



Tomahawk Speedway Mini Sprint Class Rules

Updated 1-1-20

These rules are property of Tomahawk Speedway. The guidelines and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These guidelines shall govern the condition of events and participation therein. They are intended as a guide for the conduct of events and are in no way a guarantee against injury or death to a participant, spectator, or official. The Tech Director, or the management, shall be empowered to permit minor deviation from any of the guidelines and or regulations herein, or impose any further restriction, which, in his or her opinion, does not alter the purpose of the organization. Deviation of these guidelines and or regulations will be the responsibility of Tomahawk Speedway officials, whose decisions are final. Tomahawk Speedway may at any time out law any engine, chassis, or body part that may be too costly. Our goal is to keep short track racing as affordable as we can. All cars and drivers must have car and driver data sheet on file with Tech Director before the car is allowed on track. Any car or part maybe held for examination at any time. These rule maybe updated or changed at any time by track management. Must have proper wavers and forms on file with track management.

Rules

Age Drivers ages 5 through 13 may compete in the Junior Sprint Class. All drivers must have copy of birth certificate and release forms, signed by both parents, on file before being able to compete. A driver whose 14th birthday falls during the racing season will be allowed to finish the season in which they began accruing points before their birthday.

Chassis

Sprint car style cage and chassis is required. Roll cages shall be at least 1 inch .083 wall thickness mild steel, or 1 inch .065 wall thickness chromoly steel minimum. The front section of the cage shall be no further back than the steering wheel. Roll cage shall have sufficient fore and aft bracing and strength to support the weight of the car and driver in case of an upset. Bends must have at least 3-inch radius. No square or pointed corners allowed. Roll cage must be a minimum of 3" above the driver's helmet to the top of the cage at any point above the driver's helmet. It is mandatory to install a cross brace behind the seat to support the shoulder harness at a point not lower than 1 1/2" below or above the top of the drivers shoulders.

Must have a full floor pan from front of seat forward past the pedals.

Side nerf bars are required which will extend to within 2" of the outside of the rear tire but not beyond the rear tire. Front and rear bumpers are required and shall be at least as wide as the outside edge of the tires.

Bodies

All cars must have complete bodies of Sprint Car design only. Tail sections must be in place for all races. There must be a metal firewall between driver and engine, made of 24-gauge steel or .060" aluminum. Body of car must be made of aluminum, metal, fiberglass or high impact plastic. Mudguards must be metal, fiberglass or high impact plastic. Tops and body encasements are not allowed. Minimum right side opening will be 14" from the top of cage to top of mudguard or bar 16" from the front "A" tube to the back. The only part of the car allowed to be dismantled for driver to enter or exit is a quick release steering wheel hub. All mechanically operated devices must be mounted below the driver's shoulders for safety.

General

Wheelbase; Maximum 52 inches. Minimum 50 inches, center of front axle to center of rear axle. Track Width minimum of 32" and maximum of 46" center of tire to center of tire.

Wings

Single plane, square or rectangular top wing with a minimum size of 6 sq ft and maximum size of 10 sq ft is required. Right side board, maximum 42" x 20". Left side board, 42" x 20". The wing cannot be mounted outside the centerline of the tires. No wood except for ribs or spars inside center section. Lower front corner of the wings sides cannot be more than 4" below top of roll cage. Nose wings cannot exceed 24"x 18".

Nose Wings; Single plane, square or rectangular nose wings with a maximum size of 18" X 24" are allowed. Nose wing must not extend beyond the centerline of the front tires, or beyond the front bumper, and must carry car number. Maximum dimensions of each side panel are 9" X 21". Panels must be parallel

Steering and Suspension

A quick release type steering wheel is mandatory, and no plastic components can be used. Front wheels must be connected by a solid or tubular aluminum or steel tie rod. Suspension. Aluminum or steel body shocks are legal. Coil over shocks only. All suspension components will be steel or aluminum only. Rear axle to be steel or splined aluminum, 40mm minimum and 1.5-inch maximum diameter. Rear wheel drive only. All suspension bolts except wheel nuts must be secured by some type of locking device.

Hubs

Front hubs minimum 3/4" bearings designed for racing. Rear hubs: Douglas 5 x 130 type or equivalent designed for a racing application.

Engine: 2017 Junior Sprint Engine Rules Briggs World Formula 2/1/2017

All parts must be Briggs & Stratton factory production parts unless otherwise noted in these rules. No machining, polishing or alteration of any parts is permitted unless specifically noted in these rules.

717.1: Shrouds and covers: All shrouds and covers must be run as supplied. Cylinder shield may be bent slightly or drilled around spark plug hole to allow fitting cylinder head temperature lead and clearance for Coil Ground lead. Flywheel Cover, Top Cover and Plate are non tech items. They are replaced by Part # 555699.

717.2 : Header and silencer

717.2.1: Factory header or RLV part number 5442S. Any exhaust gasket or no exhaust gasket allowed. Sealer allowed on header. Header nuts are not required to be safety wired. Bottom bracing must be bolted to head. Factory header may be cut and turned to fit car as long as the overall length and tube size remains the same as the stock factory header: OAL 20.5" OD .9375" x .065 wall (ID .807 +/- .005) Coating the pipe is allowed.

717.2.2: Exhaust gas temp sensor is optional.

717.2.4: RLV Silencer #4100 required. Baffle rattle is allowed however if baffles have been altered or removed, the muffler will be deemed illegal.

Baffle holes are .128 inch(#30 drill bit) no go gauge. Coating is allowed

717.2.5: Springs attaching Silencer to header must be safety wired.

717.3 : Electric starter: Starter motor must be operational and capable of starting engine. Battery must be minimum of 8 AH rating and capable of starting warm engine. Recoil starter and flywheel starter cone optional. Starter support bracket P\N 557119 is optional.

717.4: Air filter must be Green Brand 40 X 75 filter attached directly to Carb. No Extensions or Adapters.

717.5 : Spark plug: Any commercially available, 10 mm thread, spark plug allowed. Spark plug must be stock. Indexing washers allowed. Removal of factory sealing washer is not allowed unless using head temp sensor ring.

717.6: Fuel pump must be B&S part 557033. Must be pulsed from intake manifold only.

717.7: Clutch: May be engine and/or Jackshaft mounted. Belt or chain drive from engine to jackshaft. May use #219 or #35 sprocket.

717.8: Rev Limiter: Rev Limit is 7100 rpm +/- 50 rpm. Rev limiter may be checked at any point in the race program. Rev limit will be checked with a suitable memory capable tachometer attached to the plug lead and the motor accelerated until the rev limiter begins to function. All rev limiters must function within 100 rpm when checked with the same instrument. Each competitor is allowed one courtesy check of the rev limiter with the instrument to be used at the event.

717.9: Fuel: Fuel to be Kidsprint approved Racing Gas. Racing gas will be Sunoco Purple; VP C-10 or C-12 or Rocket Fuel 111 octane no additional additives. Fuel may be checked by any means. Each competitor is allowed one courtesy check of fuel in his tank with the method to be used at the event. Compliance with the common source will be determined by zeroing a Digitron gas meter in a sample of source gasoline and allowing each competitor deviation of + / -5 points from zero and/or by any Digitron recommended method.

717.9.1: OIL: Any crankcase oil is allowed BUT MUST PASS THE BURN TEST AND/OR THE SNIFFER TEST. (Recommend TIFF Industries Sniffer)

717.10 Carburetor: Stock Walbro PZ carburetor only. No alterations allowed; choke excluded. Carb mount boot Briggs #557130 is required. New Carburetor may have different color and exterior appearance.

717.10.2 : Slide must remain unaltered. Unaltered Stock needle marked CDB is required.

717.10.3: Choke assembly is optional and may be removed and shaft holes plugged with silicon. If choke is retained choke lever may be fastened open with spring, rubber band or tie wrap.

717.10.4: Pilot Jets: 36, 38, 40 are allowed. Check by .017 inch (#77drill bit) no go gauge. Drilling or reaming is allowed.

717.10.5: Main Jets: 90, 93, 96, 98, 100, 102 are allowed. Check by .041 inch (#59 drill bit) no go gauge. Drilling or reaming of jets allowed.

717.10.6: Venturi measurement

717.10.6.1: Vertical .9902" max

717.10.6.2: Horizontal .7382" max

717.11:Camshaft: No alteration of the camshaft by machining, polishing, or altering is allowed. Must compare to stock Briggs part. First camshaft check will be taken at the valve spring retainers. With the lash set at zero, the movement of the valve spring retainer may not exceed .3085".

Any camshaft with a measurement at the push rod of less than .306 should be removed and measured on the grind and checked for alteration. Camshaft must be as supplied with Stock Profile and compression relief.

717.11.1: Install degree wheel, using positive stop method.

717.11.2: Check ignition timing. With the right edge of the magnet (not the magnet holder) aligned with the right edge of the notch on the bottom of the right leg of the coil.

The degree wheel must indicate between 23 and 29 degrees BTDC. Flywheel key must have BS logo. Minimum key width is .182 inch.

717.11.3: Tech camshaft at pushrods. Push gently down on dial indicator stem to ensure that there is no lash when pushrods are going down.

Exhaust Lobe Lift Intake Lobe

75-71 BBDC .020 34-30 BTDC

57-53 BBDC .050 18-14 BTDC

39-35 BBDC .100 2BTDC-2ATDC

25-21 BBDC .150 13-17 ATDC

9-5 BBDC .200 29-33 ATDC

12-16 ABDC .250 49-53 ATDC

25-29 ABDC .275 63-67 ATDC

.3085 MAX .3085 MAX

70-66 BTDC .275 31-28 BBDC

57-53 BTDC .250 18-14 BBDC

37-33 BTDC .200 2-6 ABDC
21-17 BTDC .150 18-22 ABDC
6-2 BTDC .100 33-37 ABDC
11-15 ATDC .050 49-53 ABDC
29-33 ATDC .020 66-70 ABDC

717.12: Deck/Piston Clearance: Machining of deck surface is permitted. There will be no knife edge finishes allowed, Smooth finish only. Piston pop up cannot exceed .035" above block surface in the center of the piston. When measuring piston pop up, use the backside of the Sox pushrod gauge or set flat bar stock across piston parallel to wrist pin. Use dial indicator to check pop up on center of this bar. Carbon may be removed from the top of the piston prior to measuring. Top of piston may be filed to relieve protrusions left by number stamp on top of piston.

717.13: Bore: Maximum bore 2.725". Factory oversize pistons allowed.

717.14: Stroke: Maximum stroke is 2.204". Push piston down to take up rod play.

717.15: Head gasket: Any commercial available head gasket may be used but must maintain same configuration of shape of standard Briggs World Formula gasket. Minimum thickness is .040 measured with a micrometer from inside of cylinder hole of gasket at 4 points between the head bolts. Fire Ring B&S gasket is legal. Current engines using .010 and thicker will be legal to 07/15/2017. This will allow those engines that are fresh to be used til that date then rebuilt to .040 spec.

717.16: Head: Head may not be altered in any way from factory specifications. NO PORTING OF ANY SHAPE OR WAY! Heat sink P\N 555690 is allowed.

717.16.05: Cylinder head gasket surface may be machined. Remove Carbon first. Depth from gasket surface to head surface between valves must be a minimum of .319". Measure by using a depth micrometer. No knife edges or angle milling of head.

717.16.1: Rocker Arms / Push Rods: rocker arms must be as produced. Length must be 2.820 inches minimum. Push rod length 5.638" no go to 5.656 must go. Push rod diameter is .185 to .190".

717.16.5.1: Intake port: No media blasting of any type allowed on intake port in\on the head or manifold. Must be as cast.

Maximum diagonal measurement is 1.101".

Maximum vertical measurement is 1.044".

717.16.5.2: Exhaust port: No media blasting of any type allowed on exhaust port. Must be as cast. Maximum I.D. of shoulder in bottom of exhaust port is .854"

717.16.6: Valve seats - one 45° angle only

717.16.6.1: Intake valve seat diameter is .966" - .972".

717.16.6.2: Exhaust valve seat diameter is .844" - .850".

717.16.7: Valves

717.16.7.1: Intake valve head diameter is 1.055" - 1.065".

717.16.7.2: Exhaust valve head diameter is .935" - .945".

717.16.7.3: Valve stem diameter is .232" - .238".

717.16.7.4: Valve face must have one 45° sealing surface only.

717.17.8 Valve springs

717.17.8.1: Dual valve springs as supplied by factory are required.

717.17.8.2: Inner spring wire diameter is .066" - .068".

717.17.8.3: Outer spring wire diameter is .112" - .114".

717.17.8.4: Valve Guides: Replacement of valve guides with B&S factory part 555645, is allowed.

717.18: Ignition: Unaltered B&S stock coil #557040 w\External Limiter or #557125 with Internal RPM Limiter is mandatory. Attachment bolts or bolt holes may not be altered.

717.18.1: Spark plug connector must be stock factory type.

717.18.2: Rubber plug boot is allowed.

717.18.3: There must be resistance from plug wire to ground on coil #557040. Resistance must be between 3000 ohms, minimum, to 6000 ohms, maximum. Coil resistance may be rechecked after a minimum of 10 minutes if correct reading is not attained upon first check. No spec available on P\N #557125.

717.18.4: Coil air gap is non tech.

717.19: Flywheel: Only stock Cast Iron or Cast Aluminum Briggs #557126 flywheel is permitted. Starter ring gear and all cooling fins must be in place. No machining, glass beading, sandblasting, painting or coating of flywheel is allowed. Minimum Flywheel Weight with starter ring, cooling fins, and attachment bolts 4 pounds 3 oz.

717.19.1: Chipped fins due to poor casting are legal. Completely broken off fins are not allowed.

717.19.2: Stock flywheel key with B & S logo is required and will determine Aluminum flywheel ignition timing. The flywheel key may be aluminum or steel. .182 minimum width. NO offset keys permitted.

717.20: One or two stock crankcase gaskets are required.

717.21: Valve Lifters: Must be stock. No Polishing allowed.

717.21.1: Lifter head diameter must be .969" - .972".

717.22: Connecting Rod: Stock B&S part #557005 or 557117 rod only. Rod may not be altered or polished. Rod may be clearanced providing that it is in stock configuration and finish, with no dimpling or media blasting. Rod ends must be concentric with crank journal and wrist pin with no chamfer or breaking of edges.

717.22.1: Rod length, measured from bottom of wrist pin hole to top of crank journal hole, is 2.419" minimum to 2.429" maximum.

717.22.2: Oil hole opening is .185" no-go. Crank end of oil hole is chamfered.

717.23: Wrist pin:

717.23.1: Maximum I.D. is .414".

717.23.2: O.D. is .624"-626".

717.23.3: Minimum length is 1.901".

717.24: Piston rings: Three rings mandatory. Top compression ring must have chamfer or O toward top of piston. Second scraper ring must be installed with inside chamfer down and O toward top of piston. Oil ring must be installed as from factory. No alteration of rings allowed except end gapping and lapping. Maximum RING GAP of Rings .050. Rings must be self supported in the cylinder bore of the engine being inspected. Rings must remain flat. Rings must be in one piece when removed from block. Aftermarket rings are allowed if they meet the Specifications listed below.

717.24.1: Minimum width of top two rings is .095".

717.24.2: Thickness of top two rings is .059" - .064".

717.24.3: Minimum width of oil ring is .065". Ring groove must be present. Expander must be installed.

717.24.4: Thickness of oil ring is .098" - .102".

717.25: Piston: Stock "kidney bean" piston required. No alteration, polishing or machining allowed. Only piston skirts are coated and coating cannot be removed and skirts or any part of piston be polished. Factory finish only.

717.25.1: Minimum from top of piston to top of wrist pin on circlip side is .658".

717.25.2: Minimum piston length is 1.768".

717.25.3: Factory oversize World Formula pistons are allowed.

717.26: Crankshaft: Stock B&S crankshaft casting #772 and #052 only allowed, all finishes being as factory supplied, with stock timing gear installed in stock location only. No alteration or polishing in any manner allowed. Offset crankshafts not permitted. Stock bearings required. Side cover may be peened to retain side cover bearing.

717.26.1: Shim(s) if used, must be installed as from factory.

717.26.2: Crankshaft journal diameter is 1.094" - 1.100".

717.27: Block: Must be stock with no alterations, except blocks may be repaired from broken rod damage, providing that repair does not constitute a functional modification of original block. No welding is permitted from the cooling fins upward.

CYB rule: Unless the rules say you can; you can't!!!

717.28 All Tolerances +/- .001 measured with dial indicators, micrometers or calipers due to calibration variance.

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Exhaust

Stock header required, with or without gasket, may be cut and turned as necessary to fit the racecar as long as the pipe still retains the original length, diameters and volume as the original stock pipe.

Transmission

The drive will be by engine or jackshaft mounted clutches. No axle mounted clutches allowed. No direct drive will be allowed. Chain guards will be made of .090-inch thick aluminum or equivalent and will run on top of chain from the front of the front sprocket to the center of the rear axle. Driver must not be able to touch the chain or sprockets while sitting in the cockpit.

Battery and Electrical

Battery must be securely fastened. Wet cell batteries mounted inside the car must be covered and vented outside the cockpit. Electric starter must be operational and capable of starting the engine.

Cockpit Controls. On/Off switches must be on dash, top of the cowl or on steering wheel. On/off switch must be functional. Cockpit controls: carb adjusters, kill switch, starter button and engine monitor only. No wing sliders or pan hard adjusters allowed that can be controlled from the driver's compartment.

Traction Control

Traction control of any kind is strictly forbidden.

Brakes

The car must be equipped with a functional braking system. Brakes will be of sufficient strength so as to slide the rear wheels while the car is in motion at any given time.

Steel or aluminum brake rotors only. Carbon, carbon composite, titanium, or unobtainium brake components are PROHIBITED. Brake pad material is open.

Wheels

Wheels to be 8" diameter steel, or aluminum non-beadlock only. Wheels must be held on with 4 or more standard lug nuts or knock-off hubs.

Tires

Any compound Hosier Tire on front and left rear. Right rear; Hoosier Tire 16/8.5-8 RD-20 is required. Absolutely NO tire softening agents of any kind allowed. No grooving or siping tires.

Fuel Systems

All fuel cells, bladders or plastic tanks must be mounted securely to the frame. All cars should be equipped with a fuel cell and tail tank. Vent valve must be rollover type with valve. Stock B&S fuel pump (pn 557033) only.

Fuel

Gasoline only, race fuel may be used.

* New for 2020 Methanol is allowed.

Car Numbers

All cars must have **LEGIBLE** numbers on both sides of the car and the nose.

Car numbers must be a minimum of 12" high and on both sides of top wing. Number must also be on each side of the tail section a minimum of 10inches high. Minimum height of numbers is 8" on the nose or nose wing,

Mirrors are prohibited.

Radios

Any in-car 2-way communication device is prohibited.

Safety

Helmet should be SNELL 05 or newer. Flame retardant driving suit is required.

5 point racing style harness with metal-to-metal, quick release connections, no older than 5 years is required. Arm restraints or nets are required. Neck brace or helmet restraints are required.

Racing style shoes and gloves recommended. Headrest support on right side is strongly recommended.

Weight

Cars must weigh a minimum of 400 pounds with driver, at any time. Any added weight must be solid metal stock and must be bolted in a secure fashion to the chassis only. Any weight must be painted white and have the car number clearly and legibly marked on each piece for ID purposes.

Continuous developments in racing may necessitate changes that we cannot anticipate at the time the rules are formulated. We may, if necessary, update, modify, or add to these rules during the season. The "except in rare instances" (EIRI) rule is applicable and in effect at all times. NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH ALTERATION OF SPECIFICATIONS.

Please also remember we take pride in our race track and drivers. Please provide us with a clean nice looking car for our fans. We are here to put on a show. If we all work at it...it will only be better for all.

Tomahawk Speedway

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