



# 2024 4-Cylinder Rules

The 4-cylinder race car class is intended to be an entry level or hobby racing class. These rules have been written to: (1) promote participant and track official safety; (2) to establish minimum acceptable requirements; (3) to keep costs under control; and (4) to ensure each driver has a fair and competitive chance.

Aside from safety items and emission control items, all aspects of the car are to remain factory stock in function and appearance. Any changes to a car not explicitly listed below must be approved by the SPEEDWAY.

## Cars

- a) The car can be any naturally aspirated passenger car that is at least 5 years old.
- b) Front wheel drive (FWD) or rear wheel drive (RWD).
- c) Automatic or manual transmission.
- d) Cars not allowed include: 4x4s, convertibles, rotary motor vehicles (e.g., Mazda RX7).
- e) All vehicle and component identification numbers (i.e., VIN, motor, trans, etc.) must remain intact and unaltered.
- f) The car must have a wheelbase of 105 inches or less (measured at the SPEEDWAY).
- g) The combined factory horsepower and torque rating is not to exceed 310 for FWD or 310 for RWD (i.e., 155hp/155tq or any combination not to exceed a combined total of 310).

## Maintenance/Repair

- a) 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.
- b) Interchange of parts between different sub-models (i.e., 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.

**EXAMPLE:** 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

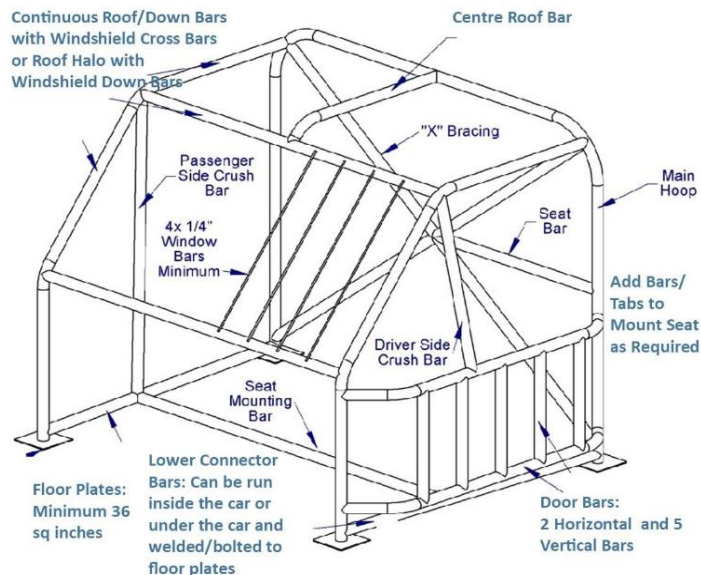
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they are two different generations of the same car. This applies to swapping all other components/parts as well.

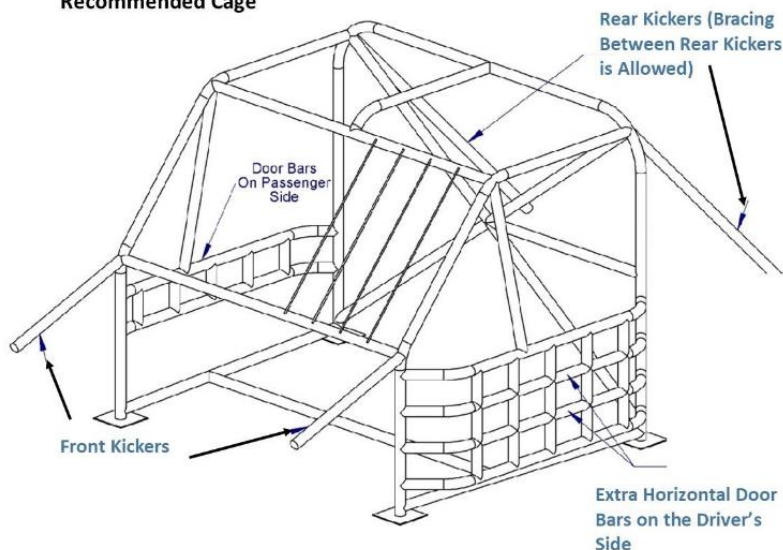
The intent of the parts interchange rule is to allow for budget friendly repair and maintenance of the race car with readily available parts, not to enhance horsepower through parts swapping with different sub-models or reduce power-to-weight ratios using different car generations.

## Roll Cage

### Minimum Cage Requirement



### Recommended Cage



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- a) Minimum requirement for entire cage 1.500" (1-1/2") diameter x 0.095" wall thickness structural tubing (DOM or HREW). 1.625" or 1.750" Diameter x .095" wall DOM recommended.
- b) No black pipe.
- c) Floor plates: Minimum of 4 floor plates, each a minimum 0.125" thick and 36 square inches, welded or bolted through the floor or rear seat riser, or 2" square tubing welded to rocker panels/structural components.
- d) Cage must be tied into floor plates.
- e) Main hoop must be 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.
- f) The main hoop must be higher than the driver's helmet when sitting in the seat.
- g) 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.
- h) Roof/down bars must include 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.
- i) One center roof bar is also required from the top center of the main hoop to the center of the top windshield cross bar.
- j) 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.
- k) Heavy gauge screen or a minimum four 1/4" bars in front of driver (from top to bottom of windshield opening).
- l) A minimum of 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.
- m) 1 1/4" minimum material diameter with wall thickness of (13 Ga.) .095". Fastened to the halo at or in front of seat headrest. Out and down to top door bar or angle back to the top door bar or B bar that goes up to the halo. One horizontal bar from extra bar to B bar, does not have to be 1 1/4" – **STRONGLY RECOMMENDED IN 2024 for local rulebook, MANDATORY in 2025.**



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## **Crush Bars**

- a) 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).
- b) 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**

- a) Seat structure and mounts must tie into the roll cage, not the car body.

## **Subframe**

- a) 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.
- b) Reasonable bracing outside the driver's compartment for safety and frame rigidity allowed, but must be inspected and approved by the SPEEDWAY.
- c) No bull bars.

## **Kickers**

- a) Front kicker bars cannot go past the radiator cradle.
- b) Front kickers can tie into front strut towers.
- c) Rear kickers can only extend 6" past rear strut towers to allow for a crush zone.
- d) Kicker bars are optional but recommended.

### Bracing

- a) Bars or x-bracing is allowed between rear strut towers (no front strut tower cross bracing is allowed).
- b) Additional roll cage bars/bracing are allowed.

## **Cage Swap**

- a) If a cage is being swapped to a different car, it is not recommended to cut the roof to do so.
- b) The preferred method would be with internal slip sleeves inside roll cage tubing and have cage seams re-welded.
- c) Inspection holes required.



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d) If cutting the roof, seams require reinforcement and tech approval prior to racing.

## **Scrub Rails**

- a) No bars shall extend outside of body panel including the grille and bumper, with the exception of side scrub rails.
- b) Scrub rails cannot extend any further forward than the rear of the front wheel opening, and no further rearward than the front of the rear wheel opening.
- c) Bars must be tight to the body and can not have any sharp edges. Maximum 1"x 2" welded or bolted to the roll cage.
- d) If bolting on scrub rails, use carriage bolts (chrome bumper type, rounded heads), or if using hex head bolts, recess them to the inner face of the scrub rail.
- e) V type Lexan scrub rails preferred.

## **Race Seat**

- a) Race seat must be mounted to the roll cage with minimum 4x 3/8" bolts.
- b) Minimum of two bolts in the lower seat mounts and two bolts mounted to the main roll cage hoop back bar.
- c) Window net and 5-point racing harness must be secured to the roll cage only and not the car body.

## **Body/Interior**

- a) Vehicle ID number (VIN) must remain in at least one stock location & will be used to determine stock OEM parts.
- b) All upholstery, carpet, glass, emblems, air bags, and plastic trim must be removed.
- c) Dash may remain, or aftermarket gauges may be used.
- d) Only one aftermarket tachometer, oil pressure, and water temperature gauge(s) will be permitted. Tach must read accurate and have factory red line clearly marked - will be tested against factory specs.
- e) No removal (gutting) of metal is allowed of any kind, except for the interior door structure to fit the roll cage door bars (factory door plate must remain).
- f) No aluminum or lightened body panels (homemade or aftermarket) allowed.
- g) Doors are to be welded shut.



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- h) Trunks and hatches need to be secured (weld, chain, bolt, or hood pins).
- i) Hoods are to be secured with hood pins.
- j) Hoods require a 10" hole above the engine in case of an engine fire.
- k) Cover any holes in the front and rear firewalls and floor.
- l) 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.
- m) 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.
- n) Enlarging or pounding out fenders to allow for larger tires is allowed.
- o) Driver side and passenger side door plates allowed. 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 ½" hardware. Hardware should not protrude any more than necessary. No grader blades.

## Engine

- a) Top of engine to bottom of oil pan, must be stock for year, make, and model of car and engine.
- b) Must be able to show tech official the engine and head casting numbers to verify that the engine/head combinations are stock for your application.
- c) OEM STOCK 4cyl or 3cyl engines only, specific to the make, model, and generation of car used, and at least 5 years old.
- d) Carburation or fuel injection is okay. SOHC or DOHC is okay. Must be below maximum horsepower/torque limit.
- e) On cars equipped with a timing BELT, either one 2" diameter hole between cam gears or two 3/4" holes off center to gears must be cut in the timing belt cover to allow for cam gear inspection. Holes may have plugs or covers but must be able to remove without tools for inspection.
- f) On cars with a timing CHAIN a hole is NOT required, but the cam/valve cover or timing cover MUST be removable for inspection when requested by tech.
- g) No aftermarket performance parts, modified parts, or otherwise enhanced parts (i.e., head studs, non-OEM spec cams, or other valve train parts,
- h) No cam modification/grinding, head work to improve performance, non-OEM spec pistons, etc.



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- i) No interchange of parts with models or trim levels that exceed the class combined maximum horsepower and torque rating.
- j) No rotary engines, turbos, or superchargers (engine must be naturally aspirated).
- k) Stock compression rule on all engines. Motor compression must be within 20 psi of factory spec.
- l) Removal of air conditioning system and power steering system is okay.
- m) Aftermarket radiators/fans are okay but must be mounted in the OEM location and of similar dimensional size.

## **Computer**

- a) Engine management computer must remain OEM stock and be the only direct source of engine control.
- b) No computer chips or program alterations (i.e., increasing rev limiter, altering air/fuel ratio, etc.).
- c) No standalone aftermarket engine control units or piggyback control units.
- d) The vehicle computer (ECU) must be mounted in a visible location providing ease of inspection.
- e) OBD II equipped cars must always have a functioning diagnostics port accessible to tech officials.
- f) Computer must be stock with no modifications, no tuning, removing, or modifying of rev limiter, etc.
- g) ECM can be claimed by the track at any time.
- h) If ECM is modified, reprogrammed or claim refused car/driver will be disqualified and loss of points for that event.

## **Drivetrain**

- a) OEM STOCK drivetrain only, specific to the make, model, and generation of car used, and at least 5 years old.
- b) No aftermarket performance parts, modified parts, or otherwise enhanced parts (ie: aluminum flywheels, performance clutches, etc.).
- c) No gutting of transmission internals allowed (must function in all gears). Min ¾" inspection hole required for tech to scope flywheel/clutch.



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- d) Locked/welded differentials are permitted.
- e) Solid engine and transmission mounts will be permitted.
- f) No brake bias or proportioning valves allowed.
- g) All four wheels must lock up.
- h) larger wheel studs and/or wheel bearings/hubs on right side of car may be allowed in certain instances for safety reasons.

## **Chassis/Suspension**

- a) OEM STOCK suspension only, specific to the make, model, and generation of car used, and at least 5 years old.
- b) No aftermarket performance parts, modified parts, or otherwise enhanced parts (i.e., lightened components).
- c) Aftermarket bushings allowed but must be a direct replacement for stock bushings. Must not alter stock suspension geometry.
- d) 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.
- e) Stock fuel tank is okay (factory fuel cut-off switch must remain and be functional).
- f) Aftermarket racing fuel cells are allowed.
- g) Aftermarket racing fuel cell must be secured with approved tank straps and completely closed off from the driver compartment with a firewall.
- h) Fuel line running through car must be steel, maximum 3/8" diameter.
- i) Aftermarket electric fuel pumps are allowed (not to exceed factory fuel pump flow rate).
- j) Aftermarket pump must have a clearly marked shutoff switch within the drivers reach while strapped in.
- k) Pump gas only, maximum 93 octane (no E85, no aviation gas, no race gas, no methanol, no alcohol, no fuel additives, etc.)

## **Emissions**

- a) Removal of emission control components is allowed (air pump, EGR, etc.).
- b) Factory header (any trim level) or aftermarket headers allowed.





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

## Tires

- a) D.O.T approved passenger car tires or non-D.O.T. racing tires allowed.
- b) M&S and winter only rating acceptable, but no aggressive mud/truck tires.
- c) Racing tires must be a "hard" compound (no "soft" or "medium" compound tires).
- d) Known approved race tires: Hoosier Stockers P/N 36975 & 36980.
- e) 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.
- f) OEM style steel or aluminum rims only (no steel or aluminum racing rims, no bead locks).
- g) No altering of tires (i.e., softening), no grooving, no siping, no narrowing the tread width, etc.
- h) Tire grinding is allowed, but no alteration to the profile (tread must remain flat – no cambering of tires).
- i) 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.
- j) Wheel spacers are allowed, maximum 1" thick.

## Miscellaneous

- a) A repair/maintenance manual for the year, make, and model of your car is mandatory in your car (Chilton, Hayes, etc., are acceptable) or in your pits, but must be at the track on race day.

## Mandatory Safety Equipment

- a) Full-Faced SNELL-Rated SA2010 or Newer required
- b) Fire Retardant Race Suit, 1pc or 2pc single layer minimum (3 layer or better recommended)
- c) Gloves and racing shoes **mandatory**, but do not have to be fire retardant (recommended)



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- d) Aluminum Racing Approved Seat Only, mounted to roll cage with minimum 4 x 3/8" bolts. Min. of two bolts in the lower seat mounts and two bolts mounted to the main roll cage hoop back bar.
- e) Full containment seat and/or HANS device or similar head restraint recommended.
- f) If not HANS or similar device used, then neck protector, guard, brace, or neck collar of some sort is required.
- g) Anyone under Age 18 MUST have a HANS device or similar head restraint.
- h) Driver's side window net required and must be securely mounted to the roll cage, NOT the car body, and must have some sort of latch at the top.
- i) 5-Point Safety harness required. Must be 3 years or newer (or as recommended by manufacturer), secured to roll cage only.