

GROUP NZ[©]

NATIONAL RALLY CAR TECHNICAL REGULATIONS 2020

DEFINITION

Group NZ is a MotorSport New Zealand Sanctioned Rally Category eligible for the NZRC.

Since 2001 FIA Group N has been the premier category in the New Zealand National Rally Championship, although now this is no longer the case as vehicle manufacturers are no longer homologating appropriate models and the expense of maintaining compliance of the existing fleet, with an international category, has become prohibitive for many.

This situation prompted a decision by the MotorSport NZ Rally Commission to 'open up' the eligibility rules and in so doing creating an 'open category' of cars that would essentially differ (from the Group N eligible models) through the fitment of locally sourced and non-homologated parts.

The reasoning behind establishing Group NZ is to place a limitation on the 'degree of modification' so that cars can be classified, can compete on equal terms and potentially participate in international events held in New Zealand.

The following regulations are intended to cater for these modified (Group N) cars, that have contested (or could have contested) a round of the New Zealand National Rally Championship. The following articles identify the areas of difference to those stipulated under FIA Group N, hence where there is no alternative specification detailed in these regulations, the Group N specification applies.

It is expected that, cars in compliance with these technical regulations, will contest on an equal basis with the new generation of rally car being established, namely Group AP4 as well as the current FIA R5 category. Additionally, it is envisaged that this rally category will provide a 'place to rally' for these 'older' cars for the foreseeable future within the NZ National Rally Series.

Safety elements of the Group NZ car will be required to comply with FIA Appendix J 254 and Competitor apparel will be required to comply with FIA Appendix L – Chapter III.

RECORD OF OFFICIAL AMENDMENTS ISSUED

Use this table to keep a record of all official amendments issued during the season to these regulations;

Amendment Number	Effective Date	Article Reference	Subject

1.0 GENERAL CONDITIONS

- 1.1 These regulations shall be read in conjunction with;
- The Series Articles (Portfolio) as issued on an annual basis by MotorSport New Zealand, and
 - FIA Appendix J, and
 - Appendix Two Schedule A, (wherever Appendix J is silent).
- 1.2 These regulations are written in terms of authorisation therefore any alternative specification and/or modification [to the Group N specification] not expressly authorised hereinafter is prohibited.
- 1.3 The limits of the alternative specifications and/or modifications allowed are specified under the appropriate article. Apart from these, any part worn through use or accident can only be replaced by a part as specified within these regulations.
- 1.4 MotorSport NZ (referenced hereinafter as MSNZ) is solely responsible for the control of these Technical Regulations and their interpretations. All enquiries relative to these regulations shall be directed to the MSNZ Technical Manager.

Where any doubt may exist in understanding any regulation contained within these regulations it will be understood that it is the Competitors obligation to enquire as to the correct interpretation. All enquiries shall be submitted in writing to the MSNZ Technical Manager, detailing the article in question and the specific subject matter. A written reply will always be given to a written enquiry.

- 1.5 All text changes from the previous issue of this Schedule are highlighted such. Text changes for grammatical and/or formatting reasons are not highlighted.
- 1.6 All cars subject to these regulations shall have a valid MSNZ logbook.

2.0 INTERPRETATIONS

- 2.1 Terms that are specific to these regulations are defined here. For further definitions refer to the MSNZ National Sporting Code, Appendix Two Schedule A, FIA Appendix J and L.

'Aftermarket (part)' means a catalogued, off the shelf component part sourced from another manufacturer to that of the car manufacturer which may be fitted without making any additional modifications.

'Direct replacement (part)' means a component part sourced from another manufacturer, to that of the original manufacturer, which is a 'direct' replacement in level of duty, function and design to the component part it replaces, and can be fitted without making any additional modifications.

'Free (part)' means that the standard component part as well as its function may be removed or replaced with a new component part on condition that the new component part has no additional function relative to the original component part. These component parts may have other conditions imposed under these technical regulations.

'Group N' means the set of regulations issued by the FIA for 'standard' production cars or a car that is homologated under Group N by the FIA.

'MSNZ' means MotorSport New Zealand Incorporated.

'Protective clothing' means overalls, underwear, balaclava, socks, shoes and gloves.

'Series (part)' or 'Standard (part)' means the standard component parts as fitted to the car at the time of original manufacture. All such parts shall be available through the original car manufacturer's dealer network. All relevant specifications shall be referenced from the manufacturers' official data or applicable FIA homologation form. In the case of a "Proto Car" those parts substituted from the donor car are deemed to be "original manufacturer parts"

'Standard' means the original specification as originally manufactured

'Proto Car' means a car built by or to the same specification as those produced by Polish company Dytko. Being essentially a replica R5, RRC or WRC silhouette utilising Mitsubishi Evo 9/10 running gear or Subaru WRX running gear including (but not limited to) engine, transmission, differential, subframes, hubs, knuckles, axles, steering and suspension components.

3.0 ELIGIBLE CARS

- 3.1 Any 4 wheel-drive car homologated by the FIA under Group N with a current (or expired Homologation Form or any production car manufactured in numbers of at least 2000 units by a recognised manufacturer and sold through a retail dealer network.

Any NZ Built or Imported "Proto Car" with a MSNZ Logbook

4.0 SAFETY EQUIPMENT / SAFETY ITEMS

- 4.1 **Drivers' safety equipment:** All driver's safety apparel shall be as detailed in the NZRC Portfolio published for the applicable season and the current motorsport Manual Appendix two Schedule A.
- 4.2 **Car safety equipment:** shall be as detailed in the NZRC Portfolio published for the applicable season and the current motorsport Manual Appendix Two Schedule A. For cars entering international events car safety shall be in full compliance with FIA Appendix J Article 253.
- 4.3 **Safety Cage** - shall be homologated by the ASN and a copy of the certificate shall be presented to the Scrutineers upon request.
- 4.4 **Competition Seats** – in compliance with a current FIA standard 8855-1999 or 8862-2009 shall be fitted. Schedule A applies relative to the 'time limitation' applied under the FIA standard.

5.0 COMPETING WEIGHT

- 5.1 The weight of the actual car shall be a minimum of 1350kg under the conditions set out below.

This is the real weight of the car, with only one spare wheel and neither the driver, nor co-driver, nor their safety equipment (being the helmets and FHR devices of both drivers).

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

The Use of Ballast is permitted under the conditions provided for in FIA App J Art 252-2-2

The minimum weight of the competing car shall be the above weights plus the addition of 160kg measured under the following conditions:

The competing car weight is the weight of the car as it competes with the crew on-board (driver + co-driver with their safety equipment) and one spare wheel.

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

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

In case of a dispute during weighing of the competing car, the driver and codriver as well as their safety equipment will be removed; this includes their helmets and FHR's, and the car will be re-weighed. For the avoidance of doubt cars must meet both weights at all times during the competition.

6.0 ENGINE - SPECIFIC REGULATIONS

- 6.1 Engine capacity** – shall be standard, including the bore and stroke measurements which shall be referenced from the applicable FIA Homologation Form, although a re-bore of the engine block [standard engine reconditioning practices] is authorised to a maximum of 1.0 mm without this leading to the capacity class limit being exceeded. In no case shall an engine larger than 2.0L nominal capacity be allowed.
- 6.2 Cylinder block** – shall be the series part.
- 6.5 Crankshaft** – shall be the series part, or an aftermarket part the specification of which shall be referenced from the applicable FIA Homologation Form, except as follows;
- The minimum permissible weight of the crankshaft (including pilot bearing) shall remain within 5% of the series part weight, irrespective of the following conditions;
 - The crankshaft may be subjected to additional mechanical treatment and machining, and
 - The main and connecting rod bearing journals may be reclaimed respecting the standard width.
 - The width and diameter of each crankshaft journal may be increased.
 - Crankshaft pulleys / gears may be freely sourced.
 - Where no FIA Homologation form exists only the series part may be used.
- 6.6 Flywheel:** The series part is authorised, or a free part is authorised under the following conditions;
- The minimum permissible weight of the flywheel (including starter ring and fixing bolts) is 40000 grams,
 - It must be made in one-piece with the exception of the starter ring,
 - The starter ring gear must respect a minimum diameter of 240mm, and
 - Only steel is authorised
- 6.7 Cylinder head** – shall be the series part the specification of which shall be referenced from the applicable FIA Homologation Form, except as follows;
- The head may be planned on the block mating face,
 - The valve seats may be re-cut / re-placed [standard engine reconditioning practices],
 - The valve guides are free although the respective (operating) angles of the valves shall not be changed.
- 6.8 Injection System:** = The series part (system) is authorised under the following criteria;
- The maximum number of injectors shall be equal to the number of cylinders, or the number fitted to the series engine.
 - A new injector rail of free design is authorised, fitted with threaded connectors for connecting the lines and the fuel pressure regulator.
 - Any other additional injection system (such as water) is prohibited.

- 6.9 Throttle valve housing:** - The series part (throttle valve housing) is authorised, or a free part is authorised. The following conditions apply;
- Only a single throttle body is authorised,
 - The maximum opening size (at the butterfly) is 64 mm +/- 0.25 mm,
 - The housing may be modified externally but not the diameter of the opening of the butterfly, and
 - The housing mounting 'bolts' shall be drilled for the possible application of wire seals.
- 6.10 ECU / Sensors / Actuators / Data acquisition:** - The series ECU (system) is authorised, or a freely sourced ECU may be accepted under the following criteria;
- The ECU is a commercially available system from a recognised manufacturer, and
 - All actuators must be controlled by the ECU.
- 6.12 Intake and Exhaust valves:** = The series parts and dimensions shall be retained. Direct replacement valves are authorised provided they respect the same dimensions and are sourced from a recognised manufacturer of valves. **Titanium is not authorised.**
- 6.13 Exhaust Manifold:** The series part (exhaust manifold) is authorised, or a free part is authorised under the following conditions;- Only steel, stainless steel or cast iron is authorised.
- 6.14 Exhaust system:** - The exhaust system is free downstream of the turbocharger, provided it respects the following criteria;
- Fitment does not entail the modification of other components, (except floorpan modification
 - The exit of the exhaust pipe shall be at the rear of the car, and
 - The noise levels must respect the stated maximum prescribed by the ASN of the country where the car competes
- 6.15 Cooling system:** - The series part (**water pump**) is authorised, or a free part is authorised under the following conditions;
- The pump is either mechanically or electrically driven, and
 - The pump is located in the engine compartment.
 - The series part (**water radiator**) is authorised, or a freely sourced part is authorised provided it remains within the engine compartment.
 - Coolant hoses may be freely sourced.
 - An expansion (header) tank is authorised as are 'air-bleeds'.
- 6.16 Other engine parts** - all other parts of the engine may be freely substituted with direct replacement / aftermarket parts which may be freely sourced.

7.0 TURBOCHARGER – SPECIFIC REGULATIONS

7.1 Turbocharger –

- The series part is authorised, or a free part is authorised under the following conditions;
- The turbocharger assembly shall come from a recognised manufacturer of turbochargers (produced in a quantity of at least 2500 units),
- The turbocharger must be a single unit, with single stage compression and expansion, and must not have variable pitch or variable geometry.

An adapter is authorised between the exhaust manifold and the turbocharger on condition that the thickness of this adapter is less than 30mm.

7.2 Turbocharger restrictor - For all engines a 34 mm restrictor shall be fitted.

All the air necessary for feeding the engine must pass through this restrictor which shall respect the following specifications;

- The maximum internal diameter shall be 34 mm maintained for a minimum of 3 mm measured downstream of a plane perpendicular to the rotational axis situated at a maximum of 50 mm upstream of a plane passing through the most upstream extremities of the wheel blades (ref: FIA drawing 254-4).
- The diameter shall be complied with irrespective of the temperature conditions.
- The external diameter of the restrictor at its narrowest point shall be less than 40 mm which must be maintained over a distance of 5 mm to each side.
- The restrictor shall be made from a single material and may be pierced solely for the purpose of mounting and sealing.
- Mounting of the restrictor to the turbocharger must be carried out in such a way that two screws have to be entirely removed in order to detach the restrictor from the compressor housing.

7.3 All restrictors shall be wired for the application of seals by the Scrutineers. The wire must pass through the turbine housing, the compressor body (or mounting clamp screw, the compressor body and terminate after (with at least 100 mm of free wire) the two screws retaining the restrictor.

7.4 Intercooler (air exchanger): - The series part is authorised, or a free part is authorised under the following conditions;

- It is wholly contained within the parameters of the engine compartment and/or immediately forward of the compartment.

External water spray systems are authorised.

8.0 TRANSMISSION

8.1 The series gearbox or a free part gearbox may be used on the following conditions:

- It Internal components are free including the ratios
- Either 'H' pattern or sequential gear selection is authorised providing its operation is mechanical
- The gear lever shall be fixed on either the floor or the steering column and may be adjustable by mechanical means only
- The number of forward gears is free
- Paddle-shift systems are prohibited

8.2 The series **final-drive / differential unit** shall be retained, although all of the internal components are free, including the ratio.

8.3 Clutch: The series parts, or free parts are authorised under the following conditions;

- it shall have a maximum of 2 friction discs (centre plates), and
- if the original diameter is not retained, the minimum diameter of the centre plate/s is 183mm.

Clutch control is free provided it remains foot pedal operated

9.0 SUSPENSION

9.1 The series / homologated suspension mounting points and their location on the bodyshell shall be retained but may be reinforced by the addition of material that follows the original profile.

- 9.2 The series / homologated suspension components may be substituted with direct replacement / aftermarket parts provided compliance with the road transport regulations is maintained.
- 9.3 For Proto Cars any fabricated suspension mounting points shall respect the geometry of the donor car. (it shall be the constructor's responsibility to validate this requirement)
- 9.4 Hub assemblies shall in all cases be the series part
- 9.5 Front or Rear Sub Frames may be substituted with tubular fabricated units respecting the pick-up point dimensions of the series part and must be compliant with NZ Transport Regulations (ie be certified under the LVVC)

10.0 BRAKES

- 10.1 The series / homologated brake components may be substituted with direct replacement / aftermarket parts provided compliance except as follows;
- All brake components are commercially available parts from a recognised brake components manufacturer,
 - Only one caliper per wheel is authorised,
 - Only steel or aluminium is authorised for the caliper housing/body, and
 - A maximum of 4 pistons per caliper.
- 10.2 All brake components shall comply with the road transport regulations.

11.0 STEERING

- 11.1 Only steering parts sourced from a recognised vehicle manufacturer or a recognised free part that is LVVTA approved are authorised

12.0 WHEELS

- 12.1 Group N regulation applies – refer Appendix J 254 article 5.5

13.0 BODYSHELL / PANELS

- 13.1 The original or homologated silhouette of the car shall be maintained either as detailed in the appropriate FIA Homologation Form, including the dimensions, or from the manufacturers repair information, although the following alternative body panels are authorised respecting the following:
- Front bumper – of an identical design of equal or greater weight
 - The material shall be that of the series part and/or a composite material,
 - The minimum weight of the front bumper is 4.5 kg (except if the original bumper is kept),
 - The lower part of the front bumper may be detachable. No element of this detachable part may be more than 100 mm in height and protrude beyond the upper part, when seen in vertical projection, and
 - New fastenings may be created to enable ease of removal / replacement.
 - The series grille may be replaced with wire mesh
 - It is permitted to remove the original mounting / crash protection parts situated between the series bumper and the bodyshell
 - Front guards – of an identical design of equal or greater weight
 - Side skirts – of a similar design
 - Rear bumper - of an identical design of equal or greater weight

- Rear spoiler – must have a maximum of two horizontal elements and measure no wider than the external dimension taken at the “B” Pillar and the base of the side window. An R4 rear spoiler or copy is authorised
- Underbody protection may be added
- In no case is it permitted to add additional aerodynamic elements to the body

13.2 For Proto cars the body kit should replicate the homologated R5 kit applicable to the bodyshell

14.0 FUEL SYSTEM

14.1 The series **fuel tank** may be retained or an FT3-1999 compliant **fuel tank** from an FIA approved manufacturer is authorised. Schedule A applies relative to the ‘time limitation’ applied under the FIA standard. FIA compliant tank is required to compete in any International event, I E APRC/Pacific Cup.

14.2 **Fuel coupling** shall be installed in the fuel supply line for the purpose of taking fuel for compliance checking. Refer to NZRC Portfolio for specification.

END

ADDENDUM 1