



Installing an Air Cooled 70cc Big Bore Kit for 2 Stroke

Basics

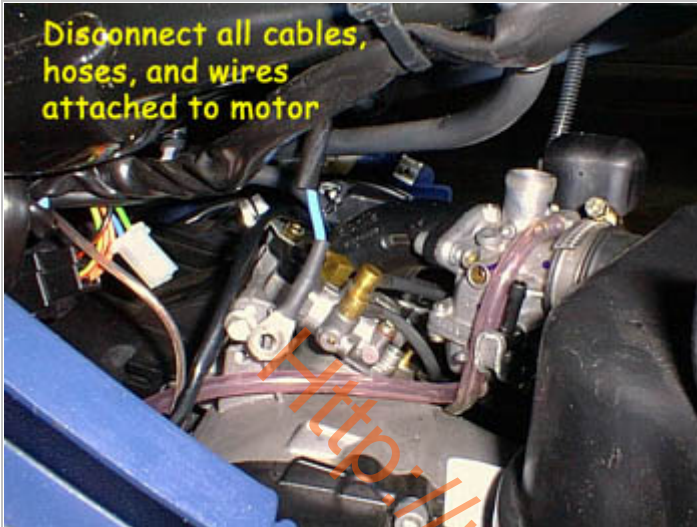
1. Let me first start with the fact that I am NOT a mechanic. I have been working on motorcycles and scooters for a long time and know a little about what I am doing. I simply take pictures for other people to use as a guide line to help them modify their own motors. Any modifications you perform are done completely at your own risk and liability.
2. Tampering with your motor in any way may void your warranty. Make sure this is a sacrifice you are willing to make before you begin working on your own vehicle.
3. Before you begin, make sure you have a nice clean area to work in. A small amount of dirt can be a big problem when working on the innards of your motor. Keep your hands, motor, and any other parts you are handling very clean.
4. This example was performed on a 2003 Aprilia Mojito. If you own any carbureted air cooled scooter, the same steps will apply. I chose to remove the entire engine/drive train to do this job. Many people say that they do it in-frame, but I find it is easier to work on when there is a lot of room to work. I hate working in tight spaces. The choice is yours, but my suggestion is remove everything before you begin.
5. ALL bolts and socket head cap screws are in metric! Don't try to work on your vehicle if you don't have metric tools, you will just end up messing up the heads.



First start by removing the farings that are in your way. Sometimes the more the better. On my Mojito, I only removed the rear faring and the small side farings.



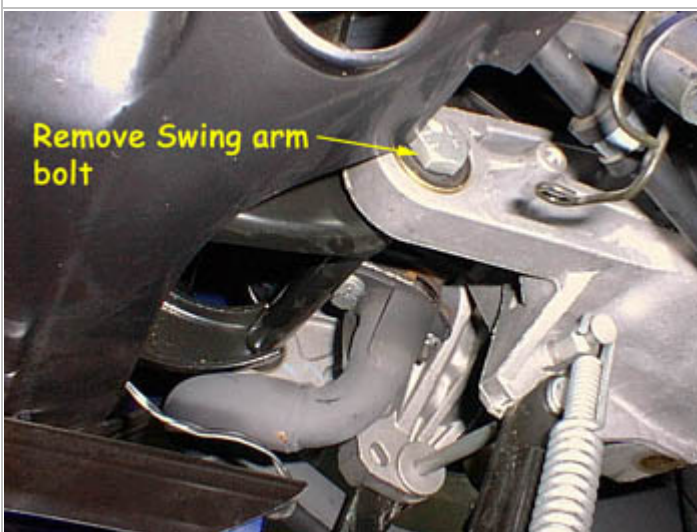
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Next you will need to disconnect ALL CABLES, WIRES, and HOSES!!! Make sure nothing attached to the frame is attached to the motor. Don't forget about your brake cable!



After all the cables, hoses and wires have been disconnected, unbolt the coil spring at the bottom.



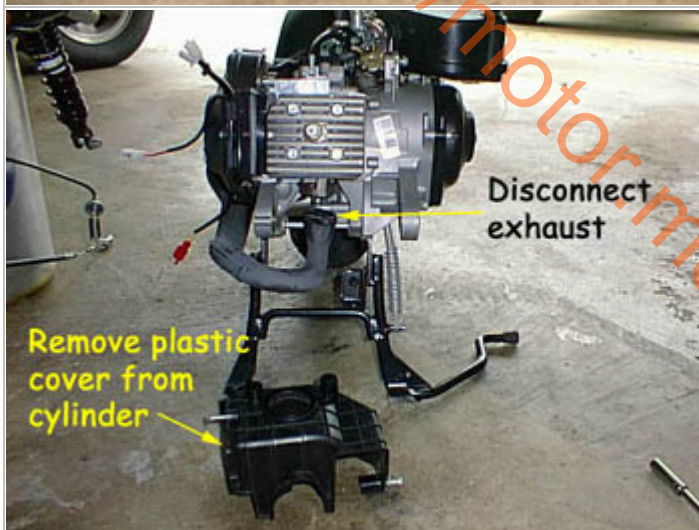
Once the shock is disconnected, and you are sure there is absolutely nothing attached to the motor, remove the main chassis bolt from the swing arm.



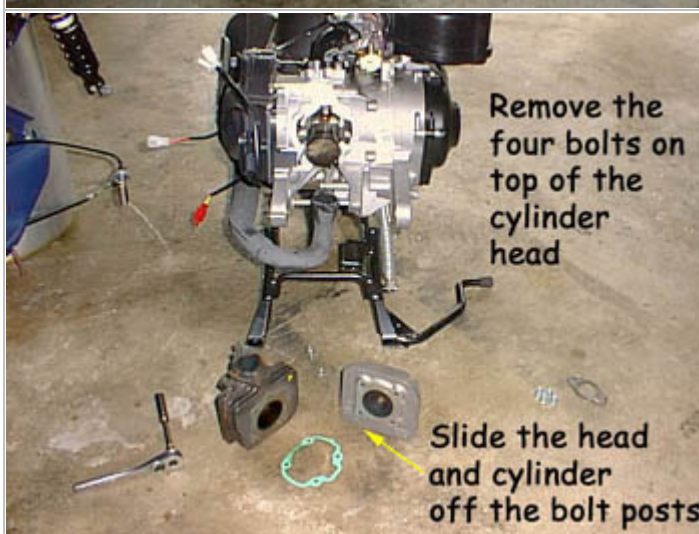
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When the bolt is removed, the scooter will be in two pieces. You may want a second person to hold up the main frame. Simply lift the frame off the engine and set it aside on something. You will now be able to install the big bore kit with greater ease.



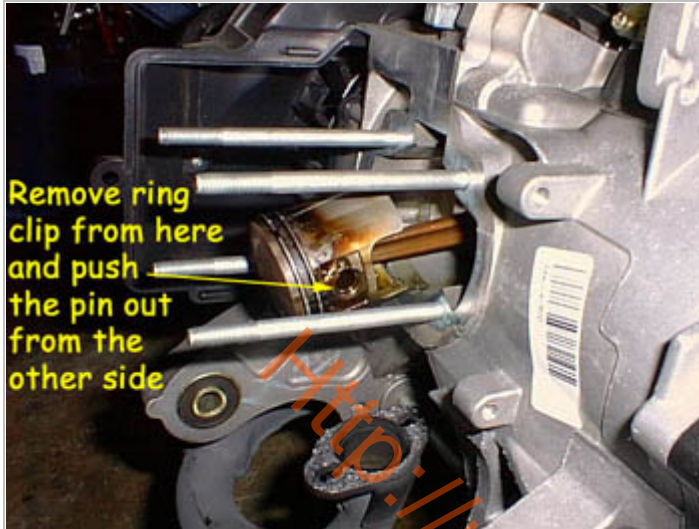
You will first have to start by removing the spark plug, the plastic cover from the cylinder head and disconnecting the exhaust.



Next remove the four bolts located on the top of the head. After the bolts are off gently pull the head off, followed by the cylinder casing. Remove the gasket at the bottom of the cylinder, Malossi provides you with a new one to replace it.



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Now you have to remove the piston. There are ring clips located on each side of the connection pin. I used a very small screw driver and snapped it out. Then push the pin out from the other side, being careful not to damage the roller bearing cage.



Now you have everything removed, we are ready to install the new kit. This is a comparison of the old cylinder to the new Malossi kit.



Here is a comparison of the 50cc piston and cylinder to the new 70cc kit. Notice the difference in diameter!!! MORE DISPLACEMENT RULES!!!

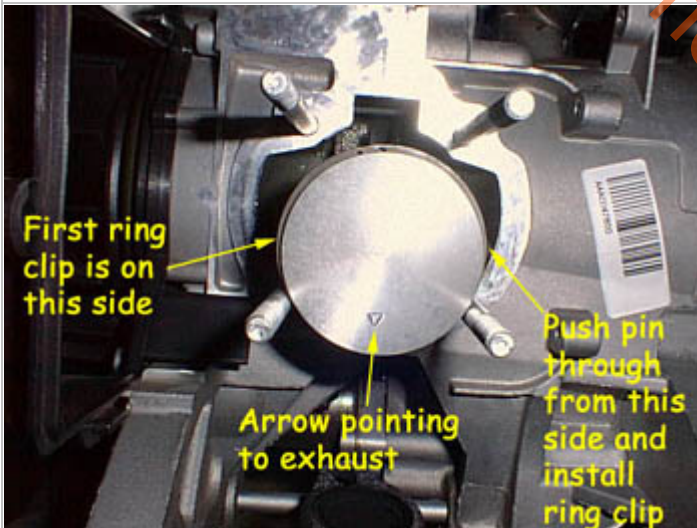


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The first step is to install the piston. You will need to put a ring clip on one side of the piston. The air cooling box to the left of the motor (Looking at it) can get in your way, so put the pin on the left side of the arrow when the arrow is pointing at you. That arrow will be installed pointing towards the exhaust.

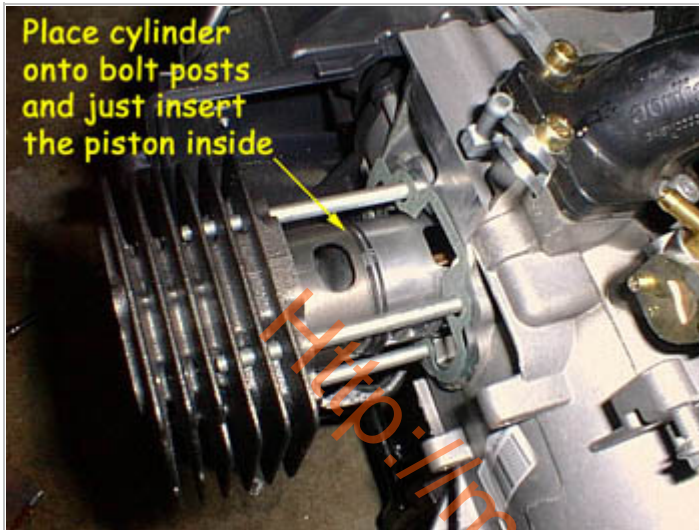
Also put the rings on now. Be careful not to stretch them too much, as they will break in half. Slide the first ring over the top and into the first groove on the piston. Then step it down to the next groove. Then install the other ring in the first groove. You will notice a small pin located inside each groove. These pins should line up where the rings are split.



Now we need to attach the piston to the connecting rod. Place the piston over the connecting rod and line up the bearing cage with the hole and slide the pin through. After the pin is in, install the other clip that came with the kit. This is done easiest with a small pair of needle nose pliers.



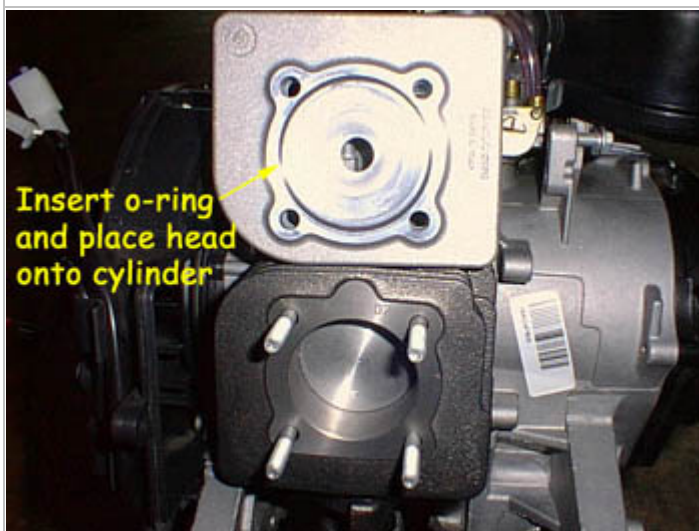
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Now we need to put the cylinder on.

Before you put it on, take a small amount of 2-cycle oil and rub it all over the cylinder walls. This will remove the chance of scoring the walls on initial start up. Also a small bolt post should have come with your kit. This is for the exhaust. You will remember that you exhaust has a bolt and a nut holding it on. Simply screw the short side of the threads into one of the threaded holes next to the exhaust port on the cylinder.

Place the cylinder gasket that came with the kit onto the four bolts and push it all the way down to the motor. Now place the cylinder onto the four bolt posts with the exhaust port facing down. Slide the cylinder to the piston until the piston just starts to enter the cylinder up to the first ring.

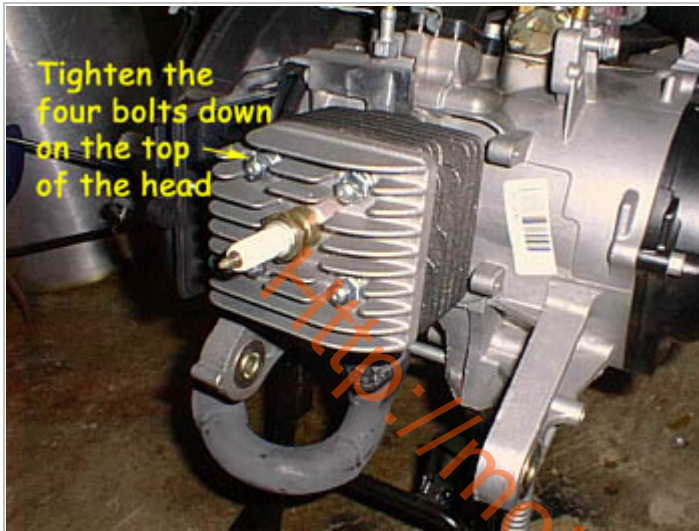


Make sure that the split in the rings are lined up with the little pins located in the grooves on the piston. Once the first ring is lined up, squeeze the ring and slide the head to the second ring. Make sure the split is lined up and squeeze the second ring and slide the cylinder all the way on.

Insert the o-ring onto the head and place the head onto the cylinder.



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Now replace the four nuts onto the head and tighten them up pretty snug.



Now re-install the plastic cover over the head and re-attach the exhaust. Then put your spark plug in.