

M.1.A Race of Champions Asphalt Modified

ANY CAR, TEAM AND/OR DRIVER THAT DOES NOT MEET THESE SPECIFICATIONS AND/OR EQUIPMENT REQUIREMENTS WILL BE SUBJECT TO PENALTIES AS DETERMINED BY THE Race of Champions OFFICIALS. **Any new components, including engine components, body designs, frame designs and/or components of any type utilized in competition must be approved by Race of Champions Officials prior to being introduced into competition.**

Open to Race of Champions-approved automobile manufacturers provided they comply with and adhere to specifications as outlined for this Series.

NOTICE

ALL MODEL, ENGINE OR EQUIPMENT CHANGES OR MODIFICATIONS NOT SPECIFICALLY ADDRESSED IN THIS RULE BOOK BY RACE OF CHAMPIONS MUST BE SUBMITTED, IN A COMPLETED FORM/ASSEMBLY, TO RACE OF CHAMPIONS FOR CONSIDERATION OF APPROVAL ON OR PRIOR TO NOVEMBER 1, 2021 UNLESS OTHERWISE AUTHORIZED BY RACE OF CHAMPIONS, TO BE CONSIDERED FOR COMPETITION FOR THE 2022 SEASON. THE APPLICANT WILL BE NOTIFIED OF APPROVAL OR REJECTION FROM RACE OF CHAMPIONS. RACE EQUIPMENT WILL NOT BE CONSIDERED AS HAVING BEEN APPROVED BY REASON OF HAVING PASSED THROUGH INSPECTION AT ANY TIME OR ANY NUMBER OF TIMES UNOBSERVED OR UNDETECTED. ANY RACE EQUIPMENT WHICH DOES NOT CONFORM TO SPECIFICATIONS OR TOLERANCES CONTAINED IN THE RACE OF CHAMPIONS RULE BOOK, OR IS NOT OTHERWISE APPROVED BY RACE OF CHAMPIONS, MAY NOT BE USED IN COMPETITION IN 2020. ALL SUBMITTED RACE EQUIPMENT MUST BE ACCOMPANIED BY COMPUTER AIDED DESIGN (CAD) FILES AND/OR MECHANICAL DRAWINGS AND REQUISITE FEE AS DETERMINED BY RACE OF CHAMPIONS.

1.0 Engines

General Engine Rules

The following characteristics of the production engine must be maintained in any engine used in competition in a manner acceptable to Race of Champions Officials. All parts listed below must originate from approved production castings and forgings. All parts, except spark plugs, should utilize fractional English measurement system fasteners and dimensions (non-metric).

ENGINE BLOCK:

Material
Number of Cylinders
Angle of Cylinders
Cylinder Bore Centerline Spacing
Number of Main Bearings and Type
Number of Camshaft Bearings and Type
Integral or Separate Cylinder Sleeves
Location of Camshaft
Overall Configuration

CYLINDER HEAD:

Material
Number of Valves per Cylinder
Type of Combustion Chamber
Location of Spark Plug
Orientation of Spark Plug
Arrangement of Valves
Valve Location in Relation to the Cylinder Bore
Angle of Valves
Type of Valve Actuation
Number of Intake Ports
Number of Exhaust Ports
Center Distances of Intake Ports Referenced to the Cylinder Bore
Center Distances of Exhaust Ports Referenced to the Cylinder Bore
Angle of Port Face Relative to Mating Face of Head to Block

Firing Order

a.) Unless otherwise specified by the Race of Champions, the same long block engine assembly (engine block, crankshaft, camshaft, connecting rods, pistons, cylinder heads, and valves) must be used for the entire Event, including practice, qualifying and the Race. An engine must not be removed from a car without the approval of the Race of Champions Officials. The Race of Champions Officials may require any team that removes an engine to start at the rear of the field, providing the car earns a starting position in the Race. The engine may be removed from a back-up car, without a penalty, at the discretion of the Series Director as follows:

- (1) If a car is wrecked beyond repair in practice before qualifying and a back-up car is used, then an engine change may be permitted provided the change can be accomplished in a timely manner before qualifying.
- (2) If a car is wrecked beyond repair during qualifying and a back-up car is used, an engine change may be permitted, however, the engine change must be completed before the beginning of practice(s), if practice(s) is scheduled, that follow qualifying.
- (3) If a car is wrecked beyond repair after qualifying and a back-up car is used, then an engine change may be permitted without an additional penalty.
- (4) If a Competitor violates this Rule, in addition to imposition of a penalty pursuant to Section K, the Race of Champions may take such action during the Event as he deems appropriate, including but not limited to loss of practice time and/or loss of the opportunity to qualify and/or confiscation of the engine or engine components. Such action shall be deemed an inspection decision not subject to Section K.

NOTE: In an effort to save time during at track inspections, it is highly recommended that all built engines have the forward most right side and forward most left side intake manifold bolts and the forward most right side and forward most left side lower cylinder head bolts cross drilled for engine sealing. If cylinder head studs are used, it is recommended that the studs be cross drilled above the cylinder head nut or through cylinder head nut and stud. If the cylinder head bolts or studs are drilled, the holes must be drilled a minimum diameter of 0.063 inch to accept the Race of Champions engine seal.

It is highly recommended that all NASCAR-approved "Spec Engines" have the forward most right side and forward most left side intake manifold bolts, the forward most right side and the forward most left side lower cylinder head bolts and the right side and left side (second from bottom) front timing cover bolts cross drilled for engine sealing. If the bolts are drilled, the holes must be drilled a minimum diameter of 0.063 inch to accept the Race of Champions engine seal.

The right side front and left side rear carburetor studs must be drilled a minimum diameter of 0.063 inch to accept the Race of Champions carburetor seal on all engines. All built engines must have the closest intake manifold bolt to each drilled carburetor stud on both the right side and left side drilled a minimum diameter of 0.063 inch to accept the Race of Champions carburetor seal.

1.0-2 358 Steel Cylinder Head Modified Engine Rules

1. Chevrolet or DART Engine Block
 - a.) DART Comp Series little (M) No. 31131111 will be permitted.
 - b.) Bowtie cast iron blocks 10051183, 10185047 or stock block will be permitted.
 - c.) A Bore size of 4.00 to **4.060** plus or minus .005 will be permitted.
 - d.) Angle cutting of the block deck will not be permitted.
 - f.) The engine block must be mounted within 2"-inch of centerline of the lower ball joints and must be securely mounted to the frame.
 - g.) Tilted blocks will not be permitted.
 - h.) There will be a minimum of 2"inch ground clearance on the oil pan.
 - i.) All bolt holes and bores must remain in the stock OEM location.
2. Crankshaft
 - a.) Only a standard magnetic steel production design crankshaft will be permitted. The crankshaft must be a minimum of 48lbs with a 2.100 rod journal 2.448 main journal. Undersizing of crank journals will be permitted to .040 providing the rod bore remains 2.225.
 - b.) Only a stock stroke of 3.480 +.005 / -.010 will be permitted.
 - c.) Crankshaft counterweights must be same shape as the original stock OEM Mass production crankshaft used with this block.

- d.) Only the leading and trailing edges may be round nosed or knife edged.
 - e.) Mains & Rod journals may be drilled.
 - f.) The outside diameter of the counter weights may be drilled or machined or ground for balancing
 - g.) Undercut or tapered counterweights will not be permitted. Counterweights must be same width from main and rod journals to outside diameter of counterweight.
3. Connecting Rods
- a.) Only solid magnetic steel connecting rods will be permitted.
 - b.) A maximum length of 6"-inches will be permitted.
 - c.) Stainless steel, aluminum, titanium and/or any other materials that are considered exotic materials will not be permitted.
4. Pistons
- a.) Flat top, dished aluminum round pistons and dome pistons will be permitted.
 - b.) Only pistons with three (3) functioning ring grooves will be permitted.
 - c.) A maximum overbore of 0.060 will be permitted.
 - d.) Only aluminum pistons will be permitted. Ceramic, plastics and/or any other type of material pistons will not be permitted.
 - e.) Coatings of any type will not be permitted.
5. Cylinder Heads 2009 Steel head Engines
- a.) The GM Bowtie casting 14011034, 14011058 or 12480034 will be permitted.
 - b.) The DART Platinum 10310010P will be permitted.
 - c.) The maximum valve size that will be permitted is 2.05 intake and 1.60 exhaust
 - d.) The cylinder head must remain in the stock OEM location. Repositioning and/or relocating the cylinder head on the engine block will not be permitted.
 - e.) The valve centerline and guide angle in relationship to the cylinder heads must be remain stock OEM.
 - f.) Porting and polishing by the removal or grinding of the original casting in runners will be permitted. Epoxy fillers, welding, spray welding and/or any other coating or materials on or in the cylinder heads will not be permitted.
 - g.) External painting will be permitted.
 - h.) Air directional devices of any type on any valve surface will not be permitted.
 - i.) Only magnetic steel push rod and valve springs will be permitted. Titanium and/or any other exotic type material will not be permitted.
 - j.) Titanium valve spring retainers will be permitted.
 - k.) The maximum compression permitted will be 12.0:1.
6. Cam / Lifters
- a.) The camshaft, bores and lifters must remain in the original stock OEM location.
 - b.) Only magnetic steel lifters will be permitted. Solid or hydraulic lifters with roller tappets or mushroom tapers will be permitted.
 - c.) Rev kits will be permitted.
 - d.) Roller rocker, stud girdles, shaft rockers will be permitted.
 - e.) Gear drives or belt drives will not be permitted.
 - f.) Roller cam bearings will be permitted.
7. Ignition
- a.) HEI, MSD, or magneto will be permitted. If an MSD style ignition is utilized it must be mounted to the right of the driver and in plain view. The MSD style ignition system must have a lexan cover, which is removable for ease of inspection. The MSD style ignition system must be removable for ease of inspection. Ignition components in the driver's compartment will not be permitted.
 - b.) Only the MSD 6ALN box will be permitted. MSD components of any type may be submitted to the manufacturer for testing from time-to-time. In the event that a component, which has been submitted to the manufacturer for inspection has not been returned a suitable replacement component will be provided by Race of Champions Officials until the inspection is completed. Refusal and/or denial of inspection will result in a penalty to be determined by section k of the Race of Champions rulebook.
 - c.) The distributor must mount in the OEM stock location. Rotation and firing order must remain in the stock OEM firing order for the engine. GM Firing Order: 1-8-4-3-6-5-7-2
 - d.) Adjustable timing controls will not be permitted.
8. Intake manifold
- a.) The following intake manifolds will be permitted competition:

- i. Brodix HV 1000
- ii. Edelbrock 2975 / 2999 / 2925 / 2926
- iii. Bowtie 2972 / 2996
- iv. Weiland Team G 7530 / 7532
- v. Holly 300-25
- vi. GM 10051102 / 10093374
- vii. HVH 10003
- viii. DART No. 42411000

- b.) Porting of 2009 Intake Manifolds will be permitted.
- c.) Welding and/or epoxy and/or filling of any type will not be permitted.
- d.) Painting and/or coating and/or the application of coating will not be permitted.
- e.) The maximum material thickness for an intake manifold gasket will be .125"-inch.
- f.) Spacers between intake manifold and cylinder heads will not be permitted.

9. Carburetor

- a.) Only the Holley 4777 650 CFM will be permitted for competition.
- b.) Alterations of any type, machined, coating and/or other wise; internal or external to the carburetor base and/or any of its components will not be permitted.
- c.) Changing and/or tuning of the power valve and/or accelerator pump and/or jets will be permitted, but must be Holley components and manufactured for the carburetor; OEM. Aftermarket and/or components that fit the carburetor that are not Holley OEM components for the part number of the carburetor will not be permitted.
- d.) The choke plate and horn may be removed. The gasket ring must remain unaltered from the manufacturer.
- e.) The carburetor boosters may be aligned. The carburetor boosters must maintain their stock OEM size and must remain in their original mounting location in the main carburetor body. Any alteration to the booster, the booster bridge, including but not limited to the tapering, raising or lowering of the booster height, will not be permitted.

10. Carburetor Spacer

- a.) A single one piece carburetor spacer with a maximum thickness of 2"-inches will be permitted. Taper and/or beveled shapes will not be permitted. The spacer must conform to the base of carburetor and use two (2) paper gaskets. The maximum thickness for either gasket will be .065-inches.
- b.) The carburetor spacer must remain in the same position as the original carburetor mounting position on the intake manifold.

11. Air Cleaner

- a.) Only one (1) round paper type (dry) air cleaner will be permitted. The air cleaner may be a minimum of 12"-inches and a maximum of 14"-inches in diameter, with a minimum of 1-1/2"-inches and a maximum of 5"-inches in height. The top and bottom of the air cleaner housing must be round and solid. Openings on the top of the air cleaner will not be permitted.
- b.) All air that enters engine must pass through air cleaner. Any type of device that directs and/or ducts air to or from the air cleaner will not be permitted.
- c.) The filter must be mounted in the center of the carburetor.
- d.) A single shield for the purpose of protecting the air cleaner from debris which may cover up to one half of the air cleaner circumference on the front of the air cleaner will be permitted.
- e.) Performance enhancing additives and/or chemical and/or freezing or cooling of, on and/or in the air cleaner and/or any of the air cleaner components will not be permitted.

12. Oiling System

- a.) A single dry sump pump will be permitted.
- b.) Oil, tanks and/or lines in the driver compartment will not be permitted.
- c.) The maximum number stages in the dry sump pump will be five (5). The maximum length of the dry sump pump will be 10"-inches x 3"-inches wide.
- d.) Oil deflecting to individual rod and/or main journals will not be permitted.
- e.) A single oil cooler permitted. If the oil cooler is mounted above the interior sheet metal the maximum height will be 5"-inches and maximum width will be 10"-inches. The outside edges of the oil cooler must be enclosed and sealed in sheet metal.
- f.) Partitions of any kind in the oil pan will not be permitted. Oil pans must be approved prior to entry into competition by Race of Champions Officials.

g.) A minimum one (1) inch and maximum one and a half (1-1/2") inspection plug must be must be placed in the bottom of oil pan for visual and mechanical inspection.

13. Engine / Car Electrical System / Ignition System
 - a.) Approved ignition systems may be used in competition. If a crank trigger ignition system is being used, triggering devices and/or pick ups will not be permitted inside of the distributor housing.
 - b.) Ignition amplifier boxes and RPM limiting devices that are analog only which **do not** contain programmable, computerized, or memory circuits will be permitted.
 - c.) Magnetos and Magneto type ignition systems will be permitted.
 - e.) Crank trigger ignition systems that use a triggering device on the crankshaft plate will be permitted. Crank trigger ignition systems that use a triggering device within the distributor will not be permitted.
 - f.) Ignition system equipment and/or wiring may not be located in the driver's side door area and/or within reach of the driver with the exception of the ignition button or ignition switch. All ignition system equipment must be mounted to the right of the driver.
 - g.) Adjustable timing controls will not be permitted.
 - h.) Ignition delay devices will not be permitted.
 - i.) RPM limiting devices must be submitted to Race of Champions Officials prior to introduction into competition and be approved prior to competition. The RPM limiting device must be wired in a visible manner to the ignition amplifier box.
14. Alternator
 - a.) The alternator system, if used, must be working within specifications and mounted on the front of the engine.
15. Starter
 - a.) The self-starter must be in working order. Gear reduction starters that have been approved by Race of Champions Officials will be permitted. After the race is underway, cars may be started by hand pushing on pit road and/or in the pit area only. Cars may not be hand pushed onto and/or on the race track during competition. In the event that any car is hand pushed onto or on the track during competition that car will be immediately disqualified from the event.
16. Cooling System
 - a.) The radiator must appear and work like an OEM radiator and be centered in front of engine.
 - b.) Cooling or icing type chemicals in the engine compartment will not be permitted.
 - c.) Only a single mechanical water pump mounted in the stock location with the same rotation of the crankshaft will be permitted.
 - e.) The coolant must flow in same direction as production engine.

1.0-3 23 and 18 degree aluminum cylinder head engine rules

1. Detailed Engine Requirements
 - a.) For purposes of construction, some elements of this sub-section are listed below. Changes from the approved standard production automobiles or component parts will not be permitted except as specified in the following rules for engine preparation. In addition to the General Engine Requirements specified in the "Spec" engine sub-section, the engines must also conform to the following Detailed Engine Requirements.
2. Detailed Engine Requirements
 - a.) The engine location must be approved by Race of Champions Officials. The engine must be mounted between the frame rails in front of the driver. The longitudinal centerline of the crankshaft when measured to the centerline of the lower ball joint, on both the left side and right side, must be within two (2) inches in distance. The engine must not be tilted in any direction.
3. Engine Ground Clearance
 - a.) The engine ground clearance will be measured (with the driver in the car) at the oil pan. A minimum height of **1-1/2** inches from the bottom of the oil pan to the ground must be maintained at all times during the inspection process.
4. Engine Ground Clearance
 - a.) All engine mounts must be acceptable to Race of Champions Officials and meet the following minimum requirements:
 1. Engine mounts must be reinforced steel or aluminum.
 2. All engine mounts must be securely bolted.

5. Engine Displacement / Compression Ratio

Engine Displacement

- a.) Only "small block" V8 engines with a minimum of 350.000 cubic inch displacement will be permitted.
- b.) To clarify the identification of a "small block" engine, listed below are the basic engines designated and approved as "small block" engines.

Any engine not listed will be designated as a large block engine and will not be permitted, regardless of the engine size.

DODGE GENERAL MOTORS FORD

360 CID 350 CID 351C CID

- c.) The engine displacement may be increased or decreased by boring or stroking. The formula for determining cubic inch displacement is as follows: Bore x Bore x Stroke x .7854 equals cubic inch displacement of each cylinder. The cubic inch displacement of each cylinder added together will determine the total cubic inch displacement of the engine. Unless otherwise permitted by Race of Champions Officials, a maximum cooling down time of two (2) hours from the official completion time of the Race will be permitted prior to measuring the total cubic inch displacement.

Compression Ratio:

- a.) For all Events, the maximum compression ratio permitted on any cylinder will be 12.0 to 1 on all engines except the NASCAR-type and approved "Spec Engine". When calculating the compression ratio, an allowance of one (1) cubic centimeter will be added to the volume for the area around the top of the piston down to the top of the piston ring that will be sealed with grease.
- b.) The procedure for calculating the compression ratio is as follows: Bore x Bore x Stroke x .7854 x 16.387 equals the Cylinder Volume of a cylinder at Bottom Dead Center (BDC) in cubic centimeters. The Cylinder Head Pour Volume minus (-) the known volume of the cylinder head plate plus (+) Head Gasket Volume plus (+) 1.00 cc for sealing the piston ring plus (+) the Cylinder Block Volume minus (-) the known volume of the block plate equals (=) Chamber Volume. Compression Ratio = Cylinder Volume plus (+) Chamber Volume.

6. Engine Blocks

- a.) All engine blocks must be acceptable to Race of Champions Officials and meet the following requirements. Race of Champions Officials may use an engine block provided by the respective manufacturer as a guide in determining whether a Competitor's engine block conforms to the specifications of the Rule Book.

Eligibility

- a.) A. Engine blocks must be a product of the manufacturer for the approved engine being used in competition. Approved manufacturers' identification and part numbers and/or casting numbers in the form of cast-in numbers must remain unaltered on the engine block being used in competition.
- b.) Only the Dodge 360 engine blocks, the Ford 351 Cleveland-type engine blocks and General Motors 350 engine blocks will be permitted. Aftermarket engine blocks will not be permitted.
- c.) The engine block must retain all standard external dimensions with the exception of the surfacing of the engine block deck. Angle cutting of the engine block deck will not be permitted.
- d.) Engine blocks must use individual magnetic steel crankshaft main bearing caps. The main bearing bore size must be the same for all main bearings.
- e.) Aluminum engine blocks will not be permitted.
- f.) The General Motors cast iron engine blocks, part numbers 22551657, 22551659, 22551788 and 22551790, will not be permitted.

7. Internal Engine Block Changes

- a.) Boring and honing of the cylinders will be permitted. Cylinder bores must remain round.
- b.) Internal polishing of the engine block will be permitted.
- c.) Relocation of the camshaft will not be permitted.

8. Pistons / Connecting Rods

- a.) Only round aluminum pistons will be permitted.
- b.) All pistons must be configured with two (2) separate compression piston ring grooves located near the top of the piston and one (1) oil ring groove located below the compression ring grooves. A piston compression ring must be used in each compression ring groove and one (1) oil ring assembly must be used in the oil ring groove.
- c.) Only solid magnetic steel connecting rods will be permitted.
- d.) Only round piston pin holes with a fixed location in the piston and the connecting rods will be permitted.
- e.) Titanium and stainless steel connecting rods will not be permitted.

f.) Only two-piece insert style connecting rod bearings will be permitted. Roller bearings will not be permitted.

9. Oil Pans / Oil Coolers

- a.) The oil pans and oil coolers must be acceptable to Race of Champions Officials and meet the following minimum requirements:
- b.) Oil pans must be made of magnetic steel. Spacers, other than sealing gaskets, will not be permitted between the oil pan side rails and the engine block surface.
- c.) Segmented oil pans and/or crankcases will not be permitted. The oil pan and crankcase area must remain open. Additions of materials to the engine block, engine block components, and/or the oil pan to separate the crankcase area from front to rear will not be permitted.
- d.) A maximum of four (4) oil pump scavenging pick-ups will be permitted into the oil pan. The scavenging pick-ups must draw oil from the inside bottom of the oil pan.
- e.) Sealed windage trays will not be permitted.
- f.) A single baffle (windage screen) may be used inside the oil pan providing it is constructed of wire mesh or louvered metal. The baffle (windage screen) must be installed in a straight line from the front to the rear of the oil pan. The baffle (windage screen) must attach to the upper sidewall and to the bottom of the oil pan on the same side. Clearance between the baffle (windage screen) and the engine main bearing caps must not be less than 1-1/2 inches when viewed horizontally. Directional baffles in the bottom of the oil pan must not be higher than one (1) inch.
- g.) Engine oil coolers must be either an oil to air or an oil to water heat exchanger mounted adjacent to the engine. The oil cooler must be mounted inside the body panels. The oil cooler may be mounted in front of the engine firewall or to the right of the driver beneath the angled interior sheet metal. The oil cooler air intakes mounted in the front body panels must not be larger than five (5) inches in width and 10 inches in length. A maximum of two (2) cooling ducts with a maximum three (3) inch diameter flexible hose in the front body panels will be permitted. Any outward facing lips on the cooling ducts must only be bent once and the lip must not exceed one (1) inch. The oil cooler air intake mounted above the interior sheet metal must not be larger than five (5) inches in width and 10 inches in length. The outside edges of the oil cooler must be completely sealed with sheet metal. All oil coolers and their installation must be acceptable to Race of Champion Officials.

10. Cylinder Heads

- a.) All modifications must be submitted to the Race of Champions before any proposed modification will be eligible for approval. Approved manufacturers' identification in the form of cast-in part numbers must remain unaltered on the cylinder heads being used in competition.
- b.) OEM Cylinder Heads:
The following cylinder heads are the only OEM cylinder heads that have been approved for use in competition:
MANUFACTURER PART NUMBER CASTING NUMBER
The Dart (Clone) 18 degree #14100000C (GM Casting Cylinder Head Clone) will be approved as a repair and/or replacement cylinder head.
Dodge W8 P4876281 P4532933 P4876697 (CNC) P4532933 P4876281 P4510019
Ford (dated 9/9/91 or later) E3ZM6049C3 E3ZM6049C3 M6049C3 E3ZM6049C3L E3ZM6049C3
General Motors 18 Degree 10134364 10134363 24502580 10134363
- c.) At all Race of Champions Events, previously approved 22 and 23 degree valve angle aluminum V-8 cylinder head are eligible for General Motors engines. Previously approved Ford and Dodge aluminum V-8 cylinder heads are eligible for Ford and Dodge engines. Previously approved cylinder heads with manufacturers' identification and part numbers are as listed:
MANUFACTURER PART NUMBER CASTING NUMBER
Air Flow Research AFR215; All Pro AP227; Brodix 3941075; Chevrolet 10051101; Dodge W 7; P5249958 (Unported) P4532442B; P5249850 (CNC ported) P453244B; Ford M 6049 C302
With 4 Degree Valve Cant; Pontiac 10033867
Race of Champions Officials may use a cylinder head provided by the respective manufacturer as a guide in determining whether a Competitor's cylinder head conforms to the specifications of the Rule Book.

11. Cylinder Head Eligibility

- a.) To be eligible, the approved cylinder heads must be acceptable to Race of Champions Officials and meet the following requirements:
- b.) The following requirements are for the approved OEM cylinder heads described in the above sub-section:
- c.) The valve angle and valve location must remain as approved by Race of Champions Officials. Spacing between the valves measured center to center is:

MANUFACTURER VALVE ANGLE SPACING

Dodge W8 15 Degrees 1.936 inches

Ford Intake 7-1/2 Degrees 1.900 inches

Exhaust 8 Degrees

General Motors 18 Degrees 1.935 inches

Valves must remain in the approved location in relation to the cylinder bore centerline.

d.) The top of the intake ports must remain in the approved location measured on the inside top of the port.

e.) The vertical centerline of the intake port entrance must be straight and perpendicular to the cylinder head gasket surface. The vertical centerline of the intake port must remain in the approved location. The horizontal centerline of the intake port must be straight and parallel to the cylinder head gasket surface.

f.) The vertical and horizontal centerlines of the exhaust port exit must remain in the approved location. The vertical and horizontal centerlines must be straight lines. The horizontal centerline must be parallel to, and the vertical centerline must be perpendicular to, the cylinder head gasket surface. If material is removed from the top or side of the exhaust port, the same amount must be removed from the bottom or opposite side of the port.

g.) The rocker arm fastener bolt holes must remain in the approved location.

h.) Only stainless steel or titanium valves are permitted. Exotic materials will not be permitted.

i.) Only magnetic steel valve springs are permitted.

j.) Only two (2) valves per cylinder will be permitted.

k.) There are no restrictions on the valve size.

l.) Internal polishing and porting will be permitted.

m.) Spark plug holes must remain in the approved location.

n.) Angle cutting of the cylinder head to the engine block mating surface will not be permitted.

o.) Milling of the heads will be permitted, but not to exceed 0.175 inch.

p.) "O" rings will not be permitted for sealing the cylinder head to the engine block.

q.) At all Race of Champions Events, when the previously approved cylinder heads are used, the cylinder heads must meet the following requirements:

r.) Only steel or titanium valves will be permitted.

s.) Only magnetic steel valve springs will be permitted.

t.) Only two (2) valves per cylinder will be permitted.

u.) There are no restrictions on the valve size.

v.) Internal polishing and porting will be permitted.

w.) Spark plug holes must remain in the approved location.

x.) Valve angle must remain as manufactured within two (2) degrees from the approved valve angle on the previously approved cylinder heads in the Race of Champions possession and/or as assembled by the manufacturer.

y.) Valves must remain in the approved location in relation to the cylinder bore centerline.

z.) "O" rings will not be permitted for sealing the cylinder head to the engine block.

12. External Cylinder Head Changes

a.) External modifications for the approved OEM cylinder heads will be permitted providing the external dimensions of the cylinder head have not been changed in respect to original height (0.000 inch for Dodge, plus 0.100 inch for Ford and 0.080 inch for General Motors or minus 0.175 inch for all engines), original length, and original width as compared to the cylinder heads described in the above sub-section.

b.) External modifications for the OEM Ford cylinder head, part number E3ZM6049C3L and the OEM 18 degree General Motors cylinder head, part number 24502580 will be limited to milling of the head not to exceed 0.175 inch.

c.) External modifications for the previously approved 22 and 23 degree General Motors cylinder heads will be permitted providing the external dimensions of the cylinder head have not been changed in respect to original height (plus or minus 0.100 inch) original length and original width. A maximum of 3.000 inches height must be maintained on intake flange side of head from the cylinder head to block surface to the valve cover rail. On cylinder heads manufactured with a raised valve cover rail for oil retention purposes a maximum of 3.200 inches will be permitted.

d.) Painting or coating of the cylinder heads will not be permitted.

13. Internal Cylinder Head Changes

a.) Internal changes for the OEM cylinder heads are as follows:

b.) Air flow improvements by internally polishing and porting will be permitted.

c.) Improvements or modifications to the cylinder head may be done by removing material from the production casting.

d.) The addition of foreign material (i.e., epoxy, plastics, etc.) to the production casting will not be permitted.

e.) Internal porting and/or polishing will be permitted. The original internal shape and configuration of the port must not be notched, grooved, channeled, or ridged in any way. After porting and/or polishing the intake port walls, port roof and port floor from the intake manifold mating surface to the centerline of the intake valve, air can flow over one (1) surface each. When the manufacturer has cast a valve guide support into the roof of the intake port the valve guide support must be blended into the roof of the intake port, eliminating all sharp edges. The maximum port floor height, maximum port roof height, port centerline, and spark plug locations must conform to the approved manufacturer template.

14. Crankshaft / Harmonic Balancer

Crankshaft

- a.) Only one-piece magnetic steel crankshafts will be permitted.
- b.) Aftermarket crankshafts must have the same design as an OEM type crankshaft for the approved engine and must be acceptable to Race of Champions Officials.
- c.) Only two-piece insert style crankshaft main bearings will be permitted. Roller bearings will not be permitted.
- d.) Crankshafts may be lightened and balanced. A solid material must be used to balance crankshafts.

Harmonic Balancers

- a.) Harmonic balancers must be used and must be used as manufactured. Only SFI 18.1-approved magnetic steel harmonic balancers and balancer hubs, acceptable to Race of Champions Officials, will be permitted.

15. Camshaft / Valve Lifters / Rocker Arms

Camshaft

- a.) Any magnetic steel roller or flat tappet camshaft will be permitted. The maximum camshaft journal size must not be more than 2.362 inches (60mm).
- b.) Only standard production design timing chains, gear drives, and belt drives will be permitted for operating the camshaft on all engines. Camshaft timing must be fixed; variable timing devices will not be permitted. All camshaft timing drive systems must be acceptable to Race of Champions Officials.
- c.) Camshafts must be driven in the same direction of rotation as the Race of Champions approved standard production engine crankshaft. The camshaft must maintain the same firing order as the Race of Champions approved production engine.

The approved firing orders using approved cylinder identification are as follows:

Dodge 1-8-4-3-6-5-7-2

Ford 1-3-7-2-6-5-4-8

General Motors 1-8-4-3-6-5-7-2

- d.) The manufacturer's cylinder identification sequence is as follows:

Dodge and General Motors Ford

(Front) (Front)

1 2 5 1

3 4 6 2

5 6 7 3

7 8 8 4

Valve Lifters

- a.) Valve actuation must be limited to one (1) lifter, one (1) push rod and one (1) rocker arm per valve. All valve actuation systems must be acceptable to Race of Champions Officials.
- b.) Solid magnetic steel flat tappet straight barrel valve lifters will be permitted. Roller tappets, mushroom valve lifters and any type of mechanical assistance exerting a force to assist in closing the valve, commonly known as rev-kits will be permitted.
- c.) Only magnetic steel one-piece, push rod assemblies without any moving parts, will be permitted.

Rocker Arms / Valve Covers

- a.) Only steel or aluminum roller bearings rocker arms, one (1) per valve, that are acceptable to Race of Champions Officials may be used. Split shaft rocker arm assemblies will be permitted.
- b.) The rocker arm fastener bolt holes may not be relocated more than 0.100 inch in any direction measured from the centerline of the approved rocker arm fastener hole.
- c.) Valve covers must be made of steel or aluminum. Magnesium and other exotic materials will not be permitted.

16. Intake Manifold

- a.) The intake manifold must be approved by Race of Champions Officials. The approved

manufacturers' identification in the form of cast-in part numbers must remain unaltered on the intake manifold.

b.) The intake manifolds must conform to the Race of Champions-approved templates, gauges, scales and other measuring devices.

c.) Race of Champions Officials may use an intake manifold provided by the respective manufacturer as a guide in determining whether a Competitor's intake manifold conforms to the specifications of the Rule Book.

d.) Only open plenum intake manifolds will be permitted. The plenum opening must not be smaller than a minimum size of 3-5/8 inches in width by 3-9/16 inches in length. The maximum plenum opening size must not be larger than 3-3/4 inches in width by 3-11/16 inches in length. The plenum opening must have radiused corners that maintain the shape and configuration of an open four (4) barrel carburetor gasket.

e.) The inside floor of the plenum and the carburetor mounting flange must remain in the approved location.

f.) The plenum will be defined as the area inside the opening of the intake manifold from the plenum opening at the carburetor mounting flange down to the floor of the plenum. Included in the plenum area will be where the runner walls attach at the top and bottom in the plenum. The intake manifold runners will be defined as starting at the point of attachment both at the top and the bottom in the plenum area of the intake manifold.

g.) The intake runners must maintain the same length as compared to the approved intake manifold with the same part number.

h.) The centerline of the intake ports, as seen from above, must remain in the approved location.

i.) Each engine will be permitted a maximum of two (2) approved intake manifolds. New approvals must be preceded by deleting a currently approved manifold. The following intake manifolds are approved for use in competition:

MANUFACTURER PART NUMBER

DODGE Dodge P4532598

Dodge/Arrington – P4532590

FORD Ford Edelbrock 2991-Victor 351Y

Ford M9424-W351

GENERAL MOTORS

18 DEGREE Edelbrock 2995

GM 24502653 Spider

Intake Manifold Modifications Permitted:

j.) Polishing in the plenum area will be permitted only to "clean up" imperfections in the castings in a manner acceptable to Race of Champions Officials.

k.) Polishing of ports in the intake manifold will be permitted.

Intake Manifold Modifications Not Permitted:

l.) Added air directional devices will not be permitted inside the intake manifold.

m.) The length of the intake manifold runners must not be changed and remain as manufactured.

n.) Epoxy or fillers will not be permitted on the plenum floor or on the walls of the plenum.

o.) Air holes will not be permitted to be opened in the intake manifold.

p.) External modifications to the intake manifold will not be permitted unless approved by Race of Champions Officials.

q.) Painting and/or coating of the intake manifold will not be permitted.

r.) Drilling or tapping of the intake manifold plenum or intake runners will not be permitted unless approved by the Race of Champions Officials.

s.) At all Events, previously approved intake manifolds may be used. These intake manifolds must meet the following requirements:

t.) Only open plenum intake manifolds will be permitted. The plenum opening must not be smaller than a minimum size of 3-5/8 inches in width by 3-9/16 inches in length. The plenum opening must have radiused corners that maintain the shape and configuration of an open four (4) barrel carburetor gasket.

u.) The plenum will be defined as the area inside the opening of the intake manifold from the plenum opening at the carburetor mounting flange down to the floor of the plenum. Included in the plenum area will be where the runner walls attach at the top and bottom in the plenum. The intake manifold runners will be defined as starting at the point of attachment both at the top and the bottom in the plenum area of the intake manifold.

v.) In the center of the plenum, from the base of the carburetor to the floor of the intake manifold between the intake runners, there must be an open area of 1-3/4 inches minimum diameter. This will be checked with a gauge.

w.) The inside floor of the plenum must remain in the approved location and be the same shape as compared to the approved manifold with the same part number.

- x.) The floor of the intake manifold between the intake runners must have a single plane, smooth, unaltered surface.
- y.) The carburetor mounting flange must remain in the approved location and maintain the same configuration as compared to the approved intake manifold with the same part number.
- z.) The centerline of the intake ports, as seen from above, must remain in the approved location.

aa.) At all Events the following intake manifolds have been approved for competition:

MANUFACTURER PART NUMBER DESCRIPTION

Brodix HV-1005 HV-1-H 0.625 inch Flange
 HV-1013 HV-SP-1 0.590 inch Flange
 Chevrolet GM 10051103
 Dodge Dodge W-7 P4532598
 Dodge/Arrington P4532590
 Edelbrock 2926 General Motors, High Port
 2990 Ford Victor 351-AH-11
 2981 Ford Victor Jr 351-W
 Ford M-9424 - A351
 M-9424 - E351
 Holley 30041
 300-105
 Pontiac GM 10093374

Previously Approved Intake Manifold Modifications Permitted:

- bb.) Polishing in the plenum area will be permitted.
- cc.) Polishing of ports in the intake manifold will be permitted.

Previously Approved Intake Manifold Modifications Not Permitted:

- dd.) Added air directional devices will not be permitted inside the intake manifold.
- ee.) Air holes will not be permitted to be opened in the intake manifold.
- ff.) External modifications to the intake manifold will not be permitted.
- gg.) Painting and/or coating of the intake manifold will not be permitted.
- hh.) Drilling or tapping of the intake manifold plenum or intake runners will not be permitted unless approved by Race of Champions Officials.
- ii.) Spacers between the engine block and the intake manifold will not be permitted.
- jj.) Spacers between the intake manifold and the cylinder head will not be permitted.
- kk.) The intake manifold must have a minimum of 1/4 inch of surface on all sides to seal the intake manifold to the cylinder head.
- ll.) The carburetor mounting studs must be solid and remain in the approved location and maintain a stud size of 5/16 inch diameter.
- mm.) Any spacer added between the carburetor (per the above sub-section) and the intake manifold must be mounted using the approved 5/16 inch diameter, solid carburetor mounting studs and must not be welded to the intake manifold.
- nn.) The intake manifold ports must be completely sealed to the cylinder head ports at all times. Intake manifold sealing must be done by using one (1) approved paper-type intake manifold gasket per side. Metal shim type or metal impregnated intake manifold gaskets will not be permitted. The as manufactured thickness of approved intake manifold gaskets must not be less than 0.060 inch and must not be more than 0.125 inch per side. Intake manifold gaskets must be secured to either sealing surface (intake manifold or cylinder head) with an approved adhesive. At the Race of Champions discretion the intake manifold and cylinder heads may be leak tested to ensure proper sealing at any time during the Event.
- oo.) The intake manifold and the valley tray material must be aluminum. Magnesium or other exotic materials will not be permitted.

17. Carburetor

- a.) Race of Champions Officials may use a carburetor provided by the respective manufacturer as a guide in determining whether a Competitor's carburetor conforms to the specifications of the Rule Book.
- Eligibility
- b.) The following Series carburetors are eligible for use:
- c.) The Holley 4150 Series, list number 80507 (390 CFM), four (4) barrel carburetors with a maximum venturi size of 1-1/16 inches and a maximum throttle bore size of 1-7/16 inches are approved for use on all 18 and 23 degree aluminum cylinder head engines except the NASCAR-approved "Spec Engine". The venturis must maintain a circular (round) cross section. This is the only carburetor eligible for use on all engines except the NASCAR-approved "Spec Engine" in all Only Holley replacement or service parts can be

used in any carburetor rework. All carburetor modifications must be acceptable to Race of Champions Officials. Carburetors and/or carburetor components machined from billet materials will not be permitted.

The Holley 4150HP Series, list number 80507 (390 CFM), four (4) barrel carburetor is the only carburetor approved for the NASCAR-approved "Spec Engine" in all Race of Champions Events. The carburetor must remain as supplied by the approved supplier (refer to the "Spec Engine sub-section).

d.) Holley 4150HP Series, list number 80507 (390 CFM), rework guidelines are as follows:

Carburetor Main Body

e.) The only carburetor main body that will be permitted for the Holley 4150 Series will be the Holley main body with casting number 6R-7879B. The Holley casting numbers must remain legible on the top of the main body. Main bodies must remain as manufactured. Machining, reshaping, grinding, polishing, or drilling holes will not be permitted. The addition of material(s) such as but not limited to, epoxies, sleeves, inserts, or tubes will not be permitted to the carburetor main body.

Carburetor Boosters

f.) One (1), one-piece singular discharge booster per venturi must be used. The type of booster must not be changed. The Holley booster part number 45R-107-1, with the casting number 45R-107 and part number 45R-312R, with the casting number 45R-312 are the only boosters that will be permitted. The Holley casting numbers must remain legible on the top of all booster stems. Size and shape must not be altered. Height and location of the boosters must remain as manufactured. All boosters must maintain a minimum outside diameter of 0.616 inch. The maximum inside diameter of the booster stem passage must not exceed 0.144 inch. The addition of material will not be permitted to the boosters. A bonding agent (epoxy) may be used to assist in adhering the carburetor booster to the carburetor main body, but it must not extend past the carburetor main body booster mounting hole into the carburetor venturis. Each carburetor booster must be secured by a steel wire not less than 0.025 inch in diameter. The wire must be installed in such a manner that in the case of a carburetor booster failure, the carburetor booster should remain suspended in the carburetor without any interference to the operation of the throttle shaft and the throttle plates (butterflies). A minimal size hole, acceptable to Race of Champions Officials, must be drilled through the top of the booster barrel, inboard of the booster attaching stem. The 0.025 inch steel wire must loop through the hole in the booster barrel and then be tied to the respective float bowl vent tube. As an alternative to drilling a hole in the booster, the 0.025 inch steel wire must pass through the booster barrel from top to bottom and then be tied to the respective float bowl vent tube.

Carburetor Venturis

g.) The venturi is defined as a constricted throat in the main body air passage. The location of the venturi must remain as produced by the manufacturer. The venturis must not be raised or lowered in the body of the carburetor. The venturis must maintain a circular (round) cross section. The maximum diameter of the venturis must not exceed 1.064 inches. Altering or reshaping of the venturi in any manner will not be permitted.

Carburetor Throttle Body (base plate)

h.) The only carburetor throttle bodies permitted will be the Holley throttle bodies with casting numbers 12R-6236B, 12R-11524B or 12R-11524M. The Holley casting number must remain legible on the left secondary "ear" of the carburetor throttle body with casting number 12R-6236B, and on the right secondary "ear" of the carburetor throttle body with casting number 12R-11524B or 12R-11524M. The carburetor throttle body must be used as provided by the manufacturer. The positioning of the throttle bores in the carburetor throttle body must be the same as provided by the manufacturer. The throttle bores must be completely round. The throttle bores must not be larger than 1.438 inches. The throttle bores must be straight without taper from top to bottom. The throttle bores must remain perpendicular to the top and bottom of the carburetor throttle body. The carburetor throttle body must not be altered in shape or size.

Throttle Plates (butterflies)

i.) The throttle plates (butterflies) must be magnetic steel and must not be thinned or tapered. The type of screw used to retain the throttle plates (butterflies) to the throttle shafts must be pan head type either straight slotted, phillips head or allen type head. Idle holes may be drilled in the throttle plates (butterflies). The throttle plates (butterflies) must be mounted to the throttle shaft in the approved location.

Throttle Shafts

j.) Holley magnetic steel throttle shafts must be used. Shafts must remain standard production size and must not be thinned or cut in any manner. Throttle shaft rotation must be in the same direction as produced by the

manufacturer. The combined thickness of the throttle shaft and the throttle plate (butterflies) must not be less than 0.197 inch. Throttle shaft seals that prevent air leakage must be used on all throttle shafts where the shafts exit the carburetor throttle body. The primary and secondary throttle shafts must each have an independent travel stop to prevent the throttle plates (butterflies) from opening beyond vertical.

Carburetor Metering Blocks

k.) Only Holley metering blocks will be permitted. Surfacing of the metering blocks for improved gasket seal will be permitted. A bonding agent (epoxy) may be used to assist in adhering the emulsion tube plugs to the carburetor metering blocks, if needed to help prevent fuel leakage only.

Carburetor Floats

l.) Carburetor floats must be a Holley replacement or service part acceptable to Race of Champions Officials. Carburetor floats designed for road courses, acceptable to Race of Champions Officials, will be permitted at road course Events only.

m.) Alterations that, in the judgment of Race of Champions Officials, were made to allow additional air to be picked up below the opening of the venturi, such as but not limited to, altered gaskets, throttle bodies, drilling or machining holes into the carburetor will not be permitted.

n.) External modifications and/or alterations to the carburetor will not be permitted.

18. Carburetor Spacer / Gaskets

a.) **A one-piece, solid, four (4) hole or single hole, aluminum carburetor spacer, a maximum of two (2) inch in thickness, may be installed between the intake manifold and carburetor on all 18 and 23 degree aluminum cylinder head engines except the NASCAR-approved "Spec Engine". Two (2) one-piece, solid, four (4) hole or single hole, aluminum carburetor spacer, a maximum of one (1) inch in thickness, may be installed between the intake manifold and carburetor on all 18 and 23 degree aluminum cylinder head engines except the NASCAR-approved "Spec Engine".** The carburetor spacer must seal with the only air passing through the internal openings. The gasket surfaces of the spacer must conform to the shape of the carburetor base plate. The carburetor spacer used on the NASCAR-approved "Spec Engine" must remain as supplied by the approved supplier (as described in "spec" engine subsection).

b.) Only two (2) non-metallic gaskets (one (1) per side) a maximum thickness 0.065 inch will be permitted. Gaskets can only be altered to match the carburetor base opening. An additional gasket must be used, a maximum thickness of 0.065 inch, if using two (2) separate one (1) inch spacers.

19. Carburetor Restrictor

a.) A carburetor restrictor must be used when required by Race of Champions Officials.

b.) For Events where a carburetor restrictor is required:

Currently approved Built Engines:

c.) All model cars competing with a currently approved built engine will be required to use a 1/8 inch thick aluminum restrictor plate with four (4) holes, as specified using a maximum 0.065 inch thick gasket.

d.) A restrictor plate, a four-hole spacer, one (1) inch thick, and necessary sealing gaskets will be issued by Race of Champions Officials for competition. Spacer(s) between the restrictor plate and the intake manifold or above the Race of Champions-issued four-hole spacer will not be permitted.

e.) Restrictor plates and spacers used for practice must be furnished by the Competitors, unless otherwise authorized by Race of Champions Officials.

NASCAR "Spec Engine":

f.) All model cars competing with the NASCAR approved "Spec Engine" will be required to use a one (1) inch thick, four (4) hole aluminum tapered bore spacer, as specified, using maximum 0.065 inch thick gaskets.

g.) Tapered bore spacers and necessary sealing gaskets will be issued by the Race of Champions for competition. Spacer(s) between the tapered bore spacer and the intake manifold or above the tapered bore spacer will not be permitted.

h.) Tapered bore spacers used for testing must be furnished by the Competitors, unless otherwise authorized by the Race of Champions.

i.) Competitors must use the carburetor restrictor as designated for the Event. A final carburetor restrictor size will be determined after the completion of the final practice prior to the Race. Any attempts to, and/or actions that result in, pulling air from sources other than normal approved methods through the air filter and carburetor venturis, such as, but not limited to, drilling of holes or altering of carburetor restrictor(s) or gaskets will not be permitted.

20. Carburetor Spacer / Gaskets

a.) Fuel filter(s) on the pressure side of the fuel pump must only be used at the carburetor fuel bowl inlets. The location and size of the filter(s) must be acceptable to Race of Champions Officials.

21. Forced Air Induction

a.) Fuel injection, superchargers or turbochargers will not be permitted.

22. Carburetor Air Filter / Air Intake

a.) The air filter housing, including the filter, must be installed at all times during practice or competition. Performance enhancing additives or chemicals will not be permitted in the air filter housing, air filter or the air intake area.

23. Carburetor Air Filter / Air Filter Housing

a.) Only a round dry type, unaltered, paper or dry type gauze air filter element maintaining a maximum 14 inches diameter will be permitted. The air filter element must maintain a minimum of 1-1/2 inches, maximum five (5) inches in height. The air filter element must maintain a consistent height when measured anywhere around the circumference of the air filter element. All air filter elements must remain as manufactured. All air must be filtered through element. **Additional fabric elements and/or covers for the filter element will not be permitted.**

b.) Only a round metal air filter housing acceptable to Race of Champions Officials will be permitted. The top and bottom of the air filter housing must be solid and must be the same outside diameter as the air filter element. The air filter housing must be centered on the carburetor and seated on the air filter housing gasket ring. The air filter housing carburetor mounting ring must have one (1) round hole. It is permissible to attach a shield to the front area of the air filter housing up to a maximum of one half of the air filter circumference. It must not be higher than the height of the air filter element. Tubes, funnels, spacers, or any other device that may control the flow of air will not be permitted inside of the air filter or between the air filter housing and the carburetor.

24. Air Intake

a.) Air ducts or baffles will not be permitted on or leading to the air filter housing or air filter.

25. Engine / Car Electrical System

a.) All engine/car electrical system components must be approved by the Race of Champions. Prior to being used in competition, all major engine/car electrical system components must be submitted, in a completed form/assembly, to the Race of Champions for consideration of approval and approved the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible.

b.) Either a crank trigger or distributor type ignition system may be used. If the crank trigger ignition system is being used, triggering devices or pick ups will not be permitted inside the distributor housing.

c.) Magnetos or computerized systems will not be permitted with 23 and/or 18 degree cylinder head engines.

d.) Adjustable timing controls will not be permitted.

e.) Retard or ignition delay devices will not be permitted.

f.) The ignition system wiring must not contain any open wires or terminals. Unused ignition amplifier box wires must be terminated and/or sealed to prevent connection in a manner acceptable to Race of Champions Officials.

g.) Each car must have primary ignition system components and may have optional backup ignition system components. The backup ignition system components must be disconnected from the primary system components using primary/backup switch(s). The ignition systems must consist of an ignition amplifier box, coil, distributor pickup and optional rev limiter (internal/external).

h.) Multiple primary/backup individual component switches will not be permitted, as described in the next sub-section.

i.) Ignition system components, including but not limited to, ignition amplifier boxes, coils and external rev limiters must be mounted to the right of the driver out and out of the driver's reach in a fashion that is easily removed, clearly visible and for ease of inspection. **In the event that the ignition box is not clearly visible, including accessible through a clear lexan panel then the ignition boxes, including those located in the driver's footbox area, must be moved to the right of the driver and out of the driver's reach for ease of inspection.** j.) As an option a removable ignition system mounting plate, acceptable to Race of Champions

Officials, may be attached to the right side floor panel and must be within four (4) inches of the right side door bars (#9B). The removable ignition system mounting plate must be made of solid (no holes) metal measuring a maximum size of 12 inches by 16 inches and installed using a minimum of four (4), minimum 1/4 inch diameter mounting bolts. **As an option, the removable ignition system mounting plate may have an opening directly beneath the ignition amplifier box(es) for inspection purposes. When used**

the opening must be the length and width of the bottom of the ignition amplifier box. The right side floor pan must be reinforced at the mounting bolt holes. The installation must be acceptable to Race of Champion Officials. Ignition system components must be located on the removable ignition system mounting plate with the ignition amplifier box wires and connectors directed toward the front of the car. The ignition system mounting plate, ignition system components, wiring and connectors must be covered with a flat clear polycarbonate cover. The flat clear polycarbonate cover must be the same size as the ignition system mounting plate. The flat clear polycarbonate cover installation and size must be acceptable to Race of Champion Officials. The ignition system components, including wiring and connectors must be visible from above and be wired such that the ignition system mounting plate can be easily removed for inspection purposes.

k.) Race of Champion Officials may, at their discretion, inspect, test and/or destructively test ignition system components including ignition amplifier boxes, tachometers, dry distributors, etc.

l.) Race of Champions Officials may use approved ignition system components provided by the respective manufacturer as a guide in determining whether a Competitor's ignition system components conform to the approved components.

26. Ignition System Wiring

a.) All ignition system wiring, including wiring to the ignition amplifier box, distributor and/or any gauges must be acceptable to the Race of Champion Officials.

b.) Ignition system wires must be continuous from the start connector to the end connector. Splices, bare and punctured wires will not be permitted in the ignition system.

c.) The distributor pickup signal must be carried by a shielded wire pair with one (1) shielded ground wire. The wire pair may be twisted within the shield. The shielded ground wire must be located and grounded at the end nearest the ignition amplifier box.

d.) Only the distributor pickup wire pairs can be contained within a shielding wrap with one (1) wire pair per shielding wrap. Ignition system wiring must remain visible and accessible. Taping wires together, heat shrink wrap and/or banded wire looms will not be permitted in the ignition system wiring.

e.) All connectors must allow for the application of a sealing device to prevent tampering and/or alteration

f.) Additional connectors may be permitted at the Race of Champion Officials discretion to facilitate removal for inspection purposes.

g.) A dedicated single ground stud must be used. All ignition system components must be grounded at this stud. Accessory components must not be connected to this stud. A ground wire may be run from this stud to the battery ground or main ground stud.

h.) The use of tracer wire color schemes is acceptable to specify backup components.

i.) Accessory component wiring, including power and ground wires, must remain completely separate from the ignition system wiring and away from ignition system components. Ignition system components must draw power from the battery side of the starter solenoid. Accessory components and switches will not be permitted to draw power from the ignition system wiring at any point.

27. Ignition Amplifier Box

a.) Ignition amplifier boxes and rev limiters that are analog only, which **do not** contain programmable, computerized or memory circuits, will be permitted.

b.) Rev limiting devices acceptable to Race of Champions Officials may be required and must be attached and wired to the ignition amplifier box(s) in a visible manner. Terminals and pin connections designed for the rev limiter connection must have the ability to apply a sealing device to prevent tampering and/or alteration. Rev limiter chips must have the ability to apply a sealing device to prevent tampering and/or alteration.

c.) The ignition amplifier box(s) may have either an internal rev limiter or be connected to an external rev limiter.

d.) Each ignition amplifier box is allowed six (6) ignition wires, two (2) powerleads and either a rev limiter pin connection or approved rev limiter connection terminal. If originally equipped with a single white points trigger wire and the white points trigger wire is not used with an interrupt switch/system or required by the distributor, the white points trigger wire must be terminated and sealed to prevent connection in a manner acceptable to Race of Champion Officials.

e.) The ignition amplifier must have a six (6) pin female connector attached to its output leads of the Packard Electric type (MSD part #8170) or the Deutsch Connector type (MSD part #8180) to facilitate testing of the ignition components during inspection. The wiring sequence must be the same as the General Motors or Ford ignition amplifier boxes. The wire color, gage, and pin assignment must follow the table below:

Pin Description Color Gage

MSD Deutsch

A 5 Power Red 16-18

B 2 Tachometer Signal Green or Brown 16-18

C 6 Coil (-) Black 16-18
D 1 Coil (+) Orange 16-18
E 3 Pickup (-) Green 16-18
F 4 Pickup (+) Violet 16-18

- f.) The ground negative (-) lead wire must be a continuous single black minimum 12 gage wire and the positive (+) power lead must be a continuous single red minimum 12 gage wire.
- g.) Modifications to ignition amplifier boxes will not be permitted.

28. Distributor

- a.) The distributor must mount in the approved location and maintain the same firing order as the approved factory produced engine for the make and model engine as described in the previous sub-section.
- b.) Only two (2) ignition pick ups of the magnetic, optical or Hall effect type will be permitted in the distributor.
- c.) The distributor must have a single connection to the coil selector, two (2) shielded distributor pickup wire pairs connecting the distributor pickup to the ignition amplifier box, eight (8) spark plug wire connections, and may have two (2) power wires for distributor pickups that require a power source.
- d.) Distributors which use a remote interface control box will not be permitted.

29. Coils

- a.) The positive (+) coil wire must be a single continuous 16-18 gage orange wire and the negative (-) coil wire must be a single continuous 16-18 gage black wire. The coil wire pair may be twisted.
- b.) The coil wires may use a connector of the Packard Electric type (MSD part #8173) or approved equivalent. If used, Pin "A" must be the negative (-) pickup wire and Pin "B" must be the positive (+) wire.
- c.) A coil secondary spark wire selector will be permitted.
- d.) A firewall feed through connector may be used between the coil and distributor.

30. Coils

- a.) Tachometers, if used, should be mounted to either the steering column or the dash gauge panel. The mounting must be acceptable to Race of Champions Officials. In all cases, tachometer wiring must be as visible as possible, and easily accessible for inspection.
- b.) Tachometers should have a maximum of three (3) wires connected to the ignition system allowing for a ground, power and a tachometer signal.
- c.) The tachometer must have a connector of the Packard Electric type (MSD part #8172), or approved equivalent, to facilitate testing during inspection. The tachometer connector must be located on or at the removable ignition system mounting plate. The wire color, gage, and pin assignment must follow the table below:

Pin Description Color Gage

A Ground Black 16-18

B Power Red 16-18

C Tachometer Signal Green or Brown 16-18

- d.) The tachometer signal wire must be run from the tachometer as a single continuous green or brown 16-18 gage wire to connect the primary and backup ignition amplifier boxes to the tachometer through blocking diode(s).
- e.) The tachometer power wire must be connected to the battery side of the starter solenoid.
- f.) If an illuminated tachometer is used, the light power and ground wires must connect into the tachometer power and ground between the tachometer and the tachometer connector.
- g.) Tachometers with integral shift lights, or pit road speed lights will be permitted.
- h.) If an external shift light or pit road speed light is used, its signal input must come from the primary and/or backup ignition amplifier boxes and not as an output from the tachometer.

31. Interrupt Switch

- a.) An auxiliary on/off button that will shut off the ignition system should be mounted on the steering wheel within reach of the driver's thumb when the hands are in the normal driving position. The auxiliary switch must shut off the engine immediately when depressed and the engine must not restart until the button is depressed again.
- b.) A Race of Champions approved ignition interrupt system which contains a manifold vacuum switch and a brake line pressure switch (and may include a brake pedal position switch) may be used at the crew chief's option, in conjunction with or to replace the auxiliary on/off button on the steering wheel.
- c.) The button/interrupter should be mounted inline of the red 16-18 gage power wire between the main ignition switch and the primary/backup switch. When the button/interrupter is engaged the ignition amplifier box must automatically shut off. If the ignition amplifier box is originally equipped with a single, white points trigger wire, this wire may be used with an interrupt switch/system.

- d.) The button/interrupter must use a connector of the Packard Electric type (MSD part # 8173), or approved equivalent, to facilitate testing of the ignition system during inspection.
- e.) Unless otherwise authorized by the Race of Champions Officials, switches and/or any device other than those described above that are designed to interrupt the operation of the engine will not be permitted.

32. Main Ignition Switch

- a.) The main ignition switch must be an on/off toggle type and be located next to the starter switch in the main switch panel. The switch must connect power to the input of the interrupter device.

33. Primary / Backup Switch

- a.) A single switch may be used to select the primary or backup ignition system and it must be mounted on the dash panel.

34. Spark Plugs

- a.) Any make or brand of spark plugs may be used. All spark plugs must thread into the cylinder heads using only M14 x 1.25 threads.

35. Alternator

- a.) A single alternator system with an internal voltage regulator and one (1) output wire must be used. External voltage regulators will not be permitted. The alternator must be mounted on the front of the engine with the center higher than the center of the water pump. Only standard production V-type or flat type V-ribbed alternator drive belts will be permitted.

36. Starter

- a.) The self-starter must be in working order and in the approved location. Gear reduction starters acceptable to Race of Champions Officials will be permitted.

37. Battery

- a.) Only Race of Champions approved batteries with a maximum nominal voltage of 12 volts will be permitted. Each battery(s) must be of the gel cell or absorption glass mat design, weighing a minimum of 17 pounds.
- b.) The battery must be located between the frame rails. The battery must be located under the hood or floor of the car. If located under the floor, the battery must be completely encased. If located under the hood, the battery must have a suitable cover. The battery must not be forward of the radiator or rear of the rear end housing of the car. The battery location must be acceptable to Race of Champion Officials.

38. Electrical Switch Location

- a.) A labeled on/off rotary-type master switch, with "on" being in the clockwise direction, must be located on the cowl or panel behind the windshield opening on the right side of the driver while remaining within reach of the driver when secured by the seat belts in the seat. The switch must be wired to the battery cable in a manner that will cut off all electrical power in the car. The switch must be easily accessible and in plain view.
- b.) All ignition, starter and accessory electrical switches must be located on the front of the dash panel or to the right of the driver in a manner acceptable to Race of Champions Officials. All electrical switches must be labeled.
- c.) Accessory wiring must remain separated from the ignition system wiring.

39. Engine Cooling System

- a.) All engine cooling system components must be approved by the Race of Champions. Prior to being used in competition, all major engine cooling system components must be submitted, in a completed form/assembly, to the office of the Race of Champions for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible.
- b.) Icing, freon type chemicals or refrigerants must not be used in or near the engine compartment.
- c.) Portable cooling machines or devices will not be permitted.

40. Water Pump

- a.) Only aluminum mechanical water pumps, turning in the same direction of crankshaft rotation and in the approved location, will be permitted.
- b.) Water pump impellers may be altered.
- c.) Coolant flow must be in the same direction as the approved production engine.

41. Fan

a.) Engine-driven fans if used, must be operational and belt driven from the crankshaft. Free spin or clutch fans will not be permitted.

(1) The pitch of the fan blades may be changed.

(2) The minimum diameter of the fan must not be less than 14 inches.

(3) Engine-driven fans must have a minimum of four (4) blades.

(4) Flat fan blades will not be permitted.

b.) Electric cooling fans will be permitted in place of a standard steel fan on the back side of the radiator only.

c.) The installation, type, and location of the fan(s) must be acceptable to Race of Champion Officials.

42. Radiator Ducts

a.) When ducting air from the air intake housings to the radiator, air directional shields or dividers will be permitted within the duct. All air entering the air intake housing must pass through the radiator.

43. Radiator

a.) The engine cooling radiator must be acceptable to Race of Champion Officials and meet the following minimum requirements:

b.) The radiator must remain stock appearing. Radiator cores and tanks must be constructed from aluminum material. The radiator core must be a standard automotive fin and tube design acceptable to Race of Champion Officials. Bar and plate radiator cores will not be permitted. The radiator core must not be wider than the inside width of the front sub-frame rails. Radiator tanks must be installed on the sides of the radiator core. The radiator must remain in the standard position in front of the engine.

b.) Radiator dust or shaker screens will be permitted.

c.) Radiator installation must be acceptable to Race of Champion Officials.

d.) The radiator overflow tube may be relocated to the rear of the car.

e.) All radiator cooling tubes must be operational. All cooling fins and tubes must be evenly spaced top to bottom and side to side and must remain at a 90 degree angle to the side tanks. The spacing and width must be acceptable to Race of Champion Officials.

f.) Radiator hoses or hose and pipe combinations, between the engine and the radiator, must not exceed a maximum of two (2) inches inside diameter for the entire length of the assembly.

44. Engine Lubrication

a.) All engine lubrication system components must be approved by Race of Champions Officials. Prior to being used in competition, all major engine lubrication system components must be submitted, in a completed form/assembly, to the Race of Champions for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible.

45. Oil

a.) Any oil is permissible. Combustion enhancing additives will not be permitted.

46. Oil Pressure

a.) Oil pressure may be regulated at the discretion of the crew chief.

47. Oil Filters

a.) Oil filters and breather caps acceptable to Race of Champions Officials will be permitted.

Oil filter breather caps must not be mounted in the rear firewall.

48. Oiling System

a.) A dry sump oiling system must be used consisting of a single oil pump, a metal lubrication oil reservoir tank, approved oil lines, and an overflow expansion tank.

b.) A single engine-mounted, engine-driven, oil pump with a maximum of five (5) stages will be permitted. The body of the oil pump must not exceed 9-1/2 inches in length and 3-1/2 inches in cross-section. The maximum overall length of the oil pump including seals, bearings, adjusters, bolt on end plates and covers, not including the front end of the shaft, will be 10 inches maximum. The oil pump must be acceptable to Race of Champions Officials.

c.) All oil must be pumped by the engine-driven engine oil pump. Additional oil pumps or re-circulating pumps will not be permitted.

d.) The lubrication oil reservoir tank must be located to the rear of the leading edge of the engine firewall or mounted behind the driver's compartment to the inside edge of the left frame rail or beneath the right side sheet metal and inside the edge of the right side frame rail. The lowest component of the lubrication oil reservoir tank, including all connectors, oil lines, and fittings must not be located lower than the bottom

surface of the main frame rails. Oil lines must not pass through or against the exhaust pipes and must be located inside roll cage. Location, installation, venting and air ducting of the lubrication oil reservoir tank encasement must be acceptable to Race of Champion Officials. Unless otherwise authorized by Race of Champion Officials, the same lubrication oil reservoir tank must be used for the entire Event (practice, qualifying, and the Race).

e.) The engine oil system must have a functional, vented, overflow, expansion tank (a minimum of 1/2 gallon capacity should be used). The vent hose from the lubrication oil reservoir tank to the overflow tank must be protected by a covering acceptable to Race of Champion Officials. Location and installation of the tank must be acceptable to Race of Champion Officials.

f.) The oil pressure line to the oil pressure gauge and/or the oil pressure sending unit must be stainless steel, full coverage, outer braid protected synthetic rubber hose attached with threaded, nipple design hose end fittings and should be covered with flame resistant covering acceptable to Race of Champion Officials.

g.) All gauge sending units and sensors must be located forward of the front firewall.

49. Engine Exhaust System

a.) The exhaust systems and components must be acceptable to Race of Champions Officials and meet the following minimum requirements.

50. Exhaust Headers

a.) All cars must use tube header-type exhaust systems.

b.) The exhaust header flange must mount directly to the cylinder head without any spacers between the flange and the cylinder head. A maximum header flange thickness of 1/2 inch will be permitted.

c.) The exhaust header(s) must be round tube header-type. Materials used in the exhaust header must be either magnetic steel or stainless steel. A maximum header flange thickness of 1/2 inch will be permitted. Cast exhaust header flanges will not be permitted. The exhaust header collector size must be 3-1/2 inches outside diameter. Exhaust headers that are made from any type of exotic materials will not be permitted.

d.) When the NASCAR-approved "Spec Engine" is used, teams will be permitted to use any exhaust header and it must be acceptable to Race of Champions Officials. The exhaust header must be round tube header-type. Materials used in the exhaust header must be either magnetic steel or stainless steel. A maximum header flange thickness of 1/2 inch will be permitted. Cast exhaust header flanges will not be permitted. The exhaust header collector size must be 3-1/2 inches outside diameter.

d.) Exhaust header assemblies must remain outside of the body panels from the front fire wall rearward.

51. Exhaust Pipes

a.) 180 degree exhaust systems will not be permitted.

b.) Exhaust pipes must come out aft of the engine at the cowl and must extend a minimum of six (6) inches past the cowl.

c.) Exhaust connectors will not be permitted between the left side exhaust pipe and the right side exhaust pipe.

d.) Exhaust pipe assemblies must remain outside of the body panels from the front fire wall rearward.

e.) Exhaust pipes made from exotic materials will not be permitted.

52. Heat Shields

a.) Heat shields, when used to cover the exhaust headers, must be a flat piece of metal not more than six (6) inches wide and not longer than the length of the valve cover.

53. Drive Train

a.) All drive train systems and drive train system components must be approved by the Race of Champions. Prior to being used in competition, all drive train systems and drive train system components must be submitted, in a completed form/assembly, to the Race of Champions for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible. All drive train fasteners and mounting hardware must be made of solid magnetic steel.

54. Clutch

a.) Only mechanical foot pedal, cable or hydraulic operated clutches will be permitted. Pneumatic assisted clutches will not be permitted.

b.) The clutch assembly must be bolted to the flywheel located inside the bell housing.

c.) Multiple disc clutches will be permitted up to a maximum of three (3) discs. The disc clutch housing assembly and cover must be made from aluminum or steel. The clutch cover must be the push-type design.

- d.) Only solid magnetic steel pressure plates, and magnetic steel floater plates, without any holes will be permitted.
- e.) Only full circle, fully faced magnetic steel clutch discs with a minimum diameter of 5-1/2 inches will be permitted. Minimal cooling slots will be permitted in the clutch discs.
- f.) The clutch must be mounted inside the bell housing.
- g.) Clutches must be a positive engagement design. Slider or slipper clutch designs will not be permitted.
- h.) Dog clutch or direct drives will not be permitted.

55. Flywheel

- a.) Any steel or aluminum flywheel, bolted to the crankshaft, will be permitted but must be acceptable to Race of Champions Officials. Holes and/or other modifications to the flywheel that in the judgment of Race of Champions Officials, are for weight reduction will not be permitted.

56. Bell Housing

- a.) Only special production aluminum or magnetic steel bell housings acceptable to Race of Champions Officials will be permitted.
- b.) The maximum distance from the machined surface at the back of the engine block to the machined surface at the front of the transmission case must not exceed 6-3/8 inches including any spacers.
- c.) It is recommended that a 3/4 inch hole be drilled in the top of the bell housing directly over the starter ring gear to manually turn the engine for checking the compression ratio limit. This will be the only modification permitted on the approved aluminum bell housings.
- d.) Holes and/or other modifications that, in the judgment of Race of Champions Officials, have been made with the intent of weight reduction will not be permitted.
- e.) For all engine block-mounted starters, the starter mounting position must remain on the right side for Ford and General Motors engines and the left side for Dodge engines.

57. Transmission

- a.) Transmissions must be standard production design. The transmission must be from an approved manufacturer. Only transmissions, previously approved by Race of Champions prior to introduction into competition will be permitted. Race of Champions Officials may use a transmission provided by the respective manufacturer as a guide in determining whether a Competitor's transmission conforms to the specifications of the Rule Book.
- b.) Unless otherwise specified by the Race of Champions Officials, the same transmission must be used for practice, qualifying, practice after qualifying and the start of the Race. A transmission must not be removed from a car without the approval of Race of Champions Officials. Race of Champions Officials may require any team that removes a transmission to start at the rear of the field, providing the car earns a starting position in the Race. The transmission may be removed from a backup car, without penalty, at the discretion of the Race of Champions Officials, as follows:
 - (1) If a car is wrecked beyond repair during qualifying and a backup car is used, a transmission change may be permitted, however, the transmission must be installed before the beginning of practice(s), if practice(s) is scheduled, that follow qualifying.
 - (2) If a car is wrecked beyond repair during or after qualifying and a backup car is used, then a transmission change may be permitted without an additional penalty. If a competitor violates this Rule, in addition to imposition of a penalty pursuant to Section K, Race of Champions Officials may take such action during the Event as they deem appropriate, including but not limited to, loss of practice time and/or loss of the opportunity to qualify, and/or confiscation of the transmission or transmission components. Such action shall be deemed an inspection decision not subject to Section K.
- c.) Race of Champions Officials may, at its discretion, require that all cars compete with a final drive gear ratio specified by Race of Champions Officials for each Event.
- d.) **The complete transmission assembly, as raced, must weigh a minimum of 50 pounds. This minimum weight will include the shifter assembly, internal oil pump assembly (if used) and lubricant. The minimum weight will not include the shift lever and rear mount. Material of any-type added to reach the minimum weight will not be permitted.**
- e.) High gear must be 1.00:1 (direct) and be the primary gear engaged on all tracks, except road course Events, during competition. Overdrive gears will not be permitted.
- f.) The transmission must be acceptable to Race of Champions Officials and meet the following requirements:
 - (1) Standard production OEM type Muncie or T-10 manual four (4) speed transmissions with OEM type angle cut forward gears will be permitted. Square cut forward gears will be permitted in OEM type Muncie or T-10 manual four (4) speed transmissions.

- (2) The Jerico #2-SP two (2) speed manual transmission and the Jerico #3-SP three (3) speed manual transmission will be permitted. Straightcut forward gears will be permitted.
- (3) Race of Champions-approved four (4) speed conversions with gears removed will be permitted. Transmissions may be of the left side-load designs only. Top-load type transmissions will not be permitted.
- g.) Only aluminum or magnesium transmission housings will be permitted.
- h.) All transmissions must have the input shaft and its main gear constantly engaged. This assembly must be constantly engaged with the countershaft and its cluster and reverse gears. Gun drilled and/or lightened shafts will not be permitted.
- i.) Transmission gear ratios between 1.00:1 and 1.18:1 will not be permitted. The only high gear transmission ratio permitted will be 1.00:1. Transmissions with an "overdrive" and/or any other gear ratio that creates an overdrive gear, will not be permitted.
- j.) A forward gear and reverse gear must be in working order.
- k.) Only manual, left-side mounted, shift linkage using the H-pattern type will be permitted on the transmission. **Shift linkage that enters at the top, rear and/or backside of the transmission case will not be permitted. Shift linkage of the "push rod" type will not be permitted.** The shift lever must be metal. All shift rods connecting the shifter mechanism to the transmission must be made of metal.
- l.) Only fire resistant type shifter boots will be permitted. The shifter boots should meet the SFI 48.1 specification and should display a valid SFI 48.1 label visible on the outside of the shifter boot. Shifter boots should not be used beyond two (2) years from the date of manufacture. Quick release fasteners will not be permitted to secure the shifter boot to the transmission tunnel. The shifter boot, when installed, must mount directly to and must be completely sealed to the floor of the car. Installation of the shifter boot must be acceptable to Race of Champions Officials.
- m.) Heating pads and/or blankets will not be permitted for warming the transmission.
- n.) All transmissions must be prepared with two (2) top cover or side cover bolts and two (2) tail housing bolts and two (2) transmission to bell housing bolts drilled to accept installation of a 1/8 inch minimum diameter Race of Champions seal.
- o.) As determined by Race of Champions Officials, only two (2) speed transmissions may be permitted for competition. Teams will be notified by written technical bulletin in event of this change.
- p.) The measurement for the transmission from the front of the case to the rear of the case will be a maximum of 10 1/2" inches. The measurement for the length of the tail shaft from the rear of the case will be 22" inches.

58. Drive Shaft

- a.) The drive shaft, universal joints and yokes must be magnetic steel. Only a one-piece magnetic steel drive shaft with a minimum outside diameter of two (2) inches and a minimum thickness of 0.090 inch or a minimum outside diameter of 2-1/2 inches and a minimum wall thickness of 0.065 inch will be permitted. All drive shafts must be painted white.
- b.) Two (2), 360 degree solid magnetic steel brackets, without holes or slots, not less than two (2) inches wide and 1/4 inch thick, must be placed around the drive shaft and be welded or fastened to the crossmember of the car. As an option the rear drive shaft bracket may be bolted directly to the torque arm using a minimum of two (2) high quality 3/8 inch minimum diameter bolts.

59. NASCAR "SPEC" Engine Option

NASCAR "SPEC" ENGINE OPTION;

- a.) As an option, Teams may compete in the Race of Champions with the NASCAR-approved "Spec Engine". If used, the "Spec Engine" must be completely assembled using only NASCAR-approved "Spec Engine" components without any modifications. All parts, pieces and components that are used in the "Spec Engine" must originate from an approved NASCAR supplier. If used, the "Spec Engine" may be purchased in kit form to be assembled by the engine builder of the Team's choice and remain as supplied, or may be purchased as a completely assembled engine. NASCAR-approved "Spec-Engine" kits and assembled engines are available directly from Robert Yates Racing Engines, LLC. Weight adjustments (if any) will be made through NASCAR Technical Bulletins and/or announcements.

Robert Yates Racing Engines, LLC

159 Bevan Drive

Mooresville, North Carolina 28115

Phone: 704-660-7015

Email: dlewis@ryr.com

- c.) Modifications Permitted

(1) Wash and clean all parts - HIGHLY RECOMMENDED

- (2) Fit Bearings
- (3) Fit Piston Ring End Gap
- (4) Match Gaskets – Gasket material only
- (5) Carburetor Jetting
- (6) Distributor Timing
- (7) Carburetor floats designed for road courses, acceptable to NASCAR Officials, will be permitted at road course Events only.
- (8) The use of the crankcase windage tray supplied by the NASCAR-approved supplier is optional. If used, it must remain as supplied from the NASCAR-approved supplier with no modifications.
- (9) A maximum cylinder overbore size of 0.005 inch will be permitted on the NASCAR-approved "Spec Engine" block. The 0.005 inch overbore pistons, piston rings and wrist pins must be purchased from and remain as supplied by the NASCAR-approved supplier with no modifications.
- (10) The installation and fitting of valve guide liners will be permitted. The valve centerline and valve angle must remain the same as supplied by the NASCAR-approved supplier and manufacturer.
- (11) A bonding agent (epoxy) may be used to assist in adhering the emulsion tube plugs to the carburetor metering blocks, if needed to help prevent fuel leakage only. No other modifications to the carburetor metering blocks will be permitted. The carburetor metering blocks must remain as supplied by the NASCAR-approved supplier and manufacturer.
- (12) Decking (milling) of the engine block cylinder head surface to ensure proper sealing will be permitted. The engine block cylinder head surface may be decked (milled) up to a maximum of 0.005 inch. When installed the top of any piston must not be more than 0.015 inch at any point above the engine block cylinder head surface.
- (13) As an option, teams will be permitted to use the engine valley tray cover mounted breather system available **only through Robert Yates Racing Engines**. If used, it must remain as supplied from the NASCAR-approved supplier with no modifications.

d.) Modifications Not Permitted

- (1) No honing of engine cylinder bores. (Except as specified below)
- (2) Any and all machine work done to the engine block, with the exception of the engine overbore and decking (milling) of the cylinder head surface, **must be performed by Robert Yates Racing Engines, LLC only**. An additional encryption must be placed on the engine block reflecting any machine work being done including the cylinder overbore.
- (3) Pistons, piston rings and wrist pins must remain as supplied by the NASCAR-approved supplier. Modifications to the pistons will not be permitted.
- (4) No valve guide fitting. (Except as specified below)
- (5) No machine work to valve seats, valves or valve guides. (Except as specified below)
 - a. The following procedures and specifications must be followed when performing valve maintenance (valve job) on the Spec Engine. No modifications or deviations from the procedures or specifications will be permitted.
 - b. There are two (2) approved methods of valve seat maintenance for the Spec Engine.
- (1) The use of a dedicated carbide cutting tool insert for the intake and exhaust valve seats are available **only through Robert Yates Racing Engines, LLC**. INTAKE EXHAUST Part number: WAR-IC-6527 Part number: WAR-EC-6528
- (2) The programming and application of the supplied coordinates for use with the NEWEN Contour EPOC style machine using a single point cutter are available **only through Robert Yates Racing Engines, LLC**.
- (6) The valves must not be serviced and must be replaced.
- (7) The forged titanium valves utilize a Chrome Nitride coating and are **not** serviceable (including grinding of the valve face).
- (8) Valve guide service with the exception of valve guide liner installation **must be performed by Robert Yates Racing Engines, LLC**. An additional encryption must be placed on the cylinder head reflecting any and all service work being done to the cylinder head.
- (9) Valve Springs must be installed at 1.800 inches with an approximate seat pressure of 130 lbs.
- (10) The combustion chamber volume must be 64cc's for compression after the valve maintenance (valve job) has been completed.
- (11) Valve seat replacement must **only be completed by Robert Yates Racing Engines, LLC**.
- (12) No modifications to rocker arms, valve lifters or valve train components – Must remain as supplied by the NASCAR-approved supplier.
- (13) No crankshaft machining or balancing – Must remain as received from the NASCAR- approved supplier.
- (14) No machining of the cylinder heads.

(15) No modifications to the carburetor and carburetor spacer – Must remain as supplied by the NASCAR- approved supplier.

(16) No intake manifold modifications – Must remain as supplied by the NASCAR- approved supplier.

(17) No modifications to CAMSHAFT TIMING – CAMSHAFT TIMING must be to manufacturer's specified settings.

NOTE: The use of a camshaft degree bushing will be permitted in the camshaft timing gear to obtain the manufacturer's camshaft timing specified settings. The manufacturer's camshaft specified settings for the intake centerline must be a minimum of 105.5 degrees and a maximum of 106.25 degrees. No other modifications to the camshaft timing will be permitted.

(18) No ignition system modifications – Ignition system must remain as supplied by the NASCAR- approved supplier

NOTE: As an option, teams will be permitted to use the crank trigger ignition system Part # 125004 available only through Robert Yates Racing Engines. If the crank trigger ignition system is being used, triggering devices or pickups will not be permitted inside the distributor housing. Teams will be permitted to use distributor Part # 187008 available only through Robert Yates Racing Engines with the crank trigger ignition system only.

(19) No wiring modification – Must remain as supplied by the NASCAR-approved supplier.

(20) No alternator modification – Must remain as supplied by the NASCAR-approved supplier.

(21) No fuel pump modification – Must remain as supplied by the NASCAR-approved supplier.

NOTE: As an option teams will be permitted to use fuel pump Part # 131001 or #131003 available only through Robert Yates Racing Engines.

(22) No water pump modification – Must remain as supplied by the NASCAR-approved supplier.

(23) No oil pan modifications – Must remain as supplied by the NASCAR approved supplier.

NOTE: Must use the NASCAR-approved "Spec Engine" oil pan Part #144010 available only through Robert Yates Racing Engines.

(24) No oil scavenge or oil pump modification – Must remain as supplied by the NASCAR-approved supplier. (Except as specified below)

(25) The oil pump drive pulley may be changed at the team's discretion, using one (1) of the following approved oil pump drive pulleys:

MANUFACTURER PART NUMBER

CV Products CVD11428

CV Products CVD11430

(26) No modifications will be permitted to the oil pump drive pulley – Must remain as supplied by the NASCAR-approved supplier.

(27) No accessory mount, drive belt or front timing cover modification – Must remain as supplied by the NASCAR-approved supplier.

(28) No modifications to the front drive assembly – Must remain as supplied by the NASCAR- approved supplier.

(29) No modification to part numbers or identification markings – Must remain as supplied by the NASCAR-approved supplier.

(30) No painting, coatings, polishing or addition of material of any kind.

(31) Exhaust Headers (refer to sub-section 20D-9.1C)

e.) If the "Spec Engine" bell housing, clutch assembly (including flywheel and starter ring) and starter are used they must remain as supplied by the NASCAR-approved supplier.

NOTE: The following will be the only intake manifold and carburetor spacers approved for use with the NASCAR-approved "Spec Engine".

INTAKE MANIFOLD PART NUMBER

Edelbrock 2809

CARBURETOR SPACER PART NUMBER

CV Products (1/2 inch thickness) CV-166

CV Products (1/2 inch thickness) CV-166-1/8* *(drilled and tapped for use with approved ignition interrupt system)

NOTE: All other NASCAR "Spec" Engine rules will be referred to from the NASCAR Modified Series rule book.

2.0 Fuel, Fuel Cells and Fuel Systems

1. Fuel

a.) The Race of Champions reserves the right to have all cars use the same brand of fuel in a given Event. When this right is exercised, it will be stated on the Competition Format Sheet or in a Bulletin for that Event and the specific brand of fuel will be named the "Official Fuel". In all such cases, fuel used for practice, qualifying, and the Race itself will be supplied at the track by the "Official Fuel" supplier and must be used exactly as supplied by the "Official Fuel" suppliers dispensing equipment at the track. At an Event where an "Official Fuel" has been named, Race of Champions Officials will use a sample of the actual fuel provided at the track by the fuel supplier to determine whether the fuel used by a Competitor conforms to the specifications in the Rule Book.

2. Fuel Definition

a.) In the event there is no "Official Fuel" at a given Event, the term "Fuel", wherever used in this document, shall be understood to mean automotive gasoline that complies with the specifications given in the ASTM guidelines (<http://www.astm.org/Standards/D4814.htm>). Race of Champions Officials will use a sample of the actual fuel(s) provided at the track by the fuel supplier(s) to determine whether the fuel used by a Competitor conforms to the specifications in the Rule Book.

3. Fuel Specifications

- a.) The fuel must be automotive gasoline only.
- b.) The gasoline must comply with ASTM D-4814 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 or seasonal limitation.
- c.) The gasoline must not be blended with alcohols, ethers or other oxygenates and it must not be blended with aniline or its derivatives, nitro compounds or other nitrogen containing compounds.
- d.) Icing or cooling of the fuel system will not be permitted during the Event in the garage, pit, or racing premises.
- e.) At all Race of Champions Events only VP Racing Fuels (C12/Light Green) and VP Racing Fuels (VP110/Green) will be permitted for competition. Blending and/or mixing of the fuel will not be permitted with any other chemicals, hydrocarbons, additives, nitrous, nitrous additives and/or any other fuel enhancement.

4. Fuel Samples

a.) The Race of Champions has the right to sample a Competitor's fuel at any time during the Event. Samples will be impounded for observation and/or testing by the Race of Champions and/or any outside laboratories at the Race of Champions discretion.

5. Fuel System

- a.) All fuel systems and fuel system components must be approved by the Race of Champions. Prior to being used in competition, all fuel systems and fuel system components must be submitted, in a completed form/assembly, to the Race of Champions for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible.
- b.) Race of Champions Officials will not permit the use of any previously approved fuel cells, containers, or check valves that appear to be damaged, defective or do not function properly. Fuel cell vent pipe check valves must be used. Check valves and the fuel cell must be acceptable to Race of Champions Officials.
- c.) Pressure systems will not be permitted. Any concealed pressure type containers, feed lines or actuating mechanism will not be permitted, even if inoperable. Icing, freon type chemicals or refrigerants must not be used in or near the fuel system.

6. Fuel Cell

- a.) Only the following fuel cell bladders are approved and should be used in competition.
 - AERO TEC LABORATORIES, INC. (ATL) PART NUMBER
 - FB 222 B
 - FB 322 B
 - AIRCRAFT RUBBER MANUFACTURING, INC. (FUEL SAFE) PART NUMBER
 - RB024
 - RB124
- b.) The Race of Champions-approved maximum fuel cell size should be 25-1/8 inches by 16-7/8 inches by 13-3/4 inches.
- c.) Modifications to the approved fuel cell bladders, including the nut ring, will not be permitted.
- d.) The maximum fuel cell capacity, including the filler spout and overflow, must not exceed 24 gallons.

e.) Materials other than standard foam, as provided by an approved fuel cell manufacturer, will not be permitted.

f.) All approved fuel cells must be equipped with a steel ball or fuel resistant flap type fuel filler and a steel ball or steel poppet fuel vent check valve assembly that meets the following minimum requirements:

FUEL CELL CHECK VALVE HOUSING (STEEL BALL TYPE)

(1) The fuel cell check valve housing must be manufactured of aluminum or magnetic steel plate not less than 1/4 inch thick. A cast aluminum check valve housing assembly will not be permitted. The bottom surface of the check valve plate must be flat. Spacers will not be permitted between the check valve plate and the fuel cell bladder. Only one (1) gasket, with a minimum thickness of 0.065 inch will be permitted between the check valve plate and the fuel cell container.

(2) The solid steel ball check valve must be encased in a four (4) rail carriage. The carriage rails must be constructed of solid aluminum or magnetic steel not less than 1/4 inch thick by not less than 3/4 inch wide material. The carriage rails must be positioned such that the surface of the 1/4 inch thick edge rides against the steel check ball. Outside surfaces of the carriage must not have any sharp edges. The carriage must not be altered in any way and must remain perpendicular to the fuel cell check valve top flange plate.

(3) The fuel filler check valve carriage must not exceed a maximum depth of 8-1/2 inches. The maximum inside diameter of the filler neck including the check ball seat must not exceed 2-1/8 inches. When seated at least 1/2 of the check ball must be visible. The diameter of the solid steel check ball must be 2-3/8 inches. The filler neck must not be made of cast aluminum.

(4) The fuel vent check valve carriage must not exceed a maximum depth of 8-1/2 inches. The maximum inside diameter of the vent pipe neck including the check ball seat must not exceed 1-1/4 inches. When seated, at least 1/2 of the check ball must be visible. The diameter of the solid steel check ball must be 1-3/8 inches. The fuel vent check valve must not be made of cast aluminum.

FUEL CELL CHECK VALVE HOUSING (FLAP TYPE)

(1) The fuel cell check valve housing must be from an approved manufacturer and be made of aluminum or magnetic steel plate not less than 3/16 inch thick. A cast aluminum check valve housing assembly will not be permitted. The bottom surface of the check valve plate must be flat. Spacers will not be permitted between the check valve plate and the fuel cell bladder. Only one (1) gasket with a maximum thickness of 0.065 inch will be permitted between the check valve plate and the fuel cell bladder.

(2) The fuel filler check valve assembly equipped with a fuel resistant flap (Viton) mounted in the center of its circumference must maintain a minimum outside diameter of 3-1/2 inches. The maximum inside diameter of the fuel filler inlet must not exceed 2-1/8 inches. The fuel filler check valve assembly must not be made of cast aluminum.

(3) The fuel vent check valve carriage must not exceed a maximum depth of four (4) inches. The maximum inside diameter of the vent pipe neck including the check ball seat must not exceed 1-1/4 inches. The diameter of the solid steel ball/poppet must be 1-3/8 inches. The fuel vent check valve neck must not be made of cast aluminum.

g.) The fuel inlet tube and vent tube should have a bead around its circumference for hose retention.

h.) Fuel cells should not be used beyond five (5) years after the date of manufacture.

7. Fuel Cell Container

a.) The fuel cell container must be acceptable to Race of Champions Officials.

b.) The fuel cell must be encased in a container of not less than 22 gage (0.031 inch thick) magnetic sheet steel. The fuel cell must be fitted within the container so that the maximum capacity, including the filler spout will not exceed 24 gallons.

c.) The maximum fuel cell container size must be 25 inches in length by 16-3/4 inches in width by 13-5/8 inches in depth (inside dimensions).

d.) Interior magnetic sheet steel must allow access to the top of the fuel cell for inspection.

e.) The fuel cell should be coated bright red.

8. Fuel Cell / Fuel Cell Container Installation

a.) The fuel cell and fuel cell container must be installed in a manner acceptable to Race of Champions Officials.

b.) The fuel cell and fuel cell container must be installed as far forward as possible in the trunk compartment behind the rear axle and maintain a minimum ground clearance of 5-1/2 inches.

c.) The fuel cell container must be secured by one (1) inch by one (1) inch by 0.065 inch minimum thick square steel tubing meeting the ASTM A-513 specification or one (1) inch by 1/8 inch thick magnetic steel straps two (2) lengthwise and two (2) crosswise. The straps must be located as close to the fuel filler check valve housing as possible.

d.) A firewall of magnetic sheet steel not less than 22 gage (0.031 inch thick) must be located between the trunk and the driver's compartment.

9. Fuel Filler

- a.) At Events where refueling is required during the Event, the fuel filler must be acceptable to Race of Champions and meet the following minimum requirements:
- b.) Dry coupling systems, using a probe on the fuel filler cans and receptacle on the car, must be acceptable to Race of Champions Officials. Dry coupling receptacles must be bolted from the inside of the quarter panel and at an angle on the left rear quarter panel. The mounting must be as near to the top of the panel and as far back as possible.
- c.) The check valve filler neck inside diameter must not exceed 2-1/8 inches. The outside diameter must not be less than 2-1/4 inches and not more than 2-1/2 inches.
- d.) The maximum filler spout size is 4-1/4 inches outside diameter by eight (8) inches long, then tapering over the next 8-1/2 inches to 2-1/2 inches outside diameter, extending to an overall length of 18 inches.
- e.) A minimum of six (6) inches of 2-1/2 inches maximum diameter flex hose must be used between the end of the filler spout and the fuel cell neck.

10. Fuel Cell Vent

- a.) The fuel cell shall be vented as follows:
- b.) A single, one (1) inch minimum up to a 1-1/4 inch maximum inside diameter vent to outside of body must be installed at and sealed to the left rear corner in the taillight area only. The vent must have a self-closing flap-type valve at all tracks that can only be opened by inserting a wire or flat metal strip to allow refueling.
- c.) The fuel cell check valve vent hose neck inside diameter must not exceed 1-1/4 inches inside diameter and three (3) inches in length. The fuel cell check valve vent hose must have a bead around its outside circumference for hose retention. The fuel cell vent flexible hose must have a maximum inside diameter of 1-1/2 inches and a maximum length of 60 inches when measured from the outside end of the fuel vent pipe to the top of the fuel cell fill plate. The hose must be secured with two (2) clamps at the fuel cell fill plate.
- d.) When fuel is added during a pit stop, a crew member must catch any overflowing fuel into a container acceptable to Race of Champions Officials. The overflow container must be metal and coated red.

11. Fuel Lines / Fuel Pump

- a.) Electrical devices or electrical connections will not be permitted on the fuel cell and fuel lines rearward of the engine block. Engine compartment mounted fuel pressure regulators must be mounted in an area on or forward of the front firewall above the engine block and between the cylinder heads. Fuel pressure may only be measured from a fuel line or engine mounted regulator at the intake manifold. Fuel lines from the carburetor will not be permitted on the cockpit side of the front firewall. Fuel pressure gauge isolators or sensors for electronic fuel pressure gauges must remain on the engine side of the front firewall.

FUEL LINES

- b.) The fuel lines and fuel line connections must be acceptable to Race of Champions Officials and meet the following minimum requirements:
- c.) The size, material, and location of the fuel cell pickup must be acceptable to Race of Champions Officials.
- d.) Only one (1), maximum 5/8 inch inside diameter fuel line with a maximum AN-10 fitting, will be permitted from the fuel cell to the carburetor.
- e.) All fuel lines must be stainless steel, full coverage, outer braid protected synthetic rubber hose attached with threaded, nipple design hose end fittings and should be covered with flame resistant covering acceptable to Race of Champions Officials. This includes the fuel line to the fuel pressure gauge and/or sending unit.
- f.) The fuel line from the fuel cell to the fuel pump may be relocated to prevent vapor lock. If the fuel line runs through the right side of the driver's compartment, it must be enclosed in a straight or parallel to the drive shaft and transmission tunnel (as viewed from above) one (1) inch outside diameter metal tube, coated red and labeled "FUEL LINE".
- g.) A Race of Champion's-approved check valve mounted at the fuel line outlet on the fuel cell may be used.
- h.) Additional lines or extra length must not be used on the fuel system. Extra fuel lines or fuel cells, concealed or otherwise, will not be permitted.
- i.) An on / off, in-line fuel shutoff valve must be mounted within easy reach of the driver and labeled "FUEL SHUTOFF".
- j.) Quick disconnect fittings will not be permitted.
- k.) Only one (1) fuel filter may be used between the fuel cell and the fuel pump.
- l.) The fuel filter must be mounted on the same side as the fuel line. The size of the fuel filter must be acceptable to Race of Champions Officials.

12. Fuel Pump

- a.) Only one (1) fuel pump, acceptable to Race of Champions Officials meeting the following requirements, will be permitted.
- b.) Mechanical, lever-action, camshaft actuated fuel pumps in the approved location will be permitted.
- c.) A Race of Champions-approved remote, cable-driven mechanical fuel pump will be permitted. The pump must be driven off of the rear of the engine oil pump. The cable driven fuel pump must be mounted in the trunk area forward of the fuel cell container near the center of the chassis. If a remote fuel pump is used, the fuel line fitting on the inlet side of the remote fuel pump may be a manufacturer certified, crash-worthy, break-away, self sealing type. It is recommended that the remote cable assembly meet the SFI 8.1 specification.
- c.) Electric fuel pumps will not be permitted.
- d.) Liquid cooling of the fuel pump will not be permitted.

13. Fuel Filler Cans

- a.) Unless authorized by the Race of Champions, only two (2) approved maximum 12 gallon metal fuel filler cans will be permitted in pits for refueling at all tracks.
- b.) The metal fuel filler cans must be coated red and be acceptable to the Race of Champions Officials. The only decals used beyond those of Race of Champions Officials that will be permitted on any fuel filler can will be those of a participating fuel supplier that is approved by the Race of Champions. The fuel filler cans must be metal, ventilated and equipped with a flexible filler nozzle.
- c.) The use of two (2) fuel filler cans at the same time while refueling the car will not be permitted.
- e.) Elevated fuel drums or refueling towers will not be permitted.
- f.) Only metal fuel filler cans without dry coupling system fuel probes, coated red, acceptable to the Race of Champions Officials, will be permitted to be used to refuel the car in the garage or pit area. When adding or removing fuel to/from the car in the garage area, the car must be outside of the garage structure. When teams are parked behind the team's transporters in the garage area, the car must be moved away from the transporters before adding or removing fuel to/from the car. Race of Champions Officials may require that fuel be added or removed to/from the car in a designated area of the garage.
- f.) Fuel filler cans must not be stored in the garage structure.
- g.) Fuel filler cans must only be transported from the fuel station to the pit area in a cart acceptable to Race of Champions Officials.
- h.) When installing or removing fuel can couplers, power tools **MUST NOT** be used. It is recommended that a non-conductive nut driver be used.

3.0 Muffler and Sound Reduction Devices

1. Muffler and Sound Reduction Devices

- a.) All cars must have working and unaltered mufflers. Exhaust pipes must have specific mufflers at designated tracks that will be noted on the Competition Format Sheet the specific Event. Kooks (part number QCN350-3 -1/2 inch) Quad Core mufflers will be permitted. The mufflers must be acceptable to Race of Champions Officials.
- b.) Several tracks have a locally enforced decibel rule, which preempt any particular muffler rule. Some tracks may have a maximum sound level rule of 95 decibels at 100 feet. This rule will be enforced by local government agencies. Such decibel rules preempt utilizing the required mufflers in sub-section m.3.
- c.) At determined events only the Lobak RCM 12" (12"-inch body length 3 1/2" inch diameter) spiral flow muffler (Part Number RCM351235) will be permitted for competition.
- d.) All mufflers must be able to be separated from the rest of the exhaust system for the purpose of inspection.

4.0 Traction Control Devices

1. Traction Control / Recording Devices / Data Acquisition

- a.) Except as provided below, cars and drivers will not be permitted to carry onboard computers, automated electronic recording devices, electronically actuated devices, micro-processors, recording devices, filming devices, electronic digital memory chips, traction control devices, digital readout gauges and the like, even if inoperable or incomplete. Competitors will not be permitted to have or have had on his/her person or in his/her possession or in his/her car a device(s) at an Event designed specifically to enhance the traction capabilities of the car, even if inoperable or incomplete.
- b.) Unapproved remote lap timing or speed sensing devices will not be permitted.
- c.) All electrical wiring harnesses, switches, and connectors must be acceptable to Race of Champions Officials. All wiring must be point-to-point and each wiring connection must be easily traceable and removable from the car for inspection purposes.

- d.) Competitor's use of filming and recording devices will be limited to internal review of pit stops only and not for promotion, resale or other commercial exploitation without the Race of Champions's prior, written approval. Filming or recording device(s) will not be permitted on board the race car at any time unless previously approved by the Race of Champions.
- e.) Electronic oil, water and fuel pressure gauges and oil and water temperature gauges must be approved by the Race of Champions and they must be completely independent of the ignition system. All gauge sending units and sensors must be located forward of the front firewall.
- f.) Gauges used in competition, including but not limited to tachometer, oil pressure gauge, oil temperature gauge, water temperature gauge and voltmeter, must be installed and functional at all times during competition. Ignition and accessory switches and interrupter system components must be installed at all times during competition.
- g.) All electrical outlets used to connect the remote generator to the car must be in a location acceptable to Race of Champions Officials.

5.0 Chassis/Frame

1. Chassis / Frame

- a.) All frames and frame components must be approved by the Race of Champions. Prior to being used in competition, all frames and frame components must be submitted to the office of the Race of Champions for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible.
- b.) All frames must be acceptable to the Race of Champions Officials. The frame used must meet the minimum requirements described in the following paragraphs. All frame designs must be submitted in blueprint form for acceptance to the office of the Race of Champions at least 60 days before the design can be entered in competition. If the Race of Champions accepts the modification as set forth in the submitted blueprints, the Competitor must submit for inspection a completed frame and roll cage at least 30 days prior to the intended date of competition. Acceptance of the submitted blueprint does not guarantee acceptance of the completed frame and roll cage design, and the Race of Champions may decide not to accept such design even if it is the same as the blueprint form. If the Race of Champions accepts the completed frame and roll cage, it may thereafter, be used in competition in the form accepted, unless and until the form is no longer approved by the Race of Champions.
- c.) All frame components must be made of magnetic steel and welded. The frame must consist of a front and a rear sub-frame connected to the main frame on which the roll cage is welded. Holes and/or other modifications to the frames, frame supports, weight containers (if applicable), front and rear sub-frames, crossmembers, and any other frame components that, in the judgment of Race of Champions Officials, were made with the intent of weight reduction, will not be permitted. Any frame rejected by Race of Champions Officials will not be permitted to compete.
- d.) Main Frame - The side rails must be magnetic steel box tubing a minimum of two (2) inches in width by three (3) inches in height and a maximum of three (3) inches by four (4) inches and must have a minimum wall thickness of 1/8 inch meeting the ASTM A-500 specification. The distance from the centerline of the driveline to the left side frame rail, measured anywhere along the frame, must be within eight (8) inches of the distance from the centerline of the driveline to the right frame rail. A minimum width of 34 inches, and maximum 46 inches, measured from the center of the left frame rail to the center of the right frame rail, must be maintained in the driver's compartment.
- e.) Front Sub-Frame - The front sub-frame assembly must be made of magnetic steel box tubing two (2) inches in width and three (3) inches in height with a minimum wall thickness 0.083 inch meeting the ASTM A-500 specification. A minimum of 27 inches, and a maximum of 32 inches, measured from the center of the left frame rail to the center of the right frame rail, must be maintained from the mounting point of the upper A-frames forward. All front sub-frame assemblies must maintain a minimum of a 30 degree angle from the side frame rails up to the top of the sub-frame. All sub-frame assembly support bracing must be a minimum wall thickness 0.090 inch by 1-3/4 inches round magnetic steel seamless tubing. The front sub-frame bars (#16 A & B), left and right, must extend from the roll cage to the sub-frame and must have a downward radius bent into the bars before they are welded to the sub-frame. The left and right front sub-frame bars (#16 A & B) must not have any additional braces added between the front roll bar legs (#2 A & B) and where they attach to the front sub-frame assembly. A flex support tube may be added to the front sub-frame bars (#16 A & B) at the radius and extend forward and be attached to a crossmember.
- c.) Rear Sub-Frame - The rear sub-frame assembly must be made of magnetic steel box tubing two (2) inches in width and three (3) inches in height with a minimum wall thickness of 0.083 inch meeting the ASTM A-500 specification. A minimum width of 31 inches and a maximum of 46 inches, measured from the center of the left frame rail to the center of the right frame rail, must be maintained on the rear sub-frame assembly, with the exception for suspension and tire clearance. All rear sub-frame assemblies must maintain a minimum angle of 18 degrees from the rear axle housing up to the top of the sub-frame rail assembly.

f.) A fuel cell reinforcement bar, using a minimum 1-1/2 inches seamless magnetic steel tubing, must be installed behind the fuel cell. This reinforcement bar must be as wide as the fuel cell and as low to the ground as the fuel cell with a minimum of two (2) uprights from the reinforcement bar to the rear frame crossmember, evenly spaced behind the fuel cell. The fuel cell reinforcement bar and vertical uprights should be 0.083 inch minimum wall thickness. **NOTE: Effective January 1, 2020 the fuel cell reinforcement bar and vertical uprights must have a 0.083 inch minimum wall thickness.** An X crossmember made of one (1) inch magnetic steel tubing must be installed beneath the fuel cell from corner to corner. The X crossmember must be welded or bolted to the rear frame rails in a secure manner. Two (2) additional support bars, one (1) at each corner of the reinforcement bar, must extend forward and be welded to the rear frame assembly.

f.) The frame and roll cage assembly should be painted using only light/bright colors.

6.0 Overall Car Weight

1. Added Car Weight

a.) Added weight must be in approved block form of not less than five (5) pound blocks (no pellets). Tungsten and other unapproved metals or materials will not be permitted. Added weight must be securely bolted to the frame rail with a minimum of two (2), 3/8 inch diameter high quality bolts and painted white with the car number or team identification permanently legible on it. Dislodged weight will not be permitted to be returned to the car for weighing after the Race. Any added weight containers should be welded directly to the main frame rails, rear sub-frame rails and/or the crossmembers attached to the main frame rails. Added weight will not be permitted inside the driver's compartment. Material and mounting must be acceptable to Race of Champions Officials.

2. Car Weights After Competition

a.) After a car has qualified, only fluids consumed, as determined by the Race of Champions Officials, may be replaced.

b.) At the end of the Race, the minimum weight of the car must be within one half of one percent (.5%) of the minimum weight requirement of the car at the start of the Race. When cars are weighed after a Race, only water in the radiator, oil in the reservoir tank, and fuel in the fuel cell may be added. Wheels and tires may not be changed, unless otherwise authorized by the Race of Champions Officials.

c.) The addition of ballast weight, after competition, will not be permitted.

d.) All specified minimum weight requirements will be with fuel, oil, and water (with driver) and the car race ready. All cars must be scaled at the request of the Race of Champions Officials, pre and/or post qualifying and/or pre and/or post race. There will be a pre-race weight minimum and a post-race minimum that must be meant as follows:

1.) Throughout the Event, the minimum weight requirement for the Race of Champions Steel Cylinder Head engine package with a maximum of 358 cubic inches will be **2,600 pounds** and a maximum weight requirement of 3,200 pounds will be required in this Series regardless of the cubic inch displacement. Left side weight percentage must be maintained; not be permitted to have more than 56% of the total weight as left side weight.

2.) Throughout the Event, the minimum weight requirement for the Race of Champions any 18 degree aluminum cylinder head engine package with a minimum of 350 cubic inches and a maximum of 376 cubic inches will be 6.8 pounds per cubic inch plus 175 pounds and a maximum weight requirement of 3,200 pounds will be required in this Series regardless of the cubic inch displacement. Left side weight percentage must be maintained; not be permitted to have more than 56% of the total weight as left side weight.

3.) Throughout the Event, the minimum weight requirement for the Race of Champions 23 degree aluminum cylinder head engine package with a maximum of 368 cubic inches of will be **2,600 pounds** and a maximum weight requirement of 3,200 pounds will be required in this Series regardless of the cubic inch displacement. Left side weight percentage must be maintained; not be permitted to have more than 56% of the total weight as left side weight.

4.) Throughout the Event, the minimum weight requirement for the Race of Champions 23 degree aluminum cylinder head engine package with a minimum of 369 cubic inches and a maximum of 376 cubic inches of will be 7.0 pounds per cubic inch, plus 175 pounds with a maximum weight requirement of 3,200 pounds will be required in this Series regardless of the cubic inch displacement. Left side weight percentage must be maintained; not be permitted to have more than 56% of the total weight as left side weight.

5.) Throughout the Event, the minimum weight requirement for the Race of Champions for any car using the "NASCAR approved Spec Engine" will be 2,700 pounds and a maximum weight requirement of 3,200 pounds will be required in this Series regardless of the cubic inch displacement.

Left side weight percentage must be maintained; not be permitted to have more than 55% of the total weight as left side weight.

6.) During the 2022 racing season, Race of Champions Officials will be analyzing post-race minimum weight. The minimum weight will be 2,575 pounds. <<NEW WEIGHT>>. This rule will be utilized as a point of analysis for the development of future weight and scaling rules.

e.) Unless otherwise authorized by the Race of Champions, at all times all weights will be measured by the Race of Champions Officials using the scales provided by the Race of Champions. It is the responsibility of each race team to insure that its car meets the specified minimum weight requirements for this Series on these scales.

f.) On major components, the use of non-magnetic and/or hollow fasteners and component mounting hardware with the intent of weight reduction will not be permitted.

g.) Unless otherwise approved, Race Equipment, including car parts and components, that in the judgment of Race of Champions Officials have been constructed to increase the components weight beyond normal standards, will not be permitted.

h.) Before the use of any composite component(s), the component(s) must be submitted to and approved by the Race of Champions for use in competition.

i.) Mechanical devices used for or intended to be used for the shifting of weight that may be activated by the driver and/or a crew member while the car is static or in motion will not be permitted.

j.) From time-to-time and/or specific event(s), the weight rules for the Race of Champions may be adjusted based on maintaining the balance of competition and adjustments in regard to "home track rules". Those adjustments will be issued specifically on the "Event Competition Format".

k.) All engine and weight packages claimed by any competitor must be clearly displayed on the right side of the hood.

7.0 Body

1. Body

a.) The Race of Champions are open to eligible approved models of metal bodied passenger car production sedans.

b.) The Race of Champions will with the rules as specified in Section m.7f the Rule Book. If authorized by the Race of Champions, deviations to these rules may be permitted for stand-alone Events only. All Events will be governed by the rules as published in Section m.7 of the Rule Book.

c.) **Approved Competition Manufacturers for the 2020 season.** The following are the only approved manufacturers for competition in the Race of Champions;

APPROVED MANUFACTURERS

CHEVROLET

DODGE

FORD

PONTIAC

TOYOTA

OTHER APPROVED MANUFACTURERS

Other manufacturers may be selected when available providing they are the same in body configuration and meet the spirit and intent of competitive racing as currently evidenced in Race of Champions racing.

d.) General Car Body Requirements; Car Bodies: The car body must be acceptable to Race of Champions Officials and meet the following minimum requirements:

e.) Cars must be neat appearing. The interior and exterior of all floors, firewalls roll cage and frame assemblies and the interior of all body panels should be painted using only light/bright colors. The type of paint used, whether it be flat, satin or high gloss finish, must provide a smooth surface. The paint or vinyl must not be textured. Vinyl may only be used on the exterior of the body panels. Thermal barrier coatings applied to the immediate driver's area may be used. The location of thermal coatings must be acceptable to Race of Champions Officials.

f.) All bodies must be installed on the frame in a manner acceptable to Race of Champions Officials. Window openings should remain stock appearing and should maintain the original manufacturers' window opening configuration. Bodies must not be wider than the standard width from the front of the door panel to the rear of the quarter panels when measured beneath the car at the rocker panels. A minimum distance of 43 inches and a maximum distance of 45 inches will be permitted across the body at the bottom of the front windshield opening. A minimum of 43-1/2 inches and a maximum distance of 50 inches will be permitted across the body when measured at the bottom of the doors directly below the bottom of the front windshield opening. The outer vertical surface of the left side and right side door and quarter panel assemblies may only be a flat or convex surface. The distance from the outermost surface of any door or quarter panel to the top and bottom edge of that panel must not be more than four (4) inches. **The outer surface of the right side door and quarter panel assembly must be straight from the leading edge of the door to the**

trailing edge of the quarter panel as viewed from the rear, front and above. The outer surface of the left side and right side door and quarter panel assemblies must be straight from front to back. Bodies must not extend below the frame at the side rails. Skirts or additional metal must not extend below the body.

g.) The floor pan area directly beneath the seat forward to the front engine firewall must be made using a minimum 1/8 inch thick magnetic steel. The remainder of the floor area to the right and rear of the seat must be made from a minimum 22 gage (0.031 inch thick) magnetic sheet steel. The interior sheet metal from the right side of the seat to the right side door bars (#9B) and from the main roll bar (#1) to the right side vent window bar (#10B) and must not be lower than the second door bar (#9B) from the main frame rail or it may angle from the top of the drive shaft tunnel upwards to the top of the right side door. The removable ignition system mounting plate may be mouted to the interior sheet metal directly from the top of bottom of the floor pan. Interior sheet metal must not be higher than or enclose a standard window opening. No other floor panels will be permitted. All floor pan panels and interior sheet metal from the front firewall to the rear firewall and inside the main roll cage assembly must be completely sealed and welded in place. All floor pan panels must be acceptable to Race of Champions officials.

h.) Streamlining of the contours of the car, unless approved by Race of Champions Officials will not be permitted. Installation of air directional devices, underpans, baffles, shields or the like beneath the car or the car's hood and front firewall, floor, rear firewall area, rear deck and quarter panel area will not be permitted. When fabricating the door and quarter panels, any accent lines or offsets whether they are tapered or flat will be limited to one (1) inch maximum in width. Should conditions require a larger window opening than 13-1/2 inches, a hinged door may be installed on the driver's side door. The door must be installed using a magnetic steel full length hinge and be equipped with a magnetic steel spring loaded latch. The maximum size shall be 22 inches in length by a maximum 5 inches in height. The door must be fabricated neatly without any protruding sides or edges and must be acceptable to Race of Champions Officials. If, in the judgment of Race of Champions Officials, any part or component of the car not previously approved by the Race of Champions that has been installed or modified to enhance aerodynamic performance, will not be permitted. Bodies must have a standard appearing windshield opening and the windshield "A" post must follow standard configuration.

i.) Cars will not be permitted to compete with excessive body damage (excessive body damage to be determined by the Race of Champions Officials.)

j.) Belly pans will not be permitted. A belly pan will be defined as any object or material that alters the flow of air under the car. Determination of whether any material or object is or is not a belly pan shall be in the discretion of the Race of Champions Officials. The bottom panel of the front nose panel must not extend rearward past the rear edge of the harmonic balancer.

k.) The driver's compartment may be enclosed with additional sheet metal. All interior sheet metal should be a minimum 22 gage (0.031 inch thick) welded magnetic sheet steel. Interior sheet metal must not be higher than or enclose a standard window opening. All interior sheet metal withing reach of the driver must be a minimum 22 gage (0.031 inch thick) welded magnetic steel. Sheet metal in the driver's compartment must be horizontal from the top of the drive shaft tunnel to the right side door bars or angle from the top of the drive shaft tunnel upwards to the top of the right side door. Angled or horizontal sheet metal must extend from the rear firewall or the back of the seat a minimum of 26 inches forward. The interior sheet metal behind the main roll bar (#1) may be roll formed upward to the top of the shoulder bar (#7). The sheet metal must extend rearward and at the center of the rear axle housing, the sheet metal may angle upward and seal to the bottom of the rear window opening and extend rearward to the rear vertical panel. The use of quick release fastners (dzus) to install the sheet metal behind the main roll bar (#1) will be permitted. Interior spoilers, wings, or wind deflectors will not be permitted. Double panels will not be permitted. All interior sheet metal must be acceptable to Race of Champions Officials.

l.) All seams of the floor pans, interior sheet metal and all interior sheet metal to exterior sheet metal contact points must be sealed. This includes, but is not limited to, floors, firewalls, crush panels.

2. Detailed Car Body Requirements

a.) In addition to the General Car Body Requirements specified in sub-section m.7, the following Detailed Car Body Requirements must be maintained.

3. Front Air Dam

a.) An approved air dam may be mounted to the front underside of the cars. The optional metal or vinyl front air dam must be mounted perpendicular to the ground and not more than three (3) inches behind the front edge of the nose panel. The front nose panel and air dam must not extend past the rear edge of the front bumper. The nose panel and air dam must not extend past the outside edge of the front frame rails. All support brackets must be mounted to the rear of the air dam. Horizontal or flat air deflectors must not extend past the outer edges of the front nose panel side walls.

4. Rear Spoilers

- a.) A Race of Champions-approved rear spoiler must be installed at all times during competition. All spoilers must be approved by Race of Champions Officials. An approved spoiler must be a flat non-adjustable part of the body which controls the flow of air over one (1) surface only. Spoiler sizes will be reviewed as testing and/or Race competition dictate, and adjustments may be made during testing, official practice, or prior to Events such as time trials and/or qualifying Races, etc.
- b.) All rear spoilers and spoiler mounting points must be acceptable to Race of Champions Officials. A solid rear spoiler of a minimum 1/4 inch thick clear polycarbonate only must be installed on the rear center panel where the center panel and the rear vertical body panel intersect and meet the requirements that follow:
- c.) The only rear spoiler size permitted will be eight (8) inches high by 48 inches wide, measured at the mounting point on top of the rear panel. The rear spoiler must be installed in the center at the rear of the quarter panels where the rear panel meets the center panel sheet metal. During the Race, the rear spoiler must not extend past the rear edge of the rear bumper. Decals or logos will not be permitted on the rear spoiler.
- d.) A maximum of two (2) one (1) inch wide adjustable supports will be permitted on the front of the spoiler.
- e.) A maximum of three (3) supports must be attached to the rear of the spoiler. The supports, front or rear, must be attached to the spoiler using a solid one piece of one (1) inch by one (1) inch aluminum angle mounted to the rear side and one (1) down from the top of the spoiler.
- f.) All cars must maintain a minimum height of **31-1/2** inches and a maximum height of 35 inches, measured from the ground to the spoiler mounting point at the top of the rear vertical body panel.

5. Windows / Lights / Mirrors / Windshield

Windshield

- a.) A single one-piece flat 1/4 inch thick clear polycarbonate windshield should be used on the driver's side. A single piece rounded and/or shaped piece (traditional asphalt modified) of 1/4 inch thick polycarbonate type material (lexan) positively fastened to the cowl and roof or roof bar that covers the front of the driver area will be permitted.
- b.) The flat windshield must be mounted flush to the left side "A" post, the front edge of the roof panel and at the cowl or dash panel. The windshield must cover the area from the left side "A" post to the center windshield bar (#4A) and from the front edge of the roof panel to the cowl or dash panel. The windshield must be mounted using a minimum of three (3), evenly spaced, non-winged type quick release fasteners on each of the following, the left side "A" post, the front edge of the roof panel, the cowl or dash panel and the center windshield bar (#4A). Tabs welded to the center windshield bar (#4A) will be permitted. Hose clamps or tie wraps will not be permitted.
- c.) A complete steel windshield screen (with maximum openings of one (1) inch by two (2) inches) must be installed in the right side of the windshield opening. The windshield screen must cover the right side windshield opening from the center windshield bar (#4A) to the right side front roll bar leg (#2B) and from the front of roof bar (#3), at the top, down to the cowl or dash panel. The windshield screen must be mounted using only positive, non-winged type quick release fasteners. Tabs welded to the center windshield bar (#4A) and front roll bar leg (#2B), will be permitted.
- d.) Decals will not be permitted on the windshield.
- e.) All windshields, windshield screens and their installation must be acceptable to Race of Champions Officials.

6. Rear Window

- a.) Rear windows will not be permitted.

7. Side Window Glass

- a.) All side window glass must be removed.
- b.) The minimum side window opening on all models must be 13-1/2 inches when measured from the top of the door panel to the bottom of the roof bar (#3) or the roof drip rail (whichever is closest). Door panels must not be cut or notched to meet this specification.

8. Headlights / Parking Lights

- a.) All cars must be equipped with a solid rear vertical body panel. The rear vertical body panel may extend down to the top of the frame and may be a maximum of one (1) inch from the top of the frame and have a maximum 1-1/2 inch lip/flange on the bottom edge.

9. Rear View Mirror

- a.) Multi-view type mirrors, with a maximum size of 2-1/8 inches in height by 21-1/2 inches in width, must be installed at all times during competition and must be mounted in the upper center of the windshield opening. The rear view mirror must not extend outside of the car at any time or any position. A side mounted rear view mirror may be installed; however, it must be acceptable to Race of Champions Officials and must not

extend outside of the car at any time or in any position. Composite material(s) will not be permitted on the rear view mirrors or the mounting hardware.

10. Dash Panel

a.) All dash panels must be acceptable to Race of Champions Officials. The dash panel must permit egress of the driver on the right side.

11. Firewalls

- a.) For driver protection, all firewalls, floors, tunnels, and access panels must be installed and completely secured in place when the car is in competition.
- b.) A front and rear firewall of not less than 22 gage (0.031 inch thick) magnetic sheet steel must separate the driver from the engine compartment and fuel cell.
- c.) The front firewall must be positioned below the leading edge of the windshield.
- d.) The front firewalls must be sealed and welded in place.
- e.) The rear fire wall center panel must be a minimum of 28 inches wide and must extend from the rear vertical body panel forward to the horizontal shoulder bar (#7).
- f.) The rear firewalls must be sealed and securely mounted in place and be acceptable to Race of Champions Officials.

12. Doors

- a.) All door panels must be magnetic sheet steel or aluminum (if aluminum is used it must be a minimum 0.040 inch thick) and mounted in a manner acceptable to the Race of Champions Officials. Any seams, creases or accent lines fabricated in the doors must be made parallel with the top of the door.
- b.) A minimum distance of 72 inches up to a maximum distance of 78 inches will be permitted when measured from the center of the rear axle housing forward to the front of the door. A minimum distance of 43 inches and a maximum distance of 45 inches will be permitted across the body at the bottom of the front windshield opening. A minimum of 43 ½" inches and a maximum of 50"-inches will be permitted across the body when measured at the bottom of the doors directly below the front windshield opening.
- c.) An inner panel must be installed from the left side door panel to the outside edge of the left side main frame rail. The inner panel must extend from the front firewall rearward to the rear firewall. The inner panel must be magnetic sheet steel or aluminum (if aluminum is used it must be a minimum 0.040 inch thick) and installed in a manner acceptable to the Race of Champions Officials. Aluminum crush panels must be installed at the front and rear firewalls and must extend outward to the left side door panel and extend upward from the inner panel to the top of the left side door panel.

13. Quarter Panels

- a.) Quarter panels must be acceptable to Race of Champions Officials and made of magnetic sheet steel or aluminum (if aluminum is used it must be a minimum of 0.040 inch thick) and meet the following minimum requirements:
- b.) The top of the quarter panels and door panels must maintain the same degree of rake from the front windshield "A" post to the rear vertical body panel on both the left side and right side.
- c.) All cars must have rear wheel openings on the right side a minimum of 11 inches and a maximum of 14 inches radius measured from the center of the rear axle housing.
- d.) The minimum size for any quarter window opening will be nine (9) inches high by 14 inches wide. If a "B" post is used on the rear roof quarter panel, the rear roof quarter panel must have the minimum quarter window opening. If a "B" post is not used, the leading edge of the rear roof quarter panel window opening must be located a maximum of 12 inches forward of the center of the rear axle housing. All quarter window openings and their location must be acceptable to Race of Champions Officials.
- e.) The lower edge of the rear roof quarter panel when measured at any point from the leading edge to the trailing edge must not be more than 2-1/2 inches inward from the upper edge of the rear quarter panel on both the left side and right side. The rear roof quarter panel must remain parallel with the upper edge of the rear quarter panel on both the left side and right side.
- f.) A minimum distance of 34 inches (measured any place at the rear of the quarter panels) and a maximum distance of 42 inches measured from the center of the rear axle to the rear vertical panel of the body will be permitted. Both the right and left side rear quarter panels must be equal in length. A minimum distance of 49 inches and a maximum distance of 56 inches will be permitted when measured across the body at the top of the door panels at the front of the rear wheel openings. A minimum distance of 55 inches and a maximum distance of 60 inches will be permitted when measured at the bottom of the door panels at the front of the rear wheel openings. A minimum distance of 58 inches and a maximum distance of 60 inches will be permitted between the outer edges of the quarter panels measured at the rear bumper height. The bottom edge of the left side and right side quarter panels must not be located inboard of the top edge.

g.) The front lower edge of the rear quarter panel behind the rear wheels must be higher than the lower edge of the rear corner of the rail (nerf) bar. The rear lower edge of the rear quarter panel must not be higher than the lower edge of the rear vertical body panel. The lower edge of the rear quarter panels must not have a ground clearance of less than eight (8) inches at any point behind the rear wheels. The rear quarter panels when measured from the ground to the top of the rear quarter panel at the spoiler mounting location must be a minimum of **31-1/2** inches and a maximum of 35 inches.

h.) The rear quarter panels must maintain a minimum of **7-1/2** inches ground clearance behind the rear wheels.

i.) The rear vertical body panel (rear vertical panel) located between the quarter panels must maintain a minimum of **31-1/2** inches and a maximum of 35 inches when measured from the ground to the top of the panel at the rear spoiler mounting point. The panel must be solid with no open holes and be mounted flush at the rear of the quarter panels. The center panel must not be higher than the top of the rear quarter panels. The lower edge of the rear panel must not be more than one (1) inch above the top of the rear bumper or rear bumper mounts. The rear vertical body panel may extend down to the top of the frame and have a maximum 1-1/2 inch lip/flange on the bottom edge.

j.) The right side quarter panel assembly at any point must not extend outward beyond the inside edge of the right side rear tire contact patch as viewed from the rear and above. The right side rear quarter panel assembly behind the right side rear tire to the outside edge of the right side rear frame rail when measured must not be more than a maximum of 11-1/2 inches.

14. Grilles

a.) The grille air intake housing at the radiator must maintain a rectangular shape across the front of the nose with the opening being at least as wide as it is high and covering a minimum of 165 square inches. When a carburetor restrictor is required, the grille opening must be a minimum of 200 square inches.

b.) Only a single layer of screen wire, with a minimum 1/4 inch by 1/4 inch opening, will be permitted in the opening to allow for proper cooling.

c.) Only metal grille air intake housings will be permitted.

d.) Horizontal or flat air deflectors must not extend past the outer edge of the grille air intake housing.

e.) The top and bottom panel of the grille air intake housing must mount flush with the side panels.

f.) During qualifying, the grille opening may not be closed off. The opening must remain unaltered and open. The use of tape will not be permitted on the grille opening.

15. Hood / Roof

a.) All cars must be equipped with a hood manufactured from a single piece of metal or fiberglass and be acceptable to Race of Champions Officials.

b.) The hood must be manufactured so that it will completely cover the engine compartment from the left side to the right side, turn down a minimum of four (4) inches on each side, and cover (if used) the engine side panels. Only openings for the carburetor air filter housing, air filter, valve cover breathers (Sportsman Modified) and the distributor will be permitted. Holes for cooling the carburetor or engine will not be permitted. No portion of the hood may be higher than the bottom of the carburetor air filter housing and air filter. Hoods must be fastened with positive pin fasteners evenly spaced across the front and rear.

c.) Engine cover side panels will be permitted. Louvers will be permitted.

d.) The roof panel must be from an approved manufacturer and be made of magnetic steel. All roof panels and their installation must be acceptable to Race of Champions Officials. Unless otherwise authorized, the following are the only roof panels approved for competition:

MANUFACTURER PART NUMBER

General Motors 22699260

Ford F8RZ6350202AA

PTM Corporation NMT-111

Previously approved magnetic steel roofs will be permitted for competition if approved by Race of Champions Officials.

e.) Roof support posts must remain stock appearing and maintain the original manufacturer's configuration. All "A" posts must maintain a maximum width of 3-3/4 inches from the top mounting point to the bottom mounting point. The panel at the bottom of the "A" post must maintain a maximum length of 18 inches (including any portion of the panel that is recessed into the hood). The rear "C" post must be mounted to the rear quarter panels and maintain a minimum width of 48 inches. All roof panels must be installed in a manner and a position that is acceptable to Race of Champions Officials. The front of the roof must be secured in three (3) places—one (1) in the center and one (1) on each side. The roof must be installed using non-winged type dzus fasteners.

f.) The roof (body) height will be determined by measuring (with the driver) the overall height of the vehicle six (6) inches back from the leading edge of the roof at the roof centerline. The minimum roof (body) height

must be **39-1/2** inches. The rear of the roof at the highest point must not be more than 3-1/4 inches higher than the actual front measurement.

g.) An optional roof hatch may be installed above the driver to be used as an alternate exit. Installation of the roof hatch must be acceptable to Race of Champions Officials.

h.) The rear roof quarter panel must be made from a single piece of metal without any creases, breaks or extra rolled designs. The quarter window panel must be neatly attached at the roof and the top of the quarter panels. The top of the rear quarter window panel must not be higher than a straight line when measured from the most rearward point of the roof down to the rear top of the quarter panel at the spoiler mounting point. The front edge of the "B" post must be located a maximum of 24 inches forward of the center of the rear axle housing. The installation of all rear quarter window panels and "B" posts must be symmetrical and acceptable to Race of Champions Officials.

i.) Radio antennas should not be mounted on the roof panel.

16. Rear Deck Lids

a.) The rear deck lid should be magnetic sheet steel.

17. Bumpers / Side Rails

a.) Any bumper or side rail that has been damaged or flattened beyond repair and/or is not functional during an Event will not be permitted. The bumper and side rails must be acceptable to Race of Champions Officials and meet the following minimum requirements:

b.) Front bumpers must be made of two (2) pieces of 1-1/2 inches minimum to 1-3/4 inches maximum round magnetic steel tubing four (4) inches to six (6) inches apart (six (6) inches apart is highly recommended), center to center, mounted to the front frame rails, spindle height, with a minimum of four (4) vertical connectors will be permitted. Two (2) vertical connectors must be welded in the center of the radiused corners with the remaining two (2) spaced between the corner uprights. The front bumper must be convex in shape with rounded corners, and mounted at the front frame rails. The maximum width of the front bumper must not exceed more than two (2) inches per side of the front frame rails. The maximum distance from the center of the front spindle to the front of the front bumper must not be less than 30 inches and not more than 30-1/2 inches.

NOTE: The upper and lower front bumper tubing may be six (6) inches apart when measured center to center.

c.) Rear bumpers must be made from an I-beam extruded from aluminum. The width, when measured across the rear of the car must be a minimum of 48 inches and a maximum of 50 inches and be mounted on centerline of the rear sub-frame rails plus or minus (+/-) one (1) inch. Each end of the rear bumper (from the mounting side) must be cut square and capped with a minimum 0.125 inch thick aluminum. All bumper caps must be welded and sharp edges must be filed smooth. The minimum I-beam size permitted will be 2-3/4 inches by four (4) inches by 3/16 inch thick. The bumper must be mounted at rear axle height. A maximum distance of 46 inches measured at the center of the rear axle to the rear edge of the bumper will be permitted. Bumper extensions must be a minimum of 1-1/2 inch by 1-1/2 inch square magnetic steel tubing with a minimum wall thickness of 0.125 inches. Bumper extensions may be welded or bolted directly to the rear sub-frame crossmember. If bumper extensions are bolted to the rear sub-frame crossmember, four (4) bolts per bumper extension must be used and be a high quality minimum 3/8 inch diameter solid magnetic steel. Bumper extensions must have a rear bumper mounting flange a minimum of 1/4 inch thick flat magnetic steel welded completely to the bumper extension. Four (4) rear bumper mounting bolts per side must be used and be a high quality minimum 3/8 inch diameter solid magnetic steel. All mounting bolts must have a minimum of 1/2 inch of metal from the center of the mounting bolt to the edge of the mounting flange. When the rear bumper mounting bolts are fully tightened, mounting bolts must be completely flush with the mating surface, angled or beveled washers will be permitted. Grinding or machining of the rear bumper at the rear bumper mounting points will not be permitted (see Diagram #10, in the NASCAR Rule Book). Holes and/or modifications that, in the judgment of Race of Champions Officials, have been made with the intent of weight reduction, will not be permitted. Cars will not be permitted to compete without the front and rear bumper.

d.) All cars must be equipped with rear corner rails and side rails. All rails must be constructed using a minimum 0.083 inch thick magnetic steel seamless tubing with an outside diameter of a minimum 1-1/4 inches and a maximum of 1-3/4 inches. Side rail bars must be constructed using the following guidelines:

(1) Right side bars must be constructed by using two (2) pieces of magnetic steel seamless tubing. The bottom bar must attach to the rear of the frame rail and extend upward and outward even with the outside of the tires, or up to a maximum of 1/2 inch outside of the tires. The bottom side bar must extend forward parallel with the frame rail and angle in to the front sub-frame rail with minimal tire clearance. The bottom bar must be mounted centerline with the rear axle and front spindle. The

top side bar must be attached centerline with the main roll bar (#1) at the intersection with the horizontal shoulder bar (#7) extending outward and forward to the forward most point of the bottom bar. The top bar must turn down, be centered on, and attach to the bottom bar. The top bar must have an additional support bar attached to the front roll bar leg (#2B) centered on the dash panel bar (#8). An additional support bar must be added in the center. The bar must be attached to the frame rail and side bar. Two (2) additional vertical support bars must be added, one (1) at the rear and one (1) in the center of the side rail bar. The distance measured at the front, center to center, of the top and bottom bars at the turn down area must be a minimum of six (6) inches. The distance measured at the rear center to center must be a maximum nine (9) inches and minimum six (6) inches. Right side rail bars must be attached using high quality minimum 5/16 inch diameter solid magnetic steel bolts. Pins or clips will not be permitted.

(2) Left side rail bars must be constructed using the same guidelines described above except that the rear support bar may be a radiused bar that attaches to the main roll bar (#1) at the intersection with the horizontal shoulder bar (#7) extending down and attached to the frame rail. Left side rail bars must be mounted by centering the two (2) parallel side rail bars with the center of the rear axle and the front spindle or left side bars may be raised a maximum of two (2) inches from center. Left side rail bars must be attached using high quality minimum 5/16 inch diameter solid magnetic steel bolts. Pins or clips will not be permitted.

(3) Rear corner rails must be constructed using two (2) pieces of magnetic steel seamless tubing a minimum of 1-1/4 inches and maximum 1-3/4 inches in diameter. Both pieces of tubing must be identically formed and welded to a steel bumper bracket at the rear. The left and right rear corner rail mounting brackets must be a minimum of two (2) inches by two (2) inches, minimum 1/8 inch thick magnetic extruded steel angle and must attach to the rear surface of the rear bumper with two (2) high quality minimum 3/8 inch diameter solid magnetic steel bolts per side. All mounting bolts must have a minimum of 1/2 inch of metal from the center of the mounting bolt to the edge of the rear corner rail mounting flange and must be a minimum of one (1) inch from the end of the rear bumper. When the rear corner rail mounting bolts are fully tightened, mounting bolts must be completely flush with the mating surface, angled or beveled washers will be permitted. Grinding or machining of the rear bumper at the rear corner rail mounting points will not be permitted (see Diagram #10, in the rear pages of the NASCAR Rule Book). The tubing must angle out and upward even with the outside of the tires, or up to a maximum of 1/2 inch outside of the tires and maintain a six (6) inch dimension measured center to center. The corner bumpers must then turn in with a minimal tire clearance to the rear quarter panels. Additional support bars must be installed behind the body panels to the rear frame rails and/or roll cage. The front mounting flanges of the rear corner rails must be attached using high quality minimum 5/16 inch diameter solid magnetic steel bolts. Pins or clips will not be permitted.

(4) Cars will not be permitted to compete without side rails and rear corner rails.

18. Identification / Marking

a.) Numbers / Graphics

(1) All car number configuration and design is subject to approval by Race of Champions Officials. Only single or double-digit numbers will be permitted. **The size, color, and style of numbers must be adequate to permit prompt identification by Race of Champions Officials at all times.** Numbers must be a solid color, at least 18 inches high, measured vertically, excluding borders and silhouettes, must be neatly attached to or painted on both sides of the car on the center of the door. Door numbers must be a minimum of four (4) inches in width, and slant no more than 30 degrees from vertical. The tops and bottoms of all numbers must be even (not staggered). Two (2) digit numbers must not overlap and must have a minimum of 3/4 inch separation. A solid number 18 inches high, excluding borders and silhouettes, must be neatly attached to or painted on the center of the roof, reading from the passenger side. Solid numbers, as large as possible, must be attached to or painted on the right outer nose and taillight covers. The use of number decals is acceptable if Race of Champions Officials determine that the number is legible. Mirror foil numbers, and decals will not be permitted. Paint schemes using a mirrored or holographic appearance will not be permitted.

(2) All Race of Champions asphalt Modified Series car numbers are owned by and will be assigned by Race of Champions Management for use by the car owner. Car numbers are not transferable or assignable by the car owner. Numbers on a car competing in these Series must correspond with the car owner's registration and membership that is on file with Race of Champions management, unless otherwise authorized the Race of Champions Management.

(3) Race of Champions Management and/or Officials may require a Competitor to use a different number in order to avoid duplication or confusion at an Event.

b.) Decals / Advertising

- (1) Race of Champions management may, in its sole discretion, refuse to permit for any reason, or it may restrict or assign the size or placement of decals, identification, and advertising of any kind including but not limited to the car, equipment, personnel, uniforms, garage and pit areas, promotional materials, and/or support vehicles. All Race of Champions Members agree to accept the Race of Champions decision in this regard.
- (2) Race of Champions management may refuse to permit a Competitor to participate in an Event if the Race of Champions determines that any advertising, sponsorship or similar agreement to which the Competitor (or a car owner, driver or crew member associated with the Competitor) is or will be a party, is detrimental to the sport, to the Race of Champions, Series Sponsor or to the Promoter for any reason, including without limitation, the public image of the sport.
- (3) Decals, advertising slogans, paint schemes and other graphic designs and text on the car that have not been previously approved by the Race of Champions must not be used unless and until they have been submitted by the crew chief to Race of Champions Management and approved by the Race of Champions prior to the Event. The review and approval of decals, advertising slogans, paint schemes and other graphic designs and text on the car that have not been previously approved by the Race of Champions is at the sole discretion of Race of Champions Management and such approval may be withheld for any reason. All Race of Champions Members agree to accept the decision of Race of Champions management in this regard.
- (4) Decals, advertising logos, text or identification of sponsors must not be placed on the front of each door and/or each side of the hood (between the front of the car, the front of the door and the wide base of the "a" pillar) other than (a) decals, advertising logos, text or identification of series sponsors, (b) decals, advertising logos, text or identification of Race of Champions contingency program sponsors, or (c) such other decals, advertising logos, text, or identification as the Race of Champions may in its sole discretion permit or require.
- (5) All decals or adhesive-backed emblems supplied by the Race of Champions contingency program sponsors for advertising or identification on Race of Champions race cars are limited in size to the area of a 32 square inch rectangle. Decal sizes will be determined by multiplying the full width and full length of any decal, regardless of the decal shape. Only decals of participating Race of Champions contingency program sponsors will be permitted.
- (6) Decals, advertising logos, text or identification of sponsors will not be permitted on the windshield or rear spoiler.
- (7) Decals, advertising logos, text, or identification of sponsors, other than the car number, will not be permitted on the door of the car from the front edge of the door to the front edge of the "B" post.
- (8) **The Series sponsors decals "VP Racing Fuels" "Hoosier" must be displayed in the contingency location and may be displayed and centered on the front edge of the roof.**
- (9) A yellow stripe must be displayed on the vertical portion of the rear bumper of any car driven by a rookie driver as determined by Race of Champions Officials.

8.0 Suspension

1. Suspension

- a.) All suspension systems and components must be approved by Race of Champions Officials. Prior to being used in competition, all suspension systems and components must be submitted, in a completed form/assembly, to Race of Champions Officials for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible. All suspension fasteners and mounting hardware must be made of solid magnetic steel.

2. Coil Springs

- a.) All downward chassis movement while the race car is in competition must be limited only by the normal increasing stiffness of the springs or the bottoming of the chassis against the race track, whichever occurs first. **Intentional mechanical binding of any type will not be permitted.** Any device or procedure that in the judgment of Race of Champions Officials attempts to detract from or compromise the above will not be permitted. Only coil spring suspension will be permitted. All coil springs must be constructed using round magnetic steel wire, wound in a clockwise direction. Ovate and flat wire will not be permitted. The coil spring wire diameter must be the same size from the top to the bottom of the springs. All of the coils in a spring must be active. The coil springs at all four (4) wheels must be active and permit suspension movement. All coil springs must not be colder than ambient temperature.
- b.) Coil Over Front Springs
 - (1) Coil over springs must mount to the lower A-frames.
 - (2) Strut bars will not be permitted for mounting of coil over front springs.
 - (3) Coil over springs must be heavy-duty magnetic steel and must be constructed with both coil ends closed and ground.

- (4) Only one (1) spring per wheel will be permitted.
- (5) Coil springs may be coated but coating thickness and material must be acceptable to Race of Champions Officials.
- (6) Unless otherwise authorized by the Race of Champions Officials, coil spring rubber inserts will not be permitted for qualifying or prior to the start of the Race. After the completion of one (1) green flag lap in a Race, one (1) coil spring rubber insert, not to exceed one (1) full coil of the front coil spring, acceptable to Race of Champions Officials, will be permitted.
- (7) Progressive or digressive rate springs will not be permitted.

c.) Coil Over Rear Springs

- (1) The rear spring position may be changed, but both rear springs must be located either inside or outside of the frame rails.
- (2) Coil over springs must be heavy-duty magnetic steel and must be constructed with both coil ends closed and ground.
- (3) Only one (1) spring per wheel will be permitted.
- (4) Coil spring rubber inserts not to exceed two (2) full coils of the rear coil spring at any time, acceptable to Race of Champions Officials, will be permitted. The smallest allowable spring inserts will be 1/2 of a full coil.
- (5) Progressive or digressive rate springs will not be permitted.

d.) All coil over springs and shocks must remain visible at all times. Covering of the coil over springs and shocks will not be permitted.

3. Sway Bars (Anti-Roll Bars)

- a.) Front sway bar(s), when used, must be for the purpose anti-roll only. The front sway bars must freely rotate in their mounts. The movement of the front sway bar arms must not be prevented or restricted beyond that of normal use as an anti-roll bar.
- b.) Only magnetic steel front sway bars will be permitted.
- c.) Rear sway bars (anti-roll bars) will not be permitted.

4. Shock Absorbers

- a.) Coil over shock absorbers may be used. Shock absorbers and coil over shock and spring, by visual reference, must remain within the outline of the body and no holes can be cut in the outer body for the mounting of shocks.
- b.) Shock absorbers must provide a resultant force dependent upon piston velocity and must be acceptable to Race of Champions Officials. Shock absorbers and components must be acceptable to Race of Champions Officials. Shock absorbers and components must be used as supplied by a manufacturer and approved by the Race of Champions. Shock absorbers and components must be available to all Competitors and must meet the following minimum requirements:
 - (1) Shock absorbers must be either a mono-tube or twin-tube telescoping type. Mono-tube shock absorbers must be of the nitrogen-gas pressurized, deflective disc valve type with an integral gas reservoir and with steel deflective disc valve shims sealing the primary metering faces of the single piston in the main shock body. Shock absorber bodies must be made of aluminum or magnetic steel. If the shock absorber is of the twintube type then it must use a maximum 1.375 inch diameter piston with compression bypass valves that are the coil-spring loaded disc type or the coil-spring loaded spool or poppet valve type and a compression head (may also be called foot valve or head valve). The twin-tube shock absorber may use a gas cell located between the tubes. An external gas reservoir will not be permitted. Inertial valves will not be permitted. Twin-tube shock absorbers and internal components must remain as produced by the manufacturer, approved by the Race of Champions and as displayed on the approved component shock board and as such, are not considered to be interchangeable and will not be permitted to be modified by the Competitor.
 - (2) Mono-tube shock absorbers must meet the following dimensions: Overall Length (Extended) 23.60 Inches Maximum (center to center) Piston/Shock Body Outside Diameter 2.16 Inches Maximum Piston/Shock Body Length 10.00 Inches Maximum Gas Reservoir Outside Diameter 2.60 Inches Maximum Gas Reservoir Length 3.80 Inches Maximum Shock Shaft Diameter 0.500 Inches Minimum and 0.630 Inches Maximum

NOTE: The internal bore of the shock absorber body must remain as supplied by the manufacturer. The internal bore diameter of the shock absorber body must be the same from top to bottom. Tapers, steps, grooves and other misalignments will not be permitted. Modifications which provide position sensitive piston travel will not be permitted.

- (3) Changes in shock absorber force must not be made by the position of the shock absorber shaft, only by the velocity of the shaft through the compression and rebound stroke. Only one (1) piston per shock with one (1) shim stack on compression side and one (1) shim stack on the rebound side of piston, will be permitted.

- (4) Only a single, manual, external shaft bleed adjustment through a tapered needle into a fixed orifice in the hollow shaft, acceptable to Race of Champions Officials, will be permitted on the shock absorbers of the mono-tube type.
- (5) Only a single manual external adjustment, with an adjusting pin (allen head screw) tapered to regulate bleed and pressure of the spring on the valve will be permitted on the shock absorbers of the twin tube type.
- (6) The shock absorber shaft must not have any sleeves or spacers that could limit the travel of the shaft into or out of the main body.
- c.) Shock absorbers and internal components are subject to inspections.
- d.) Race of Champions Officials may use a shock absorber provided by the respective manufacturer as a guide in determining whether a Competitor's shock absorber conforms to the specifications in the Rule Book.
- e.) A maximum of one (1) shock absorber per wheel will be permitted.
- f.) Quick disconnect shock mounts will not be permitted. The shocks must be attached with nuts and bolts.
- g.) External shock absorber reservoirs will not be permitted.
- h.) Remote or electronically controlled shock absorbers will not be permitted.
- i.) Heating pads and/or blankets will not be permitted for warming the shock absorbers.
- j.) Air scoops, covers or any aerodynamic devices on or around the front shock absorbers will not be permitted.
- k.) All coil over springs and shocks must remain visible at all times. Covering of the coil over springs and shocks will not be permitted.**
- l.) It is the responsibility of the crew chief, not the Race of Champions, to ensure the shock absorbers are used in accordance with the manufacturer's instructions and specifications.

5. A-Frames

- a.) The upper A-frames, lower A-frames and ball joints must be acceptable to Race of Champions Officials and meet the following minimum requirements.
- b.) All A-frames must be made of magnetic steel.
- c.) The ball joints must not have any adjustment with the exception of a free play adjustment in the housing for the ball and socket.
- d.) When attaching the upper A-frames to the mounting plate, only standard type castor-camber shims or washers will be permitted.

6. Spindles / Wheel Bearings / Hubs

- a.) The spindles, wheel bearings, and hubs must be acceptable to Race of Champions Officials and meet the following minimum requirements:
 - b.) Heavy-duty magnetic steel spindles must be used.
 - c.) The front spindles should be equipped with two (2) tether attachment brackets mounted on the front of the spindle as shown and described in Diagram (#15) in the rear pages of the NASCAR Rule Book. A single tether is required for competition in any Race of Champions event. The tether attachment brackets must be 3/16 inch thick magnetic steel and be completely welded to the spindle tower and spindle steering arm. The tether attachment brackets must have a 1/2 inch minimum diameter mounting hole and use a 1/2 inch minimum diameter bolt for the attachment of the front spindle tethers. The mounting holes must have a minimum of 3/4 inch of metal from the center of the mounting bolt to the edge of the bracket.
 - d.) Wheel bearings must be magnetic steel, tapered roller bearings and bearing races. The bearings, races and seals must be assembled separately in the hubs.
 - e.) Aluminum or magnetic steel hubs will be permitted. Only standard type wide five hubs using an inner bearing race with a maximum inside dimension of 1.995 inches and an outer bearing with a maximum inside dimension of 1.885 inches will be permitted. This does not apply to the 5 X 5 design steel hub designs. All hubs must use a moly type grease. Hubs that require oil as a lubricant will not be permitted.
 - f.) A single tether on the front spindle linked to the frame must be used.
 - g.) The front spindles should be linked to the frame using two (2) Vectran® HS V-12 fiber cables on both the left side and right side. The fiber cables must be attached around the frame rearward of the upper A-frame mounts and forward of the front sub-frame bars (#16 A&B) using a choker-type hitch. The fiber cables should be attached to the tether attachment brackets mounted on the front spindles as described in 12-5B using a 1/2 inch minimum diameter magnetic steel bolt. The fiber cables must be constructed from a continuous loop of 5/16 inch diameter 12 strand cable (with a red tracer thread) woven from Vectran® HS V-12 fiber. The fiber cables should have the dated sleeve attached to the center of the continuous loop. The fiber cables must be from the approved manufacturer listed below:
- MANUFACTURER PART NUMBER
Amick Industries MD-103R2

The fiber cables and components (including expiration date and part number) must be in good quality condition and must remain as manufactured. The fiber cables must not be used past their expiration date which is three (3) years after the date of manufacture.

7. Tread Width Requirements

- a.) All cars must maintain the following tread width requirements. A minimum front and rear tread width of 82 inches and a maximum tread width of 83-3/4 inches will be permitted. The tread width will be determined by measuring the left outside wheel bead surface to the right outside wheel bead surface at spindle height.
- b.) Aluminum or steel spacers will be permitted to utilize the maximum allowable tread width.

8. Wheelbase Requirements

- a.) On either side of the car the minimum wheelbase that will be permitted is 106 inches and the maximum wheelbase that will be permitted is 108 inches.
- b.) When measuring the wheelbase, the maximum allowable difference must not exceed one (1) inch plus or minus (+/-) on the opposite side. Any device or procedure which has the ability to dynamically change the wheelbase beyond normal travel parameters will not be permitted.

9. Body Height / Ground Clearance Requirements

Body Height Requirements

- a.) Body height will be determined by measuring (with the driver) the overall height of the car six (6) inches back from the leading edge of the roof at the roof centerline. The minimum height must be 39-1/2 inches. The rear of the roof at the highest point must not be more than 3-1/4 inches higher than the actual front measurement.
- b.) Competitors presenting cars for inspection must have their tires inflated to the recommended technical inspection air pressure as specified by the participating tire manufacturer for the Event. If tire pressure(s) are not at the recommended technical inspection pressure(s) after competition, tires will be reinflated to the recommended technical inspection pressure(s) as specified by the participating tire manufacturer for the Event.

Ground Clearance Requirements

- a.). All ground clearance requirements will be measured with the driver in the car.

10. Car Height Adjustment / Handling Devices

- a.) The only device permitted for adjusting the height of a car will be the front and rear coil over spring units as described in sub-section m.8.2. Adjustments will be permitted during an Event but must be done in a manner that results in the car maintaining body height requirements, as described in sub-section m.8.9.
- b.) Any device(s) for adjusting the handling characteristics or the car's height, which can be activated by the driver, will not be permitted inside of the driver's compartment.
- c.) Electrical, pneumatic, hydraulic, remote control, or any other devices, which change the handling characteristics or height of the car, will not be permitted.
- d.) Devices and/or procedures to, or used to, reduce or hold the car lower than the normal stiffness of the springs will not be permitted.
- e.) Car height adjustments will not be permitted on the left front suspension during a Race unless approved by Race of Champions Officials.

11. Steering Components

- a.) All steering components must be approved by the Race of Champions. Prior to being used in competition, all major steering components must be submitted, in a completed form/assembly, to the Race of Champions Officials for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until Race of Champions determines that such part is no longer eligible.
- b.) Rack and pinion steering will be permitted.
- c.) All cars must be equipped with a magnetic steel steering shaft.
- d.) Tie rods, drag links and steering component parts must be heavy-duty. Holes and/or other modifications in steering components that, in the judgment of Race of Champions Officials, have been made with the intent of weight reduction, will not be permitted.
- e.) The center top of the steering post must be padded with at least two (2) inches of resilient material acceptable to Race of Champions Officials.
- f.) A quick-release steering wheel coupling with a magnetic steel housing acceptable to Race of Champions Officials must be used. The steering wheel coupling must meet the SFI 42.1 specification and display a valid SFI 42.1 label on the outside surface. The magnetic steel housing must not be covered with plastics or coatings.

- g.) The use of universal joints in the steering shaft must be acceptable to Race of Champions Officials. It is recommended that a minimum of two (2) universal joints be used forward of the firewall.
- h.) Steering wheels must have solid, magnetic steel spokes.
- i.) The power steering pressure pump must be mounted and driven off the front of the engine.

12. Brakes / Brake Cooling

- a.) All brakes and brake cooling components must be approved by Race of Champions Officials. Prior to being used in competition, all brakes and brake cooling components must be submitted, in a completed form/assembly, to Race of Champions Officials for consideration of approval and approved by the Race of Champions. Each such part may thereafter be used until the Race of Champions determines that such part is no longer eligible. Holes and/or other modifications in the braking system or components that, in the judgment of Race of Champions Officials, have been made with the intent of weight reduction will not be permitted.

13. Brake Components

- a.) Only disc brakes with magnetic cast iron or cast steel round rotors will be permitted. Only metal brake calipers will be permitted.
- b.) Brakes must be operational on all four (4) wheels at all times. Valves of any type will not be permitted in the brake lines that will reduce or cut off the flow of brake fluid to a single wheel.
- c.) Inboard brakes will not be permitted.
- d.) Only one (1) brake caliper per wheel using only two (2) brake pads per caliper will be permitted. Front brake calipers must be mounted on the rear of the spindles on both the left side and right side. Brake calipers and mounting must be acceptable to Race of Champions Officials. Brake calipers must be from an approved manufacturer. Race of Champions Officials may use a brake caliper provided by the respective manufacturer as a guide in determining whether a Competitor's brake caliper conforms to the specifications of the Rule Book.
- e.) A maximum of six (6) pistons will be permitted in all brake calipers.
- f.) Brake pads must have a magnetic steel backing plate.
- g.) **Brake rotors must be used as manufactured.** Brake rotors must be acceptable to Race of Champions Officials.
- h.) Master cylinder(s) and reservoir(s) should be mounted on the engine side of the front firewall. The master cylinder(s) must be metal and must be the pushpiston type. Only single-stage master cylinders will be permitted. Only one (1) bore size, per master cylinder, will be permitted. Pull type master cylinders will not be permitted.
- i.) Holes and/or other modifications in the brake pedal arm that, in the judgment of Race of Champions Officials, have been made with the intent of weight reduction will not be permitted.
- j.) Only mechanical, hand operated, cable driven brake bias adjustment systems will be permitted.
- k.) Inline brake proportioning systems will not be permitted.
- l.) Electronic wheel speed sensors or brake actuators will not be permitted.
- m.) Power assisted braking systems will not be permitted.
- n.) Quick disconnect fittings on the brake lines will not be permitted.
- o.) Brake pad retraction devices will not be permitted.

14. Brake Cooling

- a.) One (1) air duct per wheel may be used for brake cooling using a maximum three (3) inch diameter brake hose. All scoops must be acceptable to Race of Champions Officials. The maximum dimension of the front and rear brake air scoops will be three (3) inches by eight (8) inches. Front air scoops may be mounted to the outside of the front frame rails with the leading edge of the brake scoops not farther forward than the frame rail at the rear edge of the front bumper mount. Front air scoops may also be mounted to the sway bar arm or spindle. All brake scoops must be mounted vertical and must be operational. The rear brake air scoops mounted in the quarter panel or door must be painted the same color as the car. If the rear brake ducts are routed beneath the car, they must not be mounted lower than the bottom of the frame rail and must be mounted in a 1/2 inch by 1/2 inch angle frame. Only maximum three (3) inch brake blowers, one (1) per rear wheel, will be permitted. Brake scoops (NACA duct) mounted in the door or quarter panels must be flush with the outside of the body. A 1/2 inch air deflector may be attached to the rear brake scoops. If the brake scoops are not operational, they must be blocked off. Screens and air ducts, from the opening to the brakes, must be acceptable to Race of Champions Officials.
- b.) Only mechanical type brake fluid recirculating systems will be permitted. Motor driven brake fluid recirculators will not be permitted.
- c.) Liquid or gas cooling of the brakes will not be permitted.

15. Rear Axle

- a.) The rear axle must be acceptable to Race of Champions Officials and meet the following requirements:
- b.) Only aluminum or magnesium quick change rear end center sections equipped with aluminum or magnesium side bells will be permitted. Quick change rear end center sections must have a minimum cross section height of 12 inches at the center of the rear axle with a side bell minimum diameter of 12 inches and magnetic steel spur gears on the back side.
- c.) For specified events as noted in the Competition Format Sheet a 9"-inch type rearend may be permitted with a specified Race of Champions Series point and weight penalty for any competition utilizing this rear end.
- d.) A 10"-inch or 8"-inch ring and pinion will be permitted. A specific size of the ring and pinion may be determined and issued in bulletin format.
- c.) Only a magnetic steel lower jackshaft and driveshaft yoke will be permitted in the quick change rear end center section.
- d.) Full floating magnetic steel double splined rear axles will be permitted for competition.
- e.) Only locked rear drive axle assemblies will be permitted at all times during an Event.
- f.) Only magnetic steel axle tubes will be permitted.
- g.) The distance, measured from the center of the rear end housing to the rear hubs, left and right, at the point the wheels bolt on, must be within three (3) inches in length.
- h.) The rear end must be mounted so that the inside edge of the left rear tire is even with or outside the outermost edge of the left side frame rail.
- i.) Heating pads and/or blankets will not be permitted for warming the rear end assembly.
- j.) Any method or transmission gear higher than 1.18:1 designed to override the gear rule will not be permitted. The only high gear transmission ratio permitted will be 1.00:1. A tire circumference and air pressure minimum limit may also be in effect.
- k.) Race of Champions Officials may, at its discretion, require that all cars compete with a final drive gear ratio specified by Race of Champions Officials for each Event.
- l.) For purposes of checking a pre-determined final drive gear ratio, when jacked up both rear wheels must rotate in the same direction with each traveling the same rotational distance.

Race of Champions Asphalt Modified Gear Rule Chart for Reference ONLY (Track Size) 2020

For all tracks that are 1/2-mile and/or 5/8-mile in length the maximum gear ratio / gear rule will be 4:87 unless otherwise stated by Race of Champions Officials

Track Type	Quick Change Only	Maximum	Minimum
1/4 mile		5.97	5.60
3/8 mile		5.42	5.11
1/2 mile		4.87	4.60
5/8 mile		4.87	4.42
3/4 mile		4.34	4.12
1 mile		3.96	3.79

9.0 Roll Cage

1. Roll Bars

a.) As a minimum, all cars are required to have the basic and typical roll cage configured as shown in the NASCAR Diagrams #11A, B & C. Unless otherwise specified below, all roll bars must be made from round magnetic steel seamless tubing 1-3/4 inches by 0.090 inch minimum wall thickness meeting the ASTM A-519 specification. Electric resistance welded tubing, aluminum and/or other soft metals will not be permitted. Roll bar joints and intersections must be welded according to the ASTM specification for the material being welded. A maximum of one (1), maximum 1/8 inch diameter hole may be drilled at each welded roll cage joint for the purpose of purging the tubes when welding. Once constructed and installed, the roll cage must be acceptable to Race of Champions Officials. Holes and/or other modifications that, in the judgment of Race of Champions Officials, were made with the intent of weight reduction will not be permitted. Modifications or alterations which detract from or compromise the integrity or effectiveness of any roll cage component will not be permitted.

b.) Basic Roll Cage Structure:

(1) The main roll bar (#1 in Diagrams #11A & B) must be a continuous length of tubing with one end welded to the top of the right frame rail and one end welded to the top of the left frame rail and with both rising to maintain a minimum clearance with the "B" posts and follow along the inner surface of the roof panel with a minimum clearance for the roof panel. The main roll bar (#1) may be tilted a maximum of 20 degrees rearward. The main roll bar (#1) must also be braced with one (1) diagonal bar (#5) and one (1) horizontal shoulder bar (#7). All bends in the main roll bar (#1) must be as symmetrical as minimum clearances permit.

(2) The distance from the center of each of the front roll bar legs (#2 A & B) to the center of the main roll bar (#1) must not measure less than 39-1/2 inches. Each of the front roll bar legs (#2 A & B) must be constructed from a continuous length of tubing. One leg must be welded perpendicular to the top of the right frame rail and one leg welded perpendicular to the top of the left frame rail with both legs rising vertically a minimum of 21-1/4 inches before bending inward and rearward to maintain a minimum clearance with the "A" posts. Both legs must follow along the inner surface of each respective "A" post. The front roll bar legs (#2 A & B) must be welded to the roof bar (#3) near the upper corners of the windshield opening or extend rearward along the outer edge of the roof and be welded to the main roll bar (#1).

(3) The roof bar (#3) which may be incorporated into the front roll bar legs (#2A & B) extends forward from the outer edges of the main roll bar (#1) with minimum clearance to the roof panel and remain parallel to the main frame rails. The roof bar must follow the contour of the windshield opening as it bends across the front and be within four (4) inches to the top of the windshield opening. The roof bar (#3) must extend from the edge of the roof on the left side across to the right side. The center to center width of the roof bar (#3) must be a minimum of 39 inches, and a minimum distance of 37-1/2 inches must be maintained from the center of the roof bar (#3) to the center of the main roll bar (#1).

(4) The centerline roof bar (#4) must be a continuous length of tubing, extending from the main roll bar (#1) forward to the roof bar (#3) near the car's centerline or be a diagonal bar from the intersection of the main roll bar (#1) and the roof bar (#3) on the right side and extend to the intersection of the roof bar (#3) and the left front roll bar leg (#2A) on the left side. The center windshield bar (#4A) must extend forward from the roof bar (#3) near the car's centerline and bend downward and be welded to the dash panel bar (#8) near the car's centerline.

(5) The main roll bar diagonal bar (#5), must form a straight line, with no bends and must begin near the upper left bend of the main roll bar (#1) behind the driver's head and after intersecting the horizontal shoulder bar (#7), it must be welded to the lower right side of the main roll bar (#1).

(6) One (1) horizontal shoulder bar (#7) must be a continuous length of tubing and must be welded, with no bends, inside the vertical legs of the main roll bar (#1) at a minimum height of 15-1/2 inches above the main frame rails. An additional shoulder belt bar (#7B) must be a continuous length of tubing and may be added above the horizontal shoulder bar (#7) to facilitate shoulder harness mounting height. The shoulder belt bar (#7B) must be welded to the main roll bar (#1) and the main roll diagonal bar (#5) or it may be bent tube constructed of 1-3/4 inches by 0.090 minimum wall thickness steel, round tubing, meeting ASTM A-519 specification, welded at each end to the horizontal shoulder bar (#7) to form a loop above the horizontal shoulder bar (#7).

(7) The dash panel bar (#8) must be a continuous length of tubing, with no bends, welded beneath the dash panel between the two (2) front roll barlegs (#2 A & B) at a minimum height of 15-1/2 inches above the main frame rail.

(8) (a) The door bars (#9 A & B), on both the left and right sides, must have a minimum of four (4) bars equally spaced from top to bottom that must be welded horizontally between the vertical uprights of the main roll bar (#1) and the front roll bar legs (#2 A & B). The top door bar on each side must maintain a minimum vertical height of 15-1/2 inches from the top of the main frame rails to its centerline and match up with the intersection of the dash panel bar (#8) at the roll bar legs (#2A & B) at the front and the intersection of the horizontal shoulder bar (#7) at the main roll bar (#1) at the rear. All door bars must be convex in shape. The door bars (#9 A & B) must have a minimum of six (6) vertical supports per side with two (2) equally spaced between each door bar. These supports must be made from a minimum of 1-3/4 inches by 0.090 inch wall thickness magnetic steel seamless round tubing (not numbered but shown in the left side view of diagram #3). Right side door bars must cover a minimum of 25 inches of door length and may be either four (4) horizontal bars with six (6) vertical studs or two (2) horizontal bars and two (2) bars configured in an X design. If the X design is used, a vertical bar must connect through the center of the X from the top horizontal bar to the frame.

(b) A 13 gage (0.0897 inch thick) magnetic steel anti-intrusion plate(s) must be securely welded to the outside of the left side door bars. The anti-intrusion plate(s) must fill the area between the horizontal centerlines of the top and bottom door bars, and vertical centerlines of main roll bar (#1), and the left front roll bar leg (#2A). The plate(s) must be formed to match the curvature of the door bars. Plate(s) welded between the vertical upright bars should be as large as possible. All plate(s) must have the corners welded with one (1) inch of weld followed by a maximum of three (3) inches of surface not welded and followed again by a minimum one (1) inch weld. To facilitate emergency removal of the left side door bars (#9A), the anti-intrusion plate should have six (6), 2-1/8 inch diameter holes cut in the anti-intrusion plate, with three (3) holes forward of the

front vertical supports and three (3) holes rearward of the rear vertical supports in the following locations: The upper two (2) holes must be centered vertically between the left side door bars (#9A-1&2), at an on-center distance of three (3) inches from the center of the front vertical support and the rear vertical support. The middle two (2) holes must be centered vertically between the left side door bars (#9A-2&3), at an on-center distance of three (3) inches from the center of the front vertical support and the rear vertical support. The lower two (2) holes must be centered vertically between the left side door bars (#9A-3&4), at an on-center distance of three (3) inches from the center of the front vertical support and the rear vertical support (see Diagram #9A).

(9) All cars must have a foot protection bar acceptable to the Race of Champions Officials installed on the left side of the roll cage. The foot protection bar must be located at or in front of the pedal assembly, when viewed from the side and above. The foot protection bar must be completely welded to the left front roll bar leg (#2A) and extend forward and be completely welded to the main frame rail or front sub-frame.

(10) The vertical vent window bars (#10 A & B) must each be a continuous length of tubing welded from the upper surface of the top door bars on the right side and left side to the front roll bar legs (#2 A & B). The vertical vent window bars (#10 A & B) must be perpendicular to the top door bars (#9 A & B). A minimum of one (1) vertical bar must extend from the roof bar (#3) radiused outward and turn down to the top horizontal door bar (#9A) on the driver's side. The vertical bar must be a minimum 1-1/2 inch diameter by 0.090 inch wall thickness magnetic steel seamless round tubing and must be located in line with the driver and must not extend forward of the left side headrest/head surround assembly.

(11) The two (2) angular supports (#11 A & B) must be welded to the top of the main frame rail and to the bottom surface of the bottom door bar on both the left and right side.

(12) The rear support bars (#13 A & B) must be continuous lengths of tubing welded to the left and the right back side of the main roll bar (#1) near the roof panel at the top. They must extend to and be welded to the top of the rear sub-frame rail within one (1) inch of the rear edge of the fuel cell.

(13) The two (2) front sub-frame bars (#16 A & B) must be a minimum 1-3/4 inch diameter by 0.083 inch wall thickness magnetic steel seamless round tubing. They must be welded to the right side and the left side of the front roll bar legs (#2 A & B) at a minimum height of 15-1/2 inches. The front sub-frame bars (#16 A & B) must extend forward, turn down, and must be welded to the front sub-frame rails.

3. Gussets

(1) Gussets must be used at the intersection where the main roll bar (#1) and the front roll bar legs (#2 A & B) meet the main frame, and the gussets must be constructed using a minimum one (1) inch wide by two (2) inches high magnetic steel box tubing.

(2) Gussets must be used at the intersection where the front roll bar legs (#2 A & B) intersect the roof bar (#3), and the gussets must be constructed from a minimum 0.095 inch minimum thickness triangular shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.

(3) Gussets must be used at the intersection of main roll bar (#1) and the front roll bar legs (#2 A & B) with door bars (#9 A & B) and the gussets must be constructed from a minimum 0.095 inch minimum thickness triangular-shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.

(4) Gussets must be used at the intersection of main roll bar (#1) and the rear support bars (#13 A & B), and the gussets must be constructed from a minimum 0.095 inch minimum thickness triangular-shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.

4. Roll Bar Design

a.) For the approved location of the various roll bars, please reference both the basic roll cage diagrams and the typical roll cage diagrams in the rear pages of the NASCAR Rule Book.

b.) Modifications to the basic and typical roll cage design described above must be submitted in blueprint and/or computer aided design (CAD) files for acceptance to the office of the Race of Champions at least 60 days before the design can be entered in competition. If the Race of Champions accepts the modification as set forth in the submitted files the Competitor must submit for inspection a completed frame and roll cage at least 30 days prior to the date of intended competition. Acceptance of the submitted blueprint and/or computer aided design (CAD) files does not guarantee acceptance of the completed frame and roll cage design, and the Race of Champions may decide not to accept such design even if it is the same as the submitted files. If the Competition Administrator accepts the completed frame and roll cage, it may then be

used in competition in the form accepted, unless and until the form is no longer approved by the Race of Champions.

c.) All roll bars within the driver's reach must be covered with impact absorbent material manufactured to the SFI 45.1 specification and be acceptable to the Race of Champions Officials. Impact absorbent material used on roll bars should meet the SFI 45.1 specification and be imprinted on the outside surface with the SFI logo.

d.) All references to the roll cage, roll bars, roll cage bars or the roll cage bar design specified in other sub-sections of the Rule Book must refer to sub-section this sub-section.

h.) At the discretion of the Race of Champions Officials, additional material and/or tubing may be required to be welded to any car that does not conform to the January 1, 2020 roll cage or roll bar specifications as described in this sub-section.

10.0 Wheels

1. Wheels

a.) The wheels must be acceptable to Race of Champions Officials and meet the following requirements:

b.) Only 15 inch diameter five (5) lug reinforced magnetic steel wheels with a maximum width of 15 inches will be permitted.

c.) Any offset (backspacing) will be permitted.

d.) Steel valve stem hardware recommended by the manufacturer must be used. Valve stem caps must be installed at all times during competition.

e.) Only solid, one-piece, heavy-duty 5/8 inch magnetic steel lug bolts and standard one (1) inch hex, fully threaded, solid, one-piece magnetic steel lug nuts, tapered on at least one (1) side, will be permitted. The first thread on each lug bolt must be visible from the front of the lug nut when the lug nut is installed. The same style lug bolt must be used for practice, qualifying and the Race. Design modifications to the lug bolts will not be permitted.

f.) Bead locks will not be permitted.

g.) Any device, modification or procedure to the tire, wheel or valve stem hardware, that in the judgment of Race of Champions Officials is used to release pressure (beyond normal pressure adjustments) from the tire and/or inner shield, will not be permitted.

11.0 Tires

1. Tires

a.) Only approved tires will be permitted. Approved tires are those tires that comply with the requirements of this rule and are recommended in writing, with prior notification to the Race of Champions by the Race of Champions-approved tire manufacturer for use by Competitors in the Event.

2. Physical Requirements

a.) All four (4) tires must be the same make and the same tread design.

b.) Any approved tire will be permitted provided the tire does not exceed the maximum sidewall measurement of 16.45 inches at 20 pounds air pressure mounted on a 15 inch width rim.

3. Tire Manufacturer Obligations

a.) The tire manufacturer must provide the Race of Champions with the following information in writing two (2) weeks prior to the date of the Event. (1) Tire identification markings for each tire must be unique to one (1) particular size, construction, and rubber compound combination.

(2) The recommended position on the car for each tire being used in the Event.

b.) The same tires must be made available to each Competitor.

4. Tire Measurement Procedure

a.) A Race of Champions-approved measuring device will be used to determine the maximum size of the tire. Tires may be selected at each Event by Race of Champions Officials for measurements. Tires to be measured must be mounted on a 15 inch wheel of the proper rim width. Twenty pounds air pressure will be required for the measurements.

5. Tire Usage Rules

a.) All tires must be used in approved positions. Approved positions are those positions on the car recommended in writing with prior notification to the Race of Champions, by the Race of Champions-approved tire manufacturer for its tires used by Competitors in the Event.

b.) Unless otherwise authorized by the Race of Champions, all tires to be used for practice or qualifying must be purchased and mounted at the Event from the Race of Champions-approved tire supplier.

- c.) Unless otherwise authorized by the Race of Champions Officials, at all tracks teams will be required to use sticker tires (new tires) for qualifying and/or group qualifying, purchased on the day of the event.
- d.) Immediately following a qualifying attempt, wheels and tires from all qualified cars may be impounded and/or marked by Race of Champions Officials. Unless otherwise authorized by Race of Champions Officials, all tires used in qualifying must be used for the start of the Race. The impounded tires will be returned when the cars are prepared for the Race. The tires must be replaced in the positions from which they were removed.
- e.) Unless otherwise authorized by Race of Champions Officials, Competitors will not be permitted to make tire changes prior to the completion of the first official green flag lap of the Race.
- f.) The Race of Champions Officials may approve the replacement of an impounded tire when recommended by the tire manufacturer's representative without a starting position penalty provided the replacement tire carries the same manufacturer identification number as the tire used for qualifying.
- g.) The Race of Champions-approved tire supplier may re-balance or re-mount tires under the supervision of Race of Champions Officials.
- h.) Tire or wheel warming, using heaters, blankets, micro-wave or any other method will not be permitted.
- i.) Should identification numbers or serial numbers be defaced on any previously approved tire, this tire will be ruled ineligible for competition.
- j.) Tires that, in the judgment of Race of Champions Officials, have been altered by unauthorized treatment will not be permitted.
- k.) Hand grooving, buffing, grinding, and/or cutting on any area of the racing tire will not be permitted.
- l.) The Race of Champions Officials may establish a tire change rule for the particular Event being run. This rule shall be made known to all the Competitors at the Pre-Race driver's meeting.
- m.) Competitors presenting cars for inspection must have their tires inflated to the recommended technical inspection inflation pressures as specified by the participating tire manufacturer for the Event. If tire pressure(s) are not at the recommended technical inspection inflation pressures after competition, tires will be adjusted to the recommended technical inspection inflation pressures as specified by the participating tire manufacturer for the Event.

12.0 Safety

1. Personal Safety Equipment

a.) General

- (1) Each Competitor is solely responsible for the effectiveness of personal safety equipment used during an Event. The Race of Champions and/or Race of Champions Officials ARE NOT RESPONSIBLE FOR THE EFFECTIVENESS OF ANY PERSONAL SAFETY EQUIPMENT.
- (2) Each Competitor is expected to investigate and educate himself/herself fully with respect to the availability and effectiveness of personal safety equipment. The Race of Champions may, from time to time, schedule information sessions with Competitors and safety experts. Each Competitor is expected to attend and participate in such sessions. Sessions may include training from the Motorsports Safety Education Foundation, Inc. (<http://www.motorsportssafety.org/>)

b.) Protective Clothing

- (1) **IT IS THE RESPONSIBILITY OF THE DRIVER AND CREW MEMBER, NOT THE RACE OF CHAMPIONS, TO ENSURE THAT HE/SHE MAINTAINS, WEARS AND PROPERLY USES PROTECTIVE CLOTHING.**

DRIVERS – Unless otherwise authorized, while on the track during the Event, Drivers should comply with the following:

	Use Required	Use Recommended	SFI Specification (minimum)	SFI Specification (recommended)	SFI Label Visibly Displayed
Uniform	X		3.2A/5		Outside Surface of Left Sleeve
Shoes	X		3.3		X
Gloves	X		3.3		X
Head Socks		X	3.3		X
Helmet Skirts		X	3.3		X
Underwear		X	3.3		
Socks		X	3.3		
Helmets	X Refer to Helmet Section				

CREW MEMBERS – During race conditions where servicing of the car is required, any crew member who steps into the car servicing area should comply with the following:

	Use Required	Use Recommended	SFI Specification (minimum)	SFI Specification (recommended)	SFI Label Visibly Displayed
Uniform	X		3.2A/1 3.2A/5		Outside Surface of Left Sleeve
Shoes	X		3.3		X
Gloves		X			X
Head Socks		X			X
Helmet Skirts		X			X
Underwear		X	3.3		
Socks		X	3.3		
Helmets	X Refer to Helmet Section				

FUEL HANDLER (CREW MEMBER) – During race conditions, any crew member involved in fueling the car or handling or transporting fuel in the garage or pit area should during racing conditions should comply with the following:

	Use Required	Use Recommended	SFI Specification (minimum)	SFI Specification (recommended)	SFI Label Visibly Displayed
Uniform	X		3.2A/5		Outside Surface of Left Sleeve
One-Piece Uniform		X		3.2A/5	Outside Surface of Left Sleeve
Shoes	X		3.3		X
Gloves		X			X
Apron	X		52.1		
Head Socks	X		3.3		X
Helmet Skirts	X		3.3		X
Underwear		X	3.3		
Socks		X	3.3		
Full Face Helmet with Covering Face Shield	X Refer to Helmet Section				

c.) Other Safety Devices

(1) Each car **should have**, within the driver's reach, a manually controlled push or pull knob which activates a built-in, fully charged fire extinguishing pressurized cylinder with a visible, operating pressure gauge. It is recommended that an automatic thermally activated discharge nozzle be used in addition to the manually controlled push or pull knob. This extinguisher system must meet the SFI 17.1 specification and display a valid SFI 17.1 label. This extinguisher should be certified by the manufacturer every two (2) years. An additional manufacturer's label with a visible date code must be located directly below the pressure gauge on the surface of the cylinder. This fire extinguisher cylinder must be securely mounted beyond the right side of the driver's seat, above the interior sheet metal on the horizontal shoulder bar (#7) or on the top right side door bar. Mounts must be secured to the horizontal shoulder bar (#7) or the top right side door bar and it must use a mounting system acceptable to the Race of Champions Officials which secures both ends of the cylinder for its full circumference and attaches securely to the roll cage structure of the car. Hose clamps, worm drive clamps or cable ties will not be permitted. A device(s) must be installed to keep the cylinder from sliding out of the mounting system. Clamp style or "figure eight" mounts must completely encircle the circumference of the 1-3/4 inch outside diameter of the roll bar. This cylinder must contain a minimum of five (5) pounds of fire extinguishing agent, visibly designated on the label as DuPont FE-36, 3M NOVEC 1230 or equivalent type agent. The primary purpose of

this system is to protect the driver. Nozzle(s) must be designed for the extinguishing agent used and should not be pointed directly at the driver, but should be mounted to provide flooding of the driver's compartment to the manufacturer's recommendation. If engine compartment nozzle(s) are used with this cylinder, the fire extinguishing cylinder size must be increased to a minimum of 10 pounds of fire extinguishing agent, visibly designated on the label as DuPont FE-36, 3M NOVEC 1230 or equivalent type agent to be used for this system. All discharge lines and fittings must be steel or steel reinforced hose although nozzles may be aluminum. Cylinders for all agents must be DOT-approved steel or aluminum. Carbon fiber or composite cylinders will not be permitted.

(2) It is recommended that each car have an additional fire extinguishing cylinder solely dedicated to extinguish the fuel cell area (trunk) and as an option, the same fire extinguishing cylinder may also be directed to the engine compartment area with the use of a T-type fitting and thermally activated discharge nozzles. This extinguisher must meet the SFI 17.1 specifications and display a valid SFI 17.1 label. This extinguisher should be certified by the manufacturer every two (2) years. An additional manufacturer's label with a visible date code must be located directly below the pressure gauge on the surface of the cylinder. This cylinder must be mounted beyond the right side of the driver's seat above the interior sheet metal on the horizontal shoulder bar (#7) or the top right side door bar in the driver's compartment and it must use a mounting system acceptable to Race of Champions Officials which secures both ends of the cylinder for its full circumference and securely attaches to the roll cage structure of the car. Hose clamps, worm drive clamps or cable ties will not be permitted. A device(s) must be installed to keep the cylinder from sliding out of the mounting system. Clamp style or "figure eight" mounts must completely encircle the circumference of the 1-3/4 inch outside diameter of the roll bar. This cylinder must contain a minimum of 10 pounds of fire extinguishing agent, visibly designated on the label as DuPont FE-36, 3M NOVEC 1230 or equivalent type agent. This cylinder must be activated by an automatic, thermally activated discharge nozzle(s) recommended by the manufacturer for this application. This automatic system may have a manual and/or pneumatic override from the driver-activated system. If the engine compartment discharge option is used, then an additional automatic, thermally activated discharge nozzle must be located under the hood forward of the firewall. All discharge lines and fittings must be steel or steel reinforced hose although nozzles may be aluminum. When routing pressurized fire extinguisher lines (thermally activated) either to the trunk area or the engine compartment, the lines will only be permitted to pass through the firewall near the longitudinal centerline of the vehicle. All cylinders must have an indicator gauge and identifying label readily visible for inspection purposes. The gauge must be compatible with the agent used in the cylinder. Cylinders for all agents must be DOT-approved steel or aluminum. Carbon fiber or composite cylinders will not be permitted.

(3) All entrants should have in their garage or pit area as part of their equipment, at all times, a fully charged minimum 10 pound Class B fire extinguisher with a visible, operating pressure gauge.

(4). The use of portable pneumatic jacks (air jacks) will be permitted in the garage area only. When pneumatic jacks (air jacks) are used jack stands under the vehicle are required. At all times, when a vehicle is jacked up and crew member(s) go underneath the vehicle a jack stand(s) must be used.

d.) Passengers will not be permitted in or on a race car at any time.

2. Helmets / Head and Neck Restraint Devices / Systems

a.) Helmets

(1) Drivers must wear a full-face helmet carrying at least one (1) of the following certifications:
FIA 8860-2018

Snell SA 2015

Snell SA 2020

Helmet certification (label) must be affixed to the helmet at all times. Helmets should be fitted with a Race of Champions-approved helmet removal system. The following systems are currently approved:

Eject™ Helmet Removal System

(2) The driver must wear the helmet in accordance with the directions provided by the helmet supplier and/or manufacturer. Any modification to the helmet for any purpose should not detract from its effectiveness. Helmet surface protrusions such as visor tear-off posts should be removed.

(3) During Race conditions, any crew member who steps into the car servicing area should wear a helmet.

(4) During Race conditions, any crew member involved in fueling the car must wear a full face helmet with a covering face shield and a fire resistant head sock or helmet skirt. The head socks and/or helmet skirts must meet the SFI 3.3 specification and must visibly display a valid SFI 3.3

label. Helmets should be fitted with a Race of Champions-approved helmet removal system. The following systems are currently approved:

Eject™ Helmet Removal System

(5) IT IS THE RESPONSIBILITY OF THE DRIVER/CREW MEMBER, NOT THE RACE OF CHAMPIONS, TO ENSURE THAT HIS/HER HELMET IS APPROVED, CORRECTLY WORN, MAINTAINED AND PROPERLY USED.

b.) Head and Neck Restraint Devices/Systems

(1) At all times during an Event (practice, qualifying and competition), drivers must connect their helmet to an approved head and neck restraint device/system which is SFI-approved and acceptable to the Race of Champions. The device/system must meet the SFI 38.1 specification and must display a valid SFI 38.1 label. The head and neck restraint device/system, when connected, must conform to the manufacturer's mounting instructions, and it must be configured, maintained and used in accordance with the manufacturer's instructions.

(2) IT IS THE RESPONSIBILITY OF THE DRIVER, NOT THE RACE OF CHAMPIONS, TO ENSURE THAT HIS/HER DEVICE/SYSTEM IS RACE OF CHAMPIONS APPROVED, CORRECTLY INSTALLED, MAINTAINED AND PROPERLY USED.

(3) The following are the SFI-approved Head and Neck Restraint Devices/Systems that are currently acceptable to be utilized in competition with the Race of Champions:

MANUFACTURER MODEL OPTIONS

HANS Professional Series Fixed or Sliding Tethers

HANS Extra/Economy Series Fixed or Sliding Tethers

HANS Pro Ultra Sliding Tethers

HANS Sport Series Fixed or Sliding Tethers

HANS Sport II Series Sliding Tethers

Simpson Hybrid Fixed Tethers (formerly Hutchens)

Simpson Hybrid Pro, carbon Fixed Tethers

c.) SFI 38.1-approved head and neck restraint devices/systems will remain approved for use in competition until their expiration date which is five (5) years after the date of manufacture. At this time, the head and neck restraint device/system must be returned to the manufacturer for inspection and re-certification.

3. Seat Belts

a.) Each car must be equipped with an SFI 16.5-approved, minimum 5-point seat belt restraint system that displays a valid SFI 16.5 label. It is recommended that a SFI 16.6 seat belt restraint system that displays a valid SFI 16.6 label be used. When the 16.6 approved seat belt system is used, it must either be a 7 point or 9 point system only. When an ABTS (All Belts to Seat) seat is used the 16.6 approved seat belt system must be used. It is recommended that a 6-point (second anti-submarine belt) or 7-point (third anti-submarine belt) seat belt restraint system be used. The shoulder harness and lap belt assembly must not be more than three (3) inches (nominal) in width. The shoulder harness must not be less than two (2) inches wide (nominal) as it passes over the approved head and neck restraint system. Approved seat belt restraint systems must have a latching mechanism attached to the lap belt or, if a cam lock latching mechanism is used, it must be attached to the lap belt, the shoulder harness or the anti-submarine belts. This latching mechanism must provide a common connection and release for the lap belt, shoulder harnesses and the anti-submarine belts, and must be designed with a quick and easy one-handed, gloved release of all belts in all conditions. It must have one (1) of two (2) approved release designs:

(1) **Latch/Lever:** Utilizes a lever opening away from the body in a right to left hand movement, parallel to the lap belt with a complete release of all belts. The lever must have a provision to prevent an unintentional release.

(2) **Cam Lock:** A circular handle or raised surface that turns in both directions for a motion of not less than 30 degrees before completely releasing all belts. A downward facing tab or toggle may be used, provided that its length does not extend more than 1/2 inch beyond the outer diameter of the release mechanism unless a provision to prevent unintentional rotation or release is provided.

b.) The seat belt restraint system must be installed in accordance with the directions provided by the system supplier and/or manufacturer. In addition, please note the following guidelines:

(1) Lap belts must be installed and used in such a manner that, when secured to the latching mechanism, the seat belt webbing travels in a straight, clear and free path from the belt mount through the seat opening to the latching mechanism. Lap belt mounts must be able to swivel without binding or interference. When a driver is buckled in the seat, the free end of the seat belt webbing must rest in a position clearly aligned over the seat belt webbing entering any adjustment or latch release hardware.

(2) On the left lap belt, if a roller adjuster is used, it must have tension springs installed and it must be attached to and be a part of the latch release mechanism directly without any webbing loop. The roller adjuster must not be attached to the lap belt mounting tab at the frame. A 3-bar slider,

threaded to the manufacturer's instructions, may be used for the left lap belt length adjustment, in the absence of the roller adjuster. The 3-bar slider must be positioned outside the seat opening and as close to the mounting tab as possible. On the right lap belt, if a roller adjuster is used, it must have tension springs installed and the adjuster may be located anywhere on the belt except at the frame mounting tab. A webbing link may be used to connect the roller adjuster to the latching mechanism or a 3-bar slider, threaded to the manufacturer's instructions, may be used for the right lap belt length adjustment, in the absence of the roller adjuster. The 3-bar slider must be positioned outside the seat opening and as close to the mounting tab as possible. Wrap-around style lap belt mounts and clipon/hook/eyebolt style mounts will not be permitted; only tab style lap belt mounts secured with a nut and bolt will be permitted for aluminum

seats. Race of Champions-approved composite material seats must use the lap belt mounts which are integral with the seat and must be of the same mount style as approved with the seat.

(3) Shoulder belts must mount to horizontal shoulder bar (#7) or shoulder bar (#7B) only (as shown in the Diagram in the rear pages of the NASCAR Rule Book). If shoulder belt mounting brackets are used, the shoulder belt mounting brackets must not exceed three (3) inches in length and be a minimum 1-3/4 inches in width. The shoulder belt mounting brackets must be made of solid magnetic steel with a minimum thickness of 3/16 inch welded to the horizontal shoulder bar (#7) or shoulder belt bar (#7B). The shoulder belt mounting holes must have a minimum edge to hole distance of 1/4 inch. If the shoulder belt bar (#7B) is used, and the center-to-center distance from the horizontal shoulder bar (#7) is more than four (4) inches, then the shoulder belts must mount directly to the shoulder belt bar (#7B) or to tabs welded directly to the shoulder belt bar (#7B). The opening in the seat for this type of belt must be either a single or double open slot with a finished inside edge or a grommet installed. Only individual shoulder harness belts will be permitted. Y-type shoulder harnesses will not be permitted. Wraparound shoulder harness mounts will be permitted provided the belts do not cross behind the driver and all wrap-around mount style shoulder belts must be retained by a guide on horizontal shoulder belt bar (#7) or shoulder belt bar (#7B) to prevent lateral movement of the belt on the roll bar. Shoulder belts may cross behind the driver provided they use a tab-style mount and not a wrap-around mount. The seat opening for these crossed shoulder belts must be a single, open slot with a finished inside edge or grommet where the shoulder belts cross behind the driver. Each shoulder belt using a tab mount must use an individual mounting tab or steel sleeve welded through horizontal shoulder bar (#7) or shoulder belt bar (#7B) and be secured with a nut and bolt. Roller adjusters on the shoulder harnesses must have tension springs installed. Sternum or cross belts using metal or hard surface hardware will not be permitted.

(4) Approved anti-submarine belts must be mounted to the seat frame or a steel reinforced seat bottom mount. Either wrap-around or tab-style anti-submarine belt mounts will be permitted and must be installed in accordance with the directions provided by the system supplier and/or manufacturer.

c.) The manufacturer's label must not be located under the adjusting mechanism when the driver is buckled in the seat and has tightened the seat belts and shoulder harness. If the label is under the adjusting mechanism, the label must be removed and relocated in a manner that does not affect the integrity of the belt material. The date of manufacture must remain visible on the belts at all times. Seat belt restraint systems should not be used beyond two (2) years after their date of manufacture.

d.) The driver must use the seat belt restraint system at all times on the race track, in accordance with the instructions and/or recommendations of the system supplier and/or manufacturer, as set forth above.

e.) The SFI 16.5-approved seat belt restraint systems will remain approved for use in competition until their expiration date which is two (2) years after the date of manufacture. The seat belt restraint systems must be used as a complete restraint system. Brands may not be mixed.

f.) IT IS THE RESPONSIBILITY OF THE DRIVER, NOT THE RACE OF CHAMPIONS, TO ENSURE THAT HIS/HER SEAT BELT RESTRAINT SYSTEM AND ALL COMPONENTS ARE SFI 16.5-APPROVED AND LABELED, CORRECTLY INSTALLED, MAINTAINED AND PROPERLY USED.

4. Seats

a.) IT IS THE RESPONSIBILITY OF THE DRIVER, NOT THE RACE OF CHAMPIONS, TO ENSURE THAT HIS/HER SEAT, HEADREST/HEAD SURROUND ASSEMBLY AND ALL SEAT COMPONENTS ARE CORRECTLY INSTALLED, MAINTAINED AND PROPERLY USED.

b.) Each car should be equipped with an SFI 39.1 seat and headrest/head surround assembly displaying valid SFI 39.1 labels and be acceptable to Race of Champions Officials. Custom-manufactured aluminum seats constructed from solid aluminum sheet material from the seat bottom to above the driver's shoulders, acceptable to Race of Champions Officials, will be permitted. Race of Champions (SFI 39.1)-approved composite material seats will be permitted. Composite material seats and/or seats which incorporate lap

and/or shoulder belt anchorages are subject to additional testing with documentation supplied to the Race of Champions. Each composite seat must have a unique identifier that matches records on file with the Race of Champions. Seats constructed of multiple materials, including composite materials, must be 39.1-approved and must be acceptable to the Race of Champions. The SFI 39.1-approved seat and headrest/surround assembly will remain approved for use in competition until their expiration date which is two (2) years after the date of manufacture. Once a seat and headrest/head surround assembly has reached the expiration date, the seat and headrest/head surround assembly must be inspected and recertified by the seat manufacturer. All seat interiors must be lined with inserts and/or padding. It is recommended that a minimum thickness of two (2) inches of SFI 45.2 insert/padding be used. It is recommended that the padding meet the SFI 45.2 specification and display a valid SFI 45.2 label. All non-SFI 45.2 insert/padding materials must be 1/2 inch thick or less. No gaps or non-SFI 45.2 specification approved material(s) may be present between the seat structure and driver's uniform in the area directly under the driver with the exception of standard seat cover upholstery (1/4 inch thick maximum) or flame retardant knit materials. The area directly under the driver extends from the driver's waist (belt line) forward to the front edge of the sub-strap pass through holes, or four (4) inches forward of the lap belt mount, whichever is greater, as well as extends five (5) inches to both the left and right of the driver's centerline. It is recommended, a minimum thickness of 3/4 inches of insert/padding meeting the SFI 45.2 specification be used in this area directly under the driver. The area directly under the driver is shown in Diagram #13, in the rear pages of the NASCAR Rule Book. A 3/8 inch diameter inspection through-hole must be located on the driver's centerline between the leading edge of the lap belt pass through holes as shown in Diagram #13, in the rear pages of the NASCAR Rule Book. All seat coverings and/or upholstery should be flame retardant.

c.) Seats manufactured or recertified after January 1, 2014, should use the insert/padding meeting the SFI 45.2 specification and display a valid SFI 45.2 label. All non-SFI 45.2 insert/padding materials must be 1/2 inch thick or less. No gaps or non-SFI 45.2 specification approved material(s) may be present between the seat structure and driver's uniform in the area directly under the driver with the exception of standard seat cover upholstery (1/4 inch thick maximum) or flame retardant knit materials. A minimum thickness of 3/4 inches of insert padding meeting the SFI 45.2 specification should be used in this area directly under the driver. The area directly under the driver extends from the driver's waist (belt line) forward to the front edge of the sub-strap pass through holes or four (4) inches forward of the lap belt mount, whichever is greater, as well as extends five (5) inches to both the left and right of the driver's centerline. A minimum thickness of 3/4 inches of insert/padding meeting the SFI 45.2 specification must be used in this area directly under the driver. The area directly under the driver is shown in Diagram #13, in the rear pages of the NASCAR Rule Book. A 3/8 inch diameter inspection through-hole must be located on the driver's centerline between the leading edge of the lap belt pass through holes as shown in Diagram #13, in the rear pages of the NASCAR Rule Book. All seat coverings and/or upholstery should be flame retardant.

d.) The seat and headrest/head surround assembly must be installed in accordance with the directions provided by the system supplier and/or manufacturer. SFI 39.1 seats and headrest/head surround assemblies must not be modified or altered. The back of the seat, at shoulder level, must be positioned as close to the horizontal shoulder bar (#7) as possible.

e.) All seats should have padded seat leg extensions on the left side and right side. Leg extensions must be securely mounted to the seat and car structure. Leg extensions must be padded. It is recommended that the padding meet the SFI 45.2 specification and display a valid SFI 45.2 label. Composite material seat leg extensions should meet the SFI 56.1 specification for flammability. All leg extension coverings and/or upholstery should be flame retardant.

f.) Headrests/head surround assemblies should be designed to provide rigid support around both sides of the helmet and across the back and to the forward most point of the helmet chin bar. Extra length on the head surround must also account for forward head motion during an impact. The left side of the headrest/head surround assembly may be shortened to permit egress of the driver but must not be shortened to a location rearward of the helmet chin bar. Foam, tape or other nonoriginal coverings may not be added to the headrest without the approval of the seat manufacturer and must be acceptable to Race of Champions Officials. The headrest/head surround assembly must be rigidly bolted to the top of the seat using a minimum of 5/16 inch diameter bolts, except for the Race of Champions-accepted composite seats. Steel brackets welded to the roll cage must be a minimum of 1/8 inch thick and aluminum brackets welded to the headrest/head surround assembly should be a minimum of 3/16 inch thick. All bolts must have a minimum of 3/4 inch of metal from the center of the mounting bolt to the edge of the bracket. In addition, it is recommended that the headrest/surround assembly be bolted to the shoulder supports with a minimum 3/16 inch thick brackets and a minimum 5/16 inch diameter bolts. The headrest/head surround assembly must not extend into the window opening beyond the area defined by the upper roll cage. All headrests must be fabricated in a rigid construction and of materials which provide adequate support in an impact.

g.) All headrest/head surround assembly on both the left side and right side should be padded with flat impact absorbent material, a minimum of 2-1/2 inches thick, meeting the SFI 45.2 specification and display a valid SFI 45.2 label. On all headrest/head surround assemblies the area between the side of the driver's

helmet and the flat impact absorbent material must not be more than ½ inch on both the left side and right side.

h.) Optional strap-type headrest supports or nets must be equipped with a quick release fastener accessible by the driver.

i.) The upper seat back must be secured to horizontal shoulder bar (#7) or to a bracket that is secured to horizontal shoulder bar (#7) with a minimum of three (3) high quality 5/16 inch minimum diameter bolts through the horizontal shoulder bar (#7). For aluminum seats, if a seat bracket is used to attach the seat to the horizontal shoulder bar (#7), the bracket must be constructed using a minimum of 3/16 inch thick metal plate and it must have a minimum of 3/4 inch of metal from the center of the mounting bolt to the edge of the bracket or the bracket may utilize the composite seat bracket design. For composite seats, the seat bracket must attach the seat to the horizontal shoulder bar (#7) and must be constructed from magnetic steel.

Minimum upper seat bracket thicknesses:

Hendrick: 0.090 inch

Sabelt: 3/16 inch

Spraco: 3/16 inch

The magnetic steel seat bracket to be used with a composite seat must be constructed according to the manufacturer's instructions, including all required gussets and reinforcements (see Diagrams # 12A & B, in the rear pages of the NASCAR Rule Book). All gussets must be solid and must run from the centerline of the seat mounting hole to the centerline of the roll cage mounting hole. The outer diagonal gusset edge must be straight unless the gusset is relieved to make room for the horizontal shoulder bar (#7). Holes and or other modifications that, in the judgment of Race of Champions Officials, were made with the intent of weight reduction will not be permitted. The seat bracket must be fastened to the seat with a minimum of four (4) high quality 5/16 inch minimum diameter bolts for aluminum seats, and two (2) high quality 5/16 inch minimum diameter bolts for composite seats.

j.) The seat bottom must be secured to the car's structure with a minimum of two (2) high quality 5/16 inch minimum diameter bolts per side. Seat mount brackets or slotted mounting systems welded to the seat frame must be a minimum of 1/4 inch thick. All mounting brackets must have a minimum of 1/2 inch of metal from the center of the mounting bolt to the edge of the bracket. All seat mounting brackets, welded to the frame rail, frame crossmembers, floors, roll bars, or removable seat mounting frame assemblies, must be made of a minimum 1/4 inch magnetic steel if single shear or a minimum of 3/16 inch if the double shear configuration is used. If a slotted mount is used to mount the seat to the seat frame, the seat must be bolted to the seat frame bracket using an additional bolt to prevent sliding. When mounting through the aluminum seats or brackets large diameter washers must be used.

When an ABTS (All Belts To Seat) seat is used the seat must be secured to the vehicle's frame/roll cage assembly with a tubular seat frame which includes the seat mounting brackets. The tubular seat frame must be constructed from ASTM A513 type 5 round magnetic steel tubing with a 1-1/4 inch outside diameter and a 0.115 inch minimum wall thickness. The tubular seat frame must be secured at each end in a double shear configuration or must be welded at each end. If welded, a gusset must be used at each end. If using tubular seat frame mounting brackets, the tubular seat frame must have welded bungs with a 3/8 inch inside diameter installed. The welded bung must use a 3/8 inch magnetic steel hex head bolt or the welded bung may be threaded the entire length and welded around the entire circumference. A 5/8 inch maximum diameter through hole may be used on main frame assembly to locate weld bung. If tubular seat frame mounting brackets are used the mounting brackets must solid magnetic steel with a minimum thickness of 3/16 inch and a minimum bottom width of 1-1/4 inch. The seat frame mounting brackets must be completely welded to the main frame assembly and/or the horizontal tunnel bar (#6). Each mounting bracket must have a 3/8 inch seat frame mounting hole to attach the seat frame to the bracket. Slots will not be permitted in the seat frame mounting hole. The mounting hole must not be higher than 2-1/2 inches from the lower edge of the mounting bracket. The mounting bracket must have a minimum of 5/16 inch of metal from the edge of the mounting bolt to the outer edge of the bracket. All seat mounting frame configurations and specifications are shown in diagrams #12C and 12D in the rear pages of the Rule Book.

When an ABTS (All Belts To Seat) seat is used the seat must be secured to the vehicle's tubular seat frame assembly and horizontal shoulder bar (#7). An approved upper seat mounting bracket shown in diagram 12A in the rear pages of the Rule Book must be used. All upper seat brackets must be a minimum thickness of 0.090 inch. The upper seat bracket must be secured to the seat with a minimum of three (3) high quality 5/16 inch minimum magnetic steel bolts. The upper seat bracket must be secured to the horizontal shoulder bar (#7) with a minimum of three (3) high quality 5/16 inch minimum magnetic steel hex head bolts through the horizontal shoulder bar (#7). The seat bottom must be secured to the seat mounting brackets with a high quality 5/16 inch minimum magnetic steel hex head bolt two (2) per side using the seat manufacturer's designated mounting locations. The seat mounting brackets must be completely welded to the tubular seat frame. The seat bottom mounting brackets must be solid magnetic steel with a minimum thickness of 1/4 inch. The seat mounting bracket must have a minimum width of 1-1/2 inch or a maximum width of 2-1/2 inches at the bottom. The seat mounting bracket must have a 5/16 inch minimum mounting

hole to attach the seat to the bracket. Slots will not be permitted in the seat mounting hole. The mounting hole must not be higher than four (4) inches from the lower edge of the mounting bracket. The mounting bracket must have a minimum of 5/16 inch of metal from the edge of the mounting bolt to the outer edge of the bracket. Seat mounting bracket configurations and specifications are shown in diagram 12D in the rear pages of the Rule Book.

k.) The seat shoulder support angle should not exceed 25 degrees from vertical when measured where the driver's shoulder contacts the seat with the seat installed in the car. Additional angle may be added to the bottom of the shoulder support for driver arm clearance, if necessary. The interior shoulder support surface should be positioned perpendicular to the seat back in a plan view.

l.) Rib/chest support structures, if used, should not interfere with the natural ingress and egress of the driver from the seat. Rib/chest support structures, if used, should provide full coverage from the seat back to the front of the driver's chest. Partial rib/chest supports constructed of foam, meeting the SFI 45.2 specification, will be permitted. Rib/chest support structures should not continue forward past the front of the driver's chest and should not curve or wrap around the front of the driver's chest. Rib/chest support foam, meeting the SFI 45.2 specification will be permitted to curve or wrap around the front of the driver's chest.

5. Window Net

a.) A window net meeting the SFI 27.1 specification and displaying a valid SFI 27.1 label should be installed in the left side door window opening. The window net should not be used beyond two (2) years from the date of manufacture.

b.) The window net must be a rib-type construction made from minimum 3/4 inch, maximum one (1) inch wide material, with a minimum one (1) inch square opening between the ribs. The minimum window screen size must be 22 inches wide by 16 inches high.

c.) All window net mounts must be welded directly to the roll cage and must not attach to the door top or body exterior sheet metal. All window net mounts must be a minimum 1/2 inch diameter solid magnetic steel rod or a minimum one (1) inch wide by 1/8 inch thick flat magnetic steel and must be acceptable to Race of Champions Officials. The lower window net mounting bar must not extend above the door top.

d.) The window net, when in the closed position, must fit tightly and be secured with a lever-type quick release latch acceptable to Race of Champions Officials. The lever must be secured by a detent ball in the lever and may be supplemented by a Velcro®, fastener only, pins or clips will not be permitted. The latch must be mounted at the top in the front to the roof bar (#3) or at the top of front roll bar leg (#2A) near roof bar (#3). The forward edge of the window screen, when in the closed position, must be in line with or forward of the steering wheel.

13.0 Other

1. Accessories

a.) Except as provided below, cars and drivers will not be permitted to carry onboard computers, automated electronic recording devices, electronically actuated devices, smartphones/cell phones, smart watches, watches, micro-processors, recording devices, filming devices, electronic digital memory chips, traction control devices, digital readout gauges and the like, even if inoperable or incomplete. Competitors will not be permitted

to have or have had on his/her person or in his/her possession or in his/her car a device(s) at an Event designed specifically to enhance the traction capabilities of the car, even if inoperable or incomplete.

b.) For broadcasting and media-related purposes, the Race of Champions may permit or require selected cars to compete with broadcast telemetry or other positioning and informational systems. Unless otherwise authorized or required by the Race of Champions, the broadcast telemetry signal from these systems will be limited to the following parameters:

- (1) RPM (inductive pickup on the secondary wire only).
- (2) Transmission gear selection.
- (3) MPH (taken from sensors on the driveshaft or rear wheel only).
- (4) Brake pedal application.
- (5) Throttle position indicator (must not be attached to the carburetor).
- (6) Camera positioning and video switching.
- (7) All camera locations and styles must be acceptable to the Race of Champions.
- (8) Upon request of the Race of Champions Officials, Competitors must install the required camera(s) and broadcast system(s) in a manner and location acceptable to Race of Champions Officials.

c.) The Race of Champions may require cars to carry the Race of Champions-approved on-board impact accelerometers mounted in a standard location and manner approved by the Race of Champions. It is recommended that the mounting bracket be installed in the car. The mounting bracket must be welded to the

floor near the left side frame rail at the forward edge of the front of the seat and must be parallel with the bottom of the seat with the arrow on the bracket pointing forward. The Race of Champions shall own any and all data generated and/or collected by such accelerometers and shall control the use and dissemination of such data.

d.) One (1) Race of Champions approved timing and scoring transponder mounting bracket must be installed. Two (2) Race of Champions-approved timing and scoring transponder mounting brackets may be installed. One (1) on the left and one (1) on the right side rear frame rail, 150 inches rearward of the leading edge of the front bumper to the front edge of the transponder bracket, mounted vertically with square tab on the bottom, not higher than the bottom of the frame, unless otherwise authorized by the Race of Champions. The bracket will be fastened to the frame with 3/16 inch diameter small head pop rivets (from the outside) through the holes in the center of the bracket. When approved weight containers interfere, the transponder bracket must be welded to the outside vertical surface of the weight container.

e.) The Race of Champions may require cars to carry approved on-board data loggers equipped with designated sensors mounted in a standard location and manner approved by the Race of Champions. The Race of Champions shall own any and all data generated and/or collected by such data loggers and shall control the use and dissemination of such data. All Competitors must cooperate with Race of Champions Officials with the installation and operation of such data logging systems.

f.) Unapproved remote lap timing or speed sensing devices will not be permitted.

g.) All electrical wiring harnesses, switches, and connectors must be acceptable to Race of Champions Officials. All wiring must be point-to-point and each wiring connection must be easily traceable and removable from the car for inspection purposes.

h.) Competitor's use of filming and recording devices will be limited to internal review of pit stops only and not for promotion, resale or other commercial exploitation without the Race of Champion's prior, written approval. Filming or recording device(s) will not be permitted on board the race car at any time unless previously approved by the Race of Champions.

i.) Electronic oil, water and fuel pressure gauges and oil and water temperature gauges must be approved by the Race of Champions and they must be completely independent of the ignition system. All gauge sending units and sensors must be located forward of the front firewall.

j.) Gauges used in competition, including but not limited to tachometer, oil pressure gauge, oil temperature gauge, water temperature gauge and voltmeter, must be installed and functional at all times during competition. Ignition and accessory switches and interrupter system components must be installed at all times during competition.

k.) All electrical outlets used to connect the remote generator to the car must be in a location acceptable to Race of Champions Officials.

l.) Any devices which are intended as a driver aid and/or driver control to enhance the handling of the vehicle during competition will not be permitted.

m.) Water bottles must not be in the car during qualifying. Hydration systems, when used, must be installed in the same location for qualifying and the Race. The containers must be securely mounted to the chassis in a manner acceptable to Race of Champions Officials.

2. In-Car Radio Communications

a.) The in-car radio must be analog only and must not be capable of transmitting or receiving in a digitized, encrypted or scrambled format as determined by the Race of Champions. Keypad style and/or password protected radios will not be permitted. Only scanning of the one-way frequency 454.000 will be permitted. Scanning and/or channel hopping transmissions to or from the in-car radio will not be permitted other than the one-way frequency of 454.000. All transmissions to and from the in-car radio must be in the 450.000MHz-470.000MHz range, and all in-car radio transmitting and receiving frequencies including squelch codes should be registered annually in a

Radio Data Base. All frequency changes must be updated prior to being used during an Event and confirmed by the Race of Champion's Official Radio Supplier. The in-car radio is not permitted to transmit or receive any type of telemetry (data) signal or information other than audio communications and must remain independent from any electronic system in the car. Teams will not be permitted to rebroadcast transmissions to or from the in-car radio at any time during an Event. It is strongly recommended that all in-car radio frequencies be licensed for use by the Federal Communications Commission (FCC) and meet all applicable regulations and guidelines.

b.) Only one (1) Race of Champions-approved, two-way radio and one (1) radio push to talk button will be permitted. It is not permitted to have any frequency of any Competitor installed in the radio at any time. The car is permitted only one (1), approved radio wiring harness system.

c.) Other than antennas that are approved for broadcasting and media related purposes only, a single, Race of Champions-approved, radio antenna will be permitted inside the car or on the roof. It is suggested that radio antennas should not be mounted on the roof panel.

- d.) At all times during practice(s), qualifying and the Race the spotter must have radio communications with the driver and must monitor the Race of Champions frequency and the one-way driver radio frequency of 454.000. Spotters must be in the designated spotter location at all times during competition. The radio frequency being used will be made available by the Race of Champions Officials.
- e.) A one-way driver radio is mandatory utilizing the frequency 454.000MHz. From time-to-time that frequency may be adjusted at specific events. The radio frequency being used will be made available prior to the event by Race of Champions Officials. It is mandatory that the spotter monitor (scan) the one-way driver radio frequency for official communication.
- f.) Driver to driver radio communications will not be permitted.

14.0 Series Decal and Patches

1. Series Decals and Patches

- a.) There will be mandatory decals to be displayed on all cars entering into competition at all times as designated on the competition format sheet. Failure to display decals may result in a penalty as referenced in sub section K of the Race of Champions rule book.
- b.) There will be mandatory patches to be displayed on all drivers uniforms entering into competition at all times as designated on the competition format sheet. Failure to display patches may result in a penalty as referenced in sub section K of the Race of Champions rule book.