

World Time Attack Challenge

TECHNICAL REGULATIONS FOR CLUBSPRINT

Version 1

2019

TECHNICAL REGULATIONS - 2019

GENERAL REGULATIONS

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The regulations of the World Time Attack Challenge (WTAC) are designed to ensure the highest level of safety. Each driver and vehicle must comply with all written and oral directions of the event promoters and/or event officials. Failure to comply may result in immediate exclusion from the event, with no refund of entry fees.

1. PREAMBLE

- 1.1 Each vehicle must remain in compliance with all provisions of the regulations contained herein and relevant CAMS regulations at all times during the event. Vehicles may be checked for compliance at any time throughout the event, refusal to comply will result in a penalty up to exclusion in conjunction with the Stewards.
- 1.2 Any aspect relating to the construction, modification and/or preparation of each vehicle that is not specifically authorised in these regulations or the relevant CAMS regulations is not permitted.

2. VEHICLES

- (a) Each vehicle must be a recognised model from a vehicle manufacturer (see definitions).
- (b) A vehicle defined as an Open Wheel vehicle, Clubman, Kit Car or centre-steered vehicle are NOT permitted, as determined by the event promoter.
- (c) Each vehicle must have only four (4) wheels with the steering acting on the front wheels only unless rear wheel steering is originally fitted, in which case the original system may remain.
- (d) Each vehicle may only contain one conventional internal combustion engine, save for a Pro Class vehicle which may be fitted with a KERS or electric power type device.
- (e) Each vehicle must comply with the WTAC Safety Regulations.

3. COMPETITIONS

THE EVENT WILL COMPRISE FOUR COMPETITIONS:

3.1 Clubsprint:

- (a) Designed to be the entry level class for WTAC with modification restrictions and tyre limits to contain costs.
- (b) Professional drivers as determined by the event promoter are not permitted in Clubsprint.
- (c) A Supercar as determined by the vehicle list within these regulations is not permitted.
- (d) Each Clubsprint vehicle must use the Advan AD08 Neova control tyre.

3.2 Open:

- (a) Further freedoms allowed beyond Clubsprint, whilst retaining some restrictions.
- (b) Each Driver must be nominated on the entry form and may not drive more than two vehicles within the Open class.

- (c) Each Open vehicle must use the Advan A050 Control tyre.

3.3 Pro Am:

- (a) This class is for the owners of Pro or Open vehicles who want to compete without the presence of professional drivers as determined by the event promoter.
- (b) All regulations are as per the Pro Class with the exception of the driver rule. Entry is only by application.
- (c) Each Pro Am vehicle must use the Advan A050 Control tyre.

3.4 Pro:

- (a) The highest level of Time Attack racing for professional teams. Additional freedoms are allowed beyond Open Class.
- (b) Pro is only by invitation, by application to the event promoter. Invitations will be at the sole discretion of the event promoter.
- (c) Each Driver must be nominated on the entry form and may not drive more than two vehicles within the Pro class.
- (d) Each Pro vehicle must use the Advan A050 Control tyre.

4. VEHICLE SIGNS

- (a) Each compulsory event sponsor and event promotor decal, including numbers, as supplied by the event promoter must be placed on the vehicle as per instructions provided, by the event promoter. A vehicle found to be on track without each compulsory decal may be excluded from results.
- (b) Other than the event tyre supplier, no signage or livery of any tyre company larger than 500mm long by 200mm high and no more than four individual signs per vehicle is to be displayed on any competing vehicle.

5. GRANDFATHER CLAUSE

In certain and restricted circumstances the event promoter may allow a vehicle of significant WTAC competition history to compete under the previous WTAC regulations. This will be at the sole discretion of the event promoter and any vehicle approved may be subject to a penalty as determined by the event promoter. This penalty may include the addition of weight over the minimum required, a tyre restriction or other penalty as determined and advised by the event promoter.

SAFETY REGULATIONS

1. DRIVER SAFETY APPAREL

1.1 As a minimum, each driver is required to wear the following which must be presented for inspection at pre-event scrutiny:

- (a) a Helmet complying with the requirements for a National Speed Event in accordance with Schedule D of the CAMS Manual. If using a Frontal Head Restraint (FHR), such as a HANS® device, then the helmet must be compliant for use of a FHR;
- (b) footwear, socks and gloves each compliant with FIA 8856-2000 standard; and
- (c) in an open car, goggles or a visor with a lens material other than glass to a minimum of AS1609-1981 standard are mandatory.

2. APPAREL FOR WTAC CLUBSPRINT

2.1 For WTAC Clubsprint, in addition to Article 1 Driver Safety Apparel, as a minimum each driver shall be required to wear the following which must be presented for inspection at pre-event scrutiny:

- (a) non-flammable clothing extending from neck to wrist to ankles (apparel of nylon or similar material is forbidden).

2.2 The following is highly recommended for Clubsprint:

- (a) The use of a FHR device is highly recommended; and
- (b) The use of apparel, such as a Race suit, of a higher standard.

3. VEHICLE SAFETY

Each vehicle must comply, as a minimum, with Schedule A and B of the CAMS Manual. The following is also required for WTAC Clubsprint:

- (a) a minimum of one (1) hand held fire extinguisher, with a minimum capacity of 900g, compliant with Schedule H of the CAMS Manual. **It is HIGHLY RECOMMENDED to fit an on-board and plumbed in fire extinguisher system (fire bomb) of a minimum of 2.4litre capacity and recommended to comply with the FIA requirements;**
- (b) a convertible type vehicle must be equipped with a hard top or a roll cage that complies with CAMS regulations, and/or meets the approval of the Chief Scrutineer;
- (c) a minimum of a four (4) point Safety Harness in compliance with Schedule I of the CAMS Manual;
NOTE: If using a FHR the minimum requirement is a 5 point Safety Harness.
- (d) a seat for the driver that is suited to the use and fitment of a Safety Harness. The use of a motor sport seat compliant with FIA standard 8855-1999, as a minimum, is highly recommended;
- (e) a battery isolation (master) switch, which effectively isolates all electrical circuits from the battery and stops the engine, is highly recommended;
- (f) original brake lights fitted which must operate when the brake is applied; and
- (g) be fitted with a minimum of two functional rear vision mirrors.

4. ROLLOVER PROTECTION

- (a) Rollover protection is strongly recommended for each Clubsprint vehicle.
- (b) Each vehicle with a performance level, based on lap time, quicker than a 1.45 min lap of Sydney Motorsport Park Grand Prix Circuit must be fitted as a minimum with a CAMS Type 2 Safety Cage (half cage).

5. PRE EVENT SCRUTINY REQUIREMENTS

5.1 Each vehicle must present for scrutiny in a clean, tidy and ready to start condition. Scrutiny must be completed before the vehicle shall be permitted to take part in the competition or an on-track activity.

5.2 Each vehicle that holds a CAMS Log Book must present the log book at scrutiny.

5.3 Following Scrutiny each vehicle will be fitted with a sticker confirming that the vehicle has passed scrutineering prior to it being able to compete.

5.4 The event promoter will be the sole judge of eligibility for each vehicle in each WTAC class, in conjunction with the Chief Scrutineer.

5.5 The following details further requirements for each vehicle, in accordance with the CAMS Manual:

- (a) ensure all loose objects are removed from the vehicle;
- (b) have each battery firmly clamped and the battery location identified by a blue triangle;
- (c) be fitted with two separate fastening systems on any bonnet or other panel where the leading edge can be raised;
- (d) be fitted with a visible towing point (capable of accepting a 40mm OD cylindrical test object) fitted forward of the front axle and rearward of the rear axle and capable of towing the automobile on a sealed surface with its wheels locked. Where a tow point is obscured, each tow point shall be marked with the word "TOW" of a contrasting colour marking the location of each tow point;
- (e) have fitted an adhesive cover to any forward-facing glass components, save for the windscreen;
- (f) have the engine compartment sealed completely from the cockpit;

- (g) be constructed to minimize the entry of foreign matter into the driving compartment from the road or road wheels;
- (h) have any propeller shaft and/or universal joint, if passing through the cockpit, fitted in a fixed casing;
- (i) be fitted with a device or devices that shall protect any longitudinal propeller shaft from striking the ground in the event of a component failure;
- (j) have any driving chain effectively guarded;
- (k) have any container within the cockpit which can hold more than 500mL of hot liquid (other than a series heater core) enclosed in a sealed compartment isolating it from the cockpit;
- (l) have each fuel tank vented externally to the bodywork;
- (m) be fitted with a bulkhead constructed from a flame - and liquid-proof material. This bulkhead shall effectively seal the cockpit from any fuel tank, fuel system pumps/collectors or refuelling system. If the material is constructed from a polycarbonate material it shall be a minimum of 6mm thick;
- (n) if fitted with any crankcase breather discharging to the atmosphere, each breather be vented into a catch tank of minimum capacity of two litres for engines up to a swept volume of 2000cc or three litres for over a swept volume of 2000cc;
- (o) if fitted with any engine radiator coolant vent discharging to the atmosphere, each coolant vent be vented to a catch tank of a minimum capacity of one litre;
- (p) each window or windscreen fitted made from a material which is clear or, if tinted compliant with Australian Standards AS2080;
- (q) if fitted with rigid brake pipes have such pipes made of steel bundy tubing or equivalent. The installation must be such to protect the pipes against vibration and damage;
- (r) if fitted with any camera/video recorder attached to the vehicle it must be securely mounted and approved by the Chief Scrutineer. Suction cup mounts will not be permitted to be fitted to the external surfaces of the vehicle without the addition of a secondary tether secured to the vehicle;
- (s) be fitted with a return mechanism which, in the event of any throttle linkage failure, will close each throttle;
- (t) be fitted with a driver-operable reverse gear; and
- (u) be fitted with a steering wheel not incorporating any wood, unless such is the original component of the vehicle.

6. DURING EVENT SCRUTINY

Each vehicle may be required, at the request of a scrutineer, to undergo any further check or inspection at any time during the event, and:

- (a) any vehicle found to be leaking oil or fluids whilst competing will be suspended from the event until the Chief Scrutineer / Clerk of the Course is satisfied that action has been taken to rectify the leak;
- (b) any vehicle involved in any on track incident, including fluid leaks, component failure or any form of accident must have the vehicle checked and cleared by the Chief Scrutineer before it will be allowed to continue to compete in the event. Failure to do so may result in exclusion from the event;
- (c) should there be a further reoccurrence of any on track incident whilst competing then that vehicle will be deemed in breach of the regulations and may be applied a further penalty that may include exclusion from the event.
- (d) each tyre for use must be marked and recorded for each vehicle before use in the WTAC competition by the appointed tyre scrutineer.

PERMITTED VEHICLE MODIFICATIONS

Each vehicle must be presented as per the OEM vehicle (see definitions) apart from the freedoms allowed in these regulations.

FURTHER NOTE:

A vehicle that does not meet the regulations, requirements or definitions listed will need to be considered on a case-by-case basis. If your vehicle does not have shock towers, frame rails, or any other items listed or you are unclear (for example a vehicle which came equipped with push rod suspension) you must submit your vehicle modifications for approval prior to the event. Any approval granted will be at the discretion of the event promoter.

1. BODY

- (a) Alternative materials are permitted for the Front Bar, Bonnet, Side Skirts, Rear Bar and Boot provided they follow the same shape as the OEM part.
- (b) Bonnet vents are allowed provided they do not change the shape of the bonnet.
- (c) Alternative materials are permitted for front and rear flares.
- (d) Wheel arch modifications of OEM fenders to allow fitment of the control tyre are permitted.
- (e) OEM fenders must be of original material however flare extensions are permitted to cover the control tyre.
- (f) 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:



- (g) The remainder of the vehicle body must remain as per OEM.
- (h) Headlight assembly must remain as per OEM and be fully operational.

2. CHASSIS

- (a) Each vehicle must retain the original firewall.
- (b) Modifications can be made to the firewall for transmission clearance, wiring or roll cage, however the resulting firewall must:
 - (i) resemble the original;
 - (ii) continue to be structural;
 - (iii) create a seal between the forward area and the cockpit; and
 - (iv) only use a replacement material that must be of the same thickness as the original firewall and of a similar material (e.g., steel for steel, aluminium for aluminium).
- (c) Original shock absorber (i.e. Macpherson Strut) towers must be retained.

- (d) No fully tubular construction or composite monocoques are permitted.

3. MINIMUM VEHICLE WEIGHTS

Minimum weight will be deemed to include all liquid tanks at normal levels and with a maximum of 5 litres of fuel. All weights are without driver. All vehicle weights must be based on a "production vehicle status" and not a "factory special" with a minimum of 500 of the vehicle produced worldwide. Minimum weights for vehicles is detailed in Appendix A - Vehicle Weights Table.

Minimum weight for Clubsprint will be determined by the manufacturer's original specifications for the lightest version of that particular model of vehicle, minus 5%. E.g. Mitsubishi Lancer Evo 9 not merely Mitsubishi Lancer. Vehicles with original weight exceeding 1500kg will not apply the 5% rule but will have a minimum allowed competition weight of 1425kg. Naturally aspirated vehicles are permitted an additional 10% decrease to the minimum weight.

4. AERODYNAMIC AIDS

4.1 Strength and method of aero component fastening will be checked thoroughly at scrutineering and if found to be unsuitable the vehicle will not be permitted to start until improvements are made to meet approval of the Chief Scrutineer.

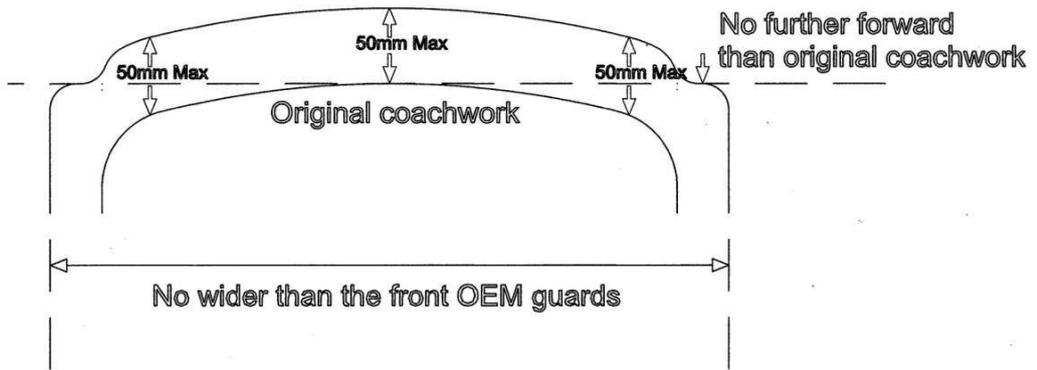
4.2 Active aero including any hydraulically or electronically actuated or movable components are not permitted in any class.

4.3 All measurements have a tolerance of +/-3mm to allow for inaccuracy of hand measurement and thermal expansion.

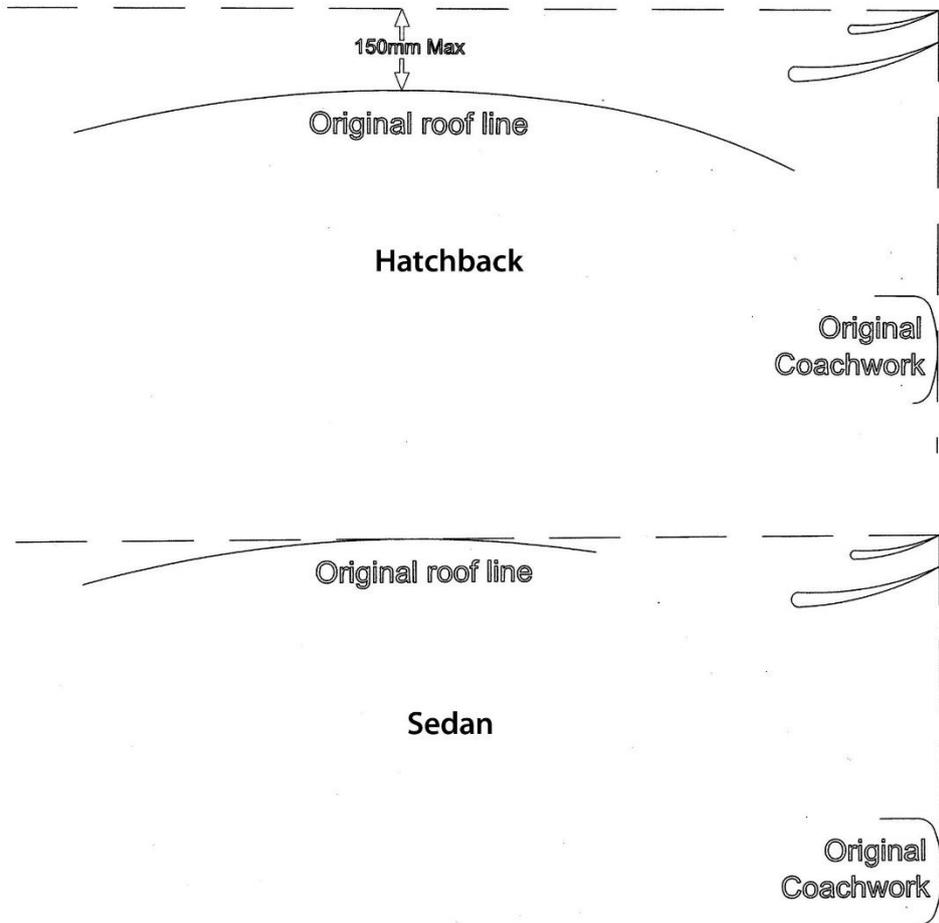
4.4 The following is permitted for Clubsprint:

- (a) A Front under tray/splitter which must follow completely the outline of the OEM front bar and may extend 50mm ahead of the vehicle OEM bodywork, no further rearward than the front axle and no wider than the original front guards, see Drawing 2.
- (b) Front canards/winglets are permitted but must not extend wider than 50mm beyond the OEM bodywork.
- (c) An OEM rear wing or an aftermarket rear wing with up to two separate elements may be used in an unmodified form. The width of the wing must not exceed the widest part of the body. Only one aftermarket wing per vehicle is permitted.
- (d) The rear wing must be fitted as such to be over the body or boot in plan view. No portion of the wing can be higher than a horizontal line from the highest point of the roof sheet metal except in the case of a hatchback where the wing can be no higher than 150mm from the highest point of the wing to the roofline and must be on the rear portion of the roof.
- (e) No part of the rear wing may not extend any further rearwards than the most rearward point of the rear bumper, see Drawing 3.
- (f) Rear diffuser/ under tray must not extend beyond the vehicles bodywork and forward only to the rear axle centre line.
- (g) Aftermarket side mirrors are permitted.
- (h) Side skirts may not extend inboard more than 250mm under the vehicle, see drawing 4.

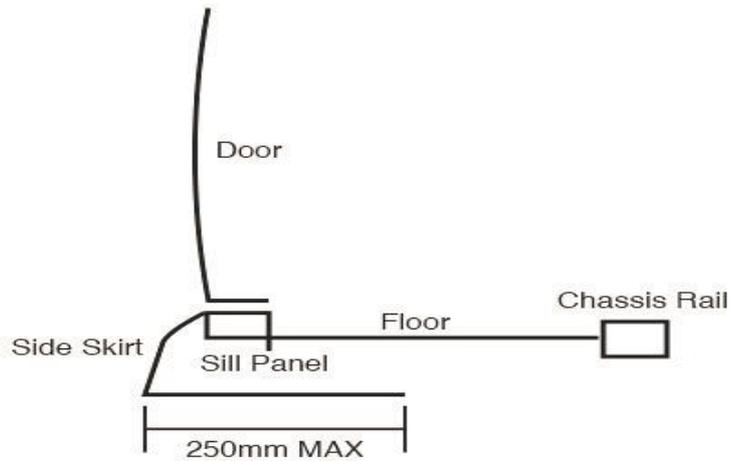
Drawing 2:



Drawing 3:



Drawing 4:



5. ENGINE

5.1 Each vehicle must use a Commercial Fuel, E85 or Unleaded Racing Fuel in accordance with Schedule G of the CAMS Manual.

5.2 Engine changes during the event are permitted subject to the approval of the Chief Scrutineer.

5.3 The Mazda 26B four rotor is considered a production engine by the promoter.

5.4 For Clubsprint:

- (a) Engine modifications are free except that the vehicle must retain an engine from that vehicle OEM and that has the same number of cylinders or in the case of a rotary engine, rotors must remain as per the original.
- (b) The use of a turbocharger or supercharger is allowed.

NOTE: For example, if the vehicle is a Toyota that came with a four cylinder engine the vehicle can be fitted with any Toyota 4 cylinder engine that can also use forced induction.

6. COOLING SYSTEM

(a) Each cooling system hose and clamping system may be replaced with an alternate hose, pipe and/or clamping system.

(b) The engine coolant radiator may be replaced with an alternate radiator of free design and size in accordance with the following:

- (i) A replacement radiator shall be fitted in the same location and plane as the original with forward or aft re-positioning of the radiator up to a maximum of 75mm from the OEM position permitted; or

For a vehicle which from the OEM is turbocharged and fitted from the OEM with a top-mount intercooler it is permitted to fit a replacement radiator in the same location as the original with forward or aft re-positioning of the radiator up to a maximum of 75mm from the OEM position permitted and the plane of the radiator in this case is free.

- (ii) It is permitted to modify the original radiator support panels, or radiator support structures only for the fitment of the replacement radiator, the addition of fasteners and for the passage of radiator pipe work and/or hoses only within the location of the pipework and/or hoses. Engine coolant radiator fan is free.

(c) A turbocharger/supercharger intercooler may be replaced or fitted of free design. Each intercooler must be fitted within the vehicles OEM bodywork. It is permitted to modify the bodywork only for the addition of fasteners and for the passage of intercooler pipe work and/or hoses only within the location of the pipework and/or hoses.

- (d) It is permitted to add an oil cooler for the engine, and/or transmission/differential and/or a power steering fluid cooler. The location of an oil cooler is free provided each oil cooler is fitted within the original bodywork. It is permitted to modify the bodywork only for the addition of fasteners and for the passage of oil cooler pipe work and/or hoses only within the location of the oil cooler pipework and/or hoses.
- (e) Additional ducting for cooling systems may be fitted provided no modification is undertaken to the original bodywork, save for the addition of fasteners for duct mounting. Any additional ducting must be contained within the bodywork.

7. FUEL SYSTEM

7.1 All fuel systems must comply with all safety regulations required in these regulations.

- (a) Fuel pumps, fuel regulators and fuel lines are free.
- (b) One additional tank may be installed with a maximum capacity of 5 litres.
- (c) Fuel tank foam and internal baffling of fuel tank permitted.

8. ELECTRICAL SYSTEM

- (a) Replacement Engine Control Modules permitted.
- (b) Modification of the OEM wiring harness permitted.

9. EXHAUST

9.1 The complete exhaust system for Clubsprint may be modified or replaced in accordance with the following:

- (a) It must comply with 95db @ 30m noise restrictions.
- (b) The exhaust must exit within 100mm of the original location and shall not protrude more than 100mm beyond the rear most portion of the bodywork.

10. TRANSMISSION, DIFFERENTIAL AND DRIVELINE

- (a) Clutches and flywheel are free.
- (b) Gearbox and differential may be replaced by another of free design.
- (c) Internal components of transmission and differential are free.
- (d) The bell housing is free.
- (e) Automatic transmissions if provided as an option by the OEM for that model are permitted.
- (f) OEM mounting points for the Transmission and Differential must be used.
- (g) Sequential change systems are not permitted unless originally fitted by the OEM to that model of vehicle.

11. SUSPENSION

11.1 Each measurement will have a tolerance of +/-3mm to allow for inaccuracy of hand measurement and thermal expansion.

11.2 Minimum ride height for Clubsprint is 80mm: Each fully sprung part of the vehicle, except for the exhaust system, must be at least the specified height above the ground when measured at any point within the wheelbase. The vehicle ride height will be measured without the driver and tyre pressures at a minimum of 20psi.

11.3 For Clubsprint:

- (a) Each spring and damper/shock absorber may be replaced however the number of each component per vehicle must remain as OEM.
- (b) Each suspension bush is free.

- (c) OEM mounting points of the suspension may be reinforced and altered in design but not in location.
- (d) Each sway bar is free.
- (e) Each vehicle must use OEM chassis mounting points and uprights but suspension geometry and arms are free.
- (f) OEM hubs/uprights must be retained on the vehicle but can be from a different model of the same make of vehicle (i.e. any Honda for a Honda or any Subaru for a Subaru etc.).
- (g) Aftermarket suspension sub frames are not allowed.

12. BRAKES

12.1 With the exception of computer controlled diagonal or transverse braking systems, which are not permitted in any class unless originally fitted, the complete braking system is free except for:

- (a) Original mounting points must be used.

13. TYRES

13.1 Tyre restrictions will apply to all competition classes as follows:

- (a) Each tyre must be marked by the organisers at scrutineering.
- (b) The use of any tyre softening chemical or treatment on tyres is strictly prohibited and will result in immediate exclusion from the event.
- (c) Random tyre checking will be conducted throughout the event, failure to comply will result in a penalty up to exclusion.
- (d) Tyre sizes are defined by width(mm)/aspect ratio(profile)/diameter(inch).

13.2 Tyres for Clubspint:

- (a) Must use Advan Neova AD08.
- (b) A maximum of 8 tyres may be used throughout the event.
- (c) Each tyre on a four (4) wheel drive vehicle must be no wider than 265 unless specified larger by the OEM for that particular vehicle in which case the tyre must match the OEM size specification.
- (d) Each tyre on a two (2) wheel drive vehicle must be no wider than 295 unless specified larger by the OEM in which case the tyre must match the OEM specification.
- (e) If the tyre is not available in the Advan size range, then the vehicle must use the OEM specification tyre or a similar tyre deemed appropriate which must be checked and approved by the organisers prior to competing.

13.3 Tyre Size Restriction for Ultra-Light Vehicles

- (a) An Ultra-light vehicle is a vehicle that in modified format, as per Appendix A for vehicle class weights, has a competition weight of less than 1001kg for 4WD vehicles, 901kg for RWD vehicles and 801kg for FWD vehicles.
- (b) Any vehicle falling into these categories the following tyre size restrictions will apply:

4WD (tyre width in mm)	RWD (tyre width in mm)	FWD (tyre width in mm)
<750kg = 205 tyre	<700kg = 205 tyre	< 700kg = 225 tyre
751kg-800kg = 225 tyre	701kg-750kg = 225 tyre	701kg-750kg = 255 tyre
801kg-950kg = 255 tyre	751kg-800kg = 255 tyre	751kg-800kg = 265 tyre
951kg-1000kg = 265 tyre	801kg-900kg = 265 tyre	>801kg = 295 tyre
>1001kg = 295 tyre	>901kg = 295 tyre	

14. WHEELS

- (a) Each wheel is free and size is unrestricted but must be suited to the tyre size used.
- (b) A maximum of one metallic spacer may be used behind each wheel. Consideration must be given to wheel stud length when fitting spacers.
- (c) Maximum spacer size is 30mm per wheel.

15. INTERIOR

Interior is free save for the following exceptions:

- (a) Local modification to the interior for fitment of a roll cage is allowed.
- (b) Complete original dash must be retained; additional switches and gauges may be added.
- (c) Heater core, air conditioning and related components that are not visible on the dash may be removed.
- (d) Original door trims must be retained.
- (e) Replacement instrument cluster is permitted.
- (f) Removable steering wheels are permitted if the vehicle is fitted with a roll cage as a safety precaution with regard to entry and exit access.

16. VEHICLE SUPERCAR LIST (INELIGIBLE FOR CLUBSPRINT CLASS):

Audi R8
Ferrari - All
Lamborghini - All
Nissan GTR (R35)
Porsche - All except 924/944
Chevrolet C6 Zo6, ZR1 Corvette
Dodge Viper
Aston Martin - All
Mercedes SLS or any Black series
McLaren - All
Lexus LFA
TVR - All
Ford GT

17. DEFINITIONS

- (a) **Alternative Materials** - Materials of suitable and acceptable strength and construction for use in motor vehicle parts and panels.
- (b) **Body work** - Refers to the exterior body of a motor vehicle as the entirely suspended part of the motor vehicle lapped by the airstream.
- (c) **CAMS** - Confederation of Australian Motor Sport
- (d) **CAMS Manual** - 2017 CAMS Manual of Motor Sport.
- (e) **Chassis Rail** – Box section part of the vehicle floor structure that extends from the front of the vehicle to rear section.

- (f) **Dashboard** - A dashboard (also called dash, instrument panel, or fascia) is a control panel placed in front of the driver in a vehicle, housing instrumentation and controls for operation of the vehicle.
- (g) **Drive Types:**
- (i) **4WD:** Four wheel drive, includes all wheel drive, any vehicle that has drive to both the front and rear wheels.
 - (ii) **RWD:** Rear wheel drive, any vehicle with drive only to the rear wheels.
 - (iii) **FWD:** Front wheel drive, any vehicle with drive only to the front wheels.
- (h) **Engine Control Module** – Any electronic device that controls engine operation.
- (i) **Firewall** - A firewall is a fire proof barrier that separates the engine from the driver and passengers.
- (j) **Frame Rails** - Two primary boxed sections running fore to aft on the vehicle.
- (k) **OEM** - Original Equipment Manufacture - is the original manufacture of the vehicle and/or any component which is the one originally fitted when manufactured.
- (l) **Recognised Model** - A model which the organisers, at their sole discretion, recognise as a model of vehicle produced by a manufacturer to a given specification.
- (m) **Standard Specification** - As originally supplied from the manufacturer, including allowable production tolerances.
- (n) **Shock Towers** - The original manufacturer upper mounting points for the suspension shock absorber (i.e. Macpherson Strut)
- (o) **Sub Frame** - A structural component of a vehicle that uses an additional separate structure to carry certain components, such as the engine, drivetrain, or suspension. The sub frame is bolted to the original integral monocoque, chassis or frame rails of the vehicle and may be equipped with rubber bushings to dampen vibration.
- (p) **Suspension Pick-Up Point** - A bracket, lug or similar mechanical component attached to, or integral with, the fully sprung part of a vehicle, to which is attached a partially unsprung suspension component, and about which such suspension component moves through an arc or solid angle consequential to normal suspension travel.
- (q) **Suspension Upright and Hub:**
- (i) **Upright** – the component that carries the hub and is connected directly to the suspension/steering control arms. The upright may carry brake components or other components as necessary.
 - (ii) **Hub** – the component which directly attaches to the wheel and is carried by the upright, via a bearing assembly. The hub, and bearing/s, may be integral to the upright or fixed to the upright and may carry the drive to the wheel.
- (r) **Vehicle** - A land vehicle propelled by its own means, running on at least four wheels not aligned, which are designed to be in contact with the ground. The steering must be controlled by at least two of the wheels, and the propulsion by at least two of the wheels.
- (s) **WTAC** - World Time Attack Challenge.

Appendix A

Vehicle Weights. All weights in kg. If your vehicle is not listed, contact the event organisers.

Make	Model	Weight	Clubsprint	Open	ProAM	Pro
Audi	A3	1395	1325	1186	1116	1116

	R8	1525	1425	1275	1200	1200
	TT RS	1260	1197	1071	1008	1008
BMW	E36	1460	1387	1241	1168	1168
Chevrolet	Corvette C5 Z06	1413	1342	1201	1130	1130
Daihatsu	Charade	740	703	629	592	592
Falcon	AU	1437	1365	1221	1150	1150
Holden	Astra	1120	1064	952	896	896
	VE Commodore	1770	1425	1275	1200	1200
	VL Commodore	1250	1188	1063	1000	1000
Honda	Civic EG Hatch	925	879	786	740	740
	Civic EG Sedan	1130	1074	961	904	904
	Civic EK	1045	993	888	836	836
	Civic EP3	1246	1184	1059	997	997
	Civic F	1179	1120	1002	943	943
	CRX	886	842	753	709	709
	DC2	1087	1033	924	870	870
	DC5R	1180	1121	1003	944	944
	Integra	1060	1007	901	848	848
	NSX	1274	1210	1083	1019	1019
	S2000	1250	1188	1063	1000	1000
Lexus	ISF	1735	1425	1275	1200	1200
Lotus	Exige	914	868	777	731	731
	Elise	860	817	731	688	688
Mazda	FB/SA RX7	1000	950	850	800	800
	FC RX7	1190	1131	1012	952	952
	FD RX7	1150	1093	978	920	920
	NA MX5	940	893	799	752	752
	NB MX5	1065	1012	905	852	852
	NC MX5	1110	1055	944	888	888
	RX8	1309	1244	1113	1047	1047
Mercedes	C63	1779	1425	1275	1200	1200
Mitsubishi	Colt	1074	1020	913	859	859
	Eclipse	1305	1240	1109	1044	1044
	Evo 5	1260	1197	1071	1008	1008
	Evo 6	1260	1197	1071	1008	1008
	Evo 6.5	1260	1197	1071	1008	1008
	Evo 7	1320	1254	1122	1056	1056
	Evo 8	1320	1254	1122	1056	1056
	Evo 9	1310	1245	1114	1048	1048
	Evo X	1420	1349	1207	1136	1136
Nissan	180SX	1225	1164	1041	980	980
	240Z	1068	1015	908	854	854
	260Z	1111	1055	944	889	889
	350Z	1446	1374	1229	1157	1157
	370Z	1466	1393	1246	1173	1173
	Bluebird	1070	1017	910	856	856
	R31 Skyline	1310	1245	1114	1048	1048
	R32 GTR	1430	1359	1216	1144	1144
	R33 GTR	1540	1425	1275	1200	1200

	R33 GTST	1390	1321	1182	1112	1112
	R34 GTR	1536	1425	1275	1200	1200
	R35 GTR	1740	1425	1275	1200	1200
	S13 Silvia	1224	1163	1040	979	979
	S14 Silvia	1253	1190	1065	1002	1002
	S15 Silvia	1253	1190	1065	1002	1002
Porsche	944	1180	1121	1003	944	944
Subaru	BRZ	1190	1131	1012	952	952
	WRX GC8	1240	1178	1054	992	992
	WRX GD	1310	1245	1114	1048	1048
	WRX GE	1394	1324	1185	1115	1115
Suzuki	Swift	970	922	825	776	776
Toyota	FT86	1190	1131	1012	952	952
	MRS	996	946	847	797	797
	Supra	1460	1387	1241	1168	1168
VW	Golf	1395	1325	1186	1116	1116