

V8 Non Wing Sprint Rule book
Version 2
Valid from 30/09/2018

CONTENTS

1. Design and Construction Compliance
2. Excluded materials and materials requiring specific approval
3. Dimensions
4. Weight
5. Chassis
6. Transmission
7. Suspension
8. Cockpit
9. Brakes
10. Wheels and Tyres
11. Cockpit
12. Bodywork
13. Engine
14. Engine accessories
15. Fuel System
16. Nerf bars and Bumpers
17. Fuel
18. Electronic Equipment
19. Definitions

Appendix A

1. Minimum Tube Sizes
2. Chassis Centre Line definition
3. Head Protection Bars & Halos
4. Safety Belt attachment location
5. Seat protection structure

1. Design and Construction Compliance

- 1.1. All phases of design and construction are subject to the approval of the Technical Director. The Chief Steward and the Technical Director may exclude any vehicle which they consider unsafe or not meeting the specification herein.

2. Excluded materials and materials requiring specific approval.

- 2.1. The use of magnesium sheet less than 3mm in thickness is prohibited
- 2.2. The use of titanium sheet is prohibited.
- 2.3. The use of any component made of carbon fibre or carbon fibre composite must be approved by the Technical Director before use.

3. Dimensions

- 3.1. For measurement purposes, the chassis centre line will be as described in Appendix A.
- 3.2. The wheelbase, measured parallel with the chassis centre line, must be at least 2120mm (83 in) and no longer than 2285mm (90")
- 3.3. Maximum overall length will not exceed 4267mm (168")
- 3.4. The outside edge of the right-hand rear wheel will not exceed 1170mm from the chassis centre line.
- 3.5. The outside edge of the front right-hand tyre cannot be outside the limit of the right-hand rear tyre.

4. Weight

- 4.1. The minimum weight including the driver as finishing the race track must be a minimum 635Kg (1397lb).
- 4.2. Ballast may be added.
- 4.3. Ballast will not be installed in the driver's cockpit.
- 4.4. Ballast will be attached inside the perimeter of the chassis as viewed from above.
- 4.5. Ballast will be attached no higher than the base of the driver's seat.
- 4.6. Each segment of ballast will be attached to the chassis with a minimum of 2 x M10 Grade 8 bolts.
- 4.7. No ballast may be added during a red or yellow flag stoppage during a race.

5. Chassis

- 5.1. The chassis of the race car will be manufactured from normalised 4130 steel tubing.
- 5.2. All joints will be fully welded. No Slide Joints.
- 5.3. All welding will show the highest standard of manufacture and be free of porosity, undercut, and lack of fusion. No welds may be ground after completion.
- 5.4. The roll over protection will form an integral part of the chassis and will contain no bolted members.
- 5.5. Head protection bars are compulsory and will be fitted to upper section of the roll over protection.
 - 5.5.1. Variations of Head Protection bars are shown in Appendix A
 - 5.5.2. With the driver seated and strapped in, the minimum clearance between the top of the helmet and the topside of the Rollcage is 90mm.

A Halo may be added to achieve the correct clearance; see Appendix A:3
 - 5.5.3. The driver must be able to exit the vehicle through the top of the roll over protection.
- 5.6. The rear motor plate must be manufactured from aluminium alloy only.
- 5.7. The minimum dimensions for the tubes used to construct the chassis are displayed in Appendix A.
- 5.8. The chassis will be constructed to carry nerf bars that attach to the chassis in 3 locations.
- 5.9. Included in the chassis will be specific bars for the attachment of the waist section of the Safety Harness. See Appendix A Section 4 for details.
- 5.10. The chassis will incorporate a seat protection structure to prevent the drive shaft and differential housing from impacting the base of the seat in an accident.
 - 5.10.1. The structure will be manufactured so that when the drive shaft strikes the cross bar the drive shaft is still 25mm clear of the seat base.
 - 5.10.2. This structure is not un-deformable. It will deform as it absorbs accident damage.

Vehicles with damage to the replaceable section of the seat protection structure will not be permitted to race.
 - 5.10.3. The differential housing will not contact the Seat Protection Structure or the seat at any time.

6. Transmission.

- 6.1. The vehicle will be rear wheel drive only.
- 6.2. Only torque tube type drivelines utilizing one universal joint are permitted.
- 6.3. The torque tube must be rigidly bolted to the rear axle.
- 6.4. All vehicles will have a restraint hoop of 4130 steel tube a minimum of 25.4mm (1in) diameter x 1.6mm wall (0.065").
- 6.5. A driveline containment system utilising a steel shield bolted to the engine plate or a containment blanket is highly recommended.

7. Suspension.

- 7.1. Radius rods may not be attached to the chassis within the confine of the cockpit.
- 7.2. Radius rod protectors are permitted.
- 7.3. Cockpit adjustable suspension prohibited.
- 7.4. Welded aluminium or titanium components prohibited with the exception of Jacob Ladder components.
- 7.5. Independent suspension prohibited.
- 7.6. Front axles must be manufactured from steel tube, either 50.8mm diameter (2") x 4.0mm wall thickness (.156") or 57.1mm diameter (2.25") x 3.0mm wall thickness (.120") or 60.3mm diameter (2.375") x 2.4mm wall thickness (.095").

8. Steering

- 8.1. Removable steering wheels are permitted with a mechanism conforming to SFI 42.1. Pip pin mechanisms are not permitted.
- 8.2. Rack and pinion steering is prohibited.
- 8.3. All drag link components must be manufactured from steel.
- 8.4. A drag link catch strap is compulsory. The strap will be constructed to prevent the drag link from contacting the ground in the event of a forward tie rod end failure.

9. Brakes.

- 9.1. Carbon fibre brakes are prohibited.
- 9.2. All vehicles must have operable brakes on both axles at all times.

10. Wheels and Tyres

- 10.1. Plastic or carbon fibre composite wheels not permitted.
- 10.2. All wheels must be 15" diameter.'
- 10.3. Front wheel maximum width is 250mm (10").
- 10.4. Right hand rear wheel maximum width 457mm (18")
- 10.5. Left hand rear wheel maximum width 381mm (15").
- 10.6. Bead lock on the right rear tyre must be approved by the Technical Director.
- 10.7. All wheels and wheel centres must be approved by the Technical Director.
- 10.8. Electronic tyre pressure control is permitted.
- 10.9. Remote control of the tyre pressure is prohibited.
- 10.10. The following tyres are approved for use. Right Rear Only; All others are open.
 - 10.10.1. Hoosier WAV, American Racer, Mc2, Goodyear M200.
- 10.11. Any solvent or chemical applied in any way to the tyre that alters the chemical make up of the compound or have the effect of altering tyre durometer or construction is prohibited. Any tyre can be confiscated by the Technical Director at any time.

11. Cockpit.

- 11.1. The centre line of the driver's seat will be no more than 25mm (1") from the centre line of the chassis.
- 11.2. An affective firewall must be installed to prevent liquids (fuel, oil and water) from entering the cockpit.
- 11.3. The firewall will extend from the centre line of the lower chassis rails to the top of the engine cover.
- 11.4. Rear view mirrors are not permitted.
- 11.5. The driver must use a full containment seat attached to the chassis with a minimum of 4 8mm (5/16th) bolts Grade 8.
 - 11.5.1. The headrest part of the seat will contain a shock absorbing material that complies with SFI 45.2. This material will have a minimum thickness of 25mm (1.0").
- 11.6. Safety belts complying with SFI 16.5 of SFI 16.1 must be used. The safety belts have a maximum life of 2 years from the date of manufacture. Safety belts presented out of that time span will not be permitted for use.
 - 11.6.1. Safety belts must remain buckled and tight at all times the vehicle is moving on the race track.
 - 11.6.2. The waist belt section of the Safety Harness will be attached to specific tubes included in the chassis. These tubes are included to assist in the correct installation of the Safety Harness. See photos, Appendix A; 4.
 - 11.6.3. Proper fitment of safety harness is illustrated in Appendix A;4

12. Bodywork

- 12.1. Only standard type Sprint Car bodies, tail tanks and engine hoods will be permitted.
- 12.2. The front part of the body, the Nose section will be no wider than the bodywork measured at the rear engine plate.
- 12.3. The Nose section will not extend past the front bumper when viewed from above.
- 12.4. The driver must be able to exit the vehicle through the right hand or left hand side, without removing the side panels.
- 12.5. All bodywork must not extend past the edge of the chassis tube by more than the material thickness. A 20mm (0.75") turn out is permitted on panel edges with the exception of sun visors where it is prohibited.
- 12.6. Both sides of the sun visor must be flat.
- 12.7. Aerofoils, wings, spoilers or aerodynamic appendages deemed by the Technical Director to not meet these regulations will not be permitted.

13. Engine

- 13.1. Any engine parts not covered by these regulations must be submitted to the Technical Director for approval before use.
- 13.2. External modifications that do not affect performance are permitted. E.g. Aftermarket rocker covers and remote oil filters.
- 13.3. No modifications to the original engine or aftermarket components are permitted.
- 13.4. Only the following engine blocks may be used.
 - 13.4.1. Part numbers 12550592, 12559846, 12559090, 12562174, 12559846, 12560621, 12559378, 12561168, 12561166, 10212339, 12558805, 12559852, 12564241, and 12559862.
- 13.5. Maximum rebore is 1.0mm (0.040").
- 13.6. Machining or grinding internally or externally is prohibited.
- 13.7. Crankshaft Part Numbers 12552216 and Scat SCT-4LS140062 is permitted. No modifications permitted.
 - 13.7.1. Balance:

Engine may be balanced. I.e. external balance, no "knife Edging" of crankshaft and no major modifications to con rod balance pads.
- 13.8. Conrod Part number 12568734 permitted. Scat conrod Part number SCA-261009444P permitted. Conrod length of 154.889mm (6.098").
- 13.9. The following pistons are permitted.
 - 13.9.1. GM Part number 12568734.
 - 13.9.2. Sealed Power Part number H868CP
 - 13.9.3. Precision Hypatec Part number PCH34680051H
 - 13.9.4. Enginetech Part number P3081
- 13.10. Maximum Valve lift is 12.94mm (.510")
- 13.11. Camshaft timing must remain at 0 degrees' advance.
- 13.12. Camshaft lifters are free but must remain the same diameter as standard.
- 13.13. Cam chain is free.
- 13.14. Cam bearings may be secured by drilling and pinning.
- 13.15. The following cylinder heads are permitted.
 - 13.15.1. Part numbers 12558806, 12559853, and 12564241.
- 13.16. The cylinder head will measure a minimum of 120mm (4.72") from the rocker cover face to the block face.
- 13.17. No modifications to the cylinder head are permitted.
- 13.18. Standard vale springs or Pac Racing Spring Part number PAC 1218 permitted.
- 13.19. Standard rockers only. Trunnions may be upgraded.
- 13.20. Maximum intake valve diameter 50.8mm (2.0").
- 13.21. Maximum exhaust valve diameter 39.37mm (1.55")
- 13.22. Engine oil pump is free. No external oil pumps. Dry sump not permitted.
- 13.23. Intake manifold, Edelbrock Victor Junior Part number 29087 permitted Holly manifold Part Number 300-132.
 - 13.23.1. Inlet manifold may be externally machined or coated for aesthetics.
- 13.24. Fuel nozzles free
- 13.25. Throttle body, maximum 4 throttles, and maximum diameter 44.45mm (1.75"). Throttle body must be unmodified from manufacture.
- 13.26. Standard GM Coil pack only permitted.

- 13.27. RPM Limit 6.900 RPM.
- 13.28. Ignition Controller MSD Part number MSD6010 and 6012/6014 permitted. No modifications and MSD permitted.
- 13.29. External mechanical fuel pump permitted.
- 13.30. Harmonic balancer Part number 12553118 only permitted.
- 13.31. Water pump on belt driven in the original location. Electric pumps prohibited.
- 13.32. Compression ratio 10.5:1 maximum.
- 13.33. No titanium fasteners.
- 13.34. Gaskets free.
- 13.35. Alternator free.
- 13.36. Power steering pump free.
- 13.37. Air filter free.
- 13.38. Rocker covers free.
- 13.39. Radiator overflow must be directed away from the driver.
- 13.40. Invitation Class engine rules:
 - 13.40.1. Cars running "Invitation Class" engines are not permitted to enter "blue ribbon events" ie. State/National Titles. They also do not qualify for event prize money or points.

Invitation Class Rules:

The LS engine this is to be used is the LS1 Generation 3.5.7L 346ci to the LS3 376ci.

- Block - Any OEM block are to be used, face deck only and rebore no machining internally or externally (as cast condition).
- Cylinder bore, the max bore 4.085 stroke 3.622" 92.00mm max stroke.
- Crank – Must be an OEM crankshaft 3.622 maximum stock standard appearance no knife edging, under cutting, removing or counter balance etc.
- Rods – Standard OEM con rods and the only aftermarket rods to be used are Scat, Eagle or Comp Star. Con Rod length of 154.889mm (6.098").
- Pistons – may protrude the deck by 0.015" maximum (any flat top piston to a maximum bore size of 4.085 inches permitted).
- Cam Shaft – 0.310 inches at cam lobe or 0.525 inch measured at valve maximum lift – intake and exhaust. Cam Shaft may be drilled and tapped for spud to drive (fuel and power steering pumps).
- Cylinder Heads – Only OEM cylinder heads are allowed to be used.
- Valves – Intake 2.170 max.
- Exhaust Valve – 1.600 max.
- RPM – 6900 maximum limit.
- Ignition Control Bo – GM MSD part number 19171130/MSD 6012/MSD 6010/MSD 6014 MSD 6014CT no modifications.
- Max Timing Allowed is 26 degrees total advance via the MSD Control. No "Programmable on the fly" electronic ignition, GM MSD box will be sealed.
- Intake Manifold, Edelbrock LS1/LS2 Victor Junior Part #29087 permitted, Holly manifold Part#300-132, LS3 Victor Junior Part#28457, LS3 GM Performance Part#25534401.
- Injector Holes – To be drilled at cast boss (eight places). Manifold to be drilled to take mechanical injectors, Example: Kinsler 460 short nozzle 1 inch long.
- Harmonic Balancer – OEM must be used.

14. Engine accessories

- 14.1. Water radiators, oil coolers and any associated accessories must be located in front of the rear engine plate and firewall and within the confines of the chassis when viewed from above.
- 14.2. All throttles will have 2 independent throttle return springs.
- 14.3. If the throttle mechanism is cable operated, it must have a push and pull type dual cable throttle.

15. Fuel System

- 15.1. A tail tank and fuel cell must be carried on the centre line of the chassis and behind the driver.
- 15.2. All fuel tanks must meet and comply with SFI Specification 28.2.
- 15.3. All tanks must have a minimum of 4 mounting points to the chassis, 2 each on each side of the chassis centre line.
- 15.4. Fuel tanks may not be mounted to the chassis utilising any portion of the access plates or the nut plates bonded into the fuel bladder. Exception to this is a secondary mount attached to the top plate to prevent the fuel tank from separating from the chassis in the event of a failure of the primary mounts.
- 15.5. All fuel systems must have a fuel shut off within the driver's reach.
- 15.6. A half stirrup toe clip must be fitted to the throttle pedal to enable manual closing of the throttle.

16. Nerf bars and bumpers

- 16.1. The nerf bars will be constructed to have the outside face within 50mm (2") of a line drawn from the outside edge of the rear tyre to the outside edge of the front tyre on the same side.
- 16.2. Nerf bars will be fitted to both sides of the chassis.
- 16.3. Each nerf bar will attach to the chassis in 3 locations.
- 16.4. Nerf bars must be manufactured from 25mm (1") x 1.5mm (0.065") steel, stainless steel tube or chrome molly.
- 16.5. Cars must have a rear bumper.
- 16.6. The rear bumper will protect the fuel cell.
- 16.7. The front bumper will not extend further than 580mm from the front of the front axle to the front of the bumper.
- 16.8. The front bumper will not extend more than 200mm (8") from the front of the chassis.

17. Fuel

- 17.1. Methanol only

17.2. Fuel additives are prohibited.

18. Electronic equipment

18.1. All cars must be equipped with an ignition switch within reach of the driver strapped in.

18.2. Data recording is not permitted with the exception of engine RPM.

18.3. Wet cell batteries are prohibited.

18.3.1. Batteries must be substantially clamped, worm drive clamps not permitted.

18.3.2. Battery may be mounted in the cockpit but terminals must be covered to prevent short circuit.

19. Drivers Apparel

19.1. All drivers must wear a safety helmet that complies with SA 2005, SA 2010, SA2015 or SFI 31.1.

19.2. Helmets must be worn at all times the car is moving on the race track.

19.3. Drivers must wear fire resistant underwear, fire resistant socks, fire resistant head sock (balaclava), fire resistant gloves that comply with SFI 3.2A and 3.3.

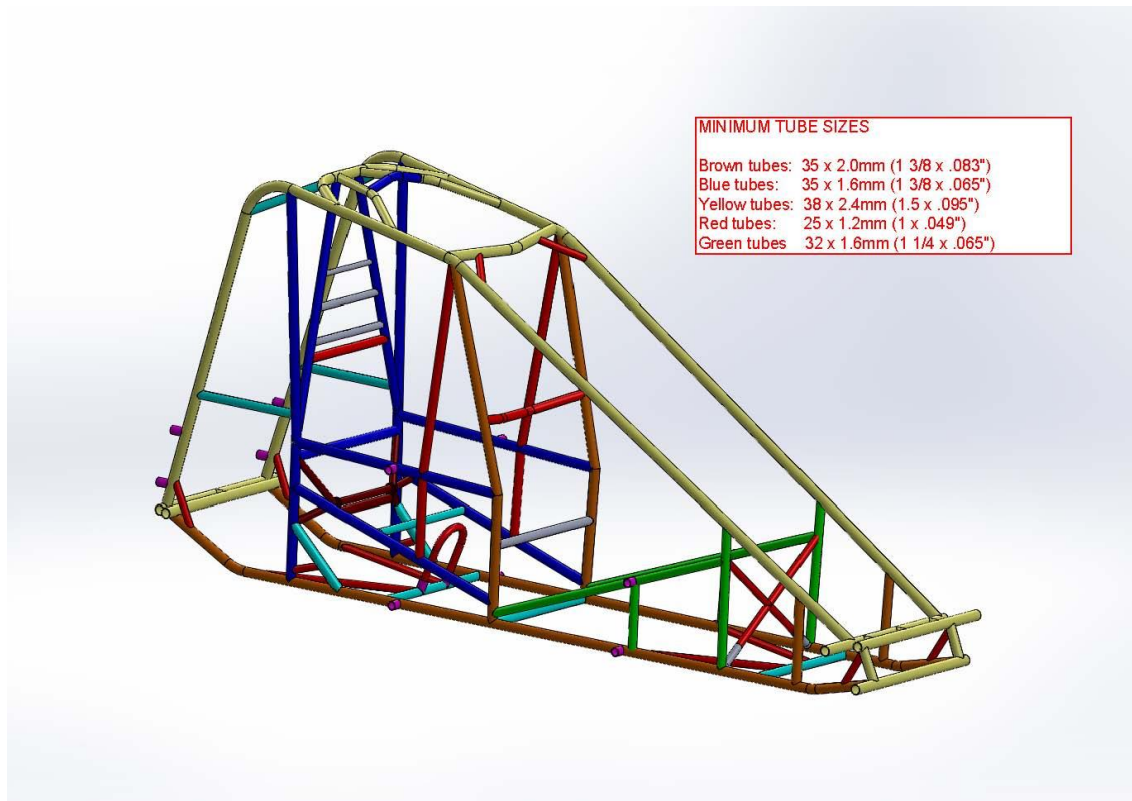
19.4. Drivers must wear a one piece safety suit that complies with SFI 32.5A and is in good condition.

19.5. Arm restraints are compulsory and must be used.

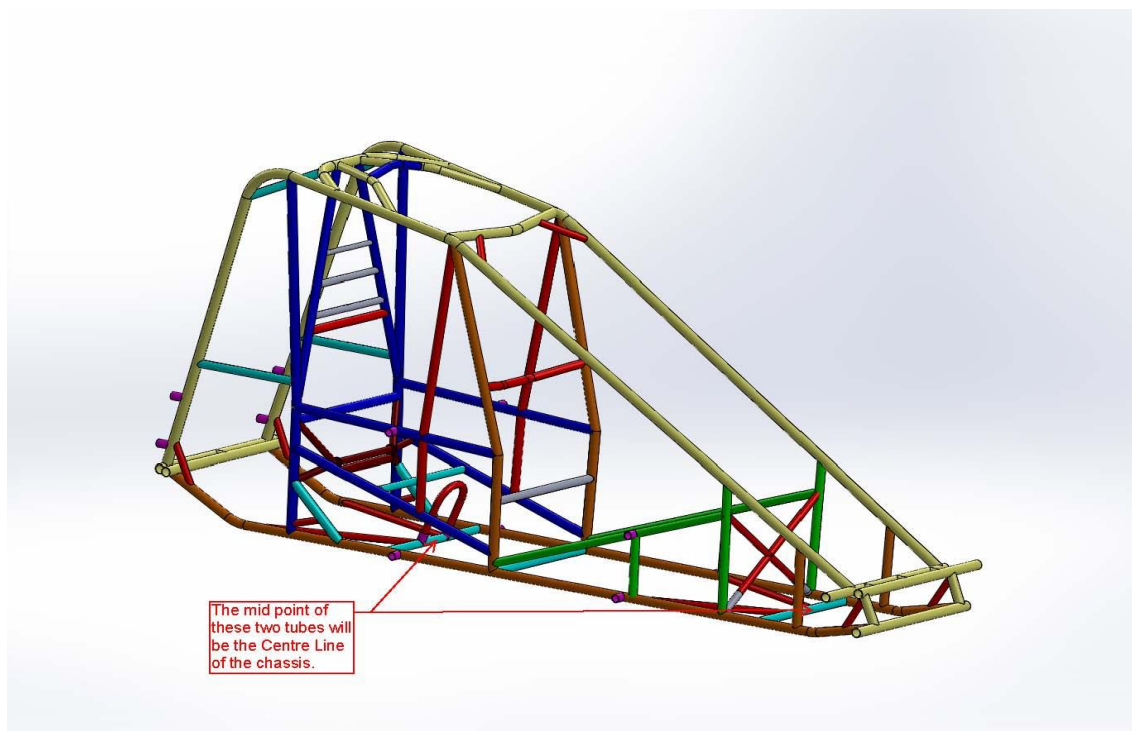
19.6. Compulsory approved full containment seats only.

Appendix A

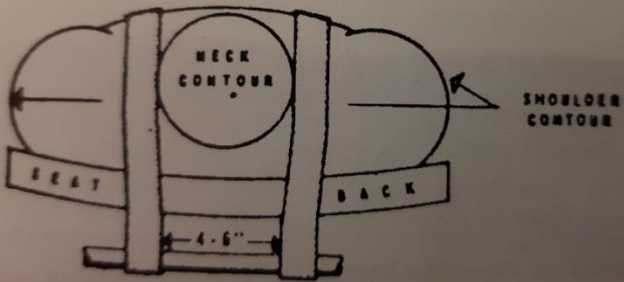
1. Minimum Tube sizes.



2. Chassis Centre line Definition



SHOULDER HARNESS
TOP VIEW



SEAT BEAT
SHOULDER HARNESS

