



**2023**

**Development**

**Rule Book**

## **RULE 40 - CAR SIZE LIMITS**

- A.** The wheelbase must be at least 66 inches and not more than 76 inches.
- B.** All cars must weigh a minimum of 1,100 pounds including the driver subject to the accuracy of the scales at the racetrack. Additional bolt-on weight must be mounted and bolted with a minimum of two  $\frac{3}{8}$  grade 8 bolts to the frame and/or chassis in a secure manner. Weight must be mounted in an area between bottom frame rails, front and rear axles, and no higher than the mid-rails at the cockpit. All weight must be mounted within the confines of the frame. **NO BALLAST/WEIGHT IN NERFS, BUMPERS, FRONT AXLE.**

## **RULE 41 - CAR CONSTRUCTION**

- A.** All revolving parts inside the cockpit must be shielded by a suitable guard. All cars must be equipped with a drive shaft restraining hoop securely attached to the chassis. The minimum hoop material is 1 inch by .095 inches steel tubing.
- B.** Right-side cockpit panels may be a maximum of 36 inches high as measured from the bottom frame tube at the motor plate and projected rearwards. The opening must be a minimum of 150 square inches and not distract the driver's vision as determined by the Director of Competition.
- C.** Left side cockpit panels may be a maximum of 36 inches high as measured from the top of the bottom frame tube at the motor plate and projected rearward. The opening must be a minimum of 150 square inches and not distract the driver's vision as determined by the Director of Competition.
- D.** Side panels cannot extend rearward past the rear diagonal roll cage tube/brace or an imaginary line between the back edge of the rear torsion tube and the back edge of the rear roll cage member. The rear roll cage member is defined as the top tube behind

the driver where the a-frame connects. Regardless of the imaginary line, side panels may not extend horizontally beyond the most rearward cage uprights.

- E. Sail panels between the rear cage upright and brace are allowed. Sail panels may not be flared outwards. Sail panels may not extend forward past a cross-plane established by the most rearward part of the seat.
- F. No airfoil, wing, spoiler, or other air deflection devices will be permitted.
- G. A maximum one (1") inch turnout or wicker is allowed on all body and sail panel edges, except sun visor.
- H. All bolts and fasteners used other than body parts must be Grade 5 or better.
- I. Sharp chassis protrusions (grease fittings, cotter keys, etc.) must not be located where they may cause damage.
- J. Rearview mirrors will NOT be allowed.
- K. All cars must be painted after their third appearance or show a justifiable excuse. Buffed and polished metal shall be acceptable. All numbers must be of not more than 2 digits between 12" and 18" high and must be of a color contrasting the car.

## **RULE 42 - ROLL CAGE**

- A. A roll cage is mandatory and must be an integral component of the chassis. The roll cage must be adequately braced fore and aft to secure it in an upright position. The cage must extend over the top of the driver's helmet a recommended (4) four inches when sitting in an upright position.
- B. The roll cage must be constructed of 1-3/8" O.D. 4130 normalized tubing with a minimum of .095-inch wall thickness.
- C. Both sides, center and front members of the roll cages and roll bars must be protected by resilient material conforming to SFI Foundation Specification 45.1.
- D. It is required that all cars not running a full containment seat must have cage nets on both the left and right sides of the roll cage for all events. All roll cage nets must conform to SFI Foundation Certification 37.1 and are labeled as such.

1. The life of roll cage nets shall not exceed two (2) years. Caution should be used when positioning roll cage nets to be certain that the driver's head cannot get under the net in case of an accident.
2. The bottom of the roll cage net should be as close to the top of the shoulder as possible.
3. The connection of the roll cage net to the chassis must be a rigid connection that does not allow the cage nets to slide up or down.

## **RULE 43 - FIREWALL**

- A. An effective firewall of metal and at least 0.0625-inch-thick or other approved fire-retarding material must be installed between the engine compartment and the cockpit. It must be as leak-proof as practical. The motor plate may not be made from carbon fiber, honeycomb, or other composite materials.

## **RULE 44 - BUMPERS & NERF BARS**

- A. Cars must be equipped with a front and rear bumper left and right nerf bars securely fastened to the chassis\*. Bumpers and nerf bars must be secured by bolts, a minimum size of 10/32's.
- B. No titanium bumpers and/or nerf bars will be permitted.
- C. The front bumper must be of a single tube design. No pretzel-style bumpers are allowed.
- D. Bumpers and nerf bars must be constructed of magnetic and or stainless steel tubing with a minimum  
  
.875 inches O.D. and a maximum of one (1") inch O.D. Wall thickness must be a minimum of .065 inches and a maximum of .120 inches.

## **RULE 45 - STEERING – SUSPENSIONS**

- A.** Removable steering wheels incorporating a quick-release mechanism conforming to SFI Foundation Specification 42.1 are mandatory. No plastic components may be used. Pin-type mechanisms are not allowed.
- B.** A quick-release type steering wheel is mandatory, and no plastic components can be used.
- C.** It is recommended that cars have an annual Magnaflux inspection of the cross shafts, the up and down shafts, steering gears, and front spindles. The above Magnaflux may be required following an accident if requested by the Safety Committee.
- D.** Steering wheel hubs on all race cars must be padded with a minimum  $\frac{3}{4}$  inch resilient material.
- E.** The use of carbon fiber, carbon/Kevlar, or other composite material as structural chassis components, suspension, or components in the driveline including the rear end, is not allowed.
- F.** Titanium front axles, rear axles, steering arms, and torsion arms are not allowed,
- G.** A tether is mandatory on the drag link.
- H.** Any shock absorber is allowed. Shock absorbers may have two external adjustments and may be adjusted by manual methods only. Shock absorbers cannot operate or be adjusted electronically. Digital shock readout is allowable as long as it does not control any function of the shock absorber.

## **RULE 46 - BRAKES**

- A.** Cars must be equipped with a suitable braking system.
- B.** Carbon, carbon composite, or titanium brake discs are not allowed. The brake pad material is open.

## **RULE 47 - ENGINE SIZE LIMITS**

- A.** All engines must be inline, normally aspirated, internal combustion, four-cycle, reciprocating piston type, incorporating a maximum of four (4) cylinders and a maximum of four (4) valves per cylinder. Engines must be a production engine from a passenger vehicle and reasonably available in the United States. No engines may be used from passenger vehicles that have not been sold by an officially authorized manufacturer dealership.
- B.** All engines are allowed a maximum displacement of 148.820 CID.
- C.** All engines must use an OEM block, OEM cylinder head, and OEM crankshaft combination from the same manufacturer.
- D.** Lightening the engine block or cylinder head is limited to removing material for the purpose of fitting the engine into the chassis. Removal or addition of material to improve oiling or cooling will be permitted.
- E.** Lightening of the crankshaft, beyond minimal material removal for balancing, is PROHIBITED. Offset grinding of the crankshaft journals is PROHIBITED. Gears may be removed.
- F.** Titanium and aluminum connecting rods are PROHIBITED.
- G.** Titanium valves and valve springs are PROHIBITED.
- H.** Cylinder head ports MUST remain stock as cast. No alterations from original OEM specifications are allowed.
- I.** Operational variable valve timing (VVT) is PROHIBITED.
- J.** All other engines must be submitted in writing and pre-approved by BMARA on a TRIAL basis before being allowed in competition. All trials approved for temporary competition will be posted at the driver's meeting.

## **RULE 49 - FUEL SYSTEM**

- A.** Electronically controlled or mechanical fuel injection systems are permitted.
- B.** All fuel tanks, fuel cells, bladders, or plastic tanks, must be constructed and supported in a manner to avoid rupture or breakage. All cars must be equipped with a fuel cell and tail tank meeting the requirements of SFI Foundation Specification 28.2.
- C.** Fuel systems must be equipped with a shut-off device located within easy reach of the driver and the rescue crew. The ignition switch and fuel valve must be clearly marked on/off.
- D.** Cars utilizing an electric fuel pump must have a switch designed to shut the pump off in the event the engine ceases to run or the oil pressure of the engine is at or below three (3) pounds of pressure.
- E.** All cars must use a midget-style tail tank with a minimum capacity of 18 US gallons.
- F.** Fuel tanks may not be made from carbon fiber or carbon/Kevlar materials.
- G.** Fuel
  1. Fuel is restricted to methanol only. The addition of any material(s) to the fuel is strictly prohibited.
  2. The addition of any material(s) to the intake air or the addition of any mechanical device(s) essential to the application of this material(s) is strictly prohibited.
  3. Any device, which artificially reduces the temperature of the fuel, is strictly prohibited.
  4. All fuel is subject to testing at any time. Any fuel that does not conform to the BMARA standards, as administered at the racetrack, will be considered illegal. The use of illegal fuel will result in disqualification from the event and/or the entire race program.

- H. A driver may not be seated in the racecar during fueling at any time, including the designated pit area. The penalty for violation will be to start at the rear of the field.

## **RULE 50 - IGNITION & ELECTRONICS**

- A. All cars must have an ignition switch or emergency shut off within easy reach of the driver and labeled "on/off".
- B. The use of electronic logic processors to record continuous data from the race car is limited to functions of approved ignition systems and wireless systems housed in a single unit, independent of any other device, and unable to transmit to or from any other device while on-track.
- C. Any form of traction control is strictly PROHIBITED. If caught with any traction control device, the car owner will FORFEIT ALL POINTS accumulated for that year and will be suspended for one year from the date of infraction.
- D. Approved electronic ignition and fuel delivery systems; MSD 6214 Midget, Performance Electronics PE3-IG2, PE3-8400, Electromotive XDI, TECs, and TECs200, and the Microsquirt AMP'd & V-3.0. Approved electronic systems are limited to functions as supplied by the manufacturer. Electronic components may be inspected or confiscated at any time by GMRS.
- E. The following sensors are the only sensors permitted: crankshaft position, camshaft position, water temperature, oil pressure, tachometer, wide or narrow band air -fuel ratio meter, throttle position (TPS), fuel pressure, and manifold absolute pressure (MAP) sensors.

## **RULE 51 – THROTTLE**



- A. Throttle toe straps are mandatory, and the linkage must be so constructed that bringing back the throttle pedal with the toe strap will close the throttle valves. There will be a minimum of 3 throttle springs.

## **RULE 52 – EXHAUST**

- A. The exhaust system must be designed to create a minimum of fire hazards and a minimum hazard to other competitors.
- B. Exhaust pipes passing close to the driver must have raised metal guards. Exhaust must exit the engine compartment to the left or right and be no wider than the nerf bar.
- C. All cars are required to utilize an exhaust muffler that reduces noise to an acceptable level as prescribed by the Board of Directors and/or local conditions. Internal mufflers are allowed but must be placed at the end of the tailpipe and be visible for technical inspection. The exhaust sound will be measured with a decibel meter at random locations during the event.
- D. Any racecar that has a decibel meter reading above the level required for local conditions will forfeit that time trial and may go to the end of the line to time trial again for one (1) lap only to meet the noise level requirements and establish his time-trial time for the race line up. Any racecar that exceeds the noise level requirement will not be allowed to race at that race meet. (Note this rule is duplicated in Rule 31-F Time Trial.)

## **RULE 53 - CLUTCH**

- A. The clutch must be rendered inoperative during the event, but can be left on the car at the discretion of the Director of Competition.

## **RULE 54 - SEATING SYSTEM**

- A. SEAT BELTS.** The use of an approved seat belt with a latch/lever release is mandatory. Rotary mechanisms are not allowed. Both the fastening design and condition of the belts are subject to an inspection by the Safety Committee. All safety belts and shoulder harnesses must bear the date of manufacture and shall not be used for more than two (2) years from the date of manufacture. All seat belts must meet SFI Foundation Specification 16.1 and be labeled as such.
- B.** Five or six-point (crotch) belts connected to the main belt quick-release mechanism and securely attached to the chassis are mandatory.
- C.** All belts should be worn as tight as possible. Seat belts must come through the seat at the bottom on each side thereby wrapping and holding the pelvic area over the greatest possible area. Belts should come through the seat at the bottom on both sides so as to hold the pelvic area at a point below the anterior superior iliac spines. Under no condition may it be worn over the area of the intestines and abdomen. At any point where the belt passes through the side of the seat, the seat edges must be rolled or have grommets to prevent chafing or cutting of the belt material. All the belts connected to the main belt release system are mandatory. Both the fastening design and the condition of the belt are subject to the inspection of the Safety Committee.
- D. SEATS:** Aluminum seats are mandatory and must be of high back style. The seat must be mounted to the chassis in a minimum of four (4) places with a minimum of 5/16" steel bolt with large O.D. washers (minimum 1 ½") on seat surface secured with nuts and/or threaded into frame. Each mounting hole in the seat must have a steel (minimum .060 thickness) or aluminum (minimum .125 thickness) washer with a minimum 2-inch O.D.

## **RULE 55 - WHEELS**

- A.** The rim diameter must be 13 inches.
- B.** Rim width is limited to 8 inches for both front wheels and left rear and a maximum of 10 inches on the right rear.

## **RULE 56 - TIRES**

- A.** The brand of tire is Hoosier on all corners, but the compounds and sizes allowed are as follows.

<b>Tire Size</b>	<b>Compound</b>
82.0/12.0-13	SP2, SP3, SP4
74, 76, 77, 78, 80 -13	D12 or D15
68.0/7.0-13	D12 or D15