

2021 Outlaws Kart Rules

R-Box, Jr wing/Box stock, 125/250 Wing, 500 Open Wing Rules

Disclaimer: Thunder Hill Speedway is a competitive race track which is intended to conduct and officiate in accordance with the rules herein. These rules provide a guideline for all to follow at each event. The rule book may be amended from time to time and special rules may be published throughout the year or at a particular event. By participating in an event at Thunder Hill Speedway, all participants agree to comply with these rules and regulations. NO EXPRESS OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM PUBLICATION OF, OR COMPLIANCE WITH THESE RULES AND REGULATIONS. They are intended as a guideline to conduct the officiating of an event and are in no way a guarantee against injury or death of a participant, spectator or official. The Series Director is permitted at any time to make a reasonable and/or appropriate amendment from any of the specifications herein or change any restrictions that, in his opinion, do not alter the minimum acceptable requirements. Any interpretation of these rules here in are left to the discretion of the series officials and their ruling is final. Any visible equipment changes and/or performance enhancing changes to previously approved karts and/or equipment MUST be approved by track officials before competition. Thunder Hill Speedway officials reserve the right to determine the legality and use of any equipment that has not been approved prior to competition. The Promoter reserves the right to alter, revise or adjust any and all penalties according to terms of circumstances or severity of the infraction. The Promoters decision is FINAL. Drivers and Parents of minors are responsible to read and understand the rules and regulations set forth in this rule book. YOU ARE RESPONSIBLE FOR THE SAFETY OF YOU AND YOUR KART. It is ultimately the obligation of each participant to ensure their conduct and equipment complies with all the applicable rules, as they may be altered from time to time. The rules are in no way a guarantee against injury and/or death to participants, spectators, officials and/or others.

ALL WING KART CLASSES:

- A: 1. All karts must be approved by race director prior to competition.
2. Tires must be Hoosier treaded kart tires and approved by series official. Not to exceed 6" diameter.
3. Cages are mandatory and must be for the protection of the driver.
4. Bodies can be any material except wood. No sharp edges or protruding parts
5. All karts must have a wing, hood, and a tail.
6. No bars may extend out past the outer edge of the tire except nerf bars.
7. All karts must have numbers on both sides of the wing and must be legible from the scoring tower or they will not be scored.
8. Duplicate numbers must have a letter. The letter must be legible.
9. No Front Wings allowed.
10. Traction Control Devices & Ratcheting Hubs are not permitted, during ANY event, in ANY class at ANY time. Must be a live rear axle.
11. Axles cannot be made out of any exotic materials. No Carbon or Titanium.

B: 1. Working RaceCeivers are MANDATORY. If your RaceCeiver does not work in staging you will not be allowed to race.

*Once you have moved up a class you are not allowed to compete in a lower class again with the exception of 250 & 500

Weight-

1. All karts must meet the designated minimum weight in their perspective class.
2. Additional bolt on weight is permitted, but must be fastened in a secure manner and must be painted white and must have the kart number wrote on it.
3. It is YOUR responsibility to make sure your kart meets the minimum weight each week per track scales. _____

CHAIN GUARDS: Must have aluminum, steel or equivalent material chain guard by clutch and then extend chain guard with safe material to protect driver's arm. Must be secured properly to protect driver from broken chain.

Safety

A. YOU ARE RESPONSIBLE FOR THE SAFETY OF YOU AND YOUR KART.

B. Brakes must be in good working order at all times.

C. Kill Switches are recommended in all classes! Karts must also have a 6" nylon tie attached to the spark plug wire.

D. Aluminum high back seats are Mandatory. The top of the seat should be at the middle of the driver's head.

E. All karts must be equipped with at least a 5-point harness to restrict body movement. Karts are subject to inspection and are at the discretion of track officials on whether or not it is safe enough to compete.

F. Approved neck braces or neck restraints are mandatory.

G. Helmets must be 2010 SNELL approved, and must fit the driver's head correctly. Thunder Hill Speedway officials have the right to determine if a driver's helmet is safe enough for competition.

H. Racing suits are highly recommended. No shorts or cut off pants allowed.

J. Roll Cage must be securely fastened at 4 locations with at least grade 5 bolts.

K. Driver's body must be completely inside the roll cage and have at least 2 inches clearance above the driver's head.

L. Knee Knockers or padding around the steering column is recommended.

M. Chain Guards, designed to protect the driver in the event of a chain failure are Mandatory.

N. Helmets and all safety gear must be worn during engine warm ups at all times.

O. Safety is Thunder Hill Speedway's number 1 concern. So please make it your number 1 concern as well. Be Smart!!

P. All classes must utilize a sprint car style rear bumper. No square flat kart style bumpers allowed. Must extend back a minimum of 7" from end of frame rail. (Bumper design must be approved by track management).

Unsportsmanlike Conduct:

1. Fighting at Thunder Hill Speedway will result in suspension.

2. Any display of unsportsmanlike conduct (on or off the track) will result in a Fine, Suspension, and Immediate Removal from grounds, Point Penalties, or All of the above.

3. Rough driving will result in docked positions, fine or black flag. Drivers and Crew members observed verbally or physically abusing other drivers and/or officials will result in loss of points, fines and/or suspension. NO EXCEPTIONS!

R-BOX: Ages 5-8 for 2021

Min weight #285

All body, chassis, wing rules are the same as Jr Wing (see Below)

Open dry clutches only / drum or disc / No jackshafts allowed

- Engine rules 2021 NKA box stock rules will apply
- Clone 196cc ONLY
- ARC or Speed Karts .425 NO GO Green unaltered Restrictor plate only

** Exceptions to NKA rules for RBOX class engines **

- Big pipe w/ 4104 muffler required. No loop pipes, Header pipe and muffler must meet 2021 NKA rules for Adult Box Stock classes, must be inside the roll cage and must exit towards the rear of the kart or must be approved prior to event by tech inspector or race director
 - Electric starter nut MAYBE used
 - Box Stock cast rod or Billet rod allowed; NO Titanium rods allowed

TIRES & WHEELS: 5" or 6" rims. Bead lock wheels are allowed. Hoosier 50 min treaded tire is Mandatory on right rear of all Winged Outlaw karts. (Must highlight RR 50 tire stamp with white paint or white paint pen for easy visibility to officials) **All Outlaw wing karts must run all 4 Hoosier Treaded tires and may also groove or sipe any of their tires. No Tire Prep is allowed!**

Box Stock/Jr Wing: Ages 8-13

Min weight #315

Open dry clutch only, NO jackshafts

Once you move up from R box you cannot return to R box, Driver May not compete in both classes. CLS Builder

Prepared (BP) clone rules apply NO PORTING allowed

- BP clone engine rules at bottom of page

Animal engine 2018 IKF / NKA rules, Gasoline only, .255 running lift maximum at retainer, No Duration checks, (Animal engines only) compression release cam NOT required if using electric starter only, compression lease cam must be used if using recoil starter, factory cast cam cores only. max main jet size .038, pilot jet .014 No go, no porting allowed, Electric start nut maybe used in place of recoil starter on both engine packages.

Pump gas only 87-91 octane only, NO Race gas or oxygenated fuel will be allowed. i.e., VP / Turbo Blue etc. for both animal and BP clone engine packages

TIRES & WHEELS: 5" or 6" rims. Bead lock wheels are allowed. Hoosier 50 min treaded tire is Mandatory on right rear of all Winged Outlaw karts. (Must highlight RR 50 tire stamp with white paint or white paint pen for easy visibility to officials) **All Outlaw wing karts must run all 4 Hoosier Treaded tires and may also groove or sipe any of their tires. No Tire Prep is allowed!**

- No body side enclosures will be allowed (on the cage) right side or Left side of cage (safety issues), nerf bars maybe covered but covering may not be attached to frame, nose cover, or roll cage. Must be attached to nerf bar only. Driver must have vision 360 degrees from driver seat and must be able to exit from LH side or RH side if needed.
- 2021 Box stock wing rules will be enforced! (R-Box and Jr Wing)

Center panel 36" long x 32" wide, Right side panel 40" long x 14" wide, Left panel 40" Long x 20" wide

All dimensions are +/- 3", No air deflecting metal or plastic / Lexan material may not added to the wing. No sharp edges

- No cockpit adjustable wing sliders allowed
- No cage mounted shocks or dampening devices allowed without approval from race director prior to the event. Bungy cords are allowed.

CLS BP Clone Engine Rules 2021

6.5 OHV engines only / Spec GAS only / Approved engines: 6.5 -196CC clone engines ONLY. NO Kohlar, NO Honda, NO Predators

The Box stock Tillotson engine will be allowed the 68MM reinforced Tillotson block will be allowed in this class, will be teched the same as any other 196CC clone block

Description: Single cylinder, 2 valve overhead 4cycle engine. Aftermarket coatings of any type are not permitted on any part of the engine other than the rocker cover, blower housing, and shrouds. Unless noted within these rules. Figure guard, rear block tin, blower cover, recoil or blower fan cover are all required.

Cylinder head:

Must be OEM casting only. All cylinder heads must be of the "JT" 4 bolt valve cover design. To include the Tillotson JT-207 cylinder head. The TG-1 Cylinder head will also be allowed. PORTING of the cylinder head is NOT permitted; this includes the valve guides in the port they may not be altered in any way. Port MUST be "as cast". Valve seats may have up to three angles, 45-degree face, 30-degree top relief, 60-degree bottom relief. Cutting of the valve seats allowed to insure proper seal. Intake seat maximum ID .897, Exhaust seat maximum ID .862, Outside face of valve may not below the floor of the combustion chamber. (cannot sink the valves). Stock type head bolts must be used (four), Head gaskets maybe aftermarket, must be of stock type configuration, NO head studs allowed! No copper or aluminum head gaskets allowed. No predator head gaskets allowed. Gasket thickness is Non-Tech. Sealer "May Be" used to insure proper seal of the head gasket. Depth between the valves front to back may not vary more than .005 max. Any stock configuration exhaust gasket maybe used; sealer permitted. Header may also be ran without gasket, sealer maybe used rather than a gasket. Allen head bolts or other bolts of similar design allowed to

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secure header to cylinder head.

Breather hole in rocker cover maybe tapped with 1/4" pipe tap to accommodate breather fittings, no oversize drilling allowed. Factory stock internal pulse valve must be installed and operational in rocker cover. Rocker cover maybe drilled and tapped for pulse fitting to fuel pump

Bore and stroke: Stock bore is 2.685 and maybe over bored to 2.718 Stroke is 2.123 +.010 -.005

Connecting rod: MUST use billet rod, may or may not have insert. No Titanium rods. Rod length is non tech.

Combustion chamber volume: 25CC Minimum. With piston at TDC using prescribed procedure (NKA). The liquid procedure is the official check. It may be checked only Once. Engine should be at room temp with valves closed / rocker arms removed from valves.

Carburetor / intake requirements: Stock Huayi, stock RUXING, or Stock Tillotson PK1A only. Venturi .625 NO GO, Rear of carb bore .751 NO GO. Carb bore and finish is NON-TECH. Throttle shaft .115 Minimum, Butterfly .037 Minimum, Butterfly must be stock and unaltered. Throttle

shaft screw lock washer not required; throttle shaft screw length is non tech. Throttle shaft / butterfly retaining screw is required but non tech for head type. Air filter adapter of 1.375 maximum length is allowed. Gasket between adapter and carb body is required. No tech on thickness of gasket. Pulse type fuel pump is required, pump must be pulsed from rocker cover or crankcase ONLY. No fuel bypass allowed. Fuel line must go directly from pump to carb inlet. Must be of a single line. Fuel filter maybe installed between fuel pump and carburetor if desired. All fuel lines must be secured by using wire or plastic tie wrap. Any fuel line not secured will not be allowed to compete. This is a tech item! May be teched at any time during the race event or in tech after the race event. Failure to secure fuel lines will result in DQ. Black phenolic spacer must be used, minimum thickness .255, surface finish of bore and gasket surface is non tech. Choke assembly may be removed, hole for choke shaft must be plugged. Jets, air bleeds jets, and e-tube are Non tech. Stock intake runner gasket configuration only. One extra gasket must be used when using restrictor plate. No other alterations allowed. No additional holes maybe drilled in carburetor body or phenolic spacer with the intent to change fuel or air delivery.

Ignition system: Ignition timing is Non tech. Stock ignition module (coil) must be used. Unaltered. No modifications allowed of any type. Stock factory sparkplug boot must be used as from factory. Timing key is not required

- Kill switch within driver's reach from seat while strapped in is recommended but not required in 2021

Piston: Must be stock dished piston with no modifications. Oversized clone or Honda dished pistons allowed up to .035 oversize.

Rings must appear stock, all three rings must be installed. Piston may not pop out above block. NO piston pop out. Top of piston may not be machined or altered

Valve train: Stock valve train only in stock configuration except: Any single valve spring and spring shims allowed. No installed height check. Any 5.5mm stem steel or stainless-steel valve maybe used. Intake valve head max diameter OD is .982 +/- .005, exhaust valve head maximum OD is .945 +/- .005, Valves must be one angle only, 45 degree, no knife edging of the valves, must have a minimum of 1mm top margin. Valve length is non tech. No additional support of rocker arms / studs is permitted. Champion rocker arms and valve cover are permitted but may not be modified in any way.

***New 2021**

Stock type valve retainers with lash cap on exhaust side only or automotive type retainers with two valve keepers per valve maybe used. Lash caps not required but may be used with automotive type retainer and keepers. No minimum weight check on valves, retainers, or lash caps. NO TITANIUM valve train parts allowed. i.e., valves, retainers, keepers, or lash caps.

Camshaft requirements: Stock / factory camshaft cores only, EZ spin must remain functional and as stock. Duration check for intake and exhaust lobe taken off the push rod. Intake duration of 248 degrees at .050 lift / 107 degrees at .200 lift, exhaust duration 247 degrees at .050 lift,

116 degrees at .200 lift. Max lift at the valve retainers (as raced) Intake .238, exhaust .242. Retainer may not be rotated.

Crankshaft requirements: Stock factory crankshafts only. Must have stock factory crank gear installed in stock location. May Not be welded to crank shaft. No modifications to crankshaft allowed. Aftermarket steel crankshaft bearings allowed. Must be of the non-self-aligning type. With or without seal installed. NO Ceramic bearings allowed. Crankshaft journal diameter is 1.180-1.168 Min. Journal rod surface finish is NON tech.

Block requirements: Stock as cast block and produced with no modifications or alterations other than those specifically permitted in these rules. Block head mating surface maybe machined, however no piston pop out is allowed. Block maybe welded or epoxied for repairs only. Under the flywheel or the front of the block only, no welding to the cylinder head mating surface is allowed. All bolt bosses in block maybe drilled and tapped for repairs or other uses, Additional side cover gaskets as required for crankshaft thrust are permitted. All parts associated with the governor and low oil sensor maybe removed and plugged. Side cover bolts are

non tech. No studs and nuts allowed on the side cover. Solid dowel pins are allowed but must be of the OE size.

Flywheel: Any Legal 2021 NKA / SFI approved billet flywheel manufactured for the 196cc Clone engine only is allowed. No machining or alterations allowed. Minimum weight is 3.3lbs. Any timing key or no key at all is allowed. A flat washer or spacer maybe used and is recommended between the flywheel nut and flywheel. Handheld electric starter maybe used but the compression release mechanism must remain on the camshaft and functional.

If flywheel is manufactured with a removable fan the fan must be unaltered attached, and functional. Missing or damaged fins may result in a DQ in tech.

Header and muffler requirements: Silencer (muffler) must be (B91XL) round hole muffler. Muffler must be unaltered and must meet tech spec for stock class clone. Exhaust pipe / Header must be double nutted or retaining bolts must be drilled and safety wired.

Header must be supported by a minimum of one support brace. No loop pipes allowed. Header maybe ceramic coated but must meet all requirements for 2021 NKA big pipe headers in the Box Stock adult clone rules. Muffler may not be welded to header pipe, muffler may not be painted or coated, Muffler does not need to be safety wired, muffler must be tight to header at post-race inspection.

All readings +/- .0005 or 2 degrees to allow for gauge variances and wear.

The karts competing in this class may be built by any competitor or manufacturer. The kart, as built, must comply with all guidelines set by Speedway Officials.

125cc/250cc Class-

Class Age 11-up (No younger drivers unless approved by Thunder Hill Speedway)

Raceiver Required in this class!

ENGINE RULES IF RACING 125 Engine in 125/250 Class:

-Single cylinder, 2-stroke dirt bike engine-(145cc maximum cylinder displacement)

-Must have factory stock stroke and rod length as per manufacturer engine specifications for the year and model of your engine

-Must have complete working clutch, no slipper clutches

-Pump gas only (No Methanol)

-No Nitrous Oxide

-Single fuel pump or safely mounted gravity fuel tank

-Single carburetor only

-125, 250 and 500 Wing Kart classes will only be allowed to run one Radiator (std CR racing size and cap.) and standard 3/4" hose directly from engine to radiator, no extra cooling hoses, tanks, etc...!!!!

-No Rotary engines

-Min. Weight with 125 engine is 350#

ENGINE RULES IF RACING 2 cycle 250 Engine in 125/250 Class:

Single cylinder (2-cycle, gas only)

Stock Stroke and rod length as per manufacturer year, model and engine specification

CHAIN GUARDS: Must have aluminum, steel or equivalent material chain guard by clutch and then extend chain guard with safe material to protect driver's arm. Must be secured properly to protect driver from broken chain.

No after market stroker kits.

Maximum cylinder displacement: 265cc

Must have complete working clutch, no slipper clutches.

Single carburetor only

Single cylinder (gas only).

-Min. Weight with any 250 is 430#

Engine Rules if racing a 250 (4 stroke) in 125/250 Class:

Single cylinder only Stock Bore & Stroke as per manufacturer year, model and engine specifications.

Single Carb only Must have complete working clutch, no slipper clutches.

125/250 and 500 Wing Kart classes will only be allowed to run one Radiator (std CR racing size and cap.) and standard 3/4" hose directly from engine to radiator, no extra cooling hoses, tanks, etc...!!!!

No Nitrous Oxide. Min.

-Min. Weight with any 250 is 430#

TIRES & WHEELS: 5" or 6" rims. Bead lock wheels are allowed. Hoosier 50 min treaded tire is Mandatory on right rear of all Winged Outlaw karts. (Must highlight RR 50 tire stamp with white paint or white paint pen for easy visibility to officials) **All Outlaw wing karts must run all 4 Hoosier Treaded tires and may also groove or sipe any of their tires. (No grooved slick tires) No Tire Softener/Prep is allowed!**

The karts competing in this class may be built by any competitor or manufacturer. The kart, as built, must comply with all guidelines set by Speedway Officials.

Wing Panels may not exceed the following dimensions.

- a. Right Side wing panel may not exceed 48" long or 20" tall at any point
- b. Left Side wing panel may not exceed 48" long or 28" tall at any point
- c. Center Section may not exceed 41" wide at any point

500 Pro Open Wing Class-

(2-STROKES ONLY)

Age 14-up (No younger drivers unless approved by Thunder Hill Speedway) Raceivers required

Engine: dirt bike style 2 Stroke engine only -No Rotary engines

Single cylinder (gas only), Single carb only, 550cc Max. Displacement (2-STROKES ONLY)

single carburetors only allowed

-Min. Weight is 450#

Wing Panels may not exceed the following dimensions.

- a. Right Side wing panel may not exceed 48" long or 20" tall at any point
- b. Left Side wing panel may not exceed 48" long or 28" tall at any point
- c. Center Section may not exceed 41" wide at any point

125/250 and 500 Wing Kart classes will only be allowed to run one Radiator (std CR racing size and cap.) and standard 3/4" hose directly from engine to radiator, no extra cooling hoses, tanks, etc...!!!!

No Nitrous Oxide. Absolutely No Nitro Methane or Nitro additives allowed in fuel

CHAIN GUARDS: Must have aluminum, steel or equivalent material chain guard by clutch and then extend chain guard with safe material to protect drivers arm. Must be secured properly to protect driver from broken chain.

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The karts competing in this class may be built by any competitor or manufacturer. The kart, as built, must comply with all guidelines set by Speedway Officials.

CHASSIS SPECS: Main frame must be similar in design and appearance to karts competing at Thunder Hill Speedway with the addition of a roll cage. Roll cage must be constructed of mild steel tubing, chrome moly tubing, or material of equal or greater strength, must be of a design that protects the driver in the event of an upset or mishap and pass stringent inspection by THS officials. Q.R.C or S.K.E SPECS Ok.

ABSOLUTELY NO SUSPENSION IS ALLOWED ON ANY WINGED OUTLAW KARTS! SPRING MOUNTED ROLL CAGE ON RIGID KART CHASSIS ONLY! NO CHAMP (style) KARTS! SAFETY RULES: Safety is one of the prime considerations of Thunder Hill Speedway. Methods of operation, vehicle construction, track facilities and competition practices are under constant review to protect the karter and to raise the safety standards of the sport

Helmets: All helmets must be Snell 2010 or newer standards. Buy a High quality helmet such as a Simpson, Bell, etc. . . Aluminum racing seat designed for use with a 5-point harness: Mandatory. (Back of seat shall not be inclined less than 60 degrees) Commercially manufactured arm restraints only. Commercially manufactured seat belts only. (Five point seat restraint system required.)

Fire retardant racing suit mandatory. Driver should be able to exit kart without additional assistance. All other safety requirements stated in the regular THS rules must be followed.

SILENCERS: Must be bolted and secured in a safe manner or driver will not be allowed to race or DQ'd. WING

Do not assume something is legal just because it is not written in these rules! Contact Thunder Hill to verify.

All General Track rules also apply!

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