

Modified Article	Date of Application	Date of Publication
5.2 INDUCTION	01/01/2021	27/11/2020
5.3 SUPERCHARGER	01/01/2021	27/11/2020
5.4 EXHAUST	01/01/2021	27/11/2020
Engine Substitution – approved in 2021	01/02/2021	06/04/2021
Change of NRC references to NRSR	Immediate	06/04/2021

Any HEADING is for reference only and has no regulatory effect; and  
A capitalised and italicised word in this document is defined in the *Code* or *NCR* or this document.

Production Rally Cars (PRC) are eligible subject to the *Automobile* meeting the description below and the requirements of Motorsport Australia *Manual* Schedule A and the National Rally Standing Regulations ([NRSR](#)) Vehicles General (VG).

**NOTE:** For *Events* listed on the FIA International Sporting Calendar, the relevant FIA regulations will apply.

## 1. GENERAL

### 1.1 ELIGIBLE *AUTOMOBILES*

- (a) Any *Automobile*, which has a minimum seating capacity of two persons, of which more than 500 have been produced worldwide in the same specification; or
- (b) An *Automobile* recognised by the FIA as being of Group A, Group N or Group R (except as shown below) from 1 January 1982; or
- (c) An *Automobile* previously recognised by the FIA as being of Group 1 or Group 3 which is included on lists published prior to 31 December 1981; or
- (d) Any other *Automobile* being of a model which Motorsport Australia in its sole discretion may recognise for PRC irrespective of the number produced or of its origin. Currently recognised under this requirement are:
  - (i) Excel Rally Cars – Refer Attachment A.
  - (ii) Toyota Corolla Sportivo Group N(P) must remain in conformity with the Motorsport Australia Recognition Form save for the application of Article 5.2 (b).
  - (iii) Fiesta R200 – must be in conformity with the MSA UK Homologation #A-5729 Extension #001.

**NOTE:** World Rally Car variants and/or components outlined under WR, R5, Super 2000, F2 extensions of Group A, R4 components or Regional homologations, are not permitted in PRC unless a specific freedom exists in these regulations.

## 2. PRC CLASSES:

### 2.1 PRC IS DIVIDED INTO THE FOLLOWING CLASSES:

<b>Class P1</b>	Up to 1400cc.	<b>Class P2</b>	Over 1400cc, up to and including 1600cc.
<b>Class P3</b>	Over 1600cc, up to and including 2000cc.	<b>Class P4</b>	2-wheel drive over 2000cc.

<b>Class P5</b>	4-wheel drive, over 2000cc (not meeting the requirements of Class P6). Mitsubishi models Evolution 7 onwards and Subaru GDA onwards. A 4-wheel drive <i>Automobile</i> with a fully active differential* irrespective of their model or year.	<b>Class P6</b>	4-wheel drive Mitsubishi models, up to and including Evolution 6.5, and Subaru models, up to and including GC8. For other 4-wheel drive <i>Automobiles</i> , models must be first manufactured prior to 1 January 1998. The use of fully active differentials* is prohibited.
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**\*NOTE:** A fully-active differential is defined as a differential that uses an ECU that receives inputs from sensors e.g. yaw rate, steering angle input and lateral acceleration to adjust the distribution of torque accordingly.

## 2.2 CAPACITY EQUIVALENCE FACTORS:

- (a) Supercharged and Rotary engine capacities are subject to an additional multiplication factor.
- (i) **Supercharged Engines:** The nominal cylinder capacity will be multiplied by 1.7 for spark ignition engines and 1.5 for diesel engines.
- (ii) **Rotary engines:** The nominal engine capacity will be multiplied by 1.8.

The car will pass into the class corresponding to the equivalent volume obtained as a result of the application of this factor. Other than where varied for minimum weight, refer Article 3, the car will be treated in all respects as if its resultant increased cylinder capacity were its actual cylinder capacity.

## 3. WEIGHT

- (a) Each *Automobile* must comply with the relevant minimum weight as determined by the engine capacity and the number of driven wheels in accordance with the following:

	Early and Late 2WD	Modern 2WD and all 4WD		Early and Late 2WD	Modern 2WD and all 4WD
up to 1000cc	700 kg	720 kg	2501cc to 3000cc	1090 kg	1140 kg
1001cc to 1150cc	760 kg	790 kg	3001cc to 3500cc	1180 kg	1230 kg
1151cc to 1400cc	790 kg	840 kg	3501cc to 4000cc	1260 kg	1310 kg
1401cc to 1800cc	880 kg	920 kg	4001cc to 4500cc	1340 kg	1400 kg
1801cc to 2000cc	960 kg	1000 kg	4501cc to 5100cc	1430 kg	1500 kg
2001cc to 2500cc	1030 kg	1080 kg	over 5100cc	1520 kg	1590 kg

- (b) The weight is the real weight of the *Automobile*, without driver nor co-driver nor their equipment and all apparel. Headphones external to the crew's helmets may be left in the *Automobile* during weighing.
- (c) These capacity ranges are set for the purpose of determining minimum weight only and are inclusive of the relevant rotary and supercharging corrective factors, with the exception that the supercharging factor for rotary engines is 1.6.
- (d) The weight of the *Automobile* may be checked with the crew on board (driver + co-driver+ their full equipment). In this case the minimum weight will be as specified above, plus 160 kg.
- (e) The use and fitment of ballast is permitted subject to Motorsport Australia requirements.
- (f) At no time during the *Event* may an *Automobile* weigh less than the minimum weight stated in this article, except where that would result in the *Automobile* exceeding its Gross Vehicle Mass (GVM).
- (g) In such a case it is permitted to add sufficient ballast in order to meet the GVM when the *Automobile* is fully fuelled and equipped ready for *Competition* (+/- 10kg). It is the responsibility of the *Competitor* to provide proof of the correct GVM via the official workshop manual or other definitive manufacturer's documentation, otherwise the PRC minimum weight will apply.

## 4. PERMITTED MODIFICATIONS

- (a) For the purpose of defining the permitted modifications to an *Automobile*, PRC is divided into 'Early', 'Late' or 'Modern' as follows:
- (i) **Early:** an *Automobile* manufactured prior to 1 January 1986. These *Automobiles* may also be eligible as Classic Cars.
  - (ii) **Late:** an *Automobile* manufactured more than 10 years prior to 1 January of the year of the *Competition* being conducted but not earlier than 1 January 1986.
  - (iii) **Modern:** an *Automobile* manufactured either in the current year or in the 10 years prior to 1 January of the year of the *Competition* being conducted.
  - (iv) Specific requirements may also be made for a 2-wheel drive and a 4-wheel drive *Automobile*.
  - (v) Where a specific freedom is provided for one of these categories, it will take precedence over a general requirement or condition.
- (b) Except where specifically detailed in these regulations, only the following modifications are permitted in PRC:
- (i) **General Conditions**

The original mechanical parts necessary for the propulsion and suspension, as well as all accessories necessary for their normal functioning (except any steering or braking parts), having undergone all normal machining operations laid down by the manufacturer for Series Production, they may be subject to all tuning operations through finishing and scraping but not replacement. Provided that the origin of the Series Production part may always be established its shape may be ground balanced, adjusted, reduced or modified through machining.

The modifications defined by the fore-going are permitted only on condition that the weights and dimensions specified in the Recognition Form (FIA Homologation, Motorsport Australia Homologation or Recognition Form or Manufacturer's published specifications) are respected. Only chemical and heat treatment/s are permitted, in addition to the above.

Damaged threads can be repaired provided they have the same internal diameter.
  - (ii) **Addition of Material**

Any addition or attaching of material or parts is prohibited unless it is specifically permitted by an Article in these Regulations. Any material removed is not to be reused.

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

Throughout the *Automobile*, any nut, bolt, or screw may be replaced by another nut or bolt or screw and may have any kind of locking device.

**NOTE:** Some of the freedoms available under these regulations may conflict with various requirements of the 'civil' registration authorities. It is a requirement of the *Competitor* to ensure that the *Automobile* complies with the conditions applicable for road usage when it is being used on public roads.

## 5. ENGINE

### 5.1 GENERAL

- (a) **Cylinder Block**
- (i) Resurfacing of the cylinder block is permitted.
  - (ii) The compression ratio is free.
  - (iii) The pistons, piston rings, gudgeon pins and their securing mechanisms are free.
  - (iv) The connecting rods are free, except that they must be manufactured of ferrous material.
  - (v) The crankshaft may receive chemical or heat treatment different to that laid down for the Series Production parts.

- (vi) The engine bearings are free; however, they must be of the original type.
- (vii) **Modern PRC:** It is permitted to increase the bore of each cylinder in the block by re-boring or re-sleeving by up to 0.6mm provided that the original engine capacity of the class limit is not exceeded. The material of a sleeve is free.
- (viii) **Late PRC:** It is permitted to increase the bore of each cylinder in the block by re-boring or re-sleeving by up to 1.5mm. The material of the sleeve is free. The *Automobile* will be classified by its resultant capacity.
- (ix) **Early PRC:** For a normally aspirated two-wheel drive *Automobile* the following will apply:
  - (A) Bore, Stroke and Engine Internals: The bore and stroke and therefore the capacity is free within the limits of the homologated or recognised engine block. The crankshaft is free. The *Automobile* will be classified by its resultant capacity.
  - (B) Rotary Engine Rotor Housings: The end and centre housings of a rotary engine are free, provided that they are supplied by the manufacturer of the *Automobile*. Rotor housings must be of the original homologated or recognised width.
  - (C) These conditions do not apply to a Substitute Engine.
- (b) **Cylinder Head**
  - (i) The cylinder head may be resurfaced.
  - (ii) The cylinder head gasket, including the number of, is free. A “decompression plate” made of metal may be fitted between the cylinder head and block for the sole purpose of reducing the compression ratio of the engine.
  - (iii) The cylinder head port sizes and tolerances, as noted on the homologation form, must be respected except for a 2-wheel drive *Automobile*, where it is permitted to modify the cylinder head port sizes and shape by the removal of metal only.
  - (iv) **Early PRC:** For a normally aspirated 2-wheel drive *Automobile* the following will apply:  
Cylinder Head/Porting: Modification of the original cylinder head is free, save that the original number of valves and camshaft(s) must be retained.
- (c) **Camshaft/s**
  - (i) The camshaft/s is free, except for their number and the number of bearings. The valve timing and lift are free.
  - (ii) Camshaft pulleys and belts and timing chains and their sprockets are free, save that they must retain their original drive type.
  - (iii) The guides and tensioners associated with these camshaft drive chains and/or belts are free, as are the protective covers.
  - (iv) The material of the gears and sprockets associated with the camshaft is free, as is the number of belts/chains.
- (d) **Valvetrain**
  - (i) The material and the shape of the engine valves are free, but the characteristic dimensions specified on the recognition document must be retained, including the respective angles of the valves' axes.
  - (ii) For 2-wheel drive *Automobiles*, the inlet and exhaust valve sizes and valve seats are free. The minimum modifications required to fit these items are permitted for Late and Modern PRC. For Early PRC refer to Article 5.1(b)(iv). In addition, valve guides may be replaced, the material of which is free.
  - (iii) The valve spring retainers, cotters and guides, even if not included as original equipment are free. Shims may be added under the springs.
  - (iv) The material of the valve seats is free.
  - (v) **4-wheel drive:** The rocker arms may be modified in accordance with the Article 4(b), General Conditions.  
**2-wheel drive:** The rocker arms are free.
  - (vi) Tappets/lifters are free save that the replacement units must be interchangeable with the original ones.

- (e) **Ignition**
- (i) Ignition coil/s, condensers, distributor, interrupter (i.e. points), and spark plugs are free subject to the concept of the system remaining the same as provided by the manufacturer of the model concerned, i.e. battery/coil or magneto.
  - (ii) The fitting of an electronic ignition system is permitted provided no mechanical part other than those mentioned in these Regulations is modified or replaced, save that the crankshaft, and/or flywheel and/or crankshaft pulley may be locally modified to facilitate a change of ignition.  
  
It is permissible to change an electronic ignition for a mechanical ignition under the same conditions.  
  
The number of spark plugs may not be modified. The number of coils is free.
- (f) **Rotary and Two Stroke Engines**
- (i) **Modern and Late PRC:** On condition that the original dimensions of the intake of the inlet ports and the exit of the exhaust ports are respected, the dimensions of the inlet and exhaust ducts into the rotor housing are free provided that this does not result in:
    - (A) peripheral ports; and/or
    - (B) the port does not extend past the original water jacket and seals.
  - (ii) **Early PRC:** The ports of a rotary engine are free, provided that this does not result in:
    - (A) peripheral ports; and/or
    - (B) the port does not extend past the original water jacket and seals.

## INDUCTION

### ~~4WD Naturally Aspirated and All 2WD Cars:~~

~~The induction system including the engine management system (ECU) is free, save that supercharging may not be added.~~

### ~~4WD Supercharged:~~

~~for each car using Commercial Fuel in accordance with Schedule G – Fuel: The fitment of a restrictor with a maximum internal diameter of 34mm which conforms with NRC VG, Supercharger Sealing Requirements is mandatory. For each car issued with a log book prior to 1 August, 1998 the requirement that the external diameter of the restrictor at its narrowest point must be less than 40mm, and must be maintained over a distance of 5mm to each side is waived.~~

~~for each car using Pump Fuel in accordance with Schedule G – Fuel: The fitment of a restrictor with a maximum internal diameter of 36mm which conforms with NRC VG, Supercharger Sealing Requirements is mandatory. The external diameter of the restrictor at its narrowest point must be less than 42mm, and must be maintained over a distance of 5mm to each side.~~

~~For each car equipped with fuel injection, the following modifications are permitted:~~

~~The air inlet system extending to the upstream face of the throttle butterfly, or to the turbo charger impeller should this be upstream of the throttle butterfly, is free.~~

~~The engine management system (ECU) is free.~~

~~The injectors are free, but not the number, position or assembly angle in the manifold. If the car is equipped with carburettor/s, those components are free.~~

~~The air filtering arrangement is free upstream of the throttle butterfly/ies.~~

~~The accelerator/throttle linkages are free.~~

~~**For Early PRC:** it is permitted to cut out part of the bulkhead situated in the engine compartment for the fitting of one or more air filters or for the intake of air, but such modifications must be strictly limited to those parts necessary for this installation and any opening created between the engine compartment and the cockpit shall be sealed.~~

## 5.2 INDUCTION

- (a) All engine types:

- (i) The accelerator/throttle linkages are free. Mechanical throttle may be replaced with an electronic throttle mechanism. Electronic throttle may be replaced with a mechanical mechanism.
  - (ii) Carburettor/s, and associated components are free.
  - (iii) The engine management system (ECU) is free.
  - (iv) Anti-pollution devices may be removed provided this does not lead to an increase in the quantity of air being fed to the engine, in which case such items removed must include blanking of any air inlet aperture.
  - (v) **For Early PRC:** it is permitted to cut out part of the bulkhead situated in the engine compartment for the fitting of one or more air filters or for the intake of air, but such modifications must be strictly limited to those parts necessary for this installation and any opening created between the engine compartment and the cockpit shall be sealed.
- (b) Naturally aspirated engine:
- (i) It is not permitted to add a supercharger to a naturally aspirated engine.
  - (ii) The complete induction system is free.
- (c) Supercharged engine:
- (i) The air inlet system to the compressor housing inlet aperture of a supercharger, where this is upstream of the throttle butterfly, is free.
  - (ii) Supercharging pressure is free.
- (d) 4-wheel drive with a Supercharged engine:
- (i) The injectors are free, but not the original number, position, or assembly angle in the intake manifold.
- (e) 2-wheel drive with a Supercharged engine:
- (i) The injectors are free, except that:
    - (A) a maximum of 1 injector is permitted per cylinder; or
    - (B) a maximum of 2 injectors is permitted per rotor (rotary engine).
  - (ii) The intake manifold and throttle mechanism/s are free.

#### **SUPERCHARGING/TURBOCHARGING**

~~All references to supercharging shall include turbocharging or similar. Supercharging pressure is free. It is permitted to make the connection between the actuating diaphragm and the wastegate adjustable.~~

~~For **Early or Late PRC** cars, the following additional provisions apply:~~

~~A substitute supercharger/turbocharger unit may be approved by the Australian Rally Commission upon application. To enable fitment to the exhaust manifold, an adaptor or modification of the mounting flange may be permitted. The substitute supercharger unit shall comply with one of the following options:~~

~~**Option 1**—The air inlet orifice and the compressor and turbine wheels shall be within 40% of the dimensions of the original supercharger unit.~~

~~**Option 2**—The replacement supercharger unit shall have the same size or smaller air inlet orifice as the original, or shall be fitted with an air inlet restrictor of the same dimension as the original supercharger air inlet orifice which complies with NRC VG, Supercharger Sealing Requirements.~~

~~To be eligible for use, the substitute component and where applicable its restrictor size shall be published in the PRC regulations.~~

~~**NOTE:** This does not negate Article 7.2(b). Approved substitutions will ordinarily take effect from 1 January of the following year.~~

#### **Approved Substitute Turbo/Superchargers**

Car Make/Model	FIA Homologation Number (where applicable)	Replacement Turbo Make/Model	Maximum Air Inlet Orifice Diameter	Effective from
Daihatsu Charade G102 GTi	A-5344	IHI RHF5, VJ35	32.6mm	1 Jan 2010
Subaru Liberty RS and Subaru Legacy RS	A-5650	IHI VF30, IHI VF34	47.1 mm	1 Jan 2011
Subaru Impreza WRX GC8	A-5480	IHI VF30, IHI VF34	47.1 mm	1 Jan 2011
Mazda Familia 4WD BFMR (323)	A-5286	HYBRID MAZDA IHI RHB 52 turbine housing with SUBARU IHI RHB 52 core and compressor housing	41mm	1 Apr 2013
MAZDA Familia GT-R (323)	A-5473	BergWarner EFR-6258 Part No. 179150	57mm	1 Jan 2015

### 5.3 SUPERCHARGER

All references to supercharger shall include turbocharger or similar, unless specified.

- (a) It is permitted to replace the supercharger in which the replacement is free provided that:
- (i) The supercharger must be mounted in the original location except that its orientation (i.e. the fitted angle) in this location may be changed.
  - (ii) For an exhaust driven turbocharger it:
    - (A) must be a single turbocharger, with single stage compression and expansion;
    - (B) is not permitted to have variable pitch or variable geometry;
    - (C) is only permitted to use an internal wastegate. The control of the internal wastegate mechanism is free; and
    - (D) is permitted to use any method to fix the turbocharger to the exhaust manifold e.g. bolted or by "V" band clamp.
  - (iii) Supercharger lubrication and cooling must use only the original lubrication and cooling system feed and return locations. Lubrication and coolant lines and fittings are free.
- (b) Supercharger Restrictor:
- (i) All the air necessary for feeding the engine must pass through the supercharger restrictor where fitted.
  - (ii) 4-wheel drive with a supercharged engine:

Each *Automobile* using:

    - (A) **Commercial Fuel**, in accordance with the *Manual* Schedule G - Fuel, must be fitted with a supercharger restrictor with a maximum internal diameter of 34mm which conforms with NRSR VG, Supercharger Sealing Requirements.
    - (B) **Pump Fuel**, in accordance with the *Manual* Schedule G - Fuel must be fitted with a supercharger restrictor with a maximum internal diameter of 36mm which conforms with NRSR VG, Supercharger Sealing Requirements.
  - (iii) 2-wheel drive with a supercharged engine:



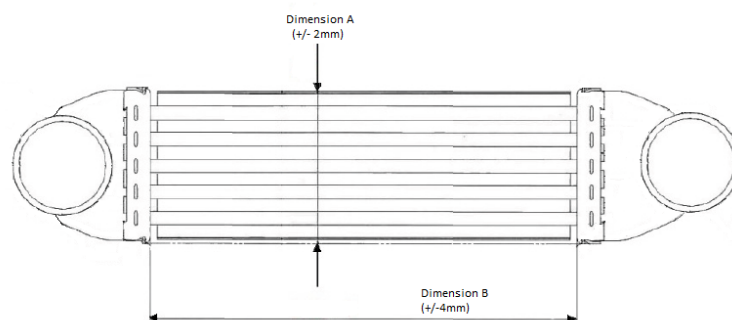
Each *Automobile* fitted with a supercharger, which is not an original and unmodified supercharger, that has a compressor inlet that is greater in size to the original must be fitted with a supercharger restrictor with a maximum internal diameter that is no greater than the original supercharger compressor inlet + 10% (rounded up to the whole mm) and fitted in accordance with NRSR VG, Supercharger Sealing Requirements.

(c) Intercoolers/Heat Exchangers:

An *Automobile* that is originally fitted with an intercooler/s and/or heat exchanger/s, or any other device fulfilling the same function must retain the intercooler/s and/or heat exchanger/s in their original location and position.

- (i) An original intercooler may be replaced provided the replacement intercooler retains the same face dimensions (for an air to air intercooler the area faced to the airflow, Refer Drawing 1, Dimension A and B) of the cooling element as the original and is fitted in the same location.

**DRAWING 1**



- (ii) The thickness is free.
- (iii) The pipes between the supercharging device and the intercooler and the manifold are free, but their only function must be to channel air.
- (iv) In the case of air-water intercoolers, the pipes connecting the intercooler and its radiator are free, but their only function must be to channel the coolant.
- (v) Any water injection fitted must be homologated and must not be modified.
- (vi) The fitment of any other substance or device to reduce the temperature of the inlet air to the engine is prohibited.
- (vii) A supercharged *Automobile* that is not originally fitted with an intercooler or heat exchanger is permitted to fit a single air/air intercooler with a maximum intercooler core (air) volume  $V_{1max}$  of 8.3 dm<sup>3</sup> (8.3 litre) determined by the measurement of the length, width and depth of the core. Only local modification is permitted to fit such an intercooler and no additional vent or aperture may be added to any bodywork to fit, or to channel air to, the intercooler.

(d) Supercharger Water Spray Tank (**NOTE:** this Article moved from Article 13 Cockpit)

For a supercharged *Automobile* equipped with an intercooler, a water tank may be fitted for the sole purpose of providing a system to spray water onto the outside of the intercooler. The maximum capacity of the tank is 20 litres, the design is otherwise free. The water tank must be securely mounted and must not impede the occupants' access, egress or operations within the *Automobile*. The pump, spray nozzles, fittings and actuation system required to enable the intercooler water spray system to operate, are free. The water tank may be used in conjunction with original equipment or recognised intercooler water spray system providing the total combined capacity does not exceed 20 litres.

**5.4 EXHAUST**

- (a) Each exhaust manifold is free except that it must be of fabricated metallic tubes with a minimum thickness of 0.9mm (measured in the uncurved parts) or of cast metallic material.
- (b) The exhaust is free after the exit from the exhaust manifold, subject to the following requirements:
- (i) It may not project in any way beyond the coachwork (in plan);
- (ii) The exhaust system must not be provisional;



- (iii) Exhaust gases may only exit from the end of the system which must be within 100mm of the perimeter of the *Automobile* and aft of a vertical plane passing through the centre of the wheelbase;
- (iv) Parts of the chassis must not be used to evacuate exhaust gases;
- (v) Adequate protection must be provided to prevent heated exhaust pipes from causing burns; and
- (vi) It must comply with any specific local requirements.

~~On an car fitted with a naturally-aspirated engine or a 2WD car fitted with a supercharged engine the exhaust including the manifold is free.~~

~~On a 4WD Supercharged car fitted with a restrictor according to Article 5.2 (b) (ii), the exhaust including the manifold is free.~~

~~On a 4WD Supercharged Automobile, fitted with a restrictor according to Article 5.2 (b) (i), the exhaust system is free only after the turbo charger wastegate unit.~~

- (c) Heat shields may be fitted to the exhaust manifold and/or the turbocharger for the sole function of heat protection.
- (d) Each *Automobile* must comply with Motorsport Australia requirements as to noise level.

## 5.5 COOLING

- (a) The radiator and its method of fixing is free provided the radiator is fitted in the original location.
- (b) Radiator hoses are free.
- (c) A radiator screen may be fitted.
- (d) The existing fan may be removed, or it may be disconnected. Additional fans may be added, for which the method of drive is free.
- (e) The thermostat is free.
- (f) The dimensions and material of the fan are free as are the number of fans.
- (g) The fitting of a water catch tank is permitted.
- (h) The radiator cap may be locked.

**NOTE:** None of the freedoms in Article 5.5 Cooling apply to intake intercoolers/heat exchangers which are considered to form part of the induction system of the engine.

## 5.6 LUBRICATION

- (a) The lubrication radiator, oil/water exchanger, lines, sump, and filter are free, subject to compliance with [NRSR VG](#).
- (b) The fitting of an oil radiator outside the coachwork is permitted only below the horizontal plane passing through the wheel hubs, in such a way that it does not protrude beyond the general perimeter of the *Automobile* when seen from above as it stands on the starting line.
  - (i) Fitting an oil radiator in this manner does not permit the addition of an enveloping aerodynamic structure, or any modification to bodywork.
  - (ii) All air vents must have the sole effect of inducing the necessary air for the cooling of the radiator and must not have any aerodynamic effect.
- (c) Oil pressure may be altered.
- (d) If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank. This must have a capacity of two litres for *Automobiles* with an engine capacity equal to or below 2000cc and three litres for *Automobiles* with an engine capacity of over 2000cc.
- (e) An air/oil separator (maximum capacity of one litre) may be added, external to the engine and within the engine compartment and any oil return to the engine must be affected by gravity alone. It is permitted to fit an oil thermostat. One fan per oil radiator is permitted, but it must have no aerodynamic effect.
- (f) The fitment of an external oil pressure regulator is permitted.

## 5.7 ANCILLARIES/GENERAL

- (a) Engine supports are free, but not their number, provided that the angle and position of the engine within its compartment is not changed, and General Conditions are respected. The supports may be welded to the engine and the bodywork.
- (b) Driving pulleys, belts and chains for ancillaries situated outside the engine are free, including number, type and dimensions. The route and number of belts etc. are free.
- (c) All gaskets in the engine are free.
- (d) Springs in the engine are not subject to any restrictions but must retain their original functioning principle.
- (e) The make and type of self-starter is free.

## 5.8 SUBSTITUTE ENGINES

- (a) In exceptional circumstances and at its absolute discretion ARCom may approve a substitute engine. An applicant must demonstrate that a substitute engine would provide a cheaper and more durable option, without a significant performance increase, when compared to the original engine. Additional limitations may be placed on such substitute engines.

### (b) Early PRC Substitute Engines

Substitute engines may be permitted subject to application to and approval by ARCom. The guidelines for replacement engines, approval of which is at the sole discretion of ARCom, are that the engine must:

- (i) be produced prior to 1986 unless otherwise specifically approved by ARCom;
  - (ii) be produced by the same manufacturer as the original;
  - (iii) have the same number of camshafts in the same location as the original;
  - (iv) have the same number of cylinders and general configuration;
  - (v) be made of the same material as the original;
  - (vi) be able to be fitted in the same general location as the original. No body modification is permitted to allow the fitment of the replacement cylinder block.
- (c) Each substitution must be approved by ARCom prior to use in *Competition*.
  - (d) *Automobiles* with substitute engines are not permitted the full range of engine modifications otherwise acceptable under these regulations. The following modification limitations apply:

#### (i) Capacity:

- (A) A maximum of a 17% increase in capacity over the original/recognised engine is permitted, or alternatively, a substitute engine which keeps the *Automobile* in the same PRC capacity class as it would be with the standard specification original/recognised engine may be permitted. The standard stroke must be retained.
- (B) A *Automobile* which incurs a capacity alteration due to a substitute engine, together with permitted modifications, must compete in the capacity class pertaining to the new capacity.

#### (ii) Cylinder Head: Modifications may be made to the cylinder head and related components only in the following areas:

- (A) inlet and exhaust ports may be modified by the removal of metal only;
- (B) inlet and exhaust valve sizes and valve seats are free. The minimum modifications required to fit these items are permitted;
- (C) valve guides may be replaced by others of alternate materials.

Approved PRC Substitute Engines					
Make	Model	Year	Current Engine	Substitute Engine	Date Added
Alfa Romeo	Alfetta / Alfetta GT	1972 - 1978	1962cc DOHC Single Spark	1962cc DOHC Twin Spark (ALFA 75 sourced)	01/02/2021

Alfa Romeo	GTV6	1980-1986	2.5 litre 12 valve V6 engine, OHC	3.0 litre 12 valve V6 engine, OHC	13/02/2019
Chrysler/ Mitsubishi	Galant/ Lancer		4G32	4G62	01/10/2007
Ford	Escort	1968-1974	1600cc X-flow / Kent	1600 OHC Pinto	27/07/2012
Holden	Commodore VB-VH	1978-1984	Holden 308 V8	350 Chevrolet V8. As fitted to Holden H series. Engine must be cast iron.	13/12/2012
	HQ-HZ (all models fitted with a V8)	1971-1980	Holden 308 V8	350 Chevrolet V8. As fitted to Holden H series. Engine must be cast iron.	05/07/2013
Mazda	RX2	1970-1978	12A	13B Naturally-aspirated (of a type available pre-1986)	01/10/2008
	RX3	1971-1978	12A	13B Naturally-aspirated (of a type available pre-1986)	01/10/2008
	R100	1968-1973	10A	12A Naturally-aspirated (of a type available pre-1986)	01/10/2008
Nissan/ Datsun	B110 (1200)	1970-1976	A12	A14	01/04/2008
	B210 (120Y)	1973-1977	A12	A14	01/04/2008
	510 (1600)	1968-1973	L 18	L20B	08/03/2007
	510 (1600)	1968-1973	L 18	Z 20 Naturally-aspirated	08/03/2007
	610 (180B)	1971-1976	L 18	L20B	08/03/2007
	610 (180B)	1971-1976	L 18	Z 20 Naturally-aspirated	08/03/2007
Toyota	Corolla KE 70	1979-1987	4K-C / 4A-C	AE 86 4A-C 8-valve (pre-1986)	08/03/2007
	Corolla KE 70	1979-1987	4K-C	2TG	02/10/2012
	Corolla ZRE152	2007-2012	2ZR-FE	2ZZ-GE	05/07/2013
	All Models fitted with 4AGE 16v	1983-1991	4AGE 16v	4AGE 20v	18/02/2014
Opel	Kadett C GTE	1976	19E	C20XE	16/05/2014

**NOTE:** Where a particular engine is available in an overseas 3 door variant of an *Automobile*, the same engine will be permitted in the 4/5 door Australian variant.

## 6. TRANSMISSION

### 6.1 FLYWHEEL

The flywheel is free save for the following:

- (i) Only a single piece flywheel, except for the ring gear, is permitted;
- (ii) Only steel material is permitted; and
- (iii) The minimum weight of a flywheel including ring gear must not be less than 3500g unless the original weight of a flywheel and ring gear is less than 3500g in which case only the original flywheel is permitted.

## 6.2 CLUTCH

The clutch assembly is free. The type of operation of the clutch is free (e.g. hydraulic or cable), provided that the driver actuates it in the same manner as the original (e.g. foot pedal).

## 6.3 GEARBOX

The gearbox, including the number of ratios is free, save for the following:

- (i) No modifications may be made to any bodywork to accommodate a gearbox, save for the drilling of holes to support components, or to facilitate the fitting of the gear change mechanism.
- (ii) Gearbox mounts are free, though not the number.
- (iii) In the case of an automatic gearbox, the flywheel is free.
- (iv) The number of driven road wheels may not be changed.
- (v) An additional lubrication cooling device including one fan is permitted (the circulation pump, radiator and air intake must be situated under the *Automobile*).
- (vi) Fitting an oil radiator in this manner does not allow the addition of an enveloping aerodynamic structure. All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator and must not have any aerodynamic effect.
- (vii) Propeller shafts, half shafts, axles and their associated bearings, constant velocity and universal joints are free.

## 6.4 FINAL DRIVE AND DIFFERENTIAL

- (a) The final drive ratio is free, as is the differential action.
- (b) The casing of the differential may be changed in *Automobiles* where the differential is fixed to the body/ chassis unit, but only if such a replacement unit can be fitted without any alterations to the body/chassis unit.
- (c) For *Automobiles* with a live rear axle, the entire rear axle tube and differential housing assembly is free.
- (d) The differential supports are free where they do not form part of the chassis.
- (e) The original lubricating principle for the rear axle must be retained. An additional lubricating and oil cooling device is permitted (circulation pump, radiator, and air intakes must be situated under the *Automobile*).
- (f) Fitting an oil radiator in this manner does not allow the addition of an enveloping aerodynamic structure. All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator and must not have any aerodynamic effect.
- (g) An oil radiator and/or an oil pump may be fitted in the boot (without modifying the series body) but a liquid-and flame-proof bulkhead must separate these components from the occupants of the *Automobile*.

## 6.5 TRANSMISSION CONTROL UNIT

Any electronic unit which controls the transmission and/or the differential/s is free.

## 7. FUEL TANK AND FUEL SUPPLY SYSTEM

### 7.1 FUEL PUMP/S

- (a) The fuel pump/s is free but must not be fitted in the cockpit. Where this is an original fitting, the pump/s may remain in place but must be well protected.
- (b) A petrol filter with a maximum capacity of 0.5 litres may be added to the fuel inlet pipe.

### 7.2 FUEL TANK/S

- (a) The total capacity of the fuel tanks must not exceed 95 litres.
- (b) One or more additional or replacement fuel tank/s of free but safe design may be fitted.
- (c) The use of a safety fuel bladder homologated to the FIA FT3 standard is highly recommended.
- (d) If the design of the *Automobile* makes the fitment of the tank outside the cockpit impractical it is permitted to fit the tank in that compartment provided:

- (i) The filling orifice and breather are outside that compartment and the tank vents to the outside, regardless of *Automobile* construction.
  - (ii) No part of the bodywork may be removed and/or altered to accommodate any petrol tank (save for the filling orifice which may be located in the window glass).
  - (iii) Glass may not be replaced by any other material to fit any part of the fuel system.
  - (iv) In all cases the tank is separated from the driver and co-driver by a flame proof and liquid proof bulkhead, which may be transparent.
- (e) On *Automobiles* on which the fuel tank is in the passenger compartment or the luggage compartment, the fuel filler must be fitted so that spilled fuel will drain away safely to the outside of the *Automobile*. If fitted with a filler catch tray, its design must be to the satisfaction of the scrutineers for each *Event*. See also 7.2(d).
- (f) Fuel lines may be replaced. If a fuel line is replaced, it must comply with **NRSR VG**.

### 7.3 FIREWALL

- (a) Where the fuel tank is installed in the boot and the rear seats are removed, a flame and liquid-proof bulk-head must separate the cockpit from the fuel tank.
- (b) Where the fuel tank is installed in the boot/luggage area of a two volume *Automobile*, a flame and liquid-proof bulkhead must separate the cockpit from the fuel tank. A non-structural partition made from transparent, non-flammable material between the fuel tank and the driver's compartment is permitted.

### 7.4 ALTERNATE FUEL TANK FITMENT

- (a) It is permitted to fit a replacement fuel tank in accordance with the following:
  - (i) The replacement tank must be a safety fuel bladder homologated to the FIA FT3 standard;
  - (ii) The tank must be situated in the cockpit in the rear seat area;
  - (iii) The floorpan of the rear seat area may be modified in order to install the tank with the following requirements;
    - (A) The maximum dimensions of the resulting hole in the floorpan are 1000 x 500 mm; and
    - (B) The floorpan longitudinal rails must not be modified.
  - (iv) The tank must be at least 50 mm behind the obligatory diagonal member in the main rollbar (Safety Cage) and forward of the rear wheel centreline;
  - (v) The bottom of the tank must be at least 80 mm above the lowest point of the chassis/monocoque;
  - (vi) The height of the assembly in the cockpit (tank + leak-proof box) must not exceed 600 mm;
  - (vii) The tank must be contained in a leak-proof box attached to the floorpan;
  - (viii) A 1.2 mm thick metallic screen between the tank and the cockpit must be fitted;
  - (ix) Only two air-tight and fluid-tight inspection hatches (in addition to the inspection hatch for checking the tank's validity date) in the cockpit are permitted.
  - (x) The pumps must be placed in the tank; and
  - (xi) The fuel circuit to and from the tank must comprise only the following parts;
    - (A) One fuel supply outlet (to the engine),
    - (B) One fuel return (into the tank) which is optional,
    - (C) Two quick-action couplings for refuelling (these couplings must be situated inside the *Automobile*), and
    - (D) Incorporate a vent system which must be vented external to the cockpit with a gravity activated roll-over valve, or a valve compliant with the FIA Article 253 requirements for Fuel Cell Ventilation.

## 8. SUSPENSION

- (a) The position of the rotational axis of the mounting points of the suspension to the shell or chassis, must remain unchanged, save for those that are attached to a sub-frame in accordance with Article 12.5.
- (b) Anti-sway bars are free, as are their anchorage points save for those that are attached to a sub-frame, in accordance with Article 12.5, which must remain attached to the sub-frame. These points may be used for the mounting of reinforcement bars.
- (c) The suspension mounting points on the body/chassis, save for those as part of a sub-frame in accordance with Article 12.5, must be unmodified and be retained and utilised exclusively to mount the suspension components, save that strengthening is permitted in accordance with Article 12.2(a).
- (d) The top damper mounting plates of MacPherson type struts are free save that the mounting points on the bodywork must remain unchanged.
- (e) Each spring is free, save that it must be of the original type (e.g. coil, leaf etc.). The spring seats may be made adjustable and may include the addition of material. A coil spring may be replaced by two or more springs of the same type, concentric or in series provided that they can be fitted without any modification other than those specified in this Article.
- (f) Each damper is free, but not the number, the type (telescopic, lever etc.), the system of operation (hydraulic, friction, mixed) nor the supports. Gas-filled shock absorbers are considered as hydraulic. MacPherson struts attached by eccentric bolts are permitted.
- (g) Reinforcement bars may be fitted between the suspension mounting points on the bodyshell subject to them being located within 100mm of the original suspension mounting point or 150mm for MacPherson strut systems. Apart from these two points, this bar must not be mounted on the bodyshell or the mechanical parts.
- (h) Uprights are free provided that they are connected to only the same components as the original (e.g. same number of control arms, steering arm, shock absorber etc.).
- (i) Other suspension components are free (e.g. control arms) provided they are entirely interchangeable with the complete original components, save for those attached to a sub-frame, in accordance with Article 12.5, which are not required to be interchangeable with the original components.

## 9. WHEELS AND TYRES

- (a) In no case can the width of the rim in relation to the swept volume of the engine, exceed the following:

<b>Up to 1000cc</b>	6.5"	<b>2000cc</b>	8.5"
<b>1400cc</b>	7.0"	<b>5000cc</b>	9.0"
<b>1600cc</b>	7.5"	<b>over 5000cc</b>	10.0"

- (b) The maximum diameter of the complete wheel/tyre assembly is 650mm.
- (c) Save for Article 9(a) and 9(b) and NCR VG the complete wheels (flange + rim + tyre) are free provided they can be housed within the original bodywork. This means the upper part of the wheel (rim flange and tyre flank), viewed vertically over the wheel hub centre, and must be covered by the bodywork when measured vertically.
- (d) 15 inch diameter wheels may be utilised on any *Automobile*, or alternatively the wheel diameter may be increased or reduced by up to two inches in relation to the original dimensions, as specified in the homologation documents where applicable.
- (e) A central wheel bolting system may be employed.
- (f) Wheel embellishers must be removed. Hub caps may be removed.
- (g) The use of tyres intended for motorcycles is prohibited.

## 10. BRAKING SYSTEM

- (a) The complete braking system is free, subject to any replacement components complying with the relevant registration requirements and any modifications to bodywork being restricted to the drilling of holes for the fitting and/or operation of components.

- (b) A circular flexible pipe to channel air to each brake assembly is permitted, but its interior diameter must not exceed 100mm. These air cooling pipes must not protrude beyond the front of the *Automobile*, as seen from above.
- (c) Anti-lock Braking Systems (ABS), Electronic Brakeforce Distribution (EBD) and Electronic Stability Control (ESC) systems may be removed or disabled.

## 11. STEERING

- (a) The original steering type must be retained (e.g. rack and pinion, recirculating ball etc.), however freedom is provided in relation to the following items:
  - (i) power steering system (modification, addition or deletion);
  - (ii) steering ratios, which must be commercially available;
  - (iii) steering arms, dampers, column and rack.

## 12. BODYWORK AND CHASSIS

### 12.1 GENERAL

- (a) Unused supports and brackets situated on the chassis/bodywork may be removed, unless these supports are for mechanical components which are not free.
- (b) The original holes in the bodywork may be closed by self-adhesive tape, unless otherwise permitted within these Regulations.
- (c) Insulating material may be removed from under the floor, from the engine compartment, the luggage boot and the wheel arches. Carpet and insulating material may be removed from the passenger compartment; additional insulating material may be fitted.
- (d) Bumper bar overriders may be removed.
- (e) External decorative strips which follow the external contours of the bodywork and are less than 25mm wide may be removed.
- (f) Jacking points may be strengthened, moved and increased in number.
- (g) The location of the number plate is free, but the lighting system must remain.
- (h) Additional safety fastenings for the windscreen and the side windows may be fitted provided that they do not improve the aerodynamic qualities of the *Automobile*.
- (i) *Automobiles* must be so constructed that with the crew normally seated, when all tyres on the same side are deflated, no part of the *Automobile* will touch the ground.
- (j) The original boot and bonnet latch mechanism fastener/s may be replaced. If so, this must be by at least two additional fasteners (i.e. bonnet pins) in each case. The original boot and bonnet hinge mechanism/s may be replaced by hinge/s of free design or removed and replaced with quick release fasteners (i.e. bonnet pins) equal to the number of hinge points.
- (k) External rear view mirrors are free whilst they perform only the function of a rear view mirror.
- (l) Where applicable, it is permitted to remove or replace the supports/bushings between the bodywork and the chassis save that the original location must be respected.
- (m) It is permitted to remove a wheel well that is located in the horizontal floor area of a rear boot compartment. The removed material must be replaced with a plate of steel material with a minimum thickness of 1.2mm and affixed completely by welding.

### 12.2 STRENGTHENING AND UNDERBODY PROTECTION

- (a) Strengthening of suspended parts is permitted provided that the material used follows the original shape and is in contact with it. Reinforcements from composite materials are permitted, irrespective of their thickness, provided they are in accordance with this regulation.
- (b) The fitment of additional underbody protection is permitted. The addition of this protection must not influence the aero-dynamics of the *Automobile*.

### 12.3 WINDSCREEN WIPERS

The motor position, the blades and the operating mechanism of windscreen wipers are free. There must be at least one windscreen wiper provided for the windscreen, in the driver's direct line of vision.

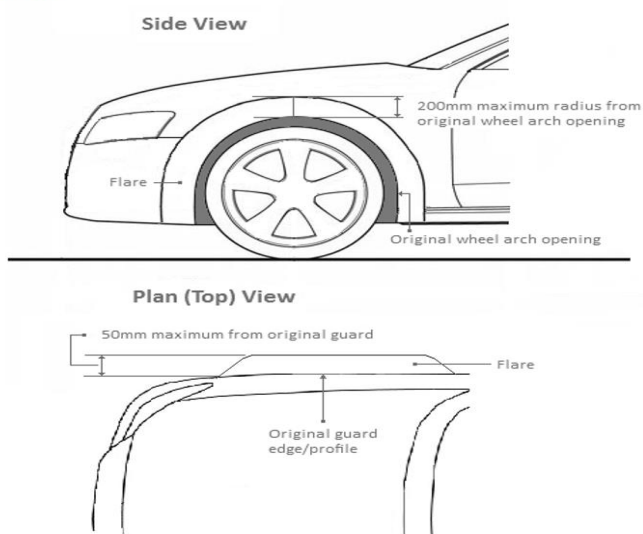


The windscreen washer device may be disconnected but not removed. The capacity of the washer tank may be increased, and its location may be moved to inside the cockpit.

#### 12.4 COACHWORK - EXTERNAL

- (a) The edges of the wing panel/s (mud guards) may be folded back if they protrude inside the wheel housing provided that the panel/s must not be reformed, nor may any changes of shape result. If wing panels are made of plastic, protrusions must be removed.
- (b) The plastic sound-proofing components from the underside of the wheel arches may be removed.
- (c) **Early and Late PRC – Wheel Arch Flares:** Early and Late PRC *Automobiles* may have wheel arch flares added by integrating the flare with the guard or bodywork or by bolt-on means, provided that the increase in the total width of the bodywork is less than 100mm and that the flare does not exceed the radius of the original wheel arch opening by more than 200mm (refer to Drawing 2). For the purpose of wheel and tyre clearance, it is permitted to remove up to 75mm of original bodywork measured radially from the edge of the original wheel arch outwards. Any cavity exposed in a door or wheel arch through the removal of metal must be covered by the addition of a metal closing panel. Any body joint protrusions must be rendered safe. The operation of any door must not be affected.

**DRAWING 2**

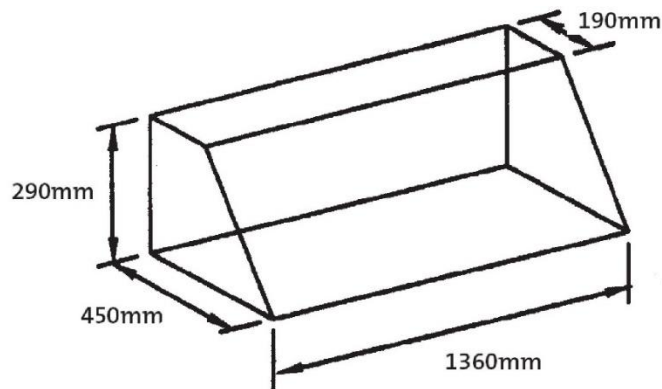


- (d) It is permitted to replace each guard/wing/bonnet/bumper bar and boot lid (all of which are held in place by bolts or screws only) with components manufactured from either fibre-reinforced polymer (FRP) or aluminium provided that they that are identical, except for the panel thickness, in dimensions to the original. For FRP, the minimum material thickness is 3mm and glass, carbon or aramid fibres may be used. For aluminium the minimum material thickness is 1.25mm. The original method of attachment must be retained for each guard, bumper bar and wing. Boot and bonnet must be attached in accordance with Article 12.1(j). All original fittings must be retained (e.g. guard indicator lights) as required by these regulations.
- (e) Body Kit Components
  - (i) It is permitted to replace the following original/homologated body kit components with a replica of the original/homologated item:
    - (A) front 'lip' spoiler;
    - (B) bumper bar/air dam assembly (front and rear);
    - (C) side skirt; and
    - (D) rear wing/spoiler.
  - (ii) The material from which the replacement body kit component is made is free.
- (f) Rear aerodynamic device
  - (i) For a *Automobile* of a type that is not currently or previously subject to FIA homologation it is permitted to fit a rear aerodynamic device (e.g. wing, spoiler) which complies with the following:

- (A) The rear aerodynamic device must be of single plane/single element design and must not be adjustable from within the cockpit. Adjustments may be undertaken only with tools.
- (B) At its lateral extremities, the rear aerodynamic device must join the bodywork, and it must be entirely contained within the frontal projection of the *Automobile* without its rear-view mirrors.
- (C) The material of construction for the rear aerodynamic device is free save that no carbon fibre, Kevlar or titanium may be used.
- (D) The rear aerodynamic device of an *Automobile* which is a sedan type (i.e. three volume) configuration must comply with the dimensions outlined below. The rear aerodynamic device of an *Automobile* which is a hatchback type (i.e. two volume) configuration must respect the same dimensions below, but at its top most point must be not more than 25mm above the roof.
- (E) The rear aerodynamic device must fit within an imaginary box of the following dimensions (refer also to Drawing 3):

<b>Width</b>	1360mm maximum, except where the boot lid or rear hatch is wider than 1360mm, in which case that will be the maximum width
<b>Height</b>	290mm maximum
<b>Horizontal length of side plate at top</b>	190mm maximum
<b>Horizontal length of side plate at base</b>	450mm maximum

### DRAWING 3



- (g) Side Skirts - All non-homologated/original devices or constructions designed to fully or partially fill the space between the sprung part of the *Automobile* and the ground is prohibited in all circumstances.

## 12.5 SUB-FRAME

- (a) It is permitted to replace a sub-frame that is fixed by fasteners to the body shell, monocoque or chassis with a sub-frame of free design and material save for the following conditions:
  - (i) The sub-frame must be fixed to the body shell, monocoque or chassis in the same location and by the same means as the original sub-frame.
  - (ii) An original sub-frame bushing may be replaced with a bushing of an alternate material.
  - (iii) Each original component mounted to the original sub-frame must be mounted to a replacement sub-frame e.g. steering rack, sway bar or rear differential.

## 13. COCKPIT

### 13.1 SEATS

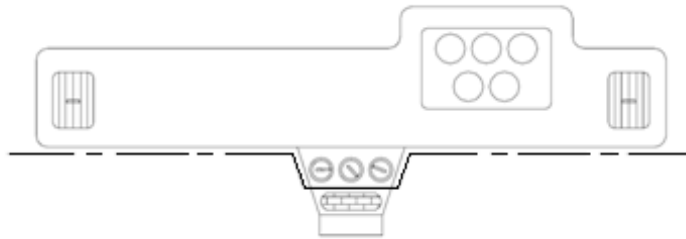
- (a) Seats are free, save that each seat must incorporate a head restraint.

- (b) For a State Championship *Competition* or above, the seats provided for the occupants must:
  - (i) be homologated by the FIA to the 8855/1999 or 8862/2009 standard; or
  - (ii) comply with Schedule C.
- (c) Unless original, the seat mountings shall comply with Schedule C or FIA Appendix J, Article 253.
- (d) The front seats may be moved backwards, but not beyond the vertical plane defined by the front edge of the original rear seat.
- (e) The rear seats including their backrests may be removed.

### 13.2 DASHBOARD AND CONSOLE

- (a) The trimmings below the dashboard, and which are not part of it, may be removed.
- (b) It is permitted to remove the centre console so long as it does not hold any heating controls or instruments (as shown in Drawing 4).

### DRAWING 4

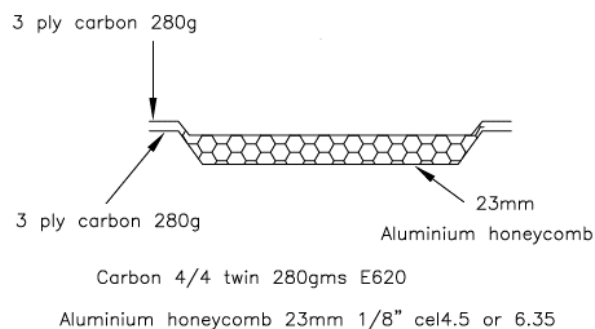


### 13.3 DOORS AND DOOR TRIM

- (a) It is permitted to remove the soundproofing material from the doors, provided that this does not modify the shape of the doors. In the case of a two-door *Automobile*, the trim situated beneath the rear side windows may also be removed but must be replaced with panels made from composite material, save for utes in which case such trim is not required to be replaced.
- (b) It is permitted to remove the trim from the door together with the side protection bar in order to install a side protection panel which:
  - (i) is made from composite materials. The minimum configuration of this panel must comply with that shown on Drawing 5; or
  - (ii) is of Energy Absorbing Safety Foam for side intrusion protection in accordance with [NRSR VG](#).

**NOTE:** The fitment of Safety Foam side intrusion is highly recommended.

### DRAWING 5



- (c) If the side protection bars in the doors are not removed, the door panels may be made from metal sheeting at least 0.5mm thick, from carbon fibre at least 1mm thick or from another solid and non-combustible material at least 2mm thick. The minimum height of this panel must extend from the base of the door to the maximum height of the door strut. It is permitted to replace electric winders with manual ones.

#### 13.4 INSULATION AND HEADLINING

- (a) All padding and insulation material except for those detailed in Article 13.2 and 13.3 may be removed, including headlining.
- (b) Insulating materials may be added to the existing bulkheads and/or floor to protect the occupants from fire and/or heat.

#### 13.5 HEATING AND WINDOW DEMISTING

The original heating system may be removed though a windscreen demisting system must be fitted. Heated front windscreens are permitted provided that any heating elements do not impede vision in any manner.

#### 13.6 AIR CONDITIONING

An air conditioning system may be added, removed or modified, subject to a windscreen demisting system being fitted.

#### 13.7 STEERING WHEEL

- (a) The steering wheel is free, subject to any replacement steering wheel not being made of wood.
- (b) The steering wheel may be on either the right or the left provided that the controls as specified by the manufacturer are inverted. The only mechanical modifications permitted are those made necessary by the inversion.

#### 13.8 REAR WINDOW SHELF

The rear removable window shelf in two volume *Automobiles* may be removed or held down by additional fasteners.

#### 13.9 PIPES AND TUBING

Air pipes may pass through the cockpit only if utilised for the ventilation of the cockpit. Liquid pipes may pass through the cockpit subject to compliance with [NRSR VG](#).

#### 13.10 SAFETY CAGE TRIM MODIFICATION

It is permitted to locally modify interior trim for the fitment of a safety cage. Refer Schedule J.

#### 13.11 ACCESSORIES

- (a) All those which have no influence on the *Automobile's* behaviour are permitted, e.g. equipment which improves the ergonomics, aesthetics or comfort of the *Automobile* interior, spare wheel/s, spare parts, safety equipment, communication equipment, ballast and windscreen washer water container, lighting, heating, radio etc.
- (b) The horn may be changed or an additional one added, within reach of the passenger.
- (c) Instruments such as speedometers, tachometers, trip meters etc. may be added or replaced, provided fitment is safe. Removal is permitted where these instruments are not required for use on public roads.
- (d) Additional compartments may be added to the glove compartment and additional pockets in the doors provided they use the original panels. It is permitted to remove the glove box lid so as to fit navigation equipment.
- (e) In no case can these accessories increase the engine power or influence the steering, transmission, brakes, or roadholding even in an indirect fashion. Controls of these items must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, e.g. a longer handbrake lever, an additional flange on the brake pedal etc.
- (f) No equipment or accessories may be fitted in front of an operational air bag.

#### 13.12 WINDSCREEN AND WINDOWS

- (a) The windscreen must be made of a laminated glass material and may incorporate defrosting/demisting equipment and the windscreen must be valid for use in each state in which the *Automobile* is to be used;
- (b) Except for the windscreen each other glass window may be replaced by a clear and transparent polycarbonate material of a minimum thickness of 3.8mm;  
**NOTE:** A polycarbonate window that is scratched or has reduced transparency may be noted in the *Automobiles* Log Book for replacement by a Scrutineer.
- (c) Each replacement polycarbonate rear window must be suitably fixed in place using the original window fixings. It is permitted to add additional fixing points.

- (d) Each replacement polycarbonate side window, except for front driver and passenger windows, must be fixed in place using original window fixings. It is permitted to add additional fixings points.
- (e) It is not required for a replacement side window to retain the ability to raise/lower the window as per the original fitment, and the original window actuation mechanisms may be removed.
- (f) Each replacement polycarbonate front driver and passenger door window must be able to be removed both internally and externally without tools in an emergency situation;
- (g) Except for the front driver and passenger door window each other side window and the rear window may be covered in a tint film that is compliant for use on public roads. In this case each rear side window must have a single circular area of a minimum diameter of 70mm that is not covered with tint;
- (h) Each front driver and passenger door window may be fitted with a closable aperture, of the same polycarbonate material, using a sliding mechanism or similar, within the replacement window;
- (i) Expressly to enable the safe installation of the requisite safety cage structure the rear window may be modified from the original shape only in so far as needed for the fitment of the safety cage. This is permitted exclusively for utility *Automobiles* and Toyota MR2 AW II.

### 13.13 HANDBRAKE

A "fly-off" and/or hydraulic handbrake may be installed.

### 13.14 SPARE WHEEL AND TYRE

- (a) One or more spare wheel and tyre may be carried, though it is not mandatory.
- (b) Any spare wheel/tyre must be securely fixed and must not be installed in the space reserved for the driver and co-driver. No exterior modification of the bodywork must result from its installation.

### 13.15 ROOF VENTS AND SUNROOFS

- (a) One or more roof vent/s is permitted provided the open side faces forward and the vertical opening is not greater than 100mm. It is recommended roof vents are fitted in the forward third of the roof.
- (b) Manufacturer fitted sunroofs are permitted. Aftermarket sunroofs fitted in the forward one-third of the roof are permitted. It is permitted to replace the glass component of the sunroof with metal or another rigid material.

### ~~13.16 SUPERCHARGER WATER SPRAY TANK (NOTE: this Article moved to Article 5.3 Supercharger)~~

~~For supercharged *Automobiles* equipped with an intercooler, a water tank may be fitted for the sole purpose of providing a system to spray water onto the outside of the intercooler. The maximum capacity of the tank is 20 litres, the design is otherwise free. The water tank must be securely mounted and must not impede the occupants' access, egress or operations within the *Automobile*. The pump, spray nozzles, fittings and actuation system required to enable the intercooler water spray system to operate, are free. The water tank may be used in conjunction with original equipment or recognised intercooler water spray system providing the total combined capacity does not exceed 20 litres.~~

### 13.17 AIRBAGS

Supplemental Restraint System (SRS) airbags may be disabled or removed.

## 14. ELECTRICAL SYSTEM

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

### 14.1 WIRING LOOM

The wiring loom is free, including wires/cables, relays, circuit breakers and fuses. A 'multiplex' wiring system may be replaced.

### 14.2 BATTERY

- (a) The make and capacity of the battery is free. Each battery must be securely fixed and covered to avoid any short circuiting or leaks. The location is free, but if mounted in the cockpit, it must be behind the front seats in a leak proof plastic box. The number of batteries specified by the manufacturer must be retained.
- (b) If the battery situated in the cockpit is a dry battery, it must be protected by a cover which covers battery terminals.

### 14.3 GENERATOR/ALTERNATOR

The generator/alternator and voltage regulator are free. The generator and the voltage regulator may be moved but must remain in their original compartment. They may be combined if the homologated *Automobile* had them originally and provided they come from another series model. The position of the voltage regulator may be changed but it may not be placed in the cockpit unless it was placed there originally.

### 14.4 LIGHTING

All lighting and signalling devices must comply with the Government regulations for the State or Territory in which the *Automobile* is registered. The make of the lighting devices is free.

- (a) Lighting devices which are part of the standard equipment must be those foreseen by the manufacturer and must function as laid down by the manufacturer. The operating system of retractable headlights, as well as its energy source, may be modified.
- (b) Freedom is granted with regard to the frontal glass and the reflector and bulbs. The mounting of additional headlamps is authorised. They may, if necessary, be fitted into the front part of the grille or bodywork, but such openings as needed in this case must be completely filled by the additional headlamps.
- (c) The replacement of a rectangular headlamp by a circular one/s or vice-versa fitted on a support corresponding to the dimensions of the aperture and sealing it completely is permitted. No change in shape of coachwork may result.
- (d) The fitting of a reverse lamp is permitted and may be by embedding it into the coachwork. It must only switch on when the reverse gear is engaged and provided the relevant civil regulations are respected.
- (e) Headlamp covers may be fitted so as to protect the headlamp glass. If such covers are fitted, they must have no effect on the *Automobile's* aerodynamics.

# ATTACHMENT A – EXCEL RALLY CARS

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## 1. PREAMBLE

- (a) These regulations have been drawn up by Motorsport Australia in consultation with the National Excel Series Committee. The regulations apply to each *Competition* where Excel Rally Cars are eligible, including each state based Excel Rally Series. To be eligible for awards and points in an Excel Rally Series *Event*, each *Automobile* is required to comply with these regulations.
- (b) Each *Automobile* in the Excel Rally Cars class must comply with PRC regulations except where a variation is explicitly authorised or required by these regulations. An *Automobile* complying with these regulations is eligible in any *Competition* for which the PRC group is also eligible.
- (c) These regulations foresee DOHC and SOHC *Automobiles* competing directly against each other. No freedoms are provided with a view to achieving 'performance parity'.

## 2. ELIGIBILITY

- (a) Each Hyundai Excel X3 model manufactured by Hyundai Motor Company between 1 July 1994 and 31 June 2000 and sold in Australia is eligible. This includes all GX, GL and GLX, Sprint, 3-, 4- and 5-door models. Both the 1495cc double overhead camshaft (DOHC) and single overhead camshaft (SOHC) engines with the following engine number prefixes; G4EK, (SOHC) and G4FK, G4EC (DOHC) are eligible.
- (b) Each *Automobile* must remain in standard specification as detailed in FIA Homologation paper number A5554 and N5554 or the Hyundai Factory Excel Workshop Manual/s, except where modification from standard specification is permitted by these regulations. If there is a discrepancy between the FIA Homologation paper and the Workshop Manual, the FIA Homologation will be the definitive document.

## 3. GENERAL

Parts for any Australian specification Excel X3 model may be used on an Excel Rally Car as long as each part can be clearly identified as a standard Excel replacement part available from an Australian Hyundai dealer or is an aftermarket part that is identical in appearance and function to the standard part which it replaces.

## 4. ENGINE

- (a) Cylinder bore size may be increased over the standard dimension by a maximum +0.6mm. The standard bore size is 75.5mm.
- (b) A replacement piston must be standard in material and in each functional dimension. No post-manufacture machining of the piston is permitted.
- (c) The camshaft profile (lobes and their position) must remain standard. The timing of camshafts relative to each other must remain standard.
- (d) Undersized crankshaft bearings may be used. Crankshaft stroke must remain standard (83.5mm).
- (e) The cylinder head mounting face may be machined. The valve seats are free. Other than these exceptions, no modifications, machining addition or removal of material from the cylinder head is permitted.
- (f) Only normal engine reconditioning procedures are permitted within the mechanical specifications and compliance with FIA Homologation paper number 5554 and the workshop manual. These specifications must be deemed to include factory approved and recommended methods of assembly as well as specific component measurements and finish standard.
- (g) Engine mounting bushes are free; however, the location and number of engine mounts is not.
- (h) Lubrication System: With the exception that an engine oil cooler may be installed, the engine lubrication system must remain standard.

### 4.2 COOLING SYSTEM

- (a) The radiator and its method of fixing are free provided that the original radiator fittings on the *Automobile* are utilised.
- (b) The fitment of an additional electric fan is permitted. The operation of the fan may be by manual switch or thermostatic control.



- (c) Each radiator hose is free.
- (d) A screen may be fitted in front of the radiator.

## 5. FLYWHEEL AND CLUTCH

- (a) The clutch assembly may be replaced by an alternative assembly of the standard type.
- (b) The clutch and pressure plate assembly weights must comply with the following:
  - (i) Clutch Plate 1.06Kg Standard / 0.901Kg minimum.
  - (ii) Clutch Pressure Plate 3.70Kg Standard / 3.145Kg minimum.
- (d) The flywheel weight must be not less than 6.3kg.

## 6. INDUCTION

- (a) The air filter system is free upstream of the throttle body.
- (b) No modifications are permitted to the throttle body or inlet manifold.
- (c) Any type of forced induction is prohibited.

## 7. EXHAUST

The exhaust is free after the exit from the exhaust manifold, subject to specific local requirements. It may not project in any way beyond the coachwork (in plan). The exhaust system must not be provisional. Exhaust gases may only exit from the end of the system which must be within 10cm of the perimeter of the *Automobile* and aft of a vertical plane passing through the centre of the wheelbase. Parts of the chassis must not be used to evacuate exhaust gases. Adequate protection must be provided to prevent heated exhaust pipes from causing burns

## 8. FUEL SYSTEM AND FUEL

- (a) Each fuel injector, electronic control unit and ignition computer must be an original and unmodified Hyundai Excel part for a model sold in Australia.
- (b) The original fuel pump may be replaced by an external electric type.
- (c) The fuel lines, fuel pump wiring and relay system may be replaced or relocated.
- (d) An additional fuel pump and/or surge tank may be added.
- (e) Fuel must be Commercial Pump Fuel as specified in Schedule G of the *Manual*.
- (f) The fuel tank must be maintained in standard location. Protection for the fuel tank may be installed.

## 9. TRANSMISSION

- (a) The original gear selector mechanism may be modified to reduce free play. Any modification to the selector mechanism may not alter the pattern of gear selection.
- (b) A gearbox oil cooler may be installed.
- (c) Gearbox ratios must remain standard.
- (d) Either a 3.842 or 3.656 final drive ratio is permitted
- (e) Limited slip or locked differentials are not permitted.

## 10. CHASSIS

- (a) The safety cage structure must be constructed in compliance with Schedule J.
- (b) Seam welding of the body shell is permitted. Strengthening of the shell may only be conducted in accordance with the PRC regulations.

## 11. WHEELS AND TYRES

- (a) The wheel diameter must be 13". Wheels are otherwise free, provided that each complete wheel and tyre is housed within the original bodywork.
- (b) Subject to compliance with Schedules E, tyres are free.

## 12. STEERING

- (a) The steering mechanism must use either
  - (i) a standard Hyundai Excel power steering rack; or
  - (ii) a non-assisted steering Hyundai Excel rack.
- (b) Power steering may be added or removed.
- (c) The steering wheel is free save that it may not contain any wood.

## 13. BRAKES

- (a) Brake friction material is free.
- (b) The brake lines are free.
- (c) The rear drum brakes must be standard, except that the backing plate may be modified for the purpose of allowing access for adjustment without disassembly.
- (d) Brake lines may be rerouted, and damage protection may be added.
- (e) The standard handbrake may be converted to 'fly off' for use in special stages.
- (f) A functional parking brake mechanism must be fitted.
- (g) The disc brake backing plate may be removed.
- (h) Each disc brake rotor must be standard. Cross drilling and/or slotting is not permitted.

## 14. SUSPENSION

- (a) Springs are free provided their type and location are unchanged. Where a "coil-over" design is fitted, it may be modified to enable the adjustment of ride height
- (b) Dampers which are externally adjustable for bump and/or rebound may be fitted. External reservoir designs are not permitted. The number and location of dampers must remain standard.
- (c) Each bump stop is free.
- (d) Each bush used at a suspension pivot point may be replaced by another. Spherical bearings are not permitted, except in the top strut mount.
- (e) The suspension may be modified so that camber and caster can be adjusted through the use of eccentric camber pins or washers and caster bush kits.
- (f) The use of replacement adjustable strut tops is permitted, providing that each utilise the standard body shell mounting points exclusively. The removal of metal from the suspension tower is prohibited, except that the hole in each rear strut tower may be enlarged to a maximum of 60mm diameter. This hole must remain circular and concentric with the original opening.
- (g) Anti-roll bars may be removed or changed provided original sway bar mountings to the chassis are used exclusively. The anti-roll bar link/s is free.
- (h) A strut brace may be fitted between the front suspension towers provided it only links the strut towers. The rear suspension towers may be braced by either the safety cage or a strut brace.
- (i) Suspension components may be strengthened and/or modified in accordance compliance with Motorsport Australia PRC regulations.
- (j) The origin of each standard suspension part must remain clearly identifiable.

## 15. ELECTRICAL EQUIPMENT

- (a) The spark plugs and high tension leads are free.

- (b) A standard Hyundai ECU, applicable to the engine fitted to the *Automobile*, from any eligible model Excel, must be used.
- (c) No replacement or piggyback ECUs, ECU reprogramming or modifications to the ECU wiring harnesses or sensors is/are permitted.
- (d) The ECU ODB-II diagnostic port must remain fully serviceable so that ECU sensor readings and other information can be accessed electronically.
- (e) An *Event* organiser may require each *Competitor* to take part in a ballot for ECUs prior to an *Event*. If any *Competitor* requests a Ballot, it must be conducted after the completion of scrutineering and prior to the Drivers Briefing. Where such a ballot takes place, it is a requirement that ECUs be exchanged in accordance with the results of the ballot.

## 16. BODY AND COACHWORK

- (a) All coachwork must comply with the workshop manual specifications except that interior items such as carpet, underfelt, hood lining, rear seat, radio, speakers, console and rear parcel shelf may be removed as outlined in accordance with the PRC Regulations.
- (b) Supplementary gauges may be fitted within the cabin.
- (c) Pedal settings may be modified for position. The original mounting fixture points to the body structure must not be changed.
- (d) An air vent/scoop may be fitted in the roof of the *Automobile* in accordance with the PRC regulations.
- (e) Any rubber bush may be changed for another bush made of an elastomeric material as long as the new bush has dimensions the same as the original.
- (f) A rear wing may be fitted that meets the following requirements:
  - (i) The wing must be made of fibre glass.
  - (ii) The wing aerofoil must be fixed and not be able to be adjusted with tools.
  - (iii) The wing must be the standard Hyundai low wing, Hyundai Part# 87211-22200 or 87211-22500 or Talon High wing part #HYU25 or a wing identical to it. The intention is to limit the wing options such that all *Automobiles* look similar.
  - (iv) A rear wing made of glass-reinforced plastic may be fitted provided that the wing aerofoil is fixed in position and cannot be adjusted and that the wing is:
    - (g) the standard Hyundai 'low wing' part number 07211-22200;
    - (h) the standard Hyundai 'low wing' part number 07211-22500;
    - (i) the Talon 'High Wing' part number HYU25; or
    - (j) a part identical in design, material, construction and installation as any one of the above three acceptable parts.

## 17. WEIGHT

- (a) The minimum weight of the *Automobile* at any time during an *Event* is 960kg. This weight is the real weight of the *Automobile*, without driver and co-driver nor their equipment and all apparel.
- (b) The minimum weight of the *Automobile* with driver, co-driver and their equipment, at any time during an *Event*, is 1,120kg (960kg as per 14.1 + 160kg). This weight is the real weight of the *Automobile*, driver, co-driver and all their equipment and apparel.

## 18. MISCELLANEOUS

Air conditioning may be added or removed.
