2016 FORMULA FORD Challenge Series Rules & Regulations

Formula Ford is comprised of 3 distinct formula ford classes for single seat, open wheel racecars.

i) HF: Historic Ford- First generation 1967-1972. Specific list of eligible chassis.
ii) CF: Club Ford- Second generation post 1972 with outboard suspension on at least one end as originally manufactured. Specific list of eligible chassis.
iii) FF: Post 1981 third generation with inboard suspension front and rear, no aero. Other post 1981 cars may be accepted at the sole discretion of the Class Representative.

Engine: 1600cc OHV cross flow Ford pushrod engine.

Formula Ford is a restricted class. Therefore, any allowable modifications, changes or additions are as stated herein. There are no exceptions. IF IN DOUBT, DON'T.

As additional OEM parts (particularly engine parts) become obsolete there will be a need to update these rules to allow suitable replacement parts. However, no new part, change, or modification is permitted, beyond those allowed in these rules, until it has been reviewed, approved, and published into these rules. There are no exceptions. IF IN DOUBT, DON'T.

GENERAL RULES APPLICABLE TO ALL THREE CLASSES

Tires: following are the only allowable spec tires for all classes (Wet or Dry):

Front: Dunlop CR82 9092 Formula Ford, 135/545-13
Rear: Dunlop CR82 9092 Formula Ford, 165/580-13
Standard 9092 compound only (476 not allowed)
or
Front: Avon 5.0/22.0-13 A29 14297
Rear: Avon 6.5/23.0-13 A29 14298
or
Front: Hoosier VFF 44165, 135/543-13
Read: Hoosier VFF 44170, 165/580-13

Single event exemption for first-time entrants with non-compliant tires at the sole discretion of the Class Representative (entrant ineligible for Series points or awards).

No mixing of makes is allowed. Additional grooving or hand-cutting is not allowed.

Minimum weight as qualified or raced excluding driver unless otherwise noted:
HF: 925 lbs
CF: 950 lbs
FF: 975 lbs

PRESENTATION

All Formula Fords shall be presented with a clean and finished appearance in keeping with the spirit of vintage racing. Cars with a rough appearance or otherwise deemed inappropriately presented may be excluded by VRG/race officials.

HISTORIC FORMULA FORD REGULATIONS

I. Definition- Eligible cars are basically the first generation Formula Ford (Vintage Formula Ford) cars generally fitted with front radiators, outboard suspension and brakes.

The following commercially constructed cars are eligible. Any chassis not listed must petition for eligibility before being included.

Alexis 14 (1968) 15 (1969) 18 (1970) 18B (1971) 22 (1972)
Beach MKII (1969-70)
Bobsy (1969)
Bowin P4/P4A (1969-71) P6 (1972)
Caldwell D9 (1969) D9B (1970-71)
Crossle 16F (1968-69) 20F (1971-72)
Dulon LD4 (1967) LD4B (1968) LD4C (1969) LD9 (1970-72)
Elden PH6 (1969) PH8 (1970-72) PH10 (1972)
Elfin 600 (1969-72)
Forsgrini MK12 (1968-69)
Ginetta G18 (1969-70) G18B (1971)
Hawke DL2 (1969) DL2A (1970) DL2B (1971) DL9 (1972) DL9A (1972)
Ladybird MK8 (1968) MK9 (1969)
Legrand MK10 (1969-72)
Lola T200 (1970) T202 (1971) T204 (1972)
Lotus 51 (1967) 51B (1968) 51C (1969) 61M (1970-72) 61MX (1972) 69 (1971-72)
Macon MR7B (1969) MR8 (1969-70) MR8B (1971)
March 709 (1970) 719 (1971) 729 (1972)
Mallock U2 MK9 (1969-70) U2MK9B (1971) U2MK9DD (1969-71)
Mcnamara FFA (1970)
Merlyn MK11 (1968) MK11A (1969) MK17 (1970) MK17A (1971) MK20 (1971) MK20A (1972)
Mirage MK5 (1970)
Mistrale (1969-70)
Nike MK4 (1968-69) MK6 (1970) MK10 (1971-72)
Royale RP2 (1969) RP3 (1970) RP3A (1971-72) RP16 (1972)
Tecno FF (1970)
Titan MK4 (1969) MK5 (1969) MK6 (1970) MK6A (1971) MK6B (1972) MK6C (1973)
Winkleman WDF1 (1969) WDF2 (1970) WDF3 (1971) WDF4 (1972)

CLUB FORMULA FORD REGULATIONS

I. Definition

Eligible cars are basically the 2nd generation formula ford (club ford) cars campaigned in 1973 through 1981. There are 1981 or older "second generation" designs with outboard suspension (shocks) on at least one chassis end.

The following commercially constructed cars are eligible. Any chassis not listed must petition for eligibility before being included.

Alexis – MK23, MK 24, MK24B
ADF – through 1981
Caldwell – DL15FF (also a few were made as DL9 in 1975)
Crossle – 25F/30F/32F/35F/45F – 1976 to 1981
Dulon – MP15/17/19/21
Eagle – (Dan Gurney) – DGF
Elden – PRH10, PRH17, PRH19, PRH20, HD24
Elfin – 620
Hawke – DL11, DL15, DL17, DL19
Hermes – 16/79, 16/80
Huron – FP2
HR2760
Image – FF2/FF2B/FF3/FF4/FF5
Javelin – JL2/JL5
Legrand – MK13/13B/21/27
Lola – T340/T342/T440/T540
Merlyn – MK24/25/28/29), MK-30 (1976),MK-31(1978)
PRS – RH02, 81F
Reynard – 73F/76F/77F/78F
Rostron – RT 77/78
Rowland – 1975/76 RP, RP24-77, RP26-78
Sark 2
Sparton – FF78
Titan – MK8/9
Tiga – FF75F/76F
Van Diemen – FA 73/74/76/78/79/80/81
Viking – NONE – 1st prototypes 1979 but 1st customer car delivered in 1982
Winkelman – became Nomad-Palliser – KHF/1 (WDF4), KHF/2 (WDF5/WDF6)
Zink – Z-10, Z-16
Zues – FF81 (1981)

Applicable to both Historic and Club Ford classes, except as noted.

II. Engine-

Detailed engine rules are outlined in the FF Formula Ford Regulations section below. Please note, Sections D.1 and D.2 apply. Exception: Pierce aluminum cylinder head or similar not allowed.

III Transmission- per section D.3

IV Final Drive- per section D.4

V. Clutch- per section D.5

VI. Chassis-

The chassis shall be of tubular steel construction with no stress bearing panels except the undertray, front bulkhead, and aft bulkhead/ firewall. A stress-bearing panel is a panel that is riveted with less than 6" rivet spacing, bonded, or welded between chassis tubes or bulkheads. The curvature of the undertray shall not exceed one inch. The tubes may transport liquid (oil or water). The addition of external tubes to carry water and oil is allowable. Monocoque construction and the use of honeycomb and composite (carbon fiber, kevlar, etc) materials are prohibited.

Monocoque chassis construction is not permitted

The addition of safety related tubing and panels per section D.6, D.12 (side impact bars, roll hoops and braces, etc) is allowed but not required for vintage and club ford classes

VII. Body-

Historic Ford- Body work must be run as originally fitted or as modified in period (pre 1973). No part of the frame or body shall project beyond a plane connecting the vertical centerlines of the front and rear tires. No skid plate shall extend beyond the bodywork, acting as a "down force device" or air splitter. The driver's seat must be capable of being entered without the removal or manipulation of any part or panel. Wings (airfoils) are prohibited. Rear spoilers in the form of raised surfaces, continuous with the body surface, and not wider than the body surface are allowable if fitted in period. Advanced composite (carbon fiber, kevlar, etc) materials are prohibited. The use of alternate bodywork is prohibited unless documentation of use in period can be verified.

Club Ford- Per section D.12, not D.7

VIII. Suspension And Running Gear- Historic and Club Ford-

All components shall be of steel with the exception of hub adapters, rear hub carriers, bearings and bushings. Wheel spacers shall not exceed 1.5".
Shock absorbers can be steel or aluminum body with no more that 2 adjustment modes. Remote reservoir shocks are prohibited.
Shock absorbers with triple and quadruple adjustments with or without remote reservoirs are prohibited.

Historic Ford - Rubber Donuts must be retained on rear half-shafts unless car owner can prove that constant velocity [CV] joints were used on the car originally.

The replacement of "metalastic" and plastic type bushings with spherical type is not prohibited. Sound engineering practices must be observed.

IX. Brakes-

Free, except the restriction to cast iron calipers and iron discs. The addition of cockpit adjustable brakes bias systems is allowed on Club Fords only, and prohibited unless it can be proven to be period authentic on any particular Historic Ford.

X. Wheels-

Historic Ford - Wheels shall be 13" pressed steel disc type with a maximum width of 5.5". Wheels must be made of steel, but the offset may be altered.

Club Ford - per section D.10

XI. Fuel Tanks

All fuel tanks must be properly secured. The original elastic cords are in most cases inadequate. An FIA approved (or equivalent) road racing type fuel cell, properly mounted, with a non-vented filler cap, and check valve in the venting system, is required for all cars. This requirement includes a flexible bladder filled with foam surrounded by a metal enclosure. Vent lines shall terminate outside of the car bodywork. Tanks must be in the original location or, if relocated, be entirely within the chassis frame.

XII. Fire System

Cars must be equipped with a minimum of a 5.0-pound (Halon equivalent) nontoxic, commercially available fire system. As a minimum there shall be two nozzles, one nozzle directed at the carburetor and one directed toward the driver. Actuation can be mechanical or electrical and must be within easy reach of the driver.

XII. ORIGINAL SPECIFICATIONS

i) **Historic Ford** - must compete in the identical specification as manufactured. Updates and modifications, however "period" they might appear, are specifically prohibited. Relocation of suspension pickup points, alteration of wheelbase or track are examples of prohibited modifications. All body panels originally supplied with the model, with the exception of the engine undertray, must be used. They must be the original shape. The car must be restored to the original period specs, unless otherwise approved in writing.

ii) **Club Ford** - must compete in the specification as manufactured and raced. Updates and modifications which were made during the life of the car to improve its competitiveness and safety are permitted. However, the racer, if challenged, must be able to demonstrate that these changes were in compliance with the SCCA GCR's in effect during its racing history.

iii) Any Historic Ford running non-steel wheels will be deemed a Club Ford.

Other than iii) above, any Historic or Club Ford not in compliance with the rules applicable to both Historic and/or Club Fords above will be deemed a Pre-`85 Ford, subject to complying with the rules for the FF class.

FF FORMULA FORD REGULATIONS

The FF class cars are required to meet the 2015 SCCA FF GCR preparation rules with the exception of tire and weight requirements as listed in the general rules at the beginning of this document.

Applicable to all 3 classes except as listed above in General Rules Applicable to All Three Classes and in Historic and Club Ford sections. For cars built before January 1st 1986 substitute D.12 for D.6, D.7, and D.8 only.

NOTE: Contained herein are the 1986 Formula Ford chassis construction requirements (see D.6 and D.7).

Definition

a. A formula for single-seat, open-wheel racing cars using standard Ford 1600 "crossflow" pushrod engines, with firewall, floor, and safety equipment conforming to the GCR.

b. Formula Ford is a Restricted class. Therefore, any allowable modifications, changes, or additions are as stated herein. There are no exceptions. IF IN DOUBT, DON'T. Homologation is required for all cars registered after January 1, 1983.

c. Two engines are allowed in Formula Ford:

1. The Ford 1600 GT "Kent" pushrod "crossflow" as installed in the Ford Cortina in 1971 and later. The Kent engine specifications are contained in D.1.
2. The Ford 1600 GT "Cortina" engine as installed in the Ford Cortina through 1970. The Cortina engine specifications are contained in D.2.

D.1. Kent Engine

a. General

1. Components shall not be interchanged between the Kent and Cortina versions of the engine unless specifically authorized.
2. The engine shall not be altered, modified, or changed in any respect unless specifically authorized herein. When a system is specified to be "unrestricted" (e.g. paragraphs p and q), the restrictions of this paragraph do not apply.
3. The gasket face of the cylinder head may be resurfaced provided the maximum compression ratio is not exceeded.
4. Valve guides are unrestricted provided the position of the valve is not changed. Standard Ford replacement valves, with oversize stems, may be used as normal repair/maintenance procedures. The specifications, in B.12.f are mandatory. It is permitted to re-cut or replace valve seats. Valve seat angles are unrestricted.
5. 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.
6. Balancing of all moving parts of the engine is permitted. The pistons, rods, crankshaft, and flywheel may be lightened to their stated minimum weights. 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. Pistons may be balanced to the minimum weight by removing weight from the pin boss, the underside of the piston crown, or the bottom edge of the skirt. "Gas porting", re-profiling, or any other modification to the piston, other than expressly permitted herein, is prohibited. Knife-edging the crankshaft throws is not permitted.
7. Compression Ratio

Maximum compression ratio: 9.3 to 1

The following specifications are used in determining compression ratio:

A. Maximum bore size: 3.200”

B. Minimum cylinder volume at Top Dead Center: 42.0cc

C. Maximum valve protrusion from head surface: .040”

D. Only approved head gaskets may be used (see B.12.c.3)

b. Block

1. Bore may be enlarged for clearance between cylinder and piston.
2. Cylinder sleeves may be fitted. The top surface of the block may be milled or surface ground to obtain the maximum compression ratio specified above. Any steel center 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.
3. The 1600 Fiesta block is permitted as a replacement part.
4. The Ford Racing block, part number M-6010-16K, is permitted as a replacement part.

c. Cylinder Head

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:

Inlet: 1.50” Exhaust: 1.20”

2. The use of the Pierce aluminum cylinder head is permitted.
3. The following head gaskets are allowed:

A. Ford Part # 931M6051AA

B. Payen Part # AH-750

C. Felpro Part # 8360PT-1

d. Inlet Manifold

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

Maximum dimension at head face: 1.340”

2. Carburetor Flange- Maximum dimensions at carburetor flange: see Figure 1.

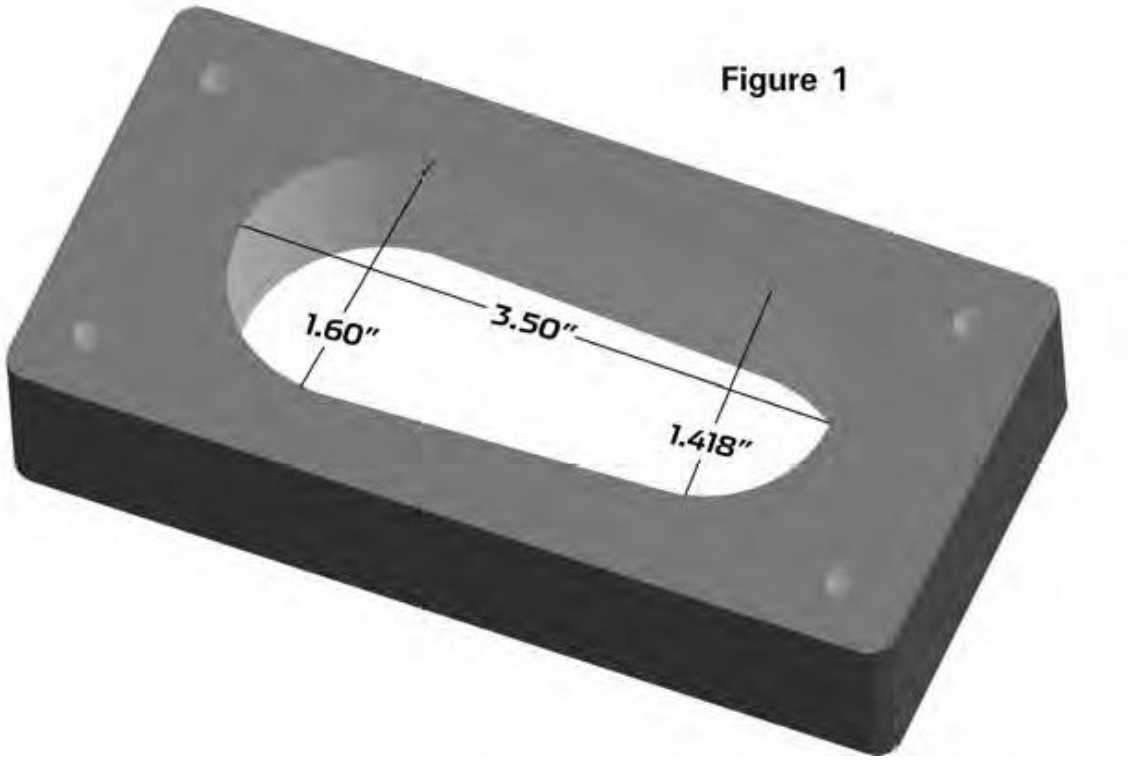

Figure 1

3. The carburetor face of the inlet manifold may be machined to the horizontal to compensate for fore/aft tilt of the carburetor.
4. Epoxy exposed in the manifold used to make repairs is acceptable, providing the total area is less than 0.75 square inches.
5. The water passages in the inlet manifold may be plugged. Holes in the inlet manifold resulting from the removal of emission/vacuum lines shall be plugged.

e. Pistons

1. Standard or 0.005 inch oversize pistons shall be used.
2. Standard size AE pistons P/N 18649, casting P/N 18634, standard size CP piston, part # 81-2 FF1600, or CP oversize piston, part # 81-2- FF1600+5 may be used.
3. Alternate piston identified as follows is allowed: P/N AE-M717D, casting number 711 M 6110. AE Hepolite P/N 20552, Casting # 20548A. Note: Mahle pistons are not allowed.

4. Dimensions and Weights
Maximum diameter:
Standard: 3.187”
0.005” o/s: 3.192”
Depth of bowl: 0.470” (minimum)
Maximum diameter of bowl: 2.44” AE Hepolite,
2.50” CP Piston
Centerline of wrist pin to crown: 1.702” +/- .002”
Overall height: 3.30” AE Hepolite
2.80” CP Piston
Minimum weight 515 grams (w/ clips, pins and rings)
Weight of pin: 115 +/- 2 grams
Ring Groove Widths: Top Groove: 0.064”
2nd Groove : 0.0795”
Oil Groove: 0.159”

5. 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
   C. Pocketing of the piston valve reliefs is allowed up to a maximum of .050" to obtain the maximum combustion chamber volume.
6. Wrist Pins are unrestricted provided that:

A. Weight is 115 +/- 2 grams.

B. No modification is made to the piston for the installation of the wrist pins.

f. Valves

1. Dimensions

	Iron head	Alloy head
Distance apart at centers	1.540" +/- .020"	1.570" +/- .020"
Max. diameter:		
Inlet:	1.560"	
Exhaust:	1.340"	
Overall length:		
Inlet:	4.367" +/- .020"	
Exhaust:	4.355" +/- .020"	

2. Reshaping of the valves is specifically prohibited.
3. Alternate valve AE p/n V34524 (intake), V34525 (exhaust) are permitted.

g. Camshaft

1. Regrinding camshaft lobes is permitted, providing they are ground to meet FORD and SCCA profile.
2. Camshaft Lobe Centers: 109° +/- 2°

Lift at top of pushrod:
Inlet: 0.231" +/- .002" Maximum

Exhaust: 0.232" +/-.002" Maximum

Lift at spring cap: (Valve Lift)
Inlet: 0.356" Maximum

(Zero tappet setting)

Exhaust: 0.358" Maximum

3. Recontouring of the valve stem contact pad of the rocker arm is permitted, provided the maximum lift at the spring cap is not exceeded
4. Offset camshaft/sprocket dowels are permitted.
5. Camshaft profile and lobe centers shall be checked using the official procedure published by SCCA.
6. A camshaft that is a replica of the original camshaft and of the same material may be used.

h. Valve Springs

Valve springs and valve spring shims are unrestricted, except that:

1. Springs and shims shall be made of steel.
2. No more than one spring shall be used per valve.
3. Conically wound springs are not allowed.
4. The standard spring cap and retainers shall be used.

i. Pushrods

Minimum stem diameter: 0.25"

Overall length: 7.64" Minimum

Minimum weight: 50 grams

j. Connecting Rods
Any ferrous connecting rod may be used provided it meets a minimum weight of 630 grams and has a center to center length of 4.925 +/- 0.020 inches. (Note: Weights include cap, bolts, and small end bush, but not big end bearing shells).

k. Crankshaft
An alternate cast steel crankshaft meeting original Ford Kent and SCCA dimensions and weight is permitted.

Weight: 24 lbs. 8 oz. Minimum

Max Stroke (at piston): 3.056" +/- .004"

Crankshaft pulley: unrestricted

The crankshaft from the Cortina engine may be used.

The crankshaft from the Fiesta engine may be used.

The crankshaft may be shot peened.

l. Flywheel

1. Weight with ring gear: 15.5 lbs minimum.
2. The flywheel may be machined to reduce weight to the above minimum weight. Flywheel locating dowels are permitted.
3. Weight may be added to the flywheel, providing it is added ONLY to the existing clutch bolt holes, i.e., single cap screws or set screws. No continuous material shall be used.
4. An alternate flywheel, part # JAE1600 is also allowed at the above weight of 15.5 lbs.

m. Carburetor
Weber 32/36 DGV or Holley 5200

Venturi diameter: Primary: 26mm

Secondary: 27mm

It is permitted to:

1. Fit any jets (including accelerator pump discharge nozzle) as long as no modifications to the carburetor body are required.
2. Modify or substitute the external throttle linkage.
3. Fit internal and/or external surge pipes.
4. Remove the air cleaner
5. Fit velocity stacks
6. Remove the choke butterflies and linkage.
7. Use an alternate carburetor gasket provided it is the same thickness as the original gasket and doesn't exceed the manifold opening dimensions

8. Modify the carburetor housing for the installation of throttle shaft bearings provided the modification serves no other purpose

n. Fuel Pump
Unrestricted

o. Exhaust Manifold
Unrestricted

p. Lubrication System
Lubrication system is unrestricted; any oil pump and oil sump permitted; dry sump is permitted. Localized machining of the cylinder block is permitted to allow fitting of the oil pump.Dry sump system is permitted.

q. Cooling System
Cooling system is unrestricted. Any radiator, fan, water pump and drive belt permitted.Pump/fan/generator drive belt: Unrestricted

r. Electrical Equipment
Distributor: Distributors are unrestricted provided the original drive, location, and housing are retained. The distributor is defined as the component that triggers the LT current and distributes the HT current. The ignition timing may only be varied by vacuum and/or mechanical means. It is prohibited to use any other method or component to trigger, distribute, or time the ignition. 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. Generators/ Alternators: not required. All other electrical components are unrestricted.

s. Miscellaneous

1. The timing chain/sprocket cover may be altered or replaced.
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 - nuts, bolts, screws, studs, etc. Intake manifold fasteners may be of either a socket head or hex head configuration, and must be 5/16" diameter.
   B. Gaskets, except 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.
   G. Rocker pedestals that are of the same material and dimensionally identical (i.e., shaft location, offset, etc.) to the original components may be used.
3. Mechanical tachometer drive is permitted.
4. The crankcase breather may be altered or removed.
5. The standard rocker cover may be altered to provide for crankcase ventilation, and the filler cap may be altered or replaced. Valve or rocker covers may be substituted, provided that the replacement cover affords no additional function than that of the original stock cover. (relocated text from 8 below)
6. The crankshaft and main bearing caps may be treated with salt-bath nitriding cover under SAE specification AMS 2755A (tuftriding, etc.)
7. Any oil or lubricants may be used.
8. Water pump, fan, and generator/alternator pulley(s) are unrestricted.
9. Exhaust Outlets

Exhaust outlets on cars registered after January 1, 1986 shall not extend more than 60 cm (23.60") behind the centerline of the rear axle and shall be positioned between 10 cm (3.9") and 60 cm (23.6) from the ground, measured to the bottom of the exhaust pipe.

Exhaust Outlets: Cars registered prior to January 1, 1986.

A. It is recommended that all exhaust outlets be no longer than 60cm (23.60") behind the centerline of the rear axle and positioned between 30cm (11.8") and 60cm (23.6") from the ground.

B. For cars unable to comply with the above rule (A.), they shall have a support bracket that attaches within six (6) inches of the outlet end, and the support bracket shall extend no more than thirty (30) degrees from vertical to the rear. Beginning January 1, 1986, it is mandatory for all Formula F cars.

D.2.. Cortina Engine

All of B.12 applies to the Cortina engine except as specified in this section. Components shall not be interchanged between the Kent and Cortina versions of the engine unless specifically authorized.

a. Compression Ratio

Maximum compression ratio: 10.0 to 1. The following specifications are used in determining compression ratio:

1.64cc - top ring to top of piston

5.60cc - head gasket.

Minimum unswept volume per cylinder:
44.4cc (original engine with standard pistons)

45.1cc (original engine with .030" o/s pistons)

b. Block

The 1600 Pinto block, P/N DIFZ-6010-C, may be used as a replacement for the Cortina block; Standard Pinto tappets, P/N DORY 6500A and DIFZ 6500A may also be used when this block is used as a Cortina replacement.

c. Cylinder head

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:
Inlet: 1.50" Exhaust: 1.16"
Combustion chamber:
Minimum depth 0.115"
Maximum length: 3.15"
Minimum volume per cylinder: 7.8cc
Reshaping is prohibited.

Ford Pinto cylinder head P/N DORY 6049B is permitted

d. Inlet Manifold

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

Maximum Size at head face:
Cyl. 1 & 4: 1.48" x 1.28"
Cyl. 2 & 3: .25"
Maximum size at carburetor flange: 3.060" x 1.389"
Maximum width: 3.80"
Primary choke end radius: .709"
Secondary choke end radius: .787"

e. Pistons

Standard, 0.015 inch oversize or 0.030 inch oversize pistons may be used.

Piston Maximum diameter:
Standard: 3.189"
0.015" o/s: 3.204"
0.030" o/s: 3.219"
Depth of bowl: 0.500" +/-.005"
Minimum volume of bowl: 31.5cc
Maximum diameter of bowl: 2.28"
Centerline of wrist pin to crown: 1.737" +/- .002"
Overall height: 3.30"
Minimum weight

w/rings & pin: 485 grams
Weight of pin: 115 +/- 2 grams
Wrist Pins are unrestricted provided that:
No modification is made to the piston for the installation of the wrist pins

f. Valves
Distance apart at centers: 1.540" +/- .020"
Max. diameter:
Inlet: 1.502"
Exhaust: 1.252"
Overall length:
Inlet: 4.280" +/- .006"
Exhaust: 4.260" +/- .006"

g. Crankshaft
Weight: 23 lbs. 8 oz. minimum

The crankshaft from the Kent engine may be used.

h. Carburetor
Weber 32 DFM or DFD or Holley 5200

Venturi Diameter: Primary: 26mm

Secondary: 27mm

D.3. Transmission
Any transmission may be used with not more than four (4) forward gears and an operational reverse gear.
a. The use of automatic and/or sequentially shifted gearbox is prohibited.
b. Electronic assisted gear change mechanisms and electronically controlled differentials are prohibited.
c. Gearboxes with shafts that are transverse to the longitudinal axis of the chassis are not allowed. The sole exception are the gearbox final drive (crownwheel) shaft axis and final drive shafts (halfshafts). All change gears must be located in the case aft of the final drive.

D.4. Final Drive
Any final drive unit may be used except:
a. Drive shall be to rear wheels only.
b. The differential cannot be modified in any way to limit its normal function. Torque biasing, limited slip, and locked differentials are prohibited.

D.5. Clutch
The use of any single plate clutch is permitted provided no modification is made to the flywheel other than changing the points of attachment of the clutch to the flywheel, and provided that it shall have an operable clutch system. Carbon Fiber clutches are not permitted.

D.6. Chassis/Frame
Formula Ford 1986 construction requirements as of January 1, 1986. All new Formula Ford cars are to be built to these specifications covered in D.6. through D.7.h.. (Required for Formula 2000 also.)
a. The chassis shall be of steel space frame construction. Monocoque- type structures are prohibited. Stabilized (honeycomb) or composite (carbon fiber or Kevlar) materials are not permitted, except as specifically authorized within these rules. 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 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. The lower main frame rails

shall be a minimum of twenty-five (25) centimeters (9.84”) apart (inside dimension) from the front bulkhead to the rear roll hoop.
b. The area between the upper and lower main frame 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.
1. Panel(s), minimum of either .060” heat treated aluminum (6061-T6 or equivalent) or eighteen (18) gauge steel, attached outside of the main frame tubes.
2. Reinforced body - at minimum, consisting of a double layer, five (5) oz., bi-directional, laminated Kevlar material incorporated into the body which shall be securely fastened to the frame.
For either method, fasteners shall be no closer than six (6) inch centers (no stress-bearing panels). The material used for the chassis braces in this area shall be at least equivalent to the roll hoop brace material.
c. A stress-bearing floor pan/undertray, minimum of .060” heat treated aluminum or eighteen (18) gauge steel, is required; at a minimum this shall extend from the front bulkhead to the rear roll hoop bulkhead. Its curvature shall not exceed one inch. Sheet materials attached to the frame by welding, bonding, or by rivets or threaded fasteners which are located closer than six (6) inch centers, are defined as stress-bearing panels. Composite or stabilized materials shall not be used for stress-bearing panels. 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. 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 carburetor in vertical height. 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. Brackets for mounting components, such as the engine, transmission, suspension pickups, instruments, clutch and brake components, and body panels may be nonferrous, of any shape, and fastened to the frame in any manner.

D.7. Bodywork
a. The bodywork opening giving access to the cockpit shall have the following minimal dimensions:
Length: 60cm (23.622 inches)
Width: 45cm (17.717 inches) This width extends over a length of 30cm (11.811 inches) minimum. This minimal rectangular opening may exist anywhere forward of the bracing, and required padding will not be considered in these dimensions.
b. The driver’s seat shall be capable of being entered without the manipulation or removal of any part or panel.
c. Bodywork (including fuel tanks) shall not exceed a maximum width of 95cm (37.44 inches). No part of the bodywork, rear spoiler, or exhaust system shall extend more than 100cm (39 inches) behind the centerline of the rear axle. Bodywork shall not increase in width behind the centerline of the rear axle in any horizontal section. 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. All bodywork shall be firmly attached to the chassis. Wings and other airfoil devices which create aerodynamic downforce are prohibited. No extension of the undertray or attached components for the purpose of downforce or ground effects are permitted. 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.

d. No part of the bodywork or rear spoiler shall exceed the height of a horizontal plane 90cm (35.4 inches) above the ground, with the car as qualified or raced, with driver aboard. The safety roll bar/roll cage and engine air box are not included in this height restriction.
e. 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.) Diffuser undertrays or venturi tunnels are prohibited. No aerodynamic devices (e.g., skirts, body sides, etc.) may extend more than 1cm (0.394 inches) below the lower surface of the floor pan 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. All ducted air for heat exchangers (water/oil) shall pass through those heat exchangers.
f. Fuel cell air vents shall be located at least 25cm (9.84 inches) to the rear of the cockpit.
g. Carbon fiber is not permitted.

D.8. Suspension
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 for this discussion. All suspension components shall be of steel or ferrous material, with the exception of hubs, hub adapters, hub carriers, bell cranks, pivot blocks, bearings, and bushings. Front and rear hub carriers shall be only steel or aluminum alloy for cars manufactured after January 1, 1983.
Springs shall be steel only.
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.
Shock absorbers: Design - unrestricted; Casing Material steel or aluminum alloy.
All components which are not defined as chassis/frame or suspension are unrestricted, unless otherwise restricted by these rules or the GCR.
Titanium is prohibited.
It is not permitted to attach spoilers, fairings, or other devices which may exert downforce to the movable suspension members. If the suspension member is of streamline or airfoil cross section, it shall be symmetrical about its horizontal axis.
Brake lines may be attached to the suspension.

D.9. Brakes
Unrestricted, except that calipers shall be cast iron, and rotors are restricted to ferrous material. Forward facing brake cooling ducts may be installed, but shall serve no other function or purpose.

D.10. Wheels
Wheels are unrestricted except that:
a. Material is unrestricted providing it is metal.
b. Diameter shall be thirteen (13) inches.
c. Rim width shall not exceed 5.5 inches.
d. Wheel covers, wheel fans, or any device to fair in the wheel is prohibited.

D.11. Weight
Minimum weight as qualified or raced, with driver:
1,175 lbs. – regardless of engine

D.12. Cars Registered Prior To 1/1/86

The following specifications are for cars registered prior to January 1, 1986 and for Technical Inspection only. No cars are to be built to these specifications as of January 1, 1986.

A. Chassis/Frame

The chassis is defined as the frame. It shall be a steel space frame. Monocoque-type structures are prohibited. Sheet material affixed to the frame by welding, bonding, or riveting, or by bolts or screws which are six (6) inch centers are defined as stress-bearing panels.

The undertray, for safety reasons, shall be a stress-bearing panel. Its curvature shall not exceed one (1) inch. 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. No other stress-bearing panels are permitted.

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. Gussets are defined as of steel, fastened to a maximum of two (2) members, and are specifically permitted.

The firewall portion of the bulkhead (panel) shall extend the full width of the cockpit and be as high as the top of the carburetor. 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.

B. Suspension and Running Gear

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.

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 January 1, 1983 will be only steel or aluminum alloy.

Springs: steel only, titanium is prohibited.

Shock absorbers: Design: Unrestricted. Casing Material: Steel or aluminum alloy.

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

C. Body

1. Definition of Bodywork Internally: All visible parts of the passenger compartment.

a. The bodywork opening giving access to the cockpit shall have the following minimal dimensions: Length: 60cm (23.622 inches) Width: 45cm (17.72 inches) This width extends over a length of 30cm (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.

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

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

d. 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.

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

f. 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. g. 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.

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

3. It is the intent of these rules to minimize the use of "ground effects" to achieve aerodynamic down-force on the vehicle. Thus, for the full width of the body between the front and rear axles, the lower surface (surface licked by the air-stream) 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. All ducted air for heat exchangers (water/oil) shall pass through those heat exchangers.

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