

MONOPOSTO RACING

Class Specification

Historic Formula Ford

REVISED June 2014

Pre-1973 Historic Formula Ford

I. DEFINITION

A class for single seat, open wheel race cars raced before 1973 by private owners, using the standard Ford 1600 crossflow, pushrod engine. The following commercially constructed cars are eligible.

Alexis 14 [1968] 15 [1969] 18 [1970] 18B [1971] 22 [1972]
Beach MK11 [1969-70]
Bobsy [1969]
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 G-18 [1969]
Hawke DL2 [1969] DL2A [1970] DL2B [1971] DL9 [1972] DL9A
[1972]
Le Grand MK10 [1969-72]
Lola T200 [1970] T202 [1971] T204 [1972]
Lotus 31 [1967] 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]
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 [1971-72]
MK6B [1972]
Winkleman WDF1 [1969] WDF2 [1970] WDF3 [1971] WDF4
[1972]

Any otherwise eligible Formula Ford not on the Monoposto Eligibility List may be considered for eligibility upon application to the Monoposto Board by the car owner.

II. ENGINE

A. General

The engine shall be the standard Ford 1600 pushrod crossflow, as installed in the following vehicles:

Original version: Cortina 1600 GT, through 1970 model.

Updated version: Cortina GT 1600 [1971], Capri 1600 [1971], Pinto [1971].

Updated SCCA legal crankshafts are permitted.

Components shall not be interchanged from the original and updated versions of the engine. Regulations pertain to both versions unless otherwise stated.

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

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.

Maximum compression ratio: Original engine: 10.0 to 1

Updated engine: 9.3 to 1

Minimum unswept volume per cylinder:

Original engine with std. pistons: 44.4 cc

Original engine with +.030" pistons: 45.1 cc

Updated engine with std. pistons: 48.2 cc

B. Block

Bore may be enlarged to increase clearance between piston and cylinder. Cylinder liners may be fitted. The top surface of the block may be milled to obtain the maximum compression ratio, as specified above. Any steel centre main bearing cap is permitted.

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:

Inlet: 1.42"

Exhaust: 1.16"

Combustion chamber [original engine only]:

Min. depth: 0.12" +/- .005"

Max. length: 3.15"

Minimum volume per cylinder: 7.88 cc

Reshaping is prohibited.

A standard dimension head gasket shall be used. Head gaskets may be exchanged between the original and uprated engines. (See Permitted Modifications, paragraph S. 2. on page 6)

Aluminum heads are not permitted.

D. Inlet Manifold

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

	Original Engine	Uprated Engine
Max. size at head face:		
Cyl. 1 & 4	1.48 x 1.28"	1.24"
Cyl. 2 & 3	1.25"	1.25"
Max. size at carb flange:	3.060 x 1.389"	
Max. length:		3 .80"
Primary choke radius:		.709"
Secondary choke end radius:		.787"

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

Water passages in the inlet manifold may be plugged.

E. Pistons

Standard .015" oversize or .030" oversize may be used in the original engine. Only standard size pistons may be used in the uprated engine.

	Original Engine	Uprated Engine
Maximum dia: standard	3.189"	3.189"
.015" OS	3.204"	Not permitted
.030" OS	3.219"	Not permitted
Depth of bowl [+/- .005"]	0.500"	0.500"
Max. dia. of bowl:	2.28"	2.44"
Min. vol. of bowl:	31.50 cc	N/A
Centerline of wrist		
pin to crown:	1.737" [+/- .002]	1.737"[+/- .002]
Overall height:	3.30"	3.30"
Min. weight with		
rings and pin:	573 grams	555 grams
Weight of pin [+/- 2 grams]	115 grams	115 grams

Piston make is free provided:

1. one oil control and two compression rings are used; and

2. no modification is made to the piston for the installation of rings.

F. Valves

	Original Engine	Uprated Engine
Distance apart at centers:	1.540" [+/- .020]	1.540" [+/- .020]
Max. dia. Inlet:	1.502" [+/- .020]	1.560" [+/- .020]
Exhaust:	1.252" [+/- .020]	1.340" [+/- .020]
Overall length: Inlet:	4.280" [+/- .006]	4.367" [+/- .020]
Exhaust:	4.260" [+/- .006]	4.355" [+/- .020]

Reshaping of the valve is specifically prohibited.

G. Camshaft

The camshaft lobe profile shall not be altered. The following specs are provided for checking only.

Lobes, heel to toe:	Inlet: 1.311" max. Exhaust: 1.312" max.
Lobes, base circle radius:	Inlet: 0.540" Exhaust 0.545"
Lift at top of pushrod:	Inlet: 0.231" [+/- .002" max.] Exhaust: 0.232" [+/- .002" max.]
Lift at spring cap with zero tappet setting:	Inlet: 0.356" max. Exhaust: 0.358" max.

H. Valve Springs

Valve springs and valve spring shims are free except that:

1. No more than one spring per valve.
2. The standard spring cap and retainer must be used.

I. Pushrods

Minimum stem dia.: 0.25"
Overall length: 7.64" [nominal]
Minimum weight: 50 grams

J. Connecting Rods

Minimum weight [both engines]: 640 grams

Note: that weight includes: cap, bolts and small end bush, but not the bearing shells.

K. Crankshaft

Weight: Original engine: 23 lbs. 8 oz. minimum

Upated engine: 24 lbs. 8 oz. minimum

Stroke at piston: 3.056" [+/- .004]

Updated SCCA legal crankshafts are permitted.

L. Flywheel

Weight with ring gear and dowels:

Original engine: 18.00 lbs. [min.]

Upated engine: 20.00 lbs. [min.]

M. Carburetor

Weber: 32DFM, 32DFD or 32/36DGV

Venturi diameter: Primary -- 26 mm.; Secondary -- 27 mm.

PERMITTED MODIFICATIONS:

1. The fitting of any jets [including accelerator pump discharge nozzle] which may be fitted without modification to the carburetor body.
2. Modification or substitution of the external throttle linkage.
3. The fitting of internal and/or external anti-surge pipes.
4. The fitting of a velocity stack.
5. The fitting of any filtration device, directly to the carburetor. No scoops, snorkels or ram air devices, unless original.
6. Removal of the choke butterflies and linkage.

N. Fuel Pump: Free

O. Exhaust Manifold: Free, except that the tail pipe cannot extend more than 25 inches behind the centerline of the rear axle.

P. Oil Pump and Sump: Free; dry sump system is permitted.

Q. Cooling System: Radiator, fan, pump and generator belt: Free

R. Electrical System

Distributor: The distributor shall be mounted in the original position and use the original drive. The vacuum advance mechanism may be removed. The distributor must be triggered by only 1 set of breaker points OR a magnetic pickup contained within the distributor. Only a standard unamplified coil ignition may be used. Transistorized/ electronic/solid state ignition is prohibited.

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 to any other component.
 - . fasteners [nuts, bolts, screws, studs, etc.]
 - . gaskets made by manufacturers other than Ford may be used providing the head gasket, carburetor to inlet manifold, and inlet manifold to head are of identical dimensions to the Ford standard part.
 - . washers
 - . seals
 - . connecting rod, crankshaft and camshaft bearings of the same size and type as original. Normal over/under size bearings are permitted.

3. Mechanical tach drive is permitted.
4. The crankcase breather may be altered or removed.
5. The rocker cover may be altered to provide for crankcase ventilation, the filler cap may be altered or replaced.
6. The crankshaft and main bearing caps may be treated with salt bath nitriding covered under SAE specification AMS 2755A [tufftriding, etc.].

III. TRANSMISSION

Any transmission may be used with not more than four forward speeds and an operational reverse.

IV. FINAL DRIVE

Any final drive may be used except: drive shall be to the rear wheels only; limited slip and locked differentials are prohibited.

V. 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. Flywheel may be modified to accept a single plate sintered metallic clutch [e.g., AP Borg and Beck, Tilton, etc.] providing no other regulations are broken.

VI. CHASSIS

The chassis shall be of tubular steel construction with no stress bearing panels except the undertray and a single transverse bulkhead. The curvature of the undertray shall not exceed one inch. The tubes may be used to transport liquid [oil or water] unless specifically prohibited by current general competition rules in the region. Monocoque construction is prohibited. With the exception of safety related tubing [6" maximum length], no modifications from the original are allowed.

VII. SUSPENSION AND RUNNING GEAR

All components shall be of steel with the exception of hub adaptors, rear hub carriers, bearings and bushings. Wheel spacers shall not exceed 1.5". Shock absorbers are free except that they must be steel, shall not be more than two-way adjustable and shall not have remote reservoirs. 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. All historic Formula Fords must use donuts in the driveline except for those specific cars which have demonstrated their use in their racing design and history and have received exemption from the President, Monoposto Racing or his designee.

VIII. BODY

No part of the frame or body shall project beyond a plane connecting the vertical centerlines of the front and rear tires. As noted in paragraph II.O., the tail pipe cannot extend more than 25 inches from the centerline of the rear axle. The driver's seat must be capable of being entered without the removal or manipulation of any part or panel. Wings [airfoils] are prohibited.

IX. BRAKES

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

X. WHEELS

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.

XI. TIRES

Monoposto Racing Historic Formula Fords will use only the following:

Front: Dunlop 135/545-13 CR82 9092 Formula Ford or

Avon 5.0/22.0-13 A29 14297

Rear: Dunlop 165/580-13 CR82 9092 Formula Ford or

Avon 6.5/23.0-13 A29 14298

For Dunlops only the 9092 compound is allowed [476 not allowed].

For Avons only the A29 compound is allowed. It is not permitted to mix the two tire brands; only Dunlops or Avons may be used.

Additional grooving or hand-cutting is not allowed. Rain tires are not allowed.

XII. MINIMUM WEIGHT

The minimum weight is: 925 lbs. [including coolant and lubricants, but no driver and fuel]. Note: This is approximately 5% above the original rules. The intent is to encourage the use of all safety related items. The use of full height rollbars, with additional fore and aft braces, dash hoops and fire-systems should not be omitted for fear of a weight penalty.

XIII. FUEL TANKS

All fuel tanks must be properly secured. The original elastic cords are in most cases inadequate. Fuel cells are required. They must be of a type approved by CASC, SCCA, FIA, IMSA, etc. for road racing. Tanks must be in the original location or, if relocated, be entirely within the chassis frame.

XIV. ORIGINAL SPECIFICATIONS

All Historic Pre-1973 Formula Fords 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.