

# WVSO 2023 Thunder Car Rules

## Updated 2/19/23

**Any American made rear wheel drive car 1955 through 2010. No convertibles, no two seaters and no trucks. Ford to Ford, GM to GM, Mopar to Mopar etc. Minimum wheelbase 101". Gen 3 Camaros Must be 54% Left. Only #34 Fox Body Mustang is allowed. No other Fox Body Mustangs. No mono balls or heim joints in ANY cars other than steering shaft and carb linkage. Racing Radios with ability to add raceceivers allowed. Raceceivers are mandatory.**

### BODY:

After market noses ok, must match model. Hoods, fenders, roof and q-panels MUST be OEM stock. Doors may be stock or 20-gauge steel. Hood, doors, and trunk lid may be gutted. If you have sheet metal q-panels MUST be stock configuration and 20-gauge steel. Bumpers MUST be in stock configuration or covered. **Stock firewall MUST be in place in stock location. All stock floorboards MUST be in place in stock location. Minimum 20-gauge steel used for patching.** Clear Lexan or stock allowed. Spoiler may be NO wider than 60 inches centered on trunk lid. Spoiler can be no wider than the body, NO OVERHANG Spoiler no taller than six inches (6"). Battery MUST be in a covered box with a master switch located behind driver. MUST have full windshield and can be Lexan. Wing windows no longer then ten inches (10"). No air cleaner hole in hood.

***Bodies must remain stock appearing and in full spirit of class.***

**There must be an open space at the top of the windshield for the class sponsor.**

### ROLL CAGE:

Fully conforming roll cages are required. Front hoops allowed. External driver's door nerf bar optional. All bars are subject to the Technical Director's approval. Roll bars are required and must be of at least one and one-half inches (1 1/2") O.D. steel pipe, one-eighth inch (1/8") wall thickness, one and one-three quarters (1 3/4") by ninety-five hundredths (.095) wall thickness on tubing. Roll bars MUST be welded or securely fastened inside the car to the floor pan and braced on the rear main bar. All roll bars must have three (3) sissy bars on the driver's side connected with three (3) vertical bars in the center with a minimum of two (2) sissy bars on the passenger side. All cars MUST have a rear safety bar attached to the main cage to protect gas tank.

### ENGINE HEADS:

Approved stock production only. Bigger valves ok and all seat work must be on center line. Screw in studs ok. Rocker arms MUST be stock stamped steel. Rocker ratio MUST be stock per engine. **ROCKER RATIO MUST BE STOCK PER ENGINE, ROLLER TIP ROCKERS OK, FULL ROLLER ROCKERS ADD 25LBS.** NO porting, polishing, deburring or port matching. NO angle milling. NO stud girdle. NO oil deflectors. NO titanium retainers, "steel only". NO titanium valves. NO epoxy. NO aluminum. NO welding. NO "N" heads. NO bowtie vortex. NO vortex. NO angle plugs. NO W2. NO world SR. NO Ford Motorsports. NO after-market.

CAMSHAFT:

.530 lift max; Hydraulic cam. Hydraulic lifters MUST de-pump FULL stroke of lifter. NO hydraulic rollers. NO solid lifter cams. NO stacking of hydraulic lifters. NO gear drives.

BLOCKS:

Stock OEM production only with part number. **No Aluminum Blocks.**

INTAKE MANIFOLD:

Stock OEM cast iron Q-Jet or low rise two barrel. Two (2) big holes and two (2) small holes, low rise. Ford equivalent or subject to penalty. Dodge equivalent or subject to penalty. No marine type. Must have part number. **No Aluminum except sealed GM 602 crates.**

EXHAUST MANIFOLD:

NO porting or port matching. NO lighting. NO exit greater than two and a half inches (2 1/2). MUST have muffler and pass at 95db. No Step headers.

ROTATING:

Option 1: MUST be of stock weight and dimension. Flat tops only. Two (2) valve relief pistons ok. MAX cubic inch 360. Stroke MUST match block. NO stroked or de-stroked. NO light weight.

Option 2: See Weight

OIL SYSTEM:

NO dry sumps. NO external oil pumps. NO external oil filters.

RADIATOR:

Steel or aluminum ok. NO anti-freeze. MUST have a catch can.

CARBURETOR:

Stock Holley 4412 five hundred (500) cfm 2 barrel only with full choke horn. The part number MUST be on choke horn. **NO RACING CARBURETORS. NO SCREW IN AIR BLEEDS.** Must pass complete BLP Gauges.

CARBURETOR SPACER PLATE:

One inch (1") carb spacer or Canton Phenolic. NO tapered, CNC milled or ANY high-performance spacer.

AIR FILTER:

Fourteen-inch (14") round, three inches (3") tall, K&N allowed

CLUTCH:

MUST be stock cast iron flywheel; .870 thick or more. One (1) clutch disk. All steel pressure plate, ten half inch (10 1/2") minimum. MUST have a one inch (1") access hole in bellhousing for visual on clutch and a one inch (1") hole in bell plate. NO racing clutches. MUST have scatter shield or belting. Clutch pedal and master cylinder can be aftermarket.

TRANSMISSION:

MUST have all forward gears and reverse. Automatic transmission MUST have torque convertors. Must have OEM part number.

REAR END:

Can be stock or nine-inch Ford (9"). Stock Open Spyder Rear End Ok. Spool or welded only. NO limited slips. NO Detroit lockers. Spring shackles ok. Floaters with drum brakes ok and are allowed, no cambered snouts. Any rear end with disc brakes, add 25 pounds. Must have stock OEM calipers only.

DRIVELINE:

MUST be steel; painted white. MUST have a loop twelve inches (12") behind transmission.

BRAKES:

MUST have ALL OEM brakes (4 working). Aftermarket brake pedal ok. Aftermarket master cylinder ok. Remote brake adjuster must be under dash or hood. Stock Calipers for make only.

WEIGHT:

Option 1: Up to 360 cubic inches

**Weight 3200 min**  
**Max Left 55%-54% Gen 3**  
**Max Rear 48%**

Option 2: Up to 400 cubic inches

**Weight 3400 min**  
**Max Left 55%-54% Gen 3**  
**Max Rear 48%**

Option 3: GM Sealed 602 Crate with 6000 chips; MSD #8727CT soft touch HEI rev limiter on right side of dash or firewall out of reach of driver.

**Weight: 3225 min**  
**Max Left 55%-54% Gen 3**  
**Max rear 48%**

#### SHOCKS:

Steel Body Non-Adjustable, Non-Rebuildable, Mounted in Stock Location using Stock Mounting Hardware. \$150.00 Claim Per Shock. Claim must be made by a Thunder/Hobby Driver competing that evening. Claim must be in cash, in writing and presented to the Tech Director between Qualifying and 15 minutes before the main event. If you refuse the claim, you will lose all money and points for the night.

#### RIDE HEIGHT:

Five-inch (5") ride height from lowest part of car.

#### A-ARMS:

Stock OEM only, per make and model.

#### SPINDLE:

MUST be stock OEM.

#### CAMBER:

Two inches (2") right and one inch (1") left, max measured with square at top of wheel.

#### WEIGHT JACKS:

NO weight jacks. Pocket spring adjusters ok.

#### TRAILING ARM:

MUST be stock OEM dimension. MUST be in stock location. NO alteration allowed. NO MONO BALLS

#### SWAY BAR:

One and one quarter inch (1 1/4") max in stock OEM saddles. All thread ok for adjustment. NO Heim Joints. **No At Frame Adjusters.**

IGNITION:

- Option 1: Firing order MUST be stock per engine. NO crank triggers. NO electronic tuning.
- Option 2: 4-7 swap okay.
- Option 3: 602 - MSD#8727CT soft touch rev limiter

FUEL CELL:

MUST be covered in twenty (20) gauge steel in trunk location. Fuel filter MUST be metal. Fuel line MUST be in conduit if located through car. Fuel cell no lower than ten inches (10") and no closer than twelve inches (12") from back bumper.

FUEL PUMP:

Mechanical only. NO electric. **Oberg type anti siphon shut off valve mandatory.**

WHEELS:

15 x 7 or 15 x 8 steel racing wheel. 5/8-wheel stud mandatory.

TIRES:

Hoosier 970. NO softening inside or outside. NO poking. NO tire shine. The tire you qualify with you MUST start the main event with. Qualifying tires will be stamped at the scales prior to qualifying.

SAFETY:

MUST have race padding on all bars that your hands and head can reach. MUST have window net. MUST have three inch (3") wide shoulder belt. ALL belts must be five (5) years or newer. MUST have two-inch (2") sub belt. MUST have fire extinguisher. MUST have master electrical shut off behind the driver's seat. Helmet MUST be SNELL SA 2005 or newer. NO motorcycle helmets. Head and neck restraint recommended. Driver's suit must be clean with no visible holes. Racing gloves must always be worn. Holes around shifter must be covered. Seats must be aluminum. 2" belt okay with HANS or Youth.

TRANSPONDER:

Location: Right rear frame rail; fifteen inches (15") behind center of rear-end.

CAR NUMBERS:

Doors: Twenty-four-inch (24") MINIMUM

Roof: Thirty-inch (30") MINIMUM

Added weight must be painted white and clearly marked with your car #. Must be mounted securely with minimum 1/2 "grade 5 bolts.

**These rules can be adjusted anytime to even the competition.**

**IF IT DOES NOT SAY YOU CAN, YOU CANNOT. PLEASE BUILD TO THE RULES NOT AROUND THEM.**