



The Federation of Motor Sports Clubs of India

2019

FMSCI-INRC-R

**Specific Technical Regulation
For
(Rallying)**

Member of



The INRC R Specific Regulations 2019 should be read with the following Articles of FMSCI Appendix J RALLYING.

Article.251 – Classification and Definitions

Article.252 – General Prescriptions for Production Cars (Group N), Touring Cars (Group A)

Article.253 – Safety Equipment (Groups N, A)

Article.254 – Specific Regulations for Production Cars (Group N)

All modifications permitted below, in INRC- Group-R, will be in addition to the modifications permitted in Article 254

It is permitted to use after market replacement parts as long as such parts are in conformity with the homologated parts N(including of Optional Variants in Group) in ALL ASPECTS except the brand name. Such parts should have no additional functions relative to the original parts.

Eligible vehicles- PETROL ENGINES ONLY

FMSCI Homologated/TDF Cars with FMSCI R2B / R2C Kits OR FMSCI Homologated/TDF Cars following the regulations listed below.

Normally aspirated engines – Up to 2000cc and Supercharged engines – Up to 1333cc

When the word **FREE** is used in the regulations below, it means that those parts need not be homologated as a variant. It also means that parts may be used without any attached conditions, so long as the **basic** function/principle, of the replaced part is the same. In some cases it is permitted to remove parts, and in others, replace.

Series production Indian vehicles sold on or after 01/01/2010 in India.

For Eg. Mitsubishi Cedia was sold from 2006 to 2011 so it is eligible for this class.

MINIMUM WEIGHT— NA VEHICLES- 1390cc to 1600cc is 1030kg

NA VEHICLES- 1600CC to 2000cc is 1080kg

SUPERCHARGED VEHICLES- 927cc to 1067 is 1030kg

SUPERCHARGED VEHICLES- 1067cc to 1333cc is 1080kg

The use of ballast / ballasts is permitted

1-ENGINE- For the sole purpose of being able to fit the gearbox, local external machining of the engine block is allowed. Mountings and their anchorages on the body shell may be modified provided that the angle and position of the engine within its compartment are not modified. The number of mountings may not be modified. The material of the elastic part is free. The number of mountings must be the same as the original

Re boring of 0.5mm maximum is allowed in relation to the original bore, even though this may lead to the capacity in class limit being exceeded. (Only because of using 0.5 mm oversize pistons)

1.1 SUPERCHARGING- TURBOCHARGER: FREE. But not the numbers

INTERCOOLER- FREE. The intercooler may be relocated, only in the engine bay or ahead of the radiator provided it is within the body work of the car.

Ducts and the pipes of the supercharging system are free, but their only function must be to channel air and to join various parts together.

1.2 Piston- FREE

1.3 Compression Ratio- Free

1.4 Connecting Rod – FREE- Must be made of steel

1.5 CYLINDER HEAD- Surfacing of the head gasket plane is permitted. Cylinder head Porting is allowed. Addition and removal of material is permitted
Cylinder head gasket is free.

1.6- VALVE TRAIN-(inlet and Exhaust) - Free, but not their numbers so long as the valve homologated diameter is maintained. The valve cotters and guides are not subject to any restriction. Valve springs and their numbers are free. Spacers may be added under the springs.

EXCEPT TITANIUM ANY OTHER MATERIAL MAY BE USED IN THE VALVE TRAIN

Rocker arms are free as well as their ratio

The timing is free. If the original timing includes an automatic play recovery system, this may be neutralised mechanically and play compensation discs may be used.

1.7 – Air filter and its plumbing up to the throttle body – Free, but must remain in the engine compartment.

1.8 -13. ECU and wiring system- FREE- The location of the ECU may be changed

Sensors and Actuators are free.

Modification of the Wiring loom, as well as custom built looms are permitted

1.9 Camshaft- FREE

Adjustable CAM pulley is permitted. The number and diameter of the bearings must be retained.” VVT” and “VALVETRONIC” etc. Type systems are authorised if original. They may be rendered inoperative.

Timing belt, belt tension rollers and locking of belt tensioners are free. The material and the profile of the timing belt is free so long as the number of teeth is identical to the original.

The oil inlets may be blocked. The plugs used must have no function other than that of blocking the ducts.

The valve play compensation discs between the valve buckets and stem are free

1.10 –CRANKSHAFT- Balancing is permitted. Forged (steel only) crankshafts are permitted
The make and material of the shell bearings and thrust bearings are free, but they must retain their original type and dimensions.

1.11– ENGINE FLYWHEEL- Material: steel

Minimum weight - Weight of the original homologated flywheel decreased by a maximum of 15% is permitted. Diameter of the starter ring gear and the number of teeth must be retained.

2- Lubrication

The oil radiator, oil/ water exchanger, lines, thermostat and pump strainers (including the number) are free without modifying the bodywork. The oil radiator cannot be situated outside the bodywork. The oil gauge is free but must be present at all times. It may be moved from its original location. Fitting of an oil filter is mandatory and the entire oil flow must pass through this filter or cartridge. An adaptor between the oil filter and the oil filter housing or between the oil filter support and the engine block is permitted. The adaptor may also have oil cooling and temperature and / or the pressure sensor connections. Fitment of baffles in the oil sump is permitted. The oil pump may be modified. The flow rate may be increased relative to the original. Fitting of oil pump chain tensioner is permitted. The drive system to the oil pump is free. The oil pressure regulation system may be modified. The oil pressure accumulator is free.

3 - INTAKE MANIFOLD- FREE**4- Throttle Body**

Numbers has to be same as Homologation / TDF. Diameter of the throttle Valve is free
Vehicle equipped with Motorized Throttle body may change to mechanical Throttle body vice versa.

5 – INJECTORS- May be modified or replaced in order to modify their delivery and relocated-provided the numbers remain the same as homologated.

6 - EXHAUST

For NA cars- Exhaust manifold- Free

For Turbocharged cars it is free downstream of the turbo charger. An adaptor plate may be used to adapt a different turbocharger to the exhaust manifold (maximum thickness of 25mm).

Fitment dose not entail the modification of other components. If the car is homologated with a single exhaust, the exit must be situated in the same position as that of the original exhaust. The cross section of the muffler must be 170% of the inlet pipe and contain sound deadening material. The length of the silencer must be more than 8 times the diameter of the inlet pipe. Additional mounting points for exhaust system are permitted. The catalytic converter is considered as a silencer and may be removed.

7 - COOLING SYSTEM- A larger radiator may be fitted, the mounting points may be changed to accommodate the same, so long as it remains in the same location as the original radiator. Radiator screens are free. Cooling fans are free.

The original **water pump** must be retained

8- GEAR BOX- FREE. The number of Mountings and their anchorages may be modified.
Gear Ratios Free, Synchronized or Non Synchronized (Dog Box) and Sequential gear boxes are permitted (Mechanical only). Linkages are free. An additional oil cooling device may be used

9- FINAL DRIVE- Free. Final Drive Ratios are Free.

Mechanical type Limited Slip Differential (LSD) is authorised, the interior of the differential housing may be modified.

10-- CLUTCH ASSEMBLY - Free. The master cylinder is free. The clutch disc is free

11- TRANSMISSION HALF SHAFTS- Free

12- FRONT AND REAR RUNNING GEAR- Strengthening of Sub frames by addition of material is permitted. A silent block may be replaced by any other type of joint, collaring is authorised. Upper plate for the mounting of shock absorber to chassis is free. Front and rear hubs may be modified. Wheel carriers and hubs are FREE, provided a maximum of 50mm over the homologated track width is not exceeded.

TRACK WIDTH--A maximum of 50mm more than the homologated track width is permitted.

WISHBONES- FREE (Suspension arms- front and rear) . Spring seats may be removed if they are not used. Silent block bushes may be replaced with uniball joints or plain bearings.

FRONT AND REAR SUB FRAMES- Modifications are allowed.

HELICOIL SPRINGS- Free along with their numbers. Parts for preventing the springs from moving in relation to their mounting points are authorised.

TORSION BARS- Free. These freedoms on torsion springs do not authorise one to disregard the ground clearance.

FRONT AND REAR ANTIROLL BARS- Free. The anti roll bars homologated by the manufacturer may be removed or disconnected.

SHOCK ABSORBERS- FREE. Provided the original system is maintained. E.g. If the original car had a McPherson type suspension damper system, the same has to be maintained . Whatever the type of shock absorbers used, plain bearings are mandatory and the use of ball bearings with linear guidance is prohibited.

Suspension travel limiters are allowed

FRONT AND REAR SUSPENSION TOP MOUNTS- Free design.

13- RUNNING GEAR. Under no circumstances may the rim exceed a width of 8". In all other respects wheels are free. The spare wheel(s) is (are) not mandatory and if carried it must be securely fixed.

14-BRAKING SYSTEM – Disc brakes along with the complete braking unit are free for the front and rear, even if the original vehicle did not have one. Brake rotors can only be made of steel. For each wheel one cooling duct with a maximum diameter of 10 cm is allowed or two cooling ducts of 7 cm diameter is allowed, these ducts may be made of composite material.

Only the following mounting points are authorised for fixation of lines to bring the cooling air to the brakes.

- Original apertures in the body work, e.g. for fog lamps, may be used to bring cooling air to the brakes; the connection of the air ducts to the original apertures in the bodywork is free, provided these apertures remain unchanged.
- If the car does not have any original apertures, two circular apertures of a maximum diameter of 10 cm, or equivalent section, may be made in the front bumper.
- A device for scraping away mud which collects on the brake discs and / or the wheels may be added.
- A device to protect the brakes from flying stones may be added.
- Servo brakes- free
- Brake linings- material and mounting method (riveted or bonded) are free provided the dimensions of the linings are retained.
- Pedal box- free or the original may be modified.
- Master cylinder/s- free.

- Front and rear pressure regulator / limiter- free.
- Handbrake – Free. It is permitted to modify / replace the hand brake provided it remains on the central tunnel. Dual rear handbrake (standard one and Hydraulic system) is permitted
- Front callipers- free. The calliper support is free.

15- STEERING - The driving pulleys and the position of the hydraulic power steering system are free.

- Steering rods are free
- Steering column-free
- Steering wheel- free, the original locking system of the anti-theft lock may be rendered inoperative.
- Steering fluid tank- free

16- FUEL TANK AND CIRCUIT- Capacity- minimum 40 litres and maximum 100 litres.

OE fuel tanks are permitted. It is permitted to have a fuel pump and fuel filter outside the tank. Fuel pumps are free. All fuel may be as supplied by the manufacturer. Fuel pressure, in any case must be below 5 bars. Fuel flow must be less than or equal to the homologated on the base model. It is permitted to install a radiator in the fuel circuit (maximum capacity- 1 litre). All fuel system parts must be protected in an adequate fashion.

17-ELECTRICAL- As per ART-254

18-BODYWORK- Internal and external

- **Strengthening of chassis is allowed by welding or addition of sheet metal so long as it follows the shape of the original part.**
- **Front and rear wheel arches – It is permitted to add wheel arches, to cover the wheels when the track width of 50mm extension is used. It is permitted to fold back or cut the fender to accommodate the wheel travel and reduce the plastic edges of the fenders and bumpers if they protrude into the wheel housing.**
- **Front and rear bumpers may be fabricated using fibreglass etc provided it follows the identical shape of the original, supplied by the manufacturer or where specific modification is permitted in these regulations. eg. ducting.**
- **Plastic and sound proofing parts may be removed from inside the wheel arches. These parts may be replaced with parts made from aluminium or composite material of the same shape**
- **The original dashboard must be retained. It is permitted to remove the glove compartment cover and the central console. Door pads may be replaced with fabricated ones.**
- **All parts of the AC/heating system may be removed**
- **The dashboard may be modified to accommodate the fitment of roll cage, navigational instruments etc.**
- **Floor carpets are free and may thus be removed**
- **All sound proofing materials may be removed**
- **Electrically operated door windows may be replaced with mechanically operated ones**
- **The capacity of the windshield water tank is free**
- **Additional safety fastenings for the windscreen and side windows are permitted**
- **The bumper mountings are free so long as the original shape of the bodywork and the bumper remain the same**

UNDER BODY PROTECTION- Is permitted

19-Bonnet Vents

Only two vents on each side of the bonnet are allowed.

Single vent or centre vent are not allowed.

Maximum area of 310 sq cm is allowed for each vent.

FMSCI