



SPEC HONDA SHIFTER ENGINES (LEGACY)

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RULES AND REGULATIONS

400 ENGINE STANDARDS

404 SPEC HONDA SHIFTER SPECIFICATION

- 404.1 Approved Engines (S1/S2/S3/S4/S5 or S125/M125):** 1999-2002 Honda CR125R.
- 404.2 Air Box:** Drivers may use an optional air cleaner or air box (unless regulated by track). If an air box is utilized, it must be in stock form with NO MODIFICATIONS to the box or the inlet tubes. Air boxes may have up to 3 inlet tubes, each not to exceed 29mm +/- 1mm inside diameter and 95mm minimum length. Approved air boxes are limited to CIK approved and RLV. Note special requirements for S5.
- 404.3 Parts Interchangeability:** Parts from years listed in the Approved Engines section above may be interchanged, except for items specified below.
- 404.4 Cylinder Head:** Head must remain OEM with no modifications or machining (including polishing) of any kind. Head to be checked with Shockwave or Rocket Racing Products profile gauge. Removal of mounting boss and modifications to the water outlets for the purpose of hose connection are allowed. Minimum squish as checked per **401.10** and **401.10.1** is .045" minimum.
- 404.5 Cylinder:** 2000 to 2002 cylinders are legal. No modification of the cylinder is allowed, such as porting, adding or deleting of ports, decking, or re-Nikasil. Stock power valves may be removed and aftermarket plugs used, with no filling, welding, or modifying of the cylinder. No machining of any portion of the exhaust port is allowed. Power valve plugs must be matched outside of the cylinder and re-inserted. Cylinder mounting flanges for retaining cylinder to cases may be spot faced in the area where the nut meets the flange only. Some factory grinding, done prior to the Nikasil process, is present on many cylinders. The Technical Director reserves the right to approve or disapprove any cylinder supplied by Honda and not modified. In other words, some stock OEM cylinders may not be acceptable for SKUSA competition.
- 404.6 Visible light check:** The SKUSA visible light check for CR125 cylinders is an adaptation of the common test used by other organizations such as IKF and WKA. Use an IAME X30 piston for the test. This has the advantage of easy availability, a Dykes ring and many used ones are available. It does require a sleeve of 19/14 mm to adapt the 14 mm pin to the Honda rod. This will be made of Delrin® and is available thru SKUSA. The test cylinder is placed on case (without base gasket) and torqued to a maximum of 180 inch/lbs. A dial indicator is placed on the top of the cylinder, zeroed and piston rotated below the exhaust port. A high intensity light (small Mag Lite) is placed in the exhaust beamed toward piston. Rotate in the correct rotation bringing the piston up until no light is seen above the ring. This is the measurement. Note that this is relative number, not the actual port height. The number should be between 1.110" and 1.140". Numbers outside of this range are non-conforming and will be disqualified; these measurements may be adjusted based on additional testing. These numbers are for 2000-2002 cylinders. A little practice will allow you to get repeatable readings. Due to the construction and installation procedures of some exhaust plugs, it is almost impossible to determine if the top of the exhaust port directly adjacent to the bore has been ground as it is covered by the plug. Therefore, the visible light check will be the determining inspection of that portion of the port. All other portions of the port and rib will be governed by the 'no grinding' rule.
- 404.7 Cylinder Damage:** Cylinders that have internal damage may not be acceptable for SKUSA competition. Small nicks in one port from debris such as broken circlips, ring segments and the like are acceptable on any edge of the port. Larger damage on the top of the port is not acceptable. Damage from wrist pin damage resulting in grooving of the cylinder above the port is not acceptable. It is strongly recommended

that any questionable cylinder be approved in advance, at the Tech Director's discretion, for a specific event.

- 404.8 Cylinder Length** –2000-2002: 3.307" – 3.312".
- 404.9 Piston assembly:** Piston components including piston, piston ring, wrist pin bearing, and wrist pin must be unmodified stock OEM parts. Wrist pin clips are non-tech. No other aftermarket parts are permitted. No modifications or treatments (such as coatings) of any kind are permitted. Minor deburring of rough edges (for example light sanding or Scotch Brite) to facilitate break-in is allowed, if the original piston dimensions are retained. Lapping the bottom (only) of the ring is permitted.
- 404.10 Crank, Rod, and Assembly:** Must remain OEM with no modifications allowed. The two main bearings and seals are to be OEM. It is recommended to install main bearings with writing out to facilitate technical inspection. Flywheel key must also remain in place with no modifications to the keyway or key. Only OEM parts are allowed for rod, bearing, washer, and pin replacement. Polishing to allow for slip fitting of crank is permitted.
- 404.11 Transmission:** Five (5) speed as originally delivered in motorcycles or six (6) speed available through Honda in kit form. The six speed transmissions must be 1994-96 OEM components. All transmission components must remain OEM. No aftermarket parts are permitted. No polishing, grinding, or modifications of any kind are permitted. This also includes all bearings, seals, and shifting mechanisms. Mechanical gearbox control only. No ignition interrupt systems are allowed. Drain plug must be drilled and safety-wired to prevent loss.
- 404.12 Clutch:** All parts must remain OEM with no modifications of any kind. This also includes bearings. The OEM number of plates must be installed with no deletion of plates.
- 404.13 Engine Cases:** Engine cases, internally, must remain OEM stock with no modifications, including lapping and bearing pocket alignment. External modifications to the cases are allowed only in respect to non-performance modifications, such as machining the kick starter boss and installing a plug in the kick start shaft hole. SKUSA reserves the right to continue to analyze external case modifications as this class develops, and will adjust accordingly.
- 404.14 Exhaust: Effective February 1, 2014,** only the SKUSA SK-1 exhaust pipe is allowed. No modification of any kind is permitted. All exhaust components are to remain intact during the race and until technical inspection.
- 404.15** Exhaust flange/header is open and must be between 24.5mm (0.965") and 31.55mm (1.240") in length. No spacing can be used to adjust exhaust length, including flange, flange gaskets, or pipe spacers.

YEAR	PART NUMBER	LENGTH
1999	18532-KZ4-700	24.5 mm (.965")
2000/01	18532-KZ4-L10	23.5 mm (.925")*
2002	18532-KZ4-L20	31.55 mm (1.240") (tolerance is +/- 1 mm)

*For S5, only part 18532-KZ4-L10 is allowed, with no modification to header or SKUSA-supplied restrictor.

- 404.16** Silencer is a non-tech item; however, if in the judgment of race officials the effectiveness of the silencer is not appropriate, disciplinary action may occur. S5 drivers are to use an unmodified SKUSA restrictor, stamped with the SKUSA emblem. They can be purchased through the website at www.superkartsusa.com, by phone: 951-491-0808 or via email info@superkartsusa.com. Restrictor is to be installed against the cylinder, and may be sealed with silicone seal. It must not leak at this joint. Maximum I.D. of restrictor: 1.093".

404.17 Ignition

404.17.1 CDI: Must be OEM 1999 with no modifications to internals or wiring. SKUSA race officials or the Technical Director reserves the right to require that a competitor swap ignitions prior to entering the racing surface; if the competitor does not comply, they may be disqualified from the event.

404.17.2 Stator/Flywheel: Must be OEM 1999 with no modifications, including wiring (except for repairs approved by the Technical Director). Flywheel key must remain in place with no modifications. Stator: Effective February 1, 2014, the SKUSA Timing Plate (available from SKUSA or thru affiliated engine builders) must be used. The SKUSA plate allows a limited amount of timing adjustment. Any attempt to exceed this adjustment amount is not permitted. No modification to the hold down bolts or to the plate is permitted. No other modification to any of the ignition components that changes static timing is permitted beyond what the SKUSA plate allows.

404.17.2.1 No covers allowed on ignition. Must be fully open for easy visual inspection.

404.17.3 Coil: Must be OEM 1999 with no modifications. The lead and ground wires can be replaced to facilitate mounting. No ignition advance control can be performed with the coil. Ground cable type and size are non-tech.

404.17.4 Starting System: Use of a Hegar Quick Start System is approved.

404.18 Ignition interrupt/Aftermarket shifting systems: Speed shift/no-lift shift systems are not allowed. Connection between shift lever and J-arm must be solid (other than spherical rod ends). No air bottles, air pumps or any other methods may be used. Exemptions may be granted here by the Technical Director or for special needs drivers.

404.18.1 Spark plug may be any brand or heat range. Maximum length 18.5mm including washer or head temp lead. Must have washer or heat lead in place

404.19 Carburetor: The approved carburetors are: For S5 – Keihin 38mm PWM Sudco part # 16-170. For all other Spec Honda classes – Keihin 38mm PWK Sudco part # 16-153; Keihin 38mm PWM Sudco part # 16-170. Note that the Sudco part numbers and website <http://www.sudco.com/keihin.html> are supplied for reference only. Pump around systems are allowed. Carburetor bore measurement will be determined at the engine side of the slide. Bore may not exceed the designated maximum diameter of 38.6mm in an area .400" (10mm) wide measured inboard of the slide. No additional performance components may be added to the carburetor. No internal or external performance modifications to the carburetor are allowed, such as polishing, boring (including oval boring), or modifying internal passages. Pictures of both allowed and not allowed carburetors are available at <http://www.superkartsusa.com/rulebook/1175-stock-honda-carburetor-examples-showing-permitted-and-not-permitted-versions.html>. Aftermarket float bowl drains that facilitate jet changes and jet needle vibration absorbers (such as used on motocross carburetors) are acceptable. See the event technical director for approved versions.

404.20 Air Box, Air Cleaner:

Stock Honda (all but S5): Drivers may use an air box or optional air cleaner (unless regulated by track). If an air box is utilized, it must be in stock form with NO MODIFICATIONS to the box or the inlet tubes. Air boxes may have up to 3 inlet tubes, each not to exceed 29mm +/- 1mm inside diameter and 95mm minimum length. Approved air boxes are limited to CIK approved and RLV.

S5 must use RLV airbox with (2) 23mm inlet tubes. RLV Part Number 0300 Red and 0301 Black.

404.21 Reed Cage, Manifold and Reeds: The reed cage and manifold must remain stock 1999 OEM CR125 (Honda Part Number 16221-KZ4-A10 – marked KZ4M) with no modifications. The reed cage must be 1999 CR125 (PN 14100-KZ4-J11). For longevity reasons, aftermarket replacement reeds will be allowed, including mono reeds or stiffeners. Note that this only allows reeds that may be installed without modification to the 1999 reed cage and does not permit multi-stage reeds.

404.22 Gaskets, Bearings, and Seals: All bearings and seals must be OEM for the stated model years. No modifications, including treatments, are permitted. Gaskets must meet OEM specification, which includes

thickness and number of gaskets used. Two cylinder base gaskets may be used with a total thickness of 0.025" maximum. Head gasket maximum thickness .010" on non-embossed portion of gasket. The use of common sealants on gaskets and the periphery of seals is permitted.

404.23 Water Pump: Water pump and housing must remain OEM. No modifications to impeller or housing of any kind are permitted.