

## SPEEDWAY MIDGETS 2024+

### SECTION 3 - CAR SPECIFICATIONS



The entire purpose of the procedures listed here is to not discourage cars from coming to compete but rather to welcome all similar cars and gain the knowledge to put restrictions in place to make it a fair playing field regardless of configuration. At any point HWY 16 LLC may alter these procedures if it is felt there is an advantage (or disadvantage) to any competing car.

**All makes and models of readily available, production-based engines are welcome. These engine rules revolve around the use of the "Baseline" sealed spec Focus and Honda engines. Any other engine package must be submitted to the SPEEDWAY MIDGET committee for review PRIOR TO COMPETING IN ANY EVENT.**

#### 3.1 ENGINES

A declaration sheet will be given to each competitor to list the engine configuration and will be on file and remain confidential. This declaration sheet will be used to set weight/restriction limits if necessary. It will also be used for tech, scaling and/or protest defense. The accuracy of the data on the declaration sheet will be the responsibility of the competitor. At any point, if this configuration changes the competitor is responsible for getting an updated sheet to the Tech Director.

##### 3.1.1 Ford Focus Midget Engine (2002-2004 Ford Focus Zetec 2.0 Engine)

3.1.1.1 Each engine is sealed by the authorized agent and/or the Director of Competition. All cars must have the new style metal engine seals in place to be considered "baseline".

3.1.1.2 The following parts are supplied with the Ford Focus engine package and may not be modified or substituted.

- Flywheel
- Injector Horns
- Clutch Assembly
- Throttle Bodies
- Bell Housing Oiling System (Remote oil filter OK)

3.1.1.5 Cars utilizing power steering must have the authorized heavy-duty accessory drive available.

3.1.1.6 The following parts are supplied with the Ford Focus engine and may be modified and/or substituted.

- Nozzles, Jets and Valve Bodies
- Spark Plugs, Spark Plug Wires
- Ignition settings within the parameters of the spec ignition
- Oil and Oil Filter
- Fuel Pump (Must be a mechanical pump)

### **3.1.2 Honda Midget Engine - HBD K24 "Baseline"**

- 3.1.2.1 Each engine is sealed by the authorized agent and/or the Director of Competition. All cars must have the new style metal engine seals in place to be considered "baseline".
- 3.1.2.2 The following parts are supplied with the Honda Midget engine package and may not be modified or substituted.
- Intake, Fuel Rail, Injectors and Throttle Body assembly
  - Clutch Assembly
  - Steel Flywheel
  - Oil Pan/Pump/Tank
  - Bell Housing
  - Oil Inlet Cup
  - Coolant Adapter(head)
  - Honda ECU – Spec. HPD mapping only
  - Alternator and Pump brackets
  - Restrictor Plate (1 7/16" – 1.4375")
  - Fuel pump and Pressure Regulator (In Tank)
- 3.1.2.3 Sealed ECU and 1 7/16" Restrictor plate with sealed engine = \*Baseline\* Focus equivalent. **Restriction rule may be modified by series officials if deemed necessary for competition purposes.**

### **3.1.3 Other Engine Configurations**

- 3.1.3.1 Any 4-cylinder engine configuration not meeting the above criteria or any above engine that is missing the original seal will be subject to additional Ignition/Weight/Restriction modifications from baseline. This will be at the determination of the Tech committee.
- 3.1.3.2 Stock stroke, production-based engines only.
- 3.1.3.3 Modifications such as porting, knife-edging of crankshafts are strictly prohibited.

## **3.2 FUEL AND FUEL SYSTEMS**

- 3.2.1 Fuel must be 99% methanol or E85 only with no performance enhancing additives.
- 3.2.2 All cars must be equipped with 1/4 turn **fuel shutoff** in driver's compartment within easy reach, fuel shutoff must be clearly marked as to "on" and "off" positions. It is recommended that the valve be accessible from the outside of the car.
- 3.2.3 Fuel **cell vent** must have a check valve.
- 3.2.4 A conventional tail tank, fuel cell and the fuel contained must be carried on the centerline of the chassis and be located behind the driver.
- 3.2.5 The minimum capacity of the tank must be 18 U.S. gallons.
- 3.2.6 All tanks must have a minimum of four mounts to the chassis.
- 3.2.7 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.
- 3.2.8 A protective cover may be used on the top of the tail tank providing it is no more than

9 inches vertical and 12 inches horizontal and not wider than the top (head rest) of the tank.

### **3.3 CAR CONSTRUCTION**

**All cars will be rear wheel drive. Only standard type Midget Car bodies, tail tanks and hoods are allowed.**

#### **3.3.1 Wheelbase & Overall Length/Width**

- 3.3.1.1 The wheelbase must be at least 66 inches and no more than 76 inches.
- 3.3.1.2 The overall width will be limited to a maximum width of 65 inches from the outside left front or rear tire to the outside of right front or rear tire.

#### **3.3.2 Weight**

- 3.3.2.1 Baseline weight = 1140lbs. All cars must meet minimum weight with the driver. Minimum weight for any other configuration will be determined by the declaration sheet. Any ballast used must be securely bolted within the confines of the frame tubes.
- 3.3.2.2 Weight must be mounted in an area between bottom frame rails, front, and rear axles and no higher than mid rails at cockpit.
- 3.3.2.3 NO BALLAST/WEIGHT IN NERFS, BUMPERS, FRONT AXLE.
- 3.3.2.4 All ballast must be painted white and clearly marked with the car number.

#### **3.3.3 Off-Set**

- 3.3.3.1 The maximum rear wheel offset, from center, is three inches (six inches overall) measured from the inside bead seat to the centerline of the rear end center section.
- 3.3.3.2 The outside of 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)

**3.3.4 Weight Jackers** - Driver-adjustable suspension parts and/or weight jackers will not be allowed inside or outside of the cockpit.

#### **3.3.5 Nose Assembly**

- 3.3.5.1 The front part of the body, known as the nose assembly, shall not be wider than the parallel lines of the body, may not exceed the width of the frame.
- 3.3.5.2 The nose assembly may not extend forward beyond the confines of the front bumper.

#### **3.3.6 Chassis Centerline**

- 3.3.6.1 Engines must be mounted on the centerline of the chassis and the crankshaft must be parallel to the bottom plane of the chassis.
- 3.3.6.2 Engine height is limited to 5/8 inch (.625) from the flat on the bottom of the bellhousing to the bottom of the engine mounting plate.
- 3.3.6.3 Engine inclination must be thirty degrees from vertical as measured from the vertical centerline of the cylinder bores.
- 3.3.6.4 The driver shall be seated directly behind the engine. Drivers head can be no more than one (1) inch off center line of roll cage, measured at center line of seat to top of driver's helmet when seated in an upright position.

#### **3.3.7 Driveline**

- 3.3.7.1 Only torque tube type drivelines, with only one u-joint.
- 3.3.7.2 Torque tube must be one solid piece. Hoop or strap mandatory.

- 3.3.7.3 Driveline containment system utilizing steel shield bolted to engine plate or containment blanket to cover torque ball and u-joint is highly recommended.
- 3.3.8 Radius Rods** - Radius rods may not be attached in the driver's compartment.
- 3.3.9 Engine Cowling** - 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.
- 3.3.10 Floorboards/Under pan** – Only steel, aluminum, or carbon fiber driver floor (belly) pan are permitted (the driver floor pan must support driver weight when stood on).
- **Under-Pan Specifications** - Under-pans may not extend rearward past the leading edge of the rear axle. Under-pans or floorboards must be bolted to the chassis in the cockpit area. The under-pan or car bottom must be flat from side to side without any aerodynamic aids. Horizontal panels must not extend below the plane of the under-pan. It is recommended that under-pans be constructed of aluminum or equivalent alloy, extending from the front of the engine to the rear engine plate. It is recommended that a fireproof absorbent pad be used under the engine.
- 3.3.11 Car Body Design**
- 3.3.11.1 A forward facing scoop, or ducting, supplying "forced air induction" to the injection inlets is not permitted.
- 3.3.11.2 Side panels covering the sides of the engine may not extend vertically any higher than any part of the hood covering the engine bay behind the front engine mount. A maximum overlap of two inches is allowed for proper fastening.
- 3.3.11.3 Side panels that include exit ducts may not extend more than 5 inches from the frame rails and may not extend past the front engine plate. These ducts must start behind the front axle.
- 3.3.11.4 Right side cockpit body panels may be a maximum of thirty-six (36) inches high as measured from the bottom frame tube at rear motor plate and projected rearward twenty-three (23) inches.
- 3.3.11.5 Right side cockpit opening must have a minimum opening of eight (8) inches vertical and twenty-three (23) inches horizontal.
- 3.3.11.6 Left side cockpit body panels may be a maximum of twenty-five (25) inches high as measured from the bottom frame tube at the motor plate and projected rearward twenty-three (23) inches.
- 3.3.11.7 Side visors on roll cage (body panel) will be allowed, must maintain 8" vertical and 23" horizontal opening on right side. The left side visor can be no larger than the right.
- 3.3.11.8 Sail panel may extend rearward to triangular bar at back of roll cage, sail panels may not extend forward past a cross plane established by seat back.
- 3.3.11.9 No paneling can extend past edge of frame rails more than thickness of material.
- 3.3.11.10 One (1") inch turnout allowed on all body and sail panel edges. (except sun visor and nerf bar panel)
- 3.3.11.11 Sun visors must not extend forward more than seven (7) inches from the front of the forward most edge of the roll cage/halo tube and may not be wider than the width of the cage. Sun visors must be flat on both sides.
- 3.3.11.12 Airfoils, wings, spoilers or other aerodynamic appendages will not be permitted.

3.3.11.13 Except for suspension components, induction and/or exhaust systems and nerf bars, no accessory or component of the car may extend more than 6 inches from the main frame tubes. Cylindrical oil tanks mounted outside the frame, behind the engine must be mounted as close to the frame as practical.

3.3.11.14 No water or oil coolers are to be placed above or beside the cockpit opening.

### **3.3.12 Roll Cage**

3.3.12.1 All cars must have a roll cage, which 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.

3.3.12.2 The roll cage must be adequately braced fore and aft, and side to side, to secure it in an upright position in case of rollover. The roll cage should extend four inches above the drivers helmet when he/she is seated in the driving position.

3.3.12.3 All roll cages must be constructed of SAE 4130 seamless tubing with a minimum O.D. 1 3/8" and minimum wall thickness of .095. The roll cage must be gusseted in all four corners. For all new construction, gussets must be tubular and attached a minimum of 2 inches from the centerline of the angle being gusseted. Material must be a minimum of 11/16" O.D. x .095 wall thickness or 7/8" O.D. x .065 wall thickness.

### **3.3.13 Nerf-Bars**

3.3.13.1 All cars must be equipped with rear wheel nerf-bars. The right rear nerf-bar cannot extend beyond the outside edge of the tire.

3.3.13.2 Nerf bars, front and rear bumpers must be constructed from SAE 4130 alloy tubing or equivalent having an O.D. of 7/8 inch, 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 nerf-bars. No ballast is allowed in the nerf-bar tubing.

3.3.13.3 Except for the exhaust system, no components or accessories may be attached to the nerf bar assembly.

**3.3.14 Rear Bumper** -All cars must always have an adequate rear bumper.

**3.3.15 Front Bumper** - All cars must be equipped with a front bumper.

3.3.15.1 Front bumper may be no more than 21" from the leading edge of the front axle.

## **3.4 STEERING AND SUSPENSION**

3.4.1.1 **Steering Wheel** -The steering wheel hub must be padded with a resilient material or not less than three-fourths (3/4) inch thickness. Removable steering wheels incorporating a quick release mechanism are mandatory. Pip pin type mechanisms are not allowed.

3.4.1.2 Welded aluminum or titanium suspension parts are prohibited with the exception of the Jacobs ladder (Watts link)

3.4.1.3 No electronic weight, shock, sway bar or any suspension item adjuster.

3.4.1.4 No independent suspension.

### **3.4.2 Shock Absorbers**

3.4.2.1 Shock absorbers must have all valve mechanisms housed in a single cylindrical unit.

3.4.2.2 Shock absorbers may have two external adjustments (compression and rebound) and may be adjusted remotely only by manual methods.

3.4.2.3 Shock absorbers cannot operate or be adjusted electrically. Cannot be adjusted

from cockpit.

### **3.5 IGNITION AND ELECTRONICS**

- 3.5.1.1 All cars must be equipped with an ignition switch or emergency shut-off located within easy reach of the driver, and clearly marked on and off.
- 3.5.1.2 Electronically controlled fuel injection systems are not permitted (Baseline Honda excluded.)
- 3.5.1.3 The only ignition controllers and coils allowed are the following:
  - Electromotive HPX – Ignition (purple)
  - Electromotive XDI – Ignition (silver)
  - Electromotive coils supplied with above ignitions
  - Motorcraft #988F-12029-AC coil pack or any stock Ford Focus replacement coils for 2.0 liter Ford Zetec engine
  - Performance Electronics PE3-IG2 as a replacement for the above.
  - Honda Baseline or approved ignition
- 3.5.1.4 Electronics that provide traction control are prohibited. All electronic components may be inspected, sealed, or confiscated at any time.
- 3.5.1.5 The use of electronic logic processors to control any function of the race car, and/or any system for gathering continuous data from any function of the race car is strictly prohibited.
- 3.5.1.6 Tachometer only item approved for use to collect/record data.
- 3.5.1.7 Electronic ignition system may only be used to control; coil(s), trigger(s), spark curve(s) and RPM limits.

### **3.6 AXLES**

- 3.6.1.1 The car's axles connecting the wheels must be of one-piece tubular construction without the capability of camber or independent caster adjustment to the wheel assembly. Any other construction will be considered as independent suspension.
- 3.6.1.2 Offset kingpin bushings are allowed.
- 3.6.1.3 Any other construction will be considered as independent suspension.
- 3.6.1.4 All front axles must be constructed of SAE 4130 steel or a steel alloy equivalent in structural strength.
- 3.6.1.5 Titanium front or rear axles are not permitted.
- 3.6.1.6 7" Rear Ends are not allowed.

### **3.7 THROTTLE**

- 3.7.1.1 Throttle toe straps are mandatory.
- 3.7.1.2 A minimum of three (3) return springs must be connected to the throttle and at least one of these must be connected to the butterfly shaft.
- 3.7.1.3 If the throttle actuating mechanism is the cable type, the cable must be encased.

### **3.8 BRAKES**

- 3.8.1 Brake discs are limited to being manufactured of steel, ferrous, aluminum alloy or titanium. Carbon and/or carbon composite, brake discs are not allowed.
- 3.8.2 **Master Cylinder and Brake Lines** - Master cylinders not fixed to the frame must have flexible lines. Copper tubing is not allowed anywhere in the braking system.
- 3.8.3 **Loss of Brake During an Event** - If at any time during a competition it becomes evident that a car is without brakes the necessary repair must be completed before the car can continue in the competition.
- 3.8.4 No electronic controlled brake bias adjuster allowed, manual adjustment only.

### **3.9 STARTER AND CLUTCH**

3.9.1 A starter and a de-clutching device are provided with the Ford Focus & HBD K24 engine packages and must be operational.

3.9.2 The car must have a neutral position in the final drive.

3.9.3 All cars must carry an on-board battery capable of starting the engine.

3.9.4 All cars must be able to start under their own power.

**3.10 Muffler** - A muffling device will be required if needed to meet local speedway DBA requirements.

### **3.11 MISCELLANEOUS**

3.11.1 **Radios** - Two-way radios are not allowed. One way race official communication is mandatory.

3.11.2 **Violations** - Proof of any willful violation of Section III-Car Specifications will result in loss of points and money for that program.

3.11.3 **Non-Conformance** - Non-conforming cars may be allowed to compete on a race-by-race basis at the discretion of the Technical Committee with approval of the Race Director. However, if correctable at the track with equipment on hand before the event, the vehicle will be made to conform to rules according to Car Specifications, Section III of this Rule Book.

### **3.12 TIRE AND WHEEL SPECIFICATIONS**

#### **3.12.1 Wheels**

3.12.1..1 The number of allowable wheels is restricted to two (2) front wheels and two (2) rear wheels on each car.

3.12.1..2 The rim diameter must be 13 inches.

3.12.1..3 The rim width is limited to eight (8) inches for both front wheels and the left rear.

3.12.1..4 The right rear wheel may be a maximum of ten (10) inches in rim width.

3.12.1..5 Direct mount or spindle mount wheels are not allowed on the right front.

3.12.1..6 Splined front hubs/wheels will not be allowed.

3.12.1..7 The use of full-face brake scoops and/or wheel covers on the inside of wheels is not allowed.

3.12.1..8 All bolts are mandatory in bead lock and wheel centers.

3.12.1..9 Bleeders are not approved for use.

3.12.2 **TIRES** - No altering or soaking of tires is allowed.

3.12.2..1 Three Tires will be marked prior to qualifying. Marked tires must be on the car during all races (trophy dash excluded).

3.12.2..2 Tires will be Hoosier Racing Tire. The following tires are approved OR any made available by Meridian or Magic Valley Speedway.

- LF- Hoosier #13110 7.0/20.5-13 MG5, Hoosier DX2 or Hoosier 700
- RF- Hoosier #13110 7.0/20.5-13 DX2, Hoosier 700 or Hoosier R60A
- LR- Hoosier #13195 10.0/22.0-13 branded USAC SPEC or Hoosier MG5
- RR- Hoosier #13210 10.0/23.5-13 branded USAC SPEC or Hoosier 760