



Specifications

Junior Sedans

September 2018

Version 1.3

These specifications will be fixed for 3 years with changes for safety reasons only.

The RSA wish to reconfirm that on a title event date for each division, no competitor can hand in a log book for a class whose title is on at another venue on the same date in order to compete at any other venue.

Only log books for classes who do not have a title on the same date can be handed in for, including but not limited to racing, practice, exhibitions, competitions etc at other venues.

This has become necessary in order to keep the integrity and prestige of a title event for the competitors and for the successful club who tendered for the title, so that as many cars as possible for the title.



Code of Conduct

TO BE WELL PRESENTED WHEN IN PUBLIC

- 1) Always be well spoken.
- 2) Always sign autographs when asked.
- 3) NEVER wear a race suit pulled down and tied around your waist when in public.
- 4) Respect all other competitors.
- 5) The USE OF MOBILE PHONES or ANY OTHER media to INTIMIDATE or HARASS any other competitor WILL receive 12 months suspension.
- 6) Any swearing from any drivers, parents and/or pit-crew WILL NOT be tolerated. Offenders WILL be excluded from the race meeting and this will be recorded in the conduct book of the driver. REPEAT OFFENDERS WILL FACE FURTHER PENALTIES.

Contents

1)	INTERPRETATION	4
2)	GENERAL	5
3)	SAFETY STANDARDS	7
4)	IDENTIFICATION NUMBERS	8
5)	SEAT	8
6)	SEAT BELT MOUNTINGS	9
7)	WINDOW NETS	11
8)	BATTERY	11
9)	ELECTRICAL WIRING	12
10)	MIRRORS	12
11)	STARTER MOTORS	13
12)	BODIES	13
13)	BODY PANELS	14
14)	RUB RAILS	15
15)	BUMPERS	15
16)	FIREWALL	16
17)	RADIATORS	16
18)	EXHAUST	17
19)	FUEL TANK	17
20)	FUEL	19
21)	ROLL CAGE	20
22)	SCATTERSHIELD	28
23)	SUSPENSION	29
24)	WHEELS & TYRES	29
25)	WHEEL ARCHES	30
26)	BRAKES	30
27)	STEERING	30
28)	TRANSMISSION	31
29)	DIFFERENTIAL	32
30)	ENGINE	32
31)	CARBURETTOR	33
32)	FUEL INJECTION	33
33)	WINGS & SPOILER	34

1) INTERPRETATION

- a) This book supersedes all others and no reference to be taken from previous books regardless of their contents.
- b) Specifications listed in this book are meant as a guide only to building race cars unless otherwise specified. **If "IT" is not mentioned in this book, enquire beforehand for clarification and / or possible approval.**
- c) The term “**Stock Standard**” means precisely what it says, “**STOCK STANDARD**” as per Manufacture for the year, make, model and body type, so unless the specifications say otherwise, nothing is to be altered.
- d) O.E.M. Original Equipment Manufacturer – means for make and model unless otherwise stated.
- e) **Before constructing any vehicle, or adding any part, panel or component thereof of unusual, unconventional or unknown design, full details are to be submitted in writing to the RSA. These submissions are to be with supporting documentation of the issue/s and come via your club to the RSA secretary for processing. A written response will be provided, and if approved, the letter of approval is to be attached to the car’s logbook.**
- f) **Note:** It may not always be possible for RSA Committee persons and / or Tech Advisors / Officers to provide an immediate verbal or written response to queries relating to specifications.
- g) Notwithstanding anything contained in these specifications or any other Supplementary Regulations that have been approved by the Racing Sedans Australia (RSA), the Scrutineer shall have the right to exclude any vehicle if it is not track worthy, fails to meet specifications in relation to safety or performance advantage, or could become a danger to other competitors or the public or is not constructed in an acceptable manner.
- h) The Scrutineer will make a full report in the Car's Log Book and all defects noted must be rectified before the car is presented for scrutineering again or the vehicle may be excluded from the event.

- i) If a race car is submitted for scrutineering and has the same defect that was previously recorded in the log book, the vehicle and/or driver may be subject to 12 months suspension.
- j) All material sizes mentioned here within are a minimum unless a maximum is stated. Any Part, Panel or Component not specifically mentioned to be modified must remain standard as per production base model.
- k) Ignorance of Speedway Australia Rules and Regulations and this RSA Junior Specification book and notices shall be deemed as no defence in regard to breaches and/or appeals of same.
- l) Any Part, Panel or Component **not specifically** mentioned to be modified must remain standard as per production model.
- m) The contents of this book may not be copied or reproduced in any way without the written authority of the Racing Sedans Australia.
- n) This specification manual is fixed for 3 years, NO AMENDMENTS can be made or changed unless it is for safety issues or with the Association's approval.

2) GENERAL

a) Junior Sedans – NO CONTACT PERMITTED

- b) Drivers Age - Junior Licences are issued to a Driver 10 years of age, and under 17 years of age, at the time of applying for their Licence. All tracks must always have a recognised junior trainer present while junior racing is being conducted on any NSW and ACT tracks. RSA Junior Trainers are accredited via the NSW/ACT Junior Trainers Accreditation Course as it has been proven an excellent package for NSW/ACT Junior Drivers for many years.
 - c) No Junior competitor will receive prize money.
 - d) Junior Sedans will be known state wide as the "All Stars" and "New Stars", the latter only if numbers permit.
 - e) Junior Sedan Racing will be conducted under the current rules of Racing Sedans Australia to Licence, Register and Train their Juniors.
 - f) Junior drivers must hold a CONDUCT BOOK, the conduct book is to be handed to the junior trainer/s prior to entry of any race track.
-

- g) All junior drivers must be trained by an accredited Junior Trainer, Junior driver training application form must be filled out and signed by the parent/guardian and junior trainer before he or she can enter any race track in NSW and ACT. A copy of the application form to be sent to the RSA secretary once training is done for record purposes.
 - h) Recognition of Prior Learning for interstate competitors so that they do not need to complete the NSW Junior Driver Training Program prior to racing on NSW and ACT tracks. The minimum requirement to avoid the training is six log book entries of completed race meetings and/or a letter from their club stating they are competent and are free of all infringements.
 - i) Prime consideration must be given where any doubt exists, to the safety of Drivers, Crews, Officials and Spectators. All race cars are subject to engine and general measurement before and after any race at the discretion of the Chief Steward, Technical Officer or Disputes Committee.
 - j) It is recommended whenever possible, that all race cars under construction be inspected by the licensed Club Scrutineer before painting.
 - k) Race cars must maintain a neat and presentable appearance, so as not to bring disgrace to the Association. All body panels, bumpers, exhaust systems, etc., must be securely mounted.
 - l) Any driver found with debris in cabins, boot or pockets, etc. e.g., broken glass, bolts, tools, etc. will be refused race clearance to enter the track until the offending items are removed.
 - m) Any driver who continually loses components on the race track will be liable to a fine and/or suspension.
 - n) All cars are to be built and repaired to a high standard. All material used is to be of high quality. No bolts/rivets/screws or holes of any sort are to be put in any structural tubing in the roll cage cabin area.
 - o) Race cars, when presented for scrutineering, must be in full race condition (i.e. tyres to be used for racing, battery secured, helmet, full race clothing, bonnet and boot must be present).
 - p) It is the responsibility of all drivers to ensure their race cars have all sharp protrusions removed when presenting them for any race. The Scrutineer may at any time, direct a driver to remove sharp protrusions, and this must be carried out before entering the track.
-

- q) Car registration (green sheeting) and payment and issue of an annual / seasonal RSA logbook are required before competition. **Registration of an RSA Vehicle cannot be made by a person under the age of 18 years.**
- r) It is the driver and owner responsibility to make sure that his/ her car and all internal, external engine components and all suspension parts meet the specifications of this Division.
- s) Pre and post-race vehicle scrutineering inspections may be performed at any race meeting, including state and national titles. If any car fails the after-race specification inspection the driver and car owner will be fined and/or suspended and disqualified from the event under Speedway Australia' s Racing Rules & Regulations.
- t) All cars are subject to engine checking and general measurement at any time by a duly accredited Scrutineer, the Technical Committee, Steward or the Racing Disputes Committee.
- u) The RSA Inc. reserves the right to impound and inspect any race car at any time; this may include the removal of any engine for inspection and including the downloading of any information via relevant means if applicable. Cars can be selected at random and ordered to the impound area for dismantling. The Owner and/or Driver of the car must deliver them immediately upon request and supply the necessary manpower and hand tools to accomplish dismantling. Only 2 x persons actually involved in dismantling the car will be allowed in the immediate area of a vehicle being checked. Any persons not having cars in the impounded area, and gaining entry without authorisation, will be ejected.

3) SAFETY STANDARDS

- a) Refer to the Speedway Australia web site and/or Speedway Australia Racing Rules and Regulations (Annexure D) for current up to date regulations and notification of any changes. The minimum safety standards as set by Speedway Australia are compulsory and apply to:
- Racing Apparel (race suit, underwear, gloves, boots, etc)
 - Helmets and Head and Neck restraints
 - Seat Belts (must be lever Latch Type)
 - Seat belts with 2-inch shoulder straps (otherwise 3 inch) are permitted when using a HANS device. HANS device must be used where seat belt has 2-inch shoulder straps.

4) IDENTIFICATION NUMBERS

- a) All race cars must carry the correct identification number as is issued by their club. The numbers must be displayed on BOTH front doors, rear doors or quarter panels with club prefix. Numbers on doors are to be a minimum height of 40cm high x 7 cm wide strokes, on rear quarter panels minimum 30cm high x 7cm wide strokes, in a contrasting colour and easily read by officials. Club prefix to be minimum height of 10cm high x 2 cm wide strokes.
- b) Drivers will use upright roof numbers of no more than 16-gauge material, 300mm x 300mm only in size – white numbers on black roof plate only. The roof plate number shall be bolted to the roof of the vehicle at an angle from the left-hand front to the right-hand wheel arch or parallel with the side of the Race Car depending on lap scoring requirements. Visiting drivers will alter their number when it is required for lap scoring purposes. Failure to comply will be dealt with by the Chief Steward.
- c) Drivers name is to be placed above right hand front door or on sun visor – minimum height 7cm.
- d) Current registration decal must be affixed to interior within easy view.

5) SEAT

- a) **MINIMUM** of 50mm clearance between helmet and head plate. A purpose built professionally constructed (for speedway usage) in steel or aluminium in good condition and **head rest must** be used. Seats must support back to a minimum of shoulder height and width. Seat base and seat back must be mounted directly to the roll cage, using roll cage type material and or 50 mm x 50 mm x 3 mm angle iron or stronger.
- b) Head rest must be at least 150 mm wide material and covered. Maximum thickness of padding on seat to be 50mm.
- c) Side supports to be a minimum of 50mm on all seats at thighs and torso areas. **Seat is to be a correct fit for driver.**

- d) All cut outs for seat belts will be suitably grommeted. **ALL bolts to be a cup head design, minimum of two 8mm bolts in base (four recommended) & two 8mm bolts in seat back, approx. 75 mm below shoulder height. All mounting bolts must use a minimum of 25mm diameter body washers or similar design washers.** No sharp protrusions allowed, seat must be suitably supported by a minimum of 50mm backing plate or washers (to prevent bolts pulling through seat).
- e) Head supports are mandatory. It is to prevent side movement of the head. Supports to be fitted to both sides of seat.
- f) **The centre line of seat**, steering column and pedals to remain as per O.E.M for make and model measured at waist line.

6) SEAT BELT MOUNTINGS.

- a) Because of the difference (often vast) in competition vehicles and size of drivers, a standard method of mounting is impractical. Good judgement and common sense is needed. The lap belt should be positioned so as it rides across the solid pelvic area and not the soft stomach through seat holes to support the mention body areas. Mountings are to be manufacturer's specification. Seat belts must be mounted to roll cage.
- b) Mounting brackets must be welded to roll cage or roll cage cross braces only. Mountings to be equivalent or stronger than roll cage material or 50 mm x 50 mm 3 mm angle iron. Any race car found with bolts through seat belt webbing will be immediately given an order to replace seat belts.
- c) Rear anchorage must be mounted so as to prevent side movement of harness. MINIMUM 10mm bolts to be used.

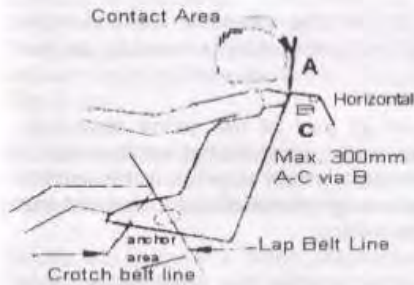


Fig. 2 (i)

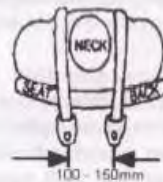


Fig. 2 (ii)

Fig 3

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



Crotch strap should be anchored in-line with the chest.

The seat belt anchor should be 65mm forward of the back line of the driver.



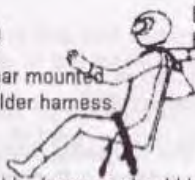
(ii)

5 Point System

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

(iii)

Rollbar mounted shoulder harness



Belts anchored 100mm below shoulder line.

Fig. 3

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



(iv)

6 Point System

Crotch strap mounts as far apart as comfortable.

Fig 3 Simple Seat only shown for clarity.
See "Installation of Restraint System".
See "Adjustment of Driver Restraints".

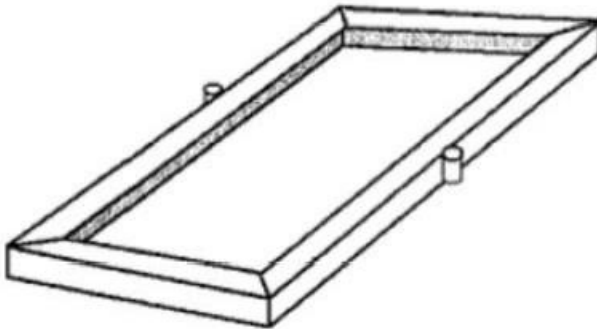
7) WINDOW NETS

- a) All race cars must be fitted with a propriety type window net from a race wear manufacturer. **NO STEEL OR HOMEMADE WINDOW NETS.** Window net should, as near as practical, cover the driver's side window opening. Triangularly window nets are **NOT** permitted. **Ocky straps NOT permitted.** Mounting points are to be to the Scrutineers satisfaction. Window net must be mounted to the roll cage using brackets, using minimum of 3mm steel plates and a minimum of 6mm steel rods; and mounted so that it cannot be pushed outwards. The purpose of a window net is to stop the **head or arms** coming outside the car in an accident or roll over. Window net must be easy to remove in a case of an accident or fire. Window net must be hinged from the bottom.

8) BATTERY

- a) Battery to be securely mounted in a box or metal frame secured to roll cage or bar work – as per the below diagram. **NO PLASTIC BRIDGES.** A nonconductive covering be placed over the battery and the exposed metal of the cable terminals to reduce acid spillage and to reduce chance of arcing if metal contacts battery in any incident if in cabin area. The maximum size battery that can be used is N70ZZ. Cabin mounted battery must be secured by an angle iron frame (25mm x 25mm) both top and bottom with 8mm bolts or rods.
- b) Rubber grommets must be fitted where battery cable passes through metal firewalls.
- c) Blue triangle to be placed on body to show battery location.

BATTERY CLAMP/HOLD DOWN FRAME



FRAME: 25 X 25 X 3mm ANGLE IRON

9) ELECTRICAL WIRING.

- a) All switches to be grouped together, IGNITION switch clearly marked ON / OFF. Within easy reach of the driver with seat **belts fastened**. If model comes with an electric fuel pump, it must be connected to the ignition switch ON / OFF switch.
- b) A "KILL SWITCH" must be fitted outside the windscreen in the centre of the cowl panel or on the front of roll cage windscreen centre pipe to control all electrical circuits and must be clearly marked ON / OFF in a contrasting and distinctive colour. Dipper switches may be used. Electrical wiring must be suitably grommeted where it passes through metal firewalls etc. and taped to prevent chaffing.

10) MIRRORS:

- a) No Mirrors allowed.

11) STARTER MOTORS.

- a) At the commencement of race meeting, car must be capable of starting with the starter motor.

12) BODIES

- a) Sedans and Hatchbacks only permitted. No mid or rear mount motors permitted. All cars to have Australian Compliance plate and it must be affixed to the body and match the VIN number of that vehicle and untampered with. No full chassis Cars, Convertibles, Utilities or Panel Vans.
- b) No car model can be newer than 8 years old. All vehicles must have a minimum seating capacity of four (4) people.
- c) Body of vehicles must be in a sound condition. All glass external mirrors, grills, door handles, manufacturing badging, bull bar, tow bar, helper springs and all inflammable material to be completely removed together with manufacturer's fuel tank.
- d) Lights and body apertures MUST be filled with (MAXIMUM) 1.6 mm sheet steel or aluminium body metal or polyethylene.
- e) DOORS must be securely bolted or welded. BOOTS to be pinned. Bonnets if hinged, to be pinned on two (2) front corners, if not hinged to be pinned on all four (4) corners. If fiberglass bonnet is used, it is to be pinned on five (5) points – three (3) at front and two (2) at rear. NO bonnet pins allowed in sides of mudguards, side panelling or side of body. NO Bolts, nuts or chains.
- f) ALL inner panels are to remain intact. Original front sub-frames and inner guards must remain in place, except that; the section forward of the leading edge of both front tyres may be removed, unless they constitute suspension or engine mounting points.
- g) The front (east/west) sub-frame section may be replaced and fabricated with 40mm X 40mm X 3mm RHS only and may be attached to the optional front bar work alongside original sub-frame forward from roll cage. The front engine mount support to be re-attached to the fabricated

40mm X 40mm steel tube and must remain in the original OEM position for the model being used.

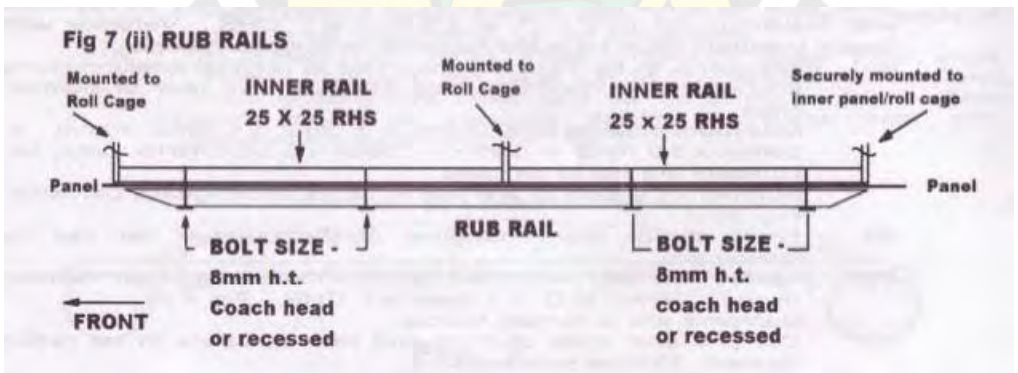
- h) A protective mesh must be fitted to the driver's side of the windscreen. Maximum effective mesh size 50mm x 50mm. Mesh gauge 3mm. Windscreen mesh to be attached to the roll cage. Recommended that the mesh be attached in such a manner as to enable quick removal (i.e. r-clipped, pinned, or clamped). Minimum of five attachment points. There must be a clear vision area in front of the driver of at least 200 mm in vertical height. Passengers side of front windscreen to be fully open.
- i) Name plate (sun visor) can be full or half centre of roll cage. Dash may be removed, providing it does not weaken the body.
- j) No skeletonising is permitted with the exception of all doors, bonnets and boots. If door has been skeletonised to run NASCAR type bar work, must have window welded in at least three (3) place 25 mm long (minimum) or removed Door frames and skins may be removed.
- k) A steel mesh grill may be used; maximum thickness 5 mm steel x 50 mm x 50 mm or 50 mm x 75 mm.
- l) NO TEK Screws or Self tappers to be used in construction.

13) BODY PANELS

- a) The only panels which may be replaced with fibreglass/ aluminium **replica** panels are bonnet, boot, front guards and doors. Replacement panels must be securely fastened; **NO tek or self-tapping screws permitted.**
- b) To assist with appearance of car, the rear quarter panels may be **COVERED** with fibreglass replica panels, securely attached to steel panels. No part of the floor pan can be removed, including the wheel arches. The boot floor must remain, except, for a hole (max 150mm diameter) under the fuel tank. All other panels such as rear parcel shelf and fire walls must remain.
- c) Modification to front & rear firewalls, rear parcel shelf, floor and engine tunnel not permitted.

14) RUB RAILS

- Rub rail may be fitted between wheel arches on the widest point of the car. Mild steel 25x25x3mm MS RHS or alternately a nylon (urethane, nolathane) 50mmx12mm thick. To be securely mounted against body, at a minimum of 4 (four) points.
- Both ends must be tapered down 50 mm from ends or 45 degrees **and ends be filled in**. Bolts at each end must be no more than 50mm from the end of rub rail. Brackets from bar work and body must be used or inner mounting bar to be returned to the chassis or roll cage at each end, 5/16" or 8mm Cuphead bolts are to be used to mount bar to brackets of roll cage or inner rail. If mounted through main roll cage bars, cross tubes must be welded in.
- Rub rails **not** to be fitted to quarter panel behind rear wheels See Diagram



15) BUMPERS

- Must be original front and rear, or very similar in appearance. \to be attached only to sub frame using original brackets, or **FITTED** over the top of optional bar work. No reinforcing whatsoever permitted. Fibreglass, Plastic or Poly-carbonate Bumper Bars as per model **must be replaced over optional bar work, if optional bar work is used, Steel bumpers do not have to be refitted over optional bar work.,** Ends of front and rear bumpers are to be attached to **front guards** and

rear quarter panels to stop getting hooked. Maximum materials permitted – 1.6 mm x 50mm width of bar, using cuphead bolts. The purpose of this is for securing Bumper Bar ONLY.

16) FIREWALL:

- a) Driver must be isolated from mechanical, fuel, electrical and exhaust components by firewalls of a minimum of 1.6 mm thick or body metal. Holes in firewalls and front floor section must be filled with 1.6 mm thick sheet, secured with bolts, pop rivets or welded.

17) RADIATORS

- a) Cooling system may be modified.
- b) Maximum of two (2) radiators permitted.
- c) Radiators may be mounted inside cabin provided that they are mounted as low as possible in the rear of the vehicle rearward of the roll cage main hoop. The upper half of rear window opening **MUST NOT** be obscured by the rear radiator. Radiator ducting shroud must not be more than half the rear window height.
- d) Cabin mounted radiators must have **BOTH** tanks and cap covered to protect the driver in the event of the rad cap blowing off or tank splitting.
- e) All internal pipes to be ducted or lagged with suitable material.
- f) All radiator hoses to be of fabric reinforced material, no plain rubber hoses permitted. Hoses to be as short as possible and fitted to radiator from rear side. Exposed hoses or joints not permitted in cabin area.
- g) Radiator in engine bay must be in its original position. No cutting out of bodywork to make it fit. Radiator support panel bracing is permitted only if running a radiator in the front - maximum material 25mm x 25mm x 3mm RHS Tubing or Angle. Bracing permitted back to the edge of the sub frame. Bracing must not protrude more than 50mm in front of

radiator. No removal of radiator support panel or inner guards is permitted.

- h) Cooling system to have a manual pressure relief tap/cap fitted. Lever vent type may be used.
- i) Radiator cap overflow to be fitted with a hose to direct steam to the ground. The use of radiator expansion tanks is limited. MAXIMUM 2ltrs.
- j) Cabin mounted fans to have shroud or suitable guard.
- k) Electric water pumps allowed.
- l) Cabin mounted water pumps must be lagged or covered by suitable guard.
- m) Radiator water spray systems are not allowed.

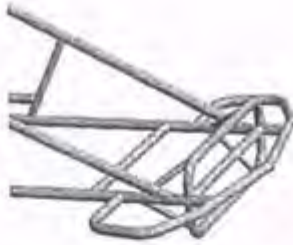
18) EXHAUST

- a) Exhaust must be within noise level requirements of each track. Must not exceed 90 dba. Muffler must be fitted to the engine pipe which must be securely mounted and bracketed. ORIGINAL EXHAUST MANIFOLD & Engine pipe size MUST be used. Floor may be shaped to lift muffler. **Out let** to be behind driver seat EXHAUST SYSTEM MUST NOT PASS THROUGH CABIN. All exhaust gases must be directed away from drivers, tyres and fuel tank.

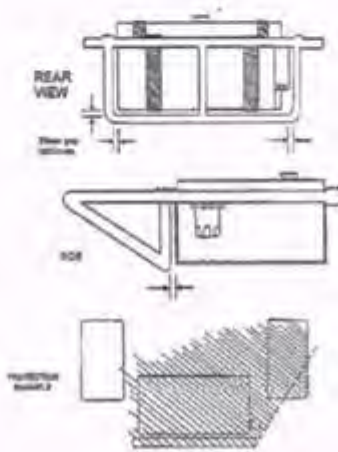
19) FUEL TANK

- a) Vehicle's manufactured fuel tank not permitted and must be completely removed. Fuel tank to be either approved racing tank or suitably manufactured tank of minimum 16-gauge steel, stainless steel, plastic or 3mm aluminium.
- b) Maximum capacity- 40 litres.

- c) Fuel tanks must be mounted in an upright position. Contact area must be a minimum 300mm from rear and sides of boot area and must have rubber under all mounting points and straps to prevent metal to metal, aluminium to metal contact. Tanks must be isolated from the driver by a steel firewall. Tank must be securely fastened. Boot must be able to be opened for scrutineering and inspection of fuel tank area. Filler neck of tank must be inside the boot area or rear parcel tray. Area beneath fuel tank must have adequate ventilation in the event of a spillage during refuelling.
- d) A breather pipe is to be fitted to fuel tank and fitted with a suitable valve to seal in the event of a roll over. Alternatively, a pig tail is to be fitted and the breather pipe wrapped around fuel tank or the breather pipe is to be wrapped around the fuel tank on all sides before passing through the floor and directed away from the exhaust system. Pick-Up and breather pipes to be silver soldered or braised into top of the tank.
- e) Fuel lines must be first grade fuel line or original EFI system, for EFI engine cars, fuel lines must be EFI grade High Pressure lines, securely fastened. All fuel lines and electrical wiring must be separated and not taped together, must be fitted with grommets when passing through metal firewalls etc. and must be taped and secured where chafing can occur. If the fuel line runs through the cabin, a clearly marked ON/OFF fuel tap must be used for carburettor engine cars (within easy reach of the driver). If fuel line running under car tap not required. Fuel Injected cars MUST NOT have a fuel tap and must have one continuous piece through cabin area. (NO joins in cabin area).
- f) For underslung fuel tanks, a fuel tank protector bar must attach to the rear chassis bars and be constructed of 38mm x 3 mm CHS to be braced forward with 25mm x 25mm RHS or 20mm NB with 25mm clearance all around the tank and filter. Bar is to prevent side entry to tank. This bar must be 50mm wider than both sides of the tank and min. height of 150mm or 75% of the height of the tank, whichever is greatest. (See diagram).
- g) If the fuel tank is above the rear chassis bars, a fuel tank protector bar is required above the fuel tank to the same specifications as for an underslung tank.



1. Under slung fuel tank is a fuel tank that has some portion below the bumper tube or chassis rails and therefore is to have a fuel tank protector bar fitted.
2. Protector bar must be 25mm lower than an under slung tank. (see diagram below)
3. Fuel tank protector bar must have radius formed corners.



20) FUEL

- a) Petrol only. Unleaded or premium unleaded pump fuel only and must come from a retail service station EG: Caltex, BP, Shell. Max 98 octane.
- b) **Fuel samples may be taken and tested. NO ADDITIVES PERMITTED**

21) ROLL CAGE

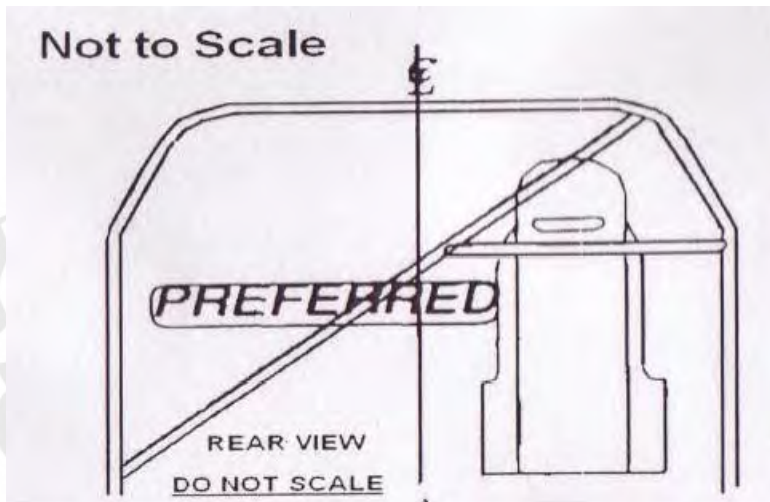
Definition of Materials

CHS	Circular Hollow Section
RHS	Rectangular Hollow Section
WT	Wall Thickness
ID	Inside Diameter
OD	Outside Diameter
Body Metal	16G (1.6 mm) Steel

- 1) All material sizes are a nominal minimum unless a Maximum stated. All welds to be of a professional standard, free from slag.
- 2) All material must be of good quality, Bolts are not to be used through structural tubing, but a suitable mounting bracket shall be provided.
- 3) **Butt welds in continuous pipe not permitted.**
- 4) The image below details the minimum structural requirements. Each item number is referred to in the text below.
- 5) The roll cage is to prevent the collapse of cabin area under impact. Roll cage, to enclose the driver, to be full width and full height of the cabin area. The roll bars are to constitute a cage type framework, braced fore and aft. The cage must extend from behind driver's seat forward to the windscreen area and incorporate protection for the driver's feet.
- 6) All roll bar material must be of good quality mild steel, AS 1163, minimum Gr300. MINIMUM 38mm O.D. x 3.0mm w.t. CHS. (Sonic test at not less than 2.70mm ABSOLUTE). Aluminium based materials not permitted.
- 7) All bends to be made using a pipe bender with the correct size former, with no evidence of crimping, wall failure, or significant weakening. Galvanised tubing or welding over threaded tubing is not permitted in any structural bar work.

- 8) Water pipe fittings or malleable fittings are not permitted. Roll cages built using other than fusion welding techniques will not be accepted. Gussets on welded joints may be required at daylight inspection of weld quality.
- 9) **Main Hoop:** The rear main hoop will be made of one continuous length of tubing. See Fig.3 (i). Hoop to be within 50mm of sides of roof at the narrowest point, be within 50mm of the inside line of the B pillar measured at point B of Fig. 3 (i), and be completely inside the body line. The base of the hoop will be fitted square in the car.
- 10) **Roof Hoop:** The roof hoop will be formed from one continuous length, or alternately be replaced by using one continuous length to form the front leg A pillar bar, which then continues back to the rear hoop, with a top windscreen bar being fitted to complete the hoop. The roof hoop to be within 50mm of the roof at sides, within 50mm of windscreen opening, and be welded to the main hoop to form a halo around the driver's head.
- 11) **Front Legs / A pillar:** The two front legs are to be formed each from a continuous length and be welded to the roll cage base (bar 13) and the roof hoop (bar 2) or if using the second option for the roof hoop, welded to the main hoop (bar. 1).
- 12) A third option is: The top Nascar bar, lower windscreen bar and passenger's top Nascar bar may be formed in one continuous bar. This entails the front leg to be formed in 2 pieces. One from the roll cage base to this hoop with the upper section from this hoop upwards to the roof hoop. The top part of all options must join the roof hoop at a point no further than 50mm from the windscreen opening and follow downwards to point A of Fig. 3 (i) at an angle of 45 degrees downward from the horizontal.
- 13) A quarter window bar (bar.15) if required because of excessive rake or a long roll cage, where the "A" pillar bar (bar. 3) is less than 45 degrees from the horizontal must be fitted to both sides and installed from the top Nascar bar to top one third section of the "A" pillar bar, using a minimum of 25mm x 3mm CHS. The lower mount point must be aligned with or be within 50mm of the first dropper bar. On the passenger side this will require an additional dropper bar (bar.18) between the top Nascar bar (bar.7) or the door bar (bar.8) and the base bar (bar.13) to support the quarter window bar.

- 14) Newly constructed cars, the front leg will be no further than 250mm behind, and 50mm inwards of the OEM door opening at points A & C of Fig 3 (i).
- 15) **Centre Roof Bar:** Centre roof bar to be minimum of 32mmx3mm CHS and shall be welded between the main hoop and the roof hoop, in the centre line of the roll cage.
- 16) **Rear Diagonal:** A one-piece diagonal brace, minimum 38x3mm CHS will be fitted in the roll cage hoop, behind the driver's head, within 250mm of the bend, and down to the point where the hoop joins the L/H cage base as per Fig 3 (i). A second brace may be fitted in cruciform. If cruciform type bracing is used, a minimum of 32x3mm CHS may be used.

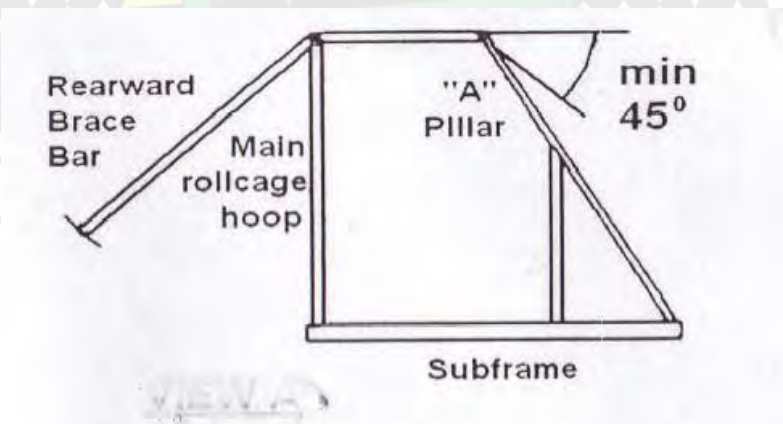


- 17) **Seat Back/Shoulder belt Bar:** A 38x3mm CHS mounting bar to be fitted to mount the seat and seat belts, to be positioned so that the belts are anchored a maximum of 300mm from the point at which the shoulder belts come through the back of the seat. Top seat mount to be no further than 75mm lower than this bar.
- 18) **NASCAR Bars:** On the driver's side, three horizontal bars that will resemble the drawings provided. They are to have a deflection/bend at either end of the bar which allows the Nascar bars to be positioned

towards the door skin and placed between front and rear cage legs, evenly spaced between window sill and roll cage sub-frame. The centre horizontal bar may run straight through, from front wheel arch to rear wheel arch, and then have two separate pieces of 38x3mm CHS turning at 90 degrees to the Nascar bar connecting to the roll cage main hoop, and to the front leg. There will be a minimum of two bars evenly spaced between the front leg, and the rear hoop for each of the openings created by the Nascar bars, making a minimum of six bars to be fitted. Refer to Fig 3 (i). Door pillar to be notched, NOT removed, to accommodate bar work.

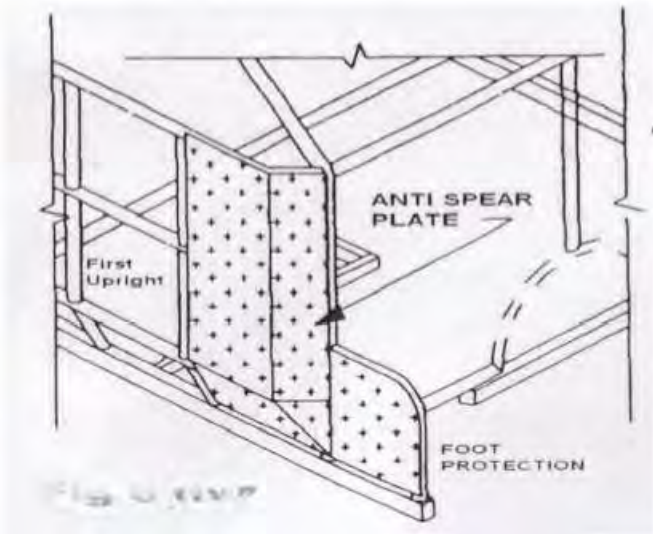
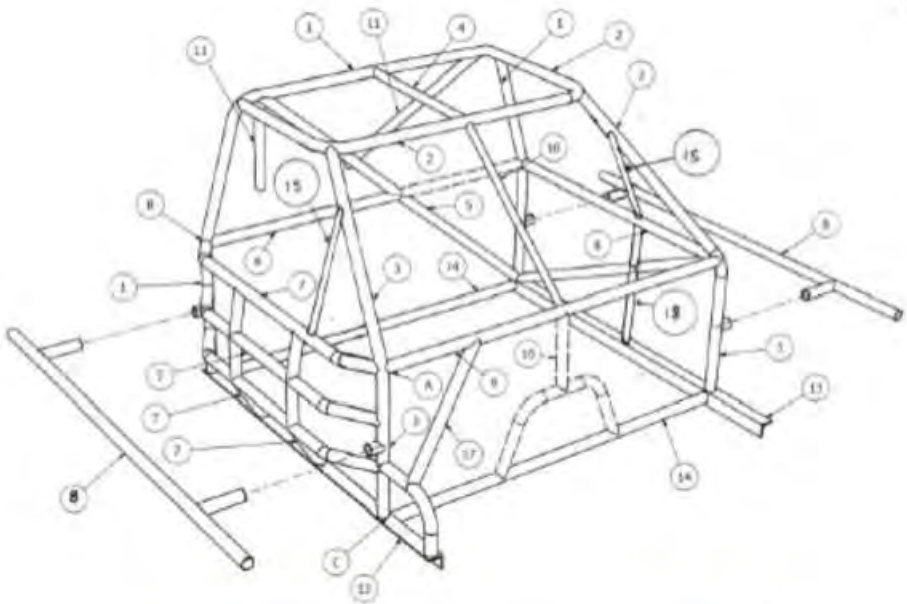
- 19) **Door Bars:** Passenger side will have a minimum of two bars fitted between the front leg and the main hoop. One of these must be horizontal at window sill height.
- 20) **Lower Windscreen/dash bar:** A 38x3mm CHS bar between the front legs must be fitted at top Nascar bar height. Refer also to front leg options (3). As an option a bar (16.) can be fitted between lower windscreen/dash bar and the front spreader bar.
- 21) **Centre Windscreen Bar:** A 25x3mm minimum bar, to be fitted at centreline of cage, between to roof hoop, and the lower windscreen bar.
- 22) **Rearward Brace Bars:** Two rearward brace bars minimum 34mm CHS to extend from top rear of main hoop down onto the rear sub frame (approx. 45 degrees). They may form a crucifix and must be attached to the rearward side of the main hoop within 100mm of the centre of the bend.
- 23) **Foot Protection Bar:** Foot protection bar 38x3mm CHS, shall be required if any part of the driver's feet or legs, are in front of the front leg (bar 3) whilst the driver is seated in the car in race position. A bar (17) minimum 25x3mm CHS will attach from the foot protection bar at one end, and the other end to bar work to the left. If the front leg is more than 100mm behind the OEM door opening, a plate of 3mm steel or 5mm alloy, must be fitted to the foot protection bar hole. The foot protection bar must mount to the front leg/A pillar bar no lower than 300mm from the roll cage base.

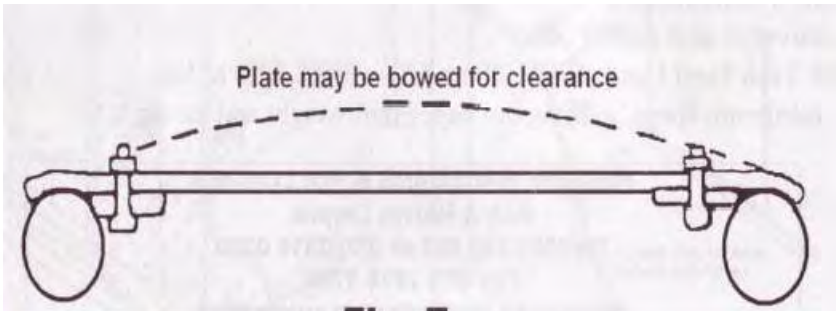
- 24) **Sub Frame:** Roll cage legs shall be welded to the top of a sub-frame of 38x3mmCHS, 50x50x5mm angle or 50x3mm RHS section running fore and aft. Sub-frame to be securely welded or bolted to the floor pan/sills using at least four 12mm steel bolts through the sub-frame and using 100mm x 100mm plates under the floor.
- 25) **Spreader Bars:** A minimum of two sub frame spreader bars at roll cage legs, either 38x3 CHS or 35x3mm RHS to be fitted. 200mm is the maximum distance forward or back, from the front leg of roll cage, for fitment of the spreader bar, before a brace may be required.
- 26) **Quarter Window Bar:** A quarter window bar (bar.15) if required because of excessive rake or a long roll cage, where the "A" pillar bar (bar. 3) is less than 45 degrees from the horizontal must be fitted to both sides and installed from the top Nascar bar to top one third section of the "A" pillar bar, using a minimum of 25mm x 3mm CHS.
- 27) The lower mount point must be aligned with or be within 50mm of the first dropper bar. On the passenger side this will require an additional dropper bar between the top Nascar bar (bar.7) or the door bar (bar.8) and the base bar (bar.13) to support the quarter window bar.



- 28) **Lower Windscreen/ Dash Bar Support:** As an option a bar (16.) can be fitted between lower windscreen/dash bar and the front spreader bar.

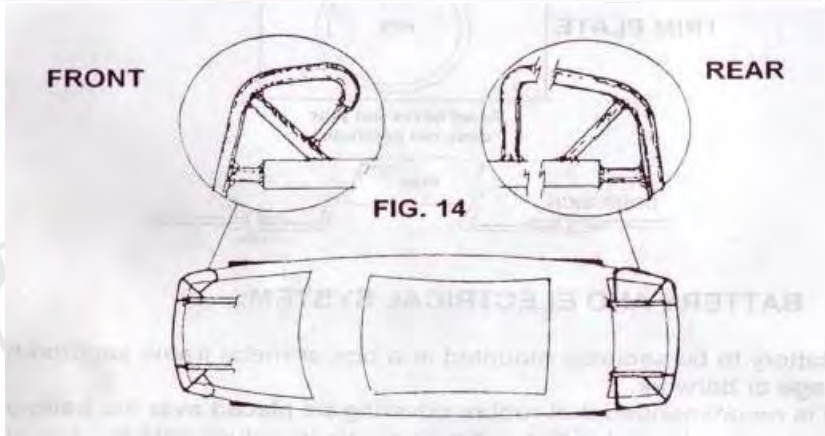
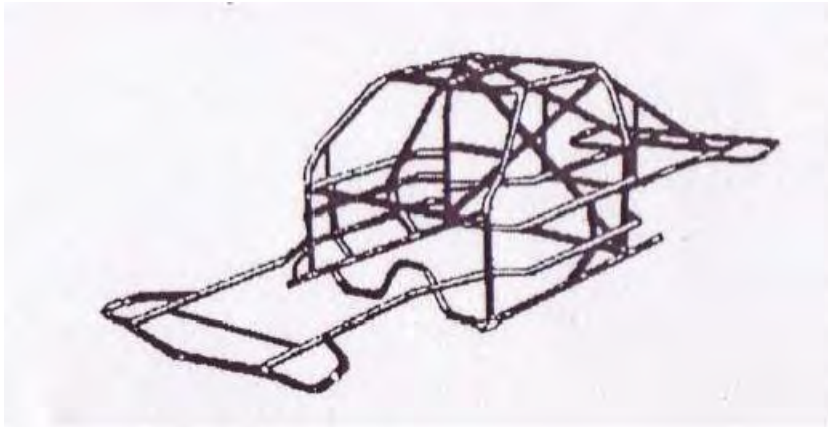
- 29) **Foot Protection Support Bar:** A bar (17) minimum 25x3mm CHS will attach from the foot protection bar at one end, and the other end to bar work to the left.
- 30) **Windscreen Mesh:** Mesh screen to cover entire area from “A” pillar to centre bar and from dash to roof bar. Maximum effective mesh size 50mm x 50 mm. Mesh gauge 3mm. Windscreen mesh to be welded or clamped with metal clamps to the roll cage “A” pillar and centre windscreen bar. Minimum of four clamps.
- 31) **Anti-Spear Plates:** 3mm steel or 5mm alloy, (NOT to be lightened by drilling).
- 32) The anti-spear plates to be fitted to the outside of the Nascar bars. 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. If not welded, three external door plates to be bolted on, using a minimum of 6 – 50mm x 50mm x 3mm MS tags and bolted to either 8mm or 5/16th high tensile bolts with no protrusions. If individual pieces are used, then a minimum of 4 – 50mm x 50mm x 3mm MS tags and bolted to either 8mm or 5/16th high tensile bolts to each piece with no protrusions. HIP PLATE NO LONGER ALLOWED.
- 33) Foot protection brace bar not shown in this diagram.
- 34) **Head Plate:** A full head protection plate of 3 mm (minimum) thick steel plate (5 MM Aluminium) must extend from rear roll bar to top of windscreen bar and from driver’s side outer roof bar to centre roof bar and must be welded to roll cage or bolted to brackets as per diagram. Removable head plates are strongly recommended to allow for the removal of a driver if required. If alloy head plate or removable head plate is used, the use of 10 mild steel Plate Tabs measuring 50mm x 50mm x 3mm or 55mm x 40mm x6mm will be required to secure the head plate to the roll cage. When sitting and belted in seat, there must be a **minimum** of 50 mm clearance between helmet and head plate.





OPTIONAL EXTERNAL BARWORK

- 35) ALL external bar work to be MAX 38mmOD x 3mm wt. CHS or 30mm x 3.2 RHS or 50mm x 25mm x 3.2RHS only. Gussets are not permitted. Bar work can be attached to roll cage. Vehicles with plastic bumpers must have the bar work behind the bumpers. FRONT bar work maximum return 300mm, minimum 100mm.
- 36) Corners and ends of front and rear bumpers to be radius formed, 100mm minimum. *Figure 14*
- 37) Maximum of four mounting points on each bumper bar.
- 38) Returns and bumpers to be flush fitting with the body REAR only. Returns of rear bumper may be extended as a skid rail against outside of the body between the bumper and wheel arch, and then extend inward to the bar work.



22) SCATTERSHIELD

- a) **All** front engine cars must fit a scatter shield. To be a minimum 3mm x 250mm wide and must cover the upper 180 degrees of bell housing and be securely attached to the bell housing or fire wall in engine bay, or front fire wall in cabin area. Scatter shield to be a minimum 3mm steel or 6mm alloy and must protect the driver's feet and legs from clutch explosion. (East-west cars included)

23) SUSPENSION

- a) Suspension must remain the same suspension that came out fitted to the vehicle. Standard coils may be swapped for aftermarket models provided original mounting points are used and not modified; i.e.: spring saddles must be at original heights and not be adjustable in any way. Gas, Decarbon shock absorbers permitted. No lowering or jacking permitted by use of weight jackers or adjusters. Random check after scrutineering will happen to help police this matter and a severe penalty will be given if found guilty.
- b) A spreader bar is permitted for struts **between shock towers, bars may be fitted from top rear of strut towers to the centre of lower windscreen bar**) MAXIMUM MATERIAL PERMITTED 25 mm x 25 mm x 3 mm RHS.
- c) No coil overs permitted. No air shock absorbers. CUTTING OR WELDING OF SUSPENSION COMPONENTS NOT PERMITTED. Limiting suspension travel by use of chains NOT permitted.
- d) Front and Rear suspension:
- Aftermarket camber caster kit EG: Pedders, Whiteline ALLOWED to TOP ONLY (max 5 degree).
 - NO handmade suspension parts PERMITTED.
 - NO extension of lower control arm PERMITTED.
 - NO widening of wheel track PERMITTED.
- e) **A support bar** may be fitted to strengthen the original mounting points of the **rear** control arms but must be fitted between existing body mounting points. Only existing bolt holes on body mounts may be used. No additional brackets or mounting points permitted. Maximum material permitted 50mm X 50mm X 3mm square tube with drilled flat plate welded at each end. Angle iron (max 50mm x3mm) may also be used.

24) WHEELS & TYRES

- a) Rim size optional. All four wheels to remain same diameter on vehicle at any one time. Alloy or Mag wheels may be used but must be of one-piece construction. Correct matching nuts must be used. All wheel studs

and nuts must be in good condition and used. Rim edges to be rolled or rounded off if rim protrudes past tyre walls.

- Wheels must be in good condition and free from cracks.
- All wheels to be max 155mm wide x 15" diameter.
- All wheels to have the same offset.
- STANDARD wheel off set, NO deep dish off set on FWD cars to extend wheel track.
- NO rally, snow, mud, racing, or racing retread tyres permitted. ALL TYRES must meet a minimum 50 durometer reading.
- Wheel Spacers ALLOWED up to 10mm per wheel.
- Custom made wheels NOT PERMITTED.
- NO wire or dual wheels PERMITTED.
- Wheel weights not PERMITTED.

- b) Tyre / rim combination must not protrude beyond original body line. There **will be no flaring of guards**. Wheel nut taper and wheel chamfer must match. Studs must be firm fit in hub. Wheel studs MINIMUM 11 mm.

25) WHEEL ARCHES

- a) To remain Standard – NO MODIFICATION

26) BRAKES

- a) Race cars must be fitted with effective brakes on all four (4) wheels, handbrake highly recommended. No taps permitted. Not necessary to lock up.

27) STEERING

- a) Left hand drive not permitted.
- b) Modifications are not permitted to steering which must remain standard and in sound condition. Power Steering optional provided it is as per production line, for model.

- c) Original or sports type steering wheels approved. Wire spoke, or wood rim steering wheels are NOT permitted. QUICK RELEASE STEERING WHEELS – Compulsory. Steering wheel quick release hub to be professionally manufactured. To be made of aluminium or steel. NO PLASTIC. Recommended that retaining pin be an integral part of the hub. Steering position to remain standard. Rose joint permitted at top mounting if no modification to original column. **Centre of steering wheel must be padded.**
- d) Steering column must pass through a steel loop 12 mm thick, bolted or welded to the dash bar. No chain or exhaust clamps permitted.
- e) No cutting or welding of steering components allowed.

28) TRANSMISSION

- a) Ratios are optional but must be from same make or optional model.
- b) Standard factory gearbox must be used as per model,
- c) But three (3), four (4), or five (5) speed gearboxes can be interchanged but must be from the same parent manufacturer. Straight or split tail shafts may be used to suit gearboxes and diffs.
- d) A steel strap or chain is to be under the front of the tail shaft 150mm to the rear of the front universal joint. Loop is to have a maximum clearance of 50mm below the tail shaft. If split tail shaft, must have a loop on each universal. Material to be a **MINIMUM** 5mm chain or 40mm x 5mm flat bar or equal.
- e) Race vehicles must have a **MINIMUM** of two (2) forward and one (1) reverse gear. Gear lever shall be rendered harmless by the use of suitable knobs, handles etc. Any floor shift lever shall be fitted with a suitable boot to cover the gear shift hole in the floor pan. There will be NO multiple gear shift levers.
- f) Neutral/inhibitor safety switch or brake switches to be installed and working on all AUTOMATIC models.

29) DIFFERENTIAL

- a) Ratios may be altered if crown wheel and pinion only are changed. Must fit housing. There will be no quick-change diffs permitted.
- b) Diffs may be locked. Four (4) wheel drives not permitted. Rear axle bearing retaining collar rings to be tack welded to axle. MAXIMUM two (2) tacks 5 mm long, using a small diameter, low hydrogen rod on low amperage. If axle is lost and it is found that this has not been done, driver will be penalised.

30) ENGINE

- a) **Restrictor Plates may be fitted to all fuel injected cars during the life of this specification book.**
- b) Engine capacity 1600 cc. Engines up to factory rating 100-kilowatt absolute maximum. If in doubt, seek advice from State Technical Officers BEFORE building/fitting your engine.
- c) Engine to remain stock standard including air cleaner housing & exhaust manifold as per engine model.
- d) Engine to remain visually standard per model with everything operational, with the exception of fan blades (not required). Including Alternator wired and working & water pump. Manufacturer's markings to remain on engine block castings,
- e) Engine position to remain standard as per car model. Cross member may be changed to suit motor, but no cutting or welding permitted.
- f) UP TO FOUR (4) cylinders only. Rotary, Turbocharged, Supercharged, or Special Race Rally packs NOT permitted. Motors interchangeable are permitted in same make of car e.g.: Toyota to Toyota, Nissan to Nissan, Honda to Honda.
- g) Standard CAMSHAFTS and CAM FOLLOWERS to remain standard as per engine model.
- h) Engines to be standard stroke.

- i) Standard con rods and standard type pistons as per the engine model (up to 60 thou) can be used.
- j) MAXIMUM OVERBORE PERMITTED 0.060". MAXIMUM HEAD FACING 0.030.
- k) **Crankshaft to remain STOCK standard.**
- l) Engine block deck height not to be machined more than 10 thou from standard.
- m) Standard valves as per engine model and port sizes to be retained.
- n) -NO PORTING or POLISHING or port matching.
- o) Standard flywheel, clutch and pressure plate as per engine to be used. **NO LIGHTENING OR MACHINING.**
- p) Factory manifolds acceptable for engine model.
- q) Oil coolers permitted in Autos. Engine oil coolers permitted if factory fitted on production model. No aftermarket auxiliary oil coolers permitted.
- r) No performance enhancing types of Ignition permitted.
- s) Distributor as per production model of motor must be original.
- t) Crankshaft, Alternator and Water Pump Pulleys must remain standard as per engine model.
- u) Electric water pump may be fitted BUT original water pump must still work.

31) CARBURETTOR

- a) One standard factory single or dual throat carburettor. No aftermarket carburettors. An extra return spring must be fitted to carburettor main throttle shaft. NO adaptor plates may be used, all other models as per year. Factory manifold only
- b) Manifold & carburettor off a similar model may be fitted to later injected motor with **MINOR** modifications.

32) FUEL INJECTION

- a) Standard electronic ignition, injection & computer to be used as per engine model. Computer to be sealed by Racing Sedans Australia.

33) WINGS & SPOILER

- a) Wings NOT permitted.
- b) Body kits not permitted.
- c) NO Bonnet scoops PERMITTED.
- d) Rear spoiler only permitted must come from same make and model of vehicle.
- e) There are many makes and models of spoilers, so any final interpretation of fitment will be up to the RSA Executive/Technical committee.
- f) Rear spoilers are allowed but must be polycarbonate, fibreglass or plastic only and of a mass-produced store-bought item. No steel, aluminium or homemade will be allowed. Maximum height must not to exceed 150mm from top of boot lid to uppermost point of spoiler.
- g) Spoiler to not extend past the line of the rear quarter panels and must be firmly fixed. Hatchback spoiler not to exceed 150mm in height from lowest point of hatch.

AMENDMENTS to this specification manual may be made during the life of this book for the reasons as set down by Racing Sedans Australia Inc policy governing such amendments. A stick-in advising this amendment will be provided for the front of all manuals given before the amendment/s becomes law. Amendments circularised such manner shall be deemed to be as valid as the contents of this manual and must be adhered to by all Competitors and Scrutineers.



Notes

