

## AUSTRALIAN SPEEDWAY RACING RULES & REGULATIONS

### DUTY OF CARE STATEMENT

This duty of care statement is to be read out to the Competitors at every drivers meeting before the start of any race meeting with no exceptions.

It is my duty to advise you of the following;

- That motor racing can be dangerous; your equipment could be damaged or destroyed; and you may suffer serious personal injury or worse.
- If there is any aspect of this race meeting that causes you concern for your personal safety or for that of any member of your crew, whether that concern be with the track, the venue or the manner in which the meeting is being conducted it is your obligation to bring those concerns to the attention of the Clerk of Course or Chief Steward.
- If after doing this those concerns are not addressed to your satisfaction, you are advised to withdraw from this race meeting.
- Does everyone understand his or her obligations and rights in this regard?
- It is also my duty to advise you that at any time during this race meeting random drug and or alcohol testing may take place.
- If you have any doubts as to your ability to pass such a test with a negative or zero reading you should withdraw from this race meeting IMMEDIATELY.
- Does anyone have any questions?



# Lightning Sprints Australia Inc.

A0055175M

## Car Specifications

Book No. - **LSA001**

Revised Specifications:

**Amended:**

**Added:**

**Deleted:**

#### Disclaimer

Lightning Sprints Australia Inc (LSA Inc) is formed and operated for the purposes heretofore stated and will not be held liable for any damages incurred by or to any individual or group of individuals in their pursuit of racing. Any person engaged in the sport of racing in any capacity assumes all risks and recognises the hazards involved and, thus releases and discharges the Association, its Officers, Officials and Members from any and all liability and claims of any nature.

The rules, regulations and procedures set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements.

The interpretation and enforcement of these rules, as published herein, shall be determined by the Lightning Sprints Australia committee and their decisions will be final in all respects.

No express or implied warranty of safety shall result from publication of or compliance with these rules, specifications and procedures and/ or subsequent modifications. In respect to safety, they are intended only as a guide for the conduct of the sport and are in no way a guarantee against injury or death to participants, crew members, spectators, track officials or any others.

All rules and regulations contained herein are subject to deletions, additions, and/ or modifications by directives contained in subsequent supplementary regulations, official newsletters and other publications issued by the LSA Inc or by a verbal directive of the club committee.

## **1.0 DESCRIPTION**

**1.1** A land vehicle propelled by its own means running on four wheels, not in line, which must be normally in contact with the ground and of which the front two must effect the steering and the rear two the propulsion.

**1.2** The engine is to be located forward of the driver

**1.3** The car body shape is to be of sprintcar design.

## **2.0 GENERAL DIMENSIONS**

**2.1** Wheelbase - Minimum 1475mm - Maximum 2030mm.

Measured from centre of axle to centre of axle.

**2.2** Overall Width - Minimum: 1240mm - Maximum 1675mm.

Measured from far outside of rim to far outside of rim (including beadlocks and beadlock bolts).

**2.3** Length: maximum overall length will not exceed 3400mm

## **3.0 WEIGHT**

**3.1** For cars with engines other than Mitsubishi V6:

Maximum weight 550kg at any time.

Minimum weight 350kg at any time.

**3.2** For cars with Mitsubishi V6 engines:

Minimum weight 545.5kg with driver at any time.

## **4.0 WHEELS and TYRES**

**4.1** Maximum rim width 305mm. (12 inch)

Maximum rim diameter 330mm (13 inch)

**4.2** Tyres must be fully seated on beads.

**4.3** Maximum factory branded tyre size of 84 inch or equivalent.

## **5.0 WINGS**

**5.1** Wings to be constructed of aluminium sheeting.

**5.2** Top wing measurements.

Maximum:

Aerofoil 1220mm wide

Outer 1550mm long and 660mm high

Inner 1550mm long and 860mm high

Minimum:

Aerofoil 762mm long and 838mm wide

Outer 1016mm long and 330mm high

Inner 1016mm long and 330mm high

## N) PLENUMS

All plenums may be inspected at any time by an approved official.

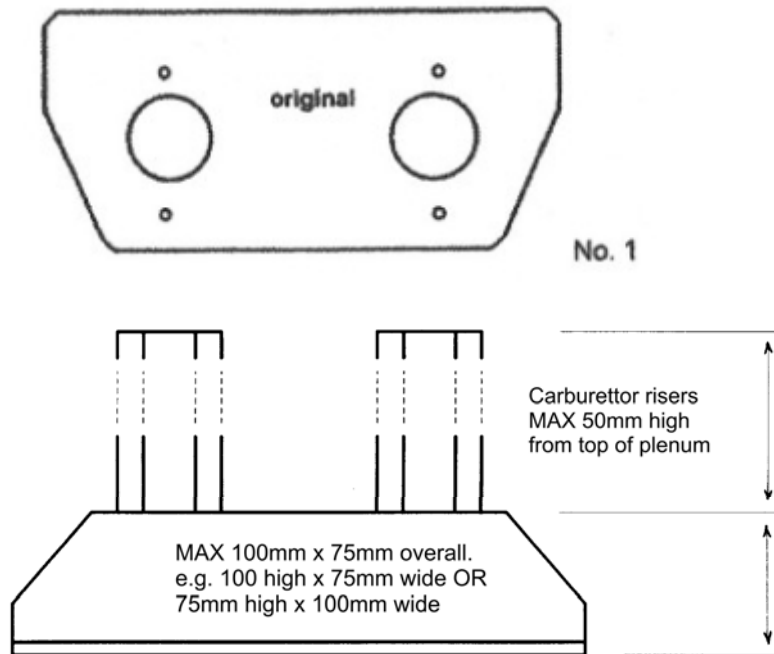
Two types only. 75mm (3in) by 100mm (4in) outside diameter maximum. No minimum. May be reshaped to suit inlet and carburetors. Plenum measurement can go either way.

SDWA original manifold may be used.

No internal baffles.  
To be open chamber.

Maximum plenum riser 50mm (2 in.) high.

### General Shapes - Diagrams Are Sample Only



**5.3** Fitment of top wing is MANDATORY and must remain securely mounted at 4 points whenever car is competing in a race. Loss of top wing will result in a vehicle defect flag.

**5.4** Fitment of front wing is optional. If fitted minimum aerofoil size 300mm x 300mm, maximum width 950mm.

## 6.0 ENGINE

**6.1** All engines are to be based on mass-produced engines from road-registered use vehicles only.

**6.2** Engine block / crankcase to be OEM part. Motorcycle crankcases may be 'cut-down'. All other engine parts open for modification unless stipulated otherwise in specifications 6A, 6B or 6C.

**6.3** Starter motor, if required, must be fitted to car when racing and must be capable of starting engine.

**6.4** Turbo or Supercharging of any engine is not allowed.

**6.5** No two-stroke engines are allowed.

**6.6** No multiple engine couplings are allowed.

**6.7** Fuel injection is allowed, may be mechanically or electronically controlled.

**6.8** Computer or electronic engine management systems that are controlled externally or by remote, i.e. separate from or not controlled by driver whilst in the car, during racing are not to be fitted or used.

**6.9** Electronically controlled traction control devices are not to be fitted or used.

**6.10** All the above rulings apply to and are to be used in conjunction with one and only one of the engine specifications listed as specification 6A, 6B or 6C as follows.

**6.11** All engines to be sealed by an association approved machine examiner. Seals to be placed so as to prevent sump from being removed from block or crankcases being separated. Engine sealing must be done via one of the following methods

**A)** Engine to be inspected and measurements taken and recorded by an LSA authorised person (scrutineer, tech officer) at time of sealing. The car owner / driver must carry a record of the inspections with them to all race meetings that the car competes at.

With this method there will be no need for the engine to be 'pulled down' if they gain a podium finish at a title or major blue ribbon event so long as ALL seals are intact and match the numbers recorded at time of inspection / sealing.

**6.11 (cont) B)** Engine to be sealed by an LSA authorised person (scrutineer, tech officer) without inspecting / measuring engine components. Once sealed then car owner must organise a Statutory Declaration stating that the engine sealed with the specified seal numbers is built to and legal within the specifications. The owner must carry the Statutory Declaration with them to all race meetings that the car competes at.

With this method the engine will be subjected to a mandatory 'pull down' and inspection if they gain a podium finish at a title or major blue ribbon event which stipulates this requirement. If the engine is found to be outside of the specifications or the owner / driver refuses to allow the engine to be inspected then the owner / driver will be subject to Rule 7.8 of the Australian Speedway Racing Rules & Regulations as published by NASR, furthermore the statutory declaration can be used to initiate civil action against the owner / driver.

### **6A - Engines**

**6A.1** - Starter motor must be fitted and be capable of starting engine.

**6A.2** - Minimum number of cylinders: 4

**Capacity of engines shall be as follows:**

**6A.3** - Motorcycle engines with more than 2 valves per cylinder 1200cc + 5% maximum. 600cc minimum

**6A.4** - Motorcycle engines with 2 valves per cylinder 1300cc + 5% maximum 600cc minimum

**6A.5** - Car engines with 2 valves per cylinder 1500cc + 5 % Maximum

**6A.6** – Car engines with double overhead cams or more than 2 valves per cylinder 1300cc + 5% Maximum

**6A.7** - 10a Mazda rotary engines are allowed. Porting allowed.

### **6B - Engines**

**Capacity of engines shall be as follows:**

**6B.1** - 1500cc + 4% for push rod and single overhead cam.

**6B.2** - 1200cc + 4% for twin overhead cam engines.

**6B.3** - 1100cc + 4% for engines with more than two (2) valves per cylinder.

**6B.4** - Minimum number of cylinders: 4.

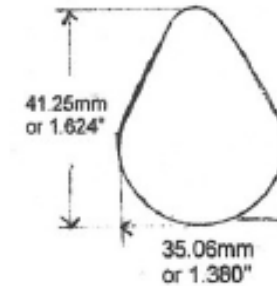
**6B.5** - Starter motors optional.

### **6C - Engines**

**6C.1** - Mitsubishi 6G72 V6 3 litre. For full wording of engine specifications refer to Appendix "A" at rear of this book. Note that the use of this engine only permitted in conjunction with weight requirements as per specification 3.2.

Cam gears must be in a fixed position in relation to the camshaft when operating.

Timing belt and tensioners are free.



### **k) ENGINE SEALING**

Engine is to be sealed by an approved technical officer, with approved seals.

One camshaft to be sealed, one rocker bolt to be drilled to accept seal wire & must be visible through oil filler cap. Two seals to be fitted to sump, one on each side, holes for wire to be drilled through sump & block.

### **l) IGNITION**

Point or electronic distributor. Computer controlled not permitted.

### **m) CARBURETTORS**

Two single barrel Stromberg downdraft carburetors of (1 5/32in) venturi & std. cast iron Stromberg base. It is permitted to use the small or large base. No change to airflow and fuel booster system. Approved fuel flow pipe system may be used.

Carburetors shall be externally stock standard.

Methanol conversion internally only.

### **g) CYLINDER HEADS**

Standard head thickness 84mm.

Minimum head thickness 82.50mm.

Cylinder Heads may be ported.

**WARNING** Please note: cylinder head castings are not very thick and are easily damaged. On expert advice there is minimal horsepower gain to be obtained.

No modifications allowed to combustion chambers to increase compression.

Cylinder head face may be machined. **Angle milling is prohibited.**

Valves must be std Mitsubishi parts or OEM replacements.

Maximum valve head Dia. Inlet 43mm Exhaust 35mm.

Valve springs & retainers are free. shimming of valve springs is permitted.

### **h) INLET MANIFOLD**

Inlet manifold can be match ported, for a maximum distance of 15mm from the mounting face. Casting flashes may be removed.

### **i) LUBRICATION**

Oil filter & boss may be changed. Oil cooler is permitted.

Sump may be altered to increase capacity. Oil pick-up may be altered. Baffles & screens are permitted. Oil pressure relief valve spring may be shimmed or replaced.

Dry sump systems are prohibited. External oil pumps are prohibited.

Electric oil pumps are prohibited. Additional oil storage reservoirs are prohibited.

### **j) CAMSHAFTS**

V6 6G72 power plant must use unaltered Mitsubishi camshaft measuring 35.06mm across the widest part of the base circle of the cam shafts & 41.25mm from the base to the highest point of the lobe.

Functioning hydraulic lifters - to year and model.

No solid lifters.

Welding & cam grinding prohibited

Timing gears may be drilled to allow dialing In of camshaft. Other methods are permitted.

**6C.2** - Starter motor must be fitted and be capable of starting engine.

### **7.0 TRANSMISSION**

**7.1** May be chain, shaft or belt driven or a combination of either.

**7.2** All drive chains, shafts or belts passing through cockpit must be fully covered from the firewall to rear of seat using 1.6mm steel or 2mm aluminium.

**7.3** Tail shafts to have front and rear safety loops fitted and torque tubes to have tube hoop or suitable restraint strap fitted. Tailshaft is defined as shaft having 2 pivoting joints.

**7.4** Fitment of a clutch is optional.

**7.5** If fitted, the flywheel and clutch to be forward of engine plate unless fitted with a scatter shield that fits as close as possible to bell housing. Scatter shield to be made of 3mm mild steel and to cover flywheel sufficiently to protect driver in the event of flywheel breakage. Minimum width 150mm and must be welded or bolted to the chassis or suitable reinforced mounting.

**7.6** Gearbox: all cars must be equipped with a gearbox or device which enables the car to be pushed in a neutral position with the engine stopped and without a driver.

### **8.0 STEERING**

**8.1** Steering box or rack to be securely mounted to chassis or axle.

**8.2** A flexible steel or aluminium alloy steering wheel must be used. Plastic coated wheels must have a steel cross member and full circle outer ring under the plastic coating.

**8.3** Steering boxes must be sealed to prevent foreign matter from entry to mechanism.

**8.4** Steering shaft minimum size to be 19mm x 1.6mm seamless cold drawn tube or 13mm solid steel.

**8.5** All cars to have an approved quick release type steering wheel.

**8.6** Steering linkages to have minimum grade 8 bolts fitted. i.e. Draglink & trackrod. No lightening of these bolts allowed.

### **9.0 BRAKES**

**9.1** Cars to be fitted with an effective hydraulic braking system. Brakes are mandatory on the rear wheels, and highly recommended on left front wheel. Fitment of left front brake mandatory for race season 2011 / 20112.

## **10.0 CONTROLS**

**10.1** All clutch, gear change, brake and accelerator mounting positions are optional, subject to Technical Committee's discretion.

**10.2** A positive acting return spring attached directly to the carburetor or fuel injection linkage, must be fitted. The spring fitted inside carburetors will not be acceptable as a substitute for the above.

**10.3** A positive stop or override prevention must be used to prevent linkage from passing over centre and sticking in the open position.

**10.3** If the car is fitted with rod type accelerator linkages a hoop on the accelerator pedal is recommended so the driver can return the throttle manually. Fitment of hoop will be mandatory for season 2011 / 2012.

## **11.0 IGNITION & ELECTRICAL**

**11.1** Each car must have an engine cut off switch located on the firewall. This switch must be clearly marked, and be within easy reach of the driver in an unobstructed position. The switch must cut off all electric fuel pumps and ignition.

**11.2** If a battery is fitted it must be secured and protected in a fashion to prevent leakage of acid onto driver and shorting of terminals in the event of a roll-over. Location of the battery to be shown by a solid blue triangle of 75mmx75mm displayed on the exterior of body work adjacent battery. Only Gel or Dry-Cell battery accepted for race season 2011 / 2012.

## **12.0 FUEL SYSTEMS**

**12.1** All fuel lines must be suitable for fuel being used.

**12.2** Rigid lines not allowed.

**12.3** Fuel tanks must be securely mounted to chassis

**12.4** Fuel tanks must be isolated from the driver, battery and all electrical components.

**12.5** Tanks must be fitted with lock type or screw cap.

**12.6** The breather or cap must be constructed in such a manner to stop fuel escaping in the event of a collision or upset.

**12.7** No soft solder allowed on fuel tanks, lines or fittings.

**12.8** A fuel tap shall be fitted within easy reach of the driver and be clearly marked 'ON / OFF'

## **b) PISTONS & RINGS**

Pistons used must be either:

Mitsubishi O.E.M. replacement items or aftermarket mass produced pistons as direct replacement of Mitsubishi O.E.M. items.

Piston rings are free, with the provision that two compression rings and one segmented oil ring set is used on each piston.

Gudgeon pins as supplied with pistons are the only pins permitted. Pistons must not protrude above cylinder block deck face any more than .015" in. with the piston at top dead centre. The piston crown may be machined to achieve correct deck clearance. The only other material that may be removed is for the purpose of balancing.

## **c) CRANKSHAFT**

The crankshaft may be reground to a maximum 1.0mm undersize, with a maximum stroke of 76.0mm. Lightning of the crankshaft is prohibited; material may only be removed for the purpose of balancing. Shot peening is permitted. Crankshaft main & big end bearings are free.

## **d) CONRODS**

Conrods must be genuine Mitsubishi 6G72 parts. Conrods may be resized, shot peening is permitted. Conrod bolts & nuts may be replaced by aftermarket fasteners. Material may only be removed from conrods for the purpose of balancing.

## **FLYWHEEL & FRONT PULLEY**

Top 180 deg of flywheel to have an enclosed scatter shield of 3mm steel or 5mm alloy.

Flywheel & front pulley are free.

## **e) BALANCING**

All rotating & reciprocating components may be balanced by the removal of metal only from the locations so provided by the manufacturer.

## **Appendix A : Mitsubishi 6G72 V6 3 Litre specifications.**

### **POWER PLANT**

**Any aspect relating to the construction and or modification of the power plant, which is not expressly permitted In these regulations is forbidden. Modifications permitted are allowed only on the condition that the weights and or dimensions mentioned in these regulations are adhered to.**

**The use of any ceramic components or ceramic coatings is prohibited with the exception of the extractors and mufflers.**

**The use of any titanium components is prohibited.**

1. The power plant to be used shall be an unaltered Mitsubishi 6G72 V6 3 Litre 2 valve per cylinder as fitted to Magna, Verada and Pajero or an identically produced power plant
2. Hyundai Sonata G6AT. With the exception that Hyundai camshafts and rockers are prohibited.
3. The power plant shall include all components used to generate power.
4. All aftermarket parts must be equivalent to O.E.M. specifications, as per standard reconditioning practices.
5. Power plants to be used in standard form with the following exceptions
  - Normal engine reconditioning procedures are permitted
  - Blue printing of the power plant is permitted

#### **a) CYLINDER BORES**

Maximum overbore of a standard power plant block is 1mm (40thou in).  
Maximum capacity 185.45c.i (3038.966cc)

**12.9** Methanol, ULP or PULP fuel may be used. Competitors should note that some states may have legislated restrictions on types of fuels that can be used and are therefore advised to check this requirement before competing. Methanol fuel mandatory for season 2011 / 2012.

Maximum specific gravity reading of 0.800 for Methanol.

**12.10** No nitromethane or oxygen producing additives permitted.

**12.11** Fuel cells are permitted.

### **13.0 OIL SYSTEMS**

**13.1** All oil lines must be of association approved high quality materials.

**13.2** All oil lines must be secured with high quality fittings and clamps.

**13.3** All oil tanks, coolers and filters to be securely mounted to the satisfaction of machine examiner.

### **14.0 Body**

**14.1** All cars must be fitted with:

A bonnet of sprintcar design. A dash cowling extending from at least the top edge of bonnet to top of firewall. A tail piece the same style as speed cars and sprintcars. Panels covering both lower parts of the cockpit. A panel to cover upper part of right hand side cockpit

**14.2** The body shall be of neat appearance and kept in good order.

**14.3** The cockpit is to be free of all sharp edges.

### **15.0 FLOORPAN**

**15.1** To extend to a minimum of 75mm rearwards of front edge of seat.

**15.2** Minimum thickness of floor pan  
steel...1.6 mm or aluminium.....1.6 mm (3.0mm for season 2011 /2012)

**15.3** Floor pan must be secured by bolts, rivets, weld or fasteners approved by the Technical Committee.

### **16.0 FIREWALL**

**16.1** To be fitted between top and bottom chassis rails between engine and cockpit and be built of: steel: minimum 1.6mm or aluminium: minimum 2.0mm

**16.2** All holes to be sealed with a fire retardant material.

## 17.0 SUSPENSION AND STEERING

**17.1** 7/16 inch or 11mm minimum size rose joints/rod ends are to be used except on steering links / rods and rear torsion bar arms which are minimum 1/2 inch size.

Grease nipple type allowed on steel to steel type only.

**17.2** Front axle suspension to be configured and operate as single beam axle.

**17.3** Front axle to be 38.1mm min. O.D./ 3.2mm min. thick if mild steel or 1.5" min. O.D./ .120" min. thick if chromoly. Front axle to be made of only mild steel or chromoly.

**17.4** Rear axle suspension to be configured and operate as single beam axle.

**17.5** No independent suspension permitted.

## 18.0 CHASSIS AND ROLLAGE

**18.1** Rollcage to be constructed of tubing with the minimum size as follows: mild steel 32mm o.d. 2.6mm wall thickness or chrome moly 31.75mm.o.d. 2.38mm (.092")

**18.2** Chassis mainrails (as shown in diagrams 1b, 2b & 3b) to be minimum size of 25.5mm o.d. 2mm wall thickness (1" x 0.083")

**18.3** Diagrams No.1, 2 and 3 (page 11) define the chassis and rollcage bars of the three current types of frames. Any other designs must be submitted to Technical Committee.

**18.4** Chassis Dimensions maximum

Width 710mm

Height 1420mm

Length 2550mm

**18.5** Length and height measurements do not include bumpers or their sockets.

**18.6** Width measurements do not include suspension mounting points, nerf bar sockets or protection bars

**18.7** Rollcage gusseting and rear "A" brace material to be a minimum size: 19 mm o.d. with 2 mm wall thickness

**18.8** Rear "A" shaped brace behind seat must not be spaced more than 100 mm apart at the top and must not be curved or bent. This "A" brace must have a tie bar fitted for the harness belts to pass over at the correct height.

**18.9** Bright or chrome plating of rollcage or chassis is not permitted.

**18.10** Chassis bracing and material size to be minimum: 19 mm o.d. with a 2 mm wall thickness.

**29.3** All cars to be of neat appearance and sound design.

**29.4** Cars must be cleaned prior to attending race meeting.

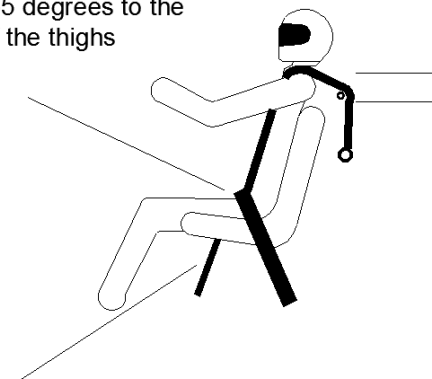
**29.5** All bolts to be of high tensile quality.

**29.6** Bolts retaining steering and suspension components not retained by nuts need to be suitable lock wired.

## SAFETY HARNESS MOUNTING

diag. 4

Lap belt should be installed at an angle of 45 - 55 degrees to the tangent line of the thighs



Passing over bar max. 100mm below top of shoulder

Anti submarine belt should be anchored in line with the chest

## 25.0 HELMETS

**25.1** Helmets must comply with the requirements as per current Australian Speedway Racing Rules & Regulations as provided by NASR.

**25.2** The machine examiner has the right to reject any helmets they may think unsafe. This decision is final and may only be contested through the LSA Technical Committee.

**25.3** Approved face and eye protection must be worn at all times on the race track.

## 26.0 PROTECTIVE CLOTHING

**26.1** All protective clothing to meet current Australian Speedway Racing Rules & Regulations as provided by NASR.

## 27.0 INSPECTION

**27.1** All cars must be presented for a 'daylight' inspection prior to being granted registration for each racing season.

## 28.0 LOG BOOKS.

**28.1** Log books are issued to the car concerned and are not transferable to other cars.

**28.2** Log book must be presented to Machine Examiner at every race meeting.

**28.3** Drivers not in possession of log book at inspection prior to any race meeting will be liable to a fine or disqualification from racing.

**28.4** Log books will be renewed when required.

**28.5** Loss of log book without reasonable explanation will incur a Fifty Dollar (\$50) fine payable to LSA Inc.

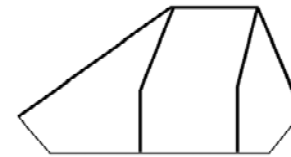
**28.6** Log book pages will be numbered.

## 29.0 GENERAL

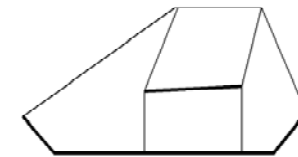
**29.1** LSA Technical Committee may, from time to time, allow the use of items not specified within this book, however express permission must be obtained in writing from the LSA Technical Committee prior to acceptance (e.g. Hand controls on steering wheel)

**29.2** All bolts, component parts, suspension, steering and running gear must be secured with either lock tab washer, lock nut, split pin or nyloc nut and must have at least one full thread showing through nut.

## LIGHTNING SPRINT ROLLAGE AND CHASSIS DIAGRAMS

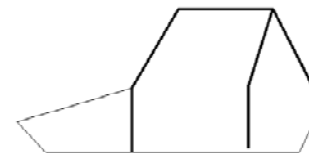


**1a. Rollcage**

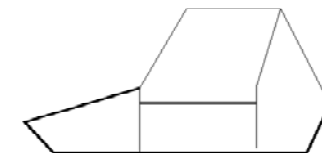


**1b. Chassis**

**Diag. 1**

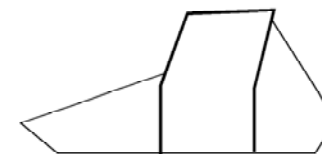


**2a. Rollcage**

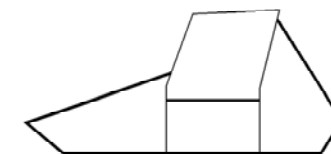


**2b. Chassis**

**Diag. 2**



**3a. Rollcage**



**3b. Chassis**

**Diag. 3**

All top connecting crossbars on rollcage must be of the same diameter, wall thickness and material as the rest of the roll cage.

**18.11** Welding of rollcage and chassis may only be Electric arc, M.I.G or T.I.G and be of high quality and appearance.

**18.12** Any chassis/rollcage construction outside these specifications must be submitted to the technical committee for approval. This includes new and secondhand cars built without an unpainted inspection during construction.

#### **19.0 NERFING BARS.**

**19.1** Cars must be fitted with suitable nerfing bars designed to prevent the rear wheel climbing over other car wheels. They must project to at least the centre of the tyre and be no closer than 25mm. from the leading edge of the tyre at axle height. Nerfing bars to be separate to radius rods.

**19.2** Nerfing bars to be a minimum of 16mm (5/8") outside diameter and a maximum outside diameter of 25mm (1").

**19.3** Nerfing bars must be mounted to the chassis at min. 3 points.

#### **20.0 BUMPER BARS**

**20.1** Front and rear bumper bar are compulsory.

**20.2** Must not have open ends or have sharp edges.

**20.3** Must be of sound construction and attachment.

**20.4** Rear pusher bar to carry through to underbody and join rear pusher underbow.

#### **21.0 SEAT AND SAFETY HARNESS**

**21.1** High back, one piece seats including headrest are to be used.

**21.2** Seats are to be of sufficient strength, design and be mounted to Technical Committee approval.

**21.3** Seats to be mounted on chassis cross bar with a minimum of 4 x 8mm bolts fitted with 44.45mm washers, 2 in base of seat in 2 in back of seat. Cross bar to be in front 1/3 section of seat base.

**21.4** Safety harness to be minimum 5 point mounting with minimum 75mm belt width. (Except anti/submarine belt/s 50mm.)

**21.5** Safety harness mounting to comply with diagram No. 4

**21.6** The safety harness, quick release catch is not to have plastic covering or plastic depress button.

**21.7** It is highly recommended that harness adjusting straps are 'double-rolled' back through adjusting buckle to help eliminate adjusting buckle slippage.

**21.8** 100mm x 200mm x 1.6mm steel or 4mm alloy plate, inclusive of seat thickness, to be fitted to protect base of seat from differential. Plate not required on chain driven cars.

#### **22.0 SAFETY ITEMS**

**22.1** Compulsory cage nets to be fitted to right hand side of cockpit and to be of webbing belt construction mounted to Technical Committee approval

**22.2** Head and neck restraints are compulsory and must comply with the requirements as per current Australian Speedway Racing Rules & Regulations as provided by NASR.

**22.3** Any torque tube or fifth arm shall require a hoop of sufficient strength to restrain it if it breaks or dislodges.

**22.4** The top of drivers helmet, when properly seated in the car, must be a minimum of 25mm below a line drawn between the underside of the rollcage bars whilst driver seated in normal driving position with helmet on. If halo bars or 'morris bar' fitted top of helmet to be min. 100mm below top side of bars.

**22.5** Knee supports, protecting the driver's knees from the steering box, Optional however highly recommended.

#### **23.0 EXHAUST PIPES AND MUFFLERS**

**23.1** All cars must have exhaust pipes which extend beyond and away from the cockpit and have the end of the pipe cut square.

**23.2** Exhaust pipes must be secured to the chassis or nerf bar with clamp or bracket other than that of the motor.

**23.3** All cars must be equipped with a silencing device, if so required by the promoters. (All Australian tracks as of 1997 have a 95 decibel limit)

**23.4** If end of exhaust protrudes proud of nerf bars exhaust tip must be of type to have blunt / rolled edge.

#### **24.0 NUMBERS**

**24.1** All cars must have their numbers on both sides of the tail section. Minimum size of each individual number is to be 300mm high.

**24.2** All cars must show state registered prefix with number, min. size 50% of number height.

**24.3** The numbers are to be clear and easily identifiable.

**24.4** An additional number is to be displayed on the inside of the left hand sideplate of the wing in a contrasting color, to be readable from the control tower.