

50cc and 150cc Scooters:

Post Delivery Inspection Guide

Thank you for your purchase, we appreciate your business.

This guide for post delivery inspection is designed to aid you in getting the maximum life from your new scooter. Proper PDI is very important and starts you off right, in your ownership experience.

You will need some basic hand tools, such as:

A socket set, and ratchet

A rubber mallet

A medium sized Phillips screw driver

Some zip ties

A medium sized flathead screw driver

And a pair of pliers

You will also need some supplies for the initial set up such as:

A can of **premium** gasoline (most scooters with the gy6 style engine recommend 92 octane fuel.)

A *bottle of blue thread lock*

A can of spray lubricant

A quart of **quality**, standard type, 10W-30 oil (Castrol, Valvolene, etc.).

A quart of quality gear oil (GL-3 or GL-5)

Note: For the **break in period (0-300k)**, we recommend that you **not** use synthetic motor oil. Standard oil helps the break in process. After the initial break in, Synthetics are fine to use. The oil you use can vary, based on a number of factors, such as climate, riding style, habits, and terrain. Research your area and pick the best oil for your location and conditions. If in doubt, use whatever oil is recommended in your owner's manual, or 10W-30 if no recommendation is made.

The First thing you will notice is the packaging. The large cardboard box and metal crate are there to protect your investment during its long journey from us to you. Look over the unit carefully, before removing the cardboard, to see any obvious signs of damage. Make note of anything that appears serious, and then remove the box. The metal crate inside is fastened to the scooter using nuts, bolts and in some cases, wire. Walk around the unit, and note the way it is attached, and begin unbolting the unit from the crate, starting on top, and working your way down. It is a good idea to remove the scooter from its crate before continuing. It's recommended that you have two people at this point, one balancing the front of the scooter, the other cutting and removing the left over shipping wires (if any). Have the helper unbolt the front axle bolt from the frame and slide it out, holding on to all the removable parts (axle bolt and nut). This frees the front wheel up. Next both of you pick up the scooter and set it on the ground (stable ground, no sand or grass) on the center stand. The majority of scooters (150cc and smaller) will stand up fine without the front wheel, but for added stability, a prop may be placed under the floorboard, such a cinderblock with a towel over it, a small cooler, or a strong cardboard box. This will help make sure it won't fall over. Large scooters (250cc and up) **will** need additional support, as they will fall over if not properly supported.

Now, since we still have a lot to do, look for the box with the battery in it. It may be in a box on the step-through, or in the under seat storage area. Follow the directions for adding the electrolyte to the battery (be careful as this is an acid, and can burn you and destroy clothing) and let it sit open, leaving off the black plastic electrolyte cap, for 20 minutes before charging. After 20 minutes, while still leaving off the black plastic cap, put the battery on a charger with no more than 2 amps, in a safe place while you do the rest of the pdi. This needs to charge while we work, usually 4-6 hours is a good amount of time to charge it.

The front wheel:

Most scooters come with the front wheel off of the bike, but if yours came with the front wheel attached, go to the next step.

Some bikes come with a spacer between the brake pads, so if yours does, remove it. Then, slowly and carefully guide the wheel into position, this may prove difficult on some models, but careful attempts and patience will get it done. The wheel sometimes gets in the way of the caliper, but despite how it appears, it is not necessary to remove the caliper, it just takes some finesse and practice. The disk should slide between the brake pads. There is usually a metal spacer that goes between the hole on the wheel, and the front fork, on the side with the brake disc. The speed sensor, attached to the speedo cable, on the other side

often has another spacer also. The speed sensor usually has two notch tabs on it, that line up with a peg on the fork, and on the inside has two tabs that line up with two tabs on the wheel. Line up the tabs on the sensor and wheel first, then, holding it in place, line it up with the peg on the fork, being careful to hold the spacer on the brake side in place. This requires good hand eye coordination and a concert of movement and assumes that you have already gotten the disk into the caliper. Unless you have done this before, it can be infuriating and while this can be done alone, it's better to have a helper for ease of installation. Hold the speed sensor, spacer and wheel in position, and have your helper slide the axle bolt you saved from step one through the whole assembly. If everything is lined up, it should slide in easily; however, sometimes it will only go 1/2 to 3/4 of the way in.

You have to get the axle through the first fork arm, the spacer and into the wheel by hand. If it gets stuck beyond this point, a few gentle taps with a rubber mallet will get it the rest of the way through, but be very careful not to damage the speed sensor.

Once the axle bolt is all the way through, put a couple of drops of blue thread lock on the axle threads (being careful not to put too much, it's very effective stuff) and thread on the washer and nut. Check the owner's manual for torque specs, and if none are listed, 75-80lbs should do. Some bikes come with the axle nut on the end of the axle, while others have a different nut in the parts box. Be aware of the one you have, and bear in mind that it should be a high grade lock nut.

The full check over:

Since the front wheel is now firmly on the bike, you have the option to remove all the top plastic fairings. The reason for this is to look at all of the scooter mechanicals and electricals. While this step is very important, it is not within the scope of ability of some customers. If you opt to skip this step, please be aware that you may miss a loose bolt or connection, and it's a good idea to have a competent scooter or motorcycle mechanic do this for you as soon as possible. For those of you who are mechanically inclined, please follow this section carefully.

For the sake of instruction, we will assume that this is your first time removing scooter plastics, and though it tends to be very tedious at times, it is possible and not too difficult once you get the feel for it. Do yourself a favor and work with plenty of lighting and make notes, make drawings, take photos, anything to help you remember where and how everything goes. Many panels are held together with tabs and slotted fittings, or screws and clips, or both. Gently pull on the plastics to find the next bolt or tab, and don't pull too hard, they will come off with patience. Keep your screws and clips together with their panels so you can keep track of what goes where. There are few things that are more frustrating than putting the wrong screw in a hole and not catching it until later, and having to undo what you have already done, or worse, using the wrong bolt and stripping it.

There is an opportunity at this point, to prevent squeaking and rattles, by using a buffer on the clips, when you reinstall them, like rubber cement, or silicone. This will give the bike a tighter feel and enhance its durability, since the buffer will also help grip the screws and help them to not fall out with time. Also, with the frame being made of steel, it's important

to inspect the welds for cracks and rust. If you see any cracks, please call your dealer and report this, because this is hazardous. As for rusty welds, touch them up with a good black paint if you see any rust. Simply sand the area down to the metal and wipe it off, then coat it with paint. I like to use black epoxy paint but any good black will do, epoxy simply hardens up better.

Check your grounds at this point as well, to make sure they are properly attached and not bolted into a painted surface. If they are, unbolt them, sand the grounding surface down, and reattach them. You can then hit it with spray clear coat, after they are reinstalled, if you desire to cut down on rust.

After this step, it is a good chance to have a look at your electricals. There is a lot of little gang plugs in there, and they must be checked for proper fitment, one at a time. Gently pull on the connectors, not the wires, and see if they come loose and if so plug them back in. You can firm up this connection by using small high quality zip ties, a dot of silicone across both connector sides or electrical tape. Thinking about these things will alleviate many if not all of the electrical issues many owners experience. You may notice connectors that are left unplugged and have no mate, from the factory, and these are a normal part of the bike, due to the use of a general harness for similar bikes. These are for options the bike doesn't have, or come with. Here is a great time to check for loose harness sections, and if you find any hanging about in an unsafe manner, zip tie them snugly, but not too tightly, onto the frame, out of the way of hot or moving parts. This step is **VERY** important.

While at this phase, check the tightness of all the nuts and bolts. Should you find any loose bolts, it's a good idea to remove them and thread lock them if practical. It's best to do it to every nut and bolt on the frame, minus any engine bolts, the oil drain plug, tranny drain plug and dipstick, if possible, because they like to come out with all the vibrations that scooters experience. Any threaded body clips you may encounter, should be re-crimped slightly with a pair of pliers, so that they will go back on the bike without any problems. The fit will be snug on the plastics.

Also on that note, all exhaust bolts should be removed and have thread lock applied and then reinstall them, or they'll come out.

Some people like to replace the vacuum and fuel lines as well as the fuel filter. This is not a bad idea, but not as necessary as it once was. Recent quality improvements and laws have made the quality of these parts better and they tend to have a much lower failure rate than in older bikes. However, should you desire to replace them, then feel free, just make sure to get quality fuel hose, for the fuel lines, and quality vacuum hose for the vacuum lines.

Before continuing there is a special note regarding the 150cc, and some 50cc carbs.

Some of these carbs came with a special float bowl drain tube. It is both a valve and a drain, so the screw at the bottom of this hose **MUST** stay in place, or the fuel will leave the carburetor. This tube assembly is located near the front of the tranny housing. It's a rubber tube that goes from the carb, to just under the front of the tranny, and has a large coiled spring around the tube, that is silver or gold in color. It has a small silver fitting that it attaches to, that bolts to the tranny. Before attempting to start the bike, remove the screw on the bottom of the silver fitting at the end of the hose, and put blue thread lock on

it and reinstall it, allowing it to dry per bottle directions, before trying to start it. This small step will help ensure that this part does not come out while riding and leave you stranded.

Make sure to check the gas tank, also, with a flashlight, to make sure it is free of Styrofoam or other debris. These can cause you problems if you do not catch them.

At this stage, you will need to check the spark plug, and plug gap which can be found in most manuals. I like to recommend a plug upgrade, if you so desire, to an NGK brand plug, as these tend to do very well in this type of bike. When you put the plug back in, please be very careful not to cross thread the aluminum head, as this is a common problem and not fun to fix. Tighten it by hand fist then, snug it up with a ratchet, just like in a car. 7-12ft lbs should be sufficient. After this, reinstall the plug boot completely, listening for the little clicks as you push the boot all the way down.

Now it is time to get the battery off the charger (4-6 hours later) and put the plastic electrolyte cap in place. You may want to tap it gently with a screwdriver handle to get it all the way on, since it's a tight fit. Be careful not to get acid on yourself at this stage, as it can splatter. If you do, go *RIGHT AWAY*, and rinse it off. Use a lot of caution here because acid is dangerous, and should be handled with respect. Do not smoke at this time, while you are near the battery, and take extra care not to get the electrolyte in your mouth or eyes. It's **ACID**.

The Oil:

It is important to note that the oil that comes in the scooter is for shipping, and should be changed when you get the scooter. As mentioned previously, a Good, high quality non-synthetic oil (10W-30) is recommended for this to help properly break in the engine. After 300-500 kilometers, you may switch to a synthetic if you wish, since the motor is broken in. Many Scooter enthusiasts prefer a synthetic, as the cost increase is small given the amount of oil needed in most bikes, which is usually $\frac{3}{4}$ qt. - 1qt.. Castrol, Valvolene, Pennzoil, etc. Are good, just make sure to observe the synthetic/non-synthetic rule for the first 300-500 kilometers. For the purpose of break in, semi-synthetics should be considered synthetics, because of their wear characteristics. Before changing the oil, it's good to have the engine warmed up a bit **before** dropping the drain plug, just be mindful of the hot engine, oil, and drain plug. Start by pulling out the dipstick, and then put an oil catch container under the engine, below the oil drain plug. One you loosen the drain plug, you should see a spring and screen assembly pop out, this is your oil filter assembly and this design has been used for years in various models, to good effect. Hold on to this assembly to reinstall it after the oil change, this is VERY important. A magnet may or some small needle nose pliers may aid in removing it from the catch pan, if necessary. To aid in a clean installation, please wipe these parts off with a shop towel, or rag.

Once the oil has fully drained from the engine, place the screen in the spring, and install the assembly with the drain plug. Remember when installing this, that the engine block is aluminum, and strips easily, so do NOT over tighten it. Once this is complete, you may add the oil to the engine. $\frac{3}{4}$ qt. is usually the standard amount, but check your manual. If no

specification is given, $\frac{3}{4}$ qt. (750ml) should be sufficient on bikes 150cc or below. The dip stick can be used to measure the level of oil, but must be checked using the stick inserted up to the threads, but NOT screwed in. Once the proper amount of oil is added, reinstall the dipstick, and wipe any spills, being careful not to allow oil to get on the tires. After a quick warm up, check the unit for leaks.

Gear box oil change:

Warm up the Engine, and then, with the bike on the center stand, place your oil catch container under the bike once more, and remove the CVT drain plug. Typically it is located under the back of the transmission case. There is usually a drain plug, and a fill plug, located above it. Since the tranny is warm, the fluid should flow easily from the drain hole. Once the gearbox has drained, reinstall the drain plug, bearing in mind that, once again, this is aluminum we are dealing with, and exercise care NOT to strip the hole out, by over tightening. Once the drain plug is reinstalled, using a funnel, fill the "fill" hole until it reaches the bottom of the hole with quality gear oil. (This meets the demands of a gear box better than standard motor oil. You can experiment with the weight a bit but, 80W-90 or 75W90 is a good weight to use or even 70W. GL-5 is best for anti wear but, GL-3 will work fine also, and synthetics are good for regular as well as severe conditions). At this point, some oil may dribble out. This is not a problem, and means that it is full, simply wipe up any spillage and reinstall the fill plug. Then, after a quick warm up, check the unit for leaks.

Coolant.

At this time, this guide does not cover 250cc water cooled engines, specifically. Though as a note, flushing the coolant and using an aluminum safe replacement coolant is recommended. The process is very detailed, and will be covered in a different, 250cc specific document.

Tires.

Now it's time to check the tires for damage and proper inflation. Check to be sure that the tires are in good condition and hold air. **The valve stems should be replaced as soon as possible** with a valve stem that is *not* a 2 part construction type, meaning all you should see is solid rubber when you look for a new valve stem. The valve stems that come with the bike will hold air but tend to deteriorate quickly and should have a quality replacement installed within the first 300 miles or sooner if possible. A local tire shop can do this for a small fee, or you can do it yourself by deflating the tire and clamping the tire with 2 large "C" clamps, so that access to the backside of the valve stem is possible, then simply cut it off, and install the new one. After this step, inflate the tire to roughly 90% of the max COLD pressure. So if max cold inflation pressure is, say, 30psi, you would inflate it

to 27psi, to compensate for heat expansion. The max cold pressure can be found on the sidewall of the tire. The current valve stem design, shared by many scooters, across many manufacturers is being revised but until a better design is built, it is best to swap them out. **Though our company has not received word of any faulty valve stems on our scooters, others scooters have had this problem and we want to error on the side of caution.**

Near the end!

Now it's time to double check yourself and make sure that everything is installed and bolted down tight, properly thread locked if necessary, topped off and in order, so that you can reattach the body plastics, and give it a test ride. We hope that this guide has been helpful and that you get years of enjoyment from your new scooter. Thank you for reading!