

2023 Outlaw Wing Kart Rules

R-Box, Jr wing, 125/250 Wing Rules

ALL WING KART CLASSES: (Read through entire rules below and scroll down to find your specific class rules)

Drivers that move up a class cannot go back and compete in lower classes or compete in both classes

Working RaceCeivers and Transponders are MANDATORY. If your RaceCeiver does not work in staging you will not be allowed to race.

2. Transponders must be installed and in working order. If your transponder does not work you will not be scored.

3. **Transponders must be mounted on the steering shaft support bar directly in front of the seat closest to the floor pan.** (If mounted in the incorrect spot and a close finish is scored you will be put behind the other finisher)

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, Hubs must be securely fastened to axle at all times. Must be a live rear axle.

11. Axles cannot be made out of any exotic materials. No Carbon or Titanium.

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.

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 2015 SNELL approved or newer**, and must fit the drivers 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

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.

Other drivers and/or officials will result in loss of points, fines and/or suspension. NO EXCEPTIONS!

R-Box (Wing class)

Ages 5-8

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 2022 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 2022 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 D50 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!**

Jr Wing (Jr BP 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.

Cedar Lake Arena Builder Prepared (BP) clone rules apply -NO PORTING allowed

- Cedar Lake Arena 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 release 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

- 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.
- **2023 Box stock wing rules will be enforced! (R-Box, Jr Wing, Intermediate 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 be 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.

TIRES & WHEELS: 5" or 6" rims. Bead lock wheels are allowed. Hoosier D50 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!**

CEDAR LAKE ARENA BP Clone Engine rules 2023:

6.5 OHV engines only / Spec GAS only / Approved engines: 6.5 -196CC clone engines ONLY. NO Kohler, 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 $\frac{1}{4}$ T+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 $\frac{1}{8}$ 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 be below the floor of the combustion chamber. (Cannot sink the valves) Stock type head bolts must be used (four), head bolt washers allowed, Head gaskets may be 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 $\frac{1}{4}$ May Be+used to ensure proper seal of the head gasket, more than one head gasket may be used to meet minimum cc rule. Depth between the valves front to back may not vary more than .005 max. Any stock configuration exhaust gasket may be used, sealer permitted. Header may also be run without gasket, sealer may be used rather than a gasket. Allen head bolts or other bolts of similar design allowed to secure header to cylinder head.

Breather hole in rocker cover may be tapped with $\frac{1}{4}$ +pipe tap to accommodate breather fittings, no oversize drilling allowed. Factory stock internal pulse valve must be installed and operational in rocker cover. Rocker covers may be drilled and tapped for pulse fitting to fuel pump

Bore and stroke: Stock bore is 2.685 and may be over bored to 2.718 Stroke is 2.123 +0.010/-0.005 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. Ventruri .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 and throttle shaft 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 may be 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 may be 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 drivers reach from seat while strapped in is recommended but not required in 2023

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

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.

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 may be 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.

Stock type valve retainers with lash cap on exhaust side only or automotive type retainers with two valve keepers per valve may be 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 may be machined; however, no piston pop out is allowed. Block may be 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 may be 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 may be 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 2022 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 may be used and is recommended between the flywheel nut and flywheel. Handheld electric starter may be 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 may be ceramic coated but must meet all requirements for 2022 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 +/- 0.0005 or 2 degrees to allow for gauge variances and wear.

125cc/250cc Class-

There are 3 Engine Options for this class!

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

Receiver and Transponder 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

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!

2023 Right Side Sail Panels will be allowed ONLY in the 125/250/500 Outlaw karts. Panel must not extend more than 3" beyond the gap. Panel should not block driver's vision.

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.

125/250 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

Intermediate Wing Open Clone:

- Ages 12-up - May run BP and Intermediate classes if meet age requirements for 2023
- 350 Lb. Min weight
- All body, chassis and wing spec rules are the same as Jr Wing class rules
- Fuel type: Gasoline or methanol only (no exotic fuels or additives allowed)
- 6.5 OHV – Approved Engines. 196cc Clone only, No Kohler, No Honda, No Predators allowed Engine spec sheet for Open Intermediate Clone class
- ♣ Description: Single cylinder, 2 valve overhead 4 cycle engines. No aftermarket coatings allowed or permitted on any part of the engine unless otherwise noted in these rules. (Header, blower housing, rocker cover, and shrouds are permitted). Cylinder head requirements: Must be OEM casting only. Any Clone JT casting, Tillotson JT-207, or TG-1 head will be allowed. Must be of the four-bolt valve cover type only. Intake valve seat maximum ID 0.897, Exhaust seat maximum ID 0.862.
- ♣ Bore and stroke: Stock borer is 2.685 and may be over bored to 2.718, Stroke is 2.123" +0.010" or -0.005 ♣ Connecting rod: Billet aluminum rods, with or without bearing inserts Required. No titanium rods allowed. Rod length is non tech.
- ♣ Carburetor Stock appearing 196cc Clone carbs only. No Honda carbs allowed. Huayi, Ruxing, or Tillotson PK series carburetors only. Internal filler of any type not allowed anywhere in Carburetor.
- ♣ Ignition system: Ignition timing is non tech. Stock 196cc ignition module / coil only. No modifications of any type allowed. Spark plug wire and boot / spark plug connector must be stock as supplied by factory. ♣ Piston requirements: Piston is allowed up to .035 oversize
- ♣ Valve train: Intake valve head max OD. .982 +/- .005, Exhaust valve head max OD. .945 +/- .005 ♣ Crankshaft requirements: Stock factory 196cc crankshafts only with stock timing gear in factory location. ♣ Block requirements: Stock 168F clone type block. Bracing / welding is allowed. No billet blocks, No Honda blocks, No Kohler blocks. 68MM Tillotson blocks are allowed.
- ♣ Flywheel: Any SFI certified billet aluminum flywheel only. May NOT be modified or altered. ♣ Clutches: Disc or drum only allowed.
- ♣ Header and muffler Requirements: Silencer / muffler must be B91XL round hole or RLV -4106. Exhaust pipe / header must be double nutted, or safety wired. Header / silencer must be supported by clamped on brace to secure it in place. No loop pipes are allowed.
- ♣ +/- .005 or 2 degrees on all measurements to allow for gauge variances and wear (All wing classes) ♣ Hoosier grooved tires only on all four corners of kart. D50 or D55 must be used on right rear. Other corners are optional. RR must durometer minimum of 50 Prior to race
- ♣ Wing: All wing classes at CEDAR LAKE ARENA
- ♣ Center panel 36" long 32" wide ... Right side panel 40" long x 14" wide ... Left panel 40" long x 20" wide (NO SHARP EDGES)
- ♣ All dimensions are +/- 3" No cock pit adjustable wing sliders electric or manual

Outlaw Kart Construction:

The karts competing in these classes 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 flat 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

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 2015** 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 Speedway to verify.

All General Track rules also apply!

(*Thunder Hill Speedway reserves the right to modify these rules as needed!)

500 Pro Open Wing Class-

(2-STROKES ONLY)

Age 14-up (No younger drivers unless approved by Thunder Hill Speedway) Receivers 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#

2022 Right Side Sail Panels will be allowed ONLY in the 125/250/500 Outlaw karts. Panel must not extend more than 3" beyond the cage. Should not block driver's vision.

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...!!!!

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 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 driver's arm. Must be secured properly to protect driver from broken chain.

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 sipe any of their tires. (No grooved slick tires) No Tire Softener/Prep is allowed!**

(*Thunder Hill Speedway reserves the right to modify these rules as needed!)

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.

