

Pingel® Electric Speed Shifter Kit for Yamaha Warrior 2004-2007 **Designed for Street Use** **#77300 Installation Instructions**

Read all instructions thoroughly, look at photos and all components before attempting installation.
This product is not designed or intended to be used as an assistive device for any particular disability.

All the components of this Electric Speed Shifter Kit have been assembled and tested as a unit before leaving our factory and have been found to be in working order at the time of shipping. Installation of this kit requires detailed knowledge of the motorcycle model, its electronics and mechanics. It is assumed that the installer has access to the proper tools and a working knowledge of them, test equipment (such as a voltmeter), and factory service manuals. The following instructions must be read in their entirety and any questions should be answered prior to attempting installation. Incorrect installation will result in damage to Electric Speed Shifter components. If after reading the instructions you do not feel comfortable installing the kit, please find a qualified technician to do the installation. Installation time is 2-3 hours.

Disconnect negative battery cable before attempting any work on motorcycle.

INSTALLATION OF DUAL BUTTON HANDLEBAR CONTROL:

Refer to figure 1. Loosen the left side handlebar switch housing. Loosen the clutch perch and slide it toward the fork 7/16". Retighten the clutch perch. Reinstall the handlebar switch housing as close to the clutch perch as possible.

Install the dual button handlebar control bracket onto the handlebar between the hand grip and switch housing. This handlebar control bracket is set up to route the wires externally, but may also have its wires routed internally through the handlebars. This is accomplished by feeding the black cable up to the hole on the center of the bracket and then through a hole in the handlebars.

Route the wires from the dual button handlebar control bracket neatly along handlebar (or inside the handlebar) and under the fuel tank. From there run the wire assembly under the frame towards the battery. Alongside the battery is the approximate location that the control module will be mounted. Make sure to secure the wires along their routing with wire ties provided. Excess wire can be coiled and hidden in the battery area.

INSTALLATION OF CONTROL MODULE AND WIRE HARNESS:

The mounting location of the control module is alongside the battery; see top view in figure 2. The control module is supplied with Velcro for the bottom of the box to secure it.

The wire assembly previously run from the handlebar control will now come down and be connected to the control module. Note that there is a large round 4-pin connector, a small round 4-pin connector and a large round 3-pin connector. The handlebar connector has the small round 4 pins and should be connected to the appropriate male receptacle on the control module.

The large round 4-pin connector coming from the control module should be connected to the large 4-pin connector from the fused wire harness. The small round 3-pin connector on the wiring harness is used for the electronic engine kill module. There are 3 loose wires coming from the fused wire harness. The black (negative) and large red (positive) go directly to the battery, the small red is for switched 12v positive power. The small red lead can be connected to any lead on the motorcycle that is switched 12v positive power. Cut the small red wire to the proper length and use the blue quick tab connector provided to make this connection (soldering is preferred). The large red and black battery wires can also be cut to proper length, and then solder on the ring terminals supplied. Now attach the soldered on ring terminals to the battery posts, black to the negative and large red to the positive. The electronic engine kill module is also mounted alongside the battery. See the instruction sheet that is included with the electronic engine kill module.



Figure 1

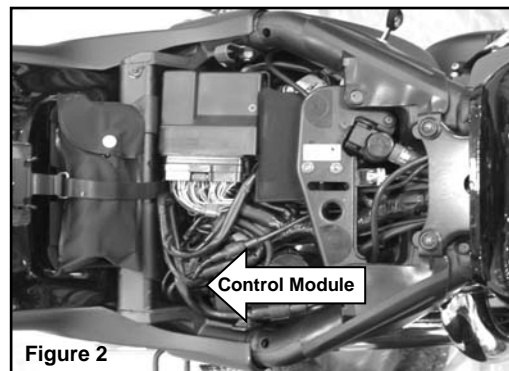


Figure 2

INSTALLATION OF ELECTRIC SHIFT CYLINDER:

An aluminum shift cylinder support bracket, (A) in figure 3, with half of the Pingel shift cylinder clamp will be mounted to the frame. This support bracket mounts into the two stock holes located where the left side lower and upper frames connect. Remove the two stock nuts and bolts as well as the metal backing plate to install the support bracket. Insert a 10mm x 100mm hex head screw through the top hole of the bracket and through the .875 (diameter) x .396 (id) x 1.36 (length) spacer supplied, (A) in figure 4. Insert the other 10mm x 100mm hex head screw through the bottom hole of the bracket and through the .875 (diameter) x .396 (id) x 1.20 (length) spacer supplied, (B) in figure 4. Insert this assembly into the bolt holes of the frame and apply the metal backing plate. Secure the assembly to the frame with the supplied nyloc nuts and tighten.

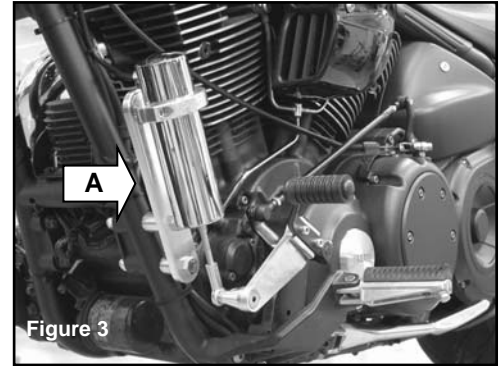


Figure 3

Remove the stock shift lever from the motorcycle making note of the shift lever's position on the splined shaft so it may be properly reinstalled. The Pingel shift lever bracket will be installed on the stock shift lever. Make sure to push the bracket all the way down towards the mounting hole of the shift lever. Take a 3/16" drill bit and put it through the holes of the Pingel shift lever bracket and make two small point marks on the back of the shift lever by twisting the drill bit with your fingers, see figure 5. Using the top back of a vise, center punch the two small points (see figure 6) then drill through the center punched points squarely using a 1/4" drill bit. Attach the Pingel shift lever bracket to the stock shift lever using the supplied thread locker and two 10-20 x 3/4" socket head cap screws. With the Pingel bracket attached, install the shift lever onto the motorcycle. Be certain to install it in the same position it was in prior to removal. After putting the shift lever on the shaft, squeeze the assembly together (as shown in figure 7) and hold while tightening the bolt. This procedure will remove any end play from the mechanism which could cause misalignment.

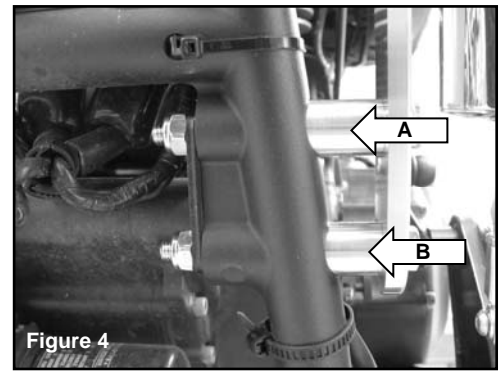


Figure 4

Install the electric shift cylinder onto the shift cylinder support bracket using the Pingel clamp and (2) 1/4-20 x 3/4" socket head cap screws as shown in figure 3. Just snug these bolts for now, as adjustment will be needed later. The rod end on the shift cylinder should be able to go past the point of mounting in each direction sideways. The point of mounting is that flat surface upon which the rod end bolts to the shift lever bracket allowing for the thin flat 1/4" washer(s) if needed (four are supplied, use as many as required to achieve proper alignment). It is imperative that there is no side pressure or tension on the electric shift cylinder shaft when it meets its flat surface upon the Pingel shift peg bracket when it is bolted as this would take away valuable power from the electric shift cylinder resulting in binding and missed shifts. If the rod end does not line up correctly, you can either add another thin 1/4" flat washer to the existing washers to move the rod end away from the shift peg bracket, or remove one or more of the thin flat 1/4" washers to move the rod end closer to the shift peg bracket. Install the 1/4-20 x 1" button head socket cap screw through the 1/4" washer(s) and through the rod end of the electric shift cylinder. Apply thread locker and install into the threaded hole on the shift lever bracket, see figure 8.

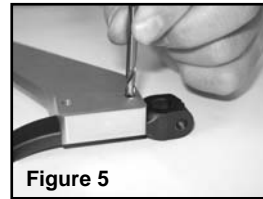


Figure 5

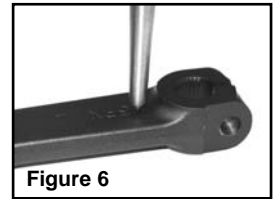


Figure 6

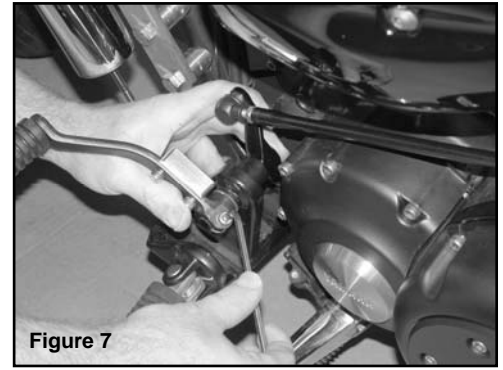


Figure 7

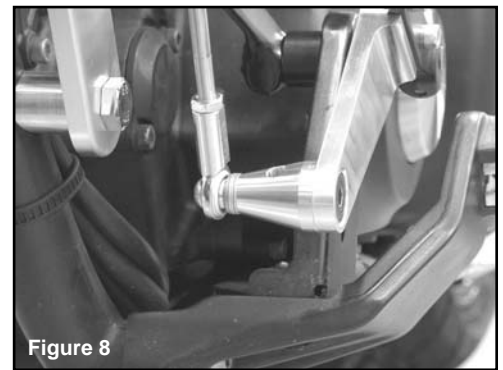


Figure 8

Before adjusting the shift cylinder up or down make sure the motorcycle transmission is in a resting position. While holding onto the electric shift cylinder housing, loosen the two screws on the clamp. Now find the groove in the center of the cylinder shaft. Adjust the cylinder housing up or down so the groove in the shaft is exactly at the plastic bushing, located on the bottom of the cylinder housing, as shown in (A) figure 9. With the shift cylinder in the correct position, tighten the two bolts of the Pingel clamp.

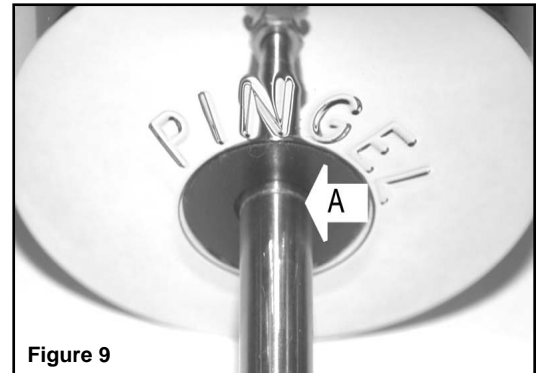


Figure 9

Route the cable from electric shift cylinder to the control module, attaching it to the appropriate connector. Secure all wires away from heat and moving parts with wire ties supplied.

Your Electric Speed Shifter kit installation should now be complete. Reconnect negative battery cable. In the interest of safety this is the recommended starting procedure: To arm the electric shifter, make sure the motorcycle is in neutral and pull in the clutch lever, then start the engine. With clutch lever pulled in push either button on the handlebar control and hold it for five seconds; now release the clutch lever slowly (in case the motorcycle is accidentally in gear). The system is now turned on and will shift when button is pressed. When the key is turned off, the power to the control module is disengaged so this procedure must be performed every time the motorcycle is turned back on. Pull in clutch and check shifter movement by pushing either button on the handlebar control.

Test ride motorcycle. If shifting up or down is not achieved, you can loosen the Pingel clamp on the shift cylinder and adjust up or down 1/16" to 1/8" at one time. Retighten Pingel clamp and retest ride motorcycle. When you get final adjustment made, remove and apply thread locker to the end threads of each clamp bolt, but remove only one clamp bolt at a time so as not to lose your adjustment.

Be certain that all of the round connectors are properly coupled and tight. If the motorcycle is not shifting or the kill module is not working, check that these plugs are properly seated and that the internal connector pins are making good contact with their sockets (i.e. no pins are bent).

Note: in the wire harness we have installed one 40-amp fuse for constant power. A spare 40-amp fuse is also supplied.

Prolonged repeated operation of the shifter (actuating the shifter repeatedly in rapid succession beyond normal use) can discharge the motorcycle battery and damage the shift cylinder and/or the control module. The normal battery takes 30-60 minutes to recharge after starting the motorcycle so use the shifter sparingly in this time.

Helpful Operating Tips:

Here is an example of what we found works for us: when upshifting at whatever your shift point RPM is (2000 – 6500) do not drop the RPM to make a shift happen, this will not help. RPM must be kept up to make a shift happen. When traveling at lower speeds, twist the throttle on slightly when hitting the shift button, to make a smoother shift. When downshifting, a slight crack of the throttle helps to smoothly go into lower gears, also if there is no load on transmission a simple push of the button should be sufficient. Our testing team has found that downshifting works best when shifting just under the following mph: 4th gear at 40mph, 3rd gear at 30mph, 2nd gear at 20mph and 1st gear at 10mph.

Note: Downshifting on a corner while leaning the bike may cause loss of control.

This unit is not waterproof. Do not subject it to pressure washing or extreme moisture.

Installation of the Electric Speed Shifter Kit still maintains OEM Shifting.

If you have any questions please call 608-339-7999

Thank you for purchasing a Pingel Enterprise, Inc. product.

Items included: #77300 Yamaha Warrior

- | | |
|--|--|
| 1 - .875 o.d. x .396 i.d. 1.120" aluminum spacer | 4 - ¼" washer |
| 1 - .875 o.d. x .396 i.d. x 1.36" aluminum spacer | 1 - Electric shift cylinder |
| 2 - 10mm locknut | 2 - Ring terminals |
| 1 - Electric shift cylinder support bracket with cylinder clamp (threaded) | 3 - Blue quick tab connector |
| 1 - Cylinder clamp (through-holes) | 10 - Wire ties |
| 2 - 10mm x 1.50mm x 100mm stainless socket head cap screw | 1 - Tube thread locker |
| 1 - Fused wiring harness | 1 - 40-amp fuse |
| 1 - 1" handlebar two piece dual button control assembly | 1 - Electronic engine kill module |
| 1 - Control module | 1 - Electronic engine kill module wire leads to coil |
| 1 - ¼"-20 x 1" button head | 1 - Pingel shift arm lever |
| | 2 - ¼"-20 x ¾" socket head cap screw |

Dear Valued Customer,

Pingel Enterprise, Inc. would like to take this opportunity to thank you for purchasing one of our Electric Speed Shifter Kits.

We would also like to know what you think of the product and how your installation went. Your assistance can help us overcome any technical issues that other installers may experience. You can reach us toll free at 1-888-474-6435 or email us at info@pingelonline.com.

We are also requesting photos of your installation. Your photos may be selected for publication in the Pingel catalog or at www.pingelonline.com. Photos may be submitted by emailing them to info@pingelonline.com. When submitting a photo, please include the motorcycle model and year.

Thank you again for your purchase!

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