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Mfg: Honda **Make:** XR50R
Year: All
Product: 88cc S-Stage Big Bore Kit



Parts List

- | | |
|--------------------|-----------------|
| 1- Cylinder | 2- C-Clips |
| 1- Piston | 1- Wrist Pin |
| 1-Camshaft | 1-Gasket Packet |
| 1- Piston Ring Set | |

Technical Specifications

XR50	Stock	88cc S-Stage Kit
Bore	39.0mm	52.0mm
Stroke	41.4mm	41.4mm
Compression Ratio	10.0 : 1	11.5 : 1
Intake Valve	19.0mm	19.0mm
Exhaust Valve	16.0mm	16.0mm

Intake & Exhaust Valve clearance should be 0.05mm (+/- 0.02mm tolerance)

Warranty

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Two Brothers Racing products are intended for closed course competition purposes only, and therefore are sold "as is" without warranty. Two Brothers Racing specifically disclaims any warranties of merchantability or fitness for a particular purpose and disclaims all responsibility for consequential and incidental damages or any other losses arising from the use of these products or parts.

IMPORTANT - PLEASE READ CAREFULLY

We recommend that this performance engine kit be installed by a qualified motorcycle technician. If you have any doubts as to your ability to install this performance engine kit, please consult with your local motorcycle dealer. Read all instructions first before starting installation. Make sure the motorcycle and exhaust system are completely cool before starting the installation. Also, make sure the bike is secure on the sidestand or ideally a rear service stand during installation. Be sure to save all stock components for possible use later.

Disassemble the Stock 50cc Engine

1. Shut off fuel petcock



Remove the stock manifold



Remove air cleaner assembly



Remove the fuel and air hoses from the carburetor



2. Remove stock exhaust system



3. Remove spark plug



4. Remove cylinder head cover



Remove left side cover



5. Remove left side crank case cover



6. Remove both tappet covers



7. Rotate the cam gear to the "O" mark, be sure the flywheel is on the corresponding "F" and "T" marks. Remove cam sprocket (you will need to keep the flywheel stationary in order to prevent the cam sprocket from rotating).



8. Loosen cylinder head side bolt. Loosen cam chain roller bolt



9. Remove cylinder head cover (x4 bolts & x4 washers)



10. Remove cylinder head (DO NOT LOSE THE KNOCK PINS, you will be reusing these)



11. Remove the cylinder head side bolt



Remove cam chain roller bolt



Remove cam chain roller



Remove cylinder



12. Remove c-clip and wrist pin
Remove piston (USE A CLEAN RAG TO PLUG THE CRANKCASE - BE CAREFUL NOT TO GET ANY DIRT, DUST OR FOREIGN BODY IN THE CRANKCASE)



13. Remove the cylinder base gasket, o-ring and knock pins (USE A CLEAN RAG TO PLUG THE CRANKCASE - BE CAREFUL NOT TO GET ANY DIRT, DUST OR FORGEIN BODY IN THE CRANKCASE)

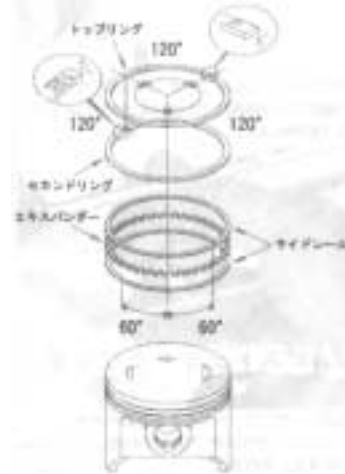


Assemble the 88cc Engine

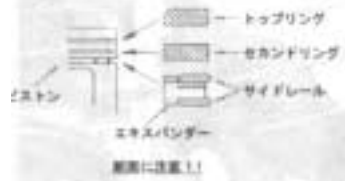
1. Install the left c-clip into the piston (arrow on top of piston points down)
Lightly coat the piston rings with CLEAN motor oil



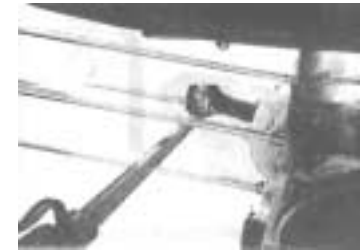
("R" mark is the top ring, "RN" mark is second from top) Install piston rings (bottom ring first) referencing the diagram.



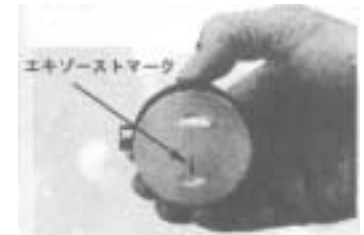
トップリングの上面にはRの刻印
セカンドリングの上面にはRNの刻印があります。



Lightly coat the connecting rod and wrist pin with CLEAN motor oil



Install the piston onto the connecting rod (arrow on piston points down)



Install wrist pin into the piston and through the connecting rod



Install right side c-clip into piston



2. Install cylinder gasket





Reinstall the knock pins



Lightly coat the cylinder wall with CLEAN motor oil



Install the cylinder onto the studs (BE CAREFUL NOT TO DAMAGE PISTON/RINGS/CYLINDER DURING INSTALLATION)



Pull the cam chain through the cylinder



Finish installing the cylinder flush onto the crankcase



Install the cam chain roller into the cylinder



Loosely install the cam chain roller bolt



Loosely install the cylinder side bolt



3. Remove tappet nut/bolt (x2 from end of the rocker arm) from the cylinder head



Install one of the cam sprocket bolts into the end of the cam shaft and use it to pull out the stock cam shaft



Install the new cam shaft



Reinstall tappet nut/bolt (x2 from end of the rocker arm) back into the rocker arms



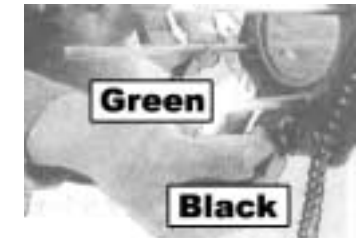
4. Install x2 knock pins into the top of the cylinder



Install cylinder head gasket (BE SURE TO USE CONTACT CLEANER ON THE GASKET MOUNT AREA ON THE CYLINDER TO ENSURE A GOOD SEAL) onto the cylinder



Install one of the black rubber seals (included in the Takegawa gasket kit bag) into the recessed hole on the cylinder. Install the green rubber seal over the stud (ref: picture for proper location)



Install cylinder head onto studs



(BE SURE TO PULL CAM CHAIN THROUGH CYLINDER HEAD, use a screwdriver to keep cam chain from falling back through slot)



Install the cylinder head cover gasket and cylinder top cover onto the cylinder head



(BE SURE TO ALIGN MARKS ON CYLINDER HEAD AND CYLINDER HEAD TOP COVER)



Install the washers (x1 copper goes on left-lower corner, x3 regular) and nuts.

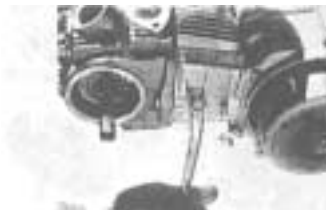


Torque nuts to 9 ft lbs.



Tighten the cam chain roller and cylinder side bolt, torque both bolts to 8 ft lbs.

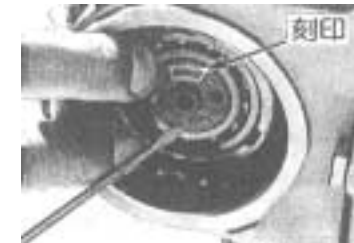
5.



Align flywheel to the "F" and "T" marks



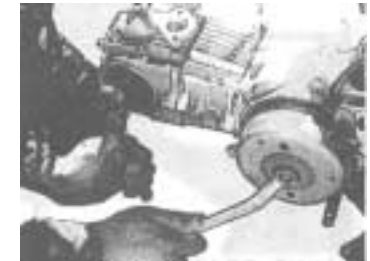
Align the cam shaft to the "N1" mark so it's on the top side



Install the cam sprocket onto the cam shaft (THIS CAN BE VERY TRICKY, TAKE YOUR TIME)



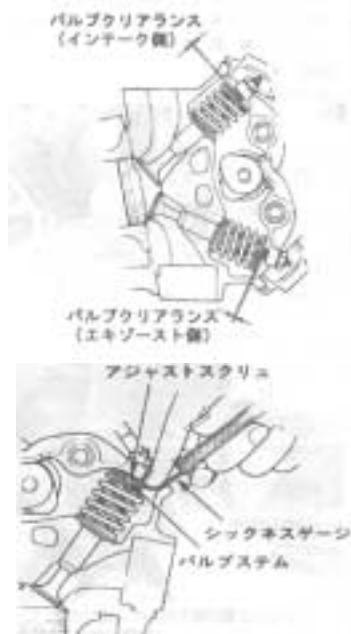
Install the cam sprocket bolts (secure the flywheel with a wrench to prevent it from rotating) and torque to 7 ft lbs.



6. Adjust valve timing and tappets (BE SURE THE FLYWHEEL IS ON THE "T" MARK AND THE CAM SPROCKET IS ON THE "O")



Intake & Exhaust Valve clearance should be 0.05mm (+/- 0.02mm tolerance)



Once valve clearance has been set rotate engine COUNTERCLOCKWISE twice and realign the "T" and "O" marks



Recheck valve clearance again if there is no gap you have done everything correctly, if you find a gap reset valve clearance and turn over engine COUNTERCLOCKWISE twice. Repeat until proper valve clearance is accomplished.



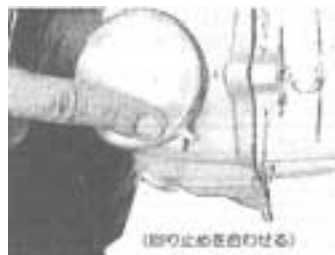
Reinstall all remaining engine covers



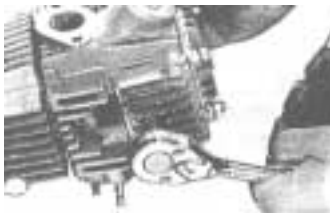
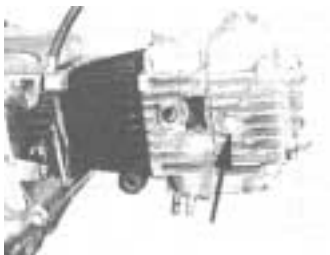
7. Install left side cylinder head gasket and cover



Be sure to fully tighten left side cover, tab must touch



Tighten right cylinder head hex bolt, torque to 9 ft lbs.



8. Install spark plug.
9. Reinstall exhaust system.
10. Install new carburetor and air filter and crankcase breather. Be sure to oil the air and crankcase filters with a high quality filter oil.
11. Install left engine cover.
Reinstall gear shift lever, torque to 1.0kg-m
12. **Doublecheck your work before starting the bike and doublecheck the engine oil level!**