



2021 Car Specific RULEBOOK

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The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. No expressed or implied warranty of safety shall result from publications of or compliance with these rules and/or regulations. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator or official. The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his/her opinion do not alter the minimum acceptable requirements. No expressed or implied warranty of safety shall result from such alteration of specifications. Any interpretation or deviation of these rules is left to the discretion of the officials and their decisions are final.

Table of Contents

1	PREFACE	3
2	CLASSIC MODIFIEDS & MODIFIED LITE (IMCA/UMP/DIRTCar) SPECIFICATIONS	3
3	CLASSIC MODIFIEDS BODY SPECIFICATIONS	4
4	MODIFIED LITE (IMCA/UMP/DIRTCar) BODY SPECIFICATIONS (DIRTCar Figure 1) (IMCA/UMP Figure 6).....	4
5	MODIFIED LITE (IMCA/UMP/DIRTCar) HOOD AND NOSE SECTION	4
6	MODIFIED LITE (IMCA/UMP/DIRTCar) ROOF PANEL (DIRTCar Figure 5) (IMCA/UMP Figure 9)	5
7	MODIFIED LITE REAR UPPER QUARTER PANEL (Sail Panel) IMCA/UMP/DIRTCar Figure 12 & 13.....	5
8	MODIFIED LITE (IMCA/UMP/DIRTCar) SIDE WINDOW (DIRTCar Figure 4) (IMCA/UMP Figure 8) (Mandatory NO TOLERANCE).....	5
9	MODIFIED LITE INTERIOR (DIRTCar Figure 10) (IMCA/UMP Figure 11)	5
10	MODIFIED LITE INTERIOR SPECIFICATIONS (DIRTCar Figure 2) (IMCA/UMP Figure 6)	5
11	MODIFIED LITE REAR SPOILER (DIRTCar Figure 10) (IMCA/UMP Figure 11).....	6
12	WEIGHT	6
13	BUMPER DIMENSIONS	7
14	FIREWALL	11
15	WINDSHIELD.....	11
16	NERF BARS	11
17	SEAT	11
18	NUMBERS, GRAPHICS & TRANSPONDER.....	11
19	BATTERY, FUEL SYSTEM.....	12
20	DRIVE TRAIN	12
21	FRAME AND ROLL CAGE (Figure 14)	13
22	CHASSIE DIAGRAM (Figure 14).....	14
23	SUSPENSION & SHOCKS	15
24	SHOCK CLAIM POLICY	16
25	STEERING	16
26	BRAKES	16
27	SAFETY EQUIPMENT.....	17
28	WHEELS AND TIRES	17
29	1000cc MOTOR PROGRAM.....	17
29.1	GENERAL MOTOR SPECIFICATIONS	17
29.2	ALLOWABLE 1000cc ENGINES MODEL.....	18
29.3	ENGINE	18
29.4	CAMS	19
29.5	OIL SYSTEM.....	19
29.6	FUEL SYSTEM	19
29.7	IGNITION SYSTEM.....	20
29.8	FUEL.....	20
29.9	OTHER.....	20
30	ENGINE TECH PROCEDURES.....	20
31	BORO & STROKE CHART	21

1 PREFACE

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. No expressed or implied warranty of safety shall result from publications of or compliance with these rules and/or regulations. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator or official. The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his opinion do not alter the minimum acceptable requirements. No expressed or implied warranty of safety shall result from such alteration of specifications. Any interpretation or deviation of these rules is left to the discretion of the officials and their decisions are final.

2 CLASSIC MODIFIED (Dwarf Car) & MODIFIED LITE (IMCA/UMP/DIRTcar) SPECIFICATIONS

2.1 Any car specifications not covered in these body specs are subject to Modified Lite STARS Series officials interpretation. Any significant performance advantage will be addressed on an individual basis. Modified Lite STARS Series official's reserves the right to determine what constitutes an unfair advantage.

2.2 1928-1948 American- made production vehicles only, 5/8 scale, two-door vintage coupe, sedan, sedan delivery, wagon, or pick-up truck. These are to be known as Classic Modified body styles.

2.3 Modified appearing body style such as IMCA/UMP/DIRT modified. These are to be known as Modified Lite body styles.

2.4 All chassis specifications are the same for all body styles.

2.5 All measurements may be taken with or without the driver and/ with or without fuel tolerance permitted on all body dimensions is maximum of +/- (plus or minus) 1/2" -inch (One half inch). This is a tolerance, not a dimension that is intended to be added to the body dimensions.

2.6 The intent of these specifications is to follow the bodyline and design of an exciting IMCA/UMP/DIRT modified racecar. Body must be 5/8 scale, stock appearing. Maximum outside tire width 60", Cars must pass **freely** through a hoop 60 1/2" wide by 52 1/2" high, 73" wheelbase length plus or minus 1". When measuring wheel base, front tire must be in line with rear tire. **The hoop already has tolerances built in so if any part of car touches the hoop it is illegal!**

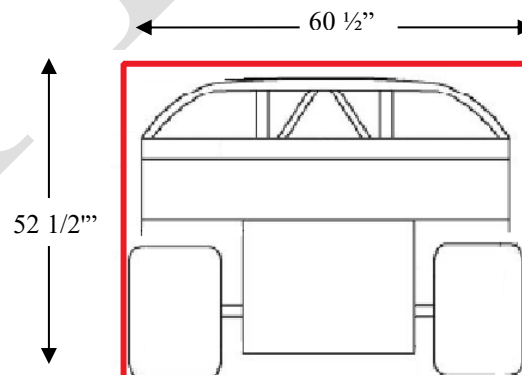


Figure #1

2.7 NO car over 52" tall, top to ground. Body height maximum 46", bottom edge to top (including frame rail).

- 2.8 Maximum body width @ Decking 50", Maximum frame width 34" min 30."
- 2.9 132" maximum total length, bumper to bumper measured from outside to outside of bumper.
- 2.10 Kick outs or side nerf bars must be mounted two or three points and run full length between tires. 1 ¼" max .125 wall thickness. Cannot stick out beyond 1" from the side of the rear tires, and must not touch hoop during tech..

3 CLASSIC MODIFIEDS BODY SPECIFICATIONS

- 3.1 Must have grill shell or simulated open radiator matching original body style, any material.
- 3.2 Doors, windows, and cowlings must retain stock appearance. Hood louvers allowed for cooling, but must maintain stock contour.
- 3.3 Engine compartment must conform to scale and match contour of body. Hole may be cut for breather clearance only. Ram air induction system prohibited.
- 3.4 Must have closed trunk lid or fully enclosed trunk access panel conforming to original bodylines. Louvers allowed no holes.
- 3.5 No fenders.
- 3.6 No wings or spoilers.
- 3.7 Body will be metal construction, 26-gauge steel or .040" aluminum minimum. All exposed edges must be folded or trimmed over. Legends cars may be allowed under local rules. No lips or spoilers of any kind.
- 3.8 NO open top cars (roadsters, convertibles). Only closed top, meaning hardtop.
- 3.9 Body contour must follow frame and roll cage. Roof hatch allowed.
- 3.10 Drivers door must be operational and equipped with a secure latch.

4 MODIFIED LITE (IMCA/UMP/DIRTCar) BODY SPECIFICATIONS (DIRT Car Figure 2-5,10,&13) (IMCA/UMP Figure 6-9,11,&13)

- 4.1 86"max - Door and rear quarter length.
- 4.2 30" min 36" max - side height of rear quarter panel from the ground. 30" max height of quarter panel.

5 MODIFIED LITE (IMCA/UMP/DIRTCar) HOOD AND NOSE SECTION

- 5.1 20" min 29" max - hood height excluding breather protectors (bottom of frame rail to top of hood).
- 5.2 Rear of hood becomes part of windshield area rules.
- 5.3 No part of nose section, (which ends 8" in front of the lower ball joint), may be wider than a maximum of 24". Modified Lite DIRTCar design must resemble approved DIRTCar nose.

5.4 Hood may taper out to door panels at the rear.

5.5 Maximum 1.5 inch side fins allowed on aluminum nose.

5.6 IMCA/UMP Body only - approved plastic nosepieces allowed. Plastic nose must be mounted in an approved manner and can extend no further back than front of hood.

5.7 Bumper may not extend more than 30" forward of spindle. Measurement to be taken from either side of car center of spindle to outside of front bumper.

6 MODIFIED LITE (IMCA/UMP/DIRTCar) ROOF PANEL (DIRTCar Figure 5) (IMCA/UMP Figure 9)

6.1 40" min 48" max - length of roof panel. 36" min 42" max - width of roof.

6.2 No part of roof panel may have more than 14° of angle rake. No deflector on upper sides or rear of roof panel. Roof entrance hatch optional.

6.3 Maximum 1.5 inch ridge down sides of roof.

6.4 Maximum .75 inch rear roof stiffener (must face down).

6.5 Maximum 1.5 inch rolled down rock guard allowed on roof front.

7 MODIFIED LITE REAR UPPER QUARTER PANEL (Sail Panel) IMCA/UMP/DIRTCar Figure 13

7.1 20" min 38" max rear upper side panel may contain plexiglass.

7.2 Side panel may be no higher than an imaginary line from the rear edge of roof panel to 3" above the top edge of the rear quarter panel.

7.3 Sail panels may have window cut outs but both sail panels must be a mirror image.

8 MODIFIED LITE (IMCA/UMP/DIRTCar) SIDE WINDOW (DIRTCar Figure 4) (IMCA/UMP Figure 8) (Mandatory NO TOLERANCE)

8.2 Driver and passenger side window openings must be at least 18" long by 10" high.

9 MODIFIED LITE INTERIOR (DIRTCar Figure 10) (IMCA/UMP Figure 11)

9.1 46" min 50" max - width of rear shelf and body panels.

9.2 Rear shelf and cockpit area may have no more than a 5° max rake and may not be concave or convex in design. (flat deck)

9.3 Cockpit areas will not be fabricated similar to the late model style design. No convey or convex decking.

10 MODIFIED LITE INTERIOR SPECIFICATIONS (DIRTCar Figure 2) (IMCA/UMP Figure 6)

10.1 DIRT Car only 36" min 56" max - length of right-side pod area with max 30°. Side pods not permitted on IMCA/UMP body style.

10.2 Rear quarter distance from center of rear 20" min 32" max.

10.3 Cockpit cover with a max of ½" lip will be permitted providing the on/off cutoff switch is reachable from outside the car by safety personnel.

10.4 Deck lid height from ground 30" minimum, 36" maximum.

10.5 DIRT Side pod may not extend rearward past the centerline of rear axle.

10.6 Body must be centered on chassis.

10.7 All body dimensions will have a tolerance of + or - ½".

11 MODIFIED LITE REAR SPOILER (DIRTCar Figure 10) (IMCA/UMP Figure 11)

11.1 A one piece, aluminum/Lexan spoiler with a maximum height of 4"-inches from the rear deck and 5" maximum length will be permitted.

11.2 The rear spoiler must be non-adjustable from the cockpit and/or during racing conditions. Hinges, adjuster(s), slides and/or any other adjusting type device permitted.

11.3 A brake and/or bend on the top of the aluminum/lexan spoiler will be permitted for reinforcement.

11.4 The maximum overall height of the spoiler when measured from the ground must not exceed 40"-inches.

12 WEIGHT

12.1 All cars following the MODIFIED LITE STARS SERIES program must weigh a minimum of 1325 lbs., with driver after race.

12.2 CLASSIC MODIFIED body styles (DWARF CARS) locale tracks and/or clubs, **MAY** authorize a weight break adjustment, set at a minimum of 1240 lbs. with driver after the race. (In order to help the competitiveness of **older** Classics/Dwarfs)

12.3 No weight outside of car body, i.e. on nerf bars/**rear end housings**.

12.4 Hood will be clearly marked with cc displacement and minimum weight as outlined in Engine Specification.

12.5 This weight program will be monitored for parity and competitiveness and may be changed at the discretion of MODIFIED LITE STARS SERIES.

16.5 Attached weight must be securely bolted to frame with 1/2" or larger bolts. Weight must be painted white with car number displayed.

16.6 All cars following Modified Lite STARS "future cup" 600 cc motor program, must weigh a minimum of 1100 lbs with driver after race.

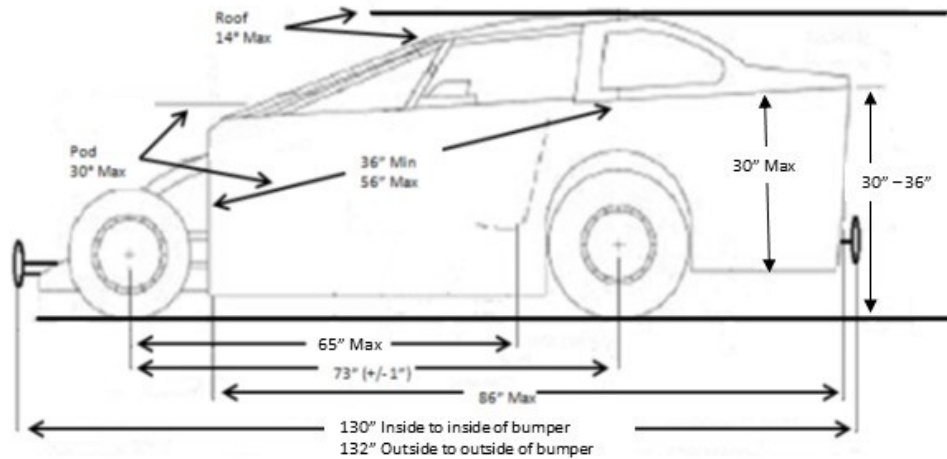
16.7 **Weight added to rear axle tubes will not be allowed.**

13 BUMPER DIMENSIONS

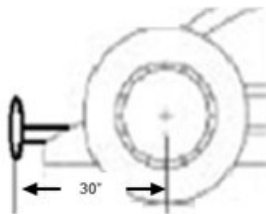
- 13.1 Front maximum width 30", Bumper height 6" to 8" with 2-bar loop. Ground to top of bumper: 12" minimum, 16" maximum. Bumper may not extend more than 30" forward of spindle center. **Refer to figure 3 and 7**
- 13.2 Rear maximum width 56" with 3 vertical bars. Bumper height 6" to 8" with 2-bar configuration. Ground to top of bumper: 12" minimum, 18" maximum. May not extend more than 10" behind rear body panels.
- 13.3 Bumpers must be hollow with max wall thickness of .125
- 13.4 Front bumper minimum width will be 20".
- 13.5 To ease pre & post-race inspection, easy to remove bumper/nerf bar connecting pins or bolts required.



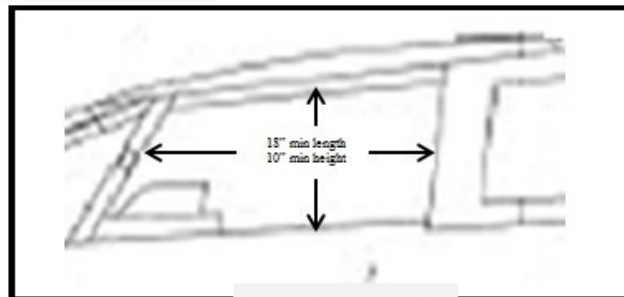
DIRTCar Body Styles



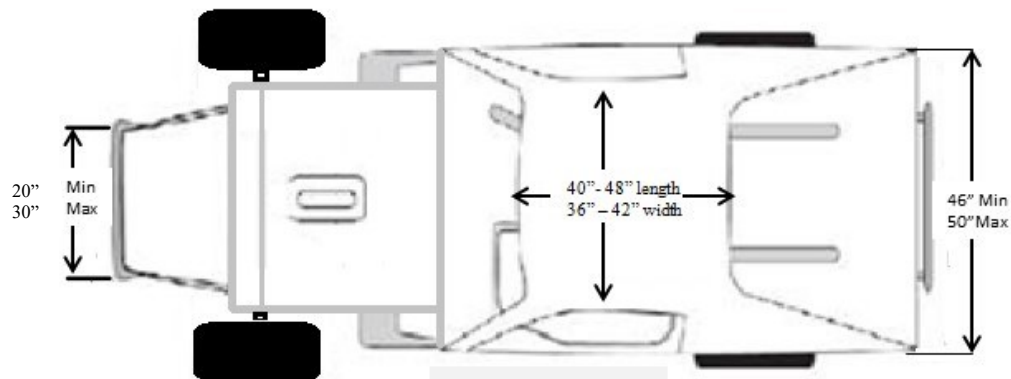
DIRTCar Figure 2



DIRTCar Figure 3



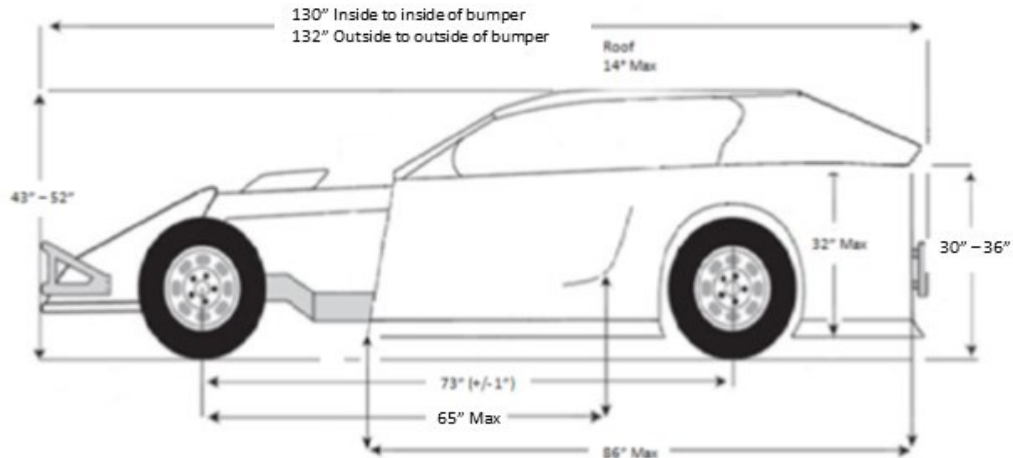
DIRTCar Figure 4



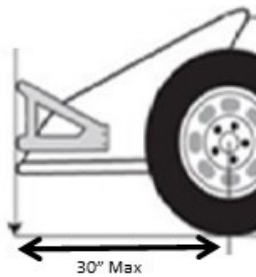
DIRTCar Figure 5



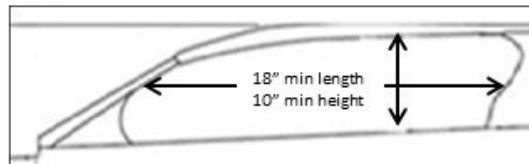
IMCA/UMP Body Styles



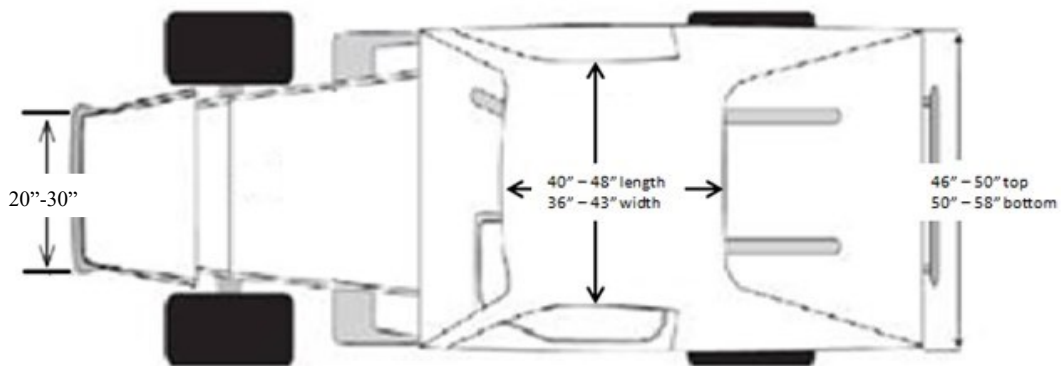
IMCA/UMP Figure 6



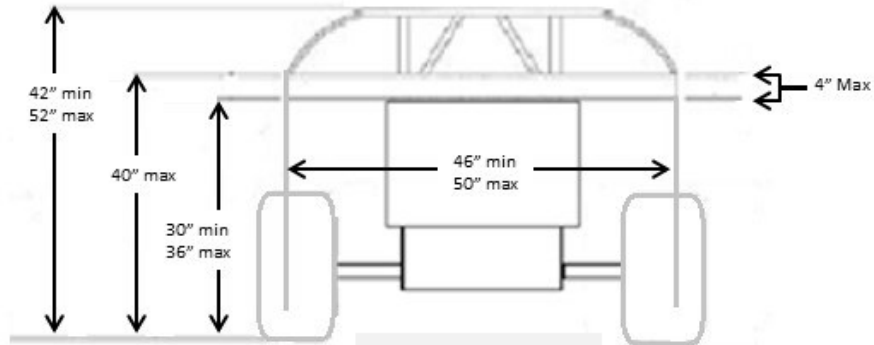
IMCA/UMP Figure 7



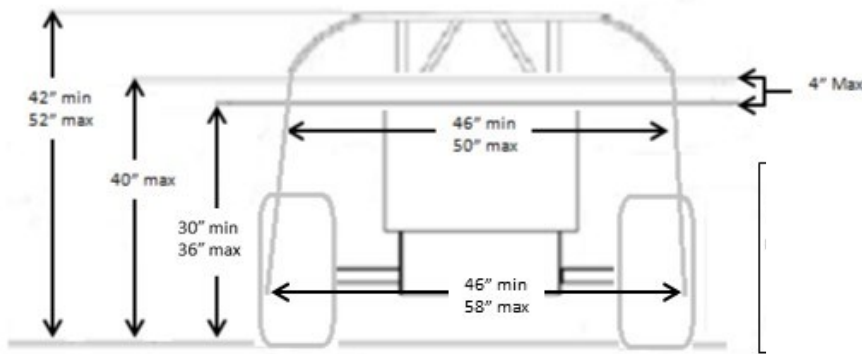
IMCA/UMP Figure 8



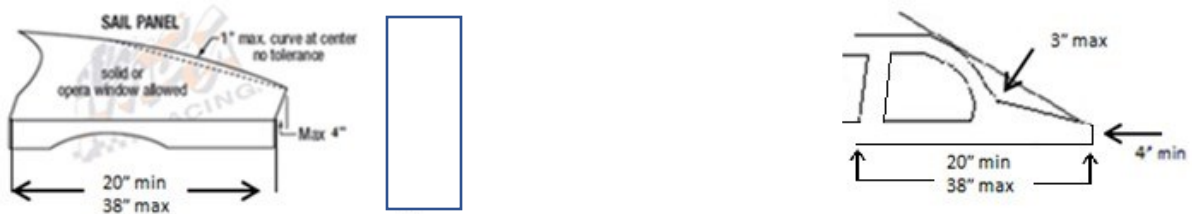
IMCA/UMP Figure 9



DIRTCar Figure 10



IMCA/UMP Figure 11



DIRTCar/IMCA/UMP Figure 13

14 FIREWALL

Firewall must be metal and must completely separate engine compartment from cockpit. Engine protruding into cockpit must be enclosed.

15 WINDSHIELD

Windshield must be Lexan, wire mesh, or protection bars. Lexan highly recommended when running asphalt. No Glass. All other cockpit areas must remain open. Deflectors may be used in front of driver. May be no wider than roll bar area.

16 NERF BARS

Full length nerf bars between front and rear tires mandatory. Maximum outside diameter of 1.25" and .125 maximum thicknesses, must be hollow and may not extend out beyond tread width more than 1" at the rear only. Must pass **freely** through hoop.

17 SEAT

1. Seat must be high-backed aluminum, racing type.
- 17.1 Recommend complete driver full containment type seat with head rest and head surround that meet or exceed the SFI 39.2 specification and display a legible and valid SFI 39.2 label.
- 17.2 Seat must be mounted to a seat frame that is welded to the racecar frame/roll cage structure. Attaching points, angles, and materials for the seat frame and mounting of the seat to the seat frame must be in accordance to the seat manufacturer instructions.
- 17.3 Seats must be used as supplied and instructed by the seat manufacturer with the exception of trimming the length of the left side head surround for the purpose of egress only. If the left side head surround is trimmed to a distance that is less than the most forward surface of the drivers helmet (usually the area crossing the chin) then recommend a left side head net meeting the TFI/SFI 37.1 installed with a quick release latch.
- 17.4 All cars will have a permanent bar located behind top of seat at shoulder level.
- 17.5 Bottom of seat will not be more than 65" back measured from upper ball joint.
- 17.6 Seat may be tilted back for added driver head clearance; however, no portion of the seat may be back more than 74" as measured above.

18 NUMBERS, GRAPHICS & TRANSPONDER

18.1 Car number must be minimum 12" in height and 2" stroke. Must be displayed on each door or quarter panel and roof or trunk. Numbers in 4" size should be on front and rear of car to help with line-ups

- 18.2 Transponder may be located anywhere behind **rear firewall**.

18.3 See Figure #15 for decal locations.

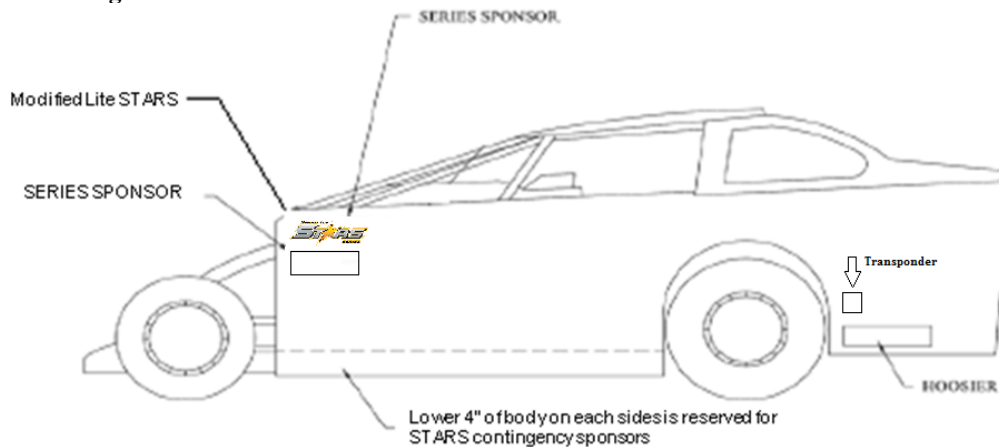


FIGURE #15

19 BATTERY, FUEL SYSTEM

19.1 Battery and fuel pump must be mounted outside driver compartment. Battery must be secure and held with non-rubber strap.

19.2 Fuel cell mandatory, maximum 5 gallons, located in trunk, (remote filler neck highly recommended)

19.3 Reinforced or steel braided line must be used in all high-pressure areas.

19.4 A direct manual cutoff switch will be installed on the right rear shelf or rear firewall. Switch will be located over the right shoulder of the driver. The emergency electrical cut off switch will be clearly located and marked.

20 DRIVE TRAIN

20.1 **Must use steel drive shaft from transmission adapter to automotive rear end.** Minimum 2.50" x .083" or 2" x .120".

20.2 Quick-change rear ends allowed with steel tubes only.

20.3 Drive shaft tunnel must have minimum of 2 (3 recommended) 360-degree hoops between firewall and seat back. Must be fabricated of minimum .1875" X 1.5" steel bar. 1" X .095" steel tube highly recommended.

20.4 Rear end must be locked or have a solid spool.

20.5 No slip spools allowed.

20.6 No titanium axles allowed

20.7 18 gauge steel from the front fire wall to the rear fire wall over driveshaft tunnel is strongly recommended.

21 FRAME AND ROLL CAGE (Figure 14)

- 21.1 Main frame members will be minimum of 1" X 2" x .120" wall rectangular steel tubing or 1 ½" DOM .095.
- 21.2 Main frame rail consists of the length between the front lower a-arm cross member and the rear main roll bar upright.
- 21.3 No aluminum allowed in cage or frame.
- 21.4 Main frame will have a minimum of 3 cross members between firewall and back of seat fabricated of same material as the frame rails and **securely welded on both ends**.
- 21.5 Alternate material may be steel angle, minimum .125" X 1.5" X 2" or 1 ½" DOM .095.
- 21.6 Cross-bracing in floor under driver strongly recommended. Rear frame rails at rear roll bar must be 34" max and 30" minimum outside dimension.
- 21.7 Frame may taper forward of driver seat area.
- 21.8 Front engine area frame width must be 24" max and 20" min outside dimension. (Cars manufactured prior to the 2018 production year with the narrow nose will be grandfathered). Cars manufactured after September 30, 2018 will be required to meet the 23.8 rule.
- 21.9 Left and right frame rails must be the same + or - ½".
- 21.10 1" Right side raise rail permitted.
- 21.11 Roll cage must be DOM steel minimum 1.25" x .083" (.095 recommended).
- 21.12 Cross-brace or diagonal strongly recommended in hoop over driver's head.
- 21.13 All cars must have cage bars installed across door openings on both sides.
- 21.14 Bars should be welded in place as part of roll cage.
- 21.15 Minimum size 1" x .065". (1.25" x .095" recommended) cars with bars mounted on doors should have full doorframe and minimum of 2 horizontal cross bars. Minimum 1" x .083".
- 21.16 Cars with bars mounted on doors must have 1/4" x 2" steel stops welded in on each side of opening, totaling a minimum of 4" on each end of door.
- 21.17 It is required to have a steel bar with a minimum size of 1" X .065" from doorpost to doorpost, under the dash. Steel plate on driver's door bars recommended.
- 21.18 It is recommended that, if using rivets, body panels attach to tabs welded onto cage instead of drilling multiple holes into cage bars.
- 21.19 No down tube frame cars allowed. Any bars going from cowl area to snout must remain below the upper line of hood.
- 21.20 Classic pickups may have two (2) bars going from upper rear roll cage down to rear clip.

22 CHASSIE DIAGRAM (Figure 14)

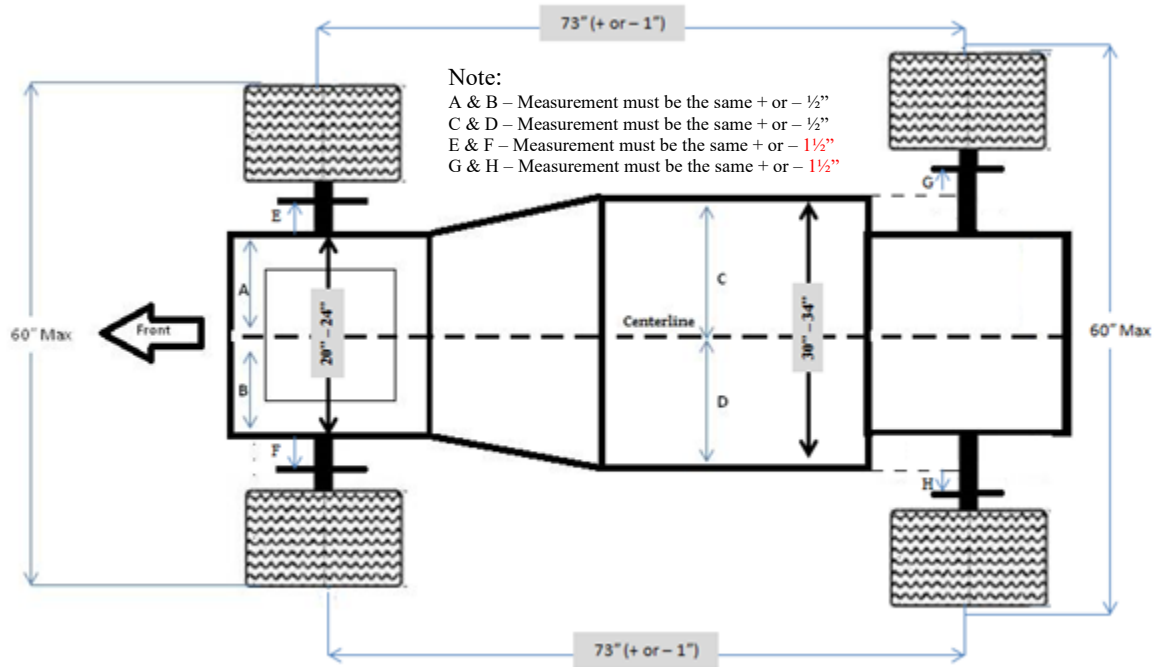


Figure 14

FEB

23 SUSPENSION & SHOCKS

23.1 Front suspension must not extend rearward past the most forward panel of the firewall.

23.2 Rear trailing arm/radius rod specifications:

23.2.1 Arms may have a maximum length of 30".

23.2.2 Torque-absorbing devices are permitted.

23.2.3 The only rear suspension that is allowed in Modified Lite STAR Series is the three-link design. Which consists of: two lower control arms, and one upper control arm to control the up and down movement of rear end. One pan hard bar is used for the side to side control of the rear end. No sliding pan hard bar allowed.

23.2.4 No watts link, floating bird cages, four link suspension type or can't-a-lever allowed.

23.3 Wheel offsets are allowed.

23.4 Hub offsets must be within 1 1/2" inch side to side. Hubs front and rear must be within 1 1/2" distance from mainframe rail on either side of car, measured from center of rotor to vertical plane of frame rail.

NOTE:

- Camber considerations must be taken.
- Make sure the rotor is completely parallel with the frame rail prior to taking the measurement.
- Measurement is made from the center of the rotor close to the hub and center of the rotor where it mounts to the hub, not at the outer or bottom edge of the rotor due to camber considerations.

23.5 Shocks must be of all-steel construction, non-adjustable type.

NOTE:

Although not recommended we understand that our drivers have their shocks re-valve which requires special tooling and takes place off site from the race track. The intent of this rule is to reduce cost. The Bilstein SG Series 6" – 7" travel shocks are approved and recommended for use within the Modified Lite STARS Racing Series.

The QA1 twin tube shock or similar will be allowed in the Modified Lite STARS Racing Series.

23.6 No driver shall have the ability to adjust suspension from inside car.

23.7 Straight front axles are prohibited. Local clubs may grandfather existing cars for competition.

23.8 No leaf springs.

23.9 No floating birdcage or break floater will be allowed.

- 23.10 Anti-roll (sway) bars permitted front or rear. Must be connected without adjustments to arm location.
- 23.11 No torsion bar suspension system of any type allowed. No lift bars.
- 23.12 No cant-a-lever or cant-a-lever type device will be permitted in or on any area of the race car suspension.
- 23.13 Coil-over shocks are the only allowable means of supporting the chassis. One shock and one spring per wheel only. Shock and spring must remain as one unit. Take up springs and bump stops are allowed. Spring stacking is not allowed.
- 23.14 Schrader Valves will not be allowed in any application within the rules of the Modified Lite STARS Series.

24 SHOCK CLAIM POLICY

- 24.1 Any car that enters tech at the end of the race may have their shocks claimed for the sum of **\$150 each**. Only drivers that have competed in that race may purchase another competitor's shocks. The highest finishing driver within the top ten finishers of the feature may file a claim with approval from the Modified Lite STARS Race Director. Claim fee must be paid in full by cash to the Modified Lite STARS Race Director or his designated representative within 10 minutes after the event. Claim policy will go in effect on the last day of a multiple day shows scheduled under the STARS banner.
- 24.2 Drivers that do not report to tech or refuses to allow shocks to be claimed, or damage shocks during removal will be disqualified and forfeits all purse and contingency for that event.

25 STEERING

- 25.1 All steering components must have safety fasteners such as cotter pins or self-locking nuts.
- 25.2 Manufactured quick-release steering wheel hubs mandatory.
- 25.3 Rack and pinion steering is mandatory.

26 BRAKES

- 26.1 All four wheels must have working calipers and rotors.
- 26.2 Rotors and calipers:
- 26.2.1 Steel rotors mandatory.
 - 26.2.2 Steel OEM calipers or aluminum calipers.
 - 26.2.3 Cutting and scalloping of rotors will be allowed. No surface cracks of any type will be allowed on the face of the rotors.
 - 26.2.4 Drilling of rotors is permitted.
 - 26.2.5 Adjustable brake bias and wheel shut offs allowed.
 - 26.2.6 Competition-type master cylinders allowed.

27 SAFETY EQUIPMENT

- 27.1 Fire bottle system HIGHLY recommended must be fastened down with metal spring bands and not plastic. SFI 17.1
- 27.2 Fire resistant driving suit required. Single layer minimum TFI/ SFI 3.2a1 or double layer SFI 3.2a5
- 27.3 Fireproof gloves required. TFI/SFI 3.3/1 or 3.3/5.
- 27.4 Fireproof shoes required. TFI/SFI 3.3
- 27.5 Full-face helmet required. SA 2010, SA 2015 SFI 38.1, FIA 8860-2004, FIA 8860-2010, Snell 2010, SAH 2010, or SFI 31.1/2005.
- 27.6 Driving racing harness & restraints required. Must be replaced according to manufacturer's replacement date. If the replacement date is not stated, they must be replaced within 3 years of stamped date.
- 27.7 Full Containment Seat recommended. SFI 39.2
- 27.8 The following are recommended:
- 27.8.1 Window nets TFI/SFI 27.1
 - 27.8.2 Arm restraints TFI/SFI 3.3

28 WHEELS AND TIRES

- 28.1 Steel wheels only, minimum wall thickness .090", 13" only, **Wheel width max. 8"**.
- 28.1.1 Wide five hubs and wheels will not be permitted.
- 28.2 The official tire for the Modified Lite STARS Series is the **Hoosier STARS plated tire**. The burn-off period for all other Hoosier tires that do not carry the STARS plate (TUSA/HTWD) will be the 2021 season, other tires to be considered by events.

36805STARS	205/60-13 STARS SOFT
36810STARM	215/60-13 STARS MED
36910STARS	215/60-13 STARS SOFT
36815STARS	235/60-13 STARS SOFT
36815STARM	235/60-13 STARS MED



- 28.3 Tires must durometer at a minimum of 40 before the race.
- 28.4 Bead lock rims are optional.

29 1000cc MOTOR PROGRAM**29.1 GENERAL MOTOR SPECIFICATIONS**

29.1.1 If there is something that has not been addressed in the below specification, do not assume modifications can be made. You must request clarification from your governing body with any item that has not been directly addressed.

29.1.2 Four cycle, four cylinders maximum only. Must have working transmission, clutch, and starter with all parts in place. Complete Clutch assembly must remain in engine. External reverse boxes allowed. No air controlled shifting devices unless deemed necessary for handicap driver by STARS official.

29.1.3 Engines must be front mounted in engine compartment.

29.1.4 Engine setback:

29.1.4.1 The "square of the engine" (rear fins of the jugs) may not extend rearward more than 17" from the center of front spindle.

29.1.4.2 No part of the engine or transmission may extend rearward more than 21 inches from center of front spindle.

29.2 ALLOWABLE 1000cc ENGINES MODEL

GSXS 1000 (2020 or order)

GSXR 1000 (2019 or older)

Honda CBR 1000 RR (2019 or older)

Yamaha YZFR1 (2019 or older)

Kawasaki ZX 10 (2019 or older)

We are returning to the 2-year rules, with the exception of the 2020 GSXS 1000, it will be grandfathered in for the 2021 racing season.

29.3 ENGINE

29.3.1 Engine parts from different year engines can be swapped between engines providing they are from the same manufacture and same motor series. The GSXR & GSXS motors meets this criteria and are considered to be of the same motor series. **You cannot change the bore, stroke, or rod length of the year of engine being used. To be determined by serial number.**

29.3.2 No modifications to the bottom of the engine will be allowed, all bottom end components must remain in stock configuration.

29.3.3 Charging system optional.

29.3.4 Battery powered ignition system only.

29.3.5 Alternator cover allowed.

29.3.6 Factory balancer and/or balancer shaft maybe removed.

29.3.7 No auxiliary starters.

29.3.8 Engine must be cooled by original intent. May use extra fan or oil cooler. Electric water pump will not be allowed unless OEM water pump remains completely functional also.

29.3.9 Engine exhaust must include muffler and exit rearward. All muffler devices must include baffles. **MUFFLER MUST MEET LOCAL TRACK REGULATIONS, (IF MANDATORY)**

29.3.10 All head components must be OEM stock. After market cylinder heads and valves will not be permitted.

29.3.11 No porting, or grinding, polishing, or changing stock configuration of intake or exhaust ports allowed.

29.3.12 Bore and stroke must remain unaltered from the factory manufactured year specification.

29.3.13 No altering of pistons, rods, head components. Crank, rods and pistons must remain OEM.

29.3.14 Header must attach directly to head in stock exhaust port location.

29.4 CAMS

29.4.1 Cams must be as per original equipment manufacturer (OEM) and meet OEM specifications.

29.4.2 Optional cam sprockets permitted.

29.4.3 Cam shafts must remain stock lift and duration and be in their original placement. (i.e. intake on intake side, and exhaust on exhaust side).

29.4.4 Kawasaki Racing Exhaust-Camshaft part number 49118-0729, Kawasaki Racing Intake-Camshaft part number 49118-0728, Kawasaki Cam Sprocket part number 120460034 are not permitted.

29.5 OIL SYSTEM

29.5.1 Oiling system may not include a dry sump system.

29.5.2 One piece billet, or cut down oil pans may be used.

29.5.3 High volume oil pump gear permitted.

29.5.4 The oil pan may be magnetic steel or aluminum.

29.6 FUEL SYSTEM

29.6.1 Engines must remain with the fuel injector or carburetor that was supplied with the engine from the factory. i.e. No interchanging a carburetor on an engine that came with fuel injection.

29.6.2 No aftermarket fuel injection and turbo chargers. You may remove the fuel injector screens and you are allowed to change the O-ring type.

29.6.3 Carburetor/fuel injection boot must fasten directly to head in the stock intake port location.

29.6.4 After market velocity stacks permitted.

29.6.5 Factory supplied air boxes and or aftermarket air filters maybe used with OEM velocity stacks. After market air boxes, such as K & N or Kinser permitted.

29.6.6 No ram air induction.

29.6.7 Port casting part lines must be visible upon inspection.

29.6.8 Intake port area may be altered to match intake boot. Alterations not to exceed 3/8" into intake port.

29.6.9 Only one fuel monitoring device can be used, but may not include any additional boxes, modules, or devices to alter motor function.

29.7 IGNITION SYSTEM

29.7.1 OEM stock ignition system only (Flashing of ECU/ECM acceptable). Power Commanders up to 5 USB and or TFI may be used. Oxygen sensors or components added will not be permitted. Components added to allow traction control will not be allowed. Bazzaz fuel performance devices will not be allowed.

29.7.2 Wiring harnesses must be left exposed for easy inspection. Anything used to change the tune of the engine MUST be out of cockpit area and out of drivers reach during race. Driver will not be allowed to change the tune of the engine in any way while racing. You must be able to show the Tech Official what the function of all switches are.

29.8 FUEL

33.8.1 Any type of manufactured pumped gasoline including ethanol based fuels such as E85 will be allowed.

29.8.2 No nitro or nitrous oxide.

29.9 OTHER

29.9.1 Engine must be in production for a 2-year time period to determine its competitive relationship with our current motor program.

29.9.2 Any major changes to the existing engine by the manufacturer must be reviewed by the STARS Officials before approval.

29.9.3 All electronic and/or computerized wheel spin and/or ignition retardation and/or acceleration limiting and/or traction control devices of any type will not be permitted.

30 ENGINE TECH PROCEDURES

30.1 Carburetors or Fuel Injection and all 4 spark plugs must be removed before checking compression.

30.2 After ten (10) compression revolutions of cranking:

30.3 Maximum 220 p.s.i. per cylinder average of 4 cylinders, no variance

30.4 Measured with a Snap-On Motorcycle compression gauge, part number EEPV303A: with adapters EEPV304A, EEPV306A or MT26J200, EEPV305A or with Snap-On Motorcycle Compression Gauge Set EEPV503: with adapters EEPV5G10L, EEPV5G12L and EEPV5G14L.

31 BORO & STROKE CHART

- GSXS 1000 up to 2020**
- GSXR 1000 up to 2019**
- Honda CBR 1000 RR up to the year 2019**
- Yamaha YZFR1 up to the year 2019**
- Kawasaki ZX 10 up to the year 2019**

			Bore	Stroke	Fuel Pressure
GSXS 1000	999cc	2015-2020	73.4	59	42.0-43.3
GSXR 1000					
	988 cc	2001-2002	73.0	59.0	43.0
	988 cc	2003-2004	73.0	59.0	43.0
	998.6 cc	2005-2006	73.4	59.0	43.0
	999 cc	2007-2008	73.4	59.0	43.0
	999 cc	2009-2011	74.5	57.3	43.0
	999 cc	2012-2016	74.5	57.3	43.0
	1000 cc	2017-2019	76.0	55.1	43.0
Honda CBR 1000 RR					
	998 cc	2004-2005	75.0	56.5	50.0
	998 cc	2006-2007	75.0	56.5	50.0
	999 cc	2008-2011	76.0	55.1	50.0
	999 cc	2012-2019	76.0	55.1	50.0
Yamaha YZF-R1					
	998 cc	1998-1999	74.0	58.0	NA
	998 cc	2000-2001	74.0	58.0	NA
	998 cc	2002-2003	74.0	58.0	40.4
	998 cc	2004-2005	77.0	53.6	42.6
	998 cc	2006	77.0	53.6	46.1
	998 cc	2007-2008	77.0	53.6	46.1
	998 cc	2009-2010	78.0	52.2	47.0
	998 cc	2011-2014	78.0	52.2	43.5
	998 cc	2015-2019	79.0	50.9	43.5
Kawasaki ZX 10					
	998 cc	2004-2009	76.0	55.0	41.0
	998 cc	2010-2019	76.0	55.0	43.0