

# **Sunset Thunder Rules 2006, 07**

## **Includes Kawartha, Mosport, Peterborough And Varney Speedways**

This set of rules is designed as a basic guideline. All cars are subject to technical inspections by random selection at the end of each race. Any part of the car not specifically covered in these rules must remain stock.

The Thunder Car division is open to any make of North American built automobile having a factory listed wheelbase of 101" or more, for the make, model and year being raced. No convertibles, four wheel drive vehicles or station wagons will be allowed. Mosport permits full size trucks, Sunset permits compact trucks.

The word stock when used herein shall mean unaltered, as factory available and produced by O. E. M. for the make, model and year of the car being raced. That excludes all aftermarket "High Performance" parts, and all decisions and rulings shall be based on data obtained from the Canadian Service Data Book.

### **SPECIFICATIONS**

#### **APPEARANCE**

Cars must not be excessively rusted and must be presentable in appearance. Cars that are considered unsafe or improperly prepared will be rejected by the tech committee.

#### **BATTERY**

Must be located behind the drivers seat securely fastened and in a sealed container e.g. a marine battery container with lid if in driver's compartment.

#### **BODY**

Body must be steel and stock in appearance to the original vehicle, with no chopping, channelling or sectioning allowed. Body must be complete with all doors, fenders, quarter panels, hood, trunk and roof as well as both bumpers. All chrome mouldings, door handles, name plates and lights must be removed. Truck body alterations must be approved by tech.

#### **A) BUMPERS**

Bumpers must be stock appearing. Bumpers must be mounted in stock position with no sharp edges exposed. After market nose and tail cones allowed. Chains or cables must be installed from the bumper to the frame for safety reasons. A fabricated bumper reinforcement may be run but stock bumper or cover must be over top.

## **B) GROUND CLEARANCE**

Minimum frame and body height is 6".

## **C) HOOD AND TRUNK LID**

No hood openings allowed. Inner hood and trunk lid bracing may be removed. If original hood / trunk hinges are used, then 2 pins must be used, If not hinged, 4 pins are required. Rear spoiler allowed but may not extend beyond rear edge of rear deck panel and must follow the contour of the rear deck lid. Maximum 5" by width of rear deck. No side pods or bracing of rear spoiler.

## **D) SCRUB RAILS**

Side bars must extend no further forward than the rear of front wheel opening, and no further rearward than front of the rear wheel opening, maximum 1" x 2" welded or bolted to roll cage. No sharp edges. When bolting on scrub rails, you must use carriage bolts (or round-headed bolts), if hex head bolts are used, they must be counter sunk. 14" X 40" 16 gauge metal recommended to go between the cage and the door skin.

## **E) WHEEL OPENINGS**

Original wheel arches may be removed/trimmed for tire clearance. Inner splash aprons in the front fenders must be removed.

## **F) WINDSHIELD**

Windshield is a must. Windshields must be safety glass or lexan with 2 center braces and 4 safety clips –2 at top of window and 2 at bottom of window. No plexiglass screens or half windshields allowed. The top 5" of windshield must be kept clear for Speedway division sponsors.

## **BRAKES**

All four wheels must be working. Rotors, calipers and spindles may be used from different models. Single piston steel calipers only.

No brake biasing of any kind, including valves, blocked lines etc. No brake lines allowed in the driver compartment. Only factory stock rear disc brakes allowed if drum brakes not available for that make and model and must run a 50 lbs weight penalty on rear wheel drives.

## **CHASSIS AND SUSPENSION**

### **A) ROLL CAGE & FRAME**

Must be stock steel frame with no holes drilled for lightening. Front and rear sub or unibody frames must be attached with 2 x 3 hollow or box tube with a minimum wall thickness of .095. A full roll cage constructed out of 1 3/4 x .095 min round steel tubing is mandatory. Roll cage must be symmetrical in all directions. A minimum of four horizontal door bars on the drivers side with a minimum of two vertical bars between each horizontal bar "X" type bars will be allowed on passenger side. Left leg protection bar must be installed between the roll cage and the left front frame rail. Dash bar required, along with an "X" type member across and behind driver. A so called "Petty" bar recommended to run from center of cage to upper right front halo. A front engine bay hoop is allowed and may

connect directly to main cage. Bracing running from top of cage towards the rear, should extend beyond fuel cell area before attaching to rear frame rails. All welds must be electric or mig and will be subject to the approval of tech inspectors. No offset cages allowed. All roll bars in the drivers area must be properly padded and taped. All suspension mounting points must remain in their stock locations. Front cross member may have snout removed and plated for center link clearance. Structural X ing will be permitted in the following areas of the chassis. Main frame rails may have X bracing under the floor in the center section of the car. Rear clip may have X bracing above or under the fuel cell area. Downward supports from main cage hoop to rear clip may have X bracing. Rear frame sections may have 2"x3" replacement tubing from top of kick-up rearward. Must retain original appearance.

#### **B) SHOCKS**

After-market racing shocks will be allowed but must be non rebuildable, stock style steel shocks in stock locations with stock style mounts.

#### **C) SUSPENSIONS AND FRAMES**

All suspension and frame components must be stock for the year, make and model of car. No modification of stock suspension locating points. Wheelbase must be a minimum of 101". Springs and steering components may be interchanged. All control arm rubber bushings may be replaced with urethane or heavy plastic. steel, aluminum, or brass. Mono-ball type bushings will not be allowed. No adjustable sway bars. Link kit lengths may vary side to side. Springs may be stock or after market with a minimum size of 4 inch outside diameter. Any and all spring spacers, front and rear, must be welded to the chassis and non-adjustable (welded by fourth week of racing). OEM rubber mounting adapters on rear springs will be allowed. Top rear spring mounts may be manufactured and in stock location (non-adjustable). Multi-hole spring shackles will not be permitted on leaf spring applications. No "weight jacking" or weight transferring devices allowed.

#### **D) WHEEL CAMBER**

Strut cars may alter front strut towers to adjust camber.

#### **COOLING SYSTEM**

No antifreeze permitted, An overflow can must be installed on the firewall, behind the right front tire.

Aluminum radiators permitted and electric fans permitted.

#### **EXHAUST SYSTEM**

Muffler(s) are mandatory. Catalytic converter may be removed. Exhaust pipes must exit within 18" of the rear wheels. Pipes to be cut flush to the body and above the frame rail or turned down at the exhaust end and exit under car. Exhaust pipes should be firmly mounted high enough to avoid contact with the track surface during racing conditions. The exhaust cannot have any sharp edges or protrude outside of the body line. Original cast iron exhaust manifolds only. No

Ram Horn manifolds or headers permitted. Maximum 2-1/4" pipe size before muffler and maximum 3" after muffler. Magnaflow muffler #11215 (2-1/4"), #11216 (2-1/2"), or #11219 (3") recommended (mandatory at Mosport). Enter step-up to muffler to be a max. of 6" long.

## **FUEL**

Pump fuel or track fuel permitted. The gasoline shall not be blended with alcohols, ether or other oxygenates. It shall not be blended with aniline or its derivatives, nitro compounds or other nitrogen containing compounds. No NOS systems.

## **FUEL SYSTEM**

### **A) FUEL CELL**

Is Mandatory and must be mounted in the center of the trunk area, with filler inside trunk. Fuel cell maximum recommended capacity –15 gallons. The fuel cell must be separated from the driver's compartment by an all metal firewall. There can be no openings in the firewall and any holes must be filled in with metal. No filler neck or fuel line is permitted inside of the driver's compartment. The fuel cell must be firmly secured with steel straps to the floor of the trunk. Minimum of two straps front and back, one side to side (straps must be steel and a minimum of 1" x 1/8" flat strap or equivalent). A fuel cell protection bar is mandatory. Minimum 1 3/4 inch O.D. .095 inches thick. The bottom of the fuel cell may be no lower than 13" from the ground to bottom of cell, and must be centered in the chassis from side to side. No electric fuel pumps allowed unless on fuel injected vehicles. All filler caps must be non-vented. No car will be permitted to run if any sign of fuel leakage is found. The mounting of the fuel tank is at the discretion of the tech inspector. Steel cased fuel filters only. Cell ground strap and fuel cap attaching device are mandatory.

### **B) FUEL SHUT-OFF**

There must be a fuel shut off valve in working order and mounted in the rear firewall or window parcel shelf accessible by safety personal. It must be brightly and neatly marked "ON" and "OFF".

## **IGNITION & CHARGING SYSTEM**

OEM 12 volt stock ignition, Must consist of stock or stock replacement parts only. No aftermarket high performance ignition systems or printed circuit type modules. Charging system is optional. **Kill Switch Mandatory** in main battery line or use of Ford solenoid is permitted, either system must be clearly marked and in reach for safety personal.

## **INTERIOR**

With the exception of the driver's seat, all upholstery materials and trim and padding must be removed. Front and rear firewalls must have all holes and openings covered with sheet metal. Area between fender and firewall must be

filled with sheet metal. Front firewall may be fabricated but must remain in stock location. Any holes or openings in the floor pan or trunk area must be covered with sheet metal. Original floor pan must be retained on drivers side of interior. A fabricated interior may be used on the passenger side of car. For transmission clearance floor pan may be raised 12" above original position of drivers floor pan. Passenger side floor may drop back down to original height or maintain height of 12" to passenger door. Rear firewall may be fabricated. Rear firewall may start behind seat at base of roll cage and extend rearward to base of rear window opening. Rear firewall may not exceed height of rear deck. Any and all fabricated interior must be built with a minimum of .022 gauge sheet metal. One stock interior mirror is permitted. No fuel or brake lines or fuel filters permitted in the driver's compartment. No plastic gauge lines. Roll bar padding is mandatory.

### **PAINT AND LETTERING**

Only those cars who are entered in the Thunder Car division and registered are permitted to prenumber their car. Numbers of members must be on the sides of the car in large (minimum 18") letters in a color that clearly contrasts to the paint job on the car. All cars of non-members must have sides and roof clear so the number assigned by the track official can be placed on the car. Sponsor's name and logo may be placed any other place on the car. 4" number required on right front of car. Vulgar words and expressions are not permitted.

### **RADIOS**

No radios unless track authorized one-way.

### **REAR AXLE**

Welded locked rear ends permitted. Steel Mini-spools are allowed. No posi, full aluminum or full spools allowed. Rear end housings may be interchanged year to year. ( eg. 8 1/2 " rear end may be used to replace a 7 1/2 " rear end ).

### **SAFETY**

#### **A) HELMET & APPAREL**

Driver's fire suit is mandatory. No coveralls. Driver and suit must maintain clean looking appearance. Fireproof gloves, neck collar, balaclava, underwear, socks, and shoes are recommended. No nylon shoes allowed. A Snell 2000 SA or newer approved racing safety helmet and complete driver's racing suit must be worn in all practice and race events and until car is parked in pit area.

#### **B) BELTS AND HARNESS**

All cars must be equipped with a quick release type, 5 point harness with a minimum 3" lap belt and shoulder harness of 3", properly affixed to the roll cage or chassis with aircraft quality bolts, no less than .375 (3/8) inches in diameter. Head restraint **strongly** recommended. Seat belts must be dated and be in excellent condition.

#### **C) FIRE CONTROL**

Cars must have a 2 ½ lbs minimum fire extinguisher with either a steel or aluminum head mounted in a steel mounting bracket and must be bolted down, and within driver's reach with seat belts fastened. Fire extinguisher must be serviced and inspected each year and dated no later than January 1st of the current year.

#### **D) SEAT**

An aluminum racing seat must be used, bolted to roll cage, not bolted to the floor. When mounting seat use minimum 3/8" bolts with large washers to hold racing seat to seat framework. Minimum of two bolts on the seat back and two bolts on the seat bottom. Seat must be positioned completely to the left of the centerline of the car. An approved head restraint must be made of some energy absorbing material. Headrest side plates recommended.

#### **E) WINDOW NET**

Window net mandatory with minimum 3/8 inch rod. Must have quick release.

### **TIRES**

TRACK TIRE RULE WILL APPLY, Specific track tire will be mandatory.

### **TRANSMISSION**

You must use automatic transmissions unless your engine size is 3.5 litre or less in which case you may run a factory stock standard transmission, clutch and flywheel but scatter protection must be used. No racing automatics. No after market valve bodies or manual valve bodies allowed. Torque converters must be stock and be a minimum of 11" diameter on V8s. Aftermarket shift kits and shifters permitted. All cars must have a working reverse gear. Transmission coolers are permitted but cannot be mounted in the drivers compartment. Powerglide transmissions will be allowed with a 50 lbs penalty. Driveshafts must be stock, steel and painted white. Two drive shaft loops to fully enclose drive shaft are mandatory. Loops must be no less than 2 inch wide and 1/4 inch thick and must be fastened to the chassis front and rear.

### **WEIGHT**

Maximum left side weight 53% and maximum rear weight of 45% with driver in car in 4 barrel carb cars. 55% left and 50% rear with two barrel carb and 6 cyl. cars. Minimum total weight 3150 lbs for V8s and 2800 for track approved V6s including driver. 100 lbs penalty for fuel injected V8s. No topping up with fuel after the feature. When adding ballast it must be in blocks of no less than 5 pounds, bolted in securely, painted white, be numbered and have 6" ground clearance minimum.

### **WHEELS**

No reverse or aluminum type rim permitted. Steel only. Maximum rim width bead to bead: 8". Heavy duty or racing rims may be run on all four wheels. Right front wheel **MUST** be a racing rim. Minimum of 5/8" studs required.

### **WHEELBASE - TRACK WIDTH**

Track width will be a maximum of 64".

### **ENGINES :**

#### **BLOCK ASSEMBLY**

Only engines that were factory available for the make, model and year being run are permitted. No modifications to engine block, cylinder head, crankshaft, camshaft or connection rods unless specified.

Maximum Cubic In. GM- 350 plus.040 for clean-up

FORD- 351 " "

DODGE- 360 " "

Block may be zero decked. No part of the piston can protrude above block deck.

### **PISTONS**

OEM cast or forged pistons allowed. No high performance pistons.

### **CAMSHAFT**

OEM style Hydraulic cams and lifters only, Double roller timing chain allowed.

Maximum Valve Lift: GM 410

Ford 419

Dodge 412

### **CARBURATION**

Carburetor to be stock only as from factory. Must bolt to original factory intake with no adapters. The following are mandatory: two throttle springs running in two different directions, throttle stop at the carb, solid linkage (no throttle cable) and a toe bar. Cold air boxes are permitted, as long as they fit under the hood. No air ducting of any type allowed into the air box. CHRYCO may use quadrajet carb. Fuel injected motors may be used if it is available in the make/model/year of vehicle being run. Choke accessories may be removed. No adaptor plates allowed. No truck carburetors. Rochester carburetor throttle body max. bore diameter is 1-11/16", max. boost (secondary) venturi bore diameter is 1/8".

### **COMPRESSION RULE**

Maximum of 9.0 –1 Whistle up to 9.4 - 1 if checked hot.

### **CYLINDER HEADS**

Must be stock for engine being run, No head modification. NO DOUBLE BUMP TYPE HEADS - NO 2.02. No vortec V8 heads.

VALVES. Cylinder heads may be changed from year to year provided they are not high performance. Stock OEM rocker arms and ratio only. Screw in studs are permitted –no guide plates.

Cleveland Max. 2.04 intake and 1.65 exhaust  
Windsor Max. 1.84 intake and 1.64 exhaust  
Chrysler Max. 1.88 intake and 1.60 exhaust

### **ENGINE MOUNTS**

Solid engine and transmission mounts are permitted but engine must remain in stock location or equivalent.

### **FUEL PUMP**

Stock location mechanical pumps only unless running fuel injection.

### **HEIGHTS**

Engine height will be a minimum of 12 inches measured from ground to center of crankshaft.

### **INTAKE MANIFOLD**

Original OEM cast iron manifolds only. With only OEM type gasket allowed, no doubling of gaskets under carb. No aluminum intakes.

### **VALVES**

Valve stem diameter must be stock. Stainless steel or stock type valves are allowed. No turning of valve stems permitted. Undercut and light weight valves are not permitted. OEM rocker arms and ratio only. Dodge may use adjustable rockers.

### **WATER PUMP**

No aluminum pumps allowed on GM, stock OEM replacement pumps only.

### **OIL PAN AND LUBRICATION**

Extra capacity aftermarket wetsump oil pans are allowed.