2019 KCRP Modified Rulebook 3.5

1. SAFETY EQUIPMENT: Rules apply at all times car is on track.

a. Snell-rated no earlier models than SA2010 helmet required.

b. Roll bar padding required in driver compartment. Fire retardant padding should be used.

c. SFI-approved full fire suit required. Fire retardant gloves, shoes and HANS type device required. Right and left seat head supports required if using head and neck restraint system. Fire retardant head sock and underwear. 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. Minimum three inch (two inch with head restraint system) wide SFI-approved five point safety belt assembly required, must be mounted securely to main roll cage. Safety belts may not be more than three years old.

d. Kill switch required within easy reach of driver and must be clearly marked 'OFF' and 'ON'. Kill switch shall be accessible from both sides of car. 2lb fire extinguisher or onboard fire suppression system required with metal quick release pin, no plastic pins allowed.

2. **BODY: For Body Rules and Body Specifications: See** https://www.spearsmodifiedseries.com/team-info/rules/

KCRP Modified Updated Spoiler Rule: May 21, 2019

A. Rear Spoiler – Maximum height is 4 inches, with top 3 inches made of clear plastic. Minimum height is 3 inches, with top 2 inches made of clear plastic.
B. Spoil cannot be wider than rear of body.
C. (3) inch tall spoilers can be over 60 inches wide, but not wider than the rear of body.
D. No spoiler may be over 240 sq. inches, or under 180 sq. inches. The minimum angle of the spoil is 55 degrees and must be rigid and well supported.

3. FRAME: 1964 or newer OEM perimeter American rear-wheel drive passenger car frame only. No sports car frames. Frame must be full and complete, cannot be widened or narrowed, and must be able to support roll cage on both sides. Exceptions are: weight jack in original center line of spring tower allowed; frame may be cut a maximum 36 inches forward from center of rear end housing; horns may be removed in front of steering box and notched maximum one inch at bottom for tie rod clearance; front cross member may be notched and boxed for radiator and/or steering clearance; maximum seven inch wide opening in side of spring tower for spring removal. Maximum two inch wide by four inch tall frame stiffener may be welded directly to outside of left side frame rail. **Four inch minimum frame height without driver.**

4. Minimum wheelbase 108 inches, maximum 112 inches, both sides. Maximum overall width shall not exceed 78 inches from outside of tire to outside of tire. For cars using OEM rear suspension design, rear of frame behind rear tires no further forward than one inch behind factory seam, may be replaced with two inch by three inch steel tubing with 0.095 inch wall thickness. No part of frame can be lower than four inches from ground, except for the front cross member.

5. DRIVER COMPARTMENT: Must have minimum of two windshield bars in front of driver **~~with a 1/8 thick Lexan windshield and shall be no less than half the width of the deck lid~~**. No other windows are allowed. Minimum 0.125 inch aluminum, or 0.060 inch steel, complete floor pan required. Aluminum high-back seat only and must be bolted in, using minimum 0.375 inch bolts, next to left side frame rail and ahead of rear tires. Bottom of seat can be no lower than bottom of frame rail. Driver must be sealed off from track, driveline, engine, fuel cell, canisters and pumps. Oil coolers must not protrude above interior. Accumulators cannot be mounted between driver and left-side door bars. No driver-adjustable devices allowed while car is in competition except brake adjuster.

6. REAR VIEW MIRROR: All cars may have up to two (2) rear view mirrors. It must be acceptable to Tech Officials and must not extend outside of the body at any time.

7. ROLL CAGE: Must consist of continuous hoops, minimum 1.75 inch O.D. tubing, with minimum wall thickness of 0.095 inch for main cage, frame-mounted in at least six places. Recommended: low carbon or mild steel. Must consist of a configuration of front, rear and top hoops connected by tubing on sides or side hoops. Driver's head must not protrude outside

cage with helmet on. Roll cage must be securely supported and braced with minimum one cross bar in top halo. Foot protection bar required. Main cage no further forward than rear of engine. All bars forward of cage must be lower than hood. All driver side door bars and uprights must be minimum 1.5 inch O.D. with 0.083 inch wall thickness. Minimum three driver side door bars, parallel to ground and perpendicular to driver, and welded to front and rear of roll cage. Passenger side must have at least one cross door bar, horizontal or angled, minimum 1.25 inch O.D. with 0.083 inch wall thickness, and one top door bar, minimum 1.5 inch O.D. with 0.083 inch wall thickness. Steel door plate, 18 gauge or 0.049 inch minimum thickness, must be securely welded to outside of driver side door bars and cover area from top door bar to bottom door bar and from rear hoop down-post to five inches in front of seat. Must be visible for inspection.

8. FRONT SUSPENSION: All components must be steel, unaltered OEM, in OEM location, and replaceable by OEM parts. Exceptions are: tube-type upper A-frames with or without aluminum or steel cross shaft, and mounts can be moved; stamped steel OEM replacement lower A-frames; rubber, nylon or steel lower A-frame bushings, no offset or bearing type; welded or bolted shock mount on lower A-frame; OEM or OEM replacement rebuild able ball joints allowed. Lower A-frames must be oem stamped steel lower a-frame, measuring within one (1) inch in length right to left. Lower A-frame mounts and bolt holes on frame must be within OEM specifications and may not be moved. No suspension stops of any kind allowed.

9. SHOCKS: The only shocks allowed will be AFCO (14 Series) & PRO Shocks (WB Series), 7 inch or 9 inch. Must remain as produced from manufacturer.

10. STEERING: No rack and pinion. All components must be steel, unaltered OEM, in OEM location. Exceptions are: outer tie rod end and adjustment sleeve may be replaced by a minimum 0.625 inch steel rod end and steel tube; spindles can be ground for brake caliper clearance only; unaltered, OEM or OEM replacement Pinto spindles with 'IMCA' raised cast; bolt on spindle savers allowed; steel steering shafts with collapsible steering shaft section and knuckles only; driver compartment steering may be modified, must be kept on left side. Spindles must be right and left, and of same design. Quick release required - steering quickener and steering wheel may be aluminum. Idler arm, pitman arm, and center link must match frame.

11. SPRINGS: One steel coil or multi-leaf (rear) spring per wheel only. Minimum 4.5 inches O.D., maximum 13 inch free height, non-progressive coils only. No torsion bars, air bags, inner liners or spring rubbers allowed.

12. REAR SUSPENSION: All components must be steel. No covers allowed. All mounts and brackets must be welded or bolted solid. Coil springs must remain vertical **~~and over center line of rear-end housing~~**. No coil-over eliminators allowed. No chains, cables or tethers. Rear shocks cannot be mounted on control arms. All rear control arms and panhard bars must be straight.
    Must utilize one of the following designs:
    (A) Aftermarket three link design requirements: Must use 16 inch minimum, 24 inch maximum lower control arms. Must use one upper control arm, solid tube only, located at top center of rear end housing and remain centered (one inch tolerance) on housing over drive shaft. Must use minimum 23 inch panhard bar located behind rear end housing. Lower spring perch must be welded to rear-end housing. ~~Bottom of rear spring must remain within 0.75 inch of the axle tube~~. Must use steel upper weight jack. No floating or bearing rear spring perches/cups allowed, top or bottom.
    (B) Multi-leaf spring design requirements: Must use steel multi-leaf springs with no additional suspension components besides one shock per wheel. Adjustable aluminum lowering blocks allowed.
    (C) OEM stock design requirements: Rear cross member, control arm mounts and bolt holes on frame must be in stock location. All components must be unaltered, approved OEM, and match frame. Control arms cannot be altered in any way. Steel, rubber or nylon control arm bushings only. Springs must remain in stock location. Lower spring perch must be welded to rear-end housing. Must use steel upper weight jack.

13. **GEAR RULE: The gear rule will be 4.11 magnetic steel gears only.**

14. REAR END: Any steel approved OEM passenger car or truck non-cambered rear end (housing and carrier) allowed. Safety hubs (floater) allowed. All components must be steel, except lowering blocks, axle and U-joint caps, and drive flange. Mini-spools only. Solid steel axles only. No quick change devices. One piece drive flange only. No torque dividing mini spools or differentials. Ring gear, center section and yoke cannot be lightened.

15. BUMPERS: Steel bumpers must be on front and rear and welded, or securely mounted with minimum .375 inch bolts. Rear bumper must be capped, constructed of solid square, or minimum 1.25 inch O.D. tubing with 0.095 wall thickness, maximum six inches beyond rear deck, no wider than five inches outside of rear frame rails. If wider than five inches outside rear frame rails, must be bent forward 90 degrees, or constructed in a loop design. Must have at least one upright, minimum 1.25 inch with

0.065 wall thickness, from bumper to fuel cell guard. Two-bar front bumper must be minimum 1.25 inch O.D. tubing with minimum 0.065 wall thickness (maximum 0.095 inch) mounted frame-end to frame-end, no wider than width of material outside frame horns and with bottom loop parallel to ground. Top bar must be directly above bottom bar, minimum 6.5 inches apart, measured center to center.

16. WHEELS: Steel Racing wheels only. Must use minimum one-inch O.D. steel lug nuts. Wheels must weigh a minimum of 19lbs. No bleeder valves. Only approved 15-inch diameter steel wheels, with a maximum 8-inch rim width and a reinforced center ~~**with same width and offset on all four wheels**~~.

17. One inch maximum wheel spacers.

18. GAUGES/ELECTRONICS: Two way radios are required to be used and a spotter shall be in the tower when the car is on track. No timing retard controls, or digital gauges (including tach). No electronic monitoring computer devices capable of storing or transmitting information except memory recall analog tachometer. 12 volt ignition system and OEM HEI distributor only. No billet distributors or crank triggers. Ignition rotor, cap, coil and module must remain OEM appearing. Crate engine MUST use MSD #8728 rev-control and 6,200 rpm chip. No unapproved or additional ignition accessories allowed. All components must be out of reach of driver, but with rev-control easily accessible facing up or out for inspection. All wiring must be visible for inspection. Only gauges allowed are analog oil pressure, fuel pressure, brake bias, water temperature and tach. OEM type alternator with internal regulator allowed. No electronic traction control devices.

19. BATTERY/STARTER: One 12 volt battery only, must be securely mounted between frame rails, and positive terminal must be covered. Car must have capability of starting without being pushed or pulled. Car must leave initial staging area on demand, unaided, or go to rear of that race. Starter must bolt on block in OEM location and directly engage flexplate/flywheel.

20. TIRES: Hoosier 970 tires purchased at the track from Kern County. Tires must remain as factory. Teams may not alter tires in any way. Tires may be impounded between events.

    - Race tires must be purchased at Kern County Raceway, on race day and must be officially recorded to a specific car.
    - A team may purchase five (5) new tires at its first race of 2019. At each following race that the car competes, it will be allowed one (1) recorded tire per race. The recorded tires for the specific car are the only tires that can be used on event day.
    - Must qualify and race on same four tires.

- Teams may not shave tires, must use as manufactured.
- No chemicals or cleaners of any kind may be applied to the tire.

21. FUEL:
    APPROVED FUEL: 91 Octane Unleaded standard pure consumer pump gas, from a consumer gas station. No special fuels, even if from a pump. No additional additives.

    APPROVED FUEL: SUNOCO 110 may be used, but it must be pure SUNOCO 110 from Kern County Raceway, not blended with any other fuel or additive.

    Fuel shall comply with ASTM D4814 entitled, "Standard specification for automotive spark- ignition engine fuel", except limited to liquid hydrocarbons only, Class A, B, C, D or E, but without regard to geographical location or seasonal limitation.

22. FUEL SYSTEM: Racing fuel cell required, maximum 32 gallon capacity, must be in minimum 20 gauge steel container. Must be securely mounted behind rear axle, between rear tires, minimum four inches ahead of bumper, and minimum 10 inches above ground. Must mount with minimum two solid steel straps around entire cell, two inches wide and 0.125 inch thick. All cell mounts must be steel, securely welded to frame/cage. Protective tubing must cover rear and extend past both sides of cell. No part of cell shall be lower than protective tubing. Fuel cell vents, including cap vent, must have check valves. If fuel cell does not have aircraft style positive seal filler neck/cap system - a flapper, spring or ball type filler rollover valve is required. Pick-up must be on top or right side of cell. One fuel filter allowed. No cool cans. Air cleaner top/stud cannot direct air into carburetor. No top flow air cleaner housings or cold air boxes. Mechanical OEM type push rod fuel pumps only. Maximum 0.100 inch thick carburetor gaskets on all engines. GM CRATE ENGINE: Shall use the Holley 4150 650 cfm 4-barrel carburetor P/N 80541-1 , all components (float bowls and main body) must be Holley manufactured. No aftermarket metering blocks. Base plate may be billet aluminum non-Holley. A 1" maximum thickness spacer is required. The spacer may be billet aluminum or plastic.

23. WEIGHT: Minimum weight limit of 2,500 pounds, no tolerance, before race with driver in car. **Left side weight shall be 58%.** No weights and/or loose objects in driver compartment, above interior deck or outside body. Weights must be securely mounted to frame in steel tubing and welded to the car. Weight clamps are allowed. All weights will be painted white with car number on it.

24. ENGINE COMPARTMENT: Rear of engine (bell housing flange) must be mounted at least 72 inches (+/- ½ inch) forward from centerline of rear

axle. Engine offset must be kept within two inches of centerline of front cross member with engine level. Minimum 11 inch engine height from ground to center of crankshaft. V-belt aluminum or steel pulleys only. Copper/brass or aluminum radiator only and must be mounted in front of engine. No vacuum pumps, pan evacuation systems, oil coolers or remote oil filters.

25. ENGINE OPTIONS AND SPECIFICATIONS: All cars shall utilize a GM602 crate engine. Non GM602 engines may run in this class. They may run a Holley box stock 4412 500 cfm. or approved carburetor. 9:1 compression at 185 lb cranking compression at 180 degrees. The addition of weight is reserved as required to enhance the competition level.

(A) CRATE ENGINE: Must use unaltered sealed GM #88958602 or #19258602 crate engine. Sealed from the factory, may be rebuilt to GM specs by an approved builder. Beginning in 2020, all 602's will be Factory Sealed.

(B) Open Motor: must use KCRP approved naturally aspirated, unaltered 500 c.f.m. Holley - part no. 0-4412, may be modified to Holley HP Dorton part no. 0-80583-1 specs, or an approved PN. Float bowl must face forward. Any adapter, maximum one inch thick. No throttle bore adjustable carburetor spacers

BLOCK: OEM steel passenger vehicle production block only. No GM Bowtie, Ford SVO or Chrysler W components allowed. GM approved block numbers are: 10105123, 10066034, 3892657, 3914660, 3914678, 3932388, 3932386, 3956618, 3970000, 3970006, 3970010, 3970014, 10066033, 10066036, 10243880, 14010207, 14010209, 14010287, 14016376, 14016379, 10054727, 14088528, 14088548, 14088552, 14093638, 14101148. Stroke must match block. No 400 or larger cubic inch parts allowed. Maximum 361 cubic inches (GM); 363 (Ford); 370 (Chrysler). Violation of cubic inch limit must be verified by removal of head. Maximum compression ratio is 9.0 to 1, no tolerance. Compression ratio checked using Whistler and cubic inches checked using pump, OR by visual inspection of part and/or casting numbers, pistons, etc. (track option which method is used). Flat top or dished pistons only, no gas-ported pistons allowed. OEM or OEM appearing replacement steel crankshaft only - cannot be lightened. No narrowing, bullnose, knife edge, undercut or drilling of second or third rod throws. OEM or OEM appearing replacement steel rods only – GM 5.7 inch, 6 inch or GM Vortec rod part number 10108688 allowed. Cap screw allowed. No splayed main caps. Conventional flat tappet cam and lifters only, cannot alter lifter bores. OEM firing order cannot be changed (GM: 1-8-4-3-6-5-7-2). May use oil restrictors. 'Wet' sump

oiling system only. Steel oil pans only. Racing oil pans allowed. Mandatory one inch inspection hole in all pans – no obstructions to crank and rods. Accumulator allowed.

CYLINDER HEADS: Steel only. Must be unaltered approved OEM and minimum 76 cc combustion chamber (GM). Only GM OEM approved head numbers are: 14079267, 3986336, 3986339, 3986339X, 3986388, 3932441, 376445, 3928454, 3932454, 3876487, 3973487, 3973487X, 3973493, 3951598, 468642, 330862, 333882, 3998920, 3998991, 3998993, 3998997, 3970126. Maximum size valves on these heads are 2.02 inch intake and 1.60 inch exhaust. May use Stock Replacement (SR) cylinder heads: Engine Quest (EQ) GM part number CH350I, (EQ) Chrysler part number CH318B, World Products Ford part number 53030 - 1.250 inch (± .015 tolerance) maximum O.D. valve springs. All SR heads must remain as produced, seat angles and valve sizes can not be changed: three angle valve job only (absolutely no casting removal in valve pocket of EQ or World Products head, for any reason); Ford - no SVO heads; Chrysler - no W-2 heads, 360 cubic inch heads only. No porting, polishing or unapproved alterations allowed to any cylinder head or intake, disqualification and $250 fine if illegal. Guide plates, screw-in shouldered studs (GM 0.375-inch max) and polylocks allowed. No stud girdles. Steel roller tip rocker arms allowed. GM - 1.250 inch (± .015 tolerance) maximum O.D. valve springs, no beehive valve springs allowed.

Intakes:
OTB stock. Must be an unaltered intake. No modifications of any kind allowed.

Unaltered OEM type harmonic balancer only. OEM type steel or aluminum water pumps only.

25. TRANSMISSION/DRIVE SHAFT: Must have two forward and one reverse gear plus a neutral and move in both directions under power. OEM production transmissions allowed. No ‘in and out’ boxes or quick change devices allowed. Functioning shift levers must be in OEM location. One steel or aluminum OEM style/size flywheel or steel OEM style/size flexplate allowed, must be bolted directly to end of crankshaft. Automatic: Must be unaltered, two or three speed, OEM production case with a functioning OEM appearing pump. Aluminum OEM bell housing may be replaced with aftermarket explosion-proof aluminum bell housing. Original OEM bell housing must have approved scatter shield constructed of minimum 0.125 inch by three inch steel, 270 degrees around flexplate. Only external lines allowed are for transmission cooler. Splined drive

flange coupler or torque converter (10 inch minimum) only. Manual: 3 or 4 speed transmissions allowed -No internal shifting, no over drive, minimum of 50 lbs without shifter, OEM production case and have a working 7.25 inch minimum diameter, steel and/or aluminum, single or multi-disc clutch and pressure plate bolted directly to flywheel/flex plate. These components must rotate, consistent with engine rpm, while car is in any gear.
Must use explosion-proof steel bell housing with one hole for throw out bearing lever or hose, must be 270 degrees around top of clutch and flywheel/flex plate area. Hydraulic clutch pedal allowed. Drive Shaft: Steel slip-yokes only. Minimum two inch diameter, white, steel drive shaft is required. 360-degree drive shaft loop required and must be constructed of at least 0.25 inch by two inch steel, or one inch tubing, mounted six inches back from front U-joint. No Brinn style transmissions.

High gear must be 1.00:1. Must race in high gear. Third gear minimum ratio 1.23:1 maximum 1.46:1.

Must run in high gear and must not circumvent gear rule at anytime.

26. BRAKES: Must be steel approved OEM, operative four wheel, drum or disc. Must maintain minimum OEM dimensions for hubs/rotors and calipers, cannot be lightened. No oil bath front hubs. Bolt pattern may be changed. Larger studs allowed. Rear rotors may be aftermarket 0.81 inch thickness (new). Vented solid surface rotors only, no scalloped or ceramic coated rotors. No brake shut-off or pressure sensitive devices. One front to rear proportioning device allowed. Brake lines must be visible. Rear caliper brackets must be welded or bolted solid to rear-end housing.

NOTE:

Lucas Oil Modified style cars are welcome, required to use a 602 motor to KCRP specs, the following shocks; AFCO (14 Series) & PRO Shocks (WB Series), 7 inch or 9 inch (Must remain as produced from manufacturer) and all rear suspension links must be solid.

Please call ahead before your event – Thank you. 661-835-1264