



JAMAICA MILLENNIUM MOTING CLUB

Technical Regulations 2018

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Section 6

- 6.1 Technical Specifications

6.1.1 Mandatory Safety Requirements

A) The responsibility to ensure that the vehicle and drivers equipment complies with these Regulations and is safe rests solely and at all times with the Entrant and Driver. The inspection of a vehicle is not a guarantee of the vehicles safety.

6.1.2 Principles of Classification

A) All modifications are forbidden unless expressly authorized by the regulations specific to the group in which the car is entered or by the general prescriptions below or imposed under the chapter "Mandatory Safety Requirements". The components of the car must retain their original function. If these Regulations do not specifically state modifications may be made or specific variations to OEM specifications are permitted, then no additional modifications or variations are permitted. This will be a major factor in the settling of any disputes arising from questions of eligibility. If a car is found not to comply with the technical regulations, it shall be no defence to claim that no performance advantage was obtained.

B) Cars will be divided into three (3) groups:

- i) Standard Production/Jamaican N (JN)



- ii) Modified Production/Jamaican A (JA)
- iii) Open Class/Jamaican C (JC)

C) Group JN and JA must qualify as a legal two passenger vehicle minimum in their OEM specification.

D) Group JN and JA will be further divided into classes in the following manner:

Class		Engine capacity (cc)
1	2WD	0 – 1400.
2	2WD	1401 – 1600.
3	2WD	1601 – 2000.
4	2WD	2001 and over.
7	4WD	0 – 3000.
8	4WD	3001 and over.

2WD means Two Wheel Drive, 4WD means Four Wheel Drive

E) Group JC will be further divided into classes in the following manner:

Class		Engine capacity (cc)
1	2WD & 4WD	0 – 2000.
2	2WD & 4WD	2001 – 3000.
3	2WD & 4WD	3001cc and over.

F) In cases of forced induction, the nominal cylinder-capacity will be multiplied by 1.7 for petrol engines and by 1.5 for diesel engines, and the car will pass into the class corresponding to the fictive volume thus obtained.

The car will be treated in all respects as if its cylinder-capacity thus increased were its real capacity.

This shall particularly be the case for assigning the car to its cylinder-capacity class, its minimum weight, etc.

G) To be classified in Groups JA & JN, all vehicles employing a system of forced induction shall be fitted with a restrictor fixed to the compressor housing. All the air necessary for feeding the engine must pass through this restrictor which must respect the following;

For Group JA:



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

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

The external diameter of the restrictor at its narrowest point must be less than 40 mm, and must be maintained over a distance of 5 mm to each side.

The mounting of the restrictor onto the turbocharger must be carried out in such a way that two (2) screws have to be entirely removed from the body of the compressor, or from the restrictor, in order to detach the restrictor from the compressor. Attachment by means of a needle screw is not authorized.

For the installation of this restrictor, it is permitted to remove material from the compressor housing, and to add it, for the sole purpose of attaching the restrictor into the compressor housing.

The heads of the screws must be pierced so that they can be sealed.

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

In case of an engine with two parallel compressors, each compressor must be limited by a restrictor with a maximum internal diameter of 24.0 mm and a maximum external diameter of 30 mm, in the conditions set out above.

For Group JN:

All vehicles employing a system of forced induction shall be fitted with a restrictor fixed to the compressor housing. All the air necessary for feeding the engine must pass through this restrictor which must respect the following:

The maximum internal diameter of the restrictor is 33mm, maintained for a minimum distance of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (see drawing 254-4).

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

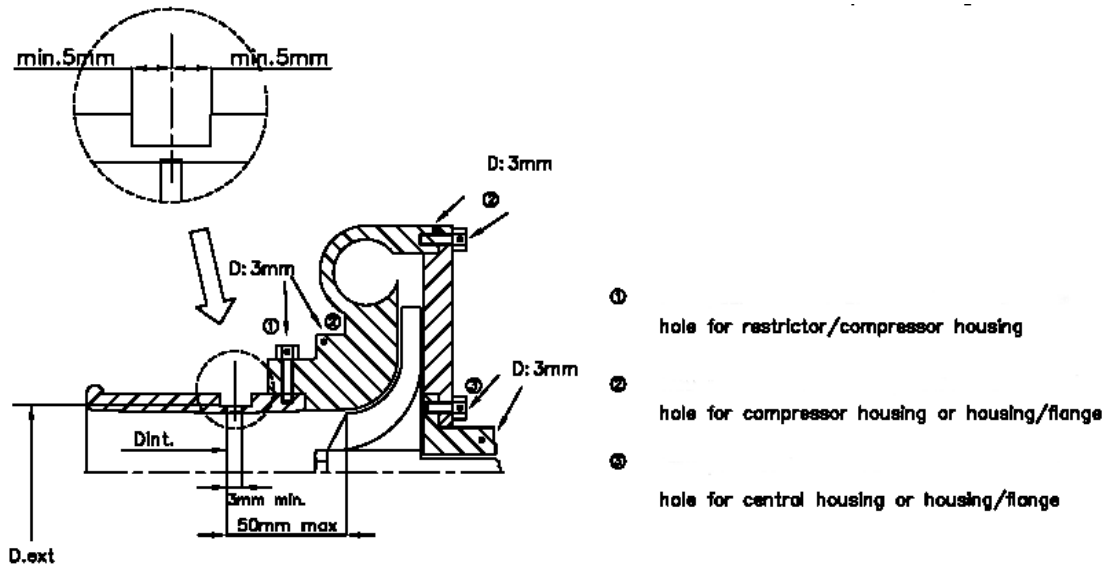
The external diameter of the restrictor at its narrowest point must be less than 38 mm, and must be maintained over a distance of 5 mm to each side.

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

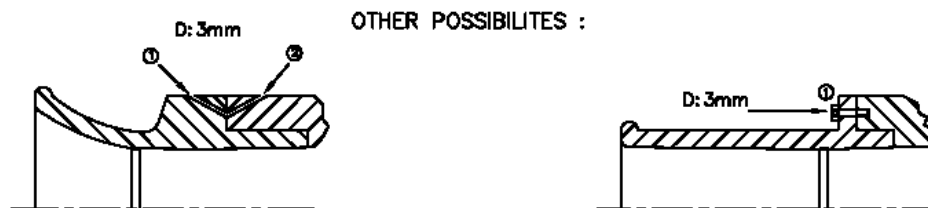
The heads of the screws must be pierced so that they can be sealed.

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

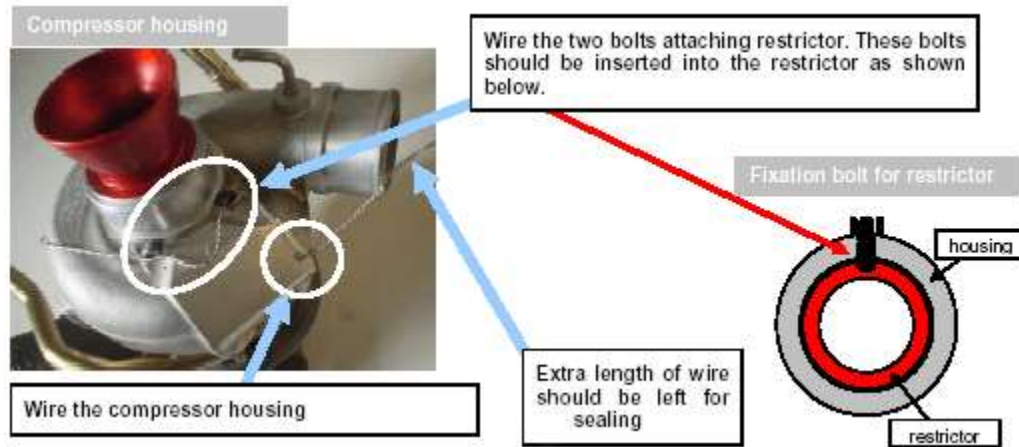
In case of an engine with two parallel compressors, each compressor must be limited to a maximum intake diameter of 22.6 mm.



Drawing N°254-4



The following is an example:



H) In order to determine the classification of a car using an engine of the NSU Wankel patents (Rotary Engines), the manufacturers claimed cylinder displacement will be increased by a factor of 1.8. If the same engine also employs a system of forced induction, then the above rule Article 6.1.2.f shall also apply. (For example a Mazda 13B engine rated at 1308cc would be classified as (1308×2) 2616 cc, if the same engine was turbo charged then the displacement would be $(1308 \times 1.8 \times 1.7)$ 4002.4 cc.

I) The use of Nitrous Oxide (N₂O) is forbidden in all groups and classes. Only air may be mixed with the fuel as an oxidant. Racing gasoline, gasoline, methanol, gasohol, diesel, ethanol, natural gas and propane are permitted. Nitromethane is prohibited.

6.1.3 Standard Production (JN)

A) All the modifications which are not allowed by these regulations are expressly forbidden. The only work which may be carried out on the car is that necessary for its normal servicing, or for the replacements of parts worn through use or accident. The limits of the modifications and fittings allowed are specified hereinafter. Apart from these, any part worn through use or accident can only be replaced by a part identical to the damaged one.

B) Vehicles shall be at least the manufacturer's specified Kerb Weight with a standard tool-kit as supplied with the car, a maximum of one spare wheel, but without



auxiliary lights, guards or roll cage. In the case where the roll cage has already been installed, the weight of the roll cage will be assessed at either 25kg. (55 lbs.) or 30 kg. (66 lbs.) depending on design. In cases where the vehicle is offered in alternate markets with different kerb weights, the lowest weight may be used, provided that this is properly documented with the Competition Committee.

C) Exhaust system:

- i) The exhaust system downstream of the exhaust manifold exit is free, but must extend to the rear of the car and exit in the approximate location of the original system.
- ii) For cars with a turbo charger, the exhaust system begins after the turbo charger.
- iii) These liberties must not entail any bodywork modifications and must respect the laws of the land with regard to noise levels. For all cars used in Rallies and unless the limits imposed by the local authorities are lower, the noise level on the open road must not exceed 103 dB(A) at 10ft measured at a 45° angle to the actual point of exit for an engine rotation speed of 3500rpm for petrol engines and 2500rpm for diesel engines.

D) Brake and Clutch:

- i) The clutch disc is free, including the weight, with the exception of the number. The diameter of the clutch disc may be increased. The use of Carbon Fibre is prohibited.
- ii) Brake backing plates may be removed or bent.
- iii) In the case of a car fitted with servo-assisted brakes, this device may be disconnected. The same applies for anti-lock braking systems.
- iv) Brake lines may be changed for aviation type lines. Rerouting of brake lines is free.
- v) A device for scraping away the mud which collects on the brake discs may be added. The mechanism of the handbrake lever may be adapted in order to maintain instant unlocking (fly-off handbrake). The mechanical handbrake may be replaced with a hydraulic system.
- vi) An alternate brake proportioning valve is allowed, and the OEM brake proportioning valve may be modified or removed.
- vii) The electronic control unit of the braking system is free, but must be entirely interchangeable with the original unit (i.e. the braking system must work when the unit is replaced with the series unit).



viii) Brake linings are free, as well as their mountings (riveted, bonded, etc.) provided that the contact surface of the brakes is not increased.

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

E) Drive Train:

i) The interior of the gearbox, number of teeth and ratios is free. Alternative final drive ratios, supplied by the manufacturer in normal production may be used provided that this is properly documented with the Competition Committee. The gear selection grid pattern homologated on the series model must be retained. The use of a mechanical type limited slip differential is authorized, provided that it can be fitted in the series housing. "Mechanical limited slip differential" means any system which works purely mechanically, i.e. without the help of a hydraulic or electric system. A viscous clutch is not considered to be a mechanical system. If the original vehicle is fitted with a differential controlled by an electronic system, the electronic control unit is free, but must be entirely interchangeable with the original unit (i.e. the differential must work when the unit is replaced with the series unit). The joints of the gearbox linkage are free.

F) Suspension:

i) The material of the elastic part of bushings and mounts is free but not the number or location.

ii) The reinforcing of the structural parts of the suspension (with the exception of anti-roll bars) and its anchorage points by the addition of material is allowed. The suspension reinforcements must not create hollow sections and must not allow two separate parts to be joined together to form one.

iii) Body shells may be seam welded and transverse strut braces may be fitted.

iv) Springs and dampers are free provided that the locating points remain unaltered.

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

vi) The damper tanks may be attached onto the unmodified shell of the cars. If the shock absorbers have separate fluid reserves located in the cockpit, or in the boot if this



is not separated from the cockpit, these must be strongly fixed and must have a protection.

vii) Anti-roll bars may be added or removed, however the addition must serve only one function.

G) Engine:

i) The accelerator cable may be replaced or doubled by another one regardless of whether it comes from the manufacturer or not. If the series vehicle is fitted with a motorized throttle valve, a throttle kit with a mechanical linkage, homologated in Group N, may be used.

ii) Ignition: The make and type of the spark plugs, rev. limiter and high tension leads are free. The electronic control unit and the ignition components in the electronic control unit are free; nevertheless the system must be entirely interchangeable with the original unit. The original loom must be kept and cannot be modified.

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

iii) Cooling System: The thermostat is free as is the control system and the temperature at which the fan cuts in. Locking system for the radiator cap is free.

iv) Carburetor: Jets are free.

v) Injection: The original system must be retained. The interior of the electronic control unit for the injection is free. Inputs to the electronic control unit (sensors, actuators, etc.), including their function must remain as standard.

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

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

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

vii) The fitting of baffles in the oil sump is authorized.

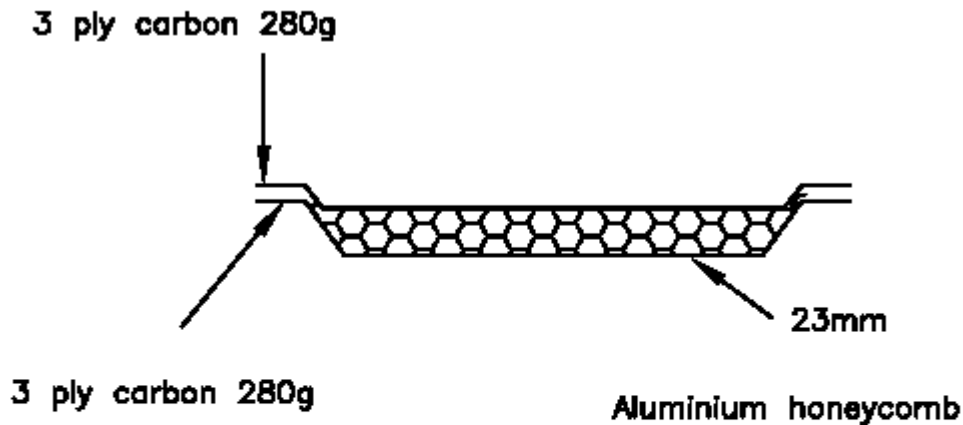
viii) The material of the elastic part of the engine mountings is free, but not the number of engine mountings.



- ix) Re-boring of the cylinder is allowed as per the OEM service manual.
- x) Engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic function.
- xi) The material of the cylinder head gasket is free, but not the thickness.
- H) Lubricants and Fluids:
 - i) Lubricants and Fluids are free.
 - I) Bodywork exterior:
 - i) Hubcaps must be removed.
 - ii) Protective headlight covers may be fitted provided that their only function is to cover the glass, and that they have no influence on the car's aerodynamics.
 - iii) The fitting of underbody protection is authorized, provided that these really are protections which respect the ground clearance, which are removable and which are designed exclusively and specifically in order to protect the following parts: engine, radiator, suspension, gearbox, tank, transmission, exhaust, extinguisher bottles. Underbody protections may extend the whole width of the underside part of the front bumper only in front of the front wheel axis.
 - iv) Any locking system may be used for the cap of the fuel tank.
 - v) The fitting of external rear view mirrors is authorized.
 - vi) The changing of the front and rear windscreen wiper blades is authorized.
 - vii) Plastic sound-proofing parts may be removed from the wheel openings. These plastic elements may be changed for aluminium or plastic elements of the same shape.
 - viii) The jacking points may be strengthened, moved and increased in number. These modifications are limited exclusively to the jacking points.
 - ix) Additional accessories: All those which have no influence on the car's behaviour, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.), are allowed without restriction. In no case may these accessories increase the engine power or influence the steering, transmission, brakes, or road-holding, even in an indirect fashion.
- J) Bodywork Passenger space:



- i) All accessories which have no effect on the vehicle's behavior are allowed without restrictions, such as those concerning the aesthetics or interior comfort (lighting, A/C, radio, etc.), on the express condition that they do not influence, even in a secondary manner, the efficiency of the engine, steering, strength, transmission, braking or road-holding.
- ii) Additional measuring instruments, counters, etc. may be freely installed, provided that their fitting is not likely to create any danger.
- iii) Additional compartments may be added to the glove compartment as well as additional pockets to the doors.
- iv) The steering wheel is free. The locking system of the anti-theft steering lock may be rendered inoperative.
- v) Carpets, rear safety belts and rear seats may be removed and the front seats may be replaced with competition items. The front seats may be moved backwards but not beyond the vertical plane defined by the front edge of the original rear seat.
- vi) Should the fuel tank be installed in the boot and the rear seats removed, a fireproof and liquid-proof bulkhead must separate the cockpit from the fuel tank.
- vii) It is permitted to remove the soundproofing material from the doors, provided that this does not modify the shape of the doors.
 - a) It is permitted to remove the trim from the doors together with their side protection bars in order to install a side protection panel which is made from composite materials. The minimum configuration of this panel must comply with that shown on drawing N° 255-14.



Carbon 4/4 twin 280gms E620

Aluminium honeycomb 23mm 1/8" cel4.5 or 6.35

Drawing N°255-14

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

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

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

viii) Other soundproofing materials and trim, except for those mentioned under articles 6.1.3.j.vii may be removed. The dashboard and the central console must remain original.

ix) It is permitted to replace electric winders with manual ones.

x) The original heating equipment must be retained. The following parts of the air conditioning system may be removed: condenser and auxiliary fan, fluid tank, evaporator and fan, expansion valve, as well as all pipes, connections, contact switches,



sensors and actuators necessary for the functioning of the system. The compressor may be rendered inoperative. If certain elements are common with the heating system, they must be retained.

- xi) The removable rear shelf in twin-volume cars may be removed.
- xii) All controls must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.
- xiii) The original fitting of the air bags may be removed, without modifying the appearance of the bodywork.

K) Electrical System:

- i) The make and capacity of the battery is free. Battery cables are free. The site of the battery must be retained. A power take-off connected to the battery is permitted in the passenger space.
- ii) Alternators and generators are free.
- iii) Additional headlights including the corresponding relays are allowed, provided that the total does not exceed eight (tail and parking lights not included). The original headlights can be made inoperative and covered with adhesive tape. They can be replaced by other headlights, in compliance with this article.
- iv) A reversing light may be fitted provided it can only be used when the gear lever is in the "reverse" position, and provided that the Police regulations on this subject are observed.
- v) Fuses may be added to the electrical system.
- vi) The horn may be changed. Another one, possibly for the passenger's use, may be added. In rallies only, the noise level produced by the horn must be greater than or equal to 97 dB during at least 3 seconds, measured 7m in front of the vehicle.

L) Wheels and Tyres:

- i) The rims are free, respecting the homologated maximum diameter and maximum width. Where homologation information is not available from the Competition Committee, the diameter and width may be varied by 1" from OEM specification. The use of rims with lesser dimensions is permitted.



ii) Complete wheels (rim and tyre assembly) are free, provided that they may be housed within the bodywork. This means that the upper part of the complete wheel, located vertically over the wheel hub centre, must be covered by the bodywork when measured vertically. The maximum wheel (rims and tyre assembly) diameter may not exceed 650 mm. (25.5").

Tyres are free in closed course events. On events when using public roads, open to normal traffic, tyres shall comply with the laws of the land.

iii) Alloy rims are permitted. Rims made from forged magnesium are forbidden (including standard rims).

M) FIA Approved Fuel Cells (FT3, FT3.5 & FT5)

i) FIA approved fuel cells (FT3, FT3.5 or FT5) are optional.

ii) Providing the original tank is equipped with an electric pump and an interior filter, it is possible when using an FT3, FT3.5 or FT5 tank to place a filter and a pump with identical characteristics to the OEM one outside. These parts must be protected in adequate fashion.

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

iv) Fuel lines must be changed for aviation type lines if an FT3, FT3.5 or FT5 tank is used, the route of these lines being free. Should an OEM tank be used, this change is optional.

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

N) The lines linking the power steering pump to the rack may be replaced with lines respecting the following:

i) These lines must have threaded or self-sealing connectors and an outer braid resistant to abrasion and flame (will not sustain combustion).

ii) These must have a minimum burst pressure of 280 bar (4000 psi) at the minimum operating temperature of 232°C (450°F). If the operating pressure of the hydraulic system is greater than 140 bar (2000 psi), the burst pressure must be at least double the operating pressure.



6.1.4 Modified Production (JA)

Excepting for the Mandatory Safety Requirements the only Regulations in this group (JA) are as follows:

A) Complete wheels (rim and tyre assembly) are free, provided that they may be housed within the bodywork. This means that the upper part of the complete wheel, located vertically over the wheel hub centre, must be covered by the bodywork when measured vertically. The rim diameter may be increased or reduced by up to 2 inches in relation to the original dimensions. However, the rim diameter must not exceed 18". The maximum diameter of the complete wheels is 650 mm (25.5"), not including the studs if studded tyres are used.

Tyres are free in closed course events. On events when using public roads, open to normal traffic, tyres shall comply with laws of the land.

B) In no case may the width of the complete wheel (rim and tyre assembly), in relation to the cubic capacity of the associated engine exceed, nor the weight be less than, those dimensions indicated in the following table.

Engine Capacity (cc X conv. Factor)	Max wheel width ins, for Rallies	Min weight kg./ lbs.	Class
0-1400	8.0	0.59 / 1.29	JA1 (2WD)
1401-1600	8.0	0.53 / 1.17	JA2 (2WD)
1601-2000	9.0	0.47 / 1.02	JA3 (2WD)
2001 and over	9.0	0.37 / 0.81	JA4 (2WD)
0-3000	9.0	0.39 / 0.86	JA7 (4WD)
3001 and over	9.0	0.34 / 0.75	JA8 (4WD)

e.g. Minimum Weight = 1590 (cc rating) X 0.53 (Conversion Factor) = 842 kg.

Engine Capacity (cc X conv. Factor)	Max wheel width ins, for other events
0-1400	8.0
1401-1600	8.0
1601-2000	8.0
2001 and over	9.0
0-3000	9.0
3001 and over	10.0



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

C) Exhaust noise level shall comply with the laws of the land. For all cars used in Rallies and unless the limits imposed by the local authorities are lower, the noise level on the open road must not exceed 103 dB(A) at 10ft measured at a 45 degree angle to the actual point of exit for an engine rotation speed of 3500 rpm for petrol engines and 2500 rpm for diesel engines.

D) Engine block must one of the versions offered by the manufacturer of the car (i.e.: Ford engine in a Ford car).

6.1.5 Open Class (JC)

Excepting for the Mandatory Safety Requirements the only Regulations in this group (JC) are as follows:

A) Open cockpit and convertible vehicles may use a four (4) mounting point roll cage/bar of sound construction.

B) Exhaust noise level shall comply with the laws of the land.

6.1.6 Vehicle Logbooks

A) A vehicle logbook, listing the particulars and equipment of the vehicle, should be presented by competitors at Technical Inspection.

B) During Inspection, any technical deviations in the vehicle shall be noted in the vehicle's logbook by the Technical Inspector.

C) If a vehicle is damaged during an event, it shall be noted in the logbook.

D) Competitors who do not have a Vehicle Logbook available shall not delay the inspection of vehicles that have their logbook available, and shall arrange with the Technical Inspector an appropriate time for inspection of their vehicle prior to being accepted for competition.

E) Vehicle logbooks are available from the Competition Committee.

6.1.7 Weighing of Vehicles



A) The onus is on the competitor to have the vehicle at the legal weight at all times during an event. When called upon to have a vehicle weighed the following shall apply:

- i) Cars will be weighed under the supervision of a Competition Committee representative on a scale designated by the Competition Committee.
- ii) The car must be presented with its gas tank(s) as close to empty as possible.
- iii) Only one spare tyre, and a standard set of tools will be allowed during weighing.
- iv) All articles which are not an integral part of the vehicle and its equipment must be removed.
- vi) Additional lights shall be removed.
- vii) It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility to fix seals, placed on the floor of the cockpit, visible and sealed by the Technical Inspectors.

6.1.8 Protest against a Vehicle

A) If a protest is lodged against a vehicle, the protestor shall clearly state the exact regulation(s) alleged to have been violated and shall additionally stipulate the component(s) that are to be inspected.

B) The protestor shall be required to post a cash bond with the Competition Committee, the amount of which shall be determined by the Chief Steward, and shall be sufficient to cover the cost of any disassembly, inspection and reassembling by a qualified service technician. Such inspection shall be performed under the supervision of the Competition Committee or a designate.

C) If the vehicle is found not to conform to these regulations, the cash bond shall be returned to the protestor and the inspection cost shall be borne by the entrant and/or driver of the inspected vehicle shall be subjected to disciplinary action.

D) If the vehicle is found to be legal, the protestor will forfeit the cash bond to the Competition Committee, which shall be used to cover the inspection cost involved. Any amount remaining after costs will be returned to the protestor.