

AKRA Clone Rules

Section 8 – AKRA Box Stock Project

Class Structure

Participant ages are determined as of January 1st.

BOX STOCK SENIOR 350* Age 15 years & up – 350 lbs. – 87 Octane Gas Only – Approved engine:
BS Project 6.5

OHV only, with Factory Stock exhaust required. Stamped steel drum shoe type clutches only. (Tires
Burris)

Clones

2015 ENGINE SPECIFIC TECH SHEET FOR: BOX STOCK PROJECT 6.5 OHV

Approved Engine: 6.5 OHV 196cc clone engine

Fuel: GASOLINE ONLY 87-93 octane

Description: Single cylinder, 2 valve, OHV 4 cycle engine.

Combustion chamber volume: 26.5 cubic centimeter minimum, with piston at TDC, using prescribed procedure. The Liquid CC check is the official check (IF THE ENGINE FAILS THE CC LIQUID CHECK AT ANY TIME DURING THE TECH PROCEDURE IT MUST BE CALLED ILLEGAL)

Cylinder Head Requirements: Must be OEM casting only. Porting and / or grinding are not permitted. Valve seats are two angles 45 degrees valve face and 30 degrees top relief. Intake seat maximum ID .897", Exhaust seat maximum ID .862". Outside face of valve may not be below floor of combustion chamber (i.e. don't sink the valves). Stock head bolts only, must have four. Head gasket/s maybe after market, must be of stock configuration, gasket thickness is a non tech item. Depth check between the valves, front to back and side to side may not vary by more than .005" max. No copper or aluminum gaskets allowed. Any stock configuration exhaust gasket allowed no other sealer.

Block Requirements: Stock cylinder bore is 2.685" max. Stroke is 2.123" + .010" or - .005". No piston pop out allowed. Matting surface finish of block and cylinder head is a non-tech item, surfacing of both to correct gasket failure and meet cc check allowed however, no piston pop out is allowed. May use 2 side cover gaskets of stock configuration. Block must remain stock as produced. Stub for governor may be removed and hole plugged. No machining of block allowed. Welding to the block shall be for rod damage repair only and may not constitute a functional modification.

Carburetor requirements: Huayi OR RUI*ING model carb only. Carb to intake sealer is gasket only no other sealer allowed. Choke must be as supplied from factory, but may be fixed to stay in open position. Venturi .615" NO-GO. Rear carb bore .751" NO-GO. Main fuel jet .042" NO-GO. Low speed idle jet is a Non Tech item. Stock emulsion tube must be used and unaltered, .066" max ID (no pass through). Side holes in E-Tube 4 holes max in bottom section and 20 holes max in top section. Minimum E-Tube length 1.092". Throttle shaft - .115" minimum. Butterfly - .037" minimum. Aftermarket air filter adapter allowed (max length of 1.375).

Valve Train: Stock valve cover only with any stock configuration gasket, no sealer. Factory stock rocker arms 1:1 ratio and push rods only. Stock valves only 45 degree angle only both valves, Intake valve Max OD .982" +/- .005" and Exhaust valve Max OD .945" +/- .005", no modifications allowed. Only Box Stock valve springs. (Installed Height for valve springs .815", must be checked by using the .815" spring must go gauge with retainer seal in place on intake an exhaust valve if used.) Prescribed check procedure as follows – Remove valve spring, reinstall spring retainer, insert .815" must go gauge in spring location. Gauge must go in both locations Intake and Exhaust with any allowed retainers in place, as raced, during check procedure. Max wire diameter on spring wire is .071" with a maximum tension of 10.8 lbs. at a height of .850". Lash cap on exhaust valve only. Valve stem seal allowed on Intake and Exhaust valve, maximum lip thickness of .027". Minimum thickness of Intake retainer .227", Exhaust retainer .250". BS lifters only, no modifications allowed.

(Additional check for valve springs – Each spring is to be checked using a .750" height by .800" width plate gauge and a .250" (square) no-go gauge to check the center spacing of the spring coils while inserted in the plate gauge.) Prescribed check procedure as follows – Insert the spring in the .750" X .800" plate gauge (spring must be centered in plate gauge and must fit inside of gauge with the ends of the spring wires perpendicular to the plate). Once inserted in the plate gauge take the .250" no-go gage and check the center coil spacing on both sides. The .250" no-go gauge must be parallel to the spring wire and perpendicular to the center of the spring when checking. The .250" no-go must pass check on at least one side of the spring. This check is to be performed after the 10.8/lb check and .071 max wire diameter check have been performed.

Ignition system: Stock Box Stock system only and must be unaltered. Kill switch and low oil sensor may be disabled and removed. Flywheel: Box Stock flywheel only (5lbs 4oz minimum) including plastic fins. BSW-1 steel billet flywheel allowed on 1/1/12 same weight check as stock flywheel. As of 3/21/12, ARC Flywheels 6619 & 6618 and Raceseng Flywheels RSP-13-075 & RSP-13-077 allowed. All other current specs as to flywheels will remain intact and in place.

Piston and Rings: Must be unaltered Box Stock only. No machining of piston and rings allowed.

Connecting Rod: Stock Box Stock rod only. No machining of any type allowed. Stock rod bolts only.

Crankshaft Requirements: Stock Box Stock crankshaft required. Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Stock factory timing gear mandatory and must

be installed in original location. Crankshaft journal diameter is 1.180" max - 1.168" min.

Camshaft Requirements: Stock camshaft cores only, ez-spin assy must remain as stock. Cam lobe base circle diameter .865" $-.005"/+.010$ " Duration check for Intake and Exhaust lobes (taken off pushrod). Intake duration of 219 degrees at .050 lift/86 degrees at .200 lift.* Exhaust duration of 222 degrees at .050" lift/97 degrees at .200" lift.* (* \pm 2 degrees for wear and gauge variances) Max Intake lift on cam .225" – Min .215" lift taken at the pushrod. Max Intake lift at the valve .238" Taken on valve spring retainer with zero lash. Max Exhaust lift on cam .232" – Min .222" lift taken at the pushrod. Max Exhaust Lift at the valve .242" Taken on valve spring retainer with zero lash. (To achieve zero valve lash for checking running lift, preload dial indicator by .001".)

Blower Housing Assembly: Pull starter must be present and remain stock. Pull starter may be rotated for a better crank angle.

Header and Muffler Requirements: Any single stage, one-piece header made from .750" OD steel tubing, with the RLV Mini B-91 Silencer installed at the end of pipe. The B-91 Silencer must be tread fitted to the pipe end. The entire exhaust pipe including the muffler is 15" max length and 10" min length. Exhaust Pipe must be double nutted or safety wired and silencer must be supported by clamped on brace to secure it in place. (No aftermarket coatings of any type are permitted.)

Fuel Tank Requirements: Floor Mounted fuel tank mandatory (stock tank must be removed). Pulse type fuel pump allowed.

Fuel Pump Requirements: Fuel pump must be pulsed from either the crank case or the valve cover. You may install a flat metal plate in the original tank location for the purpose of mounting the throttle linkage and fuel pump.

Clutches: Stamped steel drum shoe type clutches only, No machined Billet drums allowed. No disc clutches allowed.

RLV Mini 91 Silencer Requirements: Part #4117 Overall Length 5.470" minimum $\pm .005$ " - 5.600" maximum $\pm .005$ ". Threaded Nipple .685" maximum ID (ID as Mfg. NO Grinding, Reaming, or Polishing Allowed). Rear baffle holes .1285" maximum, inner baffle holes .0965" maximum. Silencer must be utilized as produced, with no modifications or alterations permitted. Strap or brace required to silencer for support, and to insure silencer does not turn and unscrew.

Claimer Rule: You must finish the race in the box stock class to purchase the winners engine for \$200 or \$275 if the billet STEEL flywheel is included (minus the clutch/chain guard/throttle kit, header pipe/muffler, air filter adaptor/air filter, top plate & fuel pump).

Important Note: Any attempt to increase the RPM 's of the BOX STOCK PROJECT, Stock Classes,

engine (example: stronger/non stock valve springs or decreasing exhaust restriction from stock levels) is strictly prohibited. Should this be allowed or preformed will mandate the use of an aftermarket Billet style flywheel for high RPM use (Super Box). ARC currently has these parts in their product line (part #'s 6618/6619) and they are approved by AKRA for use, others may become available as demand increases. Note: Under no circumstances is this type of flywheel allowed in the Box Stock (Stock Classes), Stock Flywheel ONLY. No other alterations to or from stock components are allowed.

2012 ENGINE SPECIFIC TECH SHEET FOR BP (Builder Prepared) 6.5 OHV

The intent of this class is to give those who want to make an incremental move up from Box Stock Project or a change from stock flathead a class of their own with horsepower similar to the flathead "stock" classes that are becoming increasingly expensive. The rules allow a builder into the engine, but are written with the intent of making it possible for the average person to build his/her own engine.

Fuel: Methanol ONLY

Approved Engine: 6.5 OHV 196cc clone engine modified only according to BP OHV Engine Spec. Tires are track/series option.

ENGINE SPEC SHEET FOR BP 6.5 OHV CLASS

Description: Single cylinder, 2-valve overhead 4-cycle engine. No aftermarket coatings of any type are permitted on any part of the engine (exception Blower Housing and Shrouds).

Cylinder Head Requirements: Stock cylinder head only. Machining of gasket surface is allowed. No addition of material in ports or to cylinder head allowed. Porting and / or grinding are not permitted. Valve seats may have two angles, 45° valve face and 30° top relief. Inside diameter of valve seats must be stock (Into .897" max ID and Ex .862" max ID). Valve seats must appear stock and must be in stock position and depth. Stock head bolts are required and all four are required. Head gasket/s maybe after market, must be of stock configuration, and gasket thickness non-tech. Depth check between the valves, front to back and side to side may not vary by more than .005" max. Cylinder head guide plate for pushrods must remain stock. No other alterations to the stock head are permitted.

Bore and Stroke: Stock bore is 2.685" and may be over bored to 2.718" Stroke is 2.123" +.010"-.005".

Connecting Rod: Stock or Billet aluminum rods, with or without bearing inserts allowed. No titanium rods allowed. Rod length is a non tech item.

Combustion Chamber Volume: 25 cubic centimeter minimum, with piston at TDC, using prescribed procedure. The Liquid CC check is the official check (IF THE ENGINE FAILS THE CC LIQUID CHECK AT ANY TIME DURING THE TECH PROCEDURE IT MUST BE CALLED ILLEGAL).

Carburetor/Intake Requirements: Stock Huayi or RUI*ING carb. Venturi .625" NO-GO. Rear carb bore .751" NO-GO. Carb bore finish, non tech. Throttle shaft - .115" minimum. Butterfly - .037" minimum. Air Filter adapter of 1.375" max length allowed. No air rams. Pulse-type fuel pump is mandatory. Fuel pump must be pulsed from either the crankcase or the valve cover. Black phenolic carb insulator must be used. Choke assembly may be removed. Jets, air bleeds jets, and emulsion tubes are non-tech. Throttle shaft, washer, and butterfly must be stock and must be present, butterfly screw non tech. Stock intake runner gasket configuration only. One extra gasket may be used with restrictor plates. No other alterations are permitted.

Ignition system: Ignition timing is non tech. Stock ignition module only. No modifications of any type allowed. Sparkplug connector must be stock as from factory.

Piston Requirements: Must be stock dished piston with no modifications. Oversize Clone or Honda ZOT dished piston is allowed up to .035" oversize. Rings must appear stock and all rings must be installed. Piston may not pop out above cylinder deck.

Valve Train: Stock valve-train only in stock configuration except any single valve springs and valve spring shims are allowed. No additional support for rocker studs permitted. Valves must be one angle only, 45°. No polishing, lightening or knife edging of valves (1mm min. margin). Valve length is non-tech. Outside face of valve head may not be below the combustion chamber floor. (i.e. don't sink the valves) Valve cover may be drilled for fuel pump pulse fitting, otherwise, it must remain unaltered. Valve cover gasket is non-tech.

Camshaft Requirements: Stock camshaft cores only, ez-spin assy must remain as stock. Duration check for Intake and Exhaust lobes (taken off pushrod) . Intake duration of 248 degrees at .050 lift/107 degrees at .200 lift. Exhaust duration of 247 degrees at .050 lift/116 degrees at .200 lift. Max lift at the valve retainers, Intake .238" and exhaust .242" taken on valve spring retainer with zero lash. (To achieve zero valve lash for checking running lift, preload dial indicator by .001".)

Crankshaft Requirements: Stock, factory crankshaft only with stock, factory timing gear in factory location. No modifications to crankshaft allowed. Aftermarket steel main bearings of non self-aligning type, with or without seal are allowed. No ceramic bearings. Crankshaft Journal diameter is 1.180", 1.168" minimum.

Block Requirements: Stock Block, as cast and produced with no alterations or modifications other than those specifically permitted. Block head matting surface may be machined, however, no piston pop out is allowed. Blocks may NOT be welded for repairs. No addition of material to block (i.e. welding, jb weld, etc). 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 the low oil sensor may be removed, plugging any associated holes.

Flywheel: Approved SFI certified billet aluminum flywheel only. No machining or alteration of any kind allowed. Minimum weight for flywheel is 3.3 lbs. Any timing key or no key at all may be used. A flat washer or spacer may be used, and is recommended, between the flywheel and the nut. Handheld electric starter may be used, but compression release mechanism must remain on camshaft.

Current Approved flywheels: ARC 6619, ARC 6618, Raceseng Flywheels RSP-13-075 Rewheel NF-S1 & RSP-13-077 Rewheel F-S1.

Header and Muffler Requirements: Header Pipe Length: Minimum 18"- Maximum 22". Silencer must be a RLV 91_L type with .1285 no-go hole. Header must be securely wrapped from flange to muffler prior to the race. Exhaust Pipe must be double nutted or safety wired and silencer must be supported by clamped on brace to secure it in place.

Optional: Ignition shut off switch is recommended.

IMPORTANT NOTES

1. Aftermarket air filter and adapter
2. AKRA spec header and muffler
3. Tank relocation is optional
4. Shoe/drum type clutch

ADDITIONS

1. Any clone engine that meets AKRA specs (ex. blue, black, yellow.)
2. Blairsville Speedway has first option to claim any engine
3. Open gear
4. Burris slicks only any compound

FINAL NOTE

Blairsville Speedway is part of a local track network including Race-1, Shadetree, Central PA, Goodhope Speedway, FlatRun, Slippery Rock, Naugle, and Cove Valley. Any suspension imposed by any of these tracks will be honored at Naugle Speedway.

First time offense 15 day suspension

Second time 366 day suspension

Chassis, Body Panels and Bumpers:

1. Weight must be secured to the kart frame with at least a 5/16 bolt and cotter-keyed or double nutted. Mounting weights to the rear bumper or nerf bars prohibited. It is highly recommended that any bolt on weights be painted a contrasting color for visibility purposes.
2. Each kart must have a complete set of nerfs and bumpers built to meet or exceed current WKA standards.
3. All karts must have a solid side panel extending from no more than 1 ½ " from behind the front tire and no more than 1 ½ " from the front of the rear tire. No more than 2" of the rear tire can extend past the side panel. All body panels must have an edge designed so as to not cause injury in a crash. Aluminum panels must have a rolled or covered edge.
4. An IFK type wedge body is allowed. Body can be 30" tall provided that does not impair the driver's vision or create an unsafe condition for other competitors. Total width of kart can be no more than 50 inches.

The track reserves the right to judge the fitness or safety of any kart. Any kart judged as unfit will not be permitted on the track until repairs or replacements can be made to the kart.

Noise: In an attempt to curb noise, all karts will be required to run WKA approved mufflers. All 2 cycle karts will be required to run silencers or to deflect the exhaust downward to the track surface by either adding an extension to the expansion chamber to by modifying the expansion chamber placing the exhaust port downward.

Numbers are REQUIRED on ALL 4 sides of your kart. Please make sure you have legible numbers showing on all sides of your kart including the REAR of your kart as well. We do use the rear of your kart for scoring as well. Help make our scorers job easier and also lessen the chance of not being scored correctly.

Thank You.

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