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## 2017 USAC Dirt Midget Association Rules

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### Section 100: Dirt Midget Association

The intent of the USAC Dirt Midget Association is to provide a safe, affordable, and competitive form of racing. All rules, unless otherwise stated, will be considered guidelines. The rulebook is based off of the USAC Technical Specifications.

### Section 101: Design and Construction

All phases of design and construction are subject to the approval of the USAC Dirt Midget Association. The USAC Dirt Midget Association may exclude any car, design or construction, which is deemed unsafe or not meeting the specifications, the spirit and/or the intentions of the rules contained herein.

### Section 102: Dimensions and Weight

A. The wheelbase must be at least 66 inches and no more than 76 inches.

B. The overall width will be a maximum of 65 inches.

C. All cars must weigh a minimum of 1,175 lbs., including water, oil, fuel, and the driver with his personal equipment. At the discretion of the track and/or series, cars may be weighed prior to and/or following any event. Details for scaling procedure will be announced in the drivers meeting. 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, between the front axle and motor plate, and no higher than mid rails at cockpit. All weight must be mounted within confines of frame. No weight may be added during the yellow or red flag. No ballast or weight in nerfs, bumpers, or front axle.

### **Section 103: Car Construction / Body**

- A. All cars shall be rear drive only. Engine offset is limited to a maximum of one (1) inch, two (2) inches overall, from the chassis centerline as measured at the centerline of the crankshaft.
- B. Engines must be mounted on the centerline of the chassis and the crankshaft must be parallel to the bottom plane of the chassis.
- C. Only torque tube type drivelines, utilizing only one u-joint, will be allowed and the torque tube must be one solid piece. A torque tube hoop or strap is mandatory.
- D. Radius rods may not be attached within the confines of the cockpit.
- E. 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.
- F. Only standard type midget car bodies, tail tanks, and hoods will be permitted.
- G. The front part of the body, known as the nose assembly, shall not be wider than the 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.
- H. The top surface of the nose may not be dished or concave more than one (1) inch. This dimension will be measured from a straight edge lying on the longitudinal axis of the car. This one (1) inch dimension includes any flairs or wicker bills. Vertical spill plates are not allowed. The positioning of the nose may not extend above or below the down tube more than two (2) inches. Any air deflector that is used to direct air for cooling shall be completely inside the confines of the nose and the solid sides of the nose shall cover this deflector. This deflector will not be movable.
- I. 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.
- J. A forward facing scoop, or ducting, supplying "forced air induction" to the injection inlets is not permitted.
- K. 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 (2) inches is allowed for proper fastening.
- L. Side panels that include exit ducts may not extend more than five (5) inches from the frame rails, and may not extend past the front engine plate. These ducts must start behind the front axle.
- M. 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. Right side cockpit opening must have a minimum opening of eight (8) inches vertical and twenty-three (23) inches horizontal.
- N. 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.

- O. Side visors on roll cage (body panel) will be allowed; they will be limited to eight (8) inches tall. The minimum right side opening must be twenty-five (25) inches horizontal and eight (8) inches vertical at any point. Left side visor may not be larger than right side visor. Visors that restrict driver's vision at the discretion of USAC DMA officials will not be permitted.
- P. 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.
- Q. All paneling must not extend past edge of frame rails more than thickness of material.
- R. One (1) inch turnout allowed on all body and sail panel edges (Except sun visor and nerf bar panel).
- S. Side visors on roll cage will be allowed, must maintain 8" vertical and 23" horizontal opening on right side. The left side visor can be no larger than right.
- T. Only steel or aluminum driver floor (belly) pan are permitted (the driver floor pan must support driver weight when stood on). The 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 under pan or fuel tank.
- U. Sun visors are limited to seven (7) inches in length from top to bottom and may not be wider than the width of the cage; sun visors must be flat on both sides. For fan recognition, all teams are encouraged to place the drivers' name on their visors in large letters.
- V. Airfoils, wings, spoilers or other aerodynamic appendages will not be permitted.
- W. With the exception of 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.
- X. Rear view mirrors are not permitted.
- Y. No titanium or carbon fiber.

#### **Section 104: 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, twenty (20) inches in diameter, extending through the top cockpit opening directly above the seat. The roll cage should extend four (4) inches above the driver's helmet when seated in the 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 besides the cockpit opening.

## **Section 105: Fuel System**

- A. A conventional tail tank, fuel cell and the fuel contained within, 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. All tanks must have a minimum of four (4) mounts to the chassis.
- C. 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.
- D. A protective cover may be used on the top of the tail tank providing it is no more than nine (9) inches in height, twelve (12) inches in length and not wider than the top (head rest) of the tank.
- E. The engine must be equipped with a fuel shut-off device located within easy reach of the driver and a second fuel shut-off device located close to the fuel tank on the right rear.

## **Section 106: Revolving Parts Protection**

- A. Highly recommended driveline containment system utilizing steel shield bolted to engine plate or containment blanket to cover torque ball and u-joint.

## **Section 107: Bumpers**

- A. The car must be equipped with a rear bumper at all times.
- B. Front and rear bumpers must be constructed of magnetic and or stainless steel 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.
- C. All cars must have a tubular front bumper with a minimum O.D. of 3/4 inch extending forward not more than twenty-one (21) inches from the leading edge of the front axle. Bumpers must be constructed so as not to cause a safety hazard.

## **Section 108: Nerfing Bars**

- A. Nerf bars cannot extend beyond edge of tire at any time.
- B. Nerf bars must be constructed of magnetic and or stainless steel tubing having a maximum O.D. of one inch (1") and a minimum O.D. of 7/8 inch. Wall thickness is limited to a minimum of .065 inch and a maximum of .120 inch. A maximum of three (3) horizontal and/or three (3) vertical tubes are allowed in the construction of nerf bars.
- C. With the exception of the exhaust system, no components or accessories may be attached to the nerf bar assembly.

## **Section 109: Steering & 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 suspension parts are prohibited with exception of jacobs ladder (watts link).
- C. Drag link straps mandatory.

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

E. No independent suspension.

F. Shock absorbers must have all valve mechanisms housed in a single cylindrical unit. All shocks will be non-adjustable with a maximum manufacture suggested retail price of \$225.00 with exception of the left rear shock, which may be a single adjustable shock with a maximum manufacture suggested retail price of \$350.00. If an adjustable shock is used on the left rear, it must be adjusted remotely only by manual methods, cannot operate or be adjusted electrically, and cannot be adjusted from cockpit.

G. External adjustments only on all suspension, coil over, torsion bar, sway bars, shocks, radius rods, weight jacking. No Cockpit adjustable devices for any suspension item.

### **Section 110: Axles**

A. The car's axles connecting the wheels must be of one-piece tubular construction without the capability of camber or independent castor adjustment to the wheel assembly. Offset kingpin bushings are allowed.

B. Any other construction will be considered as independent suspension.

C. All front axles must be constructed of SAE 4130 steel or a steel alloy equivalent in structural strength.

D. 7 inch Rear Ends will not be allowed.

### **Section 111: Wheels**

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

B. The rim diameter must be thirteen (13) inches.

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

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

E. It is recommended that a tire bead locking device be used on the outer bead seat of the right rear tire and wheel assembly.

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

G. All bolts are mandatory in bead lock and wheel centers.

### **Section 112: Tires**

A. Any device(s) used for warming the tires prior to competition is prohibited.

B. 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.

C. Siping and/or grooving permitted.

D. The use of any device/s to alter the air pressure of the drive tires while the car is in motion is prohibited.

E. All wheel/tire axle locking nuts will be held in place with a cotter pin or similar to secure the wheel nut from backing off.

F. All right rear tires must be the DMA branded and approved Hoosier tire. All teams must be on this tire by the third race of 2016.

### **Section 113: Throttle**

A. Throttle toe straps are mandatory. It is recommended that three (3) return springs be connected to the throttle and at least one of these must be connected to the butterfly shaft.

B. If the throttle actuating mechanism is the cable type, the cable must be encased.

C. The throttle pedal must have a wide-open pedal stop.

D. It is recommended that all cars utilize an emergency shut off switch in conjunction with the throttle return strap.

### **Section 114: Brakes**

A. Cars must be equipped with an effective braking system.

B. Master cylinders not fixed to the frame must have flexible lines.

C. Brake discs are limited to being manufactured of steel, ferrous, or aluminum alloy.

D. If at any time during competition it becomes evident that a car is without brakes, the necessary repairs must be completed before the car can continue in competition.

E. No electronic controlled brake bias adjuster (manual adjustment only).

### **Section 115: Engine, Starter & Clutch**

A. All cars must be self-starting.

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

C. All cars must carry an on-board battery capable for starting the engine.

D. The starter and a de-clutching device are provided with the Ford Focus engine package and must be operational.

### **Section 116: Engine Mounting Plate**

An effective firewall constructed of a proper material must be installed between the engine compartment and the cockpit. It must be as leak proof as practical.

### **Section 117: Engines**

The current approved engines for competition are the General Motors 2.3 and 2.4 “Quad 4” engines, and the USAC Legal Ford Focus. The General Motors ECOTEC can be run on a case by case basis with approval for competition from the series. The GM Eco Tech cannot have variable timing control.

The USAC Dirt Midget Association must approve all other engines and they will be on a trial basis until approved for competition. Any new engines must fit the following requirements:

- Must be a production vehicle engine
- Must make no more than 180 horsepower in stock form
- Must be no more than 2.4 liters
- Any modifications from stock form must be approved by the USAC Dirt Midget Association
- Engines to be approved must be accompanied with an engine build sheet listing the parts that were used

#### **Quad 4 Engine Rules**

The only engines covered under the following rules are the General Motors 2.3 and 2.4 “Quad 4” engines.

Only modifications or additions specifically covered by these regulations are permitted. All engine components not covered or addressed in these regulations shall remain completely standard, unmodified and functional.

The official Oldsmobile Shop Manual will be used to provide clarification of engine specifications and preparation of items not directly addressed by existing rules. In the event of a discrepancy between the specification and the Oldsmobile Shop Manual, these specifications will take precedence.

A. Cylinder Head Ports: “Port work”, removal or addition of material, or reshaping of intake or exhaust ports is prohibited.

B. Intake Manifold: OEM Manifold can be modified for frame/steering clearance. All unused vacuum ports will be plugged. A one (1) inch maximum spacer between the intake manifold and the cylinder head is permitted to allow for frame clearance.

E. A hole may be drilled in the injector rail to allow for a pressure gauge to be fitted. Fuel return line, from injector rail to fuel cell must be -6 in size and must not be restricted. Maximum fuel pressure, measured at fuel rail will be forty-eight (48) psi (vacuum source must be removed from fuel pressure with the engine running during test).

F. Electronic Control: Only the specified Electronic Control Module (Service # 16156450) will be used. In-line resistor, diodes, or additions of the other electrical components are prohibited.

G. Crankshaft damper: Original damper may be modified or substituted.

H. Crankshaft: Stock 41 lbs. minimum weight.

I. Lubrication System: Will be wet sump type only, utilizing original equipment manufacturers (OEM) oil pump. Use of a remote oil filter is permitted where required. An oil accumulator may be added.

J. Air Cleaners: Any air cleaner may be attached to the throttle body. However, no ram air induction systems, or velocity affecting device may be used.

K. Water pump: OEM or equivalent water pump shall not be modified.

L. Engine Mounting: Engine will be mounted with up to a twenty-five (25) degree layover; crankshaft centerline will be seven (7) inches from the bottom of the lower frame rails.

M. Starting system: An unmodified OEM or equivalent starter operated by the driver and an OEM or equivalent flex plate shall be used. The flex plate must remain stock.

N. Intake manifold rule exception: You may use the plastic 2.4 intake manifold on the 2.3 engine. Skip Matczak has an adaptor plate for this swap.

### **Ford Focus Engine Rules**

The only engine covered under these rules is the Ford Focus as described and built by USAC or USAC approved engine builder.

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

- Air Cleaner
- Flywheel
- Injector Horns
- Clutch Assembly
- Throttle Bodies
- Ignition Trigger, Controller, and Coils
- Fuel Pump
- Exhaust Header
- Bell Housing
- Oiling System (Remote oil filter OK)

B. The following parts and only the following parts may be substituted for the Standard Fuel Pump: Waterman Fuel Pump, Waterman in tank fuel pump Cable Drive kit.

C. The following part and only the following part may be substituted for the Standard Air Cleaner: K&N Filters Ford Focus Midget Air Cleaner PN AP-3051.

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

E. 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



F. EFI is allowed when using stock throttle body and intake

G. 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 for 2 liter Zetec engine. (Any above coils may be used on electromotive controllers).

H. Electronic ignition system may only be used to control; coil(s), trigger(s), spark curve(s) and RPM limits.

I. Engine height is limited to 5/8 inch (.625) from the flat on the bottom of the bell housing to the bottom of the engine mounting plate. Engine inclination must be thirty degrees from vertical as measured from the vertical centerline of the cylinder bores.

### **Section 118: Exhaust / Muffler**

A. The exhaust system must exit behind the rear of the motor plate and must deflect away from the driver's compartment.

B. Mufflers are mandatory and must be mounted after the collector. Exhaust decibel level must not exceed 118 db. as measured by USAC DMA or track equipment.

### **Section 119: Fuel / Air**

A. No fuel additives allowed. Ethanol and methanol are approved fuels for the Quad 4.

B. 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.

C. A single mechanical or electric fuel pump will be used. Fuel pump must shut off when engine stops.

### **Section 120: Ignition & Electronic Equipment**

A. 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.

B. Electronics that provide traction control are prohibited.

C. No Electronic controlled data logging.

D. Tachometer is the only item approved for use to collect/record data.

E. An aftermarket computer system may be used but only if the competitor using the system will share the technical data with anyone else who may want to run the same computer.

F. An external crank trigger will be allowed.

### **Section 121: Radios**

One-way radio or Raceceiver mandatory.

## **Section 122: Seat & Seat Belts**

- A. Approved aluminum and composite seats may be used, no fiberglass. Seats must be mounted with minimum of four (4) bolts 5/16 diameter.
- B. It is mandatory that all cars have a headrest of high impact behind the driver's head with a minimum thickness of one (1) inch with shock-absorbing material and meeting SFI Specification 45.2.
- C. Seat belts must meet SFI 16.5 or SFI 16.1, be within two (2) years from date of manufacturer (must have label).
- D. Seat belts and seats must be installed and used in accordance with manufacturer's instructions.

## **Section 123: Safety Equipment**

It shall be the responsibility of each driver to inspect all safety equipment prior to each event with support from the USAC Dirt Midget Association. Any participant not complying in full with all safety requirements in this rulebook will not be permitted to compete.

A. Helmets - All participating drivers must wear safety helmets designed specifically for auto racing that meet or exceeds the SA 2005 or newer Snell Foundation or SFI Foundation 31.1 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.

B. Uniforms - All drivers must wear fire resistant underwear, socks, shoes, gloves and a one-piece uniform fitted snugly around the neck, wrists and ankles. It is recommended that you also wear a fire resistant head sock and/or helmet skirt.

Recommended all above items meet SFI Foundation Specifications 3.2A and 3.3.

C. Arm Restraints - Arm restraints are mandatory and must be worn at all times during competition.

D. Roll Cage Nets - It is mandatory that all cars be fitted with roll cage nets on both the left and right sides of the roll cage for all events. All roll cage nets must conform to SFI Specification 37.1, which specifies a functional quick release opening mechanism. The life of roll cage nets shall not exceed two (2) years. 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 rollcage net should be as close to the top of the shoulder as possible. Mandatory - both nets required; LHS and RHS.

E. Roll cage nets will not be required if an approved full containment seats are utilized.

F. Roll cage padding conforming to SFI specification 45.1 is mandatory, if not utilizing a full containment seat, in all areas surrounding head. Highly recommended with full containment seat.

G. A SFI approved head and neck restraint system is highly recommended.

H. All teams are required to have a fire extinguisher with them in the trailer/pit area should the need arise. All fire extinguishers should meet or exceed the requirements for extinguishing oil or fuel fires.

## **Section 124: Car Numbers**

- A. The USAC Dirt Midget Association will assign all car numbers. Numbers 1 through 99 will be assigned.
- B. Every car must carry its assigned number prominently displayed on the nose and on each side of the tail.
- C. After a number is assigned to a particular car and entrant, it will remain with the entrant until the end of the racing season.
- D. There are to be no duplicate or duplication of numbers.
- D. Should two (2) or more cars with the same number be entered in a competition, it will be require that one (1) or more cars be temporarily renumbered. If the car owners cannot agree as to which car will be renumbered, then the USAC Dirt Midget Association will make that decision.
- E. The tail numbers should be at least 22” tall by 12” wide and easily readable from a distance.

## **Section 125: Equalization of Equipment**

As the USAC Dirt Midgets Associations attempts to equalize the equipment, we reserve the right to adjust the rules with at least one (1) full programs notice. When the rules have been shown to favor a particular interpretation, the series will work to adjust the rules in as inexpensive way as possible, within a reasonable amount of time.

## **Section 126: Transponders**

All teams will have a scoring transponder mounted on the racecar. The location will be on the right rear down tube behind the rear axle. If a transponder is not in place then you will not be scored.

Track owned transponder process:

- A. Once the team has parked in the pit area, a representative from the team (car owner, driver or team member) will report to the pit office and secure a transponder from the track officials.
- B. The team representative will advise the track official as to who is driving the racecar and what the car number is.
- C. Once the race is over, all transponders must be returned to the track pit office.

Team owned transponder process:

- A. Once the team has parked in the pit area, a representative from the team (car owner, driver or team member) will report to the pit office.
- B. The team representative will advise the track official as to who is driving the racecar and what the car number is.

## **Section 127: Actions Detrimental to the USAC Dirt Midget Association**

- A. Any driver, team, or crew member(s) behavior that may be deemed as detrimental to the other competitors, track officials, or fan will not be tolerated.

B. Actions deemed detrimental will result in penalties taken by the USAC Dirt Midget Association and/or track officials against the party or parties involved.

C. Penalties could include monetary fine of up to \$250.00, and/or suspension from the series, and/or suspension for a set amount of races as decided by the series, and/or penalties as deemed necessary by the track officials.

**Section 128 Driver Age Requirements:**

A. The minimum age to compete in the series is 16.

**Section 129 USAC Membership and Insurance Requirements:**

A. All drivers must have the USAC membership and insurance in order to compete in the series.

B. If no USAC membership and insurance then you can only compete with the series two (2) times.

**Section 130 Race Procedures**

A. If a competitor wins three (3) feature races in a single season, then that competitor will start each feature race from the last starting position. This rule only applies in the race season that the competitor has won three (3) races.

B. A rookie will not be allowed to start from the pole position and will be placed in the appropriate starting position as determined by track and series officials. This rule applies until the rookie has demonstrated to the track and/or series officials that they are able to start on the pole position.

C. If a competitor spins three (3) times then they will be blacked flag and removed from the race.