

APPENDIX 5 (a)
2024 SCOTTISH FIESTA ST CUP
TECHNICAL REGULATIONS

5.1 INTRODUCTION

The following Technical Regulations are set out in accordance with the **ASN** specified format and it should be clearly understood that if the following texts do not clearly specify that you can do it you **must** work on the principle that you cannot. Competitors are advised to read **Chapters 7, 8, 9 and 12 of the National Competition Rules (NCR)**.

5.2 GENERAL DESCRIPTION

5.2.1 The Fiesta ST Cup is for Competitors participating in Ford Fiesta Mk6 ST150 (and as amended by these Regulations) (MY2003 to 2008) **Cars** modified in accordance with the following Regulations.

5.2.2 Examination of **Cars**

The Organiser (in addition to any other powers they may have under these Regulations) reserves the right before or after any Race in the Championship to designate any one or more of the competing Cars for special eligibility scrutineering.

Upon such election being made the Competitor shall immediately place the Car under the control of the Organiser and be deemed to have permitted all such scrutineering, examination and testing as the Organiser may responsibly require to undertake. The Organiser **has** the right to:

a Examine the Car at the circuit for such period as they may reasonably require and take Fuel and/or other samples and/or

b Retain the Car for detailed examination at premises chosen by the Organiser. If the Organiser elects to retain the Car they shall make it available for collection by the competitor at least seven days prior to the Qualification session for the next Race in the Championship unless the Car is found to be in breach of these Regulations and/or

c Seal the Car and its components in such a manner as they may choose and require the Competitor at their own expense to present the Car at any other premises chosen by the Organiser for detailed examination within a specified period and/or remove the Car by transporter at no expense to the Competitor to an appointed location. The Competitor will be advised in writing of the time, date and location of the subsequent testing or eligibility examination.

The overseen stripping of the engine or any required component will be undertaken by the Competitor and/or mechanic/technician nominated by the Competitor.

Any sealing method permitted in the NCR is allowed, however where possible, wire and sealing tags is the preferred method where seals are expected to remain in place for longer than 24 hours.

The Organiser reserves the right to re-inspect **Cars** at any time during the course of the **Championship**.

Competitors will be personally and solely responsible for ensuring that their Car complies with their Registration details and with these Regulations for each Event at which they are Entered. Failure to comply in either respect will be **deemed** a breach of these Regulations. Queries concerning **the eligibility of a Competitor's own Car** should be referred in writing **by the Competitor concerned** to the Championship Eligibility Scrutineer at least seven days prior to **the** Event Entered, **so as** to permit a ruling in advance of any Event at which it is intended to compete.

Tests to establish the power output of any Car may be carried out by the Organiser or their representatives. Such power testing will be carried out using **a rolling dynamometer equipment which must have a current Certificate of conformity and which shall be an Official Document together with the results of such testing.**

5.2.3 It should be clearly understood that the Regulations set out in the **NCR** apply except where amended by the following texts.

It should also be understood that if it is not clearly specified that you can carry out a modification then you **must** work on the principle that you cannot.

Any modifications carried out that are not clearly specified as permitted in these Regulations may be considered as a technical infringement by the Championship Eligibility Scrutineer or their Deputies and reported to the Stewards.

5.3 SAFETY REQUIREMENTS

All Articles of NCR Chapter 7 Vehicle Safety Regulations will apply.

5.3.1 Roll-Over Protection Systems:
All cars must have ROPS which comply with NCR Chapter 7 App.3 Art. 1-66 & Art.91-93. They must include a compulsory diagonal member and may include optional reinforcing members as show in the listed diagrams in NCR Chapter 7 App.13.

5.3.1.1 Fiesta ST Cup: roll cages are free in terms of manufacturer and part number as long as they comply with the specifications listed above and those detailed in NCR Chapter 7 App.3.

- 5.3.1.2 **Fiesta ST Challenge: Cars must use a Safety Devices F157 roll cage consisting of:**
- **Multipoint front cage with windscreen reinforcement bars, roof cross, for bent cross door bars (part number: RBF 157 3SSX).**
 - **Multipoint rear cage for roof cross, cross diagonal and harness bar, lower backstays, for bent cross door bars (part number: RBF 157 5XSX).**
 - **Bent cross door bar nearside (LHS) (part number: RBF 157 DXUN), and Bent cross door bar offside (RHS) (part number: RBF 157 DXUO)**
- The Safety Devices F157 roll cage is available for purchase via Paul Curtis, contact f40mks@hotmail.com**
- 5.3.2 If fitted with a sunroof, this must be made of steel and securely fixed in the closed position by at least two additional fixings.
- 5.3.3 An **FIA homologated safety harness** with a minimum of 4 straps (2 shoulders, 2 waists) must be installed to **NCR Chapter 7 App.7 Art.31-33**. It is recommended that a 5 or 6 strap safety belt is used. **All harness straps must be adjusted so that in use the harness buckle is located on the Driver's body only in the area between the top of the thigh and the top of the pelvic girdle and must not be located any higher on the abdomen.**
- 5.3.4 Fire extinguisher - **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.**
- A plumbed-in unit for discharge into the cockpit and engine compartment as defined in NCR Chapter 7 App.6 is the minimum requirement.**
- 5.3.5 A battery cut-off master switch must be installed. The circuit breaker when operated must isolate all electrical circuits with the exception of those that operate the fire extinguishers (**NCR Chapter 7 App.5 Art.13-18**). The triggering system for the circuit breaker should be situated at the lower part of the windscreen mounting preferably on the Driver's side or below the rear window. The location is to be identified by a RED SPARK on a WHITE EDGED BLUE Triangle and the ON and OFF positions are to be clearly marked. (The preferred system recommended is the Cartek fully electronic Battery Isolator System).
- 5.3.6 For scrutineering purposes the bulkhead between the main engine bay and the area occupied by the Interior Heater and Windscreen Wiper unit will be considered as a bulkhead that must be sealed. Windscreen trim can be removed.

5.4 GENERAL TECHNICAL REQUIREMENTS & EXCEPTIONS

NCR Chapters 7, 8, 9 & 12 apply as relevant.

- 5.4.1 Definitions: All references to standard parts and/or material in these Regulations shall be interpreted as references to the manufacturer's original specification(s).
- 5.4.2 All parts must remain as Standard except for the modifications permitted listed. The modifications specifically prohibited are for Competitors' guidance only.

5.4.3 Unless specifically authorised in these Regulations, the use, substitution of, and/or addition of, any parts, material or processes is prohibited, other than welding or repairing material or the fitting of the manufacturers standard replacement parts, for the sole purpose in every respect of restoring the vehicle to the manufacturer's Standard specification or to comply with **the ASN** statutory safety requirements.

It is permitted to reclaim stripped threads back to the original size using thread inserts.

It is permitted to replace fixings to a different format providing the thread size remains the same.

It is permitted to weld up housings to reclaim them back to the original specification.

5.4.4 Prior to competing in **this** Scottish Fiesta ST Cup the **Car** must undergo a Safety Scrutineering inspection which will be undertaken by the **Organiser's** Chief Scrutineer, Championship Eligibility Scrutineer or their appointed deputies, unless the **Car** competed in the same condition in the **preceding year** Championship. Additionally all **Cars** must undergo a Safety Scrutineering inspection at least every 4 events. Any **Car** involved in a **contact Incident**, or having been modified in any way, **must** be represented to the Scrutineers for further examination (**NCR Chapter 7 App.12 Art.5**) **unless notified to the contrary by a Championship or Event Official**. A record of inspections will be maintained by the Championship Organiser. The Event Organiser may select Cars for pre-Event safety inspections, the method of selection and times/locations for inspection will be notified in the **Event Official Documents**.

5.5 CHASSIS: Standard

The chassis is defined as the overall structure of the Car around which are assembled the mechanical components and the bodywork.

5.5.1 Ground Clearance. Minimum ground clearance of the Car with Driver (in full racing kit) aboard is 95 mm **as measured using a roller under the corners of the front subframe.**

The exhaust system is excluded for the purpose of measuring the ground clearance but must comply with **NCR Chapter 7 App.2 Art.80.**

5.5.2 Only material/parts specially allowed by these Regulations can be modified or removed. Removed material cannot be reused on the **Car**.

5.5.3 Fiesta ST Cup: Seam welding of the body shell is permitted.

5.5.3.1 Fiesta ST Challenge: Seam welding of the body shell is NOT permitted.

5.5.4 Two Towing Eyes must be fitted front and rear, and must be of the wire rope type complying with [NCR Chapter 12 App.13 Art.4](#). They must be bolted to the front and rear crash structures in accordance with [NCR Chapter 12 App.13 Art.3](#), have a minimum internal diameter of 60mm, and be in a contrasting colour (eg red, orange or yellow) and must be clearly [marked with an arrow and the word "tow"](#).

[5.5.4.1](#) [In order to maintain the standard silhouette of the Car, inserts or coverings must be fitted to fill any gap surrounding the towing eyes.](#)

5.5.5 Bonnet and tailgate fasteners must be fitted. Original locking devices must be rendered inoperative with the exception of the front bonnet catch, which must remain operative. The actuation lever of this catch must be extended into a visible position from outside the Car and painted with Day-Glo paint. Disconnected locking devices may be removed.

5.5.6 Steering lock must be rendered inoperative and may be removed from the [Car](#).

5.5.7 Cars fitted with Safety Airbag in the steering wheel must have them removed. Caution is required over the removal of any airbag device. If in doubt contact the Eligibility Scrutineer for the correct method of removal.

5.6 **BODYWORK: Standard**

5.6.1 **Modifications Permitted**

5.6.1.1 Removal of spare wheel and tools.

5.6.1.2 Alternative steering wheel.

5.6.1.3 Non-standard Driver's seat.

5.6.1.4 Removal of floor carpeting and sound deadening.

5.6.1.5 Removal/replacement of passenger seats.

5.6.1.6 Removal of boot lid inner panel. Rear wiper motor can be removed, wiper must remain on silhouette.

5.6.1.7 [Heater and Centre Console:](#)

5.6.1.7.1 [Fiesta ST Cup: Removal of passenger compartment heater and centre console is permitted.](#)

5.6.1.7.2 Fiesta ST Challenge: Removal of the passenger heater and air ducting behind the dashboard is NOT permitted. [The](#) heater must remain functional as standard. Trimming the dashboard to allow fitment of the roll cage is permitted

5.6.1.8 Fuel and brake lines may be routed through the Driver/passenger compartment subject to provisions of [NCR Chapter 7 App.2 Art.60 & Chapter 7 App.4](#). It is permitted to cover Fuel lines to protect from heat.

- 5.6.1.9 It is permitted to remove the rear seat mountings.
- 5.6.1.10 It is permitted to use additional fixings/tethers to retain items of trim into the front and rear bumpers.
- 5.6.1.11 The gear knob may be replaced.
- 5.6.1.12 **Door** mirrors must be of the standard 150 mirror shape and size and conform with silhouette.
- 5.6.1.13 All glass side windows may be fitted with clear colourless safety film not exceeding 100 microns thickness.
- 5.6.1.14 Drivers door window net is Mandatory. Suitable FIA or EU specification netting must be installed in the window opening attached to the bodyshell or roll cage, to act as a restraint to stop the Drivers arms or head inadvertently emerging from the **Car**.
- 5.6.1.15 The lower steering column trim and glove box can be removed.
- 5.6.1.16 Door trim panels:
Inner door panels may be trimmed to ease access for work on doors.
- 5.6.1.16.1 **Fiesta ST Cup: All door trim panels** must be fitted, however these may be of alternative materials but of the same shape, size and dimensions as original items.
- 5.6.1.16.2 **Fiesta ST Challenge: All door trim panels must be fitted, and may not be of alternative materials.**
- 5.6.1.17 Interior mirror must be fitted but is free.
- 5.6.1.18 Central locking and alarm system must be rendered inoperative by the removal of the fuse or that wiring element.
- 5.6.1.19 The window mechanism of the passenger door must be operable and capable of opening/closing the front passenger door window. The standard electric window mechanism may be retained but a mechanical means of operation to both Driver & passenger door windows may be utilised from any Fiesta fitting.
- 5.6.1.20 **Sealant may be removed.**
- 5.6.2 **Modification Prohibited**
- 5.6.2.1 Silhouette: all changes to silhouette are prohibited.
- 5.6.2.2 Fiesta ST Challenge: Cars must retain the standard door cards. Trimming inner door cards to ease access is permitted. Removing door reinforcement bars is NOT permitted.

5.6.2.3 Dash panel and instruments must be as fitted and MUST be complete with all switches, air vents, steering controls, steering column cowl, etc.

5.6.2.4 All glazing must be as per the original Car.

5.7 ENGINE

The only engine eligible is as fitted to the Ford Fiesta ST150 (MY2004-2008) or a standard HE I4 2.0 litre Duratec replacement unit. No modifications to the specification of this variant of the engine, **other than those listed below**, are permitted.

The term standard shall apply to that as manufactured by the Ford Motor Company and will include the tolerances as manufactured by Ford Motor Company. If you are in any doubt then consult the Eligibility Scrutineer.

5.7.1 **Flywheel:**
No lightening/machining of the flywheel is permitted. Only original, standard flywheels are permitted, with a minimum weight of 8.14kg.

5.7.2 Ignition Systems / Electronic Control Unit (ECU):
The “as manufactured” ignition and engine management control unit must be used. The designated engine Electronic Control Unit (ECU) or any of its associated parts **must** not be modified in any way. It is not permitted to change the strength or form of any of the sensor signals to or from the ECU or ignition amplifier unit.

All cars must have their ECU reprogrammed with the SMRC approved software (**contact East Coast Motor Group for details. Tel. 0131 663 6210 Email remap@ecmotorgroup.com**). This SMRC approved software shall be regarded as the only software permitted to be installed and used. This software must not be tampered with or altered in any way. A nominal charge for this software will be borne by the Competitor. The Organiser retains the right to provide a replacement ECU, or to download the software from the Competitor’s ECU for the purposes of validating against the standardised SMRC software, at any time during any **Event**.

5.7.3 Modifications Permitted:

5.7.3.1 Fitment of an optional air con pump internal jockey wheel and shorter drive belt.

5.7.3.2 As original Ford manufactured conrod bolts are now not available they may be replaced by an alternative version which has similar shape and dimension. For Technical Specifications/Dimensions see Appendix.

5.7.3.3 The engine blow by gases must be fed either into a catch tank with a containable internal volume in excess of 2 litres, or an internal breather. All production openings into or out of the engine not used as a direct result of this change must be effectively sealed.

5.7.3.4 Due to part availability pistons may be substituted with OEM matching quality parts to exactly the same **size, weight and dimension** as the original **standard item**.



- 5.7.3.5 Due to part availability bearings may be substituted with OEM matching quality parts to exactly the same **size and dimension** as the original **standard item**.
- 5.7.3.6 Engine water pipes may be changed to a silicon based hose of the same size and dimension, hoses may be covered to protect from heat.
- 5.7.3.7 Baffles in the sump. Any internal engine components fasteners may be replaced by suitable OEM matching quality parts. **For Technical Specifications/Dimensions, see Appendix.**
- 5.7.3.8 The choice of make and type of spark plugs is free.
- 5.7.4 Prohibited Modifications:
- 5.7.4.1 All standard production engine sensors which have any influence whatsoever on the engine management system must be retained in the correct position and in working order. It is not permitted to reposition positional sensors.
- 5.7.4.2 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.
- 5.7.5 Location:
The engine must remain in the 'as manufactured' location in terms of lateral/longitudinal/vertical axis.
- 5.7.6 Oil/Water Cooling:
The standard fan cowlings must be fitted with the standard Ford ST150 radiator. A standard Ford cowl that fits in front of the radiator may be removed but no replacement panels can be substituted to alter the airflow in the radiator.

Fitment of an additional oil cooler is permitted within the confines of the bodywork provided this does not entail modification of the bodywork or radiator grill.
- 5.7.7 Induction Systems:
The standard Ford air induction system to the throttle body can be replaced with a Pipercross kit part number PK308. The throttle body has a maximum internal dimension of 55mm measured at the throttle butterfly spindle. Fitment of ducts is not permitted.

No **other** modifications to the throttle body or manifolds are permitted.
- 5.7.8 Exhaust Systems:
- 5.7.8.1 Exhaust system must have a standard manifold and no less than a 200 cell Catalytic Converter. The rest of the exhaust system is free.
- 5.7.8.2 No modifications are permitted to the catalyst, but the silencer units and tail pipe are free.
- 5.7.8.3 The full exhaust system must be free of leaks.

- 5.7.8.4 Catalytic operation may be tested by any means.
- 5.7.8.5 The final section of the exhaust must exit from the rear of the car, locating the outlet in the manufacturers cut-out of the rear skirt, and comply with **the decibel limit detailed in NCR Chapter 7 App.8.**
- 5.7.8.6 The exhaust system can be adjusted by bending (including heating) the pipes and mountings but it is not permitted to cut the pipes.
- 5.7.8.7 The exhaust system is excluded for the purpose of measuring the ground clearance but must comply with **NCR Chapter 7 App.2 Art.80.**
- 5.7.8.8 Exhaust wrap may be used to protect from heat.

5.8 SUSPENSIONS

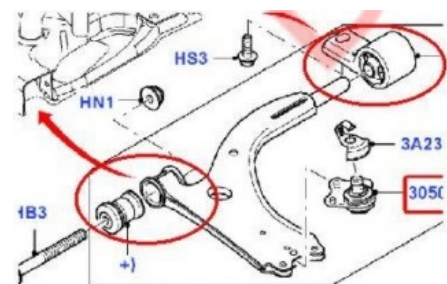
- 5.8.1.1 Fiesta ST Cup: Standard Front and rear suspension is permitted or the following options;

Option: Fitment of designated championship AST suspension kit. Spacers are permitted between the front damper rod and top mount, or between the top mount and the mounting point on the body according to AST manual.

Option: Fitment of the GAZ Suspension kit part number “GHA368/EC” or “GGA468SC”. No spacers are permitted between the rear damper rod, or damper body and the mounting point on the body.

It is permitted to fit an additional element to the front suspension that will solely limit the rotation of the shock absorber and not change any other element of the front suspension or its designated geometry.

Alternative polyurethane type bushes may replace the standard rubber bushes (on the front lower arm assembly as circled in diagram opposite) and on the main rear axle support beam (bushes must be single piece units with metal central sleeves).



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Front anti roll bar thickness bare metal is 19mm +/- 1mm, Anti roll bar links are 284mm in length +/- 1mm or 240 +/- 1mm. Front camber must not exceed 4°

- 5.8.1.2 Fiesta ST Challenge: Gaz Suspension kit part number “GGA468SC” must be fitted together with “Polybush Kit 190” Suspension Bushes, which should be purchased directly from www.polybush.co.uk
- 5.8.2 Spring and spring trim are free.

- 5.8.3 It is permitted to remove the rear brake back plates. Shims or washers may be fitted up to a maximum total thickness of 5mm between the stub and the axle. All shims must be in contact with the majority of the surface area between axle beam and stub axle and retained in place by all four existing bolts. This is to allow the adjustment of the rear camber and tracking. Rear tracking **must be** parallel +/- 0.5°. Camber **must be** 1° +/- 1°.
- 5.8.4 Prohibited Modifications
- 5.8.4.1 No modifications may be made directly to the rear axle beam to induce camber, except that Shims may be fitted, but manufacturer's maximum camber must not be exceeded.
- 5.8.4.2 No alterations may be made to the front wishbones and mountings for caster or camber.
- 5.8.4.3 The standard front anti-roll bar must be fitted and operational.
- 5.8.4.4 It is not permitted to modify the front suspension stub axle in any way.
- 5.8.4.5 No modifications to component mountings permitted.
- 5.8.4.6 All bolts and fastenings must be to OE specification, as must all mounting holes.
- 5.8.4.7 Offset bushes are not permitted, all bush dimensions must remain as OE specification.
- 5.8.4.8 It is not permitted to modify or alter the rear axle or front subframe assemblies by welding, gusseting or strengthening in any way.
- 5.8.5 Wheelbase/Track:
As standard or as amended by permitted alterations.

5.9 TRANSMISSIONS

Standard gearbox and differentials only.

- 5.9.1 General:
Engine mounting must be Ford original part **with the mandatory use of Powerflex Engine Mount Insert (PFF19-1120/PFF19-1121)**. Upper gearbox mount must be Ford original part or an OEM matching quality part of the same material and dimensional specifications. **Lower gearbox mount is free, however must retain the same dimensional specifications as the Ford original part.**
- 5.9.2 Prohibited Modifications:
No modifications are permitted

5.9.3 Transmission and drive ratios:
Only Ford production parts are allowed. The only gearbox permitted is the STD 5 speed unit as fitted to the production Fiesta ST 150 2004-2008

1st – 3.583:1

2nd – 2.038:1

3rd – 1.414:1

4th – 1.108:1

5th – 0.878:1

Reverse – 3.615:1

DIFF RATIO 3.824:1

All gears must be standard profile and number of teeth.

The Differential must be standard with a ratio of 3.824.1 and no form of Limited Slip Differential is permitted.

5.9.3.1 A paddle clutch disc of the same nominal diameter may be fitted.

5.9.3.2 A machined retaining 'washer' may be fitted to prevent front bearings from moving out of position and thereby allowing the wheel to become detached from the front transmission unit.

5.10 ELECTRICS

5.10.1 Exterior lighting:

All lights must be in full working order with the exception of the rear number plate light and the side repeater flashers which must be present but can be non-functional.

5.10.2 Rear fog lights:

The rear fog light must work and the on/off switch must be accessible to the Driver when seated in the Car and ready for Competition. One FIA specification high intensity LED rear light must be fitted in the centre line below the rear screen. It must be clearly visible and fitted to the outside of the Car.

5.10.3 Headlamp units:

Headlights must be retained as standard, in full working order and operable by the Driver when seated in the Car.

5.10.4 Batteries:

A 12 volt battery must be used and fitted securely. (Dry cell or Gel type batteries are recommended). The battery top must be covered by an insulating cover to prevent short circuits in the case of a **contact Incident**. Battery may be relocated to inside cockpit but must comply **with NCR Chapter 7 App.5 Art.6**.

5.10.5 Generators:

The standard alternator must be fitted and operational at all times.

- 5.10.6 **Wiring Harness:**
The main wiring harness cannot be modified except as required for the fitting of the battery master switch ([NCR Chapter 7 App.5 Art.13-18](#)). No data logging equipment may be connected into the ECU either by direct or indirect means except any official datalogging systems which may be installed on selected Cars by the Championship Eligibility Scrutineer for their sole use. Any such equipment shall carry **an ASN seal details of which shall be recorded on an Official Document**. The fuse board, ECU and OBD diagnostic plug may be relocated within the restrictions of the standard wiring loom, tape may be used to secure wiring.
- 5.10.7 All Cars may have a system of lamp indication to determine engine revolutions to indicate gearchange point (Shift Light) or an LED display to give the gear in which the Car is currently being driven (Digital Gear Indicator). To achieve this, the unit may be wired into the instrument loom to facilitate the functionality of either unit.
- 5.10.8 The external rear wiper blade assembly must be fitted to conform with the vehicle silhouette.
- 5.11 BRAKES**
Friction Materials: The brake pads are free.
- 5.11.1 Standard callipers and brake discs must be used together and the duct shields may be removed from the front discs.
- 5.11.2 The ABS as fitted must remain and be in fully operational state.
- 5.11.3 Anti-slip or extension pads may be added to all foot control pedals.
- 5.11.4 High quality aircraft specification flexible brake pipes are allowed subject to meeting minimum FIA ISC Appendix J Safety Regulations (Art.253.3.2.). These require that all lines containing hydraulic fluid with the exception of lines under gravity head only, must have a burst pressure of 70 Bar (1000 psi) or higher according to operating pressure and a minimum operating temperature of 232°C (450°F). When flexible these lines must have threaded connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).
- 5.11.5 Brake ducting can be installed for the front brakes using the front fog light position in the front bumper as an entry point. Mounting of the ducting will be behind the bumper. The standard bezels and mounting must be retained in the standard position.
- 5.11.6 **Prohibited modifications:**
No further modifications are permitted.
- 5.12 WHEELS/STEERING**
Construction and material: Alloy 7x15, Offset 35/40mm

5.12.1 Permitted Options:

5.12.1.1 Fiesta ST Cup:

- Team Dynamics/Rimstock wheel 7 x 15 Pro Race-1.2 Offset 35/40 mm.
- 7 x 15 ATS DTC Lightweight Silver - Offset 35/40mm
- 7 x 15 Braid Fullrace Maxlight Offset et35

5.12.1.2 Fiesta ST Challenge:

- Team Dynamics/Rimstock wheel 7 x 15 Pro Race-1.2 Offset 35/40 mm.
- 7 x 15 Braid Fullrace Maxlight Offset et35
- Any Ford Manufactured road wheel can be used as long as it conforms to the above dimensions

5.12.2 Fitment of wheel bearing retaining washer is permitted.

5.12.3 A standard, and unmodified Power Assist Steering (PAS) steering rack must be retained.

5.12.4 The mounting bushes for the steering rack shall be either the standard bushes or the Ford Motor Company Limited specified bushes only.

5.12.5 The power assist pump must remain unmodified and fully operational at all times.

5.12.6 Only front upright assemblies for the power assist steering are allowed.

5.12.7 Power steering pipes may be substituted.

5.12.8 A remote power steering reservoir may be fitted.

5.12.9 An additional power assist pump cooler may be fitted.

5.12.10 Either the standard steering wheel, with the Safety Air bag fully removed, or the alternative steering wheel (with 360° constant radius rim) may be used.

5.12.11 Prohibited Options:

The steering wheel containing a live airbag assembly is not permitted. No other item is permitted.

5.13 TYRES

Toyo Proxes R888R tyres are mandatory and must be purchased from Wheels Around.

5.14 VEHICLE WEIGHT

5.14.1 Definition: As per [NCR Chapter 7 App.2 Art.63.](#)

5.14.2 Minimum Weights:

The all-up weight, including the Driver in full racing kit, at any time during Competition is 1110Kg. Ballast can only be installed in the position [detailed in NCR Chapter 7 App.2 Art.64-66.](#)

5.15 FUEL TANK/FUEL

5.15.1 Types:
Standard production Fuel Tank must be retained. Additionally, an approved protective plate or Tank guard must be fitted below the Tank.

5.15.2 Location:
The Tank must be retained in its standard position.

5.15.3 Fuel:
Only unleaded Pump Fuel (as defined in NCR Chapter 8 App.1 Art.7) up to and including 99 RON is permitted.

5.15.4 Sampling:- It is mandatory to fit a dry break coupling in the pressured fuel line to allow safe sampling/draining of the fuel tank.

5.16 SILENCING

Vehicles must be silenced in accordance with NCR Chapter 7 App.8.

5.17 NUMBERS and CHAMPIONSHIP DECALS:

5.17.1 All Cars must be identified by ASN specification numbers to NCR Chapter 12 App.4 Art.40-45. In addition the competition number must be displayed in the upper right of the rear window to the same specification as detailed in NCR Chapter 12 App.4 Art.45c-f.

5.17.2 Sponsors' decals must be carried on each Car if requested by the Championship Organiser. Specific locations on the Car are reserved for Championship sponsors; locations are as stipulated in the diagrams, which will be supplied. One set of decals will be supplied free of charge by the Organiser. The Championship Organiser reserves the right to charge for replacement decals.

5.17.3 Drivers Names:- Competitors will be responsible for providing Driver's Name decals; these must be applied to the rear side windows in a position to be advised in an Official Document.

APPENDIX: Engine Specifications/Dimensions

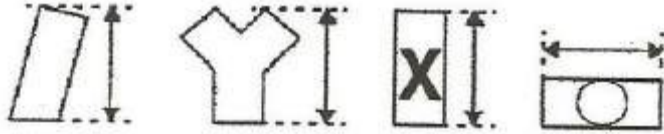
Number of Supports **3**

Total minimum volume of a combustion chamber **48.5 cubic cm**

Minimum volume of a combustion chamber in the cylinder head **41.3 cubic cm**

Maximum compression ratio (in relation with the unit) **11.3:1**

Minimum height of the cylinder block **302mm** (according to the drawing below)
(Fiesta ST Challenge minimum block height is **302.7mm**)



Pistons

(a) Sleeves Material **Ferrous Alloy**

(b) Number of rings **3**

(c) Minimum weight 420g with pin and rings

(d) Distance from gudgeon pin centre line to highest point of piston Crown **28.5 +/- 0.1mm**

(e) Distance (+/-) between the top of the piston at TDC and the gasket plane of the cylinder block **0.65 +/- 0.15mm**

(f) Piston groove volume **0.8 +/- 0.5cm³**



Crankshaft – maximum diameter of crank pins **47.0mm**

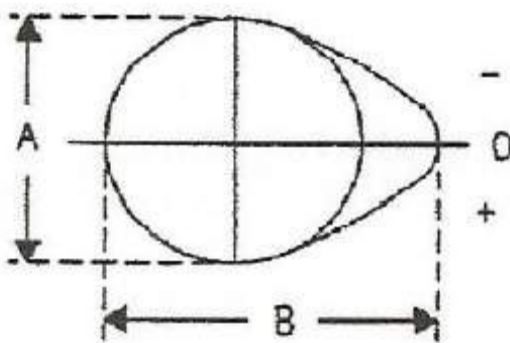
Cylinderhead – minimum height (block face to top of head) **123mm**

Thickness of tightened cylinderhead gasket **0.5 +/- 0.2mm**

Camshaft

(a) Diameter of bearings **25.0mm**

(b) Cam dimensions	Admission	A = 33.0 +/- 0.1mm
	Intake	B = 42.1 +/- 0.1mm
	Echappement	A = 33.0 +/- 0.1mm
	Exhaust	B = 41.1 +/- 0.1mm



Distribution/Timing

(a) Theoretical clearance for valve timing

Admission Intake **0.25mm**
Echappement Exhaust **0.30mm**

(b) Cam lift in mm (dismounted camshaft)

ADMISSION / INTAKE				ECHAPPEMENT / EXHAUST			
Ford/Mazda drawing, INLET Cam P/n 1S7G-6A271 BH & RF 1S7G-6A271-BG Fitted from 15/11/2004 to 05/02/2007				Ford/Mazda drawing, EXHAUST Cam P/n 1S7G-6A272-EA & RF 1S7G-6A272-BG			
Rotation angle in degrees	Lift in mm (+/- 0.1mm)	Rotation Angle in Degrees	Lift in mm (+/- 0.1mm)	Rotation angle in degrees	Lift in mm (+/- 0.1mm)	Rotation angle in degrees	Lift in mm (+/- 0.1mm)
0	9.13		9.13	0	8.07		8.07
-5	9.04	+5	9.04	-5	7.98	+5	7.98
-10	8.78	+10	8.78	-10	7.73	+10	7.73
-15	8.36	+15	8.35	-15	7.31	+15	7.32
-30	6.11	+30	6.08	-30	5.09	+30	5.11
-45	2.64	+45	2.68	-45	7.19	+45	1.84
-60	0.30	+60	0.37	-60	0.27	+60	0.34
-75	0.03	+75	0.10	-75	0.01	+75	0.07
-90	0.00	+90	0.00	-90	0.00	+90	0.00
-105		+105		-105		+105	
-120		+120		-120		+120	
-135		+135		-135		+135	
-150		+150		-150		+150	

A shift of +/- 2 degrees of the whole measurement is accepted

Cam timing

Piston No.1 at TDC camshaft locking tool must be able to locate into timing slots of camshaft. Use of profile tool can be permitted for scrutineers observation of camshafts.

(c) Maximum valve lift

	Maximum valve lift
Admission / Intake	8.9 +/- 0.2mm
Echappement / Exhaust	7.8 +/- 0.2mm

with clearance according to (a) above

Admission / Intake

Number of springs per valve **1**

Under a load of **34kg** the max length of the spring is **31.5mm**

External diameter of the springs **24.75 +/- 0.2mm**

Number of spring coils **8.5**

Diameter of spring wire **3.23 +/- 0.1mm**

Max free length of the springs **48.1mm**

Echappement / Exhaust

Number of springs per valve **1**

Under a load of **34kg** the max length of the spring is **31.5mm**

External diameter of the springs **24.75 +/- 0.2mm**

Number of spring coils **8.5**

Diameter of spring wire **3.23 +/- 0.1mm**

Max free length of the springs **48.00mm**