

## APPROVED FORMULAE

- (b) Inlet and exhaust manifolds.
  - (c) Oil sump including conversion to dry sump.
  - (d) Oil and fuel pumps.
  - (e) Crankshaft provided the stroke is unchanged.
  - (f) Connecting Rods.
  - (g) Main bearing caps.
  - (h) All springs.
  - (i) Valve spring retainers and keepers.
  - (j) Clutch and flywheel.
  - (k) Pistons and piston pins.
  - (l) Camshaft.
  - (m) Tappets, cam followers, push rods, rocker arms and supports.
  - (n) Valves, valve guides, valve seats provided they are of the same type and dimensions.
  - (o) Pulleys, except for camshaft drive.
  - (p) Gaskets, seals, nuts, bolts, studs and washers.
  - (q) Compression ratio.
2. (a) It is permitted to lighten, balance, or modify in shape by machining or polishing the standard components of the engine provided it always remains possible to identify their origin. Ports may be reshaped by removal of metal provided the dimensions at manifold and valve seat faces remain unchanged.
  - (b) It is not permitted to extend or add any material except for dowels, bushings and cylinder liners.

## Formula Ford

1. These regulations shall be effective from 1st January, 1971, and until further notice.

2. *Type of car.* Formula Ford is open to single-seater racing cars fitted with a standard Cortina GT engine with open coachwork as defined by the F.I.A. for Formula III and complying with the other regulations hereafter.

3. *Drivers.* No driver who has won the European Formula Ford Championship, the Les Leston Formula Ford Championship or who fulfils the qualification requirements for full membership of the B.R.D.C. will be permitted to compete in this Formula after the conclusion of the season in which he attains these qualifications.

The B.R.D.C. requirements are:

- (a) Drivers must compete in at least two seasons' racing with participation in not less than six Speed events of any type in each season.
- (b) In the second season, or subsequently, they must have competed in not fewer than four races which must be International or National Open and, in at least two of these four events, the candidates must have been placed 1st, 2nd, or 3rd in general classification, when the race is more than 50 miles but less than 100 miles in length, or finish higher than 10th in races over 100 miles.

NOTE.—Where two drivers handle the same car in a race, both drivers would be eligible if each drive for not less than 100 miles and the car is classed as a finisher.

In races of 100 miles or more a car will be regarded as having finished only if it has completed 80 per cent of the race distance set for its class.

4. The 'Spirit of the Regulations' should be understood to imply that all competitors and constructors are expected to assist in keeping the cost of

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Formula Ford racing within reasonable bounds.

The authority for the control of Formula Ford, its rules and their interpretation is the responsibility of the R.A.C.

5. *Modifications or Additions.* Only those modifications or additions specifically covered by these regulations will be permitted. All engine components not featured in these regulations shall remain completely standard unmodified.

6. *Eligibility.* Any driver who is excluded from an event as a result of driving a car which does not comply with the Formula Ford Regulations will be excluded from any Championship of which the event in question is part.

7. *Safety.* Article 296 of Appendix J of the International Sporting Code of the F.I.A. as defining Formula III must be complied with except for the following exceptions:

- (a) Aerodynamic devices such as aerofoils and/or spoilers are forbidden.
- (b) The coachwork including fuel tanks shall not exceed a maximum width of 95 cms. at any point.
- (c) An inbuilt fire extinguisher is not mandatory. Nevertheless the car shall carry mounted in an accessible place a fire extinguisher of a minimum capacity of 3 kilograms of extinguishant.
- (d) Full safety tanks are not mandatory providing the tank is mounted within the chassis frame and the capacity does not exceed 9 gallons. Nevertheless such tanks must be covered externally with a protective coating as approved by the R.A.C.

8. *Weight.* Minimum weight of car 400 kg. (881.6 lb.) Any ballast which is carried must be permanently fixed and be made an integral part of the vehicle by welding, brazing or riveting.

9. *Chassis.* Must be of tubular construction with no stress-bearing panels except bulk-head and undertray but the curvature of the undertray must not exceed 1 inch. Tubes may transport liquid. Monocoque construction is not permitted. Full seat belt harness mounting points must be fitted on the chassis.

10. *Body.* Free within the limits of paragraphs 2 and 7.

11. *Fuel Tanks.* See paragraph 7. Only Commercial Fuel as specified by Article 297 of Appendix J may be used.

12. *Suspension and Running Gear.* With the exception of springs, hub adaptors, rear hub carriers and bearing bushes all parts must be of steel or ferrous material.

13. *Shock Absorbers.* Free.

14. *Drive.* Rear wheel drive only, final drive free, but torque-biasing differential not permitted.

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15. *Gearbox.* Maximum number of forward speeds—four.
16. *Steering Gear.* Free.
17. *Brakes.* Aluminium alloy callipers are not permitted, otherwise free.
18. *Wheels.* Only 13 inch steel disc type with maximum rim width of 5½ inches. Rims must be of standard manufacture but the offset of the centre disc may be altered. For safety reasons it is strongly recommended that weekly checks are carried out and that wheels are renewed at least twice a year.
19. *Tyres.* Racing tyres are not permitted, otherwise free, within standard production retails range as specified in Section I of R.A.C. Tyre Regulations or readily available through normal channels outside the United Kingdom. The tyre section must be one of the recommended fits by the tyre manufacturer for a 5½J rim. Remould and re-capped tyres are not permitted.
- 20.
- (a) *The Engine.* As from 1st January, 1971, the 1600 GT crossflow engine, in either its uprated or original form, will be the only engines admitted. It is required that entrants declare at scrutineering which series of engine they are running.  
Separate regulations will apply to the two series of engine. Regulations for components which are common to both series are listed below. Regulations and dimensions for components which differ in each series are listed under the heading 1970 and 1971 series. Components may not be interchanged between the 1970 Series and 1971 Series engine.
- (b) *Rocker Covers.* Non standard rocker covers are permitted provided that they in no way improve the performance of the engine. The breather take off may be situated at either end of the rocker cover.
- (c) *Valve Springs.* Valve springs are free within the following limitations:  
(i) Maximum free length of valve springs plus any shim used, 1.48 inches.  
(ii) Single valve springs only—doubles prohibited.  
(iii) The standard cap must be utilized without any intermediate device.
- (d) *Pushrods; Rockers; Tappets; Pedestals and Shaft.* All these items must remain standard. No polishing, profiling, lightening or other modification of the standard part is permitted.
- (e) *Carburettor.* The air cleaner may be removed and substituted by a trumpet. Jets may be changed. The carburettor may be modified for both butterflies to open together. The cold start device and diffuser bar may be removed. External anti-surge pipes may be fitted. No other modifications are permitted—chokes must remain standard and no polishing or profiling is allowed.
- (f) *Exhaust Manifold.* Free.
- (g) *Lubrication System.* Oil sump and pump are free. Dry sump is permitted.
- (h) *Cooling System.* Radiator fan and water pump are free. Dry sump is permitted.
- (i) *Electrical Equipment.* Generator is optional. Only standard Autolite or Lucas distributors may be fitted. Transistorised ignition is not permitted. Other electrical equipment is free.
- (j) *Fuel Pump.* A standard mechanical duel pump only will be permitted. The uprated pump part No. 691F 935 OAB may be used on any engine.
- (k) *Camshaft.* This must remain entirely standard. It must be fully manufactured and ground by the Ford Motor Company and it is prohibited

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to regrind or re-profile camshafts or to grind camshafts from camshaft blanks. Tuftriding or any other surface treatment is prohibited.  
Lobes—heel to toe

	inlet	1.311"
	exhaust	1.312"
Cam lift—measured at top of pushrod	inlet	.231" ± .002"
	exhaust	.232" ± .002"
Max. valve lift measured at springcap	inlet	.356"
	exhaust	.358"
With zero tappet clearance		
Max. valve lift timing with respect to crank	inlet	109° ATDC
	exhaust	109° BTDC
Base circle radius		0.54" ± .002"

- (l) *Crankshaft.* A standard crankshaft must be used. Spot machining to achieve balance is permitted. Polishing of the crankshaft is prohibited. Tuftriding and other surface treatments are prohibited. Crankshaft pulley is free as is tooth belt drive.  
Minimum weight 1970 Series 23 lb. 8 oz. 1971 Series 24 lb. 8 oz.
- (m) *Flywheel and Clutch Assembly.* These must be standard components. Spot Balancing is permitted. Friction material is free. Racing clutches not permitted.  
1970 Series Min. Weight of flywheel and clutch assembly: 28 lb.  
1971 Series Min. Weight of flywheel and clutch assembly: 30 lb.
- (n) *Compression Ratio.* Machining of the block surface is permitted provided neither the maximum compression ratio nor minimum crown to block distances are exceeded.

	1970 Series	1971 Series
Max. compression ratio	10.0:1	9.3:1
Min. combustion volume standard bore	44.4 cc	48.2 cc
.030 overbored unit	45.1 cc	not permitted
Volume allowed (for scrutineering) between the top of the top ring and the top of the piston.	1.64 cc	1.33 cc
Max. permitted bore size	3.223"	3.193"
Volume allowed for valve protrusion	not applicable	0.3 cc
Min. piston to block height	not specified	0.025"
In a 1971 Series engine a damaged bore may be reclaimed by fitment of a standard liner.		

- (o) *Cylinder Head.* It is permissible to reshape the inlet and exhaust ports to the exclusion of metal but not to the addition of same providing the diameter of the ports at the manifold faces remain in accordance with the dimensions set out below. The cylinder head combustion chamber



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may not be re-profiled as this is a fully machined-part, polishing only is permitted.

	1970 Series	1971 Series
Depth of combustion chamber	.120" ± .005"	not applicable
Max. length of combustion chamber	3.154"	not applicable
Max. diameter of ports at manifold	inlet* 1.422"	1.422"
Head face	exhaust 1.158"	1.158"
Head volume per cylinder	7.8 cc min.	not applicable

Measured external to chamfer  
Standard cylinder head gaskets only will be permitted—compressed thickness .033" — .035"

- (p) **Inlet manifold.** The inlet manifold may have the carburettor seat face machined to the horizontal.
- |                          |                 |                                  |
|--------------------------|-----------------|----------------------------------|
| Outer ports at head face | 1.48" x 1.28"   | } Bore of all four 1.24"         |
| Inner ports at head face | 1.28" max.      |                                  |
| Carburettor flange       | 2.910"–3.060"   | Max. length 3.80"                |
|                          | x 1.321"–1.389" | Primary choke and radius .709"   |
|                          |                 | Secondary choke and radius .787" |

- (q) **Pistons.** These shall be standard Ford Production pistons—unmodified in any way except for balancing as specified below. All three piston rings must be fitted, but Apex 3 piece oil control rings are allowed. Localized machining of the gudgeon pin bosses to achieve balance and minimum weight.

	1970 Series	1971 Series
Depth of bowl at centre	0.5" ± .005"	0.5" ± .005"
Centre line of gudgeon pin to crown	1.733" ± .002"	1.737" ± .002"
Overall height	3.30"	3.30"
Minimum weight with piston rings and gudgeon pin	573 gms.	555 gms.
Weight of gudgeon pin	115 ± 2 gms.	115 ± 2 gms.

**Valves.** These shall remain standard. No profiling whatsoever is permitted. The original 45° seat angle must remain.

	1970 Series	1971 Series
Distance apart at centres	1.538" to 1.542"	1.540" ± .020"
Max. distance across face	Inlet 1.502"	1.560"
	Exhaust 1.252"	1.340"
Overall length	Inlet 4.274"–4.286"	4.367" ± .020"
	Exhaust 4.254"–4.266"	4.355" ± .020"

- (s) **Connecting Rods.** Standard 1600 GT connecting rods only may be used. 1970 Series: Polishing is prohibited—balancing only permitted. Minimum weight 645 gms. 1971 Series: Polishing is prohibited and the only machining permitted is to achieve balance and metal may only be removed from the balance-

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ing bosses on the big end cap and at the little end. Minimum weight 640 gms.

- (i) **Miscellaneous.**
- The timing chain/sprocket cover may be altered or replaced.
  - Mechanical tachometer drive may be fitted.
  - The use of non standard replacement parts is permitted as follows: Provided their use does not result in unauthorised modification of any other components:
    - Fasteners, (nuts, bolts, screws, studs, washers etc.) which are not connected with or support any moving part of the engine or its compulsory retained accessories.
    - Gaskets and seals, except cylinder head and carburettor to inlet manifold gaskets.
    - Pump, fan and generator drive pulleys.
    - Drive belts.
    - The crankcase breather may be altered or removed.
    - Standard oversize/undersize bearings are permitted.

Formula F100

1. **Type of car.** F 100 is open two seater racing cars with enveloping coachwork as defined under Appendix "J" Group 7, Articles 286-292. Wind-screen of at least 10 cms. vertical height and 100 cms. width compulsory. Doors optional.

2. **Safety.** Article 296 of Appendix "J" of the International Sporting Code of the F.I.A. as defining Formula II must be complied with except for the following items.

- Aerodynamic devices such as aerofoils and/or spoilers must comply with Appendix "J" Group 6.
- An inbuilt fire extinguisher system is not mandatory. Nevertheless the car shall carry mounted in an accessible place a fire extinguisher of a minimum capacity of 3 kilograms of extinguishant.
- Full safety fuel tanks are not mandatory providing the tank is mounted within the chassis frame and the capacity does not exceed 9 gallons. Nevertheless such tanks must be covered externally with a protective coating as approved by the R.A.C.
- Weight.** Minimum weight of car 1,000 lb. (464.6 kg.)
- Chassis.** Any type of chassis construction is permitted.
- Body.** Free within the limits of paragraphs 1 and 2.
- Fuel Tanks.** See paragraph 2. Only commercial fuel as specified by Article 297 of Appendix "J" may be used.

7. **Suspension and Running Gear.** With the exception of hub adaptors, rear hub carriers and bearing bushes all parts including brake calipers must be of steel or ferrous material.