

# **MICROPRINTS AUSTRALIA**

## **NATIONAL RULES / SPECIFICATIONS**

**2011/ 12 Season**

## **1. AUTHORITY TO EXCLUDE**

Notwithstanding anything contained in these specifications, the machine examiner, scrutineer and/or Club Committee shall have the right to exclude ANY vehicle from competition at any time, if in his/her/their opinion; the vehicle is not track worthy or could become a danger to other competitors.

Likewise, a driver who is not considered fit for any reason to drive a vehicle, shall be disqualified from driving by the steward and/or clerk of the course.

## **2. DISCLAIMER**

Notwithstanding any design detail contained in these specifications, or approvals given, the Club Committee and members accept no responsibility for the safe operation of any vehicle or component manufactured under these rules.

Each member of the Club accepts that it is a condition of membership that they indemnify all other members of the Club against any injury or damage to their own or others property which may occur during race meetings.

This indemnity applies even if the above described injury or damage is caused by failure of equipment, (which has or has not been approved by the Club Committee or passed at scrutineering), or unsafe driving habits of other competitors.

It must be emphasized that the specifications lay down standards and dimensions to be achieved in the manufacture of a race car and approvals that must be gained prior to use of such race car. This in no way places the responsibility of any matter covered in the Specification upon members of the Club.

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### **3. General Requirements and Information**

#### **3.1 National Committee Structure**

It is proposed that only Two (2) delegates, voted in by each State as their representatives, to be on National Committee.

These delegates will then vote at National conference to make up National Committee.

This will provide and maintain an even spread of input from ALL States.

The National President would have the ability to cast two(2 ) votes. i.e. One to vote on behalf of his State and the casting Vote (one vote if needed) to break a deadlock.

#### **3.2 National Title Allocation**

The Australian Title to be awarded each season on a Rotational basis.

Should a State forfeits its chance to run a Title for whatever reason, then it loses it until next rotation

#### **3.3 National Title Format**

The Format for Titles to be as per Australian Title at Portland or similar.

ALL 3 heats to be randomly selected and allow competitors to have a front, middle and rear draw.

#### **3.4 Race Receivers**

Race Receivers are to be compulsory for ALL competitors at State & National level race meetings.

#### **3.5 Eligibility to National & State Titles (Three Race Rule)**

All competitors must complete a minimum of three (3) club level race meetings to be eligible to compete at any National Title or State Title race meetings.

The three meeting must be completed in the period between the running of the same event in the previous season and the event they wish to enter.

#### **3.6 National Title Rule**

The Maximum Number of Competitors per heat to 10 competitors

Progression of Grid position when a competitor withdraws /fails to start.

- If withdrawn from meeting prior to gridding up the competitors will progress using the "zigzag" method.
- Where withdrawn after the entry to the track the drivers will "move up" one position in their respective row (inside or outside row) only.

#### **3.7 State Title Rule**

The Maximum Number of Competitors per heat to 8 competitors

#### **3.8 National and State Title Priority**

NO other Microsprint event allowed to be held or sanctioned to be run in Australia on same date as a National or State Title.

The only Exception would be where a Title Meeting is rained out and the rain out date clashes with a Pre-scheduled meeting.

### **3.9 Engine Tagging**

Engine tagging with the approved Microsprints Australia seals and the provision of a Statutory Declaration by the engine builder, is accepted as a legally compliant engine.

The engine tag fitment to be deemed legal must consist of:

- lock wire passing between a minimum of two(2) or more mounting bolts which prevents the removal of the cylinder from the crank cases.
- The lock wire will then be fed through the approved seal in such a manner that the cylinder mounting bolts cannot be loosened /removed without breaking the lock wire and associated seal.

Failure to meet the above requirements when sealing the engine will deem the engine illegal and subject to engine measuring without reimbursement of basic reinstatement costs incurred during the measuring process.

By following the process of tagging the engines, for both 2 and / or 4 stroke and the provision of a statutory declaration from the engine builder will negate the need to measure any pre-tagged engine at any race meeting (including National and State titles meetings).

In the case of a formal protest being lodged against any competitor with a tagged engine, the following will apply:

- the engine would be removed and sealed
- The engine will be measured within a reasonable timeframe after the meeting at a suitable location either by the scrutineer or others under the scrutineer's supervision.

#### **Engine Proved Illegal.**

If during this process the declaration of the engine builder was found to be false (i.e. engine found to be illegal), then all engines sealed by that engine builder would be deemed to be illegal.

All competitors who submitted declarations from the specific engine builder would not be permitted to compete until such time as an alternate engine builder/s or scrutineer had re-measured, sealed and provided a new declaration for each motor.

#### **Complying Engine**

Where any engine subject to protest be deemed legal, the competitor who lodged the protest, will become liable for the cost of reinstating the engine to its pre-inspection state (ie gaskets seals etc.) and any shipping costs that may be incurred in returning the engine to the competitor, in the case of interstate competitors

### **4.0 NASR Rules and Regulations Summary**

It is the responsibility of the competitor to be both knowledgeable and comply with Australian Speedway Race Rules and Regulations as issued by NASR.

Unless explicitly exempted or stated within this rulebook, the relevant NASR rule will apply. A number of key rules/clarifications have been included for quick reference purposes. Note that not all NASR sections, rules and or subclauses are included within this section.

#### **1.3 VARIATION OR DEVIATION FROM THESE RULES**

1.3.1 The Chief Steward shall be the only person empowered to permit or direct any reasonable variation from any of these rules, or to impose any further restrictions that in his or her opinion do not compromise safety nor alter the minimum acceptable standards as may be required in order to expedite the conduct of the meeting. The Chief Steward must have regard to the guidelines for penalties provided in these rules or associated publications referred to in these rules (if any).

1.3.2 Neither NASR nor any affiliated body nor any Official, using or varying these rules, shall

be liable to prosecution or to any action for damages or breach of contract or to an injunction order or any judgement of a court at the instance of any member, Driver, mechanic or person admitted to a race track or for anything.

#### **1.4 SUPPLEMENTARY REGULATIONS**

1.4.1 Supplementary rules and regulations, referred to from here as 'supplementary regulations', required for any long distance race, championship race or feature race or events where necessary, not covered by these rules must be submitted by the event promoter to the relevant Association State Executive at least 30 days prior to the event to allow time for approval and publication on the nomination or entry forms.

1.4.3 The State Executive or National Executive of the relevant Association has the right to approve or reject all or part of the supplementary regulations included in the submission and may stipulate added safety precautions.

1.4.5 If the supplementary regulations are endorsed by the State Executive, approval will be forwarded within 14 days of the application, clearly stating the date(s) of the event, the name of the event and a full list the supplementary regulations and an approval number for the event.

1.4.7 In the event of extraordinary circumstances (such as a rainout or postponement) the Executive reserves the right to alter the supplementary regulations in writing and distribute to all competitors.

#### **2.1 NOMINATIONS**

2.1.1 The promoter, NASR or the relevant State and National competitor bodies have the right to refuse any nomination.

2.1.3 At tracks where Drivers are required to nominate, any Driver who is a late nomination or arrives at a race meeting with the intention of competing without nominating may be subject to a late nomination fee. The Driver may also be required to start at the rear of the field during any heat races.

#### **2.2 LICENCES**

2.2.1 All Drivers and officials participating in any race meeting must be in possession of a current and relevant NASR or NASR affiliated organisation issued photo licence and an Infringement Card that is free of unpaid fines and current suspensions.

2.2.2 If a Driver competes in a race meeting and subsequent to that meeting it is confirmed that the Driver does not have a Licence for the division in which the Driver raced he shall be disqualified from that meeting and fined \$500.

2.2.6 Only persons 16 years or older may apply for a Senior Licence.

2.2.9 Photo licences and an Infringement Card must be available for inspection by the Chief Steward, Scrutineer, Race Secretary or other authorised race meeting official.

2.2.10 Any Driver receiving payments under any Workers Compensation scheme or benefits from any accident insurance policy is only permitted to compete if a recognised medical practitioner has provided a medical clearance.

2.2.12 Whether through an accident, or for any other reason, a Driver is considered unfit to continue racing, the Chief Steward, after consulting with ambulance or paramedic personnel, will order that the Driver not compete for the remainder of the meeting. Drivers receiving medical treatment shall produce a medical certificate stating that they are medically fit before being permitted to compete in any event.

2.2.13 A Driver competing in a race meeting must have the following items at a speedway track to be allowed to compete:

- a) a current NASR Drivers Licence and Infringement Card;
- b) a current registered speedway car;
- c) a current log book for that vehicle;
- d) safety apparel complying with specification of racing category;
- e) a current Australian Speedway Racing Rule book; and
- f) a current class specification book.

### **2.3 NEW DRIVERS**

2.3.1 New Licences will only be issued to Drivers that have passed the NASR licence medical examination and also passed a theoretical Driver's examination as per NASR policy guidelines.

2.3.2 Drivers competing in their first race meeting will be required to start rear of field and continue to do so until the Chief Steward clears them to start in the field.

### **4.10 RACE TRACK RE-ENTRY**

4.10.1 Any Driver who loses control to the infield or who otherwise leaves the race track for any reason and wishes to rejoin the race may do so only with the utmost care and consideration for the safety of other Drivers. To avoid conflict, cars must re-enter the track at the most acute angle possible and track re-entry on corners should be avoided.

4.10.2 If the Chief Steward believes that any race track re-entry has been careless or reckless, the Driver will be subject to a warning flag, a rear of field penalty

### **4.11 RACE INCIDENTS AND STOPPAGES**

4.11.1 Following a race crash or incident for which the Chief Steward orders yellow caution lights and flags, all cars not directly involved in the incident must slow down to a safe speed and hold their position.

4.11.2 Any car that passes car(s) while rolling around the track under yellow lights may be subjected to being put back two positions for each car passed.

4.11.4 Once the red light/flag has been instigated, all Drivers will bring their cars to an immediate safe stop. They are not to pass the accident scene or drive across the infield past the accident. Any Driver failing to stop may incur a minimum fine of \$100 and/or sent to the rear of the field for the restart and may be disqualified from that race meeting.

4.11.8 Any Driver considered by the Chief Steward to have been the primary cause of two stoppages in the same race may be disqualified from that race.

4.11.11 Any Driver who fails to obey any signal or direction given by the Chief Steward or an official appointed by the Chief Steward may be subject to a fine up to \$1,000 and/or suspension up to 12 months and/or disqualification.

### **4.23 COMPLETION OF A RACE**

4.23.1 When a car has passed under the chequered flag, it must stop racing and slow down in a safe manner and complete a slowdown lap at reasonable speed.

4.23.2 A race is declared complete when the chequered flag has been displayed and the last car running has passed under that flag. Race results will be determined from the transponder records or lap scorer charts, based upon the order in which the cars cross the finish line completing all the laps of the race. The remainder of the field will be classified by the greater amount of laps completed and then the order in which they crossed the finish line on the last completed lap.

4.23.3 The Chief Steward will declare a race complete once the lead car has passed the chequered flag. If the yellow lights/flags are shown after the lead car crosses the finish line for an incident all the cars receiving the chequered flag will finish in the order they crossed the finish line. The remaining cars (excluding those deemed to be unable to restart) will be recorded as finishing in the order of their last completed lap not withstanding any penalties which could be applied by the Chief Steward.

4.23.4 When a race is completed, placing will be provisional until:

- a) The lap sheets and/or transponder lap charts have been checked.
- b) The scrutineers have given clearance.
- c) The Chief Steward has given the all clear.

4.23.5 When a race runs over more or less than the advertised number of laps and the chequered flag is shown, the Chief Steward will declare the race positions in the order of the cars at the chequered flag.

4.23.7 For heat races, a Driver must receive the chequered flag under their own power and have completed at least one half of race distance to be eligible for points and/or prize money.

4.23.8 Any Driver who has received the black flag or is disqualified from a race is not eligible for points and/or prize money.

#### ***4.25 MECHANICAL DEFECTS***

4.25.1 Whether by the Chief Steward's own judgment or by advice from the infield official, it is determined that a car cannot safely continue to race, or for any reason is judged to be a potential hazard to other competitors, the Driver will be shown the Mechanical Defect flag, together with the car number if possible to avoid confusion.

4.25.2 Upon receiving the Mechanical Defect flag, a Driver must immediately withdraw from the race, using utmost caution. Any Driver refusing to withdraw when directed will be shown the black flag. Failure to obey the black flag will result in a penalty in accordance with rule 4.17.2 and 4.17.3.

#### ***4.30 NATIONAL TITLES AND SERIES AND STATE TITLES***

4.30.1 To be eligible to compete in a National Title and Series, and State Titles, a Driver must have competed in a minimum of two race meetings, or more at the discretion of the relevant organising body, in the current season or previous 12 months in the division racing for the Title event and have their Licence accordingly endorsed by a Chief Steward.

4.30.2 At the discretion of the association conducting the Title event, dispensation can be provided if the Driver has driven in an affiliated class or a division determined by the organising association as providing requisite experience, in the current season or previous 12 months.

4.30.3 The previous years champion shall be allowed to defend the title but must compete in the heats. However, if the champion fails to qualify in this manner a rear of field start is permitted in their own or a substitute car.

#### 4. GENERAL DIMENSIONS

All cars must comply with the National Rule Book (i.e. NO State variations / deviations). Should a State/s wish to trial a new idea, it must be voted on at the Annual National Conference and voted in by a majority vote.

Any car involved in a major incident is to have an entry made into the log book specifying to the areas of damage, by an official of the meeting.

The car will be required to undergo a full pre season style scrutineer check before being declared safe to return to the race track

##### 4.1 Dimensions

Without exception all race vehicles must comply with the following dimensions and limits.

Maximum	Minimum	
Wheelbase	1850 mm	1450 mm
<b>Track</b>	<b>1500 mm</b>	1200 mm (See also Sketches SECTION 27)

**Track:** Measured from the outside tyre wall to outside tyre wall. ( See also Sketches SECTION 27)

##### 4.2 Weight

Car Weight minimum: 185 Kg (End of race excluding driver)

##### 4.3 Additional Weight Constraints.

Where additional weight is required to add to a race vehicle it shall comply with the following:

- Maximum of 10 kg per each weight
- All ballast to be steel encased
- Mounted no more than 200mm forward of the steering wheel
- No further rearward than 50mm of the driver's seat
- All ballast units to be mounted with a minimum of two (2), 1/2 inch bolts and nylock nuts.

#### 5. ROLL CAGE AND FRAME (see also Sketches SECTION 27)

##### 5.1 General:

The roll cage and frame must be constructed in a safe and sound manner to ensure that if the vehicle were to roll or crash during a race the driver will be effectively protected.

All pipe work and fittings must be properly fitted together and welded in an acceptable engineering manner. (All work is to be approved by the Club Chief Scrutineer).

##### 5.2 Specific Design Requirements:

###### Material of Construction:

Main frame, roll cage and side bars to be a minimum of 30 mm/1.25 inch with a minimum wall thickness of 2 mm / 83 thou

**Chrome Molly :** AMS 6371-T-6736-Condition N

Or

**Non-Chrome Molly tubing**

DOM (Drawn over Mandrel) Steel : ASTM-A513-Type 5 ONLY 1.25 inch x 120 thou

Commercially constructed frames will be accepted with diameter and gauge to be approved by the Club Committee. All such frames must be inspected by the Club Chief Scrutineer prior to painting.

Any material which is to be used for chassis construction that differs from the above specification must be submitted to the Club Chief Scrutineer for approval before construction commences.

The roll cage must be gusseted in the top section at the four opposite corners. Gussets may be fitted externally but must not encroach inside the roll cage.

Roll cage gussets to be a minimum of 19 mm diameter x 2 mm-wall thickness chrome molly or cold drawn seamless tube and a minimum length of 100 mm and a maximum length of 180 mm. Gussets to be equidistant from corner radius).

Bracing throughout the frame to be a minimum of 19 mm diameter x 2 mm-wall thickness, chrome molly or cold drawn seamless steel tubes.

Reynolds grade 351, 28.6 diameter x 1.6 mm wall thickness may be used as an alternative material providing the whole frame, cage gussets and bracing is constructed from this size.

Chrome molly frames will be accepted with diameter and gauge to be approved by the Club Committee. (NB: each frame to be considered on its merit, which may mean that different size tubing and construction methods may be acceptable other than stated in this specification).

**Bends/Fitting/Welding:**

All bends in the frame/cage pipe work are to be a minimum of 75 mm centre-line radius and formed such that the diameter of the tube is not reduced by more than 4%.

All pipe joints are to be accurately fitted together with a gap no greater than the pipe wall thickness allowed on any joint (i.e.: maximum of 2 mm gap).

All non-structural welding can be welded using Oxy acetylene or Mig

All structural welds to be Tig welded.

Electric stick welding is NOT allowable for pipe joints but is acceptable for attachments.

It is not allowable to grind or putty over welds.

Construction Method:

All self-built chassis are to be approved by the Club Committee. Inspection must be carried out before final welding while in the tacked state and also again at completion of welding prior to painting.

The roll cage and frame with all bracing and gussets is to be of fully welded one-piece construction.

The roll cage can be either high or low bar design but must extend to the bottom rail in front of and behind the driver. The measurement from the top of the driver's helmet to the underside of the top rail must be a minimum of 50 mm / 2 inches with the driver seated in the car with harness secure.

\*\*Subsequent buyers of 2nd handcars to check this aspect before purchase.

The top opening of the roll cage is to be large enough to allow the driver and seat to be removed vertically whilst still seated.

\*\*Subsequent buyers of 2nd handcars to check this aspect before purchase.

The roll cage and frame must be braced to the main frame in a manner to keep it in an upright position.

Bracing must be fitted to the rear of the roll cage with an inverted "V" shape fitted to the rear aperture behind the driver. Bracing is required between this "A" frame at the vertical Roll cage bars in line with the horizontal cross bar. Bracing is also required along the bottom rails of the frame.

Side intrusion bars must be fitted along the frame beside the open area of the cockpit in a position between the shoulder and elbow of the driver whilst seated in the car.

It is recommended the left hand side of the cage be fitted with sufficient bar work to prevent intrusion from another vehicle into the cockpit in the event of an accident.

Holes must not be drilled through the frame unless supported by a suitably sized bush which has been welded in position

Failure to comply with the above regulations will mean the chassis will be rejected. Rejected chassis cannot be used.

## **6. NERFING BARS (see also Sketches SECTION 27)**

### **6.1 General:**

Nerfing / Crash bars must be fitted to prevent cars becoming interlocked.

### **6.2 Specific Design Requirements:**

#### **Materials of construction:**

All Nerf and Crash Bars Front and Rear crash bar to be a minimum of 19 mm and maximum 25 mm diameter and must be constructed to meet one of the following standards:

- **Stainless Steel Tube: ASTM A213 grade 316/L**
  - Minimum 19 mm – Maximum 25mm x minimum 1.6mm wall thickness
- **Chrome Molly tubing: AMS 6371-T-6736-Condition N**
  - Minimum 19mm – maximum 25mm x 1.6mm wall thickness
- **Non – Chrome Molly DOM (Drawn over Mandrel) Steel: ASTM-A513-Type 5 ONLY**
  - Minimum 19mm – maximum 25mm x 2mm wall thickness

#### **Mounting details:**

Nerf bars are to be securely mounted to the roll cage or mainframe at a minimum of 3 points and a maximum of 4 points.

Nerf bars are to be secured with bolt and Nylock nut (minimum 5 mm) suitable to stop bar from coming away from race car.

Outer edge of nerf bar must not extend any further than:

- 50 mm past the outer face of rear tire.
- 75 mm inside the outer face of rear tire.

#### **6.2.1 Side Mounted Fuel Tanks**

Nerf bars protecting side mounted fuel tanks shall be constructed with a minimum of four mounting points.

The nerf bar shall extend level to or higher than the top of the fuel tank, so as to prevent the intrusion during normal racing conditions of another car or its components.

Adequate vertical bracing is required in the sidebars to restrict the opening to a maximum of 300 mm.

## **7. FRONT AND REAR CRASH BARS**

### **7.1 General:**

Front and rear crash bars must be fitted and constructed to prevent hook ups. (NB: rear bar should allow use of a push vehicle).

### **7.2 Specific Design Requirements:**

#### **Material of construction:**

Front and Rear crash bar to be a minimum of 19 mm and maximum 25 mm diameter.

- **Stainless Steel Tube: ASTM A213 grade 316/L**
  - Minimum 19 mm – Maximum 25mm x minimum 1.6mm wall thickness
- **Chrome Molly tubing: AMS 6371-T-6736-Condition N**
  - Minimum 19mm – maximum 25mm x 1.6mm wall thickness
- **Non – Chrome Molly DOM (Drawn over Mandrel) Steel: ASTM-A513-Type 5 ONLY**
  - Minimum 19mm – maximum 25mm x 2mm wall thickness

#### **Mounting Details:**

The front crash bar shall be securely mounted to the roll cage and or main frame at a minimum of two points(2) and Rear Crash bars at a minimum of four(4) points.

Both Front and rear bars to be secured with bolts of minimum 6 mm and maximum 8 mm diameter, nuts and spring washers or Nylock nuts alone, suitable to stop either bar from coming away from race car.

The front crash bar must protrude past the line of the front tires for at least 50 mm.

Front crash bar heights to be a minimum of 275 mm and a maximum 325 mm from the centre of the crash bar to the ground.

Working height of the rear crash bars must be within 25 mm of the centre of both front and rear wheels.

Combined fuel/tail tanks shall be protected by additional bar work extending under the tank that covers 50% of fuel tank. ( See Sketches SECTION 27)

The tail tank shall be within the confines of the nerf bar.

A maximum of 850 mm from the centre of rear axle to outside face of nerf bar.

Distance of tail tank to nerf bar is 50 mm minimum and 150 mm maximum.

A single vertical bar shall extend from the top of the rear crash bar to the bottom of the rear crash bar.

The rear crash bar must have a vertical bar at the trailing edge and must not extend more than 50 mm to 75 mm above the top bar on the crash bar.

## **8. REAR AXLE AND HUBS**

### **8.1 General:**

The rear axle must be one piece and can be either solid or hollow but of steel or commercially constructed splined aluminium style.

### **8.2 Specific Design Requirements:**

#### **8.2.1 Material of construction:**

##### **Steel Axles**

Steel axles are to be a minimum of 1030-1040 grade steel. Solid axles to be a minimum of 30 mm diameter and hollow axles to be a minimum of 35 mm diameter with a minimum wall thickness of 6 mm.

##### **Aluminium Axles**

Aluminium and Chrome molly splined axle of commercial grade are accepted

#### **8.2.2 Mounting details:**

Hubs are to be held in place on the axle using a structurally acceptable locking method such as drive key, spline or castellated nuts with split pins. Splined axle wheel hubs are to be secured by a minimum of one compatible (quick change) axle nut.

Welding or pinning of hubs to axle is not permitted.

Axles must not protrude past the outside of the rim.

Wheels are to be secured to hubs(non-splined) with a minimum of four 10 mm diameter bolts and nylock nuts or acceptable commercial wheel nuts.

## **9. FRONT STUBS, KING PINS AND WHEEL HUBS**

### **9.1 General:**

The front stubs kingpins and hubs must be of structurally acceptable design and strength to prevent breakage or collapsing due to normal racing stresses or impacts.

### **9.2 Specific Design Requirements:**

#### **Material of construction:**

Kingpins are to be of steel material and a minimum of 12 mm diameter.

A suitable method of retaining the kingpin shall be in place to prevent the pin dropping out through the bottom of the C-section.

Stub axles to be steel material and constructed with a threaded extension of minimum 12 mm diameter to allow hub to be retained with a nylock nut or castellated nut with split pin. (Other materials to be approved by the Club Committee).

Wheels to be secured to hub with a minimum of four 10 mm diameter bolts fitted with Nylock nuts or acceptable commercially available centre nut at the discretion of the Club Committee.

Direct mount wheels of commercial manufacture are accepted.

## **10. FRONT AXLE**

### **10.1 General:**

Is to be of beam axle design and located by radius rods and panhard bar.

### **10.2 Specific Design Requirements:**

#### **Material of construction:**

Front axle to be tubular chrome molly tubing with a minimum diameter of 35 mm and 0.095 inch , 3 mm wall thickness.

Front axle to be a one piece tubular low carbon structural steel seamless or chrome molly tubing from king pin housing to king pin housing with a minimum diameter of 35 mm and 3 mm wall thickness beam design axle located by radius rods

## **11. STEERING ASSEMBLY**

### **11.1 General:**

The steering wheel must be of racing type and commercially available.

### **11.2 Specific Design Requirements:**

The steering wheel must be within the confines of the roll cage. Its position must allow the car to be driven without interference of other controls.

A quick release hub must be fitted.

A steering box or direct type steering may be used but all arrangements must have lock stops fitted to prevent over centring if it can occur.

All steering rods are to have approved spherical type rod ends with lock nuts and nyloc nuts.(NB: Steering rods must not be welded).

## **12. SUSPENSION**

### **12.1 General:**

All cars must have suspension fitted eg coil over shock, coil shock, torsion bar, a combination of both, etc.

All stress-mounted points must be securely fastened.

Commercially manufacture quick release shock pins are accepted

All rod ends to be securely fastened.

All Shocks to be securely fastened.

## **13. BRAKE ASSEMBLY**

### **13.1 General:**

An efficient hydraulic disc brake system must be installed with disc fitted to rear axle.

The system must be operational and pass a test to the satisfaction of the scrutineer or machine examiner.

## **14. WHEELS, RIMS AND TYRES**

### **14.1 General:**

All wheels must be free of sharp edges and cracks and must be commercially available racing type.

Tires must be approved flat track design and have an unbroken tread pattern. Tires showing canvas, cord or signs of cracking will not be permitted.

### **14.2 Specific Design Requirements:**

Rim Dimensions: ( See also Sketches SECTION 27)

#### **Front Rims**

Maximum Diameter: 254 mm (10 inch)

#### **Rear Rim**

Maximum Diameter: 254 mm (10 inch)

Maximum Width: 304.8 mm (12 inch)

## **15. Race Numbers & Position**

All cars to have their registered car number appearing;

- a. On both sides of the cars tail tank
- b. On the inside of the top wing on the largest panel positioned at the trailing edge of the wing
- c. On the outside panel of the largest panel
- d. States prefix placed before the number on both sides of the top wing  
Prefix is a minimum of 100mm i.e. v5, n5

### **15.1 Tail Tank**

The minimum height of a racing number, to be displayed on the tail tank of a car is to be a 250mm.

### **15.2 Wings**

Each car must display at least one (1) racing number on one of the side boards of the wing clearly visible when viewing the right side of the car.

It is also recommended that at least one number be placed on a wing side board clearly visible when viewing the left side of the car.

These numbers should be no less than 200mm high for the wing panel numbers.

## **16. ENGINE**

### **16.1 General:**

The engine and parts are to be of commercially available **Single Cylinder ONLY** motor cycle manufacture.

Engine must be mounted forward of the rear axle and adjacent to or forward the drivers seat. The engine must not be behind this point but can be either left or right side mounted.

The most rearward spark plug must be forward of the drivers waist. Engines are not permitted to be rear mounted .i.e. behind the driver's seat. (all classes).

After market & programmable ignitions are permitted. However, the mechanism or ability to manually adjust or select alternate ignition programming from within the vehicle during a race is not permitted (manual selection switches banned)

A suitable exhaust system must be fitted that does not exceed 92 Db or individual track requirements as per NASR rule book.

Mandatory engine measuring of 1st place only, must be performed at all National and State Title events.

The engine measuring of 2nd & 3rd placegetters will be at the discretion of the relevant Officials, after consultation with the relevant placegetters.

In addition, engine measuring will be performed when an official protest is lodged in writing, accompanied by the appropriate Fee (\$50).

In the event that an engine is protested and is deemed legal all costs relating to the test is to be met by the protesting party.

## **16.2 Specific Design Requirements:**

### **16.2.1 Unlimited Class**

#### **General**

Either four stroke or two stroke, Single cylinder, air or water cooled designs are permitted. Turbo charging or supercharging is not permitted.

#### **Two Stroke Motors :**

To be single cylinder **only** and derived from any commercially available Motocross or Quad bike.

- Single Cylinder:
- Cubic capacity to be 271 cc + 0% (maximum).
- Engines may be modified but must retain original crank cases and gearbox configuration (max 5 speed).
- Alternative barrels & heads may be fitted.
- Fuel injection not permitted in 2 stroke engines

#### **450cc 4 Stroke Engine**

To be single cylinder **only** and derived from any commercially available Motocross or Quad bike.

Eligible Four Stroke Motors must comply with the following:

- Single Cylinder Only:
- Cubic capacity to be 450 cc + 0% (maximum).
- Bore and Stroke to remain as per manufacturer's specification
- Non genuine / alternate supplier Cam shafts, Pistons, Valves and rods are permitted
- Motors must be normally aspirated through a conventional type carburettor and /or injection

### **16.2.2 Limited Class**

#### **General**

The engine and parts are to be of commercially available motor cycle manufacture.

Racing "Grand Prix" engines are not allowed (i.e.: special purpose race engines).

**Specific Design Requirements:**

Limited class engine is restricted to;

- Two stroke single cylinder engine, air or water cooled designs are permitted.
- Cubic capacity to be 250 cc + 5% (262.5 cc maximum).
- Standard stroke crank only.
- No stroker cranks permitted.

Engines may be modified but must retain original crank case and gearbox configuration.

Parts can be changed, providing 250 cc parts are used and are manufactured by the parent company (ie 250 cc Yamaha to use 250 cc Yamaha parts only). Alternative barrels must not be fitted.

Turbo charging or supercharging is not permitted, motors must be normally aspirated through a conventional type carburettor.

## **17. TRANSMISSION**

**General:**

Power must be transmitted to the rear axle by chain from the gearbox.

An operational gearbox must be installed with gearshift mechanism readily accessible.

Four wheel drive or front wheel drive is not permitted.

**Specific Design Requirements:**

Chain is to be a minimum of 520 pitch.

Rear sprocket must be fitted with chain guide and / or plates.

It is recommended that a chain tensioner be fitted.

The driver must be protected from the chain.

## **18. BATTERIES**

**General:**

Dry cell or Gel style batteries ONLY are allowed to be used and must be affixed to and within the main frame and must have a fusible earth.

## **19. IGNITION & Equipment Isolation SWITCHES**

**General:**

All vehicles must be fitted with an ignition switch, which will stop the engine, fuel pumps and other accessories when activated.

The switch must be within easy reach of the driver and outside personnel. It must be clearly marked with IGNITION and also ON/OFF position.

## **20. ELECTRONIC DEVICES**

### **20.1 Computer / Electronic Engine Management**

External or remotely controlled systems (separate from or not controlled by driver whilst in the car) are Strictly Forbidden.

Any device that is controlled or accessed remotely from the car whilst racing is Strictly Forbidden. Electronic shock absorbers are not permitted.

### **20.2 Traction Control**

The use of manual or electronic traction control is not permitted

### **20.3 Data Logging**

Data logging devices that log only are permitted.

## **21. FUELS & Fuel TANKS**

### **21.1 Fuels General:**

The fuel tank is to be of solid construction of approved materials and securely located within the confines of the tail tank or within the confines of the side nerf bar ( refer rule Section 6). Fuel Cells must have one way valve fitted and do not require a breather pipe to be fitted.

A positive locking cap must be fitted.

Any fuel tank that proves to be unsafe in the event of an accident will be deemed illegal from that point on.

#### **21.1.1 Unlimited Class 2 Stroke & 4 Stroke**

The following fuels are permissible:

- Methyl alcohol
- Aviation gas
- Super
- Unleaded
- Elf 119/124 124 (Requires lead licence under EPA Laws. See NASR)
- Any commercially available fuel (NO NITRO)

#### **21.1.2 Limited Class Only**

Fuels allowed:

BP Optimax or equivalent or any lower octane rated fuel available from roadside service stations via a bowser

No Additives, Nitro or Acetone allow

It is not allowable to use oxygen rich or nitro-methane fuels. Octane improvement additives are permissible for Aviation gas or Standard petrol fuels only, pending approval by the technical committee.

#### **21.2 Fuel Tank Specific Design Requirements:**

The fuel tank is to be securely located in place by metal straps or bolted brackets. Elastic straps are not allowable.

The fuel tank is to be fitted with a breather pipe which is to be attached in such a way that fuel cannot escape in the event of a rollover.

A positive locking cap must be fitted.

Fuel lines that pass through the cockpit area must not extend forward of the seat, they must also be protected from interference.

### **21.3 Location of Fuel Type Signage:**

Signage/ labelling indicating the specific Fuel type being used by each vehicle must be clearly displayed on **both** the fuel tank (adjacent to the filler cap area )and dash panel.

## **22. Fuel Stop / Isolation Device**

A stop/isolating device must be fitted to completely stop all fuel supply to engine.

The device must be fitted before to any fuel pump, either mechanical or electric and accessible from the outside of the vehicle.

The ON and OFF position must be clearly marked to allow officials to isolate the fuel in the case of an accident.

## **23. WING**

### **General:**

A suitably constructed lightweight wing is to be mounted to the vehicle roll cage and used for all races unless nominated by the club committee.

The use of any form of Front wing is prohibited

Driver must have clear view in all directions.

### **Specific Design Requirements:**

The wing panels are to be constructed from aluminium sheeting.

The main wing is to be securely mounted to the top of the vehicle with quick release clips which will allow the wing to be readily removed in the event of an accident. (There must be a minimum of two quick release clips on the rear mount).

The wing may be offset but the side panels must not protrude past the outside edge of the wheels at maximum track.

Wings within the following measurements will be allowed:

### **Main Wing:**

<b>Wing</b> (in plan)	Minimum	895 mm x 1000 mm
	Maximum	945 mm x 1050 mm

### **Side panels:**

Left side	Minimum	545 mm x 1195 mm
	Maximum	595 mm x 1245 mm

### **Right side:**

	Minimum	395 mm x 1195 mm
	Maximum	445 mm x 1245 mm

## 24. BODY ASSEMBLY

### General:

All vehicles must be soundly constructed with a body of speedcar style and be of good appearance.

The cockpit must be of sufficient size to allow the driver easy entry and exit and a comfortable position when driving.

All protruding parts within the cockpit are to be suitably padded which include sidebars and inverse "V" bracing behind driver's head.

A floor is to be fitted to the main frame which must extend from the front of the seat to a point forward of the floor controls and also be the full width of the frame.

A **barrier** must be fitted between the driver and the engine/gearbox and drive chain. It must be of metal (**ferrous or non ferrous**) or fibreglass style material (to be approved by the technical committee) and a minimum of 0.9 mm but 1.6 mm is recommended.

All body panels, (bonnet, side panels and tail) are to be secured by at least three fasteners. Dzus type or other approved quick release fasteners are recommended.

Body panels may be constructed from aluminium, fibreglass or thermal plastic.

Rear vision mirrors or Perspex or sheet metal windscreens are not permitted. It is recommended that a wire mesh stone guard be used with a minimum 10mm grid.

## 25. SEAT

### Specific Design Requirements:

A high-back speedway style seat is to be installed and must be of Aluminium construction. The seat must extend at the rear higher than shoulder height to allow harnesses to pass through the seat.

Seat shall have no sharp edges.

Seat shall be secured to the car by a minimum of four high tensile steel bolts. Bolts shall be a minimum of 6 mm /0.25 inch with a washer of minimum 20 mm diameter.

## 26. SAFETY HARNESS (see also Sketches SECTION 27)

### General:

A safety harness is to be fitted of an approved racing type and be maintained in good order.

The webbing straps must not be joined or patched and the harness is to be replaced as the date reaches five years from manufacture. Harnesses to be re-certified every 2 years by the manufacturer or approved local authority (or as nominated by NASR).

The chief steward has the right to deem harnesses unfit for use after an accident if he thinks they have been damaged.

### Specific Design Requirements:

Harness is to be a minimum of 75 mm wide with minimum of five mounting points.  
The buckle is to be of quick release design.

The shoulder straps must be constrained from sideways movement. Also they must pull directly down on the drivers shoulders. If a horizontal cross stiffener is fitted to the inverse "V" bracing over which the belts pass then it must be at least 75 mm below the driver's shoulders.

## **27. SAFETY APPAREL**

### **Minimum Speedway Safety Standards (as per NASR website)**

It is recommended that the following minimum safety standards are adopted immediately by speedway competitors. These standards will become compulsory as of 1st July 2008.

#### **APPAREL & HELMETS**

AA - All Divisions  
A - All Open Wheeled Divisions  
ASCF - Super Sedans

#### **Race suit.**

Race Suit must meet minimum standard of either SFI 3.2A/5 or FIA 8856-2000 and be a one (1) piece suit.

Race Suit must meet minimum standard of either SFI 3.2A/1, FIA 1986 Norme (FIA 1986 Norme is allowed until June 30, 2010) or the higher standard of apparel and be a one (1) piece suit.

#### **Helmet**

Helmet must comply with the Snell SA-2000 or Snell SA-2005 Standard. Drivers in all categories must wear full faced helmets \*\*\* (see definition below) with a visor that must be closed whilst competing (no goggles)

Helmet must meet minimum standard of either Snell M 2000, Snell M 2005, AS1698 standard full faced helmet or the higher standard Snell helmets.

AS1698 helmet must be no older than 5 years from the manufacturer date (please check the manufacturer date prior to purchase).

All drivers must wear a full faced helmet \*\*\* (see definition below) with a visor that must be closed whilst competing (no goggles) in all divisions.

\*\*\* A full face helmet covers the entire head, with a rear that covers the base of the skull, and a protective section over the front of the chin. Such helmets have an open cut-out in a band across the eyes and nose, with a visor or shield that generally swivels up and down to allow access to the face that must be closed whilst competing (no goggles). No Open Faced or Modular (flip-up) helmets allowed.

#### **Head and Neck Restraint**

Head and Neck Restraint must be worn and meet FIA or SFI 38.1 Standard (A horse collar is optional when wearing a Head and Neck Restraint )

**A - All Sedan Divisions**  
**ASCF - All Divisions Except Super Sedans**  
**B - All Divisions**

**V - All Classic Drivers**

**JD Junior Competitors & Extraneous Events\*\***

Horse collar is compulsory without a Head and Neck Restraint

If you wear a Head and Neck Restraint, it must conform with either the FIA or SFI 38.1 standards. However, if you are using a AS1698 helmet with the device, you may not modify the helmet in any way. If the helmet must be modified to wear the head and neck restraint device, you must wear the Snell helmet.

\*\* Extraneous Events such as demo derby will have their own standards.

**Horse Collar/Head and Neck Restraint**

Head and neck restraints are now used and trusted by major motor sport organisations worldwide. They have been mandatory in Australian Sprintcar competition since 2004 and are now mandatory for AA, A Open Wheeled and ASCF Super Sedans license categories (from the 1st of July 2008)

Only FIA (approved by the Federation Internationale de l'Automobile) and SFI 38.1 (approved by the SFI Foundation) head and neck restraints will be allowed in line with the Speedway Safety Advisory Committee (SSAC) recommendations ratified by the NASR Board.

As of July 1st 2008 the following devices are SFI approved (in no particular order):

HANS Device  
Leatt Brace - MotoR  
LFT Technologies R3 Device  
LFT Technologies R3 Rage Device  
Safety Solutions Hutchens-II Device  
Safety Solutions Hutchens Hybrid Device  
Safety Solutions Hutchens Hybrid X Device  
Safety Solutions Hutchens Hybrid Rage  
Safety Solutions Hutchens Hybrid Pro  
DefNder

Therefore the following devices, which were NASR approved until 30th June 2008, can not be used until they meet SFI 38.1 specifications:

D-Cel Harness  
Tucker Helmet Harness  
G Force SRS-1  
Wright Device

Please note:

1. A horse collar is optional when wearing an approved head and neck restraint device.
2. It is highly recommended that all other categories wear a head and neck restraint device.
3. It is strongly recommended that all Junior drivers wear a head and neck restraint device.
4. A head and neck restraint device cannot be used with a AS1698 helmet.

***Other devices may be approved by the SFI Foundation and NASR in the future. Updates will be posted on the NASR website when other devices are approved ([www.nasr.com.au](http://www.nasr.com.au)).***

## **BOOTS, BALACLAVAS, GLOVES & UNDERWEAR**

### **All Divisions**

#### **Boots**

Boots are compulsory in all divisions and must comply with SFI 3.3, FIA 8856-2000 or FIA ISO6940 (FIA ISO6940 is allowed until June 30, 2010)

#### **Balaclavas**

Balaclavas are compulsory in all divisions and must comply with SFI 3.3, FIA 8856-2000 or FIA ISO6940 (FIA ISO6940 is allowed until June 30, 2010)

#### **Gloves**

Gloves are compulsory in all divisions and must comply with SFI 3.3, FIA 8856-2000 or FIA ISO6940 (FIA ISO6940 is allowed until June 30, 2010). It is recommended they are the Gauntlet Style glove and they must not be modified in any way.

#### **Underwear**

Underwear must be worn conforming with SFI 3.3, FIA 8856-2000 or FIA ISO 6940 (ISO6940 is allowed until June 30, 2010). All drivers must wear cotton under-garments (eg. no synthetic boxer shorts), and no under wires on bras. There must be no synthetic attire and no jewellery to be worn by a competitor whilst competing.

## **28. DRUG & ALCOHOL POLICY**

NASR has developed and adopted a Drug and Alcohol Policy applicable to all speedway participants commencing with the 2006/07 season (from 1st of July 2006).

The policy outlines set procedures, including testing techniques for both drugs and alcohol, as well as chain of evidence requirements and relevant offences and penalties.













The policy is based on saliva testing for drugs and was written in consultation with the South Australian Police Department and relevant testing authorities.

Competitors, Mechanics and Officials will be selected at random at race meetings across the country by an independent testing agency.

It is the responsibility of each competitor and their associated support crew to ensure they comply with the current regulations.

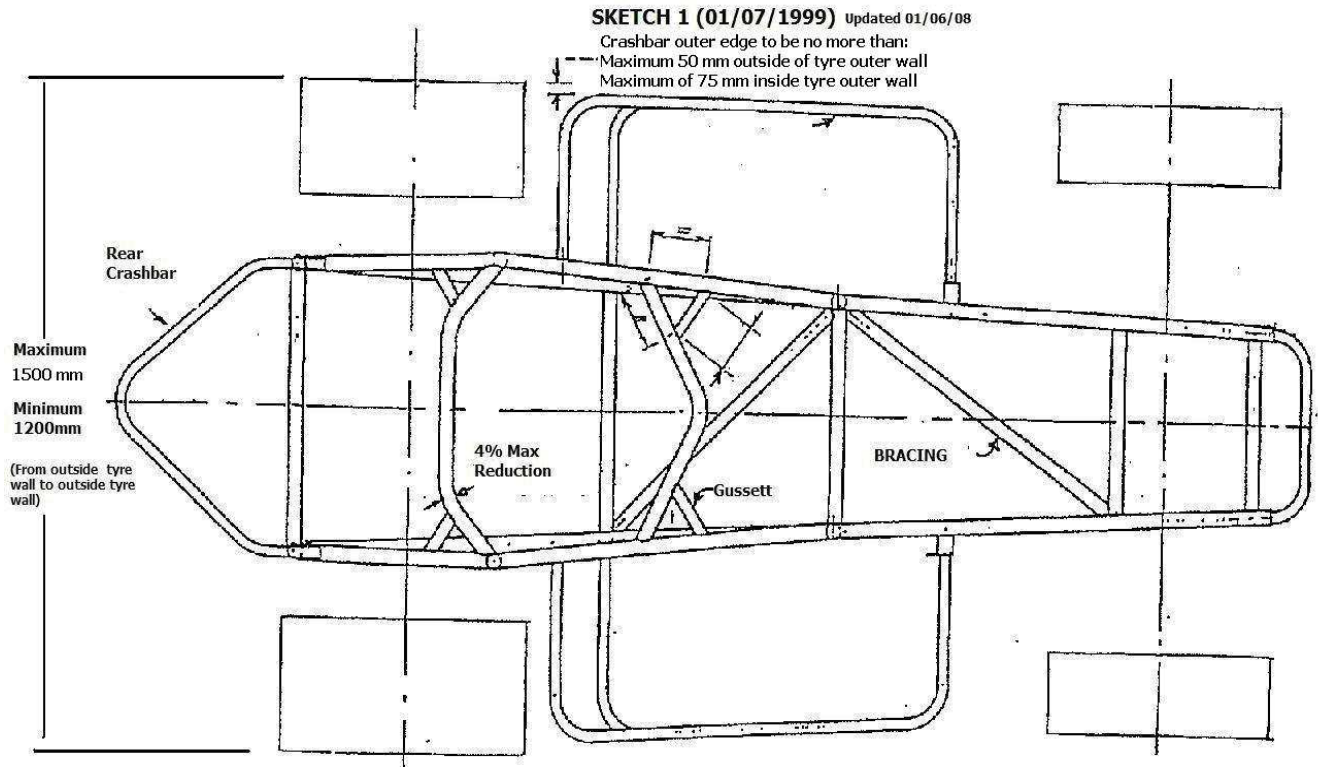
To view the NASR Drug and Alcohol Policy click on the link found on the NASR website.

**29. Flags**

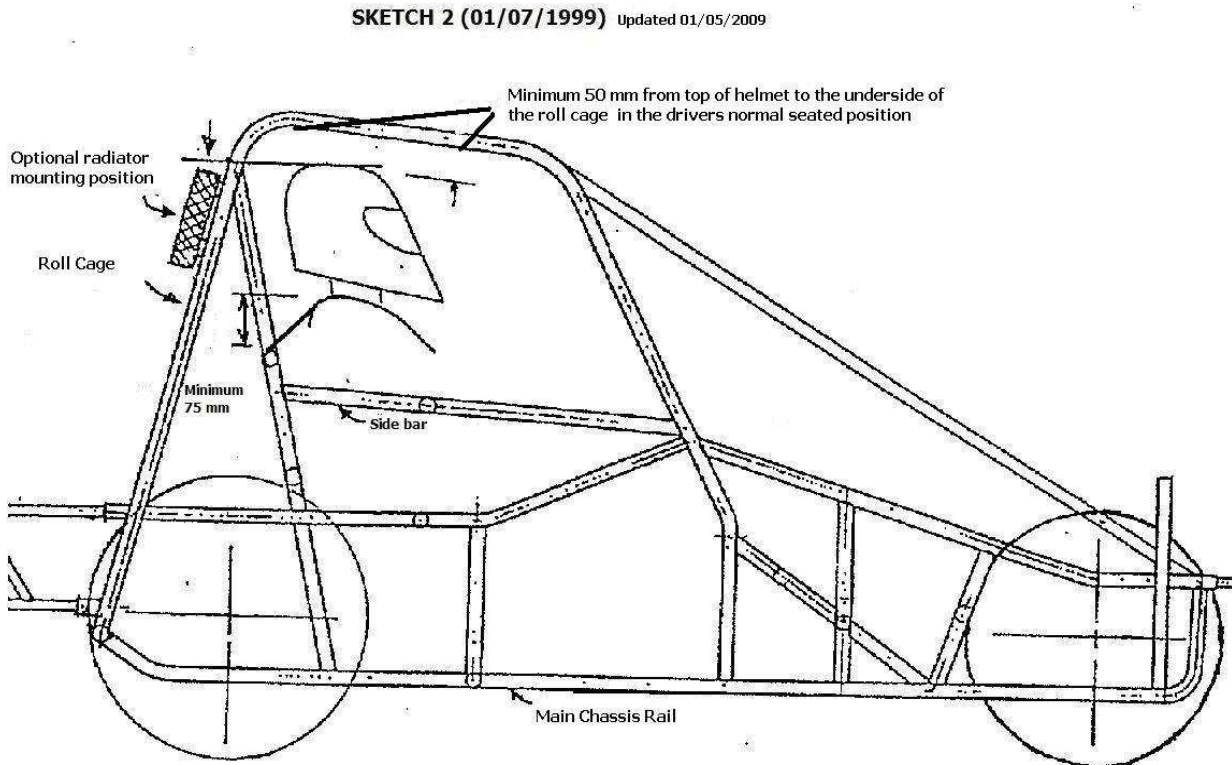
	<p><b>GREEN LIGHT and FLAG</b> Start – or restart of race, or race is in progress</p>		<p><b>RED FLAG with WHITE DIAGONAL STRIPE</b> Fire - driver to stop on infield as closely as possible to a designated fire fighting area.</p>
	<p><b>YELLOW LIGHT and FLAG</b> Caution - hold position at reduced safe speed.</p>		<p><b>YELLOW FLAG with RED STRIPES</b> Slippery surface - may be shown during roll up laps after race track has been watered..</p>
	<p><b>RED LIGHT and FLAG</b> Stop - while exercising due caution.</p>		<p><b>YELLOW FLAG with BLACK DIAGONAL STRIPE</b> Noise flag - driver may continue to race, but if noise level remains high, black flag will result</p>
	<p><b>BLACK FLAG with WHITE DIAGONAL STRIPE</b> Warning due to rule infringement. Driver may be penalized for further infringements..</p>		<p><b>BLUE FLAG with YELLOW SPOT</b> Lapping flag - car is soon to be lapped. Lapped car to hold line and not impede lapping traffic.</p>
	<p><b>BLACK FLAG</b> Disqualification - driver to withdraw from race</p>		<p><b>WHITE FLAG</b> One lap to go.</p>
	<p><b>BLACK FLAG with WHITE SPOT</b> Mechanical defect - driver to withdraw to infield</p>		<p><b>BLACK AND WHITE CHEQUERED FLAG</b> Finish of race - reduce speed gradually.</p>

### 30. Reference Sketches

#### Sketch 1

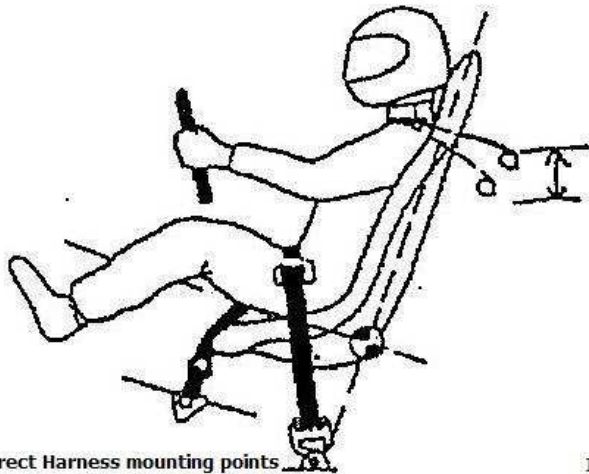


#### Sketch 2

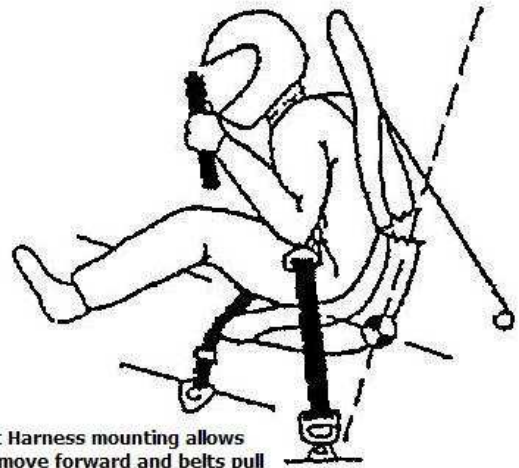


Sketch 3

SKETCH 3 (01/07/1999) Updated 01/06/08



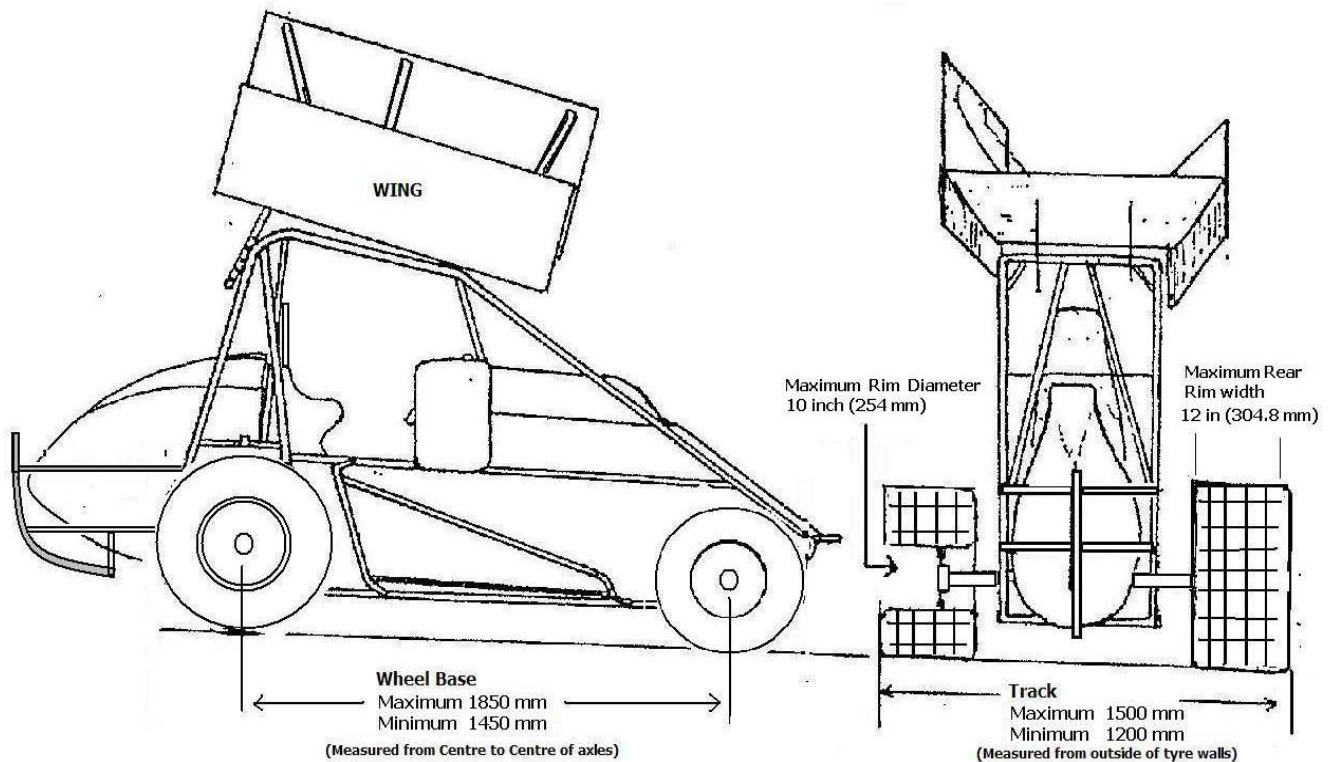
Correct Harness mounting points to prevent driver movement



Incorrect Harness mounting allows body to move forward and belts pull down on torso to compress spine

Sketch 4

SKETCH 4 21/07/2009



### 31. Notes / Updates

#### Reference Bore & Stroke Chart

Due to the increase in engine capacity the following can be used as a "reference guide only" for engine configuration options for capacity.

It is the responsibility of the competitor to perform their own calculations to ensure the capacity of the engine meets the rule.

Bore Squared x Stroke x 3.14159 = divided by 4000 = Your Motor CC

Standard	2mm Stroke	4mm Stroke
72mm----66.40 = 249.320cc Stock	74mm----66.40 = 256.246cc Stock	76mm----66.40 = <u>263.171</u> cc Stock
72mm----66.65 = 251.201cc .010 o/s	74mm----66.65 = 258.179cc .010 o/s	76mm----66.65 = <u>265.157</u> cc .010 o/s
72mm----66.90 = 253.089cc .020 o/s	74mm----66.90 = 260.120cc .020 o/s	76mm----66.90 = <u>267.150</u> cc .020 o/s
72mm----67.01 = 253.922cc .024 o/s	74mm----67.01 = 260.976cc .024 o/s	76mm----67.01 = <u>268.029</u> cc .024 o/s
72mm----67.16 = 255.060cc .030 o/s	74mm----67.16 = 262.145cc .030 o/s	<b>76mm----67.16 = <u>269.230</u>cc .030 o/s</b>
72mm----67.28 = 255.973cc .035 o/s	74mm----67.28 = <u>263.083</u> cc .035 o/s	
72mm----67.41 = 256.963cc .040 o/s	74mm----67.41 = <u>264.101</u> cc .040 o/s	
72mm----67.51 = 257.726cc .044 o/s	74mm----67.51 = <u>264.885</u> cc .044 o/s	
72mm----67.67 = 258.949cc .050 o/s	74mm----67.67 = <u>266.142</u> cc .050 o/s	
72mm----67.92 = 260.866cc .060 o/s	74mm----67.92 = <u>268.112</u> cc .060 o/s	
72mm----68.05 = 261.865cc .065 o/s	<b>74mm----68.05 = <u>269.139</u>cc .065 o/s</b>	
72mm----68.17 = <u>262.790</u> cc .070 o/s	74mm----68.17 = <u>270.089</u> cc .070 o/s	
72mm----68.43 = <u>264.798</u> cc .080 o/s		
72mm----68.55 = <u>265.727</u> cc .085 o/s		
72mm----68.68 = <u>266.736</u> cc .090 o/s		
72mm----68.81 = <u>267.747</u> cc .095 o/s		
72mm----68.94 = <u>268.760</u> cc .100 o/s		
<b>72mm----69.06 = <u>269.696</u>cc .105 o/s</b>		
72mm----69.19 = <u>270.712</u> cc .110 o/s		