

TTR125

BBR 150 BORE KIT AND HIGH-PERFORMANCE CAMSHAFT INSTALLATION INSTRUCTIONS

Installation of this piston kit is identical to OEM installation. Please refer to the Yamaha shop manual or a qualified mechanic for assistance or questions. These instructions are not intended to be a replacement for the Yamaha shop manual. Read all instructions carefully before installation. Make sure that the motorcycle has cooled down and has been secured. Clean the motorcycle thoroughly to insure that no dirt or foreign objects can enter the engine.

Every effort has been made to insure the quality of this product. Because BBR cannot control the installation or use there is NO warranty or guarantee with this product. Using quality motorcycle oil will help prolong engine life. Be sure to change it often. Some of the pictures shown may not be the same as your model.

Required Tools:

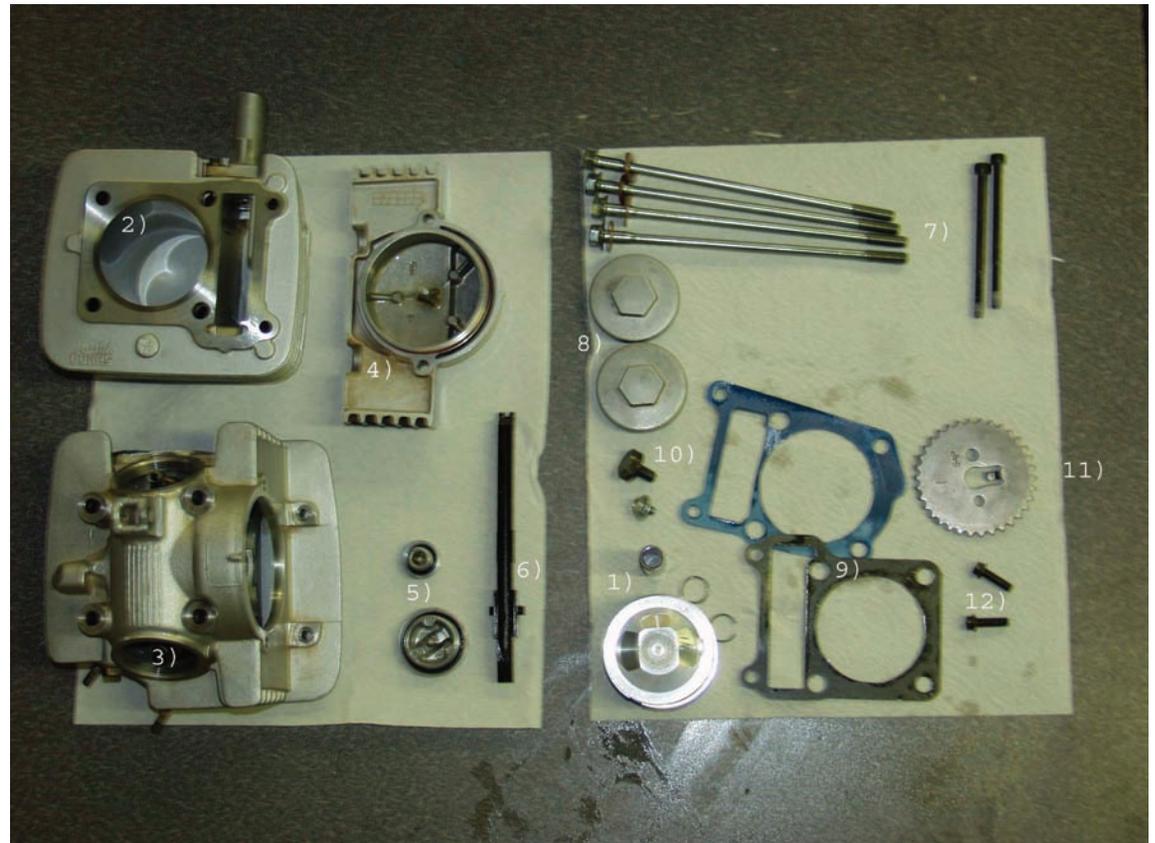
- Service Manual
- 8mm socket or wrench
- 10mm socket or wrench
- 17mm socket
- 5mm allen wrench
- Torque wrench
- Large flat head screwdriver

Torque Values:

Head bolts:	22 N-m (2.2 kgf-m, 16 lbf-ft)
8mm & Allen bolts:	10 N-m (1.0 kgf-m, 7 lbf-ft)
17mm bolts:	20 N-m (2.0kgf-m, 14 lbf-ft)

BBR Recommends using a 112.5 main jet
for 60 degrees and hotter outdoor temperatures.
For colder than 60 degrees use a 115 main jet.

- | | |
|------------------------|---------------------------------|
| 1. Piston Assembly | 8. Valve Covers |
| 2. Cylinder | 9. Gaskets |
| 3. Cylinder Head | 10. Cam Sprocket & chain Screws |
| 4. Cam Sprocket Cover | 11. Cam Sprocket |
| 5. Access Screws | 12. Cam Sprocket Cover Bolts |
| 6. Cam Chain Slider | |
| 7. Cylinder Head Bolts | |



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Disassembly instructions:

To remove the engine from the frame remove the 2 large engine mounting bolts, throttle cable, air filter assembly, and chain.

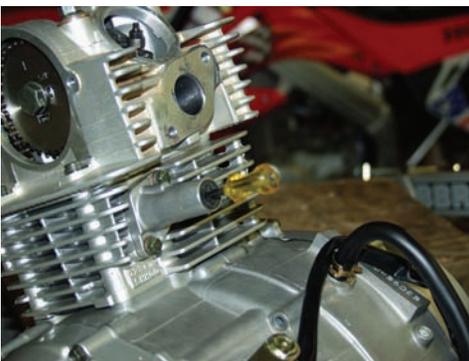
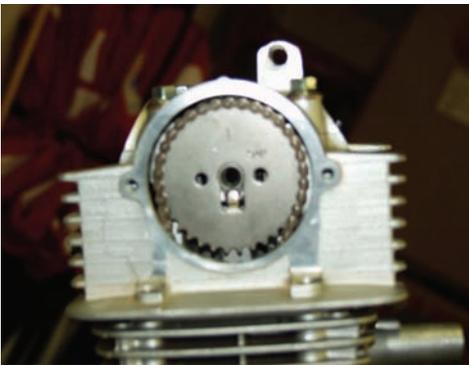
1. Remove the left side crankshaft and timing mark accessing screws.



2. Remove the left side cylinder head cam cover by removing the two 8mm bolts.



3. Remove the timing chain tightening bolt and release the pressure on the chain by turning this bolt all the way clockwise. When installing turn it counter clockwise and you will feel it self adjust.



4. Remove the cam sprocket from inside the left of the cylinder head by removing the 17mm bolt. Be sure to not let the washer fall off of this bolt into the engine.



5. Remove the 2 large round 17mm valve covers caps. Remove the four 8mm bolts from the top cylinder head cover and remove the cylinder head.

6. Remove the 10mm cam chain slider. Remove the 2 left side cylinder bolts (5mm allen heads).



7. Remove the cylinder head, gasket, and 2 alignment dowels. A well used motor may require some force to get the base gasket to release the cylinder. A rubber hammer may be helpful - but be very careful! Do NOT use a screw driver to pry it up, or you will destroy the cases!

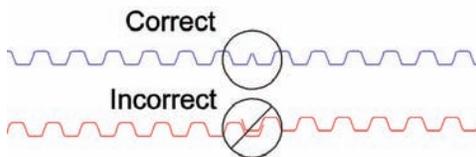
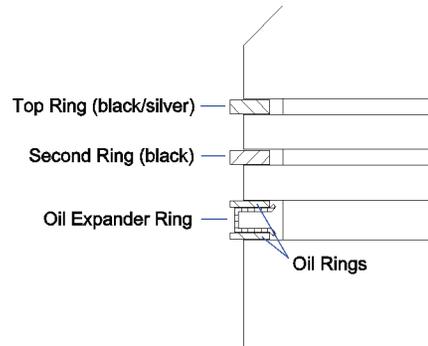
8. Remove one of the small piston clips from inside the piston (use a small screwdriver or needle-nose pliers). Push out the piston pin, and remove the piston from the shaft.



9. Piston Ring Installation:

Using your fingers and a minimal amount of force, pry each ring over the piston and slide it into the groove. Apply a thin coat of motor oil onto each ring before installing.

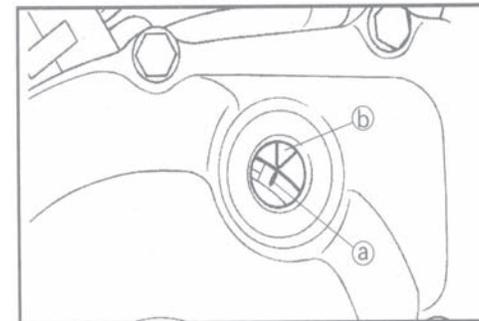
- Install the oil expander ring (the wavy ring) onto the bottom groove.
- Install the two thin rings: one on top of the oil expander ring and one underneath, in the same groove.
- Install the black ring onto the center groove making sure any letters face up.
- Install the black and silver ring onto the top groove making sure any letters face up.
- Rotate all gaps in rings approximately 90 degrees from each other so they do not line up. Also make sure that the oil expander ring does not overlap itself.



10. Piston Installation: Install one of the provided piston clips onto the piston. Push the piston into the cylinder making sure that "BBR" on the piston would not be upside down if you were sitting on the bike. Use your fingers to compress the rings and slide it inside the cylinder before installing the cylinder.



11. Make sure that the crank is at top dead center (at the top of its stroke or TDC). This is indicated by the mark on the flywheel lining up with the notch on the case. You can see this by looking through the timing access screw. If it is not, turn the flywheel until it is in this position.



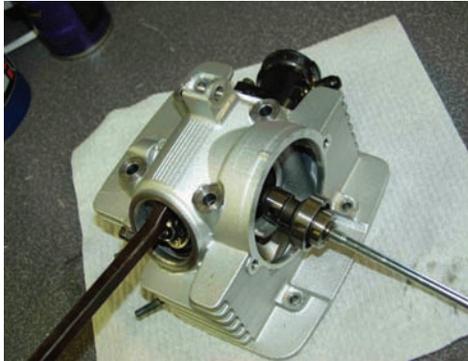
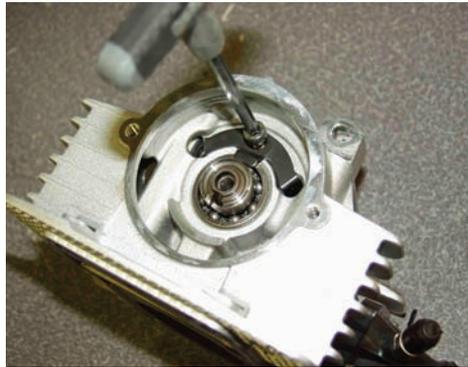
12. Slide the cylinder onto the engine after placing the gasket, and dowels onto engine cases. The BBR kit DOES NOT require the stock cylinder O-ring! Once the piston has reached the connecting rod install the wrist pin through the piston and connecting rod and install the 2nd circlip to secure the piston pin. When sliding the cam chain slider in be sure it is as far forward as possible and does not wiggle around.



Piston to Cylinder Clearance: Using a cylinder bore gauge, measure the inner diameter of the cylinder. Be sure to check for roundness and taper by measuring in more than one location. Next, measure the pistons outside diameter using a micrometer. Subtract the pistons diameter from the cylinder measurement; the difference should not be more than .002".

13. Cam Removal & Installation:

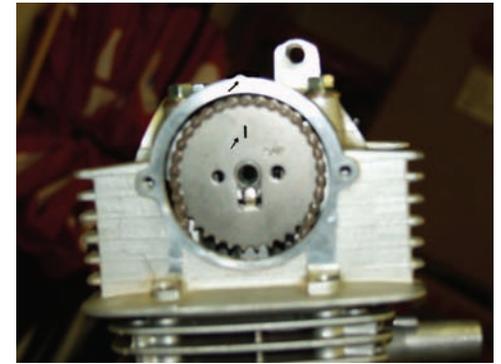
First remove the cam brace covering the cam bearing using a 5mm Allen key. Remove the old cam by compressing the exhaust valve with a large screwdriver or other prying object and slide the cam out. Next compress the intake valve and continue sliding the cam out of the cylinder head. Use care not to bend the valves or damage the cylinder head.



14. Install the new BBR cam in reverse order making sure that the cam lobes are facing down (in towards the engine). The bare camshaft is pictured at the right. Notice the lobes facing down.



15. Cam Sprocket Installation: When installing the cam sprocket make sure that the "T" on the flywheel is still lined up with the mark on the engine case. Make sure the circle on the cam sprocket is lined up with the mark on the cylinder head.



Setting the valve clearance: Loosen the 8mm bolt on the valve adjuster. Using a feeler gauge slide it between the valve and the threaded pin. Thread the pin in or out until the feeler gauge fits snugly but slides easily. Retighten the 9mm bolt at this position and install the valve cover. Repeat with the other valve.



Valve clearance:

Intake:

.003~.005 in (.08~.12 mm)

Exhaust:

.004~.006 in (.10~.14 mm)

Continue installing any other parts you have not installed yet and reassemble the motorcycle (if you took the motor out of the engine). Be sure to check the oil level before running the motorcycle.