



FEDERATION INTERNATIONALE DE L'AUTOMOBILE

**FIA** ANNUAIRE DU  
SPORT AUTOMOBILE

**FIA** YEAR BOOK OF  
AUTOMOBILE SPORT

1978





# **Annexe "J" au Code Sportif International 1978**

## **Classification, définition et spécifications des voitures**

En cas de divergence d'interprétation entre les termes des diverses traductions des règlements officiels de la CSI, le texte français fera seul foi.

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# **Appendix "J" to the International Sporting Code 1978**

## **Classification, definition and specifications of cars**

In the case of differences of interpretation as regards the terms used in the various translations of official CSI regulations, only the French text will be considered authentic.

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# **Anhang "J" zum Internationalen Automobil-Sportgesetz 1978**

## **Einteilung, Begriffsbestimmungen und Erläuterungen der Fahrzeuge**

Im Falle von Streitfragen bei CSI-Bestimmungen ist stets der französische Originaltext verbindlich.

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# **Allegato "J" al Codice Sportivo Internazionale 1978**

## **Classificazione, definizione e caratteristiche delle vetture**

In caso di divergenza nell'interpretazione dei termini delle diverse traduzioni dei regolamenti CSI, farà fede il testo francese.

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## **Appendix "J"** **to the International Sporting Code 1978**

### **Classification, definition and specifications of cars**

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## TITLE 1—CLASSIFICATIONS OF CARS

**Art 251—Categories and groups:** Cars competing in events shall be distributed into the following categories and groups:

**Category A:** Recognised production cars (numbers between brackets are those of the required minimum production in 12 consecutive months, except in Group 4 where the period of production is 24 consecutive months).

Group 1: series-production touring cars (5,000)

Group 2: touring cars (1,000)

Group 3: series-production grand touring cars (1,000)

Group 4: grand touring cars (400)

Group 5: special production cars deriving from Groups 1 to 4

**Category B:**

Group 6: two-seater racing cars

Group 7: international formula racing cars

Group 8: 'formule libre' racing cars

## TITLE 2—DEFINITIONS

**Art 252—Definitions:**

a) **Recognised production cars:** Cars of which the series-production of a

certain number of identical (see definition of this word hereafter) cars has been completed within a certain period of time, and which are meant for the normal sale (see below) to the individual purchaser. This period of time is of 12 consecutive months for Groups 1 to 3 and 24 consecutive months for Group 4.

The checking of the existing minimum production enables the NSA to apply to the FIA for homologation (see this word below).

**b) Racing cars:** Cars manufactured solely for speed races on a circuit or a closed course. These cars are generally defined by the international racing formulae, the specifications of which are fixed by the FIA for a certain period of time. Racing cars not being defined by any international formula are said to be 'formule libre' and prescriptions concerning them must be specified by the organiser and set out in the supplementary regulations of the event.

**c) Identical:** By 'identical' cars are meant cars belonging to one and the same fabrication series and which have the same coachwork (outside and inside), same mechanical components and same chassis (even though this chassis may be amalgamated with the coachwork in case of a unitary construction).

'Mechanical components' include all parts for the propulsion, suspension, steering and braking system and all accessories whether moving or not which are necessary for their normal functioning (such as, for instance, electric accessories).

By chassis is meant the structure of the car which holds mechanical components and coachwork together, and includes any structural part which is located below the horizontal plane passing through the centre of the wheel hubs.

**d) Minimum production:** This minimum production, different for each group of cars, applies to cars which are identical, the manufacturing of which has been fully completed within a period of 12 consecutive months for Groups 1 to 3 and 24 consecutive months for Group 4. By 'minimum series' should be understood only a number of entirely finished cars, eg, cars in running condition and ready for delivery to the purchasers.

**e) Normal sale:** Means the distribution of cars to individual purchasers through the normal commercial channels of the manufacturer.

**f) 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 Groups 1, 2, 3 or 4 of these regulations. Application for homologation shall be submitted to the FIA by the ACN 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, and a manufacturer wishing to obtain the homologation of his model(s) must undertake to abide by their prescriptions. Homologation will only be granted to car-models which were still in production on January 1st 1976 or the production of which was started after that date. Homologation of a series-produced car will become void 5 years after the date on which the series-production of the said model has been stopped.

Homologation of a model may only be valid for one group. The transferring of a previously recognised model from one group to another will therefore nullify the effect of the said previous homologation.

Definitive abandonment of the series-production: the series-production is considered as abandoned when the annual production decreases under 10% of the minimum production of the group considered.

Definition of the term 'model of car': By 'model of car' is meant all the cars belonging to a production-series distinguishable by a specific conception and specific external general lines of the coachwork and by an identical mechanical conception of the engine and the transmission to the wheels.

A model of car may exist in several variants (for example, different power or engine cylinder-capacity), which may possibly be the subject of separate homologation.

However, it must be pointed out that, if the FIA has the possibility, for practical reasons, to authorise the homologation of certain variants of a same car-model in different Groups of cars, the principle of a simultaneous homologation of variants of a same model, in Groups 1 and 2 (Touring) on the one hand and in Groups 3 and 4 (Grand Touring) on the other hand, remains forbidden.

**g) Homologation forms:** All cars recognised by the FIA shall be the subject of a descriptive form called homologation form on which shall be entered all data enabling identification of the said model.

To this effect only the standard homologation forms and standard additional form for 'normal evolution of the type' and 'variant' approved by the FIA shall be used by all ACNs.

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

In case of any doubt remaining after the checking of a model of car against its homologation form, the scrutineers would have to 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 enough accurate documentation, scrutineers may carry out direct scrutineering by comparison with an identical part available from a concessionaire. It will rest with the competitor to obtain the recognition form and, if need be, the additional forms concerning his car, from the ACN of the manufacturing country of the vehicle.

It is precised that the car must comply with a determined stage of evolution, and that consequently all previously homologated evolutions must apply.

Whenever the scrutiny of a car shows the complete compliance of it with its homologation form, inasmuch as is required for the group in which it is admitted, there is no need to worry about its year of fabrication.

Therefore, the chassis and engine numbers which may be mentioned on the homologation form are not to be taken into consideration.

**h) Cylinder-capacity classes: 15 classes have been retained:**

1. Cylinder-capacity inferior or equal to 500cc
2. Cylinder-capacity exceeding 500 cc and inferior or equal to 600 cc
3. " " " 600 cc " " " " " 700 cc
4. " " " 700 cc " " " " " 850 cc
5. " " " 850 cc " " " " " 1,000 cc
6. " " " 1,000 cc " " " " " 1,150 cc
7. " " " 1,150 cc " " " " " 1,300 cc
8. " " " 1,300 cc " " " " " 1,600 cc
9. " " " 1,600 cc " " " " " 2,000 cc
10. " " " 2,000 cc " " " " " 2,500 cc
11. " " " 2,500 cc " " " " " 3,000 cc

- |     |  |
|-----|--|
| 12. | Cylinder-capacity exceeding 3,000 cc and inferior or equal to 4,000 cc |
| 13. | " " " 4,000 cc " " " " " 5,000 cc                                      |
| 14. | " " " 5,000 cc " " " " " 6,000 cc                                      |
| 15. | " " " over 6,000 cc  |

Regulations intended for specific events may provide one or several subdivisions of class 15. There shall be no subdivision of the other classes.

The above-mentioned classification will apply only to non-supercharged engines.

Unless otherwise specified in special provisions set up 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.

**i) Formulae of equivalence between reciprocating piston engines and special engines:**

**Rotary piston engines:** Cars with rotary piston engines covered by the NSU-Wankel patents will be admitted on the basis of a piston displacement equivalence. This equivalence is twice the volume determined by the difference between the maximum and minimum capacity of the working-chamber.

**Turbine engines:** Cars propelled by a turbine engine will be admitted on the basis of a formula of equivalence with regard to alternating piston engines. This formula is the following:

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

A = High-pressure nozzle area—expressed in square centimetres by which is meant the area of the air-flow 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 minimum area between the fixed blades of the high pressure turbine first stage. In cases where the first stage turbine stator blades are adjustable, they will open to their greatest extent to present the greatest area for the determination of area 'A'.

The area of the high pressure nozzle is thus the product—expressed in square centimetres—of height by width and by the number of vane spaces.

C = Cylinder-capacity of reciprocating piston engine expressed in cubic centimetres.

R = The pressure ratio, ie, the ratio of the compressor of the turbine engine. This pressure ratio 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 stages will be designated to have a pressure of:

$$4.25 \times 1.15 \times 1.15 \times 1.15 \times 1.15 \times 1.15 \times 1.15 \text{ or } 4.25 \times 1.15^6.$$

*The CSI reserve their right to modify the basis of comparison established between conventional type engines and new type engines, while giving a previous notice of two years to start from 1st January, following the date on which the decision was made.*

**j) Coachwork:** By coachwork is meant:

—externally: all parts of the car licked by the air-stream and situated above a plane passing through the centre of the wheel-hubs. (Single-seaters of Groups 7 and 8: All parts of the car licked by the air stream.)

—internally: all visible parts of the passenger compartment.

The measurement of the bodywork in relation to the wheel-hubs plane will be made driver on board, whatever the conditions.

Coachworks are differentiated as follows:

- 1) completely closed coachworks,
- 2) completely open coachworks,
- 3) convertible coachworks: with a hood in either supple (drop-head) or rigid (hard-top) material.

**k) Use of aerodynamic devices on cars of Groups 6 and international racing formulae:** In interpreting Art 252 K), shall definitely be considered as coachwork all external parts of the car which extend above the highest point of the wheels equipped with tyres with the exception of the roll-over bar and of components definitely associated with the functioning of the engine or transmission.

Any specific part of the car which has an aerodynamic influence on the stability of the vehicle must be mounted on the entirely sprung part of the car and shall be firmly fixed whilst the car is in motion.

**l) Wheel:** By wheel is meant flange and rim: by complete wheel is meant flange, rim and tyre.

**Measuring wheel width:** Measuring wheel width is to be done with the wheel mounted on the car, on the ground, the vehicle in race condition, driver aboard, at any point along the circumference except in the area in contact with the ground (for all groups).

**m) Friction surface of the brakes:** By friction surface of the brakes is meant the surface swept by the linings on the drum, or the pads on the disc when the wheel achieves a complete revolution.

**n) Cylinder block:** By cylinder block is meant the crankcase and the cylinders.

**o) Manifolds:**

**Intake:** By intake manifold is meant the part collecting the air-fuel mixture from the carburettor(s), and extending to the entrance ports of the cylinder head, in the case of a carburettor induction system, and the part collecting the air from the air intake control device and extending to the ports of the cylinder head, in the case of an injection intake system.

**Exhaust:** By exhaust manifold is meant the part collecting together the gases from the cylinder head and extending to the first gasket separating it from the rest of the exhaust system.

**p) Starting:** Compulsory starter with electrical or other source of energy carried aboard the car and able to be controlled by the driver when normally in his seat.

**q) Reverse gear:** All vehicles must have a gearbox including a reverse gear, which must be in working order when the car starts the events and able to be operated by the driver in his seat.

**r) Verification of the minimum weight:** Cars must maintain their minimum weight during all the duration of an event.



Scrutineers can therefore take a car on the finish line and weigh it, after emptying the petrol tank.

**s) Ballast:** It is permitted to complete the weight of the car by one or several ballasts incorporated to the materials of the car on condition that they are strong and unitary blocks, mounted by means of tools and providing for the possibility to fix seals if the scrutineers deem it necessary.

Removable ballast is not permitted.

A spare wheel may be used as ballast under the hereabove conditions.

**Application:** Cars of Groups 2, 4, 5, 6, 7, 8.

No kind of ballast is authorised on cars of Groups 1 and 3.

For cars of Groups 2 and 4, the eventually used ballast should be placed on the passenger's compartment floor, it should be visible and sealed.

**t) Perimeter of the car seen from above:** It is pointed out that it concerns the car such as presented on the starting grid, for event considered.

**u) 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. The dimensions of this filler are given in the diagram shown on page 108.

All cars must be provided with a fuel filler complying with the diagram shown on page 108. The leak-proof filler 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 valves and valves having the same closing system as that of the standard filler, and of the same diameter.

During refuelling the outlet of the air-vent 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. The venting catch tanks must be empty at the beginning of the refuelling procedure.

**Application:** Please refer to the General Prescriptions of the FIA Championships.

**v): Stock block engine** (Such as used for the world championship for two-seater racing cars. Please refer to the championship prescriptions, gold section).

**v1): Maximum cylinder capacity:** 5000 cm<sup>3</sup>.

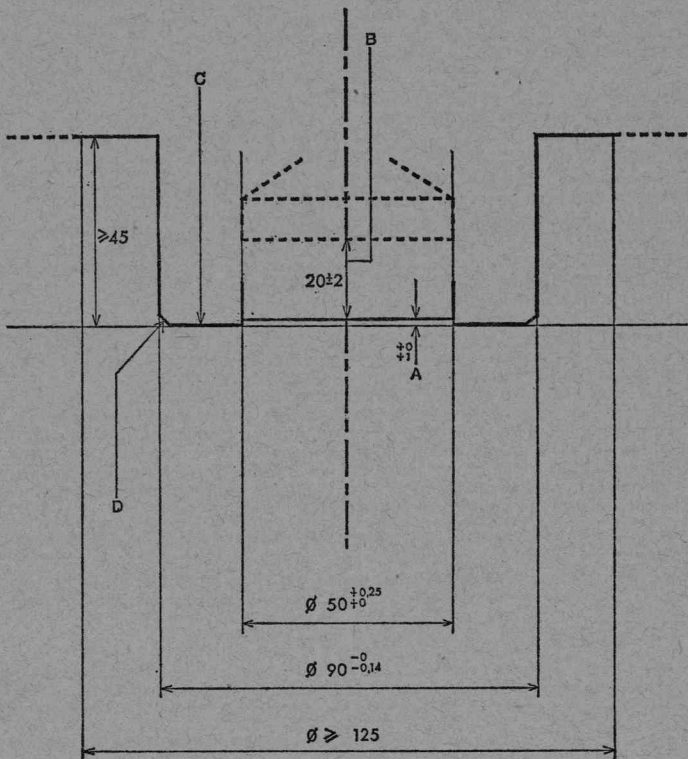
**v2):** Engine whose series production will have been checked by the FIA as being 5,000 units a year, and mounted on (a) series production car(s).

**v3):** Engine with valves operated by rockers and pushrods.

**v4):** Use of the original cylinder head. The number and location of the original camshaft(s) may not be changed. The number of valves may not be changed. The valve angle and the angle of the intake and exhaust ports may not be changed in relation to the cylinder axis.

**v5):** Use of the original block. The number of main bearings may not be changed.

**v6):** Supercharging prohibited.

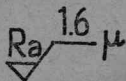


**Dessin/drawing No 1**

**Orifice de remplissage standardisé pour voitures/Standardised car fuel filler**

Alliage recommandé/Recommended material: AU4G  
(aluminium, cuivre/copper, magnesium)

**Usinage/Machining**



$\mu$  = Micron, Ra = Rugosité admise/  
average roughness of a surface.  
Toutes cotes en mm/All dimensions  
in mm.

**A: Position du clapet au repos/position of the released valve.**

Clapet normalement fermé et étanche à la pression de 100 m. bar (1.5 psi)/  
Valve normally shut and leak proof under 100 m. bar of pressure (1.5 psi).

**B: Ouverture du clapet/valve lift ( $20 \pm 2$  mm).**

**C: Plan de joint: tolérance de surfacage: 0.05 mm/Gasket facing plane, unswerving tolerance: 0.05 mm.**

**D: Chanfrein  $1+1$  à  $45^\circ$  ou arrondi (rayon 1 mm)/**

$+0$

Bevel cut  $1+1$  at  $45^\circ$ , or rounded at 1 mm radius.

$+0$

L'attention des fabricants de l'accoupleur (côté-stands) est attirée sur le fait que la partie en contact avec la surface C de l'orifice de remplissage doit être munie d'un joint Vitton. Aussi, il est recommandé de ne pas dépasser un guidage initial, avant l'ouverture des soupapes, de 18 mm, de telle sorte qu'à l'ouverture maximale autorisée de la soupape (22 mm) la pénétration totale ne dépasse pas 40 mm, laissant ainsi 5 mm minimum de tolérance.

The attention of the manufacturers of the coupling (pit-side) is drawn to the fact that the part in contact with the area C of the filler must be provided with a Vitton joint. It is advised not to exceed an initial locating penetration of 18 mm, before the opening of the valve, so that, with the valve open to the authorised maximum (22 mm), the total penetration does not exceed 40 mm, leaving thus a minimum of 5 mm tolerance.

## TITLE 3—SAFETY PRESCRIPTIONS

### Art 253—Safety devices for all cars competing in events entered on the FIA International Calendar

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

**a) Supplementary locking devices:** A supplementary locking device(s) for engine bonnet, boot lid and other important objects carried on board of the vehicle (such as a spare-wheel, tool set, etc).

**Application:** Compulsory for cars of Groups 1, 2, 3, 4, 5.

**b) Supplementary protection of the fuel pipes:** A supplementary protection of fuel pipes and brake lines outside the coachwork against any risk of damage (stones, corrosion, breaking of mechanical pieces, etc) and inside the cockpit against any risk of fire (fuel pipes only).

**Application:** Compulsory for cars of Groups 1, 2, 3, 4, 5 and 6.

**Cables, lines and electrical equipment:** Except if the cables, lines and electrical equipment such as battery, fuel pump, etc, are in compliance with the requirements of the aircraft industry as regards their location, material and connections, they must be placed or fitted in such a way that any leakage cannot result in:

- Accumulation of liquid.
- Entry of liquid into the cockpit.
- Contact between liquid and any electrical line or equipment.

Should the cables, lines or electrical equipment pass through or be fitted in the cockpit, they must be fully enclosed in a cover of a liquid-tight and fire-proof material.

All fuel lines external to the cockpit, with the exception of fuel lines permanently mounted on the engine, should be a reinforced construction, attached by screw-on connectors. They must withstand a 70 kg/cm<sup>2</sup> pressure (1,000 psi) and a 260° C temperature (500° F).

All electrical wiring should be enclosed in a fire-proof material.

**Application:** Compulsory for cars of Groups 6, 7, 8.

**c) Safety belts:** Wearing of one diagonal strap and one abdominal strap: fixation points on the shell: 3.

**Application:** Compulsory for all cars of Groups 1, 2, 3 and 4 participating in rallies.

Wearing of two shoulder straps and one abdominal strap: fixation points on the shell: two for the abdominal strap—two or eventually one symmetrical in relation to the seat for the shoulder straps.

**Application:** Compulsory for all cars of Groups 1, 2, 3 and 4 (except in rallies). It is permitted to make a hole in a series-production seat to allow the passing of a safety belt.

Wearing of two shoulder straps, one abdominal strap and two straps between the legs: fixation points on the body: two for the abdominal strap, two or eventually one symmetrical in relation to the seat for the shoulder straps, two for the straps between the legs.

**Application:** Compulsory for all cars of Groups 5, 6, 7 and 8.

**d) Extinguishers—systems of extinction:** The extinguishing system will have a 5 kg extinguishing capacity carried in one or two units maximum. CO<sub>2</sub> will

be considered as unacceptable as an extinguishant; BCF (Freon 12B1) is given as an example to be at least equalled in terms of capability and non toxicity.

The extinguisher(s) will have to be immediately accessible to the driver and co-driver.

**Application :** Compulsory for all cars of Groups 1, 2, 3 and 4.

**Extinguishing system compulsory for cars of Groups 5, 6, 7 and 8.**

**d1) Extinguishing product :** BCF—DTE—BTM.

**d2) Minimum capacity :**

Driver's compartment: 5kg. Engine compartment: 2.5 kg.

**d3) Location—Mounting method :** The 5 kg minimum capacity bottle must be placed inside the main structure.

The 2.5 kg minimum capacity bottle may be placed inside or outside the main structure.

In all cases the bottle mountings must be able to withstand a 25 g acceleration.

**d4) Discharge time :**

Engine compartment: 10 seconds maximum.

Driver's compartment:  $30 \pm 5$  seconds for BCF and DTE.  
 $60 \pm 5$  seconds for BTM.

**d5) Drive system :** Heat sensors may be fitted to permit automatic triggering of the fire extinguisher system. The use of these sensors is only recommended and not compulsory.

Both bottles should be released simultaneously.

Any triggering system having its own source of energy is permitted, on condition that it is possible to operate all extinguishers in case all electric circuits have a breakdown.

Two handles should be provided, one at the disposal of the driver, the other one on the base or along one of the main supports of the safety roll-bar.

**d6) Check of bottles :** The following weights shall be indicated on each bottle:

Weight of the empty bottle,

Weight of the extinguishing agent,

Total charged weight.

**d7) Working :** The system must work in any position, also when the bottles are overturned.

**e) Safety roll-bars :**

**General considerations**

1) The basic purpose of such devices is to protect the driver if the car turns over or is involved in a serious accident. This purpose should always be borne in mind.

2) Whenever bolts and nuts are used, the bolts should be of a sufficient minimum diameter, according to the number used. They should be of the highest possible quality (preferably aircraft). Square head bolts and nuts should not be used.

3) One continuous length of tubing should be used for the main structure with smooth continuous bends and no evidence of crimping or wall failure.

4) All welding should be of the highest quality possible with full penetration (preferably arc welding and in particular heliarc). Although good outside appearance of a weld does not necessarily guarantee its quality, poor looking welds are never a sign of good workmanship.

5) Braces should preferably be of the same size tubing as used for the main structure.

Their fixation should be located as near as possible to the top of the roll bar, in any case at a minimum of  $\frac{1}{4}$  of the total height of the roll bar.

6) For space-frame constructions it is important that crash-bar structures are attached to cars in such a way as to spread the loads over a wide area. It is not sufficient to simply attach the roll-bar to a single tube or junction of tubes. The roll-bar should be designed in such a way as to be an extension of the frame itself, not simply an attachment to the frame.

Considerable care should be attached to the necessary strengthening of the basic structure, for instance by adding reinforcement bars or plates so as to properly distribute the loads.

7) For monocoque constructions, consideration should be given to using a roll-bar hoop of 360 degrees completely around the inside of the car, and attached with suitable mounting plates. This type of roll-bar then becomes a substitute for the frame.

#### **A) Closed cars :**

As a general rule, the safety cage must be made of two main hoops, one behind the front seats and one following the windscreen pillars (see drawing No 2). For some groups of cars, (see hereunder) the windscreen hoop is not compulsory and the designing may be realised as shown in drawing No 3.

The safety roll-bar or cage must be conceived in such a way as not to obstruct the access to the front seats and not encroach on the space provided for the driver and the passenger. On the other hand, it is allowed that the elements of the roll-bar or cage encroach on the space of the rear passengers, and pass through the upholstery or the rear seat(s).

The main roll-bar hoop(s) must be placed as near as possible to the roof in order to limit its crushing in the event of a somersault.

In order to avoid an important deformation of the coachwork and consequently protect more efficiently the driver in case of a lateral impact, it is possible to enhance the efficiency of the safety roll-bar, thanks to the mounting of a longitudinal support at the door level.

The pipe constituting this support should be integrated in the safety framework, the front and rear rolls of which it connects, and to which it is fitted, either by welding or with a removable coupling; it cannot be fixed on the coachwork itself.

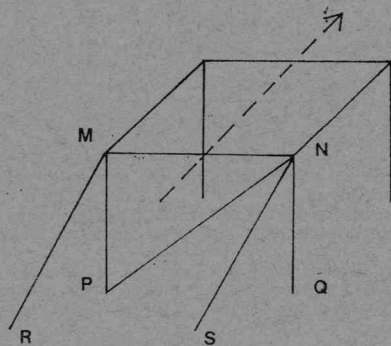
Its diameter, its thickness and its material correspond to the specifications of the FIA for safety roll-bars. Its angle with the horizontal should not exceed  $5^{\circ}$ . It should divide the height of the opening of the door in the relation 2:1, ie, it is fitted on the framework at a height equal to  $\frac{1}{3}$ rd of the total height of the door above the door sill.

#### **B) Open cars :**

Conception and realisation identical to those prescribed for closed cars. Moreover, the main hoop behind the front seats must be symmetrical about the lengthwise centre-line of the car and comply with the following figures (see drawing 10):

**Height:** The top of the roll-bar must be at least 5 cm (2 in) over the helmet of the driver normally sat at his wheel.

**Width:** Measured on the inside of the vertical struts of the roll-bar; there must be at least 20 cm (8 in) measured at 60 cm (23 in) above the driver's and passen-



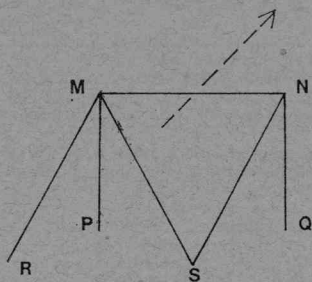
Dessin/drawing No 2

### Groupes 1 à 5

Le montage d'un renfort diagonal est obligatoire. Les différentes variantes autorisées sont: MQ, MS, NP, NR. (NP est indiqué sur le dessin no 2 comme un exemple.)

### Groups 1 to 5

Fitting of a diagonal strut is compulsory. The various authorised alternatives are: MQ, MS, NP, NR. (NP is shown on drawing 2 as an example.)



Dessin/drawing No 3

### Groupes 1 à 4

Le montage d'un renfort diagonal est obligatoire. Les différentes variantes autorisées sont: MQ, MS, NP, NR. (MS est indiqué sur le dessin no 3 comme un exemple.)

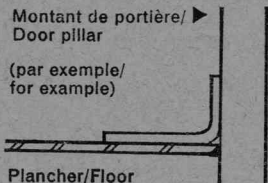
### Groups 1 to 4

Fitting of a diagonal strut is compulsory. The various authorised alternatives are: MQ, MS, NP, NR. (MS is shown on drawing 3 as an example.)

Montant de portière/ Door pillar

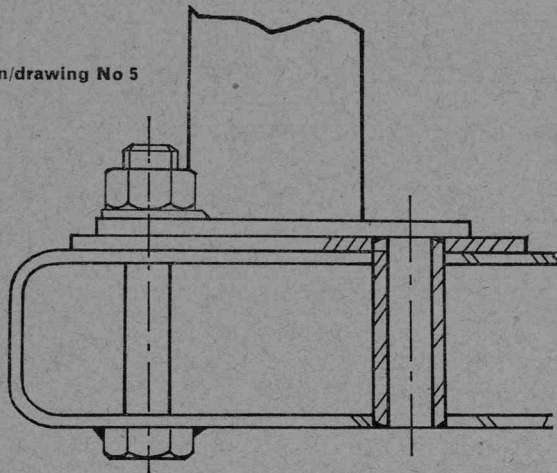
(par exemple/  
for example)

Plancher/Floor

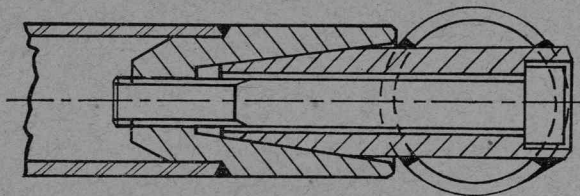


Dessin/drawing No 4

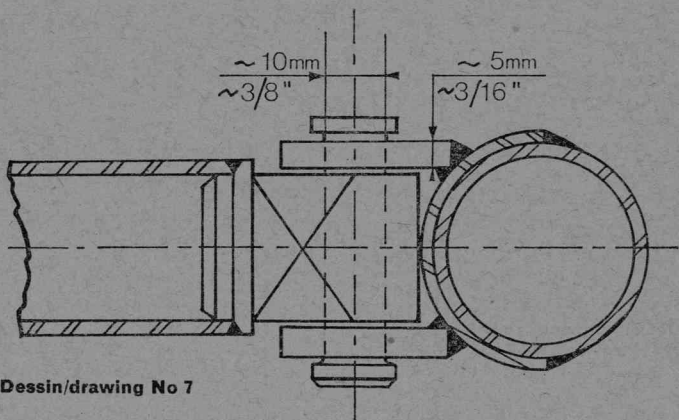
Dessin/drawing No 5



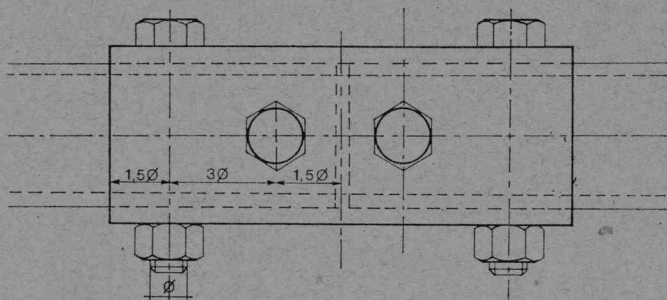
Dessin/drawing No 6





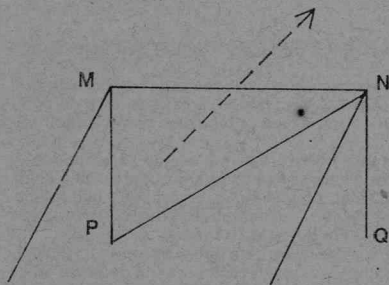


**Dessin/drawing No 7**



**Dessin/drawing No 8**

12 mm (tube < 40 mm diam. ext)  
 $\phi = 14$  mm (tube  $\geq 40$  mm < 50 mm diam. ext)  
 16 mm (tube  $\geq 50$  mm diam. ext)



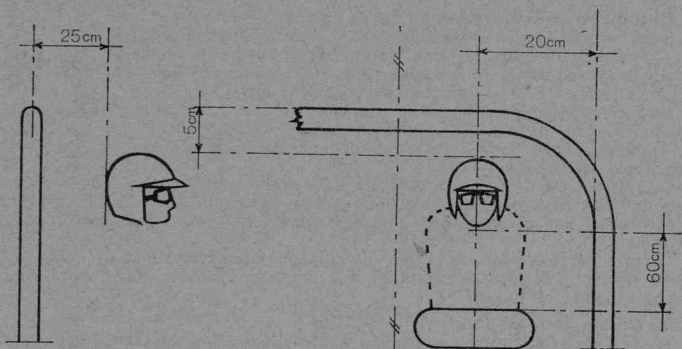
Dessin/drawing No 9

### Groupe 6

Le montage d'un renfort diagonal est obligatoire. Les 2 variantes autorisées sont MQ et NP. (NP est indiqué sur le dessin no 9 comme un exemple.)

### Group 6

Fitting of a diagonal strut is compulsory. The 2 authorised alternatives are MQ and NP. (NP is shown on drawing 9 as an example.)



Dessin/drawing No 10

ger's seat (on the line perpendicular to the driver's vertebrae from the lengthwise centre-line to the outside).

**Lengthwise location:** The lengthwise distance between the top of the roll-bar and the helmet of the driver normally sitting at his steering wheel must not exceed 25 cm.

Will also be considered as open cars, cars which have no structural parts between the upper part of the windshield framework and that of the rear window, if any.

**C) Attachment of roll-over bars on the body:**

It is specified that roll-over bars must make use of two plates:

—a steel plate, welded, riveted, or bolted on to the chassis body shell, at least 2 mm thick, with a prolongation along a vertical component of the body (for instance, a door pillar: see drawing 4).

This plate must have a total surface of at least 35 cm<sup>2</sup>, a third of which at least constitutes the link with the vertical body component.

—a plate attached to the tube, having the same thickness as the metal of the tube to which it is fixed.

These two plates shall be joined together by at least three hexagonal headed bolts and nuts, at least 8 mm in diameter.

In no case may the roll-over bar be welded directly on to the body shell/chassis.

When the roll-bar rests on a box-member, the latter must be locally reinforced by a structure constituted of either welded bolts or welded tubing ends (see drawing 5).

**D) Removable connections:**

In case removable connections are used in the roll-bar construction, they must comply with a type approved by the FIA. Are approved up to now: a tapered connection and a twin lug connection with axis working under double shearing conditions and a muff-connection complying with drawings 6, 7 and 8.

The twin lug connection may however be used only for longitudinal brace-rods and not for the basic frame of the roll-bar(s).

**E) Application:**

Specifications of the tubes utilised (Groups 1 to 5)	Closed cars		Open cars	
	<1,200 kg	≥1,200 kg	<1,200 kg	≥1,200 kg
	Ext. ø × thickness			
Cold drawn seamless carbon steel E~30 daN	ø 38 × 2.6	ø 48.3 × 2.6	ø 44.5 × 2.6	ø 57 × 2.9
Alloy steel type 25 CD 4 SAE 4125 etc, E~50 daN	ø 33.7 × 2.3	ø 42.4 × 2.6	ø 38 × 2.6	ø 48.3 × 2.6

These dimension figures represent in mm the minimum figures admissible. They correspond to standardised tubes (International Standards ISO R 64).

In the case of cars weighing more than 1,200 kg, the dimension figures prescribed for cars weighing less than 1,200 kg may be used for tubular elements other than the main hoop located behind the front seats.

**NB:** The CSI, conscious of the problem of habitability raised by the use of roll cages, suggests that each car manufacturer recommends a type of roll-bar complying with FIA Specifications for all cars in Groups 1 to 4.

This roll-bar will have to be entered on a recognition sheet amendment and submitted to the CSI for approval.

**Important:** The exact weight of the device shall be subject to a statement from the competitor, to be appended to the entry form. This weight must be added to that indicated for the vehicle on the recognition form.

**Application:** Groups 1 and 3.

**Cars of Groups 1 and 3:**

Fitting compulsory for all speed events on circuits. Fitting optional for rallies, hill-climbs and slaloms. However, should the organisers of a rally or hill-climb deem that the driving conditions during their event are comparable to those of a speed event, they are entitled to prescribe the compulsory fitting of a safety roll-bar or cage, even for cars of Groups 1 and 3. This obligation must, in that case, be clearly mentioned in the Supplementary Regulations of the events.

**Cars of Groups 2 and 4:**

Fitting compulsory for all events. In rallies, the diagonal strut is not compulsory. The safety cage, as shown in drawing No 2, provided for cars whose weight exceeds 1,200 kg, is compulsory for all cars whose cylinder-capacity exceeds 2 litres.

**Cars of Group 5:**

Fitting compulsory for all cars. The safety cage as shown in drawing No 2, provided for cars whose weight exceeds 1,200 kg, is compulsory.

**Cars of Group 6:**

All cars should be equipped with a safety roll-bar symmetrical about the longitudinal axis of the car.

In cars fitted with doors, the roll-bar will have a minimum height of 92 cm measured vertically from the lowest point of the entirely sprung structure of the car.

In cars without any door, the minimum height will be 120 cm. In any case, the top of the roll-bar must be at least at 5 cm above the driver's helmet when the driver is sitting in normal driving position.

Manufacturing of roll-bars, in conformity with the following table and drawings 9 and 10 (International Standards ISO R 64 except for  $\varnothing 35 \times 2$ ), and to previous specifications concerning the removable connections and the general considerations.

The mounting of front stays to protect the driver is accepted on condition that they are removable, for open cars.

It is recalled that the safety roll-bar must be symmetrical about the lengthwise centre line of the car.

**(Group 6)**

	Closed and Open Cars	
	< 700 kg	≥ 700 kg
Cold drawn seamless carbon steel E~30 daN	$\varnothing 42,4$ $\times 2,6$	$\varnothing 48,3$ $\times 2,6$
Alloy Steel type 25 CD4 SAE 4125 etc E~50 daN	$\varnothing 35$ $\times 2$	$\varnothing 42,4$ $\times 2,6$

However, recognised and traditional manufacturers may also present a roll-bar of free conception as regards the material used, the dimensions of the tubes and the implantation of the braces, providing that the construction is certified to withstand stress minima given hereafter.

The mass being that of the car in starting order (driver aboard, full tanks), the roll-bar must be able to withstand three simultaneously applied accelerations:

— 1.5 G lateral,

— 5.5 G fore and aft,

— 7.5 G vertical, the induced loads being carried over into the primary structure of the chassis.

A certificate signed by a qualified technician must be submitted to the Scrutineers of an event. It must be accompanied by a drawing or a photograph of the said roll-bar and state that this roll-bar can withstand the above mentioned loads.

### **Cars of Groups 7 and 8:**

**Dimensions:** The dimensions of the roll-bars must be as follows: the minimum height must be at least 36 inches (92 cm) measured along the line following the driver's spine, from the seat's metal shell to the top of the roll-bar. The top of the roll-bar must also be at least at 5 cm above the driver's helmet when the driver is sitting in normal driving position. The width must be at least 38 cm measured inside the roll-bar between the two vertical pillars of the sides. It must be measured at 60 cm above the seat's metal shell on the perpendicular to the line following the driver's spine.

**Strength:** In order to obtain a sufficient strength for the roll-bar, two possibilities are left to the manufacturers:

a) The roll-bar, of entirely free structural conception, must be capable to withstand the stress minima indicated on the scale hereabove (§ concerning cars of group 6).

b) The tubes and brace(s) must have a diameter of at least  $1\frac{1}{8}$  inch (3.5 cm) and at least 0,090 inch (2 mm) wall thickness. The material should be molybdenum chromium SAE 4130 or SAE 4125 (or equivalent in DIN, NF, etc).

There must be at least one brace from the top of the bar rearwards at an angle not exceeding 60° with the horizontal. The diameter and material of the brace must be the same as those of the roll-bar itself.

In the case of two braces, the diameter of each of them may be reduced to 20/26 mm. Removable connections between the main hoop and the brace must comply with drawings No 6 and 7 or with any other type approved by the FIA.

Provided the prescriptions concerning cockpit openings and strength of roll-bars are met, stays may be fitted forward.

### **f) Safety fuel tanks approved by the FIA:**

Entrants must use safety fuel tanks made by a manufacturer recognised 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 there shall be a printed code indicating the name of the manufacturer, the exact specifications according to which this tank has been manufactured and the date of the manufacturing.

**1) Technical specifications:**

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

**2) Specifications FIA/Spec/FT3:**

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

**Ageing of tanks**

The ageing of safety tanks entails a considerable reduction in the strength characteristics after approximately five years.

Therefore, all fuel cells must be replaced by new ones at the latest five years after the fabrication date indicated on the cell. Fuel cells which are not codified such as to show their date of fabrication will be considered to date from before January 1st 1970, and therefore are no longer allowed.

**3) Specifications FIA/Spec/FTA:**

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

For reasons of vibrations, the fuel tank, if it is not made of rubber or of other elastic materials, should be suspended from the chassis by means of elastic supports (of a type similar to those used for the water radiators).

**Note:** In case this specification of fuel tanks would be used for cars of Groups 6-7 (F1 and F2), the fitting of crushable structure would become optional.

**4) List of recognised manufacturers**

**Federal Republic of Germany**

Uniroyal, 5100 Aachen, Postfach 410

**United States**

Aero Tec Laboratories, 20 Beldon Place, Norwood, New Jersey 07648

Donn Allen Inc, 5730 Bankfield Drive, Culver City, California 90230

Firestone Coated Fabrics Co, 1200 Firestone Parkway, Akron, Ohio 44301

Fuel Safe Corporation, 15545 Computer Lane, Huntington Beach, California 92649

Goodyear Fuel Cell Labs, The Goodyear Tire and Rubber Company, Akron, Ohio 44316

**France**

Kléber-Colombes Division Marston, BP 22, 4 rue Lesage Maille, 76-Caudebec-les-Elbeuf

Superflexit SA, 45, rue des Minimes, 92-Courbevoie

**Great Britain**

FTP Industries Ltd, The Airport, Portsmouth, Hants

Marston Excelsior Ltd, Wobaston Rd, Wolverhampton, Staffs

Woodville Rubber Company Ltd, Hearthcote Road, Swadlincote, Burton-on-Trent, DE11 9DX.

**Italy**

Autodelta SpA (Alfa Romeo), Via Enrico Fermi 7, 20019 Settimo-Milanese

Pirelli, Viale Rodi 15, Milano

**Japan**

Bridgestone Tyre Co Ltd, 1-1 Chome Kyobashi, Chuo Ku, Tokyo 104

Kojima Press Ltd, 3-30 Shimolchibacho Toyota, Aichiken

Sakura Rubber Co Ltd, 48-14-1 Chome Sasazuka, Shibuya Ku, Tokyo

Sumitomo Electric Industries Ltd, 15-5 Chome Katahama, Migashi Ku, Osaka

### 5) Application of the different specifications

**Cars of Groups 5-6-7-8:** Compulsory fitting of a FT3 or FTA fuel tank in all events.

**Cars of Groups 1-2-3-4:** The cars of Groups 1 to 4 may be equipped with a safety fuel tank, on condition that the necessary internal modifications do not affect the structural parts and the suspension mountings.

**g) General circuit breaker:** The general circuit breaker must cut all electrical circuits (battery, alternator or dynamo, lights, hooters, ignition, electrical controls, etc). It must be of 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 mounting on the driver's side for closed cars, at the lower part of the main hoops of the roll-bar, *indifferently* on the right or the left, for open cars. It will be marked by a red spark in a white-edged blue triangle with a base of at least 12 cm.

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

**h) Oil catch tank:** When cars are running in events which are entered on the FIA Sporting Calendar and when their lubrication system includes an open type sump breather, they must be equipped in such a way as to prevent oil from spilling on the track. In cars of a cylinder-capacity inferior or equal to 2,000 cc, the oil catching device shall have a minimum capacity of 2 litres and of 3 litres for cars with a cylinder-capacity exceeding 2,000 cc. The container shall either be made out of translucent plastic or include a transparent panel.

#### i) Rear view:

**Cars of Groups 1-2-3-4-5:** This shall be provided by an inside mirror commanding a rear window with at least a 10 cm vertical opening, maintained along a width of at least 50 cm (see drawing No 15). However, if the straight line connecting the upper and lower edges of the rear window opening makes an angle inferior to 20° with the horizontal, the rear view must be efficiently obtained by other means (two outside mirrors or any other system of equivalent efficiency). Furthermore, all these cars should be equipped with two outside mirrors for circuit events.

**Cars of Groups 6-7 and 8:** The mirrors must give the driver a rear visibility on either part of the car.

**j) Braking safety system:** Double circuit operated by the same pedal and complying with the following:

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:** Compulsory fitting on all cars of Groups 2-4-5-6-7 and 8.

**k) 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 and it will be avoided to use it to lift the car.

**Application:** Cars of Groups 1-2-3-4-5 and 6.

**l) Safety fixing devices for windshields:** Such devices may be used freely for all cars having a windscreen, without recognition. They are however not compulsory.

**m) Windshield:** A windshield made of laminated glass is compulsory.

**Application:** Groups 1-2-3-4 and 5.

**n) Red warning light:** A rearward facing red warning light of at least 15 watts should be mounted as high as possible on the centre-line of the car and be clearly visible from the rear. The warning light must be switched on by order of the clerk of the course.

**Application:** Cars of Groups 7 and 8.

**o) Tank fillers and air-vents:** It is recalled that the tank fillers and their caps must not protrude beyond the coachwork.

The caps must be designed in such a way as to ensure an efficient locking action which reduces the risks of an accidental opening following a crash impact or incomplete locking after closing.

The fillers must be placed away from points which are vulnerable in case of a crash. The air vents must be located at least 25 cm to the rear of the cockpit.

**Application:** Groups 6-7-8.

**p) Life support system:** A life support system composed of a medical air bottle connected to the driver's helmet by a flame-resistant pipe is recommended for all single seaters.

**Application:** Group 7, Formulae 1 and 2 only.

## TITLE 4—GENERAL PRESCRIPTIONS

**Art 254—Rule for changing from one group to another, and authorised amalgamation of groups:** Cars originally belonging to a certain group, but which have been subject to duly declared modifications and/or additions that exceed the limits specified for the group concerned, may pass into a higher group, provided for in the supplementary regulations, with the prescriptions of which it complies and under the following conditions:

Group 1 passes into Group 2 }  
Group 3 passes into Group 4 } or eventually in Group 5  
Groups 2 and 4 pass into Group 5

**Art 255—Prescriptions common to all cars of Groups 1 to 6:**

**a) Chassis, ground-clearance:** No part of the car should touch ground when one of its tyres is deflated.

**b) Coachwork:**

**Conditions for homologation:** Coachworks of one same minimum series shall be identical with the only exception of a 'sun roof'.

However, if a model has its coachwork equipped with a specific number of doors and has been homologated on the basis of a given minimum series, similar homologation may be granted to another coachwork with a different number of doors when its minimum production reaches 50% of the figure necessary for homologation of the basic series, providing that both models have the following common characteristics:



1) a coachwork of similar shape, ie, of which the general appearance is basically the same and which has not been modified beyond what is necessary to change from a four-door version to a two-door version (or vice-versa);

2) exactly identical mechanical parts;

3) the same wheelbase, track and number of seats;

4) at least the same weight;

5) an FIA decision to homologate this variant coachwork and to draw up an additional 'variant' homologation form.

As far as convertible cars are concerned, these must comply in all respects with the specifications applying to closed cars if they run an event under this form, or with the specifications concerning open cars if they run with the hood down or the hardtop removed.

**Maximum outside dimensions:** The overall width shall be 200 cm for all cars participating in events on circuits.

**Minimum inside dimensions and minimum number of seats:** Cars shall be equipped with a minimum of two seats or a minimum of four seats according, to the group in which they seek recognition and, within a same group according to their engine cylinder-capacity.

For each group specified in these regulations, the minimum number of seats is listed hereafter and the minimum inside dimensions for both cases are indicated in the following paragraphs.

**First case** (see diagram 11): Car equipped with 4 (or more) seats.

The height at the front (B) is measured between the lowest point of the front seat cushion compressed by a standard mass of 60 kg (see diagram 12) and the ceiling (the padding if any, may be compressed). Should the backrest of the front seat(s) be inclined backwards, the protected height must also be measured at the same angle as the inclination of the backrest.

If the front seats are separate, the measurement is made in the middle of the two seats. In case of adjustable front seats, the seats will be placed in medium position.

If there is a common front seat, the measurement is made at 25 cm from the centre line of the car.

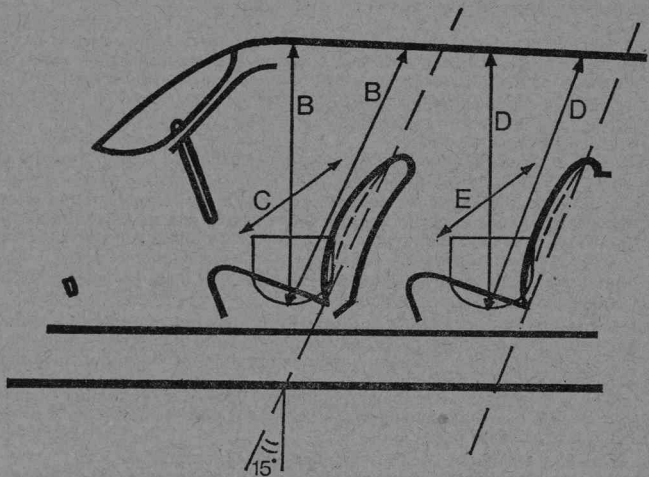
The height at the back (D) is measured between the cushion of the rear seat, compressed by the standard mass, and the ceiling (the padding, if any, may be compressed) at 25 cm from the centre line of the car. Should the backrest of the rear seat be inclined backwards, the protected height must also be measured at the same angle as the inclination of the backrest.

The width over the front seats (C) is measured along the vertical plane passing through the centre of the standard mass placed on the seat. The width must be freely maintained over a height of at least 25 cm.

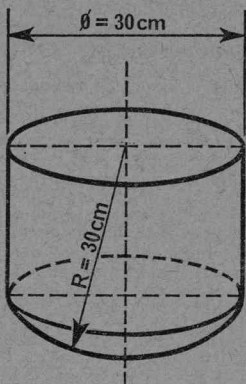
The width over the rear seats (E) is measured along the vertical transversal plane passing through the centre of the standard mass. The width must be freely maintained over a height of at least 25 cm.

The minimum dimensions (in centimetres) are the following:

Cylinder-capacity	B	C	D	E
Up to 1,000 cc	85	100		
From 1,000 to 2,000 cc	85	110	85	110
Over 2,000 cc	90	120	85	120

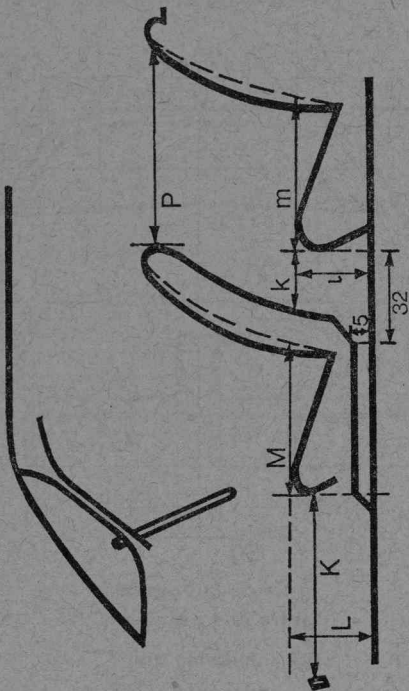


**Dessin/drawing No 11**



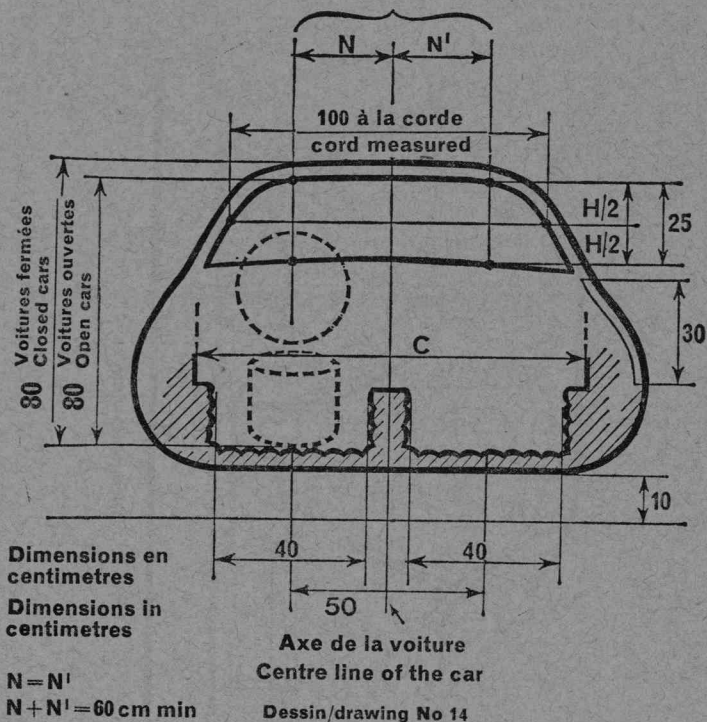
**Weight/tare = 60 kgs  $\pm$  200 grms.**

**Dessin/drawing No 12**



Dessin/drawing No 13

**Largeur sur laquelle la "hauteur protégée" doit être maintenue**  
**Width where the "protected height" must be maintained**



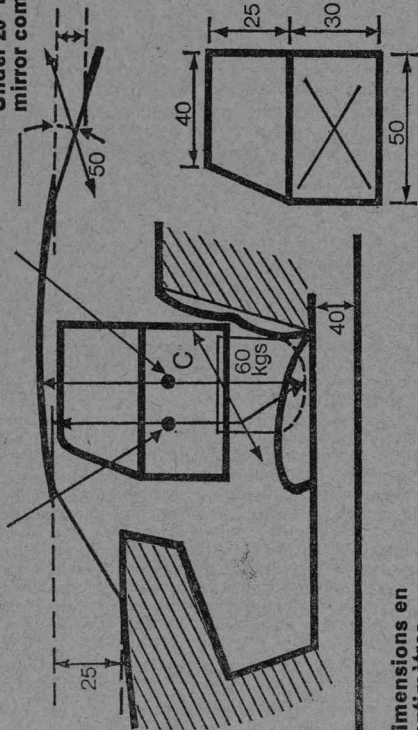
	0-700 cc	700- 2,000 cc	2,000+ cc
C	100	110	120

En dessous de 20° rétro-  
viseur extérieur  
obligatoire

Under 20° rear view  
mirror compulsory

80 Voitures ouvertes  
80 Open cars

80 Voitures fermées  
80 Closed cars



Dimensions en  
centimètres  
Dimensions in  
centimètres

Dimensions portière  
Door dimensions

Dessin/drawing No 15

## Art 255: Prescriptions Groups 1 to 6

Moreover, in order to be homologated as a four-seater, a model must fulfil certain conditions regarding its rear-seating capacity. These conditions are the following (see diagram 13):

- 1)  $l$  must be at least 90% of  $L$ ;  
 $m$  must be at least 85% of  $M$ ;  
 $p$  must be at least 85% of  $k+m$ .
- 2)  $k$  must measure at least 15 cm and the minimum measures for the foot-space of the rear passengers must be: 32 cm long, 5 cm high and (for each one of the two passengers) 25 cm wide.
- 3) The space available for the rear passengers must meet the following condition:  $k+l+m=95$  cm minimum.
- 4) Cars in which the back of the rear seat(s) is inclined forward beyond the vertical cannot be considered as four-seaters.

The measuring of the above dimensions must be carried out under the following conditions:

—The front seat, if adjustable, must be placed in its normal driving position, i.e.:  $K+L+M$  must measure at least 120 cm.

—If the front or rear seats have reclining backrests (by means of either a mechanical device or chocks or any other means) these should be set at an inclination of  $15^\circ$  backwards.

— $K$  is measured horizontally from the brake pedal (at rest) to the foremost point of the front seat;  $k$  is measured horizontally (at a height equal to  $l$ ) from the back of the front seat to the foremost point of the rear seat.

— $L$  and  $l$  are measured vertically from the highest point of the cushion of the seat to the floor of the car. At the front  $L$  must be measured at the usual resting-place of the driver's heels.

— $M$  and  $m$  are measured horizontally from the foremost point of the seat to the backrest to be measured at a height of  $L$  ( $l$ ).

Two specific cases must be distinguished:

- 1) Separate seats: the measuring must be taken on the centre line of each seat.
- 2) Common seat: measuring must be carried out at 25 cm from the longitudinal axis of the vehicle.

However for the rear seat(s) measuring must be made in the same vertical plane as for the front seats.

$p$  is measured (in the same vertical plane as  $m$ ) horizontally from the rearmost point of the backrest of the front seat to the backrest of the rear seat.

The seating cushion, if adjustable in height, must be fixed at half the adjusting range.

For the above-mentioned measurements, seats must not be occupied.

### **Definition of the term 'seat':**

By seat is meant the two surfaces constituting the seating cushion and the seat-back or backrest.

By seat-back or backrest is meant the surface measured upwards from the bottom of the spine of a person normally seated.

By seating cushion is meant the surface measured forwards from the bottom of the spine of the same person.

These two main parts of the seat must form an homogeneous construction and be entirely covered with upholstery (for example, in natural or synthetic textiles). When examining a specific car, the rear space reserved for passengers

can only be considered as complying with the term 'seat' if it offers comfort similar to that of the front seat, ie, the upholstery on it must have approximately the same thickness and the same flexibility as that of the front seats or, in practical terms: during the measurement, the standard mass (60 kg) must compress the seating cushion on the rear to approximately the same extent as on the front seats.

**Second case** (see diagrams 14 and 15): cars with a minimum of 2 seats.

The two seats must be distributed equally on either side of the longitudinal centre-line of the car and at the same level, regardless of their normal play for adjusting them to the size of the driver. The location provided for placing or housing the two front seats must have a minimum width of 40 cm maintained all along the depth of the seat. The seats themselves must have identical dimensions.

The 'protected height' shall be at least 80 cm measured from the cushion of the seat compressed by the standard mass (see diagram 12) to the ceiling (any existing padding being compressed) in cars with closed coachwork and 80 cm from the surface of the seat compressed by the standard mass (see diagram 12) to the upper edge of the windscreen (measured vertically through the centre of the standard mass) in case of open cars.

The minimum interior width over the front seats (see measurement C) shall be of 100 cm in cars with a cylinder-capacity inferior or equal to 1,000 cc, 110 cm in cars with a cylinder-capacity from 1,000 cc to 2,000 cc and 120 cm in cars with a cylinder-capacity exceeding 2,000 cc. The minimum width of foot-space (for each person) must be at least 25 cm measured perpendicularly to the centre-line of the car, plumb with the pedals.

The distance between the lengthwise centre-lines of the two seats should not be inferior to 50 cm. In case the two centre-lines should not be parallel, measurement should be done from the hollow of the seats.

The passenger's compartment and seat shall remain free throughout the competition and shall not be encroached upon by any element or equipment of the car except when Appendix J specifically provides otherwise. The passenger's compartment and seat of open cars shall not be covered.

**NB:** If a modification authorised by Appendix J affects a dimension stated on the homologation form, it will not be possible to retain that dimension as an eligibility criterion for the car.

**c) Windshield-windshield wiper:** A windshield made of laminated glass is compulsory. It shall be equipped with at least one automatic wiper sweeping a sufficient area to enable the driver to distinctly see the road from his seat.

The windshield shall comply with the following requirements:

- 1) Be placed symmetrically with regard to the centre-line of the car.
- 2) Have a minimum height of 25 cm, maintained between two points symmetrically placed with regard to the centre-line of the car and of which one is determined by the vertical line passing through the centre of the steering-wheel. There must furthermore be at least 60 cm between the two said points.
- 3) Have a minimum width of 100 cm; cord measured at half its vertical height.

Shall be considered as being the windshield, only the glass area through which one has an entirely free vision towards the front, without being limited by any outside opaque projection apart from the bulge of the mudguards which cover the front wheels.

**d) Mudguards:** Shall be of permanent nature and firmly fixed.

They shall project over the wheels and provide efficient covering of at least one third of their circumference, and at least the width of the tyre. In those cars where mudguards are entirely or partly overhung by the body structure, the combination mudguards-body or the body alone shall nevertheless meet the above protection requirements.

Mudguards must be solid with the body, there being no gap between them, except as regards the openings mentioned under Art 269 b).

**e) Doors:** All vehicles shall be fitted with at least one rigid door on each side, with closing devices and hinges which may not be located on the rear-door post, nor on the door-sill. The outside door handle, in case of closed cars, must be clearly indicated. The dimensions of the lower door panel (the part which is normally opaque) must be such as to allow a rectangle of at least 50 cm wide and 30 cm high being inserted in it. The corners of this rectangle may be rounded to a maximum radius of 15 cm. Cars with sliding-doors will not be allowed unless they include a safety system enabling a quick and easy evacuation of the car's occupants in case of an accident.

Cars with closed or convertible coachwork shall have doors equipped with movable windows of the material provided by the manufacturer for the considered model, liable to be opened over at least one third of their surface in order to provide for ventilation, each window having a minimum width of 40 cm and a minimum height of 25 cm.

When opened, the doors must give free access to the seats. They must be made in such a way that they never restrict the lateral view of the driver.

By door should be understood the part of the coachwork opening to give access to the seats.

**f) Luggage trunk:** A covered space shall be provided which is an integral part of the coachwork but outside the space occupied by the passenger seats.

This space shall be such as to enable to carry without special difficulty a number of suit-cases, sheltered from rain or dirt which varies according to the cylinder-capacity of the engine equipping the car (see below), of the following minimum dimensions: 60 cm x 40 cm x 20 cm.

Cylinder-capacity inferior or equal to 2,000 cc: 1 suit-case

Cylinder-capacity superior to 2,000 cc: 2 suit-cases

However, in cars having inside dimensions which are inferior to the minima laid down in Art 253 b) to allow classification as a four-seater, but which contain a compartment behind the front seats liable to receive passengers, this compartment may be taken into account as luggage space whether or not it has been equipped for this purpose but without modifying any of the original parts.

It is specified that the luggage capacity for FIA homologated cars is checked at the moment of homologation. Therefore, race scrutineers need not worry about minimum luggage space for all cars benefiting from an FIA homologation in Groups 1, 2, 3 and 4.

**g) Fuel tanks:** The total capacity of the fuel tanks (main and additional) must not exceed the following limits:

Cars up to	700 cc of engine cylinder-capacity :	60 l
Cars from	700 cc to 1,000 cc	: 70 l
" "	1,000 cc to 1,300 cc	: 80 l
" "	1,300 cc to 1,600 cc	: 90 l
" "	1,600 cc to 2,000 cc	: 100 l
" "	2,000 cc to 2,500 cc	: 110 l
Cars over	2,500 cc	: 120 l



Will be considered as a fuel tank any container holding fuel which can flow out by any method either to the main-tank or directly to the engine.

The filling-port(s) (and vents) of each tank must always be outside the passenger-compartment and be entirely leak-proof.

**Location of fuel tanks:** The emplacement foreseen by the manufacturer for the fuel tank(s) and the feeding system towards the engine constitutes one of the principles of series-production, and this implies that no change can be made, unless an authorisation is explicitly stated in Appendix J.

However, a derogation to the above rule shall be made for cars in which the manufacturer has placed the fuel tank inside the passenger compartment, and close to the occupants.

In this specific case, and for the sake of safety, it will be possible, whatever the group of cars, to mount a leak-proof protective barrier between the tank and the passengers, or to change the place of the tank and, if necessary, its accessory parts (filling port, petrol pump, outlet tube).

**h) Minimum weight:** Is the real minimum weight of the empty car (without persons or luggage aboard) fully equipped and ready for delivery to the purchaser. It shall consequently include a spare-wheel (See Art 255 i), and all the accessories normally mounted on the least expensive model of the series concerned, except for the normally supplied repair kit (jack, tool-kit). All liquid tanks (of lubrication, cooling system, braking, heating system, if need be), except for the fuel tank, must be full.

By full it will be understood: to the normal level recommended by the manufacturer.

The minimum weight of the car shall be strictly respected. Any lightening of the car by removal or replacement of parts, exclusively intended to reduce its weight, is prohibited.

**i) Spare-wheels:** All cars shall be equipped with at least one spare-wheel occupying the position provided for by the manufacturer which may not encroach upon the space provided for luggage.

The spare-wheel must be equipped with a tyre of the same nominal tread circumference as those fitted on at least two wheels of the car. It must be serviceable under all circumstances.

**j) Silencer (muffler) and exhaust system:** Even when the specific provisions for a group allow replacement of the original muffler, cars competing in an open road event shall always be equipped with an exhaust muffler complying with the road regulations of the country(ies) through which the event is run.

For events run exclusively on closed circuits, the supplementary regulations may authorise modification, replacement or removal of the exhaust muffler.

The outlet pipes of the muffler shall be directed either rearwards or sideways.

If the outlet pipes are pointing rearwards, their orifices shall be placed at a height neither superior to 45 cm nor below 10 cm; they shall not protrude by more than 15 cm beyond the overall length of the car. If the exhaust pipes are directed sideways, their orifices must be located aft of a vertical line passing through the wheelbase centre and may not project in any way beyond side of the coachwork. Adequate protection shall be provided in order to prevent heated pipes from causing burns.

**k) Minimum lighting equipment:** For all types of races, cars must be equipped with at least two 'Stop' lights plus two red tail lights, each fitted with a

bulb of at least 15 w. In addition all cars in Groups 1 to 5 should be fitted with two headlamps as powerful as those normally found on Touring or Grand Touring cars. These headlamps should be in working order throughout the race, even if the race takes place exclusively in the daytime. Two direction indicators must be fitted at the rear.

For events run on open roads (rallies), cars must comply with the legal requirements of the country of the event; cars from other countries must comply in this respect with the Convention on international road traffic.

**l) Supercharging:** If the engine of a car includes a separate device used for supercharging it, the nominal cylinder-capacity will be multiplied by 1.4 and the car will pass into the class corresponding to the fictive volume thus obtained. The new cylinder-capacity of the car shall always be considered as the real one. This shall particularly be the case for assigning the car to its cylinder-capacity class, and the car will be treated in all respects as if its cylinder-capacity thus increased was its real capacity. Especially in regard to its classification per cylinder-capacity class, its inside dimensions, its minimum number of seats, etc.

A dynamic air inlet for ducting the air from the atmosphere into the engine intake will not be considered as a supercharging device.

*The CSI reserves its right to change the supercharging coefficient(s) as from January 1st 1980.*

**m) Limits of authorised modifications:** Certain modifications to the original parts, certain additions and/or removal of accessories normally mounted by the manufacturer of the model concerned, are explicitly authorised by the present regulations. The limits of these modifications are set out for each of the groups 1 to 5. All those not explicitly mentioned as permissible for the group in which the car claims classification and which affect, even secondarily, the mechanical efficiency of the engine, the steering, the transmission, the road-holding and/or the braking, will render the car ineligible for the group requested.

If these modifications or additions have been the subject of a previous statement by the entrant, the car may be allowed to compete in the event in one of the other groups provided in the supplementary regulations and with the prescriptions of which it complies. Should there be however an obvious case of wilful misrepresentation, the entrant should not be authorised to start or should be stopped if he had already started, with request to the ACN concerned to pronounce his suspension for at least 12 months.

**n) Fuel:**

**1) For all piston engines (reciprocating and rotary):** By 'commercial fuel' to be used in motor car competitions, the Federation Internationale de l'Automobile intends to designate a 'motor' fuel produced by an oil company and currently distributed at road refuelling stations throughout one same country.

May therefore be used, in all races for which the use of commercial fuel is compulsory, all commercial fuels of the country in which the event takes place, with no other additive except that of a lubricant of current sale which cannot increase the octane number, or water.

May also be used, under the same conditions, any commercial fuel(s) which—in France, Germany, Great Britain and Italy—is (are) of the highest octane rating, according to the Research Method.

If the above-mentioned fuel could not be easily imported into the country where the event is taking place, it may be replaced by another one of similar quality and

*Art 255: Prescriptions Groups 1 to 6/Art 256-57-58: Group 1*

with the same octane number (RM)—with a tolerance of + 1—specially made by an oil company.

Whenever, in France, Great Britain, Germany and Italy, a new commercial fuel is made available which has a higher octane rating than those sold so far, the oil company producing this said fuel shall give notice to the FIA by a registered letter and this new commercial fuel (or its equivalent as specified hereabove) may be used for racing 30 days after the registered letter has been mailed.

The oil companies who supply fuel directly to the entrants of a race shall have to send to the promoters the characteristics and a sample of the fuel delivered in such quantity as is sufficient to carry out the necessary analyses, and also a declaration stating that the fuel complies with the present specifications.

**NB:** This paragraph 255n) also applies to cars of Group 7.

**2) For vehicles propelled by turbine engines:** Kerosene used by commercial aviation companies for turbo-prop or jet engines or the fuel used by vehicles with conventional type engines and complying with the here-above definition of 'commercial fuel'.

**o) Combustive:** The engines must intake only ambient air.

**Application:** Groups 1 to 7.

**p) Application of general prescriptions:** The general prescriptions must be complied with if the particular specifications of groups of cars of Groups 1 to 6 do not mention them or do not provide for any stricter prescriptions.

**q) Anti-pollution legislation:** It is specified that the freedom left for the modifications of anti-pollution equipment is valid only as far as these modifications are not forbidden by the national laws of the country traversed.

## **SERIES-PRODUCTION TOURING CARS (Group 1)**

### **Art 256—Definition:**

**Touring cars built on large series-production terms:** The only working authorised is normal maintenance or the replacement of parts damaged through wear or accident and the modifications and additions explicitly authorised hereafter under Article 258. Except for what is explicitly authorised, any part damaged through wear or accident may only be replaced by an original part identical to the one damaged.

**Art 257—Minimum production and number of seats:** Series-production touring cars shall have been manufactured in 12 consecutive months in a quantity of at least 5,000 identical units and offer at least four seats, except if their engine cylinder-capacity is inferior or equal to 1,000 cc, in which case the manufacturer may deliver them as two-seaters.

### **Art 258—Mountings and modifications authorised:**

**a) Lighting devices:** All lighting and signalling devices must comply with the legal requirements of the country of the event; cars from abroad must comply in this respect with the Convention on international road traffic.

Lighting devices which are part of the standard equipment must retain those foreseen by the manufacturer and must comply as far as is concerned their

functioning with what the manufacturer has foreseen for the considered model. Thus, if changing from a road beam to a passing beam is produced by merely deflecting the beam inside one same reflector, this system may not be altered.

Freedom is granted with regard to the frontal glass, the reflector and the bulbs. The mounting of additional headlights is authorised provided that a total of six headlights is not exceeded (parking lights not included). Extra headlights may, if necessary, be fitted into the front part of the coachwork or into the radiator grille, but such openings as needed in this case must be completely filled by the additional headlights. The number of headlights and other outside lights must be even. Shall be considered as a headlight any lighting-device throwing a beam towards the front (dipped-beam, long-range lamp, anti-fog lamp). The fitting of reverse-lights is authorised, if necessary by embedding into the coachwork, but provided it will only switch on when engaging the reverse-gear, and provided the police regulations are respected.

The mounting of manoeuvrable search-lights on the roof or elsewhere is forbidden. Waivers may be granted to these specifications on condition that they be explicitly provided for in the supplementary regulations of the event.

It is permitted to modify the location of the signalling devices and the parking lights. The make of the lighting devices is free.

The supplementary regulations of an event may authorise the use of more than six headlights, within the conditions of the present article.

**b) Fuel and oil tanks:** Must be those normally homologated by the manufacturer for the model concerned, the capacities of which are specified on the homologation form (Art 252 g).

A safety fuel tank of a specification homologated by the FIA (FT3-FTA) (re Art 253 f) or that the manufacturer of the car considered will have had homologated by the FIA without any minimum production may be mounted on two conditions:

- Its capacity will be inferior or equal to the original fuel tank.
- The compartment of origin will be the same. It will also be allowed to install it in the luggage boot.

In no case will it be permitted to cut a hole in the floor of a car for the mounting of a safety fuel tank.

The use of a fuel filler with a vertical hose will be authorised for the series-production fuel tank and also the eventual safety fuel tank. However, no modification of the coachwork will be permitted, and the opening of the former fuel filler will be totally obstructed. Should the tank and its filler be located in the luggage compartment, an outlet must be provided for the fuel accidentally spilled in this compartment.

For circuit races where refuelling takes place, it is permitted to use the standard refuelling coupling recommended by the CSI, even if this means modification of the coachwork, so long as the part of the coupling fitted to the car does not protrude beyond the coachwork line. The use of a fuel tank with a larger capacity may be authorised by the ACN with the FIA's agreement, in the case of events organised under particular geographic conditions (on desert or tropical courses for instance).

The series fuel tank must be removed when another type of fuel tank is used.

**c) Cooling circuit:** If, for the same model, radiators of different capacities are normally provided, only those homologated for this model will be authorised.

The addition of a radiator screen is authorised.

The use of a radiator with a larger capacity may be authorised by the ACN with

the FIA's agreement, in the case of events organised under particular geographic conditions.

Make and type of thermostat are free; however, it may also be removed. The radiator screen may be a rigid plate fixed behind the grille.

**d) Induction:** The carburettor(s) or fuel injector pump(s) normally mounted on the homologated model and described on the homologation form may not be changed or modified. The elements which control the quantity of fuel fed in the engine may be changed, but not those which control the quantity of air. It is permitted to remove the filtering element on condition that the original air filter box is retained.

In the case of a supercharged car, the supercharging system must conform strictly with the series.

**e) Electrical equipment:** The tension (voltage) of the electrical equipment may not be changed. In case of an electrical circuit under a 12 volt tension, this tension may be produced either by a 12 volt battery or by several batteries of an inferior voltage on condition these batteries remain in the original location. By location of the battery is meant the coachwork compartment where it was originally mounted.

The make and capacity of battery, as well as the make and the output of the generator, are free. The manufacturer may provide for one same minimum series the use either of a dynamo or of an alternator on condition that this is explicitly mentioned on the basic homologation form or on an additional 'variant' form.

**Ignition coil, condenser, distributor and regulator** are free, subject to the ignition system remaining the same as provided by the manufacturer for the model concerned.

However, it is specified that the fitting of an electronic ignition system is allowed on series-production cars provided no mechanical part other than those mentioned hereabove is modified or replaced.

**Spark plugs:** Make and type are free.

**f) Transmission:** For one same series of 5,000 cars the following possibilities are given on the express condition that they are those of the series-production and that they are normally sold to the purchaser and entered on the homologation form.

**Gearbox:**

—Either two gearboxes with the same number of ratios but different in their staging, without any minimum production requirement;

—or two gearboxes with a different number of ratios and different in staging provided that 50% of the required minimum number of cars have been equipped with either one of the gearboxes.

The fitting of an overdrive system in addition to the existing gearbox is authorised.

For each additional series of 5,000 models, the manufacturer therefore has the possibility of requesting homologation for one new gearbox, in so far as he is able to certify that, in each series, the required minimum number of cars has effectively been delivered with the equipment object of the homologation.

**Final drive:** Two different ratios.

Should a manufacturer have provided a greater number of gearboxes either by the spacing or by the number of ratios and/or final drive, he must, for their use to be permitted, prove that he has achieved the required minimum production

of the car as many times as he has submitted one final drive ratio and one gearbox.

The use of an automatic gearbox is authorised but on condition this gearbox is foreseen by the manufacturer and mentioned on the homologation form. No minimum production is required.

In this case, however, the differential ratio provided for the automatic box on the homologation form should be used, with the exception of the ratios provided for the manual box.

The gear change lever must be in the location or locations designed by the manufacturer and mentioned on the homologation form. Its shape and length are free.

Each set of gearbox ratios entered on the homologation form should be considered as a unit.

For each additional series of 5,000 models, the manufacturer therefore has the possibility of requesting homologation for one new final drive ratio, in so far as he is able to certify that, in each series, the required minimum number of cars has effectively been delivered with the equipment object of the homologation.

**g) Shock absorbers:** The make and type are free. However, no addition is allowed and neither their original purpose nor their number, nor their system of operation may be modified. By system of operation is meant: hydraulic, friction, telescopic or lever type. The original supports may not be changed in any way.

If, in order to change the damping element of a McPherson suspension, it is necessary to replace the entire McPherson strut, the replacement part must be mechanically identical to the original one, except for the damping element.

In this case, suspension geometry must remain unchanged, and the characteristic angles of the suspension and the wheel must continue to correspond to the original ones.

**h) Wheels and tyres:** Wheels must be those provided by the manufacturer for the considered model. They are defined by their diameter, the width of their rim and the track they determine. Wheels which differ by their shape or dimensions may be homologated subject to the following conditions:

—That there is a sufficient number of cars equipped with such wheels to justify homologation.

—That they are mounted in compliance with the specifications of paragraph 'mudguards' of Art 255 d).

Besides, the four wheels must always belong to the same homologation set.

Tyres are free (make and type) on condition they are tyres provided by their manufacturer to be fitted on the wheels without any intermediary device.

However, they will have to conform with the regulations of the country where the event takes place for events being run on roads open to traffic, and they will be left at the choice of the organisers for other events.

All special or additional non-skid devices for snow or ice may also be fitted.

However, the CSI reserves its right to prohibit the use of studded tyres for events run on open roads.

**i) Brakes:** Must be those provided by the manufacturer. The replacement of worn linings is authorised and their system of attachment is free, provided the dimensions of inner friction surfaces remain unchanged (Art 252 m). Servo-assistance and pressure limiting valves are only permitted when duly homologated concerning a number of identical cars equal to that required for basic homologation.

If a servo-assistance is normally provided for on a car, the servo device may be disconnected.

It is permissible to fit a dual braking system on condition that it be of the same make as that of the hydraulic master cylinder or provided by the manufacturer of the vehicle and that it has been homologated without minimum production.

The material and method of fixation of the brake linings are free.

**j) Clutch:** The material and method of fixation of the clutch linings are free.

**k) Supplementary accessories not included in the homologation:** Are authorised without restriction provided they have no influence whatsoever on the behaviour of the car, such as those concerning the aesthetics or the inside comfort (lighting, heating, radio, etc), provided they do not affect, even indirectly, the mechanical performance of the engine, the steering, the transmission, the road holding and the braking.

All controls and their functions must remain those provided by the manufacturer, but it is permissible to arrange them in such a way as to make them accessible and easier to use, ie, lengthening of the handbrake-lever, fitting of additional pads to the brake-pedal, etc. The position of the steering-wheel may be indifferently on the left or on the right, provided this only results in a simple transposition of the steering-system linkages as provided and supplied by the manufacturer and without any other mechanical alteration (tubing, etc).

The following is authorised:

1) The windshield may be replaced by a windshield of same material but with a heater-defroster device incorporated.

2) The original heater may be replaced by another one provided by the manufacturer and mentioned in his catalogue as available on request.

3) All freedom is left regarding the mounting or the replacement of all gauges, meters, etc. However, this mounting should represent no danger.

4) The horn may be changed or an extra one may be added, at the disposal of the passenger if wished.

5) The mechanism of the handbrake lever may be adapted for obtaining an instantaneous unbolting (fly-off handbrake).

6) All electrical switches may be freely changed, inasmuch as is concerned their purpose, their location and, in case of the adding of extra accessories, their number.

7) Extra relays and fuses may be added to the electrics; battery wires may be lengthened. The original accelerator cable may be replaced by another one, whether supplied or not by the manufacturer.

8) Seat brackets may be altered and any kind of seat-covers may be added, even those which constitute a bucket-seat.

9) Jacking points may be strengthened; their location may be changed or extra ones may be added.

10) Head-light covers may be fitted provided they do not influence the streamlining of the car.

11) Complete freedom is left with regard to the location and appearance of registration number plates, in consideration of the great differences between legal requirements from one country to another.

12) The luggage boot may be adapted for better accommodation of the equipment carried (straps for fixing a tool-box, protection of a supplementary fuel-tank, of an additional spare-wheel, etc). The attachment system of the original spare-wheel may be altered provided its original location is not changed.

13) Extra compartments may be added to the glove-box and extra latera pockets to the doors.

14) Plates of insulating material may be added in all places where they may be necessary to protect those carried aboard the car from a risk of fire.

15) An oil-catch tank or a water-catch tank may be fitted (Art 253 h).

16) The radiator filler cap may be locked by any means.

17) Safety fasteners may be provided for the windshfeld.

18) The steering-wheel is free.

**l) Coachwork:** None of the normal elements of the coachwork (dashboard, all inside quiltings whatever their location) may be removed or replaced, and none of the accessories normally mounted by the manufacturer on the lowest priced model may be removed.

However, the modifications deriving from the fitting of the supplementary accessories authorised in the preceding paragraph, such as those necessitated by the addition of a windscreen washer (drilling of a hole into the bonnet) will be allowed. The same minimum series may comprehend various materials for seats, upholstery and inside quilting (cloth, leather, plastics, etc) and two different types of front seats (bench type or separate seats). These variants must be stated on the homologation form and in particular the various total weights resulting from the use of different front seats.

Manufacturers may ask for recognition of a sport seat on a separate extension form. The following data are required:

— Photograph of the seat and of its mounting system;

— Weight — make and reference.

Transparent parts must, in case of damage, be replaced by others made of a material identical to the original one listed on the homologation form. They shall be completely interchangeable with those originally fitted. They must be mounted on the original supports and their original opening system (if any) must be maintained.

Nuts and bolts may be freely exchanged and locked by pins or wires.

Wheel-spats which are part of the coachwork must be removed.

**m) Bumpers, embellishers, streamlining:** Bumper overriders may be removed.

Wheel embellishers must be removed. The addition of any protective device underneath the car is forbidden unless such a device is mentioned on the homologation form of the model in question or is authorised or made compulsory by the supplementary regulations of the event.

**n) Reboring dimensions:** A maximum reboring dimension of 0.6 mm will be authorised on condition that the piston be the original one and that the cylinder-capacity class remains the same (Art 252 h).

**Manufacturing tolerances:** Provided the tolerances comply with the tolerances allowed by the FIA, it will not be necessary to mention individual tolerances on the homologation form any more. Should any tolerance exceed the allowed ones, due explanations should be provided by the manufacturers for consideration by the Sub-Commission for Technical Regulations.

**Tolerance scale:**

1) Tolerances for all machining, excepting bore and stroke: 0.2%. (Articles 148, 150, 74, 75, 161, 171, 185, 186, 192, 211, 212 and also the orifices appearing on page 15 of the homologation form).

2) Article 144: tolerance  $\pm 0.5\%$ .



- 3) Unfinished castings: +4% —2%.
- 4) Cam-lift: +1% (Articles 162, 172, 205).
- 5) Weight (Articles 151 to 156): +7% —3%.
- 6) Width of the car at front and rear axles: +1% —0.3%.
- 7) Wheelbase (Article 3):  $\pm 1\%$ .
- 8) Track (Art 110 and 111):  $\pm 25$  mm.

**Former homologation form:**

- 1) Art 156-158-159-181-196-215-216-225-262-263 orifices p 8.
- 2) Art 146.
- 4) Art 182-197-255.
- 5) Art 160 to 164.
- 7) Art 1.

**TOURING CARS (Group 2)**

**Art 259 — Definition:** Cars of series-production which may be submitted to certain modifications aimed at making them better suited to competition. The list of the modifications and additions authorised is given hereafter under Art 261.

Moreover, in this group, may be classed cars of Group 1 which have been the subject of modifications and/or additions exceeding the limits of Group 1. These cars will then enjoy the same freedom as provided for Group 2.

**Art 260 — Minimum production and number of seats:** Touring cars shall have been manufactured in a quantity of at least 1,000 units in 12 consecutive months and be equipped with at least four seats; however, if their cylinder-capacity is equal or inferior to 1,000 cc, they may be delivered as 'two seaters'.

**Art 261 — Modifications and additions authorised:** All those already authorised in Group 1, plus those contained in this article.

**a) Minimum weight:** The following scale of weights represent overall minimum weights of cars as they cross the finish line, fuel weight deducted.

Up to	500 cc:	495 kg
" "	600 cc:	535 kg
" "	700 cc:	570 kg
" "	850 cc:	615 kg
" "	1,000 cc:	655 kg
" "	1,150 cc:	690 kg
" "	1,300 cc:	720 kg
" "	1,600 cc:	775 kg
" "	2,000 cc:	845 kg
" "	2,500 cc:	920 kg
" "	3,000 cc:	990 kg
" "	3,500 cc:	1,050 kg
" "	4,000 cc:	1,115 kg
" "	4,500 cc:	1,175 kg
" "	5,000 cc:	1,225 kg
" "	5,500 cc:	1,280 kg
" "	6,000 cc:	1,330 kg
" "	6,500 cc:	1,365 kg
" "	7,000 cc:	1,405 kg
" "	7,500 cc:	1,425 kg
" "	8,000 cc:	1,445 kg
Over	8,000 cc:	1,530 kg

In no case the scrutineers may take the weights figuring on the homologation forms into consideration.

**b) Modifications of the original mechanical parts:** The original mechanical parts having undergone all the normal machining operations foreseen by the manufacturer for series-production, except those for which the present article provides a freedom of replacement, may be subject of all perfecting operations by means of finishing or scraping, but not replacement. In other words, provided the origin of the series-production part may always be ascertained undoubtedly, this part may be rectified, balanced, adjusted, reduced or modified in its shape through machining. This permission however does not apply to brake callipers. Any adjunction of material in an homogeneous way (welding, gluing, electrolysis) is forbidden for the following mechanical elements: engine, gear-box, transmission, suspension parts.

**c) Engine — cylinder-heads and valves:** Besides the modifications which can be carried out on the cylinder-head as specified under paragraph b), complete freedom is left as regards valves, valve-guides and valve-seats. The number of valves per cylinder cannot be modified. It is allowed to add washers to the valve-spring assembly.

Valve-springs are submitted to no restriction as regards their number and type, provided the modifications remain within the limits provided for in b).

**d) Engine—induction system and elements:** Free. However, supercharging will be forbidden if not homologated.

In case a supercharging system would be homologated in series, complete freedom is granted in so far as its preparation is concerned.

A turbocharger may not be replaced by another type of compressor and vice versa.

(Turbocompressors remain turbocompressors, mechanical compressors remain mechanical compressors, etc.)

**e) Engine—reboring:** No overlapping of cylinder-capacity class is allowed (Art 252 i). A 0.6 mm maximum reboring is permitted in relation to the original series bore. It is permitted to sleeve (or re-sleeve) the engine within the authorised dimensions.

By sleeve, it will be understood the metal cylinder inside which the piston moves. This part will be a separate component which will be fitted in the block in different ways: pressed, welded, etc.

The material will be free. In case the engine would be directly bored and no intermediate part used, it will be possible to add a sleeve, the material of which will be free. An addition of material will be permitted inside the cylinders, by way of derogation to Art 261 b).

**f) Engine—exhaust system and elements:** Free. The piping will however be conceived in such a way as to end on one of the sides or at the rear of the car.

However, for all types of events, organisers may provide for a particular restriction, which will be mentioned in the regulations of the event. Besides, for events run on open roads, the efficiency of the mufflers must conform to the legal prescriptions of the country where the event is run.

**g) Engine—bearings:** Plain, or roller bearings may be replaced by others of the same type.

**h) Engine—gaskets:** Gaskets may be replaced by others or suppressed.

**i) Engine—lubrication system:** The oil sump is free. The oil pump may be modified provided its original body is retained.

The number of oil pumps originally fitted cannot be changed.

A dry sump lubrication system is forbidden, unless homologated in series.

Oil filters and oil coolers are free (type, number and capacity). The fitting of an oil cooler exterior to the coachwork is only permitted below the horizontal plane passing through the centre of the wheel-hubs. In no case, such a fitting of an oil cooler may result in the addition of an aerodynamic enveloping structure. Moreover, the oil cooler must not constitute a protuberance outside the general car perimeter, seen from above, such as presented on the starting line.

**j) Engine—camshafts and valve gear:** Free. Yet, the location, number and driving system of the camshaft(s) cannot be changed (chain, belt, gears, con-rods, etc).

The freedom concerning the camshaft(s) does not apply to its (their) emplacement(s) nor housing(s).

**k) Engine—piston, piston axle and piston rings:** Free.

**l) Engine—other elements:** Mountings are free. The cooling fan and water-pump may be modified, replaced or suppressed.

There is no restriction for the fuel pump as regards number, type, location and output. Nevertheless, it must never be located in the passengers' compartment.

The inclination and the position of the engine inside the engine compartment are free, provided however the implied modifications do not go beyond what is allowed in Art 261 b, l, m and n.

**m) Transmission:** For one same series of 1,000 cars, the following possibilities are given on the express condition that they are those of the series-production, and that they are normally sold to the purchaser and entered on the homologation form.

**Gear-box:** Three sets of recognised ratios including those eventually recognised for Group 1, which may be mixed, on condition that the gears are not combined into a one piece gear unit. The number of ratios of the gear-box(es) of origin must be retained. The synchronisation system of origin must be retained.

Selection forks may be reinforced by addition of material, by way of exception to Art 261 b).

Mountings are free. The location and type of the gear lever are free. The gear-box casing should remain that of origin, within the limits of the modifications permitted in paragraph b). The original principle of lubrication of the box should be retained; however a cooling device for the gear-box oil is authorised (circulation pump and radiator).

For cars fitted with automatic gear-box, a complete freedom is left for the ratios on condition that their number is unchanged. The torque converter is free.

**Differential:** Mountings are free. The differential ratio is free, provided however it is homologated. No minimum production is necessary for this homologation. A limited-slip or self-blocking differential may be fitted, provided it can be located in the casing without entailing a modification beyond that allowed under paragraph b). All the transmission shafts and joints between the engine and the wheels are free.

The original principle of lubrication must be retained; however a cooling device for the oil is authorised (circulation pump and radiator). A complete freedom is left as regards pulleys and belts for belt transmissions.

**Clutch:** The clutch will be free on condition that it has the same number of discs as the series-production clutch and that the original bell-housing and fly-wheel are retained.

**n) Suspension:** It is permitted to modify the original parts of the suspension according to the specifications of Art 261 b). The addition or suppression of an anti-sway bar is permitted. This anti-sway bar must play no other part in the suspension.

The material and dimensions of the main spring are free, on condition that it remains unique in the performance of its function.

The addition of auxiliary springs is permitted on condition that the main spring of origin be retained unchanged.

The shock absorbers anchoring points may be reinforced.

The fitting of joints of a different type and/or material is authorised. Pivoting points must remain in their original location.

**o) Steering:** The steering ratio is free, provided that the original steering box is kept. A servo steering system may be disconnected. Its homologation can be granted without minimum production.

**p) Wheels and tyres:** Free, provided their fitting can be carried out in full conformity with Art 255 d) and in so far as the complete wheel (Art 252 l) width in relation to the cylinder-capacity of the car does not exceed the following dimensions:

Up to 1,300 cc:	9"
" " 1,600 cc:	10.5"
" " 2,000 cc:	11.5"
" " 3,000 cc:	13"
" " 5,000 cc:	14"
" " 6,000 cc:	15"
Over 6,000 cc:	16"

Moreover, the four wheels of a car must always have the same diameter (Art 252 l). The spare-wheel is not compulsory. However, in case one should be installed, it must be firmly attached, not installed within the space reserved for the driver and the front passenger, and not entail modifications in the outside aspect of the coachwork.

It is specified that the track is free.

**q) Electrical equipment—lighting equipment:** Free. Yet for events on open roads, the vehicle must be in compliance with the police regulations of the country where the event is run or with the international convention on road traffic (Art 255 k).

The liberty given for the lighting devices concerns their replacement or modification, but does not allow their suppression.

Their number should be even. The minimum lighting equipment should remain in normal functioning conditions during the whole event. Two stop lights are compulsory.

The location of the battery is free; however, it should not be placed in the habitacle. In case the battery would be placed within the habitacle of a car in the normal production, it may retain this location on condition it is properly protected.

**Electrical system—engine accessories:** It is allowed to replace a dynamo by an alternator and vice-versa. Its mounting brackets and crankshaft pulley are free. The generator may be removed or put out of use. The ignition system is

free on condition the modifications involved are authorised in Art 258 e). The fitting of a double ignition system is not allowed, except if homologated with a minimum production equal to that of the basic homologation.

The make and type of the starter motor are free.

**r) Fuel tanks and water radiators:** The capacity of fuel tanks is limited by Art 255 g).

In case the tank of origin would be changed, either the modification will be made in conformity with Art 261 bb), or the fuel tank will be a safety fuel tank homologated by the FIA (minimum specification FT3). Should the tank and its filler be located in the luggage compartment, an outlet must be provided for the fuel accidentally spilled in this compartment.

The location and dimensions of the filler orifice as well as those of the filling cap may be changed, provided the new fitting does not protrude beyond the coachwork line and provides against fuel leakage into the inside compartments of the car.

There is complete freedom as regards the water radiator and its capacity. Its location may be changed provided no modification is entailed either to the outside or to the inside (habitacle) of the coachwork.

**s) Braking equipment:** The mounting of a double master-cylinder or of any device which produces simultaneous action on the four wheels and a separate action on two wheels at least is compulsory.

The discs may be replaced by others provided the area of the friction surface is not modified; the same does apply to the drums.

It is however not permitted to replace drums by discs and vice versa.

Linings are free. The backing plates may be modified and fitted with air openings. Protection shields may be modified or suppressed. Cooling air-ducts may be added provided they do not entail a modification of the coachwork.

The addition or the suppression of brake servos is allowed.

It is not permitted to modify the drum disc callipers which can only be replaced by callipers homologated by the manufacturer without minimum production (re Art 261 bb).

A brake-cooling system using an additional liquid may be homologated with no production minimum. The liquid used must obligatorily be water.

**t) Cables and pipes:** It is allowed to entirely modify the arrangement, location and materials of all cables and pipes providing for the passage of fluid elements (air, water, fuel, electric currents, etc, including the suspension system).

The fuel and high temperature liquid pipes and air ducts should not pass through the habitacle, except if this mounting is realised in series. In all cases, these pipes should be efficiently protected.

**u) Springs:** Any spring, including its abutment(s), may be modified or may be replaced by another one of similar type (ie, leaf spring, coil-spring, etc) except in the case of the suspension where Art 261 n) applies. Its original location must be retained.

**v) Coachwork elements:** The front seats and their mounting brackets may be replaced.

It is permitted to remove the rear seating arrangements, as well as the passenger seat. However, when the rear seating arrangements are removed, cars shall be fitted with a rigid metallic partition flame and liquid proof which will separate the passengers' compartment from the engine compartment and fuel tank.

It will be forbidden to install anything except the fire extinguisher, and, according to the case, the spare wheel inside the passengers' compartment.

The lightening and modification of the elements of the coachwork or the chassis of the car is forbidden. Any kind of reinforcement is authorised.

It is allowed to fit aerodynamic devices on the front part of the car below the horizontal plane passing through the centre of the wheel-hubs. Nevertheless, these aerodynamic devices shall not protrude beyond the overall perimeter of the car, seen from above.

All homologated windows and winding mechanisms should be retained. The original rear window should also be retained. Non-visible insulating material may be removed. Trimmings of the passengers' compartment, of the door panels, etc, which are normally provided for cars of the series-production may be lightened but not removed. The original aspect of the inside must be kept. It is also permitted to remove the glove-box lid and the floor carpets.

It is permitted to widen the wing by beating, within the limits foreseen by Art 261 cc) (wing extensions).

It is specified that when the fitting of a safety element required by the regulations (double braking circuit for example) entails the modification of structural elements, this modification must be duly homologated (without production minima).

**Additional fasteners:** At least two fasteners, able to be operated from the outside, are compulsory on each bonnet and boot lid.

Should the modification made be considered a modification of the coachwork, it should be homologated by the manufacturer, with no production minimum.

In addition, for all competitions on closed roads, competitors must render inoperative the original fasteners, and the safety catch, if there is one. On open roads, this measure is left to the discretion of competitors.

**Bumpers:** Changing bumpers is no longer authorised in rallies.

Bumpers which are not integrated may be removed for events run only on closed tracks. However, no brackets may protrude beyond the coachwork.

The material of which coachwork-integrated bumpers are made may be changed, provided that the new bumpers have the same shape and dimensions as the original ones and that they are no heavier.

**w) Heating system:** It is permitted to remove the heating devices and their accessories on condition that the demisting of the windshield and the rear window remains assured, if provided in series.

**x) Options—definitions:** A variant of the series-production.

Accessories or equipment delivered on express request of the customer. By option is therefore meant any equipment supplied in supplement to or in place of the basic model available on request, even if this equipment is normally fitted on some series-production cars as is the case, for example, of cars for export.

**aa) Homologation of an option:** The homologation of an option will only be granted if the optional equipment may be obtained without any discrimination from the manufacturer or his concessionnaires by any person who wishes to buy it.

**bb) Optional equipment which may be homologated without a minimum production:**

(This paragraph must be applied in conformity with Articles 259, 260, and 261.)

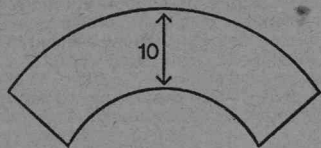
— Reinforced suspension elements and rear axle, provided they are absolutely

interchangeable with the original part and that the pivoting points to the chassis remain in their original location and that the kinematics of the suspension is not modified.

- Different dashboard.
- Brakes—brake callipers (the brakes may possibly be of a different type) and brake cooling devices.
- Fuel tanks.
- Steering rods.
- Servo steering (Art 261 o).
- Dry sump engine lubrication.

**cc) Free equipment which need not be homologated :**

- Underneath protections.
- Wing extensions (simple deflectors of at least  $120^\circ$  and of 5 cm maximum width and 10 cm maximum height and of free material.)



Front view

Drawing No 16



Side view

For measuring the maximum width, the measurement is to be done at the vertical going through the centre of the wheel hubs. It is permitted to cut the existing wing under the wing extension.

**dd) Any other option** affecting directly or indirectly the performance of the car cannot be homologated unless 1,000 identical cars equipped with this option have been manufactured in 12 consecutive months.

In case this article would be applied within Group 4 (Special GT), the minimum production would obviously be 400 cars and not 1,000 in 24 months.

### **SERIES-PRODUCTION GRAND TOURING CARS (Group 3)**

**Art 262 — Definition :** Cars with at least two seats, manufactured on a limited series-production scale for the drivers who seek the best possible performances and/or the greatest comfort.

**Art 263 — Minimum production and number of seats :** Grand Touring Cars must have been manufactured in a quantity of at least 1,000 units identical in all respects (unless the authorisations, listed hereafter under Art 264, specify otherwise) over a period not exceeding 12 consecutive months and be equipped with at least two seats.

**Art 264 — Modifications and/or additions authorised :** Exactly the same as those authorised for Group 1 (see Art 258).

## GRAND TOURING CARS (Group 4)

**Art 265 — Definition:** At least two-seater cars manufactured on a small series-production scale, and which may be subject to modifications in order to be more particularly adapted to sporting competition. This group also includes cars derived from those homologated in Group 3 (Series-production GT cars) and modified beyond the limits allowed for Group 3.

**Art 266 — Minimum production and number of seats:** The Grand Touring Cars must have been manufactured in a quantity of at least 400 units over a period not exceeding 24 consecutive months, and be equipped with at least two seats.

**Art 267 — Modifications authorised:** Exactly the same as those authorised for Group 2 (Touring Cars) (see Art 261), with the exception of the following scale of weights (Art 255 h). These weights are weights such as the car crosses the finishing line, weight of the fuel deducted.

Up to	500 cc:	495 kg	Up to	3,500 cc:	1,005 kg
" "	600 cc:	535 kg	" "	4,000 cc:	1,075 kg
" "	700 cc:	570 kg	" "	4,500 cc:	1,120 kg
" "	850 cc:	615 kg	" "	5,000 cc:	1,170 kg
" "	1,000 cc:	655 kg	" "	5,500 cc:	1,225 kg
" "	1,150 cc:	670 kg	" "	6,000 cc:	1,270 kg
" "	1,300 cc:	700 kg	" "	6,500 cc:	1,310 kg
" "	1,600 cc:	740 kg	" "	7,000 cc:	1,340 kg
" "	2,000 cc:	810 kg	" "	7,500 cc:	1,365 kg
" "	2,500 cc:	880 kg	" "	8,000 cc:	1,380 kg
" "	3,000 cc:	945 kg	Over	8,000 cc:	1,465 kg

## SPECIAL PRODUCTION CARS (Group 5)

**Art 268 — Definition:** Special production cars for which no minimum production number is required, but which are derived from those cars benefiting from a valid homologation in Groups 1 to 4.

**Art 269 — Modifications allowed:** All modifications authorised for Groups 1 to 4 (Art 258 and 261) are permitted, as well as those specified in the present chapter.

**a) Minimum weights:** Cars of Group 5 will weigh at least the weights figuring on the scale hereunder (Art 255 h). All the safety equipment required (roll cages, extinguishers, etc) are included in these weights.

Cylinder-capacity inferior or equal to	500 cc:	450 kg
" "	600 cc:	495 kg
" "	700 cc:	525 kg
" "	850 cc:	555 kg
" "	1,000 cc:	585 kg
" "	1,150 cc:	610 kg
" "	1,300 cc:	635 kg
" "	1,600 cc:	675 kg
" "	2,000 cc:	735 kg



Cylinder-capacity inferior or equal to	2,500 cc:	800 kg
"	"	"
"	3,000 cc:	860 kg
"	"	"
"	3,500 cc:	915 kg
"	"	"
"	4,000 cc:	970 kg
"	"	"
"	4,500 cc:	1,025 kg
"	"	"
"	5,000 cc:	1,065 kg
"	"	"
"	5,500 cc:	1,115 kg
"	"	"
"	6,000 cc:	1,155 kg
"	"	"
"	6,500 cc:	1,190 kg
"	"	"
"	7,000 cc:	1,220 kg
"	"	"
"	7,500 cc:	1,240 kg
"	"	"
"	8,000 cc:	1,255 kg
"	"	"
"	over 8,000 cc:	1,330 kg

**b) Coachwork—chassis:**

**b1) Coachwork:** The outside shape of the original coachwork must be retained, except as concerns the wings and the aerodynamic devices allowed. Trim-strips, mouldings, etc, may be removed. Windscreen wipers are free, but there must be at least one in working order. The highest figure in Art 6 of the homologation form (Art 4 of the old form) shall be taken into consideration for limiting the overall length of the coachwork. The car's overall maximum width is limited to two metres.

**b2) Bodyshell—chassis:** No modification may be made in the series-production bodyshell and/or chassis, except as concerns lightening the original basic structure by removing and/or adding reinforcements.

**b3) Doors, bonnets and bootlids:** Their material is free, provided that their original outside shape is retained.

Door hinges and outside door handles are free: the original lock must be retained.

The locking devices on the bonnet and bootlid, as well as the hinges, are free. There must be four locking devices, and opening from the outside must be possible. The original closing system must be removed. Openings may be made in the bonnet for ventilation, provided that they do not make mechanical components visible. In all circumstances, the bonnets and bootlids must be interchangeable with the original homologated ones.

**b4) Glass surfaces:** Except for the windscreen, the material is free, provided that windows are transparent. However, the window in the driver's door, and the one in the passenger's door, if the event's supplementary regulations permit one, must be made of the original homologated material.

The original opening of this (these) window(s) must be retained and must be equal to one-third of the minimum surface required in Art 255 e). The opening of the rear windows is free. The way they are attached is free.

Sliding windows will be authorised.

**b5) Cockpit ventilation openings:** Openings may be made in the coachwork for ventilating the cockpit, provided that they are placed:

— at the rear roof edge above the rear window and/or in the area between the rear side window and the rear window;

— that they do not protrude beyond the original line of the coachwork.

**b6) Wings:** The material and shape of the wings are free. However, the shape of the wheel arches must be retained, but this does not imply that their original

dimensions must be retained. The wings shall project out over the wheels and provide efficient coverage over at least one third of their circumference and at least the whole width of the tyre.

Openings for cooling may be made in the wings. However, should they be made behind the rear wheels, louvres must make it impossible to see the tyre from the rear along a horizontal plane.

The inside of the wings is free. It is therefore permitted to install mechanical components there.

**b7) Interior:** Interior trim, door panels, etc are free.

The dashboard must have no protruding angles. The seat must be located entirely on one side or the other of the longitudinal vertical plane passing through the middle of the car.

The bulkheads separating the cockpit from the engine compartment and the boot must retain their original place, shape, and material. Installing components up against or passing through one of these bulkheads is however permitted, provided that this does not protrude into the cockpit more than 20 cm (as measured perpendicularly to the bulkhead). This possibility does not apply to the engine block, sump, crankshaft, or cylinder head.

In addition, the floor may be modified, provided that it is not made higher than the door sills. In this case, the original floor may be removed.

It is also permitted to make the modifications necessary for installing a new transmission.

The tubes, pipes, and electrical lines running through the cockpit must comply either with the prescriptions of Art 253 b), or with aviation norms.

Except for components installed up against or through bulkheads, only the following accessories may be installed in the cockpit: spare wheel, extinguisher, medical air, communication equipment, ballast.

**c) Mechanical components:** No mechanical component may protrude beyond the car's original coachwork, except inside the wings.

**c1) Engine:** The original engine block recognised on the basic car should be retained. The cylinder-capacity will be free, and may be obtained by changing the bore and/or the original stroke. Sleeving/resleeving are free. The engine should be located within the original engine compartment, and the original orientation of the crankshaft seen from above should be retained.

It is not permitted to use several engine blocks.

**c2) Transmission:** The driving wheels of the recognised basic model must remain the driving wheels. This implies that a four-wheel-drive transmission can only be used on a car so designed at the origin. The gear-box must remain in its original compartment for instance, in front of or behind the engine, at the driving axle, etc. Adding any device for stepping up the gearing is authorised.

**c3) Other mechanical components:** Free.

**d) Suspension:** The type of suspension recognised must be retained. However, it is permitted to modify or add fixation points, to modify or replace the connection units of the suspension system. The type and the number of springs and dampers are free.

By type of suspension is meant: McPherson, rigid rear axle, De Dion rear axle, wishbones, trailed wheel, etc.

The wheelbase of origin must be retained (tolerance  $\pm 1\%$  according to Art 258).

**e) Steering:** Free.

**f) Wheels:** Free. However, the following maximum complete wheel (see Art 252 l) widths, in relation with the cylinder-capacity, will be authorised:

- Up to 1,000 cc: 11"
- " " 1,300 cc: 12"
- " " 1,600 cc: 13"
- " " 2,000 cc: 14"
- " " 3,000 cc: 15"
- over 3,000 cc: 16"

**g) Brakes:** Free (Art 253 j).

**h) Tanks:** Cars must be equipped with safety tanks in compliance with the specifications FIA/Spec/FT3 or FIA/Spec/FTA, in the conditions of Art 272 h.

The location of the fuel tank is free on condition that it is placed neither in the cockpit nor in the engine compartment, except if that is the homologated location.

Cutting through the flooring in order to install a tank is permitted.

Safety tanks are optional in:

— Hill climbs, if total fuel tank capacity is not greater than 20 litres, and if no tank is located more than 30 cm from the car's longitudinal centre line.

— Circuit races in one or several heats of less than 100 km.

Should a safety tank not be used, a real fuel tank must be used.

**i) Aerodynamic devices:** Seen from above, aerodynamic devices need not follow the contour of the shape of the car. Those which are not homologated for series-production must fit within the car's frontal projection.

**In the front:** They may not exceed by more than 10% the wheelbase of the car (measurement made from the overall limit of the coachwork) and they may in no case exceed by 20 cm the overall limits of the original bodywork (Art 269 b); they will compulsorily be installed below the horizontal plane passing through the wheel hub and may be inscribed between the lowest suspended part and the ground.

**In the rear:** They may not exceed by more than 20% the wheelbase of the car (measurement made from the overall limit of the coachwork) and they may in no case exceed by 40 cm the overall limits of the original bodywork (Art 269 b).

## **TWO-SEATER RACING CARS (Group 6)**

**Art 270 — Definition:** Two-seater competition cars built specially for speed races on closed circuit.

**Art 271 — General specifications:** These cars should answer the General Prescriptions concerning cars of Groups 1 to 6 (see Art 252 and 255) except as regards the following points:

- a) The space for the luggage is optional (Art 255 f).
- b) The spare-wheel is optional (Art 255 i).
- c) In the case of an open car, the windscreen as well as all the transparent parts of the doors, if provided, are optional and their dimensions free.
- d) Doors are optional. In case they should be fitted, they should have the dimensions foreseen by Art 255 e).

**Art 272 — Supplementary specifications :**

**a) Minimum weight:** Cars should weigh at least the weights given on the following scale:

Cylinder-capacity	inferior or equal to	1,000	to	1,000 cc:	500 kg	
"	"	from	1,000	to	1,300 cc:	535 kg
"	"	"	1,300	to	1,600 cc:	560 kg
"	"	"	1,600	to	2,000 cc:	600 kg
"	"	"	2,000	to	3,000 cc:	700 kg
"	"	"	3,000	to	4,000 cc:	765 kg
"	"	"	4,000	to	5,000 cc:	810 kg
"	"	"	5,000	to	6,000 cc:	840 kg
"	"	"		over	6,000 cc:	860 kg

**b) Battery:** The location of the battery is free. However, it should be firmly secured and entirely protected by a box of insulating material.

**c) Wheels and tyres:** It is recommended to use wheels including a device to retain the tyres. In case 'knock-off' wheel bolts (butterfly type) are used, the latter should never project beyond the rims.

The maximum width of the complete wheel is limited to 16".

**d) Brakes:** The braking system should be conceived so that the pedal normally controls 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.

**e) Suspension elements:** It is forbidden to chrome steel suspension elements if they have a rupture resistance superior to 45 tons/sq inch.

**f) Coachwork:** Coachwork shall provide comfort and safety for driver and a passenger. All elements of the coachwork shall be completely and neatly designed and finished with no temporary or makeshift elements. The body shall cover all mechanical components, except that the intake and exhaust pipes and the upper part of the engine may protrude.

**f1) Dimensions:** Maximum overall width: 200 cm; maximum overall length: 450 cm.

**Height: Open cars:** No part of the coachwork, with the exception of the safety roll bar shall exceed in height a horizontal plane 80 cm above the lowest point of the entirely sprung structure of the car.

**Height: Closed cars:** Maximum height: 110 cm. (Same measurement method as for open cars.)

**Air boxes (open and closed cars):** No orifice related to the functioning of the engine may exceed in height a plane situated 80 cm above the lowest part of the entirely sprung structure of the car.

**f2) Wings:** They shall project over the wheels and provide efficient covering of at least 1/3 of their circumference, and at least the width of the tyre wheel. At the rear part of the car, wings should be lower as the axle of the rear wheels. Cooling holes may be provided between the wings and the body.

Cooling holes directed to the rear must be fitted with louvres, baffles or any other device preventing to see the tyre from the rear.

**f3) Opening of the cockpit:** In an open car, the opening defining the cockpit should be symmetrical about the longitudinal axis of the car.

**f4) Visibility:** Coachwork shall provide visibility for driver and passenger forward and to both sides adequate for racing conditions. Rear view mirror(s) shall provide driver visibility to the rear on both sides of the car.

**f5) Cockpits and seats:** The dimensions of the cockpit should correspond to those provided for in Art 253 b) for two-seater cars. The seats for the driver and the passenger should be of similar dimensions and equally disposed on each side of the longitudinal axis of the car. Seats shall be firmly attached in the car, but may provide for adjustment for the size of the occupant.

**g) Lighting equipment:** The vehicles will be equipped at the rear with at least two braking-lights, as well as two rear red lights both of them being fitted with a minimum 15 w bulb. They will be disposed in a noticeable manner and symmetrically about the longitudinal axis of the car.

For night racing they will be equipped with at least two headlights as effective as those normally fitted on touring cars and two direction indicators mounted at the rear. The supplementary regulations of an event may require additional lighting and/or signalling equipment.

**h) Fuel tanks:** All the cars which participate in speed races on circuit consisting of one or several heats of 100 km minimum should be equipped with safety fuel tanks conforming to the specifications FIA/Spec/FT3 or FTA and supplied by an approved manufacturer. Fuel tanks, filled with safety foam complying with the American military specifications Mil-B-83054 (Baffle material), will compulsorily be placed inside the main structure of the car. The fuel system should be so arranged as no part of it is the first object to be struck in an accident. If the car is equipped with a standardised refuelling system, the coupling on the car should be protected.

For hill-climbs, if the total capacity of the fuel tank(s) does not exceed 20 litres a safety bladder tank is no longer mandatory providing that no part of the tank exceeds 30 cm on either side of the longitudinal axis of the car and that it is surrounded by a 1 cm thick crushable structure.

Should a safety tank not be used, a real fuel tank must be used.

**i) Fuel tank capacity:** The total capacity of the fuel tanks must not exceed the following limits:

Cars up to and equal to	700 cc engine cylinder-capacity:	60l
„ from	700 to 1,000 cc	70l
„ „	1,000 to 1,300 cc	80l
„ „	1,300 to 1,600 cc	90l
„ „	1,600 to 2,000 cc	100l
„ „	2,000 to 2,500 cc	110l
„ „	over 2,500 cc	160 l

The total capacity of a fuel tank shall not exceed 80 litres. The fuel system must be arranged not to allow more than 80 litres of fuel to spill in the event of a rupture of the fuel tank.

A collector tank of an 8 litres maximum capacity may be placed outside the main chassis on condition that it be surrounded by an approved 10 mm thick crushable structure.

**j) Oil tanks:** All storage tanks, situated outside the main structure of the car, must be surrounded by 10 mm thick crushable structure. In any case, no oil storage tank, not located within the main structure, may be situated aft the gear-box or differential-casing.

**k) Bulkheads and tanks:** No part of any fuel, oil or water tank shall be exposed to any part of the driver and passenger compartment. Fuel tanks shall be vented to prevent the accumulation of toxic fumes and to prevent fumes from passing into the driver or engine compartment. Fuel tanks shall be isolated by means of bulkheads so that in case of spillage, leakage or a failure of the tank, the fuel will not pass into the driver or engine compartment or around any part of the exhaust system.

**l) Safety equipment:** See Art 253 and 255.

**Headrest:** Compulsory fitting of a headrest capable of restraining 17 kg under a rearward acceleration of 5g. Its dimensions shall be such that in no case can the driver's head be trapped between the roll-over bar and the headrest itself.

**Crushable structure:** The entire fuel tank area of the car in direct contact with the open airstream must incorporate a crushable structure conforming to the specifications of Art 273 B).

A 150 mm thick and 200 mm high crushable structure, with characteristics similar to those of fuel tanks, should extend longitudinally in front of the pedals over at least 500 mm on either side of the car. These structures should be solidly connected between one another as well as to the structure of the car. Other types of structure may also be used on condition that they present the same coefficient of energy absorption.

**Firewall and floor:** Cars shall have an adequate firewall to prevent the passage of flame from the engine compartment or under the car to the cockpit. Openings in the firewall for the passage of engine controls, wires and lines shall be of the minimum size necessary. The cockpit floor shall be constructed to protect the driver by preventing the entry of gravel, oil, water and debris from the road and engine. Bottom panels or belly panels shall be adequately vented to prevent the accumulation of liquid.

**m) Starting of the engines:** The starting of the engines is permitted both on the starting grid and in case of a stop at the pit with the help of a supplementary source of energy which will be temporarily connected to a proper coupling fixed on the car.

## **SPORTS CARS (Group 5/75—Group 6/78)**

As combining these two sets of regulations is authorised by the CSI (provided that the weight scale and the limitation on tyre width for Group 6/78 are respected), you will find the applicable regulations below.

**Art 270a—Definition:** Two-seater competition cars especially manufactured for speed or long-distance races on closed circuits.

**Art 271a—General specifications:** These cars should answer the General Prescriptions concerning cars of Groups 1 to 6 (see Art 252 and 255) except as regard the following points:

- a) The space for the luggage is optional (Art 255 f).
- b) The spare-wheel is optional (Art 255 i).
- c) In the case of an open car, the windscreen as well as all the transparent parts of the doors, if provided, are optional and their dimensions free.

d) Doors are optional. In case they should be fitted, they should have the dimensions foreseen by Art 255 e).

e) Maximum width: 210 cm.

**Art 272a—Supplementary specifications:**

**a) Minimum weight:** Cars should weigh at least the weights given on the following scale:

Cylinder-capacity inferior or	equal to	1,000 cc:	500 kg
"	from	1,000 to 1,300 cc:	535 kg
"	"	1,300 to 1,600 cc:	560 kg
"	"	1,600 to 2,000 cc:	600 kg
"	"	2,000 to 3,000 cc:	700 kg
"	"	3,000 to 4,000 cc:	765 kg
"	"	4,000 to 5,000 cc:	810 kg
"	"	5,000 to 6,000 cc:	840 kg
"	"	over 6,000 cc:	860 kg

**b) Battery:** The location of the battery is free.

**c) Wheels and tyres:** It is recommended to use wheels including a device to retain the tyres.

The maximum width of the complete wheel is limited to 16".

**d) Brakes:** The braking system should be conceived so that the pedal normally controls 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.

**e) Dimensions:** Maximum width: 210 cm.

**Aerodynamic devices:** The highest point of any forward facing gap in the coachwork shall not be situated above a horizontal plane, 80 cm above the lowest point of the entirely sprung structure of the car.

The engine air intake is not considered to be part of the coachwork.

**f) Wings:** They shall project over the wheels and provide efficient covering of at least 1/3 of their circumference, and at least the width of the tyre wheel. At the rear part of the car, wings should terminate below the axle line of the rear wheels. Cooling holes may be provided between the wings and the body.

Cooling holes directed to the rear must be fitted with louvres, baffles to prevent the tyre being visible from the rear.

**g) Opening of the cockpit:** In an open car, the opening defining the cockpit should be symmetrical about the longitudinal axis of the car.

**h) Cockpits and seats:** The dimensions of the cockpit should correspond to those provided for in Art 253 b) for two-seater cars. The seats for the driver and the passenger should be of similar dimensions and equally disposed on each side of the longitudinal axis of the car. Seats shall be firmly attached in the car, but may provide for adjustment for the size of the occupant.

**i) Lighting equipment:** The vehicles will be equipped at the rear with at least two braking-lights, as well as two rear red lights both of them being fitted with a minimum 15 w bulb. They will be disposed in a noticeable manner and symmetrically about the longitudinal axis of the car.

For night racing, they will be equipped with at least two headlights as effective

as those normally fitted on touring cars and two direction indicators mounted at the rear.

**j) Fuel tanks:** All the cars which participate in speed races on circuit consisting of one or several heats of 100 km minimum should be equipped with safety fuel tanks conforming to the specifications FIA/Spec/FT3 or FTA and supplied by an approved manufacturer.

The tanks must be filled with safety foam in conformity with the American military specifications MIL-B-83054 (Baffle material).

**For hill climbs:** If the fuel capacity does not exceed 20 litres, a safety bladder tank is no longer mandatory for cars competing in hill climbs providing that no part of the tank exceeds 30 cm on either side of the longitudinal axis of the car and that it is surrounded by a 1 cm-thick crushable structure.

Tanks exceeding 20 litres will have to conform to the normal safety regulations of the Group 6.

**Bulkheads:** Fuel tanks shall be isolated by means of bulkheads so that in case of spillage, leakage or a failure of the tank, the fuel will not pass into the driver or engine compartment or around any part of the exhaust system.

**k) Fuel tank capacity:** The total capacity of the fuel tanks must not exceed the following limits:

Cars up to and equal to	700 cc engine cylinder-capacity:	60 l
" from	700 to 1,000 cc	70 l
" "	1,000 to 1,300 cc	80 l
" "	1,300 to 1,600 cc	90 l
" "	1,600 to 2,000 cc	100 l
" "	2,000 to 2,500 cc	110 l
" "	over 2,500 cc	160 l

**l) Roll-over bars:** Comply with Art 253 e) Group 6 prescriptions, except as concerns the 92 or 120 cm minimum heights.

**m) Starting of the engines:** The starting of the engines is permitted both on the starting grid and in case of a stop at the pit with the help of a supplementary source of energy which will be temporarily connected to a proper coupling fixed on the car.

## SINGLE-SEATER RACING CARS (Groups 7 and 8)

### Art 273 — Common prescriptions for cars of Group 7:

#### A) Prescriptions common to Formulae 1, 2, 3:

**1) Minimum weight:** The minimum weight is that of the car in running order, ie, with all lubrication and cooling liquids, without fuel.

#### 2) Coachwork

**Coachwork height:** No element of the coachwork may exceed in height a horizontal plane situated at 90 cm above the ground. The safety roll-bar is not included in that measurement.

These measurements are made in any condition, driver on board.

**3) Safety roll-bars:** Total freedom of conception regarding the roll-bars, within the limits foreseen by Appendix J. Forward facing stays are allowed, even if the minimum cockpit opening dimensions are not respected.



4) The construction of the vehicle must be symmetrical, ie, when the car is lifted laterally and weighed, the half weight on either side must be equal to half the overall weight, a margin of + or - 5% being allowed for the said half weight. To verify the above, the weighing must be done with all tanks full (fuel, water, oil) and a driver weighing at least 75 kilos normally sitting at the steering-wheel (or a ballast of the same weight occupying the same place).

5) Driver's seat liable to be occupied or left without it being necessary to open the door or remove a panel. Sitting at his steering wheel the driver must be facing the road.

Moreover, the cockpit must be so conceived that the maximum time necessary for the driver to get in or out does not exceed 5 seconds.

6) **Starting:** The starting of F1, F2 and F3 engines is authorised both on the dummy grid and in case of a stop at the pit with the help of a supplementary source of energy which will be temporarily connected to a proper coupling fixed on the car.

7) **Filling port:** The filling port(s) and its (their) cap(s) shall not protrude beyond the coachwork material.

The opening shall have a sufficient diameter for allowing the air exhaust at the time of quick refuelling (in particular those done under pressure) and if necessary the breather-pipe connecting the tank with the atmosphere shall be such as to avoid any liquid leakage during the running.

8) **Exhaust pipes:** The outlet orifices of the exhaust pipes, when directed horizontally to the rear, must be placed at a height of less than 60 cm above the ground.

9) **Oil tanks and water radiators:** The filling ports of the oil tanks and radiators shall provide the possibility of affixing seals. The leads sealing the filling port(s) of the lubricant tank(s) may not be removed at any time during the race. The leads sealing the filling port(s) of the radiator(s) shall be in place at the start of the race, but may be removed at any pit-stop.

All oil storage tanks, situated outside the main structure of the car, must be surrounded by 10 mm thick crushable structure. In any case, no oil storage tank, not located within the main structure, may be situated aft the gear-box or final drive casing.

## **B) Supplementary prescriptions common to F1 and F2:**

1) **Coachwork:** Wheels shall be external to the coachwork.

The coachwork opening giving access to the cockpit must have the following minimal dimensions:

— Length: 60 cm.

— Width: 45 cm, maintained over 30 cm from the most rearward point of the seat-backrest towards the front.

Behind the front wheels, the coachwork shall not exceed a maximum width of 140 cm for F1 and 130 cm for F2.

The crushable structure is included in that width.

The coachwork ahead of the front wheels may be extended to an overall maximum width of 150 cm.

Nevertheless, any part of the coachwork ahead of the front wheels, exceeding an overall width of 110 cm, shall not extend above the height of the front wheel rims.

No bodywork element will protrude rearwards by more than 80 cm (measurement made from the centre of the rear wheel axle).

**2) Crushable structure:** The entire fuel tank area of the car in direct contact with the open air stream must incorporate a crushable structure conforming to the specifications hereafter. (See Art 253 f)—FTA Specifications.)

The term 'licked by the open air stream' is considered to define the complete external area of the body/monocoque construction irrespective of such added items as water radiators, inlet ducts, windscreens, etc.

a) The crushable structure should be a sandwich construction based on fire resistant core of minimum crushing strength of 25 lb/square inch (1.8 kg/cm<sup>2</sup>). It shall be permitted to pass water pipes through this core.

The sandwich construction must include two sheets of 1.5 mm thickness one of which shall be aluminium sheet having a tensile strength of 14 tons/square inch (2.2 T/cm<sup>2</sup>) and minimum elongation of 5%.

b) The minimum thickness of the sandwich construction should be 10 mm. The fore and aft fuel tank area, however, should provide for a crushable structure of at least 100 mm thickness, the position of the widest point to be at the constructor's discretion, over a length of at least 35 cm after which it may be gradually reduced to 10 mm.

#### **Art 274 — International Formula No 1**

##### **Validity:**

**Engine specifications:** Valid up to 31.12.81.

**Other specifications:** Up to 31.12.79.

##### **Engines with reciprocating pistons:**

a) Engine cylinder-capacity without supercharging: inferior or equal to 3,000 cc.

b) Engine cylinder-capacity with supercharging: inferior or equal to 1,500 cc.

**Number of cylinders:** Maximum 12.

**Turbine engine:** Utilisation authorised on the basis of the Equivalence Formula given under Article 252 I).

**Minimum weight, without ballast:** 575 kg.

**Bodywork dimensions:** The overall maximum width behind the front wheels to the leading edge of the rear wheels shall not exceed 140 cm. No oil, fuel and electric lines shall be situated beyond 60 cm on either side of the car's centre line and must not run adjacent to the main fuel cells or within the crushable structure.

Oil radiators are not governed by the regulations concerning oil pipes.

The maximum width of the rear wing will be 110 cm.

##### **Additional Prescriptions:**

It has been decided that the car's overall length will be limited to 5 m as from 1.1.79.

- Total rear overhang=80 cm.
- Total front overhang=120 cm.
- Maximum width of the complete rear wheel=21". Diameter=13" (measurement between two vertical planes).
- Front wheels (max width=21").
- Overall maximum width of car=215 cm.
- There will be near the dashboard a substantial structure (for example: roll bar, etc) such as a straight line drawn from the top of the main roll bar to the

top of that structure passes over the driver's helmet. It will consist of a tube with a minimum diameter of 35 mm and minimum thickness of 2 mm, conforming with the SAE 4130 or SAE 4125 specifications, or in a substantial structure capable of withstanding the loads provided for in Article 253 e) a).

— **Structure of protection for the pedals:** There will be in front of the pedals a structure capable to withstand a 25 g deceleration without causing the pedals to move backwards by more than 150 mm (car with full tanks and driver aboard).

— Oil pipes will be protected by a 10 mm thick crushable structure or will conform with aircraft requirements.

— No part of the car containing oil may be situated aft of the rearmost casing (gearbox or differential).

**Rubber bladder fuel cells:** All fuel tanks will be situated within the main structure of the car.

All fuel tanks beyond 30 cm on either side of the car's centre line must be non self-sealing rubber bladders conforming to the Specifications FIA/Spec/FT3-FIA/Spec FTA (Art 253 f).

A tank situated within the main monocoque not extending beyond 30 cm on the centre line of the car must be FT3 material, or the above material.

A collector tank of maximum one UK gallon (4.55 l) may be placed outside the main chassis on condition that it be surrounded by crushable structure conforming to the specifications provided for in Art 273 B) and that it be at least 10 mm thick. The rubber bladder to be to FT3 specifications, and will be connected to the engine by means of a self-sealing break away coupling (aviation type).

The fuel system should be so arranged as no part of it is the first object to be struck in an accident.

**Fuel capacity:** The total capacity of the fuel tanks shall not exceed 250 litres of which not more than 80 litres shall be contained in any one tank.

**Safety roll-bar:** The safety roll-over bar will have a minimum height of 82 cm (identical checking method as for the height of wings on cars with bodywork). In all cases, the top of the safety roll-over bar will be at least at 5 cm above the helmet of the driver.

#### **Additional safety measures applicable to Formula 1:**

a) Provision for a clearly indicated external emergency handle which can be actuated easily by the circuit rescue personnel even at a distance with a hook. This emergency handle shall simultaneously initiate the fire-extinguisher, cut off the engine and isolate the battery.

b) Compulsory fitting of a headrest capable of restraining 17 kg under a rearward acceleration of 5 g. Its dimensions shall be such as that in no case can the driver's head be trapped between the roll-over bar and the headrest itself.

c) The use of magnesium sheet will be authorised only if its thickness exceeds 3 mm.

d) The source of energy on board must be capable of starting the engine at least twice.

e) Chromium plating of steel suspension members of over 45 tons per sq inch tensile strength is forbidden.

#### **Art 275 — International Formula No 2**

**Validity:** From January 1st 1972 to December 31st 1978.

**Reciprocating piston-engines:** Engine cylinder-capacity inferior or equal to 2,000 cc. Supercharging forbidden.

**Minimum weight, without ballast:** 500 kg.

**Engine:** Free.

**Maximum number of cylinders :** 6.

**Gearbox:** Five gears maximum, not including the reverse gear.

**The propulsion** will be ensured by two wheels maximum.

**Bodywork:**

Front overhang: 100 cm (measured from the axle of the front wheel hub).

Rear overhang: 80 cm (measured from the axle of the rear wheel hub).

Overall maximum width: 200 cm.

**Wheels and tyres:** Overall maximum width of the complete wheel: 16"

Compulsory diameter for the rear wheels: 13".

### **Art 276 — International Formula No 3**

**Validity:** From January 1st 1974 to December 31st 1978.

Reciprocating piston engines or Wankel engine exclusively. (Wankel: re Art 252 i).

**Maximum cylinder-capacity:** 2,000 cm<sup>3</sup>.

**Case of the reciprocating piston engine:** The maximum cylinder-capacity may be obtained by increasing or reducing either the bore or stroke or both dimensions.

**Maximum number of cylinders: 4**

The engine block and cylinder head castings, machining completed, must be those of an engine equipping a car model of which the FIA has ascertained the series-production of at least 5,000 units in 12 consecutive months. The original engine block and cylinder head may be modified freely by removal of material to the exclusion of any addition of material. However, it is permitted to sleeve an engine block that originally is not fitted with sleeves.

The type of crankshaft bearings may not be modified (the replacement of a plain bearing by a roller bearing is therefore forbidden).

It is pointed out that whatever the type of the engine used, it is not compulsory that the different mechanic components of the engine should proceed from the original engine.

The induction system is free but it must compulsorily be fitted with a throttling flange of 3 mm in length and with a parallel hole of 24 mm diameter. Through this throttling flange all the air feeding the engine must pass.

The throttling flange must compulsorily be made of metal or metallic material.

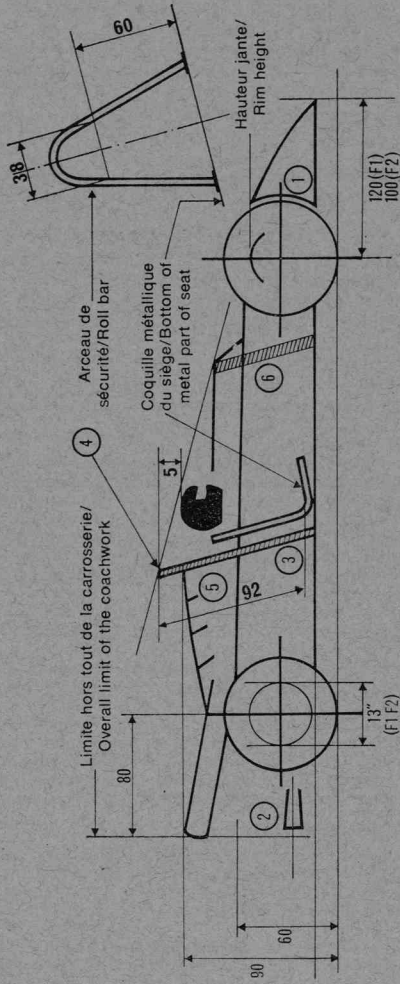
The material of the air box is free, provided that it is not porous.

It is prescribed that the entire inlet system including manifolds, injectors, air-box and restrictor must fit into a box of 1m long, 50 cm wide and 50 cm high. It will also be prescribed that the inlet system may be removed from the engine as one unit with the cylinder head(s).

By 'entire inlet system', it will be understood all the elements of the inlet system included between the head and external side of the throttling flange. The CSI reserves its right, after the experience obtained, to modify the dimensions of the throttling flange with a shorter previous notice than the two regular years.

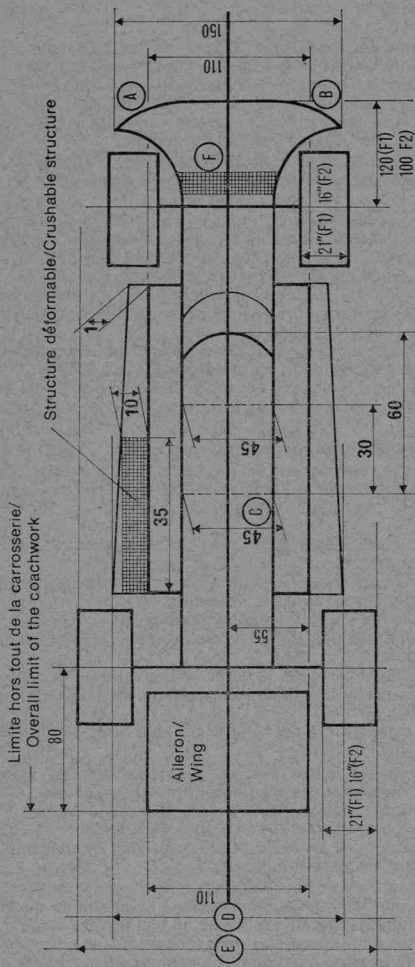
No supercharging device is allowed even if a series-production one was fitted on the original engine.

The other original parts of the engine may be replaced or modified without restriction. It is permitted to weld the sleeves to the block for the conventional engine.



- 1 — Pour toute partie de plus de 110 de large/For all parts wider than 110
- 2 — Echappement/Exhaust
- 3 — Fond de la coque de métal du siège/Bottom of the metal part of the seat
- 4 — Arceau de sécurité/Safety roll bar
- 5 — Prise d'air comprise dans hauteur de 90/Air box included in height of 90 cm from ground
- 6 — Structure substantielle/Substantial structure

NB: Les chiffres en gras représentant des dimensions minimales/Figures in bold are minimum dimensions



A B — Parties ne devant pas dépasser la hauteur de la jante AV/Parts that must not protrude above level of front rims

C — Point le plus reculé du siège/Most rearward point of seat

D — Largeur maximale structures suspendues — F1: 140 cm; F2: 130 cm/Maximum width of the suspended structures — F1: 140 cm; F2: 130 cm

E — Largeur maximale hors tout — F1: 215 cm; F2: 200 cm/Maximum overall width — F1: 215 cm; F2: 200 cm

F — Structure substantielle/Substantial structure

NB: Les chiffres en gras représentant des dimensions minimales/Figures in bold are minimum dimensions

**Other mechanical elements:** Free.

**Dimensions:**

Minimum wheelbase: 200 cm.

Minimum track: 120 cm.

Maximum rim width: 10 inches.

**Coachwork:** Wheels shall be external to the coachwork.

The coachwork opening giving access to the cockpit must have the following minimal dimensions:

— Length: 60 cm.

— Width: 45 cm, maintained over 30 cm from the most rearward point of the seat-backrest towards the front.

Behind the front wheels, the coachwork must not exceed a maximum width of 95 cm. The coachwork ahead of the front wheels may be extended to an overall maximum width of 135 cm.

Nevertheless, no part of the coachwork ahead of the front wheels, exceeding an overall width of 95 cm, shall extend above the height of the front wheel rims.

Front overhang: 100 cm (measured from the axle of the front wheel hub).

Rear overhang: 80 cm (measured from the axle of the rear wheel hub).

Overall maximum width: 185 cm.

**Tyre restrictions:** The tread width of F3 tyres is limited to a value of 8 inches, plus a certain tolerance to compensate for tyre wear. This tolerance is provided for in the drawing on page 205 representing the measuring gauge to be used during scrutineering.

Checking may be done at any moment of the race and practice.

The measuring gauge must be held parallel to the axle of the wheel, but not necessarily vertically.

At the limit points C and D (see drawing) are in contact with the tyre shoulder but points A and B must remain in contact with the tyre tread.

If a competitor uses tyres of dimensions evidently smaller than 8 inches, points A and B will naturally not touch the tyre tread simultaneously, but the checking will then not be necessary.

Compulsory diameter of the rear wheels: 13".

**Minimum weight, without ballast:** 440 kg.

**Certificate of origin:** Any Formula 3 car showing up at the start of an event shall be supplied with a certificate established by the manufacturer and ratified by the National Sporting Authority, specifying the origin of the basic elements of the vehicle.

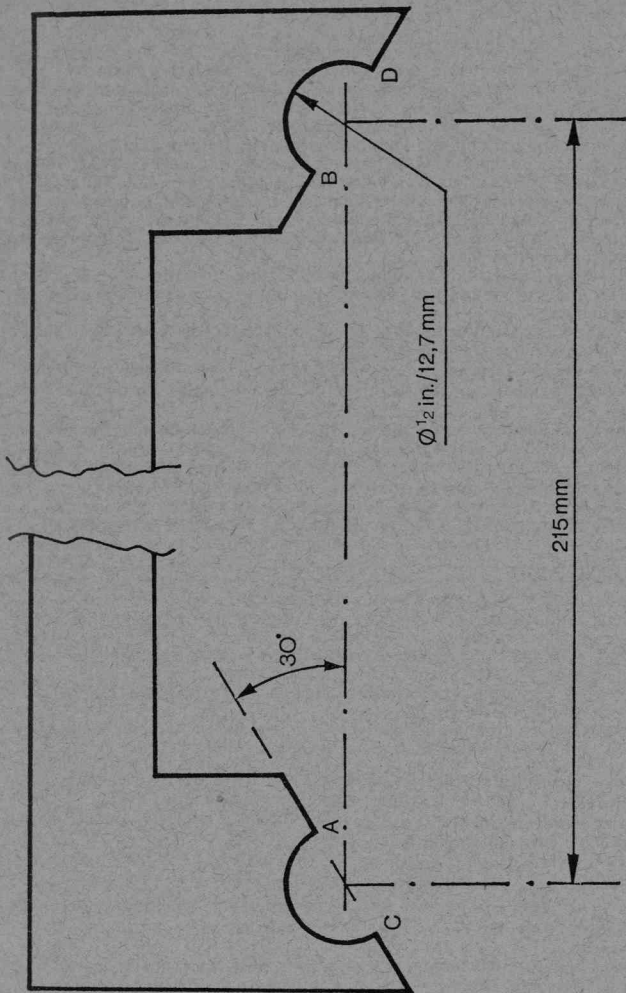
**Vacuum tightness control apparatus of the induction system for F3 engines:** The control apparatus described hereafter represents the ultimate method of verification of the vacuum tightness of F3 induction systems, without the possibility of appeal. All F3 events organisers will have to put such an apparatus at the disposal of the scrutineers for verification purposes both before and after the race.

The apparatus aims to create artificially a vacuum in the induction system and includes:

A membrane suction-pump, with the nominal output of 25 to 28 litres/minute, and capable of obtaining a vacuum of 55 to 65 cm Hg for zero air flow.

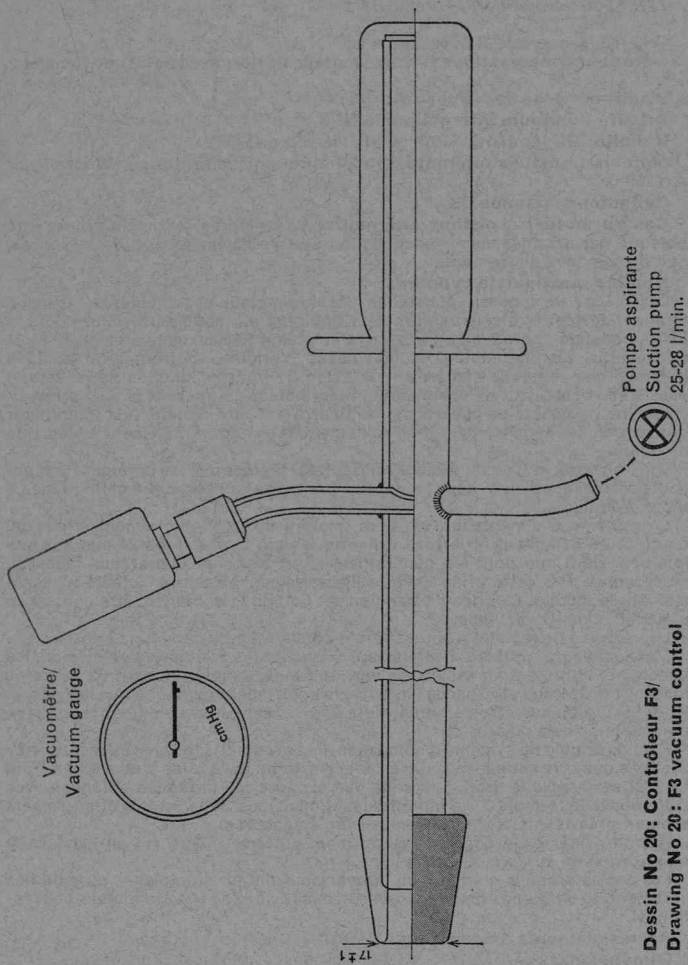
A rubber tubular stop perfectly adjusted to the flange.

A vacuum-gauge connected to the piping between the rubber stop and the suction-pump.



Dessin No 19: Calibre/  
Drawing No 19: Gauge





**Dessin No 20: Contrôleur F3/  
Drawing No 20: F3 vacuum control**

The procedure to be respected for the checking is the following:

- a) Rotate the engine into such a position that, in each cylinder, at least one of the valves is closed.
- b) Open the injection slide or the carburettor butterflies.
- c) Check on the vacuum-gauge that the suction-pump creates in the induction system a depression superior or equal to 15 cm Hg.
- d) If the condition a) cannot be met, disconnect the rocker-arms or remove the cam-shaft in order to shut all inlet valves. If one or several valves have been damaged during the event, the entrant may repair them under the steward's control before undergoing the testing procedure. In these last cases, the minimum vacuum to be obtained shall be 20 cm Hg, instead of 15.

An example of this device is given on page 207.

For all further information, please contact the CSI Secretariat, 8, Place de la Concorde, 75008 Paris, France.

#### **Art 277 — Formule Libre racing cars (Group 8):**

It is permitted to organise sporting competitions open to other racing cars than those defined in one of the previous Groups of Appendix J.

All specifications concerning the vehicles and particularly the limitations of the cylinder-capacity are in this case at the discretion of the promoters and it rests with them to list these specifications as clearly as possible in the Supplementary Regulations of the event, which anyway have to be approved by the National Sporting Authority answerable to the FIA.

However, racing cars, which do not comply with any of the International Racing Formulae, must for security reasons be in conformity with the General Prescriptions listed under Art 253 b), c), d), e) f), g), h), i), j), n), o), Art 273 A3, B1 (last §).

## **TITLE 5—NATIONAL FORMULAE**

### **Registration of National Racing Formulae**

The CSI will accept to study the registration of 'national' formulae, in order to have their technical prescriptions known at an international level and to ensure a certain stability and a standardisation of the regulations which rule them.

1 — In pursuance of Arts 253 and 273, any ACN has the right to define regulations applying to given types of 'Formula libre' racing cars denominated hereafter: 'National Formulae'.

2 — Are eligible for registration only the applications presented by at least 2 National Sporting Authorities and concerning a National Formula used in at least 2 countries.

3 — The FIA will accept, in compliance with the preceding Art 2 to register on a voluntary basis any set of prescriptions defining such National Formulae.

The regulations thus registered by the FIA will be applicable in countries, the ACNs of which have declared to abide by them.

The declaration made by the National Sporting Authority to adopt the regulations of a determined National Formula is exclusively valid for the regulations such as they were originally deposited at the FIA, and this National Sporting Authority is entitled to withdraw this declaration if the regulations are altered afterwards.

The withdrawal of a declaration for another reason than the one hereabove mentioned, must compulsorily be communicated to the FIA before December 31st in order to be valid as from the following year.

## National Formulae

4 — From the time when such a National Formula is registered, its appellation can be used, in those countries where the ACNs have adopted the registered regulations, only for cars entirely complying with the regulations deposited at the FIA.

5 — Any application for the registration of regulations for a National Formula should be addressed to the FIA at the latest on October 1st, to be valid as from January 1st of the following year.

The National Formulae can (but it is not compulsory) form the subject of restrictions as regards the engine or other manufacturing elements, in order to allow exclusively the use of castings of a given make. Such a one-make Formula may have a distinct commercial name related to the imposed design restrictions.

6 — The National Sporting Authorities which have adopted a determined National Formula may file an application at the FIA in view of the organisation of a reward including several countries.

Any application of that kind will be submitted to the appreciation of the CSI whose decision will depend on the number of countries interested by the organisation of an event included in that reward and on the advisability or the necessity, for the general interest of Automobile Sport, to introduce such a form of competition.

7 — The organisation of any other type of international reward without the FIA's agreement, as prescribed in the above Art 6 will entail the application of penalties.

### National Formulae registered by the FIA

	Nation Nazione	Limite de cyl(ccm) Capacity limit (cc) Max. Hubraum (ccm) Cilindrata max (cc)	Moteur dérivé de Engine origin Motorherkunft Motore derivato da	Type de châssis Chassis base Chass Basis Tipo di telaio	Secretariat Head office Hauptbüro Segreteria
F.V.	(D)	1300	VW 1300	VW 1300 Single seater	(Int) Formel Vau Europa, Lilienst. 48, D-8000 München 8
F. Super V	(D)	1600	VW 1600	Single seater	(Int) Formel Vau Europa, Lilienst. 48, D-8000 München 8
F. Ford	(GB)	1600	Cortina GT	Single seater	RAC Motor Sport Div, 31 Belgrave Square, London SW1X 8QH
F. Renault (F)		1565	Renault Gordini	Single seater	FFSA, 136 rue de Longchamp, Paris 16e
F. Renault Europe (F)		1596	Renault Gordini	Single seater	FFSA, 136 rue de Longchamp, Paris 16e



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