

## Thunder Car Rules

*\* These rules may be amended at the official's discretion. Be sure to check the amendments page for this class. \**

1. **Models:** Stock off the street, American made, rear wheel drive, passenger cars as purchased from the factory with no modifications or alterations except as specifically allowed in these rules. No convertibles, station wagons, trucks, jeeps etc. Wheelbase must not be less than 108". No Cameros, Dusters, or other Uni-body cars unless the wheelbase is 112.5" or more.

2. **Body & Chassis:** Bodies must remain stock appearing. No metal may be removed except as noted. Wheel openings may be trimmed for tire clearance. All exterior trim, lights & lenses must be removed, and holes covered with 22-gauge sheet metal. Body panels may be gutted. Altered interior and firewall allowed with 1/8" thick steel seat plate. A rear single plane spoiler with a maximum height of 5", and the width of the trunk lid is allowed. Spoiler may be plastic. Fixed side skirts allowed, provided they extend between the wheel openings and meet the ground clearance rule. No other aerodynamic devices allowed. A maximum 1" square rub rail is allowed on both sides of the car provided it does not extend beyond the length of the rocker panels. The trunk floor may be removed. The hood must be secured with at least 2 hood pins near the front edge of the hood. Hood scoops and fiberglass cowls are allowed provided that they remain non-functional and sealed to the hood. Fuel cell access panel must be hinged at front edge; no tools shall be used to gain access to fuel shut-off valve. 18-gauge aftermarket panels are allowed. Any repairs to exterior panels must use 18-gauge sheet steel. An aftermarket nose may be used. All interior plastic & fabric must be removed. All holes, from the trunk area to the engine compartment, must be sealed with 22-gauge sheet steel. The floor may be fabricated of 20-gauge sheet steel, and be raised no higher than the top of the frame rails to allow for clearance of the exhaust and chassis 'X' bracing. This floor must be secured by electric welding only. The original drive shaft tunnel must remain at least 24" from the firewall. (Installation must meet the officials' approval.) The chassis must remain stock forward of the rear axle. The rear frame rails may be replaced with 2" X 3" X .090" steel tubing from the centerline of the rear axle back.

3. **Bumpers:** Stock appearing bumpers only. If an aftermarket nose is used, the front bumper may be made of steel tubing. Stock bumpers are required to have fender straps on both sides of the car. Straps are not to exceed 6" tall X 12" long X 1/8" thick. Bumpers must be centered at 19 inches +/- 1 inch.

4. **Glass:** All side and rear glass must be removed. A glass, or 1/8" thick Lexan™, windshield of approximate size, angle and configuration must cover the windshield opening. A Lexan™ windshield must have 3 vertical braces near the center to support the windshield. Rear windows and quarter windows may be covered with Lexan™. One interior rear view mirror, not to exceed 36 square inches, is allowed. A properly installed left door mirror is also allowed. No convex or multi-focal mirrors.

5. **Roll Cage:** A minimum 6 point properly installed roll cage of 1 3/4", .090.wall, steel roll cage tubing is required. The roll cage must be securely fastened to the frame. Unibody cars must secure the cage to 10" X 10" X 3/16" sandwich plates bolted through the floor. The main hoop must be located behind the driver and extend as close to the roof and sides of the car as possible. The main hoop must be braced from the top, down and back, to the frame. Some type of 'X' bracing must be installed between the uprights of the main hoop. A minimum of 4 left side door bars must be installed. 2 vertical bars must be installed between each level. Left side door bars and foot area must be fully plated with 1/8" steel. A minimum of 3 door bars, or an 'X' must be installed on the right side. These door bars do not have to follow the contour of the body provided there is a rub rail support bar installed. No bars may extend beyond the contour of the car body. No use of pipefittings, weld ells, square tubing, exhaust pipe, etc. All welding must be done with an electric welder. All cages will be inspected for quality of construction. Roll bar padding within reach of the driver is mandatory.

6. **Engine:** Blocks and heads must be OEM mass-produced stock, cast iron, street applicable only. No high performance or special heavy-duty blocks or heads. No removal or addition of metal to any part

unless specifically allowed as follows. Cylinders may be bored up to .060" over stock size, main bearing saddles may be line bored, rotating assembly may be balanced, valve seats may be ground for a stock type 3-angle valve job with no angle greater than 75°, heads and deck may be machined to improve sealing but stock angle must be maintained, and rocker arm stud bosses may be machined for screw-in studs and guide plates. No spacers between heads and intake manifold, or heads and block. 1 head gasket per head. Maximum displacement is 358 CID for GM, 360 CID for Ford and 368 CID for Mopar. Engines over max CID will be assessed a weight penalty. Stock type steel or cast iron crankshaft only with no modifications except for balancing. Stock type connecting rods only; no H-beam or aluminum rods. Stock bore/stroke configuration only. Compression ratio may not exceed 10.8:1. Ford may not use 4V Cleveland heads, Mopar may not use W-1 or W-2 heads, GM may not use Turbo, angle plug or Bowtie heads. Stock valve stem size for heads. Stock type rocker arms only. Valve springs must be stock type and may not be oversized. Flat tappet camshaft and hydraulic lifters only. No large diameter or 'mushroom' type lifters. Maximum valve lift is .500" measured at the valve with no lash. Vortec heads, #060, #062 or #906, allowed with maximum valve head size of 1.94 intake, and 1.50 exhaust. Intake manifold, all makes and engines, must use Edelbrock 'Performer' or Edelbrock 'Performer RPM' with no modifications. All engine parts must be Ford-to-Ford, GM-to-GM, Mopar-to-Mopar. The engine must be centered in chassis at stock height and be located so that the fuel pump is forward of the stock front cross-member location.

7. **Electrical:** 12-volt electrical system only. The battery must be securely mounted on the floor directly behind the driver in a covered marine-type battery box. A clearly marked master disconnect switch must be installed behind the driver's seat. OEM factory stock distributor ignition system only. No MSD or similar systems. Self-starter must be in good working order.

8. **Cooling System:** A minimum 2-quart overflow can must be securely installed in the engine compartment. Only water may be used in the cooling system. A fan shroud must cover the top ½ of the fan. No electric fans. A flat panel, with no sides, made of any material, may extend from the nosepiece to the radiator for cooling purposes. 4 two-inch drainage holes are mandatory in this panel.

9. **Exhaust:** Stock cast iron exhaust manifolds only with no modifications. No Corvette center dumps or other high performance exhaust manifolds. Exhaust manifolds may be GM-to-GM, Ford-to-Ford, etc. Dual exhaust system only. Left and right exhaust pipes may not be connected together in any way. Exhaust pipes may be a maximum 2 ½" outside diameter. The exhaust must exit behind the driver. No part of the exhaust system may be above the height of the transmission cross member, except for the manifold down-tubes. Some type of functional mufflers are required. Mufflers must be securely mounted at the end of the exhaust pipes. Turndowns at the rear of the muffler may be no more than 4" long. Sound level is not to exceed 95 dB at 100 feet.

10. **Fuel System:** A clearly marked fuel shut-off valve must be installed near the fuel cell. Fuel line and vent line must exit from top of the cell. No fuel lines may run through the driver's compartment. Stock type mechanical fuel pump only. Track fuel only with no additives. A Holley 500 cfm 2-barrel carburetor model #4412 only with no modifications except as follows: Jets, accelerator pump diaphragm & cam, and power valve may be changed. The choke butterfly & related linkage may be removed. Idle holes may be drilled in the throttle butterflies. The Keith Dorton 500 cfm carburetor # 0-80583-1 is allowed. Carburetor spacer must be aluminum, and may not be thicker than 2.125" including gaskets. Max height of intake and spacer 7". No cold air boxes. Carb hats are allowed.

11. **Fuel Tank:** A maximum 8-gallon fuel cell is required. The fuel cell must be mounted to the rear frame rails with minimum 1" square tubing. The fuel cell must maintain 10" ground clearance. A fuel cell protection bar must be installed behind the fuel cell made of 1 ¾" .090 steel tubing.

12. **Drive Line:** Any stock automatic transmission allowed, GM-to-GM, Ford-to-Ford, etc. All forward gears and reverse must work. Functional torque converter only. No direct drive or lock-up type torque converters. Steel, 3" minimum diameter, drive shaft must be painted white. 1 drive shaft safety hoop is

required 12" behind transmission. OEM stock passenger car rear axle only for make & model of car. Locked or open differential only. No torque sensing, limited slip or locker type differentials.

13. **Suspension:** Stock unmodified rear control arms and stock unmodified lower 'A'-arms only. Upper 'A'-arms must be non-adjustable, all steel, one piece design, with stock type shaft and mount points. Left side arms may not be used on the right side, and right side arms may not be used on the left side. OEM stock type ball joints only. Any stock spindles may be used, but must be GM-to-GM, Ford-to-Ford, etc. Stock location suspension mount points must be used. Springs may be minimum 5" diameter racing springs. Screw jacks allowed on all 4 corners. No remote suspension adjusting devices. Stock type sway bar may be mounted below the lower 'A'-arms. No rear sway bar. Non-adjustable, non-revalveable, non-rebuildable, steel body shocks allowed. Shocks may use heim mounts. Front shocks may be located outboard. Rear shocks must be mounted both in front of, or both behind, rear axle housing. \$90.00 maximum retail value including heims or bushings. No other use of heims in suspension.

14. **Steering:** OEM stock manual or power steering box only. No ratio multipliers. Stock type drag link and tie rods. Steering shaft may be aftermarket, but must be collapsible, and/or use 2 u-joints. Heim joints may be used in steering column only. Steering wheel may be removable, and the center must be padded.

15. **Brakes:** Front brakes may be disc or drum. Rear brakes must be drum. One stock type master cylinder only. One brake bias adjuster allowed. All 4 brakes must work. Cold air ducting allowed on front brakes. Aftermarket steel front rotors and hubs allowed.

16. **Tires:** Track tires only. (See separate tire rule.) No use of tire softener or altering of the tires in any way.

17. **Wheels:** Steel racing wheels are required. 8" maximum wheel width. 2" minimum offset measured from mounting face to bead flange. 1" lug nuts are required on all wheels. 5/8" studs allowed. No wheel spacers.

18. **Weight & Height:** Minimum weight is 3100 lbs. with driver in the car. Cars over max CID must add 100 lbs. to minimum weight. Front weight must be at least 53% of minimum weight. Right side weight must be at least 44% of minimum weight. All ballast must be painted white, and have your car number on them. No piece of ballast may be less than 5 pounds. All ballast must be mounted to the frame or roll cage. No ballast may be in the driver's compartment. All weights will be checked on the I 94 Raceway scales with the driver in the car, strapped in and helmet on After race. Ground clearance is 4" except for suspension and exhaust components. Aftermarket nosepiece ground clearance is 5".

19. **Seat:** Aluminum racing seat only. No plastic, fiberglass, or carbon-fiber seats. 1" square tubing may be used for the seat support structure and seat belt anchoring. The seat support structure must be attached to the roll cage and frame only.

20. **Safety:** See Common General Specifications for safety rules.

21. **I 94 305 cc engines:**

**Minimum Weight will be 2950 and will be adjusted as needed. This could be changed weekly to achieve balance.**

**Headers will be allowed on 305's only must cost less then \$150, 1 5/8 max tube with 2.5"pipes and downspout.**

**E-85 allowed with the 305 only.**

**May run a Weiland #7546 or #7546 or intakes listed above on the 305 only.**

**305's must follow all other rules above.**

**305 piston must weight more the 498 grams with out pin and rings this is stock weight.**

