

Brakes

Brake Switches

The first brake issue I noted was with a finicky brake light switch that kept the light illuminated all the time. After doing some testing, I found that the switches are the push in type and one is located on each of the brake levers. Just look for wires that come out of the master cylinder area after removing windshield body panel, windshield, and the rear dash cover. I've had no trouble with the right switch (front brake), but the left (rear brake) seems to have the hole that the switch tabs lock into drilled slightly too far in toward the lever pivot. The switch has a plastic housing with tabs that snap into the upper and lower holes. So, with the locking holes too far in, the tabs can't lock the switch in place. The solution is simple; With the switch removed, lift the tabs slightly and using a small file, remove a small amount of material from the back end of the tabs (toward the wires). This will allow the tabs to snap securely into the lock holes. You may need to remove it a few times until you get just the right amount of material removed so the switch doesn't stick, yet activates the light with minimal lever pressure.



Servicing the Master Cylinder

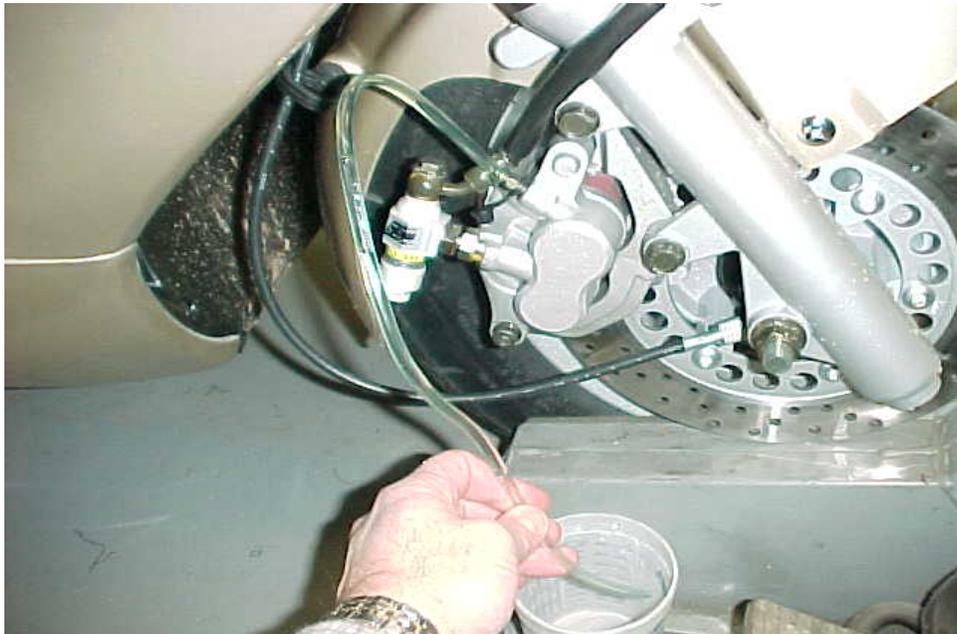
This one is simple. There is a round sight window on the back side of each master cylinder mounted on the handlebars. The window should look like

it is entirely a golden color (color of the fluid). If you see a horizontal line and the window is clear above the line, you are low on brake fluid. Remove the rectangular top and fill only to the top of the window (bike should not be tilted or on the side stand). Do not overfill! The fluid needs room to expand when it gets hot.

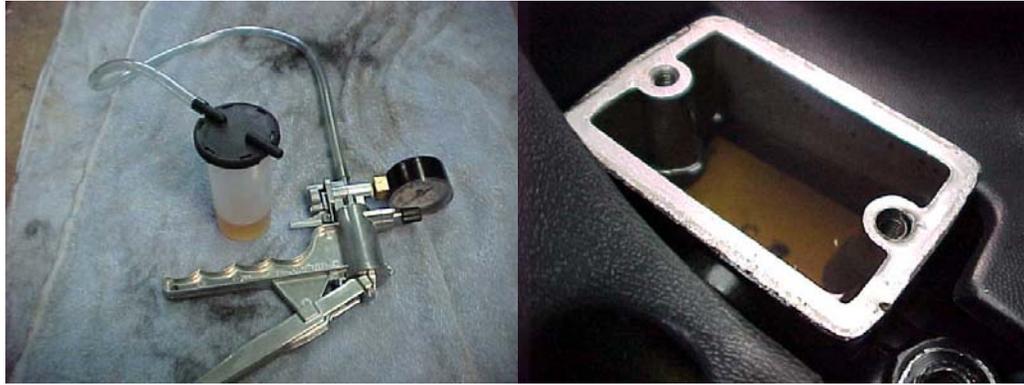
Changing the Fluid

I have no idea what quality of fluids the Chinese used on these bikes, so to be safe, I replaced them all. Below is the procedure I used, but if you don't have a brake bleeding pump, you can pump all the fluid out of the system using the brake lever and putting a piece of hose on the caliper bleed screw. This method is messy, and can introduce air in the system, which is why I don't use it. The bleeding tools can be purchased for as little as \$20 and well worth the cost.

Remove the top from the master cylinder, and then hook a piece of clear vinyl tube to the bleed screw on the caliper. Place the open end of the tube in a container to catch the fluid. Open the bleed screw with an 8mm wrench and start squeezing the lever. This will force most of the fluid out of the system and into your container. This is where you may want to just refill the reservoir and bleed the brakes, but since I wanted complete replacement, I used a vacuum bleed tool to suck out all the fluid.



Once all the fluid was removed, I filled the reservoir and pulled the new fluid (high temperature DOT 3) through the system until I stopped getting air in the line. Be sure to keep the reservoir full, or you'll introduce air into the line. Once the air was gone, I closed the bleed screw while maintaining the vacuum pressure.



If you don't have a vacuum bleeder, you can also bleed the brakes by continually pumping the lever until pressure builds, then while holding pressure, crack the bleed screw momentarily, Repeat this until all air is gone and the lever feels solid.

Squeaks, Squeals and Groans

Disk brakes can squeak! Try to determine if the noise is when braking only, or does it happen when no pressure is being applied to the lever. If you determine that the squeak is only during braking, first clean the rotors with steel wool or lacquer thinner (let them dry before using). The noise during braking is often experienced with new pads until they wear in, or pads that are worn out (metal to metal contact).

Squeaks or squeals when no brake pressure is applied is the result of the pads touching or vibrating against the rotors. There is a product made to quiet this that you can get from any auto store and it's typically called something like disk brake quiet. It's a rubberized material that is applied to the back (metal side) of the pads to deaden the vibration. It could also be a sign that you have air in your system, need to bleed the brakes, or the master cylinder fluid reservoir is too full (also see below).

Where is the Power?

If you feel like you have lost some power, put the scooter on the center stand and turn the rear wheel by hand. You should have virtually no resistance when you turn it. If you do, your brakes could be dragging. Check the front by having someone tilt the back end down so the front tire is off the ground and check the same as the rear. If the brakes are dragging, you need to check the fluid level, bleed the systems, and check the lever adjustment where it makes contact with the master cylinder plunger. You should end up with minimal brake to rotor contact or resistance. Another thing to check is to make sure that there are no leaks in any of the hoses or connections at all points between the calipers and the master cylinder(s).

What's that metallic sound?

If you hear a metal to metal metallic sound when moving the scooter around, it is probably caused by the caliper slide pad not being notched correctly. This isn't a big deal, since over time the rotor will wear the slide until the noise stops, but if it bothers you. The photo illustrates where the rubbing is. Just file or grind the stainless slide pad slot until the rubbing is gone.

