

FORMULA FORD

1. These regulations shall be effective from January 1, 1975, and until further notice.

2. **Type of car.** Formula Ford is open to single-seater racing cars fitted with a standard push rod Cortina GT engine and with open coachwork as defined by International Formula 3 (App. J Art. 296-297) and other regulations hereafter.

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

4. **Engine modifications or additions.** Only those modifications or additions specifically covered by these regulations will be permitted. All engine components not featured in the regulations shall remain completely standard and unmodified.

5. **Safety.** There are the following exceptions to App. J Art. 296 and 297:

(a) Aerofoils, adjustable or fixed, nose fins or spoilers are forbidden. In other respects, coachwork will comply with Formula 3.

(b) (i) Maximum coachwork height (excluding safety roll-bar) not to exceed 80 cms (31.5 ins.) at any point measured from the lowest point of the entirely sprung structure of the car.

(ii) No part of the coachwork shall extend more than 100 cms (39 ins.) behind the centre line of the rear axles.

(c) An inbuilt fire extinguisher is not mandatory. Nevertheless the car shall carry mounted in a readily visible and accessible place not more than 2 fire extinguishers of a minimum total capacity of 3 kg (6 lb.) of extinguishant. At least half of this fire extinguishing capacity must be in the cockpit.

(d) Full safety tanks to F.I.A. specifications are not mandatory provided the tank is mounted within the chassis frame and the capacity does not exceed nine gallons (40.5 litres).

Nevertheless all fuel tanks must be covered externally with a protective coating as approved by the R.A.C.

6. **Weight.** The minimum weight of the car as finishing a race or at any time during practice shall be 400 kg (881.61 lb). Any ballast which is carried must be permanently fixed and be made an integral part of the vehicle by welding, brazing or riveting. Otherwise it shall not count as part of the weight.

7. **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. No engine oil or water tubes are permitted within the cockpit. Monocoque construction is not permitted.

Stress bearing panels are defined as any sheet metal affixed to the frame by welding, bonding or riveting, or by bolts and screws which have centres located closer than six inches.

8. **Safety harness.** The wearing of a full 6 point harness is compulsory.

9. **Fuel.** Only commercial fuel as specified by Article 293 of Appendix J may be used.

10. **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. Front hubs are free as to material and design.

11. **Shock absorbers.** Free.

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

13. **Gearbox** Maximum number of forward speeds — four.

14. **Steering gear.** Free.

15. **Brakes.** Aluminium alloy callipers are not permitted, otherwise free.

16. **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 for cracks are carried out and that wheels are renewed at least twice a year.

17. **Tyres.** Only tyres permitted are those approved by the R.A.C.

18. (a) **Engine.** The 1600 GT crossflow engine, in either its uprated or original form, will be the only engine permitted. It is required that entrants declare before scrutineering which series of engines they are running.

(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.** Standard valve spring retainers must be used and single valve springs only are permitted. Shims are permitted and valve springs are otherwise free.

(d) **Pushrods; Rockers; Tappets; Pedestals and Shaft.** All these items must remain standard. Recontouring of the valve stem contact pad of the rocker arm is permitted provided the maximum lift at the spring cap does not exceed 0.356 ins. (inlet) and 0.358 ins. (exhaust). Damaged guides may be reclaimed by the fitting of standard Ford valve guides.

(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. A dry sump system is permitted.

(h) **Cooling System.** Radiator, fan, and water pump are free. Tooth belt drive is permitted.

(i) **Electrical Equipment.** Generator is optional. Only standard Autolite or Lucas distributors may be fitted. The automatic advance and retard may be removed. Transistorised ignition is not permitted. Other electrical equipment is free.

Dunlop Formula 70
The Graunchy Grippers

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- (j) **Fuel Pump.** A standard mechanical fuel pump only will be permitted. The uprated pump part No. 69 1F 935 OAB may be used.
- (k) **Camshaft.** This must remain entirely unmodified. It must be fully manufactured and ground by the Ford Motor Company and it is especially prohibited to regrind or re-profile camshafts or to grind camshafts from camshaft blanks. Tuftriding or parkerising is permitted but shot peening, shot blasting, polishing, etc. are prohibited. Offset camshaft drive locating dowels may be used.

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 with zero tappet clearance	inlet	.356"
	exhaust	.358"
Max. valve lift timing with respect to crank	inlet	109° ATDC
	exhaust	109° BTDC
Base 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 permitted but shot peening, shot blasting, polishing, etc. are prohibited. Crankshaft pulley is free as is tooth belt drive.
- (m) **Flywheel and clutch assembly.** These must be standard components. Spot balancing is permitted. Friction material is free. Racing clutches not permitted. Flywheel locating dowels permitted. Minimum 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.

Max compression ratio of each cylinder 9.3:1

*Min. combustion volume standard bore 48.2cc

Max. permitted bore size 3.193"

In any engine a damaged bore may be reclaimed by fitment of a standard liner.

*The combustion volume will be obtained by applying the following formula:

$$CV = B + T + G - H$$

Where CV = Combustion volume

B = Volume in cylinder block with piston at T.D.C.

T = allowance for volume between top of the top ring and the top of the piston—1.33cc

G = Gasket volume, calculated from the measured thickness and diameter. N.B.—Only standard Ford gaskets are permitted and in addition it is the entrant's responsibility to ensure that the compressed thickness and diameter of the gasket do not result in the permitted ratio being exceeded.

H = Volume of valve protrusion—0.3cc

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- (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 remains in accordance with the dimensions set out below. The cylinder head combustion chamber may not be re-profiled as this is a fully machined part. Polishing only is permitted.

Max. diameter of ports at manifold Head Face	inlet*	1.422*
	exhaust	1.158"

*Measured external to chamfer.

Standard cylinder head gaskets only will be permitted — compressed thickness 0.033"-0.035".

- (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.	Max. length 3.80"
Carburettor flange	2.910"-3.060"	Primary choke and radius .709"
	x 1.321"-1.389"	Secondary choke and radius .787"

The diameter of the two outer ports is sometimes more than 1.24" vertically but will be accepted provided the bore of the casting is untouched and in its original state.

- (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 and localised machining of the gudgeon pin bosses to achieve balance and minimum weight.

Depth of bowl at centre 0.5" ± .005"

Centre line of gudgeon pin to crown 1.737" ± .002"

Minimum distance piston to block height 0.025

Minimum weight with piston rings and gudgeon pin

Weight of gudgeon pin 555gms
115 ± 2gms

**Dunlop SP Sport
The Aquajet Radial**

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(r) **Valves.** These shall remain standard especially as regard shape. No reprofiling whatsoever is permitted. The original 45 degree seat angle must remain.

Distance apart at centres		1.540" ± .020"
Max. distance across face	inlet	1.560"
	exhaust	1.340"
Overall length	inlet	4.367" ± .020"
	exhaust	4.355" ± .020"

(s) **Connecting rods.** Standard connecting rods only may be used. Polishing is prohibited and the only machining permitted is to achieve balance and metal may only be removed from the balancing bosses on the big end cap and at the little end. Minimum weight 640gm.

(t) **Miscellaneous**

(i) The timing chain/sprocket cover may be altered or replaced.

(ii) Mechanical tachometer drive may be fitted.

(iii) The use of non standard replacement parts is permitted as follows, provided their use does not result in unauthorised modifications of any other components:

(a) Fasteners (nuts, bolts, screws, studs, washers, etc.) which are not connected with or its compulsory retained accessories.

(b) Gaskets and seals, except cylinder head and carburettor to inlet manifold gaskets.

(c) Pump, fan and generator drive pulleys.

(d) Drive belts.

(iv) The crankcase breather may be altered or removed but all breathers must be discharged into a specified catch tank.

(v) Standard oversize/Undersize bearings are permitted.

19. To make provision for a Scrutineer's wire seals every Formula Ford engine must have $\frac{1}{16}$ in. diam. holes pre-drilled as follows:—

(a) **Sump.** The sump/cylinder block joint flange must be drilled at two locations, one on each side of the engine, while the sump is in position. Both locations must be easily accessible when the engine is in the chassis with all accessories fitted.

(b) **Timing Cover.** At least two retaining screws must be provided with cross-drilled heads.

(c) **Rocker Cover.** At least two retaining screws must be provided with cross-drilled heads. Where cast Rocker Covers are fitted sufficient clearance must be provided between the screw head and Cover to allow for wire insertion.

The Eligibility Scrutineer appointed to control this category of racing is Mr. H. P. Mason, 7, Carthona Drive, Fleet, Hants, Tel: (H) Fleet 21518.

X Feb 75 MSCW - same as FF1000

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FORMULA FORD 2000

1. These regulations will be effective from 1st January 1975 and until further notice.

2. **Type of car:** Single-seater racing cars fitted with a Ford 2000cc sohc Cortina engine as defined hereunder and complying with Articles 295 and 296 of Appendix 'J' of the International Sporting Code of the F.I.A. as defining single seater racing cars and with all regulations hereunder.

3. The authority for the control of Formula Ford 2000 its rules and their interpretation is the responsibility of the R.A.C.

4. **Engine.** Modifications or additions. Only those modifications or additions covered by these regulations will be permitted. All engine components not featured in the regulations shall remain completely standard and unmodified.

5. **Eligibility of drivers:** To compete in Formula Ford 2000, drivers must comply with the championship regulations.

6. **Safety:** All provisions of Articles 296 and 297 of Appendix 'J' shall apply, including fire extinguishers, and the coachwork shall not protrude more than 1 metre behind the axle of the rear wheels.

7. **Weight:** The minimum weight of the car as finishing a race or at any time during practice shall be 440kgs. Any ballast carried must be permanently fixed and made an integral part of the vehicle by means of welding, brazing or rivetting. Otherwise it shall not count as part of the weight.

8. **Chassis:** Must be of tubular construction and with no stress bearing panels except for the bulkhead and undertray: the curvature of the undertray must not exceed 1 in. No engine oil or water tubes permitted within the cockpit.

9. **Safety Harness:** The wearing of a full six point harness is compulsory.

10. **Suspension and running gear:** With the exception of springs, hubs, hub adaptors, rear hub carriers and bearing bushes, all parts must be of steel or ferrous material.

11. **Shock Absorbers:** Free

12. **Final drive and differential:** Rear Wheel drive only is permitted. Final drive ratio is free. Torque-biasing or limited slip differentials are forbidden.

13. **Gearbox:** A maximum of four forward speeds shall be permitted. Ratios are free but a reverse gear in working order and able to be operated by the driver when normally seated in the car is compulsory.

14. **Steering Gear:** Free.

15. **Wheels:** Must be 13 ins. diameter with a maximum rim width of 6 ins. (front) and 8 ins. (rear). Material used for the construction of the wheels is free provided it is metal. Offset of the centre disc is free.

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