

# SPEEDWAY SEDANS AUSTRALIA INC

ONLINE – VERSION 15 – JANUARY 2024

## SSA SUPER SEDAN SPECIFICATION MANUAL

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Rules and Regulations



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# SSA SUPER SEDAN SPECIFICATION

## Policy, Procedures and Definitions

### A. INTERPRETATION (01/07/23)

Speedway Sedans Australia Inc. (SSA Inc.) shall be the sole authority for the interpretation of, and compliance auditor for, these specifications, referred to from here as 'these specifications. At any Race Meeting, this authority is delegated to the Head Technical person.

SSA Inc Technical is inclusive of all established technical committees.

The role and responsibility of SSA Inc Technical and all technical sub committees is to continually monitor all facets of construction, safety, maintenance, competition, upgrading and not to preclude any competitor regardless of financial status.

Amendments to this specification manual may be made during the life of this manual for the reasons as set down in SSA Inc. Policy governing such amendments. Recommendations for an amendment will be submitted as per governing technical policy.

All technical enquiries must be directed through your Club Scrutineer, State Technical Representative/Delegate, and/or your State Office.

SSA Inc. registered vehicles must only compete with SSA Inc. registered vehicles and registered in the same class with drivers who hold an SSA Inc. / Speedway Australia licence and SSA Inc. approved insurance for the appropriate class.

### B. GENERAL

All new and existing cars must comply with all specifications listed below. If "IT" is not in the book, it will be considered non-compliant until written approval for use is issued by SSA Inc. Technical after being ratified by SSA Inc Board. (01/07/23)

### C. REGISTRATION / DAYLIGHTING / RACE DAY (01/07/23)

#### C.1 Registration

- a) A Super Sedan is a purpose built full chassis race car enclosed by a complete body.
- b) Application for registration of an SSA Inc Vehicle cannot be made by a person under the age of 18 years.
- c) An SSA Inc. registration shall only be issued subject to the car conforming to all specifications detailed in the SSA Inc. Specification Manual for the class in which the car is to be registered.
- d) A car being re-registered must have the logbook from the immediate previous season. A car being re-registered that was not registered in the immediate previous season and therefore had no logbook issued for that year of registration must provide validation of the car's previous registration, regardless of age; otherwise, the chassis area and the roll cage will be subject to new car specifications as per all current specification manuals.

- e) A new registration decal will be issued annually and must be attached to a prominent/protected location on the car.

### **C.2 Daylighting of Race Car (01/07/23)**

- a) The car must pass a Daylight Inspection based on confirming compliance.
- b) The Daylight Inspection must be carried out by an independent registered SSA Inc Official – not to be completed by the car owner or the car builder/constructor.
- c) All **new cars** are required to undertake and pass a daylight inspection.
- d) A Daylight Inspection for continually registered cars will be every three (3) years.
- e) A Daylight Inspection is required for a car that was not registered in the previous immediate season/registration period.
- f) An additional Daylight Inspection must be completed by a registered SSA Inc Machine Examiner/Scrutineer and be placed in the Logbook following any structural repairs during the period of registration.
- g) A copy of the current Daylight Sheet must accompany Logbook on Race Day and/or Official Practice days.

### **C.3 Race Day Requirements (01/07/2020)**

- a) The logbook must be endorsed by an SSA Inc registered/Machine Examiner/Scrutineer at each meeting prior to competing. A logbook without endorsement by the SSA Inc Machine Examiner/Scrutineer is equivalent of a no participation ticket.
- b) Race Day Scrutineering – A competitor/owner of a car taking part in the race meeting must not scrutineer or sign off the logbook for his/her own race car. (01/07/17)
- c) Race Day Work Orders – Maximum work order at ANY race meeting, either Club, State or National to be 7 days or next participation in competition – whichever comes first. 7 Day work orders to be issued only for non-safety and non-performance items.
- d) A **current** copy of the Daylight Sheet and Engine Seal forms corresponding to all seals on the engine being used and fitted to car to be stapled into the back of the logbook. (01/07/23)

## **D. DECLARATION OF COMPLIANCE**

The Owner of the car shall complete an SSA Inc. DECLARATION OF COMPLIANCE annually.

Compliance Declaration will include:

- a) SAFETY- compliance with all safety requirements
- b) ELIGIBILITY- Compliance with all manufacturing specifications

c) ENGINE- Compliance with class engine specifications

It is the **responsibility of the Owner/Driver** to complete pages 2 to 4 of the Log Book, ensuring that the Declaration of Compliance (page.3) has been completed before participation in any official practice session or race meeting. SSA Inc. Registration will be deemed void until such time the Log Book, pages 2 to 4 have been correctly completed. (01/07/2020)

## E. MEASURING OF CARS

All cars are subject to engine checking and general measurement at any time by a duly accredited/registered SSA Inc Machine Examiner/Scrutineer, [SSA Inc Technical](#), and the SSA Inc Steward of the race meeting or the Racing Disputes Committee. (01/07/23)

The SSA Inc. reserves the right to impound and inspect any race car at any time, this may include the removal of any engine seals for inspection and including the downloading of any information via relevant means if applicable. (01/07/2020)

Cars can be selected at random and ordered to a [designated location](#) for dismantling. (01/07/23)

The Owner/Driver of the cars must deliver selected vehicle immediately upon request and supply the necessary [resources](#) to accomplish dismantling. Only persons involved in dismantling the car will be allowed in the immediate area of the vehicle being *inspected*. If there are no facilities available to check any parts of a vehicle, sealing of parts under question can be carried out and vehicle taken to a mutually agreed venue for examination at another time, but within fourteen (14) days. (01/07/23)

Impounded cars will be stored at the owner's risk. Although every reasonable precaution will be taken, no responsibility for fire, theft or damage will be assumed by the SSA Inc. and/or affiliated states and clubs. (01/07/2020)

## F. PENALTIES

The Super Sedan Specification Manual must be read in conjunction with the Australian Speedway Racing Rules and Regulations and/or notices issued by the SSA Inc. from time to time. Ignorance of these Regulations and Specifications and notices shall be deemed as no defense in regard to breaches and/or appeals.

## G. AUTHORITY TO EXCLUDE

If an SSA Inc. Official, including a duly registered SSA Inc Machine Examiner/Scrutineer, [SSA Inc Technical](#), SSA Inc Steward of the race meeting, or the Racing Disputes Committee determines prior to or during the race meeting that the Race Car does not meet the applicable specifications, the car will not be allowed to compete unless, at the discretion of the official, the deficiency: (01/07/23)

- a) - will not adversely affect the orderly conduct of the race
- b) - will not provide the competitor with a significant competitive advantage over other competitors
- c) - is so insubstantial as not to warrant a determination that the car is ineligible to race

If the car is permitted to compete under these circumstances, the SSA Inc Official will advise the competitor in writing by way of entry in the Log Book belonging to the car of the non-compliance and the time frame for correction of the non-compliance. If the non-compliance has not been corrected within the

specified timeframe, the car will be prohibited from competing in any future event. (01/07/2020)

#### **H. SPECIFICATION BOOK TERM**

This specification book will be an online electronic document. (01/07/19)

Specification manuals can be downloaded from the SSA Inc website [Click Here](#)

## **Personal Safety Equipment**

#### **I. DRIVER SAFETY**

- a) All protective clothing and safety equipment must be used and/or worn in the approved and accepted manner whilst competing, or testing and/or practice.
- b) All race wear/equipment shall be inspected at each practice and/or race meeting.
- c) Non-compliant safety equipment will be confiscated and stored by Club/State where event is being held for the duration of the meeting – if items withheld are not claimed at the completion of the meeting they will be deemed to be disposed of after 7 days. (01/07/2020)

#### **J. PROTECTIVE CLOTHING**

- a) All Protective Clothing shall comply with minimum standards for Safety Apparel as specified in the current Speedway Australia Racing Rules and Regulations. (01/07/2020)
- b) **HEAD & NECK SUPPORT DEVICE – EFFECTIVE 01/07/23 - NOTE – the use of an SFI or FIA certified and rated Head & Neck Support device such as ‘HANS’ for drivers is mandatory. (01/07/23)**

#### **K. SEAT BELTS**

An approved type racing harness must be fitted, using a minimum of four major belts and four mounting points, plus one or two anti-submarine/crotch straps. All belt or harness sets must be of SFI 16.1 certification and rating or greater. Only belts with over-centre lever lock buckle to be used. (01/07/21)

**SEAT BELT LIFE IS A MAXIMUM OF TWO YEARS FROM DATE OF MANUFACTURE or as per the Expiry Date on the attached SFI tag.**

Shoulder belts are to have separate anchor points/adjusters.

Shoulder belt mounting points shall be positioned to the rear and below the point, at which the shoulder belts come through the seat and be not more than 300mm from that point, attached to 38x3mm CHS or 38x2.6mm CHS (CDS). See Fig 1

Lower seat belt mounting brackets (anchor points) must mount to roll cage and chassis or substantial bar work using a minimum construction of 25x25x3mm RHS or 25x3mm CHS or 32x32x2.5 RHS or 38x2.6mm CHS (CDS). Seat belt attachment tag shall be 3mm minimum mild steel.

Anchor bolts shall be 10mm steel minimum.

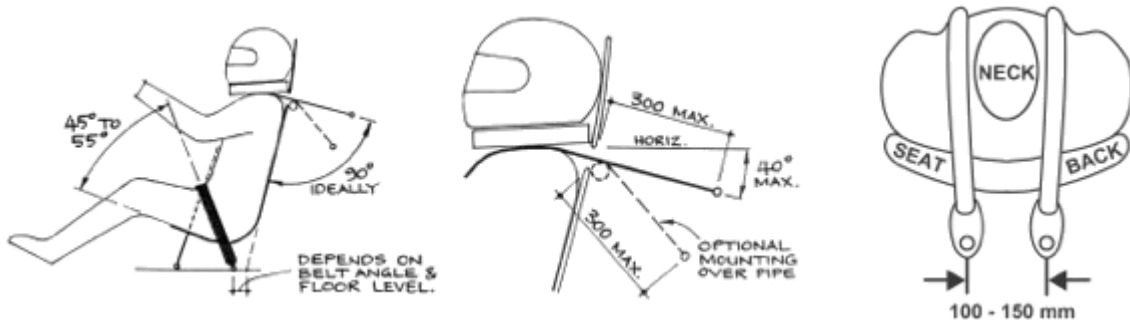


Fig. 1

## L. INSTALLATION OF DRIVER RESTRAINT SYSTEMS

The mounting points must be solid and should remain so even if the vehicle is deformed due to an accident. The mounting points should also not put undue strain or twist on the belt system hardware. The lap belt should be positioned so it rides across the solid pelvic area and not the soft stomach area or down on the thighs. The shock absorbing ability of the pelvic area and its ability to protect internal organs make it the preferred location for the lap belt. See Fig 2 (i) & (iii).

The shoulder harness should be mounted to prevent driver's shoulders from moving forward (upward if semi-reclining), out of the seat, in the event of a rollover.

Anti-submarine straps serve two purposes;

1. To secure the lap strap down across the driver's hips, so in the event of an accident, it is not pulled up across the stomach by the shoulder straps.
2. To prevent the driver from sliding forward and out of the harness. When the driver is seated in an upright position, as in most sedans, a five-point system (a single anti-submarine or crotch strap) is considered adequate (Fig 2 ii). For extra assurance a double strap anti-submarine belt can be used. (Fig 2 iv)

When the driver is seated in a semi-reclining position a six-point system (two anti-submarine or crotch straps) is preferable. Most drivers find the two anti-submarine strap system more comfortable. In many instances, the anti-submarine straps are mounted much too far forward of the seat. This practice could cause unnecessary injury as the body can slide partially out of the seat before being restrained when the strap contacts the groin. It is much more practical to cut a slot in the seat bottom so the anti-submarine strap can be anchored in line with the chest. (Fig 2 (i))

Because of the differences (often vast) in competition vehicles, a 'standard' method of mounting is impractical. Good judgement and common sense in inspecting restraint system mounts is needed. Safety equipment is often neglected in favour of performance equipment, but its proper operation when the need arises is essential to survival.

Fig. 2(i)

Lapbelt should be installed at an angle, 45-55 degrees to the tangent line of the thigh.

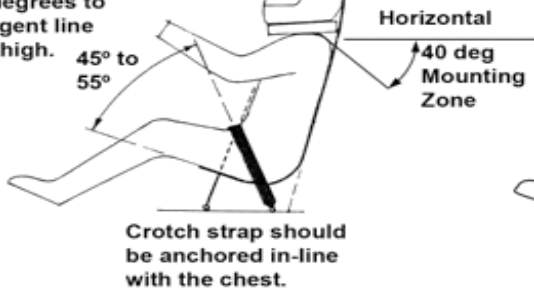
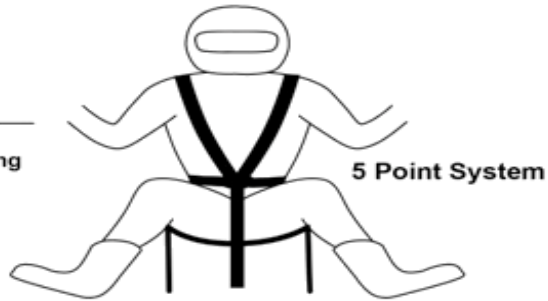


Fig. 2(ii)

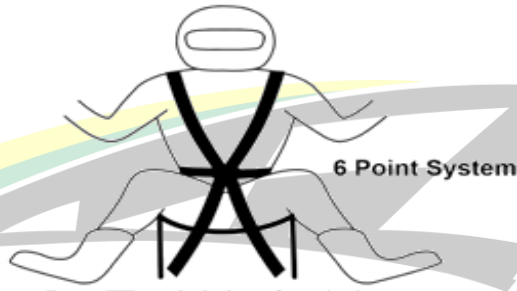


Seat belts should be anchored apart the same distance as the driver is wide. Mounting brackets should be angled the same distance as the belts pull and not tilted in or out.

Mount shoulder harness to rollbar 100mm below shoulder



Shoulder harness should be anchored at a 45° degree angle from the seat. If mounted to the rollbar cross brace, it should be located 100mm below the shoulder line.



Crotch strap mounts as far apart as comfortable

Fig. 2(iii)

Fig. 2(iv)

## L. ADJUSTMENT OF DRIVER RESTRAINTS

With the driver fully kitted out in 'underwear and driving suit', check that, with the driver seated, belt slots in the seat line up with natural line of the belt from anchor to buckle when just the lap belt is tensioned. Ensure that the lap adjusters do not foul the seat and that they are readily accessible. Some belts adjust by pressure downward others by pull up. Check that the driver can manipulate belt adjusters with gloves ON.

Also check that anchor hardware is aligned and that it is not possible to have a hitch in the anchor area without detection (sudden release of the belts to 50mm slack can put the driver off-line). Also check if the belt is holding the seat or the driver, it must be the latter.

Adjust the anti-submarine strap/s to ensure that the buckle is held flat and close to the body over the pelvis. When satisfied that the lap belt is OK, put on the helmet and check just how far the helmet (with visor) can reach, head plate clearance, helmet/window net etc. Slacken the seat belt, engage the shoulder belts into the buckle and tension the seat belts again, checking position of the buckle and adjusters. Tension each shoulder belt, checking that the adjustment range is suitable to the driver, that the belts and hardware don't foul the seat and that the natural line of the belts holds the driver as with the lap belts.



Note also any change in the buckle location and lay. If there is too much variation with the buckle it would appear that lap anchors are not in optimum position.

Before the driver releases the buckle, he should slacken both shoulder belts with the adjusters, in order to make re-entry to the car and refitting of the seatbelts as simple as possible.

## M. WINDOW NET

**Purpose** – the purpose of the Window Net is to protect the driver from flying debris and contain the driver's extremities within the vehicle. (17/09/22)

- a) Window Net is mandatory.
- b) Window net to be in good condition. (01/07/18)
- c) Window Net to be a minimum approved SFI standard of 27.1
- d) Modifications such as cutting, drilling or hole punching the window net material to facilitate attachment is NOT permitted. (01/07/19)
- e) Window nets with SFI rating that have manufacture dates be replaced every two years. (14/09/19)
- f) Window nets with SFI rating that have an expiry date be enforced *and replaced according to expiry date*. (01/07/2020)
- g) As from the 01/07/2023 all SFI rated window nets with expiry/end date will be mandatory. (14/09/19)
- h) FIA J253.11 window nets are acceptable and must meet the FIA standard/requirements. There is no expiry date applicable. In this instance Item b) applies. (01/07/20)



SFI Labels Prior to 2017

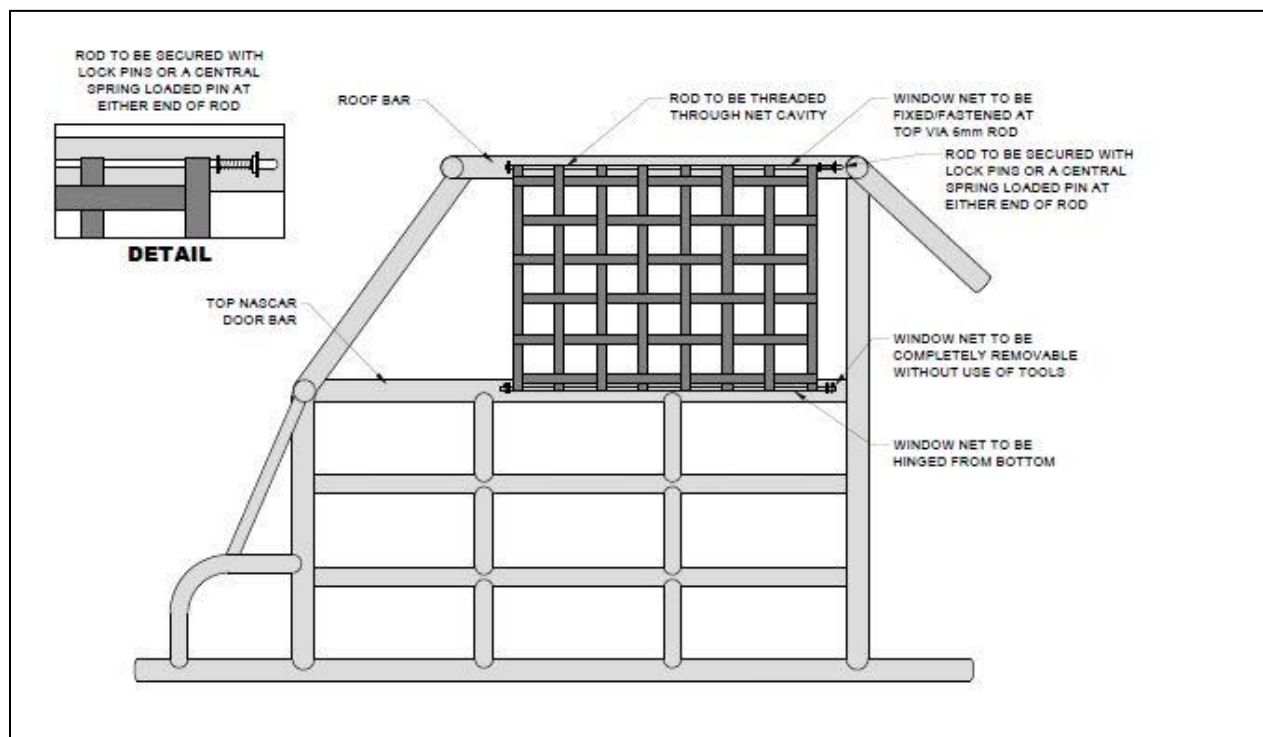


SFI Labels Available Jan. 1, 2017



## WINDOW NET FITMENT

- a) The window net shall be hinged from the bottom and shall be fixed at the top via a 6mm minimum rod threaded through the cavity provided. The rod shall be secured with lock pins or a central spring-loaded pin.
- b) Window net shall be secured to any combination of roof hoop bar, A pillar bar or the main hoop bar at the top.
- c) *The lower mount shall be secured to the roll cage. (01/07/23)*
- d) Quick release seat belt type attachments are also permitted. (15/11/13)
- e) Window net is to be removable from roll cage without the use of tools when access behind panelling and decking is required. (03/09/2020)



## O. PADDING

- a) Padding shall be used to protect driver from injury in the event of an accident. Cars shall be manufactured to minimise driver contact with sharp edges, projections or bar work in the cabin area.

## P. FIRE EXTINGUISHER

- a) An on-board fire extinguisher is permitted. It must be securely mounted and be suitable for the fuel being used.

## Q. SEAT - updated 01/07/22

A Competition Seat is used to secure the competitor within the vehicle with the objective of minimizing injury to the competitor during an accident and of supporting them safely during normal racing conditions.

The following competition seats are permitted. -- Refer to Images on Page 12

NOTE – IF USING AN INTERMEDIATE STYLE SEAT WITHOUT CONTAINMENT BUILT IN, PROPRIETARY HEAD AND SHOULDER SUPPORTS MUST BE ATTACHED TO ACHIEVE FULL CONTAINMENT.

1. If using a **non SFI/FIA approved proprietary** manufactured full competition/containment style seat which is constructed of aluminium. Refer to Seat Fig 1.
  - a) Homemade seats will be deemed non-compliant and are not permitted. (02/10/22)
  - b) The seat back is to be mounted approximately at shoulder height to the main hoop centre spreader bar or seat back/shoulder bar (Bar #5/6) at 2 (two) points.

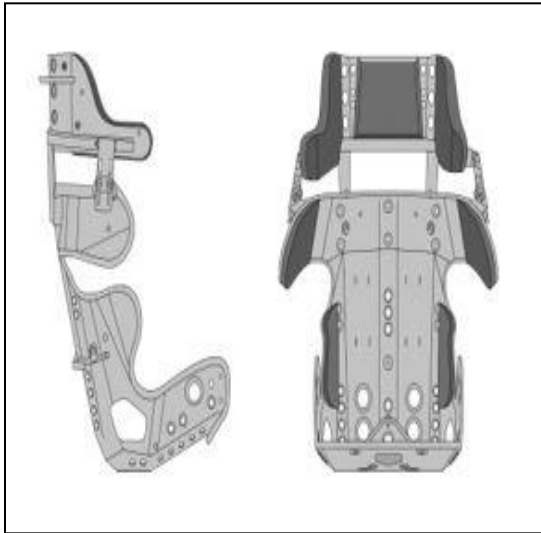
- c) The seat base to be mounted with a minimum of 4 (four) points to the roll cage/chassis, spread evenly to distribute the load. (02/10/22)
- d) Seat base is inclusive of the lower portion of seat that supports the hips, thighs and pelvic area. (02/10/22)
- e) Hardware for mounting will be SAE grade 5 or better – 5/16” minimum bolts.
- f) The use of **30mm** minimum diameter metal body or aluminium tapered seat body washers (see picture below) to be used at all seat mounting points. (17/09/22)
- g) The use of proprietary seat manufacturers mounting kits are permitted.



NOTE – IF USING AN INTERMEDIATE STYLE SEAT WITHOUT CONTAINMENT BUILT IN, PROPRIETARY HEAD AND SHOULDER SUPPORTS MUST BE ATTACHED TO ACHIEVE FULL CONTAINMENT.

2. If using an **SFI/FIA approved** full containment seat which is constructed of either aluminium or composite materials and provides for mounting the seat back to the shoulder bar of the vehicle roll cage. Refer to Seat Fig 2.
  - a) The seat assembly pertaining to the construction of the seat, shall remain as constructed by the original manufacturer and shall not be modified by anyone else. i.e. no drilling of seat for mounting purposes.
  - b) If the seat used cannot be mounted as per this SSA specification, then the seat is unable to be used and is not permitted.
  - c) The seat is always to be mounted as per the manufacturers fitting instructions.
  - d) Where possible the use of the manufacturer mounting kits and hardware is highly recommended.
3. **General Requirements for all Seats**
  - a) All support projections/wings are portions of the seat which are positioned opposite the head, shoulder and pelvic areas are extensions of a regular seat to provide extra support for those body locations and side crashes.
  - b) The seat design shall provide lateral (sideways) support to upper part of legs and hip area.
  - c) The seat shall support the drivers back to the top and full width of the shoulders.
  - d) The seat must utilise and provide head and shoulder protection on both sides of seat.
  - e) The seat base is to be mounted completely on the right-hand side of the vehicle centreline.
  - f) The driver shall have a minimum clearance between the helmet and the head plate/hoop bar when seated.

NOTE – IF USING AN INTERMEDIATE STYLE SEAT WITHOUT CONTAINMENT BUILT IN, PROPRIETARY HEAD AND SHOULDER SUPPORTS MUST BE ATTACHED TO ACHIEVE FULL CONTAINMENT.



**Seat Fig 1**  
Typical Aluminum Full Containment Seat



**Seat Fig 2**  
Typical Composite Containment Seat

**SEAT BELT MOUNTING TABS (14/09/19)**

For all **NEW** Super Sedans registered from 1 July 2020 – seat belt mounting tabs to one of the following options:

- Option 1 – if one flat piece is being used must be minimum 50x50mm x 3mm minimum thickness and fully welded on both sides.
- Option 2 – 40x40mm x 3mm minimum thickness also acceptable if RHS is used making tab 3 sided. Sides to be a minimum 20mm.
- Option 3 – Bent tabs also acceptable 40x40mm x 3mm minimum thickness with 20mm long angles minimum.
- Option 4 – if one flat trapezoid tag is used, must be as per diagram – measurements to be minimum 55x35x25mm x 5mm. To be welded on both sides of the longest side.
- Option 5 – if using ‘wrap around’ method of mounting seat belts they **MUST** be mounted so that the belt cannot slide along the mounting bar.

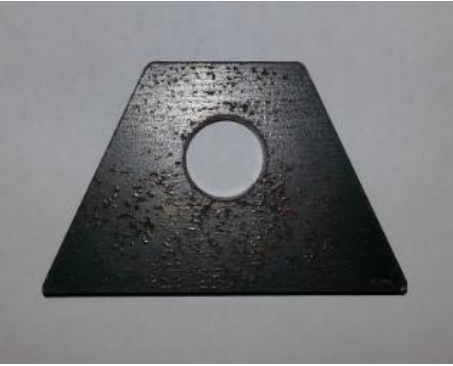
If using Option 2 or 3 the tags, must be welded on one side of the entire bracket assembly, as per attached photo.



Option 2 – RHS Seat Belt Mounting Tab



Option 3 – 40x40mm x 3mm Bent Tabs



Option 4 – 55x35x25mm x 5mm Trapezoid

## SSA Super Sedan Technical Specifications

### Section 1 – General Specification

#### SSA Super Sedan

A Super Sedan is a purpose-built full chassis race car enclosed by a complete body. A Super Sedan shall also comply with the following:

- (a)
  - (i) Right hand drive only;
  - (ii) Engine in front of driver;
  - (iii) Rear wheel drive only;
  - (iv) Quick change differential or differential fitted with full floating rear axles;
  - (v) Independent front suspension;
  - (vi) Wheel base 2540mm minimum, 2740mm maximum; and
  - (vii) Moulded plastic or fibreglass nose and tail panels.
- b) All workmanship shall be to a professional standard and all materials used shall meet the minimum standard specified.
- c) All material sizes quoted are a minimum specification unless a maximum is stated.
- d) No cabin adjustments allowed except for brake bias and brake shut off valve.
- e) Adjustable timing devices and adjustable rev limiters are not allowed inside cabin area or where they can be adjusted by a driver.
- f) No electric, electronic, hydraulic or wireless activated adjustments allowed except those specified for non V8 ECU cars.
- g) Rear Vision Mirrors or rear vision cameras with display are not permitted.

#### Weight Limits

Minimum weight including driver:

V8	1100 kg	(2420 lbs.)
6 Cylinder and Rotary	1000 kg	(2200 lbs.)
CT 525 Engine as specified	1000 kg	(2200lbs) (01/07/19)

Vehicles shall be weighed at any time and are subject to revision. (01/07/19)

#### Interiors and firewalls

- a) Driver must be protected and isolated from mechanical, fuel, electrical and exhaust components by a metal firewall minimum 0.9mm thick.

## Presentation and Signwriting

- a) All paintwork, sign writing and numbers are to be neat, attractive and of a professional standard.
- b) All vehicles must carry the correct identification number as issued by their club and must be a minimum of 300mm high. (05/10/14). This number shall be displayed on each side of car and on the roof. In addition, a 150mm high number and prefix shall be placed on the tail of the car to help drivers line up when one-way communicators are used.
- c) The name of the driver shall be displayed on the roof over RH door or on visor strip, in letters of a minimum of 75mm high.
- d) Headlight and tail light apertures may be highlighted by decal or silhouetted to help identify make and model. Decals indicating make and/or model may be fixed to the vehicle in prominent positions.

## Section 2 - Roll Cage & Chassis

### ROLL CAGE (01/07/22)

Newly constructed vehicles will be able to option the use of the previous Section 2a Roll cage Material & Design

Both Roll Cage specifications will be subject to their individual respective design and material compliance requirements and are unable to be cross referenced.

Construction of Roll Cages in Section 2 as published in this Specification Manual inclusive of the Material and Design, is the preferred option and is highly recommended by Speedway Sedans Australia.

### Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

#### GENERAL

- a) The roll cage is to provide a safe enclosed environment for the driver and is intended to prevent the collapse of the cabin area under impact.
- b) The roll cage is to fully enclose the driver with the roll bar tubing that constitutes a cage type framework, braced fore and aft.
- c) The cage must extend behind the driver's seat and forward to the windscreen area and incorporate adequate foot protection.
- d) All A-leg and roof hoop options must be constructed so as the driver can enter and exit the car through the driver's side window opening at all times. A-legs and other roll cage bracing that protrude through the driver side window opening that significantly impedes the driver's ability to enter or exit the car will be deemed non-compliant. (01/07/23)
- e) All bends to be made using a bender with the correct size former using a cold working process with no evidence of crimping, wall failure or significant weakening. The centreline bend radius must be 3 times the tube diameter. If during the bending process the tubing is ovalized the ratio of minor to major diameter must be 0.9 or greater.
- f) All bars to be suitably notched to accommodate correct assembly of roll cage.
- g) All welding is to be of a high quality with adequate penetration using only gas shielded arc welding techniques. e.g., mig or tig. All joints to be fully welded.
- h) Sonic Testing to be performed only on a straight section of tube. It is the owner's responsibility to remove paint/powder coating if required. (Sonic Test at not less than 2.40mm ABSOLUTE) (01/07/23)
- i) Roll cage is to be symmetrical about a common centreline through the front chassis rails and cabin chassis area and be full height of the cabin chassis area.
- j) Rear rail lateral location shall be placed at manufacturer's discretion. The minimum distance between the rails shall be 736mm (29 inches)

## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

- k) All bar work shall be inside the body. Roof area of the cage shall be a minimum 765mm long and 1065 mm wide as measured to outside of roof hoop bar. Floor area shall be minimum 900mm x 1445mm.

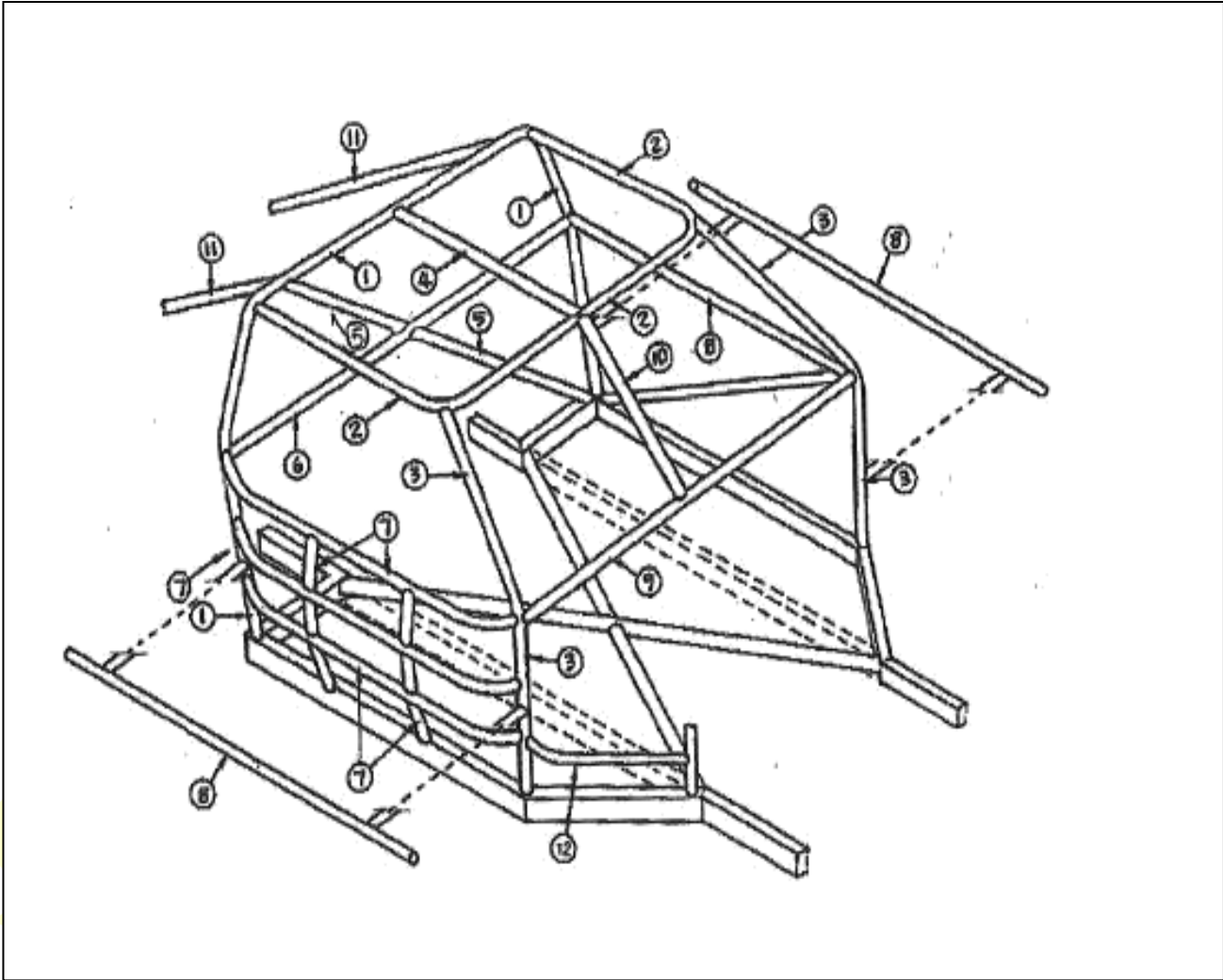
### MATERIAL SPECIFICATION

- a) Please refer to Minimum Dimensions Table following for bar size and types. (01/07/23)
- b) Minimum Cold Drawn Seamless (CHS) mild steel tube with a minimum tensile strength of 350 MPA. Unless otherwise specified. (01/07/2020)
- c) Where RHS is permitted all tube to be of AS1163 standard mild steel with a minimum tensile strength of 350 MPA.
- d) No galvanising on any tube allowed.
- e) All tube must display good elongation and welding properties.

### MINIMUM DIMENSIONS TABLE (01/07/23)

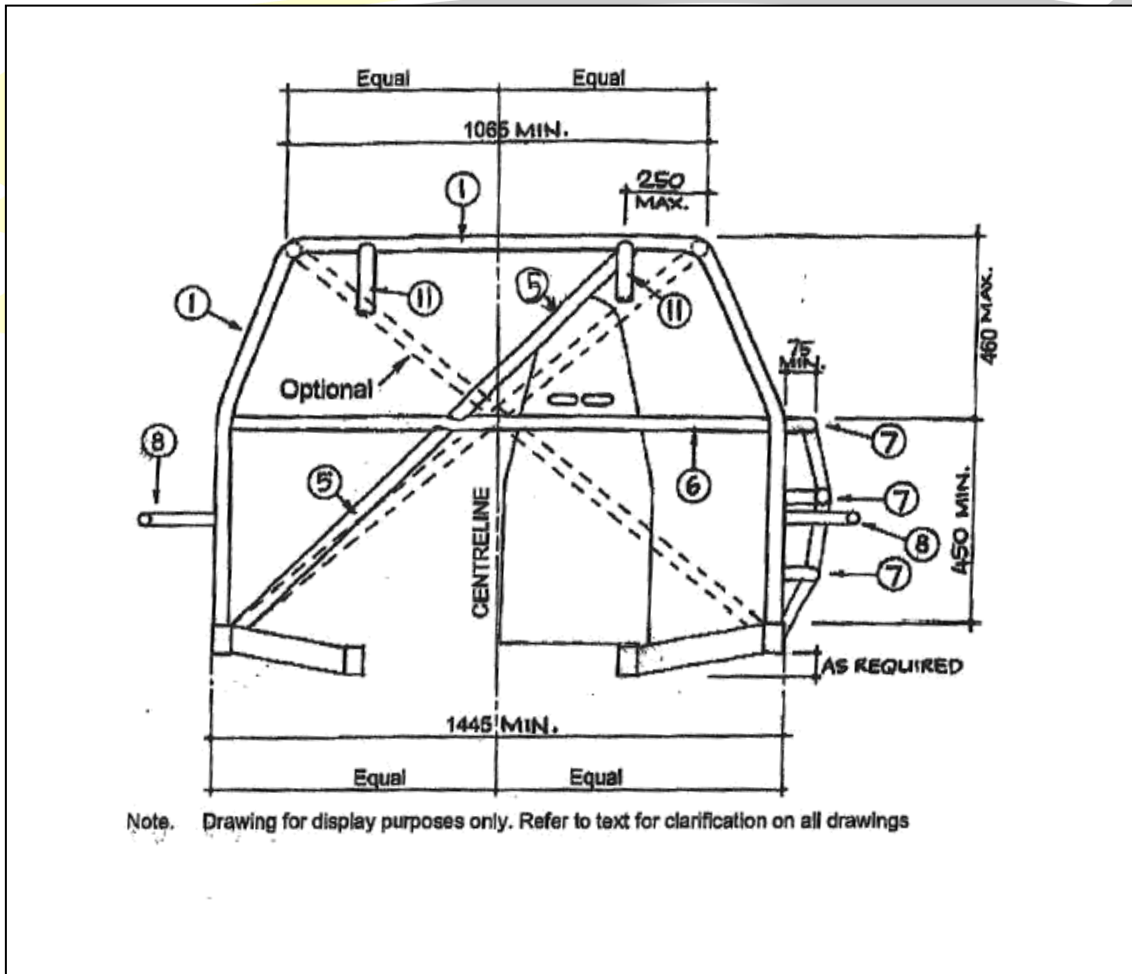
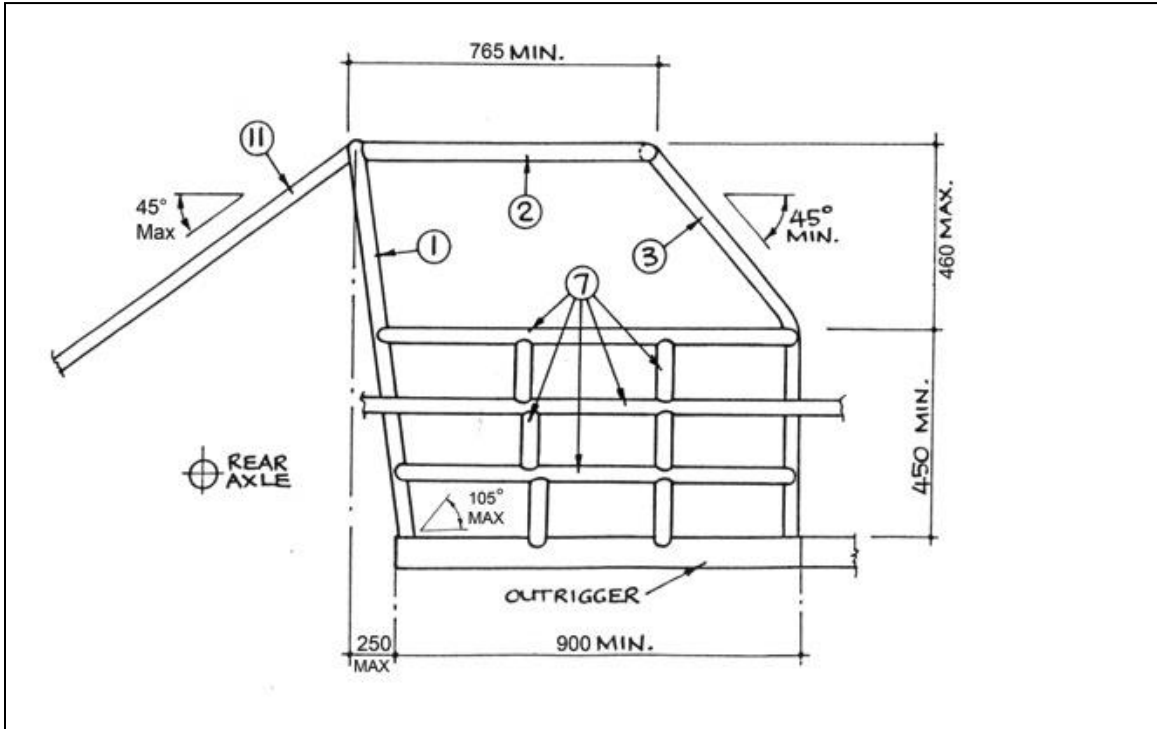
Bar #1	Main Hoop Bar	44.45 x 2.6mm	CHS
Bar #2	Roof Hoop Bar	44.45 x 2.6mm	CHS
Bar #3	Front A Legs / A Pillar Bar	44.45 x 2.6mm	CHS
Bar #4	Centre Roof Bar	38 x 2.6mm	CHS
Bar #5	Main Hoop Diagonal Bars	38 x 2.6mm	CHS
Bar #6	Main Hoop Centre Spreader Bar/Seat Back/Shoulder Harness Bar	38 x 2.6mm	CHS
Bar #7	NASCAR Door and Dropper Bars	38 x 2.6mm	CHS
Bar #8	Door Bars	38 x 2.6mm	CHS
Bar #9	Lower Windscreen Dash Bar	38 x 2.6mm	CHS
Bar #10	Centre Windscreen Bar	25 x 2.6mm	CHS
Bar #11	Rearward Brace Bars	38 x 2.6mm	CHS
Bar #12	Foot Protection Bar	38 x 2.6mm	CHS
	Chassis Design Option – Through Rails – these 3 choices are the only size and types of material accepted (01/07/2020)	38 x 2.6mm 40 x 40 x 3mm 50 x 50 x 1.6mm	CHS RHS RHS
	Chassis Design Option – Crucifix – these 2 choices are the only size and types of material accepted (01/07/2020)	38 x 2.6mm 50 x 50 x 1.6mm	CDS RHS

Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021





Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021



## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

### 1. **Main Hoop Bar:** Bar #1

The rear main hoop shall be formed from one continuous length of tubing with smooth continuous bends and no evidence of crimping, wall failure or significant weakening. Rear main hoop to be welded to the top of chassis outriggers. The rear main hoop may slope back away from vertical a maximum of 15 degrees.

### 2. **Roof Hoop Bar:** Bar #2

The roof hoop shall be formed from one continuous length of tubing and be welded to the main hoop to form around the driver's head. Alternatively, the roof hoop may be replaced by using one continuous piece of tube to form the front leg and A pillar which then continues back to the main hoop. The alternate roof hoop shall be completed by the installation of a spreader bar across the top of the windscreen.

### 3. **Front A Legs/A Pillar bar:** Bar #3 (01/07/2020)

#### **GENERAL**

The A pillar part of the front legs **MUST BE GREATER** than 45° (Bar #3) (See Drawing). The minimum distance between the front leg and the rear main hoop where they connect to the chassis outrigger shall be 900mm. This is measured outside to outside of the front leg and the rear main hoop bars.

**Option 1 – Two front legs** shall be formed from one continuous length of tubing and be welded to the Chassis Outriggers at the bottom and front corners of the Roof Hoop Bar (Bar #2) at the top.

**Option 2 – Roof Hoop Bar** (Bar #2) to be formed from one continuous length of tubing and be welded to the Chassis Outriggers and continue up as the A Leg and be bent towards and welded to the Main Hoop Bar (Bar #1).

**Option 3 – Dash Hoop Bar and Roof Hoop Bar** – this requires the A Pillar/Front Leg to be formed in 2 straight pieces. Lower A Pillar/Front Leg to be welded to the Chassis Outrigger at Point C and to the Dash Hoop Bar at Point A. Upper A Pillar/Front Leg to be mounted from Dash Hoop Bar upwards from Point A to the Roof Hoop Bar and be welded to the front corners of the one-piece Roof Hoop Bar. If using 38x2.6mm CHS tube as a top Dash Hoop Bar, the legs will be notched to fit around this tube and be fully welded on all sides. The two pieces of the A Leg must intersect at the same point on the Dash Hoop bend. The Dash Hoop Bar is the combination of Bars #7, #8 and #9 – in one continuous piece.

ALL A-LEG AND ROOF HOOP OPTIONS MUST BE CONSTRUCTED SO AS THE DRIVER CAN ENTER AND EXIT THE CAR THROUGH THE DRIVERS SIDE WINDOW APERTURE AT ALL TIMES. A-LEGS AND OTHER ROLL CAGE BRACING THAT PROTRUDE THROUGH THE DRIVER SIDE WINDOW APERTURE THAT SIGNIFICANTLY IMPEDES THE DRIVER'S ABILITY TO ENTER OR EXIT THE CAR WILL BE DEEMED NON-COMPLIANT.

### 4. **Centre Roof Bar:** Bar #4

Centre roof bar shall be welded between the main hoop and the roof hoop in the centreline of roll cage.

## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

### 5. **Main Hoop Diagonal Bar:** Bar #5

A diagonal brace will be fitted in the main roll cage hoop behind the driver's head, within 250mm of the corner and down onto the left side chassis rail or roll cage leg. (Top right to Bottom left)

**OPTION** - Rear Diagonal – A second diagonal shall be fitted in the main roll cage extending from the top left-hand corner down onto the right-hand side chassis rail or roll cage leg. (top left to bottom right)

### 6. **Main Hoop Spreader Bar/Seat Back Support/Shoulder Harness Bar:** Bar #6

One continuous piece of tube shall be fitted between the legs of the main hoop within 50mm of the top nascar bar height on either side. The spreader bar may be used as the seat belt anchor point provided that the belts are anchored a maximum of 300mm from the point at which the shoulder belts pass through the back of the seat. Top seat mount to be no further than 75mm lower than this bar.

### 7. **NASCAR Door and Dropper Bars:** Bar #7

NASCAR bars shall be fitted to the driver's side between the down leg of the main hoop and the front leg. The NASCAR bars shall consist of three horizontal side bars, curved out toward the door skin. One of the three bars may run straight through from the front wheel arch to the rear wheel arch and shall have two separate pieces turning at 90 degrees to connect onto the front leg and

## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

rear main hoop. There shall be a minimum of two bars evenly spaced between front leg and main hoop bar for each of the openings created by the horizontal NASCAR bars making a minimum of six bars to be fitted. E.g., Minimum 2 vertical bars between the top NASCAR bar and the NASCAR bar and the middle NASCAR bar, minimum 2 vertical bars between the middle NASCAR bar and the bottom NASCAR bar and a minimum of 2 vertical bars between the bottom NASCAR bar and the outrigger.

### 8. **Door Bars:** Bar #8

Passenger side shall have a minimum of two bars between front and rear roll cage legs. The top one must be horizontal and be the same height as top drivers side NASCAR bar. Top NASCAR door bar may be straight or deflect outwards. The second one must be waist height. Diagonal bracing in the passenger door area is optional. The driver's side door bar must be waist (widest part of door) height. (01/07/21)

### 9. **Lower Windscreen Dash Bar:** Bar #9

Lower windscreen and dash bar shall be a horizontal bar joining the front cage legs at top door bar and top NASCAR bar height.

### 10. **Centre Windscreen Bar:** Bar #10

A continuous piece of tube shall be fitted at centreline of roll cage at 90 degrees to & between the roof bar and the lower windscreen bar to intersect with the centre roof bar.

## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

### 11. Rearward Brace Bars: Bar #11

#### General (01/07/2020)

Both rearward brace bars options must connect to the rear of the main hoop within 250mm of the centre of the bend and extend rearward at a maximum angle of 45° down from the horizontal attaching to the rear chassis rails or rear chassis spreader.

**Option 1** – two one-piece rearward brace bars free of bends.

**Option 2** – a crucifix design with one bar being two pieces. The one-piece bar must be attached to the driver's side. All 3 bars to be free of bends.

### 12. Foot Protection Bar: Bar #12

Foot protection bar to extend from drivers' side front leg around to engine support bar or front chassis rail. The foot protection bar shall provide maximum protection to the driver's feet and legs in front of the foot well.

## CHASSIS DESIGN OPTIONS

**THROUGH RAILS-** The through Rails shall be one continuous length. Approved materials: 38 x 2.6mm CDS CHS, 40 x40 x 3mm RHS Minimum and 50 x 50 x 1.6mm RHS Minimum.

**CRUCIFIX-** The crucifix approved materials are; 38 x 1.6 CDS CHS and 50 x 50 x 1.6 RHS minimum. The crucifix shall terminate within 125mm of chassis outrigger. (01/07/2020)

**Windscreen Mesh:** Mesh screen is to cover the entire area from A Pillar front leg (Bar #3) to Centre Windscreen (Bar #10) and from top of dash paneling to Roof Hoop Bar (Bar #2).

- (i) Maximum effective mesh size 50x50mm mild steel. Mesh gauge 3mm.
- (ii) Windscreen mesh to be welded or clamped with metal clamps to the roll cage A Pillar front leg (Bar #3) and Centre Windscreen bar (Bar #10).
- (iii) Minimum of 4 (four) clamps.

**Anti-Spear Plates:** 3mm steel or 5mm aluminum (NOT to be lightened by any means)

- (i) The anti-spear plates to be mounted to the outside of the NASCAR bars and overlap the edge of the NASCAR bar work.
- (ii) Recommended 1/3 length between roll cage legs, to be fitted on the driver's side, from base of roll cage to top NASCAR bar, forward of the first vertical door dropper bar to the front leg of the roll cage.
- (iii) If using 3mm steel plate/plates to be fully stitch welded. (01/07/23)
- (iv) If using 3 individual 5mm alloy plates, they must be bolted on using a minimum of 4 – 50x50x3mm (square) or 55x40x6mm (rectangular) mild steel tags/plates per piece. (01/07/23)
- (v) Tags/plates to be solid square or rectangular with one hole only for the mounting point. (01/07/23)
- (vi) All alloy plates must be bolted on using a minimum of 8mm or 5/16" high tensile bolts with no protrusions. (01/07/23)

## Roll Cage Material and Design Option Effective for Registration commencing 1 July 2021

### HEAD PLATE

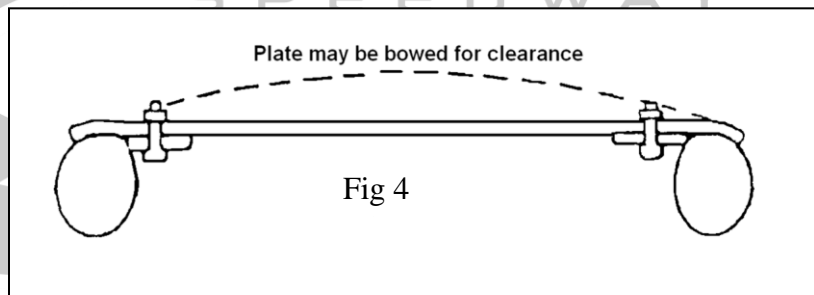
A minimum of 50mm clearance is required between the helmet, including fresh air intakes and associated fixtures, to any part of the head plate and roll cage when the driver is seated and harnessed. (01/07/2020)

All steel or aluminium head plates are to cover in full the opening above the drivers. To extend from roof hoop (bar #2) on the outside to the centre bar (bar #4), front roof hoop (bar #2), to main hoop (bar #1). Cutting of corners or any lightening of any form is NOT permitted. (01/07/23)

### **REMOVABLE STYLE**

- Head plate to be of 5mm aluminium or 3mm mild steel (NOT to be lightened by any means).
- Plate to be mounted from above and be proud of main hoop (bar #1), centre roof bar (bar #4) and side of roof bar (bar #2) as per Fig 4, with 10 mild steel Plate Tabs of 50x50x3mm (square) or 55x40x6mm (rectangular) will be required when using a removable Head Plate.
- Plate to be mounted, from above, with 10 x 8mm dia. High Tensile bolts, with lock nuts/locking devices fitted, 3 each side, 2 front, 2 rear. Heads of bolts to be downwards and spot welded e.g. no protrusions. (01/07/23)
- Plate tabs to be solid square or rectangular with one only hole for the mounting bolt

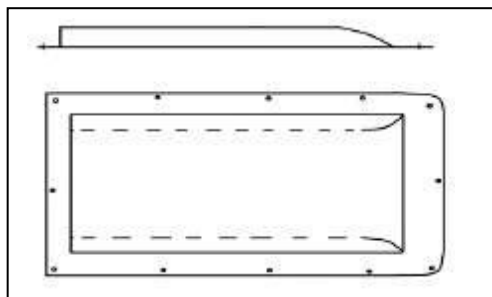
**Fig 4. Head Plate**



### **NON-REMOVABLE STYLE**

A full size 3mm mild steel head plate may be fully welded to top of Main Hoop bar (Bar #1), centre roof bar (Bar #4) and side of roof bar (Bar #2) using practice as outlined in General Item f).

Alternatively, the head plate may be fabricated to provide head clearance drawing below.



## 2a. ROLL CAGE for cars built and registered using original Roll Cage Material and Design

(01/07/22)

### CHASSIS AND ROLL CAGE CONSTRUCTION

#### Material Thickness and Tensile Strength

- a) All specified material used in the Roll cage and Chassis shall have a minimum tensile strength of 300MPa and a minimum wall thickness of 3mm (sonic test at not less than 2.7mm w.t. ABSOLUTE) after all fabrication and bending. This shall include but not be limited to manufacturing processes such as cutting, grinding, sandblasting, bending, stretching, welding, heating etc.
- b) Specified material includes any structural member specifically detailed in this document with a nominated minimum material size.
- c) All measurements for CHS relate to Tubing only (not pipe). Tube is defined as having an OD (outside diameter) and a w.t. (wall thickness)

#### Sonic Test

- a) Sonic testing to determine wall thickness shall be performed only on a straight section of tube. It is the owner's responsibility to remove paint or powder coating as necessary to perform the test. (01/07/23)

#### Material:

- a) CHS Circular Hollow Section.
- b) SHS Square Hollow Section
- c) FMS Flat Mild Steel
- d) RHS Rectangular Hollow Section.
- e) W.T. Wall thickness.
- f) O.D. Outer Diameter
- g) CM Chrome Moly 4130 (01/07/19)

#### Roll Cage

##### Roll cage material may be: (01/07/19)

Option 1 – 38 x 3mm Circular Hollow Section (CHS) mild steel

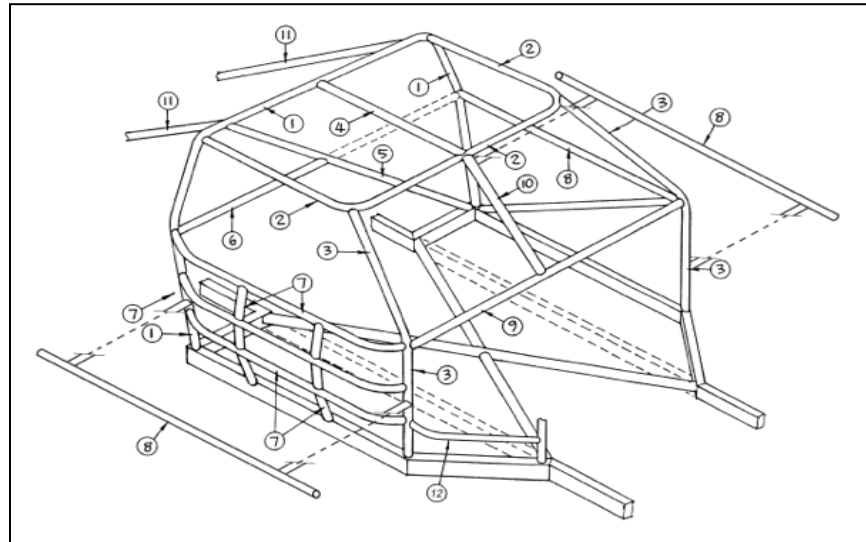
Option 2 – 38 x 3mm 4130 Chrome Moly (CM)

- a) The roll cage is required to provide a safe enclosed environment for the driver and is intended to prevent the collapse of the cabin area under impact.
- b) The roll cage is to fully enclose the driver.
- c) The roll bars are to constitute a cage type framework, braced fore and aft.
- d) The cage must extend from behind driver's seat forward to the windscreen area and incorporate protection for the driver's feet.
- e) Roll cage is to be symmetrical about a common centreline through the front chassis rails and cabin chassis area and be full height of the cabin chassis area.
- f) Rear rail lateral location shall be placed at manufacturer's discretion.
- g) The minimum distance between the rails shall be 736mm (29 inches)
- h) All roll bar material must be mild steel, minimum 38x3mm CHS.
- i) All bends to be made using a bender with the correct size former.
- j) All bar work shall be inside the body.
- k) Roof area of the cage shall be a minimum 765mm long and 1065 mm wide as measured to outside of roof hoop bar.
- l) Floor area shall be minimum 900mm x 1445mm.

The following drawing details the minimum structural requirements. Each item number is referred to in the text below.

## ROLL CAGE for cars built and registered using original Roll Cage Material and Design

Note. Drawing for display purposes only. Refer to text for clarification on all drawings



**MINIMUM DIMENSIONS TABLE (01/07/23)**

Bar #1	Main Hoop	38x3mm O.D.	CHS
Bar #2	Roof Hoop	38x3mm O.D.	CHS
Bar #3	Front Legs / A Pillar	38x3mm O.D.	CHS
Bar #4	Centre Roof Bar	32x3mm O.D.	CHS
Bar #5	Rear Diagonal – single	38x3mm O.D.	CHS
	Rear Diagonal – crucifix 2 <sup>nd</sup> bar	32x3mm O.D.	CHS
Bar #6	Seat Back/Shoulder Belt Bar	38x3mm O.D.	CHS
Bar #7	Door Bars – RH Side	38x3mm O.D.	CHS
Bar #8	Door Bars – LH Side	38x3mm O.D.	CHS
Bar #9	Lower Windscreen/Dash Bar	38x3mm O.D.	CHS
Bar #10	Centre Windscreen Bar	25x3mm O.D.	CHS
Bar #11	Rearward Brace Bars	38x1.6mm O.D.	CHS
Bar #12	Foot Protection Bar	38x3mm O.D.	CHS
	Quarter Window Bar	25x3mm O.D.	CHS
	Windscreen Mesh	50x50x3mm	Mesh
	Anti-Spear Plates	3mm Steel 5mm Aluminium	
	Head Plate	3mm Steel 5mm Aluminium	
	Chassis Design Option – Through Rails – these 3 choices are the only size and types of material accepted (01/07/20)	38x3mm O.D. 40x40x3mm 50x50x1.6mm	CHS RHS RHS
	Chassis Design Option – Crucifix – these 2 choices are the only size and types of material accepted (01/07/20)	38x1.6mm O.D. 50x50x1.6mm O.D.	CHS RHS

- (1) **Main Hoop** - The rear main hoop shall be formed from one continuous length of 38x3mm minimum tubing with smooth continuous bends and no evidence of crimping, wall failure or significant weakening. Rear main hoop to be welded to the top of chassis outriggers. The rear main hoop may slope back away from vertical a maximum of 15 degrees.

## ROLL CAGE for cars built and registered using original Roll Cage Material and Design

(2) **Roof Hoop** – The roof hoop shall be formed from one continuous length of 38x3mm minimum tubing and be welded to the main hoop to form a halo around the driver's head. Alternatively, the roof hoop may be replaced by using one continuous piece of tube to form the front leg and A pillar which then continues back to the main hoop. The alternate roof hoop shall be completed by the installation of a spreader bar across the top of the windscreen.

(3) **Front Legs** – Two front legs are to be formed each from a continuous length of 38x3mm minimum tubing and be welded to the chassis outriggers at the bottom and front corners of the roof hoop at the top. The 'door pillar' part of the front legs must not be flatter than 45 degrees. The minimum distance between the front leg and the rear main hoop where they connect to the chassis outrigger shall be 900mm. This is measured outside to outside of the front leg and the rear main hoop bars.

**OPTION:** Rather than using a main roof hoop and two front legs, one continuous roof hoop and one continuous shoulder hoop can be used. The shoulder hoop shall incorporate the top NASCAR bar, lower windscreen bar and passenger top NASCAR bar. This means that the A pillar bar to be formed in two pieces; one joining the chassis outrigger to the shoulder hoop and one joining the shoulder hoop to the roof hoop.

(4) **Centre Roof Bar** - Centre roof bar shall be minimum 32x3mm mild steel and shall be welded between the main hoop and the roof hoop.

(5) **Rear Diagonal** - A one-piece diagonal brace, minimum 38x3mm CHS will be fitted in the main roll cage hoop behind the driver's head, within 250mm of the corner and down onto the left side chassis rail or roll cage leg. (Top right to Bottom left)

A second brace may be fitted in cruciform. If a cruciform type bracing is used a minimum of 32x3mm CHS may be used.

(6) **Seat Back Support/Shoulder Belt Mounting Bar**- The anchor point mounting bar, minimum 38x3mm CHS, for the shoulder belts shall be positioned so that belts are anchored a maximum of 300mm from the rear of the shoulder belt opening of the seat.

(7) **NASCAR Bars**- NASCAR bars shall be fitted to the driver's side between the down leg of the main hoop and the front leg. The NASCAR bars shall consist of three horizontal side bars, curved out toward the door skin. One of the three bars may run straight through from the front wheel arch to the rear wheel arch and shall have two separate pieces 38x3mm turning at 90 degrees to connect onto the front leg and rear main hoop. There shall be a minimum of two bars evenly spaced between front leg and main hoop bar for each of the openings created by the horizontal NASCAR bars making a minimum of six bars to be fitted. e.g., Minimum 2 vertical bars between the top NASCAR bar and the NASCAR bar and the middle NASCAR bar, minimum 2 vertical bars between the middle NASCAR bar and the bottom NASCAR bar and a minimum of 2 vertical bars between the bottom NASCAR bar and the outrigger.

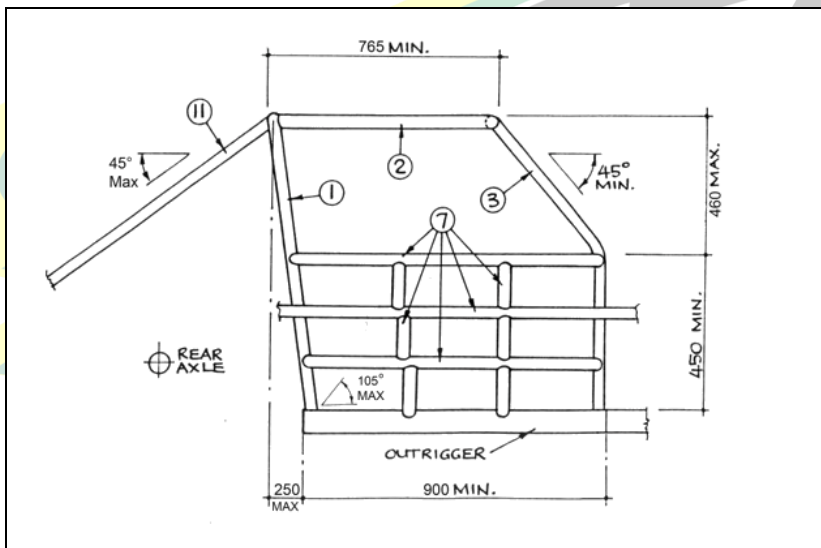
(8) **Door Bars** – Passenger side shall have a minimum of two bars between front and rear roll cage legs. The top one must be horizontal and be the same height as top drivers side NASCAR bar. The second one must be waist height. Diagonal bracing in the passenger door area is optional. The



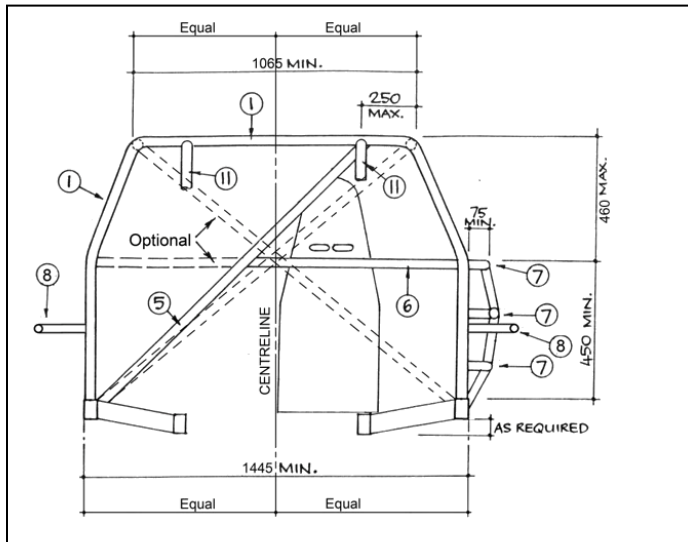
## ROLL CAGE for cars built and registered using original Roll Cage Material and Design

driver's side door bar must be waist height. Door bars shall be maximum 38x3mm CHS. Top NASCAR door bar may be straight or deflect outwards. (01/07/21)

- (9) **Lower Windscreen and Dash Bar** - Lower windscreen and dash bar shall be a horizontal bar joining the front cage legs at top door bar and top NASCAR bar height. As an option, the lower windscreen bar can extend in one continuous length to incorporate the top NASCAR bar, lower windscreen bar and passenger top NASCAR bar.
- (10) **Centre Windscreen Bar** - Centre windscreen bar, 25x3mm CHS mild steel.
- (11) **Rearward Brace Bars** - Rearward brace bars minimum 38x1.6mm CHS to extend from the top rear of main hoop down onto rear chassis rails (Maximum 45 degrees down from vertical). They may form a crucifix and must be attached to the rearward side of the main hoop within 250mm of the centre of the bend.
- (12) **Foot Protection Bar** – Foot protection bar minimum 38x3mm mild steel CHS to extend from driver's side front leg around to engine support bar or front chassis rail. The foot protection bar shall provide maximum protection to the driver's feet and legs in front of the foot well.



## ROLL CAGE for cars built and registered using original Roll Cage Material and Design



Note. Drawing for display purposes only. Refer to text for clarification on all drawings

### Quarter Window Bar

- A quarter window bar, if required because of excessive rake or a long roll cage, be fitted to both sides and installed from the top NASCAR bar to top half of pillar bar using minimum 25x3mm CHS.
- Alternately, a 38x3mm CHS bar may be fitted from top of 'A' pillar bar to top of NASCAR bar at 45° of the top bar on both sides.

### Anti-spear Plate

- An "anti-spear" plate, of 3mm steel or 5mm alloy, shall be fitted on the outside of driver's side NASCAR bars, from floor-line to the top NASCAR bar, forward of the first vertical door bar to the front leg of the roll cage. If not welded, a one-piece external door plate shall be bolted on using 8mm high tensile bolts through a minimum of 6 – 50x50x3mm MS tags welded to the NASCAR bars.
- If using 3mm steel plate/plates to be fully stitch welded. (01/07/23)
- If using 3 individual 5mm alloy plates, they must be bolted on using a minimum of 4 – 50x50x3mm (square) or 55x40x6mm (rectangular) mild steel tags/plates per piece. (01/07/23)
- Tags/plates to be solid square or rectangular with one hole only for the mounting point. (01/07/23)
- All alloy plates must be bolted on using a minimum of 8mm or 5/16" high tensile bolts with no protrusions. (01/07/23)

### Front windscreen mesh

- A 50 x 50 x 3mm steel mesh screen shall be securely fitted to roll cage in front of the driver.
- The windscreen mesh must be welded, or clamped with 4 metal clamps or bolts to the roll cage and cover the entire area between the "A" pillar and centre windscreen bar.
- A sun visor / mud protector cover strip may be fitted to the top and bottom of the mesh screen.
- No other window apertures shall be covered with any material except for the SFI approved window net on driver's window.

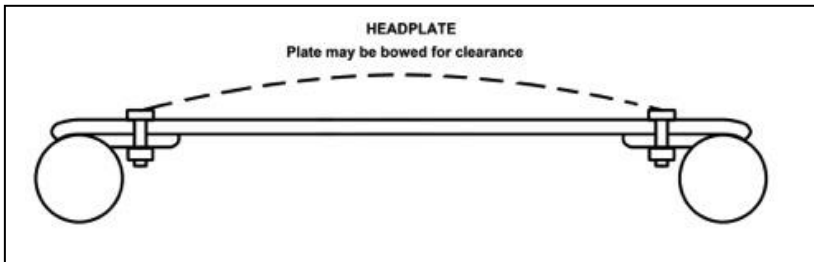
### Head Plate

- All steel or aluminium head plates are to cover in full the opening above the driver. To extend from roof hoop (bar #2) on the outside to the centre bar (bar #4), front roof hoop (bar #2), to main hoop (bar #1). Cutting of corners or any lightening of any form is NOT permitted. (01/07/23)
- The head plate shall be 5mm ALUMINIUM ALLOY or 3mm STEEL and shall be securely bolted

## ROLL CAGE for cars built and registered using original Roll Cage Material and Design

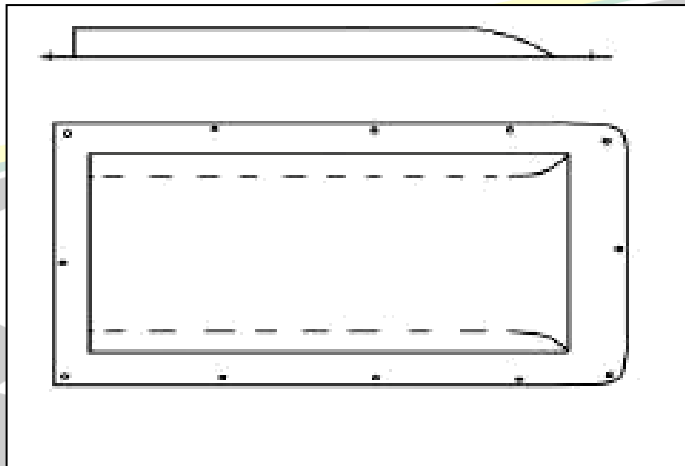
using a minimum of 10x8mm dia. high tensile bolts, with lock nuts/locking devices fitted, 3 each side, 2 front, 2 rear, bolted through 50x50x3mm MS tags. Plate shall be mounted from above. Fig 4 (i) (01/07/23)

- c) A minimum of 50mm clearance is required between the helmet, including fresh air intakes and associated fixtures, to any part of the head plate and roll cage when driver is seated and harnessed. (01/07/2020)



Alternatively, the head plate may be fabricated to provide head clearance as per Fig. 4(ii) below.

**Fig 4 (ii)**



### Skid Rails

- Skid rails are an optional fit and must be made of a nylon (urethane, nolathane) skid rail strip 50mmx12mm maximum.
- These skid rails shall not be included in the overall body width measurement or the 100mm that the wheel can be outside the bodyline.
- Skid rails must be securely mounted against body and through the door bar at a minimum of four points with equally spaced 8mm cup-head bolts.
- Bolts at each end shall be no more than 50mm from the end of the skid rail.
- Skid rails are not permitted on the quarter panel behind rear wheel.

### TOWING STRAPS – Optional – (01/07/2020)

- Tow straps are to be of wire rope cable or nylon webbing.
- Tow straps can be attached to front and rear over ride bars.
- Tow straps can be accessible through a hole in the front and rear bumpers.
- Tow straps are recommended to allow a disabled vehicle to be towed.

- (v) The use of the fuel tank protection bar or protection bar supports as a towing point at rear of car is NOT permitted. (01/07/19)

### **Chassis**

- a) The chassis is the 75x50x3mm minimum (sonic test at not less than 2.7mm w.t. ABSOLUTE) RHS frame that supports the body, engine and suspension components of an automotive vehicle.

### **Chassis Centre line**

- a) Defined as the mid-point between the outside of both outriggers in the cabin chassis area. This is calculated by dividing the measurement between the outside edges of the two outriggers by two.

### **Chassis Cabin Width**

- a) Material: mild steel 75x50x3mm RHS minimum.  
b) The chassis outriggers shall be full width of the cabin area and be symmetrical along the cabin area centreline.

### **Cabin Chassis Area**

- a) Cabin Chassis Area is the base of the chassis that the roll cage legs mount to and has a minimum floor area measuring 900mm x 1445mm.

### **Front Chassis Rails**

Material: mild steel 75x50x3mm RHS minimum.

- a) Front Chassis rails must extend forward of the front axle centre line minimum 380mm and shall be symmetrical to the cabin chassis area.

### **Rear Chassis Rails**

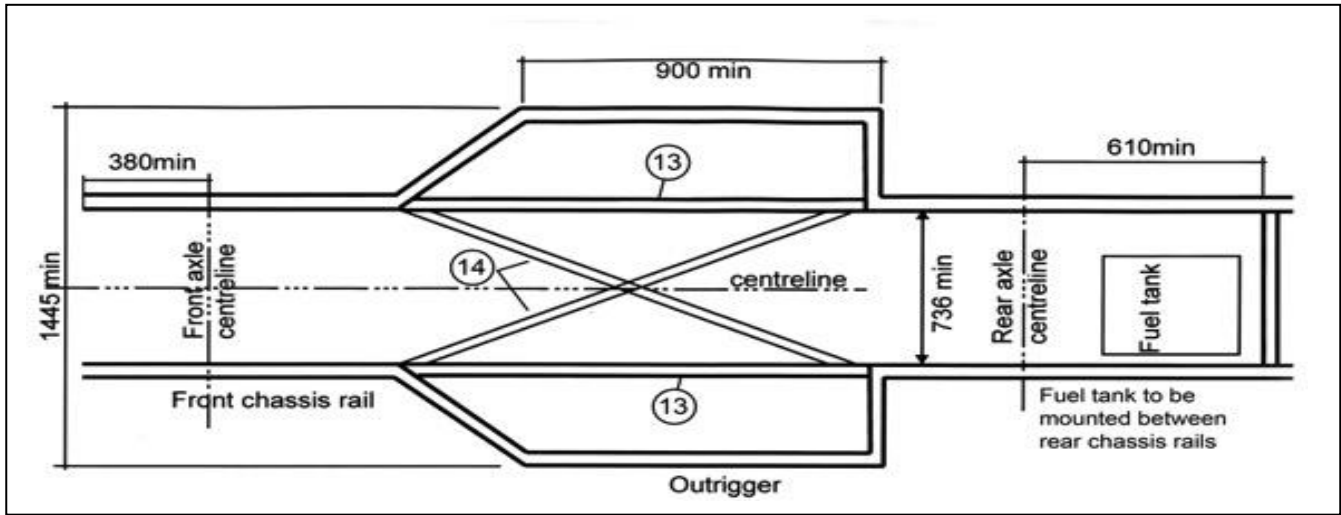
Material: mild steel 75x50x3mm RHS minimum.

- a) Rear chassis rails must extend from the centreline of the rear axle rearward a minimum of 610mm and have the fuel tank mounted in this area. I.e., Chassis rails must extend past the rear face of the fuel cell to protect the fuel cell in the event of an accident. The minimum distance between the inside face of the rear chassis rails as measured directly above the centre line of the rear axle shall be 736mm. (29inches.) Rear chassis rail location is not required to be symmetrical to the cabin chassis area.  
b) All material in fabricated chassis, chassis outriggers and/or sub-frames shall be minimum 75x50x3mm mild steel. Both chassis rails, fore and aft of cabin area, must be stepped a minimum of 75mm when viewed in side elevation to create a crush zone. Lightening of chassis material is not permitted.

### **Chassis Design**

Chassis shall be manufactured to comply with the design shown below.

Note. Drawing for display purposes only. Refer to text for clarification on all drawings.

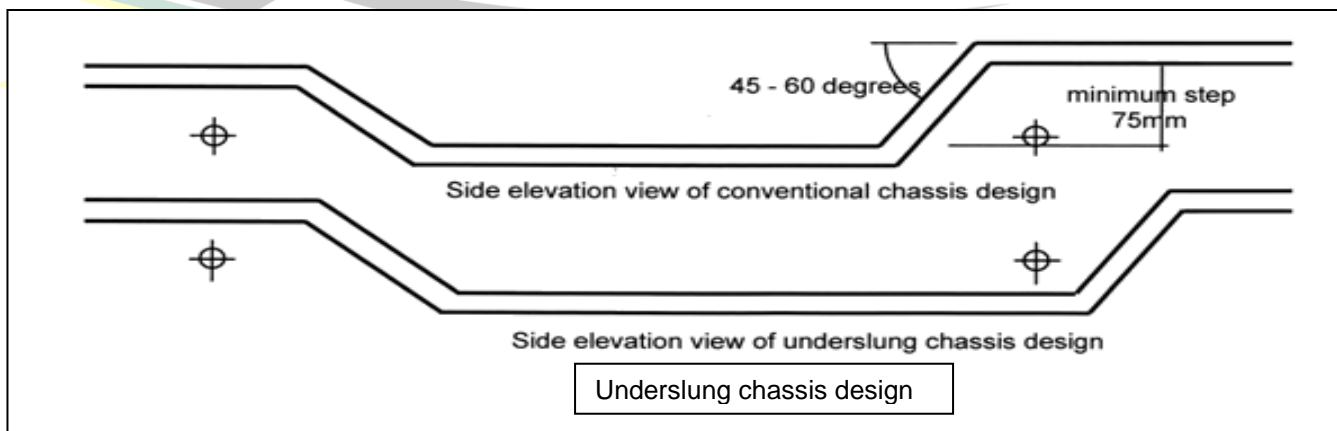


- (13) **Through Rails** – The through rails shall be 38x3mm CHS minimum, 40x40x3mm RHS minimum or 50x50x1.6mm RHS minimum. (01/07/2020)
- (14) **Through Rail Crucifix** – The crucifix shall be 38x1.6mm CHS or 50x50x1.6mm RHS minimum. The crucifix shall terminate within 125mm of the outrigger. (01/07/2020)

From 1 July 2020 ALL newly constructed SSA Super Sedans will use the through rail chassis design above.

The chassis may be constructed as either the conventional design or the underslung design as shown below. Both styles must incorporate the minimum 75mm step in the chassis to create a crush zone.

Conventional chassis design



## ANCILLARY BARWORK, PLATES AND BALLAST

### BALLAST (17/09/2022)

#### ATTACHMENT OF BALLAST IS TO BE BOLT-ON ONLY

- a) Each individual piece of ballast MUST be PAINTED white ONLY and be permanently marked with registered car number and prefix of the car the ballast is attached to.

- (i) Ballast is to be attached to substantial bar work or roll cage ONLY.
- (ii) Ballast permanently attached to roll cage, bar work or body via welding, clamping, or any other permanent attachment method is NOT permitted. This includes welding of attachment hardware (bolts).
- b)** Ballast attached to substantial bar work that is RHS is to be use one of the below attachment methods ONLY.
  - (i) Sleeves inserted in bar work with a minimum of two (2) ½” or 12mm high tensile bolts, washers and nyloc nuts with a minimum of two (2) threads protruding.
  - (ii) A 5mm plate minimum of 100x50mm to a maximum of 200x75mm with a minimum of two (2) ½” or 12mm high tensile bolts, washers and nyloc nuts with a minimum of two (2) threads protruding.
  - (iii) A minimum of two proprietary ballast type clamps. i.e. Allstar, Bicknell, AFCO etc. Accessory type clamps NOT permitted.
  - (iv) Rated leaf spring shackle type U-bolts, with washers and nyloc nuts with a minimum of tow (2) threads protruding.
- c)** Ballast attached to roll cage or substantial bar work that is 44.45mm or 38mm CHS is to use one of the below attachment methods ONLY
  - (i) Sleeves inserted in bar work with a minimum of two (2) ½” or 12mm high tensile bolts, washers and nyloc nuts with a minimum of two (2) threads protruding.
  - (ii) A minimum of two proprietary ballast type clamps. i.e. Allstar, Bicknell, AFCO etc. Accessory type clamps NOT permitted.
  - (iii) Rated leaf spring shackle type U-bolts, with washers and nyloc nuts with a minimum of two (2) threads protruding.
- d)** ALL BALLAST IS TO ATTACH SEPERATELY USING ONE OF THE ABOVE PERMITTED METHODS PER PIECE OF BALLAST. I.E. STACKING OR USING THE INVERTED SIDE OF BALLAST CLAMPS IS NOT PERMITTED
- e)** Ballast is not to be attached any higher than top NASCAR bar.
- f)** Ballast attached to fuel tank protection bar or supports is NOT permitted.
- g)** Ballast attached to bumper bar or supports is NOT permitted.
- h)** MAXIMUM singular piece of ballast to be no more than 11.5kg ABSOLUTE.
- i)** MAXIMUM total ballast to be no more than 46kg ABSOLUTE.
- j)** Ballast that is non-compliant in both weight and attachment may incur an infringement and penalty notice.

### **Bumper Bars**

- a) Cars shall be fitted with a single tube style bumper front and rear. Bumper bars shall be manufactured using 38.1x3.2mm CHS maximum or 38x2.6mm CHS CDS. Bumpers are to remain hollow. Corners and ends of bumpers shall form a 100mm minimum radius. (01/07/2020)
- b) Front bumper return shall be 300mm maximum, minimum 100mm. Rear bumper returns may be extended as a skid rail along the inside of body between bumper and wheel arch, and then extend inward to the chassis rails.
- c) Bumper mountings to be of maximum 38x3mm CHS, 40x40x3mm RHS or 50x25x3mm, gussets shall not be used.
- d) Maximum of four bumper to chassis mounting points for each bumper bar.
- e) The rear of the bumper bar facing the chassis shall have 100mm minimum offset from the chassis rail. Fig. 5. Front and rear bumper must be inside of moulded panels. Front bumper bar overall width shall be 1960mm maximum.
- f) Bumper mounts and supports shall be measured from the rear edge of the bumper.
- g) Front bumper returns must be extended into the stay bars using maximum 25x25x3mm RHS or 25x3mm CHS



Fig 5



The bumper assembly shall be designed to provide a crush zone.  
 No bar work shall be within 100mm of the rear face of either front or rear bumper bar.

### Section 3 - Body Shape, Dimensions and Body Fitment

#### GENERAL BODY FITMENT

##### **Maximum Body Width**

- a) Maximum width of the body is 1960mm as measured at waist height immediately behind the front wheels and directly in front of the rear wheels
- b) Maximum overall width of vehicle including wheels, plastic nose cones and fenders is 2110mm.
- c) Bolts shall not be used through structural tubing in the roll cage cabin area unless a welded sleeve is provided. No pop rivets, tech screws or self-tapping screws shall be inserted into roll cage tubing.
- d) Body is to be a complete symmetrical outer shell and comply with the Super Sedan body measurements detailed below. (October 2019)
- e) It must be fitted so that the centreline of the complete body is symmetrical and is within 25mm of the centreline of the chassis along the complete body centreline. (October 2019)
- f) The roof panel shall have a 50mm fall in all directions from the middle point.
- g) A straight edge placed across the roof panel from front to rear or left to right shall have a minimum of 50mm curvature on both sides.
- h) No laying back or flattening down of the plastic style nose cone.
- i) If using a MD3 nose cone, it must be of stock appearance and must not be wedged in any form and must have a convex shape when viewed from either side.
- j) Decals indicating make and/or model may be fixed to the vehicle in prominent positions.

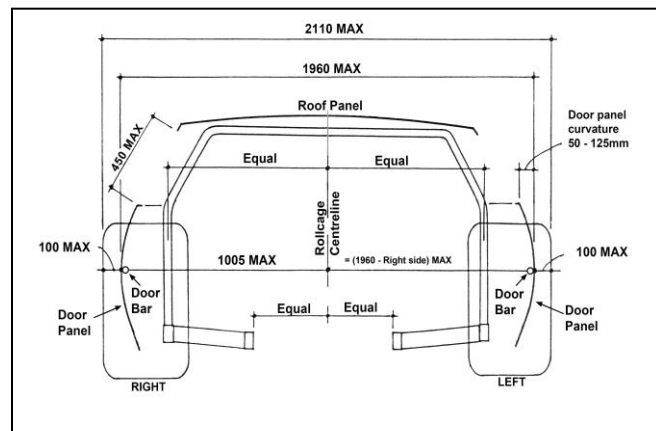
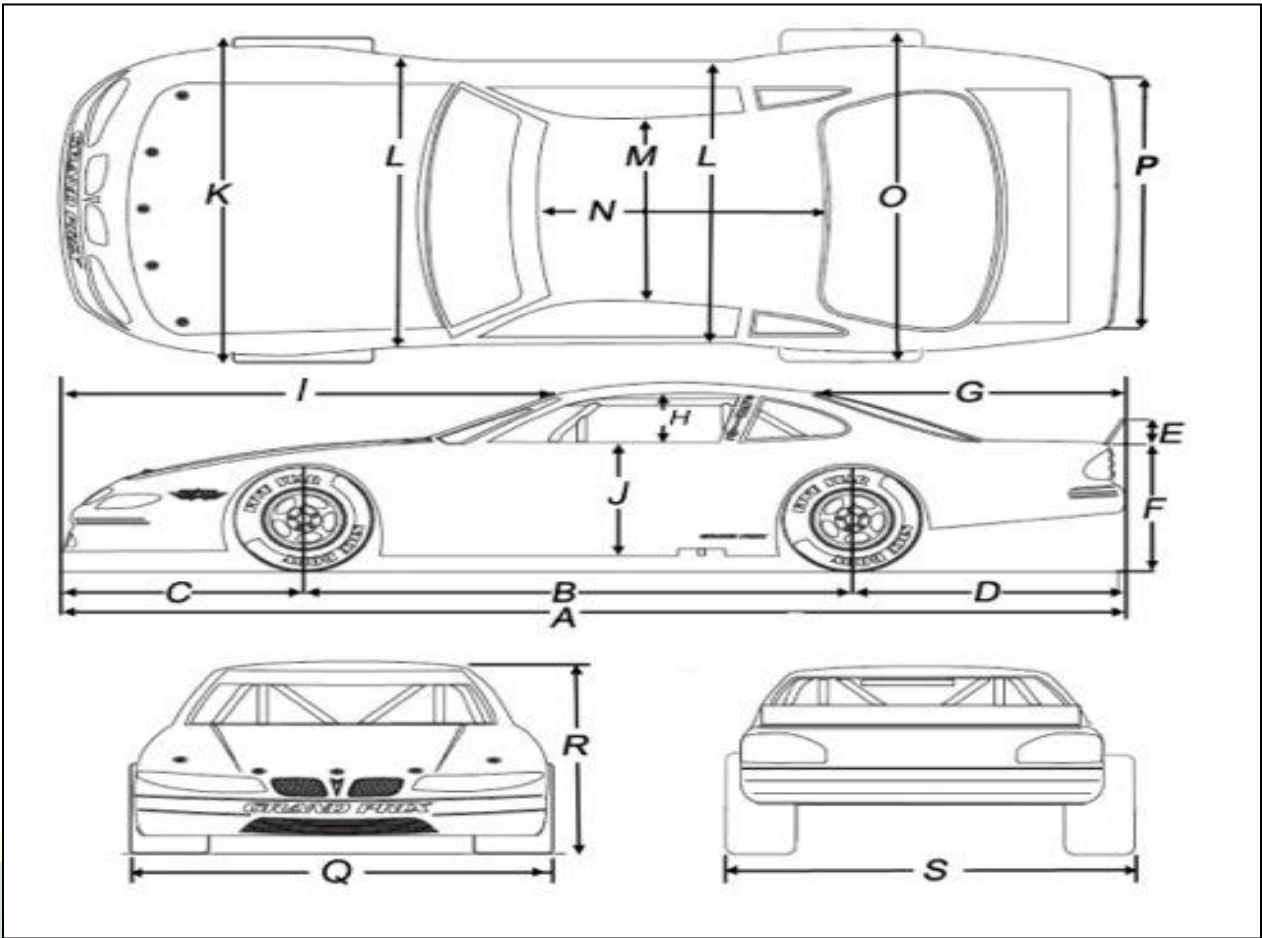


Fig. 7 (As viewed from the front)

- k) The 1005mm measurement is derived by dividing the maximum body width (1960) by two (2equal halves) and then adding the 25mm body offset. This equals 1005mm. The maximum measurement for the left side can then be calculated by subtracting the 1005 from the maximum body width (1960) resulting in a maximum of 955mm.
- l) The centreline of the chassis is the same centreline as the roll cage. The roll cage is symmetrical so therefore when the body is installed with a 25mm offset to one side, there can never be any more than 50mm **difference** between the chassis to body measurements at the same point on either side. For example, the measurement for the roof panel to the roof hoop bar cannot be more than 50mm different on either side or the door bars cannot have more than 50mm difference when measured back to the rear main hoop bar.
- m) All Bodywork, including any subsequent repair of race day damage, shall be to a professional standard. The vehicle shall be presented for racing in as near to original condition as possible after any racing accident.
- n) Panels shall be attached using rivets, bolts and nuts or proprietary race fixings. No cable ties or race tape unless race night repairs.
- o) All Super Sedans shall comply with the nominated body measurements. Body Width shall be measured with door panels pushed against door bars. Wheel offset shall be measured with door panel pushed against the door bar. Door bar location shall comply with Fig. 7 above.
- p) All moulded plastic or fibreglass body panels including front and rear nose cones must be complete. The rear edge of rear quarter panels where they attach to the rear nose is to be within 10mm of flush. Side body panels are to be parallel. Additional quarter panel extensions are NOT permitted. (01/07/2021)
- q) The complete body shall be fitted in such a manner that it shall not be raked in any form and that the complete body is attached parallel with the chassis. Attachment of front or rear body panels will be symmetrical to the rest of the complete body. (October 2019)
- r) Minimum radius on the top of the rear quarters, front guards, and door panels is 20mm.
- s) Body is not to be higher than 38mm above the bottom of the chassis rail.
- t) Driver's floor panel shall be minimum 1.6mm steel or aluminium and shall be fitted on top of chassis rails.
- u) Deflection curve at top and bottom of each side panel relative to the waistline is to be 50mm minimum to 125mm maximum.





Dimension	Specification	
<b>A</b>	<b>4900</b>	Min
	<b>5300</b>	Max
<b>B</b>	<b>2540</b>	Min
	<b>2740</b>	Max
<b>C</b>	-	Min
	<b>1250</b>	Max
<b>D</b>	-	Min
	<b>1300</b>	Max
<b>E</b>	-	Min
	<b>180</b>	Max
<b>F</b>	-	Min
	<b>1100</b>	Max
<b>G</b>	-	Min
	<b>1450</b>	Max
<b>H</b>	-	Min
	<b>450</b>	Max
<b>I</b>	-	Min
	<b>2550</b>	Max
<b>J</b>	-	Min
	<b>850</b>	Max

Dimension	Specification	
<b>K</b>	-	Min
	<b>2110</b>	Max
<b>L</b>	-	Min
	<b>1960</b>	Max
<b>M</b>	<b>1200</b>	Min
	<b>1400</b>	Max
<b>N</b>	<b>1050</b>	Min
	<b>1500</b>	Max
<b>O</b>	-	Min
	<b>2110</b>	Max
<b>P</b>	<b>Body width at that point or 1550mm whichever is the lesser.</b>	
<b>Q</b>	-	Min
	<b>2110</b>	Max
<b>R</b>	<b>1250</b>	Min
	<b>1400</b>	Max
<b>S</b>	-	Min
	<b>2110</b>	Max

(Note – an updated Drawing is in progress including the measurements for U & V)

### Notes

Measurement F for Monaro only = 1200mm maximum.

Measurement P relates to the width of the spoiler blade. (1550mm maximum)

### Rear Quarter Panel (01/07/18)

- The rear quarter panel shall have 50mm minimum curvature. (16/09/18)
- No flat panels allowed.
- The measurement in the attached table refers to the measurement from the top of the deck panel to the lowest point of the rear quarter panel at a point directly behind the rear wheel. This measurement is maximum of 720mm. (14/09/19)
- The measurement V in the attached table refers to the measurement from the top of the deck to the lowest point of the rear quarter panel where it attaches to the plastic tail panel. The measurement is a maximum of 620mm or the point of contact with the plastic tail, whichever is the lesser.

The only exception is when a competitor chooses to run a complete Commodore, Falcon, Monaro etc body. In that case, the original (or replica) plastic panels as supplied by the manufacturer may be used.

### Plastic Tail Panel (01/07/18)

- The plastic tail panel shall be no wider than 1700mm.
- No proprietary plastic tail panel shall be widened by the addition of inserts along its length.
- The depth of the proprietary plastic tail shall not be increased or decreased.

### **Rear Quarter Window/Sail Panel**

- a) Rear quarter window panel (as distinct from the straight drop on the RX8 from the back of the roof) should terminate at least 350mm in front of the base of the rear spoiler blade.
- b) The top edge of the rear quarter panel window shall form a straight line from the roof attachment point to the point of contact on the rear quarter deck.
- c) The window opening shall be a minimum of 1/3 of the height and 1/3 of the length of the window panel.

### **Interior Decking and Firewall**

- a) Driver must be protected and isolated from mechanical, fuel, electrical and exhaust components by metal firewalls, minimum 0.9mm thick.
- b) Interior deck sheeting shall enclose the complete cabin area and shall extend through to the rear panel.

### **Bonnet and Boot Lids**

- a) Bonnet is to be securely fastened by five bonnet pins.
- b) Pins to be 12mm minimum to 15mm maximum mild steel or aluminium.
- c) Where a metal bonnet is fitted only 4 bonnet pins are required. Bonnet lock pins shall be 3mm minimum to 6mm maximum. Large reinforcing washers (30mm OD minimum) to be fitted to all bonnet pin holes.
- d) Boot panel to be of profile and shape to match approved body measurements.
- e) An access panel, 650mm x 300mm minimum shall be fitted to the rear deck panel and must allow access to fuel tank for scrutineering.
- f) A removable boot panel shall be securely mounted in four points. Hinged boot panel shall be secured in two points opposite the hinge joint.
- g) Power bulges on the bonnet shall be limited to a maximum height of 100mm at any point above the bonnet.
- h) The "ears" on plastic fenders shall protrude a maximum of 100mm above the bonnet or mudguard panel at the point they contact.
- i) Air cleaner may protrude through a flat bonnet to a maximum height of 100mm as measured by placing a straight edge across the top of both mudguards immediately in front of the air cleaner. The vertical distance from the underside of the straight edge to the top of the air cleaner housing shall not exceed 100mm. Maximum clearances around filter shall be 40mm.

### **Blade/Spoiler**

- a) The blade refers to the flat leading surface of a wing. Maximum blade length (as measured from top of blade to bottom of blade) is 400mm. Maximum width of blade (side to side) shall be 1550mm. Maximum height will be 180mm. (October 2019)

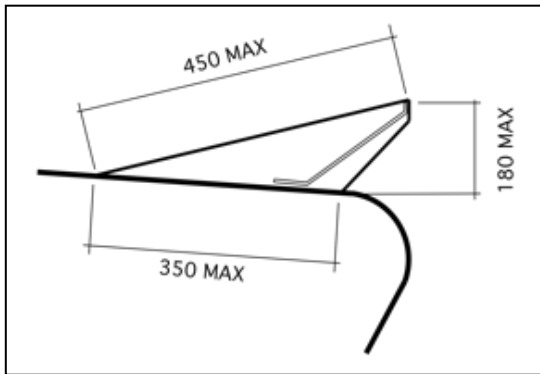
### **Rear Spoilers**

- a) Rear spoilers are an optional fitting on a Super Sedan.
- b) The spoiler may be a single plane type attached directly to the rear deck or dual plane type mounted on supports above the rear deck. (October 2019)
- c) The spoiler blade is the flat leading surface of the wing. (October 2019)

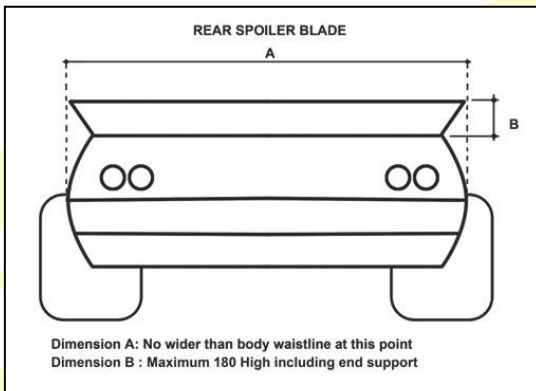
### **Single Plane**

- a) Leading and trailing faces of single plane spoiler shall be a maximum of 180mm in height.
- b) A maximum of two supports are permitted between the spoiler end supports.
- c) All spoiler supports must taper to within 10mm at the leading point of support and not project past the height of the blade at the top of rear. (01/07/21)

- d) All spoiler supports shall comply with dimensions specified as illustrated in Fig. 8 other than specified in c). (01/07/21)

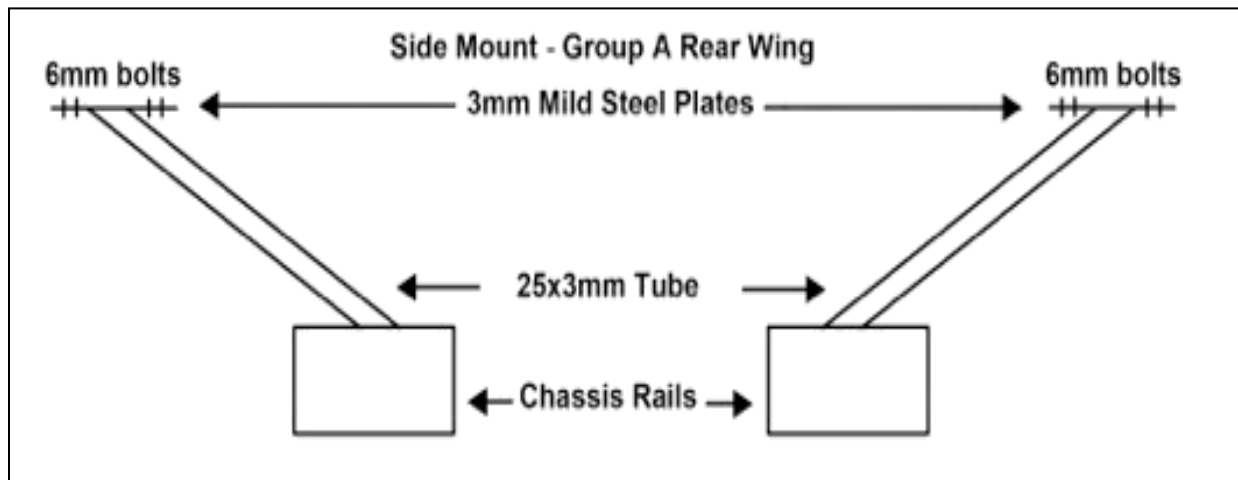


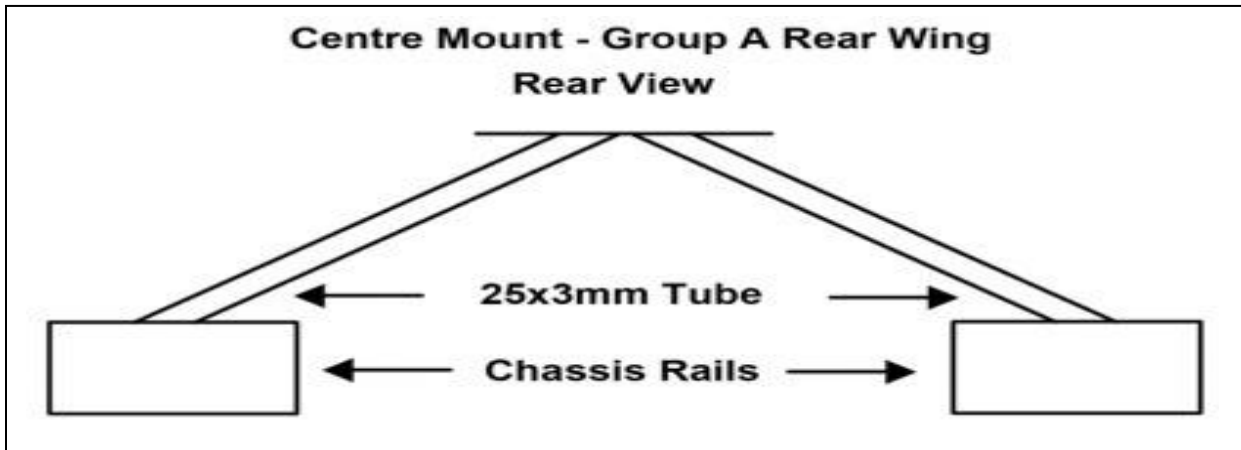
- e) No part of the spoiler shall extend past the bumper line (including corners) when viewed from above. 25mm partial folds on top edge of end supports of rear spoiler are permitted.
- f) Spoiler blade shall be no wider than the body at that point. (e.g., if body at waist line on rear quarter is 1550mm wide then maximum width of spoiler above that point is 1550mm also)
- g) Fig 9. The spoiler blade shall be one complete panel only. (No holes)



All blade supports shall be No higher than the blade

- (1) **DUAL PLANE** - V8 Super car rear wings are allowed on Falcon, Commodores, and VX/VY Monaro only. End plates must be a replica/representative of V8 Supercar end plates.





- a) The blade must be the profile of the original V8 Super Car Wing.
- b) The wing shall be mounted on the rear of the car, no further back than the rear bumper bar.
- c) The blade shall not be wider than the waistline of the body of the car where fitted and must not overhang on corners.
- d) V8 Supercar rear wing must not overhang past the body panels and the rear bumper in any direction.
- e) The wing shall be attached with a minimum of two 6mm bolts per leg, making at least four bolts with substantial washers, at least 25mm diameter. These bolts shall attach through the boot lid or rear decking to 3mm plate. This 3mm flat plate shall be attached to the chassis using 25x25mm mild steel. The 25mm tube and/or 25x25x3mm angle shall be welded to the rear chassis rails.
- f) The V8 Super Car rear wing fitted to Commodores and Falcons shall be no higher than 330mm above the boot lid, at the highest point. When fitted to a Monaro, the blade can be no higher than 180mm above the boot lid. Other aerodynamic aids not permitted.

## Section 4 - ENGINE AND ENGINE SYSTEMS

### Engine

- a) Includes all components that enables the engine to operate including bolt on components such as rocker covers and carburettor but excludes exhaust manifolds and radiator.

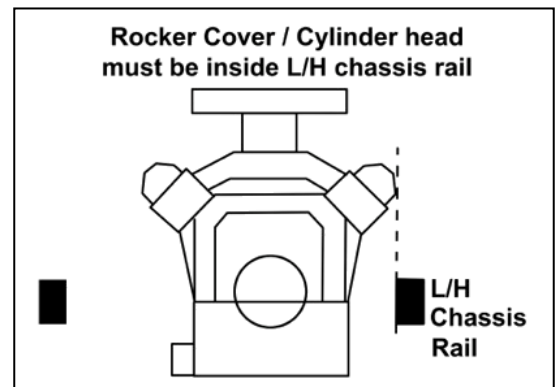
### Engine options for Super Sedans

A Super Sedan shall use one of the following engine types:

- V8
- V6 or inline 6
- Rotary
- CT525 (16/09/17)

### Engine position

- a) Engine including cylinder heads and rocker covers shall be totally mounted inside the front chassis rails.



## Engine Setback

- a) Measured from the centre of both top ball joints on the front end to the forward side of the engine plate as measured parallel to the centre line of the car. If there is no engine plate or the engine plate is not straight, measure to the rearmost mating face of the engine and the foremost mating face of the transmission. Either measurement shall not exceed the maximum allowed.
- b) Engine setback for V8, V6 and Rotary engines is 660mm (26 inches) maximum.
- c) Engine setback for inline 6-cylinder engine is 813mm (32inches) maximum.
- d) An in-line 6-cylinder engine may be laid over to permit mounting of supercharger/ turbo under the approved 100mm power bulge. In all other cases, vertical remains vertical etc., spark plugs in Rotary engines remain horizontal and vee engines are to be balanced against a vertical centreline.
- e) Oil reservoirs, remote oil filters, coolers etc., must be: securely mounted under deck level and be isolated from driver. All connecting hoses, couplings etc., are to be correct class of fittings for the purpose.
- f) Multiple register, non-actuating/non-controlling recording equipment including instruments that supply on-board only engine rpm, rev limiter, oil pressure, fuel pressure, coolant temperature and lambda information are permitted. (eg. electronic dash and RPM type displays)
- g) Multiple register recording data logging devices that include programmable electronic control units (ECU) are not allowed on V8 engines but may be used with 6 cylinder and Rotary engines.
- h) Wheel speed and/or rotational speed sensors are prohibited.

## Engine Capacity

- a) Determined by measuring the bore and stroke of the engine, calculating the swept volume of one cylinder and multiplying that figure by the number of cylinders in that engine.
- b) Engine displacement =  $0.7854 \times \text{bore} \times \text{bore} \times \text{stroke} \times \text{no of cylinders}$ .

## Bubble Testing

- a) Bubble testing will be an accepted method of measuring the cubic capacity of a super sedan engine to confirm compliance with the specifications.
- b) The owner of any bubble-tested engine that exceeds the 367ci limit (plus stated limits of accuracy of specific testing instrument) shall be given the opportunity to remove the head for physical measurement.
- c) Cars shall be subject to bubble test at any time. If car is found to be over the limit with bubble test, the owner has the option to remove head for physical measurement purposes. Should the physical measurement with the head removed also show an oversize engine, the competitor shall be penalized in accordance with the current Speedway Australia Racing Rules and Regulations.

## Engine Sealing

- a) Engines MUST be sealed using two SSA Inc numbered blue tool less roto seals, and one yellow SSA Inc engine ID tag. Sump and Timing cover are to be sealed with SSA Inc ID tag being attached with the timing cover seal. Current Engine seal sheet to be kept with the current car registration log book at ALL times. (01/07/19)
- b) CT 525 engines that have been purchased new from an approved engine supplier, will require a yellow ID tag ONLY. (01/07/19)
- c) Copies of original purchase invoice and shipping documentation verifying the authenticity of the engine shall be provided to the registered SSA Inc engine sealer for approval prior to SSA Inc ID tagging a new CT525 engine. (01/07/19)
- d) Genuine GM Factory seals fitted to new CT525 engines by an approved supplier will be recognised as the engine being compliant to CT525 specification. Upon the removal of GM factory seals for

engine reconditioning, nominal SSA Inc Engine sealing procedure will apply. Refer Engine Capacity. (01/07/19)

- e) Replacing a broken / lost seal – other existing seals must be in place and intact on the engine to ensure no engine work has been undertaken since seals were fitted. Contact your local engine sealer. (01/07/18)

### Engine Block

- a) The definition of a V8 block is any block that was commercially produced and was readily available to all competitors at the time of manufacture.
- b) Aluminium V8 engine blocks are not permitted.
- c) V8 and V6 engine blocks shall have a maximum bore spacing of 4.46 inches and a maximum block deck height of 9.5 inches.
- d) The block height is measured from the crank centre line up through the bore to the mating face of the deck.
- e) All engines must have a number stamped on the block. (No two engines shall have the same number)
- f) Maximum engine capacity after all modifications shall not exceed 367cu.in.
- g) Maximum capacity for cars with 6 cylinder forced induction engine shall be calculated by dividing the maximum V8 engine size by 1.5. E.g., 367 divided by 1.5 = 245 cubic inches

### Cylinder Heads

- a) A Super Sedan shall use any cylinder head that was commercially produced and was readily available to all competitors at the time of manufacture.
- b) V8 and V6 cylinder heads shall have a maximum of 2 valves and 1 spark plug per cylinder. Overhead camshafts are not permitted on V8 or V6 engines.
- c) Inline 6-cylinder engines are permitted a maximum of 2 camshafts, 4 valves and 1 sparkplug per cylinder. Overhead camshafts are permitted on inline 6-cylinder engines.

### Alternate Engine Option

The introduction of the CT525 as an alternative engine for Super Sedans is effective 16/09/17

#### CT525 Engine Specifications (01/07/2020)

GM Part Number: 19418211

Engine Type: LS-Series Gen IV Small-Block V-8

Displacement (cu in): 376 (6.2L)

Bore x Stroke (in): 4.065 x 3.62 (103.25 x 92mm)

Block (P/N 12673475): Cast-aluminum with 6-bolt, cross-bolted main caps

Crankshaft (P/N 12597569): Nodular Iron

Connecting Rods (P/N 12649190): Powdered metal

Pistons (P/N 19207287): Hypereutectic aluminum or 19418214 forged aluminum

GM Performance Single Plane Manifold - Optional

Camshaft Type (P/N 88958770): Hydraulic roller

Valve Lift (in): .525 intake / .525 exhaust

Camshaft Duration (@.050 in): 226° intake / 236° exhaust

Cylinder Heads (P/N 12629063): LS3 rectangular port; aluminum as-cast with 68cc chambers

Valve Size (in): 2.165 intake / 1.590 exhaust

Compression Ratio: 10.7:1 Nominal

Rocker Arms (P/N 12669995 int): Investment-cast, roller trunnion

Rocker Arms (P/N 12681275 exh): Investment-cast, roller trunnion

Rocker Arm Ratio: 1.7:1

ATI SFI Approved Balancer - Optional

Fuel: Premium pump petrol or alcohol as per SSA Inc specifications

Reluctor Wheel: 58x

Maximum GM Recommended rpm: 6,700

Maximum absolute rpm: 7,000 (SSA Inc Requirement)

Balanced: Internal

LSX ignition controller P/N 19171130, GM LS Circle (14/09/19)

Track Ignition Controller P/N 19355863 or MSD 60144CT (14/09/19)

Note: The ignition controller shall be fitted with a data inspection port. (14/09/19)

Must remain Wet Sump only

No engine components detailed above shall be modified or exchanged.

The engine shall be sealed as per existing SSA Inc sealing procedures.

The ignition controller must be fitted with a data inspection port. When the RPM limit is set by the person tuning the engine, the ability for the rpm limit to be checked MUST be selected. Failure to do so will not allow the RPM limit to be determined compliant regardless of whether it is set at 7000rpm or not. This may result in a post-race disqualification or greater. ONLY SSA certified MSD diagnostic devices will be used to determine RPM compliance on CT525 engines by licenced SSA Technical Officials. Implementation 1 July 2023.

Reminder on the requirement to ensure your rev limiter is set to a maximum of 7000rpm – [Click Here](#) – for MSD View tutorial. (01/07/23)

In addition to the above specifications the following items shall comply with the existing Super Sedan specifications:

Carburetor;

Starter;

Fuel System;

Exhaust System; and

Front Drive Systems



#### **Crankshaft and Conrods**

- a) Crankshafts and conrods may be lightened and balanced.
- b) No titanium cranks or con rods allowed.

#### **Carburetor and Induction systems**

- a) V8 Super Sedans shall only utilize a single 4-barrel carburettor as a sole means to deliver any form of fuel or air fuel mixture to the engine. It shall have all working parts in use, e.g., needle and seat, fuel bowl, float, jets and the fuel is to be delivered to the main jet by atmospheric pressure.
- b) A Willy's Super Bowl carburettor does not comply. (30/12/15)
- c) Rotary engines with MORE than two rotors are restricted to a single 4-barrel carburettor.
- d) Twin rotor Rotary engines and 6 cylinders may use carburettor/s or fuel injection and forced induction.
- e) Return springs must be fitted to each butterfly shaft (inbuilt throttle springs acceptable), and one spring to accelerator pedal linkage

#### **Ignition**

- a) Ignition systems must not contain or actuate any traction control function.
- b) The SSA Inc reserves the right to download information.



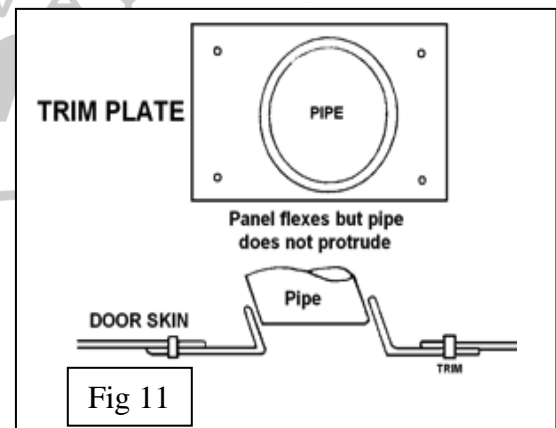
## Section 5 - BATTERY AND ELECTRICAL SYSTEM

- a) Battery size shall not exceed 310mm long x 185mm wide x 220mm high.
- b) Only one battery is permitted. (01/07/18)
- c) Battery must be securely mounted in a box or steel frame secured to the roll cage or chassis.
- d) Regardless of the location; the battery will be mounted with a minimum of 2 x 8mm / 5/16" bolts or rods. (01/07/23)
- e) Terminals and electrical cables shall be suitably protected to reduce arcing in the event of an incident. Suitable grommets must be fitted where battery cable passes through metal firewalls.
- f) At the commencement of a meeting, car must be capable of starting with starter motor.
- g) Switches: Ignition switch and electric fuel pump switch, if fitted, must be grouped together and be clearly marked.
- h) An engine 'KILL' switch, suitably marked for method of operation should be of lever/twist type, located centrally and forward of the windscreen mesh. This switch must isolate the battery, and any other electrical item. E-stop type switches that utilise a rotating release function are permitted and are highly recommended. (12/01/24)
- i) Electrical switches shall NOT to be mounted through the floor.
- j) Transponders must be mounted maximum 450mm forward of the front axle centreline on the front chassis rail.



## Section 6 - Exhaust System

- a) Exhausts must comply with local noise level requirements. Maximum 95 dBA.
- b) All exhaust gases to be directed away from all drivers, fuel tanks and tyres.
- c) Internally ducted exhaust system may vent through the body, maximum 150mm above chassis.
- d) Exhaust system to have maximum of two outlet pipes, and not protrude beyond bodyline. Fig. 11 Trim plate material shall be maximum 1.6mm aluminium.
- e) Pipes and mufflers must be securely attached to the vehicle.
- f) Any car exhausting excessive unburnt Methanol fumes while on dummy grid, or being formed up on the track may be excluded as this constitutes a health hazard.



## Section 7- Cooling System

- a) Cooling system to have a manual pressure relief tap or lever vent type cap fitted with a hose to direct steam to the ground.
- b) All radiator hoses to be of fabric reinforced material, plain moulded skidber hoses NOT permitted.
- c) Radiators may be mounted inside cabin area provided that they are mounted below the deck sheeting to provide isolation from the driver
- d) All water pipes are to be securely mounted within the roll cage.
- e) A metal and/or plastic cover shall be installed over the top of the fan blades. The cover shall protect an area the full width of the fan blades and from the back edge of the radiator to the back edge of the fan blades. Alternatively, the fan may be encased with a full shroud.

## Section 8 – TRANSMISSION/DRIVELINE

- a) Electronic Traction Control systems of any type are not permitted.
- b) Gearbox must have a minimum of two forward gears and a reverse gear.
- c) Every race car shall be fitted with a functional clutch that allows the engine to be started before the transmission is put into gear to move forward or reverse.

### Tail shaft

- a) Tail shaft loops shall be a minimum 40mm x 5mm FMS or 6mm chain or 6mm wire rope.
- b) Tail shaft loops shall be fitted within 150mm of joints at the front and the rear of the tail-shaft to prevent the tail-shaft from dropping in an event of breakage.
- c) Tail shaft and universal joints to be correctly phased and be suitable for the application.
- d) Carbon fibre tail shafts are not permitted.
- e) Tail shaft shall be painted either white or a bright luminous colour.

### Scatter Shield

- a) Cars NOT using a Bert or Brinn style gearbox must fit a scatter shield to protect the driver's feet and legs.

### Axles

- a) Titanium axles NOT permitted.

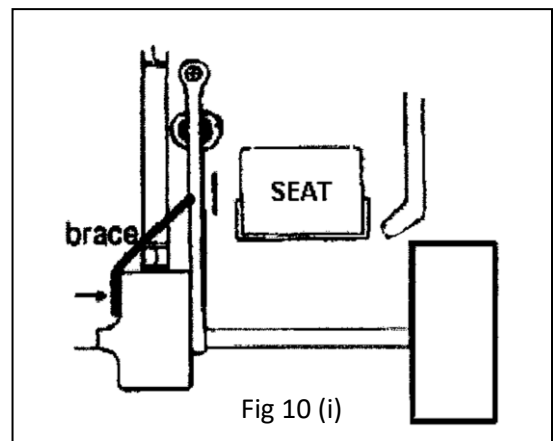
## Section 9 - Steering

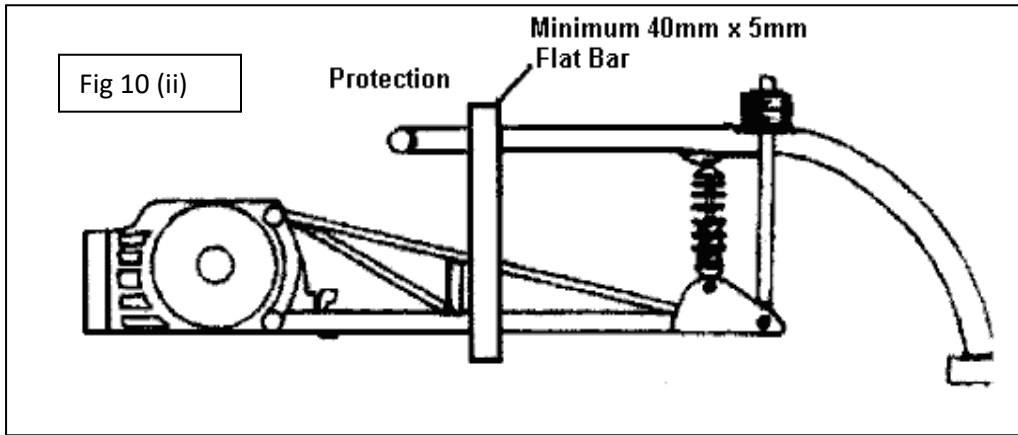
- a) Steering components must be in a sound condition.
- b) All steering joints to have locking devices fitted. i.e. split pinned, or lock nutted. (01/07/23)
- c) Steering column must be securely mounted to the roll cage dash bar.
- d) Hub of steering wheel must be padded with dense resilient foam and covered.
- e) Quick release steering wheels are mandatory. (01/07/21)

## Section 10 - Suspension

### Spindles

- a) Offset spindles are not permitted.
- b) The top ball joint taper and the bottom ball joint taper on any spindle shall share a common centreline.
- c) The spindle snout centreline shall intersect the ball joint taper centre line.
- d) Front suspension shall consist of a top A arm and a lower control arm plus a coil spring or stacker springs and one shock absorber on both sides. (24/11/18)
- e) Lower control arms of front suspension shall not cross the centreline of the car. Rear suspension shall consist of any combination of coil spring, leaf spring or torsion bar. (24/11/18)
- f) Front mountings of forward-facing rear trailing arms and leaf springs are to be boxed in on the right-hand side to protect the driver. Air bag or airlift suspension devices are not permitted. (24/11/18)
- g) Adequate side support shall be provided on 5th Arm assembly to alleviate sideways movement of the arm. A 40x5mm FMS or equivalent CHS tube shall be installed beside the seat to protect driver from 5th arm if diff is dislodged. Fig. 10(i) & 10(ii) Arm and Coil unit are to be behind firewall.





### Panhard Bar/J-Bar

- Any adjustment of the Panhard bar shall be by mechanical means only whilst the car is stationary prior to the event.
- Provision for Panhard bar adjustment whilst the car is in motion or from the driver whilst seated in the cockpit or by any other means whatsoever shall not be permitted.

### Shock Absorbers

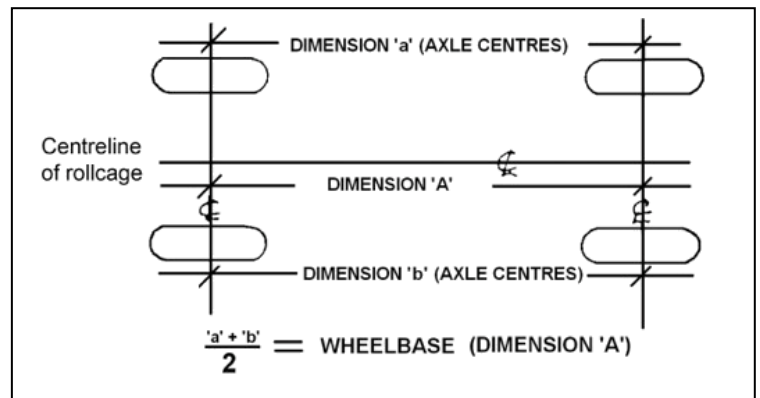
- Shock Absorbers are limited to a maximum of one external compression adjuster and one external rebound adjuster and shall not have any form of remote canister attached in any manner whatsoever.
- The maximum shaft diameter allowed for any shock absorber is 0.625 inches or 16mm. (24/11/18)
- No mechanisms are permitted to allow shock absorber adjustments to be carried out from the cabin or driver's seat whilst the car is in motion.
- The adjustment of shock absorbers is not permitted once car is formed up on the dummy grid.

### Section 11- Wheel Track

- The front and rear wheel track width shall be 2110mm maximum and shall be measured across the top of the wheels to the outmost point on the sidewall of the tyres in the 12 o'clock position.

### Section 12 - Wheelbase

- Wheelbase shall be 2540mm minimum and a maximum of 2740mm.
- With each front wheel pointing straight ahead, measure distance from front axle centre to rear axle centre on each side of vehicle. Add dimensions for left and right and divide by 2.



### Section 13 - Wheels

- Alloy or steel wheels are permitted.
- Maximum width of wheel is 12in (305mm) including bead lock attachment. Fig. 12
- Wheels must be in good condition and free from cracks.
- Dual bolt pattern drillings only permitted on Wide 5 style wheels.
- Balance weights to be securely fastened or taped.

- f) Removable wheel covers are allowed.
- g) Wheels using centre-lock retainer nut must also use an approved locking device to prevent nut from being spun off. Forward rotation of the wheel must tighten the nut.

#### Wheel studs

- a) Shall be Grade 8 and 12mm diameter minimum.

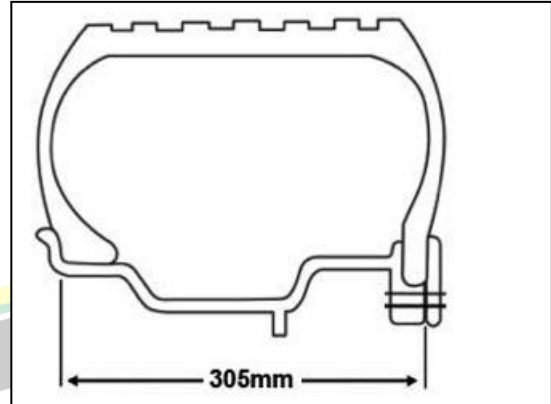
#### Wheel spacers

- a) A maximum of 2 (two) wheel spacers up to a maximum of 3 (three) inches wide may be used on any wheel provided that all specified body and chassis dimensions are complied with.

### Section 14 - TYRES

- a) Lubrication of any type (grease or oil etc.) is not permitted on tyre walls.
- b) Tyre treatments that soften tyres are strictly prohibited.
- c) Tyre shine type cosmetic products are permitted for application to sidewalls only.

Fig 12



### Section 15 - Brakes

- a) Foot operated, hydraulic brakes are to be fitted and be effective at race speeds.
- b) Bias adjustable brake systems are permitted although 'electronic' anti-lock brake systems (ABS) not permitted.
- c) Brake bias and brake shut off valve operation is permitted from the driving compartment only.
- d) Brakes are to be fitted to a minimum of three (3) wheels.
- e) A single brake assembly mounted on a ONE-PIECE (live) rear axle is considered to be brakes fitted to two wheels.
- f) Maximum of one brake calliper shall be fitted per wheel.
- g) Carbon fibre/titanium brakes and components not allowed.

### Section 16 - Fuel

- a) Methanol or petrol may be used. (Maximum specific gravity of 0.820)
- b) The introduction into the combustion chamber/s of nitrous fuels and/or additives, either in solid, liquid or gaseous form, (e.g., nitrous oxide) by any means whatsoever, is expressly forbidden.

### Section 17 - FUEL CELL AND FUEL SYSTEM

- a) Maximum fuel cell capacity shall be 72 litres for petrol or 140 litres for methanol.
- b) Use of cooling systems for fuel **IS NOT** permitted. **All fuel tanks may be covered/wrapped in insulation material product such as heat mat/wrap to deflect heat. This must be removable for inspection/testing when requested. (01/07/23) (24/04/24)**
- c) The area beneath cell must be open. Pressurised fuel cells NOT permitted. Fuel tap is to be marked indicating FUEL and the positions of ON/OFF.
- d) Filler cap shall provide a positive seal and be inside body and behind a firewall. Levers of cam lock caps to be clipped closed.
- e) Proprietary aluminium and/or steel fuel cells are permitted but must include a bladder. Fuel cell is to be securely mounted entirely between the chassis rails behind rear axle centre line in a suitable

steel cradle attached to the chassis or cage bracing, with a minimum clearance of 150mm forward of the rear bumper and 300mm minimum from the side of the vehicle. The fuel cell shall be isolated from the driver by a metal firewall.

- f) The lower half or load bearing section of the cradle shall be constructed from a minimum 40x3 FMS or 19x19x1.6mm RHS, SHS or CHS. The straps over the top shall be 32x3mm FMS minimum. Fuel cell vents shall be fitted with an anti-spill device.
- g) A flexible fuel line section must be fitted within 75mm of fuel cell and all fuel lines to be securely fixed in position. Barbed fittings of the correct size must be used in conjunction with screw type clamps when connecting flexible fuel line, exception being genuine SAE R6 lines and fittings. Neoprene, reinforced plastic or 'black fuel line' may be used.
- h) The fuel line to the engine must be fitted with a quick action NON-LEAK fuel tap, in working order, securely mounted within easy reach of driver and crash crew, and clearly marked FUEL ON-OFF positions. Return lines to the tank are to be fitted with a 'one way' valve.
- i) Electrical fuel pump must be isolated from the driver by a firewall, be fitted with an independent earth to case, and be switched off by the KILL switch and by an engine monitoring relay.
- j) An earth strap must be fitted from the plastic fuel cell filler neck to roll cage or chassis as an earth to prevent buildup of static electricity.
- k) Fuel lines shall be isolated from electrical wiring.

#### Fuel Tank Protection

- a) Bar work must be constructed of minimum 38x3mm CHS or 40x40x3mm RHS and have 25mm clearance around tank and filter. Protection bar is to prevent entry to tank by nose of another vehicle.
- b) Fuel tank protection bars must have radius formed corners as per diagram. No straight side pipes for jacking to extend below bottom member.
- c) Protector must be 25mm lower than an underslung tank and mounted as per Fig 6.
- d) Brace bars to tank protector do not constitute bumper mounts.

