

Article 284 - Specific Regulations for Series Cross Country Cars (Group T1)

ARTICLE 1 : DEFINITION

Series production Cross Country cars.

ARTICLE 2 : HOMOLOGATION

At least 1000 identical units must have been produced in 12 consecutive months and homologated by the FIA in Series Cross Country Cars (Group T1).

ARTICLE 3 : NUMBER OF SEATS

Cars must have room to accommodate at least two persons.

ARTICLE 4 : MODIFICATIONS AND ADJUNCTIONS ALLOWED OR OBLIGATORY

All the modifications which are not allowed by the present regulations are expressly forbidden.

The only work which may be carried out on the car is that necessary for its normal servicing or for the replacement of parts worn through use or accident. The limits of the modifications and fittings allowed are specified hereinafter. Apart from these, any part worn through use or accident can only be replaced by an original part identical to the damaged one.

The cars must be strictly series production models identifiable by the homologation form data.

ARTICLE 5 : MINIMUM WEIGHT

Cars must have at least the weight appearing on the homologation form plus the weight of the safety equipments.

As far as rollcages or rollbars which cannot be removed from the car and which were manufactured in accordance with Article 283.8.2, 8.3 and 8.4 are concerned, the following weight will be taken as a basis for the safety cage:

- Rollcage according to drawings 253-3/4: 30 kg
- Rollcage according to drawings 253-5 to 17C: 35 kg
- Rollcage according to drawings 283-5: 45 kg

This is the weight of the car including the weight of the safety equipment and two spare wheels, but without persons, luggage, tools, jack, spare parts, portable survival, navigation or communication equipment, provisions, etc.

The decision to check a vehicle's weight is at the discretion of the FIA Technical Delegate.

The vehicle must be weighed as it is and a set weight of 50 kg must be added to the minimum weight authorised, in order to take into account the on-board equipment and any fuel present in the tank(s).

In these conditions, if the weight checked is below the minimum weight authorised, the FIA Technical Delegate must proceed to have the equipment that must not be taken into account removed and must then check the weight of the vehicle again.

All the liquid tanks (lubrication, cooling, braking, heating where applicable) must be at the normal level foreseen by the manufacturer, with the exception of the windscreen wiper or headlight wiper, brake cooling system, fuel and water injection tanks, which shall be empty. Additional headlights which do not appear on the homologation form must be removed before weighing.

ARTICLE 6 :

6.1 Engine

Supercharged petrol engines are prohibited (even if the basic vehicle is fitted with such an engine).

- The accelerator cable may be replaced or doubled by another one regardless of whether it comes from the manufacturer or not.

- *Ignition:* Make and type of plugs are free as are rev-limiters and high tension cables.

The electronic control unit and the ignition components in the electronic control unit are free, nevertheless the system must be entirely interchangeable with the original unit (i.e. the engine must work when the unit is replaced with the series unit).

Sensors and actuators on the input side must be standard, as must their function.

No sensor may be added, even for the purpose of data recording.

- Any data recording system is forbidden unless fitted on the homologated vehicle.

- Cooling circuit: The tank containing the coolant is free, as is the type of thermostat which may be removed. The original location and attachment points of the series production radiator must be conserved.

The addition of an electric fan is permitted provided that it is fitted on any series vehicle and is commonly on sale.

- *Carburettors:* The original system must be retained.

The components of the carburettor which control the quantity of petrol entering the combustion chamber may be modified, provided that they do not have any influence over the quantity of air admitted.

- *Injection:* The original system must be retained.

Components of the injection system situated downstream of the air-flow measuring device, and which control the quantity of petrol entering the combustion chamber, may be modified but not replaced, provided that they do not have any influence over the quantity of air admitted.

The interior of the electronic control unit for the injection is free.

Inputs to the electronic control unit (sensors, actuators, etc.), including their functions, must remain as standard.

Outputs from the electronic control unit must retain their original functions in accordance with the homologation form.

The injectors may be modified or replaced in order to modify their flow rate, but without modifying their operating principle and their mountings.

The air filter, its housing and the tube between this housing and the atmosphere are free, but the housing must remain in its original location, the air must not be taken from the cockpit, modifications must not affect the structure of the car, and the installation must be situated entirely in the engine compartment.

Restrictor (normally aspirated petrol engines):

All normally aspirated petrol engines must be equipped with an air restrictor.

For the sole purpose of attaching this obligatory restrictor, the tube between the filter and the butterfly valve may be modified. It must not be possible to detach the restrictor without using tools.

For engines with more than two valves per cylinder, the air intake system must be fitted with an air restrictor at least 3 mm long and with a maximum diameter of:

- 32 mm for vehicles up to 4000 cm³
- 35 mm for vehicles up to 6000 cm³
- 38 mm for vehicles over 6000 cm³.

For engines with two valves per cylinder and rotary valve engines, apply the following formulae:

$D_{2V} = [(D - 1) \times 1.066] + 1$, the result being rounded up to the nearest 0.1 mm.

$D_{rotary} = [(D - 1) \times 1.10] + 1$, the result being rounded up to the nearest 0.1 mm.

All the air necessary for feeding the engine must pass through this restrictor, which must be made of metal or of a metal alloy.

This restrictor must be situated between the air filtering system and the intake manifold.

It must be easy to inspect and to seal.

The tube between the air restrictor and the engine must be airtight so that if this restrictor becomes totally blocked, the engine is stifled.

It is possible to use 2 air restrictors provided that the diameter normally used for one restrictor is divided by 1.4142.

Restrictor (Supercharged diesel engine):

All supercharged diesel engines must be fitted with a restrictor fixed to the compressor housing.

All the air necessary for feeding the engine must pass through this restrictor, which must respect the following:

The maximum internal diameter of the restrictor is :

- 39 mm for engines up to 5000 cm³
- 43 mm for engines over 5000 cm³ and up to 6000 cm³
- 46 mm for engines over 6000 cm³

This diameter must be maintained for a minimum length of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).

This diameter must be complied with, regardless of the temperature conditions.

The external diameter of the restrictor at its narrowest point must be less than 51 mm, and must be maintained over a length of 5 mm to each side.

The mounting of the restrictor onto the turbocharger must be carried out in such a way that two screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor. Attachment by means of a needle screw is not authorised.

For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor onto the compressor housing. The heads of the screws must be pierced so that they can be sealed.

The restrictor must be made from a single material and may be pierced solely for the purpose of mounting and sealing, which must be carried out between the mounting screws, between the restrictor (or the restrictor/compressor housing attachment), the compressor housing (or the housing/flange attachment) and the turbine housing (or the housing/flange attachment) (see drawing 254-4).

A restrictor, firmly secured (not detachable) to the compressor housing, is allowed. In that case, the external diameter at the narrowest point is free.

It is possible to use 2 air restrictors provided that the diameter normally used for one restrictor is divided by 1.4142.

- *Timing:* The springs and play of the valves are free, but the camshafts (including the profile of the cams) must remain as in the series.

- *Feed pump:* The number and the operating principle of the feed pumps are free.

- The elastic material of the engine mountings is free, but not the number of the engine mountings.

- *Exhaust:* It will be possible:

- . either to remove the inside of the original silencer ;
- . or to modify the exhaust from the first silencer to the exit (drawing 254-3), the maximum dimensions of the duct being those of the pipe situated upstream of the first silencer. The exit should be situated either to the rear or to the side.

Should two inlets exist in the first silencer, the section of the modified duct must be less than or equal to the total of the two original sections.

These liberties must not entail any bodywork modifications and must respect the laws of the country in which the event is run with regard to noise levels.

If an exhaust silencer is added, it must be of the original type and must contain noise-absorbing material. Additional parts for the mounting of the exhaust are authorised.

- *Cruising speed controller:* This controller may be disconnected.

- *Soundproofing panels:* These panels may be removed.

- *Air conditioning:* It will be possible to remove the air conditioning system from a vehicle homologated with air conditioning.

6.2 Transmission

- Clutch: The disc is free, including the weight, with the exception of the number and diameter.

6.3 Suspension

- Springs:

Coil springs: The length is free, as is the number of coils, the wire diameter, the external diameter, the type of spring (progressive or not), the external diameter and the form of the spring seats.

Leaf springs: The length, width, thickness and vertical curvature are free. The fitting of shackle protection pads is strongly recommended. The number of leaves is free.

Torsion bars: The diameter is free.

- Shock absorbers: free, provided that their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.) and their attachment points remain unchanged.

The checking of the operating principle of the shock absorbers will be carried out as follows :

Once the springs and/or the torsion bars are removed, the vehicle must sink down to the bump stops in less than 5 minutes.

Nevertheless, if a replacement shock absorber is manufactured with an operating principle different from that of the series one, it requires the approval of the FIA.

The manufacturer or the competitor must provide the FIA with a dossier of acceptance containing:

- the retail price of the replacement shock absorbers;
- their new operating principles.

Provided that the costs of T1 vehicles are respected and that they do not stray too far from the original principle, these shock absorbers will be accepted.

If, in order to change the damping element of a McPherson suspension, or a suspension operating in an identical manner, it is necessary to replace the entire McPherson strut, the replacement parts must be mechanically equivalent to the original ones and have the same mounting points

For Mac-Pherson suspensions, the shape of the spring seats is free. Their material is free. The reinforcing of the suspension and its anchorage points by the addition of material is allowed. In the case of oil-pneumatic suspension, the spheres may be changed as regards their dimensions, shape and material, but not their number. A tap, adjustable from the outside of the car, may be fitted on the spheres.

The number of shock absorbers is limited to two per wheel. No other part, apart from those whose only function is to permit the fitting of an additional shock absorber, may be added to or removed from the suspension.

In the case of a vehicle which has only one shock absorber per wheel, the mounting of this shock absorber is free provided that no part other than those exclusively allowing the attachment of an additional shock absorber can be added to and/or removed from the suspension.

The fluid tanks for the shock absorbers may be attached in the wheel arches as well as to the chassis.

- Straps: Suspension travel straps are allowed at the front and rear.

- Rigid axle: If a rigid axle is used, the original parts may be strengthened in such a way that the original part can be still recognised.

It is possible to change the material of the suspension wishbones of a T1 vehicle for steel, since the weight of the new wishbone is greater than the weight of the original wishbone, all other things being equal.

6.4 Wheels and tyres

The wheels are free, respecting the homologated width (Article 801.b) which is considered as a maximum, and the homologated diameter with, in the latter case, a tolerance of ± 1 inch.

They must be covered by the wings, and the maximum track given on the homologation form must be kept.

Tyres are free provided that they can be mounted on these wheels, but studded tyres are forbidden.

The spare wheel may be brought inside the driving compartment, on condition that it is firmly secured and that it is not installed in the space reserved for the occupants.

Wheel fixations by bolts may be changed to fixations by pins and nuts provided that the number of attachment points and the diameter of the threaded parts as indicated on the drawing 254-1 are respected.

6.5 Braking system

Brake linings are free, as well as their mountings (riveted, bonded, etc.) provided that the contact surface of the brakes is not increased. Protection plates may be dismantled or bent. In the case of a car fitted with servo-assisted brakes or an anti-

locking device, this device may be disconnected. The same applies for anti-lock braking systems.

Brake lines may be changed for aviation type lines.

In the case of a vehicle which has a homologated antilock braking system, this system may be removed in its entirety from the competition vehicle.

6.6 Bodywork

6.6.1) Exterior:

Hubcaps must be removed.

Protective headlight covers may be fitted provided that their only function is to cover the glass, and that they have no influence on the car's aerodynamics.

The fitting of underbody protections is recommended but only authorised provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts: engine, radiator, suspension, gearbox, tank, transmission, exhaust.

A cow-catcher is recommended, in addition to the bumper. This protective grill must be independent of the structure of the car and must not reinforce it or contribute to its rigidification. This cow-catcher must be made up of tubes and its mountings are situated on the original bumpers. It must have no significant function other than that of protection and mounting of additional headlights. The side and rear windows situated behind the driver may be made from non-transparent material or replaced by transparent material with a minimum thickness of 3 mm. The profile of the bodywork must not be modified as a result of these freedoms. Their fixation is free, the mechanisms may be removed, several panes filling an opening may be replaced by just one panel, and the same applies for the windows of the side doors.

The glass panel of a sun roof may be replaced by a metal sheet with a minimum thickness of 1.5 mm, with additional attachments if necessary.

Any locking system may be used for the cap of the petrol tank.

If the original spare wheel support constitutes a hazard on the outside of the bodywork and if this wheel is brought inside the cockpit (see art. 6.4), it may be removed. The fitting of external rear-view mirrors is permitted, as is the changing of the windscreen wiper blades, front and rear.

Only electric winches, fitted without making any modifications to the structure of the vehicle other than a modification allowing the winch to be attached by means of bolts, are authorised.

6.6.2) Passenger space:

All accessories which have no effect on the vehicle's behaviour are allowed without restrictions, such as those concerning the aesthetics or interior comfort (lighting, heating, etc.), on the express condition that they do not influence, even on a secondary manner, the efficiency of the engine, steering, strength, transmission, braking, or road-holding. All the passenger seats, if occupied, must be fitted with a headrest.

The cockpit carpeting situated behind the front seats may be removed in the event of an FT3 or FT3 1999 tank being fitted in this area.

All the controls must be those provided by the manufacturer and they must retain their original function but they can be worked on to make them more accessible or more easily usable ; for example, the addition of an extension to the handbrake lever, of an additional flange to the brake pedal, etc.

The following is allowed in particular:

1) Additional measuring instruments, counters, etc. may be freely installed, provided that their fitting is not likely to create any danger.

2) The horn may be changed. Another one, possibly for the passenger's use, may be added.

3) The mechanism of the handbrake lever may be adapted in order to obtain instant unlocking (fly-off handbrake).

4) Seat-covers, including those creating bucket seats, may be added to the original seats, respecting art. 253.16. The rear seats may be removed on condition that a liquid-tight bulkhead separates the cockpit from the engine compartment and/or the fuel tank.

5) Additional compartments may be added to the glove compartment as well as additional pockets to the doors.

6) Steering wheel is free.

7) It is authorised to replace the electric windows by manually-operated windows.

6.6.3) Reinforcements:

Strengthening of the suspended part is allowed provided that the material used follows the original shape and is in contact with it. It is permitted to fit front reinforcement bars, on condition that they are removable and are bolted onto the attachment points of the suspension to the bodyshell or onto the suspension spring mounts. A hole may also be bored in the upper suspension trim to fit these rods.

These bars may also be fitted at the rear, on each side, at a maximum of two points. The distance between these two points must be inferior to 10 cm. The distance between one of these points and the suspension attachment is at most 10 cm.

6.6.4) When the spare wheel is originally placed in a closed housing and when this wheel is changed for a wider one from the running gear (see Article 6.4), situated in this space, it is possible to remove from the cover of the location of the wheel the surface induced by the diameter of the new wheel (drawing 254-2).

6.7 Electrical system

- *Battery*: The make, capacity, and battery cables are free. The tension and the site of the battery must be retained.

- *Generator*: May be replaced by a more powerful one. A dynamo may not be replaced by an alternator and vice-versa.

- *Lighting system*: Additional headlights including the corresponding relays are allowed, on condition that the total does not exceed eight (tail and parking lights not included) and provided that this is accepted by the laws of the country. They may not be housed within the bodywork.

Headlights and other exterior lights must always exist in pairs. The original headlights can be made inoperative and covered with adhesive tape. They can be replaced by other headlights, in compliance with this article. A reversing light may be fitted provided it can only be used when the gear lever is in the "reverse" position, and provided that the police regulations on this subject are observed.

- *Fuses* may be added to the electrical system.

- *Flashing lights* are forbidden.

6.8 Fuel circuit

Fuel lines must be changed for aviation-type fuel lines if an FT3 or FT3 1999 tank is used, the route of these lines being free. Should a series production tank be used, this change is optional. It is permitted to fit an FT3 or FT3 1999 tank and its accessories (in conformity with the various articles of the regulations) feeding the original tank via a connector on the original filler pipe. In this case, the air vent of the original tank must pass through the FT3 or FT3 1999 tank, all the original fuel lines must be retained, and the new lines and accessories equipping the FT3 or FT3 1999 tank must be in conformity with art. 283.3.2.

6.9 Jack

The jack is free and the jacking points may be changed for others which have no other function.