



12051 Rivera Rd., Santa Fe Springs, CA 90670 USA (562) 945-7578 / 1-888-ITS NIKS FAX (562) 698-7029

H-958B HONDA CR-250R to 295cc BIG BORE SLEEVE KIT '86-91
H-5002B GENERAL MACHINING and INSTALLATION

Thank you for your interest in **L.A. SLEEVE** and **PROGROSS** Genuine Racing Parts products, and congratulations on purchasing your Big Bore bolt-on kit!

Before beginning any installation procedures, please be sure to check that all parts ordered are in the shipping carton.

Parts required for this application: Be sure the model year matches parts' year application.

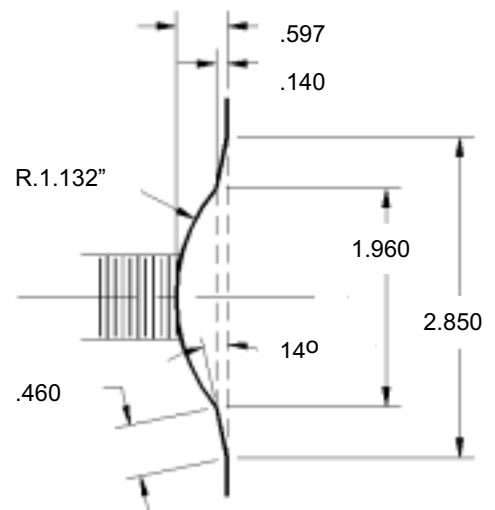
Sleeve: Part No. H-958B ('86), or H5002B ('87-91)

Piston Kit (includes rings, clips, wrist pin): Part No. W845PS

Gasket Kit (head and base): Part No. GS845

These tips are intended to be a guide for installing sleeves into cylinders. There are always exceptions to the rule and care must be taken on special applications.

1. Always check to make sure cylinder has not been previously decked.
2. Cylinder must be bored to accept the new sleeve.
3. Recommended interference fit is .004.
4. A countersink at the top of the cylinder is needed to accept the flanged sleeve.
5. Heat the cylinder to 400° for 45 minutes to an hour. The sleeve should drop right in if the barrel is heated properly. You will have 5 to 10 seconds to line up the ports.
6. Under a hydraulic press, keep pressure on the sleeve as the cylinder cools.
7. Milling the top deck of the cylinder always adds a quality touch. A caution here, some cylinders may not be able to have the top surface decked.
8. For 2-stroke cylinders, blending or matching the ports is vital to the performance of the engine.
9. Blend cylinder to match the sleeve ports, not visa-versa. The top of the exhaust port should be blended. The correct height is 1.660" from the top of the barrel to the top of the exhaust port, and 2.870" from the top of barrel to the bottom of exhaust port. Do not widen bottom of exhaust port.
10. Bore cylinder to fit the piston. Allow .0035 to .004 clearance measured 90 degrees from wrist pin hole at the skirt bottom or largest diameter. Ring end gap should be .010 to .012. Arrow on top of the piston should point towards exhaust side of the cylinder after installation.
11. The flange must be notched for studs. Use KX-250 ('83-84) or CR-125R 8mm straight studs to allow you to use more head gasket surface. Install .400 stud spacers into stud holes for KX studs to rest on.
12. Modify cylinder head to 26cc. Use specifications shown on the drawing.
13. Make sure all parts are clean before installing.
14. Preferred compression is 165 lbs.





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H-958B HONDA CR-250R to 295cc BIG BORE SLEEVE KIT '86-91 **H-5002B TECHNICAL NOTES and INSTALLATION INSTRUCTIONS**

The 295cc Big Bore kit is an easy bolt-on kit at about the cost of a new cylinder and piston. The kit is designed to use with a stock carb and pipe, but to truly utilize all the available horsepower we highly recommend using the FMF Gold Series pipe. Stage II porting will yield awesome power at high revs. This is an excellent bottom end kit for the enduro and woods rider.

1. Your cylinder has been bored to extract its maximum potential. Because it has been set up to close tolerance, a very important break in procedure is required. This is critical to increase performance without sacrificing reliability. Please follow our guide lines closely.
2. After you receive your cylinder from L.A. SLEEVE inspect it immediately for possible freight damage. If you have any questions, contact L.A. SLEEVE.
3. Wash your cylinder and piston in dish soap and water, scrubbing with a paper towel. Spray immediately with a liberal amount of WD-40, let stand.
4. Install power valves into cylinder per Honda instructions. Check to see that the valves when closed do not come into contact with the piston or exhaust port bridge.
5. Put a couple of drops of oil on the wrist pin bearing and install piston. The arrow on piston top goes toward exhaust port. If there is no arrow, ring locating pins (end gap) go toward intake side of cylinder. Note: Clips **do not** interchange with O.E.M. clips.
6. If your cylinder has a bridged exhaust we recommend you drill lubricating holes at this time. See separate instructions.
7. Assemble the cylinder with new gaskets, do not use any type of silicone or gasket sealer. Do not put any oil on the piston or cylinder, the WD-40 that was left in the cylinder is enough lubricant. Look through the reed cage hole as you're sliding the cylinder down on the piston and check to see that the ring end gap is centered on pins, adjust now with a small screwdriver if necessary. Note: If using a copper gasket, a gasket sealer must be used to help seal in the water. Gascacinch or Permatex 101B is recommended. Coat both sides of the head gasket and the cylinder surface with the sealer. Follow manufacturer's directions.
8. Torque the head nuts per factory recommendation. Generally nuts that use a twelve millimeter socket wrench torque to 22 ft. lbs.
9. Be sure air filter is clean. It is recommended you replace the old filter with a new one.
10. We recommend using orange hi-temp silicone to seal exhaust flange. Add glycol based anti-freeze, mixing 50/50 with water.
11. Re-install carb and exhaust system.
12. Install a factory recommended spark plug. Richen jetting two sizes on the main jet and one clip on the needle (lower clip raise needle). Use your normal mixture of gas/oil, we recommend 32:1. If your motor was set up for a 50/50 mixture of pump gas/race gas, we recommend you use straight race gas for the first 5 gallons.
13. See recommended break-in procedure on the last page.
14. After break-in the compression should be 165 lbs.

CARBURETION NOTES

Always check jetting using spark plug as a guide. A light brown tip color indicates the proper jetting.

1. Keihin 38mm PWK carb with functional power valves:
Main Jet: 178 Slow: 62 Needle: DEJ Needle position: 3
2. Keihin 38mm PWK carb with power valves blocked closed:
Main Jet: 172 Pilot: 65 Needle: DGJ Needle position: 3
3. Keihin 39mm PWK carb with power valves blocked closed:
Main Jet: 182 Slow: 62 Needle: DEJ Needle position: 3

HONDA CR- 250R to 295cc BIG BORE SLEEVE KIT **TECH NOTES and INSTALLATION INSTRUCTIONS** (continued)

About the Keihin Carb: The Keihin carbs are now being used by the big four Japanese race teams and are the hot set-up. We have Keihin carbs with jet kits to match the 295 kit, and the custom tuned pipe to make the kit a real top-end screamer. All Keihin carburetors have been jetted for a 32:1 gas/oil mixture. The idle screw should be adjusted so the cycle idles smooth and evenly at a low RBM. The air screw should be adjusted 2 turns so the engine runs quickly off idle. The carb is supplied with 2 extra main jets and a throttle cable.

Needle adjustment: This affects primarily the mid-range of your powerband. If your bike bogs or hesitates when accelerating, try richening your needle by lowering the needle clip one position at a time. If the bike sputters when accelerating, try leaning the needle by raising the clip.

Main jet: This jet primarily affects _ throttle to full throttle of the top end of your powerband. First, try running the bike at full throttle for a couple of minutes. Remove your spark plug and look at the insulator tip. If the insulator is white and/or blistered, then you are too lean. A black and wet insulator means you are too rich. A light brown color indicates the proper main jet. Remember, it is better to start off with too rich of a main jet and work your way down. Too lean of a jet could cause engine damage. A rich main jet will cause the bike to sputter and not clean out on the top end.

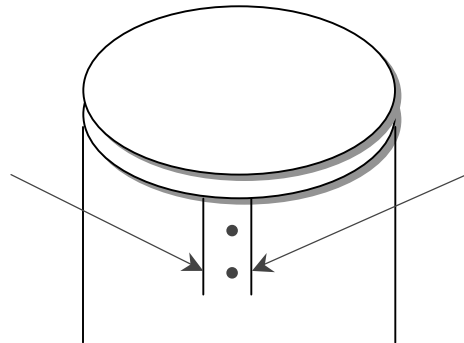
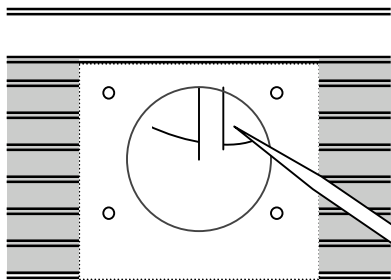
About the FMF Pipe: This pipe was designed to increase horsepower throughout the powerband with exceptional mid-range and top end quickness. The power will tend to come on the pipe quickly. An oval aluminum silencer is also available.

TECHNICAL SUPPLEMENT – BRIDGED EXHAUST

For racing engines, drilling two (2) .060 (1/16") lubricating holes into the piston along the exhaust port bridge is recommended.

The following simple steps will insure adequate lubrication over this essential part of your engine:

1. Install piston on connecting rod without rings. Piston pin circlips should not be installed at this time.
2. Fit cylinder over piston and on its normal position on the crankcase.
3. Turn over the engine and bring the top edge of the piston just above the top edge of the exhaust port, reach on through the exhaust port with a sharp scribe and scratch vertically onto the position of the exhaust port bridge.
4. Remove cylinder and piston.
5. Locate and drill exactly in the center, between the two scribed lines, two (2) 1/16" lubrication holes at the following heights measured down from the bottom edge of the top ring groove:
1st hole: " down (.500)
2nd hole: " down (.750)
6. Remove all burrs from the two holes. Piston is now ready to install in accordance with our installation sheet.





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BREAK-IN PROCEDURES

1. **Start your engine and let it idle**, occasionally blipping the throttle for four to five minutes. Allow the engine to cool completely. Repeat this *heat cycle* process four more times.
2. **Warm up the engine again** and ride the bike for five to seven minutes at a very easy pace. Vary the rpm, and do not ride at one speed. Do not ride at more than 1/3 throttle or more than 1/3 rpm. Let the engine cool down completely and repeat the initial break in ride. Let the engine cool down.
3. **Check the base and head nuts for proper torque**. Check the coolant level and add coolant as necessary.
4. **Ride the bike for five to ten minutes at a moderate pace**. Vary the rpm, and do not ride at more than _ throttle or more than _ rpm. Then let the engine cool completely and repeat this secondary break-in twice more.
5. **Replace the spark plug with a new one**. Ride the bike for five to eight minutes at a moderate pace. Vary the rpm, and shift up and down gears. Once the engine is up to operating temperature, you can make a jetting pass. Start in second gear and ride at full throttle through fourth gear, fully revving out fourth gear. With the throttle wide open in fourth hold the kill button down, pull the clutch, and stop. This is called a *plug chop*.
6. **Read the spark plug**. With a pocket flashlight and a magnifying glass, look at the porcelain part of the plug only. As you view the plug from the center electrode, look down on the length of the porcelain to its base. There should be a dark chocolate colored smoke ring. There was not sufficient time to thoroughly color the whole plug, so the nose of the insulator may still be white. As long as there is a visible dark ring at the base, everything is OK. Remember, we want break-in jetting, so the plug should read rich/dark. Richen the jetting as necessary. If you are having a hard time reading the spark plug, follow the proceeding steps: Put the plug in a vice, and hacksaw around the plug at the washer. Break the threads off with vise grips and the porcelain will be easy to read.
7. **Complete the break-in by riding at an aggressive pace for fifteen minutes**. Vary the rpm and do not cruise at part throttle. Ride hard without revving the engine too high. At the end of this final break-in session do another jetting pass/plug chop as described above. Check the spark plug for the correct dark/rich condition. Wiseco piston equipped engines will require another one or two break-in cycles. If your engine is equipped with a Wiseco piston, continue with the following steps: Ride at a recreational pace not revving the engine hard. Full throttle should only be used for very short periods. Fifth and sixth gears should only be used to cruise. Ride one tank of gas through the engine in this manner to complete the break-in.
8. **Replace the spark plug with a new one**. Ride the bike aggressively for eight minutes and do a jetting pass/plug chop in fifth gear. If the porcelain color is still dark/rich, lean the main jet size one at a time until the smoke ring at the base of the porcelain is a light brown. If the porcelain base is white, do not run the engine and contact L.A. SLEEVE. If the plug color looks good, continue riding at a race pace for ten minutes. Stop and let the engine cool. Check the torque on the cylinder base and head nuts.
9. **More on jetting**: If you generally run your engine flat out in sixth gear, then make your jet pass/plug chop in sixth. Motocross jetting is checked in fifth gear, therefore it is not safe to run MX jetting in the desert wide open in sixth. Desert jetting is richer than MX jetting. When running an engine at full throttle for extended periods, be sure to chop the throttle decisively to slow down. Just rolling out a little can seize a well-jetted engine.

Remember, the best top-end overhaul, done by the most qualified mechanic, is only as good as your break-in procedure. Good luck!