

# 2010 MADCRA RULES of COMPETITION

Mid America Dwarf Car Racing Association shall hereafter be referred to as MADCRA throughout the rules and descriptions. 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 shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. No expressed or implied warranty of safety shall result from publications 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 a participant, spectator or official. *The tech inspector shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his opinion do not alter the minimum acceptable requirements.* No expressed or implied warranty of safety shall result from such alteration of specifications. *Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.*

## GENERAL RULES

1. MADCRA race rules shall apply to all MADCRA sanctioned events.
2. All MADCRA vehicles are subject to inspection at any time.
3. Approval of a MADCRA vehicle by the tech committee shall mean only that the vehicle is approved for participation in a competitive event and shall not be construed in any way to mean that the inspected MADCRA vehicle is guaranteed mechanically sound. Be it further declared that the tech committee shall not be liable, nor shall the sanctioning body, for any mechanical failure not for any losses, injuries or death resulting from same.

## SPECIFICATIONS

### 1. BODY STYLES

Any car specifications not covered in these body specs are subject to MADCRA interpretation. Any significant performance advantage will be addressed on an individual basis. MADCRA reserves the right to determine what constitutes an unfair advantage.

- (a) 1928-1948 American-made production vehicles only. 5/8 scale, two-door sedans, coupes, or pickup trucks. These are to be known as Classic Modified body styles.
- (b) All chassis specifications are the same for both body styles.

### 2. BODY REQUIREMENTS AND SPECIFICATIONS

#### 2A. CLASSIC BODY

(1) Body must be 5/8 scale, stock appearing. Maximum outside tire width 60" plus 1/2". 73" wheelbase plus or minus 1".

Must have grill shell or simulated open radiator matching original body style, any material.

Doors, windows, and cowlings must retain stock appearance. Hood louvers allowed for cooling, but must maintain stock contours.

Engine compartment must conform to scale and match contour of body. Hole may be cut for breather clearance only. Ram air induction system prohibited.

Must have closed trunk lid or fully enclosed trunk access panel conforming to original bodylines. Louvers allowed no holes.

No fenders.

No wings or spoilers.

Ram air induction system prohibited.

(2) Body will be metal construction, 26-gauge steel or .040" aluminum minimum. Fiberglass or plastic grill shells allowed. All exposed edges must be folded or trimmed over. Legends cars may be allowed under local rules. No lips or spoilers of any kind.

(3) NO open top cars (roadsters, convertibles). No panel trucks, station wagons, or specialty cars.

(4) Classic Modified Overall Dimensions

NO car over 50" tall, top to ground. Body height maximum 44", bottom edge to top (including frame rail).

Maximum body width: 38 1/2" Maximum frame width 34"; min 30"

Body contour must be formed by frame and roll cage. Roof hatch entrance allowed.

Roof rake maximum of 14 degrees.

Frame ride height must not let car bottom out on track.

Minimal 2 exits must be operational and equipped with latch.

Fasteners on hood, trunk, or panels must be positive, locking type.

124" maximum total length, bumper to bumper.

Kick outs or side nerf bars must be mounted at three points and run full length between tires. 1 1/4" max .125 wall thickness. Cannot stick out beyond 1" from the side of the tire.

## **2B. MODIFIED LITE BODY**

The intent of these preceding specifications is to follow the bodyline and design of an existing **IMCA or DIRT** modified racecar.

Hard copy will have diagram

### **(1) Overall dimensions**

- (a). 42" min 50" max from ground - total car height
- (b). 124" maximum total length, bumper to bumper

### **(2) Sides and Rear Quarter Panel**

- (a). 84" max - Door to rear quarter length
- (b). 30" min 38" max - side height of rear quarter panel from the ground. 30" max height of quarter panel.

### **(3) Hood**

- (a). 20" min 27" max - hood height excluding breather protectors (bottom of frame rail to top of hood). Ram air introduction system prohibited. Rear of hood becomes part of windshield area rules. No part of nose section (in front of spindle centerline) may be wider than a maximum of 24". Hood may taper out to door panels at the rear.

### **(4) Roof Panel**

- (a). 40" min 48" max - length of roof panel. 36" min 42" max - width of roof.

No part of roof panel may have more than 14 degrees of angle rake. No Deflector of any type on upper sides or rear of roof panel. Roof entrance hatch optional.

### **(5) Rear Upper Quarter Panel**

- (a) 20" min 38" max rear upper side panel may contain Plexiglas. Side panels may be no higher than 3" at the rear of the straight line of quarter panel top edge. Side panel may be no higher than an imaginary line from the rear edge of roof panel to 3" above the top edge of rear quarter panel.

### **(6) Side Window**

- (a) 18" min side opening length. 10" minimum side opening height front to rear.

### **(7) Interior**

- (a) 46" min 50" max - width of rear shelf and body panels. Rear shelf may have No more than a 5 degree max rake and may not be concave or convex in design. No lips or spoilers of any kind. The rear frame area from the rear shelf downward a minimum of 16" must be completely enclosed the width of the frame. Louvers allowed, no holes.

### **(8) Additional Interior Specifications**

- (a) 36" min 56" max - length of right side pod area with max 30 degrees. Left side pod may be altered for driver access.
- (b) Rear quarter distance from center of rear 20" min 30" max
- (c) Cockpit cover with a max of 1/2" lip will be permitted providing the on/off cutoff switch is reachable from outside the car by safety personnel.
- (d) Deck lid height from ground 30" minimum 36" maximum wit NO rear lip extending upward.
- (e) Side pod may not extend rearward past the centerline of rear axle.
- (f) Body must be centered on chassis
- (g) If windshield is used, it must be flat
- (h) All body dimensions will be teched + or \_ 1/2" unless otherwise specified.

## **3. WEIGHT**

- (a) See engine rules Section 11 Part A-6. Empty car weight minimum 950#. (no ballast, no fuel)
- (b) No weight outside of car body, i.e. on nerf bars.

## **4. BUMPER DIMENSIONS**

- (a) Front maximum width 30". Bumper height 6" to 8" with 2-bar loop. Ground to top of bumper: 12" minimum, 16" maximum. Bumper may not extend more than 12" forward of front tires.
- (b) Rear maximum width 56" with 3 vertical bars. Bumper height 6" to 8" with 2-bar configuration. Ground to top of bumper: 12" minimum, 18" maximum. May not extend more than 8" behind rear body panels. *No sharp ends.*
- (c) Bumpers must be hollow with max wall thickness of .125

## 5. FIREWALL

- (a) Firewall must be metal and must completely separate engine compartment from cockpit. Engine protruding into cockpit must be enclosed. .050 thickness minimum.

## 6. WINDSHIELD

- (a) Windshield must have protection bars. Lexan allowed on side windows. No Glass. All other cockpit areas must remain open. Deflectors may be used in front of driver. May be no wider than roll bar area.

## 7. NERF BARS

- (a) *Full length nerf bars between front and rear tires mandatory. Maximum outside diameter of 1.25" and .125 maximum thicknesses. Must be hollow. May not extend out beyond tread width more than 1" at the rear only. 3 point H.L. Mount*

## 8. SEAT

- (a) Seat must be high-backed aluminum, racing type. All cars will have a permanent bar located behind top of seat at shoulder level. Bottom of seat will not be more than 63" back measured from upper ball joint. Seat may be tilted back for added driver head clearance, however, no portion of the seat may be back more than 70" as measured above.

## 9. NUMBERS AND GRAPHICS

- (a) Car number must be minimum 12" in height and 2" stroke. Must be displayed on each door and roof or trunk. Numbers in 4" size should be on front and rear of car to help with line-ups.

## 10. WHEELS AND TIRES

- (a) Steel wheels only, minimum wall thickness .090", 13" only. Wheel width max. 8". \*same width wheel on axle with the exception of bead lock on right rear ONLY.
- (b) All tires must be 215 Hoosier Medium. Durometer minimum of 40. No sipping or grooving. Scuffing is allowed.
- (c) Bead lock rims on right rear only. They are not allowed on left side unless specified by individual track rules.

## 11. ENGINE SPECIFICATIONS

- (a) **"TUSA Spec Motor" Specifications:**

\*1000 cc or less Water-cooled engines produced between 2000 and 2006 may compete in this program

1. Must remain stock bore and stroke, no altering rod or piston specifications.
2. All head components must remain stock, (except cam sprockets may be slotted type). Cams must be as per original equipment manufactured (OEM) and must meet specs as per manufacturer.

3. ONLY OEM stock ignition system with OEM ECU box may be used. Only one fuel-monitoring device, wired into the harness with no other connections, will be allowed during competition. No fuel monitoring control devices allowed in the drivers reach or driver cockpit area. These rules will be enforced during all competition lap sessions. All cars may be teched after any competitive race event.
4. Engine must retain its stock fuel induction system. May run aftermarket air filters
5. Alternator recommended but not mandatory.
6. All TUSA spec motors and stock 1000cc motors can weigh a minimum of 1240#. All other motors must weigh a minimum of 1300#.

**(b) "TUSA Open Motor" Specifications:**

1. Side draft motors 1250cc (+1%)
2. Down draft motors limited to 1200cc maximum with no variance.
3. ZX12 - Must remain stock bore, stroke, rod length, and be stock appearing. Stock OEM fuel injection only. All head components must be OEM stock with the exception of cam sprockets. Only OEM stock ignition with OEM ECU box may be used. Only one fuel-monitoring device, wired into the harness, with no other connections, will be allowed during competition. No fuel monitoring control devices allowed in the drivers reach or driver cockpit area. These rules will be enforced during all competition lap sessions. All cars may be teched after any competitive race event.
4. Water-cooled engines 1100cc and below can run carburetors or fuel injection systems. Engines above 1100cc OEM must remain in their original stock configuration of carburetors or fuel injection.
5. Down draft engine must run gasoline only.
6. No engine can be modified to be less than original stock configuration OEM specifications.
7. Engine must be in production for a designated time period to determine its competitive relationship with our current motor program. Any major changes to existing engine by the manufacturer must be reviewed by the board before approval.
8. OEM Electronic engine components (Power Commanders permitted) will be reviewed annually to insure equality.
9. Carburetors and cams optional. (Except ZX12)
10. Aftermarket cylinder & cylinder heads: No aftermarket cylinder or cylinder heads allowed on water-cooled motors. No aftermarket cylinder heads allowed on oil & air-cooled motors, aftermarket cylinders authorized.

11. Porting, grinding, polishing or changing stock configuration of intake or exhaust ports allowed for oil & air cooled motors. Carburetor/Fuel injection boot must fasten directly to head in the stock intake port location.
12. No porting, grinding, polishing or changing stock configuration of intake or exhaust ports allowed on water-cooled motors. Casting part lines must be visible upon inspection. Intake port area may be altered to match intake boot. Alteration not to exceed 3/8" into intake port. Carburetor/Fuel injection boot must fasten directly to head in the stock intake port location
13. Header must attach directly to head in stock exhaust port location
14. Oiling system may not include a dry sump system.
15. No increasing or decreasing of motor stock stroke in any way.
16. No 2009 engines or newer will be legal to compete in any division. These engines will be reviewed and considered at a later date.

(c) **"General Motor" Specifications:**

1. Four cycle, four cylinders maximum only. Must have working transmission, clutch, and starter with all parts in place. Complete Clutch assembly must remain in engine. External reverse boxes allowed. No air controlled shifting devices.
2. Charging system optional. Battery powered ignition system only. Alternator cover allowed.
3. No auxiliary starters.
4. Engines must be front mounted in engine compartment.
5. Engine setback: The "square of the engine" (rear fins of the jugs) may not extend rearward more than 17" from the center of front spindle. No part of the engine or transmission may extend rearward more than 21 inches from center of front spindle.
6. No after market fuel injection, and no turbos. No nitro, or nitrous oxide. OEM fuel injection must remain stock.
7. Engine must be cooled by original intent. May use extra fan or oil cooler.
8. Engine exhaust must include muffler and exit rearward. All muffler devices must include baffles. **MUFFLER MUST MEET LOCAL TRACK REGULATIONS, (IF MANDATORY)**

(d) **Engine Tech Procedures**

1. Cylinder cranking compression- minimum 100p.s.i., Maximum 220 p.s.i. per cylinder average of 4 cylinders,

no variance, measured with a Snap-On compression gauge, part number EEPV303A, with adapters EEPV304A, EEPV306A or MT26J200, after ten (10) compression revolutions of cranking, 15-45 minutes following feature event.

2. Carburetors or Fuel Injection and all 4 spark plugs must be removed before checking compression.

## 12. BATTERY, FUEL SYSTEM

- (a) Battery and fuel pump must be mounted outside driver compartment. Battery must be secure and held with non- rubber strap. Electric fuel pump allowed.
- (b) Fuel cell mandatory, maximum 5 gallons, located in trunk.
- (c) Gasoline or alcohol only, no fuel additives allowed. According to local preference.
- (d) Reinforced or steel braided line must be used in all high-pressure areas.
- (e) *A direct manual cutoff switch wired to ground circuit will be installed on the right rear shelf or rear fire wall within 6" of the corner formed by the rear deck and rear fire wall. Switch will be located to the right of the shoulder of the driver. The emergency electrical cut off switch will be clearly located and marked. (safety issue)*

## 13. DRIVE TRAIN

- (a) Must use steel drive shaft from transmission to automotive rear end. Minimum 2.50" x .083" or 2" x .120".
- (b) Quick change rear ends allowed with steel tubes only. Gears can be changed after hot laps but not after the heats.  
  
Must be as close as possible. MADCRA will have a chart.  
  
Allowed to change Quick Change rear ends between heat and feature races.
- (c) Drive shaft tunnel must have minimum of 2 (3 recommended) 360-degree hoops between firewall and seat back. Must be fabricated of minimum .1875" X 1.5" steel bar. 1" X .095" steel tube highly recommended.
- (d) Rear must be locked or have a solid spool.

## 14. FRAME AND ROLL CAGE

- (a) Main frame members will be minimum of 1" X 2" x .120" wall rectangular steel tubing only. Mainframe rail consist of the length between the front lower a-arm cross member and the rear main roll bar upright. No aluminum allowed in cage or frame.
- (b) Main frames will have a minimum of 3 cross members between firewall and back of seat fabricated of same material as frame rails. Alternate material may be steel angle, min. .125" X 1.5" X 2". Cross-bracing in floor under driver strongly recommended. Rear frame rails at rear roll bar must be 34" max and 30" minimum outside dimension. Rear roll bar must meet same dimension as the frame it is mounted to. Frame may taper forward of driver seat area. Front engine area frame width must be 24: max and 20" min outside dimension. Left and right frame rails must be the same + or - 1/2".

- (c) Roll cage must be DOM steel minimum 1.25" x .083" (.095 recommended) in all cars manufactured from 12/98 on. Clubs may grandfather older cars with 1" x .065" tubing. Cross-brace or diagonal strongly recommended in hoop over driver's head.
- (d) All cars must have cage bars installed across door openings on both sides. Bars should be welded in place as part of roll cage. Minimum size 1" x .065". (1.25" x .095" recommended) cars with bars mounted on doors should have full doorframe and minimum of 2 horizontal cross bars. Minimum 1" x .083". Cars with bars mounted on doors must have 1/4" x 2" steel stops welded in on each side of opening, totaling a minimum of 4" on each end of door or *equivalent*.
- (e) It is required to have a steel bar with a minimum size of 1" X .065" from doorpost to doorpost, under the dash. Steel plate on driver's door bars recommended.
- (f) It is recommended that, if using rivets, body panels attach to tabs welded onto cage instead of drilling multiple holes into cage bars.
- (g) No down tube frame cars allowed. Any bars going from cowl area to snout must remain below the upper line of hood.
- (h) Classic pickups may have two (2) bars going from upper rear roll cage down to rear clip.

## 15. SUSPENSION

- (a) Front suspension must not extend rearward past the most forward panel of the firewall.
- (b) Rear trailing arm/radius rod specifications:
  - Arms may have a maximum length of 30".
  - Torque-absorbing devices are permitted.
  - Maximum 3 radius rods or 3 link suspension
- (c) Wheel offsets are allowed.
- (d) Hub offsets are NOT allowed. Hubs front and rear must be within 1" distance from mainframe rail on either side of car, measured from center of rotor to vertical plane of frame rail.
- (e) Coil-over shocks are the only allowable means of supporting the chassis. One shock and spring per wheel only.
- (f) Shocks must be of all-steel construction, non-adjustable type. May not be of a type that allows disassembly.
- (g) No driver shall have the ability to adjust suspension from inside car.
- (h) Straight front axles are prohibited. Local clubs may grandfather existing cars for competition.
- (i) No leaf springs.
- (j) No birdcage type rear linkage.
- (k) Anti-roll (sway) bars permitted front or rear. Must be connected without adjustments to arm location.

(l) No torsion bar suspension system of any type allowed.

## **16. STEERING**

(a) All steering components must have safety fasteners such as cotter pins or self-locking nuts.

(b) Manufactured quick-release steering wheel hubs mandatory.

(c) Rack and pinion steering is mandatory.

## **17. BRAKES**

(a) All four wheels must have working calipers and rotors. Can have right shut off.

(b) Rotors and calipers:

Steel rotors mandatory, .250 minimum thickness.

Steel OEM calipers or aluminum calipers.

Cutting & scalloping of rotors will be allowed with no rotor surface being less than 3/4" in width.

Drilling of rotors is permitted.

(c) Adjustable brake bias and wheel shut offs allowed.

(d) Competition-type master cylinders allowed.

## **18. SAFETY EQUIPMENT**

(a) Fire bottle system HIGHLY recommended.

(b) Suggested driver uniform will consist of:

Fire suit (single layer minimum, one or two-piece).

Fireproof gloves.

Fireproof shoes.

Approved helmet with Snell 2000 rating or higher.

Full-face helmet.

Head and neck restraint systems recommended.

(c) Recommended the car be equipped with 5-point safety harness, no more than 3 years old, with minimum of 3-inch belts.

(d) Aluminum, high-backed racing seat mandatory.

(e) Window nets, arm restraints and head & neck restraints HIGHLY recommended.

**19. NO two-way radios. One-way communication from officials only is allowed.**

**20. NO mirrors allowed.**

## 21. GENERAL REGULATIONS

- (a) The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish the minimum acceptable requirements for such events. These rules shall govern the condition of all events, and, by participating in these events, all participants are deemed to have accepted and compiled with these rules. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM PUBLICATION OF OR COMPLIANCE WITH THESE RULES AND REGULATIONS.** They are intended solely as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator, or official. Any interpretation or deviation of these rules is left to the discretion of MADCRA and the decision is final. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH DEVIATION OF SPECIFICATIONS.**
- (b) No intoxicating spirits or controlled substances are to be consumed before or during race events by drivers.
- (c) MADCRA reserves the right to reject or allow entry of any driver or car.
- (d) Abuse or confrontation of any racetrack or MADCRA official and/or use of abusive language is strictly prohibited. **FAILURE TO ABIDE BY THIS RULE MAY RESULT IN SUSPENSION, LOSS OF POINTS, WINNINGS, RECORDS, AND/OR CASH FINE.** Any physical contact to any driver, non-driver or MADCRA official will result in immediate disqualification, loss of points for that night plus the next 2 calendar weeks. 2<sup>nd</sup> offense will result in disqualification for 365 days.
- (e) Any disputes involving qualifying times, lap scoring, finishing position is under the jurisdiction of the hosting track officials. MADCRA officials will address winnings, points, or rules interpretations. Any disputes or discussions of this nature are to be held with MADCRA officials only.
- (f) **THE DRIVER ASSUMES RESPONSIBILITIES FOR THE ACTIONS OF THEIR PIT CREW AND GUESTS.**
- (g) Drivers, owners, and/or crew shall have no claims or actions of any kind against or cause of action for damages of any kind, expenses, or otherwise against MADCRA, any track owner, promoter, or official by reason of disqualification or damage to either car, driver, or both. This regulation shall be deemed a covenant not to sue made by each driver, owner, and/or crewmember to MADCRA, any track owner, promoter, or official with respect to any alleged act or omission or agreement by any of them.
- (h) MADCRA or track officials at any time for safety, mechanical, or rules compliance may inspect any car.
- (i) **ANY RULES OR REGULATIONS NOT COVERED IN THIS BOOKLET WILL BE DETERMINED ON A TIMELY BASIS BY MADCRA AND THE DECISION IS FINAL.**
- (j) Effective date of these rules January 1, 2007.

**MOTOR RACING IS A DANGEROUS SPORT AND MAY RESULT IN INJURY, BODILY HARM, OR DEATH.**

**Rules updated January 2010**