hard, rigid (no degree of freedom in relation to the body/chassis unit), impervious surface, under all circumstances.
The periphery of the surface formed by these parts may be curved upwards with a maximum radius of 25 mm.
To help overcome any possible manufacturing problems, a tolerance of +/- 5 mm is permissible across this surface.
No sprung part of the car is permitted below the flat bottom.
No air may pass above this surface. However, two circular openings of not more than 200 mm in diameter are permitted in the flat bottom for the purpose of cooling the exhaust, as well as minimum openings allowing the use of air jacks.
It is permitted to add an inclined, perfectly flat panel to the rear of the flat bottom, with no openings:
- between the rear edge of the flat bottom and the vertical plane formed by the rearmost vertical panel of the bodywork.

This panel may be cut to adapt this extractor.
- between the vertical planes formed by the inside faces of the rear wheels.

No point of this inclined panel is permitted more than 150 mm above the flat bottom. Vertical fins are allowed, provided that they remain parallel to the longitudinal centre line of the car and that they exert no aerodynamic influence.

3.5.2) With the exception of the lower half of the complete wheels, the bodywork must cover all mechanical components in vertical projection seen from above.

3.5.3) Any air intake higher than the highest point of the windscreen must not be forward of that point.

3.5.4) Any part of the bodywork, including any part having an aerodynamic influence, must be rigidly secured to the entirely sprung part of the car (chassis/body unit), must not have any degree of freedom, must be securely fixed and remain immobile in relation to this part while the car is in motion.

3.5.5) Any device or construction that is designed to bridge the gap between the sprung part of the car and the ground is prohibited under all circumstances.

3.5.6) Material used for the bonnet and boot lids, doors and wings is free, but where a panel is replaced, it must be attached in a way which is at least as strong as the original method.
There must be at least two safety fasteners securing bonnet/boot/engine covers, both of which are clearly indicated by red (or contrasting colour) arrows. It must be possible to remove or open the bonnet and boot without the use of tools.

3.5.7) The cockpit opening of open cars must be symmetrical when viewed in plan or left/right elevation.
The passenger area must not be covered.

3.5.8) All bodywork joints in the vicinity of the refuelling connections must be designed in such a way as to prevent any leakage of fuel into the engine compartment and/or cockpit during refuelling.

3.5.9) No part of the car must touch the ground when both the tyres on one side are deflated.
This test will be carried out on a flat surface, in race trim, with the driver on board.

3.5.10) Registration plates
Registration plate mountings may be dismounted, but this must not lead to the removal of parts of the bodywork or give rise to additional air intakes except for those permitted by articles 258.3.6.4 and 258.3.6.8.

3.5.11) Windscreen wiper
Motor, position, blades and mechanism are free but there should be at least one windscreen wiper provided for the windscreen.
The capacity of the washer tank may be increased.
The headlamp washer device may be dismounted.

3.6 Bodywork modifications

3.6.1) Strengthening of the chassis and bodywork is allowed provided that the material used follows the original shape and is in direct contact with it.
Furthermore, reinforcement bars may be fitted on the suspension mounting points to the bodyshell of the same axle, on each side of the car's longitudinal axis.

3.6.2) The width of the bodywork across the front and rear wheel arches may be increased by a maximum of 100 mm. In all cases, the total width of the car modified in this way must not exceed 2100 mm.
Following these modifications, together with any modifications carried out to accommodate different wheels, the bodywork must cover the upper halves of the wheels, keeping apparently the same shapes as the original bodywork.

3.6.3) A rear wing may be mounted.
It may replace an existing wing but not be added to it.
The whole of the wing must not exceed the perimeter of the bodywork when viewed from above the car, and none of its parts must constitute the highest point of the bodywork.
It must not include more than one wing section with a single flap.
No air may circulate between the wing section and the flap.
The rear wing must be contained within a parallelogram of 520 x 150 mm with a wing section chord of a maximum of 400 mm.
The maximum authorised width of the rear wings including the supports and end plates is 2000 mm.
The maximum authorised dimensions for the end plates are 150 mm in height, 520 mm in length.
If the wing does not have end plates but does have supports, these must not exceed 520 mm in length.
If the original wing is fitted, it must not in any circumstances exceed the perimeter of the bodywork when seen from above, and none of its parts must constitute the highest point of the bodywork.

3.6.4) Bodywork may be modified below the horizontal plane of the front wheel axis and forward of the complete front wheels, provided that:
- it does not exceed the width of the bodywork across the front wheel arches (Art. 3.6.2).
- the bodywork up to 180 mm from the ground does not extend beyond 80 mm horizontally in relation to the value of the original front overhang and to the maximum perimeter of the part of the original bodywork of the car situated more than 180 mm above the ground (Drawings 258-1 and 258-2).
- no sprung part of the car may be situated below the plane defined in article 3.5.1.

3.6.5) Bodywork may be added between the front and rear wheel arches provided that it is below the lowest wheel centre line,

that it is not visible from above the car and that Article 3.5.8 may be satisfied.
3.6.6) Internal wheel arches may be modified to accommodate larger wheels but must be at least as strong as the original.
The fallen edges of the wheel arches may be cut in order to accommodate larger wheels.
3.6.7) Any parts following the external contour of the bodywork and less than 25 mm high will be considered as decorative strips and may be removed.
3.6.8) Air inlets must :
- have a single, precise function: cooling, ventilation.
- not protrude beyond the outline of the car when viewed from above.
- not extend beyond the surface of the bodywork.
However, air inlets may protrude beyond the roof (the surface limited by the top of the windscreen, the side windows and the rear window) provided that:
- they do not protrude forward of the highest point of the windscreen.
- they do not exceed the highest point of the roof of the car.
Air extraction louvres are authorised on the rear vertical panel of the car provided that they do not allow the mechanical parts and the wheels to be seen from the rear, and that they do not extend more than 20 mm beyond the surface of the bodywork.
These louvres must be located aft of the complete rear wheels.
Bodywork may be modified to incorporate louvres above or on the sides of the engine and coolers compartments, for the sole purpose of extracting heat.
They must neither protrude over the original bodywork, nor alter the original external appearance, nor permit a mechanical part to be visible from above or from the side.
Aft of the front and rear wheels, the openings made in the bodywork in order to extract air :
- must not exert an aerodynamic effect below the plane passing through the wheel centre line,
- must be fitted with louvres to prevent the tyres from being seen from the rear.
Aft of the front wheels, louvres may be replaced with a wire mesh provided that the meshes are no longer than 5 mm on the side.
For checking the front wings, the person doing the checking should be positioned beside each door.
Whatever the air inlets, the only mechanical parts visible through them are those that are visible on the series vehicle.
3.6.9) Modifications required to fit additional lighting supports and refuelling connectors are permitted.
3.6.10) A maximum of one or two volumes, of a minimum total volume of 150 dm^3 is (are) obligatory.
The boot may consist of the space located behind the front seats in their rearmost position and up to the base of the rear window. In all cases, the remaining volume of the cockpit must comply with the Group B capacity and visibility dimensions.

ARTICLE 4 : WEIGHT

4.1 Minimum weight
4.1.1) The weight of the car must not be less than 1100 kg (see appendices 1 and 2).
4.1.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the weight of any car to maximise equality of performance.
4.2 Ballast
Ballast must be secured in the cockpit such that tools are required for its removal and so as to allow the fixing of seals by the scrutineers.
Any movable ballast system when the car is in motion is forbidden.
4.3 Adding during the race
The adding to the car during the race of any solid material whatsoever or the replacement during the race of any part of the car with another which is materially heavier is forbidden.
4.4 Liquids
The weight may be checked at any time during the event with the quantity of liquids remaining in the tanks except after the race where the car will be emptied of all the fuel before weighing.

ARTICLE 5 : ENGINE

Provided the regulations in Articles 5.1 to 5.8 are complied with, the engine and ancillaries are free.
5.1 Type and position of engine
The make and type of engine used must remain original.
The position of the engine is free provided the location and orientation remain original.
The interior dimensions of the cockpit must remain original if the engine is re-positioned.
5.2 Engine modifications
5.2.1) The engine must retain the original cylinder block, cylinder heads, valve angles, number and location of camshafts and firing order.
Injection and firing systems are free.
The addition of material to the block or heads is not permitted.
However, it is permitted to sleeve a block that originally is not fitted with sleeves, by welding if necessary.
It is also permitted to modify or close the lubrication holes in the cylinder head, close standard injector holes or use helicoils.
5.2.2) Variable valve timing is not permitted.
5.2.3) Variable length inlet systems are not permitted.
5.2.4) Titanium is not permitted unless used in the original car.
5.2.5) The use of magnesium is not permitted unless it is used in the original engine.
5.2.6) The use of any ceramic component is forbidden.
5.2.7) The use of carbon or composite materials is restricted to clutches and non-stressed covers or ducts.
5.2.8) Only a direct mechanical linkage between the throttle pedal and the engine is permitted.
Systems listed above in 5.2.2 - 5.2.8 may be used if they are fitted as original equipment using original parts. However, if a manufacturer intends to use any of these they must appear on the homologation form.
5.3 Normally aspirated engines
5.3.1) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 1.
5.3.2) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.
5.3.3) The entire intake system including manifolds, injectors, airbox and restrictors must be capable of fitting into a box 1000 mm long x 500 mm wide x 500 mm high or into a volume with equivalent dimensions.
5.3.4) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.
5.4 Supercharged engines
5.4.1) Turbochargers may only be used if fitted to the FIA-homologated road car.
The maximum capacity of supercharged engines is 4000 cm^3.
5.4.2) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 2.
5.4.3) All restrictors must be placed no further than 50 mm from the forward face of the compressor wheel blades.
5.4.4) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.
5.4.5) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.
5.4.6) Supercharged cars must not be equipped with any device which allows the boost pressure, or the electronic management system controlling the boost pressure, to be adjusted while the car is in motion.
5.4.7) Variable diameter inlets and adjustable internal vanes on turbochargers are forbidden.
5.5 Temperature of the charge
5.5.1) With the exception of location, intercoolers are free and may be used for cooling intake air.
However, any modifications carried out to accommodate a different intercooler must not alter the structural integrity of the car and the bodywork.

Apart from intercoolers, any device, system, procedure, construction or design the purpose and/or effect of which is any decrease whatsoever of the temperature of the intake air and/or of the charge (air and/or fuel) of the engine is forbidden.
The pipes between the supercharging device, the intercooler and the manifold are free, but their only function must be to channel the intake air.
5.5.2) Internal and/or external spraying or injection of water or any substance whatsoever is forbidden (other than fuel for the normal purpose of combustion in the engine).

5.6 Cooling

Provided the method of cooling is retained, the cooling system is free but the water radiator must remain in the original location.

5.7 Exhaust

Provided the regulations in Articles 5.7.1, 5.7.2, 5.7.3 and 5.7.4 are complied with, the exhaust system is free.
5.7.1) The exhaust system should incorporate one or more homologated catalytic converters, which should be functioning at all times and through which all exhaust gases should pass.
5.7.2) The noise generated by the car is not to exceed 110 dB (A) at 3800 rpm, or at three quarter maximum revs if less.
This will be measured at a distance of 0.5 m and at a 45 degree angle to the point of exit of the exhaust.
All measures which are taken to ensure that the maximum noise limits are not exceeded must be permanent in nature, and must not be removed by the exhaust gas pressure.
5.7.3) The orifices of the exhaust pipes must be placed at a maximum of 450 mm and a minimum of 100 mm from the ground.
The exit of the exhaust pipe must be situated within the perimeter of the car and less than 100 mm from this perimeter, and aft of the vertical plane passing through the centre of the wheelbase.
Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns.
The exhaust system must not be provisional. Exhaust gas may only exit at the end of the system.
Parts of the chassis must not be used to evacuate exhaust gases.
5.7.4) The underbody and bulkheads may be modified for the installation of the exhaust system, but these modifications may only serve to accommodate or provide clearance for the exhaust system.
The exhaust system must be adequately isolated from the driver compartment.

5.8 Telemetry

The use of telemetry is forbidden.

ARTICLE 6 : FUEL PIPING, PUMPS AND TANKS

Provided the regulations in Articles 6.1, 6.2 and 6.3 are complied with, the fuel system is free.

6.1 Fuel tanks

6.1.1) All fuel tanks must be placed in the luggage compartment or in the original location and must be separated from the driver and the engine compartment by a firewall.
The tank must be surrounded by a crushable structure at least 10 mm thick.
6.1.2) All fuel tanks must be rubber bladders conforming to or exceeding the specifications of FIA/FT3 or FIA/FT3 1999.
6.1.3) All rubber bladders must be made by manufacturers homologated by the FIA.
6.1.4) All rubber bladders shall have a printed code indicating the name of the manufacturer, the specifications to which the tank has been manufactured and the date of manufacture.
6.1.5) No rubber bladders shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another 2 years.

6.2 Fittings and piping

6.2.1) All fittings which constitute the walls of the tank (including air vents, inlets, outlets, tank fillers, inter-tank connectors and access openings) must be metal or composite fittings bonded into the fuel tank.
6.2.2) All fuel lines between the fuel tank and the engine must have a self-sealing breakaway valve.
This valve must separate at less than 50 % of the load required to break the fuel line fitting or to pull it out of the fuel tank.
6.2.3) No lines containing fuel, cooling water or lubricating oil may pass through the cockpit.
In a 2-volume car, the air vent(s) and their valves may pass through the cockpit provided that they are made from aviation type material and do not have any connections, other than to the (tank/roof) bulkheads.
The vent and filler spouts may pass through the cockpit as close to the walls as possible.
Their pipes must be made from metal and their connectors from material identical to that used for the walls of the tank.
They must be isolated from the cockpit by means of a leakproof protection.
6.2.4) All lines must be fitted in such a way that any leakage cannot result in accumulation of fluid in the cockpit.
6.2.5) When flexible, all lines must have threaded connectors and an outer braid which is resistant to abrasion and flame.
6.2.6) All fuel and lubricating oil lines must have a minimum burst pressure of 41 bar at the maximum operating temperature of 135°C.
6.2.7) All hydraulic fluid lines which are not subjected to abrupt changes in pressure, with the exception of lines under gravity head, must have a minimum burst pressure of 41 bar at the maximum operating temperature of 204°C when used with steel connectors and 135°C when used with aluminium connectors.
6.2.8) All hydraulic fluid lines subjected to abrupt changes in pressure must have a minimum burst pressure of 70 bar at the maximum operating temperature of 204°C.
6.2.9) No hydraulic fluid lines may have removable connectors inside the cockpit.
6.2.10) The vent lines must be fitted with a gravity-activated roll-over valve.
All the fuel pumps must operate only when the engine is running, except during the starting process.
6.2.11) The air ducts must be made from a non-flammable material.

6.3 Fuel tank fillers

6.3.1) All cars must be fitted with fuel tank fillers and vents which must be combined or single units, installed or not on both sides of the car (in accordance with drawing 252-5; the interior diameter D must not exceed 50 mm).
Both fillers and air vents must be equipped with leakproof dry break couplings complying with the dead man principle and therefore not incorporating any retaining device when in an open position.
6.3.2) The tank fillers and vent holes must not protrude beyond the bodywork.
They may be situated in the rear windows; if so they must be separated from the driver and engine compartments by a firewall.
6.3.3) The tank fillers, vent holes, vents and breathers must be placed where they would not be vulnerable in the event of an accident.
6.3.4) The fuel cell ventilation system must include the following elements :
- a gravity activated roll-over valve
- a float chamber ventilation valve
- a blow-off valve with a maximum over pressure of 200 mbar, working when the float chamber ventilation valve is closed.

6.3.5) All cars must be fitted with a self-sealing connector which can be used by the scrutineers to obtain fuel feeding the engine.
This connector must be of the type approved by the FIA and must be fitted immediately before the injectors.

6.4 Refuelling during the race

6.4.1) Refuelling the car by any other means than gravity, with a maximum height of 2 metres above the track where the refuelling takes place, is forbidden throughout the event.
6.4.2) During the race, only one autonomous supply tank complying with the drawing 252-7 must be used per car.
This tank must have a simple cylindrical internal shape and must not have any additional internal parts.
For safety reasons, this tank must be fixed, through a tower, onto a trolley with the following characteristics :
- all the tower components must be mechanically assembled without any degree of freedom in relation to the trolley.

- the base of the trolley must have a surface area of at least 2 m^2 and must be made with a case fitted on 4 self-braking castors, ballasted with a weight greater than that of the tank filled with fuel.
A system for weighing the fuel may be applied through placing a weighing plate underneath the tank, provided that the characteristics set out above are respected.
A member for supporting the refuelling lines and air hoses may be attached to the trolley :
- it must be independent of the tank and of the tower.
- it is recommended that this member be allowed a degree of freedom in relation to the trolley (rotation following a vertical axis).
- it must not exceed 4 m in length and must allow a free passage of a height of 2 m over its entire length, including the accessories.
- an identification plate bearing the race number of the competing car must be fixed to its end.
A flow restrictor with the following dimensions:
- thickness: 2 mm
- maximum internal diameter: 33 mm
must be placed at the exit of the refuelling tank (see drawing 258-4).
6.4.3) Above the tank there must be an air vent system approved by the FIA.
6.4.4) The refuelling pipe, minimum length 250 cm, must be provided with a leakproof coupling to fit the filler mounted on the car, and during refuelling the outlet of the air vent must be connected with an appropriate coupling of the same diameter to the supply tank.
6.4.5) Before refuelling commences, the car and all metal parts of the refuelling system, from the coupling to the supply tank and its rack, must be connected electrically to earth by a manual contactor having no other function.
6.4.6) A 90° cut-off valve, situated on the outlet of the supply tank and controlling the fuel flow, must be manned at all times during refuelling.
A self-closing valve with an internal diameter of 38 mm must be fixed under the supply tank according to drawing 252-7.
6.4.7) All hoses and fittings from the supply tank to the car and back must have a maximum inside diameter of 1.5".
6.4.8) During practice, the standard supply tank or an unpressurised container not exceeding 25 litres capacity which is vented to air and has a leakproof coupling connecting it to the tank filler on the car can be used.
6.4.9) If a visible level is fitted to the tank, it must be fitted with isolating valves as close as possible to the tank.
6.4.10) The storing of fuel on board the car at a temperature less than 10°C below the ambient temperature is forbidden.
The use of a specific device, whether on board the car or not, to reduce the temperature of the fuel below the ambient temperature is forbidden.

6.5 Fuel capacity

6.5.1) The maximum amount of fuel which may be carried on board is 100 litres.
Any device, system, procedure, construction or design, the purpose and/or effect of which is to increase in any way whatsoever, even temporarily, the total fuel storage capacity beyond the maximum of 100 litres, is forbidden.
6.5.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of the fuel tank to maximise equality of performance.

ARTICLE 7 : LUBRICATION SYSTEM

Provided the regulations in this Article are complied with, the oil system is free.

7.1 Oil tanks

7.1.1) If the oil tanks are not retained in the original position, they must be surrounded by a 10 mm thick crushable structure.
7.1.2) The oil tank must not be located in the cockpit.

7.2 Catch tank

When a car's lubrication system includes an open type sump breather, it must vent into a catch tank of at least 3 litres capacity.

ARTICLE 8 : ELECTRICAL EQUIPMENT

Provided the regulations in this Article are complied with, the electrical system is free.

8.1 Battery

Batteries must be situated in the cockpit.
Batteries must be securely fixed and completely surrounded by a box made of insulating material that includes an air vent which exits outside the cockpit.
If the battery situated in the cockpit is a dry battery, it must be protected electrically by a cover which covers it completely.

8.2 Windscreen wiper

The car must be fitted with at least one effective windscreen wiper which must be in working order throughout the event.

8.3 Starting

A starter must be fitted and be in working order at all times during an event. The driver must also be able to operate the starter when seated normally.

8.4 Lighting equipment

8.4.1) All lighting equipment must be in working order throughout the event.
8.4.2) With the exception of the numberplate light, the original function of all exterior lighting equipment must be retained, but supplementary lighting may be added.
For safety reasons, it is obligatory for headlights to produce a white beam.
For races run in the daytime, GT cars must be equipped with white headlight covers.
8.4.3) Reverse lights
The bulbs of the reverse lights must be removed.
8.4.4) Light for rain
All cars must have a red light of at least 21 watts, in working order throughout the event, which:
- is a model approved by the FIA.
- faces rearwards at 90° to the car centre line.
- is clearly visible from the rear.
- is mounted not more than 10 cm from the car centre line.
- is at least 35 cm above the reference plane.
- is no less than 45 cm behind the rear wheel centre line, measured to the face of the lens and parallel to the reference plane.
- can be switched on by the driver when seated normally in the car.
The three measurements being taken to the centre of area of the lens.
8.4.5) Retractable headlights
Retractable headlights may be replaced with fixed headlights, on condition that the original location is retained.
The original location may be made larger, but the shape of the bonnet must be retained.

ARTICLE 9 : TRANSMISSION

Provided the regulations in this Article are complied with, the transmission system is free.

9.1 Transmission to the wheels

9.1.1) Four wheel drive is forbidden.
9.1.2) The position of the gearbox is free provided the location and orientation remain original.
The gearbox must comprise a maximum of 6 ratios and a reverse gear.
The interior dimensions of the cockpit must remain original if the gearbox is re-positioned.
9.1.3) Viscous differentials are not considered to have hydraulic slip control, provided outside control is not possible when the car is in motion.

9.2 Reverse gear

All cars must have a reverse gear which, at any time during the event, can be selected while the engine is running and used by the driver when seated normally.

ARTICLE 10 : SUSPENSION AND STEERING

10.1 Sprung suspension

Cars must be fitted with sprung suspension.
The springing medium must not consist solely of bolts located through flexible bushes or mountings.

There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.

10.2 Suspension type and mounting

10.2.1) All suspension components, with the exception of parts specifically mentioned, must be original equipment supplied by the manufacturer or homologated.

These parts may be strengthened provided the original part can still be identified.

10.2.2) The position of the suspension mounting points on the chassis can be changed by homologation, while respecting their number and the original type of the suspension.

10.2.3) Rubber joints may be replaced by unibal joints.

10.2.4) The addition of an anti-roll bar is permitted.

10.2.5) The material, number and dimensions of the springs are free.

The modification of spring, shock absorber and anti-roll bars adjustments from the cockpit is prohibited.

10.2.6) Shock absorbers are free provided their number remains original.

10.3 Chromium plating

Chromium plating of steel suspension members is forbidden.

10.4 Suspension members

All suspension members must be made from a homogeneous metallic material.

10.5 Steering

With the exception of the steering column's joints and the steering ratio, all steering components, must be original equipment supplied by the manufacturer.

These parts may be strengthened provided the original part can still be identified.

The steering lock must be dismounted.

The steering wheel may be replaced and it may be fitted with a quick release system.

For the fitting of such a system, a local modification of the steering column is allowed.

10.6 Power steering

Power steering may be disconnected.

It is possible to replace a mechanical power steering pump with an electrical power steering pump and vice versa.

10.7 Four wheel steering

The use of four wheel steering is forbidden.

ARTICLE 11 : BRAKES

11.1 Separate circuits

With the exception of 2) below, the complete braking system is free provided it incorporates at least two separate circuits operated by the same pedal.

This system must be designed so that if leakage or failure occurs in one circuit, the pedal shall still operate the brakes on at least two wheels.

11.2 Brake discs

The brake discs must be made from ferrous material.

The use of titanium is authorised for the brake pistons and for the brake disc attachments.

11.3 Anti-lock braking and power braking

Any anti-lock braking function and any power braking function are forbidden.

11.4 Brake calipers

All the brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 80Gpa.

A single caliper, with a maximum of 8 pistons, is permitted on each wheel.

The section of each caliper piston must be circular.

ARTICLE 12 : WHEELS AND TYRES

12.1 Dimensions

12.1.1) Complete wheels

Maximum width: 14".

Maximum diameter: 28".

The maximum authorised diameter of the rims is 18".

12.1.2) Measurements will be taken horizontally at axle height.

12.2 Wheel visibility

The complete wheel above the hub centre line must not be visible in plan view, with the wheels aligned for the car to proceed straight ahead.

12.3 Wheel material

Wheel material is free but they must be made from a homogeneous metallic material.

12.4 Number of wheels

The maximum number of wheels is four.

12.5 Wheel attachment

Wheel attachment is free but if a single wheel nut is used, a safety pin fitted with a spring must be in place on the nut or the stub axle whenever the car is running and must be replaced after each wheel change.

These pins must be painted dayglo red or orange. Alternatively, another method of retaining the wheels attachment system may be used, provided it has been approved by the FIA.

12.6 Pneumatic jacks

Pneumatic jacks may be fitted to the car, but compressed air bottles are not to be carried on board.

12.7 Pressure control valves

Pressure control valves on the wheels are forbidden.

ARTICLE 13 : COCKPIT

13.1 Equipment in the cockpit

13.1.1) The following must be removed from the cockpit:

- Roof padding and lining
- Steering lock
- Carpets and insulating material

13.1.2) The following may also be removed from the cockpit:

- Seats
- All trim except the dashboard
- Heating system and air conditioning, but an adequate ventilation and demisting system must be retained
- Window winding mechanisms, central locking systems and any other systems fitted to the original car solely for the comfort of the driver or passengers.

13.2 Equipment permitted in the cockpit

13.2.1) The only components which can be added in the cockpit are:

- Safety equipment and structures
- Tool kit
- Seat, instruments and any other controls necessary for driving including the brake power distributor switch
- Electronic equipment
- Driver cooling system
- Ballast
- Pneumatic jacks and their pipes
- Battery
- Driver ventilation equipment
- Door trims may be replaced with different material.

13.2.2) None of the above items may hinder cockpit exit or driver's visibility.

13.2.3) The above components must be covered where necessary by a rigid protective material to minimise injury and must be attached such that they are able to withstand 25 g deceleration.

13.3 Cockpit exit time

13.3.1) The cockpit must be designed so as to allow the driver to get out from his normal driving position in 7 seconds through the driver's door and in 9 seconds through the passenger's door.

13.3.2) For the purposes of the above tests, the driver must be wearing all normal driving equipment, the seat belts must be fastened, the steering wheel must be in place in the most inconvenient position, and the doors must be closed.

ARTICLE 14 : SAFETY EQUIPMENT

14.1 Fire extinguishers

The use of the following products is prohibited: BCF, NAF

All cars must be equipped with an extinguishing system homologated by the FIA in accordance with article 253-7.2, with the exception of the means of triggering.

A means of triggering from the outside must be combined with the circuit breaker switch and be operated by a single lever. It must be marked with a letter "E" in red inside a white circle of at least 100 mm diameter with a red edge.

14.2 Safety belts
The wearing of two shoulder straps, one abdominal strap and two straps between the legs is compulsory.
These straps must comply with FIA standard N°8853/98.

14.3 Rear view mirrors
Position free.
The car must be fitted with two rear view mirrors, one fitted on each side of the car, in order to give an efficient view to the rear.
Each mirror must have a minimum area of 100 cm^2.
The scrutineers must be assured through a practical demonstration that the driver, seated normally, can clearly see the vehicles following him. To this end, the driver will be asked to identify letters or figures, 15 cm high and 10 cm wide, displayed at random on boards placed behind the car according to the following instructions :
- Height : Between 40 cm and 100 cm from the ground.
- Width : 2 m one side or the other of the centre line of the car.
- Position : 10 metres behind the centre line of the rear axle of the car.

14.4 Seat and headrest
14.4.1) The driver's seat must either be original, modified only through the addition of accessories with a registered trade mark, or be homologated by the EEC, the FMVSS or the FIA (8855/1992 or 8855/1999 standards) and not modified, with an extension padded with energy-absorbing and non-flammable material around the driver's head and not modified.
If the original attachments or supports are changed, they must comply with the provisions of article 253.16.
It is recommended that the seat attachments be homologated on the car's homologation form.
14.4.2) All cars must be equipped with a headrest which cannot deflect more than 50 mm when a rearward force of 85 daN is applied.
The headrest surface must not be less than 400 cm^2 and must be continuous and without protruding parts.
It must be positioned so that it is the first point of contact for the driver's helmet in the event of an impact projecting his head backwards when he is seated normally.

14.5 Master switch
14.5.1) The driver, when seated normally with the safety belt fastened and the steering wheel in place, must be able to cut off all the electrical circuits by means of a sparkproof circuit breaker switch.
This switch must be clearly marked by a symbol showing a red spark in a white edged blue triangle and be accessible by the driver with his safety belt fastened.
14.5.2) There must also be an exterior switch, with a handle which is capable of being operated from a distance by a hook.
This switch must be located at the lower part of the windscreen pillar on the left-hand side.

14.6 Towing eye
14.6.1) A towing eye with a minimum and maximum inner diameter of 80 mm and 100 mm respectively must be securely fitted to the front and rear structures of all cars.
14.6.2) They must be positioned in such a way that they can be used should the car be stopped in a gravel bed.
14.6.3) The towing eyes must be clearly visible and painted in yellow, red or orange.

ARTICLE 15 : SAFETY STRUCTURES

15.1 Magnesium sheet
The use of magnesium sheet less than 3 mm thick is forbidden.
15.2 Rollover structure
The car must be fitted with a rollcage complying with Appendix J Article 253.8.
Longitudinal struts, or an alternative acceptable to the FIA, providing lateral protection, must be included.
It is possible to add three lateral protection bars onto a rollbar homologated by the FIA in accordance with drawing 258-3.
The tubes close to the driver must be padded with non-flammable foam approved by the FIA.

15.3 Firewall and floor
Cars must be equipped with a firewall which is liquid-proof, flame-proof and gas-proof between the driver and engine on the one hand and between the driver and the fuel tank on the other hand, to prevent the passage of flames from the engine compartment to the cockpit.
Any holes in the firewall must be of the minimum size for the passage of controls and wires and must be completely sealed.

15.4 Composite chassis
For any vehicle equipped with a composite chassis, any repairs to the survival cell or to the frontal protection must be carried out according to the manufacturer's specifications, in a repair centre approved by the manufacturer.
Any important damage must be entered on the technical passport.

ARTICLE 16 : FUEL

16.1 Fuel specification
The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:
- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.
The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.
- Specific gravity between 720 and 785 kg/m^3 at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.
The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.
- Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 3382).
- Maximum lead content: 0.40 g/l or the standard of the country of the event if it is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % - 47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180° C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).
The fuel will be accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.
16.2 Air
Only air may be mixed with the fuel as an oxidant.

ARTICLE 17 : FINAL TEXT

The final text of these regulations is the English version which will be used should any dispute arise over their interpretation.

Appendix 1 :Restrictors for normally aspirated engines

Appendix 2 :Restrictors for supercharged engines

APPENDIX 1 :
Restrictors for Normally Aspirated Engines
(Grand Touring Cars)

Normally aspirated engines with more than 2 valves per cylinder (ø in mm)										
Cylinder Capacity / Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
up to 3500 cm³	47,1	33,7	48,2	34,5	49,2	35,2	50,2	35,9	51,2	36,7
over 3500 cm³ up to 4000 cm³	46,4	33,2	47,5	34	48,5	34,7	49,5	35,4	50,5	36,1
over 4000 cm³ up to 5000 cm³	45,6	32,6	46,6	33,3	47,6	34	48,6	34,7	49,6	35,4
over 5000 cm³ up to 6000 cm³	44,9	32,1	45,9	32,8	46,9	33,5	47,8	34,2	48,8	34,9
over 6000 cm³ up to 7000 cm³	44,2	31,6	45,2	32,3	46,1	33	47,1	33,7	48	34,3
over 7000 cm³ up to 8000 cm³	43,3	31,1	44,3	31,8	45,3	32,4	46,2	33,1	47,1	33,8

Normally aspirated engines with 2 valves per cylinder (ø in mm)										
Cylinder Capacity / Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
up to 3500 cm³	48,7	34,8	49,8	35,6	50,8	36,3	51,9	37,1	52,9	37,8
over 3500 cm³ up to 4000 cm³	47,9	34,2	49,1	35,1	50,1	35,8	51,1	36,5	52,2	37,3
over 4000 cm³ up to 5000 cm³	47,1	33,7	48,2	34,4	49,2	35,1	50,2	35,9	51,3	36,6
over 5000 cm³ up to 6000 cm³	46,4	33,1	47,4	33,9	48,5	34,6	49,4	35,3	50,4	36
over 6000 cm³ up to 7000 cm³	45,7	32,6	46,7	33,4	47,6	34	48,7	34,8	49,6	35,4
over7000 cm³ up to 8000 cm³	44,7	32	45,8	32,7	46,8	33,4	47,7	34,1	48,7	34,8

Appendix 2 :
Restrictors for Supercharged Engines
(Grand Touring Cars)

Supercharged engines with more than 2 valves per cylinder (ø in mm)										
Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
	44,6	31,9	45,6	32,6	46,6	33,3	47,5	34	48,5	34,7

Supercharged engines with 2 valves per cylinder (ø in mm)										
Weight	1100/1149 kg		1150/1199 kg		1200/1249 kg		1250/1299 kg		1300 kg and over	
number of restrictors	1	2	1	2	1	2	1	2	1	2
	46,1	32,9	47,1	33,7	48,2	34,4	49,1	35,1	50,1	35,8

ARTICLE 258A - TECHNICAL REGULATIONS FOR SPORTS RACING CARS

SUMMARY

ARTICLE 1 : DEFINITIONS

1.1 Sports Racing Car
Two-seater open racing car, built for the sole purpose of taking part in races on closed circuits.
The two seats must be situated one on each side of the longitudinal centre line of the car, and must be crossed by the same transversal plane.

1.2 Automobile
A land vehicle running on at least four non-aligned complete wheels, of which at least two are used for steering and at least two for propulsion.

1.3 Land vehicle
A locomotive device, propelled by its own means, moving by constantly taking real support on the earth's surface, and of which the propulsion and steering are under the control of a driver aboard the vehicle.

1.4 Automobile make
An automobile make is a complete car.
When the manufacturer of the car fits an engine not manufactured by himself, the car shall be considered as a hybrid and the name of the engine manufacturer shall be associated with the name of the car manufacturer.
The name of the car manufacturer shall always precede that of the engine manufacturer.
Any Trophy, Cup or Champion Title won by a hybrid car shall be awarded to the manufacturer of the car.

1.5 Main structure
Entirely sprung part of the structure of the vehicle, to which all the suspension and/or spring loads are transmitted, extending longitudinally from the foremost suspension mounting point on the chassis to the rearmost suspension mounting point on the chassis.

1.6 Bodywork
All entirely sprung parts of the car in contact with the external air stream, except the parts definitely associated with the mechanical functioning of the engine, transmission and running gear.
Any air intake shall be considered to be part of the bodywork.
Viewed from above, from the side and from the rear, the bodywork must conceal all mechanical components.
The bodywork parts must not be mobile.

1.7 Event
An event shall consist of official practice and the race.

1.8 Weight
Is the weight of the car without the driver at any moment during the event and without fuel.

1.9 Racing weight
Is the weight of the car in running order with the driver aboard and the fuel tank full.

1.10 Wheel
Wheel : Flange and rim.
Complete wheel : Flange, rim and tyre.

1.11 Cockpit
The volume of the main structure which is reserved for the occupants.
Nothing is permitted to cover the cockpit opening as seen from above except rollbar reinforcements.

1.12 Supercharging
Increasing the weight of the charge of the fuel-air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever.
The injection of fuel under pressure is not considered to be supercharging.

1.13 Suspension
The means whereby all complete wheels are suspended from the body/chassis unit by a spring medium.

1.14 Active suspension
Any system which allows control of the flexibility and/or the damping of any part of the suspension or of the trim height when the car is moving.

1.15 Mechanical components
All those necessary for the propulsion, suspension, steering and braking, as well as all accessories, whether moving or not, which are necessary for their normal working.

1.16 Telemetry
The transmission of data between a moving car and anyone connected with the entry of that car in the event.

1.17 Semi-automatic gearbox
One which, when the driver calls for a gear change, takes over the control of one or more of the engine, clutch and gear selectors momentarily to enable the gear to be engaged.

1.18 Brake callipers
All parts of the braking system outside the survival cell, other than brake discs, brake pads, calliper pistons, brake hoses, master cylinder and fittings, which are stressed when subjected to the braking pressure.

1.19 Location
A site defined relative to the centre line of the car, axles centre (middle of the wheelbase on the centre line), cockpit, engine compartment.
Location within the engine compartment is a site defined relative to the crank case and cylinder head(s).

1.20 Position
The site defined by dimensions from the original vehicle data, e.g. axle centres and centre line of the car.

1.21 Orientation
Is the relationship of the component to the longitudinal and transversal axes of the vehicle.
If the component is turned 180°, this will be regarded as a change in orientation.

ARTICLE 2 : REGULATIONS

2.1 Role of the FIA
The following technical regulations for Sports Racing Cars are issued by the FIA.

2.2 Permitted modifications
All modifications not allowed by these regulations are expressly forbidden.

2.3 Vehicle type eligibility
Vehicles will be eligible in the Sports Racing Cars class.
To be eligible in the Sports Racing Cars class, a vehicle must have a technical form for Sports Racing Cars, delivered by the FIA.

2.4 Regulation and eligibility amendments
Each year in October at the latest the FIA will publish changes made to these regulations.
All such changes will take effect on the second 1st of January following their publication.
Changes for safety reasons may be made without notice.
Changes covered by Articles 4.1.2, 5.3.4, 5.4.5 and 6.5.2 will be made in accordance with the period of notice specified in the relevant Sporting Regulations, save in circumstances deemed to be exceptional by the governing body of the relevant Championship.

2.5 Compliance with the regulations
It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his car complies with these regulations in their entirety at all times during an event.
A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

2.6 Measurements
All measurements must be made while the car is stationary on a flat horizontal surface or as provided in the Sporting Regulations of the relevant Championship.

2.7 Electronic system
Any automatic or electronic chassis control system or function is forbidden.
This includes anti-lock braking, traction control, automatic or semi-automatic transmissions, power-driven clutches, electronically or automatically adjusted final drive differential systems, damper, suspension or ride height adjustment, power braking, four-wheel steering, movable ballast.
Semi-automatic or automatic gearboxes and differentials with electronic, pneumatic or hydraulic slip control are forbidden.
Closed-loop electronically controlled systems are prohibited.
A simple open-loop electrical switch activated by the driver acting on a system is not considered to be an electronic control.

Power steering may be employed as long as it is a simple system, without programmable control.

2.8 Material

Titanium is not permitted unless explicit authorisation by the current regulations.

The use of a material which has a specific yield modulus greater than 40 GPa/g/cm³ is forbidden.

The use of magnesium sheet less than 3 mm thick is forbidden.

ARTICLE 3 : BODYWORK AND EXTERIOR DIMENSIONS

3.1 Dimensions

All bodywork dimensions and shape must comply with those specified on the technical form.

- Maximum overall length : 4650 mm
- Maximum overall width : 2000 mm
- Maximum height of the bodywork : 965 mm
(including the rear wing)
- Minimum height of the rear rollover structure: 1020 mm

Each height is measured from the Flat bottom (Reference Surface) defined in the Article 3.5.

3.2 Overhangs and wheelbase

The front and rear overhangs must comply with those specified on the technical form.

- Maximum front overhang : 1000 mm
- Maximum rear overhang : 1000 mm
- Minimum wheelbase : 2700 mm

Front plus rear overhangs must not exceed 80 % of the wheelbase.

The difference between the front and rear overhangs must not exceed 15 % of the wheelbase.

3.3 Windscreen

Optional.

3.4 Bodywork

The material used for the bodywork parts is free.

3.4.1) Viewed from above and from the rear:

The bodywork must fully cover the wheels and tyres and all mechanical components, including the gearbox, above the wheel centre line level, with no empty space or cut-out in the bodywork (with the wheels aligned and the car positioned to go straight ahead).

Viewed from the side :

The wheel arches shall remain open.

3.4.2) Air inlets :

The only functions permitted for the air inlets are the cooling of the radiators and brakes, the air intake of the engine, and the ventilation of the engine compartment and cockpit.

They must channel all the airflow onto the elements to be cooled and have no aerodynamic influence to improve the handling of the car.

They must also respect the maximum body height as defined in article 3.1.

They must neither protrude beyond the perimeter of the bodywork as viewed from above, nor protrude above the surface of the bodywork by more than 150 mm (this does not apply to the engine air inlet).

3.4.3) Air outlets ; Louvres :

* Air outlets are permitted :

- on the front bonnet
- on the rear panel of the car up to the rear axle, provided that they do not allow the mechanical parts and the wheels to be seen from the rear and that they do not extend more than 20 mm beyond the surface of the bodywork.
- on the bodywork sides, provided they do not protrude beyond the perimeter of the bodywork.

Aft of the front and rear wheels, the openings made in the bodywork in order to extract air must not protrude beyond the perimeter of the car and must be situated below the plane passing through the front and rear axles' centrelines, whatever the static ride height of the car, as viewed from the side.

* Air extraction louvres are authorised on the rear vertical panel of the car provided that they do not allow the mechanical parts and the wheels to be seen from the rear.

These louvres must not extend more than 20 mm beyond the surface of the bodywork.

Louvres for air extraction are mandatory over the front wheels, with a minimum area of 160 cm² per wheel.

3.4.4) All parts of the bodywork, including any part having an aerodynamic influence, must be rigidly secured to the entirely sprung part of the car (chassis/body unit), must not have any degree of freedom, must be securely fixed and remain immobile in relation to this part while the car is in motion.

3.4.5) There must be at least two safety fasteners securing bonnet/boot/engine covers, both of which are clearly indicated by red (or contrasting colour) arrows.

It must be possible to remove or open the bonnet and boot without the use of tools.

3.4.6) All bodywork joints in the vicinity of the refuelling connections must be designed in such a way as to prevent any leakage of fuel into the engine compartment and or cockpit during refuelling.

3.4.7) Any device or construction that is designed to bridge the gap between the sprung part of the car and the ground is prohibited under all circumstances.

3.5 Flat bottom (Reference Surface)

Between the front and at least the rear axle centre lines, all bodywork visible from directly beneath the car must lie on one plane.

This plane, called Flat Bottom or Reference Surface, must be a uniform, solid, hard, rigid (no degree of freedom in relation to the body/chassis unit), impervious surface, under all circumstances.

It is used as a reference for all the vertical measurements.

To help overcome any possible manufacturing problems, a tolerance of +/- 5 mm is permissible across this surface.

With the exception of the rear part of this surface, the periphery of the surface formed by these parts may be curved upwards with a maximum radius of 50 mm.

A block, the minimum dimensions of which are 20x100 mm, must be mounted on the Flat bottom, on the centre line of the car and on the rear axle centre line.

The lower surface of this block must never be less than 20 mm below the Flat bottom.

No sprung part of the car is permitted below the flat bottom and air may pass between the bodywork and the Flat Bottom, for cooling and ventilation purposes only.

No opening will be permitted in the Flat Bottom except for hatches necessary for maintenance, openings for air jacks (95 mm maximum diameter) and cutouts necessary for suspension parts travel.

3.6 Aerodynamic devices

3.6.1) Elements banned :

Tunnels, ducts, skirts, diffusers, extractors or other devices for the purpose of inducing downforce with or without the exterior shape of the body are prohibited behind the front axle centre line.

Any rear diffuser is forbidden.

3.6.2) Front aerodynamic devices :

Forward of the front axle centre line, no bodywork element having a wing profile is permitted.

Additional aerodynamic devices may be added to the front bodywork of the car :

- Below and forward of the front axle centre line
- Outboard of two longitudinal and vertical planes, symmetrical around the longitudinal centre line of the car and separated by the width of the front track

provided that :

- They do not obstruct the driver's view
- They are strongly secured
- They remain within the maximum dimensions specified in Article 3.1 and 3.2.

3.6.3) Rear wing :

The primary device permitted for exerting downforce (negative lift) shall be a non-movable, adjustable wing carried at the rear of the car.

This wing must not be adjustable from the cockpit, and must be rigid so that its angle or shape is not influenced by air pressure when the car is in motion.

The rear wing is made of the following parts :

Main wing ; Guard plates; Vertical supports.

- It must be no wider than the overall width of the car.

- It must be mounted such that no part is higher than 965 mm above the Reference Surface (Flat bottom).
- The main wing must be contained within a parallelogram of 150 x 400 mm horizontally and must have a maximum of 2 elements.
- Vertical supports and guard plates must have a maximum length of 520 mm horizontally.
- The gap between the guard plates and the bodywork must never be less than 100 mm.
- The surfaces of the guard plates must not be curved and must be parallel to the longitudinal axis of the car.

Only for cars designed as from 1 January 2000 :
- It must be possible to remove the rear bodywork without disturbing the rear wing or its mounting in any way.

ARTICLE 4 : WEIGHT

4.1 Minimum weight

4.1.1) The weight of the car must not be less than 900 kg.

4.1.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the weight of any car to maximise equality of performance.

4.2 Ballast

Ballast must be secured such that tools are required for its removal and so as to allow the fixing of seals by the scrutineers.

4.3 Adding during the race

The adding to the car during the race of any solid material whatsoever or the replacement during the race of any part of the car with another which is materially heavier is forbidden.

4.4 Liquids

The weight may be checked at any time during the event with the quantity of liquids remaining in the tanks except after the race where the car will be emptied of all the fuel before weighing.

ARTICLE 5 : ENGINE

5.1 General

Provided the regulations in Articles 5.1 to 5.8 are complied with, the engine and ancillaries are free.

The make and type of engine used must remain identical to those specified on the technical form of the car.

5.2 Elements banned

5.2.1) Variable valve timing is not permitted.

5.2.2) Variable length inlet systems are not permitted.

5.2.3) Titanium is only permitted for connecting rods, valves and valve retainers.

5.2.4) The use of magnesium is not permitted.

5.2.5) The use of any ceramic component is forbidden.

5.2.6) The use of carbon or composite materials is restricted to clutches and non-stressed covers or ducts.

5.2.7) Only a direct mechanical linkage between the throttle pedal and the engine is permitted.

5.3 Normally aspirated engines

Engine types are limited to normally aspirated four-stroke, and rotary petrol engines.

5.3.1) Cylinder capacity :

The cylinder capacity is limited to 6000 cm^3.

5.3.2) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 1.

5.3.3) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.

5.3.4) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.

5.4 Supercharged engines

5.4.1) Cylinder capacity :

The maximum capacity of supercharged engines is 4000 cm^3.

5.4.2) The engine air intake system must be fitted with one or two air restrictors 3 mm long with maximum diameters set out in Appendix 1.

5.4.3) All restrictors must comply with drawing 254-4, or may incorporate between the restrictor and the inlet diameter of the supercharging device a single-piece, airtight cone.

Each cone must have a minimum 7 degrees opening angle.

On each end and over a maximum length of 10 mm, a curved shape is permitted.

At the base of each cone, a radius is permitted within the diameter of the restrictor and the diameter of the supercharging device.

5.4.4) All the air feeding the engine must pass through these restrictors, which must be made of metal or metal alloy.

5.4.5) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of these air restrictors to maximise equality of performance.

5.4.6) Supercharged cars must not be equipped with any device which allows the boost pressure, or the electronic management system controlling the boost pressure, to be adjusted while the car is in motion.

5.4.7) Variable diameter inlets and adjustable internal vanes on turbochargers are forbidden.

5.4.8) Maximum (absolute) supercharging pressure :

See table, Appendix 1.

5.5 Temperature of the charge

5.5.1) Intercoolers are free and may be used for cooling intake air.

Apart from intercoolers, any device, system, procedure, construction or design the purpose and/or effect of which is any decrease whatsoever of the temperature of the intake air and/or of the charge (air and/or fuel) of the engine is forbidden.

The pipes between the supercharging device, the intercooler and the manifold are free, but their only function must be to channel the intake air.

5.5.2) Internal and/or external spraying or injection of water or any substance whatsoever is forbidden (other than fuel for the normal purpose of combustion in the engine).

5.6 Cooling

The cooling system is free.

5.7 Exhaust

Provided the regulations in Articles 5.7.1, 5.7.2, and 5.7.3 are complied with, the exhaust system is free.

5.7.1) The noise generated by the car is not to exceed 110 dB (A) at 3800 rpm, or at three quarter maximum revs if less.

This will be measured at a distance of 0.5 m and at a 45 degree angle to the point of exit of the exhaust.

For front-engined cars having the exhaust exit on the side of the car, the noise will be measured at 90° from the side of the car.

All measures which are taken to ensure that the maximum noise limits are not exceeded must be permanent in nature, and must not be removed by the exhaust gas pressure.

5.7.2) The orifices of the exhaust pipes must be placed at a maximum of 450 mm and a minimum of 100 mm from the ground.

The exit of the exhaust pipe must be situated within the perimeter of the car and less than 100 mm from this perimeter, and aft of the vertical and transversal plane passing through the centre of the wheelbase.

Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns.

The exhaust system must not be provisional.

Exhaust gas may only exit at the end of the system.

Parts of the chassis must not be used to evacuate exhaust gases.

5.7.3) The exhaust system must be adequately isolated from the driver compartment.

5.8 Telemetry

The use of telemetry is forbidden.

ARTICLE 6 : FUEL PIPING, PUMPS AND TANKS

Provided the regulations in this Article are complied with, the fuel system is free.

6.1 Fuel tank

6.1.1) The fuel tank must be separated from the driver and the engine compartment by a firewall.

For safety reasons, the fuel tank must be installed between the two vertical and transversal planes touching the front of the front wheels and the rear of the rear wheels and two vertical planes parallel to and at a maximum distance of 675 mm from the central axis of the car.

The tank must be surrounded by a crushable structure at least 10 mm thick.

6.1.2) All fuel tanks must be rubber bladders conforming to or exceeding the specifications of FIA/FT3 or FIA/FT3 1999.
6.1.3) All rubber bladders must be made by manufacturers homologated by the FIA.
6.1.4) All rubber bladders shall have a printed code indicating the name of the manufacturer, the specifications to which the tank has been manufactured and the date of manufacture.
6.1.5) No rubber bladders shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another 2 years.

6.2 Fittings and piping

A radiator is permitted in the fuel circuit.
6.2.1) All fittings which constitute the walls of the tank (including air vents, inlets, outlets, tank fillers, inter-tank connectors and access openings) must be metal or composite fittings bonded into the fuel tank.
6.2.2) All fuel lines between the fuel tank and the engine must have a self-sealing breakaway valve.
This valve must separate at less than 50 % of the load required to break the fuel line fitting or to pull it out of the fuel tank.
6.2.3) No lines containing fuel, cooling water or lubricating oil may pass through the cockpit.
The air vent(s) and their valves may pass through the cockpit provided that they are made from aviation type material and do not have any connections, other than to the (tank/roof) bulkheads.
The vent and filler spouts may pass through the cockpit as close to the walls as possible.
Their pipes must be made from metal and their connectors from material identical to that used for the walls of the tank.
They must be isolated from the cockpit by means of a leakproof protection.
6.2.4) All lines must be fitted in such a way that any leakage cannot result in accumulation of fluid in the cockpit.
6.2.5) When flexible, all lines must have threaded connectors and an outer braid which is resistant to abrasion and flame.
6.2.6) All fuel and lubricating oil lines must have a minimum burst pressure of 41 bar at the maximum operating temperature of 135°C.
6.2.7) All hydraulic fluid lines which are not subjected to abrupt changes in pressure, with the exception of lines under gravity head, must have a minimum burst pressure of 41 bar at the maximum operating temperature of 204°C when used with steel connectors and 135°C when used with aluminium connectors.
6.2.8) All hydraulic fluid lines subjected to abrupt changes in pressure must have a minimum burst pressure of 70 bar at the maximum operating temperature of 204°C.
6.2.9) No hydraulic fluid lines may have removable connectors inside the cockpit.
6.2.10) The vent lines must be fitted with a gravity-activated roll-over valve.
All the fuel pumps must operate only when the engine is running, except during the starting process.
6.2.11) The air ducts must be made from a non-flammable material.

6.3 Fuel tank fillers

6.3.1) All cars must be fitted with fuel tank fillers and vents which must be combined or single units, installed or not on both sides of the car (in accordance with drawing 252-5; the interior diameter D must not exceed 50 mm).
Both fillers and air vents must be equipped with leakproof dry break couplings complying with the dead man principle and therefore not incorporating any retaining device when in an open position.
6.3.2) The tank fillers and vent holes must not protrude beyond the bodywork.
6.3.3) The tank fillers, vent holes, vents and breathers must be placed where they would not be vulnerable in the event of an accident.
6.3.4) Any vent or breather connecting the tank to atmosphere must exit on the outside of the bodywork, must be fitted with a non-return valve and must be designed in such a way as to avoid any liquid leakage when the car is running, upside down, or refuelling.
6.3.5) All cars must be fitted with a self-sealing connector which can be used by the scrutineers to obtain samples of the fuel feeding the engine.
This connector must be of the type approved by the FIA and must be fitted immediately before the injectors.

6.4 Refuelling during the race

6.4.1) Refuelling the car by any other means than gravity, with a maximum height of 2 metres above the track where the refuelling takes place, is forbidden throughout the event.
6.4.2) During the race, only one autonomous supply tank complying with drawing 252-7 must be used per car.
This tank must have a simple cylindrical internal shape and must not have any additional internal parts.
For safety reasons, this tank must be fixed, through a tower, onto a trolley with the following characteristics :
- all the tower components must be mechanically assembled without any degree of freedom in relation to the trolley
- the base of the trolley must have a surface area of at least 2 m^2 and must be made with a case fitted on 4 self-braking castors, ballasted with a weight greater than that of the tank filled with fuel.
A system for weighing the fuel may be applied through placing a weighing plate underneath the tank, provided that the characteristics set out above are respected.
A member for supporting the refuelling lines and air hoses may be attached to the trolley :
- it must be independent of the tank and of the tower.
- it is recommended that this member be allowed a degree of freedom in relation to the trolley (rotation following a vertical axis).
- it must not exceed 4 m in length and must allow a free passage of a height of 2 m over its entire length, including the accessories.
- an identification plate bearing the race number of the competing car must be fixed to its end.
A flow restrictor with the following dimensions:
- thickness: 2 mm
- maximum internal diameter: 33 mm
must be placed at the exit of the refuelling tank (see drawing 258-4).
6.4.3) Above the tank there must be an air vent system approved by the FIA.
6.4.4) The refuelling pipe, minimum length 250 cm, must be provided with a leakproof coupling to fit the filler mounted on the car, and during refuelling the outlet of the air vent must be connected with an appropriate coupling of the same diameter to the supply tank.
6.4.5) Before refuelling commences, the car and all metal parts of the refuelling system, from the coupling to the supply tank and its rack, must be connected electrically to earth by a manual contactor having no other function.
6.4.6) A 90° cut-off valve, situated on the outlet of the supply tank and controlling the fuel flow, must be manned at all times during refuelling.
A self-closing valve with an internal diameter of 38 mm must be fixed under the supply tank according to drawing 252-7.
6.4.7) All hoses and fittings used must have a maximum inside diameter of 1.5".
6.4.8) During practice, the standard supply tank or an unpressurised container not exceeding 25 litres capacity which is vented to air and has a leakproof coupling connecting it to the tank filler on the car can be used.
6.4.9) If a visible level is fitted to the tank, it must be fitted with isolating valves as close as possible to the tank.
6.4.10) The storing of fuel on board the car at a temperature less than 10°C below the ambient temperature is forbidden.
The use of a specific device, whether on board the car or not, to reduce the temperature of the fuel below the ambient temperature is forbidden.

6.5 Fuel capacity

6.5.1) The maximum amount of fuel which may be carried on board is 90 litres.
Any device, system, procedure, construction or design, the purpose and/or effect of which is to increase in any way whatsoever, even temporarily, the total fuel storage capacity beyond the maximum of 90 litres, is forbidden.
6.5.2) The right is reserved, by the Sporting Authority of the relevant Championship, to adjust the size of the fuel tank to maximise equality of performance.

ARTICLE 7 : LUBRICATION SYSTEM

Provided the regulations in this Article are complied with, the lubrication system is free.

7.1 Oil tanks

No vessel or line containing oil is permitted in the cockpit, more than 650 mm (external measurement) from the longitudinal centre line of the car, aft of the gearbox or in a vulnerable area.

If the oil tank is outside the wheelbase, it must be surrounded by a 10 mm thick crushable structure.

7.2 Catch tank

When a car's lubrication system includes an open type sump breather, it must vent into a catch tank of at least 3 litres capacity.

ARTICLE 8 : ELECTRICAL EQUIPMENT

Provided the regulations in this Article are complied with, the electrical system is free.

8.1 Battery

Batteries must be securely fixed and completely surrounded by a box made of insulating material. If located in the cockpit they must be in the place of the co-driver, and the protection box must include an air vent which exits outside the cockpit.

If the battery situated in the cockpit is a dry battery, it must be protected electrically by a cover which covers it completely.

8.2 Starting

A starter must be fitted and be in working order at all times during an event.

The driver must also be able to operate the starter when seated normally.

8.3 Lighting equipment

8.3.1) All lighting equipment must be in working order at all times during the Event.

8.3.2) Headlights :

The car shall be fitted with at least 2 headlights, the centres of which must be symmetrical around the longitudinal centre line of the car and separated by at least the width of the front track.

For safety reasons, it is obligatory for headlights to produce a white beam.

8.3.3) Rear lights and Stop lights :

The car shall be fitted with two rear lights and two stop lights located symmetrically around the longitudinal centre line of the car and separated by at least the width of the rear track.

8.3.4) Direction indicators :

The car shall be fitted with direction indicators fitted on either side at the front and at the rear.

8.3.5) Light for rain

All cars must have a red light of at least 21 watts, in working order throughout the event, which:

- is a model approved by the FIA.
- faces rearwards at 90° to the car centre line.
- is clearly visible from the rear.
- is mounted not more than 10 cm from the car centre line.
- is at least 35 cm above the reference plane.
- is no less than 45 cm behind the rear axle centre line, measured to the face of the lens and parallel to the reference plane.
- can be switched on by the driver when seated normally in the car.

The three measurements being taken to the centre of area of the lens.

ARTICLE 9 : TRANSMISSION

Provided the regulations in this Article are complied with, the transmission system is free.

9.1 Transmission to the wheels

9.1.1) Four wheel-drive is forbidden.

9.1.2) The location, position and orientation of the gearbox must remain identical to those specified on the technical form of the car, as well as its make and type.

The gearbox must comprise a maximum of 6 ratios and a reverse gear.

Sequential gearbox systems are allowed.

9.1.3) Viscous differentials are not considered to have hydraulic slip control, provided outside control is not possible when the car is in motion.

9.1.4) For safety reasons, the transmission must be designed in such a way that should the car be stopped and the engine stalled, it is possible to push or tow it.

9.2 Reverse gear

All cars must have a reverse gear which, at any time during the event, can be selected while the engine is running and used by the driver when seated normally.

9.3 Clutch

A conventional design, physically operated either mechanically or hydraulically by the driver, is mandatory.

ARTICLE 10 : SUSPENSION AND STEERING

10.1 Sprung suspension

Cars must be fitted with sprung suspension.

The anchorage points of the suspensions must not consist solely of bolts located through flexible bushes or mountings.

There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.

10.2 Suspension type and mounting

10.2.1) The position of the suspension anchorage points on the chassis must be identical to those specified on the technical form of the car.

10.2.2) The material, number and dimensions of the springs are free.

The modification of spring and shock absorber adjustments from the cockpit is prohibited.

10.2.3) Shock absorbers are free provided their number remains identical to the one specified on the technical form of the car.

10.3 Chromium plating

Chromium plating of steel suspension members is forbidden.

10.4 Suspension members

All suspension members must be made from a homogeneous metallic material.

Except for front-engined cars, a bar must mandatorily be fitted at the base of the front suspension wishbones if these are dangerous for the driver's legs.

10.5 Steering

The steering is free but must consist of a mechanical link between the driver and the wheels and must comply with the one specified on the technical form of the car.

The shape of the steering wheel is free but its rim must be continuously closed.

A quick-release steering wheel mechanism is mandatory.

10.6 Power steering

Power steering is permitted.

10.7 Four-wheel steering

The use of four-wheel steering is forbidden.

ARTICLE 11 : BRAKES

11.1 Separate circuits

With the exception of the restrictions set out below, the complete braking system is free provided it incorporates at least two separate circuits operated by the same pedal.

This system must be designed so that if leakage or failure occurs in one circuit, the pedal shall still operate the brakes on at least two wheels.

11.2 Brake discs

Carbon brake discs are prohibited.

A maximum of one brake disc per wheel is permitted, with a maximum of two pads.

11.3 Anti-lock braking and power braking

Any anti-lock braking function and any power braking function are prohibited.

11.4 Brake callipers

All the brake callipers must be made from aluminium alloy with a modulus of elasticity no greater than 80Gpa.

A single calliper, with a maximum of 8 pistons, is permitted on each wheel.

The section of each calliper piston must be circular.

ARTICLE 12 : WHEELS AND TYRES

12.1 Dimensions
12.1.1) Complete wheels :
Maximum width : 16".
Maximum diameter : 28.5".
Measurements will be taken horizontally at the height of the axle centre line.
12.1.2) Wheels :
The maximum authorised diameter of the rims is 18".
All the rims must be of the same diameter.

12.2 Wheel visibility
The complete wheel above the hub centre line must not be visible in plan view, with the wheels aligned for the car to proceed straight ahead.

12.3 Wheel material
Wheel material is free, provided that it is homogeneous and metallic.
The front wheel must weigh a minimum of 8 kg.
The rear wheel must weigh a minimum of 9 kg.

12.4 Number of wheels
The maximum number of wheels is four.

12.5 Wheel attachment
Wheel attachment is free but if a single wheel nut is used, a safety spring must be in place on the nut or on the stub axle whenever the car is running, and must be replaced after each wheel change.
These springs must be painted dayglo red or orange.
Alternatively, another method of retaining the wheels may be used, provided it has been approved by the FIA.

12.6 Pneumatic jacks
Pneumatic jacks may be fitted to the car, but compressed air bottles are not to be carried on board.

12.7 Pressure control valves
Pressure control valves on the wheels are forbidden.

ARTICLE 13 : COCKPIT

13.1 Cockpit
The cockpit shall be designed to ensure the best protection of the driver in the event of a crash or upset.

13.2 Cockpit opening
The cockpit opening (including the windscreen) must be at least 900 mm in width and 700 mm in length.
These measurements shall be maintained for at least 80% to provide for radii in the corners.
Nothing will be permitted on top of the cockpit opening.

13.3 Volumes for occupants' legs
Two volumes of equal dimensions, defined by flat, rectangular surfaces, symmetrical around the longitudinal centre line of the car, must be provided for the legs of both occupants.
The only components allowed to intrude into these volumes, any other being excluded, will be the steering column and its joints.
Measurements of the volumes (to be enforced on all dimensions):
a) Length : from the pedals to the vertical projection of the centre of the steering wheel.
b) Width : 330 mm minimum.
c) Height : 300 mm minimum.

13.4 Cockpit exit time
13.4.1) The cockpit must be designed so as to allow the driver to get out from his normal driving position in 7 seconds.
13.4.2) For the purposes of the above test, the driver must be wearing all normal driving equipment, the seat belts must be fastened and the steering wheel must be in place in the most inconvenient position.

13.5 Protection of the driver
The areas adjacent to the driver must include materials which provide an anti-penetrant barrier.

13.6 Lateral protections
The chassis-body structure must provide a lateral protection at least 500 mm high from the floor up to the cockpit opening and along the total length of the opening.
The vertical planes of the lateral protections must be separated by a minimum of 900 mm.

13.7 Cockpit isolation
The cockpit shall be separated from the fuel tank and from the engine compartment by means of metallic firewalls with no holes.

13.8 Equipment permitted in the cockpit
13.8.1) The following equipment alone is permitted in the cockpit but outside the two volumes prescribed in Article 13.4 :
- Safety equipment and structures
- Tool kit
- Seat(s)
- Controls necessary for driving
- Electronic equipment
- Driver cooling system
- Ballast
- Pneumatic jacks (no compressed air bottled to be carried on board)
- Battery(ies)
- Driver ventilation equipment

13.8.2) None of the above items may hinder cockpit exit.
13.8.3) The above components must be covered where necessary by a rigid protective material to minimise injury and must be attached such that they are able to withstand 25 g deceleration.

ARTICLE 14 : SAFETY EQUIPMENT

14.1 Fire extinguishers
The use of the following products is prohibited: BCF, NAF
All cars must be equipped with an extinguishing system homologated by the FIA in accordance with article 253-7.2, with the exception of the means of triggering.
A means of triggering from the outside must be combined with the circuit breaker switch and be operated by a single lever. It must be marked with a letter "E" in red inside a white circle of at least 100 mm diameter with a red edge.

14.2 Safety belts
The wearing of two shoulder straps, one abdominal strap and two straps between the legs is compulsory.
These straps must comply with FIA standard N°8853/98.

14.3 Rear view mirrors
Position free.
The car must be fitted with two rear view mirrors, one fitted on each side of the car, in order to give an efficient view to the rear. Each mirror must have a minimum area of 100 cm^2.
The scrutineers must be assured through a practical demonstration that the driver, seated normally, can clearly see the vehicles following him.
To this end, the driver will be asked to identify letters or figures, 15 cm high and 10 cm wide, displayed at random on boards placed behind the car according to the following instructions :
- Height : Between 40 cm and 100 cm from the ground.
- Width : 2 m one side or the other of the centre line of the car.
- Position : 10 metres behind the centre line of the rear axle of the car.

14.4 Seat and headrest
14.4.1) It must be possible to fit two seats of equal shape and size (excluding shoulder supports) symmetrically around the longitudinal centre line of the car.
14.4.2) All cars must be equipped with a headrest which cannot deflect more than 50 mm when a rearward force of 85 daN is applied.
The headrest surface must not be less than 400 cm^2 and must be continuous and without protruding parts.
It must be positioned so that it is the first point of contact for the driver's helmet in the event of an impact projecting his head backwards when he is seated normally.

14.5 Master switch
14.5.1) The driver, when seated normally with the safety belt fastened and the steering wheel in place, must be able to cut off all the electrical circuits by means of a sparkproof circuit breaker switch.
This switch must be clearly marked by a symbol showing a red spark in a white-edged blue triangle and be accessible by the driver with his safety belt fastened.
14.5.2) There must also be an exterior switch, with a handle which is capable of being operated from a distance by a hook.

This switch must be located at the lower part of the main rollbar on the driver's side.

14.6 Towing eye

14.6.1) Two towing eyes with an inner diameter of between 80 mm and 100 mm, and a thickness of at least 5 mm, must be securely fitted to the front and rear parts of the car's chassis.

14.6.2) They must be positioned in such a way that they can be used should the car be stopped in a gravel bed.

14.6.3) The towing eyes must be clearly visible and painted in yellow, red or orange.

14.6.4) If a lifting / towing area is located on the main rollbar, it must be clearly identified with a dayglo yellow surround.

ARTICLE 15 : SAFETY STRUCTURES

15.1 Magnesium

The use of magnesium sheet less than 3 mm thick is forbidden.

15.2 Survival cell

The chassis structure must include a survival cell extending from behind the fuel tank to a plane at least 150 mm in front of the soles of the driver's feet, with his feet resting on the pedals and the pedals in the inoperative position.

This survival cell must be from a type approved by the FIA.

A test certificate is drawn up by the FIA, according to the approval procedure featuring in appendix 2.

A copy of this certificate must be delivered by the manufacturer to the competitor.

15.3 Frontal absorbing structure

An impact absorbing structure must be fitted in front of the survival cell.

This structure needs not be an integral part of the survival cell but must be solidly attached to it.

This frontal absorbing structure must be from a type approved by the FIA.

A test certificate is drawn up by the FIA, according to the approval procedure featuring in appendix 2.

A copy of this certificate must be delivered by the manufacturer to the competitor.

15.4 Rollover structures

Front and rear rollover structures are mandatory and must be solidly attached to the survival cell or be part of it.

The front and rear structures must be separated by at least 760 mm longitudinally.

The driver's helmet must not extend higher than the line directly above the driver's head connecting the forward and rear rollover structures.

With the driver seated at the wheel, the rear rollover structure shall be at least 100 mm above the top of the driver's helmet.

In all cases, the tubes close to the driver must be padded with non-flammable foam approved by the FIA.

15.4.1) Material :

a) Rollover structures must be made of seamless mild steel or a higher-grade steel alloy.

The tubes must have a minimum outside diameter of 45 mm or 50 mm (1.75") and a minimum wall thickness of 2.3 mm or 2.5 mm (0.09").

b) The use of components of a different type and/or made from different materials from those specified in article 15.4.1a) is permitted, provided that their mechanical characteristics are equivalent or greater.

15.4.2) Front rollover structure :

It must meet the following requirements :

- be symmetrical in relation to the longitudinal centre line of the car.
- its upper part shall be 660 mm minimum above the flat bottom.
- no part of the steering wheel, whatever its position, may be higher than the rollover structure.

15.4.3) Rear rollover structure :

It must meet the following requirements :

- be symmetrical in relation to the longitudinal centre line of the car.
- have a minimum overall width of 900 mm at the level of the mountings on the survival cell.
- have a diagonal reinforcement bar starting from the top of the hoop on the driver's side and connected as a minimum to the middle point of the survival cell.
- have two rearward facing braces connected to the top of the hoop.
- the upper section of the rollbar must have a horizontal part of 500 mm minimum length measured transversally and shall be at least 1020 mm above the flat bottom.

Streamlining or fairing of the rear rollover structure is permitted no more than 200 mm measured longitudinally, and provided that any section of this streamlining or fairing is symmetrical relative to a longitudinal axis passing through the rollbar tubing centre at that section.

The fairing must not cover the rollbar mounting area over the survival cell, or have any aerodynamic influence.

15.4.4) All facilities must be made available for possible inspections by the scrutineers.

15.4.5)

- For cars built as from 01/01/2002 :

The rollover structures must comply with articles 15.4.1 to 15.4.4 and must be approved by the FIA.

A test certificate is drawn up by the FIA, according to the approval procedure featuring in appendix 2.

A copy of this certificate must be delivered by the manufacturer to the competitor.

- For cars built before 01/01/2002 :

The rollover structures must comply with articles 15.4.1 to 15.4.4 and must be approved by the FIA, unless the dimensions and/or material used are those specified in article 15.4.1a.

If articles 15.4.2 and 15.4.3 are not complied with, except with regard to the height, cars will nevertheless be accepted.

A test certificate is drawn up by the FIA, according to the approval procedure featuring in appendix 2.

Only the rear rollover structure must be the subject of a test certificate if the car was built before 01/01/2000.

15.5 Modification of a safety structure

Any modification made to a safety structure shall be submitted by the manufacturer or competitor to the prior examination of the FIA. The FIA will decide if a new approval procedure and therefore a new test certificate are necessary.

15.6 Firewall

Cars must be equipped with a firewall which is liquid-proof, flame-proof and gas-proof between the driver and engine to prevent the passage of flames from the engine compartment to the cockpit.

Any holes in the firewall must be of the minimum size for the passage of controls and wires and must be completely sealed.

15.7 Composite chassis

For any vehicle equipped with a composite chassis, any repairs to the survival cell or to the frontal protection must be carried out according to the manufacturer's specifications, in a repair centre approved by the manufacturer.

Any important damage must be entered on the technical passport.

ARTICLE 16 : FUEL

16.1 Fuel specification

The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:

- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.

The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.

- Specific gravity between 720 and 785 kg/m3 at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8% oxygen (or 3.7% if the lead content is less than 0.013 g/l) and 0.5% nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.

The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2%.

- Maximum content of peroxides and nitrooxide compounds:

100 ppm (ASTM D 3703 or in the case of impossibility UOP 33-82).
- Maximum lead content: 0.40 g/l or the standard of the country of the event if it is lower (ASTM D 3341 or D 3237)
- Maximum benzene content: 5% in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10% - 47% (ASTM D 86).
- Distillation at 100°C: 30% - 70% (ASTM D 86).
- Distillation at 180° C: 85% minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2% volume (ASTM D 86).

The fuel will be accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.

16.2 Air

Only air may be mixed with the fuel as an oxidant.

ARTICLE 17 : FINAL TEXT

The final text of these regulations is the English version which shall be used should any dispute arise over their interpretation.

ARTICLE 18 : MODIFICATIONS FOR 01/01/2002

3.6.3) Rear wing :

The primary device permitted for exerting downforce (negative lift) shall be a non-movable, adjustable wing carried at the rear of the car.
This wing must not be adjustable from the cockpit, and must be rigid so that its angle or shape is not influenced by air pressure when the car is in motion.
The rear wing is made of the following parts :
Main wing ; Guard plates; Vertical supports.
- It must be no wider than the overall width of the car measured at the rear axle centre line.

Appendix 1 : Restrictors for Normally Aspirated Engines (diameter in mm)

	5 valves / cylinder		More than 2 valves/cylinder		2 valves / cylinder				Rotary engines	
position of camshaft(s)					Overhead		In block			
number of restrictors	1	2	1	2	1	2	1	2	1	2
up to 3000 cm³	47,3	33,8	47,8	34,1	49,4	35,3	48,9	35,2	52,5	37,4
over 3000 cm³ and up to 3500 cm³	47,3	33,8	47,3	33,8	48,9	34,9	48,9	35,2	51,9	37,1
over 3500 cm³ and up to 4000 cm³	47,3	33,8	46,8	33,4	48,4	34,6	48,9	35,2	51,4	36,6
over 4000 cm³ and up to 4500 cm³			46,3	33,1	47,8	34,1	48,9	35,2	50,8	36,3
over 4500 cm³ and up to 5100 cm³			45,9	32,8	47,4	33,9	48,9	35,2	50,4	36
over 5100 cm³ and up to 5500 cm³			44,9	32,1	46,4	33,1	47,7	34,1	49,3	35,2
over 5500 cm³ and up to 6000 cm³			44,4	31,2	45,9	32,8	46,4	33,2	48,7	34,2

Restrictors for Supercharged Engines (Diameter in mm)

nombre de brides	1 restrictor	2 restrictors
More than 2 valves/cylinder	45,4	32,4
2 valves / cylinder	48,3	34,5

Supercharging pressure for Supercharged Engines (mbar)

Cylinder capacity (cm³)	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000
Max pressure (mbar) More than 2 valves/cylinder	3000	2730	2500	2310	2150	2000	1880	1770	1670	1580	1500
Max pressure (mbar) 2 valves/cylinder	3410	3100	2840	2630	2440	2270	2130	2010	1900	1790	1700

APPENDIX 2 : APPROVAL OF SAFETY STRUCTURES FOR SPORTS RACING CARS

ARTICLE 1 : APPROVAL PROCEDURE FOR SAFETY STRUCTURES

1.1 Safety structures

The following safety structures may be the subject of an FIA approval :

- Survival cell
- Frontal absorbing structure
- Front and rear rollover structures

1.2 Request for approval

In order to obtain the approval of one of the above-mentioned safety structures, the FIA must first of all receive a written request from the manufacturer or competitor at the following address:

FIA Technical Department
Chemin de Blandonnet 2,
CH1215 Geneva 15
Switzerland

For the tests described in article 2, no approval will be possible without an FIA technical delegate in attendance and without the use of measuring equipment verified by the FIA.

1.3 Approval procedure

- On receipt of the written request, the FIA will send a technical dossier to the manufacturer or competitor, to be filled in and sent back to the FIA.
- On receipt of this dossier, the FIA will decide if the necessary tests may be carried out.
- The manufacturer or the competitor will then propose to the FIA a date and venue for each test, and the FIA will appoint a technical delegate to supervise each of the scheduled tests.
- For each trip made by an FIA technical delegate, the manufacturer or competitor who made the request for approval will be charged 2500 CHF.
- On receipt of the report from the technical delegate, the FIA will draw up a certificate for each safety structure that has successfully undergone the tests necessary for its approval, and will send it to the manufacturer or competitor.
- The manufacturer or competitor will provide all information and documents that the FIA deems necessary for drawing up the certificates.

ARTICLE 2 : APPROVAL TESTS FOR SAFETY STRUCTURES

2.1 Survival cell

The survival cell must be subjected to three separate static load tests.

2.1.1) Side load tests on the survival cell :

A constant transversal and horizontal load of 2000 daN shall be applied through a ball-jointed junction at the centre of area of a pad :

- On a vertical plane passing halfway between the front wheel axis and the centre of the dashboard.
- In the cockpit area on a vertical plane passing through the centre of the seat belt lap strap fixing.
- In the fuel tank area on a vertical plane passing through the centre of area of the fuel tank in side elevation.

It must be applied in less than 3 minutes and maintained for a minimum of 30 seconds.

The survival cell must be fixed onto the test device in such a way that its transversal displacement is left free and its rigidity not modified.

This transversal displacement must be blocked through a pad identical to the one used to apply the load and positioned symmetrically relative to it (see diagram 1).

These pads must :

- be 100 mm long and 300 mm high, with a maximum radius on all edges of 3 mm
- conform to the shape of the survival cell at that section
- be placed against the outermost sides of the survival cell with the lower edge of the pad at the lowest part of the survival cell at that section.

It is permissible to place rubber 3 mm thick between the pads and the survival cell.

Under these load conditions, there shall be no structural failure of the inner or outer surfaces of the survival cell.

The deformation shall be measured at the top of the pads across the inner surfaces of the survival cell. and any permanent deformation must be less than 1 mm after the load has been released for 1 minute.

2.2 Frontal absorbing structure

The frontal absorbing structure must be subjected successively to a static side load test and a crash test.

2.2.1) Side load test on the frontal absorbing structure :

To test the attachments of the frontal absorbing structure to the survival cell, a static side load test shall be performed on a vertical and transversal plane passing 500 mm forward of the front wheel axle.

For this test, it is possible to use :

- The frontal absorbing structure and the front part of the survival cell extending to a minimum of 200 mm to the rear of the soles of the driver's feet in the inoperative position with the pedal box in its furthest forward mounting position. This part must be totally representative of the survival cell

or

- The frontal absorbing structure and the complete survival cell.

A constant transversal and horizontal load of 2000 daN must be applied to one side of the frontal absorbing structure using a pad identical to the one used in the side load tests on the survival cell.

The centre of area of the pad must pass through the vertical and transversal plane mentioned above and the mid point of the height of the structure at that section.

During that test, the front part of the survival cell or the complete survival cell must be solidly secured to a flat plate but not in such a way as to increase the strength of the attachments being tested, and must be blocked laterally through a pad of identical dimensions to the one used to apply the load, positioned before the junction with the frontal absorbing structure (see diagrams 2 and 3).

After 30 seconds of application, there must be no failure of the structure or of any attachment between the structure and the survival cell.

2.2.2) Crash test :

There are two possibilities for carrying out the crash test :

a) Crash testing of the frontal absorbing structure :

The frontal absorbing structure and the front part of the survival cell extending to a minimum of 200 mm to the rear of the soles of the driver's feet in the inoperative position with the pedal box in its furthest forward mounting position, must be subjected to an impact test against a solid, vertical barrier placed at right angles to the longitudinal axis of the car.

The frontal absorbing structure and the front part of the survival cell must previously have been subjected to the side load test described in article 2.2.1.

The front part of the survival cell to be tested must be solidly attached to the trolley in such a way as not to increase its impact resistance and must be totally representative of the survival cell.

For the purpose of the test, the total weight of the trolley and test structures shall be 900 kg (minimum weight defined in article 258A-4.1.1) + 150 kg and the velocity of impact 12 m/s.

During the test, the maximum average deceleration of the trolley must not exceed 25 g and the final deformation must be contained within the zone situated more than 100 mm ahead of the driver's feet.

b) Crash testing of the complete chassis :

The frontal absorbing structure and the complete survival cell must be subjected to the same crash test as described in article 2.2.2 a.

The frontal absorbing structure and the front part of the survival cell must previously have been subjected to the side load test described in article 2.2.1.

The entire cell must be solidly fixed to the trolley through its engine mounting points but not in such a way as to increase its impact resistance.

The fuel tank must be full of water.

A dummy weighing at least 75 kg must be installed in the survival cell with the safety belts defined in Article 14.2 fastened.

The person carrying out the test must check that, with the safety belts unfastened, the dummy must be able to move forwards freely in the cockpit.

The extinguishers, as described in article 258A-14.1, must also be installed.

For the purpose of the test, the total weight of the trolley and test structures shall be 900 kg (minimum weight defined in article 258A-4.1.1) + 150 kg and the velocity of impact 12 m/s.

During the test, the maximum average deceleration of the trolley must not exceed 25 g and the final deformation must be contained within the zone situated more than 100 mm ahead of the driver's feet.

In addition, there must be no damage to the mountings of the safety belts or fire extinguishers.

Furthermore, the peak deceleration in the chest of the dummy must not exceed 60 g for a cumulative time of more than 3ms, this being the resultant of the data from the three axes.

2.3 Rollover structures

Each rollover structure must be subjected to a specific static load test.

The loads to be applied on top of the structure are as follows:

For the front structure :

(only for cars built as from 01/01/2000)

- 5.0 w daN vertically.

For the rear structure :

(to be applied simultaneously)

- 1.5 w daN transversally
- 5.5 w daN longitudinally
- 7.5 w daN vertically.

with w equal to 900 kg (minimum weight defined in article 258A-4.1.1) + 150 kg.

The resultant of these loads shall be applied through a rigid flat pad with a diameter of 200 mm, positioned perpendicularly to the axis of this resultant.

If the front rollover structure is not directly accessible or is part of the survival cell, the load may be applied straight onto the survival cell, through a plate fitting the cell's local shape and it will be permissible to place rubber 3 mm thick between the pad and the survival cell.

The rollover structure must be attached to the survival cell.

The survival cell must be supported on its underside on a flat plate, fixed to it though its engine mounting points and wedged laterally by pads 100 mm wide by 300 mm long.

The deformation must be less than 50 mm, measured along the axis of load application, and any structural failure must be limited to 100 mm below the top of the rollover structure, measured vertically.

ARTICLE 259 - TECHNICAL REGULATIONS FOR PRODUCTION SPORTS CARS (GROUP CN)

ARTICLE 1 : DEFINITIONS

1.1 Production sports car
Two-seater competition automobile, open or closed, constructed especially for speed races.

1.2 Automobile
Land vehicle running on at least four non-aligned complete wheels, of which at least two are used for steering and two used for propulsion.

1.3 Land vehicle
Locomotive device, propelled by its own motive power by constantly taking real support from the ground surface, with propulsion and steering controlled by a driver on board the vehicle.

1.4 Bodywork
All those parts of the automobile which are wholly sprung, in contact with the external airstream, excepting those parts clearly associated with the mechanical function of the engine, the transmission or the running gear. All air intakes shall be considered to be part of the bodywork.

1.5 Automobile make
An automobile make corresponds to a complete vehicle. When a manufacturer fits an engine not manufactured by himself, the vehicle shall be considered as a hybrid and the name of the engine manufacturer shall be associated with the name of the car manufacturer. The name of the car manufacturer shall always precede that of the engine manufacturer. Should a hybrid win a Championship Title, Cup or Trophy, this will be awarded to the manufacturer of the automobile.

1.6 Event
An event shall consist of the official practice sessions and the race itself.

1.7 Weight
The weight is held to be that of the car without the driver at any moment during the event.

1.8 Wheel
Flange and rim.
Complete wheel: Flange, rim and tyre

1.9 Door
That part of the bodywork which opens to give access to the driver and passenger compartments.

1.10 Cockpit
Inner structural volume used to accommodate the driver and passenger.

1.11 Engine
Assembly constituted by the cylinder block, cylinders and cylinder heads.

1.12 Cylinder capacity
The volume swept by the movement of the pistons inside the cylinders of the engine. In calculations of cylinder capacity, the number π is held to be 3.1416.

1.13 Supercharging
Increasing the weight of the charge of the fuel-air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever. The injection of fuel under pressure is not considered to be supercharging.

1.14 Main structure
This is the fully sprung part of the structure to which the suspension and/or spring loads are transmitted, extending longitudinally from the foremost front suspension mounting on the chassis to the rearmost rear mounting.

1.15 Mechanical elements
All the elements necessary for propulsion, suspension, steering and braking, together with all the accessories, moving or not, which are necessary for the normal function of the above.

ARTICLE 2 : REGULATIONS

2.1 The following regulations governing the construction of Production Sports Car automobiles are issued by the FIA.

2.2 In October each year, the FIA will publish any changes made to these regulations. All such changes will take effect on the second January 1 following their publication. Changes made for safety reasons may come into force without notice.

2.3 Any automobile which is deemed to be dangerous may be excluded by the Stewards of the event.

2.4 It is the duty of each competitor to satisfy the Scrutineers and Stewards that his car complies with the regulations in their entirety at all times during the event. The competitor must be able to show the Scrutineers the Group A and N homologation form corresponding to the reference vehicle for the engine used, whenever the Scrutineers so request.

2.5 All measurements must be taken while the car is stationary on a flat horizontal surface.

2.6 The use of titanium is prohibited.

2.7 Only chassis made exclusively of metal, whether monocoque or tubular, are authorised; as far as the chassis is concerned, metal honeycomb constructions are authorised only for the flat bottom (see article 3.7.4).

2.8 All modifications not explicitly authorised are prohibited. Apart from these authorisations, the engine must be strictly series production and identifiable from the information given in the corresponding articles of the FIA homologation form. Therefore, any engine part damaged through wear or through an accident may only be replaced with an original part identical to the damaged part.

ARTICLE 3 : BODYWORK AND EXTERIOR DIMENSIONS

3.1 Length
The overall length of the car must not exceed 4800 mm.

3.2 Width
The overall width of the car including the complete wheels shall not exceed 2000 mm, when the steered wheels are in the straight ahead position.

3.3 Height
The height measured vertically from the lowest point of the flat surface as defined in article 3.7.4 to the highest part of the vehicle, shall not exceed 1030 mm, except as regards the rollover bar which must not constitute an aerodynamic element.

3.4 Overhangs
Front plus rear overhangs must not exceed 80 % of the wheelbase. The difference between the front and rear overhangs must not exceed 15 % of the wheelbase.

3.5 Doors
3.5.1) Closed cars:
Two doors are compulsory.
The doors when opened must afford free access to the seats. No mechanical element may hinder access to the seats. The external door handle on closed cars must be clearly indicated.
The dimensions of the lower panel (the part which is normally opaque) must be such as to allow a rectangle or a parallelogram at least 500 mm wide and 300 mm high, measured vertically, to be affixed. The corners of this rectangle or parallelogram may be rounded with a maximum radius of 150 mm.
Cars with sliding doors will be admitted only if they are fitted with a safety device enabling the occupants of the car to be evacuated quickly and easily.
The doors must include a window distinct from the panel mentioned

above, made of transparent material, and capable of containing a parallelogram with horizontal sides measuring at least 400 mm. The height measured on the surface of the window perpendicular to the horizontal sides shall be at least 250 mm. The corners of the parallelogram may be rounded to a maximum radius of 50 mm. Measurements shall be taken on the chord of the arc.
The doors must be designed in such a way that the lateral vision of the driver is never restricted.
Each door must have only one outside handle which must be of a lever type, operated by being pulling upwards, and which must be clearly indicated by an arrow in red or in another contrasting colour.
Door hinges must be designed in the form of pins which can be removed, without using tools, from the outside of the car.
3.5.2) Open cars:
Doors are optional.
If doors are fitted, they must comply with the dimensions stipulated in article 3.5.1 above (closed cars) as regards the opaque element.
If doors are not fitted, the bodywork at the side of the cockpit must comply with these same dimensions.

3.6 Windscreen

3.6.1) Closed cars:
A windscreen made of one piece of laminated glass or equivalent FIA approved material is compulsory.
The shape of the windscreen must be such that at a distance of 50 mm measured vertically downwards from the highest point of the transparent part, the glazed surface is at least 250 mm wide measured across the chord of the arc on either side of the longitudinal axis of the car.
The shape of the windscreen must be such that its upper edge forms a regular, continuous convex line.
It must be possible to affix to the windscreen a vertical band 100 mm high and 950 mm long (measured horizontally) across the chord of the arc between the inner faces of the windscreen, the centre of which shall be 300 mm (measured vertically downwards) from the highest point of the roof, excluding air intakes.
3.6.2) Open cars:
The windscreen is optional and dimensions are free, on condition that article 3.3 of these regulations is complied with.

3.7 Bodywork

3.7.1) The use of carbon fibre and/or kevlar for the manufacturing of the bodywork is prohibited.
However, rear aerodynamic devices comprising a wing (thus if, and only if, there is a flow of air between the bodywork and the device), including the supports, may be made from composite materials.
3.7.2) The bodywork shall cover all the mechanical components; only the exhaust and air intake piping, and the top of the engine, may project.
3.7.3) On closed cars, the height of the air intakes must not exceed that of the highest point of the roof; open cars must comply with article 3.3.
3.7.4) The bottom of all cars, rearward of the vertical plane tangent to the rear of the complete front wheels, and forward of the vertical plane tangent to the complete rear wheels, must be fitted with a continuous solid, flat (tolerance ± 5 mm), hard, impervious and rigid surface within which it would be possible to draw a rectangle 1000 mm (measured along the transverse axis of the car) by 800 mm (measured along the longitudinal axis of the car).
The whole of this surface must form an integral part of the chassis/body unit and must have no freedom of movement or provision for adjustment in relation to this unit. No space may exist between this "flat bottom" as defined above and the chassis/body unit.
To help overcome any manufacturing difficulties, a tolerance of ± 5 mm will be permitted for the "flat bottom" defined above. The aim of this tolerance is not to permit designs which go against the spirit of the "flat bottom".
3.7.5) No part having an aerodynamic effect, and no part of the bodywork may under any circumstances be located below the geometric plane of the flat surface provided for in article 3.7.4.
3.7.6) Any part having an aerodynamic effect, and all parts of the bodywork must be rigidly secured to the entirely sprung part of the car (chassis/body unit), must have no freedom of movement, must be solidly fixed and must remain immobile in relation to this part while the car is in motion.
3.7.7) Any device or contrivance designed to bridge the gap between the sprung part of the car and the ground is prohibited in all circumstances.
3.7.8) Behind the rear wheels, the bodywork must descend below the rear axle.
Any cooling holes in the bodywork which are directed rearward must be fitted with louvres or other similar devices to ensure that the tyres will not at any time be visible from the rear.
The bodywork shall project over the complete wheels in such a way as to cover at least one third of their circumference and their entire width.
3.7.9) All elements of the bodywork shall be completely and cleanly finished, with no temporary or makeshift elements.
3.7.10) In the case of open cars, the opening above the seats must be symmetrical in relation to the longitudinal axis of the car.
An open car must respect the following prescriptions:
- The shape of the bodywork seen from one side must be identical to the shape seen from the other side.
- Seen from above, the existence of a central element separating the driver from the passenger, even if this element is not connected to the bodywork at the backs of the seats, may be accepted as long as the cockpit opening is of the same size for both driver and passenger.
- The bodywork may be made of transparent material, but the rules regarding the windscreen must be complied with.
(see also article 13.8)
3.7.11) The clips fastening the front and rear covers must be clearly indicated by arrows in red or in another contrasting colour, and it must be possible to manipulate them without using tools.
3.7.12) The engine cover and its junction with the bodywork/cockpit must be designed so as to prevent any leakage of fuel into the interior of the engine compartment during refuelling.

ARTICLE 4 : WEIGHT

4.1 Cars must weigh at least the following weights, according to their engine capacity:

up to	1000 cm^3:			460 kg
over	1000 cm^3	and up to	1300 cm^3:	480 kg
over	1300 cm^3	and up to	1600 cm^3:	500 kg
over	1600 cm^3	and up to	2000 cm^3:	520 kg
over	2000 cm^3	and up to	2500 cm^3:	560 kg
over	2500 cm^3	and up to	3000 cm^3:	600 kg

4.2 Ballast may be used provided that it is secured in such a way that tools are required for its removal. It must be possible to affix seals if this is deemed necessary by the Scrutineers.
4.3 The adding of any solid material whatsoever to the car, or the replacement of any part of the car by a heavier part, is strictly prohibited during the race.
4.4 The weight of the car may be checked at any time during the event with the quantity of fluids remaining in the tanks. In case of doubt, the Scrutineers may drain the fuel tanks to check the weight.

ARTICLE 5 : ENGINE

5.1 Type of engine allowed

The engine must come from a model of car homologated by the FIA in Group N.
Cylinder capacity: less than or equal to 3000 cm^3.
Maximum number of cylinders: 6.
Cars with rotary piston engines covered by NSU-Wankel patents will be admitted on the basis of a piston displacement equivalence. This equivalence is 1.5 times the volume determined by the difference between the maximum and minimum capacities of the working chamber.
5.2 Supercharging of any kind whatsoever is prohibited.
5.3 Injection and spraying of water
Internal and/or external spraying or injection of water or any substance whatsoever is prohibited (other than fuel for the normal purpose of combustion inside the engine).

5.4 Temperature of the charge
Any device, system, procedure, construction or design the purpose and/or effect of which is to decrease in any way the temperature of the intake air and/or the charge (air and/or fuel) of the engine is prohibited.
5.5 Engine mountings - Position
The material, type and number of engine mountings are free, as are the position and incline of the engine in its compartment.
5.6 Ignition
The original ignition system (battery/coil or magneto) must be maintained. The make and type of plugs, the rev limiter and the high tension cables are free. Electronic control of the engine is free.
5.7 Lubrication
The lubrication system is free, on condition that it complies with articles 3.7.2 and 7.
5.8 Cooling
The cooling radiator and the lines connecting it to the engine are free, as are the thermostat and the fan, and their location. The water pump is free.
5.9 Fuel feed
Carburettor parts or fuel injection system parts regulating the quantity of fuel reaching the engine may be modified, provided that they have no influence on air admission. The original injection system must be maintained. The injectors may be changed for injectors which are identical except with regard to the size of the pintle nozzle hole at the end. Electronic control of the engine is free.
The air filter, along with its box, the plenum chamber and the lines connecting it to the engine, are free. The air filter and its box may therefore be removed, moved to a different position, or replaced. The air measuring device is free.
5.10 Exhaust
5.10.1) The exhaust is free after the cylinder head, but the interior dimensions of the exit from the original manifold must be maintained, and the maximum interior dimensions of the duct must be those of the exit from the manifold. This freedom must not enable the maximum sound levels permitted by the laws of the country in which the event is run to be exceeded.
5.10.2) The exhaust pipe outlets must be directed either rearwards or sideways. If the exhaust pipes are directed rearwards, their outlets shall be situated between 450 mm and 100 mm above the ground. If the exhaust pipes are directed sideways, their outlets must be located to the rear of a vertical plane passing through the wheelbase centre plane and may not project beyond the bodywork in any way.
5.11 Cylinder head gasket
The material is free, but not the thickness.
5.12 The accelerator control cable may be replaced or doubled, using another of unrestricted origin.
5.13 The engine flywheel is free.
5.14 Pulleys fitted outside the engine are free.

ARTICLE 6 : FUEL SYSTEM

6.1 Fuel specification
6.1.1) For petrol engines:
The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:
- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.
The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.
- Specific gravity between 720 and 785 kg/m3 at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.
The nitrogen content will be measured according to standard ASTM D 3228, and the oxygen content by elemental analysis with a tolerance of 0.2 %.
- Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 33-82).
- Maximum lead content: 0.40 g/l or the standard of the country of the event if this is lower (ASTM D 3341 or ASTM D 3237).
- Maximum benzene content: 5 % in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % - 47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180°C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).
The fuel being accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to allow the use of fuel not corresponding to the characteristics defined above.
6.1.2) For diesel engines:
Fuel must meet the following specifications:
- hydrocarbon content, % in weight: minimum 99.0
- density: maximum 0.860
- cetane index (ASTM D 613) or
calculated cetane index (ASTM D 976/80): maximum 60
6.1.3) Storage of fuel on board the car at a temperature of more than 10°C below the ambient temperature is prohibited.
The use of any device (whether on board the car or not) to reduce the temperature of the fuel below the ambient temperature is prohibited.
6.1.4) Only air may be mixed with the fuel as an oxidant.
6.2 Fuel lines, pumps and filters
6.2.1) Must have a minimum burst pressure of 41 bars (600 psi) and a minimum operating temperature of 135°C (250°F).
When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).
6.2.2) No lines containing fuel may pass through the cockpit.
6.2.3) No fuel pumps or fuel filters may be fitted inside the cockpit.
6.2.4) All fuel lines, filters and pumps must be positioned in such a way that any leakage cannot result in fuel entering the cockpit.
6.2.5) Automatic fuel-flow cut-off:
It is recommended that all fuel feed pipes going to the engine and return pipes from the engine be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.
The vent lines should also be fitted with a gravity activated roll-over valve.
All the fuel pumps should only operate when the engine is running, or during the starting process.
6.3 Fuel tank
6.3.1) Fuel tanks may not be positioned more than 65 cm from the longitudinal axis of the car and must be located within the limits defined by the front and rear wheel axes. The tank must be insulated by means of bulkheads preventing the fuel from passing into the cockpit or engine compartment or coming into contact with exhaust piping, in the event of spillage, leakage or any other accident occurring to the tank. Fuel tanks must be properly protected (see article 15.2).
6.3.2) For hill-climbs and slaloms if the total capacity of the fuel tanks is not greater than 20 l, the safety tank will not be compulsory on condition that the position of the tank does not protrude beyond 30 cm in any direction from the longitudinal axis of the car, and that it is surrounded by a crushable structure 1 cm thick. The safety tank is also optional for circuit races of less than 100 km under the same conditions of installation.
In other cases, cars must be equipped with fuel tanks which comply with or exceed FT3 or FT3 1999 safety specifications, and are supplied by an approved manufacturer.
6.3.3) On all tanks of this type, the name of the manufacturer, the specifications to which the tank has been manufactured and the date of manufacture must be printed.
6.3.4) No tank of this type may be used more than 5 years after

the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another two years.

6.4 Tank fillers and caps

6.4.1) All filler and vent caps must be designed to ensure an efficient locking action which reduces the risks of accidental opening following a crash impact or incomplete closing after refuelling.

6.4.2) The tank fillers, vents and caps must not protrude beyond the bodywork.

6.4.3) The tank fillers, vents and breathers must be placed where they would not be vulnerable in the event of an accident.

6.5 Refuelling

(Only for circuit races where refuelling is necessary)

The refuelling hose must be provided with a leak proof coupling to fit the standardised filler mounted on the car (in accordance with drawing 252-5; the interior diameter D must not exceed 50 mm).

Fillers and air vents must be equipped with leak proof dry break couplings complying with the dead man principle and therefore not incorporating any retaining device when in an open position (spring loaded balls, bayonet, etc.).

The air vent(s) must be equipped with non-return and closing valves having the same closing system as that of the standard filler, and the same diameter. During refuelling, the outlets of the air vents must be connected with the appropriate coupling, either to the main supply tank or to a transparent portable container with a minimum capacity of 20 litres provided with a closing system rendering it completely leak proof.

Should the circuits be unable to provide the entrants with a centralised system, these will have to refuel according to the above procedure. In no case may the level of the reserve tank exceed two metres above the track where the refuelling takes place, for the entire duration of the event.

The overflow bottles and the independent storage tanks must comply with drawings 252-1 or 252-2 and 252-3 or 252-4.

All metal parts of the refuelling system from the coupling over the flow meter to the tank and its rack must be connected electrically to the earth.

A 90° cut off valve situated close to the main supply tank, controlling the fuel flow, must be manned at all times during refuelling.

All hoses, valves, fittings and couplings used must have a maximum inner diameter of 1 1/2".

6.6 Fuel capacity

The maximum amount of fuel which may be carried on board is 100 litres. Any device, system, procedure, construction or design the purpose and/or effect of which is to increase in any way, even temporarily, the total fuel storage capacity beyond 100 litres, is prohibited.

ARTICLE 7 : OIL SYSTEM

7.1 Oil tanks

The quantity of oil carried on board must not exceed 20 litres.

7.2 No part of the car containing oil may be situated behind the complete rear wheels.

7.3 All oil tanks must be properly protected. All oil tanks situated outside the main structure of the car must be surrounded by a 10 mm thick crushable structure as defined in article 15.2.3.

7.4 Oil catch tank

If a car has a lubrication system which includes an open type sump breather, this must vent into a catch tank of at least 3 litres capacity. The catch tank must either be made of transparent material or include a transparent panel.

7.5 Oil lines

7.5.1) All lubricating oil lines must have a minimum burst pressure of 41 bars (600 psi) and a minimum operating temperature of 135°C (250°F).

When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).

7.5.2) No lines containing lubricating oil may pass through the cockpit.

ARTICLE 8 : ELECTRICAL EQUIPMENT

8.1 Batteries

Batteries must be located outside the cockpit. They must be securely fixed and completely protected inside a box made of insulating material.

8.2 Windscreen wiper

If the car has a windscreen, it must be fitted with at least one windscreen wiper which is in working order throughout the event.

8.3 Starting

A starter with an electrical or other power source must be carried on board the car: it must be possible for the driver to operate it when seated normally in the car. The starter must be capable of starting the engine at all times.

8.4 Lighting equipment

8.4.1) All lighting equipment must be in working order throughout the event, even if the event is run entirely in daylight.

8.4.2) All cars must be fitted with two red stop lights and two red rear lights. They must be located symmetrically on either side of the longitudinal axis of the car and must be mounted in a visible position.

8.4.3) For night races, all cars must be fitted with at least two headlights, and with direction indicators mounted at the front and rear of the vehicle (with side indicators mounted to the rear of the front wheel axle).

8.4.4) All cars must have at least one red rain light of at least 21 watts which must be in working order throughout the event, and which:

. faces rearward and is clearly visible from the rear;

. is mounted not less than 40 cm from the ground;

. is mounted not more than 100 mm from the car centre-line or, in the case of two lights, are mounted symmetrically on either side of the longitudinal axis of the car on the bodywork behind the rear wheels in frontal projection;

. has a minimum surface of 50 cm^2;

. can be switched on by the driver when he is seated normally in the car.

In addition, the lenses and reflectors must conform to standards EEC 77/538 or ECE 38 for rear fog lamps of motor vehicles and must carry the corresponding approval marking.

8.5 Cables

All electrical circuits must be enclosed in fire-resistant material.

8.6 Alternator

The alternator is free.

ARTICLE 9 : TRANSMISSION

9.1 Gearbox

Free, but the maximum number of gearbox ratios is 5, not including the reverse gear. All cars must have a reverse gear which must be in working order throughout the event. It must be possible for the driver to select reverse gear while seated normally at the wheel and with the engine running. Transverse gearboxes and semi-automatic and automatic gearboxes are prohibited.

9.2 Clutch

Free, but with a maximum of two discs. These discs must not be made from carbon.

9.3 Differential

Free, but electronically, pneumatically or hydraulically controlled slip differentials are prohibited.

9.4 Four-wheel drive cars are prohibited.

ARTICLE 10 : SUSPENSION

10.1 All road wheels/axles must be suspended from the chassis/body unit by a springing medium (i.e. axles or wheels must not be connected directly to the chassis/body unit). The springing medium must not consist of bolts located through flexible bushes or flexible mountings. There must be independent movement of the axles/hub carriers/stub axles giving suspension travel from "bump" to "droop" in excess of the flexibility of the mounting location attachments.

10.2 Active suspension

Active suspension systems are prohibited, as are all systems enabling the flexibility of springs, shock absorbers and the ground

clearance height of the car to be controlled while the car is in motion.

10.3 Chromium-plating of steel suspension elements is prohibited.

10.4 Suspension parts made partially or completely from composite materials are prohibited.

ARTICLE 11 : BRAKES

11.1 All cars must have a braking system which has at least two separate circuits operated by the same pedal. The system must be designed in such a way that in case of leakage or failure on one of the circuits, the pedal continues to operate the brakes on at least two wheels.

11.2 Carbon brake disks are prohibited.

ARTICLE 12 : WHEELS AND TYRES, STEERING

12.1 The maximum width of the complete wheel is 16".
This measurement shall be taken horizontally at the height of the axle with the tyre at normal running pressure and with the car in running order with the driver on board.

12.2 The number of wheels is fixed at four.

12.3 A safety spring must be in place on the wheel nut throughout the duration of the event and must be replaced after each wheel change. These springs must be painted dayglo red or orange. Alternatively, any other wheel-retaining device which has been approved by FIA must be used throughout the event.

12.4 Cars equipped with four-wheel steering systems are prohibited.

12.5 Pressure control valves on the wheels are prohibited.

12.6 The use of wheels equipped with a tyre-retaining device is recommended.

12.7 There must be a continuous mechanical connection between the steering wheel and the steered wheels.

12.8 Wheels made partially or entirely from composite materials are prohibited.

ARTICLE 13 : COCKPIT

13.1 The structural volume of the cockpit must be symmetrical about the longitudinal centre-line of the car.

13.2 Up to a height of 300 mm from the floor, the driver in his normal driving position must be located on one side of the longitudinal centre-line of the car.

13.3 Elbow width
The minimum elbow width in the cockpit must be 110 cm, maintained over a height of 10 cm and a length of 25 cm. This measurement shall be taken horizontally, and perpendicular to the longitudinal centre-line of the car.

13.4 Footwells
13.4.1) The car must have two footwells, defined as two free symmetrical volumes on either side of the longitudinal centre-line of the car, each one having a minimum vertical cross-section of 750 cm^2.
This cross-section must be maintained from the pedal faces to the vertical projection of the centre of the steering wheel.
13.4.2) The minimum width of each footwell is 250 mm and this width must be maintained over a height of at least 250 mm.

13.5 Equipment permitted in the cockpit
13.5.1) The only components which can be fitted in the cockpit are the following:
. Safety equipment and structures
. Electronic equipment
. Driver cooling system
. Tool kit
. Seat and controls required to drive the car.
13.5.2) Each and all of these elements must nevertheless respect the 750 cm^2 free footwell sections on each side of the centre-line of the car, and must not restrict access through the doors.
13.5.3) These components must be covered by a rigid protection if they have sharp edges which may cause injury. Their fastenings must be able to withstand a 25 g deceleration.

13.6 Ventilation
The cockpits of all closed cars must be fitted with a fresh air inlet and a used air outlet.

13.7 Pedals
The soles of the driver's feet, when he is seated in the normal driving position with his feet on the pedals and with the pedals in the inoperative position, shall not be situated forward of the vertical plane passing through the centre-line of the front wheels. Should the car not be fitted with pedals, the driver's feet at the maximum forward extension shall not be situated forward of the vertical plane mentioned above.

13.8 Cockpit opening
In open cars, the openings which correspond to the driver and passenger seats must enable the horizontal template defined in drawing 259-2 to be placed vertically within the cockpit, with the steering wheel removed.
It must be possible to lower the template to a point 25 mm below the lowest point of the cockpit opening.

13.9 Lines in the cockpit
No lines containing fuel, cooling liquid, lubricating oil or hydraulic fluid may pass through the cockpit. Only brake lines with no connectors installed within the cockpit may pass through the cockpit.
All lines containing hydraulic fluid, with the exception of lines under gravity head only, must have a minimum burst pressure of 70 bars (1000 psi) or higher according to the operating pressure, and a minimum operating temperature of 232°C (450°F).
When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).

13.10 Steering wheel
The steering wheel must be fitted with a quick release mechanism. Its method of release must be by pulling a concentric flange installed on the steering column behind the wheel.

ARTICLE 14 : SAFETY EQUIPMENT

14.1 Fire extinguishers
14.1.1) All cars must be fitted with two fire extinguishing systems, one which will discharge into the cockpit and one into the engine compartment.
14.1.2) Permitted extinguishants:
BCF (C F2 Cl Br)
NAF S3
NAF P
Any AFFF which has been specifically approved by the FIA (see "Technical List n° 6").
Dry powder is also permitted but only on cars being used in or coming from countries where national regulations preclude the use of the above products.
14.1.3) Minimum extinguisher capacity:
- For BCF, NAF S3, NAF P:

	Closed cars:	Open cars:
Cockpit:	1.65 litres	3.30 litres
Engine:	3.30 litres	1.65 litres

- For AFFF: The capacity may vary according to the type used (see "Technical List n° 6")

14.1.4) Minimum quantity of extinguishant:

		Closed cars:	Open cars:
BCF:	Cockpit:	2.5 kg	5.0 kg
	Engine:	5.0 kg	2.5 kg
NAF S3:	Cockpit:	2.0 kg	4.0 kg
	Engine:	4.0 kg	2.0 kg
NAF P:	Cockpit:	2.0 kg	4.0 kg
	Engine:	4.0 kg	2.0 kg
Powder:	Cockpit:	1.2 kg	2.4 kg
	Engine:	2.4 kg	1.2 kg

AFFF: The quantity may vary according to the type used (see "Technical List n° 6")
14.1.5) Discharge time:
Engine: 10 seconds minimum / 40 seconds maximum.

Cockpit: 30 seconds minimum / 80 seconds maximum.
Both extinguishers must be released simultaneously.
14.1.6) All extinguishers must be pressurised according to the contents:
BCF: 7.0 bar
NAF S3: 7.0 bar
NAF P: 7.0 bar
Powder: 13.5 bar
AFFF: The pressure may vary according to the type used (see "Technical List n° 6")
Furthermore, in the case of an AFFF, each extinguisher must be equipped with a means of checking the pressure of the contents.
14.1.7) The following information must be visible on each extinguisher:
- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after the date of filling or the date of the last check.
14.1.8) All extinguishers must be adequately protected and must be situated within the survival cell. In all cases their mountings must be able to withstand a deceleration of 25 g.
All extinguishing equipment must withstand fire.
It is strongly recommended that fire-resistant pipes are used: plastic pipes are discouraged and pipes made from metal are strongly recommended.
14.1.9) Any triggering system having its own source of energy is permitted, provided it is possible to operate all extinguishers should the main electrical circuits of the car fail.
The driver must be able to trigger all extinguishers manually when seated normally with his safety belts fastened and the steering wheel in place.
Furthermore, a means of triggering from the outside must be combined with the circuit-breaker switch, or situated close to it. It must be marked with a letter "E" in red inside a white circle of at least 10 cm diameter with a red edge.
14.1.10) The system must work in any position, even when the car is inverted.
14.1.11) Both extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the driver.

14.2 Safety belts

14.2.1) The wearing of a safety belt comprising two shoulder straps, one lap strap and two straps between the legs is compulsory.
These straps must comply with FIA standard n°8853/98.
14.2.2) Points of anchorage to bodyshell: two anchorage points for the lap strap, two (or one anchorage point symmetrical about the seat) for the shoulder straps, two for the straps between the legs.

14.3 Rear view mirrors

The car must be fitted with two rear-view mirrors, one fitted on each side of the car in order to give an effective view to the rear. Each mirror must have a minimum area of 100 cm^2.

14.4 Headrest

14.4.1) A headrest with a minimum area of 400 cm^2 must be fitted to all cars. Its surface must be continuous, without any protruding parts.
14.4.2) The headrest must not deflect more than 5 cm under an 85 kg rearward force.
14.4.3) The headrest shall be located in a position such that it will be the first point of contact with the driver's helmet in the event of an impact projecting the driver's head rearwards when he is in the normal driving position. The distance between the driver's helmet and the headrest should be kept to a minimum so that the helmet will move less than 5 cm under the above-mentioned force.

14.5 Circuit breaker

The driver, when seated normally with his safety belts fastened and the steering wheel in place, must be able to shut off all the electrical circuits and stop the engine by means of a spark-proof circuit-breaker.
The internal switch must be marked by a symbol showing a red spark in a white-edged blue triangle.
There must also be a clearly indicated external handle which emergency service personnel can operate from a distance by means of a hook. For closed cars, this handle must be located at the lower part of the windscreen pillar on the driver's side, and for open cars, at the lower part of the pillar of the rollover structure on the driver's side.

14.6 Towing eye

14.6.1) A towing eye with minimum inner diameter of 80 mm must be securely fitted to the front and rear structures of the car.
14.6.2) The towing eye must be placed in such a way that it can be used should the car be stopped in a gravel bed.
14.6.3) The towing eye must be clearly visible and painted yellow, red or orange, and must be located within the contour of the bodywork as viewed from above.

ARTICLE 15 : SAFETY STRUCTURES

15.1 Rollover structures

15.1.1) Closed cars:
The car must be fitted with two rollbars, one to the front and one behind the chest of the driver and passenger. Both rollbars must correspond in shape to the inner profile of the upper part of the cockpit, and must be connected at the top by at least one tubular member (preferably two, with junctions as far apart as possible) or a box member. In addition, the rear rollbar shall comprise at least one diagonal reinforcing member and two backstays directed rearwards (see drawing 259-3).
The various authorised diagonal members are MQ, MS, NP, and NR, but it is preferable that the upper extremity of the diagonal of the main rollbar should be situated on the driver's side.
This structure must be made exclusively of steel tubing with the following minimum characteristics:
- Cold drawn seamless
carbon steel Diam. 45 x 2.5 mm
Minimum yield: 350 N/mm^2 for cars built after 01.01.98.
Minimum yield: : 300 N/ mm^2 for the other cars.
- Alloy steel type 25 CD4 Diam. 40 x 2.5 mm
SAE 4125, SAE 4130, CDS 110
Yield strength: 500 N/ mm^2
Rollbars must be covered with protective fire-resistant anti-shock foam.
15.1.2) Open cars:
Included as open cars, are all cars which do not possess a supporting structure between the top of the windscreen pillars and those of the rear window (if fitted).
The main rollbar behind the front seats must be symmetrical about the longitudinal axis of the car, and meet the following dimensional criteria:
- Height: the top of the rollbar must be 5 cm higher than the top of the driver's helmet when the driver is seated normally at the wheel.
- Width: measured between the inside faces of the vertical members of the rollbar, the width should be at least 20 cm measured 60 cm above the driver's and passenger's seats (on a straight line perpendicular to the vertebral column) from the longitudinal axis of the seat towards the outside.
- Longitudinal position: the longitudinal distance between the top of the rollbar and the helmet of the driver seated normally at the wheel must not exceed 25 cm.
The rollbar structure should conform to drawing 259-1, to the table given in article 15.1.1, to the specifications relevant to removable connections and to the general remarks, as well as to those concerning the diagonal strut of the main rollbar and the presence of anti-shock foam. The fitting of frontal struts directed forward and designed to protect the driver is authorised for open cars, provided that the struts are removable.
15.1.3) The manufacturer of the car may submit a safety cage of his own design to an ASN for approval as regards the quality of steel used, the dimensions of the tubes, the optional reinforcing members and the mounting to the vehicle, provided that the construction is certified to withstand the stress minima given hereafter in any combination on top of the safety cage:
- 1.5 W* lateral;
- 5.5 W fore and aft;
- 7.5 W vertical.

("W = weight of the car + 75 kg).
A homologation certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the event's scrutineers. It must contain drawings or photos of the safety cage in question including its fixation and particularities, and must declare that the rollcage can resist the forces specified above.
Any new cage which is homologated by an ASN and is on sale, as from 01.01.97, must be identified by means of an individual number affixed to it by the manufacturer; this number must be neither copied nor moved. A certificate bearing the same number will be attached to each of the cages by the manufacturer. This certificate must also be presented to the event's scrutineers.
These safety cages must not be modified in any way.

15.2 Crushable structures

15.2.1) The bottoms of fuel tanks must be protected by a crushable structure at least 1 cm thick.
15.2.2) If the fuel tank is situated less than 20 cm from the sides of the car, the entire lateral surface must be protected by a crushable structure at least 10 cm thick.
15.2.3) The crushable structure must be of a sandwich construction incorporating a fire-resistant core with a minimum crush strength of 18 N/ cm^2, and of two sheets at least 1.5 mm thick, one of which is made from aluminium alloy with a minimum tensile strength of 225 N/ mm^2 and minimum elongation of 5 %, or, alternatively, two sheets at least 1.5 mm thick with a minimum tensile strength of 225 N/ mm^2.
15.2.4) Only water pipes may pass through the crushable structures; fuel or oil lines or electrical cables must not.

15.3 Firewall and floor

15.3.1) Cars must be fitted with a firewall placed between the driver and the engine to prevent flames passing from the engine compartment into the cockpit. Any openings made in the firewall must be the minimum size necessary to allow the passage of controls and cables, and must subsequently be completely sealed.
15.3.2) The floor of the cockpit must be designed in such a way as to protect the driver against gravel, oil, water or any other debris thrown up from the road or coming from the engine.
15.3.3) The floor panels or separation bulkheads must be properly vented to avoid the accumulation of fluids.

15.4 Frontal protection

The chassis must include an impact-absorbing structure installed in front of the driver's and passenger's feet. This structure must be independent of the bodywork and, if it is removable, it must be securely fixed to the edges of the side box members of the main chassis (i.e. by means of bolts requiring the use of tools for removal).
The structure must have a minimum length of 30 cm, a minimum height of 15 cm at any vertical cross section and a minimum total section of 800 cm^2.
The structure must be made from a metallic material with a minimum tensile strength of 225 N/ mm^2; construction should be of the sandwich and honeycomb type with a skin thickness of at least 1.5 mm. It must constitute a box the panels of which must be at least 15 mm thick, or, if the radiator(s) is (are) incorporated into the structure, two continuous box members with a minimum section of 100 cm^2 on either side of the radiator(s). All holes and cut-outs in this structure must be strongly reinforced and all material sections through these holes must still comply with the minimum material area requirements.

ARTICLE 16 : FINAL TEXT

The final text of these regulations is the French text, which shall be referred to in the event of any disagreement as to interpretation.

ARTICLE 261 - SPECIFIC REGULATIONS FOR PRODUCTION CARS ON CIRCUITS (SUPER PRODUCTION)

ARTICLE 1 : DEFINITION

Large scale series production touring cars.

ARTICLE 2 : HOMOLOGATION

At least 2500 fully identical units must have been produced in 12 consecutive months and homologated by the FIA in Production Cars (Group N).
Supply Variants (VF) homologated in Touring Cars (Group A) are also valid in Production Cars (Group N).
Option Variants (VO) of the Touring Cars (Group A) form shall not be valid in Production Cars (Group N), unless they refer to:
- fuel tank;
- sun roof;
- safety rollcage;
- seat supports and anchorages;
- safety harness mounting points;
- 2/4-door versions.

The use of tanks homologated in VO on the Touring Car (Group A) form must be carried out under the conditions of Article 5.9.2 of the Touring Car (Group A) regulations, and Article 254.6.8.
Evolutions of the type (ET), kit variants (VK) and sporting evolutions (ES) homologated in Group A are not valid in Production Cars (Group N), neither in Super Production.
Nevertheless, evolutions of the type and the sporting evolutions homologated in Group A as from 01.01.97 are valid in Group N.

ARTICLE 3 : NUMBER OF SEATS

Cars must have at least four places, in accordance with the dimensions defined for Touring Cars (Group A).

ARTICLE 4 : MODIFICATIONS AND ADJUNCTIONS ALLOWED OR OBLIGATORY

All modifications which are not explicitly allowed by the present regulations are forbidden.
An authorised modification may not entail a non-authorised modification.
The only work which may be carried out on the car is that necessary for its normal servicing, or for the replacement of parts damaged through wear or accident.
The limits of the modifications and fittings allowed are specified hereinafter.
Apart from these, any part damaged through wear or accident can only be replaced by an original part identical to the damaged one.
Throughout the car, any bolt, nut or screw may be replaced by any other bolt, nut or screw, provided that they are made from the same family of material and have the same diameter and thread as the original part and have a locking device of any kind (washer, lock nut, etc.).
The cars must be strictly series production models identifiable from the homologation form data.
Articles 251, 252 and 253 of the FIA Appendix J remain applicable, but the articles modified in the present regulations have predominance.
The use of titanium is prohibited unless expressly authorised by the regulations.

ARTICLE 5 : MINIMUM WEIGHT

The minimum weight of the car, including the driver and his full equipment, is:
- 1110 kg for a front-wheel drive car
- 1140 kg for a rear-wheel drive car

These minimum weights must be respected at all times during the event, in particular when the car crosses the finish line.
It is permitted to complete the weight of the car by one or several ballast, provided that they are strong and unitary blocks, fixed by means of tools with the possibility of affixing seals, and placed on the floor of the cockpit or the luggage compartment, visible and sealed by the Scrutineers.
The ballast must be attached to the shell/ the chassis via 8.8 class bolts, with a minimum diameter of 8 mm and counterplates, according to drawing 253-52.
The minimum area of contact between shell/chassis and counterplate is 40 cm^2 for each fixing point.

ARTICLE 6 : SAFETY PRESCRIPTIONS

The safety prescriptions for Group N cars, as specified in Article 253 of Appendix J, are applicable.

6.1 Additional fasteners

Two additional safety fasteners must be fitted for each of the bonnet and boot lids.
The original locking mechanisms must be rendered inoperative or removed.

6.2 Driver's seat

The original driver's seat must be replaced by an FIA-homologated competition bucket seat (8855/1992 or 88551999 standards) with five (5) passages for the safety harness straps.
The seat must be mounted by means of at least four (4) M8 bolts of at least 10.9 quality.
Seat attachments complying with the technical specifications for Super Touring Cars (Article 262 of Appendix J) are authorised and recommended without modifications to the homologated shell.
The original seat mountings may be removed.
The use of the competition seat mountings homologated with the bucket seat is recommended.

6.3 Safety harness

A safety harness equipped with a turn buckle release system and having a minimum of five (5) anchorage points, homologated by the FIA in accordance with Article 253.6 of Appendix J, is compulsory.

6.4 Rollover structures

A rollcage complying with Article 253.8 of Appendix J is compulsory.
The rollbar tubes situated near the driver must be equipped with a protective sleeve.
This non-flammable protective sleeve must be provided for within a perimeter of 50 cm, around the head of the driver seated in the driver's seat with his harness fastened.

6.5 Extinguishers - extinguishing systems

Hand-operated extinguishers homologated in accordance with Article 253.7 of Appendix J, of a minimum capacity of four (4) kg, are compulsory.
The extinguishing systems, in accordance with the technical specifications for Super Touring Cars, are authorised and recommended.

6.6 Protective nets

a) Net :
A protective net is recommended.
If one is fitted, it must meet the following specifications :
The net must be made up of woven strips at least 19 mm (3/4") wide. The meshes must be a minimum of 25 x 25 mm and a maximum of 60 x 60 mm. The woven strips must be non-flammable and sewn together at each point of crossing. The net must not be of a temporary nature.
b) Fixation :
The net must be attached either to the driver's door or to the rollcage, above the driver's window, and be affixed by means of a rapid

release system, even if the car turns over.
It must be possible to detach the net with one hand.
To this end, the handle or lever must have coloured markings (orange "dayglo").
A push button release system is authorised provided that it respects the prescriptions of this article.
The push buttons must be visible from the outside, be of a contrasting colour and be marked "press".
For the attachment of the net or of its rollcage support, only screw-in connections are authorised.
No modifications to the rollcage are authorised.

ARTICLE 7 : ENGINE

7.1 Cylinder capacity
The cylinder capacity must not exceed 2000 cm^3.
With respect to the bore (Art. 314 of the Homologation form), a production tolerance of 0.05 mm at the level of the fire zone and a wear tolerance of 0.1 mm below the fire zone are authorised, provided that the total cylinder capacity does not exceed 2000 cm^3.

7.2 Ignition
The make and type of the spark plugs, rev limiter and high-tension leads are free. The ignition components in the electronic control unit are free.

7.3 Cooling system
The thermostat is free, as is the control system and the temperature at which the fan cuts in.
The radiator cap and its locking system are free.
Provided that they are fitted in the original location without any modification to the bodywork, the radiator and its attachments are free, as are the screens and the air cooling lines upstream of the radiator.
The original expansion chambers may be replaced by others provided that the capacity of the new chambers does not exceed 2 litres and that they are placed in the engine compartment.
The liquid cooling lines external to the engine block and their accessories are free.
Lines of a different material and/or diameter may be used.
However, this freedom does not allow for the suppression of systems, such as, for example, the heating system, the preheating of the manifold or the preheating of the feed system.
The internal diameter of these lines may be more than, but under no circumstances less than, that of the original.
The radiator fans are free.
The oil radiators and their connections are free, provided that they do not give rise to any modifications to the bodywork and are situated within the perimeter of the bodywork.
7.3.1) Heating system :
The original heating apparatus may be replaced by another.
The water feed of the internal heating device may be blocked off in order to prevent the spraying of water in the event of an accident, if an electric or similar demisting system is available.

7.4 Fuel and air feed
The original injection system must be retained.
The electronic injection control unit is free.
Only the original intake system comprising a maximum of two (2) throttle valves is authorised.
Variable intake systems are prohibited. If the vehicle is originally equipped with such a system, it must be removed or rendered inoperative.
The accelerator cable may be doubled or replaced by another. Only a direct mechanical linkage between the throttle pedal and the throttle valve control is permitted.
If an electric throttle is homologated on the basic car, it must be rendered inoperative; a new pedal may be installed.
The flow rate of the injectors is free, but their original number, operating principle and position must be retained.
The sensors and actuators of the electronic control unit are free.
The design and production of the sound wheel for the sensors are free, as is the modification of any existing wheel.
At least one lambda probe and its control unit are compulsory.
None of these authorised modifications may have an effect on the quantity of air reaching the engine.
With regard to the engine rev (r.p.m.) signals and their transfer, only the engine speed signals may be transmitted and connected to the engine control unit.

7.5 Air filter
All the combustive air reaching the engine must pass through an air filter box.
The air lines upstream of the air filter box are free and the air lines downstream of the air filter box towards the throttles are free.
The air filter box is free under the following conditions:
- One air intake only, of a max. diameter of 80 mm or a maximum surface of 50 cm^2 is authorised.
This surface must be measured in at least one plane between the air intake and the air filter box.
- There must be a filtering cartridge in the box.
This cartridge is free as long as it filters the dust particles;
- All the air admitted to the engine must pass through this air filter;
- One air outlet only is authorised.
- The use of fibreglass-based composite material is authorised, provided that it is fire-resistant.
The position of installation of the air filter box in the engine compartment is free.

7.6 Lubrication
The fitting of baffles in the oil sump is authorised.
An oil deflector may be fitted between the plane of the oil sump gasket and the engine block, provided that the distance separating the planes of their joints is not increased by more than 6 mm.
The fitting of an oil filter, or a cartridge, in working order is mandatory, and the entire oil flow must pass through this filter or cartridge. This flow may be greater than the original one.
The filter, or the cartridge, is free provided that it is interchangeable with the original filter or cartridge.
An air/oil separator may be mounted outside the engine (minimum capacity 1 litre) in accordance with drawing n° 255-3.
The oil must flow from the oil catch tank towards the engine by the force of gravity alone.
The vapours must be re-aspirated by the engine via the intake system.
In order to allow the fitting of lubrication temperature sensors (gearboxes, differential casing, etc.), holes or threaded orifices of a max. diameter of 14 mm may be made in the respective casings.
The oil lines in the engine block and the cylinder head may be completely or partly blocked off through the addition of removable elements without welding or gluing.

7.7 Cylinder head
The material and thickness of the cylinder head gasket are free.
The cylinder head may be adjusted by planing.
The measurements of the minimum height of the cylinder head (point 321c of the homologation form) must be retained.
The valve springs and their retainers are free but the springs must be made of steel and the retainers made of an identical material to the original.
The intake and outlet ports in the cylinder head, as well as the ports in the intake manifold, may be machined in conformity with Art. 255.5 of Appendix J, as long as the dimensions on the homologation form are respected.
The valve seats are free, as are the valve guides, but the respective angles of the valve axes must be retained.
7.7.1) Compression ratio :
The compression ratio may be modified but must not exceed 11/1.
If the car is homologated with a higher ratio, it must be amended so as not to exceed 11/1.
7.7.2) Piston :
The piston, including its rings, pin and fixation rings, is free, but its minimum weight must not be less than that of the piston homologated on the series vehicle (article 317c of the homologation form). The number and the sealing principle of the piston rings must be the same as on the homologated vehicle.
7.7.3) Camshaft :
The pulleys for driving the camshaft are free provided that the original timing belts and/or chains are used.
The camshaft(s) is/are free, but the number of camshafts must remain unchanged.
The number and diameter of the bearings must remain unchanged.

Variable camshaft systems (variation in the timing of the camshafts) are prohibited. If the vehicle is homologated with such a system, it must be rendered inoperative through dismantling or blocking.
The valve lift, as defined in article 326e of the homologation form, may be modified, but must not exceed 10 mm (this is a maximum with no tolerance). If the car is homologated with greater lift, the camshaft must be modified so that the lift does not exceed 10 mm.
If the original timing includes a hydraulic play recovery system, this may be neutralised mechanically.
7.7.4) Balancing shafts :
If the original engine includes balancing shafts, these and their drive systems may be removed.

7.8 Flywheel

The minimum weight of the flywheel is 5000 g.
The original flywheel may be lightened to comply with the authorised weight through the removal of material only, provided that the original flywheel may still be identified.
The starter crown may not differ from the original.
If the original vehicle is fitted with a double type flywheel, this flywheel may be replaced by a single flywheel, provided that the starter crown keeps the same characteristics as the original one (number of teeth, head and foot diameter, width of the teeth).
In all cases, the external diameter of the friction disc of the clutch mechanism must not be less than 184 mm.

7.9 Exhaust system

The exhaust system is free downstream of the cylinder head provided that the prescribed sound levels of 100 dB(A) at 4500 r.p.m. measured in conformity with the FIA noise-measuring method are not exceeded.
Variable exhaust systems are prohibited. If the vehicle is originally equipped with such a system, it must be rendered inoperative.
The exhaust manifold is part of the exhaust system.
The lambda probe must be placed a maximum of 20 cm after the junction plane in an exhaust manifold tube, or must be retained in its original position if the original exhaust system is used.
All vehicles must be equipped with a homologated catalytic converter the position of which is free.
The exhaust gases must, at all times, pass through the catalytic converter.
The position of the catalytic converter must be indicated by coloured markings on the underbody of the car.
The exit of the exhaust pipe must be situated at the rear of the car, within the perimeter of the car, and be less than 10 cm from this perimeter (figure n° 1).
The section of the exhaust silencers or of the catalyst itself must always be round or oval.

7.10 Engine and gearbox mountings

The elastic components of the engine mountings may be replaced by others, regardless of their material, provided that they have the same dimensions as the original ones and that the position of the engine and of the gearbox remains unchanged.

7.11 Materials

The use of titanium, ceramics, magnesium, or composite or reinforced fibre materials is prohibited, unless it corresponds exactly to the original material.
The use of fire-resistant, fibreglass-based composite material, is authorised only for deflectors and air ducts for radiators and engine.

ARTICLE 8 : TRANSMISSION

8.1 Gearbox

Only the original gearboxes homologated on the vehicle at 2500 units, comprising a maximum of five (5) engageable forward gears and one (1) engageable reverse gear, and in working order, are authorised.
If the series gearbox has more than five (5) forward gears, the gear wheels as from the sixth (6th) ratio must be rendered inoperative by the removal of the teeth of the gear wheels concerned.
The inside of the original housing is free but only steel parts may be used, except for the bearings which may be made from bronze or from copper-based alloy.
Oil radiators for the gearbox and the differential, as well as a system for circulating the oil without generating pressure, are authorised.
The pressure will be measured at the entry to the gearbox or differential circuits.
The original gearbox and differential housings may be equipped with two (2) oil circuit connections.
The sole purpose of these orifices must be to connect the outflow and inflow lines of the oil circuit.
The gearshift control is free; sequential gearboxes are prohibited.
Modifications to the bodywork for the passage of the new gearshift control are authorised only if they are not at variance with other points of these regulations.
Gear changes must be made mechanically.
The gearbox selection grid and the position of the gear lever must be those homologated.
The transmission supports may be replaced by other parts, regardless of the material, provided that the position of the transmission parts remains unchanged.
Whatever their positions, optical sensors for measuring the vehicle's speed are forbidden.
8.1.1) Ratios :
The original ratios must be kept as far as the 2nd decimal point, rounded up or down following the arithmetic rule (1.044=1.04, 1.045=1.05) in relation to the 3rd decimal point, with a tolerance of + or - 3%.
e.g. 1.044=1.04+/-3% and 1.045=1.05+/-3%
In addition to the previous paragraph, the manufacturer may homologate, one time only per homologation form number, a series of five additional forward gears and one reverse gear (ratio and number of teeth), with or without synchronisation.
Only one erratum will be accepted, on one ratio only, within the 12 months following the homologation date of the form or of the option variant.

8.2 Clutch

The clutch disc is free, with the exception of the number. Carbon discs are prohibited.
The pressure assembly is free, provided that the following points are not modified:
- original type;
- operating principle;
- original spring type;
- external diameter of the pressure plate;
- fixation of the pressure assembly on the flywheel.

The clutch cable is free.
An automatic tightening device on the clutch control may be replaced by a mechanical device and vice-versa.
The clutch stop is free.

8.3 Differential

Only the homologated final drive ratios are authorised.
The manufacturer may submit an application to the FIA to obtain, besides the series final assembly, the homologation of a maximum of four (4) additional final drive ratios, to be revised annually.
Apart from this condition, the design (material and type of teeth) of the gears is free.
A mechanical limited slip differential, in the original differential housing, is free.
Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system. A viscous clutch is not considered to be a mechanical system.
An original anti-wheel spin control system must be rendered inoperative by the removal of its control unit.

8.4 Drive shafts

The drive shafts between the differential and the wheel are free provided that the technological principle of the original homocinetic joints, on the wheel side, is retained.

8.5 Traction control

All forms of traction control are prohibited.
All sensors on the wheels, drive shafts and differential are prohibited.

ARTICLE 9 : SUSPENSION

9.1 Front running gear

The joints may be of a different material from the original ones

(e.g. harder silent blocks, aluminium, Uniball joints, etc.).
The position of the rotational axis of the pivot points may be moved by a maximum of 20 mm in relation to the original position of the rotational axis.
The original suspension part may not undergo any modifications, with the exception of the making of circular grooves for the fitting of stops and the fitting of spin locking devices (grub screws, pins, bolts or similar) for the eccentric bushes.
This means that, after removing the new joint of the suspension part, an original suspension joint can be fitted and that the original operation of the suspension part can be restored.
In the case of an original crimped joint in a suspension part, it must be possible, after removing the new joint, to fit the original joint in its housing.
However, it is not necessary for the initial operation of the suspension part to be restored.
The suspension ball-and-socket joints situated on the arms at the lower triangle on the wheel side may be freely replaced, provided that the fixation points on the arms are not modified.
The position of the new rotational point may be moved by a maximum of 20 mm, following all the axes in relation to the initial rotational point.
This may be achieved by modifying the extremity of the arm or lower triangle on the wheel side, through adding a removable system.
The welding of such a system onto the arm or lower triangle is forbidden.
The steering rods and steering joints are free but must be made from ferrous material.
The upper joints of McPherson suspension parts of the front running gear are free provided that the original mounting points, on the bodyshell side, are retained and that the adjustment of the mounting point of the suspension part involves a maximum displacement of 20 mm following all the axes.
This means that the upper joints, adjustable or non-adjustable, may assume an eccentric position of a maximum of 20 mm in relation to the original articulation point.
Modifications to the bodyshell are not authorised, but three (3) holes of a maximum diameter of 10.5 mm may be bored in the upper bell housing of the shock absorber for the mounting of the upper joint support if, in the original bell housing, there are no, or not as many, fixation holes.
If an original McPherson part is bolted on to the wheel uprights, the wheel camber of the front running gear may be adjusted by this bolted connection.
Holes for the mounting of suspension parts may be made at the anchorage points of the bodyshell, of the cradle or the front cross member, if these are original parts.
In relation to the original articulation points, these holes must be situated at a maximum distance of 10 mm at right angles to and parallel to the transversal axis of the vehicle.

9.2 Rear running gear

The joints may be of a different material from the original ones (e.g. harder silent blocks, aluminium, Uniball joints, etc.).
New mounting and rotational points must be situated at a maximum of 20 mm from the original mounting and rotational points.
The original suspension part may not undergo any modifications, with the exception of the making of circular grooves for the fitting of stops and the fitting of spin locking devices (grub screws, pins, bolts or similar) for the eccentric bushes.
9.2.1) Multi-Link rear suspension :
Holes for the mounting of suspension parts may be made at the anchorage points of the bodyshell, the cradle or the rear cross member, if these are original parts.
In relation to the original articulation points, these holes must be situated at a maximum distance of 10 mm at right angles to and parallel to the transversal axis of the vehicle.
9.2.2) Single-Link rear suspension :
The original suspension parts may be modified in order to allow the adjustment of the camber and the toe.
The addition of material must be done by using a material which follows the shape of the original part and is in contact with it.
The combination and the standard fitting of the spring and of the shock absorber, as well as the original distance between the rotational axis of the running gear and the central axis of the wheel upright, may not be modified.
9.2.3) Rear running gear - General :
Any other modifications to the bodyshell, apart from those modifications authorised to the rear running gear, are prohibited.

9.3 Other Provisions

9.3.1) Geometry :
The geometry of the running gear is free within the limits of the original adjustment possibilities set out in these regulations.
9.3.2) Stabilisers :
The original stabilisers may be replaced by stabilisers of free design, but they must remain in their original position (ahead of the front wheel centre line, behind the rear wheel centre line).
The stabilisers must be made from ferrous material and must not be adjustable from the cockpit.
The new mountings of the stabilisers must not have any other function.
9.3.3) Track :
The tracks are free. Track extenders may be used if they are immovably attached to the wheel hubs.
9.3.4) Reinforcements :
Strengthening of the suspension parts and the suspension mounting points through the addition of material is allowed provided that the material used follows the shape of the original part and is in contact with it.
9.3.5) Wheel bearing :
The wheel bearings may be replaced by strengthened bearings of the same type and inside diameter as the original ones.
In order to enable the fitting of larger bearings, the bore of the bearing cages may be increased by a maximum of 3 mm.
In all other respects they are free, provided that they comply with Article 2.8.1.
9.3.6) Silent block - Articulation :
The silent blocks for the mounting of the cradles and/or the cross members may be of a different material from the original (e.g. harder silent blocks, aluminium, nylon rings) as long as the position of the cradle and/or cross members in relation to the bodyshell remains identical to that of the original following the three (3) axes of reference.
The cradles and/or cross members, the bodyshell and the original mounting points may in no way be modified by this action.
The original suspension part may not undergo any modifications, with the exception of the making of circular grooves for the fitting of stops.
This means that once the free mounting parts have been removed, the original mounting parts (for example the original silent blocks) may be refitted and that the cradles and/or cross members may then be remounted on the chassis or the bodyshell in their original locations and resume their original position.
9.3.7) Suspension travel limiter :
A strap or cable for limiting the suspension travel may be affixed to each suspension.
To this end, holes of a maximum diameter of 8.5 mm may be bored on the bodyshell side and on the suspension side.

9.4 Springs

9.4.1) Coil springs :
Coil springs are free, provided that they fulfil the following conditions.
Their number is free, provided that they are mounted in line with one another and that their type corresponds to the original type of spring.
The shape, dimensions and material of the spring seats are free.
The spring seats may be made adjustable if the adjustable part forms part of the seats and is distinct from the other original parts of the suspension and the chassis (it may be removed).
Modifications to the bodyshell are not authorised, but three (3) holes of a maximum diameter of 10.5 mm may be bored in the upper bell housing of the shock absorber for the mounting of the upper joint support, if there are no, or fewer than three (3), fixation holes (see article 9.1 for the upper joint of a Mc Pherson suspension).
Whatever the position of the original springs, it is allowed to replace them with concentric coil springs on shock absorbers.

9.4.2) Leaf springs :
The length, width, thickness and vertical curve are free.
9.4.3) Torsion bars :
Torsion bars may be replaced but the replacements must be made from steel. Their diameter must exceed 80 % of the homologated diameter.
For vehicles with torsion bars, coil springs may be added on the axle concerned, provided that they are concentric to the shock absorbers.
9.4.4) Miscellaneous :
Parts for preventing the springs from moving in relation to their mounting points are authorised.

9.5 Shock absorbers

Free, provided that their number, their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.) and their attachment points remain unchanged.
Gas-filled dampers will be considered as hydraulic dampers.
The damper tanks may be attached on to the unmodified shell of the car, provided that this does not result in modifications which are not authorised by these regulations.
If, in order to change the damping element of a McPherson suspension, or a suspension operating in an identical manner, it is necessary to replace the entire McPherson strut, the replacement parts must be mechanically equivalent to the original ones and have the same mounting points.
In the case of a McPherson suspension, the shape, dimensions and material of the spring seats are free and they may be adjustable.
In the case of an oil-pneumatic suspension, the spheres may be changed as regards their dimension, shape and material, but not their number.
A tap, adjustable from the outside of the car, may be fitted on the spheres.
Whatever the type of the shock absorbers, the use of bearings with linear guidance is prohibited.

9.6 Reinforcement

Reinforcement bars may be fitted on the suspension mounting points to the bodyshell or chassis of the same axle, on each side of the car's longitudinal axis, provided that they are removable and that they are bolted to the bodyshell or chassis.
The distance between a suspension attachment point and an anchorage point of the bar cannot be more than 100 mm, unless the bar is a transversal strut homologated with the rollbar, or unless it is an upper bar attached to a McPherson suspension or similar. In the latter case, the maximum distance between an anchorage point of the bar and the upper articulation point will be 150 mm (drawings 255.4 and 255.2).
For the fixation of a transversal strut between two upper points of the bodyshell, a maximum of three (3) holes on each side, of a maximum diameter of 10.5 mm, will be authorised.
The mounting rings of the upper transversal struts may be welded to the bodyshell.
Apart from these points, the upper bar must not be mounted on the bodyshell or the mechanical parts.

ARTICLE 10 : WHEELS AND TYRES

10.1 Complete wheel

The maximum dimensions of the wheels (rims + flanges) are 7" x 15" and their weight must not be less than 5 kg.
The complete wheel inflated to a pressure of 2 bars must fit into a box of a diameter of 580 mm and a thickness of 223 mm.
In all other respects the wheels are free provided that they are made of metal and that they are made in a single unit.
Wheel fixations by bolts may be freely changed to fixations by pins and nuts provided that the number of fixation points and the diameter of the threaded parts remain unchanged.
The fitting of air extractors on the wheels is prohibited.
The upper part of the of the complete wheel (flange + rim + tyre), located vertically over the wheel hub centre, must be covered by the bodywork when measured vertically.
Foam or any other system enabling the car to be driven without air in the tyres is prohibited.
All pressure regulations systems are prohibited.

10.2 Spare wheel

It is forbidden to carry a spare wheel on board.

ARTICLE 11 : GROUND CLEARANCE

No part of the car, with the exception of the rims or tyres, must touch the ground when all the tyres situated on the same side of the car are deflated.
In order to check this point, the air valves of the tyres on the same side of the car will be removed.
This test shall be carried out on a flat surface.

ARTICLE 12 : BRAKES

The front brakes are free, provided that they are mounted on the fixation points of the original brakes and that they comply with the following prescriptions:
- if it is different from the original, the complete front and rear braking system, including the master cylinder, must be homologated, without a production minimum, by the FIA;
- the maximum number of pistons per wheel is four (4);
- the maximum diameter of the brake disc is 296.5 mm;
- the brake discs must be made from ferrous metallic material.

The rear brake calipers may be replaced but must not have more than two pistons per wheel.
All parts of the brake calipers must be made from aluminium materials with a modulus of elasticity no greater than 75 Gpa. The internal parts of the brake calipers may be made from titanium.
The following prescriptions apply to the complete braking system:
- the brake lines and their fitting method are free;
- the original handbrake may be removed or replaced by a manual hydraulic valve operated by the driver;
- if, in its original version, a car is equipped with servo brakes, this device may be disconnected or removed, but the master cylinder and/or the pedal box must remain in their original compartment.

Modifications to the body shell are authorised provided they have no other function than to allow the fixing of the master cylinder and/or the pedal box.
They must be homologated as a Variant Option without a minimum production.
The balance of the braking forces between the front and rear axles may only be adjusted by the driver through :
- direct intervention on the position of the centre of the joint, on the linkage lever of the hydraulic pumps of the front and rear circuits.
- direct intervention on a proportional valve, in which the intake pressure of the rear circuit is adjusted through a pre-loaded spring, variable according to the position of the manual linkage system (see the drawing of the principle 262-9).

Only one of these two systems is permitted.
All other systems are prohibited, including inertial mechanical systems.
- if, in its original version, a car is equipped with an anti-lock braking system, the control unit must be removed.

Moreover, all the parts of the anti-lock system must be removed, provided that the prescriptions of Article 253.4 of Appendix J are respected;
- the location of the brake lines is free provided that the prescriptions of Article 253.3 of Appendix J are respected.

The brake lines may be replaced by aircraft-quality lines.
The connection of the dual braking circuit is free;
- for each brake, one cooling line with a maximum internal diameter of 10 cm^2 is allowed.

This diameter must be maintained over at least 2/3 of the distance between its entrance and exit;
- only the following mounting points are authorised for the fixation of the lines to bring the cooling air to the brakes :

. original apertures in the bodywork, e.g. for fog lamps, may be used to bring the cooling air to the brakes;
. the connection of the air lines to the original apertures in the bodywork is free provided that these apertures remain unchanged;
. if the car does not have any original apertures, two (2) circular apertures of a maximum diameter of 10 cm may be made in the front bumper;

. the disc protection plates may be removed or their shape modified.

ARTICLE 13 : BODYWORK

13.1 Exterior

Only the aerodynamic elements homologated on the vehicle produced in 2500 units, securely fixed to the car and authorised for road use, are allowed.
Wheel embellishers must be removed.
It is permitted to fold back the steel edges or reduce the plastic edges of the wings if they protrude inside the wheel housing.
The plastic soundproofing parts may be removed from the interior of the wheel arches.
These elements made from synthetic materials may be changed for aluminium elements of the same shape.
The soundproofing material or the material for the prevention of corrosion may be removed.
The removal of external decorative strips, following the contour of the car and less than 25 mm high, is authorised. Decorative strips more than 25 mm high may only be removed near the areas reserved for the competition numbers.
The bumper mountings as free as long as the bodywork and the shape and position of the bumpers remain unchanged.
The original apertures in the bodywork (e.g. for fog lamps) may be used for the passage of the cooling air.
The connection of the air lines to the original apertures in the bodywork is free as long as these apertures remain unchanged. The fitting of underbody protection is prohibited.
Pneumatic jacks are authorised.
The windscreen wiper blades may be replaced by others.
The cars must have an external rear-view mirror on the left-hand side and on the right hand side.
Their shape is free but each mirror must have a reflecting surface of at least 90 cm², able to enclose a 6 cm-sided square.
Strengthening of the sprung parts of the chassis and bodywork is allowed provided that the material used follows the original shape and is in continuous contact with it.
The above strengthening of the sprung parts authorises for example the reinforcement of the bodywork by welding or by the addition of material.
A second suspension bell housing may for example be placed above and soldered to the original, provided that it follows the original shape and that it is in contact with it.
The term 'suspended parts' means all the parts dampened by the wheel suspension, in other words all parts situated within the rotational points and axes of the suspension parts.
The side and rear windows, as well as the rear-view mirrors, may be covered with a safety film in order to avoid the shattering and spraying of glass in the event of an accident (specifications: SL Lumar Safety Film / D5170).

13.2 Cockpit

The passenger seat and the rear seat(s) must be removed.
The removal of any insulating or soundproofing material, as well as of the original safety belts and carpeting, is authorised.
Neither the front and rear door panels nor the rear side panels may be removed.
These may be the original ones or be made from metal sheeting at least 0.5 mm thick, from carbon fibre at least 1 mm thick or from another solid and non-combustible material at least 2 mm thick.
The panels must totally cover the door, its handles, locks and window winding mechanisms.
It is permitted to replace electric winders with manual ones. The rear window winders are free.
It is permitted to replace a rear electric window winder in a two-door car with a mechanical one, or to replace a sw[illegible]elling rear window with a fixed one, if it is available as an original [illegible].
Additional accessories which have no effect on the car's behaviour, such as those which render the interior of the car more aesthetic or comfortable, (lighting, heating, radio, etc.) are authorised provided that they do not influence, even in a secondary manner, the performance of the engine, steering, transmission, brakes or road-holding.
The original air-conditioning system may be removed.
Left-hand drive versions and right-hand drive versions are authorised, provided that the original car and the modified car are mechanically equivalent and that the function of the parts remains identical to that defined by the manufacturer.
Unused supports situated only on the floor may be removed.
All the driving control parts must be those supplied by the manufacturer.
These may be adapted in order to facilitate their use or accessibility; for example, the fitting of an extension to the handbrake lever or the widening of the brake pedal.
The following parts are authorised:
- the horn is free;
- the seat supports may be modified in accordance with Article 253.16 of Appendix J. Seat covers, including those creating bucket seats, are free;
- the steering wheel is free, but it must be closed. The locking system of the anti-theft device must be rendered inoperative;
- A removable steering wheel is recommended.

13.3 Dashboard

The trimmings situated below the dashboard and which are not a part of it may be removed.
It is permitted to remove the part of the centre console which contains neither the heating nor the instruments (see drawing 255.7).
The instruments are free. However, the installation should not present any risk.
Standard switches may be replaced by switches of different design and may be fitted at different locations on the dashboard or on the centre console. Any openings that result from this must be covered.
The turn signal control must remain in its original location.

13.4 Luggage and engine compartments

The soundproofing materials and trim in the luggage compartment may be removed.
The soundproofing materials of the engine cover and the decorative materials surrounding the engine may be removed.
Unused battery and spare wheel supports may be removed if they are not welded to the bodyshell.
The lower fairing of the engine compartment may be removed or modified only by cutting.

ARTICLE 14 : ELECTRICAL SYSTEM

14.1 Cables

The electric cable assembly of the engine is free.
The other electric cable assemblies are free provided that they respect the following conditions.

14.2 Battery

The make and capacity of the battery(ies) are free.
It must be possible at all times to start the engine with the energy of the battery transported on board the vehicle.
Each battery must be securely affixed and covered in such as way as to avoid any short-circuiting or leaks.
The number of batteries laid down by the manufacturer must be retained.
Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts.
For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt, a counterplate at least 3 mm thick and with a surface of at least 20 cm² beneath the metal of the bodywork.
The battery must be covered by a leak-proof plastic box, attached independently of the battery. Its location is free; however, if in the cockpit it will only be possible behind the front seats. In this case, the protection box must include an air intake with its exit outside the cockpit (see drawings 255.10 and 255.11).
If the battery situated in the cockpit is a dry battery, it must be protected electrically by a lid which covers it completely.
Any energy-recuperating system other than that provided by the engine is prohibited.

14.3 Voltage generator

A more powerful voltage generator may be fitted.

14.4 Lighting
The original lighting system must be retained, with the exception of the fog lamps, and must be operational at all times during a meeting.
The headlights must have a road homologation for all countries (ECE, DOT, etc.).
The upper and lower edges of the headlights may be covered by adhesive tape.
However, a strip of at least 4 cm^3 following a plane parallel to the transversal axis of the car and symmetrical in relation to the centre of the bulb must remain free over the entire width of the headlight.
The fog lamps may be removed.
The apertures may be used in accordance with Articles 10 and 11. If this is not the case, they must be hermetically sealed.
A reversing light may be fitted provided that it will only switch on when the reverse gear is engaged and that the laws in force in this respect are observed.

14.5 Fuses
Fuses may be added to the electrical circuit.
The fuse box may be moved or removed.

ARTICLE 15 : FUEL FEED SYSTEM

15.1 Petrol tank
The original petrol tank may be kept.
FT3 or FT3 1999 petrol tanks meeting the FIA specifications are authorised.
It is recommended that the FT3 or FT3 1999 tank be filled with MIL-B-83054 or D-Stop type safety foam.
They must be placed in the luggage compartment or in their original location.
Changes of the position of the tanks may not give rise to any lightening or reinforcement other than as provided for under Article 255-5.7.1 of the FIA prescriptions, but the opening remaining after the removal of the original tank may be closed by the installation of a panel.
For endurance races (with refuelling), the filler hole must be situated outside the cockpit.
For sprint races (without refuelling), the filling of the tank must be carried out in conformity with Article 253 of Appendix J.
The location of the filler holes is free, apart from in the window panels, and they must not protrude beyond the perimeter of the bodywork.
If the filler hole is not used, it must be sealed.
An original carbon filter in the tank air vent, as well as its control unit, may be removed.
An auxiliary tank of a maximum capacity of one litre is authorised. It must be situated such that it does not affect the safety of the vehicle in any way.
The total capacity of all the tanks may not exceed 100 litres.
The connections between the filler holes and the tank ventilation holes must be shielded by a fireproof and liquid-proof protective device.
If the petrol tank is located in the luggage compartment of a car with a tailgate, the tank must be shielded by a fireproof and liquid-proof protective device.
If the original tank is replaced with an FT3 or FT3 1999 tank, the new assembly must not generate an aerodynamic surface or protrude further below the vehicle than the original tank.
In all cases, there must be a fireproof and liquid-proof bulkhead between the cockpit and the luggage compartment.
In the case of a fuel tank being fitted below the floor of the car, it must be contained in a close-fitting flameproof housing that adds no aerodynamic advantage and has no other mechanical function.
This housing must include a crushable structure on all external surfaces, and be secured by using a minimum of two metal clamps 30 mm x 3 mm fixed to the floor pan by bolts and nuts.
For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt a counter plate at least 3 mm thick and with a surface of at least 20 cm^2 above the metal of the floor pan.
The crushable structure must be a honeycomb sandwich construction based on a fire-resistant core of a minimum crushing strength of 18N/cm^2 (25lb/in^2).
It shall be permitted to pass water pipes through this core, but not fuel, lubricating oil or electrical lines.
The sandwich construction must include two skins of 1.5 mm thickness having a tensile strength of minimum 225N/mm^2 (14 tons/in^2).
The minimum thickness of the sandwich construction must be 1 cm.
The opening remaining after the removal of the original tank may be closed by the installation of a panel of the same dimensions as the fuel tank aperture.

15.2 Petrol lines
The petrol lines must be of aviation quality.
The installation of petrol lines is free provided that the prescriptions of Article 253.3 of Appendix J are respected.

15.3 Petrol pumps
Free; three others petrol pumps in addition to the number homologated are authorised.
The pumps must be separated from the cockpit by a fireproof and liquid-proof protective device.

ARTICLE 16 : ICE

The transporting and/or use of natural or chemical ice, whether inside or outside the car, is prohibited throughout the entire duration of the meeting.

ARTICLE 17 : TELEMETRY

All forms of data transmission from the moving car are forbidden, apart from two-way radio communication.
Impulse generators giving information on timing are authorised, provided that they are separate parts which have no connection with the control of the engine.
An on-board data recording system, without an accelerometer, is authorised.

ARTICLE 18 : LANGUAGE

The French version of these regulations shall be considered as the authentic text in the event of a dispute.

ARTICLE 262 - TECHNICAL REGULATIONS FOR SUPERTOURING CARS (GROUP ST)

ARTICLE 1 : DEFINITIONS

1.1 Land vehicle
A locomotive device propelled by its own means, moving by constantly taking real support on the earth's surface, of which the propulsion and steering are under the control of a driver aboard the vehicle.

1.2 Super Touring Car
Large-scale series production touring cars of a minimum overall length of 4.20 metres and a maximum engine capacity of 2 litres, and having the engine installed in the front part of the car, driving two wheels and steering two wheels only. These cars must be homologated in Super Touring by the FIA.

1.3 Automobile
A land vehicle running on at least four non-aligned complete wheels, of which at least two are used for steering and at least two for propulsion.

1.4
1.4.1) Bodyshell :
The major structural part of the homologated vehicle, constructed of all parts which are permanently attached (by welding, brazing, bonding etc.) including all modifications to it allowed by these regulations (e.g. safety cage) around which are assembled the mechanical components and the bodywork.
Components or panels which are attached by means of removable fasteners are not considered to be part of the bodyshell.
1.4.2) Bodywork :
All parts homologated with the series production vehicle that are licked by the airstream, except those parts which are considered part of the bodyshell, or for which freedom of replacement is given within these regulations.
1.4.3) Subframe :
Part screwed to the bodyshell to which are attached parts of the suspension.

1.5 Wheels
Wheel: Flange and rim
Complete wheel: Flange, rim and tyre

1.6 Event
An event shall consist of official practice and the race.

1.7 Weight
Is the weight of the car with the driver and his equipment, at all times during the event.

1.8 Cubic capacity
The volume swept in the cylinders of the engine by the movement of the pistons. This volume shall be expressed in cubic centimetres. In calculating engine cubic capacity, the number π shall be 3.1416.

1.9 Supercharging
Increasing the weight of the charge of the fuel/air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever. The injection of fuel under pressure is not considered to be supercharging.

1.10 Cockpit
The volume which accommodates the driver.

1.11 Decorative strips
Any parts following the external contour of the bodywork and with a perpendicular section of less than 25 mm.

1.12 Active system
Any system that senses one or more continuously varying parameters, and uses the measured value(s) in the control of one or more actuators that influence the dynamic characteristics of the car.

1.13 Semi-automatic gearbox
One which, when the driver calls for a gear change, takes over the control of one or more of the engine, clutch and gear selectors momentarily to enable the gear to be engaged.

1.14 Automatic gearbox
One which is able to change gear without any input from the driver.

1.15 Ferrous material
A material containing at least 80% of pure iron by weight.

1.16 Tools
Items designed to help or enable the hand(s) to apply force in industrial operations (e.g. spanner, socket driver etc.)

ARTICLE 2 : FIA APPROVAL

2.1 The vehicle must comply with all the dimensional and other FIA Super Touring homologation requirements, except for those additional modifications allowed in these regulations. All modifications not allowed by these regulations are expressly forbidden. In particular, this car must belong to a family produced in a quantity of at least 25,000 units with identical external silhouettes and shells.

2.2 Homologation of a car will become null and void 7 years after the date on which the series production of the said model has been stopped.
Only engines in current production may be homologated and that homologation will become null and void 10 years after the date on which series production of the said engine has been stopped.

2.3 Homologation forms (available from the ASN) must be presented, describing the vehicle and engine used.

2.4 Dangerous construction
If an automobile is deemed to be dangerous, it may be excluded by the Stewards of the Meeting.

2.5 Compliance with the regulations
2.5.1) Automobiles must comply with these regulations in their entirety at all times during an event.
2.5.2) The FIA and/or ASN may permit cars to compete that comply with the 1998 technical regulations for Super Touring Cars and have already been used in Super Touring races in 1998. For these cars, the entrant must present, at scrutineering, a technical passport and/or a certificate issued by an ASN to verify that the car has competed in 1998. These cars will be valid until the end of 2001 on the basis of the 1998 regulations. The ASN or the FIA may require that the car is updated to comply with the latest safety requirements, and may also permit the car to be used with any homologated aero kit.

2.6 Measurements
All measurements must be made while the car is stationary on a flat surface with a minimum area of 4.5m x 2.5m with an out of plane tolerance of ±2mm .

2.7 Duty of competitor
It is the duty of each competitor to satisfy the scrutineers and the Stewards of the Meeting that his automobile complies with these regulations in their entirety at all times during an event.

2.8 Computer systems
It must be possible to upload machine code and relevant data areas from all onboard computer systems. The method of uploading must be compatible with Scrutineer's equipment. See Appendix 1.

ARTICLE 3 : WEIGHT

3.1 Minimum weight
All cars using front wheel drive only must not weigh less than 975 kg excluding the driver and 1055 kg including the driver and his equipment.
All cars using rear wheel drive only must not weigh less than 1000 kg excluding the driver and 1080 kg including the driver and his equipment.
Weight is the only controlling element between front and rear wheel drive cars.

3.2 Ballast

Ballast can be used in accordance with Art. 252.2.2 and provided it is secured in such a way that tools are required for its removal. It must be possible to fix seals if deemed necessary by the scrutineers.

ARTICLE 4 : MODIFICATIONS ALLOWED

4.1 General conditions

4.1.1) Any nut, bolt or screw throughout the car may be replaced by any other nut, bolt or screw and have any kind of locking device (washer, lock-nut, etc.). Nuts, bolts and screws made of titanium are not permitted except in the engine.

4.1.2) Apart from the parts for which the present regulation lays down freedom of modification, the original mechanical parts necessary for the propulsion, suspension as well as all accessories necessary for their normal functioning, excepting any steering or braking part, having undergone the normal machining operations laid down by the manufacturer for series production may be subjected to all tuning operations through finishing, scraping but not replacement.

In other words provided that the origin of the series production part may always be established, its shape may be ground, balanced, adjusted, reduced or modified through machining. Chemical and heat treatment are allowed, in addition to the above. However, the modifications defined by the above paragraph are allowed on condition that the weights and dimensions mentioned on the homologation form are respected.

4.1.3) Addition of material and parts:

Any addition of material or parts is not permitted unless it is specifically allowed by an article in these regulations. Any material removed is not to be reused.

Restoration of body shape and chassis geometry, following accidental damage, is permissible only using original panels or parts or by the addition of the materials necessary to effect the repairs (body filler, weld metal, etc.); other parts which are worn or damaged are not to be repaired by the addition or attaching of material unless an article in these regulations allows appropriate freedom.

4.1.4) Titanium :

Titanium is prohibited other than for components within the engine, with the exception of the conrods and crankshaft as defined in Article 4.2.7, and within the brake calipers and their fixings.

4.2 Engine

4.2.1) The engine must be of the same make as the car and must be homologated by the FIA in Super Touring. The direction of the axis of the original engine relative to the homologated bodyshell must be retained. The engine revolution direction is free.

Only 4-stroke, normally aspirated, reciprocating piston engines are permitted.

Any device to artificially limit the engine speed/power below the peak of the engine power curve will be deemed to be artificially controlling power and is therefore prohibited with the exception of a rev limiting device whose sole purpose is to control the engine below an FIA approved limit. The device may be set no more than 300 rpm below the FIA approved limit. For the purpose of changing a gear ratio only it is momentarily permitted to take the control of the propulsion system away from the driver. It is permitted to have a sensor on the gear lever to initiate a power cut, to have a single, unique timed cut for all the gears in the ECU and to have a sensor in the gear box to indicate the successful selection of the gear.

4.2.2) Engine block: :

The engine must have no more than 6 cylinders. Bore and stroke may be changed to achieve a maximum capacity of 2000 cm^3. The bore is required to be cylindrical. The axis of the cylinders may be moved, but they must remain parallel to the original ones.

Sleeving or resleeving of the cylinder bores is allowed; material of the sleeves is free. Machining of all surfaces is allowed; material may be added. Steel, or other material, main caps are allowed, as are ladder reinforcement frames, inside the block and following the bearing supports.

4.2.3) Cylinder head :

The position and the axis of the cylinders and ports must be retained, as must the axis and angle of the valves. Port sizes may be changed, but the port centres at the manifold face must remain original (± 2 mm). The addition or removal of material is allowed subject to the restrictions in these regulations (see in particular art. 4.2.11).

The cylinder head covers (rocker covers) are free, including their material, if these parts have no other function than covering the cylinder head, and possibly that of attaching the engine.

4.2.4) Compression ratio :

Free.

4.2.5) Cylinder head gasket :

Free.

4.2.6) Pistons :

Free, as well as the piston rings, gudgeon pins and their securing mechanism.

4.2.7) Connecting rods, Crankshaft :

Free, but they must be made of ferrous materials. The use of non-ferrous materials for balancing the crankshaft is not permitted. The make, dimensions and material of connecting rod and crankshaft bearings are free; but the original type must be retained (e.g. thin wall shell or roller bearings), as well as their number (see art. 4.2.11 for exception).

4.2.8) Flywheel :

Free.

4.2.9) Fuel feed and induction system :

Free, except it is forbidden to use any type of water injection system. The use of any other substance or device to reduce the temperature of the mixture is forbidden (other than the fuel radiator permitted by art. 4.10.1). The induction system, location of the injectors, number of injectors, air filter assemblies and pipes are free to be changed or modified. Fuel electronics and injector types are free. It is not permitted to inject any fuel or additive other than that specified under art. 4.2.23.

Any system that varies the geometry (length or cross-section) of either the intake ports, induction system or exhaust system, other than the throttles, is forbidden.

4.2.10) Camshaft(s) :

Free, except position and number which must remain as for the original head. Number of bearings is free. Belts, pulleys, chains are free, as are their layout and protection. A belt may therefore be changed for a chain, and vice versa.

Any systems that modulate the valve timing or lift, while the engine is running, are forbidden.

4.2.11) Valves :

The material, dimensions and the shape of the valves are free, but the system for closing the valves must be by coil springs alone. Cups, cotters, guides and springs are all free. Shims may be added under the springs. Hydraulic cam followers may be changed for solid ones. Valve lift is free. The material of the seats is free. The number of valves cannot be changed from that homologated.

4.2.12) Rocker arms and tappets :

Free, including the respective leverages of the rocker arms.

4.2.13) Ignition :

Free, but must include the FIA approved RPM limiting device which must be installed so as to limit engine RPM to 8,500 maximum. A rev logger approved by the FIA may be used in place of an RPM limiter. In this case, it is the competitor's responsibility to ensure that the engine RPM does not exceed 8,500 under it's own power.

This RPM limiting device must be installed in such a manner as to provide direct and easy access to it, to facilitate inspection and testing procedures which are to be carried out by the Technical Scrutineer or other approved FIA personnel. It must be placed either on the dashboard, or on the floor on the passenger side if a camera is present in the cockpit. The RPM limiter or logger must be installed and wired up strictly in accordance with the limiter manufacturer's instructions and any wiring diagrams issued. The regulation wiring plug seal must always be intact. The RPM limiter or logger will be checked and certified as and when deemed necessary throughout the event.

The number of spark plugs may not be modified.

4.2.14) Cooling :

Definition of exchqnger and radiator :

- Exchanger:

Mechanical part allowing the exchange of calories between two fluids.

For specific exchangers, the first-named fluid is the fluid to be cooled and the second-named fluid is the fluid that allows this cooling.
e.g. Oil/Water Exchanger (the oil is cooled by the water).
- Radiator:
This is a specific exchanger allowing liquid to be cooled by air.
Liquid/Air Exchanger.
- Intercooler or Supercharging Exchanger:
This is an exchanger, situated between the compressor and the engine, allowing the compressed air to be cooled by a fluid.
Air/Fluid Exchanger.
The method of cooling must be as on the homologated car (i.e. air cooled/water cooled). Provided the original location in the car, is retained, the radiator and its attachments are free, as are all its connections to the engine, but it must be rigidly secured at all times apart from the provision for vibration isolation. Within these conditions one radiator may therefore be replaced by several. A radiator screen may be fitted within 20 mm of the radiator face, but it must not be adjustable while the vehicle is moving. Ducting to channel air to and from the radiators is permitted, provided it does not extend beyond the periphery of the front aerodynamic device.
Cooling fans and their method of operation are free. Thermostats are free, as well as their housings and the lines situated between the thermostat body and the water pump on the one hand, and between the thermostat body and the cylinder head on the other hand. The water pump is free, including with regard to its location in its original compartment. A water catch-tank may be fitted. The expansion chamber is free.
4.2.15) Lubrication :
Lubrication is free. A dry sump system is permissible.
The position of the oil tank is free other than it must not be located within the cockpit, unless positioned in the luggage area of a hatch-back car and then enclosed within a fluid/flame-proof bulkhead. Additional oil pumps, fans and coolers are allowed, but no aerodynamic benefits may be derived from them. Air ducts and mounting brackets under the car to these coolers and pumps are allowed, but no aerodynamic benefits may be derived from them, and the external appearance of the car must remain unchanged; oil pumps and ducts must not protrude beyond the perimeter of the bodywork as seen from above. Oil coolers must be contained within the volume left free under the car when a template with an angle of 45° to the horizontal is introduced along the ground around the perimeter of the car touching the bodywork (see drawing 262-1). If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil can flow into a catch-tank of at least 2 litres capacity. This catch-tank must be made out of plastic or must include a transparent window.
4.2.16) Engine mountings :
The engine position and its mountings are free, provided the crankshaft retains its same orientation within the engine bay as in the homologated car, and the metal sheet forming the engine/gearbox bay remains as in the FIA homologated car. The bulkhead must be capable of preventing the passage of fluid or flame into the cockpit.
4.2.17) Exhaust :
Exhaust manifold and system are free but the noise from the car is not to exceed 110 dB(A) at 6300 RPM when measured at 0.5 metres distance and at a 45 degrees angle to the point of exit of the exhaust. The local (ASN) regulations governing the area in which the event takes place may supercede this requirement. No exhaust-pipe or pipes may protrude beyond the perimeter of the car's bodywork as seen from above; furthermore the outlet for the exhaust-pipe must be at the rear of the car, not more than 10 cm from the perimeter of the car. The exhaust system must incorporate one or more homologated catalytic converters, which must be functioning at all times and through which all exhaust gases must pass.
It is permitted to modify the floor pan for the purposes of providing exhaust-pipe clearance, but at no point may this result in a duct larger than 21 cm diameter, and only one such duct, which is open at the bottom, per vehicle is allowed; this tunnel must not include any closed section and must contain only the exhaust. If this tunnel passes through a structural element, this element must not be reconstituted. Any cutting of the bumper in order to provide clearance for the exhaust is forbidden. The maximum height of this tunnel must not exceed 400 mm (see drawing 262-7 and 262-9).
All measures which are taken to ensure that the maximum noise limit is not exceeded, must be permanent in nature, and must not be removed by the exhaust gas pressure. For example a butterfly valve in the exhaust manifold is prohibited.
4.2.18) Driving belts and pulleys for ancillaries :
These are free, in number, location and design.
4.2.19) Gaskets :
Free.
4.2.20) Starter :
An electric starter must be present, its make and type being free; it must be capable of starting the engine at any time using energy stored on board.
4.2.21) Supercharging :
Supercharging is forbidden.
4.2.22) Fuel :
The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must be approved by the ASN and must have the following characteristics:
- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.
The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.
- Specific gravity between 720 and 785 kg/m³ at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.
The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.
- Maximum content of peroxides and nitroxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 33-82).
- Maximum lead content: 0.40 g/l or the standard of the country of the event, if it is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % - 47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180°C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).
The fuel being accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.
4.2.23) Only air may be mixed with the fuel as an oxidant.
4.2.24) Throttle control :
Only direct mechanical linkage between the throttle pedal and the engine is permitted.

4.3 Transmission

4.3.1) Clutch :
The clutch and its control are free but automatic operation of the clutch is not allowed and, in the case of a hydraulic clutch, the liquid tank must not be situated in the cockpit. The clutch must be activated by the driver's foot.
4.3.2) Gearbox :
Considering the following restrictions, the gearbox is free.
Gears must be selected by the driver via a direct, mechanical linkage system between the gear lever and the gearbox, (electric, hydraulic or pneumatic mechanisms are not permitted). The maximum number of forward gears allowed is 6. Semi-automatic and automatic gearboxes are forbidden. The drive train concept, i.e. FWD or RWD must be retained.
A reverse gear must be retained and be operational at all times. Additional oil pumps and coolers are allowed, but no aerodynamic

benefits may be derived from them. Air ducts and mounting brackets under the car to these coolers and pumps are allowed, but no aerodynamic benefits may be derived from them, and the external appearance of the car must remain unchanged; oil pumps, coolers and ducts must not protrude beyond the perimeter of the bodywork as seen from above. Oil coolers must be contained within the volume left free under the car when a template with an angle of 45° to the horizontal is introduced along the ground around the perimeter of the car touching the bodywork (see drawing 262-1).
Gearbox supports are free. The gearbox location relative to the other transmission/drive train components must be retained, and it will have to remain in the half of the wheelbase in which it was originally located.
The making of a hole with a maximum diameter of 80 mm is authorised in order to allow the passage of the gearbox lever, but the assembly must be impenetrable by gases.
Continuously variable transmissions (CVT) are forbidden.
4.3.3) Final-drive assembly, differentials , prop-shafts and drive-shafts :
Free, subject to art. 4.3.2 and to the following::
Differentials with any means of varying the slip characteristics, by either automatic (including electric, pneumatic and hydraulic) or manual means, other than those inherent in the mechanical arrangement, are forbidden. Viscous and hydraulic differentials are not considered to have hydraulic slip control, provided outside control is not possible when the car is in motion.
Any outside control of the differential is prohibited whilst the vehicle is in motion. However cooling and lubrication systems external to the differential are permitted provided that there is no potential for control.
4.3.4) Propulsion :
Traction control is forbidden.

4.4 Suspension

4.4.1) Type :
The generic type must remain the same as the homologated car.
Anti-roll bars, fitted to the homologated car, may be removed. Mechanically adjustable anti-roll bars are permitted and these may be adjusted from the cockpit.
The bars, their levers and linkages may pass through the luggage compartment, engine bay and wheel arches but only the adjustment cables or rods may pass through the cockpit.
The removal or the addition of anti-roll bars must not change the generic type of suspension. The competitor must submit to the FIA a scheme and explanation of the operating principle and design layout of the racing suspension showing that the generic type is respected, and receive written approval. All existing suspensions raced prior to 01.01.97 must be submitted through the ASN for automatic approval.
4.4.2) Pivot points :
The inboard points of all linkages, McPherson strut mounting points and spring and/or damper mounting points must lie within a sphere of radius :
- 20 mm for all points below the upper line of the wheel rim
- 75 mm for all points above the upper line of the wheel rim.

With its centre at the original equivalent point of the homologated car's suspension.
If the inboard pivot is a bearing of finite length, the pivot point is defined as the centre of the bearing element about which the link rotates.
The length / diameter ratio of an inboard suspension joint must not be greater than 2 or than that of the joint of the series homologated car, if this is greater than 2.
The length of the joint is defined as the length of the rolling element or the shortest sliding element.
The diameter is defined as the mean diameter of the rolling element or the maximum diameter of the sliding surface.
The position of the wheel rim relative to the body shell (or chassis) is as per the homologated car, when at its unladen static height.
Modifications to the shell (or chassis), to accommodate the changed position of pivot and mounting points, are limited to that necessary to provide clearance for suspension components, drive shafts, and wheel and tyre.
The type and material of suspension joints are free.
4.4.3) Materials :
The materials from which the suspension components are made, and their design, within the limitations of art. 4.4.1., is free, except that composite materials are not permitted.
4.4.4) Reinforcement :
Strengthening of the mounting points, suspension parts, and running gear is allowed.
Reinforcing bars on the suspension mounting points of the body shell (or chassis) may be installed as follows : the distance between the suspension attachment point and the attachment point of the reinforcing bar must not exceed 100 mm, unless the bar is a transverse, tensile/compression member homologated with the roll-cage, or unless there is an upper bar attached to the top mounting of a strut suspension. In the latter case, the maximum distance between the attachment point of the reinforcement bar and the upper articulation point of the strut must not exceed 150 mm. The attachment points at not more than 100 mm/150 mm are the only points on or within the car to which the reinforcing bars are to be fixed.
4.4.5) Active systems :
Active systems that control any part or characteristic of the suspension or steering are not permitted, except power steering systems, as defined in art. 4.7.
4.4.6) Springs :
The front and rear spring types (coil, torsion bar, rubber, pneumatic, etc.), must retain the same principle as the respective spring types on the homologated car.The number of springs is free, provided that they can be fitted without any modifications other than those specified in these regulations. Combined coil spring/shock absorber units are permissible and may be used in conjunction with the original spring type subject to art. 4.4.7.
The material and main spring dimensions are free.
The spring seats may be made adjustable and include the addition of material.
4.4.7) Shock absorbers :
The number of shock absorbers fitted to each wheel suspension must be the same as the homologated car.
The make and type are free.
It is permissible to replace the strut, including spring seats, of a strut type suspension with another make or type but this must not result in a change of working principle.
4.4.8) Adjustment of springs and/or shock absorbers :
The adjustment of springs and/or shock absorbers from inside the car is not permitted.

4.5 Wheels and tyres

4.5.1) The maximum width of the complete wheel is of 9 inches; the complete wheel diameter is not to exceed 650 mm.
The front track, measured at the widest part of the complete wheel, in the straight ahead position at static ride height, must be within the following limits :
- minimum: the homologated front bodywork width
- maximum: the homologated front bodywork width + 2%.

The rear track, measured at the widest part of the complete wheel at static ride height, must be within the following limits :
- minimum: the homologated rear bodywork width
- maximum: the homologated rear bodywork width + 2%.

The complete wheel above the hub centre-line must be able to be housed within the wheel arch. No part of the stub axle or hub assembly is permitted to extend beyond the outside plane of the complete wheel.
The internal arch may be modified minimally to accommodate the complete wheel (diameter 650 mm) as long as it does not affect the structural integrity of the vehicle does not contravene art. 4.4 and allows the normal operation of the suspension, transmission and steering, with no possible contact between the wheel and the wheel arch.
For those parts of the inside of the wheel arch which may be changed in this way, the material shall be free within the same family (steel remaining steel, plastic remaining plastic). Plastic components may be changed to composites.In order to achieve a minimum steering lock of +/- 15 degrees without the complete wheel fouling the fender it is permitted to modify the fenders as follows :

The aperture of the front fender may be increased by removing material up to a maximium radius of the maximum permitted radius of the tyre +20mm (i.e. 345mm), measured at the wheel hub centre. It is permitted to blend this radius to the existing aperture using a line tangent to both curves (see drawing 262-8). It is permitted to stretch the remaining panel, or re-manufacture or add material (provided it is in the same material and of the same thickness as the original) to achieve the maximum allowable width, in order that the fender covers the complete wheel.
To achieve cosmetic sympathy with the front , it is permitted to modify the aperture of the rear fender in a similar fashion, excepting that the maximum height of the aperture is 80% of the maximum radius of the front aperture.
The fender modification must be homologated as part of the aero package.
All measurements permitted in this article will be taken in race condition without the driver on board.
Where the inner wheel arch is adjacent to the inner rear door skin, it is permitted to modify this door skin if the wheel arch has been modified in accordance with this article.

4.5.2) Wheels :

The design and diameter are free, as is the type of attachment, but wheels made partially or entirely from composite materials are prohibited. If the wheel is of the centre lock type using a central nut, then a safety spring must be in place on the nut at all times during the event. These springs must be painted "dayglo red" and each car must have spare springs available at all times.

4.5.3) Ground clearance :

At any time during an event no part of the car must touch the ground when both the tyres on one side are deflated.
A test may be carried out on a flat surface, in race trim, with the driver on board.
Any system or device that enables the control of the ride heights of the car, while the car is in motion, is forbidden.

4.6 Brakes

4.6.1) Drum brakes must be changed for disc brakes. Brake fluid tanks must not be situated in the cockpit.

4.6.2) Brake calipers :

All brake calipers bodies must be made from aluminium materials with a modulus of elasticity no greater than 80 Gpa.

4.6.3) Brake discs :

No more than one brake disc is permitted on each wheel.
Brake discs must be made from a ferrous material.

4.6.4) Brake linings :

Material, dimensions and mounting method are free.

4.6.5) Brake servos and brake pumps are free.

4.6.6) Brake cooling :

Only air may be used to cool brake discs and pads.
It is permitted to use closed loop liquid cooled calipers.
At the front: The openings homologated with the front aerodynamic device may be used, as may those corresponding to the holes for the additional headlamps in the original front face. From these openings, flexible ducts to bring the air to the brakes of each wheel are allowed, but its cross-sectional area must total less than 80 cm^2 per wheel and the maximum dimension less than 25 cm. The air ducts must not protrude beyond the perimeter of the car seen from above.
At the rear: Flexible ducts to bring the air to the brakes of each wheel are allowed, but its cross-sectional area must total less than 80 cm^2 per wheel and the maximum dimension less than 25 cm. The air ducts must not protrude beyond the perimeter of the car seen from above, and the air intakes must be situated within the rear half of the wheelbase of the car.

4.6.7) Handbrake :

Free.
It is permitted to install a single solenoid which operates equally on both wheels on either the front or rear axle controlled by a simple on-off switch which has no possibility of adjustment by the driver.

4.6.8) Hydraulic lines :

Hydraulic lines may be replaced by lines of aircraft quality.

4.6.9) Brake modulation :

Anti-lock brakes are forbidden.
The balance of the braking forces between the front and rear axles may only be adjusted by the driver through :
- direct intervention on the position of the centre of the joint, on the linkage lever of the hydraulic pumps of the front and rear circuits.
- direct intervention on a proportional valve, in which the intake pressure of the rear circuit is adjusted through a pre-loaded spring, variable according to the position of the manual linkage system (see the drawing of the principle 262-9).

Only one of these two systems is permitted.
All other systems are prohibited, including inertial mechanical systems.
In other words, no type of pneumatic, additional hydraulic, electric or electronic control (analogue and digital) may be connected to the braking system (e.g. simple electric switches, solenoid valves, etc).
Apart from the manual adjuster mentioned above, the front and rear braking circuit must have fully closed lines without the possibility of modulating the braking pressure on one side or the other.

4.7 Steering

Free on condition that the type of steering fitted to the homologated vehicle is retained and that the steering mechanism only operates the front wheels and provided art.4.5.1 is respected. The steering wheel must be fitted with a quick release mechanism. Its method of release must be by pulling a concentric flange installed on the steering column behind the wheel. Power steering may be disconnected removed, or added, but the power steering pump must not be placed in the cockpit.
The anti-theft steering-lock device must be made inoperative. The steering may be either right or left-hand, provided this is achieved by a simple inversion of the steering wheel controls, specified and supplied by the manufacturer, without any other mechanical modifications except those made necessary by the inversion.
A limited cutting of the bulkhead is permitted for the passage of a new steering column (see art. 4.8.4.2), with no deformation of this bulkhead.
Power steering systems which do anything other than reduce the physical effort required to steer the car are not permitted.

4.8 Bodywork - Bodyshell

4.8.1) Lightening and reinforcement :

All bodywork panels of the vehicle must be of the same shape, material and thickness (thickness tolerance ±5%) as the original homologated car. Strengthening of the bodyshell and bodywork is allowed provided that the material used is the same as the original material, follows the original shape, is in direct contact with it, and that the original material is fully preserved under the reinforcement.
Subframes may freely be removed or changed and further attachments may be added. The use of composites for these components is not permitted.
New supports and mounting brackets may be added as required subject to art. 4.4. Insulating material may be removed from under the car floor, from the engine compartment, the luggage boot and the wheel arches. Unused supports (e.g. for spare wheel) situated on the bodyshell/bodywork may be removed.
When the upper and lower front cross-rails are welded at both ends to the shell, they may be made detachable.
In so far as it affects driver protection in the event of an accident, the frontal impact, energy absorbing performance of the car must be unaffected by any modifications made to it. If parts of the structure that influence the energy absorbing performance (including bodyshell longtitudinals, cross frames and subframes) are removed or modified, justification for the modifications, showning that the overall structure's performance is equal to that of the series production car, or improves upon it must be submitted to the FIA for approval and homologated by the manufacturer.

4.8.2) Any holes in the cockpit, engine bay and luggage compartment, must be closed in such a way as to prevent the passage of fluid or flame. The use of adhesive tape on the exterior surface of the car is prohibited, except for the use of decals which must not cover, even partially, any hole and/or gap.

4.8.3) Exterior :

4.8.3.1 - Except in the case of explicit allowance by this regulation, all external bodywork must remain as on the original homologated vehicle.
It is permitted to close air intakes and exhausts, joints in front bodywork and aerodynamic device a minimum 10 mm behind

the exterior surface of the opening.
4.8.3.2 - The front bumper may be incorporated into the homologated front aerodynamic device, subject to the restrictions thereof. The cutting of the bumper, limited to what is strictly necessary, will be authorised for access to the towing eye. The interior reinforcements of the bumpers may be removed, and the means of attaching the bumpers is free.
It is authorised to reduce the plastic edges of the bumpers when they protrude inside the wheel housing in accordance with article 4.5.1 and drawing 262-8.
4.8.3.3 - Windscreen wipers and washers :
The wiper is free but it must be operational and clear the screen directly in front of the driver. The capacity of the washer tank may be increased and it may be moved in position or removed.
4.8.3.4 - External decorative strips and mud flaps may be removed.
4.8.3.5 - Jacking points may be strengthened, moved and increased in number.
4.8.3.6 - Registration plates and registration plate mountings may be dismounted as well as their lighting system.
4.8.3.7 - Windows may be replaced with components made from polycarbonate or a glass polycarbonate composite. The windscreen, if replaced with polycarbonate, must be hardcoated, and appropriately marked. The minimum thickness for polycarbonate windows is : front screen 6mm, rear screen 4mm, side windows 3mm. Additional safety fastenings for the windows may be fitted provided that they do not improve the aerodynamic qualities of the car.
These additional safety fastenings must be situated at the edges of the glass or polycarbonate where it meets the bodywork. "Nascar" style supports through the glass or polycarbonate are not allowed. The window opening mechanisms are free.
4.8.3.8 - The fitting of any underbody protection is prohibited except for undertrays installed as original equipment on the homologated car. If they are in contact with the external airstream, the engine and gearbox supports must be perforated with 50 mm diameter holes with centres 150 mm apart.
4.8.3.9 - The plastic sound-proofing parts may be removed from the interior of the wheel bays (see also art. 4.5.1).
4.8.3.10 - Pneumatic jacks are permitted, but compressed air bottles are not to be carried on board.
4.8.3.11 - "Skirts" are banned. All non-homologated devices or constructions designed so as to fill, fully or partially, the space between the sprung parts of the car and the ground are forbidden in all circumstances.
4.8.3.12 - It is authorised to remove or replace existing supports between the bodywork and the bodyshell, but it is not possible to change or add locations.
4.8.3.13 - Aerodynamic devices: Only homologated devices may be used, fitted, in their homologated positions throughout the duration of the event. Furthermore, if a front device and a rear device are homologated together, on the basic form or on a variant, they must be used simultaneously, as variations or different combinations are not permitted.
The front aerodynamic devices must have no radiators visible from outside the car. The original non-structural parts covered by the front device may be removed.
At no time during the event may the lowest point of the front device be situated less than 45 mm from the ground.
The rear aerodynamic device must be situated entirely, including its supports, with it's trailing edge between two vertical planes perpendicular to the longitudinal centre-line of the car situated 100 and 120 mm ahead of the rearmost point of the car.
4.8.3.14 - External rear-view mirrors: The reflecting part may be replaced with another possessing the same qualities of reflection and of which the basis is composed of plastic. The electrical defrosting and adjustment systems may be removed.
4.8.3.15 - Hang on body panels: All parts of the bodywork which are licked by the external airstream and are movable in relation to the bodyshell (i.e. the boot-lid, bonnet, doors, sun roof, tank filler flap) must be in the fully-closed-position at all times while the car is in motion under its own power.
The fully-closed-position of these parts relative to the bodyshell must be exactly the same in the homologated production car.
4.8.4) Cockpit :
4.8.4.1 - Seats :
The driver's seat must be homologated by the FIA (standard 8855-1992 or 8855-1999), with an extension padded with energy-absorbing and non-inflammable material around the driver's head, and must not be modified. It is recommended that the seat attachments should be homologated on the car's form. In this case, these attachments must be used. The seat must include a head-restraint. Its dimensions must be such that the driver's head with its helmet is retained and cannot move past it under rearward acceleration, or be trapped between the roll-over bar and the head restraint. It is recommended that the distance between the sides of the head restraint should not exceed 400 mm and that there should be a minimum of 20 mm of energy absorbing material on either side. The driver's seat may be moved backwards, but not beyond the vertical plane defined by the front edge of the original rear seat. The limit is formed by the rearmost point of the driver's shoulders. Lateral positioning as close as possible to the longitudinal centre-line of the car is recommended, but at the level of the "H" point the driver's seat must be situated entirely to one side of this centre-line (drawing n° 262-6). Passengers' seats are to be removed to reduce combustible material.
4.8.4.2 - Dashboard :
The trim situated below the dashboard, and which is not part of it, may be removed. It is also permitted to remove the part of the centre console which contains neither the heating nor the instruments. The limited cutting of the dashboard is permitted for the passage of the gear lever and steering (see drawing 255-7). If moved towards the driver, the instruments must be contained in a housing which is an extension of the original instrument binnacle.
4.8.4.3 - Doors :
On the condition that the original bodywork is respected, the door locking system may be modified.
It must be possible to remove the doors completely from the car without the use of tools.
All door interior-trim and sound-proofing material may be removed and replaced with panels of non-combustible material (e.g. aluminium carbon and/or aramid based composites) in order to obscure the door and window mechanisms.
Driver's side:
The inside of the front doors on the driver's side must be filled with energy-absorbing material, the reinforcement bars positioned inside the doors, together with the interior trim and the sound-proofing material, may be removed.
4.8.4.4 - Roof :
All padding, insulating material and roof lining are to be removed from the underside of the roof. Sun roofs are not permitted. Therefore, a sun roof may be riveted or welded, on condition that it is integrated into the structure of the car. A glass sun roof may also be replaced with a metal sheet if the thickness of the metal is the same as for the rest of the roof.
4.8.4.5 - Floor :
Insulating and padding materials and carpets are to be removed. For cars with rear-wheel drive, part of the floor may be displaced within a maximum volume of 30 dm^3 and a maximum height of 20 cm, in relation to the original floor.
Floors made from composite materials may be fitted to the driver's and passenger's side of the cockpit between the front bulkhead (but not on it) and the front of the rear seat as defined in Art. 255.5.7.3.1. These floor panels must be retained by attachments no larger than 5 mm with a minimum of 150 mm between each attachment point. Bonding to the shell is prohibited
4.8.4.6 - Any other padding and interior trim may be removed.
4.8.4.7 - The cockpit heating system may be removed.
4.8.4.8 - Air conditioning may be added or removed.
4.8.4.9 - Pedals :
Pedals are free, and their installation may entail a limited cutting of the engine/cockpit bulkhead, but there must be no deformation of this bulkhead. The pedals may be either right or left provided this is achieved by a simple inversion of the pedals controls, specified and supplied by the manufacturer, without any other mechanical modifications except those made necessary by the inversion.

4.8.4.10 - The removable rear window shelf in two volume cars may be removed together with its supports.
4.8.4.11 - Air pipes :
Air and ventilation pipes may pass through the cockpit if these are intended for the ventilation of the cockpit or air jacks, or if they meet safety criteria in Art: 253.3.2.
4.8.4.12 - In addition to the outside rear-view mirrors, rear vision must be ensured by an inside mirror commanding the rear window completely.
4.8.5) Additional accessories :
All those which have no influence on the car's behaviour are allowed, e.g. equipment which improves the aesthetics or comfort of the car interior (lighting, radio, etc.). In no case are these accessories permitted to increase the engine power or influence the steering, transmission, brakes or road holding, even in an indirect fashion. All controls must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, e.g. a longer hanbdbrake lever, an additional pad on the brake pedal, etc.
The following are allowed:
1 - All windows with the exception of the rear side windows must be capable of being demisted.
2 - Measuring instruments such as speedometer, etc. may be installed, replaced, or removed. In this last case the original holes must be sealed.
Data logging/time-keeping equipment, including the necessary sensors, may be fitted outside the field of view of any on-board camera.
3 - The horn is not compulsory.
4 - Circuit breakers and switches on the dashboard may be freely changed, on condition that the original shape and appearance of the dashboard remain the same.
Circuit breakers may be freely changed regarding their use, position or number in the case of additional accessories.
5 - Insulating material may be added to the existing bulkheads to provide additional protection for the driver from fire.
6 - It is authorized to replace the boot and bonnet hinges with ones of an alternative design provided the fit of the boot and bonnet is not compromised in any way and that the replacement hinges serve no other function. It must be possible to open the boot and bonnet without the use of tools.
4.8.6) Towing eye :
The towing eye must have a hole of minimum dimensions of 25 x 40 mm, situated 25 mm forward of the adjacent bodywork. Along 100 mm above and below this hole, there must be a clearance to enable the recovery crews to attach straps and shackles. The inner part must be flexible or deformable in order to be retractable in the bodywork.

4.9 Electrical system

4.9.1) The nominal voltage of the electrical system, including that of the supply circuit of the ignition, must be retained.
Relays, circuit breakers, fuses and cables are free.
4.9.2) Battery :
The make, number and capacity of the batteries are free. Each battery must be securely fixed and covered to avoid any short-circuits or leaks. The location of each battery is free, however if in the cockpit it will only be possible behind the front seats or, failing this, at the side of these seats. In this case, the protection box must include an air intake with its exit outside the cockpit (see drawings 255-10 and 255-11). Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts.
For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt, a counterplate at least 3 mm thick and with a surface of at least 20 cm^2 beneath the metal of the bodywork.
The battery, if it is not of the dry battery type, must be covered by a leak proof plastic box, attached independently of the battery (see drawing 255-11).
4.9.3) Generator and voltage regulator :
Free, including position and drive system.
4.9.4) Lighting and indicating :
All lighting and signaling devices, as homologated, must be operational (with the exception of the number-plate lights, reversing lights, front fog lights, high-level brake lights and side repeaters) in order to preserve vehicle identity. The make of the lighting devices is free. Original headlights may be replaced by others having the same lighting functions as long as there is no cutout in the bodywork, the original holes are completely closed, and the shape of the headlights and their operation remain unchanged. The operating system of the retractable headlights, as well as its energy source, may be modified. If a reversing light is operational, it must only operate when reverse gear is selected. Fog lights may be removed and the subsequent apertures must be blocked off if they are not used according to art. 4.6.6.
The headlamps must be capable of providing effective illumination.

4.10 Fuel circuit:

4.10.1) The fuel tank must be replaced by one or several safety fuel tanks homologated by FIA (specification FT3 or FT3 1999). Each tank must be placed inside the luggage compartment, or in its original location, provided that it is not in the cockpit. It is permitted to make holes in the bottom of the luggage compartment to allow the refueling pipes to reach the tank if this is situated beneath the luggage compartment.
The construction of collector-tanks with a capacity of less than 1 litre is free. A fluid/flame-proof bulkhead is to be installed between the tank compartments and the cockpit, and if needs be, suitable protection provided for the supplementary accessories (refueling orifice, petrol pump, overflow pipe). The changes of the position of the tanks should not give rise to any lightening or reinforcement other than provided for under this article and art. 4.8.1. In the case of a fuel tank being fitted below the floor of the car, it must be contained in a close fitting flame proof housing that adds no aerodynamic advantage and has no other mechanical function. This housing must include a crushable structure as defined for F3 fuel tanks and be secured using a minimum of two metal clamps 30 mm x 3 mm, fixed to the floor pan by bolts and nuts. For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt a counterplate at least 3 mm thick and with a surface of at least 20 cm^2 above the metal of the floor pan. The opening remaining after the removal of the original tank may be closed by the installation of a panel of the same dimensions as the fuel tank aperture.
Where the exhaust system passes through a fuel tank, the entire exhaust system must be visible from directly underneath the car.The position and the dimension of the filler hole, as well as that of the cap may be changed as long as the new installation does not protrude beyond the bodywork, and is effected in such a way that no fuel will leak into the interior compartments of the car. If the filler hole is situated inside the car, it must be separated from the cockpit by a liquid-tight protection.
Fuel lines are permitted through the cockpit, on condition that they are protected with a liquid-tight and flame proof cover, or comply with Art. 253.3.2.
It is permitted to fit a radiator in the fuel circuit.
The total capacity of the fuel tanks must not exceed 100 litres.
4.10.2) All cars must be fitted with a self sealing connector which can be used by the scrutineers to obtain fuel from the tank. This connector must be of a type approved by the FIA.

4.11 General prescriptions and safety

4.11.1) Cars must comply with the following requirements of Appendix J, article 252 - General Prescriptions and article 253 - Safety, as published in the FIA Yearbook and Sporting Bulletin, and which are not already covered in these regulations:
- 252.1.1 Prohibited modifications
- 252.1.3 Magnesium
- 252.2.2 Ballast
- 252.6 Wheels
- 252.9.4 Refueling procedure
- 252.9.5 Tank ventilation
- 253.1 Dangerous car
- 253.3.1 Protection of lines
- 253.3.2 Specifications and installation of lines
- 253.3.3 Automatic fuel cut-off
- 253.4 Braking safety system

- 253.5 Additional fasteners
- 253.6 Harness
- 253.7 Extinguishers
- 253.8.5 Safety cage: must be homologated by the FIA for any car built after 01.01.97.
- 253.10 Towing eye
- 253.11 Windows / Nets
- 253.13 General circuit breaker
- 253.14 FT3 or FT3 1999 tank
- 253.15 Protection against fire
- 253.16 Seat attachments and supports
- 253.17 Pressure control valves

4.11.2) Moreover, safety cages must comply with the following measures :
- They must be described on the car's homologation form (art. 253.8.5 of Appendix J).
- The tubes close to the driver must be padded with CF 42 or CF 45 "Confor" foam, or with foam of the "KOLBERMOOR Oldopur 1000" type. This foam must not be inflammable.
- Energy-absorbing material must be placed between the tubes on the side of the cage, to the front and to the rear on the driver's side (see drawing n° 262-5). This material must be installed mechanically, ensuring that the cage remains intact, without piercing, bonding or welding, and must not be inflammable.
- Panels of energy-absorbing material must be placed between the cage and the front and rear doors on the driver's side, and between the cage and the seat on the driver's side. This material must not be inflammable.
It is prohibited to place parts between these panels and the seat.
The lateral protection of the driver's seat must be homologated.
4.11.3) The safety harness shoulder straps homologated in accordance with the FIA standard 8853 or 8854 must be 76 mm (3") wide.
4.11.4) The cockpit must be designed so as to allow the driver to get out from his normal driving position in 7 seconds through the driver's door and in 9 seconds through the passenger's door.
For the purposes of the above tests, the driver must be wearing all normal driving equipment, the seat belts must be fastened, the steering wheel must be in place in the most inconvenient position, the doors must be closed and the door nets in place.

ARTICLE 5 : FINAL TEXT

The final text for these regulations shall be the English version which will be used should any dispute arise over their interpretation.

Appendix 1 : Computer systems

All reprogrammable computers used on a car should have an upload mechanism that allows scrutineers to take a copy of all programmed memory areas and selected data memory areas. The scrutineer will use a standard "IBM compatible" laptop computer running the Windows 95 operating system. Teams (or equipment suppliers) must provide cabling, interface equipment and communication software that matches these requirements. The FIA will provide procedural programs, manuals and training to local scrutineers.

"Selected data memory areas" will be specific to particular units and are to be decided in consultation with the FIA.

The mechanism chosen should be from an FIA approved list. Any other methods will be given individual approval - The system must give a complete and true upload and be simple to use.

The FIA will examine in detail all the software used on the car and the lap top computer in order to establish that the upload mechanism has been implemented correctly.

There will be an option to check that the uploaded program area is equivalent to a previously inspected and approved software version. In this case, the FIA must examine every computer program prior to use on a car.

Very small computers and some categories of programmable silicon devices may be exempted from the upload requirement provided the supplier can demonstrate to the satisfaction of the FIA that they can not be reprogrammed by the team.

The approved upload mechanisms are :
Direct copying via PCMCIA memory cards.
Cable connection by serial link with communication using the Z modern protocol.
Cable connection via parallel, CAN or ethernet link. Communication software to be individually examined.

Units with programs held in volatile memory will be subject to extra checks. In this case, the car should also provide a computer power reset switch which forces such units to clear the volatile memory.

ARTICLE 275 - FORMULA 3 TECHNICAL REGULATIONS

SUMMARY

ARTICLE 1: DEFINITIONS

1.1 Formula 3 car
Automobile designed solely for speed races on circuits or closed courses.

1.2 Automobile
Land vehicle running on at least four non aligned complete wheels, of which at least two are for steering and at least two for propulsion.

1.3 Land vehicle
A locomotive device propelled by its own means, moving by constantly taking real support on the earth's surface, of which the propulsion and steering are under the control of a driver aboard the vehicle.

1.4 Bodywork
All entirely sprung parts of the car in contact with the external air stream, except the rollover structures and the parts definitely associated with the mechanical functioning of the engine, transmission and running gear. Airboxes and radiators are considered to be part of the bodywork.

1.5 Wheel
Flange and rim. Complete wheel: Flange, rim and tyre.

1.6 Automobile Make
In the case of Formula racing cars, an automobile make is a complete car. When the car manufacturer fits an engine which it does not manufacture, the car shall be considered a hybrid and the name of the engine manufacturer shall be associated with that of the car manufacturer.
The name of the car manufacturer must always precede that of the engine manufacturer.
Should a hybrid car win a Championship Title, Cup or Trophy, this will be awarded to the manufacturer of the car.

1.7 Event
An event shall consist of official practice and the race.

1.8 Weight
Is the weight of the car with the driver, wearing his complete racing apparel, at all times during the event.

1.9 Racing weight
Is the weight of the car in running order with the driver aboard and all fuel tanks full.

1.10 Cubic capacity
The volume swept in the cylinders of the engine by the movement of the pistons. This volume shall be expressed in cubic centimetres. In calculating engine cubic capacity, the number shall be 3.1416.

1.11 Supercharging
Increasing the weight of the charge of the fuel/air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust system) by any means whatsoever. The injection of fuel under pressure is not considered to be supercharging.

1.12 Intake system
All the elements between the cylinder head and the external side of the air restrictor.

1.13 Main structure
The fully sprung structure of the vehicle to which the suspension and/or spring loads are transmitted, extending longitudinally from the foremost front suspension on the chassis to the rearmost one at the rear.

1.14 Sprung suspension
The means whereby all complete wheels are suspended from the body/chassis unit by a spring medium.

1.15 Active suspension
Any system which allows control of any part of the suspension or of the trim height when the car is moving.

1.16 Cockpit
The volume which accommodates the driver.

1.17 Survival cell
A continuous closed structure containing all fuel tanks and the cockpit.

1.18 Composite structure
Non-homogeneous materials which have a cross-section comprising either two skins bonded to each side of a core material or an assembly of plies which form one laminate.

1.19 Telemetry
The transmission of data between a moving car and anyone connected with the entry of that car.

1.20 Semi-automatic gearbox
One which, when the driver calls for a gear change, takes over the control of one or more of the engine, clutch and gear selectors momentarily to enable the gear to be engaged.

1.21 Cockpit padding :
Non-structural parts placed within the cockpit for the sole purpose of improving driver comfort and safety. All such material must be quickly removable without the use of tools.

1.22 Engine and gearbox assembly
The parts of the engine and gearbox that have to remain unchanged are :

- Gearbox casing
- Bell housing
- Cylinder block
- Cylinder head
- Oil sump
- Cam cover
- Complete intake system including the air box

ARTICLE 2: REGULATIONS

2.1 Role of the FIA
The following technical regulations for Formula 3 cars are issued by the FIA.

2.2 Publication date for amendments
Each year in October at the latest, the FIA will publish all changes made to these regulations. All such changes will take effect on the third 1st January following their publication.
Changes made for safety reasons may come into force without notice.

2.3 Notice for change in the air restrictor
The FIA reserves its right to modify the dimensions of the air restrictor with one year's notice.

2.4 Permanent compliance with regulations
Automobiles must comply with these regulations in their entirety at all times during an event.

2.5 Measurements
All measurements must be made while the car is stationary on a flat horizontal surface.

2.6 Technical passport
All competitors must be in possession of a technical passport for their car which will be issued by the relevant ASN and must accompany the car at all times.
No car will be permitted to take part in an event unless the passport is available for inspection at initial scrutineering.

2.7 Changes to car design
2.7.1) The survival cell, the frontal impact absorbing structure, the collapsible steering column (see Article 18.1), the front wing main plane, the engine-gearbox assembly, the steering rack assembly, the front and rear uprights including hubs, the fuel system and the fire extinguishing system must be homologated by the rolling chassis manufacturer. The rolling chassis manufacturer must supply detailed drawings to identify the homologated parts in addition to a commercial price list.
2.7.2) From the date of homologation the survival cell, the frontal impact absorbing structure and the collapsible steering column (see Article 18.1) must remain unchanged for three complete seasons.
2.7.3) From the date of homologation, the front wing main plane, the engine-gearbox assembly, the steering rack assembly, the front and rear uprights including hubs, the fuel tank and the fire extinguishing system must remain unchanged for a complete season. After this time, these parts may be changed after re-homologation. In this case, the rolling chassis manufacturer must supply detailed drawings to identify these re-homologated parts in addition to a price list. The manufacturer must also offer an upgrade kit which includes all the re-homologated parts and the price of the re-homologated parts may not differ from the price of the previously homologated parts.

ARTICLE 3: BODYWORK AND DIMENSIONS

3.1 Wheel centre line
The centre line of any wheel shall be deemed to be half way between two straight edges, perpendicular to the surface on which the car is standing, placed against opposite sides of the complete wheel at the centre of the tyre tread.

3.2 Height measurements
All height measurements will be taken with the car in normal racing trim with the driver aboard seated normally.

3.3 Overall width
The overall width of the car including complete wheels shall not exceed 1850 mm, with the steered wheels in the straight ahead position.

3.4 Width ahead of the rear edge of the front wheels
3.4.1) The bodywork ahead of the rear edge of the complete front wheels is limited to a maximum width of 1300 mm.
3.4.2) Except for fixation, the lateral extremities of any bodywork forward of the front wheels must be flat and, in order to prevent tyre damage to other cars, at least 10 mm thick within a radius of 5 mm on all edges.

3.5 Width between the rear edge of the front wheels and rear wheel centre line
The maximum width of the bodywork behind the rear edge of the complete front wheels and in front of the centre line of the rear wheels is 1300 mm.

3.6 Width behind the rear wheel centre line
3.6.1) Bodywork behind the centre line of the rear wheels must not exceed 900 mm in width.
3.6.2) Except for fixation, the lateral extremities of any bodywork behind the rear wheel centre line must be flat.

3.7 Overall height
Except for the rollover structures, no part of the car can be higher than 900 mm from the ground. However, any part of the rollover structures more than 900 mm from the ground must not be shaped to have a significant aerodynamic influence on the performance of the car.

3.8 Front bodywork height
No part of the bodywork in front of the rear edge of the complete front wheels and more than 250 mm from the longitudinal centre line of the car may be closer than 40 mm to the reference plane referred to in Article 3.13. or above the height of the front wheel rims.

3.9 Height in front of the rear wheels
With the exception of engine airboxes, no part of the bodywork forward of the front edge of the complete rear wheels and extending above the height of the complete rear wheels may project beyond 450 mm each side of the longitudinal axis of the car.

3.10 Height between the rear wheels
No part of the bodywork between the front edge of the complete rear wheels and 250 mm behind the rear wheel centre line and higher than the complete rear wheels may be more than 150 mm from the centre line of the car.

3.11 Bodywork behind the front edge of the complete rear wheels
Behind the front edge of the complete rear wheels, a maximum of three aerofoil sections may be used. All aerofoil sections used in this area must conform to one of the three sets of dimensions given in Table 1 of these Technical Regulations. Each of the dimensions given must remain nominally at the same height above the reference plane over the entire width of the relevant aerofoil section.
No trim tabs may be added to any of these aerofoil sections. However, devices to keep the space between sections constant may be used provided it is clear that this is their only purpose.
A tolerance of 1.0 mm will be permitted on any stated dimension.

3.12 Bodywork around the front wheels
With the exception of brake cooling ducts, in plan view, there must be no bodywork in the area formed by two longitudinal lines parallel to and 40 cm and 90 cm from the car centre line and two transversal lines, one 5 cm forward of the front edge and one 20 cm behind the rear edge of the complete front wheel.

3.13 Bodywork facing the ground
Between the rear edge of the complete front wheels and the front edge of the complete rear wheels, all sprung parts of the car visible from underneath must lie on one of two parallel planes, the reference plane or the step plane. The step plane must be 50 mm above the reference plane. This distance may be reduced by up to 5 mm if wear occurs to the surface lying on the reference plane after contact with the ground.
The surface formed by all parts lying on the reference plane must extend from the rear edge of the complete front wheels to the front edge of the complete rear wheels, have a minimum width of 300 mm (+/- 3 mm), a maximum width of 500 mm and must be symmetrical about the longitudinal centre line of the car.
All parts lying on the reference and step planes, in addition to the transition between the two planes, must produce uniform, solid, hard, continuous, rigid (no degree of freedom in relation to the body/chassis unit), impervious surfaces under all circumstances.
The peripheries of the surfaces formed by the parts lying on the reference and step planes may be curved upwards with maximum radii of 25 and 50 mm respectively. The surface formed by the parts lying on the reference plane must be connected at its extremities vertically to the parts lying on the step plane and any radius which forms the transition between the two planes may have a maximum radius of 25 mm.
To help overcome any possible manufacturing problems, a tolerance of 5 mm is permissible across these surfaces.
All sprung parts of the car behind the front edge of the complete rear wheels visible from underneath and more than 150 mm (+/- 1.5 mm) from the longitudinal centre line must be at least 50 mm above the reference plane.

3.14 Overhangs
No part of the car shall be more than 500 mm behind the centre line of the rear wheels or more than 1000 mm in front of the centre line of the front wheels.
No part of the bodywork more than 200 mm from the longitudinal centre line of the car may be more than 900 mm in front of the front wheel centre line.

3.15 Aerodynamic influence
Any specific part of the car influencing its aerodynamic performance:
- Must comply with the rules relating to bodywork.
- Must be rigidly secured to the entirely sprung part of the car (rigidly secured means not having any degree of freedom).
- Must remain immobile in relation to the sprung part of the car.

Any device or construction that is designed to bridge the gap between the sprung part of the car and the ground is prohibited under all circumstances.
No part having an aerodynamic influence and no part of the bodywork may under any circumstances be located below the reference plane described in Article 3.13.

3.16 Wheelbase and track
Minimum wheelbase: 2000 mm.
Minimum track: 1200 mm.

ARTICLE 4: WEIGHT

4.1 Minimum weight
The weight of the car must not be less than 540 kg.

4.2 Ballast
Ballast can be used provided it is secured in such a way that tools are required for its removal. It must be possible to fix seals if deemed necessary by the scrutineers.

4.3 Adding during the race
The adding to the car during the race of any liquid or other material whatsoever or the replacement during the race of any part with another materially heavier is forbidden.

ARTICLE 5: ENGINE

5.1 Types of engine permitted
5.1.1) Engines with reciprocating pistons:
The maximum number of cylinders is 4.
Two stroke engines are forbidden.
5.1.2) Engines with rotary pistons:
Cars with rotary piston engines covered by NSU-Wankel patents will be admitted on the basis of a piston displacement equivalence. This equivalence is 1.5 the volume determined by the difference between the maximum and minimum capacity of the working chamber.

5.1.3) The use of magnesium is forbidden in any engines homologated after 01.01.94.

5.2 Maximum capacity

Engine capacity must not exceed 2000 cm^3.

5.3 Supercharging

Supercharging is forbidden.

5.4 Engine modifications

5.4.1) The engine block and engine head castings, machining completed, must be those of a car engine equipping a car model of which the FIA has ascertained the series production of at least 2500 units in 12 consecutive months.

Each engine must be homologated by the FIA, and described on an homologation form for Formula 3 engines.

5.4.2) The original engine block and cylinder head may be modified by the removal of material, but addition of material is not permitted. However, it is permitted to sleeve an engine block, by welding if necessary, that originally is not fitted with sleeves, to modify or close the lubrication holes in the cylinder head, close standard injector holes or to use helicoils.

Unused apertures in the cylinder head or block may be closed provided the only purpose is that of closing.

Any parts added to the intake system must be permanently attached only to the intake manifold, not to the cylinder head.

5.4.3) The type of crankshaft bearings may not be modified.

5.4.4) Mechanical components from the original engine do not have to be used.

5.4.5) The intake system is free but must be fitted with an air restrictor 3 mm long and having a maximum diameter of 26 mm.

All the air feeding the engine must pass through this air restrictor, which must be made of metal or metal alloy.

5.4.6) The material of the air box is free, provided that it is not porous.

The entire intake system including manifolds, injectors, airbox and restrictor must fit into a box 1000 mm long x 500 mm wide x 500 mm high.

It must be possible to remove the entire intake system from the engine as one unit with the cylinder head.

5.4.7) Provided Article 5.2 is respected, the bore and stroke are free.

5.4.8) Internal and/or external spraying or injection of water or any substance whatsoever for the purpose of assisting combustion is forbidden (other than fuel for the normal purpose of combustion in the engine).

5.4.9) Inlet and exhaust valves must be the conventional poppet type and controlled by coil springs.

5.4.10) The use of ceramic materials is forbidden.

5.4.11) Connecting rods must be made from a conventional steel alloy.

5.4.12) Inlet and exhaust valves must be made from a conventional steel alloy.

5.4.13) No more than one fuel injector per cylinder is permitted.

5.4.14) Variable valve timing is forbidden.

5.5 Vacuum tightness control of the intake system

5.5.1) Control of the intake system :

With at least one valve in each cylinder shut and the engine throttles open, the complete intake system must be capable of sustaining a vacuum of 0.2 bar.

Alternatively, if all the valves are shut, either by removing the camshaft(s) or following a repair carried out under the supervision of the scrutineers, a vacuum of 0.267 bar must be sustained.

Any device used for checking the vacuum must have a maximum nominal output of 35 litres per minute and be capable of obtaining a vacuum of 0.734 bar to 0.867 bar for zero airflow.

5.6 Exhaust system

5.6.1) Variable length exhaust systems are forbidden.

5.6.2) The outlet orifices of the exhaust pipes, when directed to the rear, must be less than 600 mm from the ground.

5.6.3) The exhaust system must incorporate at least one approved and functioning catalytic converter through which all exhaust gases must pass. The matrix of each converter must have at least 100 cpsi, be 105 mm in diameter and 120 mm long.

Each type of converter must be specifically approved by the FIA before use in an event.

N.B.: The application of this Article is left to the discretion of each ASN.

5.6.4) The noise generated by the car must not exceed 98 dbA at 3800 rpm measured at 0.5 m and 45° to the exhaust outlet.

All measures which are taken to ensure that the maximum noise limits are not exceeded must be permanent in nature, and must not be removed by the exhaust gas pressure.

N.B.: the application of this article is left to the discretion of each ASN.

5.7 Telemetry

The use of telemetry is forbidden.

5.8 Clutch

The diameter of the clutch assembly must not be less than 165 mm.

5.9 Oil and water pumps:

Electrically driven engine oil and water pumps are forbidden.

5.10 Inlet trumpets

Any system modifying the geometry (length or section) of the intake orifices, of the intake system or of the exhaust system, is prohibited, with the exception of the throttle valve."

5.11 Engine Control Unit :

The only engine control unit which may be used for engine management is that specified by the FIA and supplied by the appointed manufacturer. This engine control unit must be used in accordance with the manufacturer's instructions.

ARTICLE 6: PIPING AND FUEL TANKS

6.1 Fuel tanks

6.1.1) The fuel tank must be a single rubber bladder conforming to or exceeding the specifications of FIA/FT3.

6.1.2) All the fuel stored on board the car must be situated between the front face of the engine and the driver's back when viewed in lateral projection.

Furthermore, no fuel can be stored more than 300mm forward of the highest point at which the driver's back makes contact with his seat.

However, a maximum of 2 litres of fuel may be kept outside the survival cell, but only the quantity which is necessary for the normal running of the engine.

6.1.3) Fuel must not be stored more than 400mm from the longitudinal axis of the car.

6.1.4) The fuel bladder must be fitted with the fuel resistant polyurethane foam baffling with which it is supplied.

6.1.5) All rubber bladders must be made by manufacturers recognised by the FIA. In order to obtain the agreement of the FIA, the manufacturer must prove the compliance of his product with the specifications approved by the FIA. These manufacturers must undertake to deliver to their customers exclusively tanks complying with the approved standards. A list of approved manufacturers is available from the FIA.

6.1.6) All rubber bladders shall be printed with the name of the manufacturer, the specifications to which the tank has been manufactured and the date of manufacture.

6.1.7) No rubber bladders shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another 2 years."

6.2 Fittings and piping

6.2.1) All apertures in the fuel tank must be closed by hatches or fittings which are secured to metallic or composite bolt rings bonded to the inside of the bladder.

The bolt holes edges must be no less than 5mm from the edge of the bolt ring, hatch or fitting.

All hatches and fittings must be sealed with the gaskets or "O" rings supplied with the tank.

6.2.2) All fuel lines between the fuel tank and the engine must have a self sealing breakaway valve. This valve must separate at less than 50% of the load required to break the fuel line fitting or to pull it out of the fuel tank.

6.2.3) No lines containing fuel, cooling water or lubricating oil may pass through the cockpit.

6.2.4) All lines must be fitted in such a way that any leakage cannot result in the accumulation of fluid in the cockpit.

6.2.5) No hydraulic fluid lines may have removable connectors inside the cockpit.

6.2.6) When flexible, all lines must have threaded connectors and an outer braid which is resistant to abrasion and flame.

6.2.7) All fuel and lubricating oil lines must have a minimum

burst pressure of 41 bar at the maximum operating temperature of 135 degrees centigrade.
6.2.8) All hydraulic fluid lines which are not subjected to abrupt changes in pressure, with the exception of lines under gravity head, must have a minimum burst pressure of 408 bar at the maximum operating temperature of 204 degrees centigrade when used with steel connectors and 135 degrees centigrade when used with aluminium connectors.
6.2.9) All hydraulic fluid lines subjected to abrupt changes in pressure must have a minimum burst pressure of 816 bar at the maximum operating temperature of 204 degrees centigrade."

6.3 Crushable structure

The chassis must include a crushable structure surrounding the fuel tank with the exception of the access hatches, this structure being an integral part of the car main structure and of the survival cell, and conforming to the following specifications:
6.3.1) The crushable structure must be a honeycomb sandwich construction based on a fire resistant core of a minimum crushing strength of 18N/cm² (25lb/in²). It shall be permitted to pass water pipes through this core, but not fuel, lubricating oil or electrical lines. The sandwich construction must include two skins of 1.5 mm thickness having a tensile strength of minimum 225N/mm² (14 tons/in²).
6.3.2) The minimum thickness of the sandwich construction must be 10 mm.

6.4 Tank fillers

6.4.1) Tank fillers must not protrude beyond the bodywork. Any breather pipe connecting the fuel tank to the atmosphere must be designed to avoid liquid leakage when the car is running and its outlet must not be less than 250 mm from the cockpit opening.
All tank fillers must be designed to ensure an efficient locking action which reduces the risk of accidental opening following a crash impact or incomplete locking after refuelling.
6.4.2) All cars must be fitted with a self sealing connector which can be used by the scrutineers to obtain fuel from the tank.
This connector must be the type approved by the FIA.

6.5 Refuelling

6.5.1) Refuelling during the race is forbidden.
6.5.2) Refuelling the car on the grid by any other means than by gravity from a maximum head of 2 metres above the ground is forbidden.
6.5.3) Any storage of fuel on board the car at a temperature of more than ten degrees centigrade below the ambient temperature is forbidden.
6.5.4) The use of any specific device, whether on board or not, to decrease the temperature of the fuel below the ambient temperature is forbidden.

ARTICLE 7: OIL SYSTEM

7.1 Location of oil tanks

All oil storage tanks must be situated between the front wheel axis and the rearmost gearbox casing longitudinally, and if situated outside the main structure of the car they must be surrounded by a 10 mm thick crushable structure.

7.2 Longitudinal location of oil system

No other part of the car containing oil may be situated behind the complete rear wheels.

7.3 Catch tank

When a car's lubrication system includes an open type sump breather, this breather must vent into a catch tank of at least 2 litres capacity.

7.4 Transversal location of oil system

No part of the car containing oil may be more than 550 mm from the longitudinal centre line of the car.

7.5 Oil replenishment

No oil replenishment is allowed during a race.

ARTICLE 8: STARTING

8.1 Starter

A starter must be fitted with electrical or other source of energy carried aboard the car, and able to be controlled by the driver when seated normally.
The starter must be capable of starting the engine at all times.

8.2 Starting the engine

A supplementary device temporarily connected to the car may be used to start the engine both on the grid and in the pits.

ARTICLE 9: TRANSMISSION TO THE WHEELS

9.1 Four wheel drive

Four wheel drive cars are forbidden.

9.2 Type of gearbox

All cars must have no more than five forward gears. Transversal gearboxes, sequential gearboxes or gearboxes forward of the rear wheel axis are forbidden. Semi automatic and automatic gearboxes and differentials with electronic, pneumatic or hydraulic slip control are forbidden. Viscous differentials are not considered to have hydraulic slip control, provided outside control is not possible when the car is in motion.

9.3 Reverse gear

All cars must have a reverse gear which, at any time during the event, can be selected while the engine is running and used by the driver when seated normally.

9.4 Traction control

The use of traction control is forbidden.

ARTICLE 10: SUSPENSION AND STEERING

10.1 Active suspension

Active suspension is forbidden.

10.2 Chromium plating

Chromium plating of any steel suspension components is forbidden.

10.3 Suspension members

10.3.1) All suspension members must be made from an homogeneous metallic material.
10.3.2) In order to prevent intrusion of suspension parts into the survival cell during a side impact, each member of every front suspension component with two inboard mountings must be joined by a link as close to the survival cell as practical. This link must be circular with a minimum diameter of 10 mm, and any slip joint must be bolted or pinned and located in the centre of the span."

10.4 Sprung suspension

Cars must be fitted with sprung suspension.The springing mediam must not consist solely of bolts located through flaxible bushes or mountings.There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.

10.5 Steering

10.5.1) The steering must consist of a mechanical link between the driver and the wheels.
10.5.2) Four wheel steering is forbidden.
10.5.3) The steering wheel, steering column and steering rack assembly must be subjected to an impact test.
For the purposes of this test, these parts must be fitted to a representative test structure, any other parts which could materially affect the outcome of the test must also be fitted.
The test structure must be solidly fixed to the ground and a solid object, having a mass of 8kg and travelling at a velocity of 7m/s, will be projected into it. The object used for this test must be hemispherical with a diameter of 165 mm.
For the test, the centre of the hemisphere must strike the structure at the centre of the steering wheel along the same axis as the main part of the steering column.
During the test the striking object may not pivot in any axis and the test structure may be supported in any way provided this does not increase the impact resistance of the parts being tested. The resistance of the test structure must be such that during the impact the peak deceleration of the object does not exceed 80g for more than 3ms. After the test the steering wheel quick release mechanism must still function normally.

ARTICLE 11: BRAKES

11.1 Separate circuits

All cars must have a brake system which has at least two separate circuits operated by the same pedal. This system must be designed so that if leakage or failure occurs in one circuit, the pedal shall still

operate the brakes on at least two wheels.

11.2 Brake discs

11.2.1) Brake discs must be made from ferrous material.

11.2.2) Brake discs must not be drilled, and must have a maximum of 4 grooves per side. Additionally, all solid discs must have a minimum thickness of 9.5 mm and ventilated discs 15.0 mm when new.

11.3 Brake calipers

11.3.1) All brake calipers must be made from an homogeneous metallic material.

11.3.2) There must be no more than four brake caliper pistons on each wheel.

11.4 Air ducts

Air ducts for the purpose of cooling the front brakes shall not protrude beyond:

- A plane parallel to the ground situated at a distance of 140 mm above the horizontal centre line of the wheel.
- A plane parallel to the ground situated at a distance of 140 mm below the horizontal centre line of the wheel.
- A vertical plane parallel to the inner face of the front rim and displaced from it by 120 mm toward the centre line of the car.
- The periphery of the tyre forwards or the wheel rim backwards, when viewed from the side of the car.

11.5 Liquid cooling

Liquid cooling of any part of the braking system is forbidden.

11.6 Brake pressure modulation

Anti-lock brakes and power braking are forbidden.

ARTICLE 12: WHEELS AND TYRES

12.1 Location

Complete wheels must be external to the bodywork in plan view, with the rear aerodynamic device removed.

12.2 Wheel material

All wheels must be made from homogeneous metallic materials.

12.3) Dimensions

12.3.1) Maximum complete wheel width: 11.5 inches.
Compulsory wheel diameter: 13.0 inches.

12.3.2) These measurements will be taken horizontally at axle height.

12.4 Maximum number of wheels

The number of wheels is fixed at four.

12.5 Wheel attachment

A safety spring must be in place on the wheel nut throughout the event and must be replaced after each wheel change. These springs must be painted dayglo red or orange.
Alternatively, another method of retaining the wheels may be used, provided it has been approved by the FIA.

12.6 Pressure control valves

Pressure control valves on the wheels are forbidden.

ARTICLE 13: COCKPIT

13.1 Cockpit opening

The opening giving access to the cockpit must allow the horizontal template, shown in drawing 1, to be inserted vertically, from above the car into the survival cell and bodywork, with the steering wheel, steering column, seat and all padding removed.
The front tip of the template must be no less than 625 mm from the front wheel centre line and it must be possible to lower the template 25 mm below the lowest point of the cockpit opening.
Furthermore, the forward extremity of the cockpit opening, even if structural and part of the survival cell, must be at least 50mm in front of the steering wheel.
The driver must be able to enter and get out of the cockpit without it being necessary to open a door or remove any part of the car other than the steering wheel or cockpit padding. Sitting at his steering wheel, the driver must be facing forward.
The cockpit must be so conceived that the maximum time necessary for the driver to get out from his normal driving position does not exceed 5 seconds with all driving equipment being worn and starting with the safety belts fastened.

13.2 Steering wheel

13.2.1) The steering wheel must be fitted with a quick release mechanism. Its method of release must be by pulling a concentric flange installed on the steering column behind the wheel.

13.2.2) The steering wheel rim must be continuously closed but the shape is free.

13.3 Internal cross section

The internal cross section of the cockpit from the soles of the driver's feet to behind his seat shall at no point be less than 70000mm².
A free vertical cross section which allows the template shown in Drawing 2 to be passed vertically through the cockpit, must be maintained over its entire length.
The only things that can encroach on these two areas are the steering wheel and padding.
The driver, seated normally with his seat belts fastened and with the steering wheel removed must be able to raise both legs together so that his knees are past the plane of the steering wheel in the rearward direction. This action must not be obstructed by any part of the car.

ARTICLE 14: SAFETY EQUIPMENT

14.1 Fire extinguishers

14.1.1) All cars must be fitted with a fire extinguishing system which must discharge into the cockpit and into the engine compartment.

14.1.2) Permitted extinguishants:
BCF (C F2 Cl Br)
NAF S3
NAF P
Any AFFF which has been specifically approved by the FIA (see FIA Technical List 6)
Dry powder is also permitted but only on cars being used in or coming from countries where national regulations preclude the use of the above products.

14.1.3) Minimum extinguisher capacity:

- For BCF, NAF S3, NAF P:

	Cockpit:	1.65 litres.
	Engine:	3.30 litres.

- For AFFF: The capacity may vary according to the type used (see FIA Technical List 6)

14.1.4) Minimum quantity of extinguishant:

BCF:	Cockpit	2.5 kg
	Engine:	5.0 kg
NAF S3:	Cockpit	2.0 kg
	Engine:	4.0 kg
NAF P:	Cockpit	2.0 kg
	Engine:	4.0 kg
Powder:	Cockpit	1.2 kg
	Engine:	2.4 kg

AFFF: The quantity may vary according to the type used (see FIA Technical List 6)

14.1.5) Discharge time:
Engine: 30 secs minimum / 80 secs maximum.
Cockpit: 10 secs minimum / 40 secs maximum.
Both extinguishers must be released simultaneously.

14.1.6) All extinguishers must be pressurised according to the contents:

BCF:	7.0 bar
NAF S3:	7.0 bar
NAF P:	7.0 bar
Powder:	13.5 bar

AFFF: The pressure may vary according to the type used (see FIA Technical List 6)
Furthermore, each extinghisher when filled with an AFFF must be equipped with a means of checking the pressure of the contents.

14.1.7) The following information must be visible on each extinguisher:
a) Capacity
b) Type of extinguishant
c) Weight or volume of the extinguishant
d) Date the extinguisher must be checked, which must be no more than two years after the date of filling or the date of the last check.

14.1.8) All extinguishers must be adequately protected and must be situated within the survival cell. In all cases their mountings must be able to withstand a deceleration of 25g.

All extinguishing equipment must withstand fire.
14.1.9) Any triggering system having its own source of energy is permitted, provided it is possible to operate all extinguishers should the main electrical circuits of the car fail.
The driver must be able to trigger all extinguishers manually when seated normally with his safety belts fastened and the steering wheel in place.
Furthermore, a means of triggering from the outside must be combined with the circuit breaker switch. It must be marked with a letter "E" in red inside a white circle of at least 100 mm diameter with a red edge.
14.1.10) The system must work in any position, even when the car is inverted.
14.1.11) Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the driver.

14.2 Master switch

14.2.1) The driver, when seated normally with safety belt fastened and steering wheel in place, must be able to cut off all electrical circuits to the ignition, all fuel pumps and the rear light by means of a spark proof circuit breaker switch.
This switch must be located on the dashboard and must be clearly marked by a symbol showing a red spark in a white edged blue triangle.
14.2.2) There must also be an exterior switch, with a horizontal handle, which is capable of being operated from a distance by a hook. This switch must be situated at the base of the main rollover structure on the right hand side.

14.3 Rear view mirrors

All cars must have at least two mirrors, each with a minimum surface area of 5500 mm², mounted so that the driver has visibility to the rear and both sides of the car.

14.4 Safety belts

The wearing of two shoulder straps, one abdominal strap and two straps between the legs is mandatory. These straps must be securely fixed to the car and must comply with FIA standard 8853-1985 or 8853/98.

14.5 Rear light

All cars must have a red light, in working order throughout the event, which:
- Is a model approved by the FIA.
- Faces rearwards at 90° to the car centre line.
- Is clearly visible from the rear.
- Is not mounted more than 100mm from the car centre line.
- Is at least 350 mm above the reference plane.
- Is no less than 450 mm behind the rear wheel centre line, measured to the face of the lens and parallel to the reference plane.
- Can be switched on by the driver when seated normally in the car.

The three measurements being taken to the centre of area of the lens.

14.6 Headrest

All cars must be equipped with headrests made from a material specified by the FIA.
The headrests must consist of one at least 75mm thick over an area of 40000mm² behind the driver's helmet and one at least 75mm thick over an area of 40000mm² along each side of the driver's helmet.
The headrests must be so installed that if movement of the driver's head was to fully compress the foam at any point over their area, his helmet would not make contact with any structural part of the car.
They must be so positioned as to be the first point of contact for the driver's helmet in the event of an impact projecting his head backwards or sideways when he is seated normally.

ARTICLE 15: SAFETY STRUCTURES

15.1 Materials used for car construction

15.1.1) The use of magnesium sheet less than 3 mm thick is forbidden.
15.1.2) The use of titanium is forbidden.
15.1.3) Within composite structures, the strain-to-failure of any fibrous reinforcing material must not be less than 1.5 %.
15.1.4) The use of carbon or aramid fibre reinforcing materials in composite structures is forbidden except in the survival cell, frontal impact absorbing structure, roll over structures, non-structural components on the engine, bodywork ahead of the front edge of the complete front wheels and bodywork more than 200 mm behind the rear wheel centre line.
15.1.5) The surface formed by all the parts lying on the reference plane referred to in Article 3.13 must be made of wood.
15.1.6) Any repairs to the survival cell or nosebox must be carried out in accordance with the manufacturer's specifications, in a repair facility approved by the manufacturer.
15.1.7) The car may not be used in another event until the technical passport has been completed satisfactorily.

15.2 Rollover structures

15.2.1) The basic purpose of safety structures is to protect the driver. This purpose is the primary design consideration.
15.2.2) All cars must have at least two rollover structures.
The first structure must be in front of the steering wheel, not more than 250 mm forward of, and at least as high as the top of the steering wheel rim.
The second structure must not be less than 500 mm behind the first and high enough for a line extended from the top of the first structure to the top of the second to pass 50 mm over the driver's helmet when he is seated normally in the car with his helmet on and seat belts fastened.
15.2.3) Both rollover structures required by Article 15.2.2 must, when attached to the car, be capable of withstanding three loads applied simultaneously to the top of the structure which are 1.5 w laterally, 5.5 w longitudinally, and 7.5 w vertically, w being 560 kg.
15.2.4) The second rollover structure shall be subjected to a static load test by applying the combined loads described in 2.3. On top of the structure through a rigid flat pad perpendicular to the loading axis.
During the test, the rollover structure must be attached to the survival cell which is supported on its underside on a flat plate, fixed to it through its engine mounting points and wedged laterally, but not in a way as to increase the resistance of the structure being tested.
Under the load, the deformation must be less than 50 mm, measured along the loading axis and any structural failure limited to 100 mm below the top of the rollover structure, measured vertically. This test must be carried out in the presence of an FIA technical delegate and using measuring equipment verified by the FIA.
15.2.5) The design concept of the rollover structures required by Article 15.2.2 shall be free. However, the second rollover structure must have a minimum structural cross section, in vertical projection, of 10000 mm², across a horizontal plane passing 50 mm lower than the highest point of the second rollover structure.

15.3 Survival cell and frontal protection

15.3.1) The survival cell must extend from behind the fuel tank in a rearward direction to a point at least 150mm in front of the driver's feet, with his feet resting on the pedals and the pedals in the inoperative position.
The survival cell must have an opening for the driver, the minimum dimensions of which are given in Article 13.1. Any other openings in the survival cell must be of minimum size to allow access to mechanical components.
The safety structures described in Article 15.2 must be a part of the survival cell or solidly attached to it.
15.3.2) When he is seated normally, the soles of the driver's feet, resting on the pedals in the inoperative position, shall not be situated to the fore of the vertical plane passing through the centre line of the front wheels.
Should the car not be fitted with pedals, the driver's feet at their maximum forward extension shall not be situated to the fore of the above mentioned vertical plane.
15.3.3) In front of the survival cell, an impact absorbing structure must be fitted. This structure need not to be an integral part of the survival cell but must be solidly attached to it.
15.3.4) The minimum external width of the survival cell is 340mm. This width must be maintained for a minimum height of 250mm along the whole length of the survival cell. The minimum height of the survival cell between the two rollover structures is 550mm.
Furthermore, the parts of the survival cell which are situated each side of the driver's helmet must be no more than 550mm apart and

at least as high as a line parallel to and 220mm below the line between the tops of the two roll structures.
In order to maintain good lateral visibility, the driver when seated normally with his seat belts fastened and looking straight ahead must have his eyes above the top of the sides of the survival cell.
15.3.5) Furthermore, at least that part of the survival cell forward of a transversal section 200mm to the rear of the front wheel axis, shall be subjected to an impact test against a solid vertical barrier placed at right angles to the centre line of the car.
If such a part is tested separately from the rest of the survival cell it must be attached to the trolley in such a way that it does not increase the impact resistance of the structure being tested.
For the purposes of this test, the total weight of the trolley and test structure shall be 560kg and the velocity of impact 10 metres/sec.
The resistance of the test structure must be such that during the impact the average deceleration of the trolley does not exceed 25g.
Furthermore, all structural damage must be contained in the zone ahead of the front wheel axis.
This test must be carried out in the presence of an FIA technical delegate in an approved testing centre.
15.3.6) In addition, the survival cell must be subjected to three separate static lateral load tests :
1) In the cockpit area on a vertical plane passing through the centre of the seat belt lap strap fixing.
2) In the fuel tank area on a vertical plane passing through the centre of area of the fuel tank in side elevation.
3) On a vertical plane passing halfway between the front wheel axis and the top of the first rollover structure.
For the tests described above, a pad 100mm long and 300mm high, with a maximum radius on all edges of 3 mm and conforming to the shape of the survival cell, shall be placed against the outermost sides of the survival cell with the lower edge of the pad at the lowest part of the survival cell at that section. Rubber 3 mm thick may be used between the pads and the survival cell.
A constant transverse horizontal load of 20kN shall be applied, in less than 3 minutes, to the pads at their centre of area through a ball jointed junction, and maintained for a minimum of 30 seconds.
Under these load conditions, there shall be no structural failure of the inner or outer surfaces of the survival cell and permanent deformation must be less than 1mm after the load has been released for 1 minute. The deformation will be measured at the top of the pads across the inner surfaces. In test 1, deflection across the inner surfaces of the survival cell must not exceed 20mm.
15.3.7) To test the attachments of the frontal impact absorbing structure to the survival cell, a static side load test shall be performed on a vertical plane passing 400mm in front of the front wheel axis.
A constant transversal horizontal load of 20kN must be applied to one side of the impact absorbing structure using a pad identical to the one used in the lateral tests in Article 15.3.6. The centre of area of the pad must pass through the plane mentioned above and the mid point of the height of the structure at that section.
After 30 seconds of application, there must be no failure of the structure or of any attachment between the structure and the survival cell.
During the test the survival cell must be resting on a flat plate and secured to it solidly but not in a way that could increase the strength of the attachments being tested.
15.3.8) A further static load test must be carried out on the survival cell from beneath the fuel tank. A pad of 200 mm diameter must be placed in the centre of area of the fuel tank and a vertical upwards load of 10kN applied in less than 3 minutes through a ball jointed junction. The load must be maintained for a minimum of 30 seconds.
Under these loads conditions, there must be no structural failure of the inner or outer surfaces of the survival cell and permanent deformation must be less than 0.5mm after the load has been released for 1 minute the measurement being taken at the centre of area of the pad.
15.3.9) Two further static load tests must be carried out on the survival cell on each side of the cockpit opening. A pad of 100mm diameter must be placed with its upper edge at the same height as the top of the cockpit side with its centre at a point 200mm forward of the rear edge of the cockpit opening template longitudinally. A constant transverse horizontal load of 10kN will then be applied at 90° to the car centre line, in less than 3 minutes, through a ball jointed junction. The load must be maintained for a minimum of 30 seconds.
Under these load conditions, there must be no structural failure of the inner or outer surfaces of the survival cell, there must be no more than 10mm total deformation and permanent deformation must be less than 1.0mm after the load has been released for 1 minute, the measurements being taken at the centre of area of the pad.
15.3.10) The static load tests in Article 15.2.4; 15.3.6; 15.3.7,15.3.8 and 15.3.9 must be carried out in the presence of an FIA technical delegate and using measuring equipment verified by the FIA.
Any significant modification introduced into any of the structures tested shall require that part to undergo a further test.
15.3.11) In order to ensure all survival cells are manufactured in the same way, each constructor must submit the weight of every survival cell produced. These weights will be compared with that of the survival cell which was subjected to the tests in 15.3.6; 15.3.7, 15.3.8 and 15.3.9. If any survival cell weighs less than 95% of the one previously tested, it will then have to be subjected to the tests above.
The FIA reserves the right to carry out the static load tests in Article 15.2.4, 15.3.6, 15.3.7, 15.3.8 and 15.3.9 at random on any other chassis produced by the manufacturer.
These tests will be carried out with 80% of the load referred to in these Articles and during these tests the deflection of the reference chassis may not be exceeded by more than 20%.

15.4 Lateral protection structures

15.4.1) Continuous panels whose projections on a vertical plane parallel to the longitudinal axis of the car shall be at least 150mm high, shall extend on either side of the car, at a minimum distance of 550 mm from the car's longitudinal centre line between at least the transversal planes passing through the fuel tank rear face and the frontal extremity of the minimum cockpit opening (Art. 13.1), and at a minimum distance of 350 mm from the car's longitudinal centre line between at least the transversal planes passing through the above extremity and the front rollover bar hoop.
15.4.2) These panels shall be made from a composite material of 3000 mm^2 minimum cross section with a honeycomb core in metal or nomex giving adequate resistance to compression. The external skins shall be of aluminium alloy, plastic, or carbon fibre of a minimum thickness of 0.5 mm or made up of another assembly of materials of equivalent efficiency.
The panels must be securely attached to the flat bottom and at their upper extremity to the main structure of the car in such a manner as to ensure absorption of a lateral impact.
The radiators may play the role of protective panels or of transversal struts.

ARTICLE 16: FUEL

16.1 Fuel

The fuel must be commercial petrol which is available from service stations and must contain no additive other than that of a lubricant on current sale.
The fuel must have the following characteristics:
- 102 RON/90 MON maximum; 95 RON/85 MON minimum for unleaded fuels and 100 RON/92 MON maximum; 97 RON/86 MON minimum for leaded fuels, the measurements being made according to the standards ASTM D 2699-86 and D 2700-86, the fuel being accepted or rejected according to ASTM D 3244 with a confidence limit of 95 %.
- Specific gravity between 720 and 785 kg/m3 at 15 degrees C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen for leaded fuel or 3.7 % if the lead content is less than 0.013 g/l, and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power boosting additives.
The measurement of the nitrogen content will be carried out according to the standard ASTM D 3228, and that of the oxygen by elemental analysis with a tolerance of 0.2%.
- Maximum content of peroxides and nitrooxide compounds:

100ppm (ASTM D 3703).
- Maximum lead content: 0.40g/l or the standard of the country of the event, if this is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % in vol. (ASTM D 3606)
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323)
- Distillation at 70°C: 10 % - 47 % (ASTM D 86)
- Distillation at 100°C: 30 % - 70 % (ASTM D 86)
- Distillation at 180°C: 85 % min (ASTM D 86)
- Maximum final boiling point: 225°C ASTM D 86)
- Maximum residue: 2 % volume (ASTM D 86)

16.2 Air

Only air may be mixed with the fuel as an oxidant

ARTICLE 17: FINAL TEXT

The final text for these regulations shall be the English version which will be used should any dispute arise over their interpretation.
Headings and typeface in this document are for ease of reference only and do not form part of these Technical Regulations.

ARTICLE 18 : CHANGES FOR 2002

18.1 Changes to Article 1.22 :

1.22 Engine and gearbox assembly :

The parts of the engine and gearbox that have to remain unchanged are :
- Gearbox casing
- Bell housing
- Cylinder block
- Cylinder head
- Oil sump
- Cam cover
- Complete intake system including the airbox
- Differential
- Final drive ratio

18.2 Changes to Article 4.1 :

4.1 Minimum weight :

The weight of the car must not be less than 550kg.

18.3 Changes to Article 9.2 :

9.2 Type of gearbox :

All cars must have no more than six forward gears.
Transversal gearboxes or gearboxes forward of the rear wheel axis are forbidden.
Semi automatic and automatic gearboxes and differentials with electronic, pneumatic or hydraulic slip control are forbidden.
Viscous differentials are not considered to have hydraulic slip control, provided outside control is not possible when the car is in motion.

18.4 Changes to Article 15.2 :

15.2 Roll structures :

15.2.1) The basic purpose of safety structures is to protect the driver. This purpose is the primary design consideration.
15.2.2) All cars must have two roll structures.
The principal structure must be positioned behind the driver. The second structure must be in front of the steering wheel but no more than 250mm forward of the top of the steering wheel rim in any position.
The two roll structures must be of sufficient height to ensure the driver's helmet and his steering wheel are at least 50mm below a line drawn between their highest points at all times.
15.2.3) The principal structure must pass a static load test details of which may be found in Article 15.2 4.
The second structure must be capable of withstanding three loads applied simultaneously to the top of the structure which are 12kN laterally, 45kN longitudinally, and 60kN vertically.
15.2.4) The principal roll structure shall be subjected to a static load test. A load equivalent to 12kN laterally, 45kN longitudinally in a rearward direction and 60kN vertically, must be applied to the top of the structure through a rigid flat pad which is 200mm in diameter and perpendicular to the loading axis.
During the test, the roll structure must be attached to the survival cell which is supported on its underside on a flat plate, fixed to it through its engine mounting points and wedged laterally, but not in a way as to increase the resistance of the structure being tested.
Under the load, the deformation must be less than 50mm, measured along the loading axis and any structural failure limited to 100mm below the top of the roll structure, measured vertically.
This test must be carried out in the presence of an FIA technical delegate and using measuring equipment verified by the FIA.
15.2.5) The design concept of the roll structures required by Article 15.2.2 shall be free. However, the principal roll structure must have a minimum structural cross section, in vertical projection, of 10000mm², across a horizontal plane passing 50mm lower than it's highest point.

18.5 Changes to Article 15.3.4 :

15.3.4 The minimum external width of the survival cell is 340mm. This width must be maintained for a minimum height of 250mm along the whole length of the survival cell. The minimum height of the survival cell between the two rollover structures is 550mm.
The minimum height of the survival cell behind the driver is 750mm. Furthermore, the parts of the survival cell which are situated each side of the driver's helmet must be no more than 550mm apart and at least as high as a line parallel to and 220mm below the line between the tops of the two roll structures.
In order to maintain good lateral visibility, the driver when seated normally with his seat belts fastened and looking straight ahead must have his eyes above the top of the sides of the survival cell.

18.6 Changes to Article 15.3.7 :

15.3.7 To test the attachments of the frontal impact absorbing structure to the survival cell, a static side load test shall be performed on a vertical plane passing 400mm in front of the front wheel axis.
A constant transversal horizontal load of 30kN must be applied to one side of the impact absorbing structure using a pad identical to the one used in the lateral tests in Article 15.3.6. The centre of area of the pad must pass through the plane mentioned above and the mid point of the height of the structure at that section.
After 30 seconds of application, there must be no failure of the structure or of any attachment between the structure and the survival cell.
During the test the survival cell must be resting on a flat plate and secured to it solidly but not in a way that could increase the strength of the attachments being tested.

18.7 Changes to Article 15.4 :

15.4 Lateral protection :

In order to give additional protection to the driver in the event of a side impact, the outer skin laminates of the survival cell, over the areas described below, must be at least 3.5mm thick and must incorporate panels as specified in a) - e) below.
The outer skin laminates must :
- be at least 250mm high at the front wheel centre line ;
- taper at a linear rate to at least 350mm high at the front of the cockpit opening and remain at this height to the rear of the survival cell ;
- be no less than 100mm above the reference plane between the front of the cockpit opening and the rear of the survival cell.

Any openings or cut outs in the laminates must be of the minimum size to allow access to mechanical components.
Each panel within the outer skin laminates must be at least 2mm thick and be constructed (and have features) as follows :
a) each ply must consist of continuous aramid fibres reinforcing an epoxy matrix with a resin density between 1.20 - 1.40 g/m³ and resin content between 47% - 53% ;
b) the basic fibre properties must meet or exceed the following :

- axial tensile strength	: 2.6 GPa
- axial tensile modulus	: 114 GPa
- axial tensile strain-to-failure	: 2.3 %

c) each ply of material must feature the aramid fibres specified above woven in the following style :
- DuPont style 285 (160-180 g/m², 4-harness satin) giving a panel nominal thickness of 0.25mm

d) the laminate must consist of at least 8 consecutive plies of the aramid/epoxy material specified above ;
e) the laminate must have its plies oriented to give quasi-isotropic in-plane properties, at least four being arranged at 0°/90° and at least four at 45°/45°.

APPENDIX 1
(ALL DIMENSIONS ARE IN MILLIMETERS)

Points for aerofoil section number 1:

1	94.44	-01.37
2	93.90	-00.00
3	91.57	-00.89
4	89.20	-01.78
5	86.84	-02.64
6	84.48	-03.51
7	83.67	-03.73
8	82.86	-03.91
9	82.02	-03.99
10	81.18	-03.99
11	03.84	-00.03
12	02.90	-00.10
13	02.01	-00.43
14	01.22	-00.97
15	00.61	-01.68
16	00.20	-02.54
17	00.00	-03.48
18	00.08	-04.42
19	00.41	-05.28
20	00.84	-06.10
21	01.27	-06.81
22	01.91	-07.62
23	02.97	-08.81
24	04.22	-10.08
25	05.49	-11.23
26	06.78	-12.27
27	08.18	-13.18
28	09.80	-14.02
29	11.81	-14.86
30	14.38	-15.70
31	17.65	-16.53
32	21.51	-17.22
33	25.76	-17.65
34	30.18	-17.78
35	34.62	-17.60
36	39.04	-17.17
37	43.43	-16.56
38	47.83	-15.80
39	52.17	-14.91
40	56.49	-13.87
41	60.76	-12.68
42	65.02	-11.43
43	69.27	-10.11
44	73.48	-08.76
45	77.70	-07.37
46	81.92	-05.94
47	86.11	-04.45
48	90.27	-02.92
49	94.44	-01.37

(drawing 275-1)

Points for aerofoil section number 2:

1	14.78	-02.90
2	16.66	-02.67
3	18.80	-02.41
4	23.34	-01.93
5	28.12	-01.45
6	32.87	-01.04
7	37.34	-00.71
8	40.62	-00.53
9	43.89	-00.36
10	47.17	-00.23
11	50.44	-00.10
12	53.67	-00.05
13	56.79	00.00
14	59.79	00.00
15	62.66	00.00
16	65.84	00.00
17	69.72	-00.05
18	74.32	-00.10
19	79.60	-00.20
20	85.24	-00.36
21	90.88	-00.53
22	96.52	-00.76
23	102.13	-01.02
24	107.77	-01.32
25	113.41	-01.65
26	119.02	-02.01
27	124.66	-02.41
28	130.28	-02.85
29	135.89	-03.33
30	138.58	-03.56
31	140.97	-03.79
32	143.53	-04.01
33	145.80	-04.19
34	151.41	-04.47
35	154.10	-04.50
36	155.07	-04.27
37	155.91	-03.78
38	160.99	00.00
39	161.75	-00.94
40	139.24	-15.60
41	114.15	-25.63
42	98.96	-29.16
43	83.67	-30.91
44	72.57	-31.32
45	61.44	-31.27
46	50.34	-30.71
47	39.27	-29.67
48	27.15	-27.18
49	15.49	-22.56
50	10.01	-19.41
51	05.41	-15.77
52	02.67	-12.90
53	00.53	-09.91
54	00.13	-08.94
55	00.03	-07.93
56	00.18	-06.96
57	00.56	-06.20
58	01.25	-05.54
59	02.29	-04.95
60	04.01	-04.45
61	06.78	-03.94
62	10.44	-03.43
63	14.78	-02.90

(drawing 275-2)

Points for aerofoil section number 3:

1	163.07	00.00
2	164.08	-01.19
3	160.86	-03.91
4	157.66	-06.63
5	154.56	-09.14
6	151.54	-11.46
7	147.47	-14.30
8	143.26	-16.99
9	138.86	-19.56
10	134.26	-22.02
11	128.27	-24.94
12	122.10	-27.69
13	116.76	-29.79
14	111.38	-31.70
15	103.48	-34.11
16	95.48	-36.22
17	87.17	-37.92
18	78.77	-39.12
19	71.75	-39.78
20	64.72	-40.13
21	59.33	-40.21
22	53.95	-40.11
23	48.67	-39.85
24	43.43	-39.45
25	38.20	-38.81
26	33.00	-37.95
27	27.53	-36.78
28	22.17	-35.38
29	17.32	-33.86
30	12.55	-32.16
31	09.50	-30.96
32	06.55	-29.69
33	05.08	-29.03
34	03.71	-28.40
35	02.34	-27.51
36	01.22	-26.29
37	00.43	-24.82
38	00.05	-23.22
39	00.13	-21.29
40	00.76	-19.48
41	01.91	-17.91
42	03.45	-16.76
43	06.86	-15.04
44	10.31	-13.39
45	15.32	-11.20
46	20.42	-09.22
47	24.00	-07.95
48	27.58	-06.81
49	33.35	-05.18
50	39.14	-03.73
51	46.86	-02.21
52	54.64	-01.12
53	60.71	-00.53
54	66.80	-00.20
55	73.18	-00.03
56	79.55	00.00
57	86.31	-00.10
58	93.09	-00.33
59	100.10	-00.66
60	107.16	-01.14
61	113.59	-01.70
62	120.07	-02.33
63	126.34	-03.02
64	132.59	-03.78
65	137.90	-04.47
66	143.20	-05.18
67	147.47	-05.77
68	151.77	-06.38
69	151.94	-06.40
70	152.12	-06.42
71	153.01	-06.50
72	153.90	-06.43
73	154.76	-06.25
74	155.60	-05.94
75	156.39	-05.51
76	157.12	-05.00
77	163.07	00.00

(drawing 275-3)

ARTICLE 277 - FREE FORMULA REGULATIONS (GROUP E)

It is permitted to organise sporting competitions open to other racing cars than those defined in one of the Groups of Appendix J. All specifications concerning the vehicles and particularly the limitations of the cylinder-capacity are in this case at the discretion of promoters and it rests with them to list clearly these specifications in the Supplementary Regulations of the event, which anyway have to be approved by the National Sporting Authority answerable to the FIA.
The cars must, for safety reasons, comply with the following articles depending on whether they are comparable to cars of category I, II or not (see article 251.1.1) :

CARS COMPARABLE TO CATEGORY I :		1
CARS COMPARABLE TO CATEGORY II :		2
OTHER TYPE :		3
- Braking safety :	1 - 2 - 3 :	253.4
- Circuit breaker :	1 - 2 - 3 :	253.13
- Safety tank :	1 :	253.14
	2 - 3 :	259.6.3
- Fuel pipes, pumps and filters :	1 :	253.3.1 and 253.3.2
	2 - 3 :	259.6.2
- Openings for refuelling and caps :	1 - 2 - 3 :	259.6.4
- Oil catch tank :	1 - 2 - 3 :	259.7.4
- Electric cables :	1 :	283.3.1
	2 - 3 :	259.8.5
- Safety belts :	1 :	253.6.1
	2 - 3 :	259.14.2.1
Longitudinal localisation of the oil system :	1 - 2 - 3 :	275.7.2
(except for rear-engined cars).		
- Reverse gear :	1 - 2 - 3 :	275.9.3
- Suspension arm :	1 - 2 - 3 :	275.10.3
- Wheel material :	1 - 2 - 3 :	275.12.2
- Extinguishers (cylinder capacity < 2000 cm^3) :	1 :	253.7.2 and 253.7.4
	2 - 3 :	253.7.2 and 253.7.4
- Extinguishers (cylinder capacity > 2000 cm^3) :	1 :	253.7.2 and 253.7.4
	2 - 3 :	275.14.1
- Rear-view mirrors :	1 :	253.9
	2 -3 :	275.14.3
- Rear light :	1 - 2 - 3 :	275.14.5
- Headrest :	1 - 2 - 3 :	275.14.6
- Towing eye :	1 :	253.10
	2 - 3 :	259.14.6
- Firewall :	1 :	253.15
	2 - 3 :	259.15.3
- Seats :	1 :	253.16

Safety structures :
Cars comparable to Category I must comply with article 253.8, and those comparable to Category III must comply with article 259.15.1.
Cars comparable to Category II must comply with the following prescriptions, according to their type :

Cross-Country type : Article 283.8
Track-car type with more than one seat : Article 259.15.1
Single-seater track type : at least two rollover structures.

Dimensions and positions for single seater track type :
The first structure must be in front of the steering wheel, not more than 25 cm forward of, and at least as high as, the top of the steering wheel rim.
The second structure must be at least 50 cm behind the first, and high enough for a line extended from the top of this structure to the top of the first structure to pass 5 cm over the driver's helmet when he is seated normally in the car with his helmet on and seat belts fastened.
The minimum height of this second structure must be at least 92 cm measured along the straight-line following the driver's spine, from the seat's metal shell to the top of the rollbar.
The width must be at least 38 cm measured inside the rollbar between the two vertical pillars of the sides. It must be measured at a height of 60 cm above the seat's metal shell on the perpendicular to the straight line following the driver's spine.
Strength :
In order to obtain a sufficient strength for the rollbar, two possibilities are left to the manufacturers :
a - The rollbar, of entirely free structural conception, must be capable to withstand the stress minima indicated in article 275.15.2.3. This must be certified on a form approved by an ASN and signed by a qualified person.
b - The tubes and brace(s) must have a diameter of at least 3.5 cm and at least 2 mm wall thickness. The material should be molybdenum chromium SAE 4130 or SAE 4125 (or equivalent in DIN, NF, etc.).
There must be at least one brace from the top of the bar rearwards at an angle not exceeding 60° to the horizontal.
The diameter and material of the brace must be the same as those of the rollbar itself.
In the case of two braces, the diameter of each of them may be reduced to 20/26 mm.
Removable connections between the main hoop and the brace must comply with drawings 253-27 to 253-36.
Forward fitted stays are allowed.
Cars comparable to Category II, single-seater track type with a carbon fibre monocoque, intended for use in International FIA approved series or events must comply with Articles 275.15.2 and 275.15.3. The weight w for the tests described in Articles 275.15.2.3 and 275.15.3.5 is the weight of the car without the driver plus 100 kg.

Aerodynamic devices :
For two-seater Closed or Open Prototypes built as from 1 January 2000 and only for circuits :

-The gap between the rear wing endplates and the bodywork must never be less than 100 mm.
- It must be possible to remove the rear bodywork without disturbing the rear wing or its mounting in any way.

ARTICLE 278 - NATIONAL FORMULAE TECHNICAL REGULATIONS

REGISTRATION OF NATIONAL FORMULAE

The FIA will accept to study the registration of "National" formulae, in order to have their technical prescriptions known at an international level and to ensure a certain stability and a standardisation of the regulations which rule them.

1) In presence of article 251, any ASN has the right to define regulations applying to given types of Free Formula racing cars denominated hereafter "National Formulae".

2) Are eligible for registration only the applications presented by at least two National Sporting Authorities and concerning a National Formula used in at least two countries.

3) The FIA will accept, in compliance with the preceding article 2 to register on a voluntary basis any set of prescriptions defining such National Formulae.

The regulations thus registered by the FIA will be applicable in countries the ASNs of which have declared to abide by them.

The declaration made by the National Sporting Authority to adopt the regulations of a determined National Formula is exclusively valid for the regulations such as they were originally deposited at the FIA, and this National Sporting Authority is entitled to withdraw this declaration if the regulations are altered afterwards.

The withdrawal of a declaration for another reason that the one here above mentioned, must compulsorily be communicated to the FIA before December 31st in order to be valid as from the following year.

4) From the time when such National Formula is registered, its appellation can be used in those countries where the ASNs have adopted the registered regulations, only for cars entirely complying with the regulations deposited at the FIA.

5) Any application for the registration of regulations for a National Formula should be addressed to the FIA at the latest on October 1st, to be valid as from January 1st of the following year. The National Formulae can (but is not compulsory) form the subject of restrictions as regards the engine or other manufacturing elements, in order to allow exclusively the use of parts of a given make. Such a one-make Formula may have a distinct commercial name related to the imposed design restrictions.

6) The National Sporting Authorities which have adopted a determined National Formula may file an application at the FIA in view of the organisation of an ward including several countries.

Any application of that kind will be submitted to the appreciation of the FIA whose decision will depend on the number of countries interested by the organisation of an event included in that award and on the advisability or the necessity, for the general interest of Automobile Sport, to introduce such a form of competition.

7) The organisation of any type of international award without the FIA's agreement will entail the application of penalties.

ARTICLE 279 - TECHNICAL REGULATIONS FOR RALLYCROSS AND AUTOCROSS CARS

ARTICLE 1 : GENERALITIES

1.1 Definition

Division 1: Touring cars:
Homologated in Group A (kit car and world rally car included) or in Supertouring and conforming to Appendix J Group A (Articles 251 to 255), the modifications listed in Articles 2 and 3 below are permitted. Cars must be rigidly-closed non-convertible models.
Division 2: Production cars:
Homologated in Group N and conforming to Appendix J Group N (Articles 251 to 254) including the Rally requirements, but the modifications listed in Article 2, and 4 below are permitted. Cars must be rigidly-closed non-convertible models. The maximum cylinder authorised is 2000 cm³.normaly aspirated
Vehicles authorised : maximum 2 litres and 2 Wheel Drive.
Division 3: Autocross Single-seaters:
4-wheeled vehicles designed and built specifically for participating in Autocross.
The vehicles shall have 2- or 4- wheel drive. They must comply with Article 5 below.

1.2 Noise- Exhaust

For all the divisions.
A limit of 100 dB/A is imposed for all cars. The noise will be measured in accordance with the FIA noise measuring procedure using a sonometer regulated at "A" and "SLOW", placed at an angle of 45° to and a distance of 50 cm from the exhaust outlet, with the car's engine running at 4500 rpm.
A carpet of minimum 1.50 x 1.50 m must be placed over the relevant area of ground.
The exhaust system must include one or more homologated catalytic converters, which must work at all times and through which all the exhaust gases must pass.
The exhaust pipe must finish at the rear end of the car.

1.3 Fuel - Oxidant:

The cars must use unleaded fuel only (maximum 0.013g/l) complying with articles 252.9.1 and 252.9.2.

1.4 Tyres and wheels

For Division 1 vehicle:
The complete wheel (flange + rim + inflated tyre) must always fit inside a U-shaped gauge of which the extremities are 250 mm apart, the measurement to be made on an unloaded part of the tyre.
The rim diameter may be increased or reduced by up to 2" in relation to the original dimension.
Division 2 must comply with the article 254.6.4 of appendix J.
Slick tyres are prohibited. Grooved tyres are authorised on the basis of a design homologated by the FIA.

- For tyres with a grooving rate of less than 25 %, the FIA will publish in his monthly bulletin the tyre designs which may be used.

These tyres may be moulded or grooved by hand to achieve an identical reproduction of the grooving design.

- For tyres with a grooving rate of over 25 %, the design is free.

The grooving rate will be calculated in accordance with the following rule:
1. Definition of the control surface
Tread pattern with a width of 170 mm (85 mm each side of the tyre centre line) and a circumference of 140 mm. In this area, the surface taken up by grooves at least 2 mm wide must occupy at least 17 % of the total surface.
The depth of the grooves must be at least 5.5 mm for moulded tyres when new (see drawing 279-5).

	Width x length	Surface	25% rate
9.5"	180x140	25200	6300
9"	170X140	23800	5950
8.5"	161x140	22540	5635
8"	148x140	20720	5180
7.5"	142x140	19880	4970
7"	133x140	18620	4655
6.5"	124x140	17360	4340

2. The sum of the width of the grooves encountered by a circumferential line in the area described above must be at least 4 mm.
3. The sum of the width of the grooves encountered by a radial line must be at least 16 mm.
4. The bridge blocks and sipes must be considered as part of the tread pattern if they are less than 2 mm.
5. Hand-cutting is authorised on the basis of a moulded tyre homologated by the FIA.
6. At any time during the race, the depth of the grooves must be at least 2mm regardless of the type of tyres used and must cover minimum 75% of the surface.

ARTICLE 2 : MODIFICATIONS ALLOWED AND PRESCRIPTIONS APPLICABLE TO CARS OF DIVISIONS 1 AND 2

The following prescriptions apply to all cars in addition to the prescriptions of Appendix J.

2.1 Rear lights:

Each car will be fitted with two red rear lights of the fog lamp type (minimum illuminated area of each light: 60 cm²; bulbs of minimum 15 watts each) working with or replacing the car's original brake lights. They must be positioned between 1.50 m and 1.00 m above ground level and must be visible from the rear.
They must be placed symmetrically in relation to the longitudinal axis of the car and in a transversal plane.
Rear lights equipped with LED are authorised.

2.2 Towing eye:

Must be fitted at the front and at the rear.
These eyes must not protrude beyond the perimeter of the bodywork seen from above.
They should be painted a bright yellow, red or orange, and must be fitted so as to be easy to find for the rescue in case of emergency.

2.3 Seats, attachments and supports

All the occupants' seats must be either original, modified only through the addition of accessories with a registered trade mark, or homologated by the EEC, the FMVSS or the FIA (8855/1992 or 8855/1999 standards), and not modified. In all these cases, a headrest must be present for each occupant.
The passenger seats and the back shelf of hatchback cars may be removed.
If the original seat attachments or supports are changed, the new parts must either be approved for that application by the seat manufacturer or must comply with the following specifications (see drawing 253-52):
1- Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counterplates, according to the drawing.
The minimum area of contact between support, shell/chassis and counterplate is 40 cm² for each mounting point.
If quick release systems are used, they must be capable of withstanding vertical and horizontal forces of 18000 N, applied non-simultaneously.
If rails for adjusting the seat are used, they must be those originally supplied with the homologated car or with the seat.
2- The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a

minimum diameter of 8 mm and reinforcements integrated into the seat. Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.
3- The minimum thickness of the supports and counterplates is 3 mm for steel and 5 mm for light alloy materials.
The minimum longitudinal dimension of each support is 6 cm.

2.4 Windscreens and windows:
Must be of laminated glass or of a polycarbonate, and the windows must be of safety glass or plastic.
If of plastic, the thickness shall not be less than 5 mm.
Cars with laminated windscreens which are damaged to such an extent that visibility is seriously impaired or that there is a likelihood of their breaking further during the event, will be rejected.
Films, stickers and spraying are not allowed, except those authorised by the sporting code chapter 17, article 211.
Synthetic screens must not be tinted. Tinted glass screens, e.g. heat shield screens, are only permitted if they are original for this car. The fitting of an additional windscreen washer tank or of one with a greater capacity is authorised. This tank must be strictly reserved for the cleaning of the windscreen.

2.5 Spare wheels:
Prohibited.

2.6 Fuel tank:
If a non-original tank is fitted, it must be a safety tank homologated by the FIA (minimum FT3 or FT3 1999 specification) in accordance with the specifications of article 253.14. The tank shall be located at least 30 cm³ from the bodyshell in both lateral and longitudinal directions, outside the driver's compartment. In all cases, the tank, including the filler pipe must be isolated by a firewall or by a container, both of which shall be flameproof and fire-resistant, preventing any fuel from infiltrating the cockpit and any contact with the exhaust pipes. Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.
In the case of twin-volume cars, it will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.
The tanks must be protected effectively and securely attached to the shell or the chassis of the car. The use of safety foam in tanks is recommended. All the fuel pumps should only operate when the engine is running, or during the starting process.

2.7 Steering column:
Anti-theft devices must be removed.

2.8 Safety harness:
Compulsory, with at least six points conforming to the specifications of Article 253.6 of Appendix J.
The two shoulder straps shall have separate anchorage points.

2.9 Water radiator:
The water radiator and its capacity are free; its location may not be changed. The fitting of extra cooling fans is permitted.
A radiator screen may be fitted, provided that no reinforcement of the bodyshell results.

2.10 External lights:
May be removed provided any resultant openings in the bodywork are covered and that the prescriptions of Article 2.1 are respected. Covers must conform to the original general silhouette.

2.11 Safety rollcage:
Must be fitted, as defined in Appendix J article 253.8.

2.12 Carpets:
Carpets may be removed.

2.13 Extinguisher systems:
Installed automatic systems are recommended and compulsory for car homologated as from 01.01.99.
They must be produced in accordance with art. 253.7 of Appendix J.

2.14 Mud flaps:
The fitting of mud flaps is allowed provided they respect Article 252.7.7.

ARTICLE 3 : PRESCRIPTIONS APPLICABLE TO AND MODIFICATIONS PERMITTED FOR CARS OF DIVISION 1, IN ADDITION TO THE PRESCRIPTIONS OF ARTICLE 2 ABOVE

3.1 Minimum weights:
Cars will weigh at least the following weights in relation to their cubic capacity:

up to	1000 cm³:			640 kg
over	1000 cm³	and up to	1400 cm³:	730 kg
over	1400 cm³	and up to	1600 cm³:	805 kg
over	1600 cm³	and up to	2000 cm³:	880 kg
over	2000 cm³	and up to	2500 cm³:	960 kg
over	2500 cm³	and up to	3000 cm³:	1040 kg
over	3000 cm³	and up to	3500 cm³:	1120 kg
over	3500 cm³	and up to	4000 cm³:	1190 kg
over	4000 cm³	and up to	4500 cm³:	1260 kg
over	4500 cm³	and up to	5000 cm³:	1325 kg
over	5000 cm³	and up to	5500 cm³:	1390 kg
over	5500 cm³:			1460 kg

3.2 Bodywork - Chassis
3.2.1) Bodywork:
The original bodywork must be retained, except as concerns the wings and the aerodynamic devices allowed.
Trim strips, mouldings, etc., may be removed.
Windscreen wipers are free, but there must be at least one in working order.
3.2.2) Bodyshell-Chassis:
The series-production bodyshell and chassis must be retained but the original basic structure may be reinforced in accordance with article 255.5.7.1.
In order to accommodate four-wheel drive, the bodywork may be modified in accordance with drawing 279-1.
All the measurements will be taken in relation to the middle of the front and rear axles of the homologated bodywork.
The materials added must be ferrous and must be welded to the bodywork.
In order to put the catalytic converter, it is allowed to make a hollowing out in the central tunnel as described in drawing 279-2.
3.2.3) Doors, bonnets and boot lids:
Except for the driver's door, the material is free, provided that the original outside shape is retained.
Door hinges and outside door handles are free. The original locks may be replaced but the new ones must be efficient.
The original driver's door must be retained, trim may be removed.
The rear doors may be sealed shut by welding.
The locking devices on the bonnet and boot lid, as well as the hinges, are free, but each lid must be fixed at four points, and opening from the outside must be possible.
The original closing systems must be removed.
Openings may be made in the bonnet for ventilation, provided that they do not allow mechanical components to be seen.
In all circumstances, the bonnets and boot lids must be interchangeable with the original homologated ones.
It is permitted to remove the window opening mechanisms from all four doors or replace electric winders with manual winders.
3.2.4) Cockpit ventilation openings:
Openings may be made in the bodywork for ventilating the cockpit, provided:
- that they are placed in front of the rear roof edge above the rear window and/or in the area between the rear side window and the rear window;
- that they do not protrude beyond the original line of the bodywork, seen from the front.
The heating system may be removed.
3.2.5) Underbody protection
The use of underbody protection is authorised in accordance with article 255.5.7.2.10.

3.3 Aerodynamic devices:
3.3.1) Front aerodynamic device:
The material and shape are of free design, limited by:
- the vertical plane passing through the axis of the front wheels and the horizontal plane passing through the lowest point of the door opening (drawing 279-3).
- the overall length of the homologated car.
- to the front, by the vertical projection of the bumper of the homologated car.
The material of the bumper must remain unchanged (plastic remaining plastic, including composite materials).
The safety elements allowing the absorption of impacts between

the bumper and the chassis must be kept.
- Modification of the lateral part of the front bumper: according to the definition of the wing given by appendix 1 of the "Homologation Regulations for Group A and B Cars".
One or more openings may be made in the bumper (the part situated above the plane passing through the lowest point of the door opening), but the total surface of openings in the front shield must be no more than 2500 cm^3_.
These openings must not affect the structural integrity of the bumper.
The thickness of the front aerodynamic devices must be 2mm minimum and 5mm maximum.
3.3.2) Rear aerodynamic device:
It must have the maximum dimensions defined in drawing 279-4.
Even if the vehicle has original dimensions bigger than those maximum dimensions, it must comply with this drawing.
At its extremities, this device must join the bodywork, and it must be entirely contained within the frontal projection of the car without its rear-view mirrors.
The base of the box including the drawing must be the one with the largest dimensions. It must be positioned horizontally.
Further, this volume may be extended section by section, which means that at any point of the rear aerodynamic device, each section must not exceed the section 450 x 290 x 190, supports included.
This aerodynamic device must be contained within the frontal projection of the car, and within the projection of the car seen from above.
The thickness of the rear aerodynamic devices must be 2mm minimum and 5mm maximum.

3.4 Mudguards:

The definition of "mudguard" is that given in Article 251.2.5.7. of Appendix J.
The material and shape of the mudguards are free, but the shape of the wheel arches must be retained.
This does not imply that their original dimensions must be retained.
Any additional mudflaps must have a minimum thickness of 0.5 mm and a maximum thickness of 2 mm.
In all cases, the maximum extension authorised at the level of the front and rear wheel axis is 140 mm in relation to the dimensions given on the homologation form of the homologated car.
The mudguards shall project out over the wheels and provide efficient coverage over at least one third of their circumference and at least the entire width of the tyre.
Openings for cooling may be made in the mudguards.
However, should they be made behind the rear wheels, louvres must make it impossible to see the tyre from the rear along a horizontal plane.
It is permitted to install mechanical components within the mudguards, but their installation shall under no circumstances be used as a pretext for reinforcing the mudguards.

3.5 Lights:

Pursuant to Article 2.10, in each cover a hole with an area of 30 cm^2 may be left for cooling purposes.

3.6 Engine:

The engine is free but the engine block must be from a homologated engine of the same original trademark as the car's original bodywork and must have the same number of cylinders as the engine originally homologated for that car.
The engine must be located in the original engine compartment.
Twin-engine configurations are not permitted unless homologated in that form.
Variable valve timing is not permitted.
Variable length inlet trumpets are forbidden.
Titanium is not permitted except in connecting rods, valves, valve retainers and heat shields.
The use of magnesium is not permitted in moving parts.
The use of any ceramic component is forbidden.
Internal and/or external spraying or injection of water or any substance whatsoever is forbidden (other than fuel for the normal purpose of combustion in the engine).
The use of carbon or composite materials is restricted to clutches and non-stressed covers or ducts.
Only a direct mechanical linkage between the throttle pedal and the engine is permitted.
The tunnels used for the passage of the exhaust must remain open to the outside along at least two thirds of their length.
In Autocross only, exhaust pipe outlets which point downwards are prohibited.
If supercharging is used, the exhaust gases from the waste-gate must exit into the vehicle's exhaust system.
Water injection is prohibited, even if it originally exists on the homologated block. Spraying of the intercooler is prohibited.
Supercharged cars must not be equipped with any device which allows the boost pressure or the electronic management system controlling the boost pressure, to be adjusted by the driver while the car is in motion.
Ceramic components, variable diameter inlets and adjustable internal vanes on turbochargers are forbidden.

3.7 Supercharged engines:

All supercharged cars must be fitted with a restrictor fixed to the compressor housing.
All the air necessary for feeding the engine must pass through this restrictor which must respect the following:
The maximum internal diameter of the restrictor is 45 mm.
This must be maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).
This diameter must be complied with, regardless of the temperature conditions.
The external diameter of the restrictor at its narrowest point must be less than 51mm and must be maintained over a distance of 5 mm to each side.
The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor.
Attachment by means of a needle screw is not authorised.
For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing.
The heads of the screws must be pierced so that they can be sealed.
The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment) (see drawing 254-4).
In case of an engine with two parallel compressors, each compressor must be limited to a maximum internal intake diameter of 32mm (internal diameter), 38 mm for the external diameter.

3.8 Interior:

The trimmings situated below the dashboard and which are not a part of it may be removed.
It is permitted to remove the part of the centre console which contains neither the heating nor the instruments (according to drawing 255-7).
The dashboard must have no protruding angles.
The complete seat must be located entirely on one side or the other of the vertical plane of the longitudinal centre line of the car.
The bulkheads separating the cockpit from the engine compartment and the boot must retain their original place and shape.
Their material must be the same as or stronger than the original material.
Installing components up against or passing through one of these bulkheads is, however, permitted, provided that they do not protrude into the cockpit by more than 20 cm (as measured horizontally from the original bulkhead). This possibility does not apply to the engine block, sump, crankshaft or cylinder head.
In addition, the floor may be modified to house the four-wheel drive in accordance with article 3.2.2.

3.9 Fuel, oil and cooling water tanks:

Shall be isolated from the driver's compartment by means of bulkheads so that in the case of spillage, leakage or failure of a tank,

no liquid will pass into the driver's compartment.
The same applies to the fuel tanks vis-à-vis the engine compartment and exhaust system.
The fuel tank filler cap shall not protrude beyond the bodywork and shall be leakproof.
The storing of fuel on board the car at a temperature of more than 10 degrees centigrade below the ambient temperature is forbidden.

3.10 Suspension:

Cars must be fitted with a sprung suspension.
The operating method and the design of the suspension system are free.
Modifications to the shell (or chassis), to accommodate the changed position of pivot and mounting points, are limited to those necessary to provide clearance for suspension components, drive shafts, and wheel and tyre.
With the exception of subframes connecting the front to the rear, the front subframe is free as regards the material and the shape, provided that:
- it is interchangeable with the original port
- it can be dismounted (no welding).

Moving the anchorage points is allowed provided that they are situated inside the new tunnel.
The springing medium must not consist solely of bolts located through flexible bushes or mountings but may be of fluid type.
There must be movement of the wheels to give suspension travel in excess of any flexibility in the attachments.
The use of active suspension is forbidden.
Chromium plating of steel suspension members is forbidden.
All suspension members must be made from a homogeneous metallic material.
Hydropneumatic suspension systems are permitted, on condition that they do not have active control.

3.11 Transmission:

Free, but traction control is prohibited; conversion to four-wheel drive is permitted.

3.12 Water radiator:

Its location is free, provided that it does not encroach upon the driver's compartment.
The air intake and outlet of the radiator through the bodywork may have, as a maximum, the same surface as the radiator.
This article completes the article 2.9 for Division 1.

3.13 Brakes:

Free, but there must be a double circuit operated by the same pedal and complying with following: the pedal shall normally control all the wheels. In case of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal shall still control at least two wheels.
Anti-lock brake systems are not permitted.
The brake discs must be made from ferrous material.
A handbrake is obligatory; it must be efficient and simultaneously control the two front wheels or the two rear wheels.
Fluid tanks are forbidden inside the cockpit.

3.14 Mechanical components:

No mechanical component may protrude beyond the car's original bodywork, except inside the wings.

3.15 Steering:

Only a direct mechanical linkage between the steering wheel and the steered wheels is permitted.
Four-wheel steering is forbidden.

3.16 Type of gearbox:

Semi-automatic or automatic gearboxes with electronic, pneumatic or hydraulic control are forbidden.
Differentials with electronic, pneumatic or hydraulic slip control which are adjustable by the driver while the car is in motion are forbidden.

3.17 Magnesium sheet:

The use of magnesium sheet less than 3 mm thick is forbidden.

3.18 Telemetry:

The use of telemetry is forbidden.

ARTICLE 4 : PRESCRIPTIONS APPLICABLE TO AND MODIFICATIONS PERMITTED FOR CARS OF DIVISION 2, IN ADDITION TO THE PRESCRIPTIONS OF ARTICLE 2 ABOVE

4.1 Minimum weight

Cylinder capacity		Front wheel driven car	Rear wheel driven car
up to	1000 cm^3	750 kg	800 kg
over	1000 and up to 1400 cm^3	850 kg	900 kg
over	1400 and up to 1600 cm^3	950 kg	1000 kg
over	1600 and up to 2000 cm^3	1050 kg	1100 kg

All weight are checked with car in race condition without driver and driver equipment.
Ballast will be permitted according to appendix J article 252.2.2 (first paragraph).

4.2 Brake

The brake must comply with article 254.6.5 of appendix J.

4.3 Camshaft

The camshaft is free but the dimensions A and B of the homologation form article 325 must be retained.

4.4 Transmission

4.4.1) Clutch
According to the group N regulations, article 254.
4.4.2) Gearbox
The material of the gearing is free.
The series housing of the gearbox must be retained but the ratios are free.
The dogbox (gearbox without synchronising) is forbidden.
The maximum number of gears must be retained.
4.4.3) Final drive and differential
A limited slip differential is allowed provided that it can be fitted into the original housing without any modification other than those laid down in paragraph "general conditions" article 252.
The original differential may also be locked. The ratios in the original housing are free. The material of the gearing is free.
4.4.4) Driveshaft
The series driveshaft type must de retained, but the material is free except that composite is forbidden.

ARTICLE 5 : PRESCRIPTIONS FOR CARS OF DIVISION 3 (AUTOCROSS SINGLE-SEATERS)

These cars must comply with the following articles of Appendix J:

ARTICLE 251 (Classification and definitions):

2.1.9	Mechanical components
2.2	Dimensions
2.3.1	Cylinder capacity
2.3.8	Engine compartment
2.5.1	Chassis
2.5.2	Bodywork
2.5.3	Seat
2.5.5	Cockpit
2.7	Fuel tank

ARTICLE 252 (General prescriptions):

1.3	Magnesium
1.4	Conformity of the car
1.5	Damaged threads
2.1	Ground clearance
2.2	Ballast
3.1	Supercharging
3.2	Equivalence formula between reciprocating piston and rotary engines
3.3	Equivalence formula between reciprocating piston and turbine engines
3.4	Fuel injection
3.5	Equivalence formula between reciprocating piston engines and new types of engines
3.7	Starting on board the vehicle
4.	Transmission
5.	Suspension
7.6	Dangerous objects
9.1	Fuel
9.3	Air
10.	Brakes

ARTICLE 253 (Safety equipment):

1	Dangerous constructions
2	Optional devices
3	Lines and pumps
8.3	Material specifications(1993 or 1995 App.J)
8.4	Homologation by an ASN
13	Circuit breaker
14	FIA approved safety fuel tanks
15	Protection against fire
17	Pressure control valves

Moreover, these cars must comply with Articles 1.2, 2.1, 2.2, 2.3, 2.8 and 3.13 of the "Technical Regulations for Rallycross and Autocross cars", and with the following:

5.1 Cylinder capacity:

The maximum corrected cylinder capacity is 3500 cm³.

5.2 Engine protection:

A protective hoop is obligatory for rear-engines.

The rear part of this hoop must entirely envelope the engine including the exhaust and its outlet.

This hoop must be braced in its centre.

This may be connected to the underneath of the vehicle or to the main roll bar. The tubes used will have a minimum wall thickness of 1.5 mm.

The protective hoop for the engine may be in several detachable parts, but in this case the joined tubes must be sleeved and the assembly effected by a bolt of 6 mm minimum diameter on each end of the sleeve, positioned at 90° the one to the other, separated by at least 30 mm. The diameter of the bolts to be used is at least 6 mm.

5.3 Lateral protection:

This will consist of composite honeycomb structures solidly attached to steel tube structures on each side of the car.

These tube structures must conform to the material specifications given in article 253.8.3. of Appendix J, with the exception of the dimensions of the tubes, which must measure at least 30 x 2 mm.

These structures must be fixed to the main structure of the car.

The minimum thickness of the composite panels is 15 mm, and they may be mounted on either side of the tubes (see drawing 279-5).

The outermost part of the protection shall be situated at the level of the centre of the wheel hubs, over a minimum length of 60 % of the wheelbase.

This protection shall extend outwards on both sides at least as far as the vertical planes passing through the middle of the foremost part of the rear tyres and through the middle of the rearmost part of the front tyres, but not further than the vertical planes passing through the outside of the foremost part of the rear tyres and through the outside of the rearmost part of the front tyres.

The space between this protection and the bodywork must be covered, to prevent wheels penetrating it.

5.4 Bodywork:

This must be impeccably finished, in no way of a makeshift nature. It must not have any sharp angles or sharp-edged or pointed parts, and angles or corners must be rounded with a radius of not less than 15 mm.

At the front and at the sides there must be hard, opaque bodywork providing protection against stones.

At the front, this bodywork must rise at least to the level of the centre of the steering wheel, and its height must not be less than 42 cm measured from the driver's seat mounting.

The height of the side bodywork must not be less than 42 cm, measured in relation to the plane passing through the driver's seat mounting.

All mechanical elements necessary for propulsion (engine, transmission) must be covered by the bodywork or mudguards.

Seen from above, all parts of the engine must be covered by sturdy, hard and opaque bodywork; the sides of the engine may be left uncovered. The panels used must not be more than 10 mm thick.

An external rear-view mirror must be present on each side of the car. The reflecting surface of each of these rear-view mirrors must not be less than 90 cm², and it must be possible to fit into this surface a square with sides measuring 6 cm.

5.5 Cockpit:

The width of the cockpit, maintained over 50 cm from the most rearward point of the seat in a horizontal plane towards the front, shall not be inferior to 60 cm.

No part of the cockpit, or situated in the cockpit, may have sharp or pointed parts.

Particular care must be taken to avoid any protrusion which could injure the driver.

The two safety rollbars must be high enough for a line extended from the top of the main rollbar to the top of the front rollbar to pass at least 5 cm over the top of the driver's helmet when he is seated normally in the car with his helmet on and his safety harness fastened.

A rigid roof panel above the driver is permitted.

Any transmission shaft joint situated beneath the floor of the cockpit must be enveloped by a band of mild steel at least 3 mm thick over a length of at least 25 cm, securely fixed to the chassis, in order to prevent the shaft from penetrating the cockpit or hitting the ground in case of failure of the joint.

No mechanical part other than the controls necessary for driving the vehicle may be situated in the cockpit.

It is obligatory that lateral protection be provided as follows for the two side openings of the cockpit:

These openings must be closed completely to prevent the passage of a hand or arm. This closing must be effected:

- either by netting with a mesh of 6 cm x 6 cm made from cords of at least 3 mm in diameter or with a mesh between 10 mm x 10 mm and 25 mm x 25 mm, the minimum diameter of the wire of which the mesh is formed shall be 1 mm.

This netting is to be fixed permanently at the top and rapidly detachable at the bottom from inside or outside;

- or by a wire grille with a maximum mesh of 6 cm x 6 cm, the wire being at least 2 mm in diameter or with a mesh between 10 mm x 10 mm and 25 mm x 25 mm, the minimum diameter of the wire of which the mesh is formed shall be 1 mm .

This grille is to be attached by two hinges at the top and having an external quick release device at the bottom, also accessible from inside the car (an opening may be made for this purpose), allowing the grille to be swung upwards to a vertical position.

- or by side windows made from polycarbonate, of a minimum thickness of 5 mm.

5.6 Weight:

The minimum weight of the vehicle, without the driver on board, must at all times during the event comply with the following scale of minimum weights according to the cylinder capacity, the number of cylinders, the type of engine and the type of transmission:

Cylinder Capacity	2WD	4WD-4cyl norm.asp.	4WD-6cyl + 4WD-4cyl superch.	4WD-8cyl + 4WD-6cyl superch.
< 1,300 cm³	420 kg	470 kg	-	-
< 1,600 cm³	450 kg	500 kg	550 kg	600 kg
< 2,000 cm³	500 kg	550 kg	600 kg	650 kg
< 2,500 cm³	550 kg	600 kg	650 kg	700 kg
< 3,500 cm³	600 kg	650 kg	700 kg	750 kg

5.7 Fire-proof bulkhead:

A metallic fire-proof, flame-proof and liquid-tight bulkhead must be fixed to the floor of the car and to the two rear uprights of the rollcage. It must extend over the whole width of the rollcage; its upper edge will be at least 50 cm from the floor.

The floor will be closed.

5.8 Mudguards:

They must be firmly fixed. The mudguards must project over the wheels, and provide efficient covering of at least one third of their circumference and at least the entire width of the tyre, and descend towards the rear to at least 5 cm below the axis of the wheels.

In those cars where the mudguards form part of the bodywork or are entirely or partly overhung by parts of the bodywork, the mudguards-body combination or the body alone shall nevertheless meet the above-mentioned protection requirements.

Mudguards must have no perforations or sharp angles.

Should it be necessary to reinforce the mudguards, this may be done with iron rod of 10 mm maximum diameter, or with tubing with a maximum diameter of 20 mm.

Under no circumstances may the mudguard reinforcement be used as a pretext for the construction of crash bars.

5.9 Suspension:
The axles must be sprung. The mounting of axles directly onto the chassis is not allowed.

5.10 Steering:
The system is free.

5.11 Throttle:
There shall be a positive means of closing the throttle in the event of failure of the throttle linkage, by means of an external spring operating on each throttle spindle or slide.

5.12 Fuel, oil and cooling water tanks:
They shall be isolated from the driving compartment by means of bulkheads so that in the case of spillage, leakage or failure of a tank, no liquid will pass into the driving compartment. The same applies to the fuel tanks vis-à-vis the engine compartment and exhaust system.
The fuel tank must be an FT3 or FT3 1999 type and be situated behind the seat.
It must be mounted in a sufficiently protected location and be firmly attached to the car.
It must not be in the driver's compartment, and must be separated from it by a fire-wall.
Unless the fuel tank is isolated from the engine and the exhaust by a leak-proof, non-inflammable bulkhead, this tank must be situated at least 40 cm away from the cylinder head and the exhaust system.
The filler caps of this fuel tank must be leak proof and must not protrude beyond the bodywork.
The capacity of the fuel tank must not exceed 20 litres.

5.13 Dynamos, alternators, batteries:
Dynamos and alternators may be removed, but each car must have a fully charged battery.
The use of any outside source of energy to start the engine of the car on the grid or during a race is forbidden.

5.14 Fuel lines and pumps:
Fuel lines, oil lines and brake lines must be protected externally against any risk of deterioration (stones, corrosion, mechanical breakages, etc.), and inside the cockpit, as far as the fuel circuit is concerned, against all risks of fire. There must be no connections on the lines situated in the cockpit.
Automatic fuel-flow cut-off: It is recommended that all fuel feed pipes going to the engine be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.
The vent lines should also be fitted with a gravity activated roll-over valve.
All the fuel pumps should only operate when the engine is running, or during the starting process.

5.15 Wheels and tyres:
The maximum diameter permitted for wheels is 18 inches.
Tyres manufactured specifically for agricultural use or marked for use at limited speeds are prohibited.
If wheels made from a material other than steel are used, the competitor must provide documentary evidence that these wheels have been supplied for a series production car either as original equipment or as alternative equipment.
Home-made constructions are prohibited.
The complete wheel (flange + rim + inflated tyre) must always fit inside a U-shaped gauge of which the extremities are 250 mm apart, the measurement to be made on an unloaded part of the tyre.
Twin wheels and wheels fitted with chains are forbidden.
Studded tyres are forbidden.
Tyres fitted with "knobbly" treads or rubber studs are not permitted unless by decision of the stewards of the meeting when the weather conditions are unfavourable and thus compromise the good running of the race.
Tyres with the following characteristics are not considered as "knobbly" or with rubber studs:
- no gap between two blocks measured perpendicularly or parallel to the tread may exceed 15 mm.
In the case of wear or tear of the corners, the measurement will be taken at the base of the block. In the case of circular or oval blocks, the measurement is taken at the tangent of the blocks;
- the depth of the tread may not exceed 15 mm.
These measurements do not apply over a width of 30 mm at the edge on each side of the tread, but the blocks may not extend beyond the vertical plane of the tyre walls.
Spare wheels is prohibited.

5.16 Parking brake:
Obligatory; it must be efficient and simultaneously control the two front wheels or the two rear wheels.

5.17 Rear light:
Each car must be fitted with one red rear light of the fog lamp type (bulb of minimum 21 watts), clearly visible from the rear. It must be positioned between 1.50 m and 1.15 m above ground level.
It must be possible for the driver sitting at his steering wheel to switch it on.
Rear lights equiped with LED are authorised.

5.18 Competition number:
This must be displayed once on each side of the car and on each side of a panel on the roof or on the engine bonnet.
The car must bear no other number likely to be confused with it.
The roof number must be permanently fixed on a vertical support, 24 cm x 35 cm, with no sharp edges and must be positioned along the longitudinal axis of the car. The number must be 18 cm high and the strokes forming it must be 4 cm thick.

5.19 Windscreen:
Must be of laminated glass or of a polycarbonate, and the windows must be of safety glass or plastic.
If of plastic, the thickness shall not be less than 5 mm.
Cars with laminated windscreens which are damaged to such an extent that visibility is seriously impaired or that there is a likelihood of their breaking further during the event, will be rejected.
Films, stickers and spraying are not allowed, except those authorised by the sporting code chapter 17, article 211.
Synthetic screens must not be tinted. Tinted glass screens.
The windscreen may be replaced, or protected, by a metal grille covering the entire surface of the windscreen opening. The mesh size shall be between 10 mm x 10 mm and 25 mm x 25 mm, and the minimum diameter of the wire of which the mesh is formed shall be 1 mm.
In cars which have a laminated glass windscreen or which have the metal grille defined above and no polycarbonate windscreen, motorcycle type goggles or a visor fitted on the helmet must be worn by the driver.
Apertures of a total area not exceeding 64 cm^2 may be made in the windscreen.

5.20 Safety cage:
It is obligatory and must comply with articles 253.8.1, 8.2, 8.3, 8.4. Nevertheless, for cars built before 01.01.95, in accordance with articles 253.8.1, 8.2,8.3, the minimum dimensions of the tubes making up the cage are 38 x 2.5 mm or 40 x 2 mm.

5.21 Mudflaps:
It is obligatory to fix mudflaps behind the driven wheels, made of a flexible material and with a minimum thickness of 5 mm.
The mudflaps must be situated no more than 5 cm above the ground and cover at least the whole width of the complete wheel and must not exceed this width by more than 5 cm.
With the exception of a transversal mudflap in front of the rear wheels, to protect the engine, any other system of mudflaps or protection under the car is forbidden.

5.22 Driver's seat
A complete, FIA-homologated seat is recommended (8855/1992 or 8855/1999 standards). This seat may not be modified in any way.
A seat which has not been homologated by the FIA may be pierced to allow straps to be passed through it. These straps must comply with the traction angles shown in drawing 253-42.
The shell of the seat must then be reinforced locally so that it at least retains its original resistance, and the trim must protect the straps from any risk of deterioration.
The seat must be securely fixed; if it is mounted on rails, or if it has an adjustable back rest, it must be additionally secured so as to be absolutely immovable and rigid. The seat shall include a headrest.
The dimensions of the headrest shall be such that the driver's head cannot be trapped between the rollbar and the headrest.

ARTICLE 281 - CLASSIFICATION AND DEFINITIONS OF CROSS-COUNTRY VEHICLES

ARTICLE 1 : CLASSIFICATION

1.1 Categories and Groups

The vehicles used in cross-country rallies will be divided up into the following categories and groups:

Category I :	- Group T1 :	Series Cross-Country Cars
	- Group T2 :	Improved Cross-Country Cars
Category II :	- Group T3 :	Prototype Cross-Country Cars
Category III :	- Group T4 :	Cross-Country Trucks

1.2 Cubic capacity classes:

The cars will be divided up into the following classes according to their cubic capacity.

1.	up to	500 cm^3		
2.	over	500 cm^3	and up to	600 cm^3
3.	over	600 cm^3	and up to	700 cm^3
4.	over	700 cm^3	and up to	850 cm^3
5.	over	850 cm^3	and up to	1000 cm^3
6.	over	1000 cm^3	and up to	1150 cm^3
7.	over	1150 cm^3	and up to	1400 cm^3
8.	over	1400 cm^3	and up to	1600 cm^3
9.	over	1600 cm^3	and up to	2000 cm^3
10.	over	2000 cm^3	and up to	2500 cm^3
11.	over	2500 cm^3	and up to	3000 cm^3
12.	over	3000 cm^3	and up to	3500 cm^3
13.	over	3500 cm^3	and up to	4000 cm^3
14.	over	4000 cm^3	and up to	4500 cm^3
15.	over	4500 cm^3	and up to	5000 cm^3
16.	over	5000 cm^3	and up to	5500 cm^3
17.	over	5500 cm^3	and up to	6000 cm^3
18.	over	6000 cm^3		

Unless otherwise specified in special provisions imposed by the FIA for a certain category of events, the organisers are not bound to include all the above-mentioned classes in the Supplementary Regulations and, furthermore, they are free to group two or more consecutive classes, according to the particular circumstances of their events.

No class can be subdivided.

ARTICLE 2 : DEFINITIONS

2.1 General conditions

2.1.1) Series Production cars (Category I) :

Cars of which the production of a certain number of identical examples (see definition of this word hereinafter) within a certain period of time has been verified at the request of the manufacturer, and which are destined for normal sale to the public (see this expression).

Cars must be sold in accordance with the homologation form.

These cars will have a maximum of six wheels and a minimum of four driven wheels.

2.1.2) Competition cars (Category II) :

Cars built singly and intended solely for competition.

2.1.3) Trucks (Category III) :

Trucks will be considered to mean vehicles with a gross weight exceeding 3500 kg, with a maximum of eight wheels and a minimum of four driven wheels.

2.1.4) Identical cars :

Cars belonging to the same production series and which have the same mechanical components and same chassis (even though this chassis may be an integral part of the bodywork in the case of a monocoque construction).

2.1.5) Model of car :

Car belonging to a production-series distinguishable by a specific conception and external general lines of the bodywork and by an identical mechanical construction of the engine and the transmission to the wheels, with the same wheelbase and the same cubic capacity.

2.1.6) Normal sale :

Means the distribution of cars to individual purchasers through the normal commercial channels of the manufacturer.

2.1.7) Homologation :

Is the official certification made by the FIA that a minimum number of cars of a specific model has been made on series-production terms to justify classification in Series Cross Country Cars (Group T1) of these regulations.

Application for homologation shall be submitted to the FIA by the ASN of the country in which the vehicle is manufactured and shall entail the drawing up of a homologation form (see below).

It must be established in accordance with the special regulations called "Homologation Regulations", laid down by the FIA.

Homologation of a series-produced car will become null and void 7 years after the date on which the series-production of the said model has been stopped (series-production under 10 % of the minimum production of the group considered).

2.1.8) Homologation forms :

All cars recognised by the FIA will be the subject of a descriptive form called homologation form on which shall be entered all data enabling identification of the said model.

This homologation form defines the series as indicated by the manufacturer.

According to the group in which the competitors race, the modification limits allowed in international competition for the series are stated in Appendix J.

The presentation of the forms at scrutineering and/or at the start may be required by the organisers who will be entitled to refuse the participation of the entrant in the event in case of non-presentation.

Should the date for the coming into force of a homologation form fall during an event, this form will be valid for that event throughout the duration of the said event.

Should any doubt remain after the checking of a model of car against its homologation form, the scrutineers should refer either to the maintenance booklet published for the use of the make's distributors or to the general catalogue in which are listed all spare parts.

In the case of a lack of sufficient accurate documentation, scrutineers may carry out direct scrutineering by comparison with an identical part available from a concessionaire.

It will be up to the competitor to obtain the homologation concerning his car from his ASN.

Description : A form breaks down in the following way :

1) A basic form giving a description of the basic model.

2) At a later stage, a certain number of additional sheets describing "homologation extensions", which can be "variants", or "errata" or "evolutions".

a - Variants (VF, VO)

These are either supply variants (VF) (two suppliers providing the same part for the manufacturer and the client does not have the possibility of choice), or options (VO) (supplied on request and available at the concessionaires).

b - Erratum (ER)

Replaces and cancels an incorrect piece of information previously supplied by the constructor on a form.

c - Evolution (ET)

Characterises modifications made on a permanent basis to the basic model (complete cessation of the production of the car in its original form).

Use :

1) Variants (VF, VO)

The competitor may use any variant or any part of a variant as he wishes, only on condition that all the technical data of the vehicle, so designed, conforms to that described on the homologation form applicable to the car, or expressly allowed by Appendix J. For example, the fitting of a brake calliper
as defined on a variant form is only possible if the dimensions of the brake linings, etc. obtained in this way, are indicated on a form applicable to the car in question.
2) Evolution of the type (ET)
The car must comply with a given stage of evolution (independent of the date when it left the factory), and thus an evolution must be wholly applied or not at all. Besides, from the moment a competitor has chosen a particular evolution, all the previous evolutions should be applied, except where they are incompatible :
For example, if two brake evolutions happen one after another, only that corresponding to the date of the stage of evolution of the car will be used.
2.1.9) Mechanical components :
All those necessary for the propulsion, suspension, steering and braking as well as all accessories whether moving or not which are necessary for their normal working.

2.2 Dimensions

Perimeter of the car seen from above :
The car as presented on the starting grid for the event in question.

2.3 Engine :

2.3.1) Cylinder capacity :
Volume V generated in cylinder (or cylinders) by the upward or downward movement of the piston(s).
$V = 0.7854 \times b^2 \times s \times n$
where b = bore
s = stroke
n = number of cylinders
2.3.2) Supercharging :
Increasing the weight of the charge of the fuel-air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust systems) by any means whatsoever.
The injection of fuel under pressure is not considered to be supercharging (see article 3.1 of the General Prescriptions).
2.3.3) Cylinder block :
The crankcase and the cylinders.
2.3.4) Intake manifold :
- Part collecting the air-fuel mixture from the carburettor(s) and extending to the entrance ports of the cylinder head, in the case of the carburettor induction system.
- Part situated between the valve of the device regulating the air intake and extending to the ports on the cylinder head, in the case of an injection intake system.
- Part collecting the air at the air filter outlet and extending to the cylinder head entrance ports in the case of a diesel engine.
2.3.5) Exhaust manifold :
Part collecting together the gases from the cylinder head and extending to the first gasket separating it from the rest of the exhaust system.
2.3.6) For cars with a turbocharger, the exhaust begins after the turbocharger.
2.3.7) Sump :
The elements bolted below and to the cylinder block which contain and control the lubricating oil of the engine.
These elements must not include any mounting part of the crankshaft.
2.3.8) Exchanger :
Mechanical part allowing the exchange of calories between two fluids.
For specific exchangers, the first-named fluid is the fluid to be cooled and the second-named fluid is the fluid that allows this cooling.
e.g. Oil/Water Exchanger (the oil is cooled by the water).
2.3.9) Radiator :
This is a specific exchanger allowing liquid to be cooled by air.
Liquid/Air Exchanger.
2.3.10) Intercooler or Supercharging Exchanger :
This is an exchanger, situated between the compressor and the engine, allowing the compressed air to be cooled by a fluid.
Air/Fluid Exchanger.

2.4 Running gear

The running gear is made up of all parts of the car which are totally or partially suspended.
2.4.1) Wheel :
Flange and rim ; by complete wheel is meant flange, rim and tyre.
2.4.2) Friction surface of the brakes :
Surface swept by the linings on the drum, or the pads on both sides of the disc when the wheel achieves a complete revolution.
2.4.3) Mac Pherson suspension :
Any suspension system in which a telescopic strut, not necessarily providing the springing and/or damping action, but incorporating the stub axle, is anchored on the body or chassis through a single attachment point at its top end, and is pivoted at its bottom end either on a transversal wishbone locating it transversally and l ongitudinally, or on a single transversal link located longitudinally by an anti-roll bar, or by a tie rod.
2.4.4) Closed loop electronic control system :
Electronically controlled system in which an actual value (controlled variable) is continuously monitored, the feedback signal is compared with a desired value (reference variable) and the system is then automatically adjusted according to the result of this comparison.

2.5 Chassis - Bodywork

2.5.1) Chassis :
The overall structure of the car around which are assembled the mechanical components and the bodywork including any structural part of the said structure.
2.5.2) Bodywork :
- externally : all the entirely suspended parts of the car licked by the air stream.
- internally : cockpit and boot.
Bodywork is differentiated as follows :
1) completely closed bodywork
2) completely open bodywork
3) convertible bodywork with the hood in either supple (drop-head) or rigid (hard-top) material.
2.5.3) Seat :
The two surfaces making up the seat cushion and seatback or backrest.
Seatback or backrest :
Surface measured from the base of a normally seated person's spine, towards the top.
Seat cushion :
Surface measured from the base of the same person's spine towards the front.
2.5.4) Luggage compartment :
Any volume distinct from the cockpit and the engine compartment inside the vehicle.
This volume is limited in length by the fixed structure provided for by the manufacturer and/or by the rear of the seats and/or, if this is possible, reclined at a maximum angle of 15° to the rear.
This volume is limited in height by the fixed structure and/or by the detachable partition provided for by the manufacturer, or in the absence of these, by the horizontal plane passing through the lowest point of the windscreen.
2.5.5) Cockpit :
Structural inner volume which accommodates the driver and the passengers.
2.5.6) Bonnet :
Outer part of the bodywork which opens to give access to the engine.
2.5.7) Mudguard :
A mudguard is the part defined according to drawing 251-1.
Front mudguard :
The area defined by the inner face of the complete wheel of the standard car (C1/C1) and the lower edge of the side window(s) (A/A) and the front edge of the front door (B1/B1).
Rear mudguard :
The area defined by the inner face of the complete wheel of the standard car (C2/C2) and the lower edge of the side window(s) (A/A) and the rear edge of the rear door (B2/B2).

In the case of two-door cars (B1/B1) and (B2/B2) will be defined by the front and rear of the same door.

2.5.8) Engine compartment :

Volume defined by the first structural envelope surrounding the engine.

2.5.9) Bodyshell :

Structure made up of bodywork parts and having the functions of a chassis.

2.5.10) Cow-catcher :

Part designed to protect the front of the vehicle, the headlights and the radiators.

2.5.11) Main structure :

- FIA-homologated vehicle :

volume contained within the bodywork and situated :

- in frontal projection, within the outermost side members and crossrails of the original shell.
- in lower longitudinal projection, within and above the original bodywork parts forming the shell or chassis shell.
- in upper longitudinal projection, below the projection of the original shell or bodywork without boot- or bonnet lids, tailgate or doors.

- Non-homologated vehicle :

volume contained within the bodywork and situated :

- in vertical projection, in length, between the planes passing through the outer edges of the wheels and in width between the planes passing through the centre of the complete wheels with a tolerance of 3 %, on condition that these planes pass through the shell or chassis shell, tubular or semi-tubular.

If this is not the case, the maximum width shall be defined by the vertical projections of the parts of the structure receiving the suspension loads.

- in longitudinal projection, the volume shall be defined in its lower part by the longitudinal projections of the lower parts of the structure receiving the suspension loads, and in its upper part, at the front, by the planes passing through the highest points of the front safety rollbar and the highest points of the structure receiving the suspension loads or, alternatively, the upper edges of the front wheels.

To the rear it shall be defined by the planes passing through the highest points of the main safety rollbar and the highest points of the structure receiving the suspension loads or, alternatively, the upper edges of the rear wheels.

Between the main and front rollbars, it shall be defined by the planes joining their upper parts.

2.6 Electrical system

Headlight : any signal the focus of which creates an in-depth luminous beam directed towards the front.

2.7 Fuel tank

Any container holding fuel likely to flow by means of lines towards the main tank or the engine.

ARTICLE 282 - GENERAL PRESCRIPTIONS FOR CROSS COUNTRY CARS

ARTICLE 1 : GENERAL REMARKS

1.1 All modifications are forbidden unless expressly authorised by the regulations specific to the group in which the car is entered or by the general prescriptions below or imposed under the chapter "Safety Equipment".
The components of the car must retain their original function.
The cars must respect the national road traffic regulations of the countries crossed.

1.2 Application of the general prescriptions
The general prescriptions must be observed in the event that the specifications of Cross Country cars (Groups T1, T2, T3) do not lay down a more strict prescription.

1.3 Magnesium - Titanium
The use of magnesium and titanium is prohibited, other than for the wheel rims or if a component effectively exists on the homologated vehicle.

1.4 It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his automobile complies with these regulations in their entirety at all times during the event.

1.5 Damaged threads can be repaired by screwing on a new thread with the same interior diameter ("helicoil" type).

ARTICLE 2 : DIMENSIONS AND WEIGHT

2.1 Ground clearance
No part of the car must touch the ground when all the tyres on one side are deflated. This test shall be carried out on a flat surface under race conditions (occupants on board).

2.2 Ballast
No kind of ballast is authorised on Series Cross-Country (Group T1).
The carrying of tools and spare parts for the car will be allowed under the conditions laid down in article 283.

ARTICLE 3 : ENGINE

3.1 Supercharging
For diesel engines and in the event of In the event of supercharging, the nominal cylinder-capacity will be multiplied by 1.5 and the car will pass into the class corresponding to the fictive volume thus obtained. The car will be treated in all respects as if its cylinder-capacity thus increased were its real capacity. This shall particularly be the case for assigning the car to its cylinder-capacity class, its interior dimensions, its minimum number of places, its minimum weight, etc.

3.2 Equivalence formula between reciprocating piston and rotary engines
(of the type covered by the NSU Wankel patents)
The cubic capacity equivalent is 1.8 times the volume determined between the maximum and minimum capacities of the combustion chambers.

3.3 Equivalence formula between reciprocating piston and turbine engines
The formula is the following:

$$C = \frac{S(3.10 \times R) - 7.63}{0.09625}$$

S = High-pressure nozzle area - expressed in square centimetres by which is meant the area of the airflow at the exit from the stator blades (or at the exit from the first stage if the stator has several stages).
Measurement is done by taking the area between the fixed blades of the high-pressure turbine first stage.
In cases where the first stage turbine stator blades are adjustable, they must be opened to their greatest extent.
The area of the high-pressure nozzle is thus the product of the height (expressed in cm) by the width (expressed in cm) and by the number of blades.
R = The pressure ratio is the ratio of the compressor of the turbine engine.
It is obtained by multiplying together the value for each stage of the compressor, as indicated hereafter:

Subsonic axial compressor:	1.15 per stage
Trans-sonic axial compressor:	1.5 per stage
Radial compressor:	4.25 per stage.

Thus a compressor with one radial and six axial subsonic stages will be designated to have a pressure ratio of:
4.25 x 1.15 x 1.15 x 1.15 x 1.15 x 1.15 x 1.15 or 4.25 x (1.15)6.
C = Equivalent cubic capacity for reciprocating piston engines in cm^3.

3.4 All engines into which fuel is injected or in which fuel is burned after an exhaust port are prohibited.

3.5 Equivalencies between reciprocating piston engines and new types of engines
The FIA reserves the right to make modifications on the basis of comparisons established between classic engines and new types of engines, by giving a two-year notice from the 1st January following the decision taken.

3.6 Exhaust system and silencer
Even when the specific provisions for a group allow the replacement of the original silencer, the cars competing in an open-road event shall always be equipped with an exhaust silencer complying with the traffic regulations of the country(ies) through which the event is run.
The exhaust system must not pass through the cockpit.
The exhaust outlet must be horizontal or directed upwards.
The orifices of the exhaust pipes shall be placed at a maximum of 80 cm and a minimum of 10 cm from the ground.
The exit of the exhaust pipe must be situated within the perimeter of the car and less than 10 cm from this perimeter, and aft of the vertical plane passing through the centre of the wheelbase. Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns.
The exhaust system must not be provisional. Exhaust gas may only exit at the end of the system. Parts of the chassis must not be used to evacuate exhaust gases.
Catalytic exhausts: Should two possible versions of one car model be homologated (catalytic and other exhaust), the cars must comply with one or other version, all combinations of the two versions being prohibited.

3.7 Starting on board the vehicle
Starter with electric or other source of energy on board operable by the driver when seated in the seat.

3.8 Accelerator controls of the "fly-by-wire" type are forbidden, unless they exist on the homologated vehicles.
In this case, only the series device may be used, without modification.

3.9 Air restrictor
All normally aspirated petrol engines for Groups T1, T2, T3 and score regulations must be equipped with an air restrictor.
It must not be possible to detach the restrictor without using tools.
The air intake system must be fitted with an air restrictor at least 3 mm long and with a maximum diameter of:
- 32 mm for vehicles up to 4000 cm^3
- 35 mm for vehicles up to 6000 cm^3
- 38 mm for vehicles over 6000 cm^3,

for engines with more than two valves per cylinder.
For engines with two valves per cylinder and rotary valve engines, apply the following formulae:
D2V = [(D - 1) x 1.066] + 1, the result being rounded up to the nearest 0.1 mm.
D rotary = [(D - 1) x 1.10] + 1, the result being rounded up to

the nearest 0.1 mm.
It will be possible to use 2 air restrictors provided that the diameter normally used for one restrictor is divided by 1.4142.
All air supplying the engine must pass through this restrictor, which must be made of metal or of a metal alloy.
This restrictor must be situated between the air filtering system and the intake manifold.
It must be easy to inspect and to seal.
The tube between the air restrictor and the engine must be airtight so that if this restrictor becomes totally blocked, the engine will be stifled.

3.10 Smoke

It is forbidden to produce excessive smoke from the engine.
Smoke levels must comply with E.E.C. standards or equivalent and a Judge of Fact will be appointed.

ARTICLE 4 : TRANSMISSION

All cars must be fitted with a gearbox including a reverse gear which must be in working order when the car starts the event, and be able to be operated by the driver when he is normally seated.

ARTICLE 5 : SUSPENSION

Suspension parts made partially or entirely from composite materials are prohibited.

ARTICLE 6 : WHEELS

Wheels made partially or entirely from composite materials are prohibited.
Measuring wheel width:
The width is to be measured with the wheel mounted on the car, on the ground, the vehicle in race condition, driver aboard, at any point along the circumference of the tyre, except in the area in contact with the ground. When multiple tyres are fitted as part of a complete wheel, the latter must comply with the maximum dimensions for the group in which these tyres are used.

ARTICLE 7 : COACHWORK

7.1 Convertible vehicles must comply in all respects with the specifications applying to open cars.

7.2 Minimum inside dimensions

If a modification authorised by Appendix J affects a dimension stated on the homologation form, this dimension may not be retained as an eligibility criterion for the car.

7.3 Cockpit

Only the following accessories may be installed in the cockpit: spare wheel(s), spare parts, tools, safety equipment, electronic equipment, materials and controls necessary for driving, windscreen washer water container, ballast (if permitted).
The passenger area and seat of an open car must in no way be covered.
Containers for helmets and tools situated in the cockpit must be made of non-inflammable material and they must not, in case of fire, give off toxic vapours.
In the case of a car with a crew of three and in which the back of the rearmost seat is situated more than 20 cm to the rear of the back of the seat which is furthest forward, the car must respect the following conditions:
- it must have four side doors equipped with transparent windows and allowing free access to the seats.
- it must have a specific rollbar as defined in article 283.8.
- the front of the rear seat(s) must be positioned more than 20 cm to the rear of the back(s) of the front seat(s).

7.4 All body panels of the vehicle must be at all times of the same material as those of the original homologated car and must be of the same material thickness as that of the original homologated car (tolerance ± 10 %).

7.5 Headlamp mounting and protection

The boring of holes in the front bodywork for light brackets is authorised, limited solely to mountings.
Non-reflecting protectors made from flexible material may be mounted on the headlamps ; they must not protrude forwards beyond the headlamp glass by more than 10 cm.

7.6 Any object of a dangerous nature (inflammable products, etc.) must be carried outside the cockpit.

7.7 Flexible shielding may be used to protect the external switches or attachments of the compulsory safety equipment.

ARTICLE 8 : ELECTRICAL SYSTEM

8.1 Lighting

A fog light may be changed for another, and vice versa, provided that the original mounting remains the same.

8.2 The mounting of the alternator is free.

8.3. It is prohibited to use any electronic driving aids, or closed loop electronic systems.

ARTICLE 9 : FUEL - COMBUSTIVE

9.1 For petrol engines the fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:
- 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.
- 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.
The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.
- Specific gravity between 720 and 785 kg/m3 at 15°C (measured according to ASTM D 4052).
- A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.
The measuring of the nitrogen content will be carried out according to the standard ASTM D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.
- Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM D 3703 or in the case of impossibility UOP 33-82).
- Maximum lead content: 0.40 g/l or the standard of the country of the event, if this is lower (ASTM D 3341 or D 3237).
- Maximum benzene content: 5 % in volume (ASTM D 3606).
- Maximum Reid vapour pressure: 900 hPa (ASTM D 323).
- Distillation at 70°C: 10 % - 47 % (ASTM D 86).
- Distillation at 100°C: 30 % - 70 % (ASTM D 86).
- Distillation at 180°C: 85 % minimum (ASTM D 86).
- Maximum final boiling point: 225°C (ASTM D 86).
- Maximum residue: 2 % volume (ASTM D 86).
The fuel being accepted or rejected according to the standard ASTM D 3244 with a confidence limit of 95 %.
If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.

9.2 Diesel oil

For Diesel engines, the fuel must be gas oil corresponding to the following specifications:

- Hydrocarbon level, % by weight	99.0 min.
- Specific gravity, kg/m3	860 max.
- Cetane number (ASTM D 613)	55 max.
- Calculated cetane number (ASTM D 976-80)	55 max.

9.3 Only air may be mixed with the fuel as an oxidant.

9.4 Refuelling

Prior to any refuelling operation, it is necessary to establish earthing common to the vehicle and to the refuelling device.

9.5 Tank ventilation

The tank must be equipped with ventilation complying with article 283.14.4, unless the series production tank, fuel feed circuit and ventilation are retained.

ARTICLE 10 : BRAKES

Carbon brakes discs are forbidden.

ARTICLE 283 - SAFETY EQUIPMENT FOR CROSS COUNTRY CARS

ARTICLE 1 :

A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

ARTICLE 2 :

If a device is optional, it must be fitted in a way that complies with regulations.

ARTICLE 3 : LINES, FUEL PUMPS AND ELECTRIC CABLES

3.1 Group T1

Series production fittings may be retained. If they are modified, they must comply with the paragraphs concerning them below.
Additional protections are authorised on the inside against risks of fire or of the projection of fluids.

3.2 Groups T2 and T3

3.2.1) Fuel and lubricating oil lines must have a minimum burst pressure of 70 bar (1000 psi) and a minimum operating temperature of 135°C (250°F).
When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).
In the case of fuel lines, the metal parts which are isolated from the shell of the car by non-conducting parts must be connected to it electrically.
3.2.2) Lines containing hydraulic fluid, with the exception of lines under gravity head only, must have a minimum burst pressure of 70 bar (1000 psi) or higher according to operating pressure, and a minimum operating temperature of 232°C (450°F).
When flexible, these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).
3.2.3) Lines containing cooling water and lubricating oil must be outside the cockpit. Lines containing fuel or hydraulic fluid may pass through the cockpit but without any connections except on the front and rear bulkheads in accordance with the diagrams 253-1 and 253-2, and on the braking circuit. Only the tank for the hydraulic fluid and the master cylinder for the handbrake circuit will be accepted in the cockpit.
3.2.4) Fuel pumps and taps must be outside the cockpit.
3.2.5) Only the intakes, exits and lines for air for ventilating the cockpit are allowed inside the cockpit.
3.2.6) The electrical cables must be protected by coverings which do not sustain combustion.
3.2.7) Self-sealing fast connectors of the same make as the flexible lines on which they are fitted may be installed on all the lines excepting the brake lines.

3.3 All groups

The lines must be protected externally against any risk of deterioration (stones, corrosion, mechanical breakage, etc.).
Automatic fuel-flow cut-off:
It is recommended that all fuel feed pipes going to the engine and return pipes from the engine be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.
The vent lines should also be fitted with a gravity activated roll-over valve.
All the fuel pumps should only operate when the engine is running, or during the starting process.

ARTICLE 4 : BRAKING SAFETY SYSTEM

Double circuit operated by the same pedal:
The pedal shall normally control all the wheels ; in the event of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal shall still control at least two wheels.
The vehicle may be fitted with a handbrake system acting on the brakes of one and the same axle and completely independent of the main system (hydraulic or mechanical).

ARTICLE 5 : ADDITIONAL FIXATIONS

At least two additional fasteners must be fitted for each of the bonnet and boot lids.
This measure also applies to tailgates, but not to doors.
The original locking mechanisms may be rendered inoperative or removed.
These fasteners must be "American fasteners", a bayonet passing through the lid, and the latter being locked by a pin also attached to the lid.
If plastic parts are used, metal reinforcements must be provided for, to prevent wrenching.
Large objects carried on board the vehicle (such as the spare wheel, tool kit, etc.) must be firmly fixed. The use of elasticated cord is forbidden.

ARTICLE 6 : SAFETY BELTS

6.1 Belts

The wearing of two shoulder straps and one lap strap is compulsory.
Anchorage points on the shell or the chassis: 2 for the lap strap, 2 (or possibly one symmetrical about the seat) for the shoulder straps.
These belts must comply with FIA standard n°8853/98 or 8854/98.
Furthermore, it is recommended that for competitions which include public road sections, the belts be equipped with push-button release systems.
The ASNs may homologate mounting points on the rollcage when this cage is being homologated (see art. 283.8.4), on condition that they are tested.

6.2 Installation

The anchorage points of the series car (Groups T1 and T2) must be used.
If the installation on the series anchorage points is impossible, new anchorage points must be installed on the shell or the chassis, a separate one for each strap and as near as possible to the centre-line of the rear wheels for the shoulder straps.
A hole may be made in a series production seat to allow the passage of a safety belt.
- The recommended geometrical locations of the anchorage points are shown in drawing n°253-42.
In the downwards direction, the shoulder straps must be directed towards the rear, and must be installed in such a way that they do not make an angle of more than 45° to the horizontal from the upper rim of the backrest, although it is recommended that this angle should not exceed 10°.
The maximum angles in relation to the centre-line of the seat are 20° divergent or convergent.
If possible, the anchorage point originally mounted by the car manufacturer on the C-pillar should be used.
Anchorage points creating a higher angle to the horizontal must not be used unless the seat meets the requirements of the FIA standard. In that case, the shoulder straps of 4-point safety harness must be installed on the rear seat lap strap anchorage points originally mounted by the car manufacturer.
For a 4-point harness, the shoulder straps must be installed cross-wise symmetrically about the centre-line of the front seats.

A safety harness must not be installed on a seat having no head restraint or having a backrest with integrated head restraint (no opening between backrest and head restraint).
The lap and crotch straps should pass not over the sides of the seat but through the seat, in order to wrap and hold the pelvic region over the greatest possible surface.
The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh.
Under no conditions must they be worn over the region of the abdomen.
Holes may be made in the series seat if this proves to be necessary in order to avoid such an occurrence.
Care must be taken that the straps cannot be damaged through chafing against sharp edges.
- If installation on the series anchorage points is impossible for the shoulder and/or crotch straps, new anchorage points must be installed on the shell or the chassis, as near as possible to the centre-line of the rear wheels for the shoulder straps.
If this latter mounting is impossible, the shoulder straps may be fixed or leaning on a rear transversal tube fixed to the rollbar or to the top anchorage points of the front belts.
The shoulder straps may also be fixed to the safety rollcage or to a reinforcement bar by means of a loop, and may also be fixed to the top anchorage points of the rear belts, or be fixed or leaning on a transversal reinforcement welded to the backstays of the rollbar.
In this case, the use of a transversal reinforcement is subject to the following conditions:
- The transversal reinforcement shall be a tube measuring at least 38 mm x 2.5 mm or 40 mm x 2 mm, made from cold drawn seamless carbon steel, with a minimum yield strength of 350 N/mm².
- The height of this reinforcement must be such that the shoulder straps, towards the rear, are directed downwards with an angle of between 10° and 45° to the horizontal from the rim of the backrest, an angle of 10° being recommended.
- The straps may be attached by looping or by screws, but in the latter case an insert must be welded for each mounting point (see drawings 253-17C and 253-53 for the dimensions).
These inserts will be positioned in the reinforcement tube and the straps will be attached to them using bolts of M12 8.8 or 7/16 UNF specification.
- Each anchorage point must be able to withstand a load of 1470 daN, or 720 daN for the crotch straps. In the case of one anchorage point for two straps, the load considered will be equal to the sum of the required loads.
- For each new anchorage point created, a steel reinforcement plate with a surface area of at least 40 cm² and a thickness of at least 3 mm must be used.
- Principles of mounting to the chassis/monocoque:
1) General mounting system: see drawing 253-43.
2) Shoulder strap mounting:see drawing 253-44.
3) Crotch strap mounting:see drawing 253-45.

6.3 Use

A safety harness must be used in its homologation configuration without any modifications or removal of parts, and in conformity with the manufacturer's instructions.
The effectiveness and longevity of safety belts are directly related to the manner in which they are installed, used and maintained.
The belts must be replaced after every severe collision, and whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.
They must also be replaced if metal parts or buckles are bent, deformed or rusted.
Any harness which does not function perfectly must be replaced.

ARTICLE 7 : EXTINGUISHERS - EXTINGUISHING SYSTEMS

The use of the following products is prohibited: BCF, NAF

7.1 Systems mounted

7.1.1) All cars must be equipped with an extinguishing system homologated by the FIA in accordance with the following standard, in force on the date of homologation of the vehicle: "FIA standard for plumbed-in fire extinguisher systems in competition cars".
7.1.2) All extinguishers must be adequately protected and must be situated within the cockpit. In all cases their mountings must be able to withstand a deceleration of 25 g.
All extinguishing equipment must withstand fire.
Plastic pipes are prohibited and metal pipes are obligatory.
7.1.3) The driver must be able to trigger all extinguishers manually when seated normally with his safety belts fastened and the steering wheel in place.
Furthermore, a means of triggering from the outside must be situated near to the circuit-breaker switch, and not combined with it. It must be marked with a letter "E" in red inside a white circle of at least 10 cm² diameter with a red edge.
7.1.4) The system must work in all positions.
7.1.5) Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the occupants' heads."

7.2 Manual extinguishers

7.2.1) All cars must be fitted with one or two fire extinguishers.
7.2.2) Permitted extinguishants: AFFF, powder or any other extinguishant homologated by the FIA.
7.2.3) Minimum extinguisher capacity:
In case of use of powder:
2.60 litres for the quantities specified hereafter.
7.2.4) Minimum quantity of extinguishant:
AFFF: 2.4 litres
Powder: 2.0 kg
7.2.5) All extinguishers must be pressurised according to the contents:
AFFF: in accordance with the manufacturer's instructions
Powder: 13.5 bar
Furthermore, in the case of AFFF, each extinguisher must be equipped with a means of checking the pressure of the contents.
7.2.6) The following information must be visible on each extinguisher:
- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check.
7.2.7) All extinguishers must be adequately protected. Their mountings must be able to withstand a deceleration of 25 g.
Furthermore, only quick-release metal fastenings, with metal straps, will be accepted.
7.2.8) The extinguishers must be easily accessible for the driver and the co-driver.

ARTICLE 8 : ROLLOVER STRUCTURES

8.1 Definitions

8.1.1) Safety cage
A structural framework designed to prevent serious bodyshell deformation in the case of a collision or of a car turning over.
8.1.2) Rollbar
Structural frame or hoop and mounting points.
8.1.3) Rollcage
Structural framework made up of a main rollbar and a front rollbar (or of two lateral rollbars), their connecting members, one diagonal member, backstays and mounting points. (For example, see drawings 253-3 and 253-4).
8.1.4) Main rollbar
Structure consisting of a near-vertical frame or hoop located across the vehicle just behind the front seats.
8.1.5) Front rollbar
Similar to main rollbar but its shape follows the windscreen pillars and top screen edge.
8.1.6) Lateral rollbar
Structure consisting of a near-vertical frame or hoop located along the right or left side of the vehicle.
The rear legs of a lateral rollbar must be just behind the front seats. The front leg must be against the screen pillar and the door pillar such that it does not unduly impede the entry or exit of the driver and co-driver.
8.1.7) Longitudinal member

Longitudinal tube which is not a part of the main, front or lateral rollbar and linking them, together with the backstays.

8.1.8) Diagonal member

Transverse tube between a top corner of the main rollbar or upper end of a backstay and a lower mounting point on the other side of the rollbar of backstay.

8.1.9) Framework reinforcement

Reinforcing member fixed to the rollcage to improve its structural efficiency.

8.1.10) Reinforcement plate

Metal plate fixed to the bodyshell or chassis structure under a rollbar mounting foot to spread load into the structure.

8.1.11) Mounting foot

Plate welded to a rollbar tube to permit its bolting or welding to the bodyshell or chassis structure, usually onto a reinforcement plate.

8.1.12) Removable members

Structural members of a safety cage which must be able to be removed.

8.2 Specifications

8.2.1) General comments

8.2.1.1 Safety cage must be designed and made so that, when correctly installed, they substantially reduce bodyshell deformation and so reduce the risk of injury to occupants.

The essential features of safety cages are sound construction, designed to suit the particular vehicle, adequate mountings and a close fit to the bodyshell.

Tubes must not carry fluids.

The safety cage must not unduly impede the entry or exit of the driver and co-driver.

Members may intrude into the occupant's space in passing through the dashboard and front side-trim, as well as through the rear side-trim and rear seats.

The rear seat may be folded down.

The safety cage must be entirely contained :

- at the front : 200mm in front of the front wheel axis
- at the rear : at the level of the rear wheel axis.

Nevertheless, the backstays may extend beyond this plane to be attached to the chassis.

The rear backstays on a monocoque chassis may extend beyond the rear suspension mounting points, provided that they are fixed or welded onto a hollow body of the monocoque chassis.

Any modification to a homologated safety cage is forbidden.

The rear face of the headrest subjected to the regulation load will define the position of the tube of the main rollbar which may not protrude beyond it in vertical projection.

The minimum free height below the rollbar tube will be 900 mm, measured vertically from the bottom of the uncrushed seat.

8.2.1.2 Basic safety cage:

Only rollcages must be used, completed by a front transversal strut and two door struts (see drawing 283-6).

In the case of a car with a crew of three, the safety cage must comply with drawing 283-5, with a second main rollbar situated close to the back(s) of the rear seat(s).

With regard to pick-up vehicles, the cockpit of which is not large enough to allow the fitting of the compulsory basic safety cage, it shall be possible to mount the rollbar(s) as per one of the drawings 283-1 to 283-4.

This possibility is open to pick-ups only, to the exclusion of all other types of bodywork and all the points of the installation must comply with the prescriptions of the other paragraphs (including the material specifications of art. 8.3).

Drawing 283-1: One diagonal strut compulsory.

Drawing 283-2: Two diagonal struts compulsory, one for the four-point rollbar inside the cockpit (according to drawing 253-4), one for the four points outside rollbar (according to drawing 253-3 or 253-4).

Drawing 283-3: One diagonal strut compulsory (according to drawing 253-3 or 253-4).

Drawing 283-4: Two diagonal struts compulsory, one for the interior four-point rollbar, one for the exterior six-point rollbar.

8.2.1.3 Compulsory diagonal member:

Different ways of fitting the compulsory diagonal member: see drawings 253-3 to 253-5.

The combination of several members is permitted.

8.2.1.4 Optional reinforcing members:

Each type of reinforcement (drawings 253-6 to 253-17, 253-17A and 253-17C) may be used separately or combined with others.

8.2.2) Technical specifications

8.2.2.1 Main, front and lateral rollbars:

These frames or hoops must be made in one piece without joints.

Their construction must be smooth and even, without ripples or cracks.

The vertical part of the main rollbar must be as straight as possible and as close as possible to the interior contour of the bodyshell.

The front leg of a front rollbar or of a lateral rollbar must be straight, or if it is not possible, must follow the windscreen pillars and have only one bend with its lower vertical part.

Where a main rollbar forms the rear legs of a lateral rollbar (drawing 253-4), the connection to the lateral rollbar must be at roof level.

To achieve an efficient mounting to the bodyshell, the original interior trim may be modified around the safety cages and their mountings by cutting it away or by distorting it.

However, this modification does not permit the removal of complete parts of upholstery or trim.

Where necessary, the fuse box may be moved to enable a rollcage to be fitted.

8.2.2.2 Mounting of rollcages to the bodyshell:

Minimum mountings are:

- 1 for each leg of the main or lateral rollbar ;
- 1 for each of the front rollbar ;
- 1 for each backstay (see 8.2.2.3).

Each mounting foot of the front, main and lateral rollbars must include a reinforcement plate, of a thickness of at least 3 mm which must not be less than that of the tube onto which it is welded.

Each mounting foot must be attached by at least three bolts on a steel reinforcement plate at least 3 mm thick and of at least 120 cm^2 area which is welded to the bodyshell.

Examples are shown in drawings 253-18 to 253-24. This does not necessarily apply to backstays (see below).

Bolts must be of at least M8 size of ISO standard 8.8 or better.

Fasteners must be self-locking of fitted with lock washers.

These are minimum requirements.

In addition to these requirements, more fasteners may be used, the rollbar legs may be welded to reinforcement plates, the rollcage may be welded to the bodyshell.

Rollbar mounting feet must not be welded directly to the bodyshell without a reinforcement plate.

The safety rollcages must be fixed directly to the steel bodyshell or the main chassis, i.e. onto the structure to which the suspension loads are transmitted (with if necessary additional reinforcement at the joint between the chassis and the foot of the rollbar).

Rollcages equipping vehicles with a tubular or semi tubular space frame (T3) must be integrated where the tubes join above the sill of the entrance to the cockpit.

At least one tube of the same section and quality as those of the chassis must extend each foot of the rollbar downwards.

Another diagonal is recommended, as well as a horizontal tube at floor level.

The tubes making up the rollbar above the level of the entrance to the cockpit must have at least all the parts making up the minimum rollcage, as well as the dimensions recommended.

8.2.2.3 Backstays:

These are compulsory and must be attached near the roof line and near the top outer bends of the main rollbar on both sides of the car.

They must make an angle of at least 30° with the vertical, must run rearwards and be straight and as close as possible to the interior side panels of the bodyshell.

Their materials specification, diameter and thickness must be as defined in 8.3.

Their mountings must be reinforced by plates.

Each backstay should be secured by bolts having a cumulative section area at least two thirds of that recommended for each rollbar leg mounting in 8.2.2.2 above, and with identical reinforcement plates of at least 60 cm^2 area (see drawing 253-25).

A single bolt in double shear is permitted, provided it is of adequate section and strength (see drawing 253-26) and provided that a bush

is welded into the backstay.
8.2.2.4 Diagonal members:
At least one diagonal member must be fitted.
Their location must be in accordance with drawings 253-3 to 253-5 and they must be straight, not curved.
The attachment points of the diagonal members must be so located that they cannot cause injuries.
They may be made removable but must be in place during events.
The lower end of the diagonal must join the main rollbar of backstay not further than 100 mm from the mounting foot.
The upper end must join the main rollbar not further than 100 mm from the junction of the backstay joint, or the backstay not more than 100 mm from its junction with the main rollbar.
They must comply with the minimum specification set out in 8.3. Diagonal members fixed to the bodyshell must have reinforcement plates as defined in 8.2.2.3 above.
8.2.2.5 Optional or compulsory reinforcements of the rollcage:
The diameter, thickness and material of reinforcements must be as defined in 8.3.
They shall be either welded in position or installed by means of demountable joints.
Reinforcement tubes must be straight and not bent.
8.2.2.5.1 Transverse reinforcing members:
The fitting of two transverse members as shown in drawing 253-7 is permitted.
The transverse member fixed to the front rollbar is obligatory and must not encroach upon the space reserved for the occupants.
It must be placed as high as possible but its lower edge must not be higher than the top of the dashboard.
8.2.2.5.2) Doorbars (for side protection):
At least one longitudinal strut must be fitted on each side of the vehicle at door level.
The tube(s) making up this reinforcement must be built into the rollcage and its(their) angle with the horizontal tube must not exceed 15° (angled downwards towards the front).
The lateral protection must be as high as possible and, if it comprises a single bar, at least 10 cm from the bottom of the seat, but in all cases its upper attachment points must not be higher than half the total height of the door measured from its base.
If these upper attachment points are located in front of or behind the door opening, this height limitation is also valid for the corresponding intersection of the strut and the door opening.
In the case of doorbars in the form of an "X" (cross-struts), it is recommended that the lower attachment points of the cross-struts be fixed directly onto the longitudinal member.
8.2.2.5.3 Roof reinforcement:
Reinforcing the upper part of the rollcage by adding members as shown in drawings 253-9 and 253-9A is permitted.
8.2.2.5.4 Reinforcement of bends and junctions:
It is permitted to reinforce the junction of the main rollbar or the front rollbar with the longitudinal struts (drawings 253-10 and 253-16), as well as the top rear bends of the lateral rollbars and the junction between the main rollbar and the backstays.
The ends of these reinforcing tubes must not be more than half way down or along the members to which they are attached, except for those of the junction of the front rollbar, which may join the junction of the door strut/front pillar.
A reinforcement as in drawing 283-17B may be added on each side of the front rollbar between the upper corner of the windscreen and the base of this rollbar.
8.2.2.6 Protective padding:
Where the occupants' bodies or their crash helmets could come into contact with the safety cage, non-flammable padding must be provided for protection.
8.2.2.7 Removable members:
Should removable members be used in the construction of a rollcage, the demountable joints used must comply with a type approved by the FIA (see drawings 253-27 to 253-36). They must not be welded.
The screws and bolts must be of ISO standard 8.8 or better.
It should be noted that demountable joints must not be used as part of a main, front or lateral rollbar because they act as hinges in the principal structure and allow deformation.
Their use is solely for attaching members to the rollbars and for attaching a lateral rollbar to a main rollbar (drawing 253-4). In this last case, hinged joints illustrated in drawings 253-30, 253-33 and 253-36 must not be used.
The removable connections must be fitted within the extension of the axis of the tubes, and must not be offset.
8.2.2.8 Guidance on welding:
All welding must be of the highest possible quality with full penetration over the entire perimeter of the tube and preferably using a gas shielded arc.
Although good external appearance of a weld does not necessarily guarantee its quality, poor looking welds are never a sign of good workmanship.
When using head-treated steel the special instructions of the manufacturers must be followed (special electrodes, gas protected welding).
It must be emphasised that the use of heat-treated or high carbon steels may cause problems and that bad fabrication may result in a decrease in strength (caused by brittle heat-affected zones), inadequate ductility and internal stress.

8.3 Material specifications

Specifications of the tubes used:

Material	Minimum tensile strength	Dimensions (mm)	Use
Cold drawn seamless unalloyed carbon steel containing a maximum of 0.22% of carbon	350 N/ mm²	45(1.75") x 2.5 or 50(2.0") x 2.0	Main rollbar (drawing 253-38) Lateral rollbars and their connection (drawing 253-39) according to construction
		38(1.5") x 2.5 or 40(1.6") x 2.0	Others parts of the safety cage

Note that these figures represent the minima allowed.
In selecting the steel, attention must be paid to obtaining good elongation properties and adequate weld ability.
The tubing must be bent by a cold working process and the centreline bend radius must be at least 3 times the tube diameter.
If the tubing is ovalised during bending, the ratio of minor to major diameter must be 0.9 or greater.

8.4 Homologation by an ASN

Safety cage manufacturers may submit a safety cage of their own design to an ASN for approval as regards the quality of steel used, the dimensions of the tubes, the optional reinforcing members and the mounting to the vehicle, provided that the construction is certified to withstand the stress minima given hereafter in any combination on top of the safety cage:
- 1.5 W* lateral ;
- 5.5 W fore and aft ;
- 7.5 W vertical.

(*W = weight of the car + 500 kg).
A homologation certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the event's scrutineers.
It must contain drawings or photos of the safety cage in question including its fixation and particularities, and must declare that the rollcage can resist the forces specified above.
Any new cage which is homologated by an ASN and is on sale, as from 01.01.97, must be identified by means of an individual number affixed to it by the manufacturer; this number must be neither copied nor moved.
A certificate bearing the same number will be attached to each of the cages by the manufacturer.
This certificate must also be presented to the event's scrutineers.
These safety cages must not be modified in any way.

To obtain the ASN's approval, a manufacturer must have demonstrated his consistent ability to design and manufacture rollcages which comply with the specifications approved by the FIA.
Manufacturers approved by the ASN shall supply customers only with products designed and manufactured to the approved standards.
Each ASN-approved manufacturer shall demonstrate to the ASN:
- that the material he uses has a certificate of origin or of traceability, and is kept segregated from other batches of material ;
- that the welding methods he uses produce consistent and sound welds and are regularly checked by laboratory tests ;
- that he operates and maintains auditable in-house quality standards and procedures, updated regularly.

Rollcages made up of a basic structure as per articles 283.8.1 to 8.3, or of a structure already tested and homologated by the ASN concerned and coming from the same manufacturer, and on which the only modifications carried out will have been the addition of parts, may be homologated directly by the ASN concerned, once the resistance has been tested and the manufacturer has supplied a certificate. For the other rollcages, the ASNs may carry out a static test as follows (see drawing 253-37):
1 - Rollcage to be considered:
As the total function of a rollcage must be considered only in its entirety, the test must be carried out on the complete rollcage.
2 - Testing device:
This must be constructed in such a way that none of the loads has any influence on its structure.
3 - Mountings:
The rollcage must be fitted to the testing device by its original mountings.
4 - Test:
A vertical load of 7.5 W (W being the weight of the car + 500 kg) is to be applied with a stamp with minimum area 500 x 200 mm on the main rollbar behind the driver's seat.
5 - Accepted distortion:
This test must not produce, in the total safety structure, any breakage or any plastic distortion of more than 50 mm.

8.5 FIA homologation

FIA suggests that each car manufacturer should recommend a type of safety cage complying with FIA standards, as defined in 8.4 above.
This safety cage must be described on a homologation extension form presented to FIA for approval and the safety cage must not be modified (see 8.2.1.1) in any way.

ARTICLE 9 : REAR VIEW

The rear view must be efficiently obtained by means of two outside mirrors (one on each side of car).

ARTICLE 10 : TOWING-EYE

All cars will be equipped with a rear and front towing-eye.
This towing-eye must be very firmly fixed and it must not be used to lift the car. It will be clearly visible and painted in yellow, red or orange, and must be located within the perimeter of the car. Minimum inside diameter: 50 mm.

ARTICLE 11 : WINDSCREEN, WINDOWS, APERTURES

A windshield made of laminated glass is compulsory.
In the event of breakage of a windscreen, the wearing of a crash helmet with a visor (or motor-cycle type goggles) shall be compulsory, otherwise the vehicle shall not be admitted to the start.
If, after an accident, the deformation of the bodywork will not allow the replacement of the windscreen by a windscreen made from laminated glass, it may be replaced by a windscreen made from polycarbonate with a minimum thickness of 5 mm.
The rear and side windows, if transparent, must be made from a homologated material or from polycarbonate with a minimum thickness of 3 mm.
All cars of which the front doors are fitted with wind-down windows must be equipped with protection nets affixed to these doors using a quick release system.
These nets must have the following characteristics :
Width of the strips : 19 mm
Minimum size of the meshes : 25 x 25 mm.
Maximum size of the meshes : 60 x 60 mm.
and must close up the window opening to the centre of the steering wheel.

ARTICLE 12 :-SAFETY FIXING DEVICES FOR WINDSHIELD

Such devices may be used freely.

ARTICLE 13 : GENERAL CIRCUIT BREAKER

The general circuit breaker must cut all electrical circuits, battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc.) and must also stop the engine.
It must be a spark-proof model, and will be accessible from inside and outside the car.
As for the outside, the triggering system of the circuit breaker will compulsorily be situated at the lower part of the windscreen mounting of the driver's side.
It will be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.
One single external switch is compulsory in Groups T1 and T2, but Group T3 cars must be equipped with two external switches, one on either side of the windscreen.
For Diesel engines, the circuit breaker must be coupled with a device cutting off the intake into the engine.

ARTICLE 14 : FIA APPROVED SAFETY FUEL TANKS

Whenever a competitor uses a safety fuel tank, it must come from a manufacturer approved by the FIA.
In order to obtain the FIA's agreement, a manufacturer must have proved the constant quality of its product and its compliance with the specifications approved by the FIA.
Safety tank manufacturers recognised by the FIA must undertake to deliver to their customers exclusively tanks complying with the norms approved.
To this end, on each tank delivered, the name of the manufacturer, the exact specifications according to which this tank has been manufactured, the date of the manufacturing, and the series number, shall be printed.

14.1 Technical specifications

The FIA reserves the right to approve any other set of technical specifications after study of the dossier submitted by the manufacturers concerned.

14.2 Specifications FIA/FT3 or FIA/FT3 1999

The Technical specifications for these tanks are available, on request, from the FIA Secretariat.

14.3 Ageing of tanks

The ageing of safety tanks entails a considerable reduction in the strength characteristics after approximately five years.
No bladder shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another two years.
A leak proof window made from non-flammable material, installed in the protection for FT3 or FT3 1999 tanks must make it possible to check the use-by date.

14.4 Installation of tanks

The tank may be replaced by a safety tank homologated by the FIA (FT3 or FT3 1999 specification), or by another tank homologated by the manufacturer of the car. In this case a panel may be used to close off the opening left by the removal of the original tank.
The number of tanks is free.
It is also possible to combine the various homologated tanks (including the standard tank) and FT3 or FT3 1999 tanks.
Any tank which is not homologated must be an FT3 or FT3 1999 tank.
The competitor must submit the certificate of conformity or FIA approval certificate, bearing the tank number and the year of manufacturer (maximum 5 years).

Collecting tanks with a capacity of less than 1 litre are of free construction, but their number is limited by that of the main tanks equipping the vehicle.
The original tank may be conserved in its original position.
An increased capacity FT3 or FT3 1999 tank may be fitted in the position of the original tank.
For cars in respect of which the manufacturer has provided for a closed compartment for luggage (front or rear luggage space) which is an integral part of the bodywork, this compartment must be used to house the additional tank.
Holes must be provided for in the floor of the boot in order to allow the outflow of the fuel in the event of a leak.
For cars in respect of which the manufacturer has not provided for a specific luggage compartment, as an integral part of the bodywork, the additional tank may be situated inside the cockpit to the rear of the rearmost seat.
In all cases, the tank including the filling pipes, must be totally insulated by means of flameproof and liquid-tight bulkheads, preventing the infiltration of fuel into the cockpit or contact with the exhaust pipes.
Should the tank be installed in the luggage compartment, and when the rear seats are removed, the cockpit must be separated from the tank by a fire- resistant, flameproof and liquid-tight bulkhead.
In the case of a two-volume car, it will be possible to use a non-structural, non-flammable bulkhead made from transparent plastic between the cockpit and the location of the tank.
Tanks must be efficiently protected and very firmly attached to the bodyshell or the chassis of the car.
The use of safety foam in FT3 or FT3 1999 tanks is recommended.
The location and dimension of the filler hole and cap may be changed on condition that the new installation does not protrude beyond the bodywork and gives every guarantee against a possible leakage of fuel into one of the inner compartments of the car.
These holes may be situated in the location of the rear windows.
The filler hole and the air vent must always be situated outside the cockpit on a metal part.
If there is a filler hole inside the bodywork, it must be surrounded by a receptacle with outflow to the outside.
The air vent must either come out on the roof of the vehicle or make a loop as high as possible inside the vehicle and come out under the vehicle on the opposite side to its connection to the tank.
These air vents must be fitted with self-sealing valves.
For pick-up cars in T1 or T2, the cockpit of which is totally separated from the rear platform (completely closed metal cabin), the tank must either originate of a series production vehicle, or be an FT3 or FT3 1999 type tank and the platform must be modified in order to allow the outflow of the fuel in the event of a leak.

14.5 Fuel tanks with filler necks

All cars fitted with a fuel tank with a filler neck passing through the cockpit must be equipped with a non-return valve homologated by the FIA.This valve, of the type (with one or two flaps(, must be installed in the filler neck on the tank side."
The filler neck is defined as being the means used to connect the fuel filler hole of the vehicle to the fuel tank itself.

ARTICLE 15 : PROTECTION AGAINST FIRE

An efficient protective screen must be placed between the engine and all the mechanical parts on the one hand, and the occupant's seats on the other hand, in order to prevent the direct passage of flames in case of fire.

ARTICLE 16 : LIGHTING EQUIPMENT

The lighting equipment must comply on all points with the International Convention on Road Traffic.
Each car must be fitted with at least:
- 2 headlights (combined passing lights/headlights)
- 2 front lamps
- 2 rear lamps and number plate lighting
- 2 stop lights
- 2 flashing indicators at the front and at the rear
- distress lights.

Each 'stop' light will have a minimum surface of 50 cm². The two headlamps and the additional lamps must be located in front of the axis of the front wheels, at a maximum height corresponding to that of the line of the bonnet/bottom of the windscreen (8 lamps maximum).
Each car must also be equipped with two red rear fog lamps, twinned or placed side by side with two "stop" lights.
Each of these lamps will have a power between 21 and 55 watts. They will each have a working surface area of 50 cm², or must have been approved by the FIA having been proved to be at least as effective.
They will be situated at a minimum height of 1.50 m from the ground, visible from the rear and attached to the outside of the vehicle. They must be fixed to both rear sides of the vehicle or, for pick-up type vehicles, to the upper angles of the rear part of the cabin.
These lights must be constantly switched on during the running of the selective section upon the directions of the Clerk of the Course.
All the lighting equipment must be maintained in perfect working order throughout the entire duration of the event.
A crew may not be allowed to start a stage until the electric circuit has been mended should it have been ascertained as being faulty.
The fitting of a reverse light is authorised, provided that it only operates when the gear lever is in the reverse position.

ARTICLE 17 : AUDIBLE WARNING DEVICE

Each car must be equipped with a compressor audible warning device, in working order throughout the entire duration of the event.

ARTICLE 18 : SPARE WHEELS

Each vehicle shall include at least two spare wheels, identical to those with which the car is fitted, which must be very firmly secured throughout the entire duration of the event.

ARTICLE 19 : MUDFLAPS

Transversal mud flaps will be accepted under the following conditions:
- they must be made from flexible material.
- they must cover at least the width of each wheel, but at least one third of the width of the car (see drawing 252-6) must be free behind the front wheels and the rear wheels.
- there must be a gap of at least 20 cm between the right and left mud flaps in front of the rear wheels.
- the bottom of these mud flaps must be no more than 10 cm from the ground when the car is stopped, with nobody on board.
- in vertical projection, these mud flaps must not protrude beyond the bodywork.

These mud flaps are compulsory to the rear of the rearmost wheels and to the rear of the driven wheels ; they must fulfil the preceding conditions, must be made from rubberised canvas or plastic (minimum thickness 5 mm) and be continuous with the bodywork.
Mud flaps to prevent splashing towards the front, made from flexible material, may be installed at the front of the vehicle.
They must not protrude beyond the overall width of the vehicle, or beyond the original overall length by more than 10 cm, and at least one third of the width of the car must be free in front of the front wheels.

ARTICLE 20 : SEATS

In T3, and in T1 and T2 if the original seat attachments or supports are changed, these parts must either be made by a FIA approved manufacturer or must comply with the following specifications (see drawing n° 253-52):
1) Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counterplates, according to the drawing.
The minimum area of contact between support, shell/chassis and counterplate will be 40 cm² for each mounting point.
If quick release systems are used, they must be capable of

withstanding vertical and horizontal forces of 18000 N, applied non-simultaneously. If rails for adjusting the seat are used, they must be those originally supplied with the homologated car (T1, T2) or with the seat.
2) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat.
Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.
3) The minimum thickness of the supports and counterplates will be 3 mm for steel and 5 mm for light alloy materials.
The minimum longitudinal dimension of each support will be 6 cm.
All the occupants' seats must be either original, modified only through the addition of accessories with a registered trade mark, or homologated by the EEC, the FMVSS or the FIA (8855/1992 or 8855/1999 satndards), and not modified.
In all these cases, a headrest with a minimum surface area of 400 cm^2 must be present for each occupant.
The surface must be continuous and have no protruding parts.
Its position will be such that it will be the first point of contact with the driver's or passenger's helmet in the event of an impact projecting the heads of the vehicle's occupants rearwards, when they are seated in their normal position.
This headrest must not deflect by more than 5 cm when a rearward force of 850 N is applied to it.
The distance between the helmet and the headrest must be minimal, such that the distance moved by the helmet, when the above-mentioned force is applied and the occupant is in his normal driving position, is less than 5 cm.

ARTICLE 284 - SPECIFIC REGULATIONS FOR SERIES CROSS COUNTRY CARS (GROUP T1)

ARTICLE 1 : DEFINITION

Series production Cross Country cars.

ARTICLE 2 : HOMOLOGATION

At least 1000 identical units must have been produced in 12 consecutive months and homologated by the FIA in Series Cross Country Cars (Group T1).

ARTICLE 3 : NUMBER OF SEATS

Cars must have room to accommodate at least two persons.

ARTICLE 4 : MODIFICATIONS AND ADJUNCTIONS ALLOWED OR OBLIGATORY

All the modifications which are not allowed by the present regulations are expressly forbidden.
The only work which may be carried out on the car is that necessary for its normal servicing or for the replacement of parts worn through use or accident. The limits of the modifications and fittings allowed are specified hereinafter. Apart from these, any part worn through use or accident can only be replaced by an original part identical to the damaged one.
The cars must be strictly series production models identifiable by the homologation form data.

ARTICLE 5 : MINIMUM WEIGHT

Cars must have at least the weight appearing on the homologation form plus the weight of the safety equipments.
As far as rollcages or rollbars which cannot be removed from the car and which were manufactured in accordance with Article 283.8.2, 8.3 and 8.4 are concerned, the following weight will be taken as a basis for the safety cage:
- Rollcage according to drawings 253-3/4: 30 kg
- Rollcage according to drawings 253-5 to 17C: 35 kg
- Rollcage according to drawings 283-5: 45 kg

This is the weight of the car including the weight of the safety equipment and two spare wheels, but without persons, luggage, tools, jack, spare parts, portable survival, navigation or communication equipment, provisions, etc.
The decision to check a vehicle's weight is at the discretion of the FIA Technical Delegate.
The vehicle must be weighed as it is and a set weight of 50 kg must be added to the minimum weight authorised, in order to take into account the on-board equipment and any fuel present in the tank(s).
In these conditions, if the weight checked is below the minimum weight authorised, the FIA Technical Delegate must proceed to have the equipment that must not be taken into account remove and must then check the weight of the vehicle again.
All the liquid tanks (lubrication, cooling, braking, heating where applicable) must be at the normal level foreseen by the manufacturer, with the exception of the windscreen wiper or headlight wiper, brake cooling system, fuel and water injection tanks, which shall be empty. Additional headlights which do not appear on the homologation form must be removed before weighing.

ARTICLE 6 :

6.1 Engine

Supercharged petrol engines are prohibited (even if the basic vehicle is fitted with such an engine).
- The accelerator cable may be replaced or doubled by another one regardless of whether it comes from the manufacturer or not.
- Ignition: Make and type of plugs are free as are rev-limiters and high tension cables.
- Cooling circuit: The capacity of the tank containing the coolant is free, as is the type of thermostat which may be removed. The original location and attachment points of the series production radiator must be conserved.
- Fuel and air feed: Carburettor parts or fuel injection system parts regulating the quantity of fuel reaching the engine may be modified, provided that they have no influence on air admission.

The original injection system must be maintained. The injectors may be changed for injectors which are identical except with regard to the size of the pintle nozzle hole at the end.
The air filter, its housing and the tube between this housing and the atmosphere are free, but the housing must remain in its original location, the air must not be taken from the cockpit, modifications must not affect the structure of the car, and the installation must be situated entirely in the engine compartment.
Restrictor (normally aspired petrol engines):
All normally aspired petrol engines must be equipped with an air restrictor in accordance with article 282.3.9. For the sole purpose of attaching this obligatory restrictor, the tube between the filter and the butterfly valve may be modified.
Restrictor (Diesel engine):
All supercharged diesel cars must be fitted with a restrictor fixed to the compressor housing. All the air necessary for feeding the engine must pass through this restrictor, which must respect the following:
The maximum internal diameter of the restrictor is :
- 39 mm for engines up to 5000 cm^3
- 43 mm for engines over 5000 cm^3 and up to 6000 cm^3
- 46 mm for engines over 6000 cm^3

This diameter must be maintained for a minimum length of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).
This diameter must be complied with, regardless of the temperature conditions.
The external diameter of the restrictor at its narrowest point must be less than 51 mm, and must be maintained over a length of 5 mm to each side.
The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor. Attachment by means of a needle screw is not authorised.
For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing.
The heads of the screws must be pierced so that they can be sealed.
The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment) (see drawing 254-4).
In case of an engine with two parallel compressors, each compressor is limited by a restrictor with a maximum internal diameter of 32 mm, and a maximum external diameter of 38 mm, within the conditions specified above.
- Timing: The springs and play of the valves are free, but the camshafts (including the profile of the cams) must remain as in the series.
- Feed pump: The number and the operating principle of the feed

pumps are free.
- The elastic material of the engine mountings is free, but not the number of the engine mountings.
- Exhaust: It will be possible:
. either to remove the inside of the original silencer ;
. or to modify the exhaust from the first silencer to the exit (drawing 254-3), the maximum dimensions of the duct being those of the pipe situated upstream of the first silencer. The exit should be situated either to the rear or to the side.
Should two inlets exist in the first silencer, the section of the modified duct must be less than or equal to the total of the two original sections.
These liberties must not entail any bodywork modifications and must respect the laws of the country in which the event is run with regard to noise levels.
If an exhaust silencer is added, it must be of the original type and must contain noise-absorbing material. Additional parts for the mounting of the exhaust are authorised.
- Cruising speed controller: This controller may be disconnected.
- Soundproofing panels: These panels may be removed.
- Air conditioning : It will be possible to remove the air conditioning system from a vehicle homologated with air conditioning.

6.2 Transmission

- Clutch: The disc is free, including the weight, with the exception of the number and diameter.

6.3 Suspension

- Springs:
Coil springs: The length is free, as is the number of coils, the wire diameter, the external diameter, the type of spring (progressive or not), the external diameter and the form of the spring seats.
Leaf springs: The length, width, thickness and vertical curvature are free. The fitting of shackle protection pads is strongly recommended. The number of leaves is free.
Torsion bars: The diameter is free.
- Shock absorbers: free, provided that their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.) and their attachment points remain unchanged.
Nevertheless, if a replacement shock absorber is manufactured with an operating principle different from that of the series one, it requires the approval of the FIA.
The manufacturer or the competitor must provide the FIA with a dossier of acceptance containing:
- the retail price of the replacement shock absorbers;
- their new operating principles.
Provided that the costs of T1 vehicles are respected and that they do not stray too far from the original principle, these shock absorbers will be accepted.
If, in order to change the damping element of a McPherson suspension, or a suspension operating in an identical manner, it is necessary to replace the entire McPherson strut, the replacement parts must be mechanically equivalent to the original ones and have the same mounting points
For Mac-Pherson suspensions, the shape of the spring seats is free. Their material is free. The reinforcing of the suspension and its anchorage points by the addition of material is allowed. In the case of oil-pneumatic suspension, the spheres may be changed as regards their dimensions, shape and material, but not their number. A tap, adjustable from the outside of the car, may be fitted on the spheres.
The number of shock absorbers is limited to two per wheel. No other part, apart from those whose only function is to permit the fitting of an additional shock absorber, may be added to or removed from the suspension.
In the case of a vehicle which has only one shock absorber per wheel, the mounting of this shock absorber is free provided that no part other than those exclusively allowing the attachment of an additional shock absorber can be added to and/or removed from the suspension.
The fluid tanks for the shock absorbers may be attached in the wheel arches as well as to the chassis.
- Straps: Suspension travel straps are allowed at the front and rear.
- Rigid axle: If a rigid axle is used, the original parts may be strengthened in such a way that the original part can be still recognised.
It is possible to change the material of the suspension wishbones of a T1 vehicle for steel, since the weight of the new wishbone is greater than the weight of the original wishbone, all other things being equal.

6.4 Wheels and tyres

The wheels are free, respecting the homologated width (Article 801.b) which is considered as a maximum, and the homologated diameter with, in the latter case, a tolerance of 1 inch.
They must be covered by the wings, and the maximum track given on the homologation form must be kept.
Tyres are free provided that they can be mounted on these wheels, but studded tyres are forbidden.
The spare wheel may be brought inside the driving compartment, on condition that it is firmly secured and that it is not installed in the space reserved for the occupants.
Wheel fixations by bolts may be changed to fixations by pins and nuts provided that the number of attachment points and the diameter of the threaded parts as indicated on the drawing 254-1 are respected.

6.5 Braking system

Brake linings are free, as well as their mountings (riveted, bonded, etc.) provided that the contact surface of the brakes is not increased. Protection plates may be dismantled or bent. In the case of a car fitted with servo-assisted brakes or an anti-locking device, this device may be disconnected. The same applies for anti-lock braking systems.
Brake lines may be changed for aviation type lines.
In the case of a vehicle which has a homologated antilock braking system, this system may be removed in its entirety from the competition vehicle.

6.6 Bodywork

6.6.1) Exterior:
Hubcaps must be removed.
Protective headlight covers may be fitted provided that their only function is to cover the glass, and that they have no influence on the car's aerodynamics.
The fitting of underbody protections is recommended but only authorised provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts: engine, radiator, suspension, gearbox, tank, transmission, exhaust.
A cow-catcher is recommended, in addition to the bumper. This protective grill must be independent of the structure of the car and must not reinforce it or contribute to its rigidification.
This cow-catcher must be made up of tubes and its mountings are situated on the original bumpers. It must have no significant function other than that of protection and mounting of additional headlights.
The side and rear windows situated behind the driver may be made from non-transparent material or replaced by transparent material with a minimum thickness of 3 mm. The profile of the bodywork must not be modified as a result of these freedoms.
Their fixation is free, the mechanisms may be removed, several panes filling an opening may be replaced by just one panel, and the same applies for the windows of the side doors.
The glass panel of a sun roof may be replaced by a metal sheet with a minimum thickness of 1.5 mm, with additional attachments if necessary.
Any locking system may be used for the cap of the petrol tank.
If the original spare wheel support constitutes a hazard on the outside of the bodywork and if this wheel is brought inside the cockpit (see art. 6.4), it may be removed. The fitting of external rear-view mirrors is permitted, as is the changing of the windscreen wiper blades, front and rear.
Only electric winches, fitted without making any modifications to the structure of the vehicle other than a modification allowing the winch to be attached by means of bolts, are authorised.
6.6.2) Passenger space:
All accessories which have no effect on the vehicle's behaviour are allowed without restrictions, such as those concerning the aesthetics or interior comfort (lighting, heating, etc.), on the express condition that they do not influence, even on a secondary manner,

the efficiency of the engine, steering, strength, transmission, braking, or road-holding. All the passenger seats, if occupied, must be fitted with a headrest.
The cockpit carpeting situated behind the front seats may be removed in the event of an FT3 or FT3 1999 tank being fitted in this area.
All the controls must be those provided by the manufacturer and they must retain their original function but they can be worked on to make them more accessible or more easily usable ; for example, the addition of an extension to the handbrake lever, of an additional flange to the brake pedal, etc.
The following is allowed in particular:
1) Additional measuring instruments, counters, etc. may be freely installed, provided that their fitting is not likely to create any danger.
2) The horn may be changed. Another one, possibly for the passenger's use, may be added.
3) The mechanism of the handbrake lever may be adapted in order to obtain instant unlocking (fly-off handbrake).
4) Seat-covers, including those creating bucket seats, may be added to the original seats, respecting art. 253.16. The rear seats may be removed on condition that a liquid-tight bulkhead separates the cockpit from the engine compartment and/or the fuel tank.
5) Additional compartments may be added to the glove compartment as well as additional pockets to the doors.
6) Steering wheel is free.
7) It is authorised to replace the electric windows by manually-operated windows.
6.6.3) Reinforcements:
Strenghtening of the suspended part is allowed provided that the material used follows the original shape and is in contact with it.
It is permitted to fit front reinforcement bars, on condition that they are removable and are bolted onto the attachment points of the suspension to the bodyshell or onto the suspension spring mounts. A hole may also be bored in the upper suspension trim to fit these rods.
These bars may also be fitted at the rear, on each side, at a maximum of two points. The distance between these two points must be inferior to 10 cm^3. The distance between one of these points and the suspension attachment is at most 10 cm.

6.6.4) When the spare wheel is originally placed in a closed housing and when this wheel is changed for a wider one from the running gear (see Article 6.4), situated in this space, it is possible to remove from the cover of the location of the wheel the surface induced by the diameter of the new wheel (drawing 254-2).

6.7 Electrical system

- Battery: The make, capacity, and battery cables are free. The tension and the site of the battery must be retained.
- Generator: May be replaced by a more powerful one. A dynamo may not be replaced by an alternator and vice-versa.
- Lighting system: Additional headlights including the corresponding relays are allowed, on condition that the total does not exceed eight (tail and parking lights not included) and provided that this is accepted by the laws of the country. They may not be housed within the bodywork.

Headlights and other exterior lights must always exist in pairs. The original headlights can be made inoperative and covered with adhesive tape. They can be replaced by other headlights, in compliance with this article. A reversing light may be fitted provided it can only be used when the gear lever is in the "reverse" position, and provided that the police regulations on this subject are observed.
- Fuses may be added to the electrical system.
- Flashing lights are forbidden.

6.8 Fuel circuit

Fuel lines must be changed for aviation-type fuel lines if an FT3 or FT3 1999 tank is used, the route of these lines being free. Should a series production tank be used, this change is optional. It is permitted to fit an FT3 or FT3 1999 tank and its accessories (in conformity with the various articles of the regulations) feeding the original tank via a connector on the original filler pipe. In this case, the air vent of the original tank must pass through the FT3 or FT3 1999 tank, all the original fuel lines must be retained, and the new lines and accessories equipping the FT3 or FT3 1999 tank must be in conformity with art. 283.3.2.

6.9 Jack

The jack is free and the jacking points may be changed for others which have no other function.

ARTICLE 285 - SPECIFIC REGULATIONS FOR IMPROVED CROSS COUNTRY CARS (GROUP T2)

ARTICLE 1 : DEFINITIONS

Cars derived from cars homologated in the Series Cross Country Group.

ARTICLE 2 : HOMOLOGATION

At least 1000 identical examples of these cars must have been manufactured in 12 consecutive months.
The up-to-date homologation form must be presented at scrutineering.

ARTICLE 3 : NUMBER OF SEATS

Improved Cross Country cars must have room to accommodate at least two persons.

ARTICLE 4 : WEIGHT

The cars are subject to the following scale of minimum weights in relation to cylinder capacity :

Cylinder capacity (cm^3)	Weight (Kg) 2 valves/ cylinder	Weight (Kg) more than 2 valves/cylinder
up to 2000	1450	1525
over 2000 and up to 2500	1525	1600
over 2500 and up to 3000	1600	1675
over 3000 and up to 3500	1675	1750
over 3500 and up to 4000	1750	1825
over 4000 and up to 4500	1825	1900
over 4500 and up to 5000	1900	1975
over 5000 and up to 5500	1975	2050
over 5500 and up to 6000	2050	2125
over 6000 and up to 6500	2125	2200
over 6500 and up to 7000	2200	2275
over 7000 and up to 7500	2275	2350
over 7500 and up to 8000	2350	2425
over 8000	2425	2500

This weight scale may be revised on an annual basis without notice.
This is the weight of the car including the weight of the safety equipment and two spare wheels, but without persons, luggage, tools, jack, spare parts, portable survival, navigation or ommunication equipment, provisions, etc.
The decision to check a vehicle's weight is at the discretion of the FIA Technical Delegate.
The vehicle must be weighed as it is and a set weight of 50 kg must be added to the minimum weight authorised, in order to take into account the on-board equipment and any fuel present in the tank(s).
In these conditions, if the weight checked is below the minimum weight authorised, the FIA Technical Delegate must proceed to have the equipment that must not be taken into account remove and the fuel tank(s) emptied, and must then check the weight of the vehicle again.
It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools, with the possibility to fix seals, placed on the floor of the cockpit, visible and sealed by the scrutineers.

ARTICLE 5 : MODIFICATIONS AND ADJUNCTIONS ALLOWED

GENERAL CONDITIONS :
Irrespective of the parts for which the present article lays down freedom of modification, the original mechanical parts necessary for the propulsion, suspension as well as all accessories necessary for their normal functioning, excepting any steering or braking part, having undergone the normal machining operations laid down by the manufacturer for series production may be subjected to all tuning operations through finishing, scraping but not replacement. In other words provided that the origin of the series production part may always be established, it may be grounded, balanced, adjusted, reduced or modified through machining. Only chemical and heat treatment are allowed, in addition to the above. However, the modifications defined by the above paragraph are allowed on condition that the weights and dimensions mentioned on the homologation form are respected.
Nuts and bolts : Throughout the car, any nut, bolt, screw may be replaced by any other nut, any other bolt, any other screw and have any kind of locking device (washer, lock nut, etc.).
Adjunction of material :
Any adjunction of material or parts is forbidden unless it is specifically allowed by an article in these regulations. Any material removed is not to be reused.
All modifications authorised for Series Cross Country Cars (article 284 - Group T1) are authorised.

5.1 Engine

5.1.1) General :
The engine must originate from the homologated base car or from a car of the same make homologated in Group A (Touring Cars) or in the Series Cross Country Group (Group T1). For engines homologated in Group A, evoiutions of the type (ET) valid in rallies will be accepted, but not sporting evolutions (ES) or the (VK)s and (WR)s. The eligible engines must be in their integral and complete homologated versions, according to article 3 of the homologation form.

5.1.1.1 Supercharging
The supercharging of petrol engines is forbidden (even if the basic vehicle is thus equipped).

5.1.1.2 Air restrictor
A) Restrictor for normally aspired petrol engines :
All normally aspired petrol engines must be equipped with an air restrictor in accordance with article 282.3.9.
B) Restrictor for supercharged diesel engines only :
All supercharged diesel cars must be fitted with a restrictor fixed to the compressor housing with the following maximum internal diameter :
- 39 mm for engines up to 5000 cm^3
- 43 mm for engines over 5000 cm^3 and up to 6000 cm^3
- 46 mm for engines over 6000 cm^3

All the air necessary for feeding the engine must pass through this restrictor, which must comply with article 284.6.1.

5.1.1.3 Compression ratio
For petrol engines whatever their cylinder capacity and their level of preparation, the compression ratio is limited to a maximum value of 10.5/1.

5.1.1.4 Cylinder capacity and preparation
The nominal cubic capacity of the engines is limited to :
Petrol engines :
- 5000 cm^3 for engines with 2 valves per cylinder, homologated in Group T1 and defined as in article 3 of the homologation form, with modifications strictly limited to those authorised for Group T1 (see article 284.6.1).

"Modifications strictly limited to those authorised for Group T1":
This means that all articles in paragraph 3 "ENGINE" of the T1 homologation form must be respected, except for articles 301, 320, 328p, 332 and 333 and photos C and D (right and left profiles of the dismounted engine) which may follow the regulations below (see article 285-5.1.2).
- 4500 cm^3 for engines with more than 2 valves per cylinder, homologated in Group T1 or in Group N and defined by article 3 of

the homologation form, with modifications strictly limited to those authorised for Group T1 (see article 284.6.1), with a 32 mm diameter air restrictor (see article 284.6.1).
Furthermore, the weight of this vehicle will be the theoritical weight corresponding to the nominal cylinder capacity plus 150 Kg.
- 4000 cm³ for engines with 2 valves per cylinder, homologated in Group T1, with a T2 type preparation (see article 285.5.1.3).
- 3500 cm³ for engines with more than 2 valves per cylinder, homologated in Group T1 and defined by article 3 of the homologation form, with modifications strictly limited to those authorised for Group T1 (see article 284.6.1).
- 3000 cm³ for engines homologated in Group T1 with more than 2 valves per cylinder, and engines homologated in Group A, with a T2 type preparation (see article 285.5.1.3).
Diesel engines :
- 6000 cm³ for normally aspirated engines with 2 valves per cylinder, homologated in Group T1 and defined by article 3 of the homologation form, with modifications strictly limited to those permitted for Group T1 (see article 284.6.1).
- 5000 cm³ for engines with 2 valves per cylinder, homologated in Group T1, with a T2 type preparation (see article 285.5.1.3).
- 4000 cm³ for engines with more than 2 valves per cylinder, homologated in Group T1, with a T2 type preparation (see article 285.5.1.3).

5.1.2) Permitted modifications whatever the type of the engines :

5.1.2.1 Cylinder head gasket
Free.
5.1.2.2 Connecting rods, crankshaft
Apart from the modifications permitted by the above paragraph "General Conditions", the original crankshaft and connecting rods may receive additional mechanical treatment, different from that laid down for series production parts.
5.1.2.3 Flywheel
It may be modified in accordance with the above paragraph "General Conditions" provided that the original flywheel may still be identified.
5.1.2.4 Fuel and air feed
Drawings I and II on the Group A/B homologation form must be respected.
The electronic box and its connections to the engine are free, insofar as they doe not incorporate more data.
The accelerator cable and retainer sleeve are free.
The air filter, including the filter box and the plenum chamber, is free.
The air filter along with its box may be removed, moved in the engine compartment or replaced by another (see drawing 255-1).
The pipe between the air filter and the carburettor(s) or the air measuring device (injection) is free.
Likewise, the pipe between the air measuring device and the intake manifold or the supercharging device is free.
The air filter may be fitted with a grill.
Anti-pollution parts may be removed provided that this does not lead to an increase in the quantity of air admitted.
Fuel pumps are free. They may not be fitted in the cockpit unless this is an original fitting, in which case they must be well protected.
It is possible to fit a radiator in the fuel circuit.
Petrol filters, with a maximum unit capacity of 0.5 l may be added to the fuel feed circuit.
The accelerator linkage is free.
The exchangers for Diesel engines are free in the engine compartment, but the bodywork must not be modified.
The pipes between the supercharging device, the intercooler and the manifold are free, but their only function must be to channel air.
Any water injection fitted must be homologated and must not be modified.
The use of any other substance or device to reduce the temperature of the mixture is forbidden.
The inner dimensions of the ports are free in the rotary chambers for rotary engines and for 2-stroke engines.
It is possible to make a hole, with a maximum diameter of 10 cm, in the engine bonnet in order to provide air for the engine, and to place a pipe, with a maximum internal diameter of 10 cm , in this hole (see drawing 255-13).
Intake manifolds are free for petrol engines with:
- a nominal cylinder capacity of under 2000 cm³,
- a rocker-arm engine with a camshaft in the engine block.
- two valves per cylinder
5.1.2.5 Lubrication
Radiator, oil/water exchanger, lines, thermostat, sump and pump filter, are free, on condition that the bodywork is not modified.
The use of a system of lubrication by dry sump is authorised. The oil chamber together with the lines must not be located in the cockpit or in the baggage compartment.
Nevertheless, the fitting of an oil radiator on the outside of the bodywork is only permitted below the horizontal plane passing through the wheel hubs and in such a way that it does not extend beyond the overall perimeter of the car when viewed from above, as presented on the starting line, without any modification of the bodywork.
Fitting an oil radiator in this manner does not allow the addition of an enveloping aerodynamic structure.
All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator, and must not have any aerodynamic effect.
Oil pressure may be increased by changing the discharge valve spring.
If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank. This must have a capacity of 2 litres for cars with a cubic capacity equal to or below 2,000 cm³, and 3 litres for cars with a cubic capacity of over 2,000 cm³.
This container shall be made either out of plastic or shall include a transparent window.
An air/oil separator can be mounted outside the engine (maximum capacity 1 litre), in accordance with the drawing 255-3. The oil must flow from the oil catch tank towards the engine by the force of gravity alone.
The fitting of a ventilator for cooling the engine oil is authorised, provided that this does not have any aerodynamic effect.
5.1.2.6 Cooling
Provided the original fitting on the car is retained, the radiator and its fixations are free, as are the lines linking it to the engine.
A radiator screen may be fitted. The fan and its drive system can be changed freely, or be withdrawn. It is allowed to add a fan per function. Thermostat is free
Dimensions and material of the fan/turbine are free, as are their number.
The fitting of a water catch tank is allowed. The radiator cap may be locked.
The water injection devices may be disconnected, but not removed.
The expansion chamber may be modified ; if one does not exist originally, one may be added.
5.1.2.7 Engine: Mountings - Angle and position
Mountings are free (except for their number).
The engine position is free while remaining in its original compartment provided that articles 5.7.1 and 5-general are respected.
The Supports may be welded to the engine and to the chassis and their position is free.
It is possible to cut out a part of the bulkhead situated in the engine compartment to install one or more air filters or to receive the intake air; nevertheless, these cuts must be strictly limited to the parts necessary for this assembly (see drawing 285-6).
Furthermore, if the air intake ventilating the driving compartment is in the same zone as the air intake for the engine, this zone must be isolated from the air filter unit, in case of fire.
5.1.2.8 Exhaust
Downstream of the exhaust manifold exit the exhaust is free provided that the maximum sound levels permitted in the country(ies) crossed are not exceeded if it is an event on open roads. The exhaust exit must be inside the car's perimeter (see General Prescriptions, article 282.3.6).
For cars with turbocharged diesel engines the exhaust can only be modified after the turbocharger.
In the case of rotary engines, and on condition that the original dimensions of the inlet ports of the exhaust manifold are respected,

Thermal screens may be fitted on the exhaust manifold, the turbocharger and the exhaust device, with, however, the sole function of thermal protection.

5.1.2.9 Starter

It must be retained, but its make and type are free.

5.1.2.10 Supercharging pressure

This pressure may be modified by article 5.1.19 and article 5 - General Conditions.

The connection between the housing and the waste-gate may be made adjustable if it is not originally so. The original system of operation of the waste-gate may be modified and be rendered adjustable, but this system must be retained. A mechanical system must remain mechanical, an electrical system must remain electrical, etc.

5.1.3) Permitted modifications for a T2 type preparation :

5.1.3.1 Cylinder-block - Cylinder head

It is permitted to close the unused apertures in the cylinder block and cylinder head, if the only purpose of this operation is that of closing.

A rebore of 0.6 mm maximum is allowed in relation to the original bore, as long as the original cylinder block is retained. The resleeving of the engine is allowed within the same conditions as for reboring, and the sleeve material may be modified.

Planing of the cylinder-block and of the cylinder head is allowed.

In the case of rotary engines, on condition that the original dimensions of the intake inlet ports and of the exit of the exhaust are respected, the dimensions of the inlet and exhaust ducts into the engine block are free.

5.1.3.2 Pistons

Free as well as the piston-rings, gudgeon pins and their securing mechanism.

5.1.3.3 Bearings shells

Make and material are free ; they must however retain their original type and dimensions.

5.1.3.4 Carburettor

The carburettors are free, as long as their number, their operating principle and their position are respected. Moreover, the diameter and the number of butterfly valves, as indicated on the homologation form, must be retained.

However, for engines with two valves per cylinder and rocker-arm engines with a camshaft in the engine block, the diameter and number of butterfly valves are free.

5.1.3.5 Injection

The original system and its type, as specified on the homologation form of the vehicle (such as K-Jetronic) must be retained, as must its location.

The elements of the injection device regulating the metering of the quantity of fuel admitted to the engine may be modified.

The air measuring device is free.

The injectors are free, except for their number, their position, their assembly axis and their operating principle.

The petrol lines feeding them are free.

The electronic box and its connections to the engine are free, insofar as they doe not incorporate more data.

The fuel pressure regulator is free. In the case of a Diesel engine, the injection pump is free.

5.1.3.6 Camshaft(s)

Free, whatever the type of engine, (except the number and number of bearings). Timing is free. The material, type and dimensions of the pulleys, chains and belts for driving the camshafts are free. The material of the gearing and gear wheels associated with the camshaft is free. The route and the number of belts and chains are free.

The guides and tensioners associated with these chains or belts are also free, as are the protective covers.

5.1.3.7 Valves

The material ,shape and length of the valves are free.

The other characteristic dimensions (mentioned on the homologation form) must be retained, including the respective angles of the valve axis. Valve lift is free.

With regard to the cylinder head orifices (inner side of the engine), in the case of rotary engines, only those dimensions which have been entered on the homologation form have to be respected.

The cups, cotters or guides (even if they do not exist as original parts) are not subject to any restriction. Shims may be added under the springs.

The material of the seats is free.

5.1.3.8 Rocker arm and tappets, push rods

Rocker arms may only be modified in accordance with article 5 "General Conditions" above.

The diameter and shape of the tappets are free.

It is possible to use bracking plates to adjust them.

5.1.3.9 Ignition

The ignition coil(s), condenser, distributor, interrupter and plugs are free subject to the ignition system (battery/coil or magneto) remaining the same as laid down by the manufacturer for the model concerned.

The fitting of an electronic ignition system, even without a mechanical interrupter, is allowed provided no mechanical part other than those mentioned above is modified or changed, with the exception of the crankshaft, the flywheel or the crankshaft pulley, for which modifications limited to the necessary additions will be possible. In the same conditions it shall be possible to change an electronic ignition for a mechanical ignition. The number of plugs may not be modified ; that of the coils is free.

5.1.3.10 Driving pulleys and belts for ancillaries situated outside the engine

The material, type and dimensions of the pulleys, chains and belts for driving the ancillaries are free. The route and the number of belts and chains are free.

5.1.3.11 Gaskets

Free.

5.1.3.12 Engine springs

Springs are not subject to any restrictions but they must retain their original functioning principle.

5.2 Transmission

The number of driven wheels of the homologated base car must be retained.

5.2.1) Clutch :

Clutch is free.

5.2.2) Gearbox and transfer box :

The car may be equipped with either :

- a transfer box housing and a gearbox housing from models homologated in T1.

If the gearbox has no more than 5 gears, the gear wheels and the transfer ratio are free.

If the gearbox has more than 5 gears, the gear wheels are free but the transfer ratio must be as per the original.

- a gearbox not from a model homologated in T1.

In this case, the gearbox housing and gear wheels are free but the gearbox may comprise a maximum of 6 gears, plus a reverse gear, and the use of a transfer box is prohibited.

Members with a maximum thickness of 2 cm^3 each are authorised between the engine and the gearbox and between the gearbox and the transfer box.

The use of titanium and magnesium is forbidden.

"Sequential" type boxes are prohibited.

Only automatic boxes using a torque converter are authorised.

An additional lubrication and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car) in the same conditions as for article 5.1.14.

5.2.3) Final drives, differentials and their casings :

Free. An additional lubricating and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car) under the same conditions as for article 5.1.14. The drive shafts are free.

5.2.4) Front and rear running gear

The transmission system fitted in the vehicle homologated in T1 must be retained at both the front and the rear.

- For rigid axles, the body of the axle must originate from a vehicle homologated in T1. The original parts may be reinforced, in such a way that the parts can always be recognised. The gear wheels are free. The body may be extended by 50 mm at each end, that is by 100 mm in total.

- For the other systems, the housings and the gear wheels are free.

The number and the type of transmission mounting points are free.

5.3 Suspension

The suspension system fitted in the vehicle homologated in T1 must be retained.

- For vehicles with 2 rigid axles, the maximum suspension travel authorised is 300mm (Drawing 285-3)
- For the other systems, the maximum suspension travel at the front and the rear is limited to 250mm.

The shock absorbers, the number of which is free, must not be connected to any moving parts, other than the suspension arm or the axle.

For vehicles with independent wheels, the attachment points of the lower original wishbones, on the chassis side (to +/- 20mm), must be retained.

Only reinforcements of these points will be authorised.

Reinforcement bars on the suspension mounting points to the body shell (or chassis) may be installed. The distance between a suspension fixation point and the anchorage point of the bar cannot be more than 100 mm, unless the bar is a transversal strut homologated with the rollbar, and unless there is an upper bar fixed to a MacPherson suspension or similar. In the latter case the maximum distance between the anchorage point of the bar and the upper articulation point will be 150 mm (drawing 255-4).

Apart from these two points, this bar must not be mounted on the bodyshell or the mechanical parts. One and the same bar may only be fixed to two of these points situated on the original chassis (bodyshell) (drawing 255-2).

The method for measuring suspension travel is as follows :

- for independent wheel suspensions :

measurement taken per wheel, with the vehicle mounted on stands, from steel bump stop to steel bump stop, with the spring/shock absorber unit having been dismantled.

- for rigid axle suspensions :

an upper suspension stop to the vertical of each of the members of the original chassis is obligatory. The suspension travel will be measured vertically from this point between the lower mounting point of the shock absorber and the upper bump stop, with the vehicle mounted on stands, with both the wheels raised simultaneously to rest on a horizontal plane.

The lower mounting point of the shock absorber may not be moved inwards in relation to its original attachment.

It is obligatory to affix straps limiting the suspension travel at the level of the shock absorber.

These suspension travel values may be revised on an annual basis without notice.

The lower mounting point of the shock absorber may not be moved inwards in relation to its original attachment.

The upper suspension mounting points are free. The upper suspension mounting points are considered as being situated above the axle of the rim of the homologated vehicle.

5.4 Wheels and tyres

Complete wheels may be housed within the original bodywork, with the authorised wing extensions (see art. 5.7.2.11).and must have a maximum diameter of 890 mm for two-wheel drive vehicles and 810 mm for four-wheel drive vehicles.

The use of tyres intended for motor cycles is forbidden.

The fitting of intermediary parts between the wheels and the tyres is forbidden.

The wheels do not have to be of the same diameter.

Wheel fixations by bolts may be freely changed to fixations by pins and nuts.

Should the wheel be fixed using a central nut, a safety spring must be in place on the nut throughout the duration of the event and must be replaced after every wheel change. The springs must be painted "Dayglo" red. Spare springs must be available at all times.

The use of a system for inflating / deflating the tyres when the car is in motion is authorised but the compressed air bottles of this system must not have a capacity greater than 15 litres each.

The mountings of the bottles must be able to withstand a deceleration of 25 g.

It is recommended that these bottles be positioned transversally in the vehicle and secured by at least two quick-release metal straps.

5.5 Brakes

Free, except with regard to the following point :

5.5.1) Cooling of brakes :

Only one flexible pipe to bring the air to the brakes of each wheel or to each shock absorber is allowed, but its inside section must be able to fit into a circle with a 10 cm^3 diameter. The air pipes must not go beyond the perimeter of the car, seen from above.

5.6 Steering

Steering is free.

5.7 Bodywork - Chassis

5.7.1) Lightening and reinforcements :

It is prohibited to modify, cut or extend the chassis.

The maximum number of original struts must be retained.

- If the original chassis comprises more than 7 struts, only three of these struts may be modified, moved or removed.
- If the original chassis comprises 7 struts or less, only two of these struts may be modified, moved or removed.

The mountings of the new struts on the chassis must not exceed 220 mm in width or the dimension of the original part if it is bigger, as shown in drawing 285-4.

The struts forming the shell of a monocoque chassis must be kept. Nevertheless, it is permitted to fabricate front and rear subframe assemblies bolted to the shell, provided that the mounting points of these subframes are modified only within a sphere of 20 mm.

Several bolts within a radius of 20 mm shall be considered as a single mounting point.

It is authorised to fit a tubular wire mesh able to be dismounted and made of 5 bars with a maximum diameter of 16 mm, with the only view to reinforce the attachment of the front part and/or the radiator (see drawing 285-2).

Modifications to the bodyshell/interior bodywork made necessary exclusively by the installation of modified parts such as the engine (art. 5.1.15), transmission (art. 5.2) and suspension (art. 5.3) are allowed through isolated deformation only, but the number of gearbox support struts located on the chassis must remain as per the original homologated car in T1. Fixed bulkheads may be rendered movable on condition that this does not modify their capacity to prevent the passage of liquids and flame.

Additional attachments are authorised between the chassis and the bodywork, but the distance between the chassis and the bodywork must not be modified.

Strengthening of the sprung parts of the chassis and bodywork is allowed provided that the material used follows the original shape and is in contact with it. Reinforcements by composite materials are allowed in accordance with this article, whatever their thickness, according to the drawing 285-6.

Insulating material may be removed from the car floor, from the engine compartment, the luggage boot, and the wheel arches.

Unused supports (e.g. spare wheel) situated on the chassis/ bodywork can be removed.

It is recommended that the holes in the cockpit, the engine and luggage compartment, and in the wings be closed. The holes may be closed using sheet metal or plastic materials, and may be welded, stuck or riveted. The other holes in the bodywork may be closed by adhesive tape only.

5.7.2) Exterior :

The external contour and shapes of the car must be conserved in their entirety, except in the cases mentioned below.

5.7.2.1 - Bumpers, cow-catcher :

The material of the bumpers is free, but their shape and the original mountings must be retained. It is possible to add mountings for the sole purpose of improving the attachment of the bumper. These additional mountings must not serve to strengthen the chassis. A cow-catcher may be mounted if it is made up of tubes and if its mountings are situated on the bumper. It must have no significant function other than that of protection and mounting of additional headlights.

5.7.2.2 - Hub-caps and wheel embellishers :

Hub-caps may be removed. Wheels embellishers must be removed.

5.7.2.3 - Windscreen wipers :

Motor, position, blades and mechanism are free but there should be at least one windscreen wiper provided for the windscreen. The windscreen washer device may be dismounted. The capacity of the washer tank may be increased and the tank may be moved inside

the cockpit in accordance with article 282.7.3.
5.7.2.4 - External decorative strips may be removed. Any parts following external contour of the bodywork and less than 25 mm high will be considered as decorative strips.
5.7.2.5 - Jacking points may be strengthened, moved, and increased in number, but points which have been changed or created must have no other function.
5.7.2.6 - Light covers may be fitted provided their sole aim is to protect the glass of the lights and that they have no effect on the car's aerodynamics.
5.7.2.7 - Taking into account the different police regulations in each country, registration plate locations and types are free.
5.7.2.8 - The registration plate mountings may be dismounted but not their lighting system. If a new mounting is provided for with lighting, the original system (mounting and lighting) may be removed.
5.7.2.9 - Additional safety fastenings for the windscreen and the side windows may be fitted provided they do not improve the aerodynamic qualities of the car.
5.7.2.10 - The fitting of underbody protections is authorised, provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts : engine, radiator, suspension, gearbox, tank, transmission, exhaust.
5.7.2.11 - The fitting of wing extensions or of new wings made of identical material to the original wing is authorised.
New wings may only be fitted if they are detachable in relation to the bodywork. They must cover the wheels over their entire width and at least one third of their circumference (including the hub disconnecting device if there is one).
These wing extensions will consist of deflectors of at least 120°.
The total width of the vehicle at the level of these wings must not exceed the width of the vehicle by more than 10 cm.
They will cover the rearward opening of the wheel passage over at least 60° in relation to the vertical, passing through the hub. The plastic sound-proofing parts may be removed from the interior of the wheel passages. These plastic parts may be changed for aluminium parts of the same shape. It is possible to fit plastic protection parts in the wings, on the same ground as aluminium parts.
Only the wheel arches may be modified in order to house the wheels authorised but must not give rise to any additional aerodynamic effect.
Modifications within the wheel arches are authorised in order to allow the installation of the suspension parts.
The material of the wheel arches must not be modified.
The crossrails and side members must under no circumstances be modified or cut except within the context of article 5.7.1.
5.7.2.12 - Removable pneumatic jacks are permitted.
5.7.2.13 - "Skirts" are banned. All non-homologated devices or constructions designed so as to fully or partially fill the space between the sprung part of the car and the ground is forbidden in all circumstances.
5.7.2.14 - The outer part of the side doors, over which small currents of air pass, must be made of the same material as the homologated vehicle.
The material of the bonnet and boot-lids, handles and hinges is free, but their external appearance and operation must be retained.
The material of the front lateral windows is free, but it must be transparent and at least 3 mm thick.
Their opening systems are free.
5.7.2.15 - Rear-view mirrors :
The external rear-view mirrors are free, if they are only rear-view mirrors. However, the external rear-view mirror on the driver's side, if it is modified or changed, must have a reflecting surface of at least 90 cm^2.
5.7.3) Cockpit :
No mechanical part may protrude into the interior of the cockpit. Modifications to the cockpit must not be dangerous for the occupants of the vehicle, especially in the event of a crash.
5.7.3.1 - Seats
Occupants' seats and their mountings are free, provided that they comply with article 283.20, but they must include a headrest. The front seats may be moved backwards but not beyond the vertical plane defined by the front edge of the original rear seat. The limit relating to the front seat is formed by the height of the seatback without the headrest, and if the headrest is incorporated into the seat, by the rearmost point of the driver's shoulders.
If they are not occupied, the passenger's seat and the rear seats may be removed.
5.7.3.2 - Dash board :
The dashboard is free, but its parts must not have any projecting angles.
5.7.3.3 - Roof :
All padding and insulating material may be removed from the underside of the roof.
5.7.3.4 - Floor :
Insulating and padding materials may be removed. Carpets are free and may thus be removed.
It is prohibited to cut the gearbox tunnel inside the cockpit. The passage of the axis of the gearbox control may be removed in the event of the box being changed, if this is required by the position of the new control. Bosses may be made, without the addition of any material.
5.7.3.5 - Other insulating and padding materials :
May be removed.
5.7.3.6 - Heating system :
The original heating equipment may be removed or replaced by another. It is permitted to blank off the water supply of the internal heating device in order to prevent water spillage during an accident, provided that an electric demist system or similar is available.
5.7.3.7 - Air-conditioning :
May be added or removed.
5.7.3.8 - Steering wheel :
Free; the anti-theft device may be removed. The steering can be on either the right or left provided that it is a question of a simple inversion of the steered wheels control, laid down and supplied by the manufacturer without any other mechanical modifications except those made necessary by the inversion.
5.7.3.9 - The rear removable window shelf in two-volume cars may be removed.
5.7.3.10 - It is permitted to install one or two ventilation flaps in the roof of the car, in the following conditions :
- maximum height 10 cm
- displacement contained within the front third of the roof
- hinges on the rear edge
- total maximum width of the openings : 500 mm.

5.7.4) Additional accessories :
All those which have no influence on the car's behaviour are allowed, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, etc.). In no case may these accessories increase the engine power or influence the steering, transmission, brakes, or roadholding even in an indirect fashion. All controls must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.
The following is allowed :
1) The original windscreen may be replaced by a laminated windscreen with defrosting equipment incorporated. It may also be mounted on the bodywork with a seal if it is not originally fitted with one.
2) Measuring instruments such as speedometers, etc. may be installed or replaced, and possibly have different functions. Such installations must not involve any risk. However, the speedometer may not be removed.
3) The horn may be changed and/or an additional one added, within reach of the passenger.
4) Circuit breakers may be freely changed vis-à-vis their use, position, or number in the case of additional accessories.
5) A "fly-off" hand brake may be installed.
6) The spare wheels must be securely fixed, and not installed in the space reserved for the occupants of the vehicle. No exterior modification of the bodywork must result from their installation.
7) Additional compartments may be added to the glove compartment and additional pockets in the doors.
8) Insulating material may be added to the existing bulkhead to

protect the passengers from fire.
9) It is permitted to change the joints of gearbox change systems.

5.8 Electrical system

5.8.1) The nominal voltage of the electrical system including that of the supply circuit of the ignition must be retained.

5.8.2) The addition of relays and fuses to the electrical circuit is allowed as is the lengthening or addition of electric cables. Electric cables and their sleeves are free.

5.8.3) Battery :

The make and capacity of the battery(ies) are free. Each battery must be securely fixed and covered to avoid any short circuiting or leaks. The number of batteries laid down by the manufacturer must be retained.

Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts. For attaching these clamps, securing bolts with a diameter of at least 10 mm must be used, and under each bolt, a counterplate at least 3 mm thick and with a surface of at least 20 cm^2 beneath the metal of the bodywork.

It will be possible to place the battery in the cockpit but only behind the front seats. In this case, the battery must be covered by a leak-proof plastic box with its own attachment which must include an air intake with its exit outside the cockpit (see drawings 255-10 and 255-11).

5.8.4) Generator and voltage regulator :

Free, but neither the position nor the driving system of the generator may be modified. The position of the voltage regulator may be changed but it may not be placed in the cockpit unless it was placed there originally.

5.8.5) Lighting - Indicating :

All lighting and signalling devices must comply with the legal requirements of the country of the event or with the International Convention on Road Traffic.

Taking this into account, the location of the indicators and parking lights may be modified, but the original orifices must be sealed. The make of the lighting devices is free.

Lighting devices which are part of the standard equipment must be those laid down by the manufacturer and must comply where their functioning is concerned with what the manufacturer has laid down for the model in question. However, the operating system of the retractable headlights, as well as its energy source, may be modified.

Freedom is granted with regard to the frontal glass, the reflector and the bulbs. The mounting of additional headlights is authorised provided that the total number of headlights equipping the car does not exceed 8 (parking lights and side lights not included) and provided that the total is an even one. They may, if necessary, be embedded in the front part of the coachwork or in the radiator grille, but such openings as needed in this case must be completely filled by the headlights. Additional original headlights may be rendered inoperative and may be covered by adhesive tape.

The replacement of a rectangular headlight by two circular ones, or vice-versa, fitted on a support corresponding to the dimensions of the aperture and sealing it completely is allowed.

The fitting of a reverse-light is authorised, if necessary by embedding it into the coachwork, provided that it will only switch on when the reverse-gear is engaged and that the police regulations are respected.

If a new registration plate support is provided for with lighting, the original system (support and lighting) may be removed.

5.9 Fuel tanks

5.9.1) The changes in the position of the tanks should not give rise to any lightenings or reinforcements other than those provided for under article 5.7.1.

ARTICLE 286 - SPECIFIC REGULATIONS FOR PROTOTYPE CROSS COUNTRY CARS (GROUP T3)

Mechanical propelled single-engined land vehicles with 4 to 8 wheels, propelled by their own means, taking continually a real bearing on the ground, and of which the propelling device and steering are controlled by a driver on board each vehicle. These cars may be unit-built, but must comply with the International Convention on Road Traffic, particularly with regard to the following points : windscreen wipers and washers, speedometer.
Automobile Make : an "automobile make" corresponds to a complete car. When the car manufacturer fits an engine which it does not manufacture, the car shall be considered a hybrid and the name of the engine manufacturer shall be associated with that of the car manufacturer. The name of the car manufacturer must always precede that of the engine manufacturer.
Should a hybrid car win a Championship Title, Cup or Trophy, this will be granted to the manufacturer of the car.

ARTICLE 1 : OBLIGATIONS

Group T3 cars must comply with the general prescriptions and with the safety equipment defined in articles 282 and 283 respectively. Furthermore, they must comply with article 285.5.1.14, 5.2.2, 5.2.3, 5.4, 5.7.2.13 and 5.8.3.
Any tank containing oil or fuel must be situated in the main structure of the vehicle.
Only fuel tanks conforming to the FT3 or FT3 1999 standards will be allowed.
The maximum diameter of the wheels is 890 mm for two-wheel drive vehicles and 810 mm for four-wheel drive vehicles.

ARTICLE 2 : BODYWORK

2.1 Exterior

The materials are free.
A windscreen is optional. However, should it be provided for, it must be of laminated glass regardless of its shape and surface. In the event of the breakage or absence of a windscreen, the wearing of a crash helmet with a visor (or motorcycle type goggles) shall be compulsory, otherwise the vehicle shall not be admitted to the start.
All parts of the bodywork must be carefully and fully finished, with no temporary or makeshift parts and no sharp corners.
No part of the bodywork may present sharp edges or points. The minimum radius of the angles and corners must not be less than 15 mm. The front bodywork of each car must be made from a hard, non-transparent material extending upwards to at least the centre of the steering wheel without being less than 42 cm above the plane determined by the fixation of the driver's seat, and providing protection against loose stones.
Seen in vertical projection, the bodywork shall cover all the mechanical components; only the exhaust pipes may project rearwards. The bodywork must terminate at, or be extended rearwards to, at least the level of the upper edge of the rim.
An opening for cooling the engine transmission unit may be made in the rear or in the side, respecting the width of the bodywork limited by Article 286.2.2.
All parts having an aerodynamic influence and all parts of the bodywork must be rigidly secured to the entirely sprung part of the car (chassis/body unit), must not have any degree of freedom, must be securely fixed and remain immobile in relation to this part when the car is in motion.

2.2 Maximum width

- For 4-wheel drive vehicles, the maximum width is 1.90 m.
Cars wider than 1.90 m but less than 1.96 m, derived from a car with full EEC road homologation or the equivalent, may be accepted by the FIA. In this case, a detailed request must be submitted to the FIA.
"Amateur" vehicles with a technical passport dated before 01/01/97 may exceed this width until 31/12/2001.
"Amateur" véhicle means any vehicle with a technical passport that did not belong to a Manufacturer who was a member of the Manufacturers' Commission.
- For 2-wheel drive vehicles, the maximum width is 2.10 m.

2.3 Interior

The bodywork shall be designed so as to provide the driver and possible co-drivers with comfort and safety. No part of the bodywork may present sharp edges or points.
No mechanical part may protrude into the interior of the cockpit.
Any equipment which could involve a risk must be protected or insulated and must not be situated in the cockpit. The cars must have lateral openings allowing the exit of the driver and possible co-drivers.
The dimensions of these openings must be such that it is possible to fit into them a rectangle at least 50 cm wide and 50 cm high, measured vertically, the corners of which may be rounded with a maximum radius of 15 cm. The cockpit must be designed so as to allow an occupant to exit it from his normal position in the vehicle in 7 seconds through the door on his side and in 9 seconds through the door on the other side.
For the purpose of the above tests, the occupant must be wearing all his normal equipment, the seat belts must be fastened, the steering wheel must be in place in the most inconvenient position, and the doors must be closed. These tests will be repeated for all the occupants of the car.
- Single-seater cars : The location provided for the seat must have a minimum width of 45 cm maintained over the complete depth of the seat.
The minimum vertical protected height shall be 80 cm between the bottom of the flattened seat and a line joining (on the outside) the two main rollbars or the inside of the roof.
The minimum width of the footwell must be 25 cm, maintained to a height of 25 cm, measured horizontally and perpendicularly to the longitudinal axis of the chassis, plumb with the pedals.
For cars built after 31.12.96, the dimensions of the cockpit must comply with the minimum volume indicated on the drawing 286-2.
- Two-seater cars : Each location provided for each seat must have a minimum width of 45 cm maintained over the complete depth of the seat. The distance between the lengthwise centre-lines of the two seats of the car must not be less than 50 cm. If the two centre-lines are not parallel, the measurement must be taken from the hollow of each of the two seats.
The minimum interior width for the front seats shall be 110 cm, maintained freely over at least 25 cm in height and 40 cm in length.
The minimum vertical protected height shall be 80 cm between the bottom of the flattened seat and a line joining (on the outside) the two main rollbars or the inside of the roof.
The minimum width of each footwell must be 25 cm, maintained to a height of 25 cm, measured horizontally and perpendicularly to the longitudinal axis of the chassis, plumb with the pedals.
The axis of the pedal box must be situated behind or plumb with the axis of the front wheels.
Cars without side windows must be fitted with lateral protection nets which unfasten at the bottom.
Doors with windows must have an opening made of transparent material and into which it is possible to fit a parallelogram with horizontal sides measuring at least 40 cm. The height measured on the surface of the window perpendicularly to the horizontal sides shall be at least 25 cm. The angles may be rounded in accordance with a maximum radius of 5 cm. The measurements shall be taken across the chord of the arc. Inspection hatches, allowing neither the installation nor the removal of mechanical parts, are authorised in the structural bulkheads of the cockpit.

ARTICLE 3 : MINIMUM WEIGHT

3.1
The cars are subjected to the following scale of minimum weigths in relation to cylinder capacity :

Cylinder capacity in cm^3	Weight in kg 4x4	Weight in kg 2wd
up to 2000	1450	980
over 2000 and up to 2500	1525	1040
over 2500 and up to 3000	1600	1100
over 3000 and up to 3500	1675	1160
over 3500 and up to 4000	1750	1220
over 4000 and up to 4500	1825	1280
over 4500 and up to 5000	1900	1340
over 5000 and up to 5500	1975	1400
over 5500 and up to 6000	2050	1460
over 6000 and up to 6500	2125	1520
over 6500 and up to 7000	2200	1580
over 7000 and up to 7500	2275	1640
over 7500 and up to 8000	2350	1700
over 8000	2425	1760

If the driver is alone in the car, take off 60 kg from the class corresponding to the cylinder capacity of the car.
For engines with more than 2 valves per cylinder, add 60 kg 75 kg to the class corresponding to the cylinder capacity of the car.
If, in race conditions, three spare wheels are carried on board a vehicle which has front and rear wheels with different diameters, this vehicle may be weighed with the three spare wheels.
3.2 This is the minimum weight of the car including the weight of the safety equipment and two spare wheels, but without persons, luggage, tools, jack, spare parts, portable survival, navigation or communication equipment, provisions, etc.
The decision to check a vehicle's weight is at the discretion of the FIA Technical Delegate.
The vehicle must be weighed as it is and a set weight of 50 kg must be added to the minimum weight authorised, in order to take into account the on-board equipment and any fuel present in the tank(s). In these conditions, if the weight checked is below the minimum weight authorised, the FIA Technical Delegate must proceed to have the equipment that must not be taken into account remove and the fuel tank(s) emptied, and must then check the weight of the vehicle again.
It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility of affixing seals, and placed on the floor of the cockpit, visible and sealed by the Scrutineers.

ARTICLE 4 : ENGINE

4.1 General
4.1.1) Supercharging :
Supercharged petrol engine prohibited.
4.1.2) Air restrictor :
A) Restrictor for normally aspired petrol engines :
All normally aspired petrol engines must be equipped with an air restrictor in accordance with article 282.3.9.
B) Restrictor for supercharged diesel engines only :
All supercharged diesel cars must be fitted with a restrictor fixed to the compressor housing with the following maximum internal diameter :
- 39 mm for engines up to 5000 cm^3
- 43 mm for engines over 5000 cm^3 and up to 6000 cm^3
- 46 mm for engines over 6000 cm^3

All the air necessary for feeding the engine must pass through this restrictor, which must comply with article 284.6.1.
4.1.3) Compression ratio :
For petrol engines whatever their cylinder capacity and their level of preparation, the compression ratio is limited to a maximum value of 10.5/1.
4.2 Cylinder capacity and preparation
- Engine up to 2000 cm^3: free
- Rocker-arm engine (camshaft in the engine block): free.
- Engine up to 2 valves per cylinder : free, provided there is evidence that an engine block and the cylinder head have come from series-produced vehicle.
- Engine from a vehicle homologated in groups A, B, T1 or GT2 having not the above characteristics : preparation and tuning are limted by article 285.5.1.
- For two-wheel drive vehicles with the engine situated behind the middle of the wheelbase, the cylinder capacity is limited to 4000 cm^3.

ARTICLE 5 : CHASSIS

The car must have a structure immediately behind the driver's seat which is wider and extends above his shoulders when he is seated normally in the car with his seat belts fastened.
This structure must be capable of withstanding a sustained lateral load of 1.5 w applied to its top, w being the racing weight of the car, i.e. with persons, fuel and equipment.

ARTICLE 6 : GEARBOX AND TRANSFER BOX

The design of the gearbox is free. It is restricted to 6 gears, without the possibility of changing by any other means in the transmission chain.
If the gearbox has 5 gears or less, it will be possible to add an additional speed-reducing gear by means of a transfer box.
The use of titanium and magnesium is forbidden.
"Sequentiel" type boxes are prohibited.
Only automatic boxes using a torque converter are authorised.

ARTICLE 7 : SUSPENSION

Suspension is free, but suspension travel for 4-wheel drive vehicles will be limited to :
- 300 mm for a "banjo" type rigid axle; the axis of the differential outlet merging with the centre line of the wheels.
- 250 mm for the other types of transmission.

These values will be measured from steel bump stop to steel bump stop at the level of the shock absorber attachments.

ARTICLE 8 : MISCELLANEOUS

8.1 Special cases
A 4-wheel drive series production vehicle with a weight of between 2500 and 3500 kg and a width of over 1.9 m may be accepted in T3, if the manufacturer sends a written request to the FIA.
In a Cross-Country event, the weight of this vehicle must not be less than 2800 kg, and the vehicle may retain its original width.
8.2 Score Regulations
With the exception of the "Trophy Truck" category, these regulations are approved, on the condition that evidence can be provided of a vehicle's participation in the Score or another Championship, and that the regulations are accepted by the FIA cross-country commission.
The cars must respect the national road trafic regulations of the countries crossed.
All normally aspired petrol engines must be equipped with an air restrictor in accordance with article 282.3.9.
8.3 The use of a system for inflating / deflating the tyres when the car is in motion is authorised but the compressed air bottles of this system must not have a capacity greater than 15 litres each.
The mountings of the bottles must be able to withstand a deceleration of 25 g.
It is recommended that these bottles be positioned transversally in the vehicle and secured by at least two quick-release metal straps.

ARTICLE 287 - CROSS COUNTRY TRUCK TECHNICAL REGULATIONS (GROUP T4)

ARTICLE 1 : GENERAL

1.1 Definitions

1.1.1) The definitions featured in article 281 of Appendix J must be applied to these technical regulations.

1.1.2) The expression "Constructor" (of vehicles) must be considered as covering only those firms who hold or who have held a coded "world constructor identification" for identifying the vehicle (V.I.N.).

1.2 Authorised modifications

All modifications which are not expressly authorised are forbidden.

The only work which may be carried out on the vehicle is that which is necessary for its normal maintenance, or in replacement of damaged parts.

The limits of the authorised modifications and assemblies are specified below.

Outside these authorisations, any damaged part may only be replaced by an original part identical to the damaged part.

The vehicles must be strictly series production and identifiable from the information given in the articles of the documents listed in article 2.3.

1.3 Traffic

1.3.1) The vehicles must comply with the International Road Traffic Convention.

1.3.2) The vehicles submitted for examination must be clean, dry and free of grease.

ARTICLE 2 : ELIGIBILITY

2.1 General

The present technical regulations govern competitions between 2- to 4-axle trucks.

With the exception of the authorised modifications specified in these regulations, the vehicles must comply with a FIA homologation form for Group T4.

Optional equipment or additional accessories which do not modify the vehicle's performance are authorised.

2.2 Eligible vehicles

Series production 2- to 4-axle trucks (chassis-cab) produced by a recognised constructor, with a permissible total laden weight of minimum 3,500 kg and fitted with conventional bodywork are eligible.

The competitor is responsible for providing all the proof requested by the scrutineers, such that they may check that the submitted vehicle is or has been produced in series and that it is on normal sale to the public, and is homologated in Group T4.

2.3 Documentation

2.3.1) The following documents must be presented by the competitor:

1) FIA homologation form.

2) Report of the annual technical inspection.

3) Registration certificate (provisional or temporary registrations are forbidden).

4) Certificate of "homologation" of the conventional type bodywork in the case of a separate homologation.

2.3.2) Homologation:

Is the official certification made by the FIA that a sufficient number of trucks of a specific model has been made on series-production terms to justify classification in Group T4.

The application for homologation shall be submitted to the FIA by an ASN of the country in which the vehicle is manufactured and shall entail the drawing up of a homologation form (see below).

It must be established in accordance with the special regulations called "Homologation Regulations", laid down by the FIA.

The homologation of a series-produced model will become null and void 7 years after the date on which the series-production of the said model has been stopped (annual production below 10 % of the minimum production of Group T4).

2.3.3) Homologation forms:

All models of T4 trucks homologated by the FIA will be the subject of a descriptive form called homologation form on which shall be entered all the data enabling identification of the said model.

This homologation form defines the series as indicated by the manufacturer. The modification limits allowed in international competition for the series are stated in Appendix J.

The presentation of the forms at scrutineering and/or at the start may be required by the organisers who will be entitled to refuse the participation of the entrant in the event in the case of non-presentation.

Should any doubt remain after the checking of a model of truck against its homologation form, the scrutineers should refer either to the maintenance booklet published for the use of the make's distributors or to the general catalogue in which are listed all spare parts.

In the case of a lack of sufficiently accurate documentation, scrutineers may carry out direct scrutineering by comparison with an identical part available from a concessionaire, or with a vehicle of the same type.

It will be up to the competitor to obtain the homologation form concerning his vehicle from his ASN.

Description: A form breaks down in the following way:

1) A basic form giving a description of the basic model.

2) At a later stage, a certain number of additional sheets describing "homologation extensions", which can be "variants", "errata" or "evolutions".

a - Variants (VF, VO)

These are either supply variants (VF) (two suppliers providing the same part for the manufacturer and the client does not have the possibility of choice), or options (VO) (supplied on request and available from the concessionaire).

b - Erratum (ER)

Replaces and cancels an incorrect piece of information previously applied by the constructor on a form.

c - Evolution (ET)

Characterises modifications made on a permanent basis to the basic model (complete cessation of the production of the vehicle in its original form).

Use:

1) Variants (VF, VO)

The competitor may use any variant or any part of a variant as he wishes, only on condition that all the technical data of the vehicle, so designed, conforms to that described on the homologation form applicable to the truck, or expressly allowed by Appendix J.

2) Evolution of the type (ET)

The truck must comply with a given stage of evolution (independent of the date when it left the factory), and thus an evolution must be wholly applied or not at all.

Furthermore, from the moment a competitor has chosen a particular evolution, all the previous evolutions should be applied, except where they are incompatible, for example, if two brake evolutions happen one after another, only that corresponding to the date of the stage of evolution of the truck will be used.

ARTICLE 3 : SAFETY REQUIREMENTS

3.1 Rollcage

3.1.1) Cab:

An internal cab rollcage must be fitted.

The basic purpose of such a rollcage is to protect the driver and passengers if the vehicle is involved in a serious accident.

Minimum acceptable rollcage requirements are detailed in these regulations but the following observations should be noted:
The essential characteristics of a rollcage come from a finely detailed construction, suitable fixation to the cab and snug fitting against the bodywork.
It is recommended that mounting feet be made as large as possible in order to spread loads over the maximum area.
It is also advisable to attach the cage to the cab structure (e.g. to the screen and door pillars) wherever possible. This greatly increases strength and rigidity.
All welding should be of the highest quality possible, with full penetration (preferably arc welding and in particular under protecting gas).
A longitudinal member (door reinforcement) must be fitted at each side of the vehicle. These members may be removable.
This lateral protection must as high as possible but not higher than one third of the total height of the door measured from its base.
The requirements are a minimum.
It is permitted to fit extra elements or reinforcements in addition to the basic requirements (see Appendix J article 283.8 and drawings 287-1 and 287-2).
In addition to the internal rollcage, it is permitted to fit an external rollcage, subject to the following conditions:
- To the front, no part of the cage may extend beyond the projection of the base vehicle over the ground.
- No part of the external cage may project beyond the side and the upper extremities of the load-bearing bodywork of the base vehicle.
- To the rear, no part of the external cage may be located more than 0.5 metres behind the back of the bodywork of the cab.

3.1.2) Load-bearing bodywork:
(see drawing 287-3)
The rear part of the vehicle (the part intended to carry the merchandise) must be reinforced in front (the panel of the bodywork situated behind the cab) by a completely closed rollbar ABCD made rigid by a diagonal AD or BC which must follow exactly the contour of the inside of the bodywork and its minimum height must be at least equal to that of the highest part of the cab or of its external rollbar (air intakes and exhaust outlets are not taken into consideration).
This rollbar will be fixed on the one hand by steel plates welded to the tube and bolted to counterplates at floor level, as near as possible to corners C and D, and on the other hand, in the same fashion, to the vertical wall of the bodywork (except in tarpaulin type trucks) near corners A and B.
If the floor is not strong enough, this attachment must be carried out on the chassis.
The rollbar must be held up by two rectilinear tension rods fixed at A and B and bolted to the floor of the vehicle with plates and counterplates (AE and BF).
If the floor is not sufficiently resistant, these rods must be bolted onto the chassis.
The plates and counterplates used above must have a surface area of 200 cm^2 and a minimum thickness of 3 mm, and be fixed by bolts of 12 mm diameter.

3.1.3) Minimum specifications:
The minimum acceptable rollcage is shaped as shown in drawing 287-1.
Each rollbar must be in one piece and must be free from unevenness and cracks.
All the parts of the rollcage must be welded together or be connected by the connections defined in article 283.8 of Appendix J.
Note: The rear diagonal must have its top fixing on the driver's side of the cab.
It is permissible, and even recommended, to fit additional struts to the rollcage.
An example is shown in drawing 287-2. Such additional struts may be welded, or fixed by removable connections.
The minimum fixation of the cage to the cab consists of four mounting plates, one for each vertical pillar of the cage.
Each mounting foot must have an area of at least 200 cm^2 and a thickness of 3 mm.
Reinforcing plates with an area of at least 200 cm^2 and a minimum thickness of 3 mm must be fitted such that the cab floor is sandwiched between the mounting feet and the reinforcing plates.
At least three bolts must clamp each mounting foot to its reinforcing plate, such bolts to have a minimum specification of 8.8 ("S" Grade) and diameter of 12 mm. This mounting represents a minimum.
It is permitted to increase the number of bolts and to attach the rollcage to the cab shell. (e.g. to windscreen and door pillars). (see texts and drawings in Appendix J, art. 283.8).
Minimum material specification for all mandatory tubes is as follows:
Cold drawn seamless steel tube with a minimum tensile strength of 340 N/m^2.
Minimum permitted tube sizes are as follows:
57 mm outside diameter x 4.9 mm wall thickness
or
60 mm outside diameter x 3.2 mm wall thickness
or
70 mm outside diameter x 2.4 mm wall thickness.
Every tube in drawing 287-1 must have an inspection hole of 5 mm diameter, drilled in an easily visible position.
Note: The tube sizes quoted above are standard sizes which should be easily available.
However if one of these sizes cannot be obtained, the tube will be acceptable if its dimensions exceed the dimensions shown above ; for example 60 mm x 4.9 mm or 57 mm x 5.0 mm are acceptable in place of the 57 mm x 4.9 mm tube.

3.2 Seat belts

3.2.1) General:
They must be securely attached to the vehicle's cab structure or roll cage (it is not acceptable for seat belts to be anchored to seats).
Anchorage points on the cab structure must be reinforced to ensure adequate strength.
The wearing of at least two shoulder straps and one lap strap is compulsory.
The lap strap must be attached to the cab by two mounting points, and the shoulder straps also by two mounting points situated behind the driver's seat.
These belts must comply with FIA standard n°8853/98 or 8854/98.
Furthermore, it is recommended that for competitions which include public road sections, the belts be equipped with push-button release systems.
Note: It is not allowed to mix parts of seat belts. Only complete sets, of proprietary manufacture, may be used.

3.2.2) Installation and use:
The effectiveness and longevity of safety belts are directly related to the manner in which they are installed, used and maintained.
The belts must be replaced after every severe collision.
Seat belts must be replaced immediately whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.
They must also be replaced if hardware or buckles are bent, deformed or rusted, or if the seat belt does not function properly.
Shoulder straps must not be mounted so as to make an angle of more than 20° to the horizontal from the wearer's shoulders.
The shoulder straps must be fixed or supported on a rear transversal tube fixed to the rollbar or to the top anchorpoints of the front belts.
The lap and crotch straps must be located in such a way that they wrap and hold the pelvic region over the greatest possible surface, the lap straps crossing it below the antero-superior iliac spines.
Under no conditions must they be worn over the region of the abdomen. Holes may be made in the seat if this proves necessary in order to avoid such an occurrence.
Care must be taken that the belts cannot be damaged through chafing against sharp edges.

3.2.3) Principles of mountings to the monocoque:
1) General fixing system:
see drawing 253-43.
2) Shoulder straps mounting:
see drawing 253-44.
3) Crutch strap mounting:
see drawing 253-45.

3.3 Fire extinguishers

3.3.1) Each truck must be fitted with two fire extinguishers.
3.3.2) Permitted extinguishants:

BCF (C F2 Cl Br)
NAF S3
NAF P
AFFF
Powder

3.3.3) Minimum extinguisher capacity:
In case of use of BCF, NAF SIII, NAF P, or powder:
2.60 litres for the quantities specified hereafter.

3.3.4) Minimum quantity of extinguishant for each bottle:
BCF: 4.0 kg
NAF S3: 3.2 kg
NAF P: 3.2 kg
AFFF: 2.4 litres
Powder: 2.0 kg

3.3.5) All extinguishers must be pressurised according to the contents:
BCF: 7.0 bar
NAF S3: 7.0 bar
NAF P: 7.0 bar
AFFF: 12.0 bar
Powder: 13.5 bar
Furthermore, in the case of AFFF, each extinguisher must be equipped with a means of checking the pressure of the contents.

3.3.6) The following information must be visible on each extinguisher:
- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check.

3.3.7) All extinguishers must be firmly attached inside the cab and must be adequately protected.
Their mountings must be able to withstand a deceleration of 25 g. Furthermore, only quick-release metal fastenings, with metal straps, will be accepted.
It is strongly recommended that fire-resistant pipes are used: plastic pipes are discouraged and pipes made from metal are strongly recommended.

3.3.8) The extinguishers must be easily accessible for the driver and the co-driver.

3.3.9) In place of one of the two extinguishers mentioned above, it is permitted to fit an automatic extinguisher system which conforms to the specifications of article 283.7 - Cross-Country Cars of Appendix J.

3.4 Circuit breaker

Vehicles must be fitted with a circuit breaker and a choker device which shuts down the engine and disconnects the batteries from all electrical circuitry (except any automatic fire extinguisher system).
This switch must be painted yellow and identified by a red spark on a white edged, blue triangle.
A prominent notice not less than 20 cm in width should be affixed to indicate the location of the switch.
The circuit breaker and the choker device must be placed on the outside, in the middle of the front face of the cab, beneath the windscreen.
The circuit breaker must be easily accessible at all times, even if the vehicle is lying on its side or roof.
In addition, an engine shut-down switch must be fitted in the cab, with its on-off positions clearly marked. It must be operable by the driver when normally seated and wearing his seat belt. The switch must also isolate any electric fuel pumps.
Note: In the case of vehicles which use a mechanical engine shut-down system, a shut-down device may be fitted on the outside, separate to the electrical circuit breaker. However, the device must be fitted close to the circuit breaker, be clearly marked and have clear operating instructions (e.g. pull knob to stop engine).

3.5 Rear warning lights

Each vehicle must be equipped with two red rear fog lights, of a minimum power of 21 watts and a maximum of 55 watts, situated at a minimum height of 1.5 m from the ground, visible from the rear and attached to the outside of the vehicle, to the left and right rear of the truck.
Two other "stop" lights of a minimum power of 21 watts and a maximum of 55 watts must be situated at the same position and the same height as the red rear fog lights, in order to indicate braking in the dust.
The lighted area of these lamps must not exceed 100 cm^2.

3.6 Head restraint

The driver's and passengers' seats must be equipped with a head restraint, capable of supporting a 17 kg mass under a rearward acceleration of 5 g.
Its dimensions must be such that the driver's head is restrained and cannot move to the rear under this acceleration, or be trapped between the head restraint and the rollcage.

3.7 Cab and bonnet lock down

Vehicles with tilt cabs must have an additional device which bridges the normal tilt lock mechanism and will prevent cab tilt in the event of that mechanism disengaging.
The weakest part of the device will be either one steel bolt or pin of at least 16 mm diameter or two steel bolts or pins of at least 12 mm diameter.
Steel cables are allowed on each side of the cab, with a minimum diameter of 12 mm (or equivalent section). They will be of a sufficient length to allow movement between the cab and the chassis.
Vehicles with bonnets must be fitted with an additional locking device, in addition to the normal bonnet lock, to prevent the bonnet from opening in case of failure of the normal lock (attachment by means of "American" steel pins).
These additional devices must be positively engaged while the vehicle is in motion.

3.8 Propeller shaft

For each longitudinal transmission shaft over 1 m long, a rollbar or a safety loop made from steel must be installed close to the front extremity.

3.9 Wheels and tyres

3.9.1) Wheel rims, spacers:
The size of the rims is limited to 14 x 20 inches and the total diameter of the wheel when mounted and inflated to 5 bar must not exceed 1300 mm.
Split rim wheels are forbidden.
It is prohibited to fit any spacers or adaptors between the road wheels and the hub.

3.9.2) Wheel nut covers:
Wheel nut covers must be fitted to all wheels if nuts or studs extend beyond the complete wheel.

3.9.3) Wheel balance weights:
It is prohibited to have removable balance weights fitted to any wheel.

3.9.4) Tyres:
Any tyre which the scrutineers consider to be dangerous or in breach of the regulations, for one reason or another, shall be refused.

3.9.5) Spare wheel/tyre:
Two wheels or two tyres, depending on the type of wheels used, are compulsory.

3.10 Isolation from engine and transmission (Firewall)

All vehicles must have a protective bulkhead of non-flammable material between the engine/transmission and the driver's compartment capable of preventing the passage of fluid or flames in the event of fire. Gaps must be sealed with glass fibre.
Magnesium is prohibited for bulkheads.

3.11 Lines

3.11.1) Fuel lines:
It is prohibited to run any fuel lines within the cab.

3.11.2) Oil lines:
The only oil lines which may run within the cab are those leading solely to temperature and pressure gauges. Such lines must be metallic, or be aviation type lines.

3.11.3) Coolant lines:
The only coolant lines which may run within the cab are those leading to temperature/pressure gauges or the cab heater.

3.12 Windscreen and body glazing

A windscreen of laminated glass must be fitted, bearing a mark to verify the fact.

All other windows may be of any type of homologated safety glass. All window operating mechanisms must function as designed by the manufacturers (e.g. manufacturers' wind-down windows must remain as wind-down windows).
The wearing of visors or motorcycle type goggles is compulsory for all members of the crew, in case the windscreen breaks.

3.13 Steering lock
Any steering lock system fitted to the vehicle may be removed.

3.14 Parking brake
The location of the parking brake control must be clearly indicated by a notice inside the cab at least 20 cm in width.
The parking brake control must be operable by the driver while normally seated with the seat belt fastened.

3.15 Windscreen wiper and washer
All vehicles must be fitted with at least one windscreen wiper and a washer. These must be maintained in a working condition at all times.

3.16 Oil catch tank
All engine breathers venting to the atmosphere must lead into a catch tank, arranged in such a way as to prevent oil from spilling onto the ground.
If a single catch tank is used, it must have a volume of at least four litres.
It is permitted to use multiple tanks, but each tank must be at least two litres.
Tanks may be made of any material, but it must be possible to view the contents of the tank (e.g. a sight glass is required in a metal tank, and plastic tanks must be translucent).
All tanks must be capable of being readily emptied.

3.17 Towing eye
All vehicles must be fitted with a front towing attachment of strength and size adequate for towing the vehicle on the itinerary of the event.
It must be painted in a contrasting colour (yellow, red or orange) for easy identification and be available for immediate use when required.
It must not project forward beyond the front face of the bumper.

3.18 Lamps
The number of headlamps is limited to 8. They must be fitted in accordance with the International Road Traffic Convention, at a maximum height not exceeding that of the lowest part of the windscreen.
All forward facing lamps of more than 32 cm^2 surface area must be adequately protected and secured in case of glass breakage, by a grille or additional translucent panel.

3.19 Warning triangle
This is compulsory, in case of a breakdown or an unscheduled stop. The triangle must be placed on the track, in such a way that it is clearly visible, 100 m before the immobilised vehicle.

3.20 Audible signalling devices
Each vehicle must be equipped with a powerful audible signalling device, in working order throughout the event.

3.21 Mud flaps
The fitting of efficient mud flaps behind every wheel of the vehicle is compulsory ; they must be fixed as far back as possible.
Each flap must stop at most 10 cm above the ground and it must be wider than the tyres.
For vehicles with more than 4 driven wheels, the only wheels to be taken into consideration will be the rearmost wheels on the front and rear axles.

3.22 Rear view mirrors
It is permitted to fit additional rear view mirrors, but the standard mirrors must be retained and kept in working order, at all times.

ARTICLE 4 : CHASSIS

Only local modifications of the chassis frame are permitted in order to comply with the safety requirements described in art. 3 of these regulations.
With the exception of the items covered in art. 7.1, the chassis frame must be exactly to manufacturer's standard specification. Manufacturers' options on chassis shape and material are prohibited.

ARTICLE 5 : BODYWORK

5.1 Cab interior

5.1.1) Door locks:
Door locks must be kept in the unlocked position while the vehicle is on the route.

5.1.2) Tool kits:
All tool kits and other equipment not rigidly secured must be removed from inside the cab.

5.1.3) Seats:
All the occupants' seats must be either original, modified only through the addition of accessories with a registered trade mark, or homologated by the EEC, the FMVSS or the FIA (8855/1992 or 8855/1999 standards), and not modified.
The occupants' seats may be removed.
In all these cases, a headrest with a minimum surface area of 400 cm^2 must be present for each occupant.
The surface must be continuous and have no protruding parts. Its position will be such that it will be the first point of contact with the driver's or passenger's helmet in the event of an impact projecting the heads of the vehicle's occupants rearwards, when they are seated in their normal position.
This headrest must not deflect by more than 5 cm when a rearward force of 850 N is applied to it.
The distance between the helmet and the headrest must be minimal, such that the distance moved by the helmet, when the above-mentioned force is applied and the occupant is in his normal driving position, is less than 5 cm.
If the original seat attachments or supports are changed, these parts must either be made by an FIA-approved manufacturer or must comply with the following specifications (see drawing 253-52):
1) Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counterplates, according to the drawing.
The minimum area of contact between support, shell/chassis and counterplate will be 40 cm^2 for each mounting point.
If quick release systems are used, they must be capable of withstanding vertical and horizontal forces of 18000 N, applied non-simultaneously. If rails for adjusting the seat are used, they must be those originally supplied with the homologated car or with the seat.
2) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat.
Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.
3) The minimum thickness of the supports and counterplates will be 3 mm for steel and 5 mm for light alloy materials.
The minimum longitudinal dimension of each support will be 6 cm.

5.1.4) Trim:
Carpet and floor coverings may be removed. Any loose floor coverings must be removed.

5.1.5) Steering wheel:
A non-standard steering wheel of proprietary manufacture may be fitted.

5.1.6) Pedals:
The pads of the pedals may be modified as long as this does not involve any lessening to their resistance.

5.1.7) Apertures:
NASCAR-type protection nets are authorised over all the apertures.

5.2 Cab exteriror

5.2.1) Mudguards:
All vehicles must be equipped with mudguards on the rear wheels. They must have no sharp edges and must cover the full width of the tyre over a continuous arc of 120°.
This minimum coverage must be achieved with a continuous surface of rigid material uninterrupted by any gaps, holes, slots or vents.
The mudguards must extend forward of the relevant axle centre line in vertical projection.
The trailing edge of the mudguard must be no higher than the top of the corresponding rim.

The front mudguards will remain those of the cabin of the homologated vehicle.
5.2.2) Winches:
Only winches, fitted without making any modifications to the structure of the vehicle other than a modification allowing the winch to be attached by means of bolts, are authorised.

5.3 Load-bearing bodywork

5.3.1) Outside:
Modifications or adjustments carried out after homologation (article 2) must respect the road regulations and the present regulations.
5.3.2) Inside:
The transporting of "merchandise" is entirely the responsibility of the competitor. However, the Scrutineers may check the quality of the load, with regard to safety.
The transporting of certain quantities of dangerous materials is governed by official regulations.
Any dangerous liquids must be held in tanks similar to those of the vehicle (FT3 or FT3 1999 safety tank or truck tank).

ARTICLE 6 : ENGINE

6.1 General

With the exception of permitted modifications detailed thereunder the engine and all ancillaries must be exactly to manufacturer's standard specification.

6.2 Engine speed

Maximum engine speed may be changed.

6.3 Water cooling system

The original number of water cooling radiator units must be retained.
They must be fitted to their original mounting points on the chassis. However, it is permitted to change the size and shape of these radiators, and associated piping, as long as this does not cause any change in body or chassis shape.

6.4 Air induction system

The air filter(s) and tubing upstream of it(them) may be modified.
No part of the air induction system may project more than 300 mm beyond the side or top extremities of the cab.
- no more than two air induction pipes may be fitted.
- the total cross-sectional area of the air induction pipes or ram air collector boxes must not exceed 1,000 cm^2.

6.5 Fuel injection system

Only the settings on the fuel injection pump may be modified.

6.6 Fuel

The fuel must be gas oil with the following specifications:

- Hydro-carbon content, % w/w	99.0 min.
- Specific gravity, kg/m^3	860 max.
- Cetane number (ASTM D613)	55 max.
- Calculated Cetane number (ASTMD976/80)	55 max.

Only atmospheric air may be mixed with fuel as an oxidant.

6.7 Smoke

It is forbidden to produce excessive smoke from the engine.
Smoke levels must comply with E.E.C. standards or equivalent and a Judge of Fact will be appointed.

6.8 Exhaust

After the final muffler, the exhaust pipe may be modified. A vertical exit pipe, or two at the most, may be installed without exceeding by more than 300 mm the top of the cab, or of the load-bearing bodywork if this is higher.

6.9 Fly-by-wire

Accelerator controls of the "fly-by-wire" type are forbidden.

ARTICLE 7 : SUSPENSION

7.1 Dampers

A maximum of four damper units are allowed per axle.
Their make and type are free, but they must have no other function than that of dampers.
If hydraulic damper units are used, there must be no interconnection between the circuits.
The damper supports are free on condition that they have no other function than that of support.

7.2 Rigid axles

Rigid axles may be strengthened, but in such a manner that the original parts may be recognised.

7.3 Springs

The number of spring leaves is free.

7.4 Travel limitation

Travel straps may be fitted.

ARTICLE 8 : TRANSMISSION

8.1 Clutch

The clutch plates are free.

ARTICLE 9 : ELECTRICS

9.1 Lighting system

All lamps required for normal legal road use must be functional at all times and must not be concealed.
No lamp other than those provided for by the International Road Traffic Convention and the present regulations (article 3.18) may be fitted.

9.2 Batteries

Vehicle batteries must be to original specification or equivalent.
They must not be positioned inside the cab.
They must be securely fastened, each battery to be held down by at least two steel bolts of 10 mm minimum diameter. They must be protected to prevent short circuiting of terminals.
Batteries must not be visible from outside the vehicle.

ARTICLE 10 : BRAKES

10.1 Braking system

The entire braking system must remain original (except for art. 5.1.1.6 - Pedals).
The material and attachment system of the brake linings are free.

10.2 Brake cooling

Brake cooling is permitted using ducted air only.
Cooling ducts must be fed by air intakes (one per wheel) which can fit within a circle of 150 mm diameter, fixed below the axis of the wheels and not extending beyond the vertical projection of the vehicle.

ARTICLE 11 : WHEELS

11.1 Specification

These must be of unmodified proprietary manufacture and must be such that no part of a rim or tyre fouls on any part of the vehicle under extremes of steering or suspension movements.
The wheel nuts and studs must match the wheel rims being used, to ensure adequate fixing strength. Wheel nuts must be of unmodified proprietary manufacture.

11.2 Rim dimensions

Maximum allowed wheel rim width is 14".
Different rims from the original ones may be authorised by the supplementary regulations of the event, according to the type of terrain.

11.3 Wheel track and vehicle width

The combination of axles and wheels/tyres fitted must not cause the vehicle width to exceed 2,500 mm, nor increase the front or rear wheel track by more than 150 mm beyond manufacturer's standard specification.
Note also the requirements of article 11.1 concerning wheels/tyres fouling on the bodywork.

ARTICLE 12 : TYRES

12.1 Specification

Maximum permitted section width: 19".
All tyres fitted to the vehicle must have a tread depth complying with relevant national legal requirements for the duration of the event.
Re-cut and/or hand grooved tyres are not permitted.
Tyres fitted must be available through normal retail outlets for all-weather use on roads and/or tracks.

Special tread compounds and/or patterns are not allowed, nor are any externally applied chemical compounds which may affect tyre grip.
All tyres must have a speed index of "F" or more.
No carcass may have undergone serious repairs.

12.2 Approved manufacturers

All tyres used must be to E.E.C. Type Approval standard (E.E.C. regulation 54) or equivalent.

12.3 Retreated tyres

Retreated tyres are forbidden.

12.4 Inflating / Deflating

The use of a system for inflating / deflating the tyres when rolling the vehicle is in motion is authorised.

ARTICLE 13 : VEHICLE WEIGHT

The minimum allowed vehicle weight at any time is the weight of the vehicle, emptied of fuel, without persons, luggage, tools, jack, spare parts, portable survival, navigation or communication equipment, provisions, etc., but with the safety devices, and its bodywork as defined here above.
It must not be less than the weight of the chassis-cab stated in the certificate of receipt by type modified by the multiplicating coefficient 1.33.

ARTICLE 14 : FUEL TANK

14.1 Type

Additional fuel tanks are free in respect of capacity. They must be of unmodified proprietary manufacture, of a type normally used in trucks ; they must be without modification, and fully proofed against accidental fuel spillage or leakage from fillers and vents.
Filler caps must have a positive closure action and must not project beyond the line of the vehicle's bodywork.
Note: It is recommended to fit FIA/FT3 or FIA/FT3 1999 safety fuel tanks as described in article 253.14, Cross Country Cars, of Appendix J.

14.2 Position

Subject to the following requirements, fuel tank position is free:
- Tank(s) must be firmly fixed to the chassis. They must have underbody protection against flying stones and lateral protection against impact.
- Tank(s) may not be fitted inside the cab.

14.3 Additional tanks

(Other than those feeding the vehicle)
No reserves containing fuel may be situated on the outside of the vehicle (jerrycans or other cans).
Containers for water or lubricants will be tolerated on the outside of the vehicle, must be firmly secured and must not project beyond the perimeter of the vehicle.

ARTICLE 15 : TACHOGRAPHS

The tachographs record vehicle speed. Competitors are reminded that any change to the vehicle which may affect the calibration of the tachograph (e.g. a change of tyre make or tyre size) must be approved by the Scrutineers.
It is specifically forbidden to conceal, or interfere in any way with, the approved tachograph or any associated wiring, cable drive or sender units.
If any change is made to the vehicle specification which may affect tachograph calibration, or if the system is interfered with in any way, it is the competitor's responsibility to have the tachograph re-calibrated and re-certified. Failure to comply with this requirement may cause the vehicle to be rejected at Scrutineering.
Competitors are reminded that tachographs are extremely accurate measuring devices.

ARTICLE 16 : FINAL TEXT

In the event of any dispute over the interpretation of the terms used in the various translations of these regulations, the French version will be used.

ARTICLE 290 - RACING TRUCKS TECHNICAL REGULATIONS (GROUP F)

Super race trucks
Race trucks

SUMMARY

These technical regulations govern competitions run on circuits between two-axle heavy tractor units from tractor/semi-trailer combinations only.
In the event of any dispute over the interpretation of the terms used in the various translations of these regulations, the English version will be used.
Racing trucks will be divided up into the following 2 groups:
Super race trucks
Race trucks

ARTICLE 1 : DEFINITIONS

1.1 General
The definitions given in Article 251 of Appendix J shall apply to these Technical Regulations, except with regard to articles 2.1.7 and 2.1.8.
Any reference to standard specification and/or parts and/or materials in these regulations shall be interpreted as a reference to the manufacturer's listed items only.
1.2 Super race truck
Two-axle road tractor units. The general shape of the tractor unit must correspond to the shape of a road-going tractor unit homologated for the transportation of merchandise. Super race trucks must be in conformity with articles 2 and 3 of these regulations.
1.3 Race truck
Two-axle road tractor units. The general shape of the tractor unit must correspond to the shape of a road-going tractor unit homologated for the transportation of merchandise.
The mechanical components must be derived from a road-going tractor unit homologated for the transportation of merchandise.
Race trucks must be in conformity with articles 2 and 4 of these regulations.
1.4 Manufacturer
The expression "Manufacturer" (of vehicles) must be considered as covering only those firms who hold or who have held a coded "world manufacturer identification" for identifying the vehicle (V.I.N.). When the truck manufacturer fits an engine which it does not manufacture, the truck shall be considered a hybrid and the name of the engine manufacturer shall be associated with that of the truck manufacturer. The name of the truck manufacturer must always precede that of the engine manufacturer.
Should a hybrid truck win a championship title, cup or trophy, this will be awarded to the manufacturer of the truck.
1.5 Tractor/Semi-trailer combination
Articulated vehicle: tractor with semi-trailer exerting an appreciable vertical force on the coupling device.
1.6 Cab
Structure defining the volume which accommodates the driver and the passenger(s).
1.7 Chassis
Assembly of members accommodating the various mechanical parts of the truck.
1.8 Closed loop
Electronically controlled system in which an actual value (controlled variable) is continuously monitored, the feedback signal is compared with a desired value (reference variable) and the system is then automatically adjusted according to the result.

ARTICLE 2 : SAFETY EQUIPMENT

2.1 General
Any truck, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the Meeting.
2.2 Speed measuring instruments
The speed is limited to 160 kph.
All competing vehicles must be fitted with a correctly calibrated and functioning speed measuring instrument of an approved type. Any vehicle which is not fitted with an approved speed measuring instrument will not be eligible for racing. (However, the FIA reserves the right, at the beginning of each year, to impose any other device for speed control which may prove more efficient).
The speed measuring instruments record road speed.
It is specifically forbidden to conceal, or to interfere in any way with, the approved speed measuring instrument or the associated wiring, sensors, drive shaft or sender units.
If any change is made to the vehicle specification which may affect speed measuring instrument calibration, or if the system is interfered with in any way, it is the competitor's responsibility to have the speed measuring instrument re-calibrated and re-certified. Failure to comply with these requirements may cause the vehicle to be rejected at scrutineering.
Competitors are reminded that speed measuring instruments are extremely accurate measuring devices. If the road speed could possibly exceed the values allowed in these regulations, it is recommended to fit road speed governors to prevent any accidental infringement of these regulations. Any infringement, even an unintentional one, will be penalised. It is the competitor's responsibility to comply with the regulations.
2.3 Cables, lines and electrical equipment
It is recommended that there be no connections in the cab, apart from on the front bulkhead and the rear bulkhead.
If the series production fitting is retained, no additional protection is necessary.
2.3.1) Fuel lines :
It is prohibited to run any fuel lines inside the cab.
2.3.2) Oil lines :
The only oil lines which may run inside the cab are those leading to temperature or pressure gauges. Such lines must be metallic.
2.3.3) Coolant lines :
The only coolant lines which may run inside the cab are those leading to temperature/pressure gauges or to the cab heater.
All such lines must be painted red and, if non-metallic, must be enclosed in a solid metal cover or an internally/externally metal braided hydraulic pressure hose.
2.4 Braking safety system
Double circuit operated by the same pedal: the pedal must normally control all the wheels. In case of leakage anywhere in the brake system piping or of any kind of failure of the brake transmission system, the pedal must still control at least two wheels.
2.5 Additional fasteners
2.5.1) Cab lock-down :
Vehicles with tilt cabs must have an additional device which bridges the normal tilt lock mechanism and will prevent cab tilt in the event of that mechanism disengaging.
The weakest part of the device must be either one steel bolt or pin of at least 16 mm diameter or two steel bolts or pins of at least 12 mm diameter.
Note : wire cables and/or chains are not acceptable.
2.5.2) Bonnet lock-down :
Vehicles with an external/internal bonnet must be fitted with an additional locking device, as well as the normal bonnet lock, to prevent the bonnet from opening should the normal lock fail.
These additional devices must be in the locked position while the vehicle is on the circuit.
2.6 Seat belts
All seat belts must be securely attached to the vehicle's cab structure or roll cage, but not to the seats. Anchorage points on the cab structure must be reinforced to ensure adequate strength.
The safety belts must comprise at least two shoulder straps and one lap strap and they must comply with FIA standard n°8854/98 or, preferably, standard n°8853/98. Belts used in circuit competitions must be equipped with a turn buckle release system. The lap strap must be attached to the cab by two mounting points. The shoulder straps must be parallel and must also be attached by two mounting points, situated behind the seat.
Seat belts which have been involved in a serious accident, or which are showing signs of wear, should be discarded. Combinations of parts from different seat belts are not allowed. Only complete sets, as supplied by the manufacturer, may be used.
Shoulder straps must be mounted so as to make an angle of not more than 20° to the horizontal from the wearer's shoulders.
The shoulder straps must be fixed or supported on a rear transversal tube attached to the roll bar or to the upper anchorage points of the front belts.
The lap and crotch straps must be fitted in such a way that they

wrap and hold the pelvic region over the greatest possible surface, the lap straps crossing it below the anterior-superior iliac spines. Under no conditions must they be worn over the region of the abdomen. Holes may be made in the seat if this proves necessary in order to avoid such an occurrence.
Care must be taken that the belts cannot be damaged through chafing against sharp edges.

2.7 Fire extinguishers

2.7.1) All trucks must be fitted with one or two fire extinguishers.
2.7.2) Permitted extinguishants:
NAF S3
NAF P
Any AFFF which has been specifically approved by the FIA (see "Technical List n° 6" of the Appendix J).
Dry powder is also permitted but only on trucks being used in or coming from countries where national regulations preclude the use of the above products.
2.7.3) Minimum extinguisher capacity:
NAF S3, NAF P:
2.72 litres.
AFFF: The capacity may vary according to the type used (see "Technical List n° 6" of the Appendix J and take the same capacity as category GT engine)
2.7.4) Minimum quantity of extinguishant:
NAF S3: 3.2 kg
NAF P: 3.2 kg
Powder: 2.0 kg
AFFF: The quantity may vary according to the type used (see "Technical List n° 6" of the Appendix J and take the same quantity as category GT engine)
2.7.5) All extinguishers must be pressurised according to the contents:
NAF S3: 7.0 bar
NAF P: 7.0 bar
Powder: 13.5 bar
AFFF: The pressure may vary according to the type used (see "Technical List n° 6" of the Appendix J)
Furthermore, if filled with an AFFF, each extinguisher must be equipped with a means of checking the pressure of the contents.
2.7.6) The following information must be visible on each extinguisher:
- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after the date of filling.

2.7.7) All extinguishers must be adequately protected and must be situated within the survival cell. In all cases their mountings must be able to withstand a deceleration of 25 g. Furthermore, only quick-release metal fastenings, with metal straps, will be accepted.
2.7.8) The extinguishers must be easily accessible for the driver.
2.7.9) Automatic systems :
As an alternative to the above, it is permitted to fit an automatic extinguishing system complying with article 253.7 of Appendix J to the FIA International Sporting Code.

2.8 Circuit breaker - Engine shutdown

Vehicles must be fitted with a circuit breaker and a choker device which shuts down the engine and disconnects the batteries from all electrical circuitry (except that of the automatic fire extinguisher system). This switch must be painted yellow and identified by a red spark on a white-edged, blue triangle. A prominent notice not less than 20 cm in width should be affixed to each side of the vehicle to indicate the location of the switch. The circuit breaker and the choker device must be placed on the outside of the cab, between the chassis side rails, behind the rear axle. The circuit breaker must be easily accessible at all times, even if the vehicle is lying on its side or roof.
In addition, an engine shut-down switch must be fitted inside the cab, with its on-off positions clearly marked. It must be operable by the driver when normally seated and wearing his seat belt. The switch must also isolate any electric fuel pumps.
Note : In the case of vehicles which use a mechanical engine shut-down system, a shut-down device may be fitted on the outside, separate from the electrical circuit breaker. However, the device must be fitted close to the circuit breaker, be clearly marked and have clear operating instructions (e.g. pull knob to stop engine).

2.9 Roll cage

2.9.1) General :
The driver's cab must be fitted with an internal roll cage.
The basic purpose of such a roll cage is to protect the driver and passenger(s) if the vehicle is involved in a serious accident.
The minimum acceptable roll cage requirements are detailed in these regulations, but the following observations should be noted:
The essential characteristics of a roll cage are first and foremost the result of a finely detailed construction, suitable attachment to the cab and snug fitting against the bodywork. It is recommended that the mounting bases be made as large as possible in order to spread loads over the maximum area. It is also advisable to weld the cage to the cab structure (e.g. to the windscreen and door pillars) wherever possible. This greatly increases strength and rigidity. All welding should be of the highest quality possible, with full penetration (preferably arc welding and in particular under protecting gas). The requirements are a minimum. It is permitted to fit extra elements or reinforcements in addition to the basic requirements (See Appendix J Article 253.8 and drawings 287-1 and 287-2).
2.9.2) Minimum specifications :
The minimum acceptable roll cage shape is as shown in drawings 287-1 and 287-2 of the Appendix J. It must follow the interior shape of the cab as closely as possible, and must be free from unevenness or cracks. The rollbars must be in one piece, i.e. all the parts must be welded together or be connected by the connections defined in Article 253.8 of Appendix J.
Note : The attachment of the upper extremity of the rear diagonal must be on the driver's side of the cab.
It is permissible, and even recommended, to fit additional struts to the roll cage. An example is shown in drawing 287-2. Such additional struts may be welded, bolted or clamped in place. The minimum mounting of the cage to the cab consists of four mounting bases, one for each vertical pillar of the cage. Each mounting base must have an area of at least 200 cm^2 and a thickness of 3 mm. Reinforcing plates with an area of at least 200 cm^2 and a minimum thickness of 3 mm must be fitted such that the cab floor is sandwiched between the mounting bases and the reinforcing plates. At least three bolts must clamp each mounting base to its reinforcing plate, such bolts to have a minimum specification of 8.8 ("S" grade) and a minimum diameter of 12 mm. This mounting represents a minimum. It is permitted to increase the number of bolts and to weld the roll cage to the cab shell (e.g. to the windscreen and door pillars).
Minimum material specification for all mandatory tubes is as follows :
Cold drawn seamless steel tube with a minimum tensile strength of 340 N/mm^2.
Minimum permitted tube cross sections are as follows:
57 mm external diameter x 4.9 mm wall thickness
OR
63.5 mm external diameter x 3.2 mm wall thickness
OR
70 mm external diameter x 2.4 mm wall thickness.
Each tube in drawing 287-1 must have an inspection hole of 5 mm diameter, drilled in an easily visible position.
Note : The tube sizes quoted above are examples of standard sizes which should be easily available. However, if one of these sizes cannot be obtained, the tube size will be acceptable if it exceeds the dimensions shown above, for example 60 mm x 4.9 mm or 57 mm x 5.0 mm is acceptable in place of the specified 57 mm x 4.9 mm. However, it should be noted that 57 mm is the minimum acceptable diameter, and that 2.4 mm is the minimum acceptable wall thickness for a minimum diameter of 70 mm.
2.9.3) The rollcage described in articles 2.9.1 and 2.9.2 must be directly connected with steel sections to the chassis in a minimum of 4 separate locations. Two connections must be in front of the driver's feet and two rearward of the rearmost position of the driver.

2.10 Side, front and rear guards

2.10.1) Side guards :
Metal side guards must be fitted between the wings of the front and

driven axles to prevent wheels interlocking and to protect fuel tanks and other external parts. The side guards may be made with any of the following :

- 1 steel channel 100 mm high x 50 mm x 5 mm wall thickness

OR

- 1 steel box section 100 mm high x 50 mm x 3 mm wall thickness

OR

- 1 steel tube 65 mm diameter x 3 mm wall thickness

OR

- 2 steel tubes 50 mm diameter x 3 mm wall thickness.

Aluminium may be used in place of steel, but in that case the material thickness must be doubled. Outriggers from the chassis to the side guards must be made from material at least equal in strength to the side guard material. All tubes and box sections must have a 5 mm hole drilled in a visible position for inspection purposes. Maximum spacing between any two outriggers is 1.5 metres. Maximum unsupported sideguard overhang is 500 mm. Maximum permitted gap (in side view) between the front or rear wing and the sideguard is 100 mm. Outriggers must be mounted to the chassis using spreader plates of at least 100 cm area and 5 mm thickness. These plates must be welded to the outriggers and bolted to the chassis. At least 4 x 8 mm diameter bolts must be used for each outrigger; these bolts must be at least grade 8.8 ("S" grade). It is permitted to drill holes in the chassis for the attachment of the side guards. The bottom of the side guards must be at least 500 mm above the ground. The top must be no more than 1 metre from the ground. The sideguards must extend outward so that they are within 300 mm of the extremities of the vehicle in plan view. They may not project beyond the extremities of the vehicle in plan view. All welding must be of the highest quality, with full penetration. It must be possible to inspect all welds.

The side guards must not present any sharp angles or corners on the vehicle in plan view. It is permitted to cover the side guards with fairings as described in section 6, but all such fairings must be readily detachable to allow for inspection of the side guards.

Note : This regulation describes the minimum requirements. It is permitted to fit extra guards if desired, so long as they do not project beyond the extremities of the vehicle in plan view or extend forward beyond the perimeter of the vehicle in plan view.

2.10.2) Front and rear guards :

Guards must be fitted to the front and rear of the vehicle to prevent it from driving over the top of "armco" safety barriers, and to assist with "suspended tow" vehicle recovery. These guards must meet the following requirements:

Front guard only:

- The front face of the guard must be vertical and in line with the front face of the standard bumper.
- The top face of the guard must be in line with the top face of the standard bumper.

Rear guard only:

- The rear face of the guard must be vertical.
- No part of the rear guard may extend more than 200 mm behind the end of the chassis side rails.
- The top face of the guard must not be higher than the top flange of the main chassis side rails, measured at the extreme rear of the vehicle.
- The overall width of the rear guard must not exceed 2300 mm.

Front and rear guards:

- The bottom face of each guard must be between 300 mm and 400 mm above the ground.
- The bottom face of each guard must be between 1800 mm and 2300 mm wide.
- All exposed parts of the guards which are not part of the standard bumper must be made of tubing. The tubing material is free, but it is recommended that roll cage or side guard tubing is used.
- Ends of tubes must not be left exposed. Bottom tubes must be joined to top tubes/bumper and there must be no sharp edges or exposed corners or angles.
- It is permitted to cover all or part of the guards with securely attached metal panels.
- Each guard must be able to withstand a load equal to the vehicle weight on the rear axle, applied horizontally to the bottom tube, along the axis of the vehicle. It must also be capable of supporting the weight of the rear end of the vehicle. These loads must not cause permanent distortion of the guards.

2.11 Towing eye

All vehicles must be fitted with a 14 mm removable towing pin at both front and rear. The strength of these 14 mm pins must be sufficient to allow the vehicle to be towed under all circumstances. They must be painted in a contrasting colour (yellow, red or orange) for easy identification and be available for immediate use when required. They must not project beyond the front face of the front bumper or the rear face of the rear bumper. The towing pin must be accessible at all times.

2.12 Windscreen and windows

A windscreen of laminated glass must be fitted, bearing a mark to verify the fact. All other windows may be of any type of safety glass, or transparent plastic of at least 4.8 mm thickness.

Note : If side and/or rear windows are made of safety glass, it is recommended that they be covered with self-adhesive plastic film in order to prevent possible injury from broken glass.

A protective net or mesh must be fitted to the inside of the driver's door, covering the area of the window. It must not impede vision, but must be able to prevent any part of the driver's hand or arm from falling out of the (broken) window if the vehicle rolls over.

For safety reasons, it is mandatory that the windscreen be backed by one or more bars to prevent the windscreen from collapsing into the cabin during an accident. Each bar must be vertical, made in metal and must have a section of 45mm² minimum.

2.13 Rear view mirrors

The truck must be fitted with two external rear view mirrors, one fitted on each side of the truck, in order to give an efficient view to the rear.

2.14 Fire protection

All vehicles must have a protective bulkhead of non-flammable material between the engine/transmission and the driver's compartment, capable of preventing the passage of fluid or flames in the event of fire. All gaps must be sealed with glass fibre.

It is forbidden to use magnesium for the bulkheads.

2.15 Wheels and tyres

2.15.1) Wheel rims :

Split rim wheels are forbidden.

The rear external rims must be made from magnetic steel.

2.15.2) Wheel nut covers :

Wheel nut covers must be firmly affixed to all wheels on steering axles which have protruding nuts with sharp corners.

No part of the wheel nuts or studs may project through these covers, which must be fixed to the rims by means of at least 4 separate attachments.

2.15.3) Wheel balance weights

It is prohibited to have removable balance weights fitted on any wheel.

Balance weights must be welded or screwed onto the rim.

2.15.4) Tyres

Any tyre which the scrutineers consider to be dangerous or in breach of the regulations, for one reason or another, will be rejected. Any vehicle fitted with such a tyre will not be allowed on the circuit.

2.15.5) Spacers

It is prohibited to fit any spacers or adapters between the wheels and the hub/drum.

2.16 Propeller shafts

A minimum of two strong, steel, safety loops must be fitted to each propeller shaft, to prevent it hitting the ground in case of breakage. They must be fitted so that they are positioned one on either side of the midpoint of the propeller shaft.

For propeller shafts of less than 0.75 metre total length, only one safety loop is mandatory.

2.17 Rear warning light and braking lights

A rearward facing red warning light of at least 20 watts (maximum 30 watts) must be mounted on the rear panel of the cab. It must be situated as high as possible on the vehicle centreline. It must be switched on throughout all practice sessions and races. The lighted area of this lamp must not exceed 100 cm² but must be greater than 60 cm².

The power of the braking lights must be at least 20W (maximum 30W).

A LED unit may also be used provided it is from a commercial vehicle.
The number of LEDs must be from 25 to 100 with a minimum diameter of 8 mm each.

2.18 Cab

2.18.1) Construction :
The cab must retain its original strength and integrity. Any corrosion of the cab structure or mountings will cause the vehicle to be rejected at scrutineering.
2.18.2) Door locks :
Door locks must be kept in the unlocked position while the vehicle is on the circuit. Door catches must be fully operable from both inside and outside the vehicle.
2.18.3) Tools :
All tools and other loose equipment must be removed.
2.18.4) Seats :
All the occupants' seat must be homologated by the FIA (standard 8855), with an extension padded with energy-absorbing and non-inflammable material around the driver's head, and must not be modified
All seats fitted must be firmly attached and must not slide, tilt, hinge or fold. The driver's seat must support the driver and hold him in position inside the cab.
All seats must face forward. Passenger seats may be removed. All joints between any seat and the cab (i.e. seat to subframe (if fitted) and subframe to floor) must have at least 4 x 8 mm diameter or 6 x 6 mm diameter bolts, minimum grade 8.8 ("S" grade), with counterplates. The minimum area of contact between support, cab and counterplates is 40cm² for each mounting point (See Appendix J drawing 253-52). Sliding seat runners must be locked and bolted in position by a system requiring the use of tools.
2.18.5) Steering lock :
Any steering lock system fitted to the vehicle must be removed.
2.18.6) Parking brake :
The location of the parking brake control must be clearly indicated by a notice at least 20 cm in width placed inside the cab. The parking brake control must be operable by the driver while normally seated and with the seat belt fastened.
2.18.7) Windscreen wipers and washers
All vehicles must be fitted with windscreen wipers and washers. These must be maintained in working order at all times.

2.19 Engine - Oil catchtank

All engine breathers venting to atmosphere must lead into a catch tank, arranged in such a way as to prevent oil from spilling onto the track. If a single catch tank is used, it must have a capacity of at least four litres. It is permitted to use multiple tanks, but each tank must be able to hold at least two litres.
Tanks may be made of any material, but it must be possible to view the contents of the tank (e.g. a sight glass is required in a metal tank, and plastic tanks must be translucent). All tanks must be capable of being easily emptied.

2.20 Lamps

All forward facing lamps with a surface area of more than 32 cm² must be adequately protected and secured in case of glass breakage.

2.21 Exhaust pipes

In order to minimise the risk of hot parts of a broken engine/turbo-charger being blown onto the circuit, a protection device must be fitted to the end of all exhaust pipes. This device must be made so that any part with a diameter of more than 40 mm cannot pass directly out of the exhaust pipe. An example of a suitable protection device is : strips of metal, 1.6 mm thick x 25 mm wide, welded into the end of the exhaust, edge-on to the exhaust gas flow, at less than 40 mm spacing.

2.22 Mudguards

All wheels must be equipped with mudguards. They must have no sharp edges and must cover the full width of the tyre over a continuous arc of 120°.
The mudguards must extend forward of the relevant axle centre line in vertical projection. The trailing edge of the mudguard must be no more than 75 mm above the relevant axle centreline.
The mudguard must be situated not more than 200 mm from the outside of the tyre.
The front mudguards will remain those of the homologated cab of the vehicle.

2.23 Audible reversing warning

Vehicles must be fitted with an audible warning that sounds when the reverse gear is engaged.

ARTICLE 3 : REGULATIONS FOR SUPER RACE TRUCKS

3.1 General

All modifications are forbidden unless expressly authorised by the regulations below or imposed under the chapter "Safety Equipment". The components of the truck must retain their original function.
It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his truck complies with these regulations in their entirety at all times during the event.
All vehicles must be presented at scrutineering in a clean and dry condition.

3.2 Dimensions (See drawing 290-3)

3.2.1) Overall width :
The overall width of the vehicle is limited to 2550 mm
3.2.2) Height :
The height of the vehicle at the highest point of the cab must not be less than 2500 mm measured vertically over a width of 1800 mm.
This measurement must be taken 50 mm in front of the rearmost point of the cab.
3.2.3) Ground clearance :
Ground clearance must at all times be greater than 180 mm, with the exception of the front and rear axles which must not be situated less than 150 mm from the ground and must not generate any aerodynamic effect.
No part of the vehicle must touch the ground when all the tyres on one side are deflated.
This test shall be carried out on a flat surface under race conditions (driver(s) on board).
In the case of adjustable suspension, these measurements shall be made with the suspension in its lowest position.
3.2.4) Ride attitude
The chassis must not slope downward towards the rear of the vehicle when measured at the midpoint of the wheelbase.

3.3 Weight

The minimum allowed weight for Super Race Trucks is 5000 kg.
The weight is checked with the truck in race condition without the driver and driver equipment.
It is permitted to make up the weight of the vehicle with one or several ballasts, provided that they are strong and unitary blocks, attached by means of tools, easily accessible for affixing seals, placed between the chassis rails, between the cab and the fifth wheel.

3.4 Chassis

3.4.1) General :
The chassis frame must be made of a ferrous material.
3.4.2) Fifth wheel (see drawing 290-3) :
Regardless of manufacturer's specification, the semi-trailer pin coupling (fifth wheel) must be situated forward of the drive axle centreline.
It must be possible for the vehicle to couple to a normal semi-trailer.
The fifth wheel must be a commercial model homologated for a load of 17 tonnes, with an opening of 50 mm.
It must be made of ferrous material and have a minimum weight of 100 kg.
It may be modified in order to reach this minimum weight but must retain its original external appearance.
The fifth wheel must be situated between 1200 mm and 1300 mm from the ground at all times.
For taking this measurement, the fifth wheel shall be horizontal.
No other part, within a circle of 2040 mm radius, the centre of this circle being the kingpin axis of the fifth wheel, may be situated less than 100 mm below the upper surface of the fifth wheel.

3.5 Engine

3.5.1) General :
With the exception of the permitted modifications detailed in the present article 3.5, the engine and all ancillaries must be exactly to manufacturer's standard specification.

The rearmost part of the (single) engine block must be situated forward of the centreline of the wheelbase.

3.5.2) Block :

The bore and stroke may be changed in order to obtain a maximum cylinder capacity of 12000 cc.

In the case of supercharging, the nominal cylinder capacity will be multiplied by 1.

In the case of two-stroke engines, the nominal cylinder capacity will be multiplied by 1.4.

In the case of normally aspirated engines, the nominal cylinder capacity will be multiplied by 0.6.

The bore must be cylindrical and the stroke linear. Lining or relining of the cylinders is authorised, the material of the linings is free. All surfaces may be machined; material may be added.

3.5.3) Cylinder head :

The cylinder head is free.

3.5.4) Compression ratio :

The compression ratio is free.

3.5.5) Cylinder head gasket :

The cylinder head gasket is free.

3.5.6) Pistons :

The pistons are free, as are the rings, their pins and retaining method.

3.5.7) Connecting rods :

The connecting rods are free, but they must be made from material consisting of at least 80% pure iron by weight.

The crankshaft is free but must be made from ferrous material.

The use of non-ferrous materials for balancing the crankshaft is prohibited.

3.5.8) Bearings :

The bearings are free

3.5.9) Fuel feed and induction system :

It is prohibited to inject fuel or additives other than those specified in these regulations.

3.5.10) Camshaft :

The camshaft is free, but must be made from ferrous material.

3.5.11) Valves :

The valves are free.

3.6 Fuel - Oxidant

The term "fuel" shall include all substances fed into the combustion chambers of the engine, excepting only atmospheric air and the water vapour contained naturally therein.

The only fuel authorised is diesel fuel corresponding to the following specifications:

- hydrocarbon content, % w/w : 99.0 min.
- density, kg/litre : 0.860 max.
- cetane number (ASTM D613) : 60 max.
- calculated cetane number (ASTM D976/80): 60 max.

Oxidant:

Only air may be mixed with the fuel as an oxidant.

Any chemical additive which increases the power is forbidden.

3.7 Fuel system

3.7.1) Fuel tank type :

Fuel tanks are free in respect of capacity, design and material. However, they must be of unmodified proprietary manufacture and must be fully proofed against accidental fuel spillage or leakage from fillers and vents. Filler caps must have an efficient closing action.

Note : It is recommended to fit FIA/FT3 safety fuel tanks as described in Article 253 of Appendix J to the FIA International Sporting Code.

3.7.2) Fuel tank position :

The position of the fuel tank is free, subject to the following requirements:

- The tank must be securely mounted on the chassis and must be adequately protected from impact.
- The tank must be mounted between the internal faces of the chassis rails (or their vertical projections), in front of the fifth wheel but behind the cab.

3.8 Cooling systems

3.8.1) Fuel/oil cooling system :

Fuel and oil coolers must be fitted within the periphery of the bodywork when viewed from any angle.

3.8.2) Water and charge cooling system :

The water and charge cooling system is free, on condition that it is fitted within the periphery of the bodywork when viewed from any angle.

Water injection on the radiators is authorised on condition that this water contains no power-boosting additives.

3.9 Exhaust system

3.9.1) Turbocharger :

The number of turbochargers is limited to two. It is permitted to change the make and type of the turbocharger(s) insofar as this does not cause any change in body shape.

Turbocharger wastegates may be fitted.

The turbochargers must be single stage compression and expansion.

3.9.2) Smoke :

The engine must not produce visible exhaust emissions under race conditions.

3.9.3) Exhaust pipes :

Exhaust components after the cylinder head may be modified, but must terminate within the perimeter of the vehicle (in plan view), between the front and rear wheels and not more than 500 mm above the ground (in side view).

3.10 Air induction system

Components of the air induction system may be modified or replaced.

No part of the air induction system may project more than 200 mm beyond the sides and roof of the cab, and bonnet.

The total cross-sectional area of the air induction pipes or ram air collector boxes must not exceed 1,000 cm^2.

Air induction pipes must not pass inside the cab.

3.11 Transmission

3.11.1) Gearbox :

The gearbox is free, but it must have a working reverse gear.

3.11.2) Clutch :

The clutch is free.

3.11.3) Axles :

Only rigid axles are authorised.

Only the rear wheels may be driven.

Electronic traction control is prohibited.

Transmission and final drive ratios may be changed.

3.12 Steering

It is not permitted to use the rear axle for active steering.

3.12.1) Camber angle :

The camber angle on the steering axle may not be negative. Zero or positive camber is allowed, but with no tolerance.

3.12.2) Castor angle :

The castor angle is free.

3.13 Suspension

The suspension and shock absorbers are free, with the exceptions that :

- in the case of pneumatic suspension, the tanks must be of unmodified proprietary manufacture. It is forbidden for the vehicle's air system pressure to exceed 12 bar.
- it is forbidden for suspension components, other than bearing bushes, which have any axle locating function to be made of non-ferrous material (e.g. spring hangers, shackles, springs, "U" bolts).

3.14 Wheels

3.14.1) Specifications :

The choice of the size and material of the wheel rims is free, on condition that the safety equipment specified in article 2.15 is respected. The wheels must be of unmodified proprietary manufacture and must be such that no part of the rim or tyre fouls on any part of the vehicle under extreme conditions of traffic, steering or suspension movement.

The maximum allowed wheel rim width is 229 mm (9.0 inches).

The wheel nuts and studs used must match the wheel rims used, to ensure adequate fixing strength. Wheel nuts must be of unmodified proprietary manufacture.

All the complete wheels of a truck must be interchangeable (i.e. a rear wheel may be mounted on a front hub with no special tools or accessories). Thus, it must be possible to fit two front wheels to a rear hub in twin wheel configuration. The measurement "a" of the drawing 290-6 must be respected.

3.14.2) Spare wheel :
Any spare wheel must be removed.

3.15 Tyres

3.15.1) Specifications :
- The maximum permitted section width is 315 mm.
- All tyres fitted to the vehicle must have a tread depth of 2 mm minimum measured at the beginning of each race or practice.
- Re-cut and/or hand grooved tyres are not permitted, except for the tread patterns authorised by the general prescriptions below.
- The vehicle must be fitted with all-weather tyres designed for road use and available through normal retail outlets. Special tread compounds and/or patterns are not allowed, nor are any externally applied chemical compounds which may affect tyre grip.
- The maximum cold inflation pressure must not exceed the tyre manufacturer's permitted pressure.
- All tyre carcasses must be of tubeless radial steel construction.
- Tyre carcasses must not have undergone any major repairs.
- All tyres must have a speed rating of "L" or higher, and a load index of minimum 3.5 tons.

3.15.2) Tread patterns :
Important : Note that the following concessions on hand cut treads are granted for safety reasons. It is absolutely forbidden to make any other modifications to standard tread patterns.
a - Driven axles :
hand cut treads may be added, but all such treads must not be deeper than the wear bars on the tyre treads.
b - Non-driven axles :
no hand cut tread patterns allowed.
3.15.3) Approved manufacturers :
All tyres used must be to E.E.C. type approval standard (E.E.C. regulation 54) or equivalent.
3.15.4) Retreaded tyres :
Retreaded tyres must not be fitted to any steering axles.
Note : It is recommended that all worn-out racing tyre carcasses be destroyed and not retreaded for either race or road use.

3.16 Brakes

3.16.1) Braking system
The braking system is free but of proprietary manufacture.
The braking of the vehicle must be activated by the driver alone, (ABS or any similar system is forbidden).
An effective parking brake system must be fitted, operated mechanically (i.e. not by air pressure, but by springs).
3.16.2) Cooling
Brake cooling is permitted using water and/or ducted air only. Cooling ducts must comply with the bodywork regulations given in Art. 3.18).
Any water tanks must be securely attached to the chassis.
Tanks secured to the chassis with straps must have a minimum of two mounting points each with a minimum dimension of 20 mm along the length of the tank and 100 mm in the circumferential direction.
Extra tanks must use mounts direct to the chassis or commercial spacer mounts to the adjacent tank.
3.16.3) Air tanks and air pressure :
Brake air tanks must be of unmodified proprietary manufacture. It is forbidden for the vehicle's air system pressure to exceed 12.0 bar.
Any air tanks must be securely attached to the chassis and must be approved as being equal to or greater than the working pressure of the system.

3.17 Cab

The cab must come from a series in which at least 100 units have been built. The truck manufacturer must be able to justify this number at any time using official documentation from the cab manufacturer.
3.17.1) Cab dimensions (see drawing 290-3) :
The width of the cab must not be less than 1800 mm.
The lowest point of the floor of the cab must be at least 1000 mm above the ground.
3.17.2) Cab material :
The external surface of the cab including the floor must be made from the material of the original cab. The form of the cab floor is free.
3.17.3) Dashboard :
The dashboard is free.
3.17.4) Trim :
The interior of the cab is free.
3.17.5) Steering wheel :
The steering wheel is free, on condition that it comes from a recognised manufacturer of this type of accessories.
3.17.6) Trailer susies :
Trailer susie pipes must be removed.
3.17.7) Lighting system :
All lamps required by law for normal road use, excepting sidelights, must be functional at all times and must not be obscured. Generators must remain in circuit. No lights other than those authorised in the International Convention on Road Traffic may be lit when the vehicle is on the circuit, excepting the rear light as described in Art. 2-17).
3.17.8) Windscreen :
The original windscreen may be replaced with a windscreen made from polycarbonate or glass-polycarbonate composite.
If made from polycarbonate, the windscreen must be a minimum of 5.5 mm thick, hardcoated, appropriately marked and must respect the homologation regulations of the European Community (Full Type).

3.18 Bodywork

3.18.1) Aerodynamic devices :
Standard or optional aerodynamic devices listed by the manufacturer may be removed. They may be fitted only if they do not contravene the requirements of point 3.18.2.
3.18.2) Body fairings :
Side and top fairings may be fitted subject to the following provisions:
- All fairings must be firmly affixed and made of rigid material.
- No fairing may impede access to safety devices, e.g. fuel and electrical cut-off switches.
- If fairings impede inspection of the side guards, they must be removable for scrutineering purposes.
- Top fairings must be able to support the weight of a person walking on them.
- No fairing may extend forward of the front wings or rearward of the end of the chassis rails. No wheel/tyre may be obscured by a side fairing.
- No fairing may extend more than 100 mm above the highest face of the chassis rails behind the cabin; fairings must not impede the connection of a semi-trailer to the trailer coupling plate.
- Fairings may not extend beyond the unfaired vehicle outline (in plan view).
- Rear axle mudguards may be integral with fairings.
- Underbody fairings are forbidden.

3.19 Windscreen and body glazing

All window operating mechanisms must function as designed by the manufacturer (in particular, the window-opening system envisaged by the manufacturer must remain identical).

3.20 Batteries

Vehicle batteries must be of at least 55 Ah capacity. They must not be positioned inside the cab. They must be securely fastened, each battery to be held in place by at least two steel bolts of 10 mm minimum diameter, and must be protected to prevent short-circuiting of terminals.
Batteries must not be visible from outside the vehicle.

3.21 Telemetry and radio

The transmission of data between the moving truck and any person or instrument exterior to the truck is forbidden. Only vocal radio transmission is authorised

3.22 Accessories

Supplementary accessories which do not affect the performance or the handling of the vehicle are permitted (e.g. air horns).

ARTICLE 4 : REGULATIONS FOR RACE TRUCKS

4.1 General

All modifications are forbidden unless expressly authorised by the regulations below or imposed under the chapter "Safety Equipment". The components of the truck must retain their original function.

Unless specifically prohibited by these regulations, it is permitted to use "pattern parts" as direct replacement of manufacturer's parts, provided such parts are commercially available as direct replacements and are of the same design as the vehicle manufacturer's parts.
Repair of components may be effected using accepted repair methods such as welding. Competitors' attention is drawn to the limitations of such action : the addition of gussetts, additional welding or material, the change of shape, design, material, surface finish or removal of material constitute a "modification".
Any reference to standard specification and/or parts and/or materials in these regulations shall be interpreted as a reference to the manufacturer's listed standard item(s) only as set down in the appropriate type approval. It shall not include manufacturer's options.
Apart from the engine management systems, closed loop systems are prohibited.
It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the Meeting that his truck complies with these regulations in their entirety at all times during the event.
All vehicles must be presented at scrutineering in a clean and dry condition.

4.2 Dimensions (See drawing 290-3)

4.2.1) Overall width :
The overall width of the vehicle is limited to 2550 mm
4.2.2) Height :
The height of the vehicle at the highest point of the cab must not be less than 2500 mm measured vertically over a width of 1800 mm.
This measurement must be taken 50 mm in front of the rearmost point of the cab.
4.2.3) Ground clearance :
The minimum ground clearance is 200 mm.
No part of the vehicle must touch the ground when all the tyres on one side are deflated.
This test shall be carried out on a flat surface under race conditions (driver(s) on board).
In the case of adjustable suspension, these measurements shall be made with the suspension in its lowest position.
No mechanical part must generate an aerodynamic effect.
4.2.4) Ride attitude :
The chassis must not slope downward towards the rear of the vehicle when measured at the midpoint of the wheelbase.

4.3 Weight

The minimum allowed weight for Race Trucks is defined as follows :
- 5500 kg, of which 3400 kg measured at the front wheels, for trucks fitted with drum brakes at the front
- 5800 kg, of which 3600 kg measured at the front wheels, for trucks fitted with disc brakes at the front
The weight is checked with the truck in race condition without the driver and driver equipment.
It is permitted to make up the weight of the vehicle with one or several ballasts, provided that they are strong and unitary blocks, attached by means of tools, easily accessible for affixing seals, placed between the chassis rails, between the cab and the fifth wheel.

4.4 Chassis

4.4.1) General :
It is permitted to locally modify the chassis frame in order to comply with the safety requirements specified within these regulations.
The chassis frame must be made of a ferrous material and must consist of two main members forming a "U" shape (drawing 290-5). It will not be permitted to weld anything whatsoever to these members.
It is essential that the minimum dimensions set out in drawing 290-5 are respected between the front and rear axles. A tolerance of -1500mm will be applied to the length of chassis between front and rear axles requiring a 'U' section of the dimensions shown in drawing 290-5.
The members must not be modified or cut at any point and must form a symmetrical "U" shape.
They may only be pierced so that various parts , as well as the reinforcements and supports described in article 4.4.2, may be affixed.
Regardless of manufacturer's specification the semi-trailer pin coupling position must be forward of the drive axle(s) centreline.
Manufacturer's options on chassis shape and material are prohibited.
4.4.2) Authorised reinforcements :
- The two main members may be reinforced locally with reinforcements of the same type (material, section shape...) positioned inside the "U" shape. The total combined length of these reinforcements must not be more than 1000 mm per main member. These reinforcements may be joined together by transversal members with a constant section that must always be less than those of the main members measured at the location of the reinforcement.
A maximum of 12 transversal members may be used, including the original ones.
No more than 7 of these transversal members may be joined together longitudinally and the maximum circumference of any of these transversal or longitudinal members is 280 mm.
Longitudinal members must not be directly connected to the main members.
A "U" or "L" section will be assumed equivalent to a complete rectangle for this measurement.
A maximum of 5 plates per main member may be used to connect the transversal members that are joined with longitudinal members. Each of these plates may not exceed 220 x 300 mm in size and may use a maximum of 6 bolts of a diameter no greater than 14 mm.
- The two main members may be reinforced locally with steel plates of 6 mm maximum thickness fitted on the upper surface.
A maximum of 8 bolts are authorised for affixing these plates to the main members.
The holes through which these bolts pass must have a diameter of no more than 6 mm and must be situated at least 150 mm from one another.
4.4.3) Additional supports for equipment :
Additional supports for equipment are authorised.
They must be bolted to the main members through no more than 2 plates with a maximum length of 250 mm each. The distance between these plates must be greater than 300 mm.
Supports must not be joined together and their sections must have a maximum circumference of 200 mm.
4.4.4) Fifth wheel (see drawing 290-3) :
Regardless of manufacturer's specification, the semi-trailer pin coupling (fifth wheel) must be situated forward of the drive axle centreline.
It must be possible for the vehicle to couple to a normal semi-trailer.
The fifth wheel must be a commercial model homologated for a load of 17 tonnes, with an opening of 50 mm.
It must be made of ferrous material and have a minimum weight of 100 kg.
It may be modified in order to reach this minimum weight but must retain its original external appearance.
The fifth wheel must be situated between 1200 mm and 1300 mm from the ground at all times.
For taking this measurement, the fifth wheel shall be horizontal.
No other part, within a circle of 2040 mm radius, the centre of this circle being the kingpin axis of the fifth wheel, may be situated less than 100 mm below the upper surface of the fifth wheel.
4.4.5) Wheel track :
The combination of axles, wheels and tyres fitted must not increase the front or rear track by more than 150 mm beyond the vehicle manufacturer's standard specifications.

4.5 Engine

4.5.1) Modifications permitted :
The engine and its ancillaries may only be modified within the limitations of the following regulations. It is permitted, unless specifically disallowed by these regulations, for internal engine components to be substituted by alternative components sourced from the same engine manufacturer.
Camshaft timing and profile may be modified but valve lift must remain as standard.
4.5.2) Modifications prohibited :
Unless specifically permitted by these regulations, the engine and all, ancillaries must be exactly to manufacturer's standard

specification.
It is not permitted to substitute other engine blocks or cylinder head castings for those which are the manufacturer's standard for the specified engine.
4.5.3) Engine location :
The engine location is free.

4.6 Fuel - Oxidant

The term "fuel" shall include all substances fed into the combustion chambers of the engine, excepting only atmospheric air and the water vapour contained naturally therein.
The only fuel authorised is diesel fuel corresponding to the following specifications:
- hydrocarbon content, % w/w : 99.0 min.
- density, kg/litre : 0.860 max.
- cetane number (ASTM D613) : 60 max.
- calculated cetane number (ASTM D976/80): 60 max.

Oxidant:
Only air may be mixed with the fuel as an oxidant.
Any chemical additive which increases the power is forbidden.

4.7 Fuel system

4.7.1) Fuel tank :
4.7.1.1 Type
Fuel tanks are free in respect of capacity, design and material. However, they must be of unmodified proprietary manufacture and must be fully proofed against accidental fuel spillage or leakage from fillers and vents. Filler caps must have an efficient closing action.
Note : It is recommended to fit FIA/FT3 safety fuel tanks as described in Article 253 of Appendix J to the FIA International Sporting Code.
4.7.1.2 Position :
The position of the fuel tank is free, subject to the following requirements:
- The tank must be securely mounted on the chassis and must be adequately protected from impact.
- The tank must be mounted between the internal faces of the chassis rails (or their vertical projections), in front of the fifth wheel but behind the cab.

4.7.2) Fuel delivery systems :
Fuel injection system parts regulating the quantity of fuel to the engine may be changed, provided that the new parts fit the original location without any modification. The original fuel system designed must be retained in its entirety as the manufacturer envisaged e.g. Cummins PT. The maximum engine free run out speed may be changed.

4.8 Cooling system

4.8.1) Oil cooling system :
Lubrication oil sumps may be baffled internally, but the standard sump casing must be retained. Fuel and oil coolers may be fitted within the periphery of the bodywork.
4.8.2) Water cooling system :
Radiators may be enlarged, replaced by alternative specification items, or supplemented by additional radiators, provided that all radiators are fitted within the periphery of the bodywork.

4.9 Exhaust system

4.9.1) Exhaust pipes :
Exhaust components after the cylinder head may be modified, but must terminate within the perimeter of the vehicle (in plan view), between the front and rear wheels and not more than 500 mm above the ground (in side view).
It is permitted to fit a "wastegate" or "pop-off valve" provided such a component is of proprietary manufacture.
4.9.2) Smoke :
The engine must not produce visible exhaust emissions under race conditions

4.10 Air induction systems

4.10.1) Air induction system :
Air induction system components up to the turbocharger or supercharger may be modified or replaced. No part of the air induction system may project more than 200 mm beyond the sides and roof of the cab, and bonnet.
The total cross-sectional area of the air induction pipes or ram air collector boxes must not exceed 1,000cm².
Air induction pipes must not pass inside the cab.
4.10.2) Turbochargers :
It is permitted to change the type of turbocharger(s) provided that the induction system components (i.e. the pipework and fittings between the turbocharger(s) and engine(s)) are standard components manufactured by the relevant engine manufacturer. It is permitted to fit an air to air intercooler provided that all relevant components are standard production parts. The manufacturer's standard number of turbocharger units and stages must be fitted in the original position(s).
4.10.3) Restrictors (forced induction engines only) :
All forced induction race trucks must be fitted with a restrictor fixed to the compressor housing. All the air necessary for feeding the engine must pass through this restrictor, which must respect the following:
The maximum internal diameter of the restrictor is 65 mm, maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 100 mm upstream of a plane passing through the most upstream extremities of the wheel blades (drawing 290-4).
This diameter must be complied with, regardless of the temperature conditions.
The external diameter of the restrictor at its narrowest point must be less than 71 mm, and must be maintained over a distance of 5 mm to each side. The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor. Attachment by means of a needle screw is not authorised.
For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing.
The heads of the screws must be pierced so that they can be sealed.
The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment).
In case of an engine with two parallel compressors, each compressor must be limited by a restrictor with a maximum internal diameter of 46mm, and a maximum external diameter of 52 mm, within the conditions specified above.
For the trucks racing for the FIA European truck racing cup a restrictor will be supplied by the FIA. (see article 7.6 of the European Truck Racing Cup regulations for its mounting).

4.11 Transmission

4.11.1) Gearbox :
The gearbox is free but must be of a direct manual lever actuated type normally fitted to heavy trucks and must have a working reverse gear. The fitment of automatic gearboxes of any type is not allowed.
It must only be possible to activate the 3 or 4 main gears by means of a mechanical lever, without exerting any power other than that of the driver.
The distance from the rear of the engine to the front of the gearbox must not be altered from that specified with the original gearbox.
Fluid couplings between engine and gearbox are not allowed, regardless of the manufacturer's specification.
4.11.2) Clutch :
The clutch is free, but must be of the friction type.
4.11.3) Final drive :
Differentials may be locked by any means.
Electronic traction control is forbidden.
Transmission and final drive ratios may be changed.
4.11.4) Ratios :
Transmission and drive ratios may be changed.
4.11.5) Axles :
The front axle assembly cannot be driven.
Axles (both driven and steering) may be replaced by any suitable alternative but must be rated by the relevant axle manufacturer as having an on-road weight rating equal to, or greater than,

the vehicle's original axles. They must be fixed to the recipient vehicle's attachment points only.

4.12 Steering

It is not permitted to use the rear axle for active steering.

4.12.1) Castor angle :

The castor angle is free.

Castor angle adjusting wedges may be fitted to any axle but must be securely located either by being welded to the axle spring pad or so that it is impossible for such wedges to be removed without first removing at least two axle/spring clamping bolts.

4.12.2) Camber angle :

The camber angle on the steering axle may not be negative. Zero or positive camber is allowed, but with no tolerance.

4.13 Suspension

4.13.1) Modifications :

With the exception of the permitted modifications listed, it is forbidden to add any components to the suspension or to relocate/realign standard components such as location devices or any device which allows alteration of chassis ride height.

Air suspensions are not authorised.

4.13.2) Ride height :

Ride height may be adjusted by the re-setting of manufacturer's specification road springs to lower the ride height to the minimum manufacturer's specification for the vehicle laden to design weight. In the case of multi-leaf steel springs this may be achieved by the removal of one or more leaves from the unit.

4.13.3) Shock absorbers :

Shock absorber units may be of any proprietary make and type, provided that their number, their type, their working principle remain unchanged. The attachment points are free

Shock absorbers which can be adjusted when the truck is in motion are forbidden.

4.13.4) Anti-roll bars :

Anti-roll bars may be added to the vehicle or standard items modified, as long as they perform no function except for the control of relative lateral roll between axles and chassis and as long as they are not adjustable while the truck is in motion. They must not affect axle location or geometry in any way.

4.14 Wheels

All the complete wheels of a truck must be interchangeable (i.e. a rear wheel may be mounted on a front hub with no special tools or accessories). Thus, it must be possible to fit two front wheels to a rear hub in twin wheel configuration. The measurement "a" of the drawing 290-6 must be respected.

4.14.1) Permitted options :

Wheels are free within the limitations imposed by the following regulations.

4.14.2) Prohibited options :

No part of any wheel rim or tyre fitted to a steering axle may project outward past the plane of the wheel nut/wheel rim interface. Thus it must be possible to fit two front rims to a rear hub in a twin wheel configuration. The use of wheels and wheel nuts of non-proprietary manufacture is prohibited, as is the modification of proprietary manufacture wheels. No part of the wheel rim or tyre must foul any part of the vehicle under extremes of steering or suspension movement. Wheel nuts and studs must match the wheel rims being used, to ensure adequate fixing strength. The use of any spacers or adapters between the road wheels and the hub/drum is prohibited.

4.14.3) Construction and materials :

The use of split rim wheels is prohibited. Outer wheels on twin wheel installations must be of metallic steel construction. There is no restriction in respect of wheel material for the remaining road wheels.

4.14.4) Dimensions :

Wheel diameter is unrestricted, wheel rim width is limited to a maximum of 230 mm.

4.14.5) Spare wheel :

Any spare wheel must be removed.

4.15 Tyres

4.15.1) Specifications :

- The maximum permitted section width is 315 mm.
- All tyres fitted to the vehicle must have a tread depth of 2 mm minimum measured at the beginning of each race or practice.
- Re-cut and/or hand grooved tyres are not permitted, except for the tread patterns authorised by the general prescriptions below.
- The vehicle must be fitted with all-weather tyres designed for road use and available through normal retail outlets. Special tread compounds and/or patterns are not allowed, nor are any externally applied chemical compounds which may affect tyre grip.
- The maximum cold inflation pressure must not exceed the tyre manufacturer's permitted pressure.
- All tyre carcasses must be of tubeless radial steel construction.
- Tyre carcasses must not have undergone any major repairs.
- All tyres must have a speed rating of "L" or higher, and a load index of minimum 3.5 tons.

4.15.2) Tread patterns :

Important : Note that the following concessions on hand cut treads are granted for safety reasons. It is absolutely forbidden to make any other modifications to standard tread patterns.

a - Driven axles :

hand cut treads may be added, but all such treads must not be deeper than the wear bars on the tyre treads.

b - Non-driven axles : no hand cut tread patterns allowed.

4.15.3) Approved manufacturers :

All tyres used must be to E.E.C. type approval standard (E.E.C. regulation 54) or equivalent.

4.15.4) Retreaded tyres :

Retreaded tyres must not be fitted to any steering axles.

Note : It is recommended that all worn-out racing tyre carcasses be destroyed and not retreaded for either race or road use.

4.16 Brakes

The use of disc brakes is allowed only on the front axle, provided the axle and braking system assembly is homologated for commercial use and the components of this assembly are of proprietary manufacture.

4.16.1) Modifications permitted :

There are no restrictions other than as set out in 4.16.2. Brake cooling is permitted using ducted air or water. Cooling ducts must comply with the bodywork regulations in Art.) 4.18. Brake air tanks may be repositioned to allow the fitment of safety devices and/or fuel tank. An effective parking brake system must be fitted which is held on by mechanical energy. The parking brake must be operable by the driver sitting normally with safety belts fastened.

The braking of the vehicle must solely be driven by the foot of the driver, electronic assistance is forbidden.

4.16.2) Modifications prohibited :

Brake air tanks must be of unmodified proprietary manufacture. It is forbidden for the vehicle's air system pressure to exceed 12.0 bar.

Any air tanks must be securely attached to the chassis and must be approved as being equal to or greater than the working pressure of the system.

The use of any brake system components which are not of proprietary manufacture is prohibited. Anti-lock braking systems (e.g. ABS) are forbidden.

4.16.3) Brake cooling :

Brake cooling is permitted using water and/or ducted air only. Cooling ducts must comply with the bodywork regulations given in Art. 4.18.

Any water tanks must be securely attached to the chassis.

Tanks secured to the chassis with straps must have a minimum of two mounting points each with a minimum dimension of 20 mm along the length of the tank and 100 mm in the circumferential direction.

Extra tanks must use mounts direct to the chassis or commercial spacer mounts to the adjacent tank.

4.17 Cab

4.17.1) Cab dimensions (See drawing 290.3) :

The width of the cab must not be less than 1800 mm.

The lowest point of the floor of the cab must be at least 1000 mm above the ground.

4.17.2) Cab material :

The external surface of the cab including the floor must be the original cab. The tunnel which is the portion of the floor inside the edges of the chassis rails, may be modified in form only. The tunnel material must be the same as the floor material

4.17.3) Dashboard :

Dashboards may be deleted or modified as long as this does not cause any modification to the structure of the cab.

4.17.4) Trim :

The interior of the cab is free.

4.17.5) Steering wheel :

The steering wheel is free but it is strongly recommended that a non-standard steering wheel of proprietary manufacture be fitted. It is recommended that a soft rim type be used.

4.17.6) Trailer susies :

Trailer susie pipes must be removed.

4.17.7) Lighting system :

All lamps required by law for normal road use, excepting sidelights, must be functional at all times and must not be obscured. Generators must remain in circuit. No lights other than those authorised in the International Convention on Road Traffic may be lit when the vehicle is on the circuit, excepting the rear light as described in article 2-17.

4.17.8) Controls :

All controls must be those provided by the manufacturer and they must retain their original function but they can be worked on to make them more accessible or more easily usable.

4.17.9) Seat :

The driver's seat, and the fitting of a passenger seat are free, but must comply with 2.18.5.

4.18 Bodywork

4.18.1) General :

It is permitted to make modifications under the general restriction that the appearance of the vehicle bears a close resemblance to the standard vehicle, including radiator grill and other trim. The cab must retain its original strength and integrity.

4.18.2) Aerodynamic devices :

Standard or optional aerodynamic devices listed by the manufacturer may be removed. They may be fitted only if they do not contravene the requirements of point 4.18.3.

4.18.3) Body fairings :

Side and top fairings may be fitted subject to the following provisions:

- All fairings must be firmly affixed and made of rigid material.
- No fairing may impede access to safety devices, e.g. fuel and electrical cut-off switches.
- If fairings impede inspection of the side guards, they must be removable for scrutineering purposes.
- Top fairings must be able to support the weight of a person walking on them.
- No fairing may extend forward of the front wings or rearward of the end of the chassis rails. No wheel/tyre may be obscured by a side fairing.
- When viewed from the side, all parts of all fairings must be parallel to the chassis rails for their entire length.
- No fairing may extend more than 100 mm above the top face of the chassis rails; fairings must not impede the connection of a semi-trailer to the trailer coupling plate.
- Fairings may not extend beyond the unfaired vehicle outline (in plan view).
- Rear axle mudguards may be integral with fairings.
- Underbody fairings are forbidden.

4.18.4) Silhouette

The only modifications permitted are those which do not infringe the above regulations.

4.19 Windscreen and body glazing

All window operating mechanisms must function as designed by the manufacturer (in particular, the window-opening system envisaged by the manufacturer must remain identical).

4.20 Batteries

Vehicle batteries must be of at least 55 Ah capacity. They must not be positioned inside the cab. They must be securely fastened, each battery to be held in place by at least two steel bolts of 10 mm minimum diameter, and must be protected to prevent short-circuiting of terminals.

Batteries must not be visible from outside the vehicle.

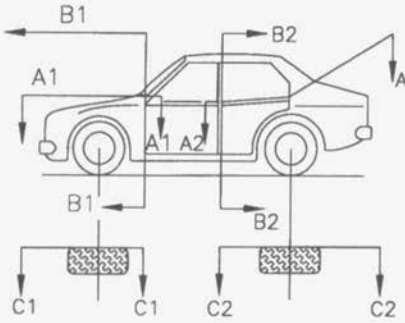
4.21 Telemetry and radio

The transmission of data between the moving truck and any person or instrument exterior to the truck is forbidden. Only vocal radio transmission is authorised

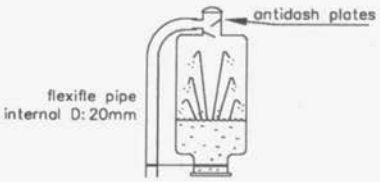
4.22 Accessories

Supplementary accessories which do not affect the performance or the handling of the vehicle are permitted (e.g. air horns).

Drawings



Drawing No 251–1



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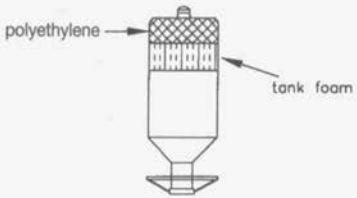

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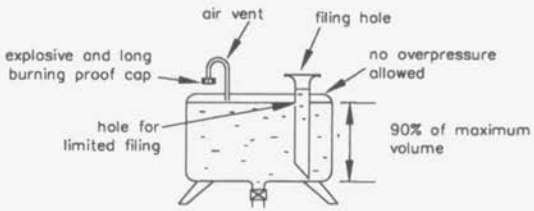

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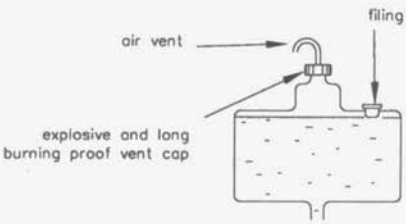
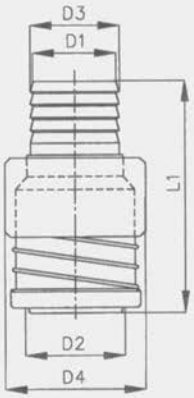


Drawing No 252–4

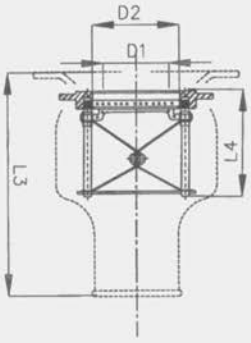
Drawing No 252–5

	D1	D2	D3	D4	L1
PP20M	2.0"	2.5"	2.25"	3.7"	6.3"
PP20MR	1.5"	2.5"	1.75"	3.7"	6.3"
PF20MS	1.5"	2.5"		3.7"	6.9"
PP15M	1.5"	2.0"	1.75"	3.3"	5.7"
PF30M	1.25"	1.65"	1.45"	2.68"	4.64"
PF40M	1.25"	1.65"	1.45"	2.68"	4.64"
PP125M	1.25"	1.75"	1.5"	2.9"	5.1"

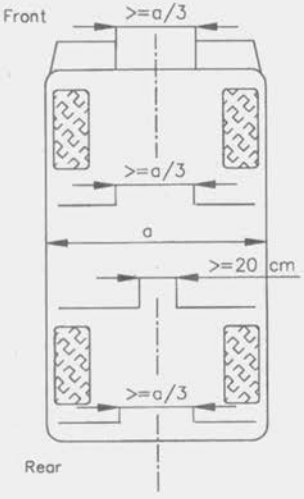


Push pull series male

	D1	D2	L3	L4
PP20F	2.0"	2.5"	6.75"	3.25"
PP20FR	2.0"	2.5"	6.75"	3.25"
PF31F	1.75"	2.12"	5.3"	3"
PF41F	1.75"	2.12"	5.7"	3.38"
PP15F	1.5"	2.0"	6.75"	3.25"
PP125F	1.25"	1.75"	6.25"	3.1"

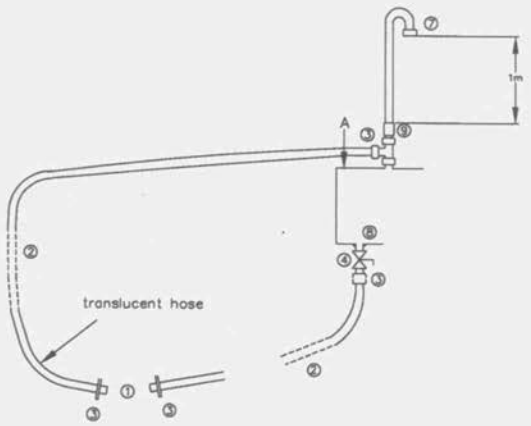


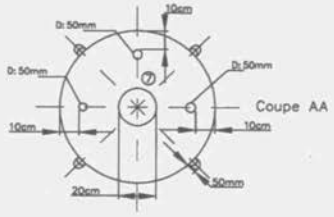
Push pull series female

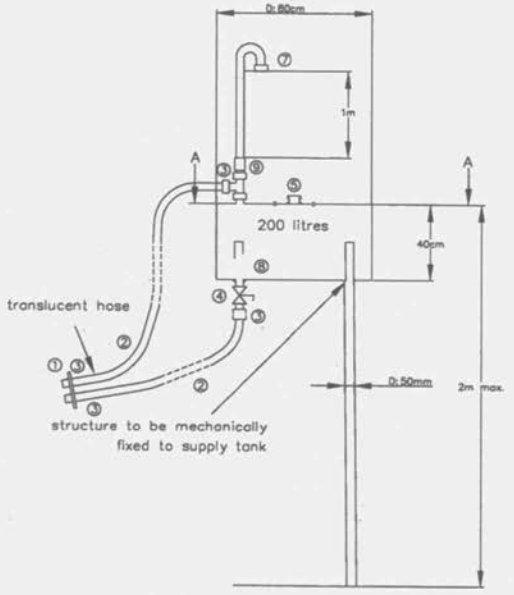


Drawing No 252–6

Drawing No 252-7







① Male refuelling valves (drawing 252-5)

② Hose internal diameter : 38mm

③ Quick coupling, internal diameter : 38mm

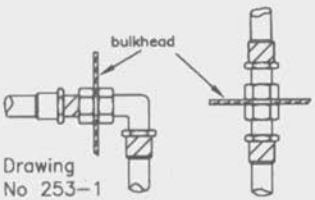
④ self closing valve, internal diameter 38mm

⑤ Filler (dry break)

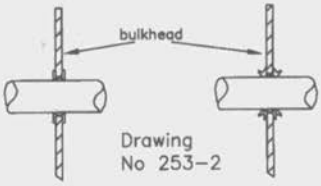
⑦ flame arrestor

⑧ Flow restrictor (drawing 258-4)

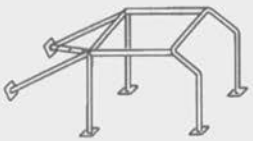
⑨ Discriminator valve



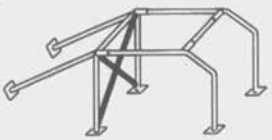
Drawing
No 253–1



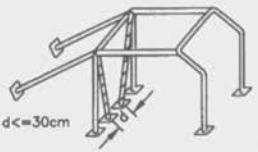
Drawing
No 253–2



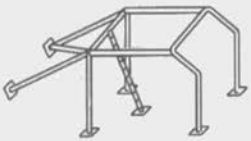
Drawing No 253–3



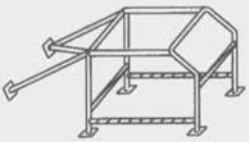
Drawing No 253–4



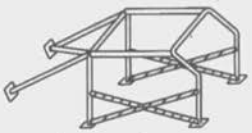
Drawing No 253–5



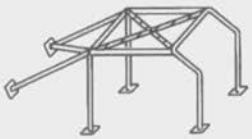
Drawing No 253–6



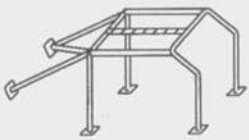
Drawing No 253–7



Drawing No 253–8

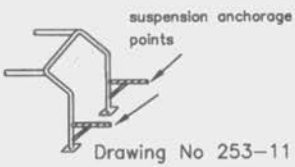


Drawing No 253–9

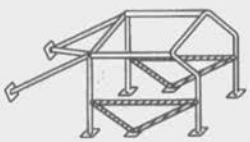


Drawing No 253–9A

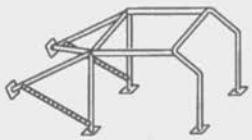
Drawing No 253–10



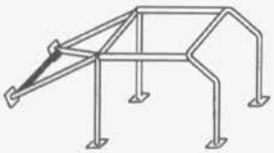
Drawing No 253–11



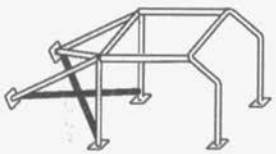
Drawing No 253–12



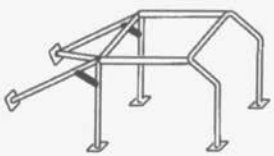
Drawing No 253–13



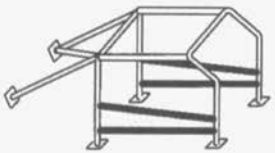
Drawing No 253–14



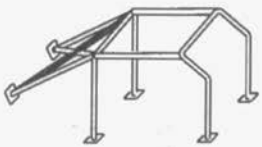
Drawing No 253–15



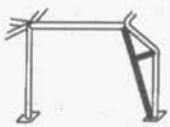
Drawing No 253–16



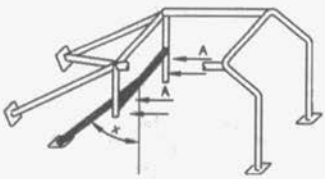
Drawing No 253–17

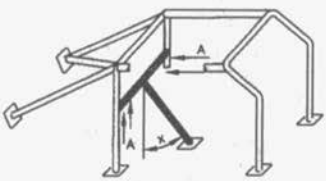


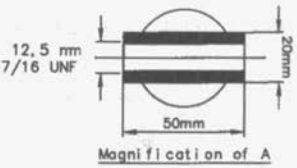
Drawing No 253–17A



Drawing No 253–17B

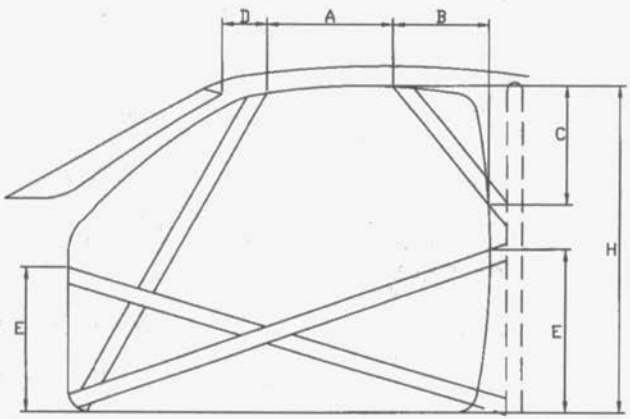




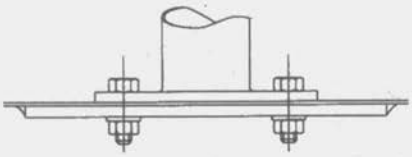


Ⓐ mounting holes for harnesses ⊗ minimum angle: 30°

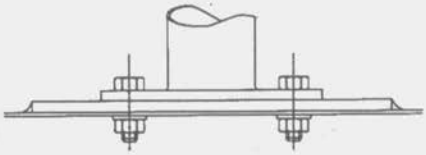
Drawing No 253–17C



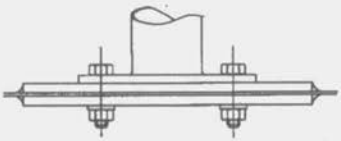
Drawing No 253–17D



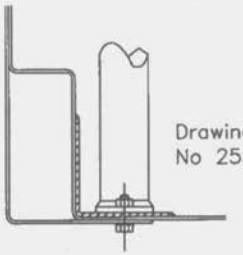
Drawing No 253–18



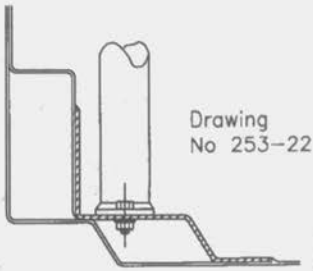
Drawing No 253–19



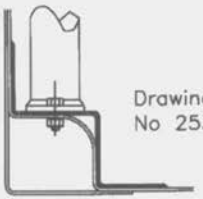
Drawing No 253–20



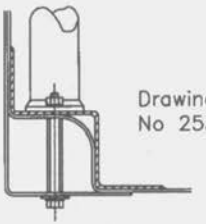
Drawing No 253–21



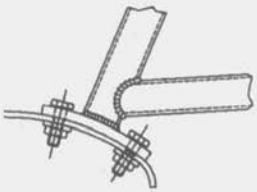
Drawing No 253–22



Drawing No 253–23



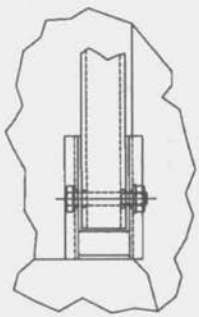
Drawing No 253–24

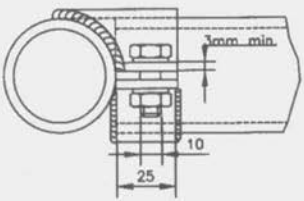


Drawing No 253–25

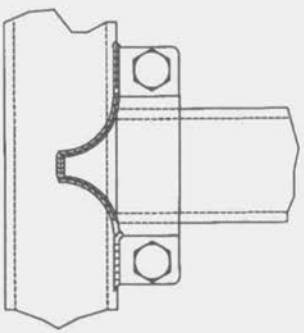
Drawing No 253–27

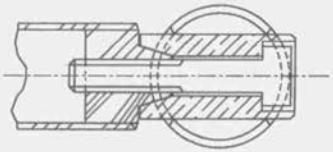
Drawing No 253–26



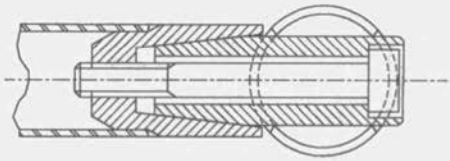


direction of applied load

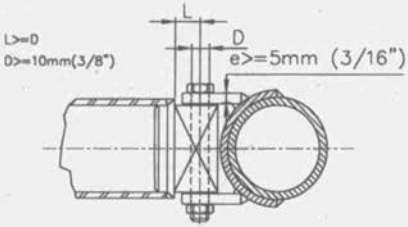




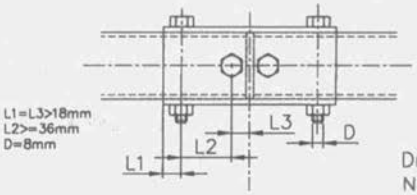
Drawing No 253-28



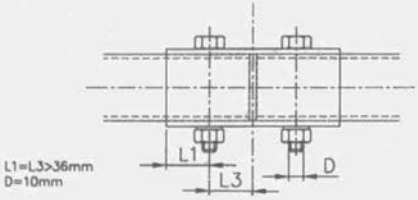
Drawing No 253-29



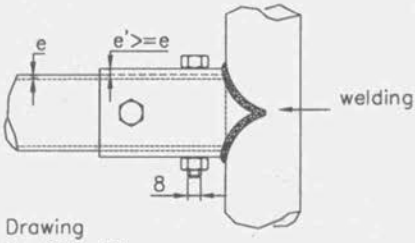
Drawing No 253-30



Drawing
No 253-31

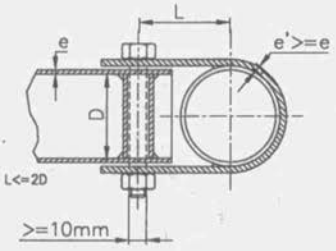


Drawing No 253-32



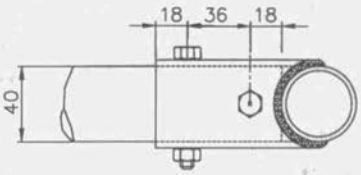
Drawing
No 253-34

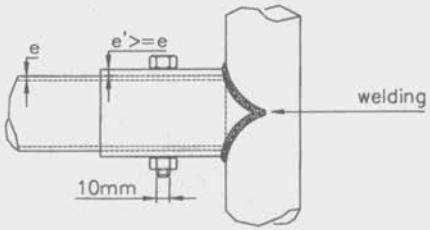
Dimensions in mm



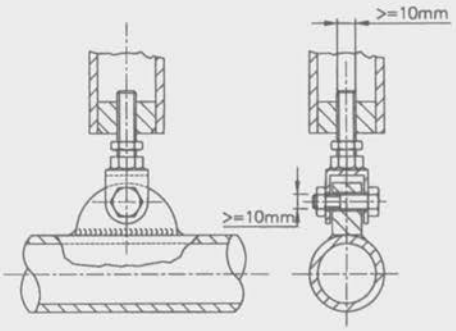
L must be minimum
The clamp width must
be at least 25mm

Drawing
No 253-33

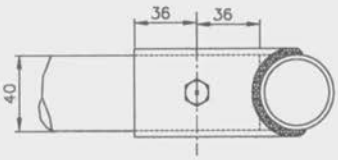


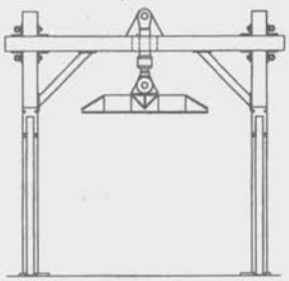


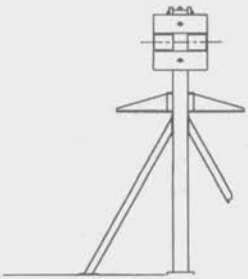
Drawing
No 253-35

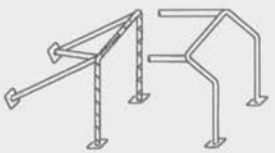


Drawing No 253-36

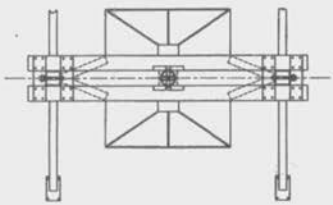




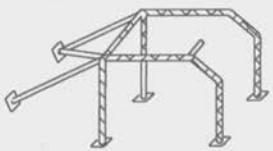




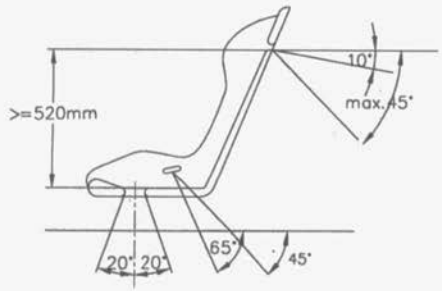
Drawing No 253-38

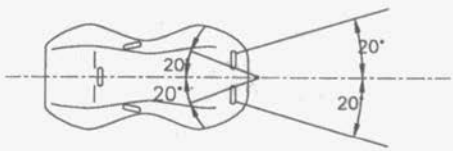


Drawing
No 253-37

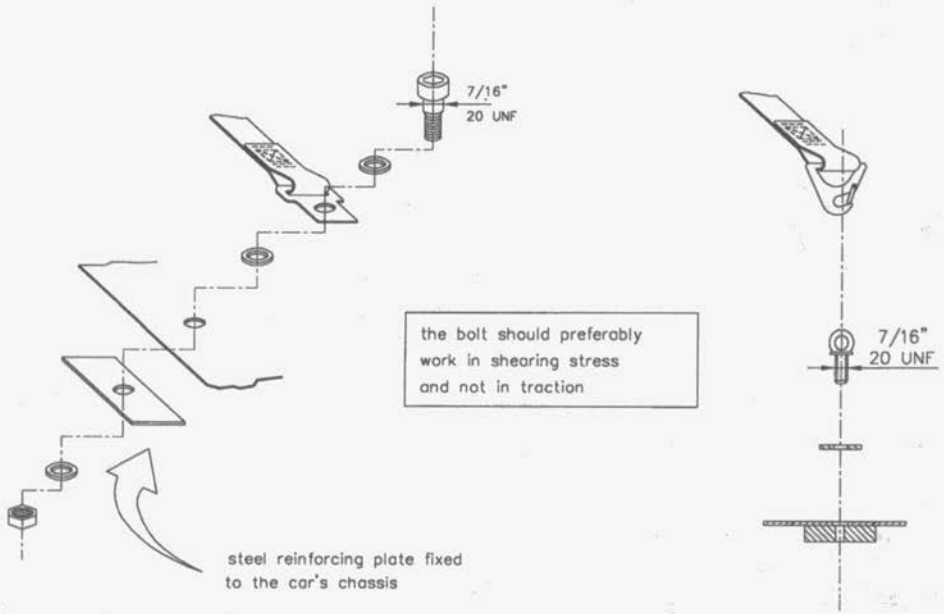


Drawing No 253-39

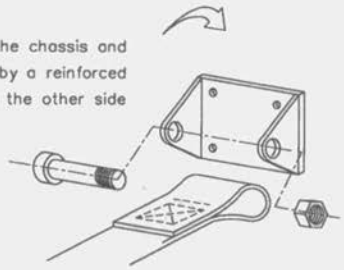




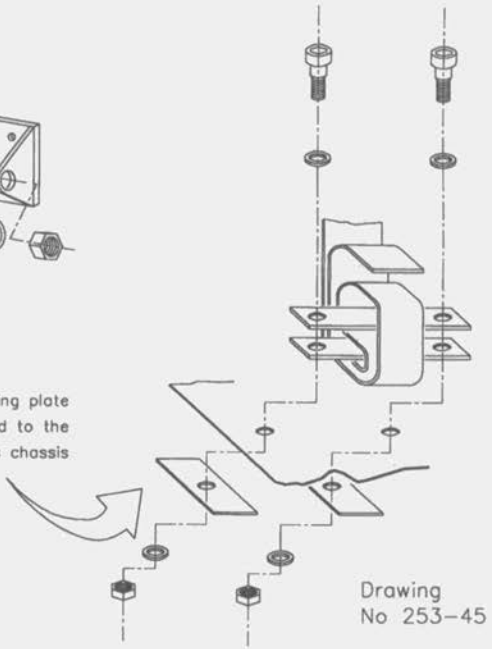
Drawing No 253–42



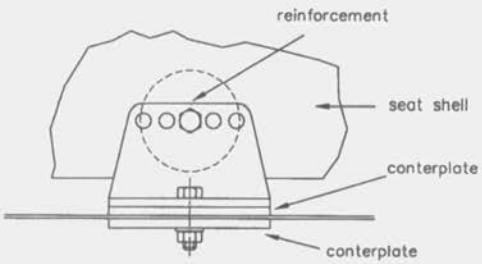
Drawing No 253–43



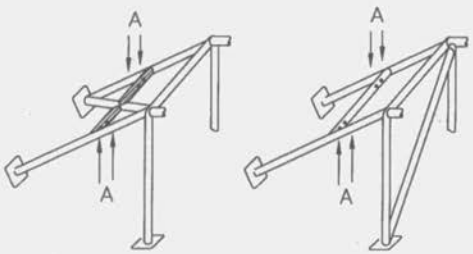
Drawing
No 253-44



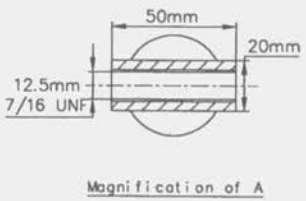
Drawing
No 253-45



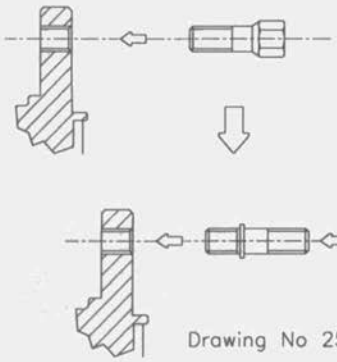
Drawing No 253-52



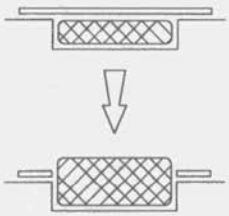
Ⓐ mounting holes for harness



Drawing No 253-53

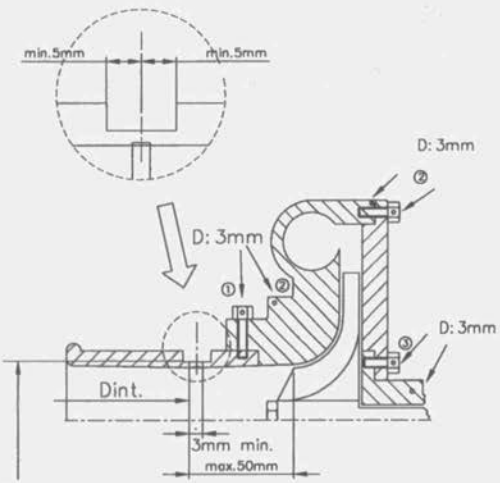


Drawing No 254-1



Drawing
No 254-2

Drawing No 254-3



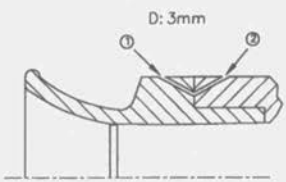
① hole for restrictor or restrictor/compressor housing.

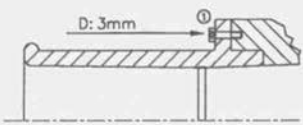
② hole for compressor housing or housing/flange

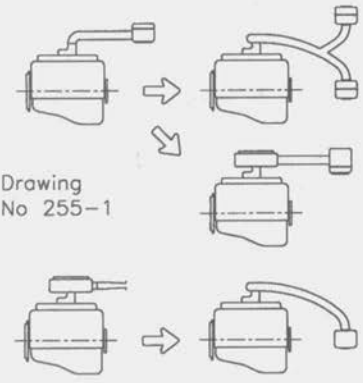
③ hole for central housing or housing/flange

Drawing
No 254-4

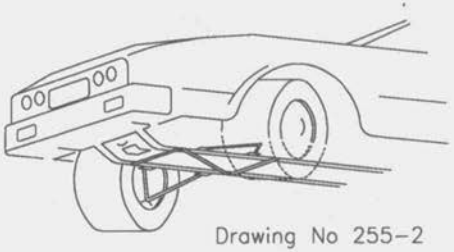
OTHER POSSIBILITIES



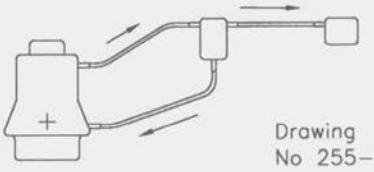




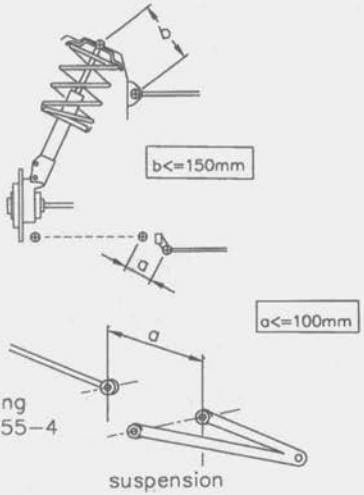
Drawing
No 255-1



Drawing No 255-2

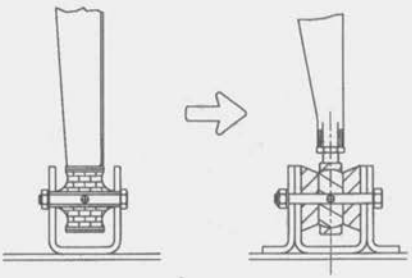


Drawing
No 255-3

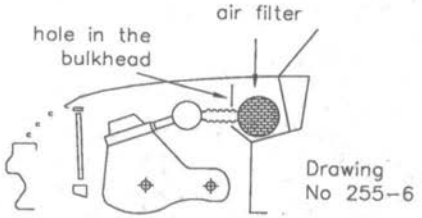


Drawing
No 255-4

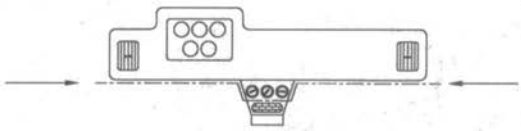
suspension



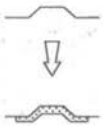
Drawing No 255-5



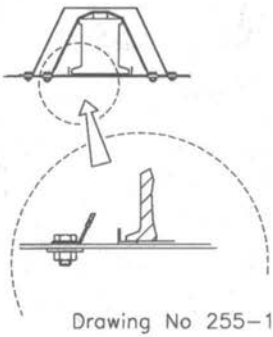
Drawing No 255–6



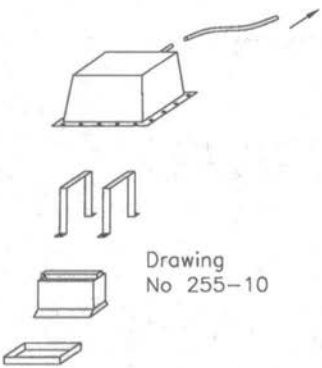
Drawing No 255–7



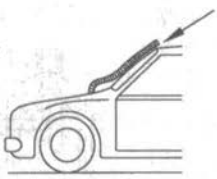
Drawing No 255–8



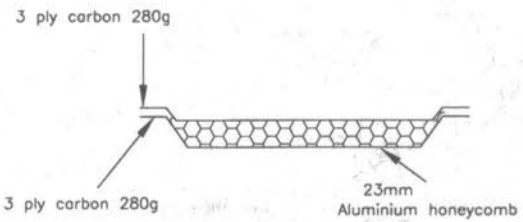
Drawing No 255–11



Drawing No 255–10



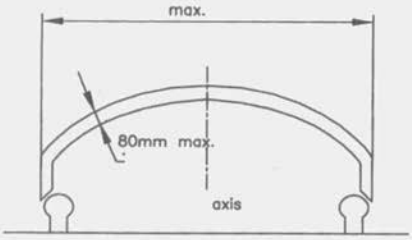
Drawing No 255–13



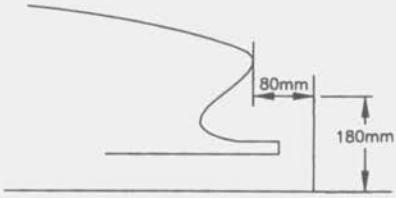
Carbon 4/4 twin 280gms E620

Aluminium honeycomb 23mm 1/8" cel4.5 or 6.35

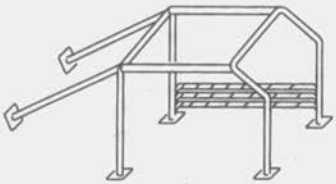
Drawing No 255–14



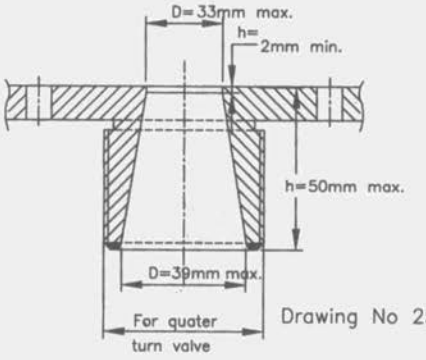
Drawing No 258–1



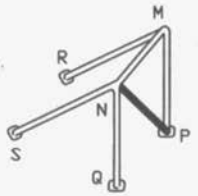
Drawing No 258–2



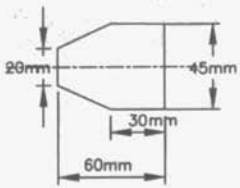
Drawing No 258–3



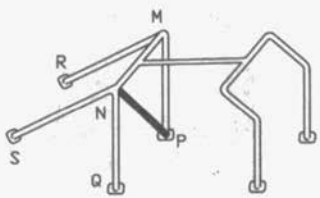
Drawing No 258–4



Drawing No 259–1

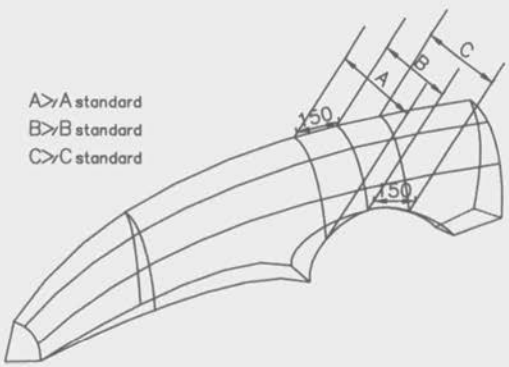


Drawing No 259–2

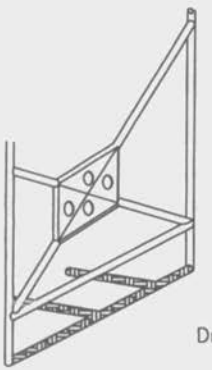


Drawing No 259–3

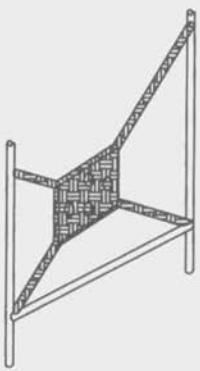
Drawing No 262–1



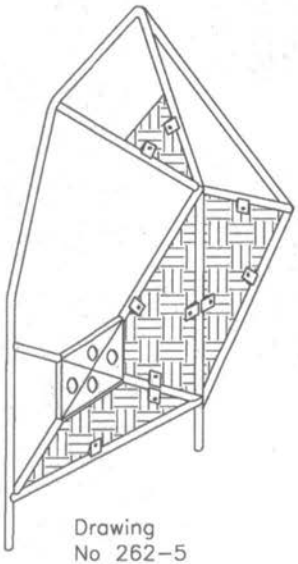
Drawing
No 262–2



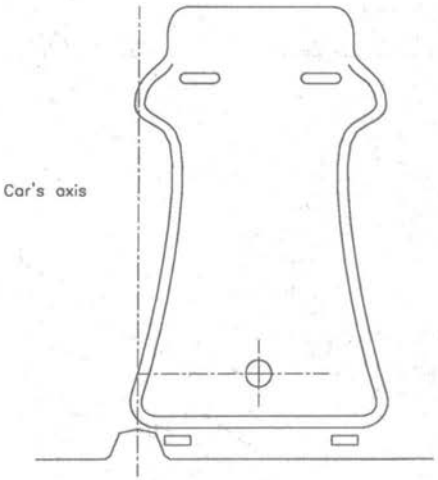
Drawing No 262–3



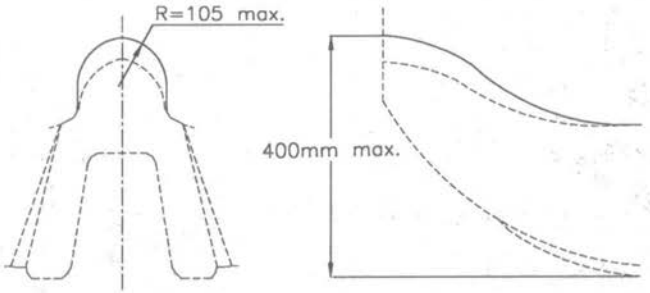
Drawing No 262–4



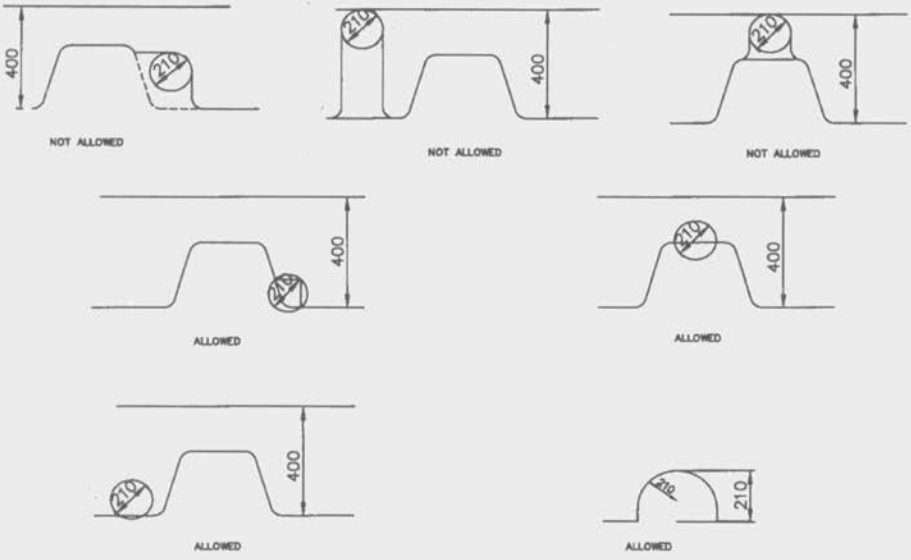
Drawing
No 262-5

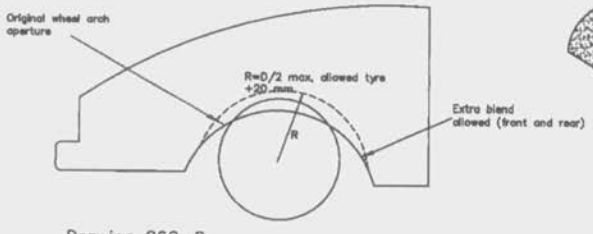


Drawing No 262-6

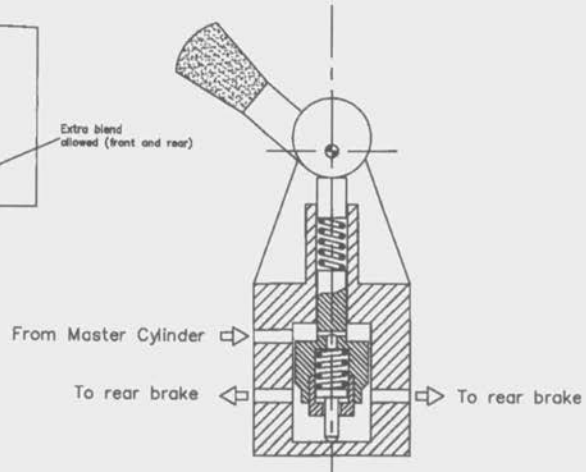


Drawing No 262-7

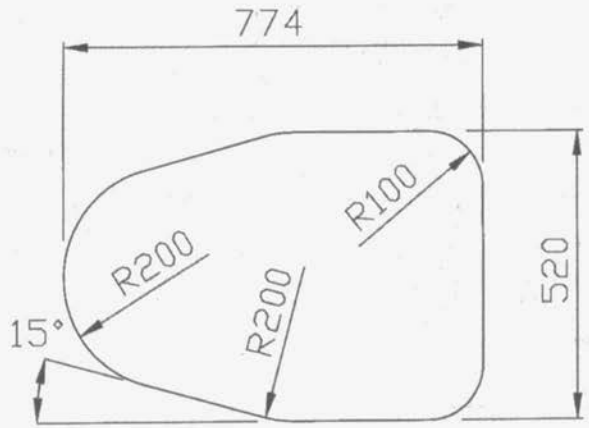




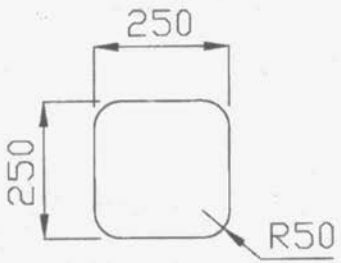
Drawing 262–8

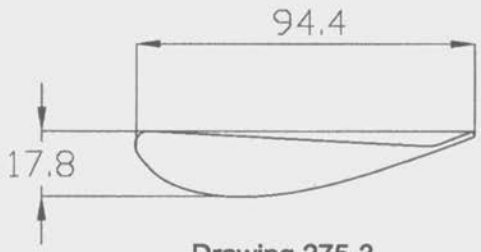


Drawing 262–9

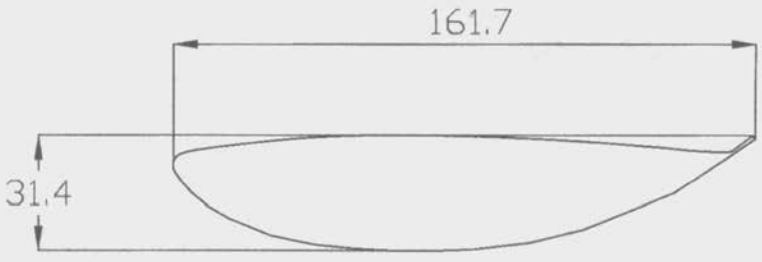


Drawing 275-1

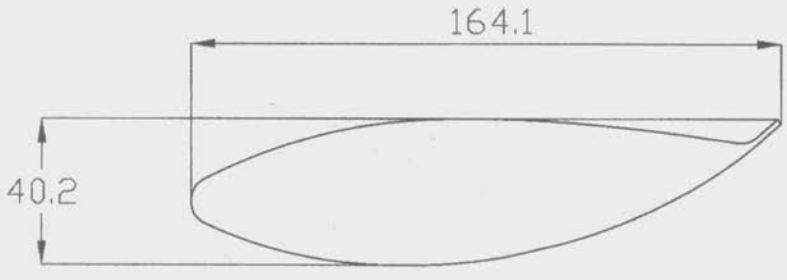




Drawing 275-3

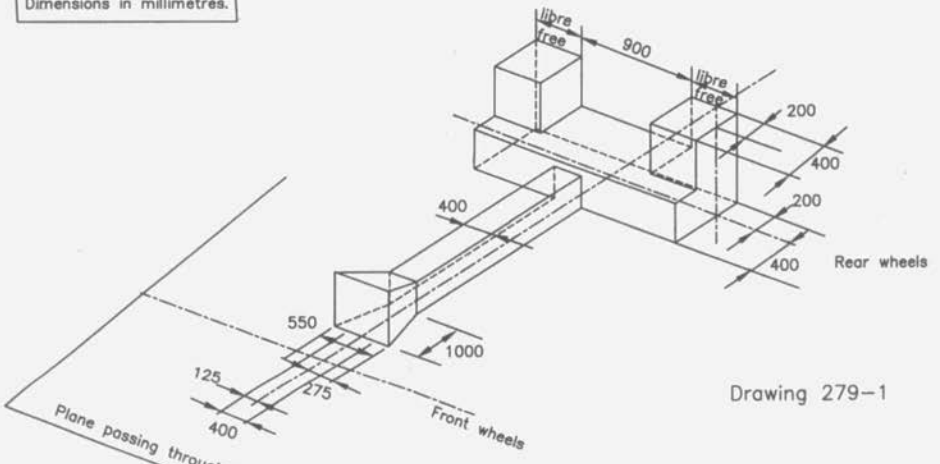


Drawing 275-4

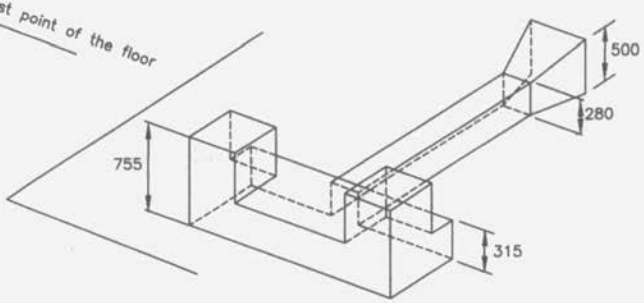


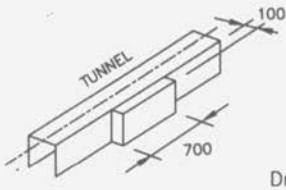
Drawing 275-5

Dimensions in millimetres.



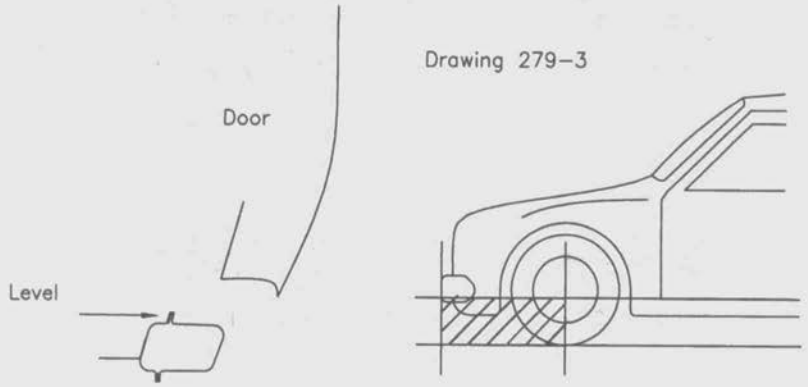
Drawing 279–1

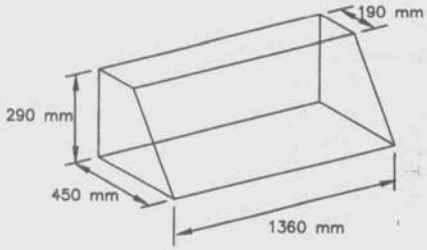




Drawing 279–2

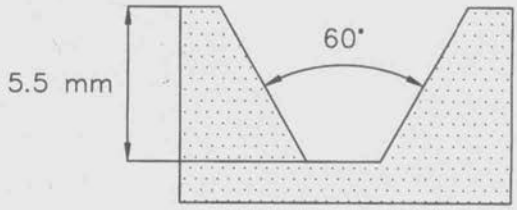
Drawing 279–3





Drawing 279–4

Drawing 279–5



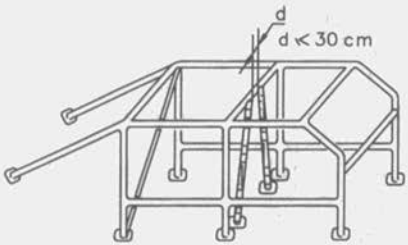
Drawing No 283–1

Drawing No 283–2

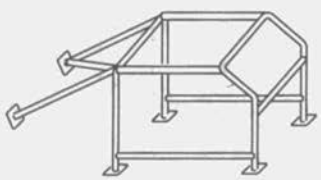
Drawing No 283–3

Drawing No 283–4

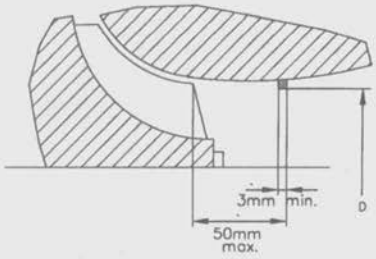
All dimensions in mm



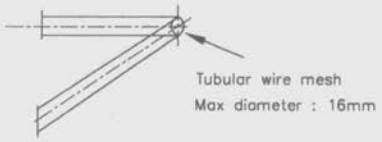
Drawing No 283–5



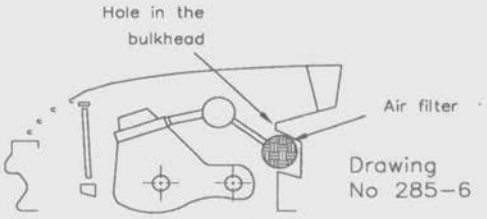
Drawing No 283–6



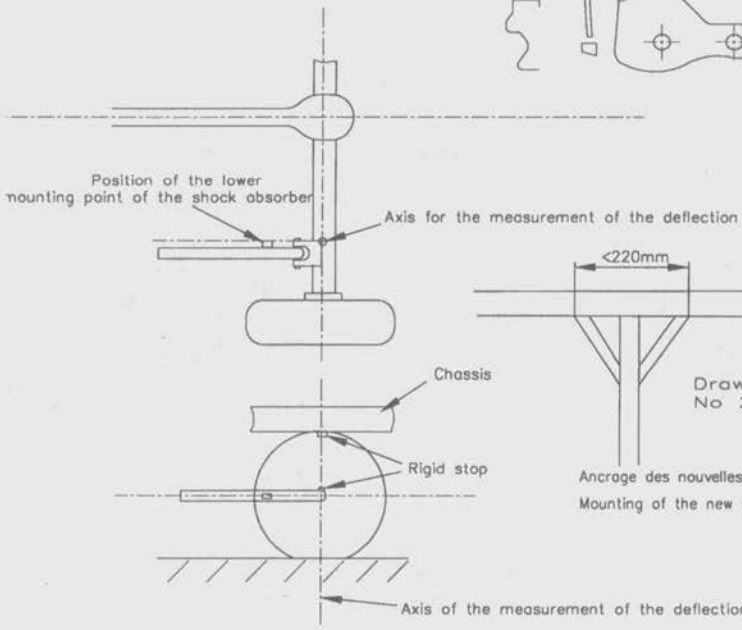
)rawing No 285–1



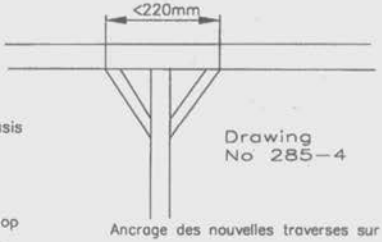
Drawing No 285–2



Drawing No 285–6

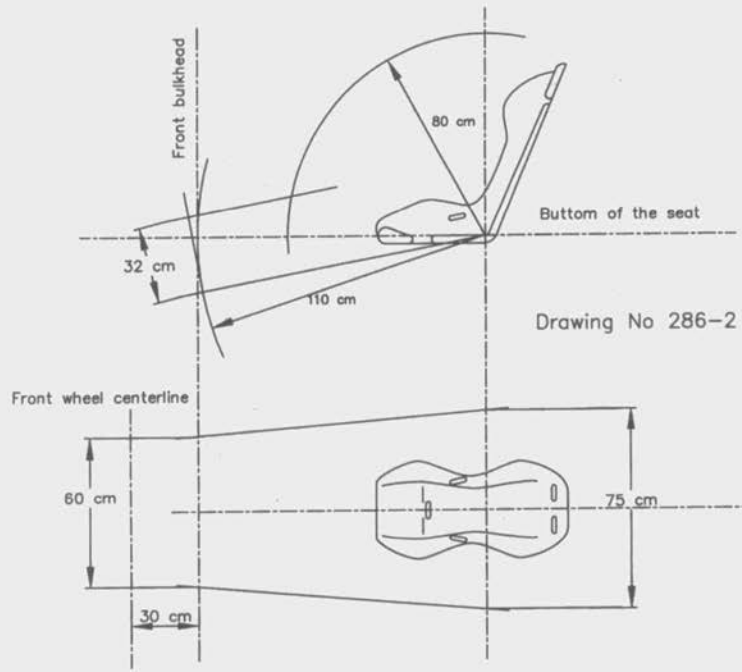


Drawing No 285–3

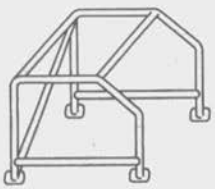


Drawing No 285–4

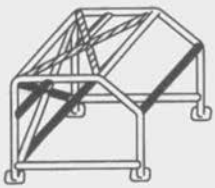
Ancrage des nouvelles traverses sur le châssis
Mounting of the new struts on the chassis



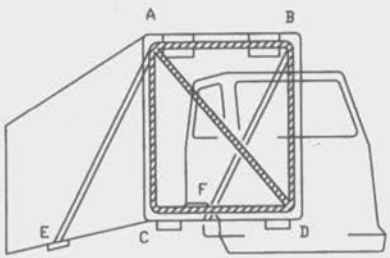
Drawing No 286–2



Drawing No 287–1

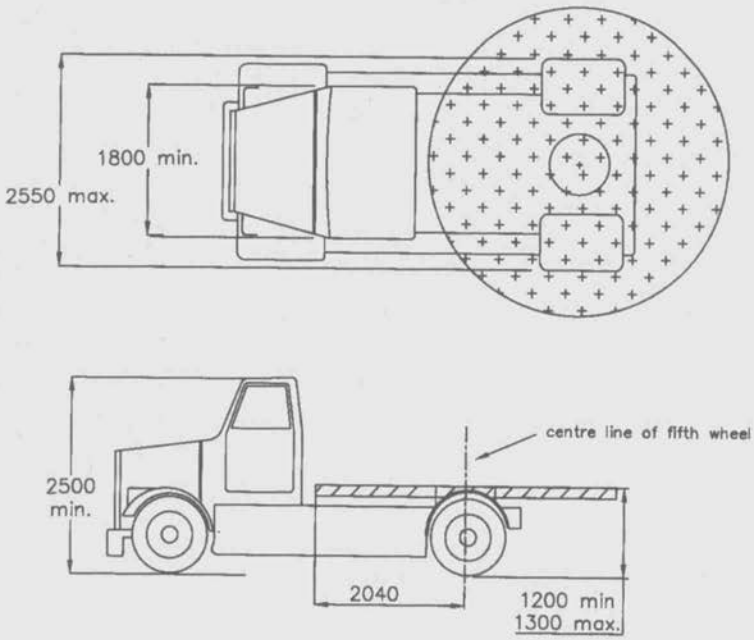


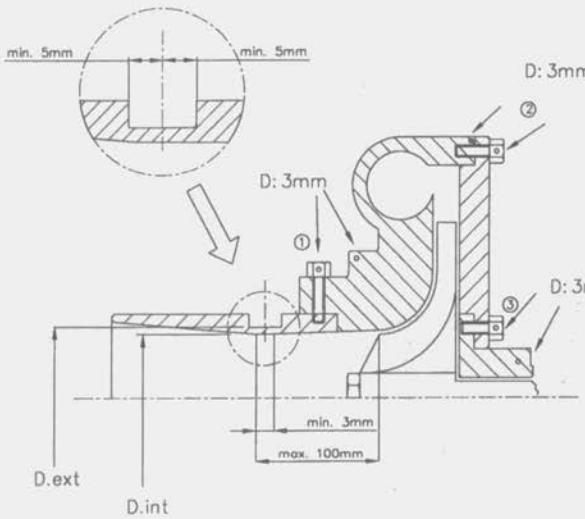
Drawing No 287–2



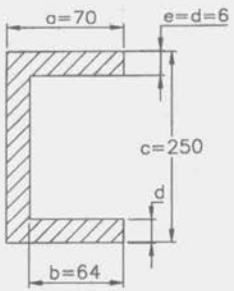
Drawing No 287–3

Drawing No 290–3

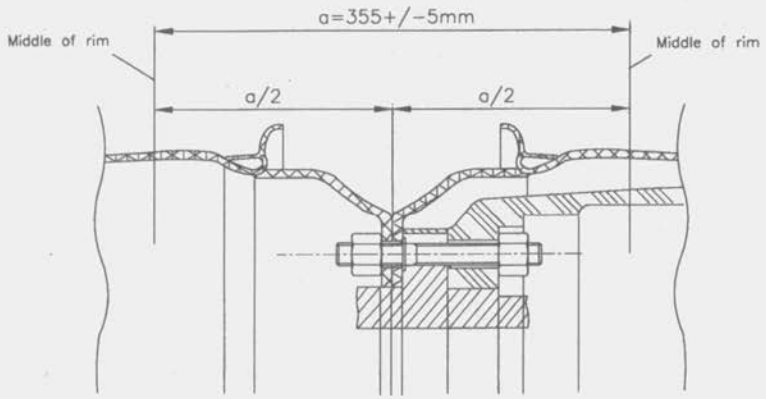




Drawing
No 290-4



Drawing
No 290-5



Drawing
No 290-6

List of tank materials homologated by the FIA
Technical list n° 1

1. FUEL TANK MATERIALS APPROVED IN ACCORDANCE WITH THE 1999 SPECIFICATIONS

*** FT3-1999 TANKS**

United States (USA)

1. Aero Tec Labs, Spear Road Industrial Park, Ramsey, N.J. 07446
   Tel. (1) 201 825 1400
   Fax (1) 201 825 1962
   Material :
   * ATL-565
   * ATL-810-C
   * 826-A
2. Fuel Safe Systems,
   Aircraft rubber
   63257 Nels Anderson road
   Bend OR 97701
   Tel. (1) 541 388 0203
   Fax (1) 541 388 0307
   Material :
   * Cross linked polyethylene CL100 (CONST 871)
   * CO 1298
   * N 1298

Great Britain (GB)

1. Aero Tec Labs
   1, Patriot drive
   Rooksley
   Milton Keynes,
   MK13-8PU
   Tel. (44) 1908 351 700
   Fax (44) 1908 351 750
   E-mail : atl@powernet.com
   Material :
   * ATL-565
   * ATL-810-C
   * 826-A
2. Premier Fuel Systems Ltd, Willow Road, Trent Lane Industrial Estate, Castle Donington, Derby DE7 2NP
   Tel. (44) 1332 850515
   Fax (44) 1332 850749
   Material :
   * Kevlar-F209
   * Nylon-F221
3. Advanced Fuel Systems Ltd, Saxon House, Station road Newport, Essex CB11 3PL
   Tel. (44) 1799 541955
   Fax (44) 1799 541983
   Material :
   * AFS 151

Italy (I)

1. GIPI Cars
   Via Abruzzo,7
   20090 Opera, (Mi)
   Tel/Fax : (39) 02 57600 279.
   Material :
   * GPRNN009
2. M.E.RIN s.r.l.
   Via R. Lepetit n°21
   00155 ROMA
   Tél : (39) 06 90 74 553
   Fax : (39) 06 90 74 553
   Material :
   * SFT/41076
3. Irvin Aerospace Spa
   Via delle Valli snc
   PO Box 106
   04011 Aprilia (LT)
   Tél : (39) 06 92 828 46
   Fax : (39) 06 92727165
   Material :
   * FT3

Germany (D)

1. Continental AG
   Werk Aarchen
   Hüttenstr. 7
   52068 Aachen
   * UNA 2047

France (F)

1. PRONAL'S
   Rue du Trieu du Quesnoy
   ZI de Roubaix-Est
   59115 Leers
   Tel. (33) 3 20 99 75 00
   Fax (33) 3 20 99 75 20
   Material :
   * 24353/00001
   * 29912/00002
   * 32672/01324
2. Société Lyonnaise des Réservoirs Souples,
   18, rue Guillaume-Tell
   75017 Paris
   Tel. (33) 1 47 66 11 86
   Fax (33) 1 46 22 19 88
   Material :
   * DP20
3. Ets J. RICHE, 48, rue de Vire,
   14110 Conde sur Noireau.
   Tel : (33) 231698100
   Fax : (33) 231690623
   * RAN807 (black colour)

*** FT3-5-1999 TANKS**

United States (USA)

1. Aero Tec Labs
   Material :
   * ATL-514-D
   * ATL-797-B
2. Fuel Safe Systems
   Material :
   * Di 1198

Great Britain (GB)

1. Aero Tec Labs
   Material :
   * ATL-514-D
   * ATL-797-B

France (F)

1. PRONAL'S,
   Material :
   * 27355/01326
   * 33228/01325
   * 33229/00561

Italy (I)

1. Irvin Aerospace Spa
   * SP31A

*** FT5-1999 TANKS**
United States (USA)
1. Aero Tec Labs
Material :
* ATL-818-D

Great Britain (GB)
1. Aero Tec Labs
Material :
* ATL-818-D

France (F)
1. PRONAL'S
Material :
* 39387/02396

2. FUEL TANKS MATERIALS ACCEPTED UNTIL 31.12.2003
*** FT3 TANKS**
The following manufacturers are homologated to make FT3 tanks.

Brasil (BR)
1. Pirelli Componentes Industriais LTDA,
Alamada Araguaia 3787
06400 Barueri Sao Paulo

Germany (D)
1. Continental AG
Werk Uniroyal Aachen, Abt. Behälterbau,
Postfach 410, Hüttenstr. 7
52068 Aachen
UNA-2047
2. GA Georg Alber
Karl Beck Stra(e 7
D-84533 Marktl. a. Inn
Tel : (49) 086 78 246
Fax : (49) 086 78 70 13

France (F)
1. Aerazur, 58, Boulevard Galliéni,
92137 Issy-les-Moulineaux Cedex
Tel. (33) 1 45 54 92 80
Fax (33) 1 45 54 92 80 Poste 465
2. Ets J. RICHE, 48, rue de Vire,
14110 Conde sur Noireau.
Tel : (33) 231698100
Fax : (33) 231690623
3. Société Lyonnaise des Réservoirs Souples,
18, rue Guillaume-Tell, 75017 Paris
Tel. (33) 1 47 66 11 86
Fax (33) 1 46 22 19 88
4. PRONAL'S,
Rue du Trieu du Quesnoy
ZI de Roubaix-Est
59115 Leers
Tel. (33) 3 20 99 75 00
Fax (33) 3 20 99 75 20

Great Britain (GB)
1. Aero Tec Labs, 40 Clarke Road,
Mount Farm Industrial Estate,
Bletchley, Milton Keynes, MK1-1LG
Tel. (44) 1908 270590
Fax (44) 1908 270591
2. FPT Industries Ltd, The Airport,
Portsmouth, Hants PO3 5PE
3. Premier Fuel Systems Ltd, Willow Road, Trent Lane
Industrial Estate, Castle Donington, Derby DE7 2NP
Tel. (44) 1332 850515
Fax (44) 1332 850749

Italy (I)
1. M.E.RIN s.r.l.,Via R. Lepetit n°21, 00155 ROMA
Tél : (39) 06 90 74 553
Fax : (39) 06 90 74 553
2. MOMO CORSE S.R.L., Str. del Francese 97/50/C, 10156
TORINO
Tel : (39) 011 47 05 05 7
Fax : (39) 011 47 01 50 7
3. SEKUR / IRVIN
Via delle valli snc, 04011 APRILIA (Latina)
Tel : (39) 069 28 28 46 - 069 27 53 65
Fax : (39) 069 27 27 16 5
4. SPARCO, Via Lombardi 5/7,
10071 BORGARO T.SE (Torino)
Tel : (39) 011 46 11 91 1
Fax : (39) 011 46 11 90 1

Japan (J)
1. Fujikura Rubber Works Ltd,
N°-2-11-20, Nishi-Gotanda
Shinagawa-ku, Tokyo
Tel. (81) 3 3490 2124
Fax (81) 3 3490 2170
2. Kojima Press Ltd, 3-30 Shimoichibacho Toyota, Aichiken
3. Sakura Rubber Co Ltd,
1-21-17 Sasazuka,
Shibuya Ku, Tokyo
Tel. (81) 3 3466 2171
Fax (81) 3 3460 4910
4. Sumitomo Electric Industries Ltd
1-1-3 Shimaya
Konohana-ku, Osaka
Tel. (81) 6 6466 5565
Fax (81) 6 6466 5730
5. Yokohama Rubber Corporation Ltd
36-11, Shinbashi, 5-Chome,
Minato-ku, Tokyo
Tel. (81) 03-3432-7111
Fax (81) 03-3431-4820 -
Tlx : J 24673 YOKORUCO

United States (USA)
1. Don W. Allen Inc, 401 Agee Road, Grants Pass,
Oregon 97526
2. Aero Tec Labs, Spear Road Industrial Park, Ramsey,
N.J. 07446
Tel. (1) 201 825 1400
Fax (1) 201) 825 1962.
3. Fuel Safe Systems,
Aircraft rubber
63257 Nels Anderson road
Bend OR 97701
Tel. (1) 541 388 0203
Fax (1) 541 388 0307

*** FT5 TANKS**
United Kingdom (GB)
1. Aero Tec Labs
Material :
* 645D
* 728D
* 760C
2. FPT Industries Ltd
Material:
* CR1060
* Cure 3015
3. Premier Fuel Systems Ltd
Material
* 109/MM/K208
* F205
* F206

United States (USA)
1. Aero Tec Labs
Material
* 645D
* 728D
* 760C

France (F)
2. Pronal's
Material
* 24353 - 2 plis
* CT 2006

List of fuel analysis laboratories recognised by the FIA technical list n°2

Austria (A)

1. I.U.M. Institut für Mineralölprodukte und Umweltanalytik
Schindlbauer-Hutter-Ingenieurgemeinschaft
Rosasgasse 27/2, A-1120 VIENNA
Tel : (43)-1-812-53-61 - Fax : (43)-1-812-53-61

Australia (AUS)

1. SGS Australia Pty. Ltd
1/33 Hurrel 121 Way, Rockingham WA 6168
Tel : (61 9) 592 62 22 - Fax : (61 9) 592 60 55

Belgium (B)

SGS Depauw & Stokoe N.V.
Haven 407, Polderdijkweg 16, 2030 ANTWERPEN
Tel. : (03) 545 84 11 - Fax : (03) 545 84 19

Switzerland (CH)

EMPA - Service/Abteilung N° 133
Ueberlandstrasse 139 - 8600 DÜBENDORF
Tel. : 1/823.41.33 - Tlx. : 825.345
Fax : 1/821.62.44

Czechoslovakia (CS)

Chemopetrol, Korytna 47, PRAHA 10 - Strasnice

Germany (D)

1. PHL
Vorhoelzerstr.3, 8000 MÜNCHEN 71
Postfach 710 626
Tel. : 089/79 89 77 - 089/3 54 25 41
Fax : 089/7 91 88 89

2. SGS Control - COMBH
Petrochemisches Labor
Am Neuen Rheinafen 12A
6720 SPREYER - Tel. : 06232 /130140

3. SGS Control - Co.mbH
Behringstr. 154
22763 HAMBURG
Tel. : (040) 88 30 71 12 - Fax : (040) 88 02 653

4. SGS Control - Co.mbH
Friedrich Albert Lange Platz 1
47051 DUISBURG
Tel. : (0203) 92 98 850 - Fax : (0203) 92 98 845

5. TÜV Hannover
Am TÜV 1
30175 HANNOVER DÖHREN
Tel. : (0511) 986 15 21 - Fax : (0511) 986 12 37

6. TÜV Bayern Sachsen e.V.
Abgasprüfstelle (G4-FBF/E)
Ridlerstr. 57
80674 MÜNCHEN
Tel. : (089) 51 90 31 52 - Fax : (089) 51 90 32 33

7. PETROLAB GmbH
Brunckstr. 12
67346 SPEYER
Tel. : (06232) 33 011 - Fax : (06232) 33 015

8. DEKRA Automobil AG
AN 5/W.Dammert, Handwerkstrasse 15
70565 Stuttgart
Tel : 0711-7861-2236 - Fax : 0711-7861-2929

France (F)

1. ATEPE
Parc d'Activité de la Tuilerie
Saint Benoît
AUFFARGIS
78610 LE PERRAY EN YVELINES

2. PCAS
ZI La Vigne aux Loups
23, rue Bossuet
91160 LONGJUMEAU

United Kingdom (GB)

1. BSI Testing
Mayland Avenue
Hemel Hempstead, Hertfordshire, HP2 4SQ
Tel. : (0442) 230442 - Tlx. : 82424
Fax : (0442) 231442

2. Caleb Brett International Limited
Laboratory and Technical Services
Unit "A", 734 London Road, West Thurrock, Essex, RM16 1HN
Tel. : (0708) 869960
Fax : (0708)861496

3. SGS Redwood Ltd.
Old Station Approach
London Road, PURTLEET, Essex, RM16 1QS
Tel. : 0708 866 855 - Tlx. : 897 361
Fax : 0708 864 137

4. Ricardo Consulting Engineers Ltd
Shoreham by Sea
West Sussex, BN43 FG
Tel. : 0273 455 611 - 87 383
Fax : 0273 464 124

5. M SCAN Ltd
Silwood park, Sunninghill
Berkshire SL57PZ
Tel. : +44 1344627612
Fax : +44 1344872709

Greece (GR)

Générale Chimie de l'Etat
Rue A. Tsoha 16
Ampelokipi - ATHENES

Italy (I)

1. Stazione Sperimentale Combustibili
Via Galileo Galilei 1
20097 SAN DONATO MILANESE - MI
Tel. : 02/510031

2. Ecocontrol
Via della Scafa 121
00054 FIUMINCINO (ROMA)
Tel. : 06/6453840

3. S.E.L.M.
Litoranea Priolese - Statale 114
96010 PRIOLO (SIRACUSA)
Tel. : 0931/731111

4. Ecocontrol
Via P.F. Calvi, 4
00040 POMEZIA (ROMA)
Tel : 39 6 91 60 13 33 - Fax : 39 6 91 60 13 00

Japan (J)

Shin Nihon Kentei Kyokai
Shinken Building 12-13, Shin Yokohama
2 Chome, Kohoku-ku, YOKOHAMA 222

Netherlands (NL)

1. Caleb Brett Nederland BV
Po Box 7455
3000 HL ROTTERDAM/HOOGVLIET
Tel. : 10-4902702 - Fax : 10-4723225
Tlx : 62090

2. Laboratory SGS Redwood Nederland B.V.
Hornweg 8, 1045 AR AMSTERDAM
Tel. : (20)6114848
Fax : (20)6118963

New Zealand (NZ)

1. New Zealand Refining Co. Ltd.
Marsden Point
Whangarei

2. Institute of Environmental Science & Research Limited
Wellington Science Centre
Gracefield Road, PO Box 30-547, Lower Hutt
Tel : (04)-570-1555
Fax : (04)-569-4500

Poland (PL)

Instytut Chemii Technologii NAFTY I WEGLA
Politechniki Wroclawskiej
ul. Gdanska 7/9
53-344 WROCLAW

Argentina (RA)

Faculdad de Ingeniera, 47 y 1
LA PLATA, Provincia de Buenos Aires

Indonesia (RI)

SUCOFINDO
Cilandak Commercial Estate
Bld 110 S Jalan Cilandak KKO
Jakarta 12560
Tel : (62-21) 7801975 - Fax : (62-21) 7800913

Sweden (S)

1. Chemcontrol AB
Ryahamnen, 41722 Göteborg
Tel. : (46) 31 54 57 70 - Fax : (46) 31 53 77 07

2. ODAB Svensk Oljedistribution AB
Po Box 27127 - 10252 STOCKHOLM
Tel. : 08 67 99 80 - Tlx. : 13786

Finland (SF)

VTT - Technical research Center of Finland
Laboratory of Fuel and Process Technology
P.O. Box 205, SF-02151 ESPOO
Fax : +358 0 460493 - Tel. : +358 0 4561 - Tlx. : 122972

United States (USA)

Rock Island Refining Corporation
Po Box 68007, INDIANAPOLIS, Indiana 46268-0007
Tel. : (317)872-3200

South Africa (ZA)

South African Bureau of Standards (SABS)
Private Bag X191, Pretoria 0001
Tel. : (012) 428 79 11 - Fax : (012) 344 15 68

AFFF EXTINGUISHING PRODUCTS APPROVED BY THE FIA
TECHNICAL LIST N°6

1) **EXTINGUISHANTS :**

Company	Product	Company	Product
SPA Design	SPA Lite	Werner GmbH	Wema AFFF
Lifeline	Zero 2000	Sparco	Eco-Sir
Chubb Fire	Spray Lance	AP Sport	Exteco
OMP	Ecolife	Taifun	Safetydrive III
Total Walther	Microdrop Arc 3x6	BRB/QUELL	3M Light Water
Hi Tech	AFFF	FEV	AFFF
Safety Devices	AFFF	Mistec	AFFF
Kingdragon	Hydral AFFF		

2) **MINIMUM EXTINGHISHER CAPACITY (litres) :**

❶ : SPA LIte - Zero 2000 - Spray Lance - Eco-Sir - Ecolife - FEV - Safety Devices
❷ : HiTech - Mistec

Catégorie / Category	❶	Wema AFFF	Exteco	Safety drive 3	Arc 3x6	3M L. Water	Hydral AFFF	❷
N, A, B habitacle/cockpit	1.65	4.7	1.65	4.8	5	11.5 engine +cockp.	4.7	2.20
N, A, B moteur/engine	3.30	4.7	3.3	4.8	5	engine +cockp.	4.7	3.30
T1, T2, T3 *voiture fermée/closed car* habitacle/cockpit	1.65	4.7	1.65	4.8	5	idem same	4.7	2.20
T1, T2, T3 *voiture fermée/closed car* moteur/engine	3.30	4.7	30	4.8	5	idem same	4.7	3.30
T1, T2, T3 *voiture ouverte/open car* habitacle/cockpit	3.30	4.7	4	4.8	5	idem same	4.7	3.30
T1, T2, T3 *voiture ouverte/open car* moteur/engine	1.65	4.7	2	4.8	5	idem same	4.7	2.20
CN, C3 *voiture fermée/closed car* habitacle/cockpit	1.65	4.7	1.65	4.8	5	idem same	4.7	2.20
CN, C3 *voiture fermée/closed car* moteur/engine	3.30	4.7	3.3	4.8	5	idem same	4.7	3.30
CN, C3 *voiture ouverte/open car* habitacle/cockpit	3.30	4.7	2	4.8	5	idem same	4.7	3.30
CN, C3 *voiture ouverte/open car* moteur/engine	1.65	4.7	2	4.8	5	idem same	4.7	2.20
F1, F3, F3000 habitacle/cockpit	1.65	4.7	2	4.8 engine +cockp.	5	idem same	4.7	2.20
F1, F3, F3000 moteur/engine	3.30	4.7	4	engine +cockp.	5	idem same	4.7	3.30
GT habitacle/cockpit	1.65	4.7	1.65	4.8	5	idem same	4.7	2.20
GT moteur/engine	3.30	4.7	3.3	4.8	5	idem same	4..7	3.30

3) **MINIMUM EXTINGHISHANT QUANTITY (litres) :**

❶ : SPA LIte - Zero 2000 - Spray Lance - Eco-Sir - Ecolife - FEV - Safety Devices
❷ : HiTech - Mistec

Catégorie / Category	❶	Wema AFFF	Exteco	Safety drive 3	Arc 3x6	3M L. Water	Hydral AFFF	❷
N, A, B habitacle/cockpit	1.12	4	1.12	4	4	8 engine +cockp.	4	1.75
N, A, B moteur/engine	2.25	4	2.25	4	4	engine +cockp.	4	3.0
T1, T2, T3 *voiture fermée/closed car* habitacle/cockpit	1.12	4	1.12	4	4	idem same	4	1.75
T1, T2, T3 *voiture fermée/closed car* moteur/engine	2.25	4	2.25	4	4	idem same	4	3.0
T1, T2, T3 *voiture ouverte/open car* habitacle/cockpit	2.25	4	2.3	4	4	idem same	4	3.0
T1, T2, T3 *voiture ouverte/open car* moteur/engine	1.12	4	1.15	4	4	idem same	4	1.75
CN, C3 *voiture fermée/closed car* habitacle/cockpit	1.12	4	1.12	4	4	idem same	4	1.75
CN, C3 *voiture fermée/closed car* moteur/engine	2.25	4	2.25	4	4	idem same	4	3.0
CN, C3 *voiture ouverte/open car* habitacle/cockpit	2.25	4	2.3	4	4	idem same	4	3.0
CN, C3 *voiture ouverte/open car* moteur/engine	1.12	4	1.15	4	4	idem same	4	1.75
F1, F3, F3000 habitacle/cockpit	1.12	4	1.15	4 engine +cockp.	4	idem same	4	1.75
F1, F3, F3000 moteur/engine	2.25	4	2.3	engine +cockp.	4	idem same	4	3.0
GT habitacle/cockpit	1.12	4	1.12	4	4	idem same	4	1.75
GT moteur/engine	2.25	4	2.25	4	4	idem same	4	3.0

4) TEMPERATURE CONDITIONS :

Product	Fill Pressure	Temperature limits
SPA Lite	7.0 bars	-15°C / +60°C *
Zero 2000	12.0 bars	-5°C / + 45°C *
Spray Lance	10.0 bars	-11°C / +55°C *
Wema AFFF A1, B1	14.0 bars	-15°C / +60°C
Wema AFFF A2, B2	14.0 bars	+4°C / +60°C
Eco-Sir	12.0 bars	+20°C /
Ecolife	12.0 bars	-20°C /
Exteco	12.0 bars	-20°C / +100°C
Safetydrive III	15.0 bars	0°C / +50°C
Arc 3x6	16.0 bars	+4°C / +60°C (whitout antifreeze) -20°C / +60°C (with antifreeze)
3M Light Water	10.3 bars	+4°C / +60°C
Hi Tech	12.0 bars	-6°C / +60°C
FEV	9.0 bars	-5°C / +60°C -10°C / +60°C
Safety Devices	9.0 bars	-5°C / +60°C -10°C / +60°C
Mistec	12.0 bars	-6°C / +60°C
Hydral AFFF	14.0 bars	-15°C / +60°C

* : special options available

Catalytic converters homologated by the FIA (ST, GT, F3)
Technical list n°8

MANUFACTURER	MARKING	HOMOLOGATION	REMARKS
AUDI AG	2/1412C-10	03.95	pour voitures ST *for ST cars*
AUDI AG	2/7612C-10	03.95	pour voitures ST *for ST cars*
AUDI AG	2/7622C-10	02.96	pour voitures ST *for ST cars*
AUDI AG	2/1012C-10	03.95	pour voitures ST *for ST cars*
AUDI AG	2/1013C-10	04.97	pour voitures ST *for ST cars*
AUDI AG	2/1014C-10	06.97	pour voitures ST *for ST cars*
AUDI AG	2/7623C-10	07.97	Pour voitures ST *For ST cars*
AUDI Sport	2/1428C-10		seulement pour Audi 80 (ST) *only for Audi 80 (ST)*
AUDI Sport	2/1512C-10		seulement pour Audi 80 (ST) *only for Audi 80 (ST)*
ALFA ROMEO	CAT 001 - CSAI	06.98	seulement pour Alfa Romeo 156 (M.Y. 199 *only for Alfa Romeo 156 (M.Y. 1997)*
BMW M GmbH	2/9074-10		seulement pour BMW 318i, E36/4, ST *only for BMW 318i, E36/4, ST*
BMW M GmbH	2/1059-10		seulement pour BMW 318i, E36/4, ST *only for BMW 318i, E36/4, ST*
BMW M GmbH	2/1590-10	03.95	pour BMW 320i, E36/4, ST *for BMW 320i, E36/4, ST*
BMW M GmbH	2/1592-10	10.95	pour BMW 320i, E36/4, ST *for BMW 320i, E36/4, ST*
BMW M GmbH	2 /1593-10	02.96	pour voitures ST *for ST cars*
Ernst-Apparatebau	ERNST-NR 987 158 ONS-NR. 1054-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe*
Ernst-Apparatebau	ERNST-NR.987 141 ONS-NR. 1054-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Ernst-Apparatebau	ERNST-NR.987 134 ONS-NR. 1054-70		pour tuyau d'échappement Ø 70 mm *for 70 mm diameter exhaust pipe*
Ernst-Apparatebau	ERNST-NR.987 073 ONS-NR. 0902-50		pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parall *2 parallel catalysers must be used*
Ernst-Apparatebau	ERNST-NR.987 103 ONS-NR. 0903-50		pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parall *2 parallel catalysers must be used*
Ernst-Apparatebau	ERNST-NR.987 066 ONS-NR. 0902-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parall *2 parallel catalysers must be used*
Ernst-Apparatebau	ERNST-NR.987 097 ONS-NR. 0903-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parall *2 parallel catalysers must be used*

Ernst-Apparatebau	ERNST-NR.987 127 ONS-NR. 1052-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
Ernst-Apparatebau	ERNST-NR.987 080 ONS-NR. 0903-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
Ernst-Apparatebau	ERNST-NR.987 110 ONS-NR. 1052-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
HJS	HJS-90950573 F3 1012/10	03.95	seulement pour voitures Formule 3 *only for Formula 3 cars*
HJS	HJS-90950575 F3 1312/10		seulement pour voitures Formule 3 *only for Formula 3 cars*
HJS	HJS-90950015 DTC-1054/10	12.94	DTC / GT / ST / Super Production
HJS	HJS-950922 ONS-0902-45		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2000 cm^3 *2 parallel catalysers above 2000 cm^3*
HJS	HJS-950932 ONS-0903-50		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe*
HJS	HJS-950923 ONS-0902-50		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2000 cm^3 *2 parallel catalysers above 2000 cm^3*
HJS	HJS-950933 ONS-0903-55		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe*
HJS	HJS-951523 ONS-1052-55		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-951543 ONS-1054-55		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-950934 ONS-0903-60		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
HJS	HJS-951524 ONS-1052-60		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*

HJS	HJS-951544 ONS-1054-60		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-951546 ONS-1054-70		pour voitures ST, GT, F3 *for ST, GT, F3 cars* pour tuyau d'échappement Ø 70 mm *for 70 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-90950030 2/2790-10	08.95	pour voitures ST *for ST cars*
HJS	HJS-90950028 2/1090-10	06.96	pour voitures PEUGEOT ST *for PEUGEOT ST cars*
HJS	HJS-90950025 2/1012-10	07.97	pour voitures ST *for ST cars*
HJS	HJS-951564 ONS-1056-60	01.99	pour voitures ST, GT, F3 *for ST, GT, F3 cars*
HJS	HJS-951566 ONS-1056-70	01.99	pour voitures ST, GT, F3 *for ST, GT, F3 cars*
HJS	HJS-951568 ONS-1056-80	01.99	pour voitures ST, GT, F3 *for ST, GT, F3 cars*
HJS	HJS-951736 ONS-1273-70	01.99	pour voitures ST, GT, F3 *for ST, GT, F3 cars*
HJS	HJS-951738 ONS-1273-80	01.99	pour voitures ST, GT, F3 *for ST, GT, F3 cars*
HJS	F3 1312 / 10	05-99	seulement pour voitures Formule 3 *only for Formula 3 cars*
JANSPEED	JSRC-002 A MSA-CAT/002/00	01.2000	Maximum 200 ch par catalyseur *Maximum 200 bhp per catalyst*
Kemira	Kemira 80869 1054-70		pour tuyau d'échappement Ø 60 ou 45 mm *for 60 or 45 mm diameter exhaust pipe* Jusqu'à 2000 cm^3 *Up to 2000 cm^3*
Kurt Gutmann GmbH	ONS GU 0903-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
Kurt Gutmann GmbH	ONS GU 0903-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
Kurt Gutmann GmbH	ONS GU 1054-60	03.91	pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Kurt Gutmann GmbH	ONS GU 1054-70	03.91	pour tuyau d'échappement Ø 70 mm *for 70 mm diameter exhaust pipe*
Kurt Gutmann GmbH	ONS GU 1056-60	03.91	pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Kurt Gutmann GmbH	ONS GU 1056-70	03.91	pour tuyau d'échappement Ø 70 mm *for 70 mm diameter exhaust pipe*
Kurt Gutmann GmbH	2/ 9010 - 10	11.95	pour voitures ST *for ST cars*
Kurt Gutmann GmbH	2/ 9210 - 10	11.95	pour voitures ST *for ST cars*
Kurt Gutmann GmbH	DMSB 2/1020	04.98	pour voitures ST et F3 *for ST and F3 cars*

Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 0902-50, Art.Nr. 122.350		pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 0903-50, Art.Nr. 122.450		pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 0902-55, Art.Nr. 122.355		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 0903-55, Art.Nr. 122.455		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 1052-55, Art.Nr. 122.555		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 0903-60, Art.Nr. 122.460		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 1052-60, Art.Nr. 122.560		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 1054-60, Art.Nr. 122.660		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Oberland-Mangold GmbH	OBERLAND >, ONS-NR. 1054-70, Art.Nr. 122.670		pour tuyau d'échappement Ø 70 mm *for 70 mm diameter exhaust pipe*
TWR Racing	2/1279T-10	02.95	pour voitures ST *for ST cars*
Umwelttechnik Freiberg GmbH	ONS 1054-60, UTF 14001		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Umwelttechnik Freiberg GmbH	ONS 1052-60, UTF 10001		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Umwelttechnik Freiberg GmbH	ONS 0903-60, UTF 019301		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Viktor Günther GmbH	VGS A 1054-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Viktor Günther GmbH	VGS 1054-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe*
Viktor Günther GmbH	VGS 0903-60		pour tuyau d'échappement Ø 60 mm *for 60 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*
Viktor Günther GmbH	VGS 0903-50		pour tuyau d'échappement Ø 50 mm *for 50 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en parallèle *2 parallel catalysers must be used*

Viktor Günther GmbH	VGS 0903-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe* 2 catalyseurs doivent être montés en paralléle *2 parallel catalysers must be used*
Viktor Günther GmbH	VGS 1054-55		pour tuyau d'échappement Ø 55 mm *for 55 mm diameter exhaust pipe*

INSTALLATION OF THE CATALYTIC CONVERTER

- The catalytic converter must be mounted in the exhaust system of the car according to the instructions of the manufacturer of the catalyser.
- The direction of flow must be respected.
- At any time, all exhaust gas must pass through the catalytic converter(s).
- No modifications to a homologated catalytic converter are allowed.
- Heat shieldings must be mounted.
- For a good durability of the catalyser, the electronic engine management should be equipped with an overrun fuel cut-off.
- For a good durability of the catalyser, the rev-limiter should be installed in such a manner that it interrupts the current supply for the fuel injection valves and not the current supply for the ignition.

CATALYTIC CONVERTERS HOMOLOGATED BY THE FIA (WRC, KIT CAR, RALLYCROSS AUTOCROSS) TECHNICAL LIST N°13

MANUFACTURER	MARKING	HOMOLOGATION	REMARKS
HJS	HJS-90950028 2/1090-10	06.96	pour voitures PEUGEOT WRC et Kit-car *for PEUGEOT WRC and Kit car*
HJS	HJS-90950043 WRC 1012 /10	11.96	WRC - Kit car - Rallycross Autocross
HJS	HJS-90950044 WRC 1279-10	12.96	WRC - Kit car - Rallycross Autocross
HJS	HJS-90950055 WRC 1112/10	11.97	WRC - Kit car - Rallycross Autocross
HJS	RC 9012-10	08.98	Rallycross Autocross, for FIAT Seicento only
HJS	HJS-950711 ONS-0701-45	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-950712 ONS-0701-50	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-950911 ONS-0901-45	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-950912 ONS-0901-50	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-951564 ONS-1056-60	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-951566 ONS-1056-70	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-951568 ONS-1056-80	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-951736 ONS-1273-70	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-951738 ONS-1273-80	01.99	WRC - Kit car - Rallycross Autocross
HJS	HJS-90950058 RC 1090/10		Rallycross Autocross
HJS	HJS-950922 ONS-0902-45		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 50 mm *For 50 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2000 cm^3 *2 parallel catalysers above 2000 cm^3*
HJS	HJS-950932 ONS-0903-50		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 50 mm *For 50 mm diameter exhaust pipe*
HJS	HJS-950923 ONS-0902-50		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 55 mm *For 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2000 cm^3 *2 parallel catalysers above 2000 cm^3*
HJS	HJS-950933 ONS-0903-55		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 55 mm *For 55 mm diameter exhaust pipe*
HJS	HJS-951523 ONS-1052-55		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 55 mm *For 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*

HJS	HJS-951543 ONS-1054-55		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 55 mm *For 55 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-950934 ONS-0903-60		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 60 mm *For 60 mm diameter exhaust pipe*
HJS	HJS-951524 ONS-1052-60		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 60 mm *For 60 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-951544 ONS-1054-60		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 60 mm *For 60 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
HJS	HJS-951546 ONS-1054-70		WRC - Kit car - Rallycross Autocross Pour tuyau d'échappement Ø 70 mm *For 70 mm diameter exhaust pipe* 2 catalyseurs en paralléle au delà de 2500 cm^3 *2 parallel catalysers above 2500 cm^3*
JANSPEED	JSRC-001 A MSA-CAT/001/98	01.99	WRC - Kit car - Rallycross Autocross
JANSPEED	JSRC-002 A MSA-CAT/002/00	01.2000	WRC - Kit car - Rallycross Autocross Maximum 200 ch par catalyseur *Maximum 200 bhp per catalyst*
Kemira	Kemira 80869 1054-70	06.2000	WRC - Kit car - Rallycross Autocross pour tuyau d'échappement Ø 60 ou 45 mm *for 60 or 45 mm diameter exhaust pipe* Jusqu'à 2000 cm^3 *Up to 2000 cm^3*
Kurt Gutmann GmbH	DMSB 2/1020	04.98	WRC - Kit car
ROSI	51141 FFSA-001	01.99	WRC - Kit car
ROSI	51491 FFSA-002	04.99	Kit car
ROSI	50181 FFSA-003	04.99	Kit car
SUZUKI	SUZUKI 60G2 FUTABA	07.99	Pour SUZUKI Baleno Kit car seulement *For SUZUKI Baleno Kit car only*

INSTALLATION OF THE CATALYTIC CONVERTER FOR RALLY

- The catalytic converter must be mounted in the exhaust system of the car according to the instructions of the manufacturer of the catalyser.
- The direction of flow must be respected.
- At any time, all exhaust gas must pass through the catalytic converter(s).
- No modifications to a homologated catalytic converter are allowed.
- Heat shieldings must be mounted.

Extinguisher systems mologated by the FIA
Technical list n°16

MANUFACTURER	NAME OF THE SYSTEM	HOMOLOGATION NUMBER	HOM DATE
Fogmaker International	Fogmaker	Ex.001.97	12.97
Lifeline Fire and Safety Systems	Zero 2000	Ex.002.98	12.98
SPA Design	Fire Fighter System	Ex.003.98	12.98
Fire extinguisher Valve company	Enviro 3	Ex.004.99	04.99
Fire extinguisher Valve company	AFFF 4000R	Ex.005.99	04.99
Fire extinguisher Valve company	AFFF 3500R	Ex.006.99	04.99
Fire extinguisher Valve company	VI-RO_3 2000R	Ex.007.99	04.99
OMP	Ecolife	Ex.008.00	01.00
OMP	Ecolife	Ex.009.00	01.00
TOTAL WALTHER	Microdrop	Ex.010.00	06.00

Address of the manufacturers :

Great Britain (GB)

1. **SPA Design ltd**
The Boat House
Lichfield street
Fazeley, Tamworth
Staffs B78 3QN
Tel: 44 1827 288 328
Fax: 44 1827 260 528
E-mail: 100306.3532@compuserve.com

2. **Lifeline Fire and Safety Systems ltd**
Burnsall road
Coventry CV5 6BU
Tel: 44 1203 712999
Fax: 44 1203 712998
Web site: www.lifeline-fire.co.uk

3. **Fire Extinguisher Valve Company**
Unit 11, Arunside Industrial Estate
Fort road
Littlehampton
West Sussex BN17 7QU
Tel: 44 1903 726 367
Fax: 44 1903 726 367

Sweden

1. **Fogmaker International AB**
Kungsgatan 13B
SE 352 31
VAXJO
Tel: 46 470 243 40
Fax: 46 470 244 40
E-mail : info@otc.se

Italy (I)

1. **OMP Racing**
Via E. Bazzano 5
16019 Ronco Scrivia (GE)
Italia
Tel: (39) 010.935.05.71
Fax : (39) 010.935.698
Website: www.ompracing.it

Germany (D)

1. **TOTAL WALTHER**
51, Waltherstrasse
D-51069 Köln
Germany
Tel: (+49) 221 67 85 202
Fax : (49) 221 67 85 612

List of FIA homologated vehicles and engines

• This list is classified by country

• The letter immediately preceding the homologation number indicates the Group in which the vehicle or engine is homologated :

Group N :	Production Cars (N)
Group A :	Touring Cars (A)
Group B :	Grand Touring Cars (B)
Group T1 :	Series Cross-Country Cars (T1)
Group T4	Cross-Country Trucks (T4)
Group ST:	Super Touring Cars
C2 :	Super Touring Engines
F3 :	Formula 3 engines
Group GT :	Grand Touring Cars
Group GT1 :	Grand Touring Cars Class 1
Group GT2 :	Grand Touring Cars Class 2
Group-N-GT :	Series Grand Touring Cars

• The date mentioned after the commercial denomination indicates the beginning of the homologation of the vehicle or engine.

• The year mentioned under end indicates the last year during which the vehicle or the engine is homologated, e.g. 2001 homologation valid until 31.12.2001. If the sign + is added, this means that the homologation is likely to be extended

• The sign ★ indicates Homologations including a VK (Kit Variant)
• The sign ➔ indicates Homologations including a WRC (World Rally Car)

ATTENTION : The cylinder capacity correction coefficient for turbo diesel vehicles in Group A, in Group N and in Group T1 has been modified : it is now 1.5.

N.B. : The present list of vehicles and engines was etablished on 31 october 2000. The periodical addenda to this list will be published in the FIA Official Bulletin.

N°	Homol	Descriptive	Start	End
		Austria		
OAF				
T4	4035	OAF 30 - 502 VFAEG 18273cc	1/4/1997	2004
		Australia		
Toyota Motor Corp. Austral				
A	5542	COROLLA SECA RV 1762 cc	1/9/1995	2002
N	5542	COROLLA SECA RV 1762 cc	1/9/1995	2002
		China		
FAW-VOLKSWAGEN				
A	5599	JETTA GTX 1595 cc	1/3/1999	2006+
N	5599	JETTA GTX 1595 cc	1/3/1999	2006+
		Czech Rep.		
Skoda				
A	5373	FAVORIT 136 L 1289.4cc	1/1/1989	2001
A★	5528	FELICIA 1289,4 cc	1/12/1994	2006+
A★	5551	FELICIA 1.6 1598 cc	1/3/1996	2006+
A★➤	5573	OCTAVIA 1,8 20V 1781 cc	1/9/1997	2006+
A	5606	OCTAVIA 1.9 TDI 1896,2 x 1.5 = 2844,3	1/7/1999	2006+
N	5373	FAVORIT 136 L 1289.4cc	1/3/1989	2001
N	5528	FELICIA 1289,4 cc	1/12/1994	2006+
N	5551	FELICIA 1.6 1598 cc	1/3/1996	2006+
N	5573	OCTAVIA 1,8 20V 1781 cc	1/9/1997	2006+
N	5606	OCTAVIA 1.9 TDI 1896,2 x 1.5 = 2844,3	1/7/1999	2006+
Tatra S.A. Koprivnice				
T4	4021	T815-290R75 4x4.1 19000 cc	1/1/1994	2001
T4	4026	T815 290R75/01 4x4.1 19000cc	1/1/1995	2006+
T4	4037	T815 2ZER55.16.400 4x4.1 15874 cc	1/1/1998	2006+
		Germany		
Audi				
A	5409	AUDI V8 QUATTRO 3561.8cc	1/4/1990	2001
A	5457	80 2.0 E B4 1984.3 cc	1/7/1992	2001
A	5479	80 QUATTRO 2.8 E 2771 cc	1/4/1993	2001
A	5515	80 COMPETITION 1984.5 cc	1/4/1994	2001
C2	5	C.BLOCK 80 16V / C.HEAD V8 QUAT 1983 cc	1/4/1993	2005
C2	21	AUDI R4 2.0L 16V 1984 cc	1/4/1994	2005
ST	6	AUDI 80	1/3/1995	2003
ST	17	AUDI A4	1/4/1995	2006+
ST	28	AUDI A4 (Mj.96)	1/4/1996	2006+
B.M.W.				
A	5440	325i (E36) 2494cc	1/11/1991	2002
A	5441	320i (E36) 1991cc	1/11/1991	2004
A	5454	325i (E36/2) 2494cc	1/3/1992	2002
A	5490	M3 (E36) 2990,5 cc	1/6/1993	2002
A	5500	318i (E36) 1796 cc	1/11/1993	2004
A	5526	318 IS-4 (E36) 1796 cc	1/7/1994	2006+
A	5562	M3 - 3,2 (E36) 3201 cc	1/3/1997	2004
C2	2	S14 (BMW M3) 2302.1 cc	1/1/1993	2005
C2	3	M42 (318iS) 1796 cc	1/1/1993	2005
C2	26	M42 (318 is) 1796 cc	1/3/1995	2005
F3	325	318iS	1/3/1999	2006+
N	5440	325i (E36) 2494cc	1/11/1991	2002
N	5441	320i (E36) 1991cc	1/11/1991	2004
N	5454	325i (E36/2) 2494cc	1/3/1992	2002
N	5490	M3 (E36) 2990,5 cc	1/6/1993	2002
N	5562	M3 - 3,2 (E36) 3201 cc	1/3/1997	2004
ST	8	320i	1/3/1995	2004
Daimler-Chrysler AG				
A	5498	MERCEDES C220 (W202) 2199.2 cc	1/8/1993	2003
C1	1	MERCEDES-BENZ C 220 D	1/4/1996	2004
C2	12	MERCEDES 220E (W124) 2201.4 cc	1/8/1993	2005
GT1	5	MERCEDES CLK-GTR	1/4/1997	2004
GT1	11	MERCEDES CLK-LM	1/7/1998	2005
T	1051	MERCEDES-BENZ 300 GD (BM 463) 2996cc	1/8/1991	2003
T	1052	MERCEDES-BENZ 300 GE (BM 463) 2960cc	1/8/1991	2003

T	1060	MERCEDES 300 GE 2960 cc	1/10/1993	2003
T	1102	MERCEDES BENZ ML 320 3199 cc	1/1/2000	2007+
T	1103	MERCEDES BENZ ML 430 4266 cc	1/1/2000	2007+
T4	4007	1935 AK 14618 cc	1/8/1992	2003
T4	4008	UNIMOG U 1550 L37 5958 cc	1/8/1992	2003
T4	4013	2635 AK 14618 cc	1/1/1993	2003
T4	4014	2636 AK 18273 cc	1/1/1993	2004
T4	4034	1844 AK 14618 cc	1/1/1997	2004
General Motor Europe				
F3	327	OPEL/VAUXHALL ZAFIRA X 18 XE 1796 cm³	1/3/2000	2006+
M.A.N.				
T4	4019	19.422 FA 11967 cc	1/1/1993	2004
T4	4038	SX 90 DFAEG 12763 cc	1/1/1998	2005
T4	4042	L2000 10.224 LAEC	1/1/1999	2006+
Adam Opel AG				
A	5426	OMEGA-A 3.0 24V/ CARLTON-A 3.0 24V 2969	1/3/1991	2001
A	5430	OPEL/VAUXHALL CALIBRA 16V 1998cc	1/3/1991	2004
A	5431	OPEL VECTRA 16V/VAUXH. CAVALIER 16V 1998	1/3/1991	2002
A★	5452	OPEL/VAUXH ASTRA-F GSi/GTE 16V 1998	1/2/1992	2004
A	5477	OP/VAUX CALIBRA-A TU 4x4 1998x1.7=3396.6	1/1/1993	2004
A	5484	OPEL/VAUXHALL ASTRA 2.0 1998 cc	1/4/1993	2004
A★	5516	OPEL/VAUXHALL CORSA-B 1.6i 1598 cc	1/4/1994	2006+
A★	5589	OPEL/VAUXHALL ASTRA-G-CC 1998 cc	1/7/1998	2006+
A	5613	OPEL ASTRA - OPC 1998,4cm³	1/4/2000	2007+
C1	4	OPEL/VAUXHALL CALIBRA COLOR EDITION	1/4/1996	2004
C2	6	OP/VAUXH ASTRA-F 2.0 C20XE 16V 1998 cc	1/4/1993	2005
F3	310	OPEL/VAUXHALL ASTRA-A 16V 1998 cc	1/4/1993	2006+
N	5426	OMEGA-A 3.0 24V/CARLTON-A 3.0 24V 2969cc	1/4/1991	2001
N	5430	OPEL/VAUXHALL CALIBRA 16V 1998cc	1/4/1991	2004
N	5431	OPEL VECTRA 16V/VAUXH. CAVALIER 16V 1998	1/4/1991	2002
N	5452	OPEL/VAUXH ASTRA-F GSi/GTE 16V 1998	1/2/1992	2004
N	5477	OP/VAUX CALIBRA-A TU 4x4 1998x1.7=3396.6	1/1/1993	2004
N	5516	OPEL/VAUXHALL CORSA-B 1.6i 1598 cc	1/4/1994	2006
N	5613	OPEL ASTRA - OPC 1998,4cm³	1/4/2000	2007+
ST	15	OPEL VECTRA-A/VAUXHALL CAVALIER-A	1/4/1995	2004
ST	16	OPEL/VAUXHALL ASTRA-F 2.0	1/4/1995	2004
ST	27	OPEL/VAUXHALL VECTRA	1/12/1995	2006+
ST	39	OPEL VECTRA CD	1/4/1998	2006+
ST	40	OPEL VECTRA GL PLUS	1/4/1998	2006+
Porsche				
B	294	911 CARRERA 4 3600.27cc	1/9/1990	2001
B	295	911 CARRERA 2 3600.27cc	1/9/1990	2001
B	296	911 CARRERA RS 3600.5cc	1/3/1992	2001
B	298	911 TURBO 2 3299 x 1.7 = 5608.3 cc	1/4/1993	2001
GT1	3	911 GT1	1/3/1997	2004
GT1	9	911 GT 1 / 98	1/4/1998	2005
GT2	2	911 CARRERA RS 3.8	1/8/1995	2004
GT2	3	911 TURBO GT2	1/1/1996	2004
GT2	4	911 CARRERA RS 3.8 (993)	1/4/1996	2004
GT2	9	911 GT 3 Cup (996)	1/4/1999	2006+
NGT	2	PORSCHE 911 GT 3	1/3/2000	2007+
Volkswagen				
A	5438	POLO COUPE G40 (86C) 1272.5x1.7=2163cc	1/10/1991	2001
A	5439	86 POLO COUPE 1275.5cc	1/10/1991	2001
A	5482	VENTO GT 2.0 1984 cc	1/4/1993	2004
A★	5483	GOLF GTI 16V 2.0 1984 cc	1/4/1993	2004
A	5568	POLO 16V 1.4 1390 cc	1/3/1997	2006+
A★	5584	GOLF 1.8 -20V 1781 cc	1/4/1998	2006+
A	5603	GOLF TDI (Mk4) 1896.2 x 1.5 = 2844.3 cc	1/3/1999	2006+
A	5615	POLO GTI 1598 cm³	1/4/2000	2007+
C2	7	GOLF GTI 16V 1.8L 1781 cc	1/4/1993	2005
C2	8	GOLF GTI 16V 2.0L 1984 cc	1/4/1993	2005
F3	302	PASSAT 1984 cc	1/8/1991	2006+
F3	309	19 GOLF GTI 1781 cc	1/4/1993	2006+
F3	311	17 GOLF GTI 1588 cc	1/4/1993	2006+
N	5438	POLO COUPE G40 (86C) 1272.5x1.7=2163cc	1/10/1991	2001
N	5439	86 POLO COUPE 1275.5cc	1/10/1991	2001
N	5482	VENTO GT 2.0 1984 cc	1/4/1993	2004

N	5483	GOLF GTI 16V 2.0 1984 cc	1/4/1993	2004
N	5568	POLO 16V 1.4 1390 cc	1/3/1997	2006+
N	5603	GOLF TDI (Mk4) 1896.2 x 1.5 = 2844.3 cc	1/3/1999	2006+
N	5615	POLO GTI 1598 cm³	1/4/2000	2007+

Spain

Miranda Alonso Fernandez S.A.

T4	4020	IPV - 180 R 17680 cc	1/1/1994	2001

Nissan Motor Iberica S.A.

T	1081	TERRANO II LONG BODY 2389 cc	1/7/1996	2003
T	1082	TERRANO II 2389 cc	1/7/1996	2003
T	1083	NEW TERRANO II 2389 cc	1/1/1997	2004
T	1084	NEW TERRANO II LONG BODY 2389 cc	1/1/1997	2004
T	1085	NEW TERRANO II LONG BODY 2664x1.5=3996 cc	1/1/1997	2004

Seat

A	5504	IBIZA GTI 2.0 1984,5 cc	1/1/1994	2005
A★	5517	IBIZA GTI 16V 1781.32 cc	1/7/1994	2001
A★	5563	IBIZA GTI 2.0 16V 1989,1 cc	1/3/1997	2006+
A➔	5586	CORDOBA 1595,4 cc	1/4/1998	2006+
A	5600	IBIZA GT Tdi 1896.2 x 1.5 = 2844.3 cc	1/3/1999	2006+
A	5610	BIZA TDi (GP'99)	1/1/2000	2007+
C2	30	TOLEDO GT	1/8/1995	2004
N	5504	IBIZA GTI 2.0 1984,5 cc	1/1/1994	2001
N	5517	IBIZA GTI 16V 1781.32 cc	1/7/1994	2001
N	5563	IBIZA GTI 2.0 16V 1989,1 cc	1/3/1997	2006+
N	5586	CORDOBA 1595,4cc	1/4/1998	2006+
N	5600	IBIZA GT Tdi 1896.2 x 1.5 = 2844.3 cc	1/3/1999	2006+
N	5610	IBIZA TDi (GP'99)	1/1/2000	2007+
ST	22	TOLEDO GT	1/8/1995	2002

France

Citroën

A	5445	AX GTI 1360.5cc	1/1/1992	2002
A★	5468	ZX 16V 1998cc	1/1/1993	2002
A	5488	XANTIA 1761.5 cc	1/5/1993	2005
A	5532	ZX TUR DIES VOLCANE 1904.5x1.5=2856.8 cc	1/1/1995	2002
A★	5564	SAXO VTS 1590 cc	1/3/1997	2006+
A★	5583	XSARA VTS 1998.9 cc	1/4/1998	2006+
A	5612	XSARA VTS 1,8I 16V 1761,7 cm³	1/3/2000	2007+
N	5445	AX GTI 1360.5cc	1/1/1992	2002
N	5468	ZX 16V 1998cc	1/1/1993	2002
N	5532	ZX TUR DIES VOLCANE 1904.5x1.5=2856.8 cc	1/1/1995	2002
N	5564	SAXO VTS 1590 cc	1/3/1997	2006+
N	5583	XSARA VTS 1998.9 cc	1/2/1999	2006+

Peugeot

A	5325	205 GTI 1900 1905cc	1/2/1987	2001
A	5380	405 MI 16 1904.53cc	1/3/1989	2001
A★	5453	106 XSI 1360.5	1/3/1992	2003
A	5489	106 XN 954 cc	1/5/1993	2003
A★	5505	106 Rallye 1294 cc	1/1/1994	2003
A	5507	405 MI 16 1998 cc	1/2/1994	2002
A★	5510	306 16S 1998.2 cc	1/4/1994	2006+
A★	5561	106 RALLYE S20 1587 cc	1/1/1997	2005
A★	5565	106 S 16 1587,5 cc	1/3/1997	2006+
A	5576	306 S16 BASE TYPE 7CRFSW 1999.16 cc	1/1/1998	2006+
A➔	5604	206 GRAND TOURISME	1/5/1999	2006+
C2	28	405 MI 16 1904.5 cc	1/4/1995	2005
C2	36	406 SV 1,8L	1/3/1997	2006+
N	5325	205 GTI 1900 1905cc	1/2/1987	2001
N	5453	106 XSI 1360.5	1/7/1992	2003
N	5489	106 XN 954 cc	1/5/1993	2003
N	5505	106 Rallye 1294 cc	1/1/1994	2003
N	5510	306 16S 1998.2 cc	1/4/1994	2005
N	5561	106 RALLYE S20 1587 cc	1/2/1997	2005
N	5565	106 S 16 1587,5 cc	1/2/1999	2006+
N	5576	306 S16 BASE TYPE 7CRFSW 1999.16 cc	1/1/1998	2005
ST	13	405 SIGNATURE	1/4/1995	2003
ST	31	406	1/4/1996	2003
ST	38	406 MODEL YEAR 98	1/4/1998	2005

Renault				
A	5378	R19 GTS TYPE B 53705 1390cc	1/1/1989	2002
A	5379	R19 GTX TYPE B 53305 1721cc	1/1/1989	2001
A	5407	19 GTR C53105 1797cc	1/4/1990	2001
A★	5418	19 16S TYPE C539 1764cc	1/10/1990	2001
A★	5433	CLIO 16S TYPE C575 1764 cc	1/4/1991	2003
A	5474	19 16S TYPE L53D 1764 cc	1/1/1993	2001
A	5485	CLIO RN 1200 TYPE C57A23 1171cc	1/4/1993	2003
A	5511	LAGUNA B56 1998 cc	1/4/1994	2006+
A★	5548	MEGANE COUPE 1995 cc	1/3/1996	2005
A	5601	MEGANE COUPE DIESEL DTI 1870 x 1.5 = 2805 cc	1/3/1999	2006+
A	5616	CLIO RENAULT SPORT 2.0 16v (CBOM) 1998cc	1/5/2000	2007+
B	299	ALPINE A610 TURBO 2975x1.7=5057.50cc	1/4/1993	2001
C2	27	CLIO WILLIAMS	1/4/1995	2005
C2	38	CLIO WILLIAMS	1/3/1997	2005
C2	43	CLIO WILLIAMS	1/2/1999	2006+
F3	314	CLIO WILLIAMS 1998 cc	1/3/1994	2006+
F3	321	MEGANE COUPE	1/3/1998	2006+
N	5378	R19 GTS TYPE B 53705 1390cc	1/1/1989	2002
N	5379	R19 GTX TYPE B 53305 1721cc	1/1/1989	2001
N	5418	19 16S TYPE C539 1764cc	1/10/1990	2001
N	5433	CLIO 16S TYPE C575 1764 cc	1/4/1991	2003
N	5474	19 16S TYPE L53D 1764cc	1/1/1993	2001
N	5485	CLIO RN 1200 TYPE C57A23 1171cc	1/4/1993	2003
N	5548	MEGANE COUPE 1995 cc	1/3/1996	2005
N	5616	CLIO RENAULT SPORT 2.0 16v (CBOM) 1998cc	1/5/2000	2007+
ST	14	LAGUNA B56	1/4/1995	2002
ST	41	LAGUNA B56 Mi 98	1/4/1998	2005
T4	4041	KERAX 385 6X6 Type 33EVC2 11121.6cc	1/1/1999	2009+
Renault Sport				
GT2	7	SPIDER TYPE EFOH	1/5/1997	2006+

G. Britain

Ford				
A★	5450	ESCORT RS 2000 MK.3 1998cc	1/1/1992	2004
A	5497	MONDEO 2.0L Si 1998 cc	1/7/1993	2002
A★	5567	KA 1298 cc	1/3/1997	2006+
A★	5578	PUMA 1679 cc	1/2/1998	2006+
A★	5596	FOCUS 1990.4 cc	1/1/1999	2006+
C2	9	2.5L PROBE ENGINE 2497 cc	1/4/1993	2005
C2	34	COSWORTH YB	1/11/1996	2005
C2	35	ZETEC	1/12/1996	2006+
F3	317	ESCORT RS COSWORTH 1994.5 cc	1/1/1995	2006+
N	5450	ESCORT RS 2000 MK.3 1998cc	1/1/1992	2004
N	5497	MONDEO 2.0L Si 1998 cc	1/7/1993	2002
N	5567	KA 1298 cc	1/3/1997	2006+
N	5578	PUMA 1679 cc	1/2/1998	2006+
N	5596	FOCUS 1990.4 cc	1/1/1999	2006+
ST	19	MONDEO 4 DOOR	1/4/1995	2002
ST	20	MONDEO 5 DOOR	1/4/1995	2002
ST	34	MONDEO 97MY (4 DOOR)	1/3/1997	2004
ST	35	MONDEO 97MY (5 DOOR)	1/3/1997	2004
ST	45	MONDEO ZETEC	1/3/1999	2006+
T	1067	MAVERICK 2389 cc	1/4/1994	2002
Honda Motor Europe Ltd				
A	5588	CIVIC 5 DOOR (MB86) 1797.5 cc	1/6/1998	2005
A	5618	Accord Sedan CG 9 1997 cm^3	1/5/2000	2007+
N	5588	CIVIC 5 DOOR (MB86) 1797.5 cc	1/6/1998	2005
N	5618	Accord Sedan CG 9 1997 cm^3	1/5/2000	2007+
ST	1	ACCORD LS (CC756)	1/3/1995	2002
ST	33	ACCORD LS (CE 856)	1/3/1997	2004
ST	46	ACCORD (CG)	1/3/1999	2006+
Jaguar cars Ltd				
GT1	2	JAGUAR XJ-220	1/1/1996	2002
Land Rover				
T	1071	DISCOVERY 3955 cc	1/4/1995	2002
LISTER CARS				
GT2	8	STORM	1/4/1999	2006+

Lotus				
GT1	6	GT1 TURBO	1/4/1997	2004
McLaren Cars Limited				
GT1	1	McLAREN F1	1/1/1995	2004
Marcos Sales LTD				
GT2	10	MANTARA LM600	1/6/1999	2006+
Nissan Motor Manufacturing Ltd				
A	5608	PRIMERA (P11) 1998.4cc	1/11/1999	2006+
N	5608	PRIMERA (P11) 1998.4cc	1/11/1999	2006+
ST	48	PRIMERA (P11)	1/11/1999	2006+
Panoz Motorsport Ltd				
GT1	4	PANOZ GTR	1/4/1997	2004
Rover Cars				
A	5447	METRO GTI 1396 cc	1/1/1992	2002
A	5475	220 GTI 1996.5cc	1/1/1993	2003
A	5502	MINI COOPER 1.3i 1274 cc	1/1/1994	2003
A	5560	MINI COOPER 1.3i 1274 cc	1/1/1997	2004
N	5447	METRO GTI 1396 cc	1/1/1992	2002
N	5475	220 GTI 1996.5cc	1/1/1993	2003
N	5502	MINI COOPER 1.3i 1274 cc	1/1/1994	2003
N	5560	MINI COOPER 1.3i 1274 cc	1/1/1997	2004
Vauxhall				
C2	41	VAUXHALL C20XE 16 VALVE ENGINE	1/3/1998	2005
ST	36	VAUXHALL VECTRA	1/11/1997	2004

Italy

Alfa Romeo				
A	5471	155 T. SPARK 2.0 1995cc	1/1/1993	2002
A	5472	155 V6 2492.4cc	1/1/1993	2003
A	5476	155 QUADRIFOGLIO 4 1995x1.7=3391.5cc	1/1/1993	2003
A	5503	164 QUADRIFOGLIO 3.0 V6 24V 2959 cc	1/1/1994	2005
A	5513	155 T.SPARK 1.8 1773 cc	1/4/1994	2001
A	5544	155 T.SPARK 2.0 S 16V 1969.46 cc	1/12/1995	2003
A	5549	145 T.SPARK 2.0 16V QUADRIFOGLIO 1969.46	1/4/1996	2006+
A	5574	156 T.SPARK 2.0 16V 1969.46 cc	1/1/1998	2005
C1	2	155 T.SPARK 2.0 S 16V	1/4/1996	2003
C1	3	155 T.SPARK 2.0 S 16V	1/4/1996	2003
C2	4	C.BLOCK 164 2.0 TU/C.HEAD 155 QUA 4 1995	1/1/1993	2005
C2	29	155 2.0 T.SPARK SUPER 16V	1/6/1995	2005
C2	39	T.SPARK 1.8 16V	1/7/1997	2006+
C2	42	T. SPARK 1.8 16V	1/3/1998	2006+
F3	304	TWIN SPARK 2.0 1995 cc	1/1/1993	2006+
F3	318	155 2.0 T.SPARK SUPER 16V	1/6/1995	2006+
F3	322	T. SPARK 1.4 / 1.6 16V	1/3/1998	2006+
N	5471	155 T. SPARK 2.0 1995cc	1/1/1993	2002
N	5472	155 V6 2492.4cc	1/1/1993	2003
N	5476	155 QUADRIFOGLIO 4 1995x1.7=3391.5cc	1/1/1993	2003
N	5503	164 QUADRIFOGLIO 3.0 V6 24V 2959 cc	1/1/1994	2005
N	5544	155 T.SPARK 2.0 S 16V 1969.46 cc	1/12/1995	2003
N	5549	145 T.SPARK 2.0 16V QUADRIFOGLIO 1969.46	1/4/1996	2006+
N	5574	156 T.SPARK 2.0 16V 1969.46 cc	1/1/1998	2006+
ST	7	155 (M.Y. 1994)	1/3/1995	2002
ST	9	155 (M.Y. 1995)	1/3/1995	2003
ST	37	156 (M.Y. 1997)	1/1/1998	2005
ST	43	156 1.6 (M.Y. 1998)	1/11/1998	2005
Ferrari				
GT2	11	F50	1/8/1999	2006+
NGT	1	360 Modena 3586,2cm³	1/3/2000	2007+
Fiat				
A	5402	UNO TURBO IE 1372.1x1.7=2332.6cc	1/2/1990	2003
A	5436	TIPO 2.0/16V 1995cc	1/10/1991	2003
A★	5463	CINQUECENTO 902.6cc	1/10/1992	2005
A★	5529	CINQUECENTO SPORTING 1108.3 cc	1/1/1995	2005
A	5530	COUPE 2.0 16V 1995 cc	1/1/1995	2004
A	5531	COUPE 2.0 16V TURBO 1995x1.7=3391.5cc	1/1/1995	2004

A	5558	BRAVO HGT 2.0 20V 1997.5 cc	1/1/1997	2006+
A★	5593	SEICENTO SPORTING 1108.3 cc	1/10/1998	2006+
A★	5595	SEICENTO SPORTING ABARTH 1108.3 cc	1/12/1998	2006+
A★	5602	PALIO 1.6 16V 1580.66 cc	1/3/1999	2006+
A★	5609	PUNTO HGT 1.8 16v 1746,96cc	1/11/1999	2006+
F3	303	TIPO i.e. 16V 1755.6 cc	1/10/1992	2006+
N	5402	UNO TURBO IE 1372.1x1.7=2332.6cc	1/2/1990	2003
N	5436	TIPO 2.0/16V 1995cc	1/10/1991	2003
N	5463	CINQUECENTO 902.6cc	1/10/1992	2005
N	5529	CINQUECENTO SPORTING 1108.3 cc	1/1/1995	2005
N	5530	OUPE 2.0 16V 1995 cc	1/1/1995	2004
N	5531	COUPE 2.0 16V TURBO 1995x1.7=3391.5cc	1/1/1995	2004
N	5558	BRAVO HGT 2.0 20V 1997.5 cc	1/1/1997	2006+
N	5593	SEICENTO SPORTING 1108.3 cc	1/10/1998	2006+
N	5595	SEICENTO SPORTING ABARTH 1108.3 cc	1/12/1998	2006+
N	5602	PALIO 1.6 16V 1580.66 cc	1/3/1999	2006+
N	5609	PUNTO HGT 1.8 16v 1746,96cc	1/11/1999	2006+
Iveco S.p.A.				
T4	4027	135 E 23 W/RS 5861 cc	1/8/1995	2002
Automobili Lamborghini S.p.A.				
GT1	8	132 GT1	1/4/1998	2005
		India		
Maruti Udyog Ltd				
A	5371	MARUTI 800 796 cc	1/10/1988	2001
M/S. Premier Automobiles Ltd				
A	5283	PREMIER PADMINI 1089.5cc	1/12/1985	2001
N	5283	PREMIER PADMINI 1089.5cc	1/12/1985	2001
		Japan		
Daihatsu				
A	5494	CHARADE (G200) 1295.5 cc	1/7/1993	2006+
A	5509	CHARADE GTI (G201) (DETOMASO) 1589.5 cc	1/4/1994	2005
A	5541	MIRA(L210) PORODUA KANCIL 659x1.7=1120.5	1/7/1995	2002
N	5494	CHARADE (G200) 1295.5 cc	1/7/1993	2006+
N	5509	CHARADE GTI (G201) (DETOMASO) 1589.5 cc	1/4/1994	2005
N	5541	MIRA(L210) PORODUA KANCIL 659x1.7=1120.5	1/7/1995	2002
T	1009	ROCKY WAGON (F75V) 2765.4x1.5=4148,1cc	1/1/1989	2001
T	1010	ROCKY HARD TOP (F70V) 2765.4x1.5=4148,1cc	1/1/1989	2001
T	1018	FEROZA RESIN TOP(F300G)(Carb.Mod)1589.58	1/4/1989	2005
T	1019	FEROZA RESIN TOP(F300G)(EFImod) 1589.58	1/4/1989	006+
T	1066	ROCKY HARD TOP (F73) 2765.5x1.5=4148,1cc	1/4/1994	2006+
Fuji				
A	5399	SUBARU LEGACY 4WD TUR 1994.3x1.7=3390.3	1/1/1990	2001
A	5420	SUBARU LEGACY SEDAN 2.2 4WD BC 2212.4cc	1/11/1990	2001
A	5421	SUBARU LEG W 2.0 4WDBF 1994.4x1.7=3390.5	1/11/1990	2001
A	5422	SUBARU LEGACY SEDAN 2.0 4WD,BC 1994.4cc	1/11/1990	2001
A	5464	SUBARU VIVIO SEDAN 4WD SUPER.KK 1118.5cc	1/11/1992	2006+
A➔	5480	SUBARU IMPREZA 555 GC8 1994.4x1.7=3390.5	1/4/1993	2006+
A	5575	SUB FOR 2.0 4WD T SF 1994.4x1.7=3390.5cc	1/1/1998	2006+
A	5591	SUB LEG 2.0 4WD TUR BH 1994.4x1.7=3390.5	1/10/1998	2006+
A	5598	SUBARU IMPREZA SEDAN 1.6 FF, GC3 1597.2	1/2/1999	2006+
A	5614	UBARU PLEO SEDAN-RA 658x1.7= 1118.5cm³	1/4/2000	2007+
C2	10	EJ20 ENGINE (A-5422) 1994.4 cc	1/4/1993	2006+
C2	11	EJ20 ENGINE 1994.4 cc	1/4/1993	2006+
N	5399	SUBARU LEGACY 4WD TUR 1994.3x1.7=3390.3	1/1/1990	2001
N	5420	SUBARU LEGACY SEDAN 2.2 4WD BC 2212.4cc	1/11/1990	2001
N	5421	SUBARU LEG W 2.0 4WDBF 1994.4x1.7=3390.5	1/11/1990	2001
N	5422	SUBARU LEGACY SEDAN 2.0 4WD,BC 1994.4cc	1/11/1990	2001
N	5464	SUBARU VIVIO SEDAN 4WD SUPER.KK 1118.5cc	1/7/1993	2006+
N	5480	SUBARU IMPREZA 555 GC8 1994.4x1.7=3390.5	1/4/1993	2006+
N	5575	SUB FOR 2.0 4WD T SF 1994.4x1.7=3390.5cc	1/1/1998	2006+
N	5598	SUBARU IMPREZA SEDAN 1.6 FF, GC3 1597.2	1/2/1999	2006+
N	5614	SUBARU PLEO SEDAN-RA 658x1.7= 1118.5cm³	/4/2000	2007+
T	1090	UBARU SF 4WD, SF 3390.5 cc	1/1/1997	006+
Hino Motors, Ltd				
T4	4025	RANGER FT U-FT3HGA-LS 11026.2 cc	1/1/1995	2005
T4	4030	RANGER FT, FT1JGB-LU 1962x1.7=13535.5	1/1/1996	2006
T4	4033	RANGER FT, FT1JGB-LD 13535.5 cc	1/1/1997	2007

Honda				
A	5444	CIVIC 3 DOOR SIR.II (EG6) 1596cc	1/1/1992	2001
A	5487	CIVIC FERIO 4 DOOR SIR (EG9) 1596 cc	1/4/1993	2001
A	5499	DOMANI (MA5) 1834 cc	1/10/1993	2002
A	5552	CIVIC 3 DOOR SiR (EK4) 1596 cc	1/4/1996	2006+
A	5590	INTEGRA TYPE-R (DC2) European 1797.2cc	1/7/1998	2006+
C2	13	B18B ENGINE 1834 cc	1/10/1993	2005
C2	14	B16A ENGINE (A-5487) 1596 cc	1/10/1993	2005
C2	15	B18C ENGINE 1798 cc	1/10/1993	2006+
C2	23	H22A ENGINE 2156 cc	1/1/1995	2005
F3	301	B21A1 ENGINE 2056 cc	1/7/1991	2006+
F3	306	CIVIC 3 DOOR SIR.II (A-5444) 1596 cc	1/1/1993	2006+
F3	307	PRELUDE 4WS(BA5) (A-5357) 1958 cc	1/1/1993	2006+
F3	308	PRELUDE 4WS(BA5) (A-5357 04/01ET) 1958	1/1/1993	2006+
F3	313	B18C ENGINE 1798 cc	1/10/1993	2006+
F3	319	H22A ENGINE 2156 cc	1/1/1997	2006+
F3	323	H22A/F20B ENGINE	1/7/1998	2006+
N	5444	CIVIC 3 DOOR SIR.II (EG6) 1596cc	1/1/1992	2001
N	5552	CIVIC 3 DOOR SiR (EK4) 1596 cc	1/4/1996	2006+
N	5590	INTEGRA TYPE-R (DC2) European 1797.2cc	1/7/1998	2006+
ST	11	CIVIC FERIO 4 DOOR	1/4/1995	2002
Isuzu				
T	1057	BIGHORN (UBS69GW) 3059.3x1.5=4588,95cc	1/7/1992	2005
T	1058	BIGHORN (UBS25DW) 3165.5 cc	1/4/1993	2005
T	1092	VehiCROSS (UGS250) 3165.5 cc	1/10/1997	2006+
T	1098	BIGHORN (UBS73G) 2999.3cc	1/7/1999	2006+
T	1099	BIGHORN (UBS26G) 3494.2cc	1/7/1999	2006+
Mazda Motor Co				
A	5514	LANTIS COUPE 2.0 1995.5 cc	1/4/1994	2001
C2	24	KL 2496,5 cc	1/3/1995	2005
ST	4	LANTIS COUPE 2.0	1/3/1995	2002
ST	5	XEDOS 6 2.0	1/3/1995	2002
Mitsubishi				
A	5469	LANCER EV CD9A(PROTON WIRA)1997.5x1.7=33	1/1/1993	2002
A	5559	LANCER EVOLUTION (CN9A)1997.5x1.7=3395.5	1/1/1997	2005
A	5585	LANCER EV (CP9A) 1998.8x1,7=3398 cc	1/4/1998	2005
F3	315	4G93 ENGINE 1834 cc	1/3/1994	2006+
F3	324	4G93 (GDI) ENGINE	1/7/1998	2006+
N	5469	LANCER EVOLUTION CD9A 1997.5x1.7=3395.5	1/1/1993	2002
N	5559	LANCER EVOLUTION (CN9A)1997.5x1.7=3395.5	1/1/1997	2005
N	5585	LANCER EV (CP9A) 1998.8x1,7=3398 cc	1/4/1998	2005
T	1044	PAJERO 3000 (V23) 2972.3cc	1/7/1991	2006+
T	1045	PAJERO WAGON 3000 (V43) 2972.3cc	1/7/1991	2006+
T	1046	PAJERO TURBO (V24) 2476.8x1.5=3715,2cc	1/7/1991	006+
T	1047	PAJERO WAGON TU (V44) 2476.8x1.5=3715,2cc	1/7/1991	2006+
T	1062	PAJERO 3500 (V25) 3497 cc	1/1/1994	2006+
T	1063	PAJERO WAGON 3500 (V45) 3497 cc	1/1/1994	2006+
T	1073	RVR (N23) 1997.5 x 1.5 = 2996,25 cc	1/1/1996	2003
T	1079	PAJERO W TUR 2800(V46) 2835.2x1.5=4252,8cc	1/1/1996	2005
T	1080	PAJERO TURBO 2800(V26) 2835.2x1.5=4252,8cc	1/1/1996	2005
T	1086	CHALLENGER 2835.2 x 1.5 = 4252,8 cc	1/1/1997	2005
T	1094	PAJERO EVOLUTION (V55) 3947 cc	1/1/1998	2005
T	1100	PAJERO TURBO DIESEL (V68) 3200x1.5=4800cc	1/10/1999	2006+
T	1104	PAJERO WAGON TURBO DIESEL (V78) 3200,5 x 1.5 = 4800.75cc	1/10/2000	2007+
T	1105	PAJERO WAGON 3500 GDI (V75) 3497 cm^3	1/10/2000	2007+
T4	4031	FUSO FR415 16031.5 x 1.7 = 27253.5 cc	1/1/1996	2003
T4	4036	FUSO FR415 16031.6 x 1.7 = 27253.7 cc	1/1/1998	2005
Nissan				
A	5405	SKYLINE GTR TUR(BNR32) 2568.7x1.7=4366.8	1/3/1990	2001
A	5427	PULSAR GTI-R (RNN14) 1998.2x1.7=3396.9cc	1/3/1991	2001
A	5461	PRIMERA (HP10) 1998 cc	1/7/1992	2002
A★	5470	SUNNY GTI (N14) 1998cc	1/1/1993	2001
A	5501	SKYLINE GTS25 (ER33) 2499 cc	1/1/1994	2005
A	5523	SUNNY (FB14) 1498 cc	1/7/1994	2006+
A★	5546	MICRA 1.3 SUPER S (K11) 1275 cc	1/1/1996	2006+
A★	5570	ALMERA GTI (N15) 1998 cc	1/4/1997	2006+
A	5582	MAXIMA QX (A32) 2987.4 cc	1/3/1998	2006+
A	5592	CEDRIC (HY33) 2987.5 cc	1/10/1998	2006+
C2	16	SR20DE ENGINE (A-5427) 1998.2 cc	1/10/1993	2005

C2	17	SR20DE ENGINE (A-5461) 1998 cc	1/10/1993	2006+
C2	18	SR20DE ENGINE 1998 cc	1/10/1993	2006+
C2	19	SR20DE ENGINE 1998 cc	1/10/1993	2006+
F3	326	SR20VE ENGINE	1/1/2000	2007+
N	5405	SKYLINE GTR TUR(BNR32) 2568.7x1.7=4366.8	1/3/1990	2001
N	5427	PULSAR GTI-R (RNN14) 1998.2x1.7=3396.9cc	1/3/1991	2001
N	5461	PRIMERA (HP10) 1998 cc	1/7/1992	2002
N	5470	SUNNY GTI (N14) 1998cc	1/1/1993	2001
N	5546	MICRA 1.3 SUPER S (K11) 1275 cc	1/1/1996	2006+
N	5570	ALMERA GTi (N15) 1998 cc	1/4/1997	2006+
N	5582	MAXIMA QX (A32) 2987.4 cc	1/3/1998	2006+
ST	10	PULSAR (FN14)	1/4/1995	2006+
ST	21	PRIMERA (HP10)	1/4/1995	2002
ST	23	SUNNY (FB14)	1/10/1995	2006+
ST	29	PRIMERA (HP11)	1/4/1996	2006+
T	1016	PATROL (Y60) 4169.2cc	1/1/1989	2005
T	1017	PATROL DIESEL (RY60) 4169.2cc	1/1/1989	2005
T	1036	PATHFINDER MPI (WD21) 2960.5cc	1/1/1990	2002
T	1037	PATROL DIES TUR (YY60) 2825.9x1.5=4238,85cc	1/1/1990	2005
T	1059	PATROL (GY60) 4169.0 cc	1/7/1993	2005
T	1076	TERRANO (LR50) 3274 cc	1/1/1996	2006+
T	1093	ATROL (TBSY61) 4478.8 cc	1/1/1998	2006+
T	1095	PATROL (KASY61) 4169.2 cc	1/4/1998	2006+
T	1106	PATHFINDER (LR50) 3498,6 cm³	1/10/2000	2007+
Suzuki				
A	5382	SUZUKI SWIFT 1300 (AA34S) 1298.8cc	1/4/1989	2002
A	5545	BALENO 1300 (GA11S) 1299 cc	1/1/1996	2006+
A	5555	BALENO 1600 (GC31S) 1590.5 cc	1/7/1996	2006+
A	5556	BALENO 1600 (GA31S) 1590.5 cc	1/7/1996	2006+
A★	5557	BALENO WAGON 1800 (GC41W) 1839.6 cc	1/10/1996	2006+
A★	5605	BALENO 1800 (GC41S) 1839.9cc	1/7/1999	2006+
N	5382	SUZUKI SWIFT 1300 (AA34S) 1298.8cc	1/4/1989	2002
N	5545	ALENO 1300 (GA11S) 1299 cc	1/1/1996	2006+
N	5555	BALENO 1600 (GC31S) 1590.5 cc	1/7/1996	2006+
N	5556	BALENO 1600 (GA31S) 1590.5 cc	1/7/1996	2006+
N	5557	BALENO WAGON 1800 (GC41W) 1839.6 cc	1/10/1996	2006+
N	5605	BALENO 1800 (GC41S) 1839.9cc	1/7/1999	2006+
T	1005	SUZUKI VITARA (TA01V) 1590.4cc	1/1/1989	2005
T	1048	SAMURAI (SJ70) 1298.8cc	1/8/1991	2001
T	1049	VITARA 4V LONG (TD01) 1590.4cc	1/8/1991	2005
T	1050	VITARA 4V (TA01) 1590.4cc	1/8/1991	2005
T	1072	VITARA (TD1 1W) 1998.5 cc	1/7/1995	2005
T	1101	AND VITARA 2500 (TD62V) 2493,8cc	1/1/2000	2007+
Toyota				
A	5429	STARLET (EP81) 1295.8cc	1/4/1991	2001
A	5437	COROLLA LEVIN (AE101) 1587.1cc	1/10/1991	2001
A	5451	CE.T.4WD/2000GT-F(ST185)1998.2x1.7=3397c	1/1/1992	2001
A	5465	CARINA E (ST191) 1998cc	1/1/1993	2005
A	5481	COROLLA (AE101) 1587 cc	1/4/1993	2001
A	5521	CELICA GT-FOUR 1998.2 x 1.7 = 3397 cc	1/5/1994	2001
A	5566	STARLET 3 DOOR (EP91) 1331.5 cc	1/3/1997	2005
A➔	5572	COROLLA 3DOOR HATCHBACK (EE111) 1331.5cc	1/8/1997	2006+
A	5594	CELICA ST202 1998.2 cc	1/10/1998	2006+
A➔	5597	COROLLA 3 DOOR HATCHBACK (AE111) 1587 cc	1/1/1999	2006+
A	5619	TOYOTA YARIS 3DOOR (NCP10) 1299 cm³	1/8/2000	2007+
C2	1	3S-GE ENGINE 1998 cc	1/1/1993	2005
C2	20	3S-GE ENGINE 1998 cc	1/10/1993	2005
C2	22	3S-GE ENGINE 1998 cc	1/7/1994	2005
C2	33	3S-GTE ENGINE	1/10/1996	2006+
C2	40	3S-GE ENGINE 1998 cc	1/10/1997	2006+
F3	305	3S-GE ENGINE 1998 cc	1/1/1993	2006+
F3	312	3S-GE ENGINE 1998 cc	1/10/1993	2006+
F3	316	3S-GE ENGINE 1998 cc	1/7/1994	2006+
F3	320	3S-GE ENGINE 1998 cc	1/10/1997	2006+
N	5429	STARLET (EP81) 1295.8cc	1/4/1991	2001
N	5451	CE.T.4WD/2000GT-F(ST185)1998x1.7=3397c	1/1/1992	2001
N	5521	CELICA GT-FOUR 1998.2 x 1.7 = 3397 cc	1/5/1994	2001
N	5566	STARLET 3 DOOR (EP91) 1331.5 cc	1/4/1997	2005
N	5597	COROLLA 3 DOOR HATCHBACK (AE111) 1587 cc	1/1/1999	2006+
N	5619	TOYOTA YARIS 3DOOR (NCP10) 1299 cm³	1/8/2000	2007+
ST	2	CARINA E (ST191)	1/3/1995	2005

ST	3	COROLLA (AE101)	1/1/1995	2002
ST	24	CORONA EXiV (ST202)	1/10/1995	2005
ST	25	COROLLA (AE110)	1/1/1996	2003
ST	26	CAMRY (SXV11)	1/1/1996	2005
ST	42	COROLLA 5DOOR LIFTBACK (EE111)	1/7/1998	2006+
ST	47	TOYOTA CHASER (JZX 100)	1/5/1999	2006+
T	1040	LAND CRUISER (HDJ81V) 4163.9x1.5=6245,85cc	1/10/1990	2001
T	1041	LAND CRUISER (HDJ80) 4163.9x1.5=6245,85cc	1/10/1990	2001
T	1042	LAND CRUISER (HZJ73V) 4163.9cc	1/10/1990	2005
T	1064	LAND CRUISER (KZJ70) 2982x1.5=4473cc	1/4/1994	2005
T	1065	LAND CRUISER (KZJ73) 2982x1.5=4473cc	1/4/1994	2005
T	1077	LAND CRUISER (HDJ81V) 4163.9x1.5=6245,85cc	1/1/1996	2005
T	1078	LAND CRUISER (HDJ80) 4163.9 x 1.5=6245,85cc	1/1/1996	2005
T	1087	LAND CRUISER (VZJ95) 3378 cc	1/1/1997	2006+
T	1088	LAND CRUISER (KZJ90) 2982x1.5=4473cc	1/1/1997	2006+
T	1089	LAND CRUISER (KZJ95) 2982x1.5=4473cc	1/1/1997	2006+
T	1091	RAV4 (SAX11) 1998.0 cc	1/7/1997	2006+
T	1096	LAND CRUISER (HDJ100) 4163.9x1.5=6245,85	1/7/1998	2006+
T	1097	LAND CRUISER (HDJ101) 4163.9x1.5=6245,85	1/7/1998	2006+

Malaysia

Proton

A	5524	WIRA/PERSONA 1.6LXI (C98S) 1597 cc	1/7/1994	2001
A	5553	WIRA 1.8EXi/PERSONA 1.8EXi 1834cc	1/4/1996	2004
N	5524	WIRA/PERSONA 1.6LXI (C98S) 1597 cc	1/7/1994	2001
N	5553	WIRA 1.8EXi/PERSONA 1.8EXi 1834cc	1/4/1996	2004

Proton

A★	5547	PROTON SATRIA 1.6 GLi 1597,4 cc	1/1/1996	2004
A	5617	PROTON SATRIA 1.3 GLi 1299 cm^3	1/5/2000	2007+
N	5547	PROTON SATRIA 1.6 GLi 1597,4 cc	1/1/1996	2004
N	5617	PROTON SATRIA 1.3 GLi 1299 cm^3	1/5/2000	2007+

Netherlands

Ginaf Trucks B.V.

T4	4028	GINAF TYPE F2222 4x4 11631.3 cc	1/12/1995	2005

Scania

T4	4005	P 113 HK 4x4 11021 cc	1/8/1992	2003

Argentina

Renault

A	5160	R 18 GTX 1995cc	1/8/1983	2001

Sevel Argentina S.A.

A	5459	FIAT REGATTA 2000 1995.2 cc	1/7/1992	2001

Rumania

Intreprinderea de Auto. Pitest

A	5408	DACIA 1320 1397cc	1/4/1990	2002

Automobile Dacia S.A.

A	5579	DACIA NOVA R524 1557 cc	1/2/1998	2005
N	5579	DACIA NOVA R524 1557 cc	1/4/1998	2005

SC Roman SA

T4	4039	26.550 DFA 14593.8 cc	1/12/1998	2009+
T4	4040	16.550 FA 14593.8 cc	1/12/1998	2009+

Korea

Daewoo

A	5537	CIELO (NEXIA) 1.5D H/B 4DR 1498.5cc	1/4/1995	2002
A	5550	NEXIA(CIELO) 1.5DOHC H/B 3D 1498.4	1/4/1996	2004
A	5580	NUBIRA 2.0 DOHC H/B 5 DOOR 1998 cc	1/2/1998	2005
A★	5581	LANOS 1.6 DOHC H/B 3 DOOR 1598 cc	1/2/1998	2005
N	5537	CIELO (NEXIA) 1.5D H/B 4DR 1498.5cc	1/4/1995	2002
N	5550	NEXIA(CIELO) 1.5DOHC H/B 3D 1498.4	1/4/1996	2003
N	5580	NUBIRA 2.0 DOHC H/B 5 DOOR 1998 cc	1/2/1998	2005
N	5581	LANOS 1.6 DOHC H/B 3 DOOR 1598 cc	1/2/1998	2005

Hyundai Motor Company

A	5508	PONY 1500 GSI 1468 cc	1/4/1994	2001
A	5540	NEW LANTRA(ELANTRA) 18.8 16V 1795 cc	1/7/1995	2002

A	5554	PONY EXCEL (ACCENT) 1.5 16V 1495.3 cc	1/5/1996	2003
A★	5571	COUPE TIBURON 1975.2 cc	1/7/1997	2004
A➤	5611	ACCENT	1/2/2000	2007+
N	5508	PONY 1500 GSI 1468 cc 1/4/1994 2001		
N	5554	PONY EXCEL (ACCENT) 1.5 16V 1495.3 cc	1/5/1996	2003
Kia Motors Corporation				
A	5538	SEPHIA 1793 cc	1/7/1995	2004
A	5539	SEPHIA 1.6D (TIMOR) 1598 cc	1/7/1995	2004
N	5538	SEPHIA 1793 cc	1/7/1995	2004
N	5539	SEPHIA 1.6D 1598 cc	1/7/1995	2004
Ssangyong Motor Company				
T	1075	MUSSO 3199 cc	1/1/1996	2003

Russia

Kamaz Inc. Naberezhnye Tchelny				
T4	4022	KAMAZ-49250 11756 cc	1/1/1994	2001
T4	4023	KAMAZ 49252 17241 cc	1/11/1994	2001
T4	4024	KAMAZ 49251 14016 cc	1/11/1994	2001
T4	4032	KAMAZ-49255 25862cc	1/10/1996	2003
Moskvitch				
A	5361	AZLK 2141 ALEKO-RALLY 1568.5cc	1/4/1988	2002
Vaz				
A	5174	LADA 2105 1295cc	1/11/1983	2002
A	5308	LADA 2108 1288cc	1/8/1986	2002
A	5345	LADA-SAMARA 21083 1500cc	1/1/1988	2002
A	5381	LADA (BA3-21074) 1568.5cc	1/4/1989	2002
A	5587	LADA 110-2,0 (VAZ-21106) 1998.2 cc	1/5/1998	2005
N	5587	LADA 110-2,0 (VAZ-21106) 1998.2 cc	1/3/1999	2006+
T	1039	LADA NIVA VAZ-2121 1568.5cc	1/4/1990	2002
Usine Autom. De Zaporojie				
A	5424	TAVRIA (ZAZ-1102) 1092cc	1/1/1991	2002

Sweden

Saab				
A	5455	9000 CS 2.3 TURBO 2290x1.7=3893cc	1/4/1992	2005
A	5525	900 TURBO 1985 x 1.7 = 3374.5 cc	1/7/1994	2001
A★	5577	SAAB 900 2.0 I 1985 cc	1/2/1998	2006+
N	5455	9000 CS 2.3 TURBO 2290x1.7=3893cc	1/4/1992	2005
N	5525	900 TURBO 1985 x 1.7 = 3374.5 cc	1/7/1994	2001
N	5577	SAAB 900 2.0 I 1985 cc	1/2/1998	2005
Volvo				
A	5493	850 SE/GLT 2.0 1984 cc	1/7/1993	2002
A	5512	850 SE/GLT 2.0 1984 cc	1/4/1994	2002
A	5534	850 T-5 SEDAN 2319 X 1.7 = 3942.3 cc	1/2/1995	2002
A	5535	850 T-5 ESTATE 2319 x 1.7 = 3942.3 cc	1/2/1995	2002
A	5569	S40 2.0 1948 CC	1/4/1997	2005
C2	25	850 T-5 B5234FT1	1/3/1995	2005
N	5534	850 T-5 SEDAN 2319 x 1.7 = 3942.3 cc	1/2/1995	2002
N	5535	850 T-5 ESTATE 2319 x 1.7 = 3942.3 cc	1/2/1995	2002
N	5569	S40 2.0 1948 CC	1/4/1997	2005
ST	12	850 T-5 ESTATE	1/4/1995	2005
ST	18	850 T-5 SEDAN	1/4/1995	2005
ST	32	VOLVO S40	1/1/1997	2005
ST	44	OLVO S40, MY 1999	1/2/1999	2006+

Turkey

Oyak-Renault				
A	5393	RENAULT 11 TXE B37N 1721cc	1/10/1989	2001
A	5396	RENAULT 12 TOROS R 1179 1397cc	1/11/1989	2001
N	5393	RENAULT 11 TXE B37N 1721cc	1/10/1989	2001
N	5396	RENAULT 12 TOROS R 1179 1397cc	1/11/1989	2001

Etats Unis / United States

Chrysler				
C2	32	NEON 2 LITRE	1/3/1996	2005
C2	37	NEON 2.0 L	1/3/1997	2005

GT2	5	DODGE VIPER GTS	1/4/1996	2004
ST	30	DODGE/CHRYSLER - STRATUS J.A.	1/4/1996	2004
AM General Corporation				
T4	4029	HUMMER WAGON/TRUCK 6453.04 cc	1/1/1996	2004
General Motors Corporation				
T	1074	CHEVROLET BLAZER 4302 cc	1/1/1996	2003
Saleen Mustang SR				
GT2	6	SALEEN MUSTANG SR	1/4/1997	2004
		Yugoslavia		
Zavodi Crvena Zastava				
A	5245	YUGO 55 1116cc	1/11/1984	2006+
A	5387	YUGO 1.3 1289.6cc	1/5/1989	2006+
N	5245	YUGO 55 1116cc	1/10/1987	2006+
N	5387	YUGO 1.3 1289.6cc	1/5/1989	2006+
		South Africa		
TOYOTA				
A	5607	COROLLA RSi 20v 157cc	1/10/1999	2006+
N	5607	COROLLA RSi 20v 157cc	1/10/1999	2006+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