



## **2023 4-Cylinder MOD Rules**

**General:** *These rules and regulations are designed to govern driver and crew member conduct during GSS racing events. By participating in these events, all drivers are required to comply with these rules. While GSS makes no claim of guaranteed safety, these rules are enforced as a guide for the conduct of the sport. GSS is in the entertainment business. Drivers, Owners, Crew and GSS Staff cooperate to provide this exciting level of entertainment. All rules, race scheduling and structure, are designed and implemented to support a balance between competition and entertainment value. Drivers and crew are required to conduct themselves as professionals at all times. GSS may change any rule at any time in an effort to reduce the cost of racing, maintain equal competition, or improve safety.*

**ALL EQUIPMENT IS SUBJECT TO THE APPROVAL OF GSS OFFICIALS. NO EQUIPMENT WILL BE CONSIDERED AS HAVING BEEN APPROVED BY REASON OF HAVING PASSED THRU INSPECTION UNNOTICED. EFFORTS TO TAKE ADVANTAGE OF "LOOPHOLES" IN THESE RULES WILL NOT BE TOLERATED. ALL RACE CARS WILL BE SUBJECT TO INSPECTION BY TRACK OFFICIALS AT ANYTIME**

# 2023 4 Cylinder Mod Specifications



## **1. SAFETY EQUIPMENT**

**1A. SEATS-** Approved aluminum driver's seat required.

Seat must be fastened to frame/roll cage and located to give adequate distance from driver's arm to door bars. Shoulder supports on right and left sides of seat are highly recommended. Head support on right side is required. Head support on left side is recommended. Leg supports are recommended. Full containment seats recommended. (No Carbon Fiber) Seat may not protrude outside 4 point upright or top cage halo.

**1B. SAFETY BELTS - Belts must be dated within 3 years of event date or newer.** SFI- approved minimum 3-inch wide lap belt, 2-inch wide with Hans or 3" shoulder harness and submarine (crotch) strap required. Competitors using the Hans device may use a standard three-inch (3") or the Schroth racing or equivalent two inch (2") wide shoulder strap. Schroth Racing shoulder strap system has been specifically designed for the use with the HANS device. Belts must be anchored to roll cage or frame. Minimum Grade "5" 1/2-inch bolts and hardware required. Shoulder harness must not be anchored lower than 2-inches below driver's shoulder height. 6-point belts (double crotch strap) are recommended.

**1C. DRIVING COMPARTMENT** - Cockpit must be completely sealed off from engine compartment and fuel cell. Roll bar padding required around driver; *Recommended: Fire retardant padding.* A securely mounted operational 2-½ pound minimum fire extinguisher with gauge visible for inspection purpose is mandatory. Extinguisher must be mounted in a quick release bracket. Fire suppression systems are recommended. Driver-side window net required, minimum 16 inch by 20-inch ribbon or mesh style and must be mounted to roll cage so latch is at top front of window. Lower window net mounting must be of a secure approved manner. Clearly labeled push-pull or toggle type kill switch accessible from either side of car is required. A gas pedal toe bar (kick-up) is highly recommended. No driver-adjustable devices allowed while car is in competition. No carbon fiber interior components will be allowed, likewise, no carbon fiber or titanium components allowed anywhere on car.

**1D. DRIVER'S ATTIRE** - Complete SFI- approved fire-retardant driving suit and gloves required. Eye protection and a **Snell SA-2015** helmet or newer required. Snell "M" or D.O.T helmets not allowed. Head and Neck restraints (HANS Type), fireproof shoes, are recommended. GSS officials will monitor items related to safety, but ultimately it is the responsibility of the driver to monitor, maintain, and update his safety equipment.

## **2. CAR ELIGIBILITY**

**2A.** Four cylinder, front or rear wheel drive compact cars only with model year 10 years old and older, and a wheelbase of 92" to 107". Wheelbase must be within 1/2-inch of stock. No full-size cars allowed; No SUVs, crossovers, or vans permitted. No convertibles allowed. No all-wheel drive allowed. No all wheel steering allowed. No rear engine allowed. No mid-engine allowed. All doors must be welded, chained, or bolted shut. Hood and trunk must be secured with two or more hood pins. Hood inner supports may be removed. All glass (head, tail, and marker lights) except windshield must be removed. You may replace the windshield with Lexan. Lexan windshields require approved bracing; 2 braces minimum are required. Plastic, trim, and items that could break, burn, or fall off, must be removed in and outside the car. Skirts, hood scoops front air dam and a 5" max height rear spoiler blade may be installed. You may relocate the battery. If in driver's compartment, must be covered with a marine case or similar; battery must have steel to steel tie downs. Anything that can be unbolted (hinges, brackets, etc.) may be removed. After market nose pieces are allowed "Rub rails" allowed between front and rear wheel wells. Ends must be chamfered and capped (no sharp edges).

## **3. CHASSIS/INTERIOR**

**3A.** Complete bumper-to-bumper steel unit-body must be retained. Full width original firewall and floor-pan required. Rear firewall must be added to isolate from fuel cell. Stress points may be reinforced from the strut tower forward. The inner front framework in front of the spring pockets/strut towers may be cut out and replaced with tubing and from rear axle back can be cut out and replaced with tubing.

## **4. ROLL CAGE**

All cars must have a well-constructed, properly welded and gusseted 6-point full width roll cage made of 1 3/4" .090 wall tubing or equivalent. Main roll hoop must be behind driver and be reinforced with a full x- bar configuration. Roll cage must be properly anchored to rocker box or floor with sandwich plates under each up-right. Cage must be reinforced from left to right with bars under the dash, along floorboards, and behind driver in main roll hoop. At least two bars must extend from main roll cage rearward to frame kick- up or beyond. A minimum of four equally spaced horizontal bars required in driver's door, three in passenger side door. Door bars must be connected with a minimum of two equally spaced vertical studs. Two angular bars must connect bottom door bar to rocker box. All welds in cage and door structure must be gusseted. Left side door bar deflector plates of min. 1/8" steel required. Driver's foot protection required.

## **5. SUSPENSION-RWD**

Steel springs that are stock appearing may be used; however, they must fit in stock mounts and location. One spring per wheel assembly. Wedge bolts are allowed. Spring buckets may not protrude through stock floor pan. Suspension parts must remain stock provided for that make and model on both sides of vehicle, except upper A-frames or strut mounts may be altered from stock to adjust camber and caster but not to exceed 6 degrees positive or negative with driver out of car, non- adjustable rear control arms with stock dimensions and stock dimension bushings allowed. Fabricated rear lower control arms of stock length, in stock locations with heim joints allowed but must be approved for safety and use. Hood may not be altered in any way due to alteration of upper strut mounts. No altering to lower A-frames and strut mounts. A-frames must be equal length right to left side. No sectioning, channeling, altering, plating or chopping allowed. No ball joint spacers. bushings must be made of pliable material. No monoballs allowed. Strut or shock price must not exceed \$150 MSRP, available at all normal retail outlets. Any non- adjustable type shock that fits in stock mounts in stock position allowed. No coil over shocks. On non- strut cars, front upper shock mount may be raised. The extended mount may not exceed 3 inches in height and must remain "on center" and "in line" with original mounts. On leaf spring assemblies, lowering blocks are acceptable provided they do not alter or replace stock mountings. Single piece stock appearing sway bars only. May be adjustable; one bar per car. Any non-approved suspension modifications as per listed above rules, will require changes to an approved design and or weight penalties added to minimum spec weight, determined by GSS tech officials.

### **5a SUSPENSION-FWD**

FWD-Any stock appearing steel spring that fits in original mounts in original position allowed. One steel non-adjustable, non-rebuildable, shock/strut in stock location per wheel. Strut or shock price must not exceed \$150 MSRP, available at all normal retail outlets. Spring adjusters allowed, adjustable spring spacers where shock mounts through spring, screw type where shock mounts outside spring. Coil-over threaded collars allowed on strut type suspensions. Adjustable leaf shackles allowed. Spring buckets may protrude through floor pan. Suspension parts including trailing links must remain of stock type for that make and model and year chassis. Upper A-frames and strut mounts may be altered for camber. Lower A-frames and strut rods must remain stock. One stock front and rear stabilizer bar allowed. Out of cockpit stabilizer adjusters allowed. Stock trailing links required. Home built rear lower control arms of stock length, in the stock location with heim joints allowed. Any non-approved suspension modifications as per listed above rules, will require changes to an approved design and or weight penalties added to minimum spec weight, determined by GSS tech officials.

### **6. TREAD WIDTH**

Maximum track width is 73" as measured to the outside of the tires with toe-plates (1/8" tolerance allowed)

### **7. SPINDLES & HUBS**

Stock, unaltered spindles and hubs required.

### **8. STEERING**

Stock, manual or power units only. No aftermarket components. Fabricated steering column must use 2 U-joints. Quick release removable steering wheel allowed and is highly recommended. Collapsible steering column recommended.

### **9. RIDE HEIGHT**

Minimum ground clearance 4" (with driver) for all mechanical parts and hardware.

### **10. FUEL TANK**

Stock fuel tank located in front of rear wheels can be left there but must be secured with two extra metal straps. All other fuel tanks or fuel cells must be mounted in the trunk area between the rear wheels as far forward as possible & mounted on top of floor pan and protected from rear collision, including protection bars and/or protection plates. Tanks must be fastened with steel straps, bolts, and over-sized washers. A complete steel firewall must be between the tank and the driver's compartment. If car came as a hatchback style, and fuel cell is in rear trunk area, a firewall will have to be built into car. Fuel cells are highly recommended with a max capacity of 8 gallons contained in a 22-gauge (minimum) fuel cell container. Fuel cell height can have no adjustment and a minimum of 10" ground clearance is required at all times. Fuel cell must be filled by opening rear deck lid. Gasoline only; no additives allowed. No E-85 fuels or alcohol allowed.

### **11. FUEL PUMP**

Mechanical or electrical fuel pumps. Electrical pumps must be wired through oil pressure switch on the positive side or through the fuel injection control unit. Fuel pump must shut off when engine is not running with key on. Supply hose from cell to pump must be steel braided with AN type fittings.

### **12. WEIGHT**

**12A. FWD**-Minimum weight for all FWD cars will be 2350 lbs. With **56% max left side and 57% min front weight.**

**12B. RWD**- Minimum weight for all RWD cars will be 2300 lbs. With **58% max left side and 52% min front weight.**

1. All weights include driver & are post-race minimums with No fuel allowance.
2. All weights: must be securely bolted to frame or cage, and be painted white, and have car number on it.

<b>Car Type</b>	<b>Base Weight</b>	<b>Weight Percentage</b>
All FWD Cars	2350	56% Left Max / 57% Front Min
All RWD Cars	2300	58% Left Max / 52% Front Min
Composite Body	+ 25LBS	56% Left Max

Additional weight may be added to any car at any time by the GSS officials to ensure competitive balance within this class. If you plan to be fast or think you will be fast, be prepared this means bring weight and bolts. Weights may be added or deducted at the discretion of the tech staff to ensure a competitive balance is maintained.

### **13. BRAKES**

**13A. RWD-** Four-wheel brakes required at all times. Stock appearing drilled and slotted rotors are allowed. Rear brakes must be drum style. Single master cylinder in stock location only. Mounting of pedals may be adjusted subject to approval. One hydraulic; proportioning valve rear brake adjuster allowed; must be located outside driver's compartment. No Wheel Fans or blowers allowed.

**13B. BRAKES-FWD-** Four-wheel brakes required at all times. Stock brake units only. Stock rear disk brakes allowed. Single master cylinder and pedals must remain in stock location. One hydraulic; proportioning valve rear brake adjuster allowed; must be located outside driver's compartment. OEM anti-lock brakes (ABS) allowed. Wheel fans allowed. No blower motors allowed.

### **14. RADIATOR/FAN**

**14A.** One radiator mounted in the stock location will be permitted. Aluminum radiators are allowed. The only bracing allowed in front of the radiator is front loop. All cars will be required to have the overflow of the radiator discharge into a catch can of no less than 1-quart size. No anti-freeze permitted. Stock fans or one electric fan will be permitted on the backside of the radiator only. Fan shroud above fan mandatory, if running a mechanical fan.

### **15. REAREND-RWD**

Locked, Limited slip, or Posi-Traction rear ends allowed. Rear end must be centered on rear springs as factory. Steel drive shaft only; no aluminum or composite drive shafts. Drive shaft is to be painted white and have a catch loop just behind the front u joint.

### **16. TRANSMISSION-RWD/FWD**

OEM stock transmission; straight stick or automatic transmissions. Automatic transmissions must run torque converter, no gutting of torque converter. Car must be able to go forward and reverse from a complete stop. No removing gears from standard transmissions.

### **17. CLUTCH & FLYWHEEL**

OEM unaltered clutch required. Minimum resurfacing allowed (flywheel allowed 1 lb. reduction from stock weight) OEM manual transmission with all gears, including reverse, required. Two 1 ½" inspection holes, on opposite sides of bell housing, required for clutch inspection. Stock mounted operating starter required. **HALF SHAFT-** Heavy duty replacement parts allowed. Safety scatter shields or plated gas pedal area highly recommended.

### **18. STARTER**

OEM production type starters only and must be in stock location.

### **19. IGNITION SYSTEM**

OEM ignition components or OEM style replacements only. All electrical switches must be operable and must be located within reach of the driver. A master ignition switch clearly labeled on-off, that is both accessible to driver and safety crew, must be centrally located inside the car. The on- off switch must be wired to the battery cable in a manner that would cut power off to all electrical power to the vehicle. No on- board computer or other recording devices. No traction control devices. No lap timing devices or speed sensing devices are permitted. **COMPUTER-**All engine management controls, wiring and data port must be operating. Computer must be relocated (within wiring limits) for easy access. Reprogramming allowed.

### **20. BATTERY**

Only one standard automotive battery, not to exceed 12 volts, will be permitted, No light-weight batteries. Batteries must be securely mounted away from fuel container and lines. You may relocate the battery. If in driver's compartment, must be covered with a marine case or similar; battery must have steel to steel tie downs. Battery box cannot extend below frame.

## **21. AIR INTAKE/AIR FILTER**

No cowl induction systems or funneling of air. All air shall be inlet through the air filter only. Absolutely no ducts or baffles permitted on or leading to the air cleaner or element. Fresh air openings of any type will not be permitted in the hood or cowl area.

## **22. CARBURETORS**

**The Holley Ultra HP Carburetor is not allowed.** The approved carburetors are the two-barrel 350 CFM (Holley 7448 only) or stock unaltered 500 CFM Stock Holley 4412 2 bbl. No alterations except removal of choke "Butterfly" allowed. Double return springs required. Carburetor Rework Guidelines: No polishing, grinding, or drilling of holes allowed in body of carbs. Gasket surfaces may be machined for improved sealing. The choke may be removed, but all screw holes must be permanently sealed. Choke horn may not be removed. Boosters may not be changed. Height, size, and shape must remain standard and unaltered. Venturi area must not be altered in any manner. Casting ring must not be removed. Base plate must not be altered in shape or size. Stock butterflies must not be thinned or tapered. Idle holes may be drilled in butterflies. Screw ends may be cut even with shafts, but screw heads must remain standard. Throttle shafts must remain standard and must not be thinned or cut in any manner. Any attempt to pull outside air other than straight down through the venturi is not permitted. Accelerator pump discharge nozzle may not be changed. Jets may be changed; however, jets must be same type as supplied by carburetor manufacturer; no dial-a-jet devices. No addition of any material, such as epoxy, may be added to carb or parts except to seal vacated external screw holes. Carburetor must be mounted "straight ahead."

**22A. CARB ADAPTER & GASKETS**-Spacer must be centered on intake manifold. No taper, bevels or any modifications will be permitted. A one-piece two-hole paper gasket maximum 0.065-inch thickness that matches the exterior dimensions of the carburetor throttle plate must be installed between the carburetor and spacer. A one-piece paper gasket maximum 0.065-inch thickness must be installed spacer and intake manifold. Carburetor adapters limited to a 1.125" height. No funneling devices or devices designed to get more air in to the engine will be permitted.

## **23. FUEL INJECTION**

Remains as produced from manufacturer, electronic fuel injection (including intake manifold) for the car/engine used. No forced induction, ram air induction, turbo or super-charging, nitrous systems, etc. allowed.

## **24. EXHAUST SYSTEMS**

Exhaust must exit behind driver and meet 100 decibels Maximum at 100 feet. All exhaust highly recommended mufflers and to exit under car to meet this requirement; if right side exhaust exit is utilized; pipe may not stick out of body more than 1/2". No dual exhaust. Cast iron exhaust manifold or aftermarket header allowed. Exhaust maximum of 2.5-inch I.D. from end of collector to exhaust pipe exit. No car expelling flame, smoke, or backfiring allowed. Any car not meeting the 100-decibel rating will add **25#'s** for the night, & must remedy the issue before next visit.

## **25. ENGINE**

Engine must be 4 cylinders, max displacement 2,500 cc. SOHC or DOHC engines (no turbos or superchargers) No Rotary Engines. **Engine must have been offered in that make and model automobile.** Type and composition of engine must remain as produced. Block, heads, intake and all other engine components must match. OEM block required with up to .040 overbore allowed. **Crankshaft and stroke must remain as produced.** Engines produced for non-domestic markets like JDM are allowed. Aftermarket oil pans & oil coolers are allowed. No dry sump oiling systems or Titanium parts allowed. Engines may not cross MFG lines; Ford engine in Chevy body, etc. Crankshaft Power pulley allowed, after market pulley's & belt tensioners allowed.

## **26. ENGINE LOCATION**

No motor setback or off set. Engines must be in original position for Make and Model of the car. Solid motor mounts may be used.

## **27. ENGINE SPECS:**

### **27A. PISTONS AND RODS-**

**FWD-** **11 to 1 compression ratio maximum.**

**RWD-** Pistons must be flat top pistons or stock configuration only. Magnetic steel rods only.

**27B. OIL PANS AND OIL COOLERS-**Aftermarket oil pans & oil coolers are allowed. No dry sumps.

**27C. CYLINDER HEADS-**Cylinder head configuration must remain as produced (no porting, chamber work or bead blasting, etc.).

**27D. CRANKSHAFT AND HARMONIC BALANCER-**Crankshaft must be magnetic steel.

**27E. CAMSHAFT FWD-**OEM cam drive only. Maximum cam lift measured at the valve, may be increased by 10% from production specs. **CAMSHAFT RWD-**Only steel flat tappet camshafts are permitted. No

roller cams, no hard-faced overlay camshafts. No automatic cam timing devices allowed.

**27F. VALVE LIFTERS-**Steel hydraulic or solid lifters only. No mushroom or roller lifters permitted. Lifters must be original size for engine block being used. No rev kits permitted.

**27G. ROCKER ARMS:** **FWD-**Roller rocker arms allowed on push rod style motors. Stock roller tip cam followers allowed on engines that came with them from factory. **RWD-**Stock style rocker arms or Roller rockers permitted.

**27H. INTAKE-**Intake manifolds must be stock OEM only, manufactured for the engine used.

**27I. WATER PUMP-** Mechanical water pumps in stock location only. No electric water pumps are allowed.

## **28. TIRES**

**Hoosier 790** will be the specified tire; Teams may substitute DOT stamped tires with a tread wear rating of 300 or greater, a 60 series or taller sidewall, and with a maximum of a 215-section width or narrower.

Tires must be the same type at all four corners (example: all Hoosier 790 or all DOT radials). Tire Sizes may vary from left and right for stagger purposes. Tires may not extend out from body of car by no more than 2". Chemical treatment of tires (softening) is not permitted and if found guilty will result in the disqualification from the event and loss of prize money and points. Drivers guilty of altering and/or chemical treatment of tires will also be suspended for the next night of racing. If a driver is found altering and/or chemical treatment of tires on the last night of competition, he/she will be disqualified for that night of points and prize money and deducted of all points from the previous night of competition. Issues with tires must be discussed with Tech officials and their decision will be final.

## **29. WHEELS**

Made for racing, 7-inch maximum width, steel wheels only. Only 13", 14" or 15" diameter wheels allowed. Wheels must be the same size per axle. One-inch lug nuts required. No bleeders allowed and only one valve stem per wheel maximum.

## **30. BODY AND APPEARANCE**

OEM steel roof with A, B, & C posts required. OEM or stock replacement fenders, quarter panels, doors, hood and trunk lid required. Stock or stock appearing nosepiece required. Maximum spoiler height 5" measured from rear deck. Spoiler may not extend outside body. Side skirts must not be lower than rocker panel. No air scoops or holes in hood allowed. Front and rear bumper and bumper cover must appear stock; bumper ends must connect to body. Stock or Lexan windshields required; all other windows (if used) must be of Lexan. Lexan windshields shall have a minimum of two center support braces and must be tech official approved. Sunroofs must be closed in with steel. Stock appearing aluminum door skins allowed. OEM wings permitted. No Non-OEM fiberglass body panels allowed. A professional appearing paint job in an attractive color required. All lettering must be professional and in good taste. Numbers: 18- inches on both sides, and roof, readable from the right side.

## **31. TOW HOOKS**

**Tow hooks on front and rear are required.**

## **32. TRANSPONDERS/RADIOS/ELECTRONICS/MISC**

**32A. TRANSPONDER-**150" behind front edge of car with clear view of track.

**32B. RACEceivers** are mandatory for Race Director Communications frequency is 454.000

**32C. RADIOS-**2-way-radios are not allowed.

**32D. ELECTRONICS-** No Data Logging gauges, or Data recording/acquisition equipment are allowed. No computer or video analysis equipment of any kind allowed.

**32E. CHAMPIONSHIP POINTS & MONEY-**Championship points will be awarded per your finishing position. If driver is disqualified, drivers behind them do not advance.

**32F. TEAM DRIVING-**Not Allowed.

**33. LOCAL TRACK VISITING EXCEPTION**

Cars from local neighboring tracks that have similar but differing rules, and/or similar performance, may be allowed to participate during the 2023 season in the interest of welcoming competition. These cars will be granted temporary eligibility status for two weeks at the discretion of GSS officials on a case-by-case basis for eligibility and rule book conformity.

**34. TECH INSPECTION**

All cars are subject to inspection ANYTIME before, during, or after a race; Officials reserve the right to disqualify cars, require changes, confiscate illegal parts etc. Any interference with any official(s) and his/her duties will result in an automatic disqualification, and/or possible suspension. Disqualification (except weight violation) is retroactive to ALL previous events competed in that race meet. Any driver/owner refusing to allow the track officials to inspect his car will lose points and money earned for the night. Driver must provide their own tools.

**35. TEAR DOWN CLAIM:** For a fee of \$500 any 4 Cylinder Mod driver may request to have the head, intake, exhaust manifold removed for inspection. If found legal, \$300 is awarded to the one inspected with \$200 retained by the officials. If illegal, the fee is returned to the protestor and the violator forfeits all money and points won that night. . Officials can require air intake, fuel injectors, coil packs, computer, intake manifold and heads be removed and inspected for compliance. If components are found to be illegal they will be confiscated and destroyed. If found to be legal the owner will receive \$100 allowance for gaskets.

**36. DYNAMOMETER TEST:** At the request of the Tech Staff any engine can be required to be dynamometer tested to determine its compatibility with the intent of the rules. ASM will be the official dyno facility of GSS.

**PENALTIES: See Below**

<b>Weight</b>	<b>Offense</b>	<b>Points</b>	<b>Fine</b>
1-5 LBS Light	Any Offense	-10 Points	-\$25
6 LBS & Over	Any Offense	Disqualified	Disqualified
<b>Left or Rear %</b>			
Up to .02% High	Any Offense	-10 Points	-\$25
0.3% & Over	Any Offense	Disqualified	Disqualified
<b>Track Width</b>			
Up to 1/8" Wide	Any Offense	-10 Points	-\$25
1/8" & Over	Any Offense	Disqualified	Disqualified

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