



DWARF CARS 2017

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Preface

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules will govern the condition of all events and by participating in these events all members are deemed to have complied with these rules. No expressed or implied warranty of safety will result from the publication of or compliance with these rules and/or regulations. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to participants, spectators or others.

VRA reserves the right to amend by addition or deletion any rule by notifying members, in writing or posting at the track office same changes, at least seven days prior to implementation of said addition or deletion. Rules involving safety may be imposed immediately.

Rules will be imposed as written. It is your responsibility to be familiar with all rules. Official's decision shall be final in all cases.

1.BODY TYPES

- 1.1. There will be no special class of cars; all oval track Dwarf Cars run under the same competition.
- 1.2. Car body will be of 1928 to 1948 vintage coupe, sedan, sedan delivery, wagon, or pick-up truck. Must have been a production car. All frames and roll cages, including firewall, doors, and rear section framing, must be fabricated as a single frame unit, already forming the actual contour and dimensions of the finished body. Sheet metal outside skins must be secured with Dzus type fasteners, or permanently attached by rivets or spot weld no more than 12" between each attachment point located at the perimeter of each panel where it meets the roll cage, firewall, or trunk framing. Skin must not bulge or gap open between attachment points. Any gap or hole exceeding 3/8" must be covered with sheet metal, a plug, or permanent type sealant.
- 1.3. No open top cars such as roadsters or convertibles. No convertible bodies with hard tops or "T" tops. The cars must be replicas of factory stock bodies. They must have full roof of metal construction. All roll cage bracing must be intact, permanently welded. Enter and exit by door only. Doors must be functional and driver must be able to exit from either door safely.
- 1.4. No foreign makes. Only closed top, meaning hardtop, American passenger cars or trucks.

- 1.5. All cars will be of metal construction. No fiberglass, plastic, nylon etc. No aluminum for frame or roll cage. Outer skin shall be a minimum of 26 gauge steel or .040 aluminum. Firewall between engine and manned compartment is mandatory. There must be a complete firewall, front and rear separating engine and trunk compartments from manned compartments.
- 1.6. No fenders of any type. No structure of any type to simulate or act as a fender. Doors and windows must remain in stock appearance and location. Body must be skinned to match its type. (i.e. 3-window coupe must be skinned as a 3 window, not as a 5-window). Right and left doors must be operational and allow passage. Windows and door must be near scale size, shape and location. All doors must be hinged as to open.
- 1.7. Each car will have grill shell and simulated original grill matching it's body style or a simulated radiator and vertical loop mounting bar mounted in near stock location and a hood to match radiator size and body style as not to distract from overall appearance. No grill is required if simulated radiator is used. Functional radiator may be mounted in the trunk area.
- 1.8. Engine compartment must conform to scale of body length and must match contour of body where it meets the right and left side of body panels. Firewall or cowl outer skin must be stock appearance in size and shape; only inner panel may be altered.
- 1.9. Any hood may be notched, bent or cut in such a manner as not to distract from the stock appearance or on car using a radiator/simulated radiator, hoods may not be altered so as to detract from neat appearance.
- 1.10. Bubble height (ie: carbs, air cleaners, hood scoop) will be measured from a straight line projected out from the rear most portion of the hood. The bubble may not exceed 4" above that line and at no place on the hood may the bubble exceed 5". A tolerance of ½" will apply. There will be no obstruction of the drivers view.
- 1.11. At the beginning of event, all cars must have all body parts intact. No car may continue to race without all body panels intact.
- 1.12. No airfoils, wings or streamlining of body.

2. DIMENSIONS

- 2.1. Maximum car height, 52", top to ground.
- 2.2. Maximum body width, 38".
- 2.3. 48" maximum body height from bottom of frame rail to top of car. There will be no sectioning of existing chassis.
- 2.4. The slope of the roof may not exceed 3 1/2" measured from the highest point in the rear just before the main cage starts to turn downward, to the lowest point just before the main cage starts to turn downward. The slope on the front hood should remain in proportion to the rest of the body.

3. TIRES and WHEELS

- 3.1 Steel wheels only, 13" WHEEL ONLY, 7" maximum width.
- 3.2 Hoosier Tires shall be the spec tire. **Hoosier HTW stamped sizes: 23/7.0-,P205, P215,P235-60D13, 50 durometer. The discontinued RC3 and Medium tires will still be allowed until they run out.
- 3.3 No softening compounds will be allowed.
- 3.4 Offset wheels are OK.
- 3.5 Bead lock allowed on REAR only.

4. WHEEL BASE

- 4.1. Wheel base 73" (1/2" tolerance allowed) measured at the center of the spindle to the center of rear end housing.
- 4.2. Outside tire width not to exceed 61" (must be able to pass through 61" opening).

5. FUEL

- 5.1. Pump gas, aviation fuel, racing gas.
- 5.2. No nitrous oxide, no alcohol, **this includes E85. No nitro or propylene oxide type additives.**

6. FUEL CELL

- 6.1. Fuel cell must be grounded and not to exceed 5 gallons.
- 6.2. Tank must be vented so as not leak fuel in any position, non leaking cap.

- 6.3. Fuel cell must be mounted between frame rails, in trunk.
- 6.4. Fuel cell must be mounted with metal straps only.
- 6.5. Must have complete fire wall between driver and fuel cell.

7. ENGINES: CARBURATED OR FUEL INJECTED

- 7.1. Motorcycle engines only. No snowmobile or other special application engines. 1250cc is the maximum allowable displacement. Any questions about approved motors, please contact WSDCA officials.
- 7.2. 1250 cc maximum, 4 cycle, 4 cylinders maximum.
- 7.3. Must be a regular production (minimum of 500 units per year).
- 7.4. Must have working starter, clutch and transmission in place.
- 7.5. Charging system optional.
- 7.6. Carbureted motors must be naturally aspirated.
- 7.7. Engine must be cooled by original intent. May use extra fans or oil cooler. No glycol-based coolant is permitted.
- 7.8. Exhaust and headers must be installed so as not to detract from stock appearing hood, with the exception of side panels.
- 7.9. Mufflers are mandatory and must meet current track specifications.
- 7.10. No auxiliary starter.
- 7.11. FUEL INJECTED engines (2017) Engines must comply with the Western States Requirements).
 - A. The engines listed below are the only engines approved for competition with VRA.
 - 1. **Honda:**
 - 1999-2003 CBR1100XX
 - 2000-2001 CBR929RR
 - 2000-2006 RVT 1000R
 - 2002-2003 CBR900F
 - 2002-2007 CB900F
 - 2004-2010 CBR1000RR
 - 2. **Kawasaki:**
 - 2000-2005 ZX12R
 - 2003-2009 X1000
 - 2004-2010 ZX10R
 - 3. **Suzuki:**
 - 1997-2008 TL, SV, DL 1000
 - 2001-2010 GSXR 1000
 - 4. **Yamaha:**
 - 2002-2012 R1
 - 2006-2009 FZ1
 - 5. **Newly approved motors: (NO modifications allowed. Must run stock ignition box to match the year of the motor) The newly approved motors are required to be 100% stock, no modifications including electronics.**
 - Suzuki:**
 - GSXR 1000, 2009-2013
 - Yamaha:**
 - R1 2009-2013
 - BMW:**
 - 1000 RR 2010-2013 s1000
 - Kawasaki:**
 - Zx10 2011-2013
 - Honda:**
 - CBR 1000 2011-2013

- B. OEM fuel injection only. Fuel injection may not be modified in any way from its original OEM specifications. OEM ignition systems only. No aftermarket fuel injection allowed. After market filters are approved with any aftermarket air filter assembly with any velocity stack.
- C. Aftermarket boxes that adjust Fuel Curve, Timing and RPM, that are approved, are the only boxes that are allowed. The boxes that are approved are the Dynojet 2,3,3R and 5, The Dobek 2 brothers and the Bazzaz ZFi and the new Dobek EJK. The Dyno jet 3 with the USB is allowed with no external modules plugged in.
- D. Any car that is discovered to have any other electronic devices other than those outlined above, or who has made any modifications to these allowed boxes or any part of the fuel injection, may be disqualified. Any boxes of this type, other than those specified, will only be approved at the annual meeting.
- E. Timing retard eliminators and gear position indicators are allowed.
- F. No electronic devices will be allowed in the cockpit area or adjustable by the driver. No other electronic devices that plug into engine or wiring harness are allowed. Final determination will be made by VRA officials.
- G. Engines must have stock bore and stroke with no more than 1 mil. over bore over the original factory specifications for the engine manufacturer. OEM bore and stroke only. (The 1 mil. over bore is intended for cleanup only, not aftermarket pistons.) Engines will be checked with a bore and stroke gauge and must not exceed manufacturers original cc's for that motor.
- H. Unmodified OEM cylinder heads only.
- I. Cylinder cranking compression minimum 100 psi, maximum 220 psi per cylinder average of 4 cylinders, No variance, After 10 compression revolutions of cranking, VRA Officials may check at any time.
- J. Cam-shafts must have stock lift and duration, adjustable cam sprockets are allowed.

8. DRIVE TRAIN

- 8.1. Must use steel drive shaft from motor to automotive rear end. Drive shaft must be painted white.
- 8.2. Drive shaft must have a minimum of 3 360 degree loops. One near each end, one in center. Must be fabricated from a minimum 3/16" x 1-1/2" steel bar, or 1.00" x .065 steel tubing.
- 8.3. Quick change rear ends are permitted.

9. FRAME & ROLL CAGE

- 9.1 Roll cage must be constructed of a minimum 1.25" OD & 1.5" OD x .065 wall tubing in the main roll cage. Secondary members will be a minimum of 1" OD x .065. wall.
- 9.2 All lower frame side rails will be a minimum of 1" x 2" rectangular tubing with a minimum of .120" wall (lower frame rails on right and left side, running from extreme front to extreme rear: does not include cross member). No round, oval or square tubing in lower side frame rail.
- 9.3 There will be a minimum of three (3) cross members in the main compartment; one at the forward end, one in the center and one at the rear. The cross members will be made of steel only, with a minimum wall thickness of .120". Cross members may be round, oval, square or angle.
- 9.4 The right and left doors must have a minimum of two bars with a minimum of .065" wall x 1" OD tubing welded through the mid-section of the door frame. The bar supporting the drive shaft tunnel may be included as one of these, only on drive shaft side. Drive shaft side of car must have one bar, minimum of .065" wall x 1" tubing, welded inside to front and rear door post positioned horizontally.
- 9.5 All cars will have a permanent structure support bar, located behind the seat at approximately 23" above the frame rail, extending from side to side. The bottom of the seat will not be more than 63" back, measured from the upper ball joint. The seat may be tilted back for added driver head clearance; however, no portion of the seat may be back more than 68" as measured above. A seat pan must be welded in place, using a minimum of 14 gauge steel.
- 9.6 Approved driver protected roll cage padding required.

10. ENGINE LOCATION and SET BACK

- 10.1 All engines must be front mounted, in stock location for model of car.
- 10.2 Engines may not be extended more than 12" to either side of car body center line.

- 10.3 Engine set back is the square of the motor (rear fins) may not extend more than 17" from center of front axle. No part of the engine or transmission may be more than 21" set back, as measures above.

11. SUSPENSION- STEERING

- 11.1 Front suspension must not exceed 25" measured from the ground to the highest point of any front suspension, or extend rearward past the most forward panel of the fire wall, except under frame rail, where it cannot be seen from either side.
- 11.2 Steering components must have safety fasteners, such as cotter pin or self locking nuts.
- 11.3 If steering box is mounted in front cowl, the pitman arm may not extend more than 1 1/2" outside the natural contour of the body near that point, and must not prevent proper door operation.
- 11.4 The center of the front and rear axle will be mounted in the center of the frame from side to side, (1/2" tolerance is allowed).
- 11.5 No Straight axles.
- 11.6 No Leaf spring or torsion bars.
- 11.7 No Bird Cage type rear linkage or Jacob's ladder.
- 11.8 Steel shocks only, one shock per tire. 4 shocks only.
- 11.9 Trailing arms, located outside of frame may not extend beyond the rear door post.
- 11.10 Power-assisted steering is permitted.

12. WEIGHT

- 12.1 No car shall weigh less than 1,000 pounds **without** driver. In the event that multiple cars are not meeting the weight requirement, the accuracy of the scales will be considered by the head tech official.
- 12.2 No ballast will be mounted outside of body or frame. All ballast must be securely bolted or welded inside of body or frame rail and extend no lower than frame rail. Ballast will be painted white and have the car number clearly marked.

13. NERF BARS and BUMPERS

- 13.1 Front bumper must be no wider than 36" and will not extend more than 6" forward of front tires.
- 13.2 Rear bumper must be no wider than 50", no less than 44" and will not extend more than 6" from extreme rear body panel, or 8" if the car has a simulated fuel tank.
- 13.3 Front and rear bumpers must be a minimum of 4" above the ground, and a maximum of 14". A 2" extension bar may be allowed on top of the bumper, but must not exceed 16" high from the ground. Minimum ground clearance is measured with assigned driver in car.
- 13.4 Bumper will be a minimum of 6" wide vertically.
- 13.5 Bumpers are to be made from round tubing .065" minimum and .095" maximum wall and must be safety strapped to the chassis with 1/8" steel cable or 3/16" steel chain.
- 13.6 There will be no sharp points or edges.
- 13.7 Nerf bars must be mounted on both sides in front of rear tire and be no more than 18" from center of rear axle to rear of nerf bar. A minimum of a three (3) point mounting is required. The lower bar must be parallel to lower frame rail from the rear of the car then curve or bend toward lower frame rail. The upper bar is to attach to the roll cage a maximum of 18" above the rear attachment point of the lower bar. An additional diagonal brace from frame rail to lower bar is strongly recommended. Nerf bars must not interfere with the opening of either door and must roll through a 61" opening.
- 13.8 These nerf bars will be constructed of a minimum of .065" x 1" OD, and a maximum of .095" x 1" OD wall tubing. Lower bars may not extend more than 1" past the tire tread in rear only. Must roll through 61" opening.
- 13.9 No car may compete without bumpers at any time. If you lose a bumper any time on the track you will be black flagged and disqualified.

14. ELECTRICAL

- 14.1 All batteries must be rear mounted (trunk area). Batteries must be securely mounted with a top restraint made of metal. Restraint must also hold battery caps.
- 14.2 Cars should have master electrical switch clearly located and marked.
- 14.3 No electronic (i.e. mechanical or computer traction control) traction devices. No electronic or manual devices (adjustable sway bars and shocks) can be accessible by the driver during a race. Any such devices shall be mounted outside the driver's compartment.
- 14.4 Transponder is to be securely mounted directly behind the driver's seat in the "trunk" area, not in the driver's compartment and needs to point down with a clear path to the track surface no more than 12" from the ground.

15. BRAKES

- 15.1 Must have at least two (2) brakes controlling 2 wheels.
- 15.2 Brake Bias manual devices are allowed inside the driver compartment.

16. SAFETY

- 16.1 All inside suspension mounts must be shrouded from drive compartment. No sharp edges or protruding objects which could endanger driver, shall be inside drivers compartment. All cut and free standing edges must be, folded, molded or filed smooth (i.e. window and door edges).
- 16.2 All cars must have an approved 5 point racing harness, equipped with a quick release buckle. Both ends of harness must be attached to the frame of the car with, not less than 3/8" grade 8 bolts. All seat belts will be installed at a 45 degree angle to the driver's hips. Shoulder harness comes from behind the driver, and will go over both shoulders so that they will be held securely in the seat. (All safety restraint harnesses will be installed in accordance with manufactures guidelines). Seatbelts must be within two years of manufacture or recertification. If the SFI label is not affixed to the belts or damaged, they belts will not be approved.
- 16.3 Drivers must wear helmet with face shield or goggles, approved by the Snell Memorial Foundation, S or SA, 2005 or newer with Snell sticker attached. No "M" rated helmets allowed.
- 16.4 All cars will have a production made quick-release, removable steering wheel.
- 16.5 All cars are required to have a fire extinguisher. 5 Lb. on board fire system with a minimum of 2 nozzles installed is highly recommended. If a portable type fire extinguisher is used, it must be mounted inside the car easily removable by driver with one hand while in belted position. **All pits MUST** have a minimum of a 2 lbs. fire extinguisher accessible in their pits.
- 16.6 All drivers must wear a minimum single layer approved driving suit. Ear protection highly recommended.
- 16.7 All drivers must wear an approved neck brace and fire proof gloves. A SFI-approved head and neck restraint is highly recommended. The SFI-approved head and neck restraint may be used in place of a neck brace. Arm restraints are mandatory at all times car is on the track. A left side window net installed as in rule 9.6 of Hobby Stocks section may be used in lieu of arm restraints.
- 16.8 All door latches must be a positive locking device, so as not to open from vibration or up set, and not to jam if door is damaged. All hoods and trunks must be securely fastened by, spring latch, nuts and bolts or dzus fasteners (no screws)
- 16.9 No glass of any type is permitted. Side windows may have shatterproof Lexan, minimum of 1/16". Front windshield must have 1/2" square mesh windscreen, or a bar system with a maximum of a 2" opening. A 2" block cannot fit through the opening.
- 16.10 A one-way receive-only device is **mandatory** at all times when the car is on the track. No two-way radios or communication devices are allowed. This radio shall be used only to receive communication from the tower. This radio is required to be purchased and maintained by the competing team. No driver will be allowed to compete without this device.
- 16.11 No rearview mirrors of any type.
- 16.12 Drivers in the Pro division must be a minimum of 14 years old at the time of competition.
- 16.13 Drivers in the Senior division must be a minimum of 45 years old at the time of competition.

16.14 Drivers may be required to furnish a legal document of their age.

17. NUMBERS

- 17.1. All cars must have numbers in five (5) locations: Numbers on right & left door and roof must be a minimum of 12" high, and the width must be 2/3 of the height, except for the number #1. On the roof, it should be as large as possible. The number on the rear of the car must be a minimum of 6", and located above the bumper so to be viewed by the driver behind. The assigned association letter must be a minimum of 6" high on the roof and the doors and 2" high on the rear of the car. A minimum 2" number and letter must be displayed on the left front upper corner of the windshield. All numbers must be permanent (ie: vinyl or painted) and READABLE BY THE OFFICIALS.