



Historic FF2000 Association Sporting Regulations 2010

The Historic FF2000 race series is for single seater racing cars built between 1975 and 1981, conforming in general to the regulations for Formula Ford 2000 in force at that time and these present.

In 2010, the Historic FF2000 race series will be contested over seven race meetings organised by the Historic Sports Car Club Ltd (HSCC) as follows:-

April 11 th	Cadwell Park
May 15 th /16 th	Silverstone International
June 5 th /6 th	Snetterton
June 20 th	Mallory Park
August 7 th /8 th	Croft
August 29 th /30 th	Oulton Park
September 11 th	Brands Hatch Indy

The races are divided into three classes as follows:-

Class A Formula Ford 2000 cars built between 1/1/1979 and 31/12/1981, but excluding the Van Diemen RF81 and RF82, and the Reynard 82SF.

Class B Formula Ford 2000 cars built before 1/1/1979, but excluding Reynard and Delta cars built in this period, which are eligible for Class A.

Invitation Air-Cooled Formula Super Vee cars built before 1/1/1978

A full list of cars eligible for Classes A and B is available from the Historic FF2000 Association.

The following awards are to be provided by the race organisers:-

A trophy for 1st, 2nd and third overall, plus class awards as follows:-

No. Starters in Class	Awards
1-3	1 st
4-5	1 st & 2 nd
6+	1 st , 2 nd & 3 rd

Overall awards replace class awards where appropriate.

In addition, the Formula Ford 2000 Association will provide awards, at its discretion (ie Driver of the Day), and awards for 4th, 5th and 6th overall, where fifteen or more cars start the race.

5. TECHNICAL REGULATIONS

5.1 INTRODUCTION:

The following Technical Regulations are set out in accordance with the MSA specified format and it should be clearly understood that if the following texts do not clearly specify that you can do it you should work on the principle that you cannot. **Competitors are advised to read section J** of the 2010 MSA Yearbook. . N.B. Specific regulations for Formula Ford 2000 cars and Air-Cooled Formula Super Vee cars are headed FF2000 and FSV respectively. If no such heading is present, the regulation covers ALL competing cars.

5.1.1 Competitors must always make prior application to the Historic FF2000 Association Committee in writing with reference to the unavailability of original pattern parts, panels etc. Each such case and application will be considered by the Series Organisers and the Eligibility Scrutineer and ruled thereon. Failure to comply may result in rejection of the car and imposition of penalties as laid down in the Historic FF2000 Association Rules.

5.2 GENERAL DESCRIPTION:

The 2010 Historic Formula Ford 2000 Association races are races for competitors participating in Formula Ford 2000 Single Seat Racing Cars built prior to 31/12/81 (excluding the Van Diemen RF81 and Reynard 82 series cars), and the onus is on the entrant/competitor to establish this. There is also an invitation class for Formula Super Vee cars with air-cooled engines built prior to 31/12/77. All cars, prior to being accepted and registered by the Association, must comply with these regulations and the provisions of the regulations. Anything outside this must be approved by the eligibility scrutineer.

5.3 SAFETY REQUIREMENTS:

The following Articles of MSA Section K Safety Criteria Regulations will apply:- **(K1) (K1.3.2.) (K2.1.3. Six Point) (K3) Section K , K3.1.1. & K3.1.2.(a), (K4), (K4&5)(K6-13).**

5.4 GENERAL TECHNICAL REQUIREMENTS AND EXCEPTIONS:

All vehicles must comply with their HSCC or FIA Identity Documents. Subject to their Identity Documents indicating otherwise, vehicles must comply with Technical Regulations for competitors (J5).

5.5 CHASSIS:

5.5.1 FF2000: Any chassis manufactured before 31.12.81, and of a type raced in contemporary FF2000 will be eligible. In addition, Formula Ford 1600 cars, modified to FF2000 regulations will also be accepted, providing that an equivalent car ran in period. (ie, a Royale RP24 may be modified and raced to RP25 specification. The exception to these rules is the Van Diemen RF81 series, in both FF2000 and FF1600 forms, which are specifically excluded, as are the Reynard 81FF and 82SF. A list of eligible cars is available on request.

5.5.3 FF2000: The chassis must be of tubular steel construction with no stress bearing panels except bulkhead and undertray. Curvature of the undertray must not exceed 2.54cm. Monocoque chassis construction is prohibited. Stress bearing panels are defined as:- Sheet metal affixed to the frame by welding, bonding or

rivets or bolts or screws which have centres closer than 15.25cm. Bodywork must not be used as stress bearing panels. The use of stabilised materials, composite materials using carbon and/or Kevlar reinforcement is prohibited. The chassis specification must remain fundamentally unaltered from original manufacture. Wheelbase, track and pickup points must remain to manufacturer's specification. Ground Clearance as per **(J5.20.11.)** at all times, in practice & race, including in any post practice or post race scrutineering. No engine oil or water tubes are permitted within the cockpit.

5.5.4 FSV: Any chassis manufactured before 31/12/77 and of a type raced in Formula Super Vee.

5.6 BODYWORK:

5.6.1 Bodywork must be of a type with a proven competition history for that type of car.

5.6.2 Wings must be of a proven period design and must respect period dimensions for the chassis type in question. All other bodywork dimensions are as follows (to be read in conjunction with drawing number 137 in the MSA Competitors and Officials Yearbook):-

- (A) 100cm on cars built before 31/12/77, otherwise 80cm
- (B) 100cm
- (C) 90cm. Cars built before 31/12/78 are permitted to run period "Periscope" airboxes.
- (D) 30-60cm
- (E) Front wheel rim height
- (F) 92cm
- (G) 5cm
- (H) 185
- (I) 95cm
- (J) 95cm
- (K) 135cm
- (L) 45cm
- (M) 30cm
- (N) 60cm
- (O) see 5.12.1
- (R) N/A
- (S) 100cm

5.6.3 Enclosure of the sides of the engine is prohibited. The use of an unstressed undertray beneath the engine bay is permitted, providing that the stipulations regarding the definition of stress bearing panels in 5.5.3 are adhered to. The undertray must not extend beyond the rear of the engine/gearbox adaptor plate.

5.6.4 No modifications are permitted without the specific approval of the Eligibility Scrutineer and Historic FF2000 Association.

5.6.5 Modifications Permitted

It is permitted to make any modification of which the primary purpose is safety or driver comfort. Cars may be updated to the specification of the latest model built by the manufacturer which appears in the list of eligible vehicles.

5.6.6 Modifications Prohibited

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

It is not permitted to construct any suspension member in the form of an aerofoil or to incorporate a spoiler in the construction of any suspension member.

5.7 ENGINE:

5.7.1 FF2000: The only permitted engine is the Ford NE series 2 Litre SOHC with 2 venturi carburettors with nominal bore 90.84mm + 0.5mm rebore allowance and stroke 76.95mm. Production tolerances are permitted providing the total swept volume does not exceed 2025cc. Engines will be mounted upright and aligned fore and aft in the chassis.

The addition of any material be it metal, plastic or composite etc. by any means be it welding, bonding encapsulation or encasement to any component is prohibited. However, specific repair of castings may be allowed with the written approval of the eligibility scrutineer responsible for the Formula. Balancing of reciprocating and rotating parts is permitted only by removal of metal from locations so provided by the manufacturer. Pump, fan and generator drive pulleys and their retention bolts, washers and belts are free. Mechanical tachometer drives may be

fitted. Generators are optional. The use of non-standard replacement fasteners, nuts bolts, screws, studs and washers which are not connected with or which do not support any moving parts of the engine or its compulsorily retained accessories is permitted. The use of thread locking compounds is permitted. Gaskets are free except for cylinder head and carburettor to inlet manifold gaskets which must be dimensionally identical to original Ford gaskets - see note under compression ratio. Any process of cleaning may be used on any component providing the surface finish, which must remain standard, is not affected. Forced induction prohibited. The air cleaner may be removed or replaced and a trumpet fitted.

Carburettor Type: Weber 32/36 DGV & DGAV. Number on engine 1 Number of Main Venturi 2.

Maximum diameter of carburettor outlet to inlet manifold 32.0/36.0mm.

Maximum diameter. of Main Venturi 26.0/27.0mm

It is permitted to change jets, open both throttles together, remove cold start devices and diffuser bar, fit internal and / or external anti-surge pipes, remove seals on emission control carburettors. No other modifications are permitted, chokes must remain standard and no polishing or reprofiling is permitted.

Any means of reducing intake air temperature is prohibited. Any form of water injection is prohibited.

Flexible mounts for the carburettor may be incorporated providing they do not exceed a maximum of 25.4mm from flange to flange. The bore of the casting must remain untouched and in its original condition. The carburettor seat face may be machined to horizontal in the fore and aft plane. The water passage in the inlet manifold may be blanked off or plugged.

The manifold may be machined externally sufficiently to clear the throttle mechanism in the case of both throttles being opened together.

EXHAUSTS

The exhaust system and manifold are free, within Vehicle Regulations.

CYLINDER BLOCKS

It is permitted, as means of repair, to replace damaged cylinder bores with cast iron cylinder liners, all to standard dimensions. Localised machining of the cylinder block is permitted to allow fitting of the dry sump system. The crankcase breather may be altered or removed, but all breathers must discharge into a catch tank, or back to the oil tank. Cylinder blocks may be machined to maintain deck height.

CYLINDER HEADS

Non-standard camshaft covers are permitted providing they in no way improve the performance of the engine. Water passages are not permitted in cam covers. Standard valve spring retainers must be used, only single valve springs are permitted. Shims are permitted otherwise valve springs are free.

The only permitted camshafts are the standard Ford production camshafts for 2000SOHC NE engines. The camshaft and rockers must remain entirely unmodified. They must be fully manufactured and ground by the Ford Motor Co. It is prohibited to grind camshafts from blanks or regrind or reprofile. Tuftriding or Parkerising is permitted.

The key/keyway in the camshaft pulley may be offset. Vernier adjustment of cam timing is permitted. Cylinder head face may be skimmed.

Maximum valve lift at determined points by camshaft rotation will be established by using a low rate substitute valve spring (load characteristics 12lb at 1.417in, 30lb at 1.000in), with zero tappet clearance.

Valves must remain standard, no reprofiling or polishing is permitted. The original 45deg. seat angle must be retained.

Maximum face diameter inlet 42.2mm Maximum face diameter exhaust 36.2mm
Overall length inlet 111.15 - = 0.5mm. Overall length exhaust 110.55 - = 0.5mm
Maximum valve stem diameter 8.4mm

It is permissible to reshape inlet and exhaust ports by removal of metal within limits. Addition of material in any form is prohibited. Maximum port dimension at manifold head face inlet diameter 39.5mm exhaust 35.5mm X27mm Sizes may only be exceeded if the castings are oversize, in such cases the castings must be seen to be original and untouched. An external oil drain pipe from the cylinder head is permitted. The fitting of a union by drilling and tapping is permitted. It is permitted, as means of repair, to replace damaged valve guides and valve seats by replacement cast iron valve guides and cast iron valve seat inserts all to standard dimensions. Inlet and exhaust port diameter may be exceeded if the original casting is visible and untouched at the gasket face.

Broken camshaft carriers may be repaired by means of machining the broken carrier(s) flat, and replacing with a ferrous block, screwed into the head casting. The block may then be line bored to accept the camshaft.

LUBRICATION SYSTEMS

The lubrication system, external to the engine, is free. Existing standard production oilways, linings or oil grooves may be enlarged or reduced, but no additional ones are permitted with the exception of an external drain from the

head to the sump. Standard friction surfaces must remain unchanged. Dry sump is permitted, oil coolers are free

COOLING SYSTEM

A liquid cooling system is mandatory but radiator and water pump are free provided that the water pump is mechanically operated. (i.e. non electrical) The radiator if housed in or incorporating a cool air scoop or deflector, must comply with bodywork regulations.

FUEL PUMPS

Only the standard mechanical fuel pump for the engine is permitted. Fuel pipes are free. Fuel cooling radiators are permitted, within safety regulations, but must be mounted within the main chassis frame.

DISTRIBUTORS

Distributors are free providing they retain the original drive and location. The distributor is defined as the component which triggers the LT current and distributes the HT ignition 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. It is permitted to mount a simple indicating pointer to the engine to facilitate the timing of the distributor with respect to the crankshaft/flywheel.

COMPRESSION RATIO

The maximum compression ratio will be controlled as follows: Minimum combustion volume in cylinder head 50cc. Standard Ford cylinder head gaskets part nos 70HM6051 BiA, 70HM6051 B3B, 70HM6051 GI: minimum compressed thickness 0.9mm minimum diameter of cylinder aperture 92,0mm or dimensionally identical aftermarket gasket. Pistons must not protrude above cylinder block surface at TDC. Cylinder block face may only be machined flat.

PISTONS

Pistons must be standard Ford or absolutely identical aftermarket production pistons, unmodified in any way except for balancing and as detailed. All three piston rings must be fitted, piston rings must be standard production or similar approved pattern replacements, i.e. the compression rings must be one piece, single homogeneous material type with conventional plain gaps, chromium plating of the top ring is optional, the oil control rings must be either single piece twin land type or apex three piece (two rails and an expander). Molybdenum faced top compression rings are permitted. To achieve balance, material may be removed from the internal surfaces at any location below the lowest point of the gudgeon pin. All external surface, dimensions and profiles must remain standard with the exception of the top surface of the piston crown which may be subjected to simple machining to achieve balance and the objectives of the section entitled "Compression ratio" Minimum weight of pistons, plus rings, connection rod, connection rod bolts and nuts, less big end bearings 1255grms

CONNECTING RODS

Connecting rods must be standard Ford part. Machining is permitted to remove metal from the balancing bosses to achieve balance only. Tuffriding, Parkersing, shot-peening, shot-blasting and polishing are permitted. It is permitted to radius the area around the big-end retaining bolt heads and nuts. Big end bolts part no. 905500 are permitted as are similar aftermarket big end bolts.

CRANKSHAFT

A standard crankshaft must be used. Spot machining to achieve balance is permitted. Tuftriding Parkerising, shot-peening, shot blasting and polishing are permitted. Crankshaft minimum weight 28lbs. It is not permitted to alter the number of bearings or fit bearings of less than standard production width. Standard oversize and undersize bearings are permitted.

FLYWHEEL AND CLUTCH

The flywheel must be a standard component. To achieve minimum weight and balance, materials may be removed from the originally machined surfaces, rim/flange etc. For rectification, the clutch mating face may be resurfaced. Cast surfaces must remain in original condition. Friction material is free. The clutch must be a standard Ford road car unit or aftermarket replacement of identical diameter and type, or AP Racing models CP5351-1 or CP5351-2. Sintered clutches are forbidden. Flywheel bolts are free and locating dowels are permitted. It is permitted to secure the starter ring to the flywheel. Flywheel and clutch assembly minimum permitted weight 12.5kg (including all flywheel and crankshaft securing bolts).

ENGINE SEALING

All engines must have provision for scrutineer's wire seals. 1/16in holes pre-drilled in readily accessible locations on installed engines must be available.

- a) Sump - two holes through the cylinder block/sump joint flange, one either side of the engine.
- b) Cam Cover - at least two retaining screw heads must be cross drilled
- c) Cam Timing Pulley - retaining bolt must be cross drilled
- d) Inlet Manifold - at least two retaining bolt heads to the cylinder head must be cross drilled.
- e) Carburettor - at least two retaining nuts to the cylinder head must be cross drilled
- f) Bell housing - at least two retaining bolts to the engine must be cross drilled to enable clutch and flywheel to be adequately sealed OR competitors must be prepared to remove either engine or transmission to enable sealing of clutch and flywheel in which case at least two clutch cover retaining bolts must be cross drilled. Failure to comply renders the engine ineligible.

5.7.2 FSV: The engine must consist of standard VW parts, and only components from engines of VW types 1 to 4 (excluding type 4 2000cc) are permitted. Compression ratio is unrestricted, and the cylinder heads may be machined by removal of metal. Piston rings, camshaft, cam followers, pushrods and rocker box covers are unrestricted. Roller camshafts and cam followers are prohibited. Two double choke, or four single choke carburettors of maximum 40mm at the throttle butterfly/slide are permitted. The make of carburettor is free.

Fuel injection is prohibited. Valve springs and valve caps are unrestricted in respect of design or number. The maximum permitted valve diameters are Inlet 41mm, Exhaust 34mm. The clutch unit must originate from VW types 1 to 4, although the method of operation, types of linings and springs are unrestricted. The flywheel may be lightened, and extra location dowels may be added. Cooling fans from VW types 1 2 3 and 4 only are permitted. Fans, fan housings and cooling ducts may be modified or removed. If a fan is used, it must be driven directly by the engine.

5.8 SUSPENSION:

5.8.1 Suspension as original. Remanufactured or replacement suspension components shall be dimensionally as original, but material thickness may be changed in the interests of safety. The suspension shall utilise only the original pick-up points unless these were modified and used on the chassis and raced in a Formula Ford 2000 race prior to 31/12/81, or Formula Super Vee race, prior to 31/12/78.

5.8.2 No modification permitted without consultation and ratification by the Historic Formula Ford 2000 Association and Eligibility Scrutineer.
5.8.3 The use of any additional anti squat/anti droop devices is strictly prohibited.
5.8.4 Dampers shall be of the same type in terms of appearance as originally fitted to the car and shall be mounted to the original mounting points. Remote reservoirs or any form of external control system are excluded. The use of more than one spring per corner is prohibited.

5.8.5 Minimum wheelbase: 2000mm
Minimum track: 1200mm

5.8.6 FF2000: 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. Remote reservoir and / or light alloy dampers are prohibited.

5.8.7 FSV: The front suspension, although unrestricted, must include VW Type 3 stub axles (uprights) and wheel hubs. The rear suspension, although unrestricted, must include VW axle shafts and universal (CV) joints.

5.9 TRANSMISSION:

5.9.1 Gearbox and final drive must be of the type originally fitted to the car.
5.9.4 The gearbox must contain not more than four forward gears and include an operable reverse gear, capable of being engaged by the driver whilst normally seated. The ratios are free. Rear wheel drive only is permitted. Final drive ratio is free. Torque biasing, limited slip and locked differentials are prohibited. Non-ferrous differential components prohibited.
5.9.5 FSV: The VW gearcase in its original orientation must be used. It is forbidden to turn the gearcase through 180° axially.

5.10 ELECTRICS:

5.10.1 Batteries must be of a type which does not leak acid if inverted. The location is free.
5.10.2 The engine must be fitted with an operable electric starter motor (compressed air starters are prohibited).
5.10.3 The electrical system shall be fitted with a safety cut out switch as per **(K8.)**, (MSA Technical Regulations).
5.10.4 A rear fog light shall be fitted as MSA Regulations **Section (K5.)**.

5.11 BRAKES:

5.11.1 The braking system must be as that originally fitted to the car.
5.11.2 No modifications are permitted without the specific approval of the Eligibility Scrutineer.
5.11.3 FF2000: Light alloy brake callipers prohibited, otherwise free.
5.11.4 FSV: VW Type 3 front brake callipers and discs must be used. VW rear brake calliper and disc (or drum) from VW Type 3 or VW Porsche 914/4 (rear) must be used

5.12 WHEELS:

5.12.1 Rim dimensions:
Front 13" dia x 6" wide maximum: Rear 13" dia x 8" wide maximum.
5.12.2 Rear wheel steering prohibited, otherwise free. Material is

free providing it is metal.

5.12.3. Wheels may be constructed from aluminium alloys or magnesium alloys. Note: Competitors are reminded that alloy/mag wheels can have a tendency to crack, especially the older ones. For safety reasons, please keep a check on your wheels.

5.12.4. Centre lock wheel retaining nuts must be fitted with safety ('R') clips and painted in a bright colour. Aircraft type self-locking nuts are not acceptable as an alternative.

5.12.5 Rear wheel steering prohibited, otherwise free. Material is free providing it is metal.

5.13 TYRES:

5.13.1 Only tyres as specified in 5.13.2 and 5.13.3 are permitted.

5.13.4 The only permitted tyres are:

AVON

Dry Front: 6.5 /21.0 X 13 Spec no. 8814

Wet Front 6.5 /21.0 X 13 Spec no. 8829

AVON

Dry Rear 8.2 /22.0 X 13 Spec no. 8815

Wet Rear 8.2 /22.0 X 13 Spec no. 8831

5.13.5 One set of new slicks per car per meeting ONLY is permitted. Eligibility Scrutineers reserve the right to mark tyres should they so wish. Competitors are reminded that should they wish to fit additional new tyres it must be with the express permission of the Eligibility Scrutineer, who will first inspect the tyre to be changed.

5.14 WEIGHTS:

5.14.1 Weight is the weight of the vehicle as it finishes the race, but excludes the driver.

5.14.2 FF2000: The weight of the car shall not be less than 440kg

5.14.3 FSV: The weight of the car shall not be less than 375kg

5.15 FUEL TANK / FUEL:

5.15.1 The fuel tank should be located in the same position as that originally fitted to the car. On safety grounds, it may be relocated subject to approval by the Eligibility Scrutineer. Competitors should be aware that bag tanks are lifed for 5 years from date of manufacture for FIA events only.

5.15.2 Fuel tank capacity is free.

5.15.3 Only "pump fuel", as defined in MSA Technical Regulations - See Section P Definition.

5.15.4 Tanks outside the chassis frame must comply with FIA Spec/FT3. Inboard tanks, covered externally with fireproof coating, are acceptable for events of less than 70km. A metal tank coated with GRP does not comply. Maximum capacity 41 litres unless carried in FIA Spec/FT3 tank.

5.16 SILENCING:

All vehicles must comply with [MSA Regulation J5.17](#), and are also subject to individual circuit requirements if specified in Supplementary Regulations.

5.16.1 A mandatory silencer, Ford part no: 9095317 must be fitted and must comply with MSA [Regulation J5.17](#).

5.17 NUMBERS AND SERIES DECALS:

As per MSA Blue Book. Individual sponsors decals are limited to two per vehicle, each with a maximum size of 12" by 4". All competing cars must display at least two HSCC badges, one on each side of the car and one Historic FF2000 Association badge, together with series sponsor stickers as required.

MISCELLANEOUS:

In case of official protest all engines shall have provision for sealing as listed:

Sump: Two holes through block/sump joint flange on both sides of the engine.

Cambox: Two retaining bolts cross drilled.

Any competitor failing to comply with either the letter or the spirit of the formula will be reported to the Clerk of the Course by the eligibility scrutineer/registrar of the Historic FF2000 Association for any further action.

Historic FF2000 is, as its name implies, a category for historic cars, being raced in a specification very close to that in which they originally competed. The organisers therefore reserve the right to disallow any developments they feel not to be in keeping with the spirit of the formula regulations, or any actions by competitors which would result in an unacceptable increase in costs for the category.