

VSC V8 THUNDER SEDAN SPECIFICATIONS 2016-2019

These Regulations and Specifications apply to all Owners, Driver's, Pit crews, Officials and Clubs engaged in the promotion, conducting, competing and/or presentation of V.S.C. Inc. Classes.

This book must be read in conjunction with V.S.C. Inc. approved Special Regulations and/or Notices issued by the V.S.C. Inc. from time to time. Ignorance of these Regulations and Specifications and Notices shall be deemed as No Defence in regard to breaches and/or appeals of same.

Where there is a difference of opinion between the Scrutineer, Machine Examiners, Officials, Owner/Driver in regard to the interpretations of any specification or regulation within this book then that matter shall be resolved by the V.S.C Inc. Technical Committee at the earliest available opportunity.

If "IT" is not in the book, inquire for prior clarification or approval before construction or implementing.

GENERAL SPECIFICATIONS:

CONSTRUCTION

To be of professional standard. All materials used must be of good quality.

Bolts are not to be used through structural tubing unless a welded sleeve is provided.

All material sizes quoted are minimum unless a maximum is stated.

Definition of material:

C.H.S. Circular Hollow Section

R.H.S. Rectangular Hollow Section

W.T. Wall Thickness

O.D. Outside Diameter

AS 1163 G.200: Australia Standard 1163 for structural steel tubing grade 200.

For clarity in printing Imperial sizes changed to Metric have been rounded off the nearest full millimetre. These sizes will continue to be accepted (i.e. 1.25" = 31.75mm rounded to 32mm)

DRIVER SAFETY

All protective clothing and safety equipment must be used and/or worn in the approved and accepted manner. Flame protection (suit) plus thermal protections (underwear) equal driver protection. **The only IMPACT RACING safety attire accepted is to have relevant SFI label with date of manufacture 2009 or later on label.**

PROTECTIVE CLOTHING

RACE SUIT: Driving suit must meet minimum standard of either SFI 3.2A /1 or FIA 8856-2000. Suit to be snug fit at ankles, collar and cuffs.

Must be fastened at all times whilst in car. Suit to be in a clean and tidy condition and free of holes.

Two piece suits **NOT PERMITTED.**

No synthetic material to be worn against skin. (Compulsory one-way communicator earpiece and lead allowed).

No jewellery to be worn.

UNDERWEAR Full length underwear meeting minimum standard of either SFI 3.3, FIA 8856-2000 **MUST** be worn by all drivers and passengers.

Approved underwear must be worn regardless of type of race suit.

Socks meeting minimum standard of either SFI 3.3, FIA 8856-2000. **MUST** be worn by all drivers.

Socks must be higher than bottom cuff of under wear.

BOOTS, GLOVES, BALACLAVAS

Boots, gloves and balaclavas are compulsory in all divisions and must meet minimum standard of SFI 3.3, FIA 8856-2000. Balaclava must cover the nose to prevent inhalation of

flames and must be long enough to fit inside of or cover the collar of the race suit. Gloves must reach driving suit cuff. Gloves cannot be modified in any way (e.g. Removing thumb). Boots must cover ankles and be high enough to permit coverage by the driving suit cuff.

HELMET

Driver must wear approved and correctly fitting helmet. The helmet must conform to a minimum standard AS 1698, Snell 2010, Snell 2015 and pass inspection by the Scrutineer or Technical Committee. SFI suggested helmet life is four years, however, if helmet has signs of misuse, neglect or damage, Scrutineer will note helmet serial number in log book. If the helmet is found in use Chief Steward is to be notified under Rule 6.2. Chin cups are not permitted. Inspection and approval to be obtained from Technical Committee before painting.

NECK BRACE (HORSE COLLAR) / HEAD & NECK RESTRAINT

Approved head and neck restraints (e.g. "Hans" type devices) can be used in lieu of horse collar neck brace. A neck brace to minimum SFI 3.3 standard is compulsory. Correctly fitted to suit the driver and helmet used, leaving a nominal 15mm gap to prevent leverage injuries. A horse collar neck brace is to be high of density foam covered with Nomex, wool or similar fire retardant material. Head and neck restraint devices must only be fitted to the helmet by authorized installer as directed by the manufacturer and must be SFI 38.1 and or FIA approved.

5 YEAR REPLACEMENT OR RECERTIFICATION FROM DATE OF MANUFACTURE ON SFI 38.1 HEAD AND NECK RESTRAINTS.

EYE PROTECTION GLASSES

Suitable eye protection must be worn IE: visor or goggles

If a driver is required to wear optical glasses under any requirement for license under Vic Roads licensing and/or Medical Practitioner stipulates that the optical glasses must be worn for reason of V.S.C. Inc. Licensing, then that Driver must wear those glasses whilst competing and any such glasses must be made of non splintable type material.

SEAT AND SEAT BELTS

A "Purpose Built" professional standard one-piece, fiberglass, approved plastic, steel or aluminium bucket type seat incorporating a substantial headrest must be used. The use of mass produced, competition based alloy seats with lightening holes is permitted e.g. Kirky or Butler. All holes are to be swaged as per manufacturer's specifications. The use of one off type seats without holes is permitted subject to VSC Technical Committee approval via Zone Scrutineer or Technical representative and endorsed in log book.

Minimum 51mm clearance Helmet to head plate/roll cage bars with driver/passenger belted in normal driving position.

Concave seat to support back to minimum of TOP of shoulder height and width. Top of headrest to be at least 50mm above helmet to seat contact area and to be within easy contact of helmet. Minimum width 150mm.

Seat base to be mounted to roll cage sub frame at a minimum of four (4) points using 8mm bolts and minimum 40mm diameter body washers.

Seat back to be braced to, and attached to roll cage approximately 75mm below shoulder height using minimum of two 8mm bolts and minimum 38mm diameter body washers.

Lateral (sideways) support must be given to hips and above waist.

Front of seat under legs to be raised and rolled.

Cut outs for belts to be suitably grommeted.

Seats may be padded and covered, the covering being securely attached. Maximum padding thickness 50mm.

Adjustable seats to be approved by VSC Inc. Technical Committee via Zone Scrutineer or Technical Representative and endorsed in log book.

HEAD REST BRACE BAR

A steel brace bar to be a minimum 20mm x 1.6mm CHS or equivalent to be connected to the roll cage bar work. A minimum 60mm x 60mm x 3mm plate to be fitted to headrest end and to be within 25mm from the headrest. Roll cage bar work can be used in lieu of brace bar where the headrest is within 25mm of the roll cage bar work.

An approved type racing harness must be fitted. Must be SFI or FIA approved.

Five or six point 3inch harness mandatory and must be a lever latch type, narrow OEM crotch strap permitted. Harness to be fitted to manufacturer's specifications or for existing fitment the following guide lines.

SFI or FIA approved head and neck restraint (e.g. Hans type devices) seatbelts permitted. If shoulder seat belts do not run through seat there must be provision to stop belts from slipping off shoulders.

Seat belt mounting brackets must be on roll cage. Chassis or cross frames, not on sheet metal. Seat belt bolts "MUST" be Minimum 10mm grade 8.8 with nylock nuts only. (Standard manufacturer's bolts and nuts permitted i.e. Simpson, G Force). **Maximum 300mm seat to seat belt mounting points.**

Seat belt mounting brackets must be on roll cage, or sub frame, or cross frames, not on sheet metal. **Additional seat belt mounting points may be needed for adjustable seats.**

See "Installation of Restraint System" (Fig.1 and 2)

In order for the driver restraint system to be fully effective, considerable thought must be given to location of mounting points and to proper installation. Many installations comply only with the letter of the rule with no understanding of the needless injury to the driver.

The mounting points should 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 to protect internal organs makes it the preferred location for the belt. (See Diagrams)

The shoulder harness should be mounted to prevent the driver from moving upward, out of the seat, in the event of a rollover. The required minimum distance from the top of the driver's helmet to the top of the roll bar does not leave much leeway for the shoulder harness, to prevent the helmet from striking the roof in the event of a rollover. The shoulder harness is the major means of preventing injury in such an accident.

Anti-Submarine straps serve two purposes.

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. To prevent the driver from sliding forward and out of the harness (see Fig.2 (i) and Fig. 2 (ii)

For extra assurance a double strap anti-submarine belt can be used (see Fig.2 (iii) and Fig.2 (vi)

When the driver is seated in a semi-reclining position a six-point system (two anti-submarine or crutch straps) is preferable. Most drivers find two anti-sub strap positions more comfortable regardless of the type of car.

In many instances, the anti-submarine straps are mounted much too far forward of the seat. This practice could cause 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.

Because of the difference (often vast) in competition vehicles, "standard" method of mounting is impractical.

Good judgment 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.

The belts must be in good condition – no fraying, tears, fading etc.

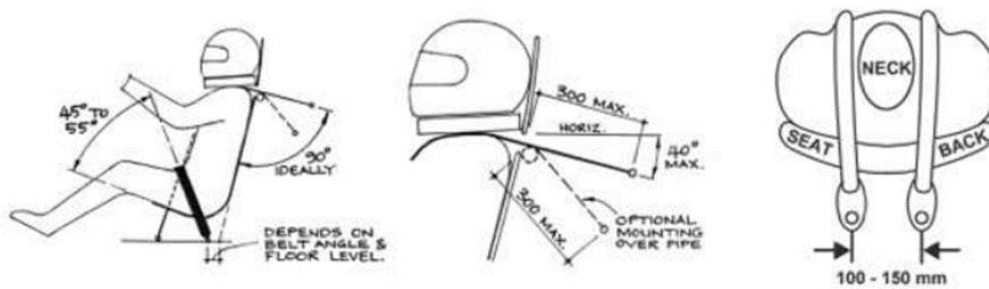
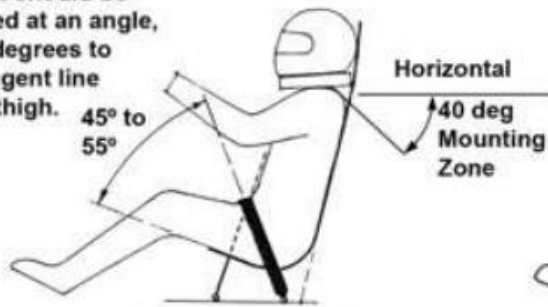
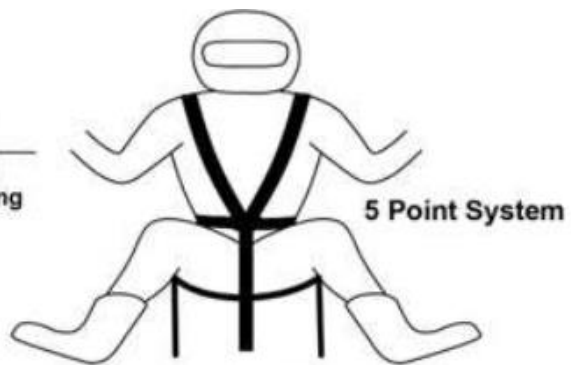


Fig. 1

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

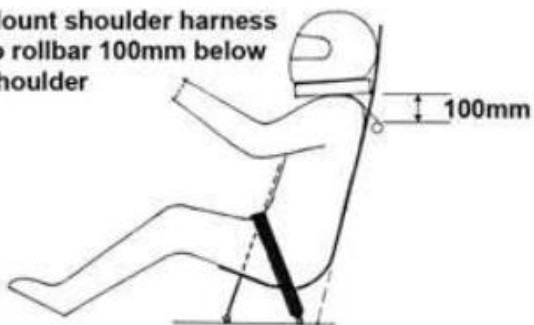


Crotch strap should be anchored in-line with the chest.

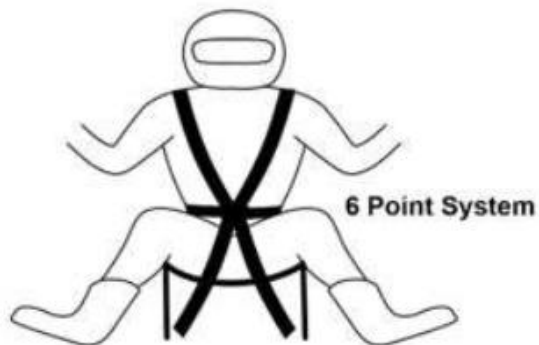


Seat belts should be anchored apart the same distance as the driver is wide. Mounting brackets should be angled the same distance as the belts pull and not tilted in or out.

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

FIRE EXTINGUISHER

On board fire extinguisher optional. It must be securely mounted and be of the correct type for the fuel being used.

NUMBERS

Numbers 1, 2 & 3 are reserved for VSC State Title place getters.

No 0's with the exception of number 10.

All vehicles are to be presented for racing in good condition, with paintwork, sign writing and allocated numbers to be painted on both sides of the body and a number to be visible when car viewed from the front: i.e. roof number or sun visor.

Registered number and prefix are to be a contrasting colour and clear of any sign writing etc. Number will be 300mm min height x 75mm min width and prefix 150mm high. Cars must have a front and rear facing number min 75mm x100mm to be a contrasting colour. Drives name/s to be on roof above driver's door or sun visor, min 50mm lettering

ROOF NUMBERS

The roof identification number shall be a metal plate, 30cm (300mm x 300mm) square with a 5cm (50mm) right angle fold at the bottom where 2 holes, at 20cm centres shall be drilled to take 6mm bolts.

The plate shall be bolted vertically on the roof of the vehicle at an angle from the left hand front to the right hand rear wheel arch, or parallel with the side of the car, depending on the track lap scoring requirements.

The plate must be black background & white number/s in plain font 20cm high.

Roof number will be allocated with registration. - 9 -

WINDOW NET

Window nets are Mandatory.

Maximum Window net opening to be 75mm x 75mm x 19mm wide webbing.

Window net to be securely attached to roll cage "**NOT**" car body and to cover 60% of side window area.

Not to be made of flammable material i.e. Plastic.

Window net "must" be fixed top and bottom using a minimum 25mm x 3mm flat steel or 8mm steel rod through window net. Original window net manufacturer supplied fitting hardware permitted.

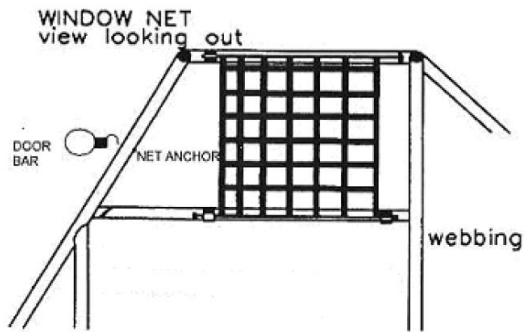
The above design uses two push button seat belt buckles and the belts. Tongues are welded to side roof bar.

Using either 25mm x 3mm minimum flat steel or 8mm minimum steel rod, to be welded to rear of buckles.

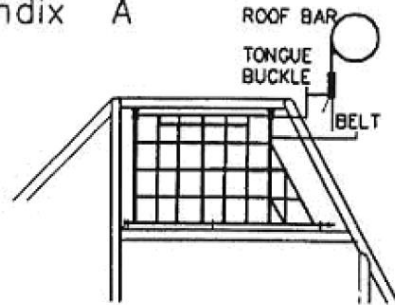
Tubing at base of net fixed with bonnet lock pins.

Window net must be removable from both the top and the bottom, no permanent mounts such as bolts or pop rivets to be used.

No tek screws, pop rivets or cable ties permitted to fit window net.



Appendix A



LICENCING:

Only V.S.C. Inc. Senior licensed persons may participate as a driver.

INSURANCE:

Proof of approved speedway accident coverage is compulsory for drivers and passengers. Ambulance membership is compulsory for drivers and passengers.

ALCOHOL: No alcohol/illicit drugs are to be consumed within twelve hours prior to racing by driver. No alcohol permitted in the pit area. Drivers, passengers or crews must not exceed .02% blood alcohol level at any time during scrutineering or race meeting, as per racing rules and regulations

TEK SCREWS

No self drilling screws (Tek Screws) permitted on external panels.

Operating one-way communicator is to be presented at scrutineering.

CLASS SPECIFICATION VSC V8 THUNDER SEDANS

1. CARS:

A VSC V8 Sedan is a purpose built full chassis race car enclosed by a complete body complying with the following:

1. Right hand drive only, no passenger seats allowed
2. Rear wheel drive only,
3. Quick change differential or differential fitted with full floating rear axles.
4. Independent front suspension (see detail in section 8. Suspension)
5. Wheel base maximum of 2740mm

2. SPECIFICATIONS

General

All workmanship shall be to a professional standard and all materials used shall meet the minimum standard specified.

All material sizes quoted are a minimum specification unless a maximum is stated.

No cabin adjustments allowed except for brake bias and brake shut off valve.

Adjustable timing devices and adjustable rev limiters are not allowed inside cabin area or where they can be adjusted by a driver.

No electric, electronic, hydraulic or wireless activated adjustments allowed.

Rear Vision Mirrors or rear vision cameras with display are not permitted.

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.

3. CHASSIS AND ROLL CAGE CONSTRUCTION

Material thickness and tensile strength

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. Specified material includes any structural member specifically detailed in this document with a nominated minimum material size. 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

Sonic testing to determine wall thickness shall be conducted on bare/unpainted steel members.

Owner shall remove paint or powder coating as necessary to perform the test.

Roll Cage

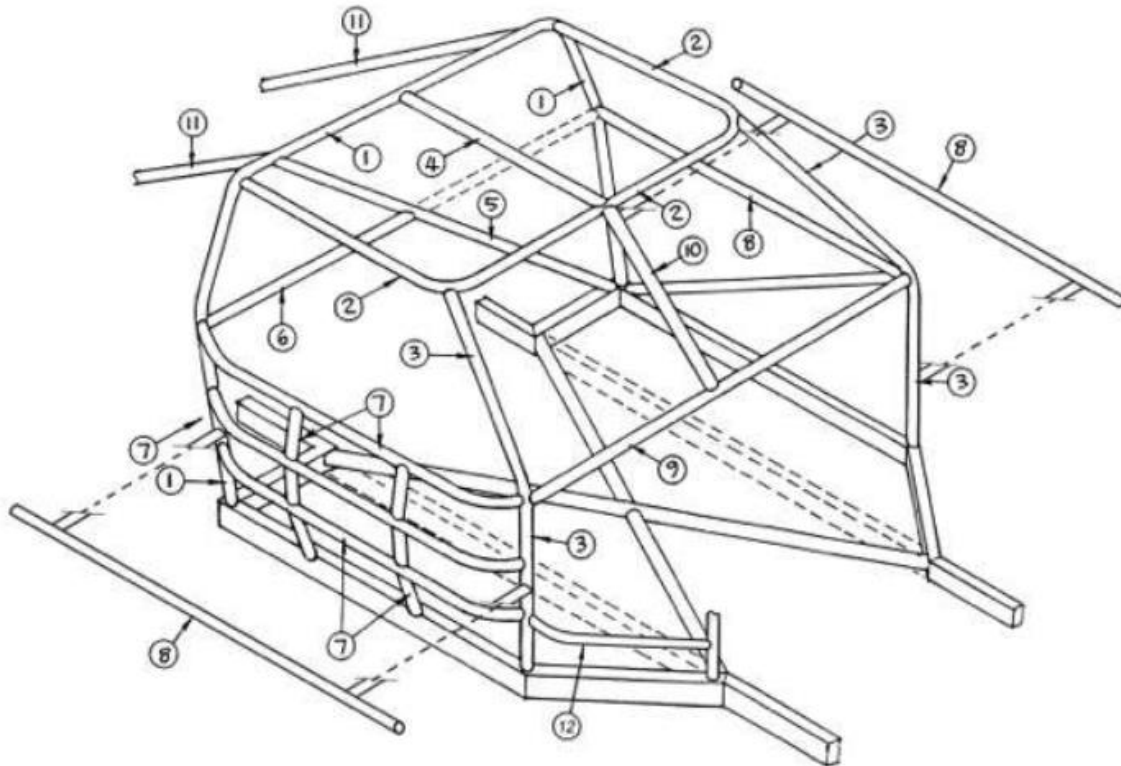
The roll cage is required to provide a safe enclosed environment for the driver and is intended to prevent the collapse of the cabin area under impact. The roll cage is to fully enclose the driver.

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.

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. Rear rail lateral location shall be placed at manufacturers discretion. The minimum distance between the rails shall be 736mm (29 inches) All roll bar material must be mild steel, minimum 38x3mm CHS.

All bends to be made using a bender with the correct size former. 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.

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



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

(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.

(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.

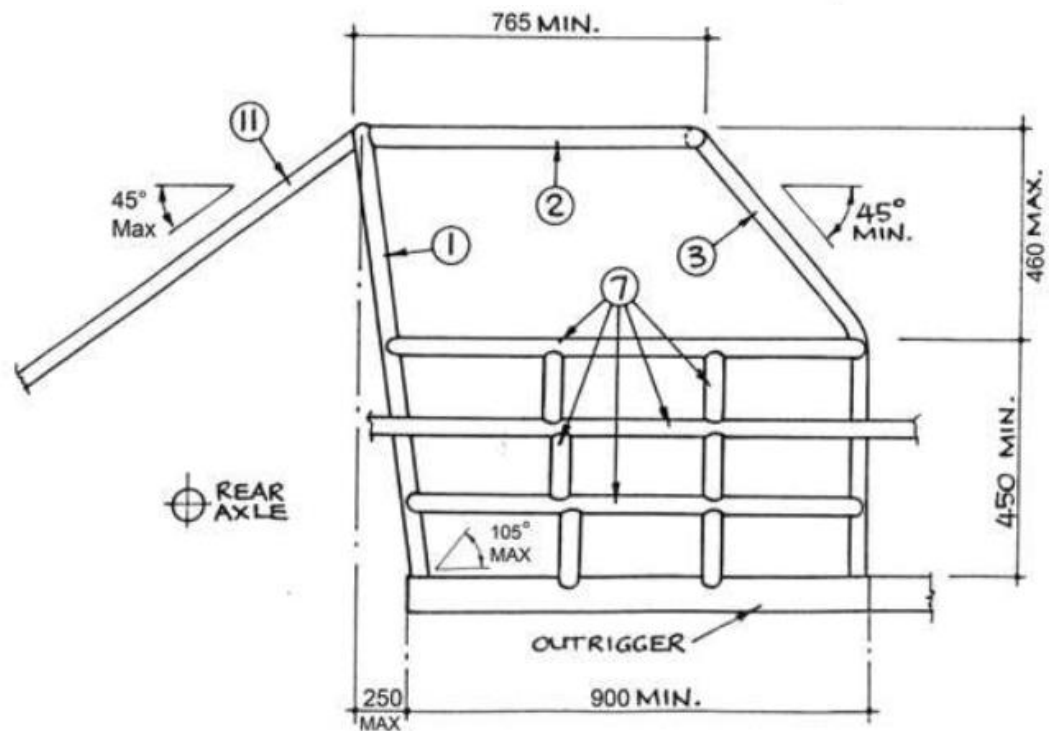
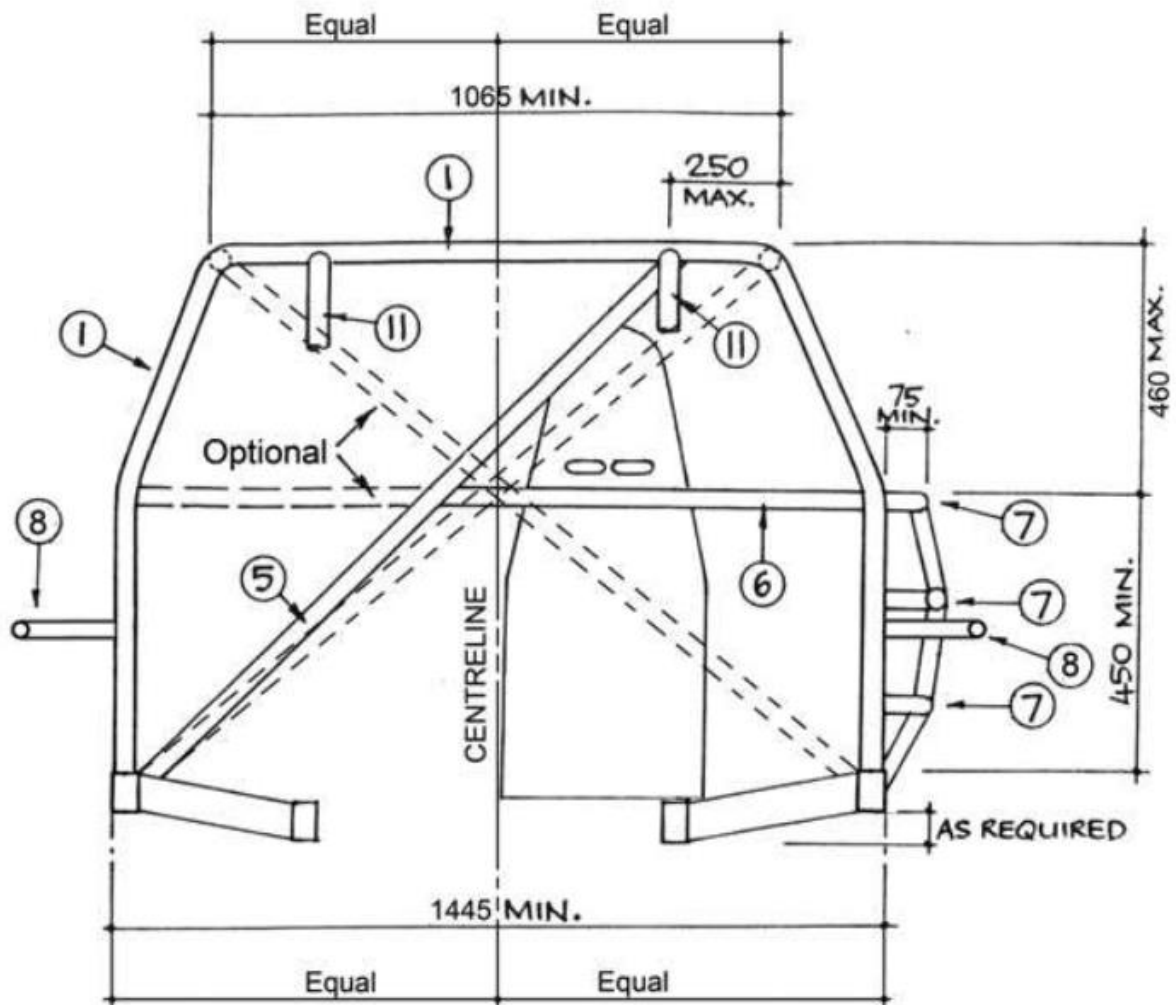
(8) **Door bars** – Passenger side shall have a minimum of two bars between front and rear roll cage legs. The top one must be horizontal and be the same height as top drivers side NASCAR bar. The second one must be waist height. Diagonal bracing in the passenger door area is optional. The driver's side door bar must be waist height. Door bars shall be minimum 38x3mm CHS.

(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 34x3mm 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) Bar minimum 38x3mm mild steel CHS to extend from drivers side front leg around to engine support bar or front chassis rail.



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

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.

Chassis Cabin Width

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

Front Chassis Rails

Material: mild steel 75x50x3mm RHS minimum. Front Chassis rails must extend forward of the front axle centreline minimum 380mm and shall be symmetrical to the cabin chassis area.

Rear Chassis Rails

Material: mild steel 75x50x3mm RHS minimum. 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.

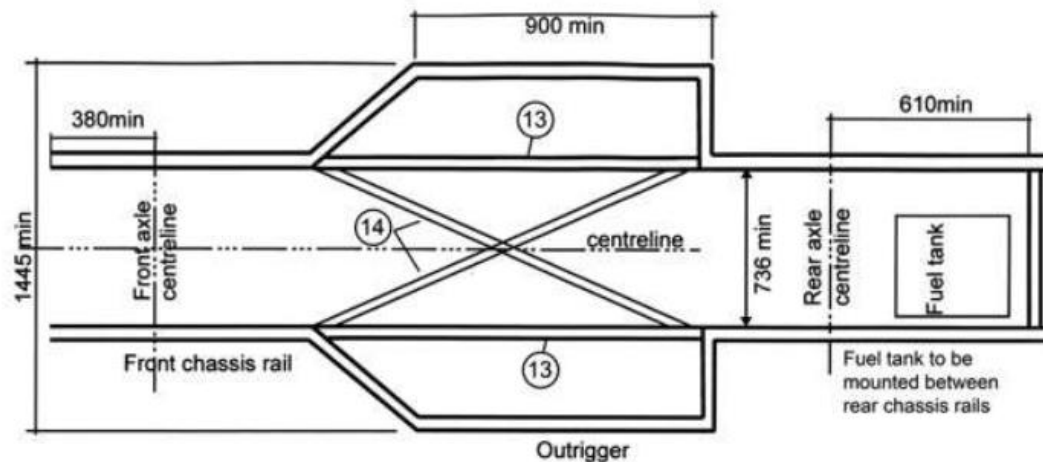
(29inches.) Rear chassis rail location is not required to be symmetrical to the cabin chassis area. All material in fabricated chassis, chassis outriggers and/or sub-frames shall be minimum 75x50x3mm mild steel. Both chassis rails, fore and aft of cabin area, must be stepped a minimum of 75mm when viewed in side elevation to create a crush zone.

Lightening of chassis material is not permitted.

Chassis design options.

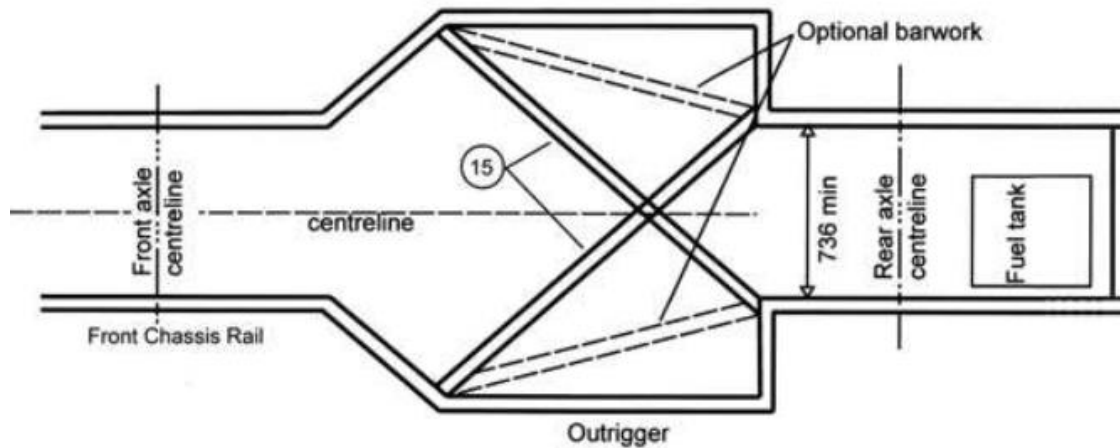
Chassis shall be manufactured to comply with either design shown below.

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



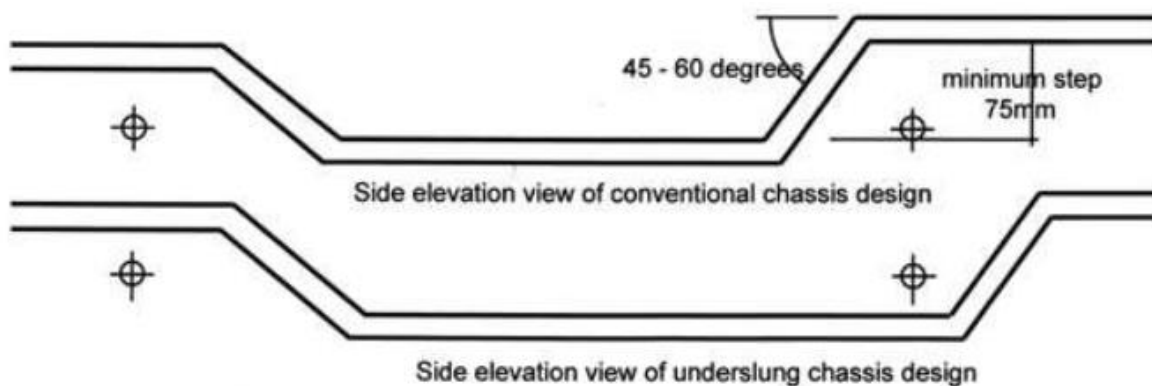
(13) Through Rails – The through rails shall be 38x3mm CHS minimum, 40x40x3mm RHS minimum or 50x50x3mm RHS minimum.

(14) Crucifix - The crucifix shall be 38x3mm CHS or 50x50x3mm RHS minimum. The crucifix shall terminate within 125mm of the outrigger. Front chassis rails and outriggers shall be symmetrical to common centreline.



(15) Crucifix – The crucifix members in the chassis design above shall be 50x50x3mm RHS minimum. 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



Underslung chassis design

4. ANCILLARY BARWORK, PLATES AND BALLAST

Ballast

Ballast must only be attached to either roll cage or chassis below deck height.

Ballast may be attached directly to the chassis by utilizing 12mm minimum high tensile bolts and nylock nuts either through a plate welded to the chassis or bolted through a sleeved insert in the chassis rail. If attached to roll cage tubing, proprietary mounting brackets shall be used. E.g. AFCO, Bicknell etc.

Each piece of ballast shall be painted white and be permanently marked with registered car number for identification.

Ballast up to 305mm in length shall have 1 bolt into approved ballast brackets.

Ballast up to 610mm in length shall have 2 bolts into approved ballast brackets.

Ballast shall be limited to a maximum of four pieces per car.

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.

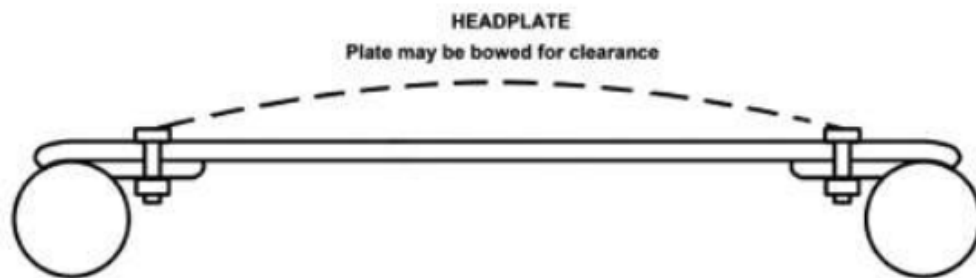
If individual pieces are used, each piece shall be bolted with 8mm high tensile bolts through 4 – 25x25x3mm MS tags welded to the NASCAR bars.

Head plate

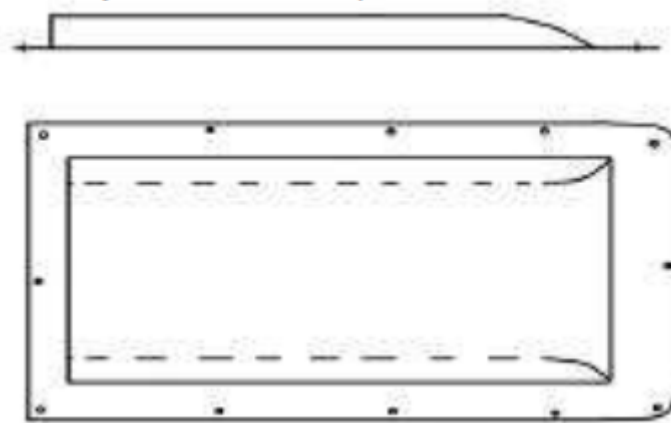
The head plate shall fully extend from the main roll bar forward to the front roof hoop bar and from the side roof hoop bar across to the centre roof bar.

The head plate shall be 5mm ALUMINIUM ALLOY or 3mm STEEL and shall be securely bolted using a minimum of 10x8mm dia. high tensile bolts, 3 each side, 2 front, 2 rear, bolted through 50x50x3mm MS tags. Plate shall be mounted from above. Fig 4 (i)

A minimum 50mm clearance is required between the helmet and any part of the roll cage and head plate when the driver is seated.



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



Bumper bars

Cars shall be fitted with a single tube style bumper front and rear. Bumper bars shall be manufactured using 38.1x 3.2mm CHS maximum. Bumpers are to remain hollow. Corners and ends of bumpers shall form a 100mm minimum radius.

Bumper return shall be 300mm maximum, minimum 100mm. Rear bumper only may be mounted outside of the body, maximum 25mm from body surface.

Bumper mountings to be of maximum 38x3mm CHS, 40x40x3mm RHS or 50x25x3mm, gussets shall not be used. Maximum of four bumper to chassis mounting points for each bumper bar.

5. FUEL PROTECTION BAR WORK.

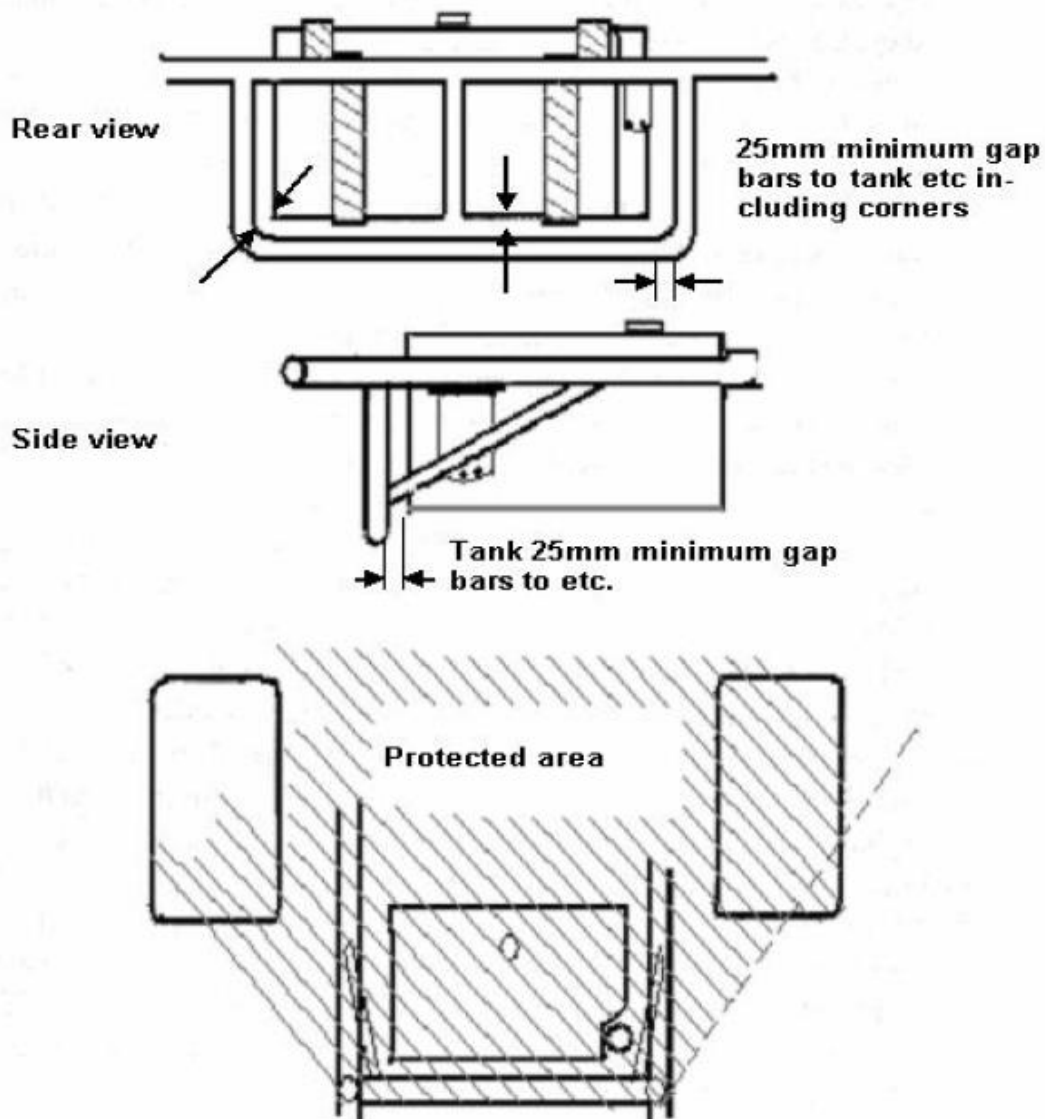
Tanks to be securely mounted in the boot area of the car, in a suitable metal cradle attached to the bar work, with a minimum clearance of 150mm forward of the lower rear end of the boot panel and 300 mm minimum from side of vehicle and isolated from driver by a metal firewall. Rear braces to be attached to top of roll cage rear hoop no more than 200mm from outside of roll cage leg. Tank to be protected by substantial bar work on all sides.

Fuel tank protection; Bar must be constructed of minimum 38mm x 3mm CHS, or 40 x 40 3mm RHS and be 25mm clear all around tank and filter, projecting a line from the rear wheel centre to the bar.

Bar is to prevent side entry to tank by nose of another vehicle.

Protector must be 25mm higher for tanks above lower bar work or 25mm lower than an under slung tank and mounted as per diagram 3. (Brace bars do not constitute Bumper mountings.)

Protector must extend 25mm above tank tanks that protrude above main chassis rail and mirror the diagram below.



6. BODIES

A VSC Thunder Sedan is to be fitted with a full body representative of the original body profile and silhouette of a sedan or full hard turret coupe bodied passenger car. Maximum width as measured at the waistline of the body is 1960mm.

MD3 style fronts not permitted fiberglass front bonnet to have 5 quick release pins 3 front, 2 rear.

Rear fiberglass boot to have 4 quick release pins 2 front, 2 rear. Replacement panel's 1.6mm maximum can be steel, fiberglass, aluminium.

Pins to be minimum of 12mm.

Heavy duty large reinforcing washers (min 30mm O.D.) to be fitted to all fiberglass bonnet and boot pin holes or worn holes in steel bonnets and boots

Bonnet and engine covers are to be free from holes and air cleaner not to protrude through the bonnet.

No tek screws outside of body.

7. RUB RAILS:

Rub rails are an optional fit and must be made of a nylon (urethane, nolathane) rubbing strip 50mmx12mm maximum. Rub rails must be securely mounted against body and through the door bar at a minimum of four points with equally spaced 8mm coach head (cup-head) bolts. Bolts at each end shall be no more than 50mm from the end of the rub rail. Rub rails are not permitted on the quarter panel behind rear wheel.

8. SUSPENSION

Rear suspension leaf spring only, can be multi or single leaf with coil over.

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. Shock absorbers fitted with Schroeder valves allowing for gas pressure adjustments are not permitted. No mechanisms are permitted to allow adjustments to be carried out from the cabin or driver's seat.

Front mountings of forward facing leaf springs are to be boxed in on the right hand side to protect the driver

5th arm must have adequate side support to alleviate sideways movement. Bar shall be fitted by seat to protect the driver in the event the 5th arm becomes dislodged.

Front suspension shall consist of a top A arm and a lower control arm as a minimum.

Lower control arms of front suspension shall not cross the centreline of the car.

9. STEERING

Any type of safe and adequate steering box or rack may be used.

Power steering systems and quick steer systems are allowed.

Steering shaft must be securely attached to the roll-cage (i.e. U bolt).

Quick release steering wheel is mandatory.

10. BRAKES

Minimum of 3 brakes operational.

Outside front wheel is the only brake that can be removed or disconnected.

11. ENGINES

Only naturally aspirated small block V8 Engines permitted:

Must be cast iron engine block

4-barrel manifold permitted

Carburettors only, no fuel injection

Fuel type – Methanol or PULP

Rear of engine to be set back no more than 75% of wheelbase

Engine offset not to exceed 75mm from centreline of chassis

12. CARBURETTORS

All carburettors must have a return spring fitted to each butterfly shaft and one to pedal linkage.

Must have some form of air filter.

13. COOLING SYSTEM

All radiator hoses to be of fabric reinforced material, plain rubber hoses not permitted.

Radiator ducting shroud, if used, maximum of 600mm forward of the radiator and must not be more than half the rear window height.

Pipes leading to the radiator to be steel, aluminium or copper tube. All internal coolant pipes and hoses to be ducted or lagged with suitable material.

Hoses to be as short as possible and fitted to radiator from rear side.

Exposed hoses or joints not permitted in cabin area.

Cabin mounted water pumps must be lagged or covered by suitable guard. Pressure release lever vent cap or tap must be fitted. Radiator must be fitted with over flow hose, must exit through floor if radiator is cabin mounted. Any type of fan fitted with guard permitted.

14. EXHAUST SYSTEM

Any type of exhaust headers or extractors may be used of any size. All exhaust components must be mounted away from the driver behind metal firewall.

A single or dual mufflers are to be used, with all exhaust gasses to exit rearward of the driver.

Exhausts to be located in such a way that all exhaust gasses are directed away from the driver, tyres, battery and fuel tank.

Max noise level 95DbA

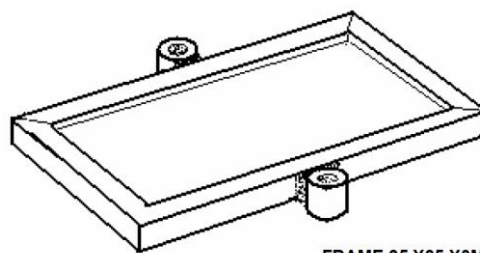
15. BATTERY

Battery frame must be securely mounted to the bar work or sub frame (not the body) and must have a metal firewall between battery, fuel tank and driver. A blue triangle of 50mm x 50mm to be placed on the outside of the car to show the position of the battery.

Only one passenger vehicle size battery is to be used.

Battery Hold Down clamp as pictured below mandatory.

EXAMPLE OF MANDATORY BATTERY CLAMP/HOLD DOWN FRAME



FRAME 25 X25 X3MM ANGLE
Top and Bottom

Battery cradle shall be a neat fit for the battery, with minimum of 2 x 8mm bolts clamping the frame and battery to the cradle. No hooks or wingnuts allowed on hold down bolts. Positive battery terminal to be shielded with rubber flap or similar

16. KILL SWITCH

ALL electrics must be controlled by Kill Switch.

An external Kill Switch must be fitted to the middle of the cowl panel and to be clearly marked ON – OFF, and must be of a contrasting colour.

Type of fuel being used to be marked at Kill Switch.

17. TRANSMISSION

Any manual, automatic or racing transmission can be used. Automatic transmissions to be fitted with operational inhibitor switch to prevent movement on start up.

18. TAILSHAFT

Tail shafts must be fitted with securely mounted 360 degree hoops at the front and rear. Front hoop to be minimum 40mm x 5mm FMS or equivalent, be round, no larger than twice the diameter of the tail shaft, and be securely mounted approximately 150mm from the universal joint.

Rear hoop to be as above except that it may be elongated vertically to permit suspension movement.

Tail shaft and universal joints to be correctly phased and be suitable for the application.

19. DIFFERENTIALS

Quick change differential or differential fitted with full floating rear axles only permitted

21. FUEL TANK

Maximum fuel tank capacity 120 litres for methanol and 72 litres for Unleaded. No LPG or Avgas as per Government Regulations.

Metal fuel filler rings on plastic fuel cells must be fitted with earth strap to bar work or body. Fuel tank area must be accessible for scrutineering (minimum access from top or rear is the size of the fuel tank).

Must be securely mounted in a suitable cradle attached to rear bar work or fuel protection bar work.

No aluminium straps or fittings permitted to secure tank.

Mounting brackets not to be welded to tank.

Fuel tank straps to be steel minimum 25mm x 3mm or 5mm steel chain for tank capacity of 32 litres or less, or minimum 32mm x 3mm for 33 litres to 60 litres

Filler cap to be a positive seal (not tapered thread).

Breather vent must have a one-way valve in working order, if boot floor fitted vent must exit through floor.

Fuel pick up fittings (etc.) to come from top or sides. Pick up from bottom of tank not allowed. Side fittings to be protected from intrusion.

The Fuel line to the engine must be fitted with a quick action, non-leak fuel tap or valve. Must be in central cabin and within easy reach of driver and crash crew.

If a return fuel line is used a one-way valve must be fitted near tank. Electric fuel pumps, fuel filters or regulators must be mounted within bar work and electric fuel pumps must be wired with an independent earth and MUST be controlled by the "KILL" switch.

Fuel tanks to be constructed of minimum 1mm steel or 3mm alloy. Competition plastic tanks allowed.

Screw type clamps to be used on all fittings.

All fuel lines to be isolated from electrical wiring. Type of Fuel to be clearly marked at kill switch, boot and fuel tap (cabin).

No fuel pumps, filters or regulators allowed in cabin area, maximum 2 fuel connections in cabin to tap only.

No jerry cans to be used as fuel tanks.

22. TYRES

Only dedicated racing tyres permitted - **NO** Road, Snow or Rally tyres permitted.
Maximum tyre diameter permitted is 29". Maximum tyre width permitted is 11"
V8 Thunder Sedans run a control compound rule on both rear tyres and outside front tyre, with the inside front tyre compound choice open
Tyre compounds permitted on rear tyres and outside front tyres are;
Hoosier 1300 or harder
American Racer SD44 or harder
Goodyear G45 or harder

Tyre grooving and sipping is allowed. Tyre manufacturer markings are not to be defaced or removed.

The use of tyre treatments or softeners is expressly forbidden.

23. WHEELS

All wheels must be professional quality steel or alloy construction.
Maximum wheel width allowed is 12"
Maximum wheel Diameter allowed is 15"
All wheel nuts to be open ended.
Wheel studs not to protrude past line of rim.
No balance weights allowed.
Competition type bead locks are the only form of mechanical tyre attachment permitted.
Wheels fitted with wheel cover must use correct wheel manufactures attachments only, covers maybe required to be removed for scrutineering purposes.
Outer edge of wheel rim must not protrude more than 100mm from waistline of body

24. WINGS

Rear spoiler may be fitted, maximum 130mm high, side support taper to zero, no longer than 300mm forward from base of spoiler. Spoiler not to exceed body width at that point, or mounted further back than rear bumper.
"V8 Supercar" style bolt on wings are permitted.

25. MIRRORS

Mirrors **NOT** permitted.

26. PADDING

All projections that may present a danger to driver / passenger must be suitably padded.

27. TOWING EYE

Lifting / Towing chain is permitted front and rear, to be fitted between bumper irons and chassis rails.

28. DIRECTION OF RACING

Cars to race Anti-Clockwise.

29. SPECIFICATIONS

Specifications frozen from July 1 2016 to June 30 2019