

## 2020 4-Cylinder Pro- 4 Rules

**\$1000 fine for tire soak**

**\$100 fine for antifreeze**

### COMPETING MODELS

Competing models for cars and station wagons eligible are 1971 and later:

American Motors Spirit	Ford Thunderbird
Buick Skylark	Mercury Bobcat
Chevy Beretta	Mercury Capri
Chevy Chevette	Olds Starfire
Chevy Monza	Plymouth Arrow
Chevy Vega	Toyota Celica
Ford Mustang I & II	Toyota Corolla
Ford Pinto	Ford Taurus

1. After-market bodies approved for competition. If a fiberglass driver's door is used, a 22-gauge (minimum) plate must be installed either over or between driver door bars.
2. Other makes and models may be eligible, but must first be approved by the Technical Director.
3. No front-wheel-drive cars allowed.
4. Wheelbase must be from 96" to 101".

### OVERALL CAR WEIGHT

1. Minimum Weight 2,200 lbs and 2100 lbs for Stock Chassis cars.
2. Car must weigh minimum of 1 lb. Per/cc of actual engine displacement. Right side weight minimum 45% of 1 lb per/cc.
3. Stock Chassis Cars deduct 50 lbs from overall minimum 1 lb per/cc. Right side weight minimum 45%.
4. Any Crankshaft altered from the original engine stroke must add 20 lbs to the right side in addition to the lb. per cc.
5. Car weight includes driver before and after race. When cars are weighed after the race, the only additional fluids that may be added to make weight will be enough water to top off the radiator, maximum of 2 quarts of motor oil in the engine and enough racing fuel to top off fuel cell at base of filler neck at bottom of vent hose - as specified in HMS Race Procedures.
6. All lead weight must be painted white with car number on weight.
7. Claimed minimum weight must be displayed on left rear corner of hood in minimum 1½" tall lettering. Example: 2340/1113.

### DETAILED BODY REQUIREMENTS

1. Bodies must be stock appearing and acceptable to HMS Tech officials.
2. Cars must maintain a roof height of forty-four (44) inches as measured at the highest point with the driver in the car. Roof line must be acceptable to officials.
3. Window opening must measure at least fourteen (14) inches.
4. Rear spoiler may not exceed five (5) inches in height and must be self-supported. Spoiler must be at least 1/8" thick. Front spoiler must be perpendicular to track with four-inch ground clearance.
5. Doors must be welded closed.
6. NO air ducts, scoops, etc.
7. At least two (2) positive fasteners must be used on front of each hood and the rear deck lid. Hinges or additional fasteners required on rear of hood and rear deck lid.
8. Car must maintain steel front and rear firewalls. Firewalls must completely seal off driver's compartment.
9. Hatchback models are required to have an approved rear firewall.
10. Fuel cell area must be completely sealed off from driver compartment.
11. Front inner fender may be removed; rear wheel housing may be replaced with 22 gauge steel sheet metal or better, of same size.
12. Excessive tire tread must not be visible from top.
13. Wheel opening must be rolled and follow shape of body.
14. Maximum tread width of 64.5", measured from inside of one wheel to outside of other wheel at bead at spindle height.
15. All glass must be removed. Windshield must be Lexan.
16. Windshield must have at least three (3) straps, 1/8" x 1" minimum inside. Windshield must be retained by six (6) 3" x 1" x 1/8" safety clips, bolted, or riveted to the windshield bed in a safe/approved manner.
17. Rear window must be installed and have two (2) straps 1/8" x 1" minimum inside.
18. Cars with "C" pillar may run quarter windows. Must be Lexan.

## **HEIGHT**

1. 4.5" minimum height rule for all cars including frame, subframe, body panels, and any added weight/weight boxes.

## **ENGINE ELIGIBILITY**

1. Maximum displacement 2500 cc, before overbore.
2. .060 overbore maximum.
3. Block assembly must be "OEM", except GM may use Super Duty Block on 151 cu. inch engine only.
4. GM 151 engine allowed on all GM cars.
5. Engines may be balanced.

## **ENGINE/TRANSMISSION LOCATION**

1. All engines utilizing GM 151 blocks or Chrysler 2.5 (Jeep) block; center of number-one spark plug hole must be in line with the center of the upper ball joints.
2. All engines utilizing Chrysler 2.2 or 2.5 (small) block; center of the rear factory transmission mount shall not extend past the mid-point of the wheelbase.
3. All other engines; rear of transmission tailshaft housing shall not extend past the mid-point of the wheelbase.

## **CYLINDER HEAD**

1. Stock "OEM".
2. Any non-titanium valve may be used, but must be located and oriented in stock manner.
3. Stock production heads only. Porting and polishing allowed.
4. Valve size up to 1.890 intake and exhaust 1.60.
5. No angle-milled heads.
6. Any valve springs may be used.
7. NO aluminum heads allowed on GM 151 engine.
8. Three-angle valve jobs permitted same as NASCAR LMSC specs.
9. Stock (OEM) or after market aluminum intake manifold allowed. Internal machining allowed. No high rise intakes allowed.
10. Two valves per cylinder maximum.

## **CARBURETOR SPACER AND AIR CLEANER**

1. Up to 2" spacer allowed with one gasket .065" thick on top and bottom.(Open plate or 2 hole carburetor)
2. All cars must use a round paper air filter maximum 4" high x 14" round. NO ducting to air filter allowed.

## **CARBURETOR ALL CARS Holley 350 CFM (from NASCAR LMSC Rulebook 2006)**

- The Holley 2300 two (2) barrel carburetor, list number 7448 and the Holley 2300 HP two (2) barrel carburetor, part number 80787-1, with a venturi size of 1-3/16 inches and maintaining a throttle bore maximum size of 1-1/2 inches (see B. below for Holley carburetor rework guidelines.) The Holley 2300 two (2) barrel carburetor, list number 7448 and the Holley 2300 HP two (2) barrel carburetor, part number 80787-1, are the only 350-CFM carburetors that will be permitted on all models. The venturis must maintain a round (circular) cross section. Only Holley replacement or service parts can be used in any carburetor rework. Carburetors and/or carburetor components machined from billet materials will not be permitted.

## **Holley 2300 and 2300 HP two (2) barrel Carburetor Rework Guidelines**

- Reshaping, polishing, grinding, or drilling of additional holes will not be permitted. The maximum size for the air bleed holes in the top of the carburetor body will be 0.080 inch for all four (4) holes. Screw in air bleed jets will not be permitted in the 2300 main body. Screw in air bleed jets will be permitted for the 2300 HP main body, but they must be epoxied in place. For the Holley 2300 HP main body, the amount of holes and passages must remain as manufactured. Additional and/or plugging holes or passages will not be permitted in the Holley
- The choke may be removed, but all screw holes must be permanently sealed.
- Choke horn must not be removed.
- The booster type must not be changed. The Holley booster part number 45R-107-1, with the casting number 45R-107 and part number 45R-312R, with the casting number 45R-312 are the only boosters that will be permitted. The Holley casting numbers must remain legible on the top of all booster stems. Size or shape must not be altered. Height and location of the boosters must remain as manufactured. All boosters must maintain a minimum outside diameter of 0.616 inch. The addition of material will not be permitted to the boosters with the exception of a small amount of epoxy that may be used to assist in securing the booster stem to the main body of the carburetor.
- The venturi area must not be altered or reshaped in any manner. The venturi must maintain a circular (round) cross section. The casting ring must not be removed. The location of the venturi must remain as produced by the manufacturer.
- Alterations that, in the judgment of Track Officials, were made to allow additional air to be picked up below the opening of the venturi such as altered gaskets, base plates, and drilling holes into the carburetor will not be permitted.

- The carburetor throttle body must be used as provided by the manufacturer. The positioning of the throttle bores in the carburetor throttle body must be the same as provided by the manufacturer. The throttle bores must be completely round. The throttle bores must be straight without taper from top to bottom. The throttle bores must remain perpendicular to the top and bottom of the carburetor throttle body. The throttle body (base plate) must not be altered in shape or size. All vacuum holes must be threaded and plugged.
- Stock throttle plates (butterflies) must not be thinned or tapered. Idle holes may be drilled in butterflies. Screw ends may be cut even with the shafts, but the screw heads must remain standard.
- Throttle Shafts must remain stock and must not be thinned or cut in any manner.
- Only Holley metering blocks can be used. Surfacing of the metering blocks for improved gasket seal will be permitted. The only metering blocks permitted for the Holley 2300 HP carburetor (80787-1) will be the Holley, part numbers 11938N, 11886 (390HP) and 12323 (screw in emulsion bleed jets) metering blocks. To order metering block part number 12323 (screw in emulsion bleed jets) the sales number is 134-276. For the Holley 2300 HP approved metering blocks, the amount of holes and passages and the location must remain as manufactured with screw in emulsion bleed jets in each jet passage, however, hole sizes may be altered in the jets. Blanks without holes may be used. Additional holes or passages will not be permitted in the Holley 2300 HP approved metering blocks. The Holley metering block, part number 12323 (screw in emulsion bleed jets) will not be permitted in the Holley 2300, list number 7448.
- The accelerator pump discharge nozzle must not be changed. The retaining screw must not be drilled for a discharge passage.
- Jets, Power Valve, and Float may be changed.

#### **CRANKSHAFT**

1. Stock "OEM" crankshafts only. Balancing and machining ok, NO lightening of crankshaft allowed. Casting numbers must not be removed. No interchanging crankshafts between manufacturers.
2. Any steel rod allowed. Maximum 5.7" rod length for Fords. Any rod bolt allowed.
3. Any piston allowed. Full-floating pins allowed.
4. Any Crankshaft altered from the original engine stroke must add 20 lbs to the right side in addition to the lb. per cc.

#### **CAMSHAFT**

1. No roller camshafts permitted.
2. Any camshaft permitted, with the exception of a roller cam, dial in pulley permitted.
3. After market roller rocker arms permitted.

#### **ENGINE COOLING SYSTEM**

1. Electric fans allowed
2. Any stock appearing radiator allowed in stock position in front of the engine.
3. No Antifreeze permitted.
4. All air that enters the grille area must flow through the radiator core and/or oil cooler (if equipped).

#### **EXHAUST SYSTEM**

1. Any header allowed.
2. Two three (3) inch diameter (maximum) exhaust pipes.
3. Exhaust pipe must exit underneath the car or through the right side door area behind the driver's compartment. Any exhaust pipes inside car must be boxed in for safety.

#### **ELECTRICAL SYSTEM**

1. Any non-magneto ignition allowed.
2. Battery must be in an enclosed secure box.
3. No electrical connections or devices in trunk.
4. Master Battery Switch Labeled on/off switch must be located on the center of the dash board within the driver's reach. The switch must be wired to the battery cable in a manner that would cut off all power to the car.
5. Only one (1) standard automotive 12-volt battery will be permitted.

#### **TRANSMISSION**

1. Only standard production OEM type transmission will be permitted.
2. All forward gears and reverse gear must be in working order.
3. Only steel angle cut forward gears will be allowed. No square cut gears.
4. No drop cluster transmissions allowed.
5. No 5 speed transmissions with gears removed allowed.
6. No automatic transmissions allowed.
7. Shifter boot meeting SFI 48.1 sealed to the floor required.

#### **CLUTCH, FLYWHEEL and DRIVESHAFT**

1. Flywheel must maintain a minimum weight of thirteen (13) pounds.
2. No aluminum flywheels allowed.
3. No center-mass flywheels allowed.
4. No multi-disc clutches allowed.
5. Bell housing must have an inspection hole in the lower section of the bell housing so the flywheel and clutch may be inspected.
1. Stock type clutch required. Clutch disc with springs NOT ALLOWED. High RPM stock type single disc racing clutch recommended.
2. Driveshaft must be made of steel minimum of 2 inches.
3. Driveshaft must be painted white
4. 2 360 degree solid magnetic steel brackets, with no holes or slots, not less than 2 inches wide and ¼ inch thick, must be placed around the drive shaft.
5. Steel bellhousing or scattershield must be installed on top, left, and right side of firewall constructed of 1/8 inch thick steel or ¼ inch belting.

#### **REAR END**

1. Stock or quick-change rear ends allowed.
2. Axles tubes must be magnetic steel.
3. Any gear ratio allowed.
4. Cambering of rear ends not allowed.

#### **TIRES**

1. Thirteen (13") inch diameter tires only allowed.
2. Maximum 9" wheel width allowed.
3. All four wheels must be of the same size and offset.
4. Hoosier F-45 is the only tire permitted. Tires must be purchased at the track. Must purchase one set of tires per year.
5. Steel or aluminum wheel spacers may be used to gain tire clearance, but may not be over three quarters (¾") of an inch thick. Only one solid spacer per wheel. Spacers one half (½") inch or larger must be billet.
6. Air bleeders not allowed.

#### **FRAMES**

1. Roll bar diameter 1 ¾" as specified in the NASCAR Rule Book.
2. Side rails must be a minimum of 2" x 3" rectangular steel with a .120 inch thick wall.
3. Front snout and rear clip must be a minimum of 2" x 2" square steel with a .090 inch thick wall.
4. Rear clip must angle down from its highest point to the rear bumper. Underslung chassis permitted.
5. Floorboard in driver's compartment must be 1/8" steel plate, plus the area directly in front of the driver's feet, plus the area immediately to the right of the driver's feet. Cars utilizing original factory floorboard in these areas do not need steel reinforcement plates.
6. Stock Chassis cars must have stock floor pan that extends from front firewall to rear firewall. No tube frames and/or tube front or rear sections. Original chassis rails must be in tack from front cross member mounting to centerline of rear axle with stock suspension mounting points. The majority of the front clip and rear chassis rails must still be present to measure relative to. Consideration will be made for wrecked and repaired chassis at HMS Tech Officials discretion. Stock front cross member must be used. Front and rear chassis may be connected with tubing that protrudes through floor pan but must be acceptable to track officials.

#### **SUSPENSION**

1. Screw Jacks allowed on all four corners.
2. All other suspension parts must be installed in such a manner that adjustments must be made from outside the driver's compartment.
3. Coil-over shocks allowed.
4. Any stock design springs.
5. Only rubber type spacers are permitted in coil springs.
6. Tubular upper and lower A-frames allowed. Lower control arms must be the same dimensions on both left and right side of the car.
7. Front and rear loop may be set in rectangular tubing to the top of the floor pan.
8. Rack and pinion steering allowed.
9. Stock design coil spring suspension allowed on all cars.
10. Rear coil spring upper mounts must be located and welded on the chassis directly above the lower mounts.

#### **BRAKES**

1. Only single piston disc brakes with stock type calipers allowed on front.

2. Either disc or drum brakes allowed on rear. Single or Multi Piston Caliper allowed on rear.
3. Rotors must be magnetic steel.
4. Floating brake calipers will not be permitted.
5. Brake recirculation systems will not be permitted.

#### SHOCKS

- ~~1. Shock absorbers and/or struts must provide a resultant force dependent upon piston velocity and must be acceptable to Track Officials. Shock absorbers, strut cartridges and components must be acceptable to Track Officials and must be available to all competitors from the shock/strut absorber manufacturer. All non-revalvable shock absorbers and/or strut cartridges must be used as supplied from the manufacturer.~~
2. Nitrogen-gas pressurized shock absorbers must be mono-tube, deflective disc valve type with an integral gas reservoir. Only a single piston is permitted in the main body with one (1) shim stack on the compression side, and one (1) shim stack on the rebound side, and only a single floating piston is permitted in the integral gas reservoir. Steel deflective disc valve shims must seal the primary metering faces of the single piston in the main shock body.
3. Adjustable shock absorbers permitted.
4. For all shock absorbers utilizing a gas reservoir, the maximum outside diameter of the gas reservoir must not exceed 2.600 inches.
5. Shock absorber shaft diameter must not exceed 0.630 inch
6. Shock absorbers/strut cartridges and internal components are subject to inspections.
7. Shock absorbers/strut cartridges must be used as manufactured by the shock absorber company.
8. Track Officials may use a shock absorber or strut cartridge provided by the respective manufacturer as a guide in determining whether a competitor's shock absorber/strut cartridges conforms to the specifications in the Rule Book.
9. A maximum of one (1) shock absorber or strut assembly per wheel will be permitted.
10. Coil over shock absorbers will be permitted.
11. External shock absorber/strut cartridge reservoirs will not be permitted.
12. Remote or electronically controlled shock absorbers/struts will not be permitted.
13. An external schrader valve to pressurize the shock absorber/strut with gas will be permitted.
14. Quick disconnect shock mounts will not be permitted. The shocks/strut assembly must be attached with nuts and bolts.
15. Heating pads and/or blankets will not be permitted for warming the shock absorbers/strut cartridges.
16. It is the responsibility of the driver, not the Track Officials, to ensure the shock absorbers/strut cartridges and assemblies are used in accordance with the manufacturer's instructions and specifications.

#### FUEL SYSTEM

1. Fuel cell mandatory.
2. NO electric fuel pumps allowed unless stock for make and model.
3. Cars with electric pump must have either a mercury cut-off switch with a steel braided line from pressure side of pump to the carburetor, or low oil cut-off switch.
4. Fuel lines running through driver's compartment must be encased in steel tube.
5. Track fuel only, with no additives.

#### ROLL CAGE

1. Four point roll cage mandatory. 1 3/4, .090M minimum tubing.
2. Full roll cage with loop permitted
3. Roll bar padding must be used in driver's compartment.
4. NO straight driver side door bars will be permitted. All door bars must be approved by HMS officials.