



2020 Night Before the 500 Sprint Car & Midget Rules

Scope of Rulebook

New Rules and Rule Changes

Night Before the 500 rules may be added, deleted, and/or amended from time to time and at any time by the organizer of the Night Before the 500. It is the participant's responsibility to stay abreast of all NHRA rule changes that may affect the participant. Additions, deletions, or changes to the Rulebook (collectively referred to herein as "amendments") will be communicated by publication on NightBeforethe500.com.

Amendments are effective and enforceable immediately upon publication on NightBeforethe500.com. Racers are responsible to consult and stay up to date with any rules and related information published on NightBeforethe500.com

Sprint Car Rules (Follows Anderson Speedway's Little 500 Rules)

Cars – Only normal traditional sprint car bodies will be permitted. Supermodified or Roadster type bodies are not permitted. No rear-engine sprinters or wings. NO OFFSET CHASSIS ALLOWED. All cars shall be rear wheel drive only. The rear axle offset shall be determined by measuring from the farthest portion of the wheel to the centerline of the rear axle centerline assembly. The maximum distance allowed is forty-three inches. The total overall width is seventy-eight inches, front and rear. All cars must be equipped with roll cages. Cars must have full belly pan. Additionally, all cars must utilize a BLANKET underneath the belly pan. FUEL CELL WITH BLADDER IS MANDATORY. Fuel tanks may not protrude from the body of the car nor shall it cause lines of the car to be altered out of shape or exposed outside the body and must be in a standard, safe location. All cars must weigh a minimum of 1,300 lbs. before, during and after qualifying and the race without the driver. No starters or clutches are permitted on cars at any time. Methanol ONLY. Gasoline is prohibited.

Tires – Tires limited to 20-inch cross-section maximum (measured with hoop). All cars must start the 2020 Night Before the 500 on the same tires that were used to qualify their car. Cars in violation of this rule shall be moved to the rear of the field and penalized (1) one lap. Right Rear tire for qualifying/race must be purchased from Hoosier Tire at Lucas Oil Raceway during the event. **Any solvents or chemicals applied to the tire that alter the chemical makeup of the compound or have the effect of altering tire durometer is prohibited.**

Participants – Car owners, drivers and pit persons must sign a liability release at pit gate and pay fees before entering the pit area. Any participant in pit area using abusive language or threatening or performing bodily harm to any official on or off the track will automatically be disqualified and forfeit all monies due to them.

General Rules – One-way radios with Race Control is required. All teams must supply a spotter, monitor race control and have radio communication with the driver.

Midget Car Rules

Cars – 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 car, design or construction, which they deem unsafe or not meeting specifications, the spirit and/or the intentions of the rules contained herein:

Dimensions and Weight

- A. Wheelbase – must be at least 66 inches and no more than 76 inches
- B. Width – overall width will be a maximum of 65 inches
- C. The maximum rear wheel offset, from center line, is three inches (6 inches overall) measured from inside bead seat to the centerline of the rear end center section.
- D. The right front tire cannot be farther out than the right rear tire when the right rear wheel is set at maximum offset. (as measured straight line along outside RR to outside RF)
- E. All cars must weigh a minimum of 1,050 lbs. including driver.
- F. Additional bolt on weight must be mounted and fastened 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 mid rails at cockpit. All weight must be mounted within confines of frame. NO BALLAST/WEIGHT IN NERFS, BUMPERS, FRONT AXLE.

Car Construction/Body

- A. All cars shall be rear drive only. Engine offset is limited to a maximum of one (1) inch, (two inches overall), from the chassis centerline as measured at the centerline of the crankshaft. Engine inclination is limited to forty-five degrees from vertical as measured from the vertical centerline of the cylinder bore.
- B. Only torque tube type drivelines, utilizing only one u-joint, will be allowed. The torque tube must be bolted directly to the face of the rear axle center section without any interruptions; the torque tube must be one solid piece. Torque tube hoop and/or strap highly recommended. A driveline containment system utilizing steel shield bolted to engine plate or containment blanket to cover torque ball and u-joint is highly recommended.
- C. Radius rods may not be attached within the confines of the cockpit.

- D. The driver shall be seated directly behind the engine; centerline of top of seat at the driver's helmet can be no more than one (1") inch off centerline of roll cage.
- E. Only standard type Midge Car bodies, tail tanks and hoods will be permitted.
- F. The front part of the body, known as the nose assembly, shall not be wider than parallel lines of the body and may not exceed the width of the frame. The nose assembly may not extend forward beyond the confines of the front bumper. (See 408 for bumper rule)
- G. The engine must be covered with a cowling or hood secured in place. The hood or cowling need not enclose the sides of the engine.
- H. A forward-facing scoop, or ducting, supplying "forced air induction" to the injection inlets is not permitted. A hood scoop to allow air to the air filter is permitted, provided that it does not feed into a contained air box, which would be considered to be forced induction.
- I. Only steel, aluminum, or carbon fiber floor/belly pan are permitted. The floor/belly pan may not extend rearward past the leading edge of the rear axle and must be flat from side to side without any aerodynamic aids. Horizontal panels may not extend below the plane of the floor/belly or fuel tank. It is recommended that a fireproof absorbent pad be used under the engine on pavement.
- J. An effective firewall must be installed between the engine compartment and the cockpit. It must be as leak proof as practical.
- K. The motor plate may not be made from carbon fiber, or any type of composite materials.
- L. Airfoils, wings, spoilers or other aerodynamic appendages will not be permitted. The Chief Steward or Technical Director may have any panel or part removed which in their opinion is not within the spirit or intent of this rule.
- M. All paneling must not extend past edge of frame rails more than thickness of material.
- N. Rear view mirrors are not permitted.

Roll Cage and Chassis

- A. Frame and/or chassis must be constructed of 4130 normalized tubing
- B. All cars must have a roll cage that is integral with the frame and does not encroach upon an imaginary cylinder, 20 inches in diameter, extending through the top cockpit opening directly above the seat. The roll cage should extend four inches above the driver's helmet when seated in a driving position.
- C. Roll Cage Construction cars constructed after 1/1/98, main uprights forming the roll cage must be a minimum of 1-3/8 inches O.D. x .095 wall thickness 4130 normalized tubing.
- D. No water or oil coolers are to be placed above or beside the cockpit opening.

Fuel System

- A. A conventional tail tank, fuel cell and fuel contained must be carried on the centerline of the chassis and be located behind the driver. All cars must be equipped with a fuel cell and tail tank meeting the requirements of USAC and SFI Specifications 28.2
- B. The minimum capacity of the tank must be 18 U.S. gallons
- C. All tanks must have a minimum of four mounts to the chassis
- D. Fuel tanks may not be mounted to the chassis utilizing any portion of the access plates or the nut plates bonded into the fuel bladder.
- E. The engine must be equipped with a fuel shut-off device located within easy reach of the driver.
- F. It is highly recommended that the fuel tank has an adequate supporting structure under the forward section of the lowest portion of the tank. The structure should follow the contour of the tank and be welded securely attached to the frame of the car on each side.

Bumper/Nerf Bars

- A. The car must be equipped with a rear bumper at all times.
- B. Front and rear bumpers and nerf bars must be constructed of magnetic and or stainless steel (NO TITANIUM) tubing with a minimum O.D. of 7/8 inch and having a minimum wall thickness of .065 inch and a maximum wall thickness of .120 inch. A maximum of three horizontal and/or three vertical tubes are allowed in the construction of the nerf bars.
- C. All cars must have a tubular front bumper extending forward no more than 21 inches from the leading edge of the front axle. Bumpers must be constructed so as not to cause a safety hazard.
- D. The right nerf bar cannot extend beyond the outside of the right rear tire.

Steering and Suspension

- A. Removable steering wheels incorporating a quick release mechanism conforming to SFI Specification 42.1 are mandatory. Pip pin type mechanisms are not allowed.
- B. Welded aluminum or titanium suspension parts are prohibited exception of Jacobs ladder (Watts link)
- C. Drag link straps are highly recommended
- D. A maximum of one cockpit adjustable suspension component will be allowed (including but not limited to shocks, sway bars, springs, roll bars, pan hard bars, ladders and any adjustments that can affect chassis handling). For the avoidance of doubt, only one cockpit adjuster will be allowed in the cockpit for the aforementioned suspension components (i.e. you cannot have a weight jacker and a shock adjuster knob/cable - even if one of them is disconnected, or two roll bar adjuster handles even if one of them is disconnected). A brake bias adjuster does not count as a suspension adjuster.
- E. No independent suspension.

Axles

- A. All front axles must be constructed of SAE 4130 steel or a steel alloy equivalent in structural strength. Titanium front or rear axles are not permitted.

Wheels & Tires

- A. Bleeders are NOT permitted.
- B. The number allowable wheels are restricted to two (2) front wheels and two (2) rear wheels on each car.
- C. The wheel diameter must be 13 inches.
- D. The wheel width is limited to eight (8) inches for both front wheels and the left rear.
- E. The right rear wheel may be a maximum of ten (10) inches in width.
- F. Direct mount or spindle mount wheels are not allowed on the right front.
- G. Splined front hubs/wheels will not be allowed.
- H. The use of full-face brake scoops and/or wheel covers on the inside of wheels is not allowed.
- I. All bolts are mandatory in bead lock and wheel centers.
- J. The Right Rear tire for qualifying/race must be purchased from Hoosier Tire at Lucas Oil Raceway during the event.
- K. Any solvents or chemicals applied to the tire that alter the chemical makeup of the compound or have the effect of altering tire durometer is prohibited.

Throttle

- Throttle toe straps are mandatory. A minimum of two (2) return springs must be connected to the throttle and at least one of these must be connected to the butterfly shaft.
- The throttle pedal must have a wide-open stop.

Brakes

- A. No electronic controlled brake bias adjuster (manual adjustment only)
- B. If at any time during competition it becomes evident that a car is without brakes, the necessary repairs must be completed before car can continue in competition.

Engines

- A. Must be normally aspirated, internal combustion, four cycle, reciprocating piston type, incorporating a maximum of four (4) cylinders. Only one spark plug per cylinder is allowed. Camshaft timing must be fixed. Any device used to alter camshaft timing during engine operation is prohibited. Or...
- B. Production based Honda K24Z7 with unmodified OEM block and cylinder head. Cylinder head modifications are not allowed. Stock bore and stroke shall be retained (+0.010" bore allowed for re-bored blocks). OEM connecting rods shall be used. The connecting

rods may retrofit with aftermarket fasteners. The OEM crankshaft shall be used and may only be modified to facilitate balancing. The OEM counter-balance shaft is optional and may be removed. Aftermarket pistons are allowed. Their installed static compression ratio shall not exceed 12.5:1. Valves shall be OEM. Valve train components shall be OEM but, valve springs, retainers, retainer locks and camshafts are unrestricted. The intake manifold must be an "as cast" HPD Forward Facing Manifold Kit (part #HK010702) and must utilize an unmodified K24Z7 OEM throttle body. The ECU (engine control unit), ignition coils, and engine sensors shall be OEM and as provided with the production motor. The fuel injector nozzles are unrestricted. Only a Hondata Flashpro unit and Flashpro software shall be used to adjust ECU engine parameters. Production based variable cam timing using OEM parts may be used. Only an unmodified reverse-rotation Garrett G25-550 turbocharger may be used. The hot side A/R ratio shall be 0.92 maximum. An approved containment shroud must be installed around turbocharger. An SFI 4.1 ballistic blanket is acceptable. The turbocharger boost pressure shall be regulated using an unmodified Tial 44mm wastegate fitted with a Tial supplied 0.4 bar (5.8 psi) spring. The wastegate shall discharge directly to atmosphere through a 1.75" dia. or larger dump tube. The compressor discharge to throttle body piping shall be fabricated from aluminum or stainless tubing and shall not utilize an intercooler. A vacuum actuated blow off valve is permitted.

Fuel

- A. Pure Methanol is the only approved fuel. (NO ADDITIVES)**

Ignition and Electronic Equipment

- A. All cars must be equipped with ignition switch or emergency shut off located within easy reach of the driver.
- B. Electronics that provide traction control are prohibited.

Safety Equipment

- A. Approved aluminum and composite seats may be used. No fiberglass. Seats must be mounted with a minimum of four bolts 5/16 diameter. Seats must be installed and used in accordance with manufacturer's instructions. Approved full containment seats are recommended.
- B. It is mandatory that all cars have a headrest of high-impact, shock-absorbing material meeting SFI Specification 45.2 behind the driver's head with a minimum thickness of one (1) inch.
- C. Seat belts must meet SFI 16.5 or SFI 16.1, be within two (2) years from date of manufacturer (must have label) Seat belts must be installed and used in accordance with manufacturer's instructions.
- D. Helmets – all participating drivers must wear safety helmets designed specifically for auto racing that meet or exceeds the SA 2005 or SA 2010 Snell Foundation or SFI

Foundation 31.1 Specifications and are labeled as such. Helmets will be subject to inspection at each event by the Technical and/or medical representative.

- E. Uniforms – all drivers must wear fire resistant underwear, socks, shoes, gloves and a one-piece uniform fitted snugly around the neck, wrists and ankles.
- F. Arm Restraints – Arm restraints are mandatory and must be worn at all times during competition.
- G. Roll Cage Nets – Roll cage nets are not required with full containment seats. If a car is not equipped with a full containment seat, the car is required to be fitted with roll cage nets on both the left and right sides of the roll cage. All roll cage nets must conform to SFI Specification 37.1, which specifies a functional quick release opening mechanism. Caution should be used when positioning head restraining nets to be certain that the driver's head cannot get under the net in case of an accident. The bottom of the roll cage net should be as close to the top of the shoulder as possible
- H. An SFI approved head and neck restraint system is highly recommended.
- I. One-way radio/raceceiver mandatory.