

APPENDIX 5 (a)
2023 SCOTTISH FIESTA XR2 CHAMPIONSHIP
TECHNICAL REGULATIONS

5. TECHNICAL REGULATIONS:

5.1 INTRODUCTION:

The following Technical Regulations are set out in accordance with the Motorsport UK 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. The Eligibility Scrutineer will make any decisions as to the compliance with the rules and spirit of the Championship. It is up to the entrant to prove any performance parts are in period specification and within the spirit of the regulations. If in doubt contact the Eligibility Scrutineer.

5.2 GENERAL DESCRIPTION:

The Scottish Fiesta XR2 Championship is for Competitors participating in Ford Fiesta XR2 1.6 XR2 CVH pre lean burn carburettor model.

5.3 SAFETY REQUIREMENTS:

5.3.1 Helmet and racewear to Motorsport UK General Regulation Q.12.1.1 applies throughout the competition, practice or event.

5.3.2 CARS MUST BE ABLE TO PASS A CURRENT MOT. Scrutineers will decide if the car is to MOT standard and it must have working lights, working wipers and a working handbrake. If a car is not to MOT standard it will not be allowed to race, unless the Championship Co-ordinator / Eligibility Scrutineer grants limited exemption and only if minor items are a possible MOT failure, to allow it to race for one meeting in the season only. Tyres that have been supplied new without E markings will be permitted provided they comply with 5.13.1.

5.3.3 The following articles of Motorsport UK Section K Safety Criteria Regulations will apply: 1 to 1.5.2 (ROPS complying with drawing 5 with optional bracing tubes as per Motorsport UK drawings only and compulsory diagonal strut with upper joint on drivers side), 1.6.1, 1.6.4 to 1.8, 2.1, 2.1.2, and 2.1.4 to 3.3 and 4 to 13.

5.3.4 If fitted with a sunroof, this must be made of steel and securely fixed in the closed position by at least two additional fixings.

5.3.5 Cars must be fitted with glass or polycarbonate in all windows. Front windscreens must be either laminated safety glass or polycarbonate.

5.3.6 A full harness safety belt with a minimum of 4 straps (2 shoulder, 2 waist) must be installed to Motorsport UK Regulation K2.1.2 (GR Q13.10.2).

5.3.7 Fire extinguisher – a plumbed in unit for discharge into the cockpit and engine compartment as defined in Section K3 of the current Motorsport UK Yearbook is the minimum requirement (GR Q13.10.7). Fire extinguishers must be an FIA homologated standard Fire Extinguisher Systems in Competition Cars (1999) or FIA Standard 8865-2015 and be serviced by the manufacturer or their agent within the preceding 24 months.



- 5.3.8 A battery cut-off master switch must be installed and a circuit breaker complying with GR. K8 shall be fitted and be identified by a red spark on a white edged blue triangle and the ON and OFF positions are to be clearly marked.
- 5.3.9 Replacement of the original seat with an FIA standard competition seat is strongly recommended.
- 5.3.10 All vehicles are to be of sound construction (i.e. no dangerous levels of rust / damage).
- 5.3.11 Towing eyes must be in accordance with Q.13.1.3.b. These are wire rope loops. Fabric loops will not be accepted.
- 5.3.12 At least one high intensity FIA specification rear light complying with Motorsport UK Yearbook GR. K.5. located externally on the rear, shall be fitted to the car and be switched on when instructed by the Clerk of the Course or other race official.

5.4 **GENERAL TECHNICAL REQUIREMENTS & EXCEPTIONS:**

- 5.4.1 Definitions: All references to standard parts and/or material in these regulations shall be interpreted as references to the manufacturers original specification(s) as appearing on the Ford XR2 Production Car Specification Sheets as appropriate.
- 5.4.2 Prior to competing in the 2023 Scottish Classic Sports & Saloon Championship the vehicle must undergo a Safety Scrutineering inspection which will be undertaken by the SMRC Chief Scrutineer, Championship Eligibility Scrutineer or their appointed deputies, unless the vehicle competed in the same condition in the 2022 Championship. Additionally all vehicles must undergo a Safety Scrutineering inspection at least every 4 events. Any vehicle involved in an accident, or having been modified in any way, should be represented to the Scrutineers for further examination (Motorsport UK General Regulation J.3.1.2). A record of inspections will be maintained by the Championship Organisers. Scrutineering self-declaration forms must be lodged with the Event Organisers a minimum of 3 days prior to every event. The Event Organisers may select cars for pre-event safety inspections, the method of selection and times/locations for inspection will be notified in the event SRs. This regulation forms part of the Motorsport UK approved Scrutineering trial and may be amended at any time.

5.5 **CHASSIS:**

As original.

5.6 **BODYWORK:**

Interior trim and all dash instruments must be as the original XR2 model and must be complete with all switches (with the exception of the heating control), air vents, steering controls, glove box lid, steering column cowl, etc. All door trim and side panels (whether reconstruction or original) must be fitted and it is recommended that boot area panels remain fitted. The Scrutineers will allow modified dashboards and instruments only if the car has been raced previously in this form in the Scottish Fiesta XR2 Championship.



5.7 ENGINE:

- 5.7.1 Engine location must remain as standard position.
- 5.7.2 Engine maximum cylinder capacity of 1620.77cc is permitted and a 1594cc minimum volume. Baffles are permitted in the sump.
- 5.7.3 Fitment of an additional oil cooler within the confines of the bodywork is permitted provided this does not entail modification to the bodywork or radiator grill. It is permitted to fit an oil pick-up pipe.
- 5.7.4 Removal of the coolant thermostat is permitted.
- 5.7.5 Oil/Water Cooling. All parts must be standard except 5.7.2, 5.7.3 & 5.7.4, coolant hoses excepting, although any replacement hoses must conform to the standard internal diameter as the original Ford parts. The standard fan cowlings must be used.
- 5.7.6 The induction system must remain standard except 5.7.8. The updated XR2 engine Weber carburettor may be used; whichever is fitted it is permissible to remove the choke butterfly. The water heated inlet manifold must remain connected, unrestricted and in working order. Fuel injection is not permitted.
- 5.7.7 The ignition system must remain standard but make and type of spark plugs are free. The ignition vacuum advance/retard mechanisms must be retained, connected & operational.
- 5.7.8 A standard unmodified air cleaner must be fitted but paper element may be removed. The fitment of the moulded air intake hose (standard Ford) is mandatory. Filter elements do not have to be Ford Motor Company origin. Removal, replacement, relocation or modification of the air cleaner housing or intake hose(s) is prohibited.
- 5.7.9 Alteration of the standard quality of fuel or air reaching the engine is prohibited except as permitted in 5.7.8.
- 5.7.10 The machining of the connecting rod bearing cap is permitted, providing that the minimum weight for the connecting rod assembly is adhered to, as stated in 6 (f).
- 5.7.11 An engine rev limiter may be fitted, the only permitted model is LUMENITION ERL-V; setting is free. If fitted the unit and all associated wiring must be in the engine compartment and easily identifiable.
- 5.7.12 Polishing or reworking of any part(s) including the inlet and exhaust manifolds, the inlet and exhaust tracts and combustion chamber space in the cylinder head is prohibited.
- 5.7.13 Exhaust system is free. Cars must comply with GR. J.5.16 and J.5.17. An additional centre support must be fitted to the exhaust system. Exhaust manifold wrapping is permitted.



5.7.14 Engines may be sealed under the direction of the Eligibility Scrutineer or their nominated agent at any time during the season and for the duration of the season. Seals must not be broken under any circumstances. If seals are broken the engine will be ineligible unless a full internal inspection is carried out by the Organisers or their nominated agent. The inspection will be at the competitors cost. Additional Motorsport UK seals may be fitted to engines at anytime. It is strictly forbidden for a competitor or his agent to remove or tamper with Motorsport UK seals. Should these seals be damaged or removed for whatever reason except under the direction of the Eligibility Scrutineer the car must not be used in competition or practice until the Eligibility Scrutineer has inspected the engine and refitted the correct seals. The Eligibility Scrutineer may require that the engine be removed and taken to an approved venue to be dismantled for inspection and the cost of this, and subsequent rebuild, will be borne by the competitor. All instances of broken seals will be logged and reported to the Clerk of the Course / Championship Organisers.

5.8 **SUSPENSION:**

5.8.1.1 Vehicles may be modified to Group N except Hydraulic McPherson strut. Setting is free. Alternatively the standard XR2 front may be retained. No modifications to this strut are permitted. Camber adjustment is not variable with this strut. XR2s must have a minimum ground clearance between the transverse seam on the bulkhead and the ground of not less than 650mm without the driver on board.

5.8.1.2 Spring and spring trim free.

5.8.1.3 Adjustable platforms are permitted (Front only).

5.8.1.4 A "strut brace" may be utilised and consist of a single steel tube bolted-in strut brace between front suspension top mounting points.

5.8.1.5 Rubber suspension bushes may be replaced with uprated polyurethane bushes, but only in the Front Lower Control Arm (inner bush), Tie Bar, Rear Anti Roll Bar and Rear Trailing Arm.

5.8.2 Prohibited modifications

5.8.2.1 Vehicle dampers/shockers must be hydraulic with single adjustment for bump and rebound; no external reservoir types permitted or rose joints.

5.8.2.2 Alterations to suspension mounting/attachments or type of operation are prohibited except for 5.8.1.4 and 5.8.1.5.

5.8.3 Wheelbase/Track must remain standard.

5.8.4 Rear Axle – Standard Group N axle or upgrade version with welded flanges fitted with brake assembly and shoes from Ford Fiesta 1400 MK4 1998 / 2001 model or Ford KA (drum brakes only), (Upgrade version; details from PCR Motorsport, Knockhill Racing Circuit, Saline, Dunfermline, Fife, email F40mks@hotmail.com).

Shims will be permitted on rear axle fixing but manufacturers max camber must not be exceeded.

5.9 TRANSMISSION:

5.9.1 Must remain standard except the material and method of fixing of clutch disc lining is free. The standard Clutch Pressure Plate may be replaced by RS Pressure Plate 9094995O. Clutch disc diameter 200mm or 220mm. Gear linkage is free. Only standard XR2 drive shaft units are permitted.

5.9.2 Gear ratios must be in compliance with appropriate Ford Motor Company specification sheets both in terms of ratio and teeth combination:

Gear	Ratio	Teeth
1 st	3.154:1	41:13
2 nd	1.913:1	44:23
3 rd	1.274:1	37:29
4 th	0.951:1	39:41
5 th	0.756:1	34:45
Reverse	3.615:1	47:13

Or, as above except: 3rd 1.281:1/41:32.

Final drive: 3.58:1/19:68 or: 3.82:1/17:65

5.10 ELECTRICS:

5.10.1 Electrics are free subject to Motorsport UK requirements, but must include the following:-

5.10.2 The headlamp unit may be replaced by a dummy panel provided that the shape and location are identical to the original headlamp unit. All other lights must be retained and in full working order. One FIA specification high intensity LED rear light must be fitted in the centre line below the rear screen. It must be clearly visible, fitted at the bottom of the screen outside the car.

5.10.3 A charging system must be fitted and working.

5.10.4 Batteries are free. Fitment of additional battery strap and non-metallic covers is permitted.

5.10.5 A starter system must be fitted and be capable of starting the engine.

5.10.6 No Electronic engine or driver aids are allowed, except:-
Rev counter, Rev Limiter, In car lap timer (but not telemetry).

5.10.7 Alternator, all lighting (except headlamps) and starter must be standard and fully operational. Original bumper mounted Ford foglamps may be replaced with a single centrally mounted unit to standard FIA specification.

5.11 BRAKES:

5.11.1 Disc pad and brake shoe friction material free.

5.11.2 It is prohibited to increase or reduce the friction contact areas.

5.11.3 Additional cooling pipes are prohibited.



5.12 **WHEELS / STEERING:**

- 5.12.1 Standard Ford alloy wheel or V82FB 1007 AA Diameter 13 inches: Rim 6J: Offset (Dim) 108mm from mounting face to inside rim. Wheel spacers are prohibited.
- 5.12.2 If fitted, the steering lock must be made inoperable whilst racing, or permanently, if preferred. Replacement steering wheels may be used provided scrutineers pass them as safe. (Motorsport UK GR. J.5.7.1.)

5.13 **TYRES:**

- 5.13.1 The Yokohama A048R (K8229) 185/60R 13 is the control tyre. The organisers reserve the right to nominate an alternative tyre in case of force majeure.
- 5.13.2 The use of tyre heating/heat retention devices, tyre treatments and compounds is prohibited.
- 5.13.3 Wheels Around are the authorised and preferred supplier of Yokohama Tyres.
- 5.13.4 Tyres that have been supplied new without E markings will be permitted provided they comply with 5.13.1.

5.14 **WEIGHTS:**

Minimum car weight:- 760kgs

The weight including the driver at any time during practice or race should be a minimum of 845kgs. If ballast is carried it must be identified to the Eligibility Scrutineer at pre event scrutineering and must be capable of being sealed in position if required (GR. J.5.15.3).

5.15 **FUEL TANK/FUEL:**

- 5.15.1 Only readily available pump fuel as defined in Section B of the current Motorsport UK yearbook may be used. The use of power boosting additives by competitors in any fuel is prohibited.
- 5.15.2 Fuel tanks must remain standard, however it is permitted for tanks to be coated with 5mm layer of fibreglass or fireproof material. The filler neck area within the nearside body panel must be sealed.

5.16 **SILENCING:**

All cars must be road legal and within limits specified by GR. J.5.17.

5.17 **NUMBERS and CHAMPIONSHIP DECALS:**

- 5.17.1 Your Championship Registration Number will be your competition number for the season. Championship decals may be provided and must be displayed one on either side of the car in the vicinity of the racing number. Exact championship or race sponsors decal positions will be notified by the Championship Co-ordinator and all competitors must display them prominently.
- 5.17.2 Drivers who fail to display the Championship Sponsor's logos correctly may be penalised.



- 5.17.3 SMRC decals must be placed one either side of the car. In addition, a sunstrip or other decals may be provided that must be carried by all cars.
- 5.17.4 All cars must be identified by numbers complying with GR. J.4.1 displayed in a position acceptable to the Timekeepers. All competing cars in classes A, B, D, E & G must carry their class letter prominently displayed next to their racing numbers on both doors and bonnet.

6. FIESTA XR2 ENGINE SPECIFICATION SHEET:

XR2 ENGINE SPECIFICATION SHEETS: O.H.C. ONLY

(a) Carburettor.-

Make	Weber
Type	Twinchoke
Number on engine	One
Number of main venturi	Two
Maximum dia. main venturi	24 (p) 25 (s)
Maximum dia. of throttle barrels	32 (p) 34 (s)
Maximum dia. at inlet manifold	34

Carburettor may not be modified except for parts controlling quantity of fuel, and the removal or disability of the choke mechanism.

(b) Inlet Manifold:

Part number	81SF 9425 JF or (V84FB9425AA) or (V84FB9425BA)
Material	Cast aluminium alloy
Internal finish	As cast
Dimensions at gasket face	As sketches below
Inlet Valve	6088114

(c) Exhaust Manifold

Deleted.

(d) Cylinder Block

Part number	81SM 6015 CMA or 86SM 6015 BA
Number of cylinders	4
Material	Cast Iron
Bore	79.94/79.98 standard bore + 0.50 re-bore allowance
Stroke	79.42/79.62
Swept volume	398.7 - 405.19 per cylinder
Total volume	1594 -1620.77 c.c.

It is permitted to reclaim engine blocks by fitting liners or by boring by 0.5 m.m. i.e. to a maximum dimension for the cylinder bore of 80.48.

(e) Crankshaft.

Part number	81SM 6303 CH or 86SM 6303 BAA
Material	Cast iron (Nodular)
Finish	As cast/machined

(f) Connecting rod:

Part number	81SM 6200 CB
Material	Forged steel
Finish	As forced
Weight	564,5 +/- 6.5 gms

(g) Flywheel

Part number	81SM 6375 KE or 86SM 6375 AA
Material	Cast iron

No lightening /machining allowed. Minimum weight 6.5 kgs.

(h) Cylinder Head

Part number	81SM 6090 ARH
Material	Die cast aluminium
Tract finish	As cast
Combustion chamber volume	53.3 - 56.0 c.c.
Combustion chamber finish	Fully machined

(i) Camshaft:

Deleted.



(j) Valve Actuation

Valve Users - part number	81SM 6500 D2E
Valve lifters -	Hydraulic
Rockers - part number	81SM 6564 EE
Valve springs - part number	81SM 6513 AE
Number of coils	6
Wire diameter	32.7
Maximum free length	47.2
Piston:	
Part number	81SM 6102 DA
Material	Cast aluminium
Number of rings	3
Weight - Piston, pin and 3 rings	506 gms minimum
Where engine block has been reclaimed by re-boring as specified the appropriate oversize pistons and rings may be fitted.	

(k) Compression Ratio - Maximum:

Head casket - compressed thickness	1.64 m.m. minimum		
Head casket - volume allowance	Vg = 8.7 c.c. minimum		
Combustion chamber volume in head	Vh = 53.3 c.c. minimum		
Piston volume above block face (including allowance down to top ring)	Vb 18 c.c. maximum		
Compression Ratio	$\frac{v}{Vh + Vg - Vb} + 1$	400	+1 = 10.1 maximum
		53 + 8.7 - 18	

(l) Exhaust manifold heatshield part number - 8ISF 95596AA must be fitted.

Some of the part numbers above may be superceded by the Ford Motor Company and in this event direct replacement Ford Motor Company parts may be used. It is strongly recommended that you obtain permission in writing from the Eligibility Scrutineer before the fitting of any such replacement parts.

