CANADIAN AUTOMOBILE SPORT CLUBS
ONTARIO REGION

# 2009

Appendix 'Q'
Section 'C'

Regulations and Specifications for Formula Ford Cars

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## Regulations and Specifications for Car Classes

## Section 'C': Formula Ford



The Rules and Regulations set forth herein are designed to provide for the orderly conduct of racing Events and to establish minimum acceptable requirements for such Events. These Rules and Regulations shall govern the condition of all CASC RaceOntario Regional Championships Series Events and by participation in these Events, all Participants are deemed to have complied with these rules and regulations.

No expressed or implied warranty of safety shall result from publication of, or compliance with these rules and regulations. They are intended as a guide for the conduct of Competition and in no way a guaranty against injury or death to Participants, spectators, or others.

***Bold italicized text indicates significant changes or amendments.***

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ANY AMENDMENTS WILL BE PUBLISHED AFTER THIS DATE IN THE OFFICIAL CASC ONTARIO REGION BULLETIN.

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# APPENDIX 'Q', SECTION 'C': FORMULA FORD

## 1.0 DEFINITIONS

1.0.1 Formula Ford is a single-seat, open-wheel racing Car using a standard Ford 1600 "crossflow" pushrod, normally aspirated engine with a 2-venturi carburettor.

1.0.2 Cars shall comply with the CASC-OR GCR and Race Regulations as well as the Regulations herein.

***1.0.3 There shall be three groups of Cars designated F Ford A, F Ford B and F Ford C.***

***a) F Ford A: chassis built between 1995 and 2008***

***b) F Ford B: chassis built between 1985 and 1994***

***c) F Ford C: chassis built between 1969 and 1984, excluding Swift DB1***

## 2.0 CHASSIS

2.0.1 The chassis shall be of steel space frame construction.

2.0.2 Monocoque-type structures are prohibited.

2.0.3 Stabilized (honeycomb) or composite (carbon fibre or Kevlar) materials are not permitted, except as specifically authorized herein.

2.0.4 The use of titanium is prohibited.

2.0.5 The chassis shall incorporate a roll cage. Forward-facing braces protecting the Driver's legs and feet shall extend from the front roll hoop to the front bulkhead. (The front bulkhead is defined as the furthest forward transverse section of the main frame.) The minimum main roll hoop height shall be 920mm.

2.0.6 The soles of the Driver's feet shall not extend beyond the front edge of the wheel rims (in normal position; i.e., pedals not depressed) and shall remain behind the front bulkhead.

2.0.7 The lower main frame rails shall be a minimum of 250mm (9.84in) apart (inside dimension) from the front bulkhead to the rear roll hoop.

2.0.8 Any nose box must be a crushable structure, securely attached to the front bulkhead, with a minimum cross section of 20000 sq. mm (31 sq. in.), 400mm (15.75in) forward of the clutch and brake pedals (not depressed) constructed of a minimum of 18 gauge 6061-T4 or equivalent aluminum.

Radiators may be incorporated in this structure.

2.0.9 The area between the upper and lower main chassis tubes from the front roll hoop bulkhead to the rear roll hoop bulkhead shall be protected by one of the following methods to prevent the intrusion of objects into the cockpit:

a) Panel(s), minimum of either 1.52mm (0.060in) heat-treated aluminum (6061-T6 or equivalent) or 18 gauge steel, attached to the outside of the main frame tubes.

b) Reinforced bodywork, consisting as a minimum, of a double layer of 5 oz., bi-directional, laminated Kevlar material incorporated only into this area of the body.

For either method, fasteners shall be no closer than 152.40mm (6in) centres. The material used for chassis braces in this area shall be at least equivalent to the roll hoop brace material.

2.0.10 Sheet materials attached to the chassis by welding, bonding, or by rivets or threaded fasteners which are located closer than 152.40mm (6in) centres, are defined as stress-bearing panels. Composite or stabilized materials shall not be used for stress-bearing panels.

2.0.11 A stress-bearing floor pan/undertray, minimum of 1.52mm (0.060in) heat-treated aluminum or 18 gauge steel, is required from the front bulkhead to the rear roll hoop bulkhead. Its curvature shall not exceed 25.4mm (1in).

2.0.12 The mountings for brake and clutch pedals and cylinders (front bulkhead), instruments, (front roll hoop bulkhead), and rear roll hoop bulkhead (behind the Driver) may also be stress-bearing panels. No other stress-bearing panels are permitted.

2.0.13 The firewall portion of the rear roll hoop bulkhead (panel) shall extend the full width of the cockpit and be at least equal to the top of the carburettor in vertical height.

2.0.14 Forward-facing air ducts may be installed for the purpose of delivering air directly to the engine area.

2.0.15 Air duct openings may be located within the cockpit provided the firewall is extended to prevent flame and debris from reaching the Driver. (Any shape may be used to form firewall extension.)

All firewall inlets shall prohibit passage of flame and debris.

2.0.16 Brackets for mounting components, such as the engine, transmission, suspension pickups, instruments, clutch and brake components, and body panels may be non-ferrous, of any shape, and fastened to the frame in any manner.

2.0.17 The use of Magnesium for bulkheads is prohibited.

2.0.18 The floor/undertray, including all sprung parts, of the car shall lie on one plane with a tolerance of 5mm(0.200in)The area of this "flat bottom" is measured from rearward of the vertical plane tangent to the rear of the complete front wheels (including mounted tires) to the fore of the vertical plane tangent to the fore of the complete rear wheels (including mounted tires).

The tolerance of +-5mm is allowed to cover any possible manufacturing problem and not to permit designs against the spirit of the "flat bottom" rule.

The periphery of the surface formed by these parts may be curved upwards with a maximum radius of 50mm(1.97in).

2.0.19 No part having an aerodynamic influence and no part of the bodywork may be located below the geometrical plane produced by the "flat bottom" surface.

2.0.20 No transverse, longitudinal, or other flexible, retractable, pivoting, or sliding device bridging the gap between the body and the road surface is permissible.

2.0.21 a) Minimum wheelbase is 2000mm (78.800in).

b) Minimum Track is 1200mm (47.280in).

c) Total overall maximum width is 1850mm (72.89in).

## 3.0 BODYWORK

3.0.1 The bodywork opening giving access to the cockpit shall have the following minimal dimensions:

a) Length: 600mm (23.622in)

b) Width: 450mm (17.717in)

This width extends over a length of 300mm (11.811in) minimum. This minimal rectangular opening may exist anywhere forward of the bracing, and required padding will not be considered in these dimensions.

3.0.2 The driver's seat shall be capable of being entered without the manipulation or removal of any part or panel.

3.0.3 Maximum width of bodywork/coachwork behind front wheels is 1300mm (51.18in).

3.0.4 No part of the bodywork shall extend more than 1000mm (39in behind the centerline of the rear axle.

Those cars which extend their tails to this length may not extend their exhaust pipes more than 600mm behind the rear axle centerline.

3.0.5 Bodywork shall not increase in width behind the centerline of the rear axle in any horizontal section.

3.0.6 There shall be no forward facing gaps or openings in the bodywork with the exception of those necessary for engine cooling, engine air inlet, shock, or brake cooling.

3.0.7 All bodywork shall be firmly attached to the chassis.

3.0.8 Wings and other airfoil devices which create aerodynamic downforce are prohibited.

3.0.9 Any part of the car which has an influence on the aerodynamic stability of the vehicle shall be firmly attached with no provisions for adjustment to vary downforce, except that a single rear spoiler, which may be capable of adjustment, is permitted. Cockpit adjustment is not permitted. This spoiler shall be no wider than the surface to which it is attached, and there shall be no gap between the spoiler and the body surface to which it is attached.

3.0.10 No part of the bodywork or rear spoiler shall exceed the height of a horizontal plane 900mm (35.4in) above the ground, with the Car as qualified or raced, with Driver aboard. The engine air box and on-board video cameras are not included in this height restriction.

3.0.11 Air may not be ducted through any part of the bodywork for the purpose of providing aerodynamic downforce on the car. All ducted air for heat exchangers (water/oil) shall pass through those heat exchangers. Diffuser undertrays or venturi tunnels are prohibited.

3.0.12 Fuel filler necks, caps, or lids shall not protrude beyond the bodywork of the Car.

3.0.13 Fuel tank air vents shall be located at least 250mm (9.84in) behind the rear of the cockpit opening.

3.0.14 Carbon fibre is not permitted. Kevlar is permitted only where specifically stated herein.

## 4.0 SUSPENSION

### 4.1 DEFINITION

Suspension is defined as the system of springs, shock absorbers, control arms, links, etc., supporting the vehicle on its axles. Sway bars, sway bar links, steering components, etc., are not classified as suspension.

### 4.2 CONSTRUCTION

4.2.1 All suspension components shall be of steel or ferrous material, with the exception of hubs, hub adapters, hub carriers, bearings, spring caps, abutment nuts, anti-rollbar links, shock absorber caps and nuts, bell cranks, and bushings. Front and rear hub carriers shall be of steel or aluminum alloy for Cars manufactured after 1/1/83. Springs shall be steel.

4.2.2 Titanium and composite material using carbon and/or Kevlar is prohibited.

4.2.3 Control arms and all associated items which attach directly to the chassis members shall be boxed in or captured to prevent intrusion into the cockpit.

4.2.4 Shock absorbers are free. Aluminum casings are permitted.

4.2.5 Spoilers, fairings, or other devices which may exert downforce, shall not be attached to suspension members.

4.2.6 Suspension members shall not be constructed in the form of an airfoil cross section. Suspension members shall be symmetrical about the horizontal axis. Brake lines may be attached to the suspension members.

## 5.0 BRAKES

5.0.1 Brakes are unrestricted, except that calipers shall be cast iron, or two-piston aluminum. Aluminum calipers shall have a maximum piston diameter of 2.00in. Rotors are restricted to ferrous material.

5.0.2 Forward facing brake-cooling ducts may be installed, but shall serve no other function or purpose.

## 6.0 WHEELS

6.0.1 Wheels are unrestricted, except that:

a) Material shall be metal.
b) Diameter shall be 330.20mm (13in).
c) Rim width shall not exceed 139.70 mm (5.5in).
d) Wheel covers, wheel fans, or any device to fair in the wheels are prohibited.

## 7.0 WEIGHT

7.0.1 Weights as practiced, qualified or raced, with Driver and required safety equipment are as follows:

a) 1050 lbs. for cars with outboard suspension
b) 1075 lbs. for cars with inboard/outboard suspension combination
c) 1100 lbs. for cars with inboard suspension

## 8.0 TIRES

8.0.1 Tire sizes shall be as follows:

a) Front tire size: 135-545-13

b) Rear tire size: 165-580-13

c) Rubber compound shall be 434 only.

8.0.2 Additional hand cutting or grooving is not permitted. Rain tires are not permitted.

# 9.0 ENGINE

## 9.1 GENERAL PROVISIONS

9.1.1 The engine shall be standard Ford 1600 GT pushrod "crossflow" as installed in the following Cars:

a) Original Version: Cortina 1600 GT (through 1970 model)

b) Uprated version: Cortina 1600 GT (1971)

Components shall not be interchanged between the original and uprated versions of the engine unless specifically authorized. Regulations contained herein apply to both versions of the engine unless specifically stated otherwise.

***9.1.2 Engines built to current SCCA specifications shall be eligible.***

9.1.3 The engine shall not be altered, modified, or changed in any respect unless specifically authorized herein.

9.1.4 The gasket face of the cylinder head may be resurfaced provided the maximum compression ratio is not exceeded and the minimum depth of the combustion chamber is maintained.

9.1.5 Valve guides are unrestricted provided the position of the valve is not changed. Standard replacement valves, with oversize stems, may be used as normal repair/maintenance procedures. Specifications, under "Valves" herein shall be observed. It is permitted to re-cut or replace valve seats. Valve seat angles are unrestricted.

9.1.6 Exhaust emission control, air pumps, and associated lines and nozzles shall be completely removed. When these air nozzles are removed from a cylinder head, the holes shall be completely plugged.

9.1.7 Balancing of all moving parts of the engine is permitted provided that such balancing does not remove more material than is necessary to achieve such balance. It is permitted to polish parts of the engine providing the contour of the part is not altered and can be recognized as the original part.

9.1.8 Maximum compression ratio:

a) 10.0 to 1 -- Original engine

b) 9.3 to 1 -- Uprated engine

The following specifications are used in determining compression ratio:

Uprated: 1.33cc - top ring to top of piston
0.30cc - volume of valve protrusion

Original: 1.64cc - top ring to top of piston

Both engines: 4.75cc - head gasket.

Minimum unswept volume per cylinder:

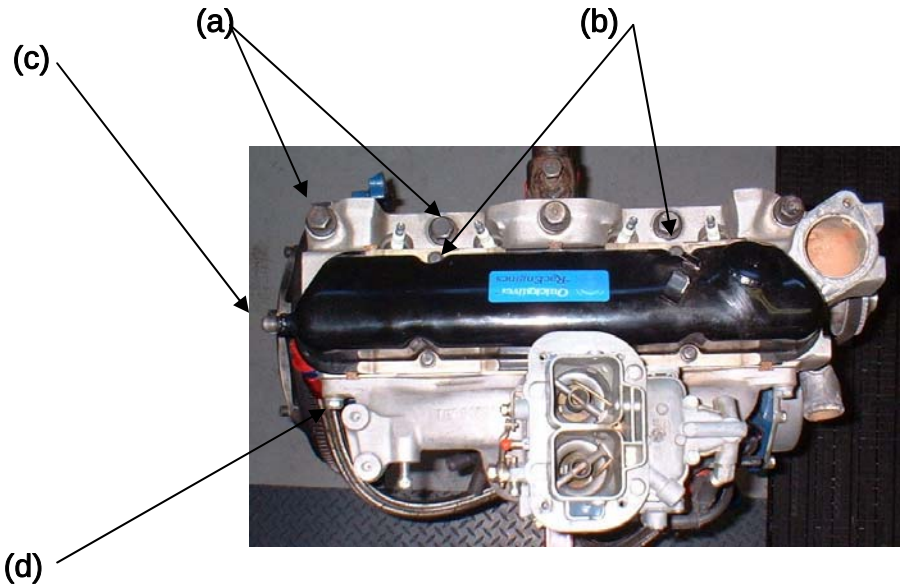
| | |
|---|---|
| Original engine with standard pistons | 44.4cc |
| Original engine with .030in o/s pistons | 45.1cc |
| Uprated engine with standard pistons | 48.2cc |

The compression ratio shall be checked using official CASC-OR procedure.

9.1.9 Pocketing of piston valve reliefs is allowed to a maximum of 0.050 in. to obtain the minimum combustion chamber volume.

9.1.10 Engine Seal Requirements
Holes of 1mm minimum diameter shall be drilled through the following bolts for sealing purposes.

(a) The two (2) rear exposed head bolts, engine left.
(b) The two (2) rocker cover bolts, engine left.
(c) One (1) bolt fastening the bellhousing/adaptor plate to rear of engine block.
(d) One (1) rear intake manifold bolt.




## 9.2 ENGINE BLOCK

9.2.1 Bore: May be enlarged for clearance between cylinder and piston.

9.2.2 Cylinder liners may be fitted.

9.2.3 The top surface of the block may be milled or surface ground to obtain the maximum compression ratio specified herein.

9.2.4 Any steel centre main bearing cap may be used. The oil pump mounting face on the block may be machined for the purpose of fitting an oil pump.

9.2.5 The 1600 Pinto block, No. DIFZ-6010-C, may be used as a replacement for the Cortina GT block; Standard Pinto tappets, No. DORY 6500A and DIFZ 6500A may also be used when this block is used as a Cortina GT replacement. Fiesta block and crankshaft are permitted.

## 9.3 CYLINDER HEAD

9.3.1 Ports may be reshaped by the removal of metal as long as the port diameter at the manifold face of the head does not exceed the following dimensions:
a) Inlet: 1.50in
b) Exhaust: 1.16in

9.3.2 Reshaping is prohibited.

9.3.3 The standard head gasket shall be used. Head gaskets may be interchanged between the original and uprated versions of the engine. In addition to the standard Ford gasket, Payen head gasket, part number BJ200, may be used.

9.3.4 Ford Pinto cylinder head part No. DORY 6049B is permitted on the Cortina GT engine.

9.3.5 Aluminum cylinder head, part #99003.845, manufactured by Pierce Manifolds, may be substituted for the original cast iron head provided that all measurements and specifications remain the same.

9.3.6 No welding is permitted on the cylinder head.

## 9.4 INTAKE MANIFOLD

9.4.1 The ports may be reshaped by the removal of metal as long as the following dimensions are maintained:

a) Maximum Size at head face:

| | Original Engine | Uprated Engine |
|---|---|---|
| Cyl. 1&4: | 1.480in x 1.280in | 1.300in |
| Cyl. 2&3: | 1.250in | 1.300in |

b) Maximum size at carburettor flange: 3.060in x 1.389in
Max. length: 3.800in

c) Primary choke end radius: 0.709in
Secondary choke end radius: 0.787in

9.4.2 The carburettor face of the inlet manifold may be machined to the horizontal to compensate for fore/aft tilt of the carburettor.

9.4.3 The diameter of the ports on the uprated engine may exceed the above listed dimensions if the casting bore is untouched and in its original state at the gasket face.

9.4.4 The water passages in the inlet manifold may be plugged.

9.4.5 In addition to the stock Ford intake gasket, Payen intake gasket, part number JA613 may be used.

## 9.5 PISTONS

9.5.1 a) Only standard size pistons shall be used in the uprated engine.

b) Standard 0.015in oversize or 0.030in oversize pistons may be used in the original engine.

c) Standard size AE pistons part No. 18649, casting No. 18634, may be used in the uprated engine.

d) Alternate pistons identified as follows are allowed:
i) Part number AE-M717D, casting #711 M 6110.
*ii)* AE Hepolite P/N20552, casting #20548A.
iii) *CP Pistons P/N CP FF1600*

9.5.2 The following dimensions and weights shall be observed:

| | | | Original Engine | Uprated Engine |
|---|---|---|---|---|
| a) | Maximum diameter: | | | |
| | i) | Standard: | 3.189in | 3.189in |
| | ii) | 0.015in o/s: | 3.204in | Not permitted |
| | iii) | 0.030in o/s: | 3.219in | Not permitted |

| | | | |
|---|---|---|---|
| b) | Depth of bowl: (+/- .005) | 0.500in | 0.500in |
| c) | Minimum volume of bowl: | 31.50cc | |
| d) | Maximum diameter of bowl: | 2.28in | |
| e) | Centerline of wrist pin to crown: | 1.737in +-0 .002in | 1.737 +-0 .002in |
| f) | Overall height: | 3.30in | 3.30in |
| g) | Minimum weight: w/rings & pin: | 525 grams | 525 grams |
| h) | Weight of pin: | 115 +/- 2 grams | |

9.5.3 Piston rings are unrestricted provided that:

a) One oil control and two compression rings are used.

b) No modification is made to the piston for the installation of rings.

## 9.6 VALVES

9.6.1 The following specifications shall be observed:

| | | | Original Engine | Uprated Engine |
|---|---|---|---|---|
| a) | Distance apart at centres: | | 1.540in +/-0.020in | 1.540in +/-0 .020in |
| b) | Max. diameter: | | | |
| | i) | Inlet: | 1.502in | 1.560in |
| | ii) | Exhaust: | 1.252in | 1.340in |
| c) | Overall Length: | | | |
| | i) | Inlet: | 4.280in +/-0 .006in | 4.367in +/-0 .020in |
| | ii) | Exhaust: | 4.260in +/-0 .006in | 4.355in +/-0 .020in |

9.6.2 AE intake valve #V34524 and AE exhaust valve #V34525 are permitted.

9.6.3 Reshaping of valves is specifically prohibited.

9.6.4 Steel or aluminum rocker shaft pedestals may be substituted for the original provided that they have the same hole and centerline dimensions as the original Ford pedestal.

## 9.7 CAMSHAFT

9.7.1 The camshaft lobe profile shall not be altered. The following specifications are provided for checking purposes:

a) Lift at top of pushrod:

| | | |
|---|---|---|
| i) | Inlet: | 0.231in +- .002in maximum |
| ii) | Exhaust: | 0.232in +- .002in maximum |

b) Lift at top of spring cap (zero tappet setting).

| | | |
|---|---|---|
| I) | Inlet: | 0.356in maximum |
| ii) | Exhaust: | 0.358in maximum |

9.7.2 Re-contouring of the valve stem contact pad of the rocker arm is permitted, provided the maximum lift at the spring cap is not exceeded.

9.7.3 Offset camshaft/sprocket dowels are permitted.

9.7.4 Camshaft profile and lobe centres shall be checked using the official CASC-OR procedure.

9.7.5 The Elgin Formula Ford Blueprint camshaft manufactured by Elgin may be used.

## 9.8 VALVE SPRINGS

9.8.1 Valve springs and valve spring shims are unrestricted provided that:

a) No more than one spring shall be used per valve.

b). The standard spring cap and retainers shall be used. The standard cap diameter is 27.84mm (1.096in) maximum.

c) Springs shall be made of steel.

## 9.9 PUSHRODS

a) Original Engine

| | | |
|---|---|---|
| i) | Minimum stem diameter: | 0.25in |
| ii) | Overall length: | 7.64in minimum |
| iii) | Minimum weight: | 50 grams |

## 9.10 CONNECTING RODS

9.10.1 Both engines: minimum weight including cap, bolts, and small end bush, but not big end bearing shells is 630 grams.

## 9.11 CRANKSHAFT

9.11.1 Minimum weight:

a) Original engine: 23 lbs. 8 oz.

b) Uprated engine: 24 lbs. 8 oz.

9.11.2 Stroke (at piston): 3.056in +-0 .004in

9.11.3 Crankshaft pulley is unrestricted.

9.11.4 Either crankshaft may be used in either engine.

9.11.5 The crankshaft may be shot peened.

9.11.6 An alternate crankshaft may be used providing it is cast steel and all measurements and specifications remain the same as the original crankshaft.

## 9.12 FLYWHEEL/CLUTCH

9.12.1 The minimum weight of the flywheel and ring gear, excluding all other components, shall be 15.5 lbs.

9.12.2 The flywheel may be machined to achieve the minimum allowed weight provided the part can be identified as the original. Flywheel locating dowels are permitted.

9.12.3 The standard Ford Pinto 1600 flywheel may be used. JAE flywheel, part number JAE 1600, may be used.

9.12.4 The flywheel clutch face may be machined to accept a racing clutch outer ring.

9.12.5 a) Single plate racing clutches may be substituted for the production based road clutch.

b) Carbon fibre and carbon/carbon clutches are not permitted.

c) Any ring gear or component inserted into the flywheel face to obtain full friction surface for the clutch disc shall not be weighed when determining the 15.5 lbs. flywheel ring/gear weight.

## 9.13 CARBURETTOR

9.13.1 Weber carburettor, with the swaged fuel inlet fitting, shall be modified by drilling and tapping the carburettor body for a threaded fitting.

9.13.2 SPECIFICATIONS:

a) Original Engine:
- i) Weber 32 DFM or DFD or Holley 5200
- ii) Venturi Diameter: Primary: 26mm; Secondary: 27mm

b) Uprated (Kent) Engine:
- i) Weber 32/36 DGV or Holley 5200
- ii) Venturi diameter: Primary: 26mm; Secondary: 27mm

9.13.3 The following modifications and changes are allowed:

a) The fitting of any jets (including accelerator pump discharge nozzle) which may be fitted without modification to the carburettor body.

b) Modification or substitution of external throttle linkage.

c) The fitting of internal and/or external anti-surge pipes.

d) The removal of the air cleaner.

e) The fitting of a velocity stack (intake air horn).

f) The removal of the choke butterflies and linkage.

g) An alternate carburettor gasket provided it is the same thickness as the original gasket.

## 9.14 FUEL PUMP

Unrestricted

## 9.15 EXHAUST MANIFOLD

Unrestricted

## 9.16 LUBRICATION SYSTEM

9.16.1 Oil pump and sump: Unrestricted

9.16.2 Dry sump system is permitted.

## 9.17 COOLING SYSTEM

9.17.1 Radiator, fan and water pump are unrestricted.

9.17.2 Pump/fan/generator drive belts are unrestricted.

# 10.0 ELECTRICAL EQUIPMENT

## 10.1 DISTRIBUTOR

10.1.1 Distributor is free provided the original drive and location is retained.

10.1.2 The distributor is defined as the component that triggers the LT current and distributes the HT current.

10.1.3 The ignition timing may only be varied by vacuum and/or mechanical means.

10.1.4 It is prohibited to use any other method or component to trigger, distribute, or time the ignition.

10.1.5 The vacuum advance mechanism may be removed, and the distributor advance plate may be secured by soldering or welding or by suitable fasteners. The advance curve and advance springs are unrestricted.

10.1.6 The only means to trigger the ignition are, one set of mechanical breaker points or a magnetic or optical trigger that serves no other purpose. The trigger shall be located in the distributor and no other external trigger components may be used.

10.1.7 Only a standard, unamplified ignition coil may be used. Electronic ignition is prohibited.

## 10.2 GENERATORS AND ALTERNATOR

10.2.1 Generators and alternator are not required.

# 11.0 MISCELLANEOUS PROVISIONS

11.0.1 The timing chain/sprocket cover may be altered or replaced.

11.0.2 The use of the following non-standard replacement parts is permitted provided their use does not result in any unauthorized modification of any other component:

a) Fasteners.

b) Gaskets, except the following:
   i) head gasket
   ii) carburettor to inlet manifold gasket
   iii) inlet manifold to head gasket.

c) Washers.

d) Seals.

e) Connecting rod, crankshaft, and camshaft bearings of the same size and type as original. Normal oversize/undersize bearings are permitted. This does not allow reducing the bearing surface area by reducing the width of standard bearings.

f) Spark plugs.

11.0.3 Mechanical tachometer drive is permitted.

11.0.4 The crankcase breather may be altered or removed.

11.0.5 The rocker cover may be altered to provide for crankcase ventilation, and the filler cap may be altered or replaced.

11.0.6 Valve or rocker covers may be substituted, provided that the replacement cover affords no additional function than that of the original stock cover.

11.0.7 Water pump, fan, and generator/alternator pulley(s) are unrestricted.

11.0.8 The crankshaft and main bearing caps may be treated with salt-bath nitriding cover under SAE specification AMS 2755A (tuftriding, etc.).

11.0.9 The use of any oil or lubricants is permitted.

## 12.0 TRANSMISSION

12.0.1 Any transmission may be used with not more than four forward gears and an operational reverse gear capable of operation by the driver in a normal seated position is permissible.

12.0.2 Ratios are free.

12.0.3 The use of automatic and/or sequential gearboxes is prohibited.

12.0.4 Electronically assisted gear change mechanisms and electronically controlled differentials are prohibited.

12.0.5 Gearboxes with shafts that are transverse to the longitudinal axis of the chassis are prohibited. The sole exceptions are the gearbox final drive (crown wheel) shaft axis and final drive shafts (halfshafts). All change gears shall be located in the case aft of the final drive.

12.0.6 Rear-wheel drive only is permitted.

12.0.7 The final drive ratio is free.

12.0.8 Torque biasing, limited slip, and locked differentials are prohibited.

12.0.9 The differential shall not be modified in any way to limit its normal function.

12.0.10 An aluminum differential carrier is permitted.

12.0.11 The use of titanium is prohibited.

## 13.0 EXHAUST OUTLETS

13.0.1 Exhaust outlets shall not extend more than 600mm (23.6in) behind the centerline of the rear axle and shall be positioned no more than 600mm (23.6in) from the ground.

13.0.2 All exhaust outlets shall terminate outside the bodywork.

## 14.0 CARS BUILT PRIOR TO JANUARY 1, 1986

14.0.1 The following specifications are for cars built prior to January 1, 1986, and for technical inspection only. No Cars are to be built to these specifications.

14.0.2 STRUCTURE

a) The undertray, for safety reasons, shall be a stress-bearing panel. Its curvature shall not exceed one inch**.**

b) The mountings for brake and clutch pedals and cylinders, and for the instrument panel and the bulkhead (panel) behind the Driver may be stress-bearing.

c) No other stress-bearing panels are permitted.

d) Brackets for mounting components, such as the engine, transmission, suspension pick-ups, instruments, clutch, and brake components, and body panels may be non-ferrous, of any shape, and fastened to the frame in any manner.

e) Gussets are defined as of steel, fastened to a maximum of two members, and are specifically permitted.

f) The firewall portion of the bulkhead (panel) shall extend the full width of the cockpit and be as high as the top of the carburettor. Forward facing air ducts may be installed for the purpose of delivering air directly to the engine area. Air duct openings may be located within the cockpit provided the firewall is extended to prevent flame and debris from reaching the Driver. (Any shape may be used to form firewall extension.) All firewall inlets shall prohibit passage of flame and debris.

14.0.3 SUSPENSION AND RUNNING GEAR

a) Suspension is defined as the system of springs, shock absorbers, A-arms, links, etc., supporting the vehicle on its axles. Sway bars, sway bar links, steering rack housings, steering links, etc., are not classified as suspension or running gear for this application.

b) All components shall be of steel, with the exception of hubs, hub adapters, rear hub carriers, and bearings and bushings. Front hub carrier material shall be of steel or aluminum alloy. The materials for front and rear hub carriers on Cars manufactured after 1/1/83 will be only steel or aluminum alloy.

c) Springs shall be made of steel only. Titanium springs are prohibited.

d) Design of shock absorbers ('dampers') is unrestricted. ***Casing material for all "A" and "B" class cars shall be steel or aluminum.***

e) All components which are not defined as chassis/frame, suspension or running gear are unrestricted, unless otherwise restricted by the Regulations. Titanium is prohibited.

14.0.4 BODYWORK

a) Bodywork is defined thus: internally: all visible parts of the passenger compartment.

b) The bodywork opening giving access to the cockpit shall have the following minimal dimensions:
   i) Length: 60cm (23.622 inches);
   ii) Width: 45cm (17.172 inches).

   This width extends over a length of (11.811 inches) minimum. This minimal rectangular opening may exist anywhere forward of the firewall. Forward facing roll bar/cage bracing and required padding will not be considered in these dimensions.

c) The Driver's seat shall be capable of being entered without the manipulation or removal of any part or panel.

d) Bodywork, including fuel tanks, shall not exceed a maximum width of 95cm (37.4 inches).

e) No part of the bodywork and aerodynamic devices shall exceed the height of a horizontal plane 90cm (35.4 inches) above the ground. The safety roll bar/roll cage and engine air box are not included in this height restriction. Measurements are to be made in any condition, Driver on board.

f) No part of the bodywork shall extend more than 100cm (39 inches) behind the centreline of the rear axles.

g) Any specific part of the Car which has an aerodynamic influence on the stability of the vehicle shall be firmly fixed with no provisions for adjustment to vary downforce.

h) Side-mounted radiators (behind the front wheels) may extend beyond the 95cm (37.4 inches) limitation, but not beyond a vertical plane passing through the centerlines of the front and rear tires.

   Any portion of a radiator that extends beyond the 95cm (37.4 inches) limitation cannot be covered with any type of shrouding. Radiators mounted in front of the front wheels are considered front- mounted and cannot exceed the 95cm (37.4 inches) limitation.

i) Wings and other airfoil devices which have the principal effect of creating aerodynamic down-thrust are prohibited. Airfoil: Any device or part of a Car (excepting normal and conventionally styled bodywork) which has a principal effect of creating aerodynamic downforce.

Within this definition may be included forward facing gaps or openings in the bodywork, but shall not include spoilers in the form of raised surfaces, continuous with the body surface, and not wider than the body surface.

j) It is the intent of these rules to minimize the use of "ground effects" to achieve aerodynamic downforce on the vehicle. Thus, for the full width of the body between the front and rear axles, the lower surface (surface licked by the airstream) shall not exceed 2.54cm (1 inch) deviation from the horizontal in any longitudinal section through that surface. (This is not to be interpreted as requiring a floor pan beneath the motor, transaxle, transmission, or final drive housing.) No aerodynamic devices (e.g., skirts, body sides, etc.) may extend more than 1cm (0.394 inches) below the lower surface of the tub or chassis floor to the rear of the front axle. Seat buckets or other protrusions shall not circumvent this rule. It is not permitted to duct air through any part of the bodywork for the purpose of providing aerodynamic downforce on the Car. <u>All</u> ducted air for heat exchangers (water/oil) shall pass through those heat exchangers.

k) Fuel filler necks, caps, or lids shall not protrude beyond the bodywork of the Car.

l) Fuel tank air vents shall be located at least 25cm (9.843 inches) to the rear of the cockpit.

## 15.0 SPECIFICATIONS FOR FF1600 CLASS 'C' CARS

15.0.1 ELIGIBLE CARS

The following cars are eligible for class 'C':

| | |
|---|---|
| Alexis | 14 ('68) 15 ('69) 18 ('70) 18B ('71) 22 ('72) |
| Beach | Mk 11 ('69-70) |
| Bobsy | ('69) |
| Caldwell | D9 ('69) D9B ('70-71) |
| Crossle | 16F ('68-69) 20F ('71-72) |
| Dulon | LD4 ('67) LD4B ('68) LD4C ('69) LD9 ('70-72) |
| Elden | PH6 ('69) PH8 ('70-72) PH10 ('72) |
| Elfin | 600 ('69-72) |
| Forsgrini | Mk 12 ('68-69) |
| Ginetta | G-18 ('69) |
| Hawke | DL2 ('69) DL2A ('70) DL2B ('71) DL9 ('72) DL9A ('72) |
| LeGrand | Mk 10 ('69-72) |
| Lola | T200 ('70) T202 ('71) T204 ('72) |
| Lotus | 31 ('67) 51 ('67) 51B ('68) 51C ('69) 61M ('70-72) 61MX ('72) 69 ('71-72) |
| Macon | MR7B ('69) MR8 ('69-70) MR8B ('71) |
| March | 709('70) 719 ('71) 729 ('72) |
| McNamara | FFA ('70) |
| Merlyn | Mk 11 ('68) Mk 11A ('69) Mk 17 ('70) Mk 17A ('71) Mk 20 ('71) Mk 20A ('72) |
| Mirage | Mk 5 ('70) |
| Mistrale | ('69-70) |
| Nike | Mk 4 ('68-69) Mk 6 ('70) Mk 10 ('71-72) |
| Royale | RP2 ('69) RP3 ('70) RP3A ('71-72) RP16 ('72) |
| Tecno | FF ('70) |
| Titan | Mk 4 ('69) Mk 5 ('69) Mk 6 ('70) Mk 6A ('71-72) Mk 6B ('72) |
| Winkelman | WDF1('69) WDF2 ('70) WDF3 ('71) WDF4 ('72) |

15.0.2 Any otherwise eligible Formula Ford not on the eligibility list may be considered for eligibility upon application to the FF1600 Series.

15.0.3 Cars built prior to December 31, 1972 shall be equipped with a fuel cell meeting CASC - OR regulations (see Appendix "M" hereto)

15.0.4 Cars shall be equipped with an onboard 2lb minimum fire system with the activation control marked externally with an "E".

15.0.5 SUSPENSION AND RUNNING GEAR

a) All components shall be of steel with the exception of hub adaptors, rear hub carriers, bearings and bushings.

b) Wheel spacers shall not exceed 1.5in.

c) Shock absorbers are free, except that the shock body shall be steel and shall not have a remote reservoir. Gas shocks are not permitted.

d) Rubber donuts shall be retained on rear half shafts unless the owner can document to the satisfaction of the Series that alternate components were original equipment.

15.0.6 WHEELS

Wheels shall be 13-inch pressed steel, with a width of 5.5in.

15.0.7 ORIGINAL SPECIFICATIONS

a) All Historic pre-1973 Formula Fords shall compete in the identical specification as manufactured. Updates and modifications, however period they may appear, are prohibited. Examples of such prohibited modifications are: relocation of suspension pick-up points or alteration of wheelbase or track.

b) All body panels originally supplied with the model, with the exception of the engine undertray, shall be used. They shall be the original shape. The car shall be presented in the original period specifications, unless otherwise approved in writing.

c) A car not meeting Class C regulations shall be owner-declared as a Class B car.

15.0.8 CYLINDER HEADS

Aluminum cylinder heads are prohibited.

15.0.9 FLYWHEEL WEIGHT

The minimum weight of the flywheel with ring gear and dowels shall be 18.00lb minimum for original engines and 20.00lb minimum for uprated engines.