

CYLINDER KIT AND ECU FOR YAMAHA AEROX R 50 4STROKE EURO 4

WARRANTY: before starting the assembly of the new Polini cylinder kit, read carefully the enclosed warranty certificate.
Cylinder: bore Ø 44mm – Stroke: 43,6mm – Displacement 66,26
– Compression ratio: 1:12

PROCEDURE - Wash the vehicle with great care for the engine area.

REMOVING THE ENGINE – Disconnect the battery and the cables of the electric system that go to the engine and the starter. Remove the exhaust system. Remove the air box, and the fuel system from the engine head leaving it connected to the frame. Disconnect the rear brake system. Empty the coolant circuit using the proper caps. After emptying the coolant from the engine, disconnect the sleeves that make the engine coolant coming in and out. Remove the rear wheel and the screws or pivots that fix the engine to the frame and the rear shock absorber. Remove the engine from the vehicle and place it on a table.

REMOVING THE CYLINDER KIT - Remove the old cylinder, verify that all the mechanical parts are in perfect conditions (roller bearings, crankshaft and piston pin cage etc.) and, if worn, replace them with new ones. Unscrew the 4 -M6 screws that fix the cover and remove it. Remove the water pump on the head. Move the engine to the Top dead Center in the compression phase (position highlighted by the marking placed on the pulley of the camshaft and from the position of the marking on the flywheel, photo 1). Align the marking on the flywheel and crankcase. Turn the engine using the variator stopping nut. Remove the chain tensioner and the ring gear, being careful that the chain does not fall down on the base. Loosen the 4 nuts and remove head and cylinder from the base of the engine and extract the piston from the connecting rod.

ASSEMBLING THE CYLINDER KIT - Before assembling the new engine, carefully wash cylinder, piston and pin with petrol, blow in a jet of compressed air; slightly lubricate the cylinder barrel and all the parts in movement using oil for mixture with great care to the pin and to the connecting rod foot. Fit the piston pin rings and check that they perfectly enter their seats.

ASSEMBLING THE PISTON RINGS (Pct. 1) – Insert spring 1 and the 2 reeds of the scraper oil in their proper piston groove. Install the second ring with letter "N" towards the upper side of the piston and the rings; place the black one under the chromed one. Lubricate all the parts. LETTER "N" ON THE RINGS MUST BE TOWARDS THE HEAD

Insert the new cylinder after lubricating it, install the new head gasket and the two centering bushes (photo 2). Insert the head on the studs and tight the 4 stud nuts following cross procedure and with tightening value: 2.5 Kgm. Insert the two M6 lateral screws that fix the head to the base and tighten them. Place the crankshaft at the top dead centre after having aligned the marking present on the flywheel to the marking on the crankcase. Install the distribution chain on the ring gear and insert it on the camshaft by aligning the marking line (photo 1). Tighten all the parts and check again that the ring gear is aligned to the marking of the head. Assemble the chain tensioner by tightening the 2 M6 screws on the cylinder, tighten camshaft and gear. Make the crankshaft turn 4-5 times and place it to the top dead centre again aligning the markings; check that the gear ring of the distribution chain is still aligned to the marking as shown in picture 1. If during its revolution the crankshaft should stop; DO NOT try to force it but check the distribution timing following carefully the procedure. Reset the proper slack between exhaust (0,15mm) and intake valve (0,10).

Install the cover again and the water pump too. Add to the engine the oil quantity and model recommended by the vehicle's manufacturer. To replace the air filter union it is necessary to disassemble the filter box; remove the original air sleeve and using a milling machine or a file enlarge the hole till 33mm as indicated in photo 3 and insert the sleeve supplied with the kit (photo 4). Fit the engine on the vehicle and restore all the standard connections and apply the ECU to the injection.

ASSEMBLY DATA

- Tightening value of the stud nuts M8 14 Nm (1,4 Kgm)
- Tightening value M6 lateral head screws 10Nm (14 kgm)
- Tightening value M8 screw, ring gear, cam shaft 24 Nm (2,4 kgm)
- Engine oil – total capacity 1 litre – Type: see "Operation and maintenance manual"
- Spark plug: NGK CR 7E

ASSEMBLING THE POLINI ECU - It is a control unit that modifies the calibration of the original map. The

Polini Ecu works on 2 data acquisitions: injection and TPS. Polini Ecu contains 2 maps.

Map 1: switch n.3 (see photo). This is the map for the Polini engine Ø 44mm and original muffler.



Map 2: switch n. 3 (see photo). This is the map for the Polini engine Ø 44mm and Polini muffler.



First disassemble the helmet compartment. Find the TPS connector where the 3 cables come out and follow the yellow cable till the connection to the Yamaha 6-cable connector. Put the cable clamp on the original yellow clamp (if necessary cut a piece of sheath) and connect it to the white/yellow cable of the Polini ECU (photo 5). Disconnect the injection female terminal and connect it to the male terminal of the Polini wiring. (Photo 6) Connect the ground eyelet. (PHOTO 6). Connect the injection connectors and the TPS to the Polini ECU (Photo 7).

TPS ADJUSTMENT - To set the TPS, turn switch n. 1 in ON position (photo 8)

1-Turn the panel on (with the key) with the throttle control in 0□ position (all closed). The led will light up first with 4/5 regular flashes followed by 3 short flashes.

2 -Without turning the panel off, accelerate keeping the throttle control to its 100□ open position (fully open) and hold it in this position. It will be followed by 10/12 regular flashes followed by 3 short flashes that indicate the acquisition of the data.

3-Turn the panel off and re-position the TPS switch to the OFF position.

4-If the panel is switched on again with the switch in ON position, the data will not be acquired. If the times of the acquisition are incorrect, repeat the "TPS adjustment" procedure.

RUNNING-IN: During the first 500 Km don't exceed the $\frac{3}{4}$ of the throttle control and avoid covering long upward runs putting the engine under strain.

GENERAL SUGGESTIONS - Both during the running-in and after never try getting the highest power before achieving the best running temperature. The bedding of the various parts will be obtained after an average of 500 km. A wrong variator calibration could compromise the engine performance when running at high rpm.

We suggest the use of original Polini Motori spare parts only.

