HRC PRODUCTION CAR RULES

Implementation Date: [1] September 2019

1. SPECIFICATIONS OF AUTOMOBILES

1.1 Cars that comply with NZ 2KCup Regulations and NZ BMW E30 rules qualify as a Production Car

1.2 MODIFICATIONS PERMITTED OR OBLIGATORY

(a) Each automobile must remain unmodified, and identical in every respect to the standard production make/model as supplied by the original automobile manufacturer. Any modification or tuning practice not permitted by these regulations is expressly forbidden. The only work which may be carried out on the automobile is that necessary for normal servicing, or for the replacement of a worn or damaged part. The limits of the modifications and fittings permitted are specified hereinafter. Apart from these, a worn or damaged part shall be replaced only by a standard production part that is compliant with these regulations.

(b) The use of carbon fibre or carbon/Kevlar® composite, ceramic material or titanium alloy, is not permitted unless such component/material was fitted/used as a standard part by the manufacturer, or unless permitted in these regulations.

(c) There is no limitation on the capacity of an engine, including any equivalence factor.

1.3 REPLACEMENT OF COMPONENT

Where these regulations permit the replacement of a component that replacement component is free, unless the replacement component is otherwise restricted by these regulations:

"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.

2. ELIGIBILITY

2.1 ELIGIBLE MODELS

To be recognised by HRC as eligible - each make/model of automobile must be available for purchase to members of the public throughout the world from the normal commercial distribution network of the original manufacturer:

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[1]. PREAMBLE

The intent of these regulations is to enable competitors to suitably prepare a production automobile for competition. The purpose of freedoms granted herein is to provide for cost effective competition by increased serviceability and reducing maintenance costs whilst maintaining the inherent strengths or weaknesses of each automobile. This statement has no regulatory role and serves only to clarify the intent of these regulations.

(a) Only an automobile certified for road use in New Zealand and has a WOF (or capable of obtaining one) is eligible for recognition in this Series. An Automobile with low volume certification is not eligible for recognition in this Class

(b) The automobile price must be less than NZ$100,000, the price being defined as the Manufacturer Suggested Retail Price (MSRP) before on-road costs

(c) A minimum of 100 examples of the specific model/variant of the automobile must have been registered worldwide; and

(d) An automobile that may not be compliant with any of the above shall be considered by HRC on application.

2.3 NUMBER OF SEATS

(a) To be recognised as a Series Production Touring Car an automobile must have at least four seats, in compliance with the dimensions defined for touring cars by the FIA.

2.4 RACING WEIGHT

(a) Each automobile must comply with the racing weight specified by the manufacturer.

2.5 NON-GENUINE PARTS

There is no restriction on the use and source of supply for all fasteners, belts, gaskets, seals, flexible hoses, liquid carrying pipes, mechanical cables, bearings, clamps, spark plugs and spark plug leads, filters, batteries and battery cables, globes and LEDs, fuses and electro mechanical relays and windscreen glass provided no modification is made to facilitate the fitment of the replacement part, and the part complies with Article 1.2 and 1.3 of these regulations.

2.6 SUBSTITUTE COMPONENT

The use of a substitute component on a specific make/model is permitted only if it has been approved by HRC and the substitute component is detailed in the relevant automobile's MSNZ log book

3. SAFETY

Each reference to a Schedule within these regulations means a Schedule of the General Requirements for Cars and Drivers in the MSNZ Manual of Motor Sport. Each automobile must comply with each Schedule.

4. ENGINE

4.1 GENERAL

Unless specified otherwise in these regulations the tolerances for machining, finishing and weighing of engine components will be in accordance with Definitions – Technical, Measuring Tolerances of the General Requirements for Cars and Drivers in the MSNZ Manual of Motor Sport.

Note: A plastic shroud located in the engine bay, the sole purpose of which is aesthetic, may be removed.

4.2 ENGINE MOUNTS

It is permitted to replace the dampening or elastomer material of each engine mount provided the location, position and orientation of the engine and the attachment of the mount/s to the engine and body/cross-member remains standard.

4.3 CYLINDER BLOCK

(a) It is permitted to increase the cylinder block bore diameter up to a maximum of 0.6mm over the standard bore size.

(b) It is permitted to re-sleeve the cylinder bores of a sleeved block, or to fit a sleeve to a unitary block, provided that in each case the material used to sleeve the cylinder bore is either the same as the standard bore or is of cast iron.

(c) It is permitted to remove material from the head gasket contact face of the cylinder block up to a maximum of 0.25mm provided the engine compression ratio remains within the automobile manufacturer's permitted tolerance.

4.4 CYLINDER HEAD/S

It is permitted to remove material from the head gasket contact face of the cylinder head up to a maximum of 0.25mm provided the engine compression ratio remains within the automobile manufacturer's tolerance. It is permitted to re-grind a valve seat provided that the grinding process does not remove any of the original cylinder head casting material.

4.5 CRANKSHAFT

It is permitted to remove a maximum of 0.25mm of material from any crankshaft bearing journal.

4.6 BALANCING OF ENGINE COMPONENTS

It is permitted to balance any rotating or reciprocating component of the engine only by the removal of metal. A minimum of one of the respective components or individual aspects of the component being balanced must remain standard and have no material removed.

4.7 CONNECTING RODS

Must be original parts.

4.8 PISTONS

Must be original parts

4.9 PISTON RINGS

It is permitted to replace each piston ring provided:

(i) the number of rings, including compression and oil rings, remain the same as the standard piston;

(ii) the number of components per ring remains the same as the standard piston rings (i.e. a single piece compression ring may not be replaced by a two piece 'gapless' ring); and

(iii) the area of the piston ring which is in contact with the cylinder wall is not less than that of the standard ring.

4.10 CAMSHAFT/S

Must be original parts

4.11 LUBRICATION

It is permitted to modify the removable portion of the oil sump provided any material added is identical and no modifications are made to facilitate the fitment. It is permitted to modify the oil pickup and to add an oil separator tank to a crankcase breather line.

4.12 THROTTLE

(a) Where an automobile is fitted with an electronically controlled throttle valve/s, it is permitted to replace the electronic assembly of the throttle valve/s with a mechanical assembly provided the replacement throttle valve/s respect the exact shape and dimensions of the standard assembly in each area that is in contact with the intake air for the engine.

(b) Where a throttle valve/s is replaced it is permitted to replace or modify each part of the pedal assembly, the sole function of which is to operate the replacement throttle control valve, as well as fit

a throttle cable, associated mounting bracket/s and the replacement or addition of a throttle position sensor. It is permitted to fit a duplicate throttle cable and associated mounting bracket/s.

(c) A cruise controller unit/s may be disconnected and/or removed.

4.13 PULLEYS

Each pulley that is fitted to an engine ancillary (e.g. water pump, alternator) is free. It is permitted to replace a drive pulley that is fitted separately to the crankshaft balancer by way of fasteners, in which case this drive pulley shall be free. Each engine ancillary drive belt may be replaced provided it respects the standard type and width.

4.14 SUPERCHARGED ENGINES

(a) Each supercharged engine must comply with the maximum manifold pressure as listed in the relevant manufacturers specification for that vehicle.

4.15 ELECTRONIC ENGINE CONTROL UNIT (ECU)

(a) The use of traction control/launch control is prohibited, unless the system is standard. In this case, the traction control/launch control system may only be operated by the original ECU utilising the manufacturer's standard software and standard calibration settings.

b) It is permitted to use a Pit Lane Speed Limiter only for the purpose of limiting the automobile speed in Pit Lane. It is permitted to fit a method of actuation of a pit lane speed limiter.

4.16 COOLING SYSTEM

(a). It is permitted to remove or modify any cooling fan shroud. No additional modifications are permitted to be made to facilitate the fitment of a replacement radiator.

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4.17 EXHAUST

It is permitted to remove the internal matrix component of a catalytic converter only if a catalytic converter is an integral part of the retained exhaust manifold.

4.18 AIR CONDITIONING COMPONENTS

It is permitted to remove from the engine compartment any component associated with an air conditioning system.

5. TRANSMISSION

5.1 MOUNTS

It is permitted to replace the dampening or elastomer material of the transmission mount/s provided the location, position and orientationand the attachment of the mount/s to the transmission and body/crossmember/s remains standard.

5.2 GEARBOX

It is permitted to replace each shift fork, shift hub key and shift bushing provided no additional modification is made to facilitate their fitment. It is permitted to fit an extension to the gearbox breather.

5.3 FLYWHEEL

Original part

5.4 CLUTCH

It is permitted to replace the clutch driven plate/s provided the number of plate/s remains standard and the plate/s are not made from a carbon fibre material. It is permitted to replace the clutch pressure plate provided the replacement assembly remains mechanically identical to the standard assembly.

5.5 DIFFERENTIAL AND FINAL DRIVE ASSEMBLY

. It is permitted to add an extension to the differential breather.

5.6 ELECTRONIC TRANSMISSION CONTROL UNITS

It is not permitted to use an electronically or automatically controlled or adjusted drive system, unless such a system is fitted as standard, in which case, the system may only be operated by the standard electronic transmission control unit utilising the manufacturer's standard components and wiring.

6. SUSPENSION

6.1 GENERAL

It is permitted to adjust the suspension geometry within the range of adjustment provided for by the manufacturer and/or by those permitted within these regulations.

6.2 COIL SPRINGS

Refer 2K Cup Regulations

6.7 ATTACHMENT POINTS

(a) It is permitted, for an independent suspension system, to relocate, in a horizontal and lateral plane, the mounting point/s of the lower and upper control arms to a maximum distance of 25mm each side. It is permitted for the track of the modified axle to be increased to a maximum of 50mm.

(b) It is permitted to replace the upper insulating/bearing block of a MacPherson strut, provided that the original and unmodified attachment points on the bodyshell are utilised.

(c) It is permitted to reinforce each suspension attachment point provided the material used follows the original shape and is in contact with the standard attachment point throughout.

6.8 SUSPENSION BUSHES

(a) It is permitted to replace each elastomer suspension pivot point bush and subframe mounting bush by a dimensionally identical bush made from another elastomer material.

(b) Should a suspension bush incorporate an outer metal shell and/or a central crush tube, each of these components will be regarded as part of the bush. Each outer shell or central crush tube must respect the dimensions of the standard bush.

(c) Should a suspension bush be integrated with a secondary component, such as a suspension arm, only the elastomer material shall be regarded as the bush.

6.9 RIDE HEIGHT

Each fully sprung part of the automobile, except for the exhaust system, must be at least 100mm above the ground when measured at any point within the wheelbase. The automobile ride height shall be measured with the driver, and all normal and necessary equipment fitted.

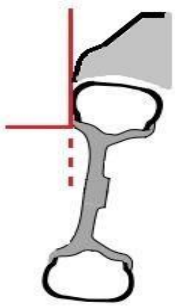
6.10 STEERING

(a) It is permitted to render the locking system of an anti-theft steering lock inoperative.

(b) It is permitted to replace the steering wheel provided the rim of the replacement steering wheel remains within 50mm of the location of the rim of the original steering wheel. It is permitted to fit a quick release mechanism for the steering wheel.

7. WHEELS AND TYRES

Each wheel and tyre must be fitted so that the upper part of the tyre, down to the flange over the wheel hub centre must be within the perimeter of the automobile when viewed vertically from above, see Drawing 1.



Drawing 1.

7.1 WHEELS

(a) It is permitted to replace a wheel, subject to a replacement wheel complying with the maximum diameter and maximum width for each listed axle and each RVD Variant as listed on the relevant automobile's manufacturers spec

7.2 TYRES

Original size and must be to WOF standard

8. BRAKES

8.1 ANTI-LOCK BRAKES (ABS)

(a) It is permitted to render an ABS system inoperative by:

(i) the disconnection of electrical power to the electronic operating system. If this method is utilised it is permitted to mount a driver operated switch to perform this function; or

(ii) the replacement of the main ABS actuating system by the fitment of a junction block. No modification to a brake line is permitted.

8.2 ELECTRONIC BRAKEFORCE DISTRIBUTION (EBD)

Where an automobile is fitted with EBD, it is permitted to either replace the original master cylinder with a mechanically identical unit incorporating a mechanical proportioning valve, or add a mechanical proportioning valve to a brake line provided such a valve is not adjustable within the cockpit.

8.3 POWER-ASSISTED BRAKING

(a) It is permitted to render the vacuum assist of the braking system inoperative. It is permitted to modify the servo unit by replacing an internal valve system, each diaphragm and each pushrod with a solid rod linking the standard and unmodified brake pedal to the master cylinder.

(b) It is permitted to fit an additional vacuum reservoir tank provided that the tank is mounted under the floor pan of the automobile. No additional modification is permitted except for the drilling of holes for mounting purposes and the addition of a one-way valve and vacuum line/s.

8.4 PADS

It is permitted to replace each brake pad with a brake pad of free design and material compound. .

8.5 ROTORS

Original equipment or to the same specification

8.6 CALIPERS

Original equipment or to the same specification

8.7 PARK BRAKE

It is permitted to render the park brake inoperable by the removal of those components the sole purpose of which is to operate the park brake.

8.8 BACKING PLATES/DUST SHIELDS

It is permitted to remove a brake/hub backing plate/dust shield. It is permitted to modify or replace the brake/hub backing plate/dust shield to facilitate the fitment of brake cooling duct/s.

8.9 BRAKE COOLING

It is permitted to remove a blanking plate or covers or a fog lamp assembly (and associated hardware) located in the lower section of the standard front bumper bar, solely for the purpose of providing additional cooling air to the front brakes.

8.10 BRAKE DUCTS

(a) It is permitted to fit a single duct to the braking system of each front wheel, solely to direct ambient air from an existing unmodified opening in the standard front bumper bar to each front brake rotor. Each brake duct must be wholly contained within the external shape of the standard bodywork and must not be visible when viewed from the front of the automobile (except through an opening in the front of the duct).

(b) Each brake duct must not exceed 80mm inside diameter except for the brake duct fitting: (i) within 150mm of the external surface of the standard front bumper bar; and (ii) within 80mm of the brake rotor.

9. FUEL SYSTEM

9.1 FUEL TANK

The original fuel tank is to be retained with no increase in volume

9.2 FUEL PUMP/S

Original equipment

9.3 DRY-BREAK FITTINGS FOR REFUELLING

(a) A Dry-Break system compliant with Schedule A may be fitted.

(b) It is permitted to modify a standard fuel tank to accept a dry-break refuelling system.

(c) The filling and vent point may either be located inside the luggage compartment, on the boot lid or rear hatch, on the rear valence panel or on a rear quarter panel. If the filling and vent point is not isolated from the cockpit special care is required in considering its location to ensure it is protected from damage in an incident.

(d) In each case the filling and vent fittings shall be mounted as close as practical to the fuel tank. All associated plumbing must be no larger than the outside diameter of the exit of the dry-break and vent bottle bulb. The route of the filler and vent bottle pipes must be as short as practical.

9.4 FUEL

Only Pump Fuel is permitted as detailed in Schedule A. With the exception of ambient atmospheric air and the permitted fuel, no other substance may be added to the intake charge of the engine.

10. ELECTRICAL EQUIPMENT

10.1 DATA STORAGE DEVICE

11. BODYWORK

11.1 GENERAL

(a) It is permitted to fit a protective cover to a forward facing lamp provided that it has no influence on the aerodynamics of the automobile.

(b) Soundproofing material and trim fitted to the underside of the bonnet that is not visible from the outside may be removed.

11.2 JACKING

(a) Each jacking point may be strengthened by the addition of metal plate/s, relocated and/or increased in number provided that each jacking point does not exceed a surface area of more than 150mm x 150mm, follow the contours of the original structure.

(b) It is not permitted to use or fit any type of on-board jacking system to the automobile.

11.3 WINDOWS

(a) Each window must remain as fitted to the automobile as standard.

(b) The original glazing material of each window shall be retained.

(c) On an automobile with four doors it is permitted to fit an insert of a clear plastic material in part of the glazed area of a rear door. The plastic glazing may incorporate a single NACA-style duct. The original window glass must be retained and must secure the plastic insert.

(d) On an automobile with fewer than four doors it is permitted to fit an insert of clear plastic material in part of the glazed area of a front door. The plastic glazing may incorporate a single NACA-style duct. The original window glass must be retained and must secure the plastic insert.

12. INTERIOR

12.1 DRIVER'S SEAT

The seat for the driver may be replaced by one that is compliant with the FIA 8855/99 standard or FIA 8862 – 2009 Standard. The seat may incorporate carbon fibre or carbon/Kevlar® material. The use of a seat that complies with the FIA 8862 – 2009 Standard, or a seat that complies with the FIA 8855/99 Standard and which incorporates a side head support structure, is strongly recommended.

12.2 COCKPIT

(a) The following components may be removed from the cockpit:

(i) roof padding and lining;

(ii) carpets and insulating material;

(iii) front passenger and rear seats;

(iv) restraint systems and supplementary restraint systems;

(v) boot lining, spare wheel and wheel changing equipment;

(vi) information and entertainment systems and associated wiring.

(b) It is not permitted that any such deletions from the cockpit shall result in any additional modifications. Any void/s created by such removal of components must be closed in a professional manner using suitable panel/s.

(c) A door trim shall be fitted to each door. Each door trim may be partly or completely replaced with a trim from an alternate material

(d) The only components which are permitted in the cockpit are:

(i) Safety equipment and structures;

(ii) Tool kit;

(iii) Additional instruments;

(iv) Electronic equipment;

(v) Driver cooling system;

(vi) Ballast;

(vii) Driver ventilation equipment;

(viii) Driver drink system;

(ix) Radio system for two –way communication between the driver and their team;

(x) Driver identification light and transponder.

(e) None of the above items may be installed in a manner which will actually or potentially hinder the driver's vision, hinder the ability for the driver to extricate from the automobile or affect the engine power or influence the steering, transmission, brakes, or roadholding of the automobile in a direct or indirect manner. Each of the items shall be suitably secured.

(f) Each control must retain its standard function although it is permitted to adapt each control to effect its use and accessibility (e.g. a longer handbrake lever, an additional flange on the brake pedal).

10 CLASSES

Engine capacity Factors

Piston engine – normally aspirated	1.00
Piston engine – supercharged	1.5
Rotary engine – normally aspirated	1.80
Rotary engine – supercharged	3.06
Piston diesel – supercharged	1.50
Piston Engine –Turbo Charged	1.8

CAPACITY CLASSES

E	0 – 1600cc
D	1601 – 2000cc
C	2001 – 3000cc
B	3001 – 6000cc
A	6000cc plus

AGE/SPECIFICATION CLASSES

Class 1	Production cars post 2005
Class 2	Production cars pre December 31st 2004
Class 3	2KCup
Class 4	BMW E30