

## 2020 ALH MOTOR SPEEDWAY 4-CYLINDER STOCK CAR RULES

**Intent:** The 4 cylinder race car class is intended to be an entry level or hobby racing class. Aside from safety items and emissions control items, all aspects of the cars are to remain factory stock in function and appearance. Any changes to a car not explicitly listed below must be approved by the class rep and tech inspector.

**1. Cars:** Any naturally aspirated passenger car with a wheelbase of 105” or less (measured at the track), with a combined factory horsepower and torque rating not to exceed 290 for FWD or 300 for RWD (ie 145hp/145tq or any combination not to exceed a combined total of 290). Car must be at least 5 years old. Front wheel drive or rear wheel drive (no 4x4). Automatic or manual transmission. No convertibles. No Mazda RX7’s (rotary motors). All vehicle and component identification numbers (VIN, motor, trans, etc.) must remain intact and unaltered.

**2. Maintenance/Repair:** Interchange of parts between same make, model, and generation is allowed. “Generation” refers to the same make and model manufactured for a period of time between major styling or mechanical changes to the car. Interchange of parts between different sub-models (ie: LX, LS, GT, SE) of the same generation and same make and model is allowed, with the exception that it does not violate any of the other rules described herein. Examples: Swapping a 1.8L DOHC engine (or parts from the engine) from a 1992 Escort GT into a 1994 Escort LX that originally came with a 1.9L SOHC engine *IS* allowed because the Escort GT engine falls below the class combined horsepower and torque limit and they are the same make, model, and generation. Swapping a Dodge Neon SRT-4 engine (or parts from the engine) into a Dodge Neon SE model is *NOT* allowed, the SRT-4 model is not allowed to race in the class because it is above the combined horsepower and torque limit. Swapping a 2003 (third generation) Chevrolet Cavalier 2.2L Ecotec engine (or parts from the engine) into a 1990 Chevrolet Cavalier (second generation) is *NOT* allowed, the motor is allowed per the class horsepower and torque limit, but they are two different generations of the same car. This applies to swapping all other components/parts as well. The intent of the parts interchange rule is to allow for budget friendly repair and maintenance of the race car with readily available parts, *NOT* to enhance horsepower through parts swapping with different sub-models or reduce power-to-weight ratios using different car generations. If in doubt, contact the class rep prior to performing any maintenance with parts of a different year or sub-model.

### **3. Mandatory Safety Equipment:**

- Full-face Snell-rated SA2010 helmet required.
- Fire proof race suit, 1pc or 2pc, single layer minimum (*3 layer or better recommended*)
- Aluminum racing approved seat, mounted to the roll cage with minimum 4x 3/8" bolts. Minimum of two bolts in the lower seat mounts and two bolts mounted to the main roll cage hoop back bar. (*Full containment seat or head restraint recommended*)
- Window net, secured to the roll cage only (not car body).
- 5-Point racing harness, 5 years old or newer, secured to roll cage only.
- *Fire proof gloves, fire proof shoes, and a neck brace not mandatory but recommended*

**4. Roll Cage:** Minimum requirement (entire cage, kickers, seat support, door bars, etc.) 1.500" (1-1/2") Diameter x .095" wall thickness structural tubing (DOM or HREW). No black pipe. 1.625" or 1.750" Diameter x .095" wall DOM recommended.

- Floor Plates; Cage must be tied into floor plates (minimum 4 plates, minimum .125" thick, minimum 36 square inches each, welded or bolted through floor or rear seat riser), or 2" square tubing welded to rocker panels/structural components.
- Main Hoop; one continuous hoop behind the driver, from the left side of the driver seat floor, up to the roof, across the top, and back down on the right side of the passenger seat. \*Ensure that the main hoop is higher than your helmet when sitting in your seat\*
- X-Brace; the main hoop requires an x-brace. One bar from the top left to the bottom right, and one bar from the top right to the bottom left.
- Roof/Down Bars; two bars running from the top of the main hoop, extending forward roughly horizontally along the roof, then down following the windshield pillar slope, then roughly vertically to the floor. One center roof bar is also required from the top center of the main hoop to the center of the top windshield cross bar. \*Ensure that the roof bars are higher than your helmet when sitting in your seat\*
- Windshield Cross Bars; one horizontal bar at the top of the windshield connecting to the roof/down bars on each side, and one horizontal bar at the bottom of the windshield connecting to the roof/down bars on each side.
- Heavy gauge screen or minimum four 1/4" bars in front of driver (from top to bottom of windshield opening).
- Door Bars; minimum two horizontal door bars on the driver side, 12" apart, with five vertical connector bars between them equally spaced along the length. *Three or four horizontal door bars on the drivers side and more vertical connector bars recommended. Door bars not required on passenger side but recommended.*
- Crush Bars; driver side crush bar to run vertically from roof/down bar near the windshield to top horizontal door bar. Same on passenger side (if door bars are present on passenger side). If no door bars are present on the passenger side, run the crush bar

from the roof/down bar near the windshield to the front passenger floor plate or lower bar.

- Seat Mount; seat structure and mounts must tie into the roll cage, NOT the car body.
- Subframe; Subframe connectors may be run under the car and welded/bolted to the floor plates, or inside the car near the floor between the main hoop and front down bar.
- Kickers; front kicker bars cannot go past the radiator cradle. Front kickers can tie into front strut towers. Rear kickers can only extend 6" past rear strut towers to allow for a crush zone. *Kicker bars are optional but recommended.*
- Bracing; bars or x-bracing is allowed between rear strut towers (no front strut tower cross bracing is allowed). *Additional roll cage bars/bracing are allowed. The above is the minimum requirement only.*

*Roll Cage Diagrams Can Be Found On The Last Page*

### **5. Body/Interior:**

- All upholstery, carpet, glass, emblems, air bags, and plastic trim must be removed.
- Dash may remain or aftermarket gauges may be used.
- No removal (gutting) of metal is allowed of any kind with the exception of the interior door structure to fit the roll cage door bars (factory door plate must remain).
- Doors are to be welded shut. Trunks and hatches need to be secured (weld, chain, bolt, or hood pins).
- Hoods are to be secured with hood pins. Hoods require a 10" hole above the engine in case of an engine fire.
- Cover any holes in the front and rear firewalls and floor.
- Bumper covers are to be OEM stock, or similar in appearance to stock, and must be on the car at the start of the race. Bumpers may be repaired with no greater than 3" x 3" x .125" wall square tube and need to fit completely under the bumper cover with no sharp edges.
- Enlarging or pounding out fenders to allow for larger tires is allowed.
- Driver side door plate is mandatory, minimum 1/8 steel, securely mounted, if plate is mounted to the outside of the roll cage door bars it should extend from the top of the door to the bottom of the door for the entire length of the door bars. If it is mounted on the outside of the car body it must extend 6" past the door in either direction and be bolted through in at least 4 spots (one on fender, two on door, one on rear door or quarter panel) with 1/2" hardware. Hardware should not protrude any more than necessary. Passenger side door plates allowed.

**6. Engine:** OEM STOCK 4cyl or 3cyl engines only, specific to the make, model, and generation of car used, and at least 5 years old. Carburation or fuel injection OK. SOHC or DOHC OK. Must be below maximum horsepower/torque limit in section 1.

- No aftermarket performance parts, modified parts, or otherwise enhanced parts (ie: non-OEM spec cams or other valve train parts, cam modification/grinding, head work to improve performance, non-OEM spec pistons, etc.)
- No interchange of parts with models or trim levels that exceed the class combined maximum horsepower and torque rating.
- No rotary engines, turbos, or superchargers (engine must be naturally aspirated).
- Removal of air conditioning system and power steering system is OK.
- Aftermarket radiators/fans OK, but must be mounted in the OEM location and of similar dimensional size.
- Engine management computer must remain OEM stock and be the only direct source of engine control. No computer chips or program alterations (ie; increasing rev limiter, altering air/fuel ratio, etc). No standalone aftermarket engine control units or piggyback control units.

**7. Drivetrain:** OEM STOCK drivetrain only, specific to the make, model, and generation of car used, and at least 5 years old.

- No aftermarket performance parts, modified parts, or otherwise enhanced parts (ie: aluminum flywheels, performance clutches, etc.).
- No gutting of transmission internals allowed (must function in all gears). \*Min 3/4" inspection hole required for tech to scope flywheel/clutch\*
- Locked/welded differentials are permitted.
- No brake bias or proportioning valves allowed. All four wheels must lock up.
- Larger wheel studs and/or wheel bearings/hubs on right side of car may be allowed in certain instances for safety reasons. Contact the class rep.

**8. Chassis/Suspension:** OEM STOCK suspension only, specific to the make, model, and generation of car used, and at least 5 years old.

- No aftermarket performance parts, modified parts, or otherwise enhanced parts (ie: lightened components)
- Battery must be secure. No bungee cords or ratchet straps. Battery may be relocated or remain in OEM position. If it is relocated, it must be mounted securely in an enclosed battery box.
- Stock fuel tank OK (factory fuel cutoff switch must remain and be functional). Aftermarket racing fuel cells are allowed. Aftermarket racing fuel cell must be secured with approved tank straps and completely closed off from the driver compartment with a firewall. Fuel line running through car must be steel, maximum 3/8" diameter. Aftermarket electric fuel pumps are allowed (not to exceed factory fuel pump flow rate). Aftermarket pump must have a clearly marked shutoff switch within the drivers reach while strapped in.
- Pump gas only, maximum 93 octane (no E85, no aviation gas, no race gas, no methanol, no alcohol, no fuel additives, etc.)

**9. Emissions:** Removal of emission control components is allowed (air pump, EGR, etc.).

- Factory header (any trim level) or aftermarket headers allowed.
- Removal of factory exhaust system (catalytic converter, muffler, etc.) is allowed.
- Exhaust must be directed under car (no open headers), maximum 3" diameter.
- Stock throttle body must remain unaltered. Air intake system can be stock or replaced with an aftermarket tube and cone filter. Stock MAF sensor must be used as close as possible to stock location. Aftermarket air filter needs to be in the stock air filter location.

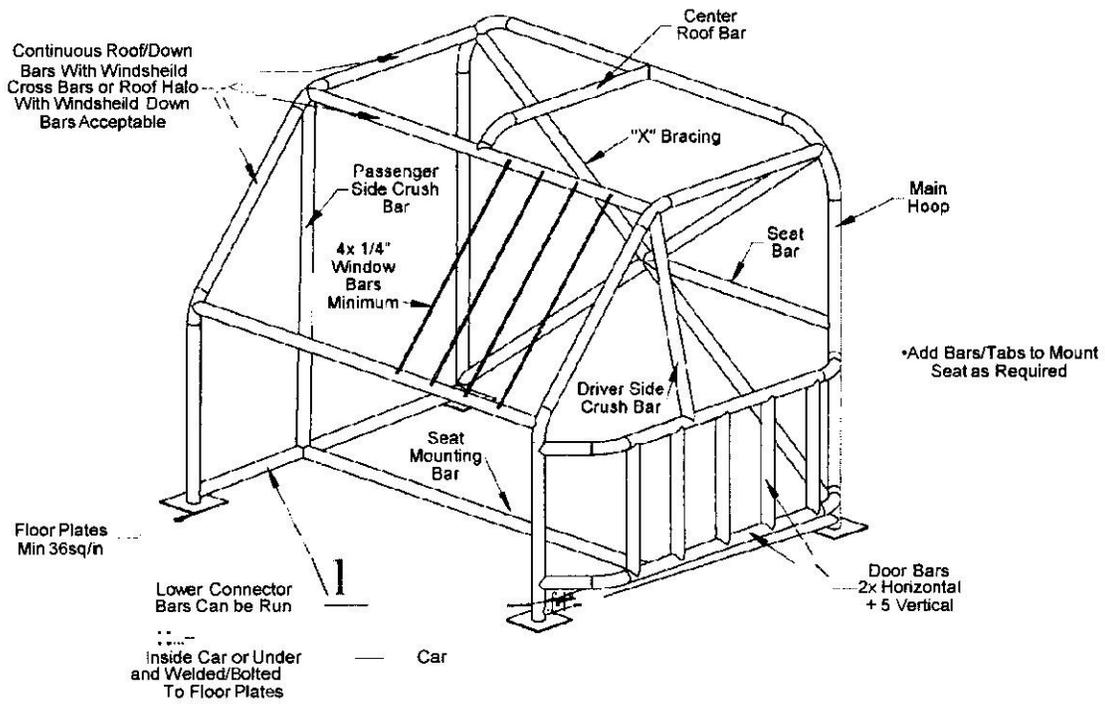
**10. Tires:** D.O.T approved passenger car tires or non-D.O.T. racing tires allowed.

- M&S and winter only rating acceptable, but no aggressive mud/truck tires. Racing tires must be "hard" compound (no "soft" or "med" compound tires).
- Known ("approved") race tires: Hoosier Stockers P/N 36975 & 36980. Other "hard" compound race tires are allowed, but to be voted in or out at the end of each season. Submit tire info and part numbers to class rep if you will be running a different race tire.
- Maximum 8" tread width (street or race tires) as measured at the track (at the base of the tread pattern), any aspect ratio (sidewall height), any rim size.
- OEM style steel or aluminum rims only (no steel or aluminum racing rims, no bead locks).
- No altering of tires (ie: softening), no grooving, no siping, no narrowing the tread width, etc. is allowed.
- Tire grinding is allowed, but no alteration to the profile (tread must remain flat – no cambering of tires allowed).
- Minimum tire pressure on right side of car must be 30 PSI before the race starts for D.O.T street tires, and minimum 25 PSI for race tires.
- Wheel spacers are allowed, maximum 1" thick.

**11. Misc:**

- Drivers must be 14 years of age or older at the start of the race.
- A repair/maintenance manual for the year, make, and model of your car is mandatory in your car (Chilton, Hayes, etc., are acceptable)

**Minimum Cage Requirement:**



**Recommended Cage:**

