

## Mini Stock Rules (Updated February 17, 2007)

### OVERVIEW

#### **Objective**

Mini stock racing is designed for the amateur individual participating in racing vehicles for a hobby. The rules and restrictions are designed to allow an amateur to enter racing and gain the experience of competitive racing and give each individual a fair and competitive chance.

#### **Stock Definition**

Parts available from your local dealer through ordinary parts catalogues may be accepted as OEM stock. Parts ordered through dealer performance catalogues will not necessarily be considered legal. No marine parts allowed.

*OEM – Original Equipment Manufacturer*

#### **Requirements**

Items that will be allowed and are required.

#### **Restrictions**

Items that are not allowed. The list of restrictions should not be considered completed. Exceptions may be allowed based on OEM design. If in doubt, ask the Technical Director before you do it.

### SPECIFICATIONS

#### **AIR CLEANER**

##### **Requirements**

- Stock OEM type air cleaner and filter element
- OEM type paper air cleaner to act as a flame arrestor
- Contained in engine compartment

##### **Optional**

- Air cleaner does not have to be from same make and model

##### **Restrictions**

- No high velocity or stack type air cleaners
- No air flow modifying pieces (element inward)
- No cowl induction system

#### **BATTERY**

##### **Requirements**

- Mounted in engine compartment and only accessible from the engine compartment
- Security fastened down with 1/8" x 1" steel strapping and 3/8" rod minimum
- If mounted in the fire wall a steel box must be used and the box must be welded to the fire wall shielding the driver completely.

### **Optional**

- May be floor mounted behind drivers seat and in an enclosed box

### **Note**

- Tech may allow exceptions based on constraints of OEM design

## **BODY AND APPEARANCE**

### **Requirements**

- Original to frame and use OEM mounting points
- Straight, sound, factory stock and in stock position on the frame
- 100% of body panels must be run each race day
- Burnables, chrome, lights, hitches, white metal, glass and plastics must be removed, except grille and windshield
- All body panels must be securely fastened and must be painted

### **Optional**

- Door handle, tail lamp and head lamp openings may be filled in with sheet metal or aluminum panels
- Fiberglass front fenders

### **Restrictions**

- No sheet metal screws are allowed in the construction of the car

## **BODY STYLES**

### **Requirements**

- Vehicle with an OEM four cylinder engine
- Any mass production compact or sub compact steel or aluminum body car with a maximum wheel base of 101"
- Front or rear wheel drive

### **Restrictions**

- No convertibles or vans
- No all wheel drives

## **BRAKES**

### **Requirements**

- Four wheel hydraulic brakes
- All four brakes must be factory original to car and be working at all times (subject to spot check)
- Brake pedal and mounting point must be in original factory location for that make, model and year

### **Restrictions**

- No lightening of backing plates, brake drums and/or shoes by cutting or trimming metal
- No self drilling of cooling holes in rotors
- No adjustable proportioning valves or residual pressure check valves
- No modifications to mounting points

### **Optional**

- Certified OEM or aftermarket brake rotors with cooling holes

## **BUMPERS**

### **Restrictions**

- Stock appearing bumpers front and rear
- Metal guards of 20 gauge sheet metal extending from bumper to body panel, riveted in place to prevent bumper gouging
  - Note: Tech may allow exceptions based on constraints of OEM design

### **Optional**

- Stock bumpers may be reinforced with 1 1/2" x 0.95" round tubing
- All tubing must be behind bumper or cover and not stick out past end

## **DOORS**

### **Requirements**

- Doors and/or hatches must be securely bolted or welded front and back using three 2" welds, top, center and bottom

### **Optional**

- Inner door panels may be removed
- Door skins may be replaced with 22 gauge sheet metal but must look stock

## **DRIVE LINE**

### **Requirements**

- Stock transmission with all gears operating as originally produced
- Half shafts, constant velocity joints, drive shaft and universal joints must be stock steel standard production type
- On rear wheel drive cars, front and rear drive shaft retaining hoops must be 360 degree and made from minimum 1 1/2" x 3/16" steel bolted to the floorboards with grade 5 3/8" bolts, 4 per hoop. Front and rear hoop to be with in respective U-joint. Refer to diagram
- Drive shaft to be painted white with car number displayed

### **Restrictions**

- No locked or after market differentials

## **EXHAUST**

### **Requirements**

- Stock OEM cast iron exhaust manifolds
- Exhaust pipe maximum 2 1/2" O.D. to muffler(s) and maximum 2 1/2" O.D. to exit
- Muffler mandatory
- Exhaust must exit below and behind driver outside of body

### **Restrictions**

- No grinding or porting
- No after market headers

## **FIREWALLS**

### **Requirements**

- Front fire wall must be original, steel and in stock location
- Must have rear fire wall, except in a hatchback
- Fuel tank must be completely closed in a sealed compartment with a hinged door to reach fuel tank. Must be made from 22-gauge sheet metal
- Holes in fire wall to be covered by sheet metal, riveted or welded.

### **Restrictions**

- Do not use duct tape to seal holes in fire wall

## **FLOOR**

### **Requirements**

- Stock, complete and in original position
- Holes must be covered by 20 gauge sheet metal, riveted or welded

### **Restrictions**

- No interiors with sub-floors or cock pit style interiors

## **FRAME**

### **Requirements**

- Frame or sub frame must be stock for body used
- Unibody front and rear sub frame may be joined with similar size material
  - One connector per side

## **FUEL**

### **Requirements**

- Regular or premium pump gas
- Fuel will be tested by RARC tech and must pass

### **Optional**

- Octane boost

### **Restrictions**

- No nitrous oxide
- No other fuel additives
- No alcohol fuels
- No aviation fuel or racing fuel

## **FUEL LINE**

### **Requirements**

- Securely fastened under floor above bottom of frame rails
- Unibody cars must have a sheet metal cover riveted under the floor covering the fuel lines' entire length when a frame rail does not protect it
- Must have extra protection in the area of the differential housing and transmission
- Gear type clamps must be used
- Fuel injected cars must use fuel injection type hose, not standard rubber fuel line for adapting and connecting fuel components

### **Restrictions**

- No fuel lines in the drivers compartment
- No more than 12" of rubber fuel line to be used in entire system for adapting fuel lines to fuel system components
- No plastic or glass fuel filters
- No copper lines

## **FUEL PUMP**

### **Requirements**

- Electric fuel pump is optional. If you use an electric fuel pump:
  - It must have a working inertia auto shut off switch
  - Reset switch must be within drivers reach with seat belts done up

## **FUEL TANK**

### **Requirements**

- Maximum capacity is 12 imperial gallons.
- Mounted above rear axle inside trunk area and securely fastened. Filler neck must be inside trunk area and not accessible from exterior of vehicle.
- Vented to outside of trunk and vent line must have a rollover check valve.

### **Optional**

- A fuel cell is highly recommended. If you use a fuel cell:
  - It must have a 20 gauge sheet metal container and must be boxed in with a minimum of 1 " square tubing.
  - Requires a ground strap on filler neck.
- If front wheel drive vehicle and OEM location is in front of rear axle an OEM mounted fuel tank in stock location is accessible

### **Restrictions**

- No aluminum fuel tanks
- No marine tanks
- No plastic tanks
  - Note: Fuel tank or fuel cell installations are subject to approval of the technical representative. Refer to diagram.

## **HOOD AND TRUNK**

### **Requirements**

- Full hood and trunk lid must be retained
- Both door and trunk lids must be securely fastened with two pins

### **Optional**

- Removable hood and trunk lid
- Each must be securely fastened with four pins

### **Restrictions**

- No hood openings or hood scoops
- No exterior hinges

## **IGNITION**

### **Requirements**

- OEM type ignitions. Ignition systems must be strictly stock or direct stock replacement

### **Restrictions**

- No multiple spark, CD type
- No rev limiters
- No after market type ignition systems
  - Note: See safety rules for specification of master kill switch, starter safety switch and ignition switch

## **INSTRUMENTS**

### **Requirements**

- Oil pressure and water temperature gauge

## **LIGHTS**

### **Requirements**

- Vehicles must have lights for night racing (refer to General Rules)
- Two red tail lights mounted on body ahead of trunk and at base of rear window or centered on rear hatch and two amber front lights mounted at base of windshield

## **MIRRORS**

### **Requirements**

- Mirrors are **Optional**
- Maximum size 3" x 10"
- If used, one mounted in center of windshield, stock location

## **RADIATOR**

### **Requirements**

- In stock location
- Overflow contained, minimum of 1 liter, mounted ahead of engine fire wall
- Hoses must have gear type hose clamps

### **Optional**

- Larger radiators are allowed if it is safely installed in a radiator cradle

## **RIDE HEIGHT**

### **Requirements**

- Body and frame must have a minimum of 4" ground clearance excluding exhaust system and skid plates

## ROLL CAGE

### Requirements

- Six point mild steel roll cage constructed of no less than 1 1/2" O.D. x .095" wall tubing securely welded to frame
- Welds must be 360 degrees
- Gussets must be present on all adjoining pipes on the main cage
- Bends must be smooth and flowing and not crimped
- One dash bar
- Main hoop within 12" of driver
- "X" brace in the main hoop behind driver and also one cross bar at shoulder height connecting at "X" brace
- Roof halo bar and one overhead bar from the top of the main hoop on passenger side to front of roof halo on driver's side is mandatory
- Bar from the top of the door to the window pillar on driver's side (vent window bar)
- Minimum of three door bars on the driver's side, bent out as close to the outer door skin as possible (no straight bars on driver's side) and two door bars on the passenger side with two rows of vertical connecting bars, suitably spaced, connecting to the frame or rocker panel
- Driver's seat mounting bracket must be welded to the driver's bottom door bar and the "X" brace, not to the floor boards
- Unibody cars with a roll cage mounted to the floor boards must have the roll cage welded to 4" square by 1/8" plate which is bolted through the floor boards to a like plate with four 3/8" bolts
- Roll bars in driver's area must be padded with roll bar padding
- Two rear support bars that connect no more than 6" below top of the main hoop must be installed
- Two rear supports extending back from top of roof hoop to rear frame rails may run straight back or form an "X"

### Restrictions

- No chrome moly tubing
- No threaded pipe, pipe fittings, lap welded pipe, magnesium or aluminum
- No square tubing, channel or angle iron will be permitted in the construction of the roll cage or bracing
- No flush grinding or welds
- No exterior bars

### Notes

- Approved kit cages are strongly recommended
- Not all kit cages are approved for this class
- Kit cage manufacturers have multiple configurations and only configurations conforming to these rules will be permitted

## **SEATS**

### **Requirements**

- An aluminum racing seat is strongly recommended, however a bucket type seat with a padded head rest may be accepted
- Either type of seat must be securely fastened to the roll cage and adequately padded
- Seats must be positioned completely left of centerline of car
- Back of seat must be properly reinforced and supported by roll bar
- Refer to diagram section for proper seat installation

## **SKID PLATES**

### **Requirements**

- Mandatory on all 4 corners with no square edges down
- Lowest point of car
  - E.g. – all tires and rims removed, car must sit on skid plates

### **Restrictions**

- No brake shoes allowed as a skid plate

## **STEERING WHEEL**

### **Requirements**

- OEM padded steering wheel or a removable racing steering wheel with a minimum 2” thick steering wheel pad and a quick release metal hub
- Stock collapsible steering column

## **SUSPENSION**

### **Requirements**

- Stock or stock replacement OEM
- Mounting bushings must be OEM rubber
- Stock/strut towers must be in original stock position and may be tied to each other with a bar
- One spring per stock wheel assembly
- Stock OEM sway bars for make and model
- Stock shackles in stock location
- Maximum allowable camber is 1” measured with a square from the center of the side wall

### **Optional**

- Any stock steel springs or OEM replacement must fit in stock location
- Springs may be cut or heated to lower ride height
- Extra bracing on stock control arms
- Lengthen or shorten lower control arms to achieve camber
  - Modification of lower control arms subject to approval

### **Restrictions**

- No racing springs
- No after market lowering kits
- No after market type high performance shocks, struts or dampening devices
- No spring or adjustable spring spacers
- No weight jacks
- No after market sway bars
- No chaining down of suspension
- No urethane or steel bushings

## **TIRES**

### **Requirements**

- Stock radial passenger car type tires
- Tires may not exceed 225 section width and 55+ series minimum
- Tread wear rating 140 minimum
- Hoosier tires optional

### **Restrictions**

- No studded ground grip or recap tires
- No altering of tires by treatment (softener's, etc)
  - Durometer and/or other methods will be used to check tires

## **TRUNK PAN**

### **Requirements**

- Trunk area must be completely sealed in

### **Restrictions**

- No ground may be visible when looking into trunk area

## **WEIGHT**

### **Requirements**

- Total car weight must be, at all times, before, during or after the race:
  - 1.0 pounds per c.c. for carbureted engines
  - 1.15 pounds per c.c. for fuel injected engines
  - 1.25 pounds per c.c. for 16 valve (s.o.h.c. & d.o.h.c.)
- Car will be weighed with the driver
- Car weight should be a maximum 52% left side
  - Note: Tech may allow exceptions based on stock design
- Added weight (ballast) must be securely bolted outside the drivers compartment to the frame with a minimum of two grade 5 1/2" bolts reinforced with a minimum 3/16" plate mounted inside drivers compartment
- Weight must be mounted no further back then the center of the wheel base of the car and must be equal from left to right

#### Note

- Any car and/or driver that has a disproportionate advantage will be required to add extra weight to equalize the class
- See General Rules for added weight (ballast) rule

### WHEELS

#### Requirements

- Stock steel or aluminum OEM wheels
- Maximum rim with 6" and may be 10", 12", 13", 14" or 15" in diameter
- Offset rims allowed to a maximum of 2" outside body line at wheel centerline
- Wheel studs must protrude through wheel nut

#### Restrictions

- No after market type racing wheels

### WINDSHIELD AND WINDOWS

#### Requirements

- Windows glass must be removed with the exception of the front windshield
- Front windshield safety clips must be a minimum of 1" x 6" x 1/8" steel and positioned two at the bottom, two at the top and riveted or bolted to the body
- Windshields must have a minimum of 3 interior windshield supports following the contour of windshield, no more than one inch away, spaced a minimum of 10" apart. Supports must be made of 1/2" steel rods or 3/8" schedule 40 black pipe.

#### Optional

- Lexan windshields are allowed and must be 1/8" minimum thickness, full width and pop riveted with 1/2" heads, maximum 8" apart
- Lexan rear window **Optional**
- Driver's window opening may be enlarged for driver entry, but must be kept to a minimum and is subject to Tech's approval.
- Opening cannot be below upper most horizontal door bar

#### Restriction

- Advertising decal or sun shade on top edge of front windshield may not exceed 6" in height

### WINDOW NET

#### Requirements:

- Refer to Safety Regulations

## **ENGINES (General)**

### **Requirements:**

- **Must be strictly stock!**
- Four cylinder
- 2, 3 or 4 valves per cylinder
- Maximum displacement is 2500 c.c.
- Stock location on stock factory mounts that may be reinforced
- Engine swapping allowed within the same family
  - Toyota to Toyota; Honda to Honda, etc.
  - No Acura to Honda, Audi to Volkswagen, etc
  - Exception is when engine out of family line came with that car
  - Tech committee's decision on engine swaps is **FINAL**
- Equipped with a battery operated starter
- Engine breather must have a minimum one liter overflow container mounted in engine compartment

### **Restrictions**

- No turbo or rotary engines

## **BLOCK ASSEMBLY**

### **Requirements**

- Production with standard external measurements in all respects with the exception of the permissible overbore of .040"
- Resurfacing of block maximum 0" piston to deck height
- Pistons, rods, crankshaft, cylinder block and cylinder head must be to OEM combination
- Stock internal type oil pump

### **Optional**

- Deburring of block and related parts
- Balancing of engine
- Machining of flywheel as needed for durability

### **Restrictions**

- No major removal of metal
- No stroking or destroking of crankshaft
- No lightening of drive train components
- Connecting rods must retain original center to center dimensions

## **CYLINDER HEAD**

### **Requirements**

- Stock OEM; 2, 3 or 4 valve per cylinder
- Stock OEM or stock replacement valves, springs, retainers, etc
- No high performance parts
- Parts must cross reference to stock OEM part number and be a direct duplicate

### **Optional**

- Three angle valve jobs. May not enter the bowl area at all when machining valve seats
- Resurfacing the head

### **Restrictions**

- No deburring, grinding or polishing of intake or exhaust ports
- No gasket matching
- No modifications to intake or exhaust manifold bolt locations

## **CAMSHAFT**

### **Requirements**

- Single overhead cam or single cam in block
- Stock OEM or direct duplicate maintaining stock lift and duration for engine used

## **CARBURETOR**

### **Requirements**

- The following replacement carburetors will be allowed and can be mounted on a 1" thick adapter plate, including gaskets:
  - One Holly 5200 series or;
  - One 40mm Webber series
- All other OEM carburetors must be stock to engine used
- Two throttle return springs

### **Optional**

- Removal of choke assembly and jetting of carburetor

### **Restrictions**

- No polishing of carburetor or throttle body
- No modifications to the above substitute carburetors

## **FUEL INJECTION**

### **Requirements**

- Stock OEM for engine used

### **Restrictions**

- No high performance or after market parts
- No mixing or matching within the family line

## **INTAKE MANIFOLD**

### **Requirements**

- Stock OEM production manifolds
- Direct bolt on for engine used with no modifications

### **Restrictions**

- No grinding, polishing or coating of any type, internally or externally
- No gasket matching

## **OIL PAN**

### **Requirements**

- Expanding of oil pan and baffling permitted and must maintain 4" ground clearance