



**The Federation of Motor Sports Clubs of India**

**2021**

**FMSCI - SUV CHALLENGE CUP**

**Specific Technical Regulation  
For  
Rallying**

**Member of**



**Federation Internationale  
de l' Automobile**



**Federation Internationale de  
Motocyclisme**



**Indian Olympic  
Association**

**The SUV CHALLENGE CUP Specific Regulations 2021 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 **The SUV CHALLENGE CUP**, 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 (UNLESS SPECIFICALLY AUTHORISED IN THE REGULATIONS BELOW)

#### Eligible vehicles

**FMSCI Homologated/TDF- SUV – PRODUCED AND SOLD IN INDIA WITH ENGINES AS SUPPLIED BY THE MANUFACTURER. THE PERMITTED MODIFICATIONS TO THE ENGINES, ARE MENTIONED BELOW. NO MODIFICATIONS ARE PERMITTED TO THE ORIGINAL BODY AND CHASSIS OF THE HOMOLOGATED/TDF VEHICLE (UNLESS SPECIFICALLY AUTHORISED IN THE REGULATIONS BELOW)**

**MINIMUM WEIGHT**—AS MENTIONED IN THE HOMOLOGATION/TDF FORM.

The use of ballast / ballasts is permitted

#### **1-ENGINE-**

Re boring of 0.5mm maximum is allowed in relation to the original bore.

**1.1 SUPERCHARGING- TURBOCHARGER:** FREE. But not the numbers.  
Supercharging the Homologated NA car is permitted.

**INTERCOOLER-** FREE.

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. The intercooler and its components must be in the engine bay or ahead of the radiator provided it is within the bodywork of the car. Ducting for the intercooler is permitted through the bumper, front grill. Holes may be cut out to allow air to pass. Water spray system may be adopted.

**1.2 Piston-** FREE

**1.3Compression Ratio-** Free

**1.4Connecting Rod** – FREE- Must be made of steel

**1.5 CYLINDER HEAD ASSEMBLY – AS SUPPLIED BY THE MANUFACTURER. CAMSHAFT/ CAM SPROCKETS AND VALVE SPRINGS ARE FREE. MODIFICATIONS TO THE ORIGINAL HEAD ARE PERMITTED BY ADDITION OF MATERIAL OR BY REMOVAL OF MATERIAL. THE ORIGINAL HEAD SHOULD BE IDENTIFIABLE AS THE HEAD SUPPLIED BY THE MANUFACTURER.**

**1.6 – Air filter** and its plumbing – Free

**1.7 -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

**1.8 –CRANKSHAFT**- Balancing is permitted. Forged crankshafts are permitted

The make and material of the shell bearings and thrust bearings are free. All engine pulleys are free along with the drive belt

**1.9– ENGINE FLYWHEEL**- Free. Diameter of the starter ring and the number of teeth must be retained. Only steel or Aluminium alloy or a combination of both is permitted. No exotic materials are permitted. (Titanium, composites etc)

**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. Relocation of the fuel injectors is permitted**TURBO**– FREE BUT LIMITED TO ONLY ONE IN NUMBER.

**TURBO-RESTRICTOR**- All turbo's must be fitted an air restrictor(34mm for 2 valves per cylinder and 32mm for more than 2 valves per cylinder)and must be according to the drawing in FMSCI- ARTICLE 254 (254-4). Holes must be provided for the purpose of sealing.

- **RESTRICTOR DESIGN- AS PER IN ARTICLE 254, DRAWING NUMBER 254-4 OR FOLLOWING THE REGULATIONS BELOW**

The restrictor design is free provided it complies with the points mentioned below.

1. All the air fed through the turbo and to the engine must pass through the restrictor only. The Technical Delegate may insist on the competitor to reveal all the air flow to the engine.
2. Any air found to bypass the restrictor, by way of a leak, intentional or unintentional, shall be considered as non conformity.
3. The restrictor internal diameter shall be a maximum of ~~30mm~~ **(As per ART 3)** and this diameter has to be maintained for a minimum length of 3mm, unless otherwise stated in the regulations.
4. This diameter must be complied with, regardless of the temperature conditions.
5. The maximum distance, inclusive of the restrictor minimum length (3mm) shall be no more than 150mm from the outer most upstream extremity of the blades of the compressor wheel.
6. The fitment of the restrictor housing must be by way of bolts, on to the turbo housing. Threading the original housing for bolting the restrictor is permitted. The restrictor housing must be fitted, by using an intermediate 'O' ring, to ensure proper sealing. The technical delegate will verify the fitment, when the sealing is done. Removal of the restrictor housing may be necessary to satisfy the scrutineers of the method of sealing of air intake into the turbo. Additional sealing methods are permitted.  
Failure of the sealing methods used, which could allow additional air bypassing the restrictor, will lead to nonconformity.
7. Fitment of the restrictor housing by way of grub screw is not permitted.

8. Holes for sealing must be provided in at least two of the bolts of the restrictor housing, adjacent to one another, which would ensure that the housing can never be removed without cutting the seal and removal of bolts.
9. Sealing of the compressor housing to the body of the turbo will be done by sealing two adjacent bolts. One seal may be used to seal all the four bolts (2 Bolts for Restrictor to turbo housing and the 2 bolts for turbo housing to the main body).
10. The diameter of the holes provided for sealing in the bolts shall be no more than 3 mm
11. It will be duty of the competitor to ensure the sealing is done in a way which will not allow removal of the sealed components without breaking the seals.
12. The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing.

#### **4-Throttle Body-FREE (limited to one only)**

**5– INJECTORS-** May be modified or replaced in order to modify their delivery, but without modifying their working principle, nor their mountings. **Blow off valves and fuel pressure regulators are free**

#### **6 –EXHAUST system-FREE**

**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 proximity to** the original radiator. Radiator screens are free. **Cooling fans are free.**

The original **water pump** must be retained.

**The original Radiator Cowl may be modified to accommodate a larger radiator and the intercooler.**

**Openings may be made (FREE OF SIZE AND SHAPE) in the front bumper/front bodywork/front grill, provided these are meant for the sole purpose of cooling the radiator/intercooler or brakes. However the minimum weight of the car should be respected.**

**8-GEAR BOX- ONLY THE INTERNALS OF THE OE GEARBOX IS FREE.** The number of mountings and their anchorages may be modified. Gear ratios are free

Linkages are free. Internals of the Transfer gearbox is free as long as it remains within the OE housing. Machining of the internal part of the housing is permitted.

**9-FINAL DRIVE-** Final Drive Ratio - Free. The OE housing has to be retained. Strengthening of the differential housing is permitted

**10--CLUTCH ASSEMBLY- Free.** The master cylinder is free.

#### **11-PROPELLER SHAFTS- Free**

**12-FRONT AND REAR RUNNING GEAR-** All silent blocks are free. Front and rear springs are free, so long as the OE mounting points remain the same as OE.

**Ride height is FREE.**

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

**SHOCK ABSORBERS- FREE.** **Additional shock absorbers may be fitted and its mounting point may be changed.**

**Suspension travel limiters are allowed**

**13-RUNNING GEAR.** Rims are free. The spare wheel(s) is (are) not mandatory and if carried it must be securely fixed. **SPACERS FOR WHEEL RIMS ARE PERMITTED**

**14-BRAKING SYSTEM**– 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.

- 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/pads - material and mounting method (riveted or bonded) are free provided the dimensions of the linings are retained.
- Brake rotors are free as long as they are housed within the wheel rim.
- Pedal box- free or the original may be modified.
- Tandem Master cylinder- 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** - Hydraulic power systems are permitted even if it is not OE. 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**- Additional fuel tank is permitted.

The fuel tank capacity is free. The OE fuel tank may be replaced with any other OE fuel tank, provided the original seam welding remains untouched. The filler cap must be located on the body (external) and must have a breather/vent, and located where it is open to atmosphere. All fuel lines are free. **THE FUEL CIRCUIT IS FREE**

**17-ELECTRICAL**- As per ART-254

**18-BODYWORK-** Internal and external

**A HARD TOP COVERED, FIXED BODY, HOUSING THE DRIVER AND CO-DRIVER IS MANDATORY.**

**NO MODIFICATIONS TO THE ORIGINAL BODY SHELL OR CHASSIS IS PERMITTED UNLESS SPECIFICALLY PERMITTED.**

- The rear windshield glass may be replaced with fixed Perspex / acrylic sheets, so long as the transparency of the original glass is maintained and fixed with bolts or rivets.
- Front and rear wheel arches – FREE. **(So long as the wheel does not protrude beyond the wheel arch, when viewed from top, same method of measurement as in FIA- Group A).** It is permitted to fold back the metal edges or reduce the plastic edges of the fenders and bumpers if they protrude into the wheel housing. **TRACK WIDTH IS FREE.**
- The original dashboard may be retained.
- Door pads may be replaced with fabricated ones.
- All parts of the AC/heating system may be removed
- Floor carpets are free and may thus be removed
- All sound proofing materials may be removed
- 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
- **BUMPERS /GRILLS/HEADLIGHTS AND FENDER INNER LININGS MAY BE INTERCHANGED WITH DIFFERENT MODELS OF THE SAME CAR.**

- **COOLING DUCTS/VENTS ARE PERMITTED WITHIN THE BUMPER AND ON THE BONNET TO ENABLE COOLING/VENTING OF THE ENGINE COMPARTMENT AND BRAKES**

**UNDER BODY PROTECTION- Is permitted**

**19- Bonnet Vents / Scoops – FREE.**

These modifications are limited to the bonnet only. This will be in addition to the roof scoops for the driver and navigator. Modifications are permitted to the bonnet to accommodate the turbo and its plumbing.

**20-Additional modifications permitted.**

- It is permitted to replace the OE Bumpers with Fibre glass replicas, provided the shape is identical to the OE component.
- It is permitted to replace the OE door rear view mirrors with any aftermarket mirrors, so long as the Rear view visibility is equal to or more than the OE mirrors.

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