

RALLY / ROAD

GROUP G4 – TECHNICAL REGULATIONS

Modified Article	Date of Application	Date of Publication

1. PREAMBLE

These regulations detail the vehicle eligibility criteria for a type of 4WD vehicle to be used in the Australian Rally Championship (ARC). It is intended to produce vehicles of similar performance to PRC vehicles.

The general philosophy is that each car should comply with the regulations in place for PRC except that the donor components have been fitted to a different bodyshell. If the modifications are not permitted in PRC, other than those changes necessary to fit the donor components into the new car, then these changes are not permitted in G4.

A vehicle constructed to these regulations is to be considered as extensively modified for exclusive motor sport use. They must be registered with the relevant transport authority or be the subject of a 12 month rally permit. Constructors should pay special attention to any requirements of the relevant State registration authorities with regard to preservation of vehicle identification numbers. Unregistered Vehicle Permits will not be recognised for competition.

2. INTRODUCTION

- (a) These regulations must be read in conjunction with Schedules A and R of the CAMS Manual of Motor Sport, which must also apply.
- (b) Where an issue is not specifically addressed by these regulations, the Production Rally Car (PRC) regulations apply. Where no freedom is provided, or the applicable regulations are silent, then no change or modification to the donor vehicle is permitted.
- (c) The right to introduce control/specified components is reserved. Definitions:
 - (i) Base vehicle – the model of vehicle into which components from a Donor vehicle are being installed.
 - (ii) Donor vehicle – the model of vehicle, from which components are removed for subsequent installation in the base vehicle. Any 4WD vehicle complying with Article 2 of these regulations may be used. The recognised donor vehicle must be specified on the Recognition Form.
 - (iii) Parts – the components sourced from the Donor vehicle to be installed in the base vehicle.
- (d) In order to detail its specifications a CAMS Recognition Document will be required and is the official certification made by CAMS that a G4 vehicle meets the requirements of the present regulations. An application for recognition must be lodged with CAMS by the constructor of the vehicle. CAMS must be supplied with a detailed plan of the vehicle to be built in compliance with the regulations for this category. Approval in principle must be obtained from CAMS before any production work is started and such approval in principle must be subject to the lodgement with and approval by CAMS of a Recognition Document. The fee payable to CAMS for the assessment of such an application is \$500.

3. ELIGIBILITY

To be eligible for Group G4, the donor vehicle must have been in production in 2005 or later and be one of the following:

3.1 Option 1

- (a) fitted with two or more seats for the occupants;
- (b) open cars are not eligible;
- (c) a production car available through the normal commercial distribution network of the original vehicle manufacturer (or their authorised Australian distributor, as approved by CAMS);

- (d) certified for road use in Australia and listed on the Road Vehicle Certification System (RVCS) published by the Department of Transport and Regional Services (DOTARS).

3.2 Option 2

- (a) Approved by CAMS, on application (application fee will apply), as a G4 vehicle and issued with the required Recognition Document.

NOTE: Left-hand drive versions of such cars may be used provided they are identical in all respects other than the reversal of the driving position.

4. GENERAL

4.1 Materials and Parts

Materials and Parts deemed free in these regulations must still be in conformity with Article 252-1.3 of FIA Appendix J. "Free" means that the original part, as well as its function(s), may be removed or replaced with a new part, on condition that the new part has no additional function relative to the original part.

4.2 Ground clearance

The ground clearance of the vehicle is free.

4.3 General Modifications

Refer Article 2.2 of the Group 3C - PRC Regulations.

5. ENGINE

5.1 Eligible engines and transmissions:

- (a) It is permitted to use a complete engine of 2000cc maximum swept volume and transmission drivetrain from one model of a FIA-Homologated 4WD supercharged vehicle. All components must comply with Article 4.2. All recognised components must be specified on the Recognition Document.
- (b) An alternative engine and/or transmission configuration may be considered on application. The fee payable to CAMS for the assessment of such an application is \$250. All recognised components must be specified on the Recognition Document.

5.2 Components

- (a) Except where a part is free under the Group 3C - PRC regulations, or an alternative engine and transmission has been approved under Article 4.1(b):
 - (i) Only components from the selected model Donor vehicle must be used (i.e. it is not permitted to use Parts from more than one homologated version of the Donor vehicle e.g. if the Donor vehicle engine is a Mitsubishi Lancer EVO X only Parts homologated for an EVO X are permitted to be used);
 - (ii) If the original engine was fitted with balancing shafts, these may be removed together with their drives.

5.3 Engine specifications

Unless varied by these regulations Article 3 of the Group 3C - PRC regulations applies. A restrictor compliant with the Article 3.1.2 of the Group 3C - PRC regulations must be fitted.

5.4 Transmission

Article 4 of the PRC regulations applies:

- (a) the Recognition Form must record all the transmission parts used for the conversion from two-wheel drive to four-wheel drive;
- (b) In order to be able to mount these transmission parts, it is permitted to modify the bodyshell in accordance with diagram 1;
- (c) The rear axle must be mounted onto the subframe as described in Article 11 (g)-(j).

5.5 Engine mounting

- (a) The orientation of the engine of the base vehicle is free, with the orientation of the donor vehicle being applied. (i.e. a longitudinal orientation may be substituted for a transverse one and vice versa);
- (b) Each modification to the engine compartment must be limited to those necessary to enable installation of the recognised engine and transmission for that G4 Rally Car;
- (c) Each modification must not compromise the structural integrity of the vehicle. Each required modification must be detailed in the Recognition Document;
- (d) On the component side each engine and transmission mounting point location as originally fitted to the Donor vehicle must be retained. Each engine mounting bushing is free.
- (e) The replacement engine must be mounted in the same general location as the original (i.e. a base vehicle with a front mounted engine must only have a replacement engine mounted in the front, or for a Base vehicle with a rear mounted engine, it must only have a replacement engine mounted in the rear).
- (f) The inclination of the substitute engine must be the same as its original application in the Donor vehicle, plus or minus 25° to the vertical. This must be measured in relation to the centreline of the bore. The location of the engine must be detailed in the Recognition Document.

5.6 Cooling System

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

5.7 Supercharger Intercooler

- (a) A single supercharger intercooler may be fitted of a size not exceeding the surface area of the Donor Vehicle.
- (b) The supercharger intercooler shall be fitted within the area either next to or in front of the engine radiator.
- (c) Supercharger intercooler piping is free provided its only purpose is to channel air.
- (d) An external intercooler water spray system from the donor vehicle may be used, and its mounting points only locally modified to suit the base vehicle. Only water is permitted to be sprayed onto the intercooler.
- (e) The supercharger intercooler, its location and fitment shall be detailed in the Recognition Document.

5.8 Oil Sump

- (a) The oil sump shall be a wet type and meet the following requirements:
 - (i) the oil sump must be either made from steel sheet or aluminium. Its sole function must be that of containing oil;
 - (ii) the number of mounting points must not exceed the original;
 - (iii) for the sole purpose of fixing an oil deflector, it is permitted to create a maximum of four threaded holes (having a maximum diameter of M5 and maximum depth of 20mm) in the bottom of the cylinder block; and
 - (iv) the oil pick up may be modified only below the lower surface of the engine block.

6. ELECTRICAL EQUIPMENT

Article 12 of the Group 3C PRC regulations applies.

7. EXHAUST

Article 3.1.3 of the Group 3C PRC regulations applies.

8. FUEL SYSTEM

(a) Fuel tank, pumps and circuit:

- (i) The fuel tank shall be the original series production item, or it can be replaced or supplemented with an FIA FT3 1999, FT3.5 or FT5 specification fuel tank.
- (ii) Each replacement or supplementary fuel tank shall be placed inside the luggage compartment or in the original location.
- (iii) The construction of a collector tank/s with a capacity of less than one litre is free.
- (iv) The fuel pump/s is free.
- (v) A petrol filter with a maximum capacity of 0.5 litres may be added to the fuel inlet pipe.
- (vi) Fuel lines may be replaced, the route of which is free. If a fuel line is replaced, it shall be of an aviation type and comply with Article 13(ii) of Schedule R – “General Requirements for all Rally Cars”.
- (vii) It is authorised to drill two holes (maximum diameter of 60mm or equivalent area) in the floor, the sole function of which will be to allow the passage of the lines necessary to feed/empty the fuel tank.
- (viii) All fuel tank and fuel system components, save for fuel lines in accordance with (f) above, shall be sealed from the cockpit by a fireproof and liquid-proof bulkhead or case. A filler hole shall not be located in a window panel.
- (ix) Each fuel filler shall be equipped with a non-return valve homologated by the FIA. This valve, of the type “with one or two flaps”, must be installed in the filler neck on the tank side. The filler neck is defined as being the means used to connect the fuel filler hole of the vehicle to the fuel tank itself. The use of a dry brake fitting system for refuelling is permitted and highly recommended.
- (x) Each fuel system vent shall be fitted with roll over valve of type approved by the FIA.
- (xi) Provisions for the safe draining of any spilt fuel from any compartment must be included in the design of any fuel tank and fuel tank filler.

(b) The total fuel carrying capacity of the vehicles fuel tank/s must not exceed 95 litres.

9. CLUTCH

Article 4.2 of the Group 3C PRC regulations applies.

10. GEARBOX/TRANSMISSION

(a) Article 4 of the PRC regulations applies. In addition:

- (i) the Recognition Form must record all the transmission parts used for the conversion from two-wheel drive to four-wheel drive;
- (ii) In order to be able to mount these transmission parts, it is permitted to modify the bodyshell in accordance with diagram 1;
- (iii) The rear axle must be mounted onto the subframe as described in Article 11 (g)-(j).

11. DRIVELINE

Articles 4.4, 4.5 & 4.6 of the Group C PRC regulations applies.

12. SUSPENSION

- (a) The wheel base must be $\pm 2.5\%$ of that of the base vehicle.
- (b) A MacPherson strut suspension system may be fitted to the front of the Base vehicle using components supplied by the manufacturer of the Donor vehicle and consistent with the homologated, for Group A/N only, or recognised components for the production car or interchangeable with those components (i.e. aftermarket components may be used). The Base vehicle upper suspension mounting point may be modified to accept the components from the Donor vehicle. Each modification to facilitate the fitting of the front suspension must be detailed on the Recognition Form.
- (c) The type of rear suspension must be one of the following:
 - (i) MacPherson strut;
 - (ii) trailing arm;
 - (iii) that of the recognised Base vehicle; or
 - (iv) that of the Donor vehicle.
- (d) Only one shock absorber is permitted per rear wheel.
- (e) It is permitted to modify the bodyshell within the area authorised by Diagram 1.
- (f) Each front and rear subframe may be manufactured from steel tubing and, save for the requirements of Article 11(h), (i) and (j), their design is free.
- (g) Each dimension of each mounting point of each subframe for the vehicle and each pick-up point for all suspension components must match a production rear subframe from either the base vehicle, Donor vehicle or one of the following:
 - (i) Mitsubishi Lancer EVO (all models);
 - (ii) Subaru WRX (all models);
 - (iii) Toyota Celica GT4;
 - (iv) those originating from other vehicles which are, or have been, homologated by the FIA under Group N; and
 - (v) those approved by ARCom, at its sole discretion.
- (h) Where any subframe is manufactured and fitted to the vehicle, it must be possible to check the dimensions by fitting the unmodified Donor vehicle original factory subframe to the vehicle.
- (i) Modifications necessary to fit each subframe to the vehicle must be welded to the bodyshell. Specific details of the mounting must be recorded in the Recognition Form by drawings and/or photographs.
- (j) Anti-roll bars must be as homologated, for Group A/N only, or recognised components for either the donor or base vehicle or interchangeable with those components (i.e. aftermarket components may be used).

13. BRAKES

13.1 BRAKING SYSTEM AND CIRCUIT

Refer to PRC regulations.

13.2 PEDAL BOX

The pedal box is free.

13.3 MASTER CYLINDER

The master cylinder is free.

13.4 MASTER VAC/SERVO-BRAKE

The master vac/servo-brake is free.

13.5 REGULATOR/FRONT TO REAR BIAS ADJUSTMENT

The regulator/front to rear bias adjustment is free.

13.6 HANDBRAKE

Refer to PRC regulations.

13.7 FRONT CALIPERS

The front calipers are free provided they have a maximum of four pistons per caliper.

13.8 FRONT DISCS

The front discs are free subject to the following:

- (a) are made from ferrous metal;
- (b) the maximum diameter of each disc is 330mm for asphalt and 305mm for gravel;
- (c) a device to protect the brake discs from flying stones is permitted.

13.9 REAR CALIPERS

The rear calipers are free provided they have a maximum of four pistons per caliper.

13.10 REAR DISCS

The rear discs are free subject to the following:

- (a) are made from ferrous metal;
- (b) the maximum diameter of each disc is 300mm;
- (c) a device to protect the brake discs from flying stones is permitted.

14. STEERING

14.1 STEERING, RODS AND COLUMN

The original steering type of either the donor or the base vehicle shall be retained (eg, rack and pinion), however freedom is provided in relation to the following items:

- (a) Power steering system (modification, addition or deletion).
- (b) Steering ratios, which must be commercially available.
- (c) Steering arms, dampers, column and rack.
- (d) The steering rack and steering ratio. If is permitted to modify the bodyshell the minimum amount necessary for the passage of the steering column.
- (e) The steering column as well as its mounting systems, provided the steering column is fitted with a shock-absorbing/collapsing system.
- (f) Steering rods and joints and their connecting parts are free provided they are made from ferrous material.
- (g) The power steering fluid reservoir is free.
- (h) A powers steering fluid cooler may be fitted.

15. WHEELS AND TYRES

- (a) Each wheel must be made from cast aluminium or steel.
- (b) Wheel fixations by bolts may be freely changed to fixations by pins and nuts.
- (c) The use of a single metallic wheel spacer behind each wheel is permitted.

- (d) The use of any device for maintaining the full performance of the tyre with an internal pressure equal to or less than the atmospheric pressure is forbidden. The interior of the tyre (space between the rim and the internal part of the tyre) must be filled only with air.
- (e) Maximum diameter of the complete wheel shall be 650mm.
- (f) The diameter of the wheel rim is free. In no case may the width of the rim in relation to the swept volume of the engine, exceed the following:
 - (i) The diameter of the wheel rim is free. In no case may the width of the rim in relation to the swept volume of the engine, exceed 8.5".
- (g) For gravel rallies, the minimum weight of each rim (wheel excluding tyre and valve) is 8.6kg.
- (h) For asphalt rallies, the minimum weight of each rim (wheel excluding tyre and valve) is 8.9kg.

16. BODY/COACHWORK

16.1 DOORS & SIDE WINDOWS

- (a) It is permitted to install energy absorbing safety foam, to protect against lateral collisions, in each door and for two door vehicles in the area of the bodywork immediately rearward behind the door aperture. Energy absorbing safety foam must be fitted to each front door of the vehicle. The installation of energy absorbing safety foam must comply with the following:
 - (i) Minimum volume of foam in each application shall be 60L (see document titled "Specification for 2011 Door foam" in the Homologation Regulations for Super 2000 Kit Variants (Rallies) / WRC, and available from CAMS).
- (b) For this purpose, it is permitted to:
 - (i) Locally modify the interior part of the door or the aperture for the fitment of foam. This may include the removal of window mechanisms and other door hardware. The door opening mechanism, operated by the crew, may be modified.
 - (ii) Each side window may be replaced with a clear and optically transparent Polycarbonate material in the original shape of the original window and of a minimum thickness of 3.8mm. An opening section, using a sliding section, may be incorporated in each replacement window in each front door only.
 - (iii) Each replacement window must be able to be removed without tools in an emergency situation.
 - (iv) Each door or aperture fitted with foam shall have a trim panel fitted that consists of a minimum of six (6) ply carbon fibre or kevlar reinforced polymer.

16.2 SUNROOF/ROOF HATCH/VENT

Refer to PRC regulations.

16.3 WINDSCREEN

Refer to PRC regulations.

16.4 BODY KIT COMPONENTS:

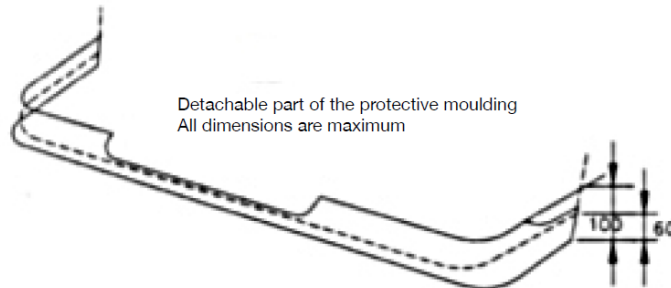
Refer to PRC regulations. Alternatively a rear aerodynamic device complying with the AP4 regulations may be used.

16.5 FRONT BUMPER:

The front bumper shall be that part of the base vehicle in its entirety. In addition the front bumper may be modified as follows:

- (a) It may have additions made to mould, join or align with the permitted flares.
- (b) The series grille may be replaced with wire mesh.
- (c) Additional openings may be made in the bumper provided the total surface of openings be no more than 2500 cm².

- (d) The openings must not affect the structural integrity of the bumper.
- (e) The material of the bar shall be free.
- (f) The minimum weight of the front bumper is 4.5 kg (except if the original bumper is kept).
- (g) New fastenings may be created to enable ease of removal/replacement.
- (h) a lip spoiler in accordance with the following diagram may be added:



- (i) Detachable part of the protective moulding.
- (j) All dimensions are maximum.

16.6 REAR BUMPER

- (a) The rear bumper shall be that part of the base vehicle in its entirety. In addition the rear bumper may be modified as follows:
 - (i) It may have additions made to mould, join or align with the permitted flares.
 - (ii) The material of the rear bar shall be free.
 - (iii) New fastenings may be created to enable ease of removal/replacement.
 - (iv) The original cut-out or insert of the rear bumper for the exhaust may be enlarged; or a circular opening with a maximum diameter of 10cm or an equivalent section created.

16.7 GUARDS:

- (a) Front: The basic shape of the base vehicle front guards (upper section) must be retained. The following is permitted:
 - (i) The guard may be widened in-line with the wider wheel-track of the car. This increase may be obtained by means of an extension or a new part may be created.
 - (ii) The maximum width between the outer extremities of the guards shall be 1820 mm (measured on the front axle centre-line).
 - (iii) The material shall be that of the series part and/or fiberglass.
 - (iv) No additional air intakes or outlets are not permitted.
 - (v) Additional aerodynamic elements are not permitted.
- (b) Rear: The basic shape of the base vehicle rear guards (upper section) must be retained, although the following is authorised:
 - (i) The guard may be widened in-line with the wider wheel-track of the car. This increase may be obtained by means of an extension or a new part may be created.
 - (ii) The material shall be that of the series part and/or fibreglass.
- (c) 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.

- (d) Each guard must cover the whole of the complete wheel in radial projection whereby the upper part of the wheel/tyre assembly, located vertically over the wheel hub centre, must be covered by the bodywork when measured vertically.

16.8 OPENING IN THE BONNET

- (a) It is permitted to add a single cut out opening, or multiple cut out openings, with a maximum surface of 1000 cm² in the bonnet.
- (b) Each cut-out must be fitted with a fine mesh or it is permitted to add a plastic part serving as a trim or a grill.
- (c) The maximum height of a trim or grill in relation to the bonnet is 15 mm. The maximum opening of 1000 cm² will be calculated without taking this added part into account.
- (d) Each bonnet opening must be detailed on the CAMS Recognition Form.

16.9 RADIATOR SUPPORT

- (a) The upper front radiator support may be cut or modified between the headlamps for the sole purpose of fitting a radiator and/or the intercooler.
- (b) This radiator support may be replaced with a different support in a metallic material between the headlights only.
- (c) The lower radiator support panel may be modified only in the area of the radiator and/or intercooler mounting points to achieve effective fitment of these components only.

16.10 OTHER ALTERATIONS

Alterations to the floor pan, front bulkhead (firewall) and inner wheel housing area may be made, but only to the extent required to achieve effective fitment of the recognised engine, transmission and suspension components. Alternatively, the floor pan and bulkhead may be replaced by those fitted to the Donor vehicle. The extent of any changes must be included in the application for a Recognition Form submitted to CAMS.

17. SAFETY CAGE

The safety cage structure must be in accordance with Schedule J of the CAMS Manual of Motor Sport. Door bars, or side intrusion, must incorporate a minimum of two elements. A single door bar is not permitted.

18. INTERIOR

18.1 SEATS

- (a) The seats provided for the occupants shall be homologated by the FIA to the 8855/1999 or 8862/2009 standard.
- (b) In the case of seats to the 8862/2009 standard, homologated seat mounts must be used.
- (c) For seats to the 8855/1999 standard, the mountings shall comply with FIA Appendix J, Article 253-16, unless original.

18.2 DASHBOARD

- (a) The material of the dashboard is free, but the general shape and the appearance of the base vehicle model must remain unchanged.
- (b) The dashboard hump(s) may be modified. The height of the dashboard humps may be reduced by a maximum of 50mm over a maximum width of 400mm. The resulting opening must be closed.
- (c) The minimum weight of the bare dashboard is 4kg.
- (d) The anchorage points may be modified for the sole purpose of installing the safety cage.
- (e) The trimmings below the dashboard, and which are not part of it, may be removed.
- (f) It is permitted to remove the centre console so long as it does not hold any heating controls or instruments (as shown in the following drawing).

18.3 AIR CONDITIONING SYSTEM

Refer to PRC regulations.

18.4 HARNESES:

A Type A harness as detailed in Schedule I shall be fitted for each crew member. Two belt/webbing cutters must be carried on board at all times. They must be easily accessible by the driver and co-driver when seated with their harnesses fastened.

18.5 FIRE EXTINGUISHER:

- (a) Refer to Schedule H in the CAMS Manual of Motor Sport.
- (b) In addition to the specified hand held fire extinguisher/s, a plumbed in system homologated by the FIA is mandatory. Refer Technical List no. 16: "Extinguisher systems homologated by the FIA".
- (c) The driver must be able to trigger the plumbed in extinguisher/s manually when seated normally with the safety belts fastened and the steering wheel in place.
- (d) Furthermore, a means of triggering the plumbed in extinguisher/s from the outside must be fitted. It must be marked with a letter "E" in red inside a white circle of at least 10cm diameter with a red edge.

19. WEIGHT

20. ARTICLE 1.3 OF THE GROUP 3C PRC REGULATIONS APPLIES.