



The Federation of Motor Sports Clubs of India

**2012
FMSCI 4 Wheeler Technical Regulations
(Rally)**

Member of



**Federation Internationale
de l' Automobile**



**Federation Internationale
de Motocyclisme**



Indian Olympic Association

FMSCI, A25, Krishna Towers, 50 Sardar Patel Road, Chennai 600113
Ph : +91 44 22352673 / 22355304 / 64506665 Fax : 22351684
email : fmsci@vsnl.com Website : www.fmsci.in

Article 251 Classification and Definitions

ARTICLE 1 : CLASSIFICATION

1.1 Categories and groups

The cars used in competition shall be divided up into the following categories and groups:

Category I:

- Group N: Production Cars
- Group R : Touring Cars or Large Scale Series Production Cars
- Group A: Touring Cars
- Group B: Grand Touring Cars
- Group SP: Super Production Cars
- Group T2: Series Cross-Country Cars

Category II:

- Group T1: Modified Cross-Country Cars
- Group T3: Improved Cross-Country Cars
- Group GT3 : Cup Grand Touring Cars
- Group GT2: Grand Touring Cars
- Group GT1: Grand Touring Cars
- Group CN: Production Sports Cars
- Group D: International Formula Racing Cars
- Group E: Free Formula Racing Cars

Category III:

- Group F: Racing Trucks
- Group T4: Cross-Country Trucks

1.2 Cubic capacity classes

The cars will be divided up into the following classes according to their cubic capacity:

1. up to 500 cm³
2. over 500 cm³ and up to 600 cm³
3. over 600 and up to 700 cm³
4. over 700 cm³ and up to 850 cm³
5. over 850 cm³ and up to 1000 cm³
6. over 1000 cm³ and up to 1150 cm³
7. over 1150 cm³ and up to 1400 cm³
8. over 1400 cm³ and up to 1600 cm³
9. over 1600 cm³ and up to 2000 cm³
10. over 2000 cm³ and up to 2500 cm³
11. over 2500 and up to 3000 cm³
12. over 3000 cm³ and up to 3500 cm³
13. over 3500 cm³ and up to 4000 cm³
14. over 4000 cm³ and up to 4500 cm³
15. over 4500 cm³ and up to 5000 cm³

16. over 5000 cm³ and up to 5500 cm³
17. over 5500 cm³ and up to 6000 cm³
18. over 6000 cm³

Unless otherwise specified in special provisions imposed by the FIA for a certain category of events, the organisers are not bound to include all the above-mentioned classes in the Supplementary Regulations and, furthermore, they are free to group two or more consecutive classes, according to the particular circumstances of their events.

No Class can be subdivided.

ARTICLE 2 : DEFINITIONS

2.1 General conditions

2.1.1) Series Production cars (Category I):

Cars of which the production of a certain number of identical examples (see definition of this word hereinafter) within a certain period of time has been verified at the request of the manufacturer, and which are destined for normal sale to the public (see this expression).

Cars must be sold in accordance with the homologation form.

2.1.2) Competition cars (Category II):

Cars built as single examples and destined solely for competition.

2.1.3) Trucks (Category III)

2.1.4) Identical cars:

Cars belonging to the same production series and which have the same bodywork (outside and inside), same mechanical components and same chassis (even though this chassis may be an integral part of the bodywork in case of a monocoque construction).

2.1.5) Model of car:

Car belonging to a production-series distinguishable by a specific conception and external general lines of the bodywork and by an identical mechanical construction of the engine and the transmission to the wheels.

2.1.6) Normal sale:

Means the distribution of cars to individual purchasers through the normal commercial channels of the manufacturer.

2.1.7) Homologation:

Is the official certification made by the FIA that a minimum number of cars of a specific model has been made on series-production terms to justify classification in Production Cars (Group N), Touring Cars (Group A), Grand Touring Cars (Group B), Series CrossCountry Cars (Group T2) of these regulations. Application for homologation shall be submitted to the FIA by the ASN of the country in which the vehicle is manufactured and shall entail the drawing up of a homologation form (see below). It must be established in accordance with the special regulations called "Regulations for homologation", laid down by the FIA. Homologation of a series-produced car will become null and void 7 years after the date on which the series-production of the said model has been stopped (series-production under 10 % of the minimum production of the group considered). The homologation of a model can only be valid in one group, Production Cars (Group N) / Touring Cars (Group A) / Series Cross-Country Cars (Group T2) or Grand Touring Cars (Group B). If a model

already homologated in Grand Touring Cars (Group B) passes into Production Cars (Group N)/Touring Cars (Group A)/Series Cross-Country Cars (Group T2), the first homologation is cancelled.

2.1.8) Homologation forms:

All cars recognised by the FIA will be the subject of a descriptive form called homologation form on which shall be entered all data enabling identification of the said model.

This homologation form defines the series as indicated by the manufacturer.

According to the group in which the competitors race, the modification limits allowed in international competition for the series are stated in Appendix J.

The presentation of the forms at scrutineering and/or at the start may be required by the organisers who will be entitled to refuse the participation of the entrant in the event in case of non-presentation.

The form presented must imperatively be printed:

- Either on FIA stamped/watermarked paper
- Or on stamped/watermarked paper from an ASN only if the manufacturer is of the same nationality as the ASN concerned.

Likewise, if a Group A car fitted with a kit variant (see below) concerning the chassis/shell is used, the original certificate supplied at the time of mounting by a centre approved by the manufacturer must be presented.

Should the date for the coming into force of a homologation form fall during an event, this form will be valid for that event throughout the duration of the said event.

With regard to Production Cars (Group N), apart from the specific form for this group, the Touring Cars (Group A) form must also be submitted.

In case of any doubt remaining after the checking of a model of car against its homologation form, the scrutineers should refer either to the maintenance booklet published for the use of the make's distributors or to the general catalogue in which are listed all spare parts.

In case of lack of sufficient accurate documentation, scrutineers may carry out direct scrutineering by comparison with an identical part available from a concessionaire.

It will be up to the competitor to obtain the homologation form concerning his car from his ASN.

Description:

A form breaks down in the following way:

1. A basic form giving a description of the basic model.
2. At a later stage, a certain number of additional sheets describing "homologation extensions", which can be "variants", or "errata" or "evolutions".
 - a - Variants (VF, VP, VO, VK)

These are either supply variants (VF) (two suppliers providing the same part for the manufacturer and the client does not have the possibility of choice), or production variants (VP) (supplied on request and available from dealers), or option variants (VO) (supplied on specific request), or "kits" (VK) (supplied on specific request).
 - b - Erratum (ER)

Replaces and cancels an incorrect piece of information previously supplied by the constructor on a form.

c - Evolution (ET, ES)

Characterises modifications made on a permanent basis to the basic model (complete cessation of the production of the car in its original form in the case of the evolution of the type (ET), or sporting evolution (ES) intended to render a model more competitive.

Use:

1) Variants (VF, VP, VO, VK)

The competitor may use any variant or any article of a variant as he wishes, only on condition that all the technical data of the vehicle, so designed, conforms to that described on the homologation form applicable to the car, or expressly allowed by Appendix J.

The combination of several VOs on the following parts is prohibited: Turbocharger, brakes and gearbox. For example, the fitting of a brake caliper as defined on a variant form is only possible if the dimensions of the brake linings, etc. obtained in this way, are indicated on a form applicable to the car in question. (For Production Cars (Group N), see also Art. 254-2).

As far as kit-variants (VK) are concerned, they may not be used only under the conditions indicated by the manufacturer on the homologation form.

This concerns in particular those groups of parts which must be considered as a whole by the competitor, and the specifications which are to be respected, if applicable.

For FIA championships, the FIA technical passport of WRC, S2000-Rally, S2000 and Super 1600 cars must be presented at scrutineering for the event.

In addition, the markings linked to the technical passport must not be removed under any circumstances.

2) Evolution of the type (ET)

(For Production Cars - Group N, see also Art. 254-2)

The car must comply with a given stage of evolution (independent of the date when it left the factory), and thus an evolution must be wholly applied or not at all.

Besides, from the moment a competitor has chosen a particular evolution, all the previous evolutions should be applied, except where they are incompatible.

For example, if two brake evolutions happen one after another, only that corresponding to the date of the stage of evolution of the car will be used.

3) Sporting evolution (ES)

Since the ES form refers to a previous extension, or to the basic form, the car must correspond to the stage of evolution corresponding to this reference ; moreover, the Sporting Evolution must be applied in full.

2.1.9) Mechanical components:

All those necessary for the propulsion, suspension, steering and braking as well as all accessories whether moving or not which are necessary for their normal working.

2.1.10) Original or series parts:

A part which has undergone all the stages of production foreseen and carried out by the manufacturer of the vehicle concerned, and originally fitted on the vehicle.

2.1.11) Composite:

Material formed from several distinct components, the association of which provides the whole with properties which none of the components taken separately possesses.

2.1.12) Materials - Definitions:

X Based Alloy (e.g. Ni based alloy) - X must be the most abundant element in the alloy on a % w/w basis. The minimum possible weight percent of the element X must always be greater than the maximum possible of each of the other individual elements present in the alloy.

2.2 Dimensions

Perimeter of the car seen from above:

The car as presented on the starting grid for the event in question.

2.3 Engine

2.3.1) Cylinder capacity:

Volume V generated in cylinder (or cylinders) by the upward or downward movement of the piston(s).

$$V = 0.7854 \times b^2 \times s \times n$$

where: b = bore

s = stroke

n = number of cylinders

2.3.2) Supercharging:

Increasing the weight of the charge of the fuel-air mixture in the combustion chamber (over the weight induced by normal atmospheric pressure, ram effect and dynamic effects in the intake and/or exhaust systems) by any means whatsoever.

The injection of fuel under pressure is not considered to be supercharging (see Article 252-3.1 of the General Prescriptions).

2.3.3) Cylinder block:

The crankcase and the cylinders.

2.3.4) Intake manifold:

In the case of a carburettor induction system :

- Part collecting the air-fuel mixture from the carburettor(s) and extending to the cylinder head gasket face.
- In the case of a single-valve injection induction system :
- Part extending from the body of the butterfly valve inclusive to the cylinder head gasket face, collecting and regulating the air or the air-fuel mixture flow.
- In the case of a multi-valve injection induction system :
- Part extending from the butterfly valves inclusive to the cylinder head gasket face, collecting and regulating the air or the air-fuel mixture flow.

In the case of a diesel engine :

- Unit mounted to the cylinder head, which distributes the air from one inlet or a sole duct to the cylinder head ports.

2.3.5) Exhaust manifold:

Part collecting together at any time the gases from at least two cylinders from the cylinder head and extending to the first gasket separating it from the rest of the exhaust system.

2.3.6) For cars with a turbocharger, the exhaust begins after the turbocharger.

2.3.7) Sump:

The elements bolted below and to the cylinder block which contain and control the lubricating oil of the engine. These elements must not have any mounting part of the crankshaft.

2.3.8) Engine compartment:

Volume defined by the structural envelope closest to the engine.

2.3.9) Lubrication by dry sump:

Any system using a pump to transfer oil from one chamber or compartment to another, to the exclusion of the pump used for the normal lubrication of the engine parts.

2.3.10) Static gasket for mechanical parts

The only function of a gasket is to ensure the sealing of at least two parts, fixed in relation to each other.

The distance between the faces of the parts separated by the gasket must be less than or equal to 5 mm.

2.3.11) Exchanger:

Mechanical part allowing the exchange of calories between two fluids.

For specific exchangers, the first-named fluid is the fluid to be cooled and the second-named fluid is the fluid that allows this cooling.

e.g. Oil/Water Exchanger (the oil is cooled by the water).

2.3.12) Radiator:

This is a specific exchanger allowing liquid to be cooled by air. Liquid / Air Exchanger.

2.3.13) Intercooler or Supercharging Exchanger:

This is an exchanger, situated between the compressor and the engine, allowing the compressed air to be cooled by a fluid. Air / Fluid Exchanger.

2.4 Running gear

The running gear includes all parts totally or partially unsuspended.

2.4.1) Wheel:

Flange and rim.

By complete wheel is meant flange, rim and tyre.

2.4.2) Friction surface of the brakes:

Surface swept by the linings on the drum, or the pads on both sides of the disc when the wheel achieves a complete revolution.

2.4.3) Mac Pherson suspension:

Any suspension system in which a telescopic strut, not necessarily providing the springing and/or damping action, but incorporating the stub axle, is anchored on the body or chassis through single attachment point at its top end, and pivots at its bottom end either on a transverse wishbone locating it transversally and longitudinally, or on a single transverse link located longitudinally by an anti-roll bar, or by a tie rod.

2.4.4) Twist beam axle :

Axle made of two longitudinal trailing arms, each attached to the bodysell through a joint, and rigidly attached one to the other through a transverse structure, the torsion stiffness of which is low compared to its bending stiffness.

2.5 Chassis - Bodywork**2.5.1) Chassis:**

The overall structure of the car around which are assembled the mechanical components and the bodywork including any structural part of the said structure.

2.5.2) Bodywork:

- externally: all the entirely suspended parts of the car licked by the airstream.
- internally: cockpit and boot. Bodywork is differentiated as follows:
 1. completely closed bodywork

2. completely open bodywork
3. convertible bodywork with the hood in either supple (drop-head) or rigid (hardtop) material.

2.5.3) Seat:

The two surfaces making up the seat cushion and seatback or backrest.

Seatback or backrest:

Surface measured from the bottom of a normally seated person's spine.

Seat cushion:

Surface measured from the bottom of the same person's spine towards the front.

2.5.4) Luggage compartment:

Any volume distinct from the cockpit and the engine compartment inside the vehicle.

These volumes are limited in length by the fixed structures provided for by the manufacturer and/or by the rear of the seats and/or, if this is possible, reclined at a maximum angle of 15° to the rear.

These volumes are limited in height by the fixed structures and/or by the detachable partitions provided for by the manufacturer, or in the absence of these, by the horizontal plane passing through the lowest point of the windscreen.

2.5.5) Cockpit:

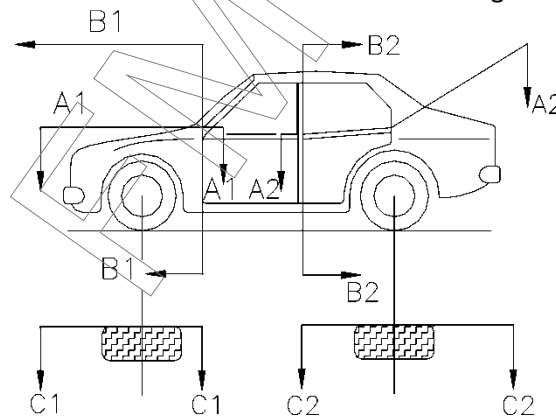
Structural inner volume which accommodates the driver and the passengers.

2.5.6) Bonnet:

Outer part of the bodywork which opens to give access to the engine.

2.5.7) Mudguard:

A mudguard will be considered to be the area defined according to Drawing 251-1.



Front mudguard: The area licked by the airstream, defined by the inner face of the complete wheel of the standard car (C1/C1), the front edge of the front door (B1/B1), and situated below the plane parallel to the door sills and tangent to the lower corners of the visible part of the windscreen (A1/A1).

Rear Mudguard: the area licked by the airstream, defined by the inner face of the complete wheel of the standard car (C2/C2), the front edge of the rear door (B2/B2), and situated below the lower edge of the visible part of the window of the rear side door, and below the tangent to the lower corner of the visible part of the rear windscreen and to the lower rear corner of the visible part of the side window of the rear door (A2/A2).

In the case of a two-door car, B1/B1 and B2/B2 will be defined by the front and rear of the same door.

2.5.8) Louvres:

Combination of inclined slats that conceal an object situated behind them while allowing air to pass through.

2.6 Electrical system

Headlight: Any signal the focus of which creates an in-depth luminous beam directed towards the front.

2.7 Fuel tank

Any container holding fuel likely to flow by any means whatsoever towards the main tank or the engine.

2.8 Automatic Gearbox

- This is made up of a hydrodynamic torque converter, a box with epicyclic gears equipped with clutches and multi-disc brakes and having a fixed number of reduction gears, and a gear change control.
The gear change can be achieved automatically without disconnecting the engine and gearbox, and thus without interrupting the engine torque transmission.
- Gearboxes with continually variable transmission are considered as automatic gearboxes with the particularity of having an infinite number of reduction ratios.

Article 252**General Prescriptions for Production Cars (Group N), Touring Cars (Group A)****ARTICLE 1 : GENERAL REMARKS****1.1 Modifications**

All modifications are forbidden unless expressly authorised by the regulations specific to the group in which the car is entered or by the general prescriptions below or imposed under the chapter "Safety Equipment".

The components of the car must retain their original function.

1.2 Application of the general prescriptions

The general prescriptions must be observed in the event that the specifications of Production Cars (Group N), Touring Cars (Group A), Grand Touring Cars (Group B) do not lay down a more strict prescription.

1.3 Material

The use of a material which has a specific yield modulus greater than 40 Gpa/g/cm³ is forbidden, with the exception of plugs, exhaust coatings, water pump turbo joints, brake pads, brake calliper piston coatings, rolling elements of bearings (balls, needles, rollers), electronic components and sensors, parts weighing less than 20 g and all coatings with a thickness less than or equal to 10 microns.

The use of a metallic material which has a specific yield modulus greater than 30 Gpa/g/cm³ or of which the maximum specific UTS is greater than 0.24 Mpa/kg/m³ for non-ferrous material and 0.30 Mpa/kg/m³ for ferrous materials (i.e. 80% iron) is forbidden for the making of all the parts that are free or homologated as an Option Variant.

Ti-6Al-4V ASTM grade 5 type titanium alloy (5.5 < Al < 6.75, C max 0.10, 3.5 < V < 4.5, 87.6 < ti < .91) is authorised, except for certain parts for which titanium is expressly forbidden. No turning part of a turbocharger or of any equivalent supercharging system (except the rolling parts of the bearings) may be made from ceramic material or have a ceramic coating.

These restrictions do not concern the parts homologated with the standard vehicle.

The use of magnesium alloy sheet metal with a thickness less than 3 mm is prohibited.

1.4 It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the meeting that his automobile complies with these regulations in their entirety at all times during the event.

1.5 Damaged threads can be repaired by screwing on a new thread with the same interior diameter ("helicoil" type).

1.6 Any Group A car, homologated after 01.01.99, with the exception of kit variants, and competing in rallies must not be wider than 1800 mm.

Group N cars may compete in their integral version.

1.7 "Free" part

"Free" means that the original part, as well as its function(s), may be removed or replaced with a new part, ~~on condition that the new part has no additional function relative to the original part.~~
(Deleted only for 2012, Review 2013).

ARTICLE 2 : DIMENSIONS AND WEIGHT**2.1 Ground clearance**

No part of the car must touch the ground when all the tyres on one side are deflated.
This test shall be carried out on a flat surface under race conditions (occupants on board).

2.2 Ballast

It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility to fix seals, placed on the floor of the cockpit, visible and sealed by the scrutineers. Application: Touring Cars (Group A), Grand Touring Cars (Group B) and Group R cars. No kind of ballast is authorised in Production Cars (Group N).

In rallies, however, the carrying of tools and spare parts for the car in the cockpit and/or inside the engine bay and/or inside the boot only will be allowed under the conditions laid down in Article 253.

ARTICLE 3 : ENGINE**3.1 Supercharging**

In case of supercharging, the nominal cylinder-capacity will be multiplied by 1.7 for petrol engines and by 1,5 for diesel engine, and the car will pass into the class corresponding to the fictive volume thus obtained.

The car will be treated in all respects as if its cylinder-capacity thus increased were its real capacity. This shall particularly be the case for assigning the car to its cylinder-capacity class, its interior dimensions, its minimum number of places, its minimum weight, etc.

3.2 Equivalence formula between reciprocating piston and rotary engines (of the type covered by the NSU Wankel patents)

The equivalent cubic capacity is equal to the volume determined by the difference between the maximum and minimum capacities of the combustion chamber.

3.3 Equivalence formula between reciprocating piston and turbine engines

The formula is the following:

$$c = \frac{S(3.10 \times R) - 7.63 C}{-0.09625}$$

S = High pressure nozzle area - expressed in square centimetres by which is meant the area of the airflow at the exit from the stator blades (or at the exit from the first stage if the stator has several stages).

Measurement is done by taking the area between the fixed blades of the high-pressure turbine first stage.

In cases where the first stage turbine stator blades are adjustable, they must be opened to their greatest extent. The area of the high-pressure nozzle is thus the product of the height (expressed in cm) by the width (expressed in cm) and by the number of blades.

R = The pressure ratio is the ratio of the compressor of the turbine engine.

It is obtained by multiplying together the value for each stage of the

compressor, as indicated hereafter:

Subsonic axial compressor	:	1.15 per stage
Trans-sonic axial compressor	:	1.5 per stage
Radial compressor	:	4.25 per stage.

Thus a compressor with one radial and six axial subsonic stages will be designated to have a pressure ratio of:

$4.25 \times 1.15 \times 1.15 \times 1.15 \times 1.15 \times 1.15 \times 1.15$ or $4.25 \times (1.15)^6$.

C = Equivalent cubic capacity for reciprocating piston engines in cm^3 .

3.4 All engines into which fuel is injected and burned downstream of an exhaust port are prohibited.

3.5 Equivalencies between reciprocating piston engines and new types of engines

The FIA reserves the right to make modifications on the basis of comparisons established between classic engines and new types of engines, by giving a two-year notice from the 1st January following the decision taken.

3.6 Exhaust system and silencer

Even when the specific provisions for a group allow the replacement of the original silencer, the cars competing in an open-road event shall always be equipped with an exhaust silencer complying with the traffic regulations of the country(ies) through which the event is run.

For all cars used in Rallies and unless the limits imposed by the local authorities are lower, the noise level on the open road must not exceed 103 dB(A) for an engine rotation speed of 3500 rpm for petrol engines and 2500 rpm for diesel engines.

The orifices of the exhaust pipes shall be placed at a maximum of 45 cm and a minimum of 10 cm from the ground.

The exit of the exhaust pipe must be situated within the perimeter of the car and less than 10 cm from this perimeter, and aft of the vertical plane passing through the centre of the wheelbase. Moreover, adequate protection must be provided in order to prevent heated pipes from causing burns. The exhaust system must not be provisional.

Exhaust gas may only exit at the end of the system.

Parts of the chassis must not be used to evacuate exhaust gasses.

Catalytic exhausts:

Should two possible versions of one car model be homologated (catalytic and other exhaust), the cars must comply with one or other version, any combination of the two versions being prohibited.

All cars equipped with a kit (VK - WRC - S2000-Rally) must be fitted with a homologated catalytic exhaust.

For all groups, all cars must be fitted with an original or homologated catalytic exhaust if this is obligatory in the country in which they are registered, unless the catalytic exhaust is not obligatory in the organising country, in which case it may be removed.

No modifications to a homologated catalytic converter are allowed. An authentic copy of the homologation document must be presented to the scrutineers for the event.

3.7 Starting on board the vehicle

Starter with electric or other source of energy on board operable by the driver when seated in the seat.

3.8 Cylinders

For non-sleeved engines, it will be possible to repair the cylinders by adding material, but not parts.

ARTICLE 4 : TRANSMISSION

All cars must be fitted with a gearbox including a reverse gear which must be in working order when the car starts the event, and be able to be operated by the driver when he is normally seated.

ARTICLE 5 : SUSPENSION

Suspension parts made partially or entirely from composite materials are prohibited.

ARTICLE 6 : WHEELS

Wheels made partially or entirely from composite materials are prohibited.

Measuring wheel width:

The width is to be measured with the wheel mounted on the car, on the ground, the vehicle in race condition, driver aboard, at any point along the circumference of the tyre, except in the area in contact with the ground.

When multiple tyres are fitted as part of a complete wheel, the latter must comply with the maximum dimensions for the Group in which these tyres are used (see Articles 255-5.4 and 256-5).

ARTICLE 7 : BODYWORK / CHASSIS / BODYSHELL

7.1 Convertible vehicles must comply in all respects with the specifications applying to open cars. In addition, cars with a rigid retractable roof must be driven exclusively with the roof closed and locked up.

7.2 Minimum inside dimensions

If a modification authorised by these regulations affects a dimension stated on the homologation form this dimension may not be retained as an eligibility criterion for the car.

7.3 Cockpit

Inversion of the driving side is possible, on condition that the original car and the modified car are mechanically equivalent and that the parts used are provided by the manufacturer for such a conversion for the family concerned.

In particular, the steering column must pass through the bodyshell only via the hole made for that purpose by the manufacturer for the family concerned.

For Super 1600, Super 2000 and WRC cars, the inversion of the driving side will be obtained by a complete steering system homologated in option variant by the manufacturer.

The hole allowing the passage of the steering column through the bodyshell must be homologated with this system. Only the following accessories may be installed in the cockpit: spare wheels, tools, spare parts, safety equipment, communication equipment, ballast (if permitted), windscreen washer water container (Touring Cars (Group A) and Grand Touring Cars (Group B) only).

All spare parts and tools must be fixed either behind the driver's and/or co-driver's seats or underneath the driver's and/or co-driver's seats.

The passenger area and seat of an open car must in no way be covered.

Containers for helmets and tools situated in the cockpit must be made of non-inflammable material and they must not, in case of fire, give off toxic vapours.

The original fitting of the air bags may be removed, without modifying the appearance of the bodywork.

7.4 All bodywork and chassis / bodyshell panels of the vehicle must be at all times of the same material as those of the original homologated car and must be of the same material thickness as that of the original homologated car.

All chemical treatments are forbidden.

7.5 Headlamp mounting and protection

The boring of holes in the front bodywork for light brackets is authorised, limited solely to mountings.

In rallies, non-reflecting protectors made from flexible material may be mounted on the headlamps ; they must not protrude forwards beyond the headlamp glass by more than 10 cm.

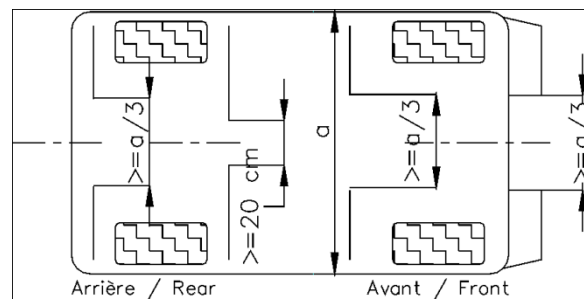
7.6 Any object of a dangerous nature (inflammable products, etc.) must be carried outside the cockpit.

7.7 Mud flaps (in Rallies only)

It is possible to fit transverse mud flaps in conformity with the article below.

If transverse mud flaps are mandatory, this requirement must be mentioned in the supplementary regulations of the event. In any case, transverse mud flaps are accepted under the following conditions:

- They must be made from flexible material.
- They must cover at least the width of each wheel, but at least one third of the width of the car (see Drawing 252-6) must be free behind the front wheels and the rear wheels.



- There must be a gap of at least 20 cm between the right and left mud flaps in front of the rear wheels.
- The bottom of these mud flaps must be no more than 10 cm from the ground when the car is stopped, with nobody on board.
- Above and over the entire height of the tyre, at least 3/4 of the width of the tyre must be covered (seen from behind).
- In vertical projection, these mud flaps must not protrude beyond the bodywork.
- Mud flaps to prevent splashing towards the front, made from flexible material, may be installed at the front of the vehicle, if the supplementary regulations of the event authorise them or impose them.

They must not protrude beyond the overall width of the vehicle, or beyond the original overall length by more than 10 cm, and at least one third of the width of the car must be free in front of the front wheels.

ARTICLE 8 : ELECTRICAL SYSTEM

8.1 Lighting

A fog light may be changed for another light, and vice versa, provided that the original mounting remains the same.

8.2 Alternators and Alternator-starters

The mounting of the alternators and alternator-starters are free.

8.3 Horn

In rallies only, the noise level produced by the horn must be greater than or equal to 97 dB during at least 3 seconds, measured 7m in front of the vehicle.

ARTICLE 9 : FUEL – COMBUSTIVE (Review 2013)

FREE

~~9.1 — The fuel must be commercial petrol which comes from a service station pump, without any additive other than that of a lubricant on current sale. The fuel must comply with the following specifications:~~

~~— 102.0 RON and 90.0 MON maximum, 95.0 RON and 85.0 MON minimum for unleaded fuel.~~

~~— 100.0 RON and 92.0 MON maximum, 97.0 RON and 86.0 MON minimum for leaded fuel.~~

~~The measurements will be made according to the standards ASTM D 2699-86 and D 2700-86.~~

~~— Density between 720 and 785 kg/m³ at 15°C (measured according to ASTM D 4052).~~

~~— A maximum of 2.8 % oxygen (or 3.7 % if the lead content is less than 0.013 g/l) and 0.5 % nitrogen by weight, the remainder of the fuel consisting exclusively of hydrocarbons and not containing any power-boosting additives.~~

~~The measuring of the nitrogen content will be carried out according to the standard ASTM-D 3228 and that of the oxygen content by elemental analysis with a tolerance of 0.2 %.~~

- ~~— Maximum content of peroxides and nitrooxide compounds: 100 ppm (ASTM-D 3703 or in the case of impossibility UOP-3382).~~
- ~~— Maximum lead content: 0.40 g/l or the standard of the country of the event if it is lower (ASTM-D 3341 or D-3237).~~
- ~~— Maximum benzene content: 5 % in volume (ASTM-D 3606).~~
- ~~— Maximum Reid vapour pressure: 900 hPa (ASTM-D 323).~~
- ~~— Distillation at 70°C: 10 % to 47 % (ASTM-D 86).~~
- ~~— Distillation at 100°C: 30 % to 70 % (ASTM-D 86).~~
- ~~— Distillation at 180°C: 85 % minimum (ASTM-D 86).~~
- ~~— Maximum final boiling point: 225°C (ASTM-D 86).~~
- ~~— Maximum residue: 2 % volume (ASTM-D 86).~~

~~The fuel being accepted or rejected according to the standard ASTM-D 3244 with a confidence limit of 95 %.~~
~~For vehicles with a catalytic converter, leaded petrol is forbidden.~~

~~If the fuel available locally for the event is not of a sufficient quality for use by competitors, the ASN of the organising country must ask the FIA for a waiver in order to enable the use of fuel not corresponding to the characteristics defined above.~~

9.2 Diesel

For Diesel engines, the fuel must be gas oil corresponding to the following specifications:

- ~~— Hydrocarbon level, % by weight 90.0 min.~~
- ~~— Density, kg/m³ 860 max.~~
- ~~— Cetane number (ASTM-D 613) 55 max.~~
- ~~— Calculated cetane number 55 max. (ASTM-D 976-80)~~
- ~~Sulphur content 50 mg/kg max. (pr-EN ISO/DIS 14596), according to directive 98/70/CE~~

9.3 Oxydant

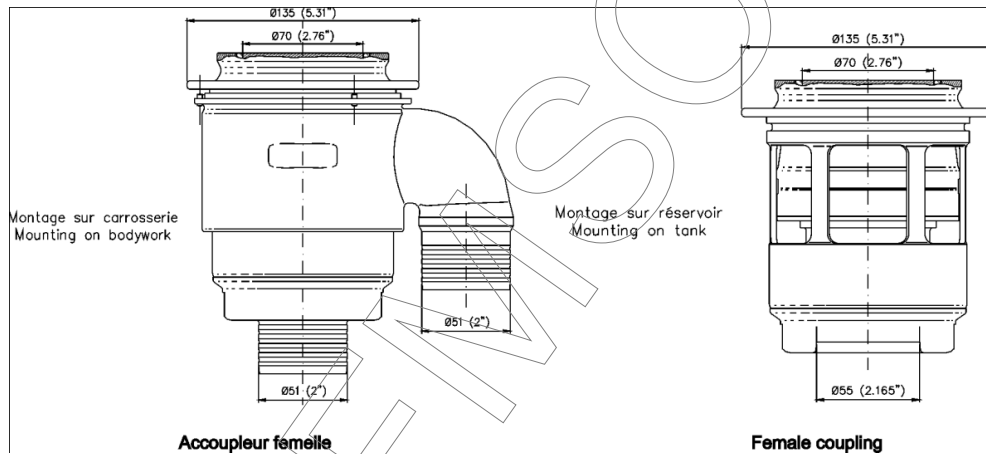
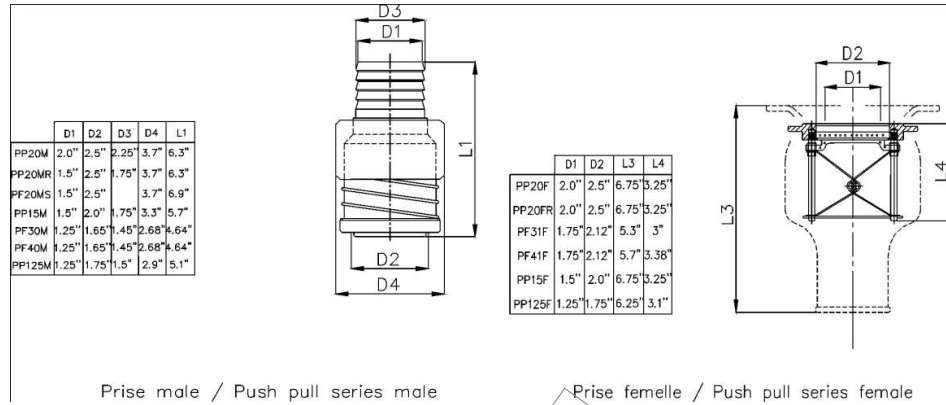
Only air may be mixed with the fuel as an oxidant.

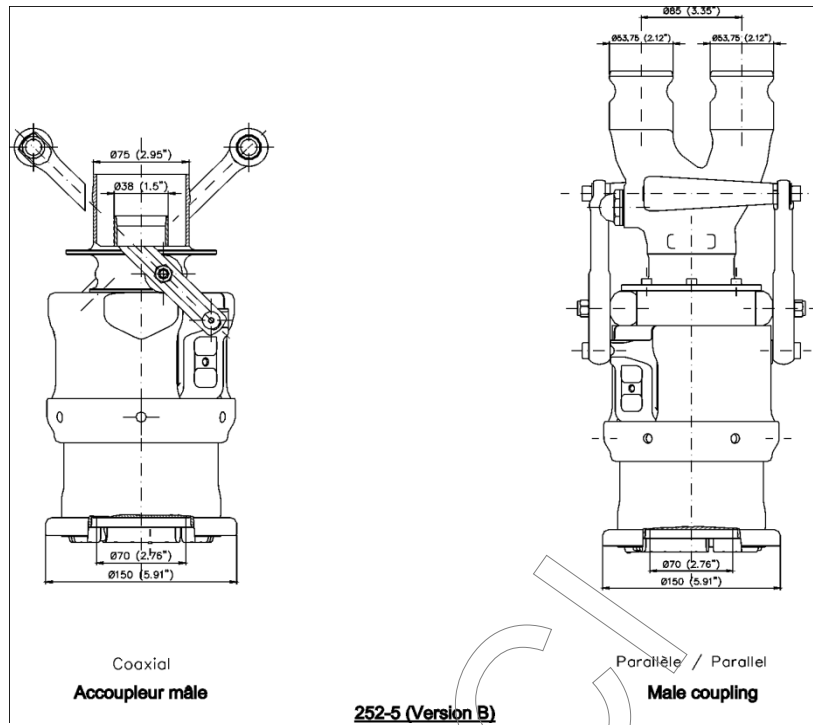
9.4 Refuelling procedure

Standardised coupling :

- In case of a centralised system provided by the circuit or a system provided by the competitors, the refuelling hose shall be provided with a leak-proof coupling to fit the standardised filler mounted on the car (in accordance with Drawing 252-5; the interior diameter D must not exceed 50 mm).
- All cars must be provided with a fuel filler complying with this diagram.
This leak-proof fitting must comply with the dead man principle and must not therefore incorporate any retaining device when in an open position (spring-loaded, bayonet, etc.).
- The air vent(s) must be equipped with non return and closing valves having the same closing system as that of the standard filler and having the same diameter.

During refuelling the outlets of the air-vents must be connected with the appropriate coupling either to the main supply-tank or to a transparent portable container with a minimum capacity of 20 litres provided with a closing system rendering it completely leak-proof.





252-5 (Version B)

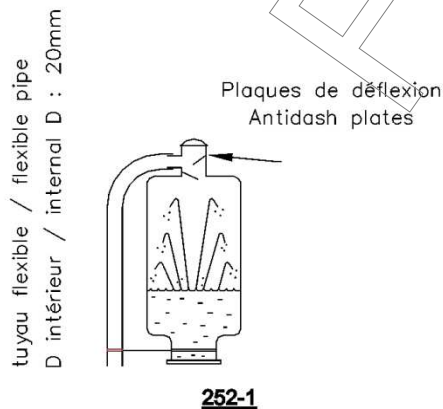
The venting catch tanks must be empty at the beginning of the refuelling operation. In the cases where the circuits are unable to provide the entrants with a centralised system, they will have to refuel according to the above procedure. The level of the reserve tank may in no case be more than 3 metres above the level of the track where the refuelling is effected.

This applies to the whole duration of the event.

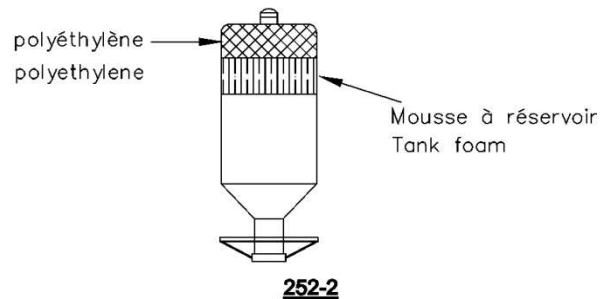
The overflow bottles must conform to one of the Drawings 252-1 or 252-2. Male coupling

Dessins 252-1 ou 252-2.

252-2.



252-1



252-2

The reserve tank and all metal parts of the refuelling system from the coupling over the flow meter up to the tank and its rack must be connected electrically to the earth.

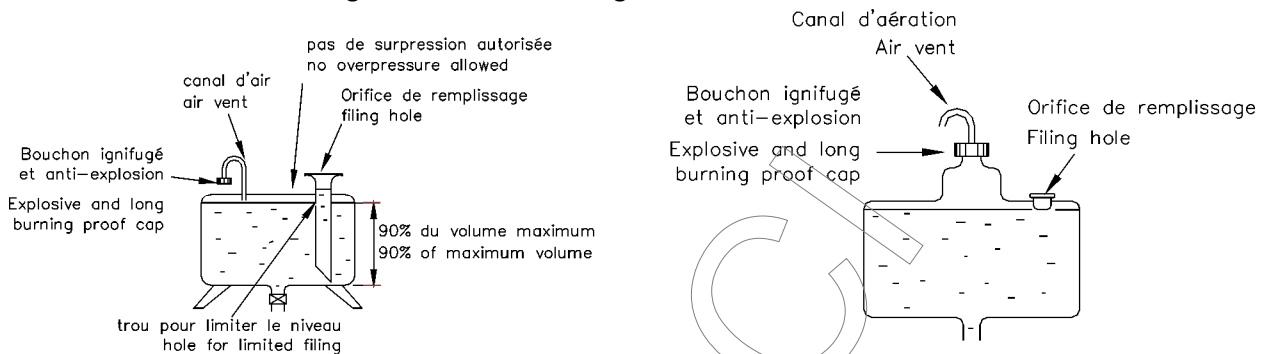
The application of the following is recommended:

1. Each pit should be equipped with two aircraft type grounding connections.

2. The refuelling system (including tower, tank, hose, nozzle, valves and vent bottle) should be connected to one of the above grounding connections for the entire duration of the race.
3. The car should be connected, at least momentarily, to the other grounding connection as soon as it stops in the pit.
4. No fuel hose connection (fill or vent) unless and until conditions 2 and 3 have been fulfilled
5. All fuel-handling pit crew members should wear non-static protective clothing.

The refuelling tank may be one of the following:

- models made of rubber, of the type FT3 1999, FT3.5 or FT5, built by an approved manufacturer, or
- tanks conforming to one of the Drawings 252-3 or 252-4.



Application: For Touring Cars (Group A), Grand Touring Cars (Group B), refer to the general prescriptions of the FIA Championships.

9.5 Tank ventilation

It is authorised to equip a tank with ventilation exiting through the car roof.

9.6 Installation of the FT3 1999, FT3.5 or FT5 tank

The FT3 1999, FT3.5 or FT5 tank may be placed either in the original location of the tank or in the luggage compartment.

There must be an orifice to evacuate any fuel which may have spread into the tank compartment.

The position and the dimension of the filler hole as well as that of the cap may be changed as long as the new installation does not protrude beyond the bodywork and guarantees that no fuel shall leak into one of the interior compartments of the car. If the filler hole is situated inside the car, it must be separated from the cockpit by a liquid-tight protection.

ARTICLE 10 : BRAKES

Carbon brake discs are forbidden.

ARTICLE 11 : ENERGY STORAGE (Review 2013)

~~The total quantity of recuperated energy stocked in the car must not exceed 200 kJ; this energy may be re-used without exceeding 10 kJ by means of 1kW maximum.~~

ARTICLE 12 : COOLING

Except for the sole purpose of cooling the driver, the transporting and/or use of any solid, liquid or gas cooling agent, whether inside or outside the car, is prohibited at all times throughout the event.

Article 13: HELMETS

Helmets must be either FIA or SFI certified with validity for the event.

Article 14: Driving Suits:

Minimum requirement:

FIA Homologated suits / SFI Certified Suits

OR

Fire retardant suit complying with EN531 Standards purchased from the following supplier:

TARA LOHIA PVT. LTD.

13, Dr. Sarat Banerjee Road,

Calcutta 700029,

INDIA.

Tel: +91-33-24660199 ;

Fax: +91-33-24667165 ;

email: info@taralohia.com ;

All suits will be sold with a certificate of authenticity and will have a serial number on the suit as well as the certificate, which must match. This certificate must be produced along with the driving suit at the time of scrutineering.

**** end ****

Article 253 Safety Equipment (Groups N, A)

ARTICLE 1 :

A car, the construction of which is deemed to be dangerous, may be excluded by the Stewards of the meeting.

ARTICLE 2 :

If a device is optional, it must be fitted in a way that complies with regulations.

ARTICLE 3 : LINES AND PUMPS

3.1 Protection

Fuel, oil and brake lines must be protected externally against any risk of deterioration (stones, corrosion, mechanical breakage, etc.) and internally against all risks of fire and deterioration.

Application: Optional for Group N if the series production fitting is retained.

Obligatory for all the Groups if the series production fitting is not retained or if the lines pass inside the vehicle and their protective covering has been removed.

In the case of fuel lines, the metal parts which are isolated from the shell of the car by non-conducting parts must be connected to it electrically.

3.2 Specifications and installation

Obligatory application if the series fitting is not retained.

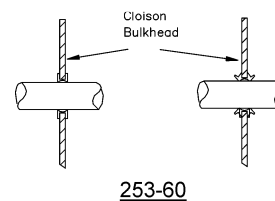
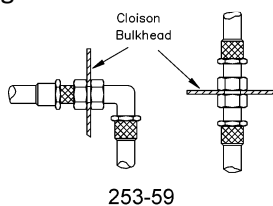
Lines containing cooling water or lubricating oil must be outside the cockpit.

The fittings of fuel lines, lubricating oil lines and of those containing hydraulic fluid under pressure must be manufactured according to the specifications below:

- when flexible, these lines must have threaded, crimped or self-sealing connectors and an outer braid resistant to abrasion and flame (will not sustain combustion) ;
- minimum burst pressure measured at a minimum operating temperature of:
- Fuel lines (except the connections to the injectors and the cooling radiator on the circuit returning to the tank): 70 bar (1000 psi) 135°C (250°F).
- Lubricating oil lines : 70 bar (1000 psi) 232°C (450°F).
- Lines containing hydraulic fluid under pressure: 280 bar (4000 psi) 232°C (450°F).

If the operating pressure of the hydraulic system is greater than 140 bar (2000 psi), the burst pressure must be at least double the operating pressure.

Lines containing fuel or hydraulic fluid may pass through the cockpit, but without any connectors inside except on the front and rear bulkheads according to Drawings 253-59 and 253-60, and on the braking circuit and the clutch fluid circuit.



3.3 Automatic fuel cut-off

Recommended for all groups:

All fuel feed pipes going to the engine must be provided with automatic cut-off valves located directly on the fuel tank which automatically close all the fuel lines under pressure if one of these lines in the fuel system is fractured or leaks.

Compulsory:

All the fuel pumps must only operate when the engine is running, except during the starting process.

3.4 Fuel cell ventilation

The ventilation line of the fuel cell as far as the valves described below must have the same specifications as those of the fuel lines (Article 3.2) and must be fitted with a system complying with the following conditions :

- Gravity activated roll-over valve
- Float chamber ventilation valve
- Blow-off valve with a maximum over pressure of 200 mbar, working when the float chamber ventilation valve is closed.

If the internal diameter of the fuel tank breather venting tube is greater than 20 mm, a non-return valve homologated by the FIA and as defined in Article 253-14,5 must be fitted.

ARTICLE 4 : BRAKING SAFETY SYSTEM

Double circuit operated by the same pedal: the pedal shall normally control all the wheels ; in case of a leakage at any point of the brake system pipes or of any kind of failure in the brake transmission system, the pedal shall still control at least two wheels.

Application: If this system is fitted in series production, no modifications are necessary.

ARTICLE 5 : ADDITIONAL FASTENERS

At least two additional safety fasteners must be fitted for each of the bonnet and boot lids.

The original locking mechanisms will be rendered inoperative or removed.

Application: Optional for Group N, obligatory for the other Groups.

Large objects carried on board the vehicle (such as the spare wheel, tool-kit, etc.) must be firmly fixed.

ARTICLE 6 : SAFETY BELTS

6.1 Belts

Wearing of two shoulder straps and one lap strap ; anchorage points on the shell: two for the lap strap, two for the shoulder straps.

These belts must be homologated by the FIA and comply with FIA standard n°8853/98 or 8854/98, **or certified by SFI and should have label with validity during events.**

Furthermore, the belts used in circuit competitions must be equipped with turnbuckle release systems.

For rallies, two belt cutters must be carried on board at all times.

They must be easily accessible for the driver and co-driver when seated with their harnesses fastened.

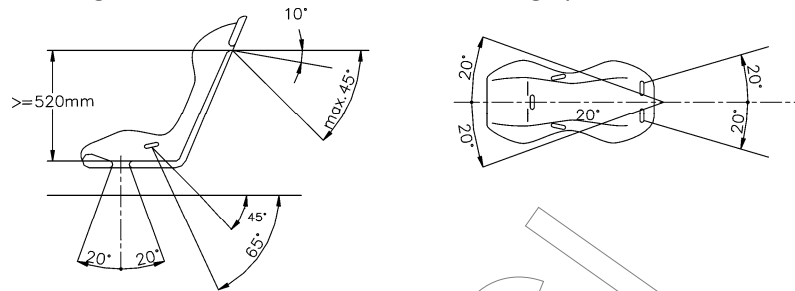
On the other hand, it is recommended that for competitions which include public road sections, the belts be equipped with push button release systems. The ASNs may homologate mounting points on the safety cage when this cage is being homologated, on condition that they are tested.

6.2 Installation

It is prohibited for the seat belts to be anchored to the seats or their supports.

- A safety harness may be installed on the anchorage points of the series car.

The recommended geometrical locations of the anchorage points are shown in Drawing 253-61.



253-61

In the downwards direction, the shoulder straps must be directed towards the rear and must be installed in such a way that they do not make an angle of more than 45° to the horizontal from the upper rim of the backrest, although it is recommended that this angle should not exceed 10°.

The maximum angles in relation to the centre-line of the seat are 20° divergent or convergent.

If possible, the anchorage point originally mounted by the car manufacturer on the C-pillar should be used.

Anchorage points creating a higher angle to the horizontal must not be used.

In that case, the shoulder straps of 4-point safety harnesses may be installed on the rear seat lap strap anchorage points originally mounted by the car manufacturer.

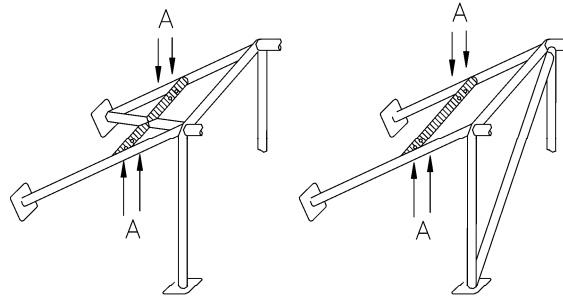
For a 4-point harness, the shoulder straps must be installed crosswise symmetrically about the centre-line of the front seat.

The lap and crotch straps should pass not over the sides of the seat but through the seat, in order to wrap and hold the pelvic region over the greatest possible surface.

The lap straps must fit tightly in the bend between the pelvic crest and the upper thigh. Under no conditions must they be worn over the region of the abdomen.

Care must be taken that the straps cannot be damaged through chafing against sharp edges.

- If installation on the series anchorage points is impossible for the shoulder and/or crotch straps, new anchorage points must be installed on the shell or the chassis, as near as possible to the centre-line of the rear wheels for the shoulder straps.



Ⓐ mounting holes for harness

253-66

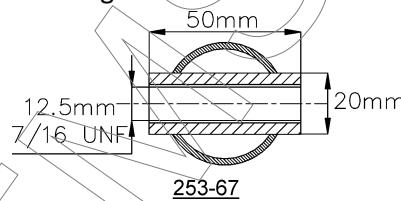
The shoulder straps may also be fixed to the safety cage or to a reinforcement bar by means of a loop, and may also be fixed to the top anchorage points of the rear belts, or be fixed or leaning on a transverse reinforcement welded between the backstays of the cage (see Drawing 253-66).

In this case, the use of a transverse reinforcement is subject to the following conditions:

The transverse reinforcement shall be a tube measuring at least 38 mm x 2.5 mm or 40 mm x 2 mm, made from cold drawn seamless carbon steel, with a minimum tensile strength of 350 N/mm².

The height of this reinforcement must be such that the shoulder straps, towards the rear, are directed downward with an angle of between 10° and 45° to the horizontal from the rim of the backrest, an angle of 10° being recommended.

The straps may be attached by looping or by screws, but in the latter case an insert must be welded for each mounting point (see Drawing 253-67 for the dimensions).

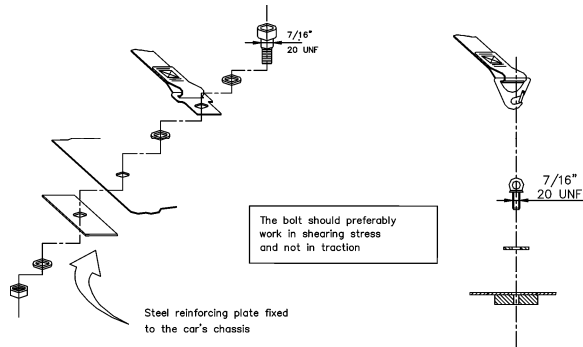


These inserts will be positioned in the reinforcement tube and the straps will be attached to them using bolts of M12 8.8 or 7/16UNF specification.

- Each anchorage point must be able to withstand a load of 1470 daN, or 720 daN for the crotch straps.

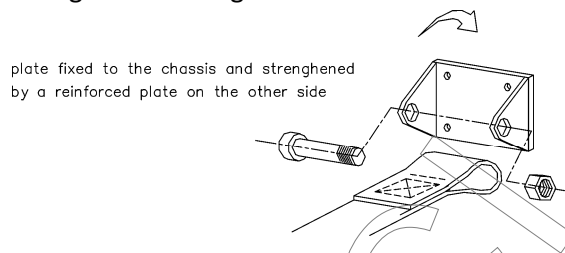
In the case of one anchorage point for two straps (prohibited for shoulder straps), the load considered will be equal to the sum of the required loads.

- For each new anchorage point created, a steel reinforcement plate with a surface area of at least 40 cm² and a thickness of at least 3 mm must be used.
- Principles of mounting to the chassis / monocoque:
- 1) General mounting system: see Drawing 253-62.



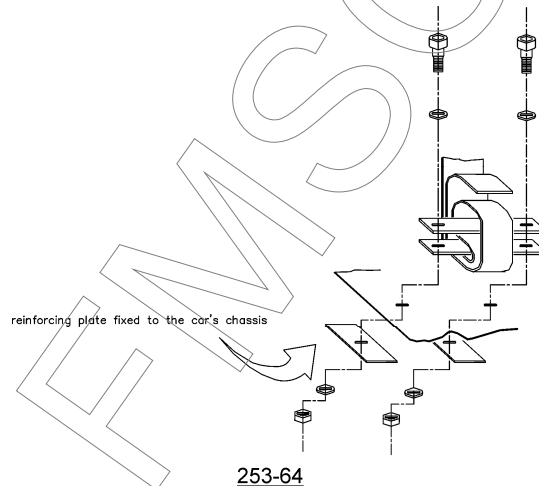
253-62

- 2) Shoulder strap mounting: see Drawing 253-63.



253-63

- 3) Crotch strap mounting: see Drawing 253-64.



253-64

6.3 Use

A safety harness must be used in its homologation configuration without any modifications or removal of parts, and in conformity with the manufacturer's instructions.

The effectiveness and longevity of safety belts are directly related to the manner in which they are installed, used and maintained.

The belts must be replaced after every severe collision, and whenever the webbing is cut, frayed or weakened due to the actions of chemicals or sunlight.

They must also be replaced if metal parts or buckles are bent, deformed or rusted.

Any harness which does not function perfectly must be replaced.

ARTICLE 7 : EXTINGUISHERS – EXTINGUISHING SYSTEMS

The use of the following products is prohibited: BCF, NAF.

7.1 In rallies :

Articles 7.2 and 7.3 apply.

In circuit events, slaloms, hillclimbs :

Article 7.2 or 7.3 applies.

The fire extinguisher has to be accessible to driver and co-driver when seated.

7.2 Systems mounted

7.2.1) All cars must be equipped with an extinguishing system from technical list n°16 : "Extinguisher systems homologated by the FIA".

7.2.2) All extinguisher containers must be adequately protected and must be situated within the cockpit.

The container may also be situated in the luggage compartment on condition that it is at least 300 mm from the outer edges of the bodywork in all horizontal directions.

It must be secured by a minimum of 2 screw-locked metallic straps and the securing system must be able to withstand a deceleration of 25 g.

All extinguishing equipment must withstand fire.

Plastic pipes are prohibited and metal pipes are obligatory.

7.2.3) The driver must be able to trigger all extinguishers manually when seated normally with his safety belts fastened and the steering wheel in place.

Furthermore, a means of triggering from the outside must be combined with the circuit-breaker switch. It must be marked with a letter "E" in red inside a white circle of at least 10 cm diameter with a red edge.

For WRC type cars, the triggering of an external or internal extinguisher must compulsorily bring about engine and battery cut-off.

The circuit breaker (master switch) must be accessible to the driver / co driver when seated normally with his safety belts fastened and the steering wheel in place.

7.2.4) The system must work in all positions.

7.2.5) Extinguisher nozzles must be suitable for the extinguishant and be installed in such a way that they are not directly pointed at the occupants' heads.

7.3 Manual extinguishers

7.3.1) All cars must be fitted with one or two fire extinguishers.

7.3.2) Permitted extinguishants: AFFF, FX G-TEC, Viro3, powder or any other extinguishant homologated by the FIA.

7.3.3) Minimum quantity of extinguishant:

AFFF: 2.4 litres

FX G-TEC: 2.0 kg

Viro3: 2.0 kg

Zero 360 2,0 kg

Powder: 2.0 kg

7.3.4) All extinguishers must be pressurised according to the contents:

AFFF: in accordance with the manufacturer's instructions FX G-TEC and Viro3: in accordance with the manufacturer's instructions Zero 360: in accordance with the manufacturer's instructions

Powder: 8 bar minimum, 13.5 bar maximum

Furthermore, each extinguisher when filled with AFFF must be equipped with a means of checking the pressure of the contents.

7.3.5) The following information must be visible on each extinguisher:

- capacity
- type of extinguishant
- weight or volume of the extinguishant
- date the extinguisher must be checked, which must be no more than two years after either the date of filling or the date of the last check, or corresponding expiry date.

7.3.6) All extinguishers must be adequately protected. Their mountings must be able to withstand a deceleration of 25 g.

Furthermore, only quick-release metal fastenings (two minimum), with metal straps, will be accepted.

7.3.7) The extinguishers must be easily accessible for the driver and the co-driver.

ARTICLE 8 : SAFETY CAGES

8.1 General :

The fitting of a safety cage is compulsory. It may be either :

- a) Fabricated in compliance with the requirements of the following articles ;
- b) Homologated or Certified by an ASN according to the homologation regulations for safety cages ;

An authentic copy of the homologation document or certificate, approved by the ASN and signed by qualified technicians representing the manufacturer, must be presented to the event's scrutineers.

Any new cage which is homologated by an ASN and is on sale, as from 01.01.2003, must be identified by means of an identification plate affixed to it by the manufacturer; this identification plate must be neither copied nor moved (i.e. embedded, engraved or self-destroying sticker).

The identification plate must bear the name of the manufacturer, the homologation or certification number of the ASN homologation form or certificate and the individual series number of the manufacturer.

A certificate bearing the same numbers must be carried on board and be presented to the event's scrutineers.

- c) Homologated by the FIA according to the homologation regulations for safety cages. It must be the subject of an extension (VO) to the homologation form of the vehicle homologated by the FIA.

The manufacturer's identification and a series number must be clearly visible on all cages homologated and sold after 01.01.1997.

The homologation form of the cage must specify how and where this information is indicated, and the purchasers must receive a numbered certificate corresponding to this.

For the following cars, the cage must compulsorily be homologated by the FIA :

Super 1600 Kit Variant, Super 2000 Kit Variant, Super 2000 Rally Kit Variant, World Rally Car Variant.

Any modification to a homologated or certified safety cage is forbidden.

To be considered as a modification, any process made to the cage by machining, welding, that involves a permanent modification of the material or the safety cage.

All repairs to a homologated or certified safety cage, damaged after an accident must be carried out by the manufacturer of the rollcage or with his approval.

Tubes must not carry fluids or any other item.

The safety cage must not unduly impede the entry or exit of the driver and co-driver.

Members may intrude into the occupant's space in passing through the dashboard and trim, as well as through the rear seats.

The rear seat may be folded down.

8.2 Definitions :

8.2.1 Safety cage :

Multi-tubular structure installed in the cockpit and fitted close to the bodyshell, the function of which is to reduce the deformation of the bodyshell (chassis) in case of an impact.

8.2.2 Rollbar :

Tubular frame forming a hoop with two mounting feet.

8.2.3 Main rollbar (Drawing 253-1) :

Transverse and near-vertical (maximum angle $\pm 10^\circ$ to the vertical) single piece tubular hoop located across the vehicle just behind the front seats.

The tube axis must be within one single plane.

8.2.4 Front rollbar (Drawing 253-1) :

Similar to main rollbar but its shape follows the windscreen pillars and top screen edge.

8.2.5 Lateral rollbar (Drawing 253-2) :

Near-longitudinal and near-vertical single piece tubular hoop located along the right or left side of the vehicle, the front pillar of which follows the windscreen pillar and the rear pillar of which is near-vertical and located just behind the front seats.

The rear pillar must be straight in side view.

8.2.6 Lateral half-rollbar (Drawing 253-3) :

Identical to the lateral rollbar but without the rear pillar.

8.2.7 Longitudinal member :

Near-longitudinal single piece tube joining the upper parts of the front and main rollbars.

8.2.8 Transverse member :

Near-transverse single piece tube joining the upper parts of the lateral half-rollbars or of the lateral rollbars.

8.2.9 Diagonal member :

Transverse tube between :

One of the top corners of the main rollbar, or one of the ends of the transverse member in the case of a lateral rollbar, and a the lower mounting point on the opposite side of the rollbar. Or

The upper end of a backstay and the lower mounting point of the other backstay.

8.2.10 Removable members :

Members of a safety cage which must be able to be removed.

8.2.11 Cage reinforcement :

Member added to the safety cage to improve its strength.

8.2.12 Mounting foot :

Plate welded to the end of a rollbar tube to permit its bolting and/or welding to the bodyshell/chassis, usually onto a reinforcement plate.

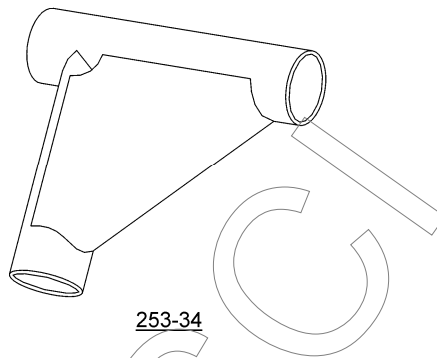
8.2.13 Reinforcement plate :

Metal plate fixed to the bodyshell/chassis under a rollbar mounting foot to better spread the load onto the bodyshell/chassis.

8.2.14 Gusset :

Reinforcement for a bend or junction made from bent sheet metal with a U shape (Drawing 253-34) the thickness of which must not be less than 1.0 mm.

The ends of this reinforcement must be situated at a distance from the top of the angle of between 2 to 4 times the diameter of the biggest of the tubes joined.

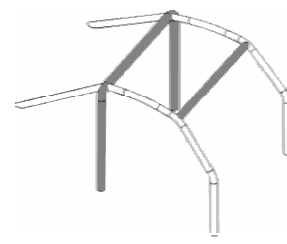
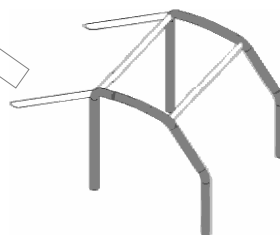
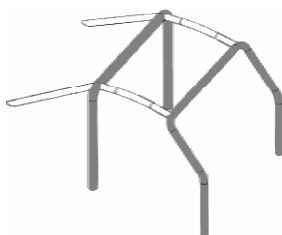


8.3 Specifications

8.3.1 Basic structure

The basic structure must be made according to one of the following designs :

- * 1 main rollbar + 1 front rollbar + 2 longitudinal members + 2 backstays + 6 mounting feet (Drawing 253-1) or
- * 2 lateral rollbars + 2 transverse members + 2 backstays + 6 mounting feet (Drawing 253-2)
- or
- * 1 main rollbar + 2 lateral half-rollbars + 1 transverse member + 2 backstays + 6 mounting feet (Drawing 253-3)



The vertical part of the main rollbar must be as close as possible to the interior contour of the bodyshell and must have only one bend with its lower vertical part.

The front pillar of a front rollbar or of a lateral rollbar must follow the windscreen pillars as closely as possible and have only one bend with its lower vertical part.

In order to build the safety cage, the connections of the transverse members to the lateral rollbars, the connections of the longitudinal members to the front and main rollbars, as well as the connection of a semi-lateral rollbar to the main rollbar must be situated at the roof level.

In all cases, there must not be more than 4 removable connections at the roof level.

The backstays must be attached near the roofline and near the top outer bends of the main rollbar, on both sides of the car, possibly by means of removable connections.

They must form an angle of at least 30° with the vertical, must run rearwards and be straight and as close as possible to the interior side panels of the bodyshell.

8.3.2 Design :

Once the basic structure is defined, it must be completed with compulsory members and reinforcements (see Article 253-8.3.2.1), to which optional members and reinforcements may be added (see Article 253-8.3.2.2).

Unless explicitly permitted and unless dismantlable joints are used in compliance with Article 253-8.3.2.4, all members and tubular reinforcements must be single pieces.

8.3.2.1 Compulsory members and reinforcements :

8.3.2.1.1 Diagonal member :

Cars homologated before 01.01.2002 :

The cage must have one of the diagonal members defined by Drawings 253-4, 253-5, 253-6. The orientation of the diagonal may be reversed.

In the case of Drawing 253-6, the distance between the two mountings on the bodyshell/chassis must not be greater than 300mm.

Members must be straight and may be removable.

The upper end of the diagonal must join the main rollbar no further than 100 mm from its junction with the backstay, or the backstay no more than 100 mm from its junction with the main rollbar (see Drawing 253-52 for the measurement).

The lower end of the diagonal must join the main rollbar or the backstay no further than 100 mm from the mounting foot (except for the case of Drawing 253-6).

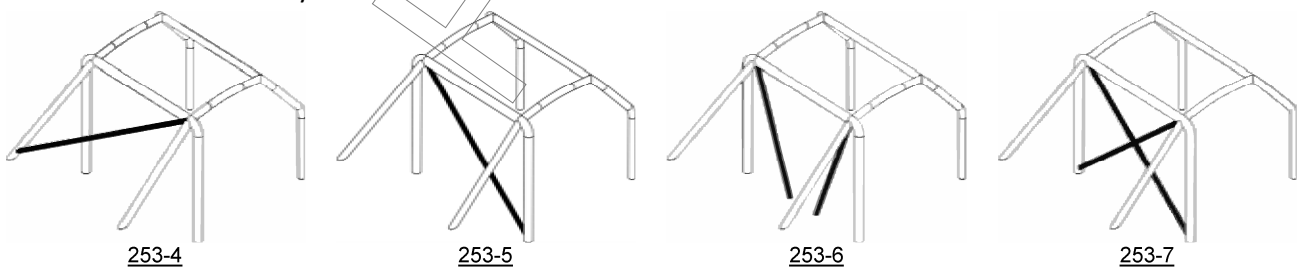
Cars homologated as from 01.01.2002 :

The cage must have two diagonal members on the main rollbar according to Drawing 253-7.

Members must be straight and may be removable.

The lower end of the diagonal must join the main rollbar no further than 100 mm from the mounting foot (see Drawing 253-52 for the measurement).

The upper end of the diagonal must join the main rollbar no further than 100 mm from its junction with the backstay.



8.3.2.1.2 Doorbars :

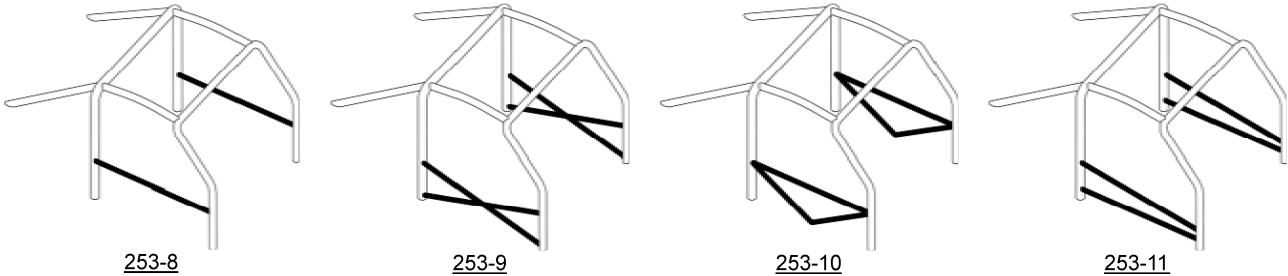
One or more longitudinal members must be fitted at each side of the vehicle according to Drawings 253-8, 253-9, 253-10 and 253-11 (Drawings 253-9, 253-10 and 253-11 for cars homologated as from 01.01.2007). Drawings may be combined. The design must be identical on both sides. They may be removable.

The side protection must be as high as possible, but its upper attachment point must not be higher than half the height of the door opening measured from its base.

If these upper attachment points are located in front of or behind the door opening, this height limitation is also valid for the corresponding intersection of the strut and the door opening.

In the case of doorbars in the form of an "X" (Drawing 253-9), it is recommended that the lower attachment points of the cross-struts be fixed directly onto the longitudinal member of the bodyshell/chassis and that at least one part of the "X" be a single-piece bar.

The connection of the doorbars to the windscreen pillar reinforcement (Drawing 253-15) is authorised. For competitions without co-driver, members may be fitted on the driver's side only and it is not compulsory for the design to be identical on both sides.



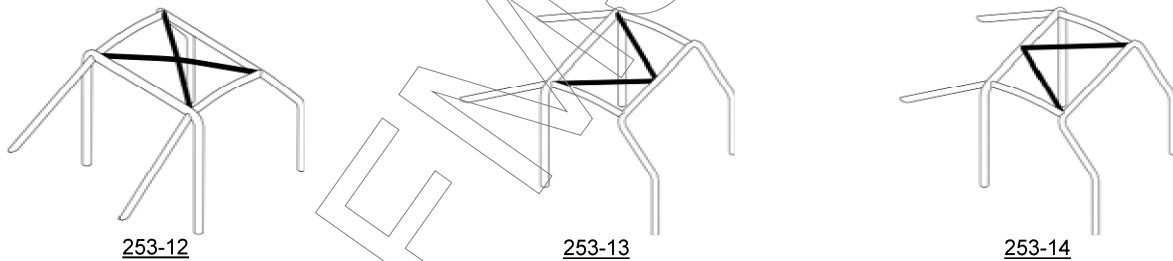
8.3.2.1.3 Roof reinforcement :

Cars homologated as from 01.01.2005 only :

The upper part of the safety cage must comply with one of Drawings 253-12, 253-13 and 253-14.

The reinforcements may follow the curve of the roof. For competitions without co-drivers, in the case of Drawing 253-12 only, only one diagonal member may be fitted but its front connection must be on the driver's side.

The ends of the reinforcements must be less than 100 mm from the junction between rollbars and members (not applicable to the top of the V formed by reinforcements in Drawings 253-13 and 253-14).



8.3.2.1.4 Windscreen pillar reinforcement :

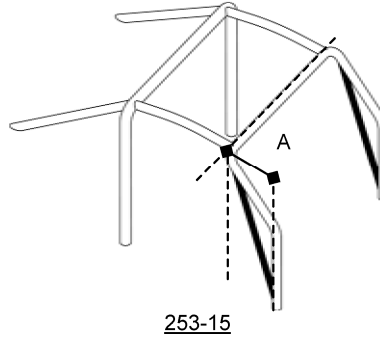
Cars homologated as from 01.01.2006 only :

It must be fitted on each side of the front rollbar if dimension "A" is greater than 200 mm (Drawing 253-15).

It may be bent on condition that it is straight in side view and that the angle of the bend does not exceed 20°.

Its upper end must be less than 100 mm from the junction between the front (lateral) rollbar and the longitudinal (transverse) member (see Drawing 253-52 for the measurement).

Its lower end must be less than 100 mm from the (front) mounting foot of front (lateral) rollbar.



253-15

8.3.2.1.5 Reinforcement of bends and junctions :

The junctions between:

- the diagonal members of the main rollbar,
- the roof reinforcements (configuration of Drawing 253-12 and only for cars homologated as from 01.01.2007),
- the doorbars (configuration of Drawing 253-9),
- the doorbars and the windscreen pillar reinforcement (Drawing 253-15), must be reinforced by a minimum of 2 gussets complying with Article 253-8.2.14.

If the doorbars and the windscreen pillar reinforcement are not situated in the same plane, the reinforcement may be made of fabricated sheet metal, provided it complies with dimensions in Article 253-8.2.14.

8.3.2.2 Optional members and reinforcements :

Except other indications given in Article 253-8.3.2.1, members and reinforcements shown in Drawings 253-12 to 253-21 and 253-23 to 253-33 are optional and may be installed as desired by the constructor.

They must be either welded or installed by means of dismantable joints.

All members and reinforcements mentioned above may be used separately or combined with one another.

8.3.2.2.1 Roof reinforcements (Drawings 253-12 to 253-14):

Optional only for cars homologated before 01.01.2005.

For competitions without co-drivers, in the case of Drawing 253-12 only, one diagonal member only may be fitted but its front connection must be on the driver's side.

8.3.2.2.2 Windscreen pillar reinforcement (Drawing 253-15):

Optional only for cars homologated before 01.01.2006.

It may be bent on condition that it is straight in side view and that the angle of the bend does not exceed 20°.

8.3.2.2.3 Backstay diagonals (Drawing 253-21) :

The configuration of Drawing 253-21 may be replaced with that of Drawing 253-22 if a roof reinforcement complying with Drawing 253-14 is used.

8.3.2.2.4 Front suspension mounting points (Drawing 253- 25):

The extensions must be connected to the front suspension top mounting points.

8.3.2.2.5 Transverse members (Drawings 253-26 to 253-30):

Transverse members fitted on the main rollbar or between the backstays may be used for the safety harness mountings in accordance with Article 253-6.2 (use of dismantable joints prohibited).

For members shown on Drawings 253-26 and 253-27, the angle between the central leg and the vertical must be at least 30°.

The transverse member fixed to the front rollbar must not encroach upon the space reserved for the occupants.

It may be placed as high as possible but its lower edge must not be higher than the uppermost point of the dashboard.

For cars homologated as from 01.01.2007, it must not be positioned below the steering column.

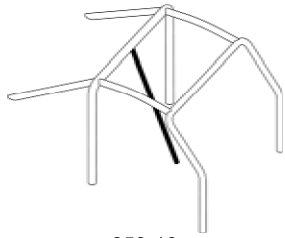
8.3.2.2.6 Reinforcement of bends or junctions (Drawings 253-31 to 253-34) :

Reinforcements must be made of tubes or bent-sheet metal with U shape complying with Article 253-8.2.14.

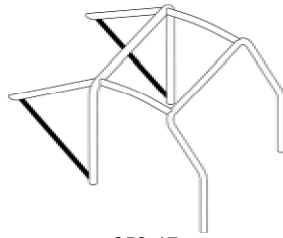
The thickness of the components forming a reinforcement must not be less than 1.0 mm.

The ends of the tubular reinforcements must not be more than half way down or along the members to which they are attached, except for those of the junction of the front rollbar, which may join the junction of the door strut/front rollbar;

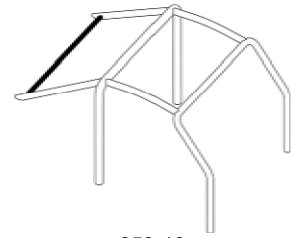
FMSCI



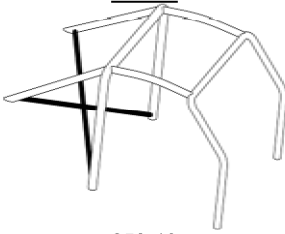
253-16



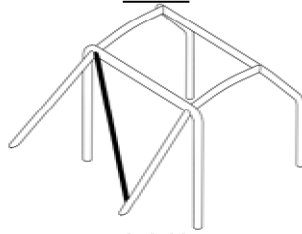
253-17



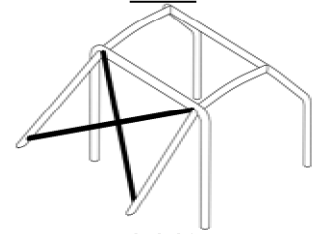
253-18



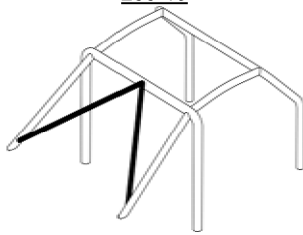
253-19



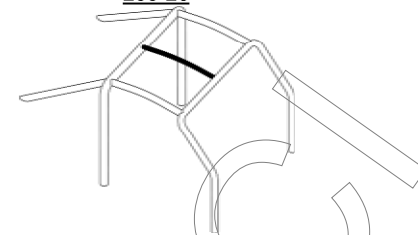
253-20



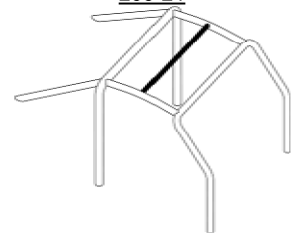
253-21



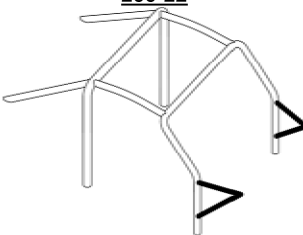
253-22



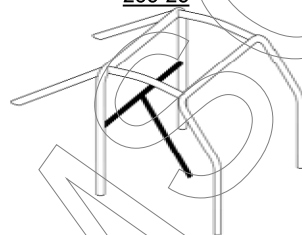
253-23



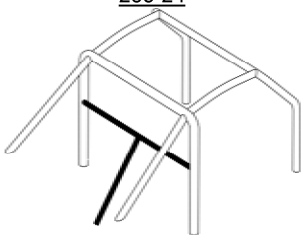
253-24



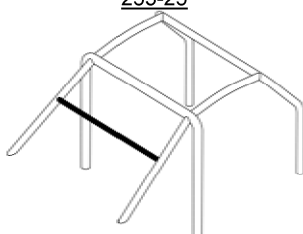
253-25



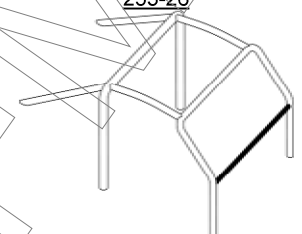
253-26



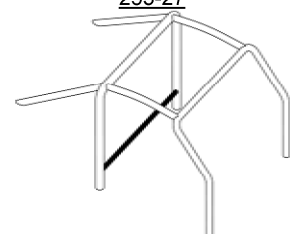
253-27



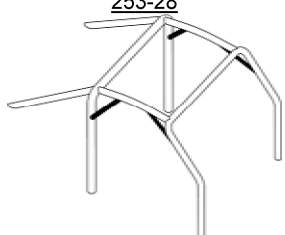
253-28



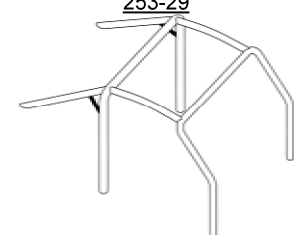
253-29



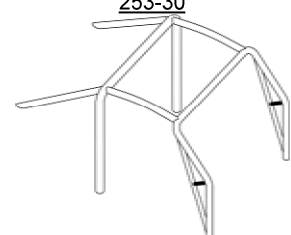
253-30



253-31



253-32



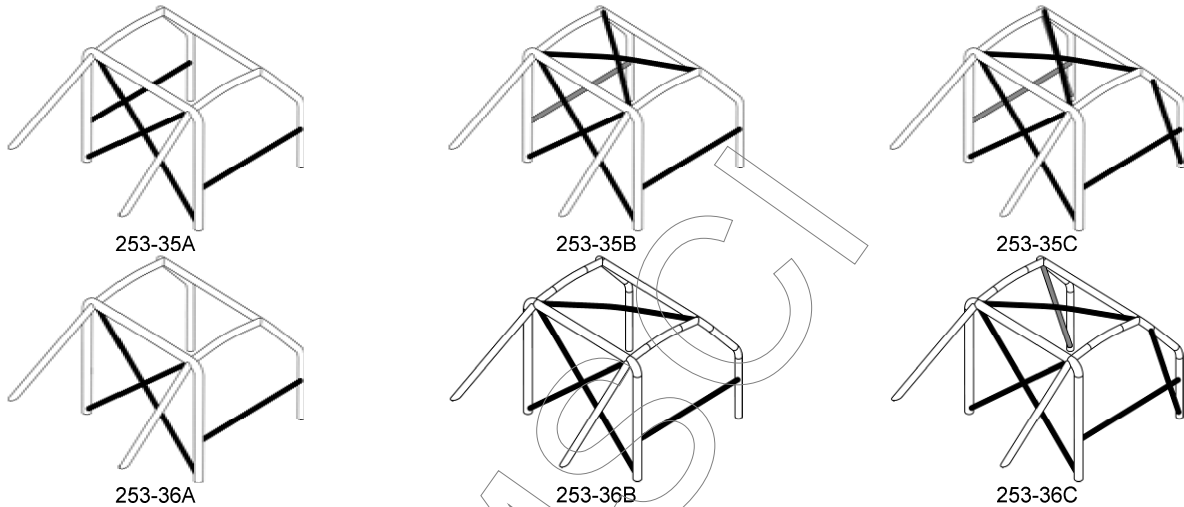
253-33

8.3.2.3 Minimum configuration of the safety cage :

The minimum configuration of a safety cage is defined as follows :

Cars homologated	With co-driver	Without co-driver
between 01.01.2002 and 31.12.2004	Drawing 253-35A	Drawing 253-36A or symmetrical
between 01.01.2005 and 31.12.2005	Drawing 253-35B	Drawing 253-36B or symmetrical
as from 01.01.2006	Drawing 253-35C	Drawing 253-36C or symmetrical

Doorbars and roof reinforcement may vary according to Articles 253-8.3.2.1.2 and 253-8.3.2.1.3.



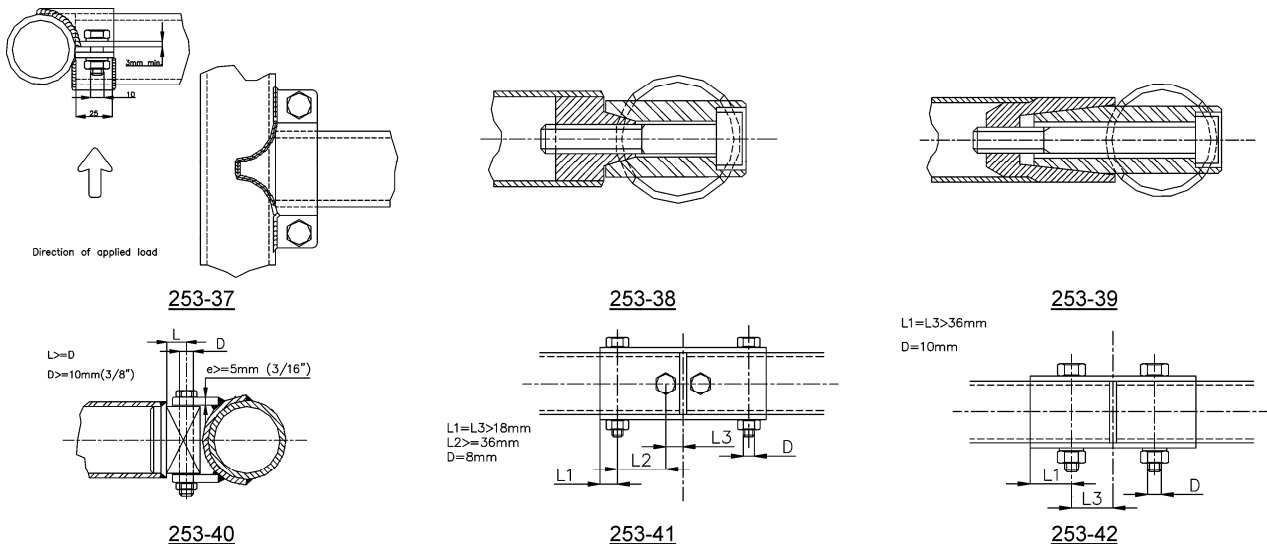
8.3.2.4 Removable members :

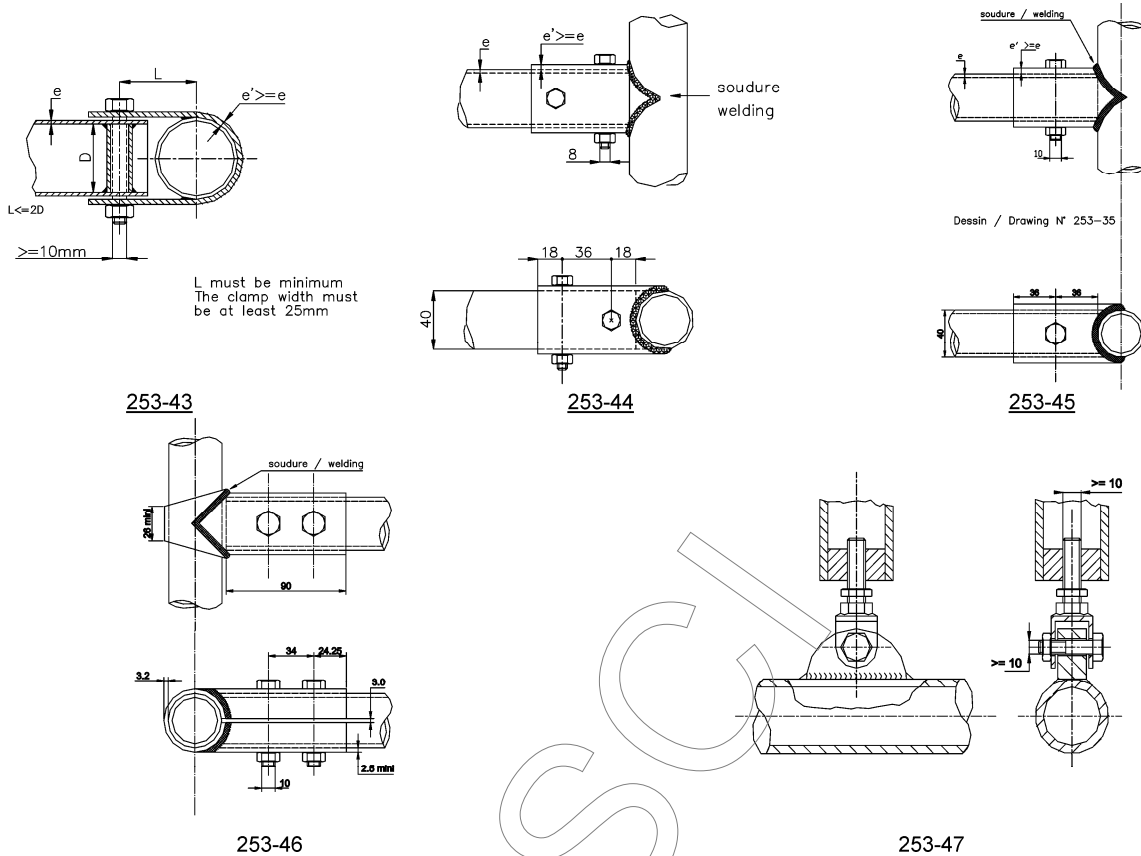
Should removable members be used in the construction of a safety cage, the dismantlable joints used must comply with a type approved by the FIA (Drawings 253-37 to 253-47).

They must not be welded once assembled.

The screws and bolts must have a minimum quality of 8.8 (ISO standard).

Dismantlable joints complying with Drawings 253-37, 253-40, 253-43, 253-46 and 253-47 are solely for attaching optional members and reinforcements described by Article 253-8.3.2.2, and are forbidden for joining the upper parts of the main rollbar, of the front rollbar, of the lateral half-rollbars and of the lateral rollbars.





8.3.2.5 Additional constraints :

Longitudinally, the safety cage must be entirely contained between the mounting points of the front and rear suspension elements carrying the vertical loads (springs and shock absorbers).

Supplementary reinforcements exceeding these limits are authorised between the safety cage and the anchorage points of the rear anti-roll bars on the bodyshell/chassis.

Each of these anchorage points may be connected to the safety cage by a single tube with dimensions of 30 x 1.5 mm.

For cars homologated as from 01.01.2002 :

In frontal projection, reinforcements of bends and junctions of the upper corners of the front roll-cage must be only visible through the area of the windscreen described by Drawing 253-48.

For all the safety cages for "Super Production" and "Super 2000" cars homologated as from 01.01.2000 and for all the safety cages for rally cars homologated as from 01.01.2001 :

The presence of the cage reinforcements in the door aperture must comply with the following criteria (Drawing 253-49) :

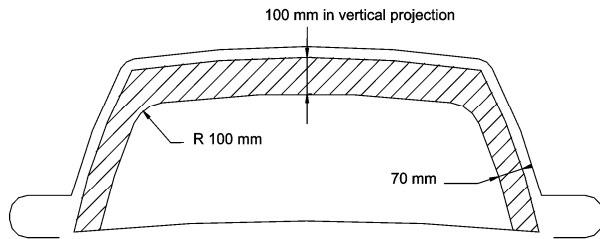
Dimension A must be a minimum of 300 mm

Dimension B must be a maximum of 250 mm

Dimension C must be a maximum of 300 mm

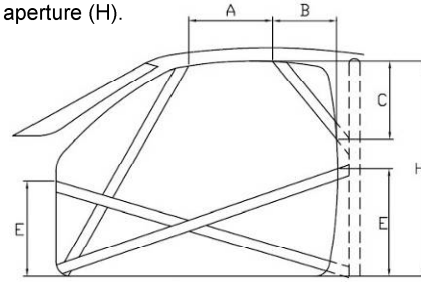
Dimension E must not be more than half the height of the door aperture (H).

hauteur de l'ouverture de porte (H).



253-48

aperture (H).



253-49

8.3.2.6 Mounting of rollcages to the bodyshell/chassis :

Minimum mounting points are:

- 1 for each pillar of the front rollbar ;
- 1 for each pillar of the lateral rollbars or lateral half-rollbars ;
- 1 for each pillar of the main rollbar ;
- 1 for each backstay.

To achieve an efficient mounting to the bodyshell, the original interior trim may be modified around the safety cages and their mountings by cutting it away or by distorting it. However, this modification does not permit the removal of complete parts of upholstery or trim.

Where necessary, the fuse box may be moved to enable a rollcage to be fitted.

Mounting points of the front, main, lateral rollbars or lateral half-rollbars :

Each mounting point must include a reinforcement plate at least 3 mm thick.

Each mounting foot must be attached by at least three bolts on a steel reinforcement plate at least 3 mm thick and of at least 120 cm² area which is welded to the bodyshell.

For cars homologated as from 01.01.2007, the area of 120 cm² must be the contact surface between the reinforcement plate and the bodyshell.

Examples according to Drawings 253-50 to 253-56. For Drawing 253-52, the reinforcement plate need not necessarily be welded to the bodyshell.

In the case of Drawing 253-54, the sides of the mounting point may be closed with a welded plate.

Fixing bolts must have a minimum diameter of M8 and a minimum quality of 8.8 (ISO standard).

Fasteners must be self-locking or fitted with lock washers.

The angle between 2 bolts (measured from the tube axis at the level of the mounting foot cf. Drawing 253-50) must not be less than 60 degrees.

Mounting points of the backstays :

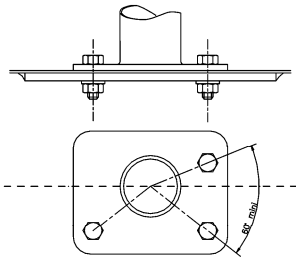
Each backstay must be secured by a minimum of 2 M8 bolts with mounting feet of at least 60 cm² area (Drawing 253-57), or secured by a single bolt in double shear (Drawing 253-58), provided it is of adequate section and strength and provided that a bush is welded into the backstay.

These are minimum requirements.

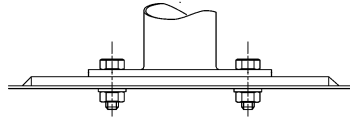
In addition, more fasteners may be used, the support plates of the mounting feet may be welded to reinforcement plates, the safety cage (as defined by Article 253-8.3.1) may be welded to the bodyshell/chassis.

Special case :

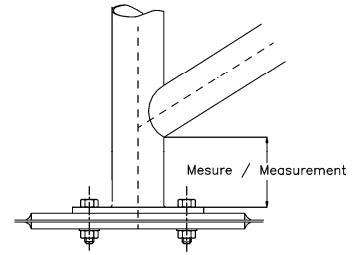
For non steel bodyshells/chassis, any weld between the cage and the bodyshell/chassis is prohibited, only the bonding of the reinforcement plate on the bodyshell/chassis is permitted.



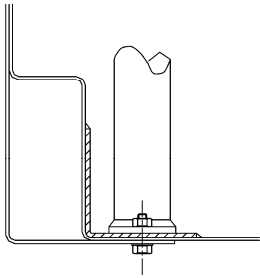
253-50



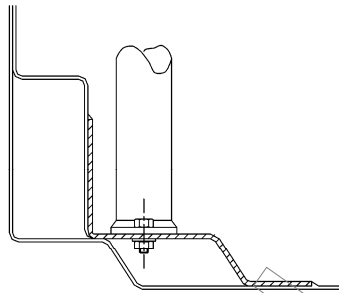
253-51



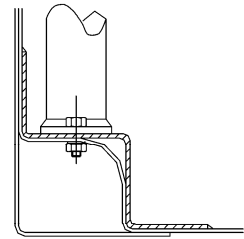
253-52



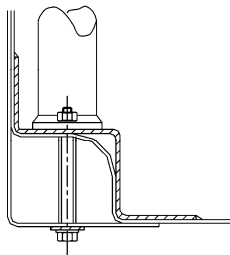
253-53



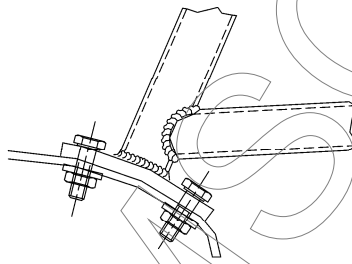
253-54



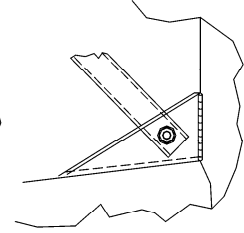
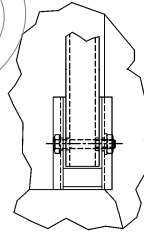
253-55



253-56



253-57



253-58

8.3.3 Material specifications

Only tubes with a circular section are authorised. Specifications of the tubes used :

Material	Minimum tensile strength	Minimum dimensions (mm)	Use
Cold Drawn seamless unalloyed Carbon steel (see below) containing a maximum of 0.3 % of Carbon	350 N/mm ²	45 x 2.5 (1.75"x0.095") or 50 x 2.0 (2.0"x0.083")	Main rollbar (Drawings 253-1 and 253-3) or Lateral rollbars and Rear transverse member (Drawing 253-2)
		38 x 2.5 (1.5"x0.095") or 40 x 2.0 (1.6"x0.083")	Lateral half-rollbars and other parts of the safety cage (unless otherwise indicated in the articles above)

Note : For an unalloyed steel, the maximum content of additives is 1.7 % for manganese and 0.6 % for other elements.

In selecting the steel, attention must be paid to obtaining good elongation properties and adequate weldability.

The tubing must be bent by a cold working process and the centreline bend radius must be at least 3 times the tube diameter.

If the tubing is ovalised during bending, the ratio of minor to major diameter must be 0.9 or greater.

The surface at the level of the bends must be smooth and even, without ripples or cracks.

8.3.4 Guidance on welding :

These must be carried out along the whole perimeter of the tube. All welds must be of the highest possible quality with full penetration and preferably using a gas-shielded arc.

Although good external appearance of a weld does not necessarily guarantee its quality, poor looking welds are never a sign of good workmanship.

When using heat-treated steel the special instructions of the manufacturers must be followed (special electrodes, gas protected welding).

8.3.5 Protective padding :

Where the occupants' bodies could come into contact with the safety cage, flame retardant padding must be provided for protection.

Where the occupants' crash helmets could come into contact with the safety cage, the padding must comply with FIA standard 8857-2001, type A (see technical list n°23 "Roll Cage Padding Homologated by the FIA") and must be permanently fixed to the cage. **Application :** For all categories.

ARTICLE 9 : REAR VIEW

Rearward visibility must be ensured by two external rear-view mirrors (one on the right and one on the left). These rear-view mirrors may be as standard.

Each rear-view mirror must have a reflecting surface of at least 90 cm². An inside rear-view mirror is optional.

Application: Groups N, A, B, R and Super 2000 Rallies. For Super Production see specific regulations. A cut-out (maximum surface 25 cm² per mirror) is authorised in the rear view mirror housing for cockpit ventilation.

Application: only in rallies, Groups N, A, R and Super 2000 Rallies.

ARTICLE 10 : TOWING-EYE

All cars will be equipped with a rear and front towing-eye for all events.

This towing-eye will only be used if the car can move freely.

It will be clearly visible and painted in yellow, red or orange.

ARTICLE 11 : WINDOWS / NETS

Windows :

The windows must be certified for road use, their marking standing as proof.

For cars with 4 or 5 doors, an intermediate part may be fitted between the upper part of the window and the upper part of the rear door window opening, provided that it has no function other than to ventilate the cockpit and that it does not protrude beyond the perimeter of the car exterior surface of the window.

The windscreen must be made of laminated glass.

It may be fitted with one or several transparent and colourless films (maximum total thickness of 400 microns) on its outer surface, unless this is forbidden by the traffic regulations of the country(ies) through which the event is run.

A sun strip for the windscreen is authorised, on condition that it allows the occupants to see the road signs (traffic lights, traffic signs...).

The use of tinted glass and/or safety film is permitted in side and rear windows. In such cases it must be possible for a person situated 5 m from the car to see the driver as well as the contents of the car. In rallies only : If silvered or tinted films are not used or if the side windows and the glass sunroof are not made from laminated glass, the use of transparent and colourless anti-shatter films on the side windows and the glass sunroof is mandatory.

The thickness of these films must not be greater than 100microns. The use of silvered or tinted films is authorised, on the side and rear windows and on the glass sunroof, and on the following conditions:

- Openings in these films must allow a person outside the car to see the driver as well as the contents of the car.
- This authorisation must be mentioned in the supplementary regulations of the event.

Application: Groups N, A, B. For Super Production see specific regulations.

Nets :

For events on circuits, the use of nets affixed to the safety roll-cage is mandatory.

These nets must have the following characteristics :

- Minimum width of the strips : 19 mm
- Minimum size of the meshes : 25 x 25 mm.

- Maximum size of the meshes : 60 x 60 mm.
and must close up the window opening to the centre of the steering wheel.

ARTICLE 12 : SAFETY FIXING DEVICES FOR WINDSCREEN

Such devices may be used freely. Application: Groups N, A, B.

ARTICLE 13 : GENERAL CIRCUIT BREAKER

The general circuit breaker must cut all electrical circuits, battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc.) and must also stop the engine. For Diesel engines having no electronically controlled injectors, the circuit breaker must be coupled with a device cutting off the intake into the engine.

It must be a spark-proof model, and will be accessible from inside and outside the car.

As for the outside, the triggering system of the circuit breaker will compulsorily be situated at the lower part of the windscreen mountings for closed cars. It will be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.

This outside triggering system only concerns closed cars.

Application: Compulsory fitting for all cars taking part in speed events on circuits or hill-climbs. The fitting is recommended for other events.

ARTICLE 14 : FIA APPROVED SAFETY FUEL TANKS

Whenever a competitor uses a safety fuel tank, it must come from a manufacturer approved by the FIA. In order to obtain the FIA's agreement, a manufacturer must have proved the constant quality of its product and its compliance with the specifications approved by the FIA. Safety tank manufacturers recognised by the FIA must undertake to deliver to their customers exclusively tanks complying with the norms approved.

To this end, on each tank delivered the name of the manufacturer, the exact specifications according to which this tank has been manufactured, the homologation date the date of the end of validity, and the series number, shall be marked.

The marking process must be indelible and must have been approved beforehand by the FIA according to the prevailing standard.

14.1 Technical specifications

The FIA reserves the right to approve any other set of technical specifications after study of the dossier submitted by the manufacturers concerned.

14.2 Specifications FT3 1999, FT3.5 or FT5

The technical specifications for these tanks are available, on request, from the FIA Secretariat.

14.3 Ageing of tanks

The ageing of safety tanks entails a considerable reduction in the strength characteristics after approximately five years. No bladder shall be used more than 5 years after the date of manufacture, unless inspected and recertified by the manufacturer for a period of up to another two years.

A leak-proof cover, made from non-flammable material, easily accessible and removable only with the use of tools, must be installed in the protection for FT3 1999, FT3.5 or FT5 tanks, in order to allow the checking of the validity expiry date.

14.4 Applications of these specifications

Group N, Group A and Group B cars may be equipped with an FT3 1999, FT3.5 or FT5 safety fuel tank if the modifications necessary do not exceed those allowed by the regulations.

The use of safety foam in FT3 1999, FT3.5 or FT5 tanks is recommended.

14.5 Fuel tanks with filler necks, Groups A and N

All cars fitted with a fuel tank with filler neck passing through the cockpit must be equipped with a non-return valve homologated by the FIA.

This valve, of the type "with one or two flaps", must be installed in the filler neck on the tank side."

The filler neck is defined as being the means used to connect the fuel filler hole of the vehicle to the fuel tank itself.

ARTICLE 15 : PROTECTION AGAINST FIRE

An efficient protective screen must be placed between the engine and the occupant's seat, in order to prevent the direct passage of flames in case of fire.

Should this screen be formed by the rear seats, it is advisable to cover them with a flameproof coating.

ARTICLE 16 : SEATS, ANCHORAGE POINTS AND SUPPORTS

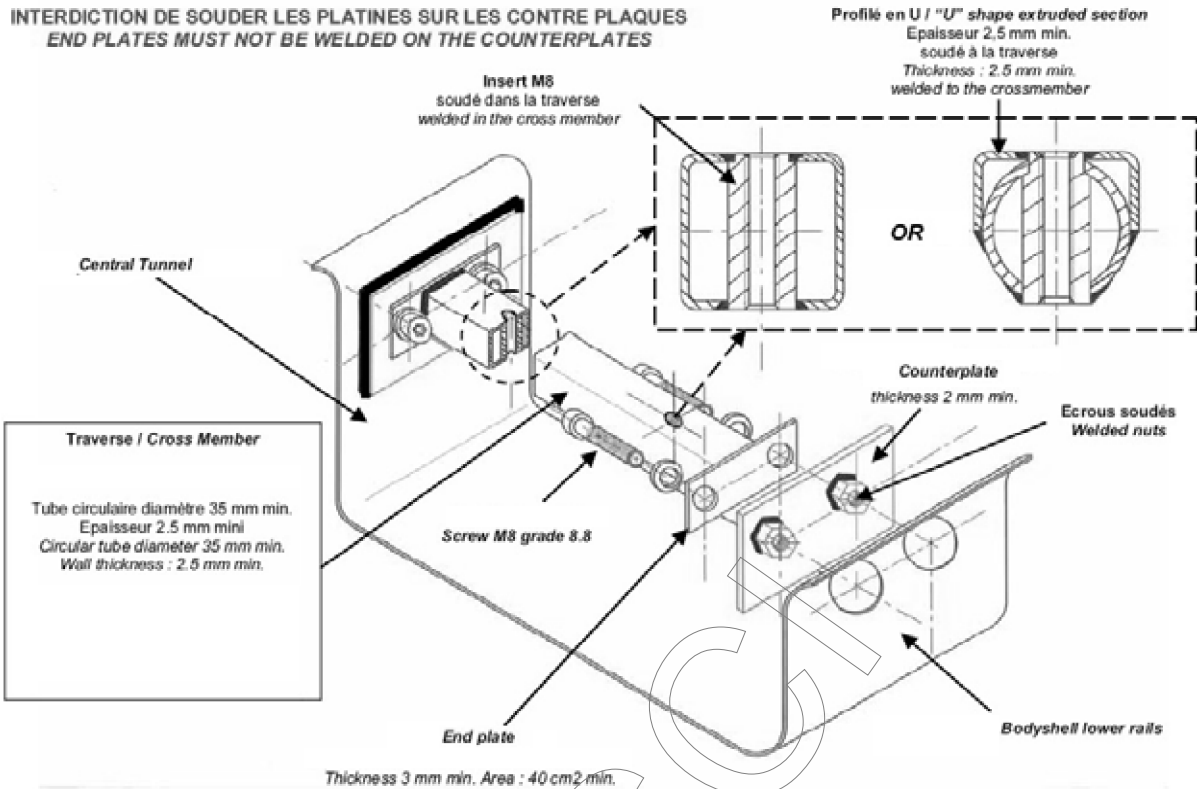
If the original seat attachments or supports are changed, the new parts must either be approved for that application by the seat manufacturer or must comply with the specifications mentioned below :

1) Anchorage points for fixing the seat supports:

The seat supports must be fixed either:

- on the anchorage points for fixing seats used on the original car
- on the anchorage points for fixing seats homologated by the manufacturer as an Option Variant (in which case the original anchorage points may be removed)
- on anchorage points for fixing seats in conformity with Drawing 253-65B.

The seat supports must be fixed to the anchorage points for fixing seats via at least 4 mounting points per seat, using bolts measuring at least 8mm in diameter.

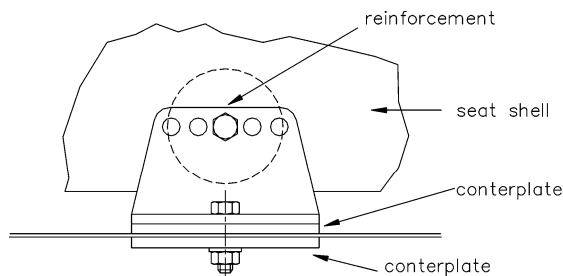


FITTING INSTRUCTIONS

- 1- Drill holes (larger than nut outer diameter) in the bodyshell lower rail and in central tunnel wall.
- 2- Weld the nuts on the counterplates, then weld these on the bodyshell lower rail on the central tunnel wall.
- 3- Weld the 2 threaded inserts in the crossmember, then weld the endplates at each end of the crossmember.
- 4- Fix the assembly through 4 M8screws of 8.8 grade which will be screwed in the welded nuts.

2) Fixing of the seat supports directly onto the shell/chassis

Supports must be attached to the shell/chassis via at least 4 mounting points per seat using bolts with a minimum diameter of 8 mm and counterplates, according to the Drawing 253-65. The minimum area of contact between support, shell/chassis and counterplate is 40 cm² for each mounting point.



253-65

- 3) If quick release systems are used, they must capable ofwithstanding vertical and horizontal forces of 18000 N, applied non-simultaneously.

If rails for adjusting the seat are used, they must be those originally supplied with the homologated car or with the seat.

- 4) The seat must be attached to the supports via 4 mounting points, 2 at the front and 2 at the rear of the seat, using bolts with a minimum diameter of 8 mm and reinforcements integrated into the seat.

Each mounting point must be capable of withstanding a force of 15000 N applied in any direction.

- 5) The minimum thickness of the supports and counterplates is 3 mm for steel and 5 mm for light alloy materials.

The minimum longitudinal dimension of each support is 6 cm.

- 6) If there is a cushion between the homologated seat and the occupant, the maximum thickness of this cushion is 50 mm.

All the occupants' seats must be homologated by the FIA (8855/1999 or 8862/2009 standards), and not modified.

For seats in compliance with 8855/1999 FIA standard, the limit for use is 5 years from the date of manufacture indicated on the mandatory label.

An extension of 2 further years may be authorised by the manufacturer and must be indicated by an additional label.

For seats in compliance with 8862/2009 FIA standard, the limit for use is 10 years from the year of manufacture.

For Rallies only, seats corresponding to the standard 8862/2009 may be used with supports homologated by the car manufacturers in option variant.

ARTICLE 17 : PRESSURE CONTROL VALVES

Pressure control valves on the wheels are forbidden.

ARTICLE 18 : HANS (HEAD AND NECK SUPPORT)

IT IS COMPULSORY TO USE HANS FOR GROUP A AND GROUP N4 VEHICLES.

Article 254

Specific Regulations for Production Cars (Group N)

ARTICLE 1 : DEFINITION

Large scale series production touring cars.

ARTICLE 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 shall not be 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) shall not be 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) or sporting evolutions (ES) homologated in Touring Cars (Group A) are not valid in production Cars (Group N).

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

ARTICLE 3 : NUMBER OF SEATS

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

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 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 form.

ARTICLE 5 : MINIMUM WEIGHT

5.1 Cars must have at least the weight appearing on the Homologation form.

This is the real weight of the empty car (without persons or luggage aboard) without tools or jack, and with a maximum of one spare wheel.

When two spare wheels are carried in the car, the second spare wheel must be removed before weighing.

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.

5.2 In rallies only, the minimum weight of the car (under the conditions of Article 5.1) with crew (driver + co-driver + the full equipment of the driver and co-driver) will be: Minimum weight defined by Article 5.1 + 150 kg. Furthermore, the weight defined in Article 5.1 must also be respected.

ARTICLE 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 ferrous material.
- 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. **For Maruti Esteem MPFI only – it is permitted to file the 5th tooth off the distributor sensor wheel (to make the wheel 4 tooth instead of 5 tooth)**

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.

Air Filters – FREE (Air Filtration methods are free upto the carburettor or the throttle body).

Explanation to Scrutineers : Additional Air intake, fabricated or otherwise may be allowed.

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.

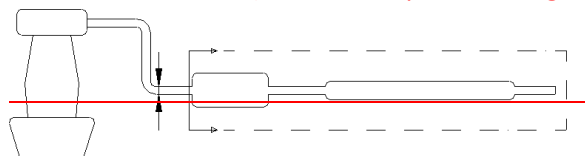
The engine and gearbox mountings must be original or homologated.

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

Exhaust :

- FREE. (Exhaust manifold to the exit is free.) However the exhaust ports in the cylinder head should remain as provided by the manufacturer.
- The noise levels on the open road must not exceed 103dB(A) for an engine rotation speed of 3500 rpm for petrol engines and 2500 rpm for diesel engines
- The location of the exit of the exhaust pipe is free
- The exhaust system must not be provisional
- Exhaust gases may only exit at the end of the system
- These liberties must not entail any bodywork modifications and must respect the laws of the country, with regard to noise levels.

~~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, 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 will be 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 should 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 event 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 will be 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.

- **In rallies only:**

The number of cylinders is limited to 6. The cubic capacity is limited as follows:

a) Normally aspirated engines

- 3 l maximum for two valves per cylinder.
- 2.5 l maximum for more than two valves per cylinder.

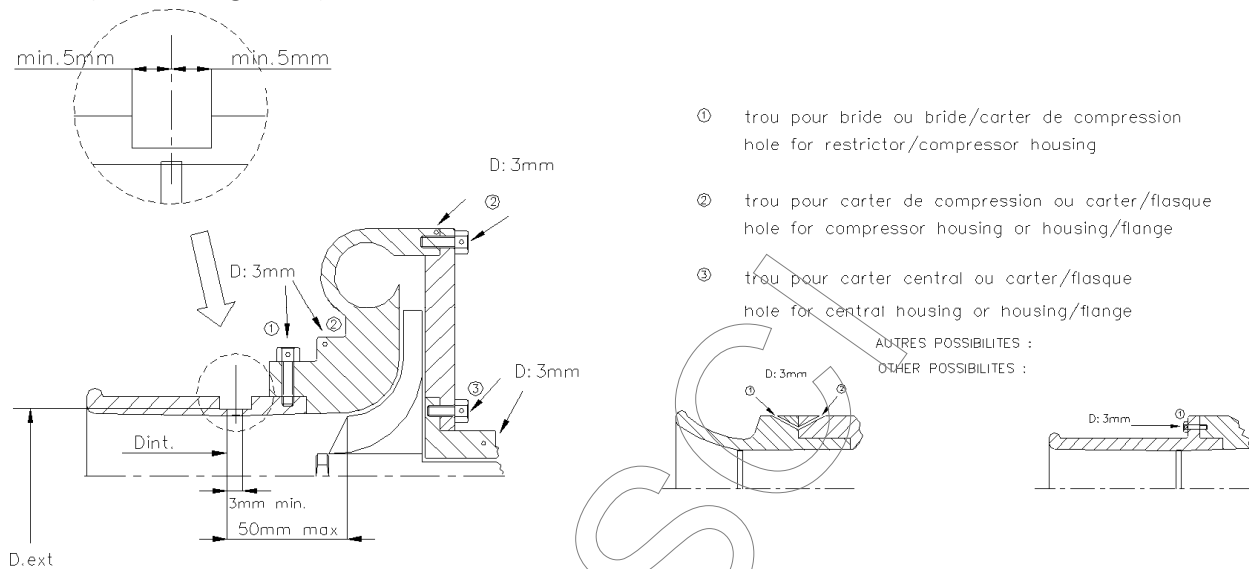
b) Supercharged engines

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 events, 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:

The maximum internal diameter of the restrictor is 33 mm, maintained for a minimum distance 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).



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 an 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 will not be 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 homologated in Option Variant (VO).

6.3 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 anti-roll 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 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. 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, will be considered as hydraulic dampers.

Mc Pherson type suspension damper

If, in order to change the damping element of a Mac Pherson 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 and the maximum hardness is 80 shores –Type A. **FOR MARUTI ESTEEM AND MARUTI BALENO ONLY – THE**

STRENGTHENING OF STRUT MOUNT BY ADDITION OF MATERIAL IS ALLOWED for the year 2012 only.

6.4 Wheels and tyres

6.4.1) Wheels:

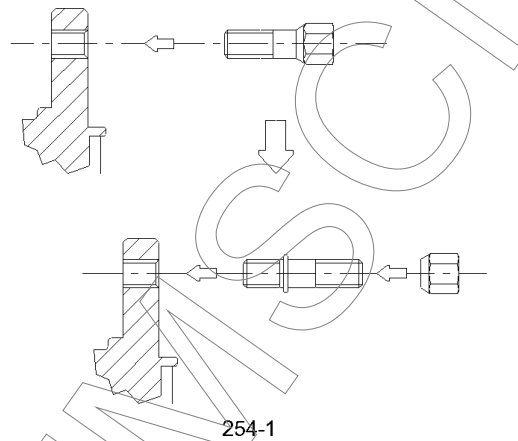
The wheels are free, respecting the homologated maximum diameter (Article 801.a), and maximum width (Article 801.b).

The use of wheels with lesser dimensions is permitted.

Wheel size 1J more and 1 inch more rim dia than the homologated size will be permitted. For the year 2012 only.

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

They must be covered by the wings (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 ferrous.

Air extractors added on the wheels are forbidden.

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.

6.4.3) Spare wheel:

The spare wheel (wheels) is (are) compulsory if mentioned in the Homologation form.

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

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

~~Strengthening of chassis is permitted by suitable welding process ; collateral addition of material is allowed. For the year 2012 only.~~

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 in rallies only, 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, steering, exhaust, extinguisher bottles.

Underbody protections may extend the whole width of the underside part of the front bumper only in front of the front wheel axis.

The mountings of the front and rear bumpers cannot be modified.

Additional mountings are authorised (in addition to the original mountings which must be retained) for attaching bodywork parts (bumper, wing 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 will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement.

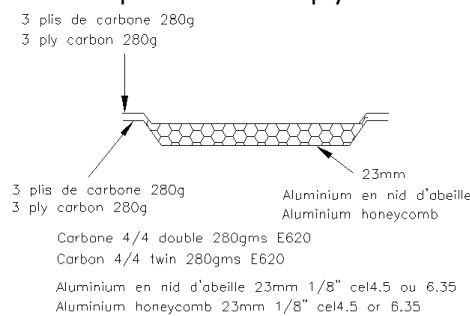
6.7.2.2) Dashboard:

The dashboard and the central console 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:

The original heating equipment must be retained.

The following parts of the air conditioning system may be removed: condenser and auxiliary fan, fluid tank, evaporator and fan, expansion valve, as well as all pipes, connections, contact switches, sensors and actuators necessary for the functioning of the system.

Only if its drive system is completely independent of any other system will it be possible to remove the air conditioning compressor. If that is not the case, the removal of the air conditioning compressor must be homologated in VO. The compressor may be rendered inoperative. If certain elements are common with the heating system, they must be retained.

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 roadholding, 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 event prevent this.
- 2) The horn may be changed and/or an additional one added, within reach of the passenger. The horn is not compulsory on closed roads.
- 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.

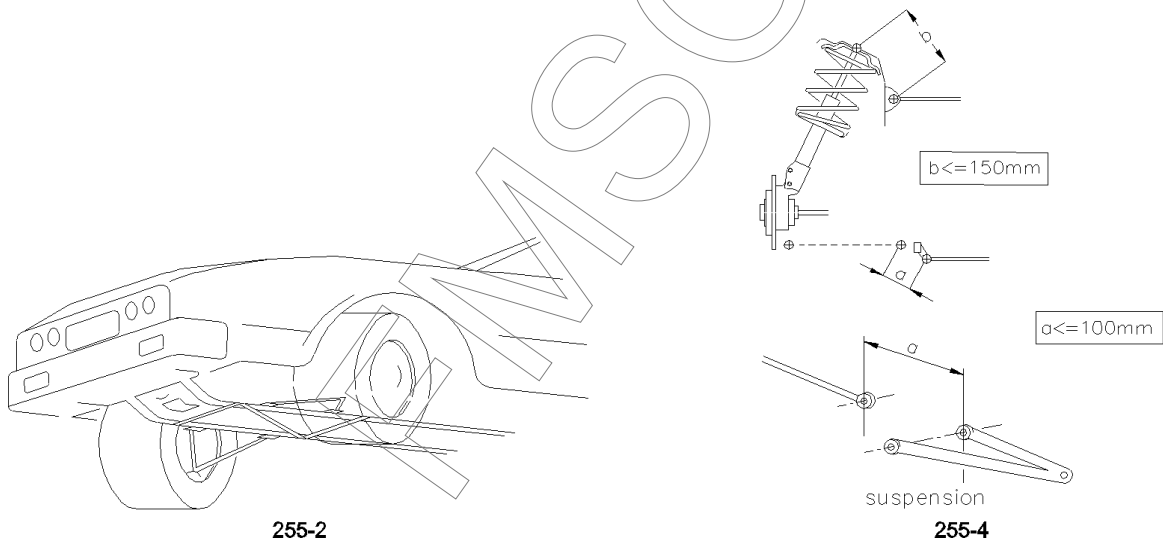
6.7.4) Reinforcements :

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 MacPherson suspension or similar.

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

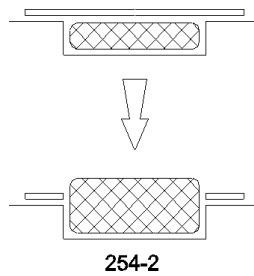
Apart from these points, this bar must not be mounted on the bodyshell or the mechanical parts.



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).



6.8 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.

- Generator:

May be replaced by a more powerful one.

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

- Lighting system:

A maximum of 6 additional headlights including the corresponding relays are allowed, provided that this is accepted by the laws of the country.

If the series fog lamps are kept, they will be counted as additional headlights.

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.

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 or FT5 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 or FT5 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.

Fuel lines must be changed for aviation type lines if an FT3 1999, FT3.5 or FT5 tank is used, the route of these lines being free.

Should a series production tank be used, this change is optional.

It is authorised to drill 2 holes (maximum diameter of 60 mm or equivalent area) in the floor, the sole function of which will be to allow the passage of the lines necessary to feed / empty the fuel tank.

The total capacity of the tanks must not exceed that indicated in Article 401d of the Group N Homologation form, except for rallies, if the car is fitted with FT3 1999, FT3.5 or FT5 tanks.

In this case, the total capacity of the tanks 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. The jack must be operated exclusively by hand (either by the driver, or by the co-driver), i.e. without the help of a system equipped with a hydraulic, pneumatic or electric energy source. The wheel gun must not allow the removal of more than one nut at a time.

6.11 Safety cage

The cage of any car with a corrected cylinder capacity greater than 2000 cm³, homologated after 01.01.2006 must be homologated or certified by an ASN, or homologated by the FIA.

ARTICLE 7: CARS WITH A CORRECTED CYLINDER CAPACITY GREATER THAN 2L IN RALLY

The following articles apply only to Rally cars with a corrected cylinder capacity greater than 2L, and are complementary to the preceding articles.

In case of contradiction between any of the following articles and the preceding articles (articles 1 to 6), the articles mentioned below will take priority for cars with a corrected cylinder capacity greater than 2L.

7.1 Minimum weight (Only for cars with four-wheel drive)

a) In rallies only, and for cars homologated after 01.01.2006, the minimum weight is set at 1350 kg in the following conditions:

- this is the real weight of the car, with neither driver nor co-driver nor their equipment and with a maximum of one spare wheel;
- when two spare wheels are carried in the car, the second spare wheel must be removed before weighing.

At no time during the event may a car weigh less than this minimum weight.

In case of a dispute during weighing, the full equipment of the driver and co-driver will be removed; this includes the helmet, but the headphones external to the helmet may be left in the car.

In case of doubt, and except in rallies, the Scrutineers may drain the tanks containing consumable liquids to check the weight.

The use of ballast is permitted in the conditions provided for under Article 252-2.2 of the General Prescriptions.

- b) In rallies only, the minimum weight of the car (under the conditions of Article 7.1.a) with crew (driver + co-driver + the full equipment of the driver and co-driver) will be: minimum weight defined by Article 7.1.a + 150 kg.

7.2 Engine

7.2.1) Engine flywheel

It will be possible to use an engine flywheel homologated as a Group N Option Variant.

7.2.2) Cooling system

It will be possible to use the lines, the cooling radiator and the fan(s) homologated as a Group N Option Variant.

7.2.3) Data logging

A data logging system is authorised, even if the series vehicle is not so equipped. It must be connected only:

- to the series sensors
- to the following sensors which it will be possible to add: water temperature, oil temperature, oil pressure and engine speed.

Any exchange of data with the car by a method other than cable link or chip card is prohibited.

7.2.4) Anti-lag system

A switch and an electric loom may be added for the sole purpose of activating the anti-lag system.

7.2.5) Water spray system on the intercooler

It will be possible to use the system homologated in Group N Option Variant.

7.2.6) Turbocharger

It will be possible to use the turbocharger homologated in Group N Option Variant.

7.3 Transmission

7.3.1) Clutch

It will be possible to use the clutch mechanism pressure plate as well as the controls homologated as a Group N Option Variant.

7.3.2) Gearbox control

It will be possible to use the control homologated as a Group N Option Variant.

7.3.3) Front and rear differentials

Only mechanical type limited-slip differentials with plates are authorised.

Mechanical type limited-slip differentials with plates must:

- either come from the series model
- or be homologated as a Group N Option Variant.

A mechanical limited-slip differential is any system that works exclusively mechanically, that is, without the assistance of a hydraulic or electric system. A viscous clutch is not considered as a mechanical system.

Any differential with electronic management is prohibited. The number and the type of the plates are free.

7.3.4) Lubrication

Gearbox and differential: an additional lubrication and oil cooling device is allowed provided it is homologated in Option-Variant (VO).

7.4 Suspension

7.4.1) Upper suspension plate

It will be possible to use upper suspension plates homologated as a Group N Option Variant.

7.4.2) Anti-roll bars

It will be possible to use anti-roll bar diameters homologated as a Group N Option Variant.

7.5 Brakes

7.5.1) Brake discs

It will be possible to use brake discs homologated as a Group N Option Variant.

7.5.2) Brake callipers

It will be possible to use brake callipers homologated as a Group N Option Variant.

7.5.3) Cooling of the brakes

It will be possible to use brake cooling ducts homologated as a Group N Option Variant.

7.6 Wheels and Tyres

Complete wheels (as well as tracks) are free, provided that they can be housed within the original bodywork; this means that the upper part of the complete wheel, located vertically over the wheel hub centre, must be covered by the bodywork when measured vertically. Wheel fixations by bolts may be freely changed to fixations by pins and nuts.

The use of tyres intended for motorcycles is forbidden.

Rims must imperatively be made from cast material, or from pressed steel sheet.

*For gravel rallies, the maximum dimension of the rims is 7" x 15".

If the rims are not made from cast aluminium alloy, the minimum weight of a 6.5" x 15" or 7" x 15" is 8.6 kg.

If specified in the Supplementary Regulations of the event (such as snow rallies), the maximum dimension of the rims is 5.5" x 16".

For asphalt rallies, the maximum dimension of the rims is 8" x 18", the material of the 8" x 18" rims is free (provided that it is cast) and the minimum weight of an 8" x 18" rim is 8.9 kg.

Air extractors added on to the wheels are prohibited.

7.7 Steering

An oil radiator for power steering is authorised, provided that it is homologated as an option variant.

7.8 Rear windows

In the case of cars with 4 or 5 doors, the lift mechanism for the rear windows may be replaced with a device that locks the rear windows in the closed position.

Article 255

Specific Regulations for Touring Cars (Group A)

ARTICLE 1: DEFINITION

Large scale series production Touring Cars.

ARTICLE 2: HOMOLOGATION

At least 2,500 identical examples of these cars must have been manufactured in 12 consecutive months. Unless restriction specified on the homologation form, all homologations valid for Group N are valid for Group A.

A "World Rally Car" (WR) is a variant of a fixed model of car, previously homologated in Group A and must therefore be assembled like a Group A vehicle.

All the parts homologated on the "World Rally Car" (WRC) form must be used in their entirety.

In order for a Group A car to take part in rallies, its characteristics and the dimensions of its parts must always be less than or equal to the characteristics and dimensions specified for a World Rally Car (this does not apply to variable geometry turbochargers of supercharged diesel engines).

If a Group A car does not originally comply with the above point, it must, by means of a VO type homologation, conform to the dimensions and characteristics specified for a World Rally Car, in order to take part in rallies.

ARTICLE 3: NUMBER OF SEATS

Touring cars must have 4 seats minimum.

ARTICLE 4: WEIGHT

4.1. Cars are subject to the following scale of minimum weights in relation to their cubic capacity (see Article 4.2 for exception):

In rallies:

up to	1000 cm ³ :			720 kg
over	1000 cm ³	and up to	1150 cm ³ :	790 kg
over	1150 cm ³	and up to	1400 cm ³ :	840 kg
over	1400 cm ³	and up to	1600 cm ³ :	920 kg
over	1600 cm ³	and up to	2000 cm ³ :	1000 kg
over	2000 cm ³	and up to	2500 cm ³ :	1080 kg
over	2500 cm ³	and up to	3000 cm ³ :	1150 kg
over	3000 cm ³	and up to	3500 cm ³ :	1230 kg
over	3500 cm ³	and up to	4000 cm ³ :	1310 kg
over	4000 cm ³	and up to	4500 cm ³ :	1400 kg
over	4500 cm ³	and up to	5000 cm ³ :	1500 kg

over 5000 cm ³	and up to	5500 cm ³ :	1590 kg
over 5500 cm ³ :			1680 kg
For other events:			
up to 1000 cm ³ :			670 kg
over 1000 cm ³	and up to	1400 cm ³ :	760 kg
over 1400 cm ³	and up to	1600 cm ³ :	850 kg
over 1600 cm ³	and up to	2000 cm ³ :	930 kg
over 2000 cm ³	and up to	2500 cm ³ :	1030 kg
over 2500 cm ³	and up to	3000 cm ³ :	1110 kg
over 3000 cm ³	and up to	3500 cm ³ :	1200 kg
over 3500 cm ³	and up to	4000 cm ³ :	1280 kg
over 4000 cm ³	and up to	4500 cm ³ :	1370 kg
over 4500 cm ³	and up to	5000 cm ³ :	1470 kg
over 5000 cm ³	and up to	5500 cm ³ :	1560 kg
over 5500 cm ³			1650 kg

4.2. In rallies, for 4-wheel drive cars with either a naturally aspirated engine with a cylinder capacity of between 1600 and 3000 cm³ or a turbocharged engine and a restrictor imposed by Article 5.1.8.3 and an equivalent cylinder capacity of less than or equal to 3000 cm³, the minimum weight is set at 1230 kg.

4.3. This is the real weight of the car, with neither driver nor co-driver nor their equipment and with a maximum of one spare wheel.

When two spare wheels are carried in the car, the second spare wheel must be removed before weighing.

At no time during the event may a car weigh less than this minimum weight.

In case of a dispute during weighing, the full equipment of the driver and co-driver will be removed; this includes the helmet, but the headphones external to the helmet may be left in the car.

In case of doubt, and except in Rallies, the Scrutineers may drain the tanks containing consumable liquids to check the weight.

The use of ballast is permitted in the conditions provided for under Article 252-2.2 of the "General Prescriptions".

4.4. In rallies only, the minimum weight of the car (under the conditions of Article 4.3) with crew (driver + co-driver + the full equipment of the driver and co-driver) will be: Minimum weight defined by Article 4.1 + 150 kg.

For cars with four-wheel drive, in rallies, with either a naturally aspirated engine of a capacity between 1600 and 3000 cm³, or turbocharged engine with a restrictor imposed by Article 5.1.8.3 together with an equivalent capacity lower than or equal to 3000 cm³, the minimum weight of the car (under the conditions of Article 4.3) with crew (driver + co-driver + the full equipment of the driver and co-driver) will be: 1380 kg. Furthermore, the weights defined in Articles 4.1, 4.2 and 4.3 must also be respected.

ARTICLE 5: MODIFICATIONS AND ADJUNCTIONS ALLOWED GENERAL CONDITIONS

Irrespective of the parts for which the present article lays down freedom of modification, the original mechanical parts necessary for the propulsion as well as all accessories necessary for their normal functioning, excepting any steering, braking, or suspension part, having undergone the normal machining operations laid down by the manufacturer for series production may be subjected to all tuning operations through finishing, scraping but not replacement.

In other words provided that the origin of the series production part may always be established, its shape may be ground, balanced, adjusted, reduced or modified through machining.

Chemical and heat treatment are allowed, in addition to the above. However, the modifications defined by the above paragraph are allowed on condition that the weights and dimensions mentioned on the homologation form are respected.

Nuts and bolts:

Throughout the car, any nut, bolt, screw may be replaced by any other nut, any other bolt, any other screw and have any kind of locking device (washer, lock nut, etc.).

Addition of material and parts:

Any addition of material or parts is forbidden unless it is specifically allowed by an article in these regulations.

Any material removed is not to be reused.

Restoration of body shape and chassis geometry, following accidental damage, is permissible by the addition of the materials necessary to effect the repairs (body filler, weld metal, etc.) ; other parts which are worn or damaged are not to be repaired by the addition or attaching of material unless an article in these regulations allows appropriate freedom.

5.1. Engine**5.1.1) Cylinder - block - Cylinder-head:**

It is permitted to close the unused apertures in the cylinder block and cylinder head, if the only purpose of this operation is that of closing.

A rebores of 0.6 mm maximum is allowed in relation to the original bore without this leading to the capacity class limit being exceeded.

The resleeving of the engine is allowed within the same conditions as for reboring, and the sleeve material may be modified.

The sleeves must have a circular internal section and be concentric with the cylinders, dry or wet and distinct from one another.

Planing of the cylinder-block and of the cylinder head is allowed.

In the case of rotary engines, on condition that the original dimensions of the intake inlet ports and of the exit of the exhaust are respected, the dimensions of the inlet and exhaust ducts into the engine block are free.

5.1.2) Compression ratio:

The compression ratio may be modified.

For turbocharged engines, it must not exceed 11.5:1 at any time.

If the car is homologated with a higher rate, it must be modified so as not to exceed 11.5:1.

5.1.3) Cylinder head gasket:

Free.

5.1.4) Pistons:

Free as well as the piston-rings, gudgeon pins and their securing mechanism.

5.1.5) Connecting rods, crankshaft:

Apart from the modifications permitted by the above paragraph "General Conditions", additional mechanical treatments, different from those carried out on the series production part, are allowed to be made to the crankshaft and the con rods.

5.1.6) Bearings shells:

Make and material are free; they must however retain their original type and dimensions.

5.1.7) Flywheel:

It may be modified in accordance with the above paragraph "General Conditions" provided that the original flywheel may still be identified.

5.1.8) Fuel and air feed:

Drawings I and II (Drawings III-K1 and III-K2 for vehicles homologated as from 01.01.2010) on the Group A/B homologation form must be respected.

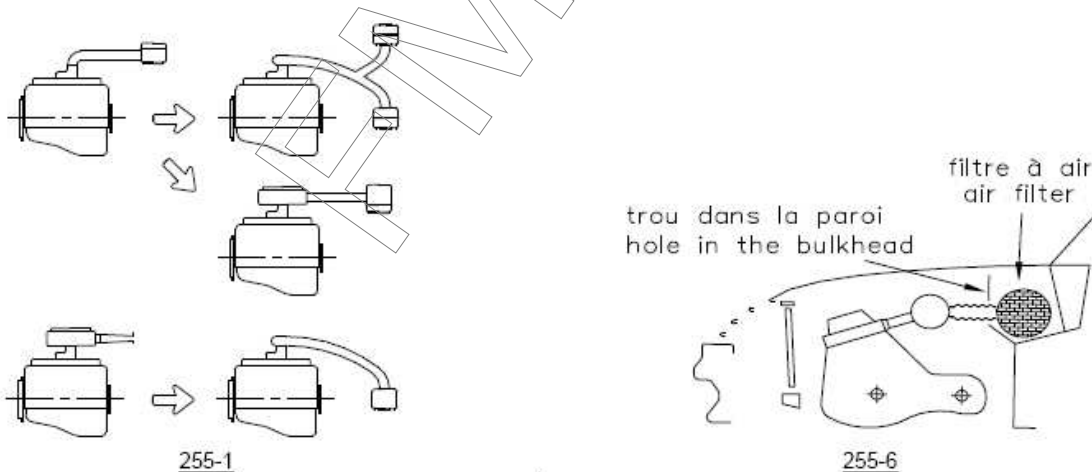
The accelerator cable and its cable sleeve stop are free.

The air filter and the filter box are free.

For a normally aspirated engine, the plenum is free, but it must remain in the engine bay.

The air filter along with its box may be removed, moved in the engine compartment or replaced by another (see Drawing 255-1).

In Rallies only, it is possible to cut out a part of the bulkhead situated in the engine compartment for the fitting of one or more air filters or for the intake of air ; however, such cut-outs must be strictly limited to those parts necessary for this installation (see Drawing 255-6).



Furthermore, if the air intake ventilating the driving compartment is in the same zone as the air intake for the engine, this zone must be isolated from the air filter unit, in case of fire. The pipe between the air filter and the carburettor(s) or the air-measuring device (injection) is free. Likewise, the pipe between the air measuring device and the intake manifold or the supercharging device is free.

The air intake may be fitted with a grill.

Anti-pollution parts may be removed provided that this does not lead to an increase in the quantity

of air admitted. Fuel pumps are free. They may not be fitted in the cockpit unless this is an original fitting, in which case they must be well protected.

Petrol filters, with a maximum unit capacity of 0.5 l may be added to the fuel feed circuit.

The accelerator linkage is free.

The original heat exchangers and intercoolers, or any other device fulfilling the same function, must be retained, and remain in their original location, which means that their supports and position must remain original.

The pipes between the supercharging device, the intercooler and the manifold are free (on condition that they remain in the engine bay), but their only function must be to channel air and to join various parts together.

Furthermore, for a turbocharged engine, the total volume between the restrictor and the butterfly (or butterflies) must not exceed 20 litres.

In the case of air-water intercoolers, the pipes connecting the intercooler and its radiator are free, but their only function must be that of channelling water.

Any system for spraying water onto the intercooler is forbidden.

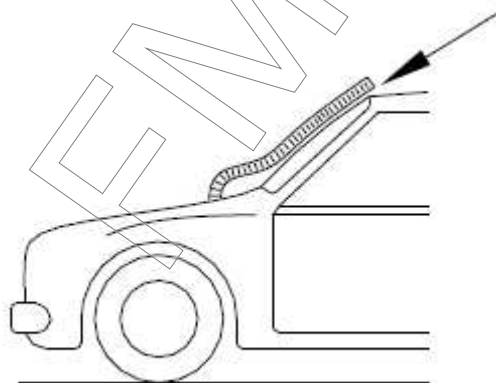
Any system for injecting water into the intake manifold and/or intercooler is forbidden.

The inner dimensions of the ports are free in the rotary chambers for rotary engines and for 2-stroke engines.

The drive pulley of the "G" compressor is free.

For African rallies only:

It is possible to make a hole, with a maximum diameter of 10 cm, in the engine bonnet in order to provide air for the engine, and to place a pipe, with a maximum internal diameter of 10 cm, in this hole (see Drawing 255-13).



255-13

5.1.8.1 Carburettor:

The carburettors are free, but the original number of carburettors and their working principle must be retained and they must remain in their original location.

Furthermore, the diameter and number of the butterflies as stated on the homologation form must be respected.

5.1.8.2 Injection:

The original system and its type, as specified on the homologation form of the vehicle (such as K-Jetronic) must be retained, as must its location.

The elements of the injection device regulating the metering of the quantity of fuel admitted to the

engine may be modified, but not the diameter of the opening of the butterfly.

The air-measuring device is free.

The injectors are free, except for their number, their position, their Assembly axis and their operating principle.

The petrol lines feeding them are free.

The electronic box is free, insofar as it does not incorporate more data.

The fuel pressure regulator is free.

5.1.8.3 Limitation in rallies:

The number of cylinders is limited to 6. The cubic capacity is limited as follows:

a) Normally aspired engines

- 3 l maximum for two valves per cylinder.
- 2.5 l maximum for more than two valves per cylinder. All 2 wheel-drive cars, with a cylinder capacity greater than 1600 cm³ and using parts homologated in Kit Variant (VK) must be fitted with an intake restrictor according to their homologation forms.

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.

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

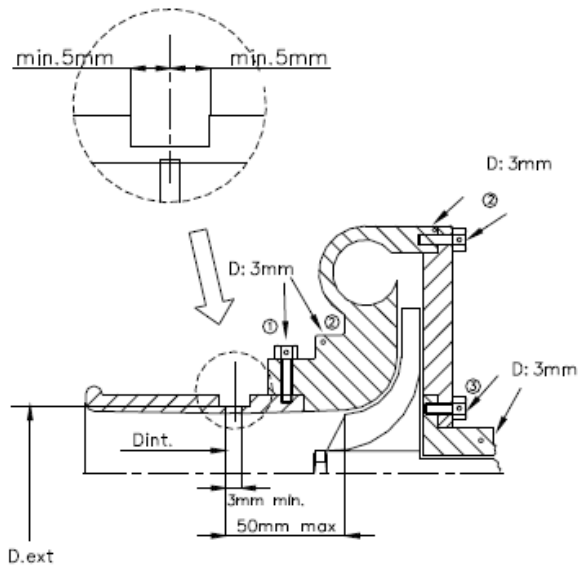
The maximum internal diameter of the restrictor is 34 mm, maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see Drawing 254-4). 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 40 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).



- ① trou pour bride ou bride/carter de compression
hole for restrictor/compressor housing
- ② trou pour carter de compression ou carter/flasque
hole for compressor housing or housing/flange
- ③ trou pour carter central ou carter/flasque
hole for central housing or housing/flange

AUTRES POSSIBILITES :
OTHER POSSIBILITIES :



254-4

For vehicles with Diesel engines, the restrictor must have a maximum internal diameter of 37 mm and an external diameter of 43 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 24.0 mm and a maximum external diameter of 30 mm, in the conditions set out above.

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

5.1.9) Camshaft(s):

Free, except the number and number of bearings.

It is permitted to add sleeve bearings to the bearings but their widths must not be greater than those of the original bearings.

Timing is free.

The material, type and dimensions of the pulleys, chains and belts for driving the camshafts are free.

The material of the gearing and sprockets associated with the camshaft is free.

The route and the number of belts and chains are free.

The guides and tensioners associated with these chains or belts are also free, as are protective covers.

5.1.10) Valves:

The material and the shape of the valves are free, as is the length of the valve stem.

The other characteristic dimensions, mentioned on the homologation form, must be retained, including the respective angles of the valves axis.

Valve lift is free.

With regard to the cylinder head orifices (inner side of the engine), in the case of rotary engines, only those dimensions which have been entered on the homologation form have to be respected.

The cups, cotters and guides (even if they do not exist as original parts) are not subject to any

restriction. Shims may be added under the springs.

The material of the seats is free.

5.1.11) Rocker arms and tappets:

Rocker arms may only be modified in accordance with Article 5 "General conditions" above.

The diameter of the tappets as well as the shape of the tappets and rocker arms are free, but the rocker arms must be interchangeable with the original ones.

It is possible to use backing plates to adjust them.

5.1.12) Ignition:

The ignition coil(s), condenser, distributor, interrupter and plugs are free subject to the ignition system (battery/coil or magneto), remaining the same as provided by the manufacturer for the model concerned.

The fitting of an electronic ignition system, even without a mechanical interrupter, is allowed provided no mechanical part other than those mentioned here above is modified or changed, with the exception of the crankshaft, the flywheel or the crankshaft pulley, for which modifications limited to the necessary additions will be possible.

In the same conditions, it shall be possible to change an electronic ignition for a mechanical ignition.

The number of plugs may not be modified ; that of the coils is free.

5.1.13) Cooling:

Provided the original fitting on the car is retained, the radiator and its fixation are free, as are the lines linking it to the engine. A radiator screen may be fitted.

The fan and its drive system can be changed freely, or be withdrawn. It is allowed to add a fan per function.

Thermostat is free.

Dimensions and material of the fan/turbine are free, as are their number.

The fitting of a water catch tank is allowed.

The radiator cap may be locked.

The expansion chamber may be modified ; if one does not exist originally, one may be added.

5.1.14) Lubrication:

Radiator, oil/water exchanger, lines, thermostat, sump and pump strainers are free, without modifying the bodywork.

The number of pump strainers is free.

The driving ratio and the internal parts of the oil pump are free.

The flow rate may be increased relative to the original part.

Oil pressure may be increased by changing the discharge valve spring.

The housing of the oil pump and its cover if any, as well as their position inside the oil sump must be original, but the inside of the housing and its cover if any may be machined.

The fitting of an oil pump chain tensioner is permitted.

The addition of oil lines is allowed inside the engine block, these lines may be used for spraying oil. These oil lines must not have a structural function. They may have a flow control valve only when the series engine block has them (the number and type of valves must be identical to those of the original series engine).

The fitting of an oil radiator outside the bodywork is only allowed below the horizontal plane passing through the hub in such a way that it does not protrude beyond the general perimeter of

the car seen from above as it stands on the starting line, without modifying the bodywork.

Fitting an oil radiator in this manner does not allow the addition of an enveloping aerodynamic structure.

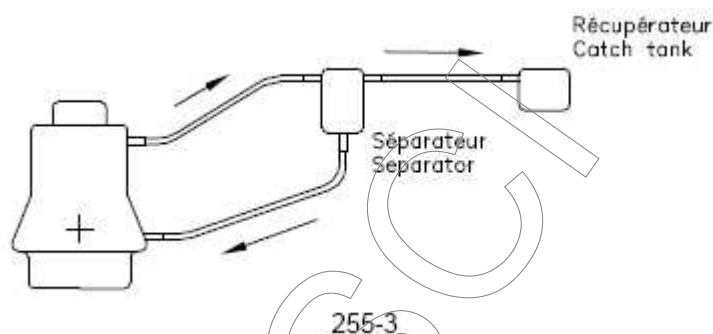
All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator, and must not have any aerodynamic effect.

If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank.

This must have a capacity of 2 litres for cars with a cubic capacity equal to or below 2,000 cm³, and 3 litres for cars with a cubic capacity of over 2,000 cm³.

This container shall be made either out of plastic or shall include a transparent window.

An air/oil separator can be mounted outside the engine (maximum capacity 1 litre), in accordance with the Drawing 255-3.



The oil must only flow from the oil catch tank towards the engine by the force of gravity alone.

A fan may be fitted for cooling the engine oil, but must have no aerodynamic effect.

Oil gauge

The oil gauge is free, but must be present at all times and have no other function. It may be moved from its original position.

Oil filter

The fitting of an oil filter, or a cartridge, in working order is mandatory, and the entire oil flow must pass through this filter or cartridge.

The filter or cartridge is free, provided that it is interchangeable with the original filter or cartridge.

5.1.15) Engine: Mountings - Angle and position:

Mountings are free (but not their number) provided that the angle and position of the engine within its compartment are not modified, and that Articles 5.7.1 and 5- General Conditions are respected.

Supports may be welded to the engine and to the bodywork and their position is free.

5.1.16) Exhaust:

- Exhaust – Free (Manifold to the exit) Only for the year 2012

~~Drawings III and IV (Drawings III L1 and III L2 for vehicles homologated as from 01.01.2010) on the Group A/B homologation form must be respected.~~

~~Downstream the exhaust manifold exit the exhaust is free provided that the maximum sound levels permitted in the country (ies) crossed are not exceeded if it is an event on open roads.~~

~~The exhaust exit must be inside the car's perimeter (see General Prescriptions, Article 252-3.6).~~

~~For the WRC, an efficient heat shield must be put in place around the exhaust in order to avoid excessive exhaust heat and to channel possible leaks towards cooler areas of the car.~~

~~For cars with turbocharged engines the exhaust can only be modified after the turbocharger.
In the case of rotary engines, and on condition that the original dimensions of the inlet ports of the exhaust manifold are respected, the dimensions of the ducts in the manifold are free.
Thermal screens may be fitted on the exhaust manifold, the turbocharger and on the exhaust device, with, however, the sole function of thermal protection.~~

~~— Normally aspirated engines :~~

~~The gas flow must never be modified by means of electronic or mechanical controls.~~

~~— Supercharged engines :~~

~~The gas flow may only be modified through the operation of the waste-gate and/or the control for injecting fresh air into the exhaust manifold.~~

5.1.17) Driving pulleys, belts and chains for ancillaries situated outside the engine:

The material, type and dimensions of the pulleys, chains and belts for driving the ancillaries are free.

The route and the number of belts and chains are free.

5.1.18) Gaskets: Free.

5.1.19) Engine springs:

Springs are not subject to any restrictions but they must keep their original functioning principle.

5.1.20) Starter:

It must be retained, but its make and type are free.

5.1.21) Supercharging pressure:

This pressure may be modified by Article 5.1.19 and Article 5-General Conditions. The connection between the housing and the waste-gate may be made adjustable if it is not originally so.

The original system of operation of the waste-gate may be modified and be rendered adjustable but this system must be retained.

A mechanical system must remain mechanical, an electrical system must remain electrical, etc.

5.1.22) Locking screw

For the sole purpose of fixing a cover on the engine block and on the cylinder head, a locking screw may be used.

This screw must on no account be used to fix other parts.

5.2 Transmission

5.2.1) Clutch:

Clutch is free, but the homologated bell housing must be retained, together with the operation type.

The clutch fluid tanks may be fixed inside the cockpit. In that case, they must be securely fastened and be protected by a liquid and flame proof covering.

5.2.2) Gearbox:

Converter gearboxes are forbidden.

An additional lubrication and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car) in the same conditions as for Article 5.1.14, but the original lubrication principle must be retained.

However, a gearbox homologated as an additional one with an oil pump can be used without this pump.

A fan may be fitted for cooling the gearbox oil, but must have no aerodynamic effect.

The interior of the gearbox is free. Gearbox ratios must be homologated in Group A. Gearbox supports are free, but not their number. May be used:

- the series housing with series ratios or one of the sets of additional ratios ;
- one of the additional housings only with one of the additional sets of ratios.

5.2.3) Final drive and differential:

A limited-slip differential is allowed provided that it can be fitted into the original housing without any modification other than those laid down in the above paragraph "General Conditions".

The original differential may also be locked.

The original lubricating principle for the rear axle must be retained. However an additional lubricating and oil cooling device is allowed (circulation pump, radiator, and air intakes situated under the car) under the same conditions as for Article 5.1.14.

An oil radiator and/or an oil pump may be fitted in the boot (without modifying the series body) but a liquid- and flame-proof bulkhead must separate them from the occupants of the vehicle.

The differential supports are free.

The use of active differentials, i.e. any system acting directly on the differential adjustments (initial stress, pressure...), is forbidden for all 2-wheel drive cars.

For cars with four-wheel drive, the front and rear differentials and self-locking systems must be in conformity with the following points:

- Only entirely mechanical systems are allowed
- The differential must be of the planetary or epicyclic single stage type
- The self-locking system must be of the type with plates and ramps

None of the parameters of the front and rear differentials can be modified except with the help of tools when the car is stopped. For WRC, only homologated front and rear differentials may be used.

5.2.4) The following measures apply to hydraulic circuits of WRC type cars:

- Hydraulic pressure present in the pipes must return to zero as soon as the engine is stopped.
- Nominal pressure in the pipes must never exceed 150 bar.

5.2.5) Transmission shafts:

Titanium alloy transverse shafts are forbidden.

Titanium alloy longitudinal shafts are forbidden, save in exceptional cases examined by the Rally Technical Working Group.

5.3 Suspension

The position of the rotational axes of the mounting points of the suspension to the wheel uprights and to the shell (or chassis) must remain unchanged.

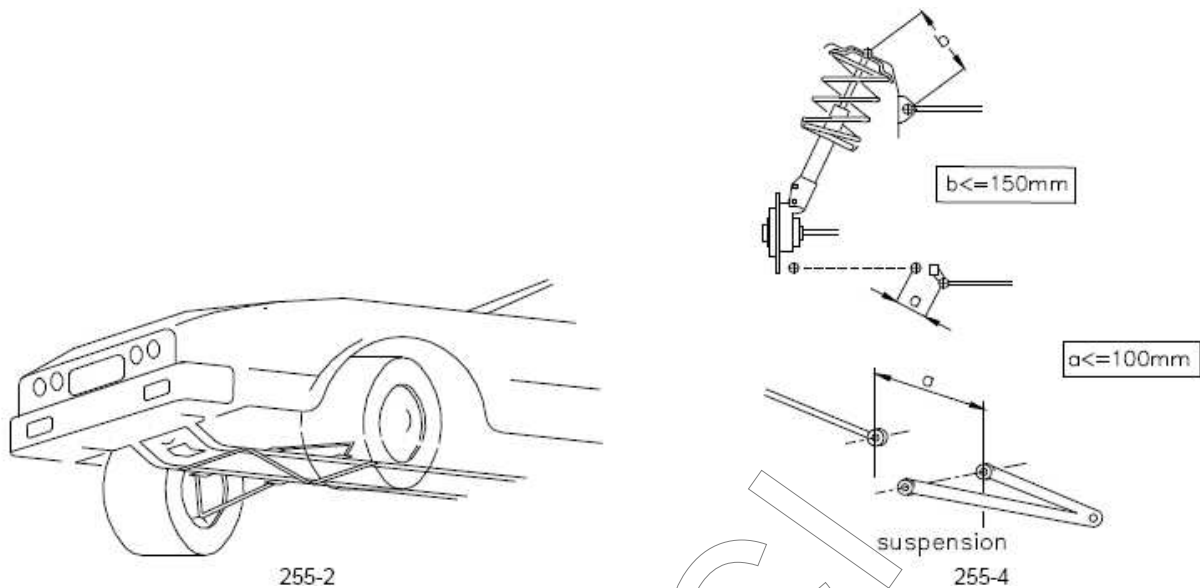
In the case of an oil-pneumatic suspension, lines and valves connected to the spheres (pneumatic parts) are free.

5.3.1) 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.

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 MacPherson suspension or similar.

In the latter case, the maximum distance between an anchorage point of the bar and the upper articulation point will 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.



Strengthening of the mounting points and of the running gear, by adjunction of material, is allowed but joining two separate parts together to form one is prohibited.

5.3.2) Anti-roll bar:

The anti-roll bars homologated by the manufacturer may be replaced or removed, provided that their mounting points on the chassis remain unchanged.

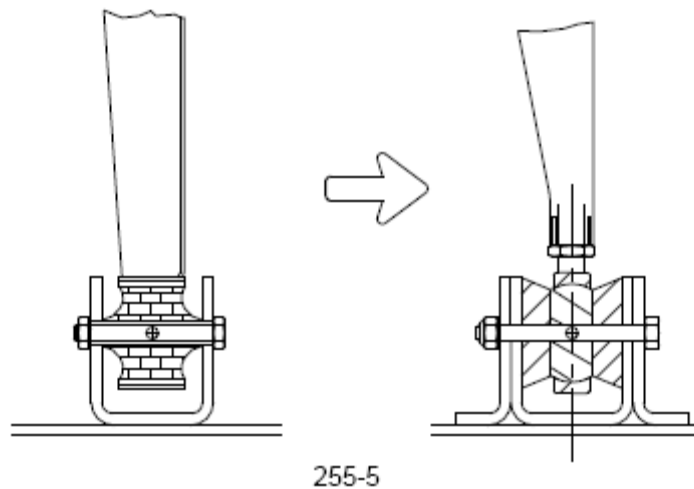
These anchorage points can be used for the mounting of reinforcement bars.

- Only mechanically operated anti-roll bar systems are authorised.
- The anti-roll setting can only be adjusted directly by the driver, using an exclusively mechanical system without external power.
- Any connection between dampers is forbidden.
- Any connections between front and rear anti-roll bars are forbidden.
- Titanium alloy anti-roll bars are forbidden.

5.3.4) The joints may be of a different material from the original ones.

- The suspension mounting points to the bodyshell or chassis may be modified:
- by using a "Uniball" joint. The original arm can be cut and a new seat for the "Uniball" welded. Braces will be used next to the "Uniball" itself.
- by using a screw with a greater diameter;
- by reinforcing the anchorage point through the addition of material within the limit of 100 mm from the anchorage point.

The position of the centre of the articulation cannot be changed (see Drawing 255-5).



- 5.3.5)** The spring dimensions are free but not the type and the material (which must be ferrous material - i.e. 80% iron).

The spring seats may be made adjustable even if this includes the adjunction of material.

A coil spring may be replaced with two or more springs of the same type, concentric or in series, provided that they can be fitted without any modifications other than those specified in this article.

The ride height must be adjustable only with the use of tools and when the car is immobile.

- 5.3.6) Shock Absorbers:**

Make is free, but not the number, the type (arm, etc.), the system of operation (hydraulic, friction, mixed, etc.) nor the supports.

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.

With regard to their principle of operation, gas-filled shock absorbers will be considered as hydraulic shock absorbers.

If in order to change the damping element of a Mac Pherson suspension, or suspension working on an identical principle, it is necessary to replace the entire Mac Pherson strut, the replacement part must be mechanically equivalent to the original one, except for the damping element, and the spring cup.

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 suspension travel limiter may be added.

Only one cable per wheel is allowed, and its sole function must be to limit the travel of the wheel when the shock absorber is not compressed.

Any servo control activating a power circuit acting directly or indirectly on the suspension parts is forbidden.

A system allowing the setting of the shock absorbers to be adjusted electronically is authorised.

Any electronic control system for the shock absorbers is forbidden.

- 5.3.7) Hub carriers**

Titanium alloy hub carriers are forbidden, save in exceptional cases examined by the Rally Technical

Working Group.

5.4 Wheels and tyres

Complete wheels are free provided that they may be housed within the original bodywork ; this means the upper part of the complete wheel, located vertically over the wheel hub centre, must be covered by the bodywork, when measured vertically.

Wheel fixations by bolts may be freely changed to fixations by pins and nuts.

For rallies only, the rim must be attached by means of at least 4 bolts or 4 pins.

The use of tyres intended for motor cycles is forbidden.

In no case may the width of the rim-tyre assembly in relation to the cubic capacity of the car, exceed the following:

In rallies:

up to 1000 cm ³ :	7"		
over 1000 cm ³	and up to	1150 cm ³ :	7"
over 1150 cm ³	and up to	1400 cm ³ :	8"
over 1400 cm ³	and up to	1600 cm ³ :	8"
over 1600 cm ³	and up to	2000 cm ³ :	9"
over 2000 cm ³	and up to	2500 cm ³ :	9"
over 2500 cm ³	and up to	3000 cm ³ :	9"
over 3000 cm ³	and up to	3500 cm ³ :	9"
over 3500 cm ³	and up to	4000 cm ³ :	9"
over 4000 cm ³	and up to	4500 cm ³ :	9"
over 4500 cm ³	and up to	5000 cm ³ :	9"
over 5000 cm ³	and up to	5500 cm ³ :	9"
over 5500 cm ³ :	9"		

For other events:

up to 1000 cm ³ :	7"		
over 1000 cm ³	and up to	1150 cm ³ :	7"
over 1150 cm ³	and up to	1400 cm ³ :	8"
over 1400 cm ³	and up to	1600 cm ³ :	8"
over 1600 cm ³	and up to	2000 cm ³ :	9"
over 2000 cm ³	and up to	2500 cm ³ :	9"
over 2500 cm ³	and up to	3000 cm ³ :	9"
over 3000 cm ³	and up to	3500 cm ³ :	10"
over 3500 cm ³	and up to	4000 cm ³ :	10"
over 4000 cm ³	and up to	4500 cm ³ :	11"
over 4500 cm ³	and up to	5000 cm ³ :	11"
over 5000 cm ³ :	12"		

For the World Rally Car and the Kit Car, the rim diameter is free but must not exceed 18".

For the other cars, the rim diameter may be increased or reduced by up to 2 inches in relation to the original dimensions. However, the rim diameter must not exceed 18". In addition, for all cars and only for events on gravel, the dimensions of the wheels are limited as follows :

- If the width of the wheel is less than or equal to 6", its maximum diameter is limited to 16".

- If the width of the wheel is more than 6", its maximum diameter is limited to 15".
In rallies, the maximum diameter of the complete wheels is 650 mm, not including the studs if studded tyres are used.

The wheels do not necessarily have to be of the same diameter.

In Rallies only :

Forged magnesium is forbidden for wheels with a diameter of less than 18".

For 8x18" wheels, forged magnesium and a weight of less than 7.8 kg are forbidden.

Except for rallies, should the wheel be fixed using a central nut, a safety spring must be in place on the nut throughout the duration of the event and must be replaced after each wheel change.

The springs must be painted "Dayglo" red. Spare springs must be available at all times.

5.5 Braking system

The braking system is free, provided that:

- it includes at least two independent circuits operated by the same pedal
(Between the brake pedal and the callipers, the two circuits must be separately identifiable, without any interconnection other than the mechanical braking force balancing device)
- there is no device or "system" fitted between the master cylinder and the callipers
Data logging sensors, contact switches for the rear red lights or front and rear mechanical limiters and handbrakes activated directly by the driver are not considered as "systems".

5.5.1) Brake linings:

Material and mounting method (riveted or bonded) are free provided that the dimensions of the linings are retained.

5.5.2) Servo brakes, braking force adjusters, anti-locking devices:

Servo-brakes may be disconnected and removed; braking force adjusters and antilocking devices may be disconnected, but not removed. The adjusting device is free.

The braking force adjusters may not be moved from the compartment in which they are originally situated (cockpit, engine compartment, exterior, etc.).

5.5.3) Cooling of brakes:

Protection shields may be modified or removed, but material may not be added.

Only one flexible pipe to bring the air to the brakes of each wheel is allowed, but its inside section must be able to fit into a circle with a 10 cm diameter.

This pipe may be doubled, but in that case the inside section of each pipe must be able to fit into a circle with a 7 cm diameter.

The air pipes must not go beyond the perimeter of the car, seen from above.

5.5.4) Brake discs:

The only operation allowed is rectification.

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

- 5.5.5) The handbrake device may be disconnected but only for closed course races (circuit, hill climbs, slaloms).

5.5.6) Hydraulic pipes:

Hydraulic pipes may be replaced by lines of aircraft quality.

The brake fluid tanks may be fixed inside the cockpit. In that case, they must be securely fastened and be protected by a liquid and flame proof covering.

5.5.7) Brake calipers:

Only brake calipers homologated in Group A may be used.

Only one caliper is authorised on each wheel. The section of each caliper piston must be circular.

5.5.8) Master cylinder

The brake master cylinders must be homologated.

5.6 Steering

Power steering may be disconnected but not removed.

5.6.1) Any steering system which permits the re-alignment of more than two wheels is forbidden.

5.6.2) Power assisted steering systems may not be electronically controlled.

No such system may have any function other than that of reducing the physical effort required to steer the car.

If the production car is fitted with an electronically controlled power steering system:

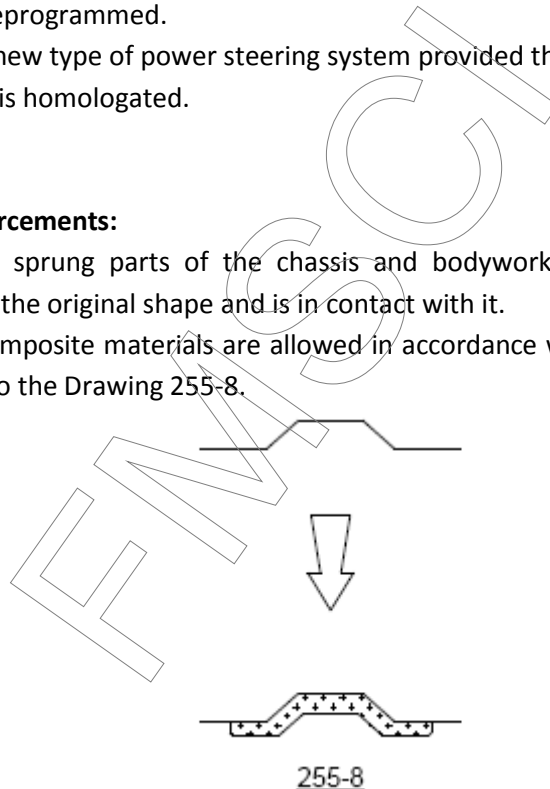
- If this type of system is retained, no part of the system may be modified, but the electronic control unit may be reprogrammed.
- It is possible to use a new type of power steering system provided that it is not electronically controlled and that it is homologated.

5.7 Bodywork – Chassis

5.7.1) Lightening and reinforcements:

Strengthening of the sprung parts of the chassis and bodywork is allowed provided that the material used follows the original shape and is in contact with it.

Reinforcements by composite materials are allowed in accordance with this article, whatever their thickness, according to the Drawing 255-8.



Insulating material may be removed from under the car floor, from the engine compartment, the luggage boot, and the wheel arches.

Unused supports (e.g. spare wheel) situated on the chassis/bodywork can be removed, unless they are supports for mechanical parts which cannot be moved or removed.

It is possible to close the holes in the cockpit, the engine and luggage compartments, and in the wings.

The holes may be closed using sheet metal or plastic materials, and may be welded, stuck or riveted.

The other holes in the bodywork may be closed, by adhesive tape only.

5.7.2) Exterior:

5.7.2.1 Bumpers:

Overriders may be removed.

5.7.2.2 Hub-caps and wheel embellishers:

Hub-caps may be removed. Wheels embellishers must be removed.

5.7.2.3 Windscreen wipers:

Motor, position, blades and mechanism are free but there should be at least one windscreen wiper provided for the windscreen. The headlamp washer device may be dismantled. The capacity of the washer tank is free and the tank may be moved inside the cockpit in accordance with Article 252.7.3, inside the boot or the engine compartment.

5.7.2.4 External decorative strips may be removed.

Any parts following external contour of the bodywork and less than 25 mm high will be considered as decorative strips.

5.7.2.5 Jacking points may be strengthened, moved, and increased in number.

5.7.2.6 Headlight covers may be fitted provided their sole aim is to protect the headlight glass and they have no effect on the car's aerodynamics.

5.7.2.7 Taking into account the different police regulations in each country, registration plate locations and type are free.

5.7.2.8 The registration plate mountings may be dismantled but not their lighting system.

5.7.2.9 Additional safety fastenings for the windscreen and the side windows may be fitted provided they do not improve the aerodynamic qualities of the car.

Only series windscreens and windscreens homologated in option variant of which the weight is greater than 9.2 kg may be used.

5.7.2.10 The fitting of underbody protections is authorised in rallies only, 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, extinguisher bottles.

These protections must be made from either aluminium alloy or steel and have a minimum thickness of 4 mm and 2 mm for steel. Nevertheless, it is possible to reinforce the upper part with metal or composite ribs and to add non-structural composite parts.

Under body protections may extend the whole width of the underside part of the front bumper only in front of the front wheel axis.

5.7.2.11 It is permitted to fold back the steel edges or reduce the plastic edges of the wings and the bumpers if they protrude inside the wheel housing.

Plastic soundproofing parts may be removed from the wheel openings.

These plastic elements may be changed for aluminium or plastic elements of the same shape.

The attachment of the wings by weld may be changed for attachment by bolts/screws.

5.7.2.12 In Rallies only: The jack must be operated exclusively by hand (either by the driver, or by the co-driver), i.e. without the help of a system equipped with a hydraulic, pneumatic or electric energy source.

The wheel gun must not allow the removal of more than one nut at a time.

Other events : Removable pneumatic jacks are permitted, but without the compressed air bottle on board.

5.7.2.13 "Skirts" are banned. All non-homologated devices or constructions designed so as to fully or partially fill the space between the sprung part of the car and the ground is forbidden in all

circumstances.

No protection authorised by Article 255.5.7.2.10 can play a role in the aerodynamics of the car.

5.7.2.14 The door hinges must not be modified.

The hinges and/or joins of the bonnet, boot lid and tailgate are free, but it is not possible to change or add their locations or to change their functions.

5.7.3) Cockpit:

5.7.3.1 Seats:

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 seatback without the headrest, and if the headrest is incorporated into the seat, by the rearmost point of the driver's shoulders. The passenger's seat may be removed as well as the rear seats.

5.7.3.2 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 will be possible to use a non-structural partition wall in transparent, non-flammable plastic between the cockpit and the tank arrangement. 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.

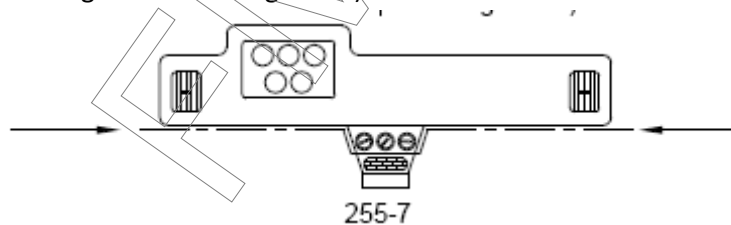
For three-volume cars homologated from 01.01.98, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.

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

5.7.3.3 Dashboard:

The trimmings situated below the dashboard and which are not a part of it may be removed.

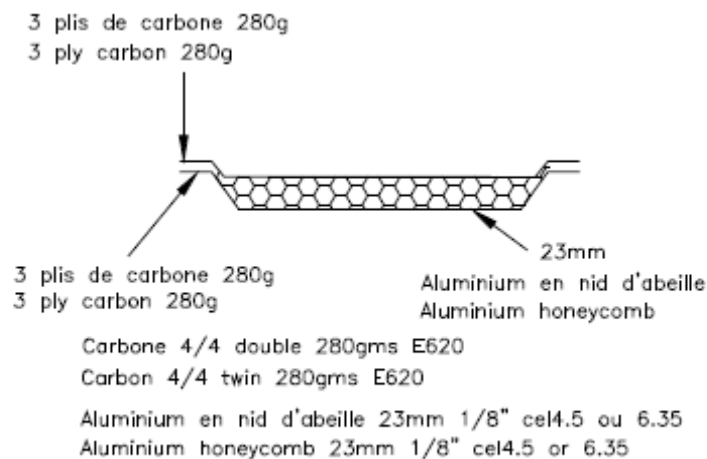
It is permitted to remove the part of the centre console which contains neither the heating nor the instruments (according to the Drawing 255-7).



5.7.3.4 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. In the case of a two-door car, the trim situated beneath the rear side windows may also be removed but must be replaced with panels made from non-inflammable composite material.

- a) It is permitted to remove the trim from the door together with the side protection bar 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 minimum height of this 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.

In the case of cars with 4 or 5 doors, the lift mechanism for the rear windows may be replaced with a device that locks the rear windows in the closed position.

5.7.3.5 Floor:

Carpets are free and may thus be removed.

5.7.3.6 Other sound proofing materials and trim:

Other padding materials, except for those mentioned under Articles 5.7.3.4 (Doors) and 5.7.3.3 (Dashboard), may be removed.

5.7.3.7 Heating system:

The original heating system may be removed but an electric demist system or similar must be retained.

5.7.3.8 Air-conditioning:

May be added or removed but heating must be assured.

5.7.3.9 Steering wheel:

Free ; the anti-theft device may be removed.

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.

5.7.3.10 A safety cage may be fitted (see Article 253.8).

5.7.3.11 The rear removable window shelf in two-volume cars may be removed.

5.7.3.12 Air pipes:

Air pipes may only pass through the cockpit if these are intended for the ventilation of the cockpit.

5.7.4) Additional accessories:

All those which have no influence on the car's behaviour are allowed, for example equipment which

improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.).

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.

Any speed uptake can only be carried out using Hall effect or inductive sensors operating with a cogwheel. The following is allowed:

- 1) The original windows of the homologated vehicle may be modified but must be homologated by the FIA and form the subject of a homologation form.
- 2) 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 event prevent this.
- 3) The horn may be changed or an additional one added, within reach of the passenger. The horn is not compulsory on closed roads.
- 4) Circuit breakers and electrical controls fitted to the steering column may be freely changed vis-à-vis their use, position, or number in the case of additional accessories.
- 5) A "fly-off" hand brake may be installed.
- 6) Spare wheel(s) is (are) not compulsory. However if there are any, they must be securely fixed, and not installed in the space reserved for the occupants of the vehicle. No exterior modification of the bodywork must result from this installation.
- 7) Additional compartments may be added to the glove compartment and additional pockets in the doors provided they use the original panels.
- 8) Insulating material may be added to the existing bulkhead to protect the passengers from fire.
- 9) It is permitted to change the joints of gearbox change systems.

5.8 Electrical system

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

5.8.2) The addition of relays and fuses to the electrical circuit is allowed as is the lengthening or addition of electric cables. Electric cables and their sleeves are free.

5.8.3) Battery:

The make and capacity of the battery (ies) are free.

Each battery must be securely fixed and covered to avoid any short-circuiting or leaks.

The number of batteries laid down by the manufacturer must be retained.

Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering, fixed to the floor by bolts and nuts.

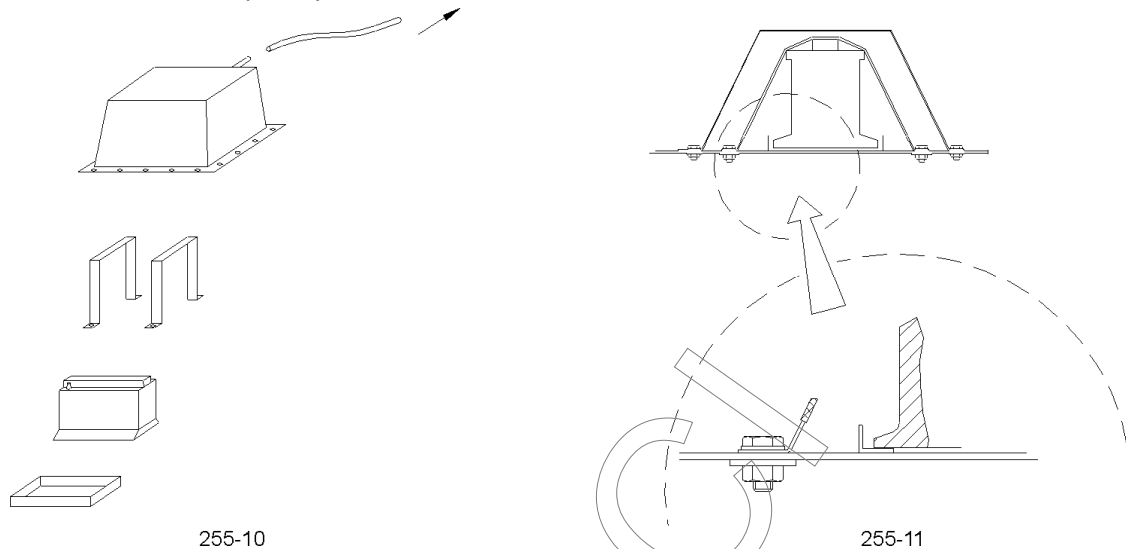
For attaching these clamps, bolts with a diameter of at least 10 mm must be used, and under each bolt, a counterplate at least 3 mm thick and with a surface of at least 20 cm² beneath the metal of the bodywork.

A wet battery must be covered by a leak proof plastic box, attached independently of the battery.

Its location is free, however if in the cockpit it will only be possible behind the front seats.

In this case, and if it is a wet battery, the protection box must include an air intake with its exit outside the cockpit (see Drawings 255-10 and 255-11).

If the battery situated in the cockpit is a dry battery, it must be protected electrically by a cover which covers it completely.



255-10

255-11

5.8.4) Generator, voltage regulator and alternator-starter:

Free, but the driving system of the generator must not be modified.

The generator and the voltage regulator may be moved but must remain in their original compartment (engine bay, etc...).

They may be combined if the homologated vehicle had them originally and provided they come from another series model.

5.8.5) Lighting - Indicating:

All lighting and signalling devices must comply with the legal requirements of the country of the event or with the International Convention on Road Traffic.

Taking this into account the location of the indicators and parking lights may be modified, but the original orifices must be sealed. The make of the lighting devices is free.

Lighting devices which are part of the standard equipment must be those laid down by the manufacturer and must comply where their functioning is concerned with what the manufacturer has laid down for the model in question.

Original headlamps can be replaced by others having the same lighting functions as long as there is no cutout in the bodywork and the original holes are completely closed.

The operating system of the retractable headlights, as well as its energy source, may be modified.

Freedom is granted with regard to the frontal glass, the reflector and the bulbs.

A maximum of 6 additional headlights are authorised, provided that the total number is even.

If the series fog lamps are kept, they will be counted as additional headlights.

They may, if necessary, be fitted in the front part of the coachwork or in the radiator grille, but such openings as needed in this case must be completely filled by the headlights.

Original headlights may be rendered inoperative and may be covered with adhesive tape.

The replacement of a rectangular headlight by two circular ones, or vice-versa, fitted on a support corresponding to the dimensions of the aperture and sealing it completely is allowed.

The fitting of a reverse-light is authorised, if necessary by embedding it into the coachwork, provided that it will only switch on when the reverse gear is engaged and that the police regulations are respected.

If a new registration plate support is provided for with lighting, the original system (support and lighting) may be removed.

Except in rallies, plate lighting is not compulsory.

The Supplementary Regulations of an event may give waivers to the above mentioned prescriptions.

5.9 Fuel tanks

5.9.1) The total capacity of the fuel tanks 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 and up to 1600 cm ³ :	90 l
over	1600 cm ³ and up to 2000 cm ³ :	100 l
over	2000 cm ³ and up to 2500 cm ³ :	110 l
over	2500 cm ³ :	120 l

In rallies only, and for an engine capacity greater than 1400 cm³, the capacity is limited to 95 l.

5.9.2) The fuel tank may be replaced by a safety fuel tank homologated by the FIA (specification FT3 1999, FT3.5 or FT5) or by another tank homologated by the car manufacturer.

In this case, the number of tanks is free and the tank must be placed inside the luggage compartment or in the original location.

The construction of collector tanks with a capacity of less than 1 litre is free.

The various homologated tanks and the FT3 1999, FT3.5 or FT5 tanks may also be combined (including the standard tank), insofar as the total of their capacities does not exceed the limits determined by Article 5.9.1.

The position of the original tank may only be modified in cars of which the tank has been placed by the manufacturer inside the cockpit or close to the occupants.

In this case it shall be permissible either to install a protective device between the tank and the occupants of the car, or to place the tank in the luggage compartment, and, if need be, to modify its supplementary accessories (refuelling orifice, petrol pump, overflow pipe).

In any case, these changes of the position of the tanks should not give rise to any lightenings or reinforcements other than those provided for under Article 5.7.1 but the opening remaining after the removal of the original tank may be closed by the installation of a panel.

It is possible to fit a radiator in the fuel circuit (maximum capacity one litre).

It is authorised to drill 2 holes (maximum diameter of 60mm or equivalent area) in the floor, the sole function of which will be to allow the passage of the lines necessary to feed / empty the fuel tank.

5.9.3) The use of an increased-capacity fuel tank may be authorised by an ASN with the agreement of the FIA for events organised under special geographic conditions (crossing desert or tropical country for

example).

ARTICLE 6: RESTRICTIONS FOR CARS HOMOLOGATED IN THE SUPER 1600 KIT VARIANT

6.1 Definition

A Super 1600 Kit variant (VK-S1600) is a variant of a fixed model of car previously homologated in Group A and must therefore be assembled like a Group A vehicle.

Eligible vehicles are models with front-wheel drive and a normally aspirated engine with a cylinder capacity of up to 1.6 litres in kit variant.

The parts homologated in the "Super 1600 Kit variant" (VK-S1600) form must be used in their entirety and must not be modified.

6.2 Weight

The minimum weight is 1000 kg under the conditions of Article 4.3 (and with only one spare wheel).

The combined minimum weight of the car (under the conditions of Article 4.3 and with only one spare wheel) and crew (driver + co-driver) is 1150 kg.

When two spare wheels are carried in the car, the second spare wheel must be removed before weighing.

6.3 Restrictions**6.3.1) Engine:**

a) Compression ratio:

The maximum compression ratio is 13/1.

The compression ratio must remain at or below this value at all times.

The surface of the piston may be machined for the sole purpose of adjusting the compression ratio.

b) Any water spraying system is prohibited.

c) Variable timing systems (valve timing and valve lift) are prohibited.

d) Variable geometry intake and exhaust manifolds are prohibited.

If the series-produced car is equipped with one, it has to be deactivated.

Intake manifold and exhaust manifolds must be homologated.

The thickness of the pipes of the exhaust system must be greater than or equal to 0.9 mm, measured at the level of the non bent areas.

e) The engine speed is limited to 9000 rpm.

6.3.2) Transmission:

a) Clutch

The minimum diameter of the clutch is 184 mm. The friction disc(s) must not be made from carbon.

b) Gearbox

Only one gearbox may be homologated, with a maximum of 6 forward gears and 1 reverse gear.

A single set of 6 ratios and 1 reverse gear as well as 3 axle ratios may be homologated.

The gearbox housing must imperatively be made from aluminium alloy.

The minimum weight of the complete gearbox (complete gearbox with mounted differential, without supports, without oil, without clutch, without external control, without half-shafts) is 35 kg.

c) Differential

A mechanical type limited slip differential with plates must be homologated ; it is the only differential that may be used. This means that no other differential may be added.

"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.

Any differential with electronic management is prohibited. The number and the type of the plates are free.

6.3.3) Suspension:

a) Anti-roll bar

Anti-roll bars that are adjustable from the cockpit are prohibited.

b) Shock absorbers

Must be homologated; only one shock absorber is permitted per wheel.

The water cooling system used must be the one homologated.

6.3.4) Wheels and tyres:

The rims must imperatively be made from cast aluminium.

a) For rallies on gravel, only 6" x 15" rims may be used. For rallies on asphalt, only 7" x 17" rims may be used.

b) The use of any device for maintaining the full 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 the internal part of the tyre) must be filled only with air.

6.3.5) Braking system :

The only brake discs and calipers that may be used are those listed for the Super 1600 Kit Variant.

The maximum diameter of the discs for the front brakes is 300 mm for rallies on gravel and 355 mm for rallies on asphalt.

The maximum diameter of the discs for the rear brakes is 300 mm.

6.3.6) Any electronic driving aid system (as well as its sensors) is prohibited (ABS / ASR / EPS ...).

Only an engine ignition and/or injection cut-off system for changing gear is allowed. This system must be homologated.

The only sensors authorised for data acquisition are those homologated in the VK-S1600 extension form. Any other sensor is forbidden.

However, the addition of only one speed sensor on a driven wheel is permitted. In all cases, information provided by this sensor must not enter the electronic unit or the data acquisition unit.

The transmission of data by radio and/or telemetry is forbidden.

6.3.7) Bodywork :

a) No new car homologated as a "Super 1600 Kit Variant" (VK-S1600) may have a width of more than 1805 mm.

b) The rear aerodynamic device (with the exception of the supports) must be made from fibreglass.

6.3.8) Material :

a) The use of titanium **alloy** and magnesium **alloy** is prohibited except for parts mounted on the (series) model from which the VK-S1600 extension is derived.

Titanium **alloy** is permitted only for quick release connectors of the braking circuit.

- b) The use of carbon or aramid fibre is authorised on condition that only one layer of fabric is used and is affixed to the visible face of the part. 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.

6.3.9) Safety cage :

The safety cage must be homologated by the FIA.

Only one safety cage may be used with the Super 1600 Kit Variant (VK-S1600); it must be mentioned in the supplementary information of the VK-S1600 extension.

Specifications of the tube for the main rollbar : minimum diameter 45 mm, minimum thickness 2.5 mm, and minimum tensile strength 50 daN/mm².

6.3.10) Fuel tanks :

The fuel tanks must come from an FIA-approved manufacturer (FIA FT3 1999 minimum specifications). These fuel tanks must be homologated.

ARTICLE 7: RESTRICTIONS FOR CARS HOMOLOGATED IN THE WORLD RALLY CAR 2 VARIANT

7.1 Definition

A World Rally Car 2 variant (WR2) is a variant of a fixed model of car previously homologated in Group A and must therefore be assembled like a Group A vehicle.

All the parts homologated in the "World Rally Car 2 variant" (WR2) form must be used in their entirety and must not be modified.

7.2 Weight

The minimum weight is 1280 kg under the conditions of Article 4.3.

The minimum weight of the car (under the conditions of Article 4.3) with crew (driver + co-driver + the full equipment of the driver and co-driver) will be: 1430 kg.

7.3 Restrictions

7.3.1) Engine :

The nominal cylinder capacity of the "World Rally Car 2" (WR2) version is a maximum of 2 litres.

a) Intake manifold:

In the case of a single-valve or multi-valve intake, the connection between the accelerator pedal and the valve(s) must be purely mechanical (hydraulic and/or electronic systems are forbidden).

b) Variable geometry intake and exhaust manifolds are prohibited.

If the series-produced car is equipped with one, it has to be deactivated. Intake manifold and exhaust manifolds must be homologated.

c) Valve timing and valve lift : Variable systems are prohibited.

d) Spraying and injection of water :

Any system for spraying water onto the intercooler is forbidden. Any system for injecting water into the intake manifold and/or intercooler is forbidden.

e) Cooling :

The position of the radiator may be modified, if it remains in its original location in relation to the engine (for example, ahead of the engine).

f) Lubrication :

Lubrication by dry sump is forbidden.

The oil pump must be a single stage one and the suction aperture as well as the oil sump strainer

must be fixed below the axis of the crankshaft when the engine is in the position in which it is mounted in the car.

The addition of oil pipes with flow control valves for cooling the pistons is authorised.

g) Starter, alternator and alternator-starter :

The generator/alternator and the starter are free, provided that they remain inside the engine compartment and retain their original drive system.

They may be combined if the homologated vehicle had them originally and provided they come from another series model.

h) Catalytic exhaust :

A catalytic exhaust is obligatory.

i) Exhaust:

For the WRC2, an efficient heat shield must be put in place around the exhaust in order to avoid excessive exhaust heat and to channel possible leaks towards cooler areas of the car.

7.3.2) Transmission :

The following measures apply to hydraulic circuits of WRC type cars:

- Hydraulic pressure present in the pipes must return to zero as soon as the engine is stopped.
- Nominal pressure in the pipes must never exceed 150 bar.

a) Clutch :

It must be homologated.

“Driven” type systems are authorised.

b) Gearbox and final drive ratios :

Only the housings and the ratios homologated in the WR2 extension may be used.

c) Gearbox control :

It must be homologated. The connection between the gear lever and the gearbox must be purely mechanical. Semi-automatic or automatic gearboxes with electronic, pneumatic or hydraulic control are forbidden.

d) Front and rear differential :

Only the differentials and housings homologated may be used.

Any differential with electronic management is prohibited. The number and type of discs are free.

e) Central differential :

Only the differentials and housings homologated may be used.

f) Transmission shafts

Titanium transmission shafts are forbidden.

The following measures apply to hydraulic circuits of WRC type cars:

f) Transmission shafts

Titanium **alloy** transmission shafts are forbidden.

7.3.3) Suspension :

a) Anti-roll bar :

Anti-roll bars that are adjustable from the cockpit are prohibited. The anti-roll bars must be of a purely mechanical type (no part that is of a hydraulic type may be connected to the anti-roll bar or to one of its components).

b) Front and rear subframes :

Only homologated subframes may be used.

- c) Hubcarrier :
Only homologated hucarriers may be used.
- d) Wishbones :
Only homologated wishbones may be used.

7.3.4) Wheels and tyres :

Maximum diameter of the complete wheel: 650 mm. Maximum width of the complete wheel: 9 inches. The diameter of the rims is free.

7.3.5) Braking system :

The only brake discs and calipers that may be used are those listed for the World Rally Car 2 Variant (WR2). Watercooling systems are prohibited.

7.3.6) Any electronic driving aid system (as well as its sensors) is prohibited (ABS / ASR / EPS ...).

Only an engine ignition and/or injection cut-off system for changing gear is allowed. This system must be homologated.

The only sensors authorised for data acquisition are those homologated in the WR2 extension form. Any other sensor is forbidden.

However, the addition of only one speed sensor on a driven wheel is permitted. In all cases, information provided by this sensor must not enter the electronic unit or the data acquisition unit.

The transmission of data by radio and/or telemetry is forbidden.

7.3.7) Bodywork :

All bodywork parts homologated in World Rally Car 2 variant (WR2) must be used without any modification.

a) Front aerodynamic device :

The material of the front bumper must be either fibreglass or polycarbonate. The minimum weight of the front bumper is 4.5 kg.

b) Rear bumper:

The material of the rear bumper must be either fibreglass or polycarbonate.

The minimum weight of the rear bumper is 3 kg.

7.3.8) Safety cage :

The safety cage must be homologated by the FIA. Only one safety cage may be used with the World Rally Car 2 Variant (WR2); it must be mentioned in the supplementary information of the WR2 extension.

7.3.9) Fuel tanks :

The fuel tanks must come from an FIA-approved manufacturer (FIA/FT3 and FIA/FT3 1999 minimum specifications).

7.3.10) Windows :

a) Windscreen :

A heated windscreen made from laminated glass may be homologated if and only if its weight is greater than 9.2 kg and if it is in conformity with Article 7.2.2 of the homologation regulations for Groups A and B.

b) Rear and side windows :

Only series windows are authorised.

MODIFICATIONS APPLICABLES ON 01.01.2013

4.4 In rallies only, the minimum weight of the car (under conditions of Article 4.3) with crew (driver + co-driver + the equipment of the driver and co-driver) will be: Minimum we defined by Article 4.1 + ~~150 kg~~ **160 kg**.

FMSCI