

2011 MOTORSPORT IRELAND MIKEY O'BRIEN FIAT MARK 1 PUNTO CHALLENGE

TECHNICAL REGULATIONS

1. GENERAL

1

Introduction:

This is a class for standard production saloons based on the Fiat Mark 1 Punto. All cars must use only standard production components except where permitted in these regulations. In these regulations the word 'standard' is deemed to be as originally produced or supplied by Fiat. The definition is further extended to include replacement or pattern parts produced by other than Fiat for aftermarket sales provided that: The part is a straight replacement for the original part, requiring no modification to fit. All dimensions of the part and the materials used in its construction are the same as the original part.

The MI Year book and SPEC sheet take precedence over the workshop manual

Scrutineering

1.1

Scrutineering will be stringent and carried out by a Championship Eligibility Scrutineer (hereinafter CES), approved by the Technical Advisory Group (hereinafter TAG) of MI, or a Scrutineer delegated by the CES at all events.

1.1.2

The FMC and the Championship organisers reserve the right to exchange any components with later production parts throughout the Championship.

1.1.3

Eligibility/safety Scrutineering will take place with technical product support provided by Fiat Ireland, and FMC approved by the TAG for MI. These officials are empowered to undertake any form of verification procedure necessary, and may order the removal of parts from the car, with any necessitating costs to be borne the competitor. MI reserves the right to seal any vehicle for inspection at any time in the series. The CES may impound a competitor's vehicle in Parc Ferme and have it removed to another location for subsequent technical examination. The competitor will be required, **at his own expense**, to provide personnel to enable this removal and disassembly to take place, **and will also be responsible for any expenses incurred by the CES or the FMC**. All sealed components must be examined within 45 days of sealing Appendix 2 Article 31.1

1.2

Every vehicle will be subject to the scrutineering requirements as detailed in paragraphs 1.1 & 1.1.1 to 1.1.5 of these regulations and may have to pass

Championship Scrutineering at a predetermined location prior to each Championship round. Failure to pass Championship Scrutineering on technical, eligibility or safety grounds will lead to that vehicle not being allowed to race.

1.2.1

Championship Scrutineering will not take the place of or obviate the requirement for each competing car and driver to attend the MI Event Scrutineering. Technical Regulations will be enforced. Registration for the Championship is considered as acceptance of the Fiat MK 1 Punto Championship Regulations in their entirety.

1.2.2

General Description

The 2011 Fiat MK 1 Punto Championship is open to all holders of a valid racing licence as set out in **paragraph 1.3.2 of MI Appendix 41**. The car must comply with the 2011 Fiat MK 1 Punto Championship Regulations, and with MI Regulations, at all times. Modifications to the car other than those allowed in these regulations are not permitted. Any 3 or 5 door Punto Mark 1 will be permitted in this Championship.

1.2.3

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

1.2.4

Safety Requirements – See MI Yearbook – Safety requirements must **conform to Appendix "2" of the current Motorsport Ireland Yearbook**.

1.2.5

A Safety Rollover Cage must be fitted and conforming to MI Appendix 2.16.

1.2.6

7 Circuit Breaker (Master Cut Off Switch) complying with MI Appendix 2.22 must be fitted and working.

1.2.7

Seat Belts complying with MI Appendix 2.7 must be fitted and in good condition.

1.2.8

Fire Extinguishers complying with MI Appendix 2.6 (as required) must be fitted, filled with permitted extinguishant and carry a current test certificate.

1.2.9

Competition seat with FIA Approval mounted in accordance with FIA regulations must be fitted.

1.2.10

Additional fasteners must be fitted on bonnet (not less than two) and tailgate (not less than two). The original locking mechanisms must be removed.

1.2.11

Towing eyes must be fitted at front and rear and must be clearly visible and painted red or yellow.

1.2.12

The bulkhead between the engine compartment and the cockpit must be sealed) to prevent the passage of fluid or flame.

1.2.13

Weight

The minimum weight in full race trim inclusive of driver and race wear and including petrol is 920kg. To achieve minimum weight some or all of the following may be removed; side and rear windows may be replaced with e.g. Macrolon provided they take the original shape of original windows. Front windscreen must stay as standard glass. Carpets, head cloth, all sound proofing and seats, rear wash wipe and wiper assembly can be removed. Dashboard must be standard, but original gauges may be replaced with rev counters and gauges. You may lighten doors, boot, bonnet and tail gate. If door panels are removed they must be replaced with lighter material provided its minimum thickness is not less than 1mm. The heater must remain in car and must be fully operational. You may also seam weld body

1.2.14

Glass

No tinting of back window is permitted

2: ENGINE

2.1

The Fiat 1395cc **engines** are the only eligible power unit's and may not be modified except as specified in these regulations. Engine No

2.1.1

Engine Capacity – MAX 1395cc

2.1.2

Bore – 80.5mm std, MAX 81.1mm

2.1.3 Stroke – 67.4 mm

Valve Sizes

2.1.4

Only standard valves, valve springs and assembly is permitted. Washer spacers must be of standard specification. (mm). No additional spacers, springs or washers may be added. Valve spring retaining position must be standard.

Combined thickness of both large washer thickness and small washer thickness is 3.5mm.

2.1.4.1

Inlet Valve Head diameter – 37.5mm (MAX)

2.1.5

Exhaust Valve Head diameter – 31mm (MAX)

2.1.6

Valve seat angle – 45 degree Inlet and Exhaust

2.1.7

Valve seat width – 1mm

2.1.8

Valve Throat at base of seat, Inlet – 7.3mm and Exhaust 7.3mm

2.1.9

Inlet Port – Width 28 mm,

2.1.10

Exhaust Port – Width 27 mm,

2.1.11

Ports as cast i.e. no machining. All sharp edges to be left. No grinding or polishing is allowed. **The valve guides' must be original and not modified. (Minimum length: 47mm)**

2.1.12

The maximum compression ratio allowed is 10.0:1. **The head must be standard but may be skimmed to achieve compression ratio**

2.1.12.1

The combustion chamber in the head can not be modified in any way.

2.1.12.2

The minimum permitted thickness of the head is 77 mm. The head is measured from cylinder head face to the top of the cylinder bolt hole

2.1.12.3

Original tappets to be retained.

2.1.12.4

The valves and valve springs must all be standard. No of coils Intake 6 Exhaust 6 Length Inlet 24.4mm Exhaust 31.2mm Wire thickness Inlet 2.7mm Exhaust 3.8mm Uncompressed length Inlet 43mm Exhaust 53mm

2.1.12.5

The head gaskets should be original Fiat gaskets or OE equivalent

Pistons

2.1.13

Standard original Fiat part piston or OE equivalent and or new CP piston may be used. Contour or shape of piston may not be changed in any way. **The crown of the piston must not be modified. Piston rings must be the same in design, shape and specification as standard Fiat unit. No lightening of the pistons is permitted. The bosses of the piston are not allowed to be machined. If balancing of the pistons is required a competitor may machine the inside of the skirt with a lathe, it is not permitted to shorten the skirt. Minimum piston weight including fittings is 394 grams.**

2.1.13.1

Con rods must be standard; no polishing is permitted and they must be standard. The small end bush must be standard Fiat part as must the big end bolts. One con rod must be std and the other 3 can be balanced to match the weight of the untouched con rod. Min Weight 650 grams

2.1.13.1.1

Min, weight of con rod and piston combined with all fittings 1044 grams

2.1.13.2

Crank shaft must be standard and cannot be lightened or polished. But may be balanced. MIN weight 9.2 KG

2.1.14

Cam drive wheel may be of a vernier pulley type, but must be non variable when in motion. Retaining dowels, hole on camshaft and cam wheel must be to standard specification.

2.1.14.1

Cam shaft - Refer to MI spec sheet

2.1.15

Inlet manifold : - As per MI spec sheet, one type only.

2.1.16

CARBURETTORS.

Type allowed, Weber 40 DCNF with primary venturi 32mm, secondary venturi 32mm.

2.1.16.1

No machining or drilling allowed. All removable jets may be changed. Choke mechanism may be removed or rendered inoperative.

2.1.16.2

A K&N/Piper type filter may be used with complete operating air filter. Alternative air box systems will not be permitted.

2.1.16

Only standard Fiat Auto parts or OE equivalent may be used, standard finishes must be maintained.

2.1.17

The engine is defined as an assembly including flywheel and inlet and exhaust manifold.

2.1.18

Spark plugs are free, except when CC the head you must use a (BP6ES) NGK

2.1.19

Thermostat setting is free

2.1.20

Fuel pump racing type

2.1.21

Cooling System is free but must remain within the engine bay

2.1.22

Lubrication: Standard system must be retained.

2.1.23

Sump may be baffled, oil cooler is allowed to be fitted to engine.

2.1.26

Flywheel: Standard Cast flywheel Minimum Weight with std Pressure plat and bolts 6.8KGS

2.1.26.1

A standard pressure plate must be used, either a FIAT original or equivalent provided they comply with MI specification sheets. It is permitted, however, to change clutch disc only to a paddle type.

2.1.27

Exhaust

2.1.27.1

Exhaust pipe is free but must exit rear of driver either side or rear of the car. It must run with at least one silencer.

2.1.27.2

The heating system to the inlet manifold may be blocked off at the cylinder head and the external feed may also be blocked off and disconnected.

2.1.27.3

Exhaust manifold may be insulated with Wrapping

2.1.27.4

The exhaust manifold may be either:

2.1.27.5.

Tubular competition (as per MI spec sheet) or Standard Fiat cast

2.1.27.6

Competitors may put a downward bend after the back box to prevent the exhaust protruding through the back bumper and fit an original back bumper with no hole.

2.1.28

An alloy sump guard may be fitted.

2.2 Suspension

2.2.1

Camber

4 max front and rear. All mounting points must remain in original position, one hole in the front shock may be enlarged to obtain camber. Only top rubber shock mount may be replaced with a Uniball arrangement, provided it is in the original position. The top mount must have two of the original three bolt used as per spec sheet. Wheels must remain **inside wheel arch.**

2.2.2

Rear - Original Top shock Mountings must be standard.

2.2.3

Front anti-roll bar. Must remain Standard. Mounting points must remain as originally positioned by Fiat Motor Co. **Effective diameter 21mm**

2.2.3.1 Rear anti-roll bar. Must remain Standard. Mounting points must remain as originally positioned by Fiat Motor Co. **Effective diameter 17.5mm**

2.2.4

A front strut brace may be fitted.

2.2.4.1

One stabiliser bar may be fitted from the top of the engine to the bulkhead or strut brace.

2.2.4.1

SPRINGS ARE FREE

2.2.5

The only permitted shock absorbers are those supplied under licence from Leda Suspensions. These are a controlled units built to Fiat Punto specifications, as supplied by Leda and with the Leda championship seal fitted and not damaged. The Internal specifications for the valves of the shock and oil used to be as specified by Leda. A certificate from Leda must be produced at scrutiny if requested by the CES. **(2011 on)** AVO will now seal these shocks. You may fit new AVO rear shocks as per spec sheet given by AVO

2.2.6

Front wish bones must be original Fiat or OE equivalent; all the bush must be standard (no offset one). Wish bone must be mounted in the original position.

2.2.6.1

Front cross member maybe lightened, all mountings and mounting point must be original. Welding or strengthening is permitted.

2.2.7

Rear axle,

Rubber bush for rear sub frame may be replaced with solid bush as per MI spec sheet. Rear swing arm bolt hole may be slotted to obtain tracking and camber

2.2.8

Wheel track for the front and rear to be front = 1600mm, Rear = 1575mm + or- 22mm outside to outside at base of tyre when car is grounded

2.2.9

Wheel base to be 2450 mm +/- 0.5%

3 Tyres

3.1

YOKOHAMA A048R MEDIUM COMPOUND 185 60 R14 (DRY TYRE ONLY)
DUNLOP 175 55 R14 WET TYRE ONLY
NO MIXING OF DUNLOP OR YOKOHAMA TYRES

3.1.1

MAXIMUM NUMBER OF YOKOHAMA TYRES PERMITTED ARE 10 PER CHAMPIONSHIP.
WET TYRES ARE FREE

3.1.2

Wheels 5.5 J or 6J wheels only

3.1.3

All modifications to tyres including re-cutting, retreading, grinding and surface treatment are forbidden.

3.1.4

The use of tyre heating/heat retention devices and chemical tyre treatment /compounds is prohibited. In addition no competitor is permitted to have tyre heating or heat retention devices or chemical tyre treatment/compounds in their possession anywhere within the venue at any event.

3.1.5

It is the responsibility of the competitor to furnish the CES with the completed tyre log at each event and the competitor must keep a copy for all the rounds. If any competitor has the wrong tyres for their log, or fails to give the log to the CES prior to practice, they will lose all the points scored for that day.

4 Transmission:

4.1

Gearbox – Standard 5 Speed Gearbox Part No. From a FIAT TIPO petrol cc

4.2

Crown wheel: Two allowed 3.9to1 or 3.7to 1, Must be original std FIAT with no LSD or packing Sun gears tight. Part No.

4.3

Teeth ratios - Gear Ratios:

1st == 3.9

2nd == 2.2

3rd == 1.4

4th == 1.0

5th == 0.8

All gears and synchro ring's and hubs to be as standard out of the fiat tipo 1.4 5 speed gear box.

4.4

Differential: Must be original Casing. ***No lighting or polishing of the differential is permitted.***

4.5

No limited slip differential allowed. No preloading of planetary gears allowed.

4.6

All drive shafts and joints (cv's) are free

4.7

It is permitted to up-rate the reliability of the gear change mechanism by replacing the standard ball & nylon socket joints with rose joints. No quick shift action permitted.

5 Electrics:

5.1

The nominal voltage of the electrical system including that of the supply circuit of the ignition must be retained.

The alternator must be working at all times and no master switch or switch on the field side to stop the alternator from charging can be fitted. No hidden switches are allowed. No ABS or pick up sensors on front wheels drive shafts, no clutch switches or pressure switch on the clutch circuit. Brake lights switch is only for the operation of the brake lights. No switches or sensors on the gear lever or gear box to be fitted.

5.2 Battery:

Battery may be fitted inside car passenger footwell provided the battery is in a battery box or is a drycell battery and must be well secured to floor. The battery tray and support may be removed from the engine compartment.

5.3

A Master cut out switch operable from outside and inside of the car, which will isolate all electrics and kill the engine ***must be fitted.***

6: Body shell

Must be standard steel shell with all doors and hatch-back operating. Structural additions for safety and reliability purposes are permitted provided they do not alter the outside appearance of the car. Head lamps may be replaced by blanking to original shape.

6.1:

Front & Rear bumper must have no extra reinforcement (in front or back of the front or rear panel)

6.1.2:

You may have three holes in the front bumper where the front number plate was originally fitted. Max 50mm each. Fog lamp blanks may be removed from the front bumper. Optional chin scoop may be fitted.

6.1.3:

The placing of a scoop as defined in a drawing from the Technical Advisory Group is permissible. The scoop must not be modified. The maximum size of hole in the bonnet is 30cm width by 16cm depth (with 5cm tolerance. Maximum width of intake is 125mm by 30mm (with 5mm tolerance).

6.1.4

Headlamp.

The opening in the headlamp blank for the air filter pipe must not exceed 50mm and the pipe must not

protrude beyond the headlamp blank. ***One hole per headlamp cover***

6.1.5

Rear lights, Stop lights, and (21 watt rain (Fog) lights must remain functioning

7 Steering

7.1

Steering rack must be mounted in original position as per fiat manufacture.

7.1.2

NO Powered assisting Motor, Steering or Hydraulic assisting systems allowed. Ignition lock assembly may be removed.

7.1.3

Standard Steering Rack must be used ***and mounting locations retained***

7.1.4

Steering Rack Ratio – 4.4 turns from lock to lock.

8 Brakes

Brake lines and friction materials only can be up rated. Brake discs may be standard solid discs or ventilated discs. No cross drilled discs or grooved discs are allowed. Max outside diameter 260mm. Compensator valve on rear can be inside car. Front brake Pads - Ferodo brake pads (part no. FCP 370S or FCP 10565) or any other manufacturer's front brake pad with equivalent specifications to the Ferodo brake pads mentioned above can be used.

8.1

Rear brake:

Standard Fiat Punto shoes and drums ONLY

RIAC PRODUCTION CAR SPECIFICATION SHEET

Registration No

Valid from



This document specifies items which have a major effect on performance and any car which relies upon this document for its eligibility must be in entire conformity with all the data listed herein. Failure to conform in any single respect will be deemed to render the car ineligible. No options are allowed except where specified or authorised and changes in specification are only recognised as the subject of a separate specification sheet covering a previous or later model variant.

Only original copies having each sheet embossed with the RAC stamp will be valid.

Except where specified otherwise hereafter, tolerances will be allowed according to Appendix J, i.e.,

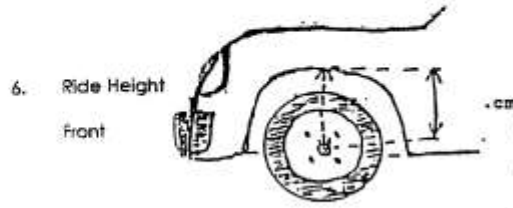
- | | |
|--|-----------|
| 1. Tolerances for all machining, except bore and stroke: | ± 0.2% |
| 2. Unfinished castings: | +4% -2% |
| 3. Weight: | +7% -3% |
| 4. Width of the car at front and rear axles: | +1% -0.3% |
| 5. Wheelbase: | ± 0.5% |
| 6. Track: | ± 22mm |

Maximum and minimum figures have no tolerance allowed.

Make of car Fiat Model Punto
Importer of car (if manufactured abroad) FIAT Ireland
Production/Import commenced 1994
Production/Import ceased —
Weight, with oil, water, with or without fuel ± DRIVER 920 kgs.
Weight on front wheels — kgs.
Weight on rear wheels — kgs.

Length overall 373 cm

Width overall 164 cm



6. Ride Height
Front

Measured to Wheel Arch
Front 25 cm

Rear 24 cm

Measured to

7. Track (at staged ride height)

Front 1600 cm

Rear 1575 cm

Camber (at stated ride height)

Front ± 4°

Rear ± 4°

8. Wheel base at stated ground clearance

..... 245 cm

9. Roadwheel

Rim diameter 14 in

Rim width and type 5.5J-6J in

Material Alloy

Offset from mounting face to inner extremity of rim

10. Tyre size fitted YOKOHAMA 18560R14 DUNLOP NET 175 55 R14

11. Steering box, turns from lock to lock 4.4 Turns

12. Front Spring Part No. Rate Free

Coil Springs:

No. of total coils Free

Diameter of wire Free mm

External diameter of spring Free mm

Registration No.

Stabilisation, front suspension

Dampers Number and type One Mc Pherson Strut N/S + OS

Suspension location links Lower Wishbone Arm

Roll Bar diameter 21MM Part no 7788435

Stabilisation, rear suspension

Dampers Leda Front+Rear Number and type One N/S + O/S Mid Adjuster

Suspension location links Rear Subframe with 2 Radius Arms

Roll Bar diameter 17.5MM Part no 46439970

Front Brakes

Type (~~drum, disc~~, ventilated disc) Ventilated disc Part no 46416712

Dimensions

Drum: Diameter cm Width

OR

Disc: O. Diameter 260 cm Thickness

O. Diameter/I. Diameter of swept area cm /

Rear Brakes

Type (drum, disc, ventilated disc) Drum

Dimensions

Drum: Diameter 181.35 cm Width 39.22 mm
max inside Ø Braking Area

OR

Disc: O. Diameter cm Thickness

O. Diameter/I. Diameter of swept area cm /

Brake servo system

Make/Type No. Fiat

Rear Brake pressure limiting valve

Make/Type No. Free Maybe adjusted from inside One

Induction

Air Cleaner Make/Type Plastic or K+N Type

Filter Medium Operating Element

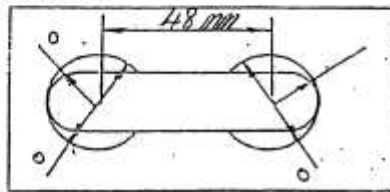
Registration No.

Induction

Carburettor

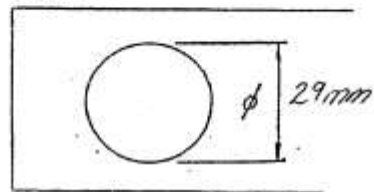
Make Weber Type No 40 DCF
No. on engine 1 (one)
No. of main venturi 2 (Two)
Maximum diameter(s) of main venturi 32mm
Maximum diameter(s) of barrels at throttle 40mm
Throttle coupling (mechanical or vacuum) Mechanical
Maximum dimensions of carburettor outlet to inlet manifold 40mm
Inlet manifold Part No.
Material CAST Alloy
Internal finish (e.g., as cast, fettled/position(s) low finish)

Carburettor



Dimensional sketches of gasket faces

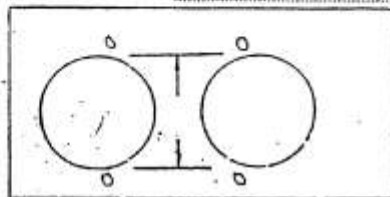
Engine



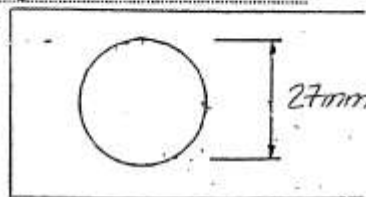
Exhaust

Manifold

Part No.
Material Tubular Competition
Internal finish (i.e., as cast, fettled, finished/position or as fabricated) AS FABRICATED



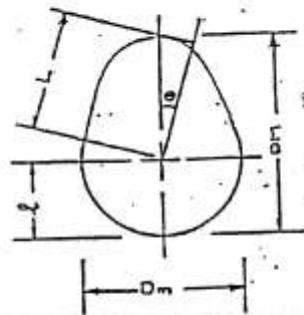
Dimensional sketches of gasket faces



Registration No.

(A) Camshaft

Part No



The cam profiles are defined by determination of lift (L) against a flat-footed follower at various angles (e)

Dimension	Inlet	Exhaust
	imperial	Metric
D_m		
D_m		
Lift at 0°		
5°	10.21	10.21
10°	9.98	9.98
15°	9.60	9.60
20°	9.15	9.15
30°	7.70	7.70
40°	5.77	5.77
60°	1.26	1.26
90°	-0.7	-0.7

Angle between major axes of inlet and exhaust cams 112°

For D_m , D_m and lift, a tolerance of +0.025mm to -0.050mm must be observed.

All components in the operating train of the valve gear must be of standard production quality, dimensions and tolerances, especially in regard to their operating geometry.

Registration No.....

9.

Transmission

Clutch

Make and Part No. Fiat Original OR Equivalent Disc Free

Weight, complete with pressure plate, springs, cover and boltskg

Weight of driven plateskg

Gearbox

Ratios 1st 3.9 2nd 2.2 3rd 1.4 4th 1.0 and, if fitted, 5th .8

Final Drive

Ratio 3.9 or 3.7

Limited Slip Differential

Make and Type, if fitted

Overdrive, if fitted as standard

Overdrive ratio

Having requested registration of this model, I confirm to the best of my belief that the data and information listed herein and all components provided to determine such are truly representative of a normal production car.

Signed Ken Bolger + [Signature]

Representing

Data checked by:

Accepted as Registered by the RIAC

Signed

Signed

Name

Date

Member of the Technical Commission

Stamp of the

Registration No.....

11.

(A) Engine reciprocating

Bore 80.5 mm Over Bore 81.1 mm

Stroke 67.4 mm

Swept volume per cylinder (Vs) 343 STD 348 MAX

Nominal compression ratio 10.0.1 MAX

No. of cylinders 4

Block Part No. and Material CAST Iron

Head Part No. and Material CAST Alloy

Combustion chamber in head STD Non Felted as Manufactured

Volume (Vh) /

Finish (i.e., as cast, fettled/position, finished or machined) No. Mach

Head Gasket

Compressed thickness /

Aperture area 81 mm

Volume allowance (Vg) /

Combustion volume in piston and block (Vb) /

The actual compression will be calculated according to the formula

$$\text{Compression ratio} = \frac{V_s}{V_h + V_g + V_b} + 1$$

The valve so calculated must not exceed the nominal figure by more than 0.2

Inlet valve head diameter 37.5 mm

Exhaust valve head diameter 31.0 mm

Inlet valve max lift 10.3 mm with 0 mm clearance at Tappets

Exhaust valve max lift 10.3 mm with 0 mm clearance at Tappets

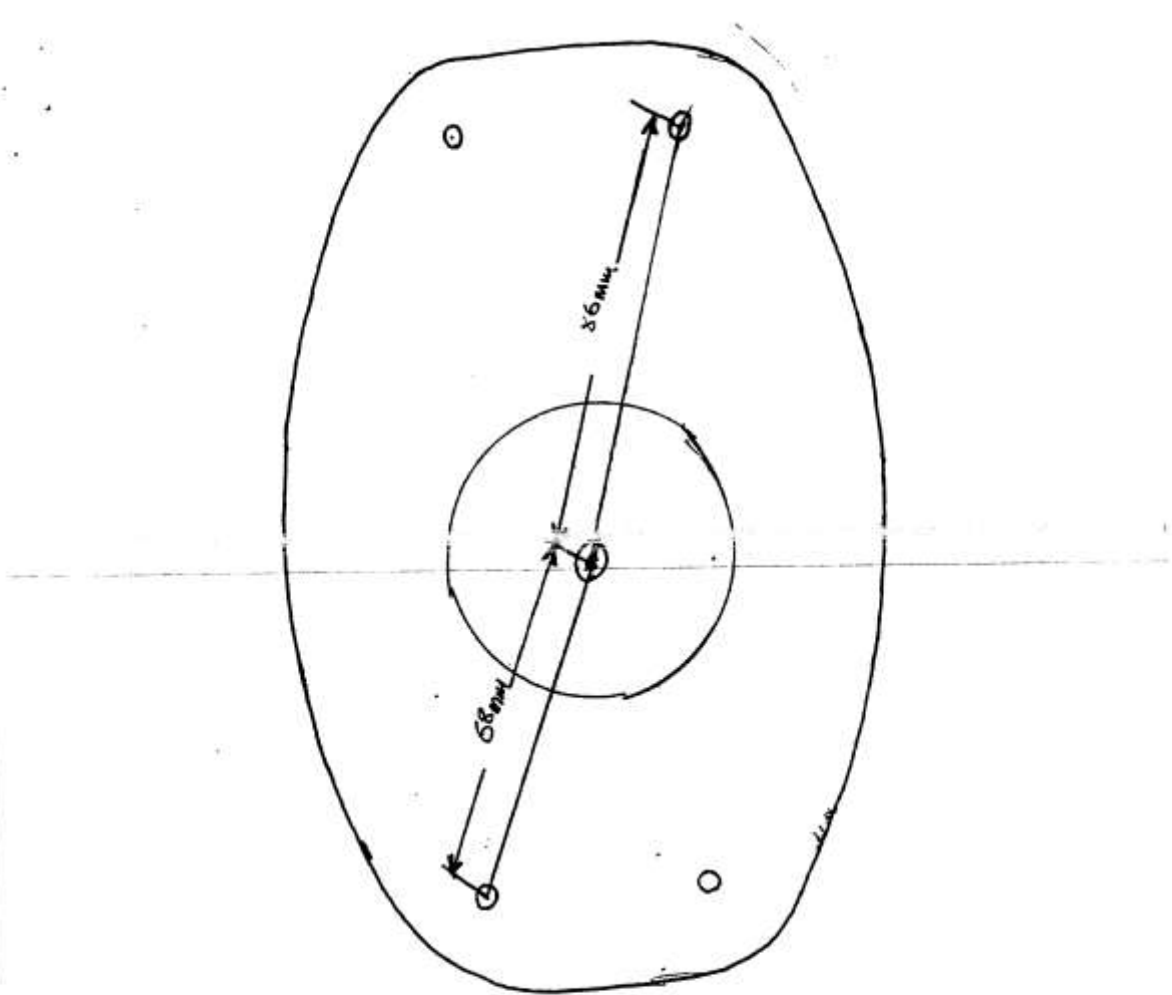
Valve springs Part No., No. of coils, outside diameter (mm) In 6 out 6

In 24.4 mm Out 31.2

Wire diameter (mm) In 2.7 mm Out 3.8 mm Uncompressed length (mm) In 43 mm Out 53 mm

Registration No.

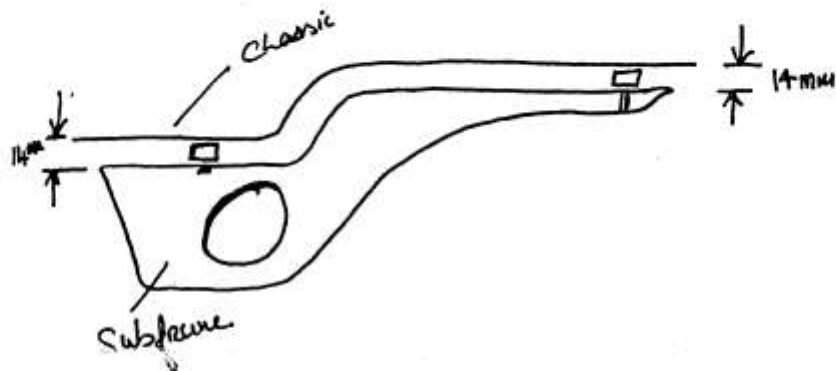
7.



Punto Front Shock Top Mount

Standard Bush may be replaced with Uniball arrangement provided the measurements and location are the same as the standard Bush and Mount.

Registration: _____



Rubber bush for rear subframe may be replaced with solid bush.

Min. thickness of bush is 14mm.

Engine mounts may be replaced with a updated mount.

Rear Spring seats may be replaced with an adjustable spring platform to take 2¼" - 2¾" springs provided springs are in original location.

FIAT PART:

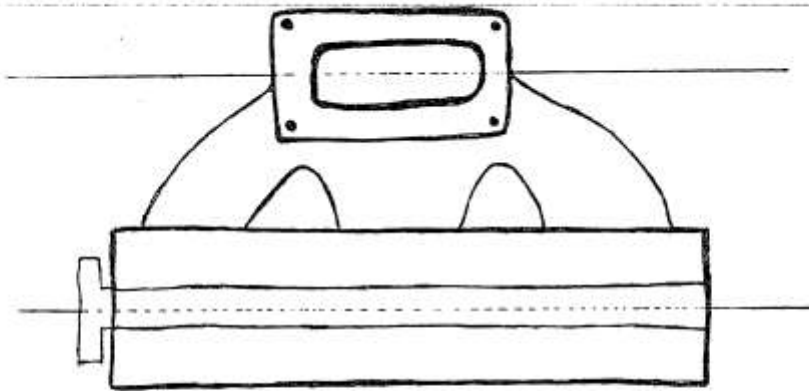
Brake Disc
Brake Caliper and Caliper Carrier
Anti Roll Bar

PART NUMBER:

46416712
D714774000 P3000
F7788435 R46439970

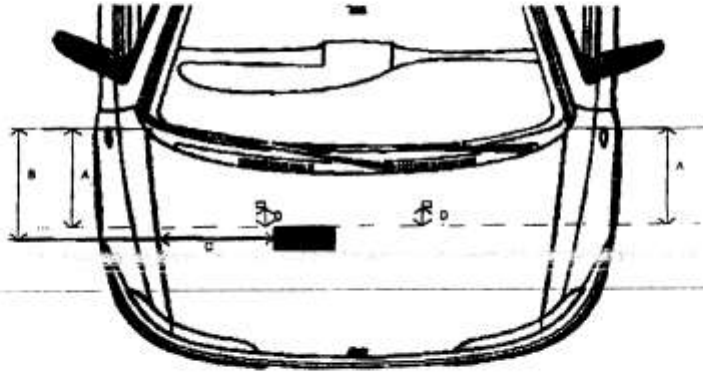
Registration: _____

**INLET MANIFOLD CARBURETTOR OPENING
MUST RUN PARALLEL WITH CAMSHAFT
SEE BELOW :-**



14.

Position of bonnet scoop on Fiat Punto



A = 36cm from corner of bonnet at hinge to rearward line of bonnet scoop

B = 45cm from corner of bonnet at hinge

C = 29cm from edge of bonnet to nearest point of bonnet scoop

D = 36mm from edge of washer jet hole to rearward edge of bonnet scoop

Bonnet scoop not to be modified

Maximum size of hole to be cut in bonnet = 30cm(+5mm*)(E) X

16cm(+5mm*)(F)



Maximum width of intake = 125mm(+5mm*) x 30mm(+5mm*)

* = tolerance

TECHNICAL COMMITTEE

27/6/2001