

## CIRCUIT RACE APPENDIX

### 3<sup>rd</sup> CATEGORY – TOURING CARS

#### GROUP 3D – SPORTS SEDANS – TECHNICAL REGULATIONS

Modified Article	Date of Application	Date of Publication

**A capitalised and italicised word in this document is defined in the FIA International Sporting Code (Code) or the National Competition Rules (NCR), including their Appendices.**

**Any HEADING is for reference only and has no regulatory effect.**

## 1. GENERAL

This group envisages a considerable degree of modification to eligible automobiles so as to render them more suitable for competition without modification to the external body shape except as specifically allowed for in these Regulations. Group 3D - Sports Sedans caters for dedicated circuit racing cars of generally free mechanical construction which utilise coachwork being recognisable as that of an eligible production car.

### 1.1 LOGBOOKS:

Each Sports Sedan for which a Motorsport Australia Vehicle Log Book has been issued prior to 31 December 2006 and which does not comply with the current Technical Regulations will be permitted to continue to compete provided it remains in compliance with the 2006 Technical Regulations in their entirety. Such Sports Sedans are permitted to upgrade to the current regulations in their entirety. A Sports Sedan for which a Motorsport Australia Vehicle Log Book has been issued after 2006 must comply with the current Regulations in their entirety.

### 1.2 REGULATIONS:

(a) The National Sports Sedan Council (NSSC) is responsible for reviewing these regulations and making representations to Motorsport Australia regarding proposed changes to these regulations. The NSSC is also responsible for providing advice in relation to these regulations. To seek clarification on any of these regulations contact your National Series or State Association NSSC Delegate.

**NOTE:** Current regulations may be found on the Motorsport Australia website under "Regulations", "Motorsport Australia Manual". For a copy of the 2006 Manual, contact your National Series or State Association council member.

(b) Any aspect relating to the construction and/or modification of the vehicle which is not expressly permitted in these regulations is forbidden.

## 2. ELIGIBILITY

### 2.1 DEFINED CAR:

The basis for the vehicle, and name by which it is known, will be the body/chassis unit of an eligible car. The use of eligible exotic or interesting vehicles as the Defined Car is encouraged.

(a) The Defined Car is the production car. The make, model and year forms the basis for dimensions, shapes and features for the derived Sports Sedan (refer Article 2.1(b)).

(b) To be eligible the Defined Car must be a Sedan, Coupe or Hatchback series production closed car, and must be or have been:

- (i) on sale in Australia through a recognised manufacturer franchised dealer network; or
- (ii) of a type of which a minimum of 5,000 examples have been manufactured worldwide; or
- (iii) a Trans-am bodied car approved for use in SCCA Pro Racing Regulations TA-1 class (refer Article 4.1 (c)); or
- (iv) an approved automobile which otherwise does not comply with 2.1 (b) (i) and (ii) above but which has been recommended by the NSSC and approved by Motorsport Australia.

(c) In all cases the production base model of each eligible car will be the reference for all vehicle dimensions. Where enhanced versions based on production cars have been produced by the manufacturer as a "sports or otherwise version" (e.g. GT, GTR, R, A9X, L34 etc) that may differ from

the basic version in wheelbase, track width, maximum width and length of coachwork; then in all cases the dimensions of the Sports Sedan will be based on the base version, NOT the sports version.

- (d) Any mid-engine Defined Car will only be eligible where the entire cylinder block is re-positioned forward of the midpoint of the wheelbase.
- (e) The donor car is permitted to be a mid or rear engine car, but the resulting Sports Sedan must use a front / mid mounted engine location.

**Definition note:** "Mid-engine" production car refers to an engine located behind the driver seat. In the context of Sports Sedans, "mid mounted" means an engine block which is relocated to the front 50% of the sports sedans wheel base (refer Article 3.3).

- (f) A Toyota MR2 issued with a log book prior to 1 August 2002, may continue to compete in mid-engine format with the engine to the rear of the midpoint of the wheelbase only when fitted with a reciprocating engine (of up to two litres capacity) or a twin-rotor rotary engine.

### 3. THE SPORTS SEDAN

#### 3.1 CONSTRUCTION:

Each Sports Sedan shall be constructed as a front-engine car utilising either a steel tubes chassis (space frame construction) or metal pressing chassis (floor pan construction) as follows:

- (a) Space Frame construction Sports Sedan: The chassis shall be constructed of steel tubes to which is attached the suspension, coachwork, aerodynamic devices and running gear. Metal drive train components, including mounting plates, may be incorporated into the chassis and be used as stressed members for any of the above attachments.
- (b) Two Wheel Drive (2WD) Floor pan Sports Sedan: A heavily-modified two wheel drive production car that utilises the standard factory sheet metal including roof, pillars, door sills and the majority of the cockpit floor section.
- (c) Four Wheel Drive (4WD) Floor pan Sports Sedan: A four-wheel drive production car that utilises the standard factory sheet metal, standard engine block configuration and cylinder head configuration.. The standard factory sheet metal shall be retained in the following areas: roof, pillars, door sills, floor section, sub-frame assemblies which incorporate suspension mounting points and standard pickup points, except where specific provision is made for modification of these items, as follows:
  - (i) Modification to the wheel wells to provide clearance for tyre and wheel assemblies;
  - (ii) Drilling holes for the fitment of permitted accessories and components;
  - (iii) Removal of unused standard brackets;
- (d) Each Sports Sedan shall have four wheels, of which only the front two are used for steering.

#### 3.2 SAFETY CAGE:

- (a) Each Sports Sedan shall incorporate a safety cage structure compliant with Schedule J.

**Note:** Attention should be given to the selection of the Defined Car to ensure that the requirements of Schedule J are met.

- (b) The chassis or the safety cage must incorporate at least two anti-intrusion bars on the driver's side. At no point in the door opening shall the cumulative vertical section of the door bars be less than that of the two individual tubes. Each anti-intrusion bar shall:
  - (i) have a minimum dimension of 38mm diameter and 2.5mm wall thickness and compliant with the material specifications of Schedule J; or
  - (ii) be proven by calculation to meet or exceed side intrusion load applied to the chassis and be Motorsport Australia certified. Motorsport Australia certification documents are to be carried at all times and be produced on request.
- (c) A Space Frame construction Sports Sedan fitted with a transaxle type rear mounted transmission or similar that has a suspension load bearing type layout (inboard suspension) may have the rearward backstay members of the safety cage formed in a 'V' type layout, providing the lower part of the 'V' centrelines are not more than 300mm apart at the mounting on the transmission. Refer Appendix A.
- (d) Each part of the chassis above the lower edge of the windows shall be regarded as forming part of the safety cage, regardless of whether they are part of the mandatory safety cage as defined in Article 3.2(a) above, or optional members and shall be subject to the requirements of Schedule J.

### 3.3 WHEELBASE:

The wheel base shall be within a total difference of  $\pm 100$ mm of the original wheel base position of the Defined Car and the location of the centrelines of the front and rear hubs shall be within  $\pm 100$ mm of that of the centrelines of the front and rear hubs of the Defined Car.

### 3.4 CLEARANCE:

Each Sports Sedan shall be so constructed that no part of the car shall be less than 40mm above the ground when, measured with all tyres at a pressure of 1.7 bar (25 psi).

### 3.5 RACING WEIGHT:

**Racing weights:** The following tables indicate minimum racing weight for each Sports Sedan based on engine capacity:

up to 1300cc	680kg
1301 - 1600cc	730kg
1601 - 2000cc	780kg
2001 - 2500cc	800kg
2501 - 3550cc	900kg
3551 - 4500cc	975kg
4501 - 5100cc	1050kg
5101 - 6000cc	1125kg
Trans Am body up to 5100cc	1175kg
Trans Am body 5101 – 6000cc	1200kg

**Note:** These are minimum racing weights for rear-wheel drive vehicles and include the driver.

<b>For each Front-wheel drive vehicle</b>	Subtract 50kg from the above weight
<b>For each Multi-valve vehicle</b>	Add 75kg to the above weight for each vehicle above 2501cc swept volume
<b>For each four-wheel drive vehicle</b>	Add 100kg to the above weight

### 3.6 Power to Weight

The permitted power to weight of an *Automobile* for Sport Sedan *Competition* is a minimum of 1.5 kg *Racing Weight* to 1 horsepower (hp) as measured at the engine.

## 4. COACHWORK

### 4.1 COACHWORK:

- (a) The body shell (deemed to be all externally visible body panels) shall be unchanged in external shape except as provided for within these regulations.
- (b) The silhouette of the Defined Car shall remain unmodified apart from the modifications permitted in these regulations.
- (c) Approved TA-1 Trans-Am bodies are permitted, however shall remain as per SCCA pro racing technical regulations in their entirety except as permitted in 4.1(c) (i) and 4.1(c) (ii), save that panels may be manufactured locally without the part number ID present. Any locally produced part must be identical to the homologated part in shape, size and proportion. Exterior coachwork and aero components shall remain compliant with the Trans-Am body produced for that approved body.
  - (i) Vertical vanes may be fitted under the Trans-am homologated rear floor/bumper panel in order to develop a rear diffuser effect. Each vane fitted shall be no wider than the inside of the rear tyres when inflated to 1.7 bar/25 PSI, no further forward than the rear axle centreline and no lower than the chassis ride height at the rear axle centreline. Each vane shall not protrude rearward of the rearmost point of the rear bumper bar.

- (ii) A Trans-Am front air dam or splitter may extend no further than 50mm horizontally, measured perpendicular to the front bumper/coachwork at any measured point and shall be no wider than the front flares/mudguards.
- (d) Each external body trim decoration greater than 150mm in width shall remain in place.

#### **4.2 MATERIALS:**

- (a) All body panels may be replaced by panels of optional material, retaining the external shape, proportion and silhouette of the Defined Car. Additions to replacement and modified body panels, where permitted, shall be manufactured from one of the following:
  - (i) Material of the same gauge and composition as the original part; or
  - (ii) Aluminium, or aluminium alloy, of a gauge not thinner than 1.2mm (commercial grade tolerances); or
  - (iii) Glass fibre and/or glass-reinforced plastic, carbon fibre and/or Kevlar composite materials of a gauge not thinner than 1.5mm.
- (b) The bonnet and boot lid may be replaced and incorporated into “one-piece” panels, with surrounding panels identical in external shape to the original. If incorporated into a one-piece panel there shall be a definition line a minimum of 3mm wide defining the guard to bonnet join, pop up headlight panel, etc so as to maintain the external appearance of the Defined Car.

#### **4.3 ROOF:**

- (a) It is permitted to fit an approved duct in the roof of the vehicle for cockpit ventilation. The duct shall be mounted on the longitudinal centreline of the roof and no further rearward than 150mm of the top of the windscreen. The Duct must be the V8 Supercar approved Roof Duct available from Lightning Composites, Part No. LCVF-RV13.
- (b) Each car manufactured or fitted as standard with a sunroof shall have a permanent replacement panel fitted into the sunroof opening so as to make the roof section one piece. Each such panel shall be made from materials as defined in Article 4.2.

#### **4.4 FRONT & REAR BUMPERS AND PANELS:**

- (a) The rear bumper, fascia, or beaver panel may be modified to only facilitate the passage of the exhaust and for the fitment of a rear diffuser as defined in Article 6.1 (k). The rear facia or beaver panel may be modified to facilitate rear venting as defined in Article 4.10.
- (b) The front bumper and grill shall retain its original appearance and location in relation to the unmodified area of the coachwork down to the horizontal centreline of the front wheel hub. It may be integral with the air dam and surrounding coachwork. If the upper edge of the bumper is in line with or below the horizontal wheel centreline then the upper edge and the area 60mm below shall remain unmodified so as to keep the original appearance and identity of the defined car. Refer Appendix A
- (c) The bumper or fascia returns may be splayed horizontally to merge with the front mudguard flares. No part of the bumper or air dam shall be wider than the widest point of the modified front mudguards. Refer Appendix A

The shape of the original bumper or fascia may be modified to merge with the air dam below a horizontal plane passing through the centreline of the front wheel hubs (refer Article 4.5 (b)). The size and placement of ducted openings to this area are free.

#### **4.5 MUDGUARDS:**

- (a) Mudguard flares, made of alternative material (refer Article 4.2) may be extended or added in order to cover the wheels and tyres as defined in Article 4.5(b) and Article 4.5(c) below. The mudguard and/or flares may be extended in width up to a maximum of 100mm per side in excess of the width of the original Defined Car. The leading and trailing edges of the reformed wheel arch shall merge with the original body work at an angle of 45 degrees or less from a line drawn horizontally down the side of the vehicle. Flares may extend a maximum of 400mm forward and 600mm rearward from the reformed wheel arch. It is permitted to include a flat section in the vertical plane on the outer portion of the guard that is surrounding the wheel arch opening, to a maximum width of 30mm. Refer Appendix A
- (b) When viewed from above, the coachwork shall cover the complete wheels to the horizontal centreline of the hubs with the wheels in the straight ahead position. The rear extremities of the front and rear mudguards and/ or extensions shall continue below a horizontal line drawn through the centreline of the wheel hubs down to the original lower point of the mudguard and shall cover the full width of the

tyres down to the horizontal centreline of the wheel hub height when viewed from the rear with the wheels in the straight ahead position.

- (c) No hole shall be permitted in mudguards other than those originally provided by the manufacturer or under these regulations (refer Article 4.5(g), 4.5(h)).
- (d) The leading or trailing edge of the mudguard flares may exceed the 45-deg. maximum angle, by the minimum amount, to permit flares that would otherwise encroach on unmodified bumpers, lights, grills, front doors and features found on the Defined Car. Refer Appendix A
- (e) Any flares or extensions of mudguards which are less than the maximum permitted dimensions shall fit as a whole within the silhouette which would have been created by a flare of the maximum dimensions.
- (f) The minimum radius on the outer upper edge of the guard shall be 5mm. Refer Appendix A. Each mudguard/rear door or flare may be modified to permit the exhaust pipe outlet to pass through a cut-out/relief therein and shall have no more than 12mm clearance around the exhaust pipe at any point, such that no part of the modification is above a horizontal plane passing through the horizontal centreline of the rear wheel hub (refer Article 7.5).
- (g) Louvered vents shall be permitted in the upper surface of the front mudguards/bonnet area. Each vent shall be positioned above the wheel/tyre assembly, no further forward than the leading edge of the tyre and no further rearward than the trailing edge of the tyre with the wheels in the straight ahead position. Each vent shall be no closer to the outer edge of the guard laterally than 20mm, shall be no further inboard than the inside edge of the front tyre with the wheels in the straight ahead position and have a maximum area of 600cm<sup>2</sup> per guard. The pitch of the louvers shall be between 25mm and 40mm and no higher than 25mm above the surrounding area of the mudguard where fitted. Refer Appendix A
- (h) An opening is permitted in the front mudguards between the rear of the wheel arch opening and the trailing edge of the mudguard. The opening is to be no closer than 30mm to either edge and no higher than the top of the wheel arch. Each opening shall have a maximum area of 400cm<sup>2</sup> per guard. In side view no part of the vehicle inside the mudguard may be seen through the opening. Refer Appendix A

#### 4.6 BONNET:

- (a) Up to 3 bonnet vents with a maximum combined area of 3200cm<sup>2</sup> may be fitted. This maximum applies to any car, regardless of venting area on the eligible car. The vent/s may have a raised leading edge (inclined rearwards) to a maximum height of 40mm from the surrounding area of the bonnet and may taper down to the bonnet surface along the sides of the vent/s. Each opening may be any shape and the vent elements must limit the visibility of other components under the bonnet when viewed from the front or sides. The maximum combined vent area includes any opening between the scuttle/plenum area and the trailing edge of the bonnet (refer Article 4.6(c)). If the bonnet vents are not louvered they shall not be just a hole in the panel in that they shall be fitted with panels or ducting down to the water radiator/intercooler/oil coolers/fans so no other parts of the under bonnet are visible. Refer Appendix A
- (b) A change to the shape of the engine cover shall be permitted where the position of the engine or its actual induction components (excluding brackets, linkages etc.) prevents the full closing of a panel of the original shape and size, save that the maximum increase in height must not exceed 100mm, that the lateral clearance of the alterations around the offending components does not exceed 75mm, and that the maximum width does not exceed 450mm. A panel of modified shape shall completely cover the part or parts which cause the change to be affected and shall not have external openings, except for the purpose of air intake into a sealed air box (refer Article 4.2). It shall not hinder the safe operation of any part of the Sports Sedan and shall not impair the vision of the driver.
- (c) Scuttle/Plenum or bonnet to windscreens opening: Where any area of the windscreens and associated lower panel or trim is below the profile of the bonnet as viewed from the front, the windscreens and associated lower panel or trim are free in such area. Where any part of the engine block extends forward of the windscreens, a flame and liquid-proof panel shall be installed to prevent engine fluids or fire from escaping between the windscreens and bonnet.

#### 4.7 DOORS:

- (a) **Front doors:** Each front door may be functional and shall retain the original external shape, size and proportion save for the modification to fit side skirts (refer Article 4.8 (b)). All window regulator mechanisms may be removed. Original front door catches, and hinges may be replaced with suitable alternative fittings. Internal anti-theft locks shall be rendered inoperative or removed. The driver's window net is to be attached to the roll cage and/or chassis in accordance with Schedule I.

- (b) Opening front doors must be operable from the inside and the outside of the Sports Sedan.
- (c) The front door/s may be cut horizontally along the full length of the door only at a height no higher than the intersecting point of the tubes that form the side intrusion protection structure and hinged at the front. This shall be classed as an opening door. The remaining fixed lower section of the door shall maintain the external appearance of the standard door down to its lowest point or to the side skirt, if fitted (refer Article 4.8(b)). The gap between the removable upper section and the fixed lower section shall be a maximum of 3mm, with the original appearance of the door to be retained. Refer Appendix A.
- (d) Non-opening front doors with or without removable panels must not be fitted with windows.
- (e) **Rear doors:** On a four-door car, the door skins of the rear doors may be made integral with the surrounding coachwork. On cars where the door skins do not extend around the window frame the original appearance and shape of window frame trims must be retained. The rear mudguard flares may extend over part of the surface of the door skin. The area of coachwork under the flare, which may include part of the "C" pillar, may be removed. If the original external door handles on rear doors are removed the resulting aperture must be filled.
- (f) The gaps between any removable body panels or opening doors must be a maximum of 10mm.

#### 4.8 PILLARS, ROCKER PANELS AND SIDE SKIRTS

- (a) On a Space Frame construction car the original shape and area of the A, B and C pillars, rocker panels and front door frames that are externally visible when the doors are closed shall be retained. The area that is not visible below the lower window line when the doors are closed may be removed and replaced with sheeting to maintain the integrity for the sealing of the cockpit from the ingress or entry of debris and fluids.
- (b) It is permitted to fit side skirts to the area between the trailing edge of the front mudguard flare and the leading edge of the rear mudguard flare. They shall be no wider than a straight line between the outer edges of the mudguard flares where the skirts meet the flares. Each side skirt shall not extend below the horizontal plane created by the floor of the Sports Sedan and shall be a maximum of 160mm in height at any point. If this is higher than the lower edge of the door, the lower part of the door may be modified to allow the skirt to be a maximum of 160mm high at any point. Each side skirt must extend from the trailing edge of the front mudguard flare to the leading edge of the rear mudguard flare and may include vent opening/s as permitted. If no side skirt is added, a vent opening is permitted in the rocker panel area in accordance with this regulation. The cumulative area of all openings in any outer surface of each skirt, or each rocker panel if no skirt is fitted, which are licked by the air must not exceed 520 cm<sup>2</sup>. Each such opening must be shaped such that air is exhausted, not inducted. If a side skirt is fitted the original rocker panel it is covering may be removed underneath the skirt. Such side skirt construction if allowing exhaust outlets must also comply with regulations 7.5 Exhaust and 4.5 Mudguards. Refer Appendix A

#### 4.9 FLOOR:

- (a) A floor that is visible with all covers attached shall seal the cockpit from the outside of the vehicle. Any sealed floor below the engine shall have one or more openings directly below the engine to let fluid egress in the event of an engine failure or fuel leak in the engine bay.
- (b) A floor may be replaced by a component whose lower surface is flat and is mounted parallel to the bottom edge of the rocker panel and complies with the following:
  - (i) It shall extend no further forward than the leading edge of the front tyres and it shall not extend further rearward than the centreline of the rear axle.
  - (ii) On any Sports Sedan where the bottom edge of the rocker panel is not a straight line, the lower edge of any replacement floor shall be parallel to a straight line drawn along the lowest straight edge of the door/s on either side of the Sports Sedan.
- (c) It is not permitted to create any aerodynamic device in the floor including the underside of the skirts unless provided for in these regulations.
- (d) In all cases (original or replacement floor pan), an additional flat surface may be fitted in addition to, or in place of, the original panel work which would normally constitute the boot floor or rear hatch floor. For each floor section rearward of the centreline of the rear axle it may be inclined at an angle, the maximum of which will necessitate that it meets the underside of the beaver panel or rear bumper bar assembly. If fitted, this rear under-tray panel shall:
  - (i) Be added to the rear of the trailing edge of the original rocker panel or cockpit bulkhead;
  - (ii) Extend no further rearward than the underside of the beaver panel or rear bumper bar assembly (at any point across the width);

- (iii) Have its leading edge no lower than and parallel to the floor pan or any replacement surface;
- (e) It is not permitted to include any vanes or other aerodynamic devices in the flat surfaces of the floor or rear under-tray, except for fitment of the diffuser (refer Article 6.1(k)).
- (f) The addition of a hole or holes shall be permitted in both the flat surfaces defined in Article 4.9(b) or 4.9 (d) only for mechanical or suspension associated components or attachment purposes.
- (g) The rear beaver panel and/or bumper bar, whichever is the lower, shall remain original in shape and position other than any modification permitted for the fitting of a diffuser. Refer Article 6.1(k) of these regulations.

#### **4.10 REAR FACING VENTS:**

- (a) One or more vents may be created in the rear facing areas of the Sports Sedan rearward of the trailing edge of the roofline (including the rear windscreen, fascia or beaver panel but excluding the rear bumper, tail lights, mudguards or any extensions/flares) except where defined in Article 4.9(a). Any vent created by removal of material in areas other than the rear windscreen must be replaced with mesh. Any vent created in the rear windscreen must have a maximum individual area of 20cm<sup>2</sup> each. The maximum combined surface area of all rearward facing vents is 1,000cm<sup>2</sup>.
- (b) Should a lower height rear diffuser be fitted, it is permitted to vent through the rear bumper up to the axle centreline in the space that otherwise may be filled by a rear diffuser.

### **5. INTERIOR**

#### **5.1 INTERIOR:**

- (a) All standard interior fittings and/or trim may be removed.
- (b) Any front door trim that is removed shall be replaced with a flush-fitting rigid material (refer Article 4.2). Local modifications shall be permitted to facilitate fitment of safety cage members and/or anti-intrusion bars.
- (c) Each window may be replaced by a suitable rigid transparent material of adequate strength (e.g., polycarbonate), which shall be of a minimum material thickness of 3mm for side and rear windows, and a minimum material thickness of 6mm for the windscreen, save that the fitment of front side windows is optional. It is permitted to fit one NACA type duct in each of the front door windows. It is permitted to fit a maximum of two NACA type ducts in each rear side window.
- (d) Each passenger seat in the car may be removed and any space for other than the driver may be encroached.
- (e) If the original driver's seat is removed, the replacement seat must comply with Schedule C.
- (f) The centreline of the driver's seat shall be positioned away from the longitudinal centreline of the Sports Sedan either to the left or the right by a minimum of 200mm. When measured vertically at shoulder height the face of the driver's seat that the driver's back touches when seated normally shall be at least 75mm forward of the leading edge of the rear tyre. Refer Appendix A
- (g) A crushable structure may be fitted to the outside of the chassis on the driver's and passenger's side of the Sports Sedan in addition to the side intrusion tubes (refer Article 3.2(b)). It is recommended this take the form of a Nomex® or aluminium honeycomb such as Ayrelite 2022® and, if fitted, shall have a minimum thickness of 50mm and a minimum volume of 5cm<sup>3</sup>. This shall be located in the vicinity of the driver's hip, and may be incorporated into the chassis.

### **6. AERODYNAMIC AIDS**

#### **6.1 AERODYNAMIC AIDS:**

- (a) It is permitted to fit a spoiler or air dam on the front of the car such that no part of it shall extend more than 100mm horizontally, measured perpendicular to the coachwork at any measured point and it shall be no wider than the front flares/mudguards. Refer Appendix A
- (b) A front diffuser or an air dam under-tray may be installed. No part of the front diffuser or under-tray shall extend further rearward than the vertical centreline of the front wheel hubs. Each part of the diffuser or under-tray shall be within the vertical projection of the car, including any modified coachwork.
- (c) It is permitted to fit a maximum of two dive planes/canards on each side of the front bumper fascia/air dam in front of the wheel arch. The dive planes/canards shall be no wider than the flare/coachwork, no higher than the front wheel hub horizontal centreline and have a maximum width at any point of 200mm measured perpendicular to the longitudinal centreline of the Sports Sedan. Each dive plane/canard shall not be extended outside the vertical projection of the front diffuser/air dam (refer Article 6.1 (a)). Refer Appendix A.

- (d) It is permitted to fit a rear deck lid spoiler of maximum height 200mm above the coachwork where mounted, and of a width not exceeding the width of the coachwork excluding any flaring of the mudguards. It shall be fitted without interruption with the rear deck and shall:
  - (i) not restrict rearward vision below that required;
  - (ii) not extend rearwards of the rearmost extremity of the coachwork; and
  - (iii) only be fitted rearwards of the rear window; and
  - (iv) only be fixed in position and not moveable whilst the car is being driven.
- (e) In the case of a car which is defined as a hatchback, the spoiler may be fitted rearwards of the centreline of the rear axle.
- (f) It is permitted to fit a rear wing assembly as an alternative to and instead of a rear deck lid spoiler (refer Article 6.1(d)) subject to:
  - (i) The wing assembly extending no further rearward than 200mm beyond the rearmost part of the original coachwork and extending no further forward than 700mm beyond the rear most point of the original coachwork. Refer Appendix A
  - (ii) The wing assembly shall be a single or dual element only. The overall width of the wing assembly, including mounts & end plates, shall be no wider than the width of the vehicle at its widest point on the rear 50% of the coachwork. A single element wing shall use a maximum horizontal length of 400mm and maximum width of 1830mm, including mounts & end plates. A dual element wing shall use a maximum combined horizontal length of 400mm, width of 1600mm, including mounts & end plates and a wing element maximum gap of 40mm. Refer Appendix A.
- (g) Each wing mount shall not provide vertical thrust.
- (h) No part of the wing assembly shall be movable or adjustable while the car is in motion.
- (i) No part of the wing assembly shall be higher than a horizontal line drawn from the highest point of the roof. Refer Appendix A
- (j) An aerodynamic device may not be used for any additional alternative function, e.g. for the mounting of an oil radiator, unless permitted in these regulations.
- (k) It is permitted to fit a rear diffuser. The diffuser may have vertical vanes fitted. No part of the diffuser shall be lower than the lower face of the floor between the rocker panels, shall be no wider than the inside edge of the rear tyres inflated to 1.7 bar (25 psi) and shall not be higher than the horizontal centreline of the rear wheel hubs. The diffuser shall extend no further forward than the vertical leading edge of the rear tyres inflated to 1.7 bar (25 psi) and shall be no further rearward than 100mm beyond the rear-most point of the original coachwork. The rear bumper, fascia and/or beaver panel may be modified to facilitate the fitment of the rear diffuser. The diffuser is to fill this opening fully with due reference to Article 4.10(b) and 4.4(a). Refer Appendix A.
- (l) It is permitted to vent any oil cooler through the diffuser panel providing no part of the cooler or ducting protrudes through the diffuser lower panel, fasteners excluded, and it shall remain within the plan view of the coachwork.
- (m) It is permitted to exit the exhaust through the diffuser panel subject to exhaust exit requirements in Article 7.5 of these regulations.

## 7. MECHANICAL COMPONENTS

### 7.1 BRAKES:

The design, construction and components of the braking system shall be free save for the following:

- (a) Anti-lock braking systems shall not be permitted unless on a 'Floor Pan' type car (refer Article 8.2 of these regulations).
- (b) Each car in a circuit race shall be fitted with a dual circuit braking system so arranged that the pedal normally operates on the four road wheels and, in the event of leakage at any point in the system, the pedal shall still control two wheels on the same axle.
- (c) Only brake rotors manufactured from ferrous material shall be used. A maximum of one brake rotor per wheel is permitted. A maximum of two brake calipers is permitted per brake rotor.

## 7.2 SUSPENSION:

Each suspension component and their mounting shall be free, save for the following;

- (a) Restrictions defined in Article 3.1 (a) and 3.1 (c)
- (b) Any type of 'active' suspension control or adjustment shall not be permitted save for gas pressurised dampers.
- (c) Any ride height adjustment shall not be permitted whilst the car is in motion or to be activated by the driver while seated in the normal driving position.

## 7.3 TRANSMISSION

The design, construction and components of the transmission and final drive shall be free, save for the following:

- (a) It shall be a 'manual' type transmission.
- (b) The clutch shall be controlled exclusively by the driver by either mechanical or hydraulic actuation. It is not permitted to use any type of electronic clutch actuation systems.
- (c) Only one clutch assembly shall be permitted to be fitted to each car.
- (d) Four-wheel drive shall be permitted on cars originally produced in that configuration (refer Article 3.1(c)); however they shall remain in 4WD Floor pan Sports Sedan configuration.
- (e) The maximum number of forward gears shall be six.

## 7.4 ENGINES:

The design, construction and components of the engine shall be free save for the following:

- (a) Only an engine block or casing permitted in these regulations shall be used. Each engine block or casing shall be:
  - (i) a cylinder block, rotor and rotor casing derived from a vehicle of which at least 2500 examples were built; or
  - (ii) A manufacturer mass-produced rotary engine assembly is acceptable up to a maximum of 3 rotors; or
  - (iii) an engine approved for Australian V8 Supercar pre-2015; or
  - (iv) One of the following selected engines previously approved for use in USA NASCAR racing:
    - (A) GM Performance Parts/Chevrolet SB2.2.
    - (B) Chevrolet R07.
    - (C) Dart SBF Iron Eagle 351 Sportsman (Ford configuration).
    - (D) Ford FR9.
    - (E) Dodge R5/P7.
    - (F) Dodge R6/P8.
    - (G) Toyota NASCAR Engine
- (b) It is permitted to use a cylinder block or intermediate/end/rotor housing manufactured by a supplier to the aftermarket provided that:
  - (i) It is an identifiable replacement for a permitted, original equipment cylinder block or intermediate/end/rotor housing; and
  - (ii) The centrelines of the crankshaft and cylinder bores or the intermediate/end/rotor housing are in the same relative position as the original equipment block it is based on; and
- (c) The replacement cylinder block or the intermediate/end/rotor housing can utilise original equipment and/or manufactured internal engine parts.
- (d) The engine block or intermediate/end/rotor housing material, each cylinder head, each rotary end/centre housings and all ancillary equipment shall be free.
- (e) To establish total engine capacity:

- (i) A multiplying factor of 1.7 applies to forced induction engines.
- (ii) A multiplying factor of 1.75 applies to rotary engines.
- (iii) The maximum engine capacities therefore are:

Naturally-aspirated reciprocating	6000cc
Naturally-aspirated rotary engine	3428cc
Forced-induction reciprocating	3529cc
Forced-induction rotary engine	2016cc

- (f) Only one internal combustion engine shall be permitted to be fitted to the car. No other source of motive power shall be permitted.
- (g) Each engine is permitted a maximum engine revolutions per minute (RPM) limit for each engine capacity (cc) range as follows:

0 – 3500cc: 9000 RPM

3501 – 6000cc: 8500 RPM

Each *Automobile* must be fitted with an effective RPM limiter and that RPM limiter must be set at or below the applicable limit specified.

At the request of the Chief Scrutineer the RPM limiter must be displayed to the Chief Scrutineer along with any data logging or rpm data supplied via the ECU.

- (h) Each engine using forced induction is permitted a maximum manifold (inlet) absolute pressure of 341.3 kPa (35 psi of boost pressure).

At the request of the Chief Scrutineer the maximum (inlet) absolute pressure must be displayed to the Chief Scrutineer along with any data logging or data supplied via the ECU.

## 7.5 EXHAUST:

The design, construction and components of the exhaust system shall be free save for the following:

- (a) Exhaust outlets must direct exhaust gases horizontally or downward.
- (b) No part of the exhaust outlets is to be higher than the horizontal centreline of the rear wheel hubs.
- (c) The exhaust may exit to the side or to the rear.
- (d) An exhaust that exits rearwards shall not protrude more than 20mm beyond the rearmost portion of the unmodified coachwork.
- (e) An exhaust that exits sideways, each outlet shall be located rearward of the midpoint of the modified wheelbase and project a maximum of 10mm beyond the maximum width of the coachwork or a minimum of flush with the panel it is exiting through.
- (f) Each exhaust outlet below the floor shall terminate no more than 50mm within the plan view of the adjacent coachwork.

## 7.6 WHEELS AND TYRES:

The design, construction and components of the wheel and tyre shall be free save for the following:

- (a) The maximum width of any complete wheel assembly shall be 370mm, measured with at least 1.7 bar (25psi) of pressure in the tyre. The maximum diameter of any wheel rim is to be 18 inches.

## 8. ELECTRICAL COMPONENTS

### 8.1 DESIGN AND CONSTRUCTION:

The design, construction and materials of the electrical system and components shall be free save for the following:

- (a) The original external shape and location of all lighting and signalling equipment must be retained.

- (b) Each original headlamp and turn indicator not used, shall have their replacement blended with the surrounding coachwork. Where an original headlamp and/or signalling equipment is removed, suitable decals of original size and location shall be used in their place. Front lighting and signalling equipment need not be functional. For Sports Sedans with retractable headlights, the external shape shall be determined to be that attained should the headlights be in the parked off position.
- (c) Each tail lamp and brake lamp shall remain operable, with a minimum power of 3 Watts for each tail light, and a minimum of 20 Watts for each brake light (or the LED equivalent).

## 8.2 ELECTRONIC SYSTEMS:

- (a) For the purpose of these regulations, a performance electronic system is defined as a computer-controlled device that manages, governs or directs the automatic operation or control of equipment.
- (b) The following Performance Electronic systems are permitted:
  - (i) Traction control
  - (ii) Launch control
  - (iii) Electronic throttle actuation (fly by wire)
  - (iv) Engine management
  - (v) Data logging
  - (vi) Telemetry – car to pit only
  - (vii) Paddle Shift
- (c) The following performance electronic systems are not permitted:
  - (i) Differential action/adjustment/control of any type
  - (ii) Clutch control of any type
  - (iii) Suspension or Damper adjustment/control
  - (iv) Automatic Gear Selection or shifts
  - (v) Antilock Braking Systems
  - (vi) Stability system
  - (vii) Ride height control
  - (viii) Telemetry – pit to car
- (d) The following performance electronic systems are only permitted in 'Floor Pan' type cars if fitted as an unmodified OEM system from the Defined Car:
  - (i) Stability control
  - (ii) Suspension control
  - (iii) Damper adjustment
  - (iv) Antilock Braking System
  - (v) Differential adjustment control
  - (vi) Ride height control
  - (vii) Rear wing adjustment
  - (viii) Automatic Gear selection
  - (ix) Clutch control
- (e) Electronic engine and transmission management systems (e.g. Electronic Control Units and Transmission Control Modules) of free design and operation shall be permitted, provided they have no control of any of the items defined in Article 8.2(c) of these regulations.

**NOTE:** To seek clarification on any of these Electronic Systems regulations contact your National Series or State Association NSSC Delegate.

### 8.3 Paddle Shift Systems

Driver initiated gear change requests to an electronically controlled gearshift system are permitted.

- (a) Paddle Shift Operation
  - (i) The system must not provide independent / automatic gear shifts (like an automatic transmission)
  - (ii) The system must not automate or eliminate a driver operated hydraulic (mechanical) clutch
  - (iii) A neutral & reverse lockout is mandatory
  - (iv) Any individual driver gear change request may only increment or decrement up to one gear per request
  - (v) The paddle system may only use Air pressure or an electric actuator to shift gears
- (b) Paddle Shift Installation
  - (i) air pressure tank must be rated higher than pump maximum operating pressure
  - (ii) air tank must have pressure relief valve (value less than tank maximum rating)
  - (iii) air tank must not be located within 500mm of fuel tank

## 9. SAFETY

### 9.1 FUEL & FUEL TANKS:

The design, construction and components of the fuel system shall be free save for the following:

- (a) Only fuel as defined by Motorsport Australia shall be used in accordance with Schedule G.
- (b) An original fuel tank may be replaced. Refer to Schedule N, for fuel tank requirements.
- (c) A fuel tank or any fuel system component that is less than 500mm forward of the rearmost point of the coachwork (excluding the rear wing), shall be required to be protected by a crushable structure of Nomex® or aluminium honeycomb with a minimum thickness of 50mm to the rear, bottom and side surfaces of the fuel tank assembly.
- (d) A Bladder-type fuel tank that is mounted inside the cockpit area, and compliant with FIA FT-3 or higher specification, shall have an outer case manufactured from material with the minimum specification of aluminium 1.5mm material thickness 5005 H34; or 1.5mm material thickness 6061 T6 or steel with a 1.5mm minimum material thickness.
- (e) A fuel tank mounted inside the cockpit area must have as a minimum a 20mm drain hole in the floor below the tank to allow any fuel to escape the cockpit in the event of a leak.
- (f) Fuel tanks that are mounted inside the cockpit area are to be fully covered and separated from the driver by a fluid and flameproof bulkhead or cover.

### 9.2 FIRE EXTINGUISHER:

For the purpose of fire extinguisher access it shall be permitted to have a maximum of two holes either in the bottom corners of the rear window or in the forward corners of the boot lid, no more than 25mm from the edges of either and a maximum diameter of 52mm. These holes are in addition to the rear vent allowance defined in Article 4.10. Refer Appendix A.

### 9.3 WINDOWS:

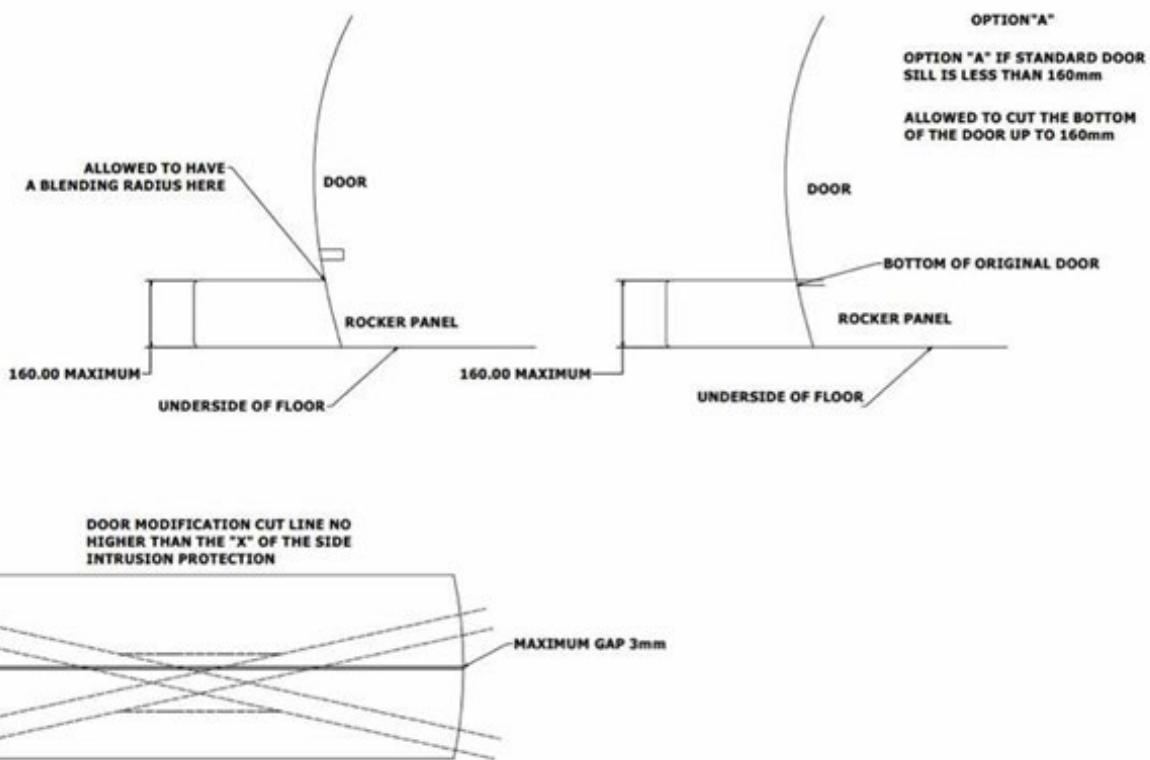
For each front door window fitted that is covering the whole of the window opening, an open slot shall be incorporated into the window of a minimum size 150mm x 50mm located within 30mm of the window edge to allow the window to be removed without tools in the case of an emergency. Refer Appendix A.

### 9.4 SCATTER SHIELD:

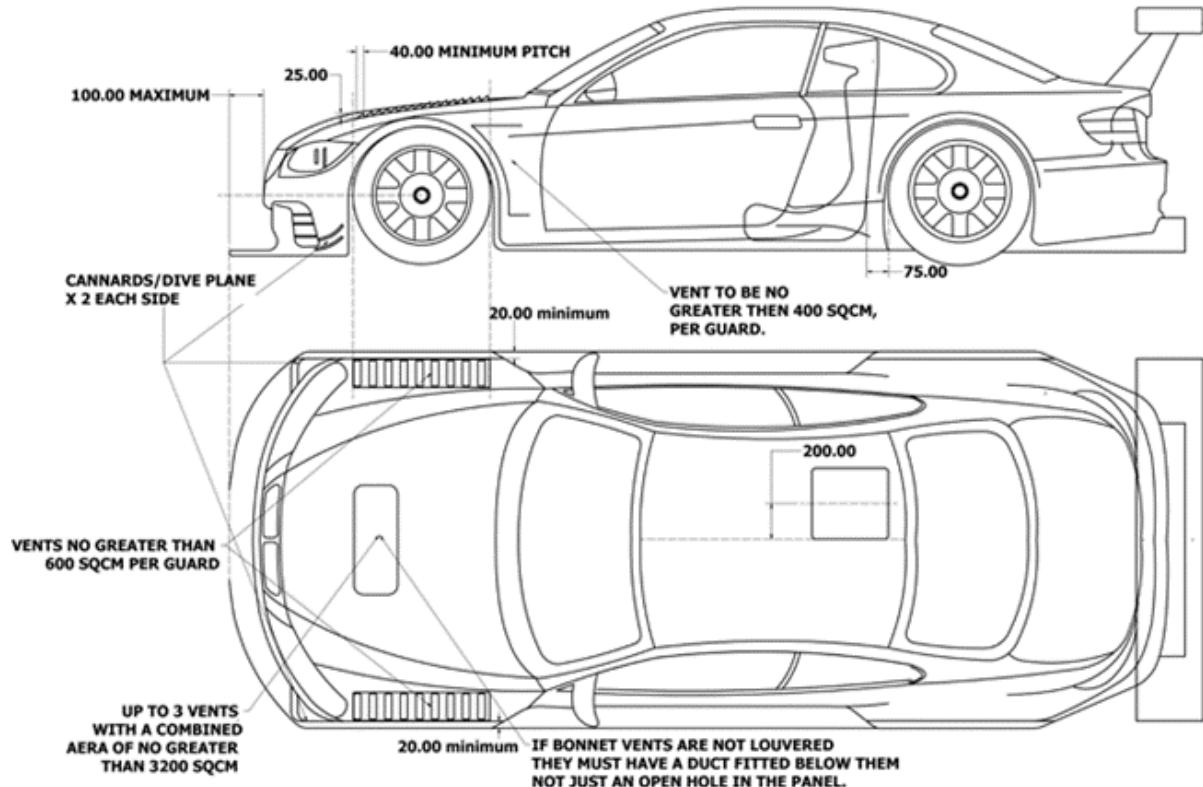
For vehicles where the engine has been relocated from the original manufacturer's position, or an alternative engine other than that optioned by the manufacturer has been installed, it must be fitted with a scatter shield incorporated into the driver's side of the transmission tunnel. The scatter shield must comply with "Schedule M - General Requirements". The scatter shield or blanket is to be fitted as close as possible over the clutch housing assembly.

## APPENDIX A

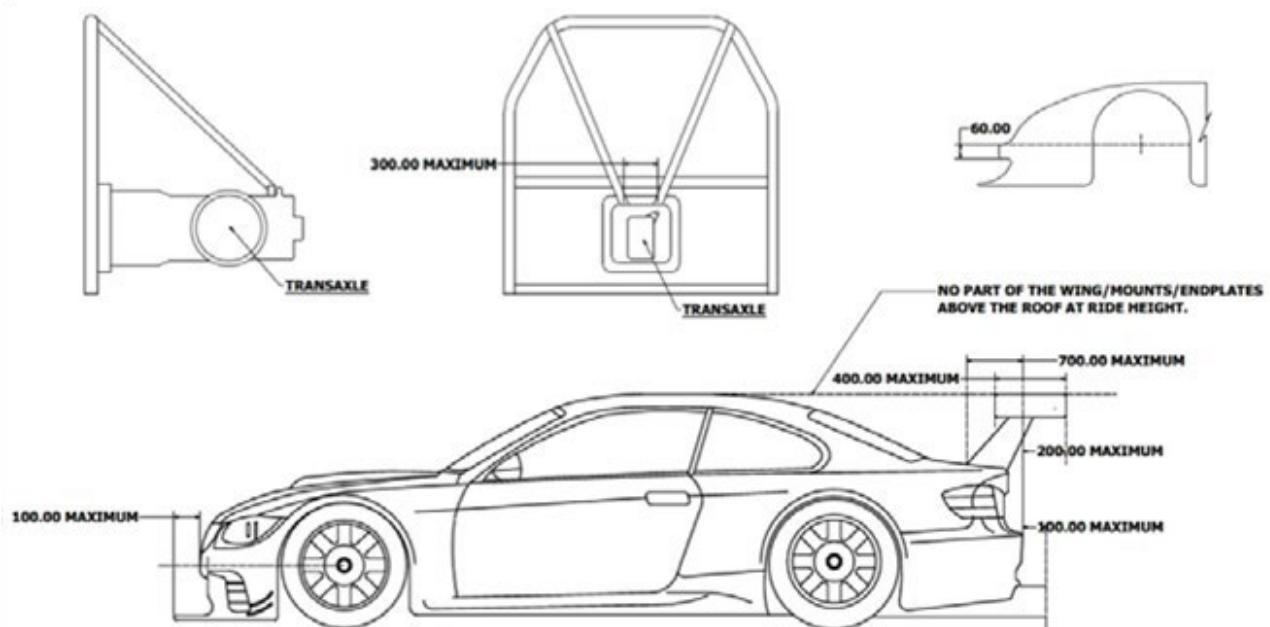
### DIAGRAM 1



### DIAGRAM 2



### DIAGRAM 3



### DIAGRAM 4

