



The Federation of Motor Sports Clubs of India

2019

FMSCI 4 Wheeler Technical Regulations-RACING

Appendix J

Article 254

Specific Regulations for Production Cars (Group N)

Member of



Art. 1 DEFINITION

Large scale series production touring cars.

Art. 2 HOMOLOGATION

At least 2500 identical units must have been produced in 12 consecutive months and homologated by the FIA in Touring Cars (Group A).

The Supply Variants (VF) homologated in Touring Cars (Group A) are also valid in Production Cars (Group N).

All Production Variants (VP) are valid in Production Cars (Group N).

Option Variants (VO) of the Touring Cars (Group A) form are not valid in Production Cars (Group N), unless they refer to :

- Engine flywheel of the same diameter and the same weight as the original, if and only if this original flywheel is made up of two parts
- Fly-wheel for automatic gearboxes
- Fuel tank
- Automatic gearboxes
- Sun roof (includes the roof vents with a flap)
- Safety cage
- Seat supports and anchorages
 - Safety harness mounting points
- 2/4 doors versions.

Super Production Option Variants (SP) are not valid in Production Cars (Group N).

The use of tanks homologated in VO on the Touring Car (Group A) form must be carried out under the conditions laid down in Article 255-5.9.2 of the Touring Car (Group A) regulations, and Article 254- 6.9. Evolutions of the type (ET), kit variants (VK) homologated in Touring Cars (Group A) are not valid in production Cars (Group N).

Nevertheless, evolutions of the type homologated, as from 01.01.97 in Group A, are valid in Group N.

Art. 3 NUMBER OF SEATS

Cars must have at least four places, in accordance with the dimensions defined for Touring Cars (Group A).

Art. 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 replacements 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 and identifiable from the information specified in the articles on the Homologation/TDF form.

Art. 5 MINIMUM WEIGHT

5.1 Cars must have at least the weight appearing on the Homologation/TDF Form/ weight factor of the class

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 must be empty.

5.2

The weight defined in Article 5.1 must also be respected.

Art. 6

6.1 Engine

Engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic function.

Soundproofing material and trim fitted under the bonnet and not visible from the outside may be removed.

The accelerator cable may be replaced or doubled by another one regardless of whether it comes from the manufacturer or not. This replacement cable must be an emergency cable, i.e. it must be fitted in parallel with the series accelerator cable.

If the series vehicle is fitted with a motorised throttle valve, a throttle kit with a mechanical linkage, homologated in Group N, may be used.

The screws and bolts may be changed, provided that the replacements are made from iron-based alloy.

The systems for attaching the engine pipes (cooling / exchanger / intake / oil...) may be replaced.

Ignition

The make and type of the spark plugs, rev. limiter and high-tension leads are free.

The electronic control unit and the ignition components in the electronic control unit are free; nevertheless the system must be mechanically interchangeable with the original unit.

The original loom must be kept and cannot be modified.

If the engine loom passes via the wheel arch, it may be moved.

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. It is prohibited to add a switch in the original wiring loom between the electronic control unit and a sensor and/or actuator.

In the case of a model fitted with a multiplexed electric circuit, the use of a loom together with an electronic control unit homologated in Option Variant is permitted.

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

Only the data logging system fitted to the series car may be used. In no case may it be modified or record additional parameters.

Only the following sensors are authorised :

Water temperature, oil temperature, oil pressure and engine speed.

Each of these sensors may only be linked to one or several visual display units (with data recording capability) by means of a harness that is completely independent of any other harness.

Cooling system

The thermostat is free as is the control system and the temperature at which the fan cuts in.

Locking system for the radiator cap is free.

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.

Replacement air filter cartridges are accepted in the same way as the original ones.

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 electronic control unit for the injection is free.

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

It is prohibited to add a switch in the original wiring loom between the electronic control unit and a sensor and/or actuator.

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

In the case of a model fitted with a multiplexed electric circuit, the use of a loom together with an electronic control unit homologated in Option Variant is permitted.

It is necessary to be certain that the sensors used by a vehicle fitted with a multiplexed electric circuit can be retained with the homologated loom.

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

The injector rail may be replaced with another of free design but fitted with threaded connectors for connecting the lines and the fuel pressure regulator, provided that the mounting of the injectors is identical to the original.

Replacement air filter cartridges are accepted in the same way as the original ones.

Lubrication

The fitting of baffles in the oil sump is authorised.

Replacement oil filter cartridges are accepted in the same way as the original ones.

For turbocharged engines, it is possible to replace the turbocharger lubrication lines with lines in conformity with Article 253-3.2.

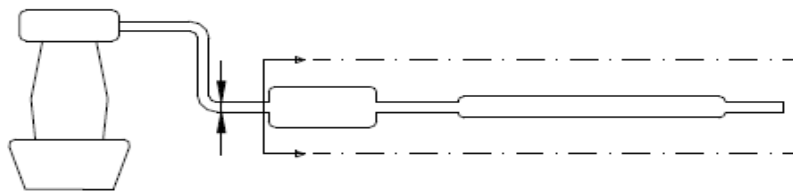
These lines may also be fitted with snap connectors.

The engine and gearbox mountings must be original or homologated.

If the mountings are original, the material of the elastic part is free.

Exhaust

It is possible either to remove the inside of the original silencer, or to modify the exhaust from the first silencer to the exit, the maximum external diameter of the duct being that of the pipe situated upstream of the first silencer (see Drawing 254-3 and Article 328p (Article 328o for vehicles homologated as from 01.01.2010) of the Group N homologation form).

**254-3**

If the original pipe upstream of the first silencer is a twin pipe, the maximum external diameter of the new duct must correspond to a section identical to that of the two pipes.

For cars fitted with a turbocharger, it is possible to modify the exhaust from the turbocharger outlet mounting plate, the maximum section of the duct being the diameter of the inlet into the first standard silencer. The interface between the turbocharger outlet mounting plate and the exhaust duct may be conical.

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.

Only one pipe may be present at the exit, unless the original part is used.

The exit must be situated in the same position as that of the series production exhaust system.

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

Additional parts for the mounting of the exhaust are authorised.

A muffler is a section of the exhaust system that must reduce the exhaust noise level of the vehicle.

The cross section of the muffler must be at least 170% of that of the inlet pipe and contain sound deadening material. The sound deadening material may take the form of a 45% perforated tube or synthetic packing.

The length of the muffler must be between 3 and 8 times the inlet diameter.

The muffler may be supplied as a series part welded to a pipe but the pipe is not considered as part of the muffler.

The catalytic converter is considered as a silencer and may be moved.

If it is fixed directly onto the manifold, the catalyst may be replaced with a conical part of the same length and with the same inlet and outlet diameters.

After this part, the exhaust is free with a tube diameter no greater than that of the outlet from the catalyst.

If the catalytic converter is an integral part of the exhaust manifold, it is possible to remove only the internal part of the catalytic converter.

A Lambda probe may be removed only if it forms part of the free part of the exhaust pipe.

Cylinder head gasket

The material is free, but not the thickness.

Cruising speed controller

This controller may be disconnected.

a) Normally aspirated engines

- 3 L maximum for two valves per cylinder
- 2.5 L maximum for more than two valves per cylinder

b) Supercharged engines

The nominal cylinder capacity is limited to 2500 cm³ maximum.

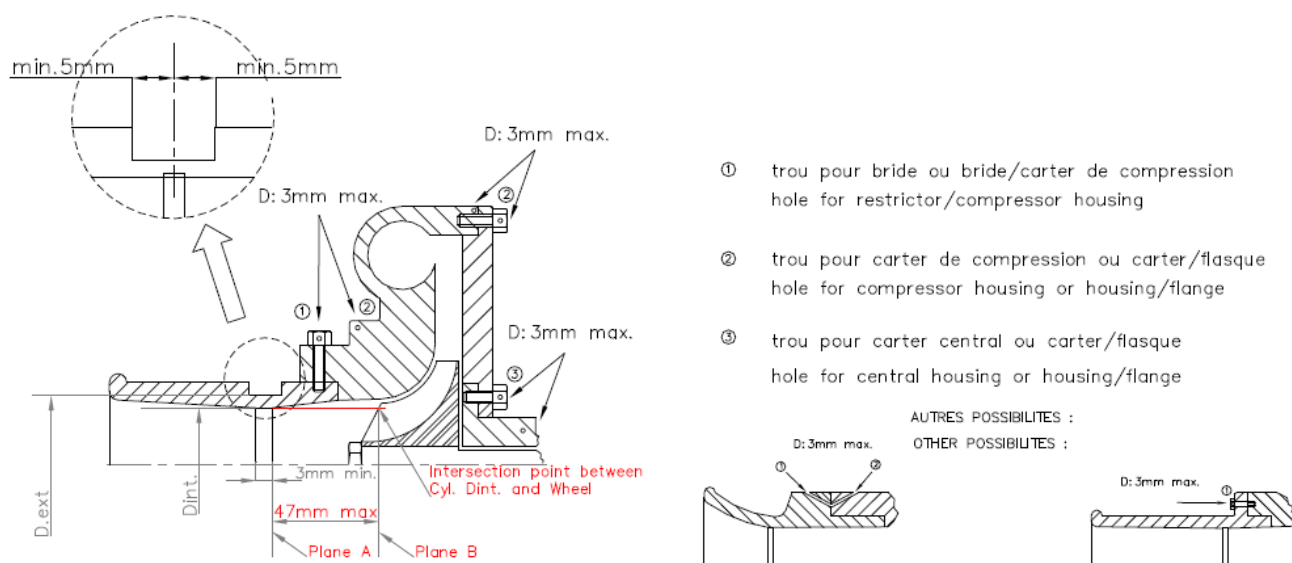
The supercharged system must comply with that of the homologated engine.

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

This restrictor, which is compulsory in rallies, is not prohibited in other competitions, should a competitor decide to use it.

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

- See Drawing 254-4.
- The maximum internal diameter of the restrictor is 33 mm.
- This diameter must be maintained for a minimum length of 3mm.
- This length is measured upstream of plane A.
- Plane A is perpendicular to the rotational axis of the turbocharger and is at a maximum of **47 mm upstream** of plane B, measured along the neutral axis of the intake duct.
- Plane B passes through the intersection between the mostupstream extremities of the wheel blades and a cylinder of 33mm diameter the centreline of which is the rotational axis of the turbocharger.



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 39 mm, and must be maintained over a distance 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).

In case of an engine with two parallel compressors, each compressor must be limited to a maximum intake diameter of 22.6 mm.

Diesel engine

For vehicles with Diesel engines, the restrictor must have a maximum internal diameter of 35 mm and a maximum external diameter of 41 mm, in the conditions set out above (this diameter may be revised at any moment without notice).

In case of an engine with two parallel compressors, each compressor must be limited by a restrictor with a maximum internal diameter of 22.7 mm and a maximum external diameter of 28.7 mm, in the conditions set out above.

6.2 Transmission

6.2.1 Clutch

The disc is free, including the weight, with the exception of the number.

The diameter of the clutch disc may be increased

6.2.2 Gearbox

The interior of the gearbox is free.

The number of teeth and ratios homologated in Group N must be retained.

The joints of the gearbox linkage are free.

The gear selection grid pattern homologated on the series model must be retained.

6.2.3 Differential

The use of a mechanical type limited slip differential is authorised, provided that it can be fitted in the series housing and is homologated in Option Variant (VO).

The ramp angles and the number of plates cannot be modified relative to the series differential or to the differential homologated in Option Variant. However, the thickness of the plates may be modified. In order to allow its fitting, the interior of the original differential's housing may be modified.

"Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system.

A viscous clutch is not considered to be a mechanical system.

If the homologated vehicle is fitted with a viscous clutch, it may be retained but it is not possible to add another differential.

If the original vehicle is fitted with a differential controlled by an electronic system, the electronic control unit is free, but must be entirely interchangeable with the original unit (i.e. the differential 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.

The electrical harness must not be modified.

6.2.4 Half-shafts

They must be original or Mechanically inter changeable with the original

Suspension

The modification of spring and shock absorber adjustments from the cockpit is prohibited.

The reinforcing of the structural parts of the suspension (with the exception of antiroll bars) and its anchorage points by the addition of material is allowed.

The suspension reinforcements must not create hollow sections and must not allow two separate parts to be joined together to form one.

Springs

The spring seats may be adjustable if the adjustable structural part is a part of the spring seat and is separated from the original suspension parts/bodywork (it may be removed).

Coil springs

The length is free, as are the number of coils, the wire diameter, the external diameter, the type of spring (progressive or not) and the shape of the spring seats.

The number of springs and spring seats is free provided the springs are mounted in series.

Leaf springs

The length, width, thickness and vertical curvature are free.

Torsion bars

The diameter is free.

These freedoms on the suspension springs do not authorise one to disregard Article 205 of the Homologation form (minimum height of the centre of the hubcap, wheel passage opening).

Spring-shock absorber assemblies

Spring-shock absorber assemblies are authorised even if the series vehicle is not so equipped, provided that the original spring is removed.

Shock absorbers

Free, provided that their number, their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.), and their attachment points remain unchanged.

The use of bearings with linear guidance is prohibited.

Only guidance by plain bearings is authorised.

The checking of the operating principle of the shock absorbers must 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.

The damper tanks may be attached onto the unmodified shell of the cars.

If the shock absorbers have separate fluid reserves located in the cockpit, or in the boot if this is not separated from the cockpit, these must be strongly fixed and must have a protection.

A silent block may be replaced by a "Uniball" joint, but only on condition that the shock absorber has no guiding function. For rallies taking place on the African continent only, a silent block may be replaced by a "Uniball" joint even if the shock absorber has a guiding function.

Gas filled dampers, regarding their working principle, are considered as hydraulic dampers.

McPherson type suspension damper :

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 telescopic part and/or the shock strut (damper and system of connection to the hub carrier), the replacement parts must be mechanically equivalent to the original ones and have the same mounting points.

For McPherson suspensions, the shape of the spring seats is free.

Their material is free.

In the case of oil-pneumatic suspension, the spheres may be changed as regards their dimension, shape and material, but not their number.

A tap, adjustable from outside of the car, may be fitted on the spheres.

Silent blocks

A silent block may be replaced with a new silent block, of which the shape is free

6.4 Wheels and tyres

6.4.1 Wheels

The wheels are free, respecting the homologated maximum diameter (Article 801.a), and maximum width (Article 801.b).

The use of wheels with lesser dimensions is permitted.

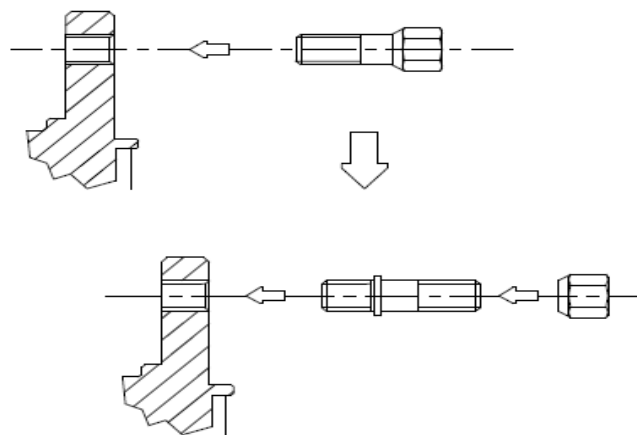
Wheels made from forged magnesium are forbidden (including standard wheels).

They must be covered by the fenders (same checking system as in Group A, Article 255-5.4), and the maximum track given on the Homologation form must be respected.

Wheels 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 Drawing 254-1 are respected.

The wheel nuts may be changed, provided that their material remains iron-based alloy.

Air extractors added on the wheels are forbidden.



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6.4.2 Tyres

Tyres are free provided that they can be mounted on those wheels.

The use of any device for maintaining the performance of the tyre with an internal pressure equal to or less than the atmospheric pressure is forbidden.

The interior of the tyre (space between the rim and internal part of the tyre) must be filled only with air.

6.5 Braking system

With the exception of the modifications authorised by this article, the braking system must be original or homologated in Option Variant (VO).

The electronic control unit of the braking system is free, but must be entirely interchangeable with the original unit (i.e. the braking system 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.

The electrical harness must not be modified.

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 removed or bent.

In the case of a car fitted with servo-assisted brakes, this device may be disconnected or replaced with the kit homologated in Option Variant (VO).

The same applies for anti-lock braking systems.

If the anti-lock braking system (ABS) is disconnected or removed, the use of a mechanical rear braking distributor homologated by the manufacturer in VO is authorised.

It is permitted to add a spring in the bore of the calipers and to replace the seals and the dust covers of the callipers.

Brake lines may be changed for aviation type lines.

A device for scraping away the mud which collects on the brake discs and / or the wheels may be added.

6.5.1 Handbrake

The mechanical handbrake may be replaced with a hydraulic system homologated in Group N, but in this case a diagonal brake circuit (X shape) or the original system is mandatory.

It is permitted to modify the position of the hydraulic handbrake system, provided that it remains in the location homologated in Group N (on the central tunnel ...).

6.6 Steering

The lines linking the power steering pump to the rack may be replaced with lines conforming to Article 253-3.2.

6.7 Bodywork

6.7.1 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 authorised

Additional mountings are authorised (in addition to the original mountings which must be retained) for attaching bodywork parts (bumper, fender extensions etc.).

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

The changing of the front and rear windscreen wiper blades is authorised.

Plastic sound-proofing parts may be removed from the wheel openings. These plastic elements may be changed for aluminium or plastic elements of the same shape.

Plastic protection parts fitted under the body (licked by the air flow) may be removed.

6.7.2 Interior

The material of the driver's and co-driver's seats is free but the weight of the bare shell (seat without foam or supports) must be more than 4 kg.

The front seats may be moved backwards but not beyond the vertical plane defined by the front edge of the original rear seat.

The limit relating to the front seat is formed by the height of the seat without the headrest, and if the headrest is incorporated into the seat, by the rearmost point of the driver's shoulders.

The rear seats may be removed.

The rear safety belts may be removed.

6.7.2.1 Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.

In the case of twin-volume cars it is possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.

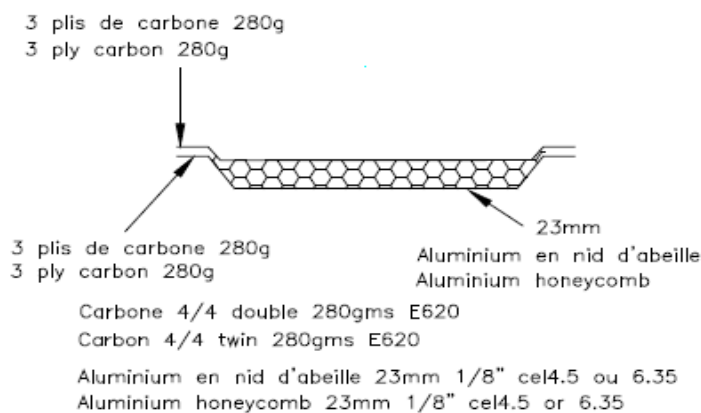
6.7.2.2 Dashboard

The dashboard must remain original.

6.7.2.3 Doors - Side trim

It is permitted to remove the soundproofing material from the doors, provided that this does not modify the shape of the doors.

a. It is permitted to remove the trim from the doors together with their side protection bars in order to install a side protection panel which is made from non-inflammable composite materials. The minimum configuration of this panel must comply with that shown on Drawing 255-14.



255-14

b. If the original structure of the doors has not been modified (removal, even partially, of the tubes or reinforcements), the door panels may be made from metal sheeting at least 0.5 mm thick, from carbon fibre at least 1 mm thick or from another solid and non-combustible material at least 2 mm thick.

The rules mentioned above also apply to the trim situated beneath the rear side windows of two-door cars.

The minimum height of the door's side protection panel must extend from the base of the door to the maximum height of the door strut.

It is permitted to replace electric winders with manual ones.

It is permitted to replace manual winders with electric ones.

6.7.2.4 Floor

Carpets are free and may thus be removed.

6.7.2.5 Other sound-proofing materials and trim

Other soundproofing materials and trim, except for those mentioned under Articles 6.7.2.3 (Doors) and 6.7.2.2 (Dashboard), may be removed.

6.7.2.6 Heating system

6.7.2.7 The removable rear shelf in twin-volume cars may be removed.

6.7.3 Additional accessories

All those which have no influence on the car's behaviour, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.), are allowed without restriction. In no case may these accessories increase the engine power or influence the steering, transmission, brakes, or road holding, even in an indirect fashion.

All controls must retain the role laid down for them by the manufacturer.

They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.

The following is allowed :

1. Measuring instruments such as speedometers etc. may be installed or replaced, and possibly have different functions. Such installations must not involve any risk. However, the speedometer may not be removed if the supplementary regulations of the competition prevent this.

The Radio / Hi-fi equipment may be removed.

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3. The handbrake locking mechanism may be removed in order to obtain instant unlocking (fly-off handbrake).

4. The steering wheel is free.

The locking system of the anti-theft steering lock may be rendered inoperative.

The quick release mechanism must consist of a flange concentric to the steering wheel axis, coloured yellow through anodisation or any other durable yellow coating, and installed on the steering column behind the steering wheel.

The release must be operated by pulling the flange along the steering wheel axis.

5. Additional compartments may be added to the glove compartment and additional pockets in the doors, provided that they use the original panels.

6. Insulating material may be added to protect the passengers or parts from fire or heating.

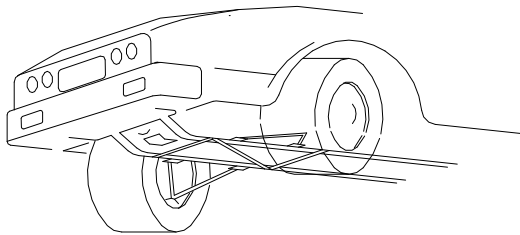
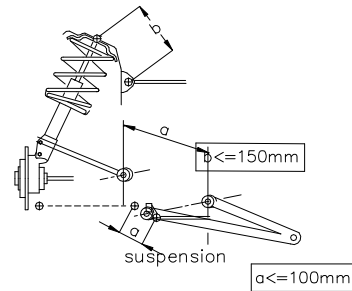
6.7.4 Reinforcements

Reinforcement bars may be fitted on the suspension mounting points to the bodyshell or chassis of the same axle, on each side of the car's longitudinal axis, on condition that they are removable and are attached by means of bolts.

The distance between a suspension attachment point and an anchorage point of the bar cannot be more than 100 mm, unless the bar is a transverse strut homologated with the safety cage, or unless it is an upper bar attached to a McPherson suspension or similar.

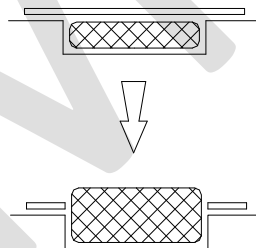
In the latter case, the maximum distance between an anchorage point of the bar and the upper articulation point must be 150 mm (Drawings 255-2 and 255-4).

Apart from these points, this bar must not be mounted on the bodyshell or the mechanical parts.

**255-2****255-4**

If the series vehicle is equipped with a reinforcement bar, it is permitted to remove or replace the series bar with a bar conforming to the prescriptions mentioned above. Strengthening of the suspended part is allowed provided that the material used follows the original shape and is in contact with it.

6.7.5 When the spare wheel is originally set in a closed accommodation, and when this wheel is changed for a thicker one (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).

**254-2**

6.6 Electrical system

Battery

The make, capacity, and battery cables are free.

The tension and the site of the battery must be retained.

A power take-off connected to the battery is permitted in the passenger space.

The battery must be of the dry type if it is not in the engine compartment.

Generator

May be replaced by a more powerful one.

A dynamo may not be replaced by an alternator and vice-versa.

Fuses may be added to the electrical system.

6.9 Fuel circuit

Providing the original tank is equipped with an electric pump and an interior filter, it is possible when using an FT3-1999, FT3.5-1999 or FT5-1999 tank or another tank homologated by the manufacturer on the car's Homologation form to place a filter and a pump with identical characteristics to the homologated one outside.

An FT3-1999, FT3.5-1999 or FT5-1999 type tank may be used to supplement the series tank (the conditions below must be respected).

These parts must be protected in adequate fashion.

The fitting of a second fuel pump is authorised, but this must be only a spare fuel pump, i.e. it cannot operate in addition to the authorised pump. It must be connectable only when the car is immobile and by means of a purely mechanical device situated beside the pumps.

The filler holes may not be located in the window panels.

The total capacity of the tanks must not exceed that indicated in Article 401d of the Group N Homologation form.

Total capacity of the tanks for rallies:

It may exceed that indicated in Article 401d of the Group N Homologation form if the car is fitted with FT3-1999, FT3.5-1999 or FT5-1999 tanks.

It must not exceed the following limits, in relation to the engine capacity :

Up to	700 cm ³	60 L
Over	700 cm ³ and up to 1000 cm ³	70 L
Over	1000 cm ³ and up to 1400 cm ³	80 L
Over	1400 cm ³	95 L

For twin-volume cars homologated from 01.01.98 with a fuel tank installed in the luggage compartment, a fireproof and liquid-proof case must surround the fuel tank and its filler holes.

For three-volume cars homologated from 01.01.98, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.

Nevertheless, it is recommended that this liquid-proof bulkhead be replaced by a liquid-proof case as for twin-volume cars.

6.10 Jack and wheel gun

The jacking points may be strengthened, moved and increased in number. These modifications are limited exclusively to the jacking points.