

## 1. BASIC CAR CONSTRUCTION

### 1.1. Wheel Base:

1.1.1. 84" Minimum

### 1.2. Overall length of car:

1.2.1. 168" Max

### 1.3. Overall Width:

1.3.1. 78" Max (Outside to Outside of Tire. Sidewalls included)

### 1.4. Offset:

1.4.1. The Maximum chassis offset allowed, for both front and rear wheels is four (4) inches (8 inches overall) measured to the outer rim surface of the wheel bead seat

1.4.2. Right Rear 43" Max (measured from the outer rim surface of the wheel bead seat to the centerline of the rear axle center section)

1.4.3. Left Rear 31" Min (measured from the outer rim surface of the wheel bead seat to the centerline of the rear axle center section)

1.4.4. Right Front 43" Max (measured from the outer rim surface of the wheel bead seat to the centerline of the chassis)

### 1.5. Front Engine, Rear wheel drive cars only

### 1.6. Engine must be mounted upright. 1 degree maximum from vertical

1.6.1. Maximum engine offset from chassis centerline is ½"

### 1.7. No driver adjustable suspension of any kind

### 1.8. No driver adjustable aero components EXCEPT wing sliders are allowed

### 1.9. Roll Cage.

1.9.1. Roll Cages are mandatory on all cars

1.9.2. Must be constructed of seamless steel tubing with a minimum O.D. of 1 ¼" and a minimum wall thickness of .095 inches

1.9.3. Roll cage must be welded to and become an integral part of the frame

1.9.4. Cage must be adequately braced to protect the driver in the event of an accident

1.9.5. The bottom surface of the roll cage halo must be a minimum of 2" higher than the driver's helmet

1.9.6. Any bars that the driver or his safety equipment may come in contact with, must be padded

1.9.7. All padding must meet SFI 45.1 specifications

1.9.8. No pitman arms or drag links allowed within the roll cage

### 1.10. Steering, Suspension and Axles

#### 1.10.1. Steering

1.10.1.1. All steering mechanisms must be engineered and assembled in accordance with sound engineering principles

1.10.1.2. Recommended that all highly stressed steering components be made from SAE 4130 steel or an alloy specified by the manufacturer of the part as equivalent in necessary strength for its intended use

1.10.1.3. Rack and pinion steering is allowed

1.10.1.4. A steering wheel designed for racing use with a quick release mechanism is required

#### 1.10.2. Suspension

1.10.2.1. No Independent suspension allowed (front or rear)

1.10.2.2. Chassis utilizing front torsion bars may not have the bar tubes below the horizontal centerline of the front spindles

1.10.2.3. Sway bars allowed

- 1.10.3. Axles Tubes and Rear End
  - 1.10.3.1. Front axles must be constructed of SAE 4130 steel or a steel alloy equivalent. No titanium allowed
  - 1.10.3.2. Rear end assembly must be of a conventional quick-change type with only one set of spur gears located behind the ring and pinion
- 1.11. Electrical/Electronics
  - 1.11.1. Ignition shutoff must be a toggle style switch
    - 1.11.1.1. Must be mounted within easy reach of the driver
    - 1.11.1.2. "on and off" positions must be clearly marked
  - 1.11.2. Batteries
    - 1.11.2.1. Batteries must be securely mounted
    - 1.11.2.2. Lead acid batteries must be fully enclosed in an approved battery box
    - 1.11.2.3. All cars with batteries must have a clearly marked master disconnect switch
  - 1.11.3. All electronics to be removed from car on race day.
- 1.12. Traction control Devices
  - 1.12.1. No traction control devices of any kind will be allowed, mechanical or electronic.
- 1.13. Glass
  - 1.13.1. No Glass including mirrors will be allowed (except instruments)
- 1.14. Fuel Cell and Fuel Systems
- 1.15. Fuel Cell
  - 1.15.1. Must be a USAC Approved type
  - 1.15.2. Must be securely mounted and supported
  - 1.15.3. Cell must be mounted behind the driver and centered on the chassis. Must be above the frame rails
  - 1.15.4. Fuel caps must be approved racing type
  - 1.15.5. Tank vent must have a check valve
- 1.16. Fuel System
  - 1.16.1. A ¼ turn shutoff valve is required and must be clearly marked for the on and off positions
  - 1.16.2. Metal Fuel Filters only
  - 1.16.3. No spring style fuel line clamps
  - 1.16.4. Car using an electric fuel pump must have a functioning low oil pressure shutdown switch wired in
- 1.17. Throttle
  - 1.17.1. Toe strap required
  - 1.17.2. The throttle pedal must have a wide-open stop
  - 1.17.3. Cable style throttle mechanisms must be encased to ensure push-pull action
  - 1.17.4. A minimum of 3 throttle return are required
    - 1.17.4.1. Must be connected to different locations on the throttle system. One spring must be on the butterfly shaft.
- 1.18. Exhaust
  - 1.18.1. A 95 db spec muffler is required. Similar or equivalent to the Schoenfeld 14272735-78
- 1.19. Cooling
  - 1.19.1. All cars must have a radiator overflow catch can or run the overflow tube into the header a minimum of three (3) feet before the final exhaust outlet
- 1.20. Brakes

- 1.20.1. All cars must be equipped with foot operated brakes that stop all wheels
- 1.20.2. No Copper tube allowed anywhere in the braking system
- 1.20.3. Steel brake rotors only.
- 1.21. Body and Wings
  - 1.21.1. Body
    - 1.21.1.1. A full firewall is required between the engine and driver's compartment
    - 1.21.1.2. Belly Pan/Floorboards must cover frame rail to frame rail side to side and extend (at a minimum) from the firewall to a point six (6) inches past the leading edge of the seat
      - 1.21.1.2.1. They may extend forward to the front of the engine
      - 1.21.1.2.2. They may not extend rearward farther than leading edge of the rear axle
      - 1.21.1.2.3. Must be flat with no added aero components
  - 1.21.2. Cars must have complete body panels including hood
    - 1.21.2.1. Hood must be on the car at all times it is on the racing surface
  - 1.21.3. No body work or aero components may extend over any portion of the front or rear tires
  - 1.21.4. Body must be mounted on the centerline of the chassis
- 1.22. Bumpers
  - 1.22.1. All cars must have front and rear bumpers
    - 1.22.1.1. Must extend a minimum of 6" ahead of the front tires and 6" behind the rear tires
- 1.23. Side Nerf Bars
  - 1.23.1. Nerf bars are required
    - 1.23.1.1. Not to extend beyond the outside edge of the tire
    - 1.23.1.2. Must extend to the fullest length possible between the front and rear tires
    - 1.23.1.3. No Ballast allowed in nerf bars
- 1.24. Wings
  - 1.24.1. Top wing
    - 1.24.1.1. Maximum top wing area is 25 square feet
    - 1.24.1.2. Maximum width and length of 72"
      - 1.24.1.2.1. Cannot extend outside of the rear/tire assemblies
    - 1.24.1.3. Sideboard vertical height will be a max of 30"
    - 1.24.1.4. No wing lip (wickerbill) to exceed 1" in height
    - 1.24.1.5. Single stage wings only
    - 1.24.1.6. Driver adjustable wing slider allowed
  - 1.24.2. Front/Nose wing
    - 1.24.2.1. Maximum front/nose wing is 6 square feet
    - 1.24.2.2. 36" maximum width
    - 1.24.2.3. Shall not extend beyond the front bumper
- 1.25. Cockpit
  - 1.25.1. Cockpit opening must be of adequate size to allow the driver to enter or exit unassisted easily
  - 1.25.2. Driveshaft and torque arm
    - 1.25.2.1. All revolving parts inside the cockpit must be shielded by a suitable guard. (fully enclosed)

1.25.2.2. Torque arms located within the cockpit must be restrained with safety loops of adequate strength

1.25.3. No radiators or coolers of any kind are allowed to be placed above or beside the cockpit opening

1.25.4. All chassis protrusions roll cage tubes and roll bars in close proximity to the driver's helmet must be padded with a securely attached, SFI approved high-density impact material

#### 1.26. Wheels and Tires

##### 1.26.1. Wheels

1.26.1.1. Wheels must be designed and manufactured specifically for racing

1.26.1.2. Bead locks permitted

1.26.1.3. Any car using a lug nut type right front hub must use all six lug nuts. A 360-degree pressure plate of either 1/8" steel or 3/16" aluminum must be used. Plate must be between the lug nuts and wheel face. Wheels manufactured with reinforced/built in plates are not required to run an additional plate.

##### 1.26.2. Tires

1.26.2.1. Qualifying tires must be used to run the all heats and the main event(s). B-main cars are allowed any tires for that feature. Transfer cars must start the A-main on their qualifying tires.

1.26.2.2. At no time are softener, additives, chemicals, enhancers or strengtheners to be applied to any tire

1.26.2.3. Mechanical/Diaphragm style air bleeders allowed. NO electronic controlled bleeders of any kind permitted.

##### 1.26.2.4. Approved Tires

1.26.2.4.1. Right Rear: Hoosier 2045

1.26.2.4.2. Right Front: Hoosier 2030

1.26.2.4.3. Left Rear: Hoosier M20

1.26.2.4.4. Left Front: Hoosier 2010

#### 2. BASE WEIGHT WITH DRIVER AT ALL TIMES

2.1. Iron on Iron 360 1575 lbs

2.2. "SPEC" 360 1600 lbs

2.3. Open 360 1625 lbs

2.4. 410 1675 lbs

3. Added weight must be securely mounted, painted white and marked with car number. Solid block only, no pellets or liquid. Weight shifting devices are not allowed. No tungsten or other exotic materials allowed. The Tech Director's decision on what qualifies as exotic is final. Penalty of \$10.00 PER LB will be added for weight lost on the racing surface.

#### 4. ENGINES

4.1. Iron Head on Iron Block 360 Specifications

##### 4.1.1. Displacement

4.1.1.1. Maximum displacement is 360.0 cubic inches +/- 1%

##### 4.1.2. Blocks and Internals

4.1.2.1. Any GM, Ford or Dodge cast iron block. Aftermarket blocks allowed but all specifications must be identical to OEM

4.1.2.2. Steel caps and splayed caps allowed

- 4.1.2.3. No titanium, ceramic or composite internal engine components allowed. Titanium valves and retainers are permitted
- 4.1.2.4. Any steel rod allowed
- 4.1.2.5. Any flat tappet or roller cam
- 4.1.2.6. Cast or Forged steel crankshaft permitted.
- 4.1.3.Heads
  - 4.1.3.1. Any standard configuration cast iron head allowed
  - 4.1.3.2. Valve angle must remain stock
  - 4.1.3.3. Porting is allowed
  - 4.1.3.4. No Angle milling allowed
  - 4.1.3.5. Screw in Studs, guide plates and any roller rocker are OK
- 4.1.4.Induction
- 4.1.5.Any stack style mechanical fuel injection is permitted
  - 4.1.5.1. Maximum of 8 nozzles and must be located in the intake manifold
  - 4.1.5.2. No down nozzles
  - 4.1.5.3. No timed or electronic fuel injection
- 4.1.6.Any carburetor combination is permitted
- 4.1.7.Must be naturally aspirated
- 4.1.8.No Nitrous oxide
- 4.2.Ignition
  - 4.2.1.Magneto Ignition Only. MSD Mag controller allowed
  - 4.2.2.No Driver adjustable ignition
- 4.3.Open 360 Specifications
  - 4.3.1.Displacement
    - 4.3.1.1. Maximum displacement is 360.0 cubic inches +/- 1%
  - 4.3.2.Blocks and Internals
    - 4.3.2.1. Must be piston driven, cam in block production-based engine
    - 4.3.2.2. Block must be American or Canadian made
    - 4.3.2.3. No Big Blocks
    - 4.3.2.4. Aluminum or iron are allowed
    - 4.3.2.5. No Titanium rods or crankshafts allowed
  - 4.3.3.Heads
    - 4.3.3.1. All GM heads must have 23 degree +/- 2 degree valve angle
    - 4.3.3.2. All Ford and Mopar heads must retain stock valve angle +/- 2 degrees
    - 4.3.3.3. Any 360 Engine with more than 2 degrees of valve angle from stock valve angle will be required to run a 2.00" restrictor or smaller as determined by the Tech Director
      - 4.3.3.3.1.1. Restrictor inside diameter shall be no larger than 2.00" Must be round and centered in the stacks, I.D. stated above must be continuous for a minimum of TWO (2) inches. No alterations to bypass restrictor, outside circumference of restrictor must be sealed against inside of stack.
  - 4.3.4.Induction
    - 4.3.4.1. Any stack style mechanical fuel injection is permitted
      - 4.3.4.1.1. Iron Block Open 360- Maximum 2.187" restrictor required.
      - 4.3.4.1.2. Aluminum Block Open 360- Maximum 2.187" restrictor required.

- 4.3.4.1.2.1. Restrictor inside diameter shall be no larger than 2.187". Must be round and centered in the stacks, I.D. stated above must be continuous for a minimum of TWO (2) inches. No alterations to bypass restrictor, outside circumference of restrictor must be sealed against inside of stack.
- 4.3.4.1.3. Maximum of 16 nozzles
- 4.3.4.1.4. Down nozzles allowed.
- 4.3.4.1.5. No timed or electronic fuel injection
- 4.3.4.2. Any carburetor combination is permitted
- 4.3.4.3. Must be naturally aspirated
- 4.3.4.4. No Nitrous oxide
- 4.3.5. Ignition
  - 4.3.5.1. Magneto Ignition Only. MSD Mag controller allowed
  - 4.3.5.2. No Driver adjustable ignition
- 4.4. "SPEC" 360 Specifications
  - 4.4.1. Displacement
    - 4.4.1.1. Maximum displacement is 360.0 cubic inches +/- 1%
  - 4.4.2. Blocks and Internals
    - 4.4.2.1. Small Block Chevy Only
    - 4.4.2.2. Aftermarket blocks allowed but all specifications must be identical to OEM
    - 4.4.2.3. Steel caps and splayed caps allowed
    - 4.4.2.4. No titanium parts allowed
    - 4.4.2.5. Any steel rod allowed
    - 4.4.2.6. Any flat tappet or roller cam
      - 4.4.2.6.1. Net lift at the valve not to exceed .620"
    - 4.4.2.7. Cast or Forged steel crankshaft permitted
      - 4.4.2.7.1. 50 lbs minimum weight
      - 4.4.2.7.2. 3.48"/3.50" stroke only
      - 4.4.2.7.3. 2.10" minimum rod journal size
    - 4.4.2.8. 3 ring groove flat top piston only
      - 4.4.2.8.1. Piston top to be below deck height
    - 4.4.2.9. Wet or dry sump oiling systems allowed
  - 4.4.3. Heads
    - 4.4.3.1. Brodix SPCH "SPEC" Head only
    - 4.4.3.2. No grinding, blending, polishing, welding or use of any substance to alter flow. Must be as produced by Brodix
    - 4.4.3.3. 2.08" Maximum Intake valve diameter
    - 4.4.3.4. 1.60" maximum exhaust valve diameter
    - 4.4.3.5. 23 degree valve angle +/- 1 degree
    - 4.4.3.6. 60cc minimum combustion chamber volume
    - 4.4.3.7. Any roller rocker OK
    - 4.4.3.8. Titanium valve spring retainers allowed
  - 4.4.4. Induction
    - 4.4.4.1. Hilborn Conventional style injection only
      - 4.4.4.1.1. No Restrictors Required
      - 4.4.4.1.2. Maximum of 8 nozzles and must be located in the intake manifold

- 4.4.4.1.3. No down nozzles
      - 4.4.4.1.4. No timed or electronic fuel injection.
    - 4.4.4.2. Must be naturally aspirated
    - 4.4.4.3. No Nitrous Oxide
  - 4.4.5. Ignition
    - 4.4.5.1. Magneto Ignition Only. MSD Mag controller allowed
    - 4.4.5.2. No Driver adjustable ignition
- 4.5. 410 Engine
  - 4.5.1. Displacement
    - 4.5.1.1. Maximum displacement is 410.0 cubic inches (0 Tolerance)
      - 4.5.1.1.1. The formula  $6.2932 \times \text{bore}^2 \times \text{stroke}$  will apply
  - 4.5.2. Blocks and Internals
    - 4.5.2.1. Must be piston driven, cam in block production-based engine
    - 4.5.2.2. Engines with the magneto in a forward mounted and/or front mounted position will not be permitted
    - 4.5.2.3. No Big Blocks
    - 4.5.2.4. Engine block and cylinders must be machine from cast aluminum. Billet machined blocks are not allowed
      - 4.5.2.4.1. All engine cylinders Sleeves (inserts) must be machined from an iron or steel alloy only
    - 4.5.2.5. No Titanium crankshafts.
    - 4.5.2.6. Only steel connecting rods and rod caps allowed
    - 4.5.2.7. Maximum cylinder bore size is 4.165"
  - 4.5.3. Heads
    - 4.5.3.1. Cylinder heads must retain a traditional valve pattern. Rotation of the valves will not be permitted
    - 4.5.3.2. No canted or splayed heads without prior approval
    - 4.5.3.3. Only two (2) valves per cylinder allowed
    - 4.5.3.4. Only one (1) spark plug per cylinder allowed
  - 4.5.4. Induction
    - 4.5.4.1. Any stack style mechanical fuel injection is permitted
      - 4.5.4.1.1. Must run a 1 7/8" (1.875") restrictor
        - 4.5.4.1.1.1. Restrictor inside diameter shall be no larger than 1.875" Must be round and centered in the stacks, I.D. stated above must be continuous for a minimum of two (2) inches. No alterations to bypass restrictor, outside circumference of restrictor must be sealed against inside of stack.
      - 4.5.4.1.2. Maximum of 16 nozzles
      - 4.5.4.1.3. Down nozzles allowed.
      - 4.5.4.1.4. No timed or electronic fuel injection
    - 4.5.4.2. Must be naturally aspirated
    - 4.5.4.3. No Nitrous Oxide
  - 4.5.5. Ignition
    - 4.5.5.1. Magneto Ignition Only. MSD Mag controller allowed
    - 4.5.5.2. No Driver adjustable ignition

## 5. TRANSPONDERS

5.1. Transponder must be run at all times, including ALL PRACTICE SESSIONS to insure proper operation with scoring. Transponders may be rented from Evergreen Speedway. If you enter the racing surface with no transponder you will be Black Flagged. If this happens during a race, you will relinquish your starting position and return to the pits to obtain one.

## 6. SEASON POINTS and LINE-UPS

6.1. To be determined at a later date

6.2. Heat races and Main events will be lined up using qualifying times

6.3. Pit Stewart will be in charge of invert draw

## PERSONAL SAFETY EQUIPMENT

### A. GENERAL

1. IWS/Stateline Speedway is not responsible for the effectiveness of any personal safety equipment.
2. Each competitor is solely responsible for the effectiveness of personal safety equipment used during an event.
3. Each competitor is expected to investigate and educate him or herself fully in respect to the availability and effectiveness of personal safety equipment.
4. It is strongly recommended that during race conditions, any crew member that steps into the car servicing area have all parts of the body protected by fire resistant clothing and/or equipment, including helmet.

### B. PROTECTIVE CLOTHING

1. Fire resistant clothing and equipment must protect all parts of a driver.
2. IWS/Stateline Speedway requires that all sprint car drivers wear a minimum two-layer fire suit, Nomex (or equivalent) underwear, gloves, head sock and fire retardant shoes in good condition OR a three-layer Nomex (or Equivalent) fire suit meeting SFI rating of 3-2A/5, gloves, head sock, and shoes. It is recommended that all drivers wear a minimum of a four-layer fire suit, along with fire resistant underwear, balaclava, socks gloves and shoes in good condition.
3. IT IS THE RESPONSIBILITY OF THE DRIVER, NOT IWS/Stateline Speedway, TO ENSURE THAT HE/SHE MAINTAINS, WEARS AND PROPERLY USES PROTECTIVE CLOTHING.

### C. HELMETS

1. Drivers must wear a helmet meeting the specifications set forth in The Federal Regulations, Federal Safety Standard, or meet the specifications set forth by the American National Standards Institute Inc. at all times on the race track.
2. Snell SA2010 or newer only. Full face helmets required. NO EXCEPTIONS.
3. The driver must wear the helmet in accordance with the directions provided by the helmet manufacturer. Any modifications to the helmet for any purpose should not detract from its effectiveness.

### D. HEAD AND NECK RESTRAINT DEVICES

1. At all times during any event (practice, qualifying and competition) drivers must connect their helmet to an SFI approved head and neck restraint device system. The head and neck restraint device must be connected as per the manufacturer's instructions and it must be configured, maintained and used in accordance with the manufacturer's instructions.

2. IT IS THE RESPONSIBILITY OF THE DRIVER, NOT IWS/Stateline Speedway, TO ENSURE THAT HIS/HER DEVICE/SYSTEM IS SFI APPROVED AND CORRECTLY INSTALLED, MAINTAINED AND PROPERLY USED.

E. SEATS

1. Only commercially manufactured aluminum racing seats are permitted.
2. All seats must be padded with high impact foam.
3. A padded headrest with a minimum thickness of one (1) inch is mandatory.

F. SEAT BELTS AND SHOULDER HARNESS

1. An SFI rated five (5) or six (6) point harness is required
2. Belts should be mounted and worn per the manufacturer's recommended instructions.
3. A quick release lap belt of no less than 3" wide is required. Both ends of the lap belt and both ends of the shoulder harness must be fastened to the roll bar with Grade 8 bolts not less than ½" in diameter.
4. The shoulder harness and lap belts must be bolted so that the ends of the belts move freely. Shoulder harness must be no less than 3" wide. Shoulder harness inertia reels cannot be used.
5. A center or submarine belt must be mounted to the lower seat frame at the bottom.
6. Where the belt passes through the seat edges, it must have a grommet installed, be rolled and/or padded to prevent cutting.
7. All seat belts and shoulder harnesses must connect at the lap belt with an approved quick release buckle. No rotary release mechanisms.
8. Seat belts must be dated by the manufacturer and must not be used beyond five (5) years after the manufacture date. Recommend replacement after three (3) years.
9. It is recommended that HANS specific seat belts be used with HANS device.

G. ARM RESTRAINTS

1. SFI rate arm restraints are required.

H. Roll Cage Nets

1. Roll cage nets on both sides of the cockpit are mandatory on all cars that do not have a full containment seat.
2. Must be fitted with a functioning quick release mechanism.

I. FIRE EXTINGUISHER

1. All entrants must have in their pit area as part of their equipment at all times a fully charged minimum 10-pound capacity dry chemical Halon or its equivalent with a visible operating gauge and current inspection certificate.

J. RADIOS

1. 2-way radios are not permitted. Raceceivers will be used.