ATLANTIC REGION MOTOR SPORTS

OPEN WHEEL FORMULA 1600 & FORMULA LIBRE

January 1, 2015

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These Open Wheel Formula 1600 & Formula Libre Rules were established by ARMS which reserves unto itself the right at any time to alter these as required, promulgate special rules in emergency and periodically to revise any appendices hereto. Such alterations or additions will be published in the form of revised manuals or bulletins and/or on the ARMS official website.

These Open Wheel Formula 1600 & Formula Libre Rules are intended to assist in the conduct of competitions and to further general safety. They are a guide and in no way guarantee against injury or death to participants, spectators or others. No express or implied warranties of safety or fitness for a particular purpose shall be intended or result from this publication or compliance with these specifications. By participation in these competitions all participants are deemed to have complied with these regulations.

ARMS Code of Conduct

ARMS clubs, members and participants in ARMS sanctioned events shall conduct themselves according to the highest standards of behaviour and sportsmanship and in a manner that shall not be prejudicial to the interests and the reputation of ARMS or its Clubs or of motorsport generally. Failure to do so shall be considered a breach of the ARMS GCRs and may result in penalties being applied.

The following statements further define the beliefs, expectations, ideals and principles of individual conduct that ARMS believes should be exemplified:

1. Participants in ARMS sanctioned activities shall be bound by this Code of Conduct;
2. Participants in ARMS sanctioned activities shall accept that motorsports can be dangerous and entails inherent risks;
3. Participants in ARMS sanctioned activities shall be treated with consideration and respect, and shall treat fellow participants with the same consideration and respect;
4. Participants in ARMS sanctioned activities shall endeavour to portray a positive image of motorsports through their exemplary driving habits;
5. Participants in ARMS sanctioned events shall not knowingly place themselves or others in a position of undue risk. Consideration of safety shall be placed before competitive goals;
6. ARMS members shall strive to set exemplary standards of behaviour as they are all ambassadors for motorsports
7. ARMS members shall pledge to demonstrate with their actions care and concern for the environment;

FORMULA 1600

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23.0 FORMULA FORD - 1600

TECHNICAL REGULATIONS:

23.1 DEFINITION:

1. Formula Ford 1600: A single seat, open wheeled automobile designed solely for speed events on circuits or closed courses. using a standard Ford 1600 "Crossflow" pushrod, normally aspirated engine with 2 venturi carburetor.

2. Automobiles must comply with the general requirements for race cars (ASN CANADA-FIA PRA regulations), as well as these regulations.

3. Light alloy. Any alloy containing more than 10% aluminum, magnesium or titanium.

23.2 CHASSIS:

1. Main chassis structure. The fully sprung structure of the vehicle.

2. The chassis must be of tubular steel (space frame) construction. Monocoque chassis construction is prohibited.

3. Stress bearing panels are defined as sheet material affixed to the frame by welding or bonding or by bolts, screws, or rivets located closer than 15.24 cm (6 in.) center to center.

4. The undertray (floor), must be a stress bearing panel. Cars must have a complete metal floor of adequate strength rigidly supported within the driver compartment.

5. The curvature/periphery of the floor/undertray edges must not exceed 2.54 cm (1 in.)

6. The mountings for brake and clutch pedals and cylinders, and for the instrument panel and the bulkhead behind the driver may be stress bearing.

7. No other stress bearing panels, including body panels, are permitted.

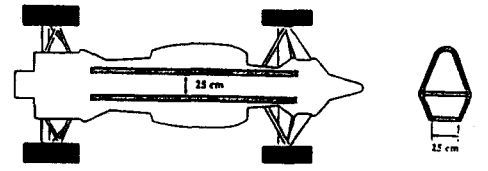
8. The use of composite materials using carbon and/or Kevlar reinforcement is prohibited.

9. The use of titanium is prohibited.

10. Cars must have a protective bulkhead of non flammable material between the engine and the driver compartment capable of preventing the passage of fuel or flame in case of fire. Gaps must be filled with a fire proof material.

11. Magnesium is prohibited for bulkheads.

12. The lower main frame rails must be a minimum of 25 cm (9.85 in.) apart (inside) dimension) from the front bulkhead to the rear roll bar (except pre 1990 US Swift).



13. All cars must not have more or less than four road wheels and not be fitted with any wheel spacer exceeding 2.54 cm. (1 in.) in thickness or of less than hub diameter. Multiple or laminated spacers are prohibited.

14. Wheel diameter is 13 inches. Rim width shall not exceed 13.97 cm (5.5 inches). Material is free providing it is metal. Wheel covers, wheel tans, or any device to fair in the wheel is prohibited.

15. Steering is free.

16. Brakes. Free, except that calipers must be cast iron and rotors are restricted to ferrous material. Two piston aluminum calipers with a maximum piston

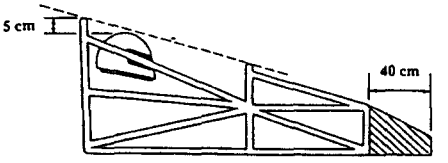
diameter of 2", may be substituted for cast iron calipers. Forward facing brake cooling ducts may be installed, but shall serve no other function or purpose.

17. Minimum length/height of the safety rollover-bar is 92 cm (36.24 in), measured in line with the driver's spine. There is no maximum height measurement.

18. No part of the safety roll over structure higher than the 90cm (35.46 in.)maximum bodywork/coachwork height may be shaped so as to have an aerodynamic influence.

19. The top of the driver's helmet must be below an imaginary line drawn between the top of the roll bar and the top of the front bulkhead.

20. Minimum clearance between top of drivers helmet and top of roll bar is 5 cm (1.97 in.).



21. Ballast. Non functional material added to increase vehicle weight. Any ballast must be permanently fixed to the chassis structure of the vehicle with provision for fixing seats should they be deemed necessary.

22. Vehicle weight. Minimum weight as qualified or raced, with driver and required safety equipment.

23.3 AFRA F1600 RACE CAR WEIGHTS

AFRA rules allow F1600 engines to be "overbored" up to a maximum of 0.030" above the ASN rules. Competitors who take advantage of this rule shall have the as raced minimum weight of their racecars increased at a rate of 10 lbs per 0.010" overbore.

The following chart shows the minimum weights as per suspension type, engine type, and bore size

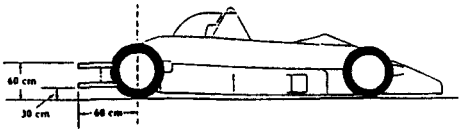
Suspension Type	Cortina Engine Bore size	Weight As Raced	Uprated Engine Bore size	Weight As Raced
Outboard	3.225"	1020 lbs	3.195 std.	1050 lbs
Inboard	3.225"	1095 lbs	3.195 std.	1125 lbs
Inboard/outboard	3.225"	1058 lbs	3.195 std.	1088 lbs
Outboard	3.225" +.010"	1030 lbs	3.195" + 0.010"	1060 lbs
Inboard	3.225" +.010"	1105 lbs	3.195" + 0.010"	1135 lbs
Inboard/Outboard	3.225" +.010"	1068 lbs	3.195" + 0.010"	1098 lbs
Outboard	3.225" +.020"	1040 lbs	3.195" + 0.020"	1070 lbs
Inboard	3.225" +.020"	1115 lbs	3.195" + 0.020"	1145 lbs
Inboard/Outboard	3.225" +.020"	1078 lbs	3.195" + 0.020"	1108 lbs
Outboard	3.225" +.030"	1050 lbs	3.195" + 0.030"	1080 lbs
Inboard	3.225" +.030"	1125 lbs	3.195" + 0.030"	1155 lbs
Inboard/Outboard	3.225" +.030"	1088 lbs	3.195" + 0.030"	1118 lbs

B. There will be no 1% tolerance to the weights as specified contrary to the ASN CANADA FIA PRA regulations 13.8.C

23. 1987 and 1988 Reynards must have the front bulkhead casting bearing the number L 155.

24. The height of the termination of the complete exhaust pipe must be between 30 cm (11.82 in.) and 60 cm (23.64 in.), measured from the ground.

25. Maximum exhaust length from rear wheel axis is 60 cm (23.64 in.).



26. Minimum wheelbase is 200 cm (78.80 in.).

27. Minimum track is 120 cm (47.28 in.). Total overall maximum width is 185 cm (72.89 in.).

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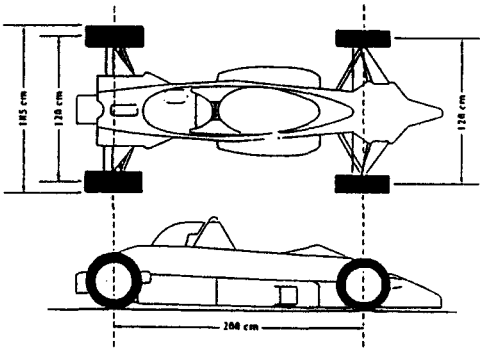
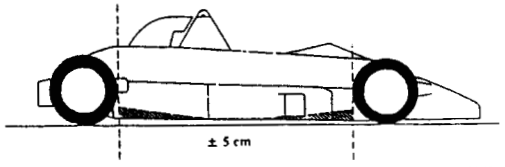
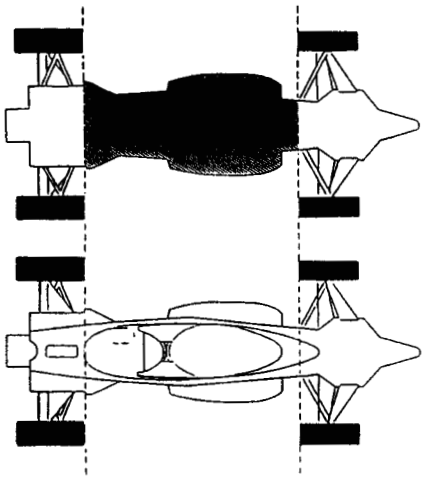


29. The floor/undertray, including all sprung parts, of the car must lie on one plane within a tolerance of ± 5 mm (0.20 in.).



30. 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 spec tires) to the fore of the vertical plane tangent to the fore of the complete rear wheels (including mounted spec tires).



31. The tolerance of ±5 mm (0.20 in.) has been introduced into the rules to cover any possible manufacturing problem and not to permit designs against the spirit of the "flat bottom".

32. The periphery of the surface formed by these parts may be curved upwards with a maximum radius of 5 cm (1.97 in.).

33. No part having an aerodynamic influence and no part of the bodywork may, under any circumstances, be located below the geometrical plane produced by the surface as defined above.

34. Any transverse, longitudinal or other flexible, retractable, pivoting or sliding device bridging the gap between the body and the road surface is forbidden.

35. Any nose box must be a crushable structure, securely attached to the front bulkhead, with a minimum cross section of 200 sq. cm (31 sq. in.), 40 cm (15.75 in.) 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.

23.4 SUSPENSION

1. All parts must be of steel or ferrous material, with the exception of hubs, hub adapters, hub-carriers, bearings and bushes, spring caps, abutment nuts, anti-roll bar links, shock absorber caps and nuts, bellcranks.

2. Springs. Steel only.

3. Titanium is prohibited. The use of composite material using carbon and/or Kevlar is prohibited.

4. It is not permitted to incorporate a spoiler in the construction of any suspension member.

5. It is not permitted to construct any suspension member in the form of an airfoil. The shape of suspension members must be symmetrical about its horizontal axis.

6. Shock absorbers are free. Aluminum casings are permitted.

23.5 BODYWORK/COACHWORK

1. Fixed external; side, front, rear and top surfaces of the vehicle licked by the air stream.

2. All cars must be fitted with bodywork including a driver compartment isolated from the engine, wet batteries, gearbox, transmission shafts, brakes, 4 road wheels, fuel tanks, oil tanks, water lines, water radiator reservoir and catch tanks.

3. A sealed battery can be located inside the driver compartment.

4. Bodywork must not be used as a stress bearing panel.

5. The body must be securely fastened to the frame.

6. The use of composite materials using carbon and/or Kevlar is prohibited, except where permitted in 4.4.17.

7. Maximum height of bodywork/coachwork, with driver aboard is 90 cm (35.46 in.), measured from the ground. Addition of material to the roll bar above the 90 cm (35.46 in.) maximum bodywork/coachwork height is prohibited. This does not included engine air box and on board TV cameras.

8. Maximum rear overhang of bodywork/coachwork is 100 cm (39.40 in.)measured from rear wheel axis.

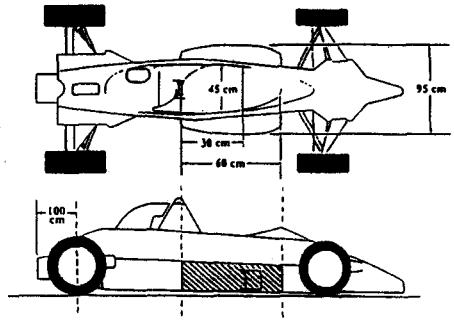
9. Maximum width of bodywork/coachwork behind front wheels is 95 cm (37.43 in.).

9A. With standard sidepods, maximum width of bodywork/coachwork behind front wheels is 130 cm (51.18 in.).

10. Minimum lateral cockpit bodywork/coachwork opening is 45 cm (1 7.73 in.).

11. Minimum longitudinal/parallel cockpit bodywork/coachwork opening length is 30 cm (11.82 in.).

12. Minimum longitudinal/parallel cockpit bodywork/coachwork overall opening length is 60 cm (23.64 in.).



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

14. 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.

15. No extension of the undertray or attached components at this plane for the purpose of downforce or ground effects are permitted.

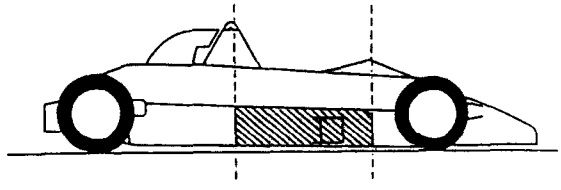
16. Any part of the car which has an influence on the aerodynamic stability of the vehicle must be firmly attached with no provisions for adjustment to vary downforce, except that a single rear spoiler, which may be capable of adjustment, is permitted. Cockpit adjustment is not permitted. This spoiler 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.

17. The area between the upper and lower main frame tubes from the front roll bar bulkhead to the rear roll bar bulkhead may be protected by one of the following methods to prevent the intrusion of objects into the cockpit;

A. Panel(s), minimum of either 1.5 mm (.060 in.) heat treated aluminum (6061 T6 or equivalent) or 18 gauge steel, attached outside of the main frame tubes.

B. Reinforced body, at minimum, consisting of a double layer,141.75 grams (5 oz.) bidirectional, laminated Kevlar material incorporating into this area of the body only.

For either method, fasteners must be no closer than 15.24 cm (6 in.) center to center (no stress bearing panels). The material used for the chassis braces in this area must be at least equivalent to the roll bar brace material.



23.6 ENGINE:

23.6.1 General

A. The engine shall be the standard Ford 1600 GT "Kent" pushrod Crossflow engine as installed in the following vehicles:

Original version: Cortina 1600 GT (through 1970 model)
Uprated version: Cortina 1600 GT (1971)

Note: (1) Both the uprated and original -engines are allowable.
(2) Specifications which appear in this rule book are for the uprated engine.

(3) Some specifications may be different for the original engine.

(4) For original Cortina 1600 GT engine specifications refer to SCCA Club Racing 1993 Formula Category specifications.

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

B. The gasket face of the cylinder head may be resurfaced provided the maximum compression ratio is net exceeded and the minimum depth of the combustion chamber is maintained.

C. Valve guides are unrestricted provided the position of the valve is not changed. Standard valve replacement valves, with oversize stems, may be used as normal repair/maintenance procedures.
Specifications. under 23.6.6 "Valves" must be observed. It is permitted to recut or replace valve seats. Valve seat angles are unrestricted.

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

E. Balancing of all moving parts of the engine is permitted providing 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.

F. Maximum compression ratio 9.3 to 1

The following specifications are used in determining compression ratio:

1.33cc top ring to top of piston.
0.30cc volume of valve protrusion.
4.75cc head gasket.

Compression ratio shall be checked using the official procedure of ASN CANADA FIA

Minimum unswept volume per cylinder: 48.2 cc

23.6.2 BLOCK

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

Fiesta blocks are permitted.

23.6.3 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:

A. Inlet: 1.50"
Exhaust: 1.16"

B. Reshaping is prohibited. The standard head gasket shall be used.

23.6.4 INTAKE MANIFOLD:

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

- Maximum size at head face: 1.30"
- Maximum size at carburetor flange: Maximum length 3.80"
- Primary choke end radius: .709"
- Secondary choke end radius: .787"

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

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

23.6.5 PISTONS:

A. Only standard size pistons shall be used in the uprated engine.

Standard 0.015 inch oversize or 0.030 inch over size pistons may be used in the original engine.

Standard size AE pistons part number 18649, casting number 18634 maybe used. Alternate pistons include: Part number AE-M717D, casting number 711 M 6110 and part number 20552.

B. The following piston dimensions must be observed

- Maximum diameter: 3.189"
- Depth of bowl (+/-.005"): 0.500"
- Centerline of wrist pin to crown (+/-.002'): 1.737"
- Overall height: 3.30"
- Minimum weight with rings and pin: 555 grams.

C. Piston rings are unrestricted provided that one oil control and two compression rings are used and that modification is made to the piston for the installation of the rings.

23.6.6 VALVES:

A. The following dimensions must be observed:

- Distance apart at centers: 1.540"(+/-).020"		
- Maximum diameter:	- Inlet:	1.560"
	- Exhaust:	1.340"
- Overall length:	- Inlet:	4.367"(+/-).020"
	- Exhaust:	4.355"(+/-).020"

B. Reshaping the valves is specifically prohibited.

23.6.7 CAMSHAFT:

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

- Lift at top of pushrod:
  - Inlet: 0.231"(+/-).002" max
  - Exhaust: 0.232"(+/-).002" max
- Lift at top of spring cap (zero tappet setting):
  - Inlet: 0.356" max
  - Exhaust: 0.358" max

B. Recontouring of the valve stem contact pad of the rocker arm is permitted provided the maximum lift at the spring cap is not exceeded.

C. Offset camshaft/sprocket dowels are permitted.

D. Camshaft lobe centres and profiles shall be checked using the official procedure of ASN CANADA FIA.

E. Part number M6250 A160 may be used.

23.6.8 VALVE SPRINGS:

Valve springs and valve spring shim are free except that no more than one spring may be used per valve and the standard spring cap and retained must be used. The standard cap diameter is 1.096 inches maximum. Springs shall be made of steel.

23.6.9 CONNECTING RODS:

Minimum weight including cap, bolts and small end bush, but not big end bearing shells: 640 grams.

23.5.10 CRANKSHAFT:

A. The following specifications must be observed:
- Weight: 24 lbs. 8 oz. minimum (11.1132 kg.)
- Stroke at piston: 3.056" +/- .004" (7.762 cm +/- .010 cm.)

B. The crankshaft pulley is free.

C. The crankshaft my be shotpeened.

23.6.11 FLYWHEEL:

A. Weight of flywheel with ring gear, dowels and clutch pressure plate with attaching bolts: 24 lbs. (10.896 kg) minimum.

B. The flywheel may be machined to achieve minimum allowed weight.

C. Flywheel locating dowels are permitted.

D. The standard Ford Pinto 1600 flywheel may be used provided that any machining to reduce weight to the above minimum weights only removes from the originally machined surfaces. All cast surfaces must remain in original condition.

E. The flywheel mating face my be modified to accept a racing clutch outer ring.

23.6.12 CLUTCH:

A. The use of any single plate clutch is permitted provided that it must have an operable clutch system.

B. Carbon fiber and carbon/carbon clutches are not permitted.

23.6.13 CARBURETOR:

A. Weber carburetor, with the swaged fuel inlet fitting, must be replaced by drilling and tapping the carburetor body for a threaded fitting.

B. Specifications: - Weber 32/36 DGV or Holley 5200
- Venturi diameters: Primary: 26 mm
Secondary: 27 mm

C. The fitting of any jets (including accelerator pump discharge nozzle) which may be filled without modification to the carburetor body.

D. Modification or substitution of external throttle linkage.

E. The fitting of internal and/or external anti surge pipes.

F. The removal of the air cleaner.

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

H. The removal of the choke butterflies and linkage.

I. An alternate carburetor gasket is permitted provided it is the same thickness as the original gasket.

J. Modification of the butterfly valve attachment screws is permitted provided that such modification in no way affects any surface of any other part of the carburetor.

23.6.14 FUEL PUMP:

Unrestricted.

23.6.15 EXHAUST MANIFOLD:

Unrestricted.

23.6.16 LUBRICATION SYSTEM:

A. Oil pump and sump: Unrestricted.

B. Dry sump system is permitted.

23.6.17 COOLING SYSTEM:

A. Radiator, fan and water pump: Unrestricted.

B. Pump/fan/generator drive bell: Unrestricted.

23.7 ELECTRICAL EQUIPMENT:

23.7.1 DISTRIBUTOR:

A. Distributors are free providing they retain the original drive and location.

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

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

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

E. 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.

23.7.2 GENERATORS/ALTERNATORS:

Not required.

23.7.3 OTHER ELECTRICAL COMPONENTS:

All other electrical components are unrestricted.

23.7.4 IGNITION:

Electronic ignition is prohibited.

23.8 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.)

B. Gaskets, except head gasket, carburetor to inlet manifold gasket and inlet.

C. Washers.

D. Seals.

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

F. Spark plugs.

3. Mechanical tachometer drive is permitted.

4. The crankcase breather may be altered or removed.

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

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

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

8. The crankshaft and bearing caps may be treated with salt bath nitriding cover under AE specification AMS2755A (tuftrining, etc.).

23.9A TRANSMISSION:

1. The gearbox must contain not more than four forward gears and include an operable reverse gear, capable of being engaged by the driver in a normal seated position.

2. Ratios are free.

3. Rearwheel drive only is permitted.

4. The final drive ratio is free.

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

6. The differential cannot be modified or influenced in any way to limit or change its normal operation.

7. An aluminum differential carrier is permitted.

8. The use of titanium is prohibited.

23.10 FORMULA FORD ENGINE SPECIFICATIONS:

The following technical information has been compiled for AFRA and represents the proper dimensions and clearances used to assemble a good working engine:

DESCRIPTION	STOCK	F1600	WEAR LIMIT
Crankshaft stroke	3.056" + 0.004"	Same	None
Main journal diam (std)	2.1253" to 2.1261"	2.1251" to 2.1255"	- 0.0003"
Rod journal diam (std)	1.9368" to 1.9376"	1.9366" to 1.9372"	- 0.0004"
Crankshaft end play	0.003" to 0.011"	0.006" to 0.009"	+ 0.003"
Block main bearing bores (std)	2.2710" to 2.27151.	2.2713" to 2.2717"	None
Block main bearing bores (0.015'-os)	2.2860" to 2.2865"	2.2863" to 2.2867"	None
Main bearing clearance	0.0008" to 0.0024"	0.0018" to 0.0024"	+ 0.0002"
Connecting rod centre distance	4.9265" to 4.9295"	equal +- 0.001"	None
Big end inside diameter	2.0825" to 2.0830"	2.0830" to 2.0832"	None
Rod bearing clearance	0.0004" to 0.0024	0.0018" to 0.0024"	+ 0.0002"
Connecting rod end play	0.004" to 0.010"	0.007" to 0.009"	+ 0.003"
Block piston cyl. Bore diameter	3.1883" to 3.189"	3.1922" to 3.1932"	+ 0.0018"
Piston diameter	3.1868" to 3.1871"	Grade e + 0.0016"	None
Piston to cylinder			

wall clearance	0.0013" to 0.0019	0.0035" to 0.0045"	+ 0.0015"
Deck height	0.035" to 0.037"	0.029"	None
Minimum unswept cyl. Volume	48.2 cc	Same	None
Wrist pin diameter	0.8119" to 0.8123"	Same	None
Piston clearance	0.0000" to 0.0002"	0.0005" to 0.0007"	+ 0.0003"
Rod clearance	0.0002" to 0.0003"	0.0005" to 0.0007"	+ 0.0003"
Piston ring thickness	Top: 1/16" Second: 5/64"	Oil: 5/32"	
Ring to piston side clearance	0.0016" to 0.0036"	0.0016" to 0.0025"	+ 0.0015"
Ring end gap	0.009" to 0.014"	0.015" to 0.022"	+ 0.003"
Camshaft lobe base min. Diameter	Intake	1.080" + 0.0011,	None
Camshaft lobe base min. Diameter	Exhaust	1.080"0.001"	None
Camshaft lobe lift max. Diameter	Intake	1.311"0.001"	None
Camshaft lobe lift max. Diameter	Exhaust	1.312"0.0011,	None
Maximum camshaft lift	Intake	0.231"0.002"	None
Maximum camshaft lift	Exhaust	0.232" + 0.002"	None
Maximum valve lift	Intake	0.356"	None
Maximum valve lift	Exhaust	0.358"	None
Camshaft bearing bore diameter	1.5615" to 1.562"	Same	None
Camshaft journal diameter	1.5597" to 1.5605"	Same	- 0.0013"
Camshaft bearing clearance	0.001" to 0.0023"	Same	None
Camshaft/ thrust washer endplay	0.0025" to 0.0075"	0.0025"	None
Intake valve max. dia	1.560"	Same	None
Exhaust valve max. dia	1.340"	Same	None
Intake valve to stem clearance	0.0008" to 0.003"	0.0008" to 0.001"	+ 0.002"
Exhaust valve to stem clearance	0.0017" to 0.0039"	0.0012" to 0.0017"	+ 0.0022"
Valve spring load: closed	44 to 49 lb.	75 lb.	65 lb.

Valve spring load: open	128 to 134 lb.	160 lb.	135 lb.
Valve seat angle	45 degrees	Same	None
Intake port at head max. Diameter	1.420"	1.500"	None
Exhaust port at head max. Diameter	1.1001,	1. 1 60"	None

23.11 ENGINE TIGHTENING TORQUE SPECIFICATIONS (FT/LB):

Head bolt long:	75
Head bolt short:	70
Main cap bolt:	70
Rod cap bolt std:	35
Rod cap bolt hd:	43
Rod cap bolt 12-pt:	55
Flywheel bolt:	55
Pressure plate bolt:	15
Rocker shaft bolt:	30
Camshaft bolt:	15
Thrust plate bolt:	3.5
Chain tensioner bolt:	7
Oil pump bolt:	15
Oil sump bolt:	8
Water pump bolt:	7
Front cover bolt:	7
Rear cover bolt:	15
Valve cover bolt:	5
Water neck bolt:	15
Fuel pump bolt:	15
Crankshaft pulley bolt:	30

Formula Libre Rules

1. Engine must be under 2000 cc
2. Must be open wheel car
3. Must be normally aspirated.