

Pingel® Electric Speed Shifter Kit #77401 & #77402

Designed for Street Use

Universal 4-Coil 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 kit components. If after reading the instructions you do not feel comfortable installing the kit, please find a qualified technician to do the installation.

Disconnect negative battery cable before attempting any work on motorcycle.

INSTALLATION OF DUAL BUTTON HANDLEBAR CONTROL:

The two-piece handlebar control bracket will be mounted between the handgrip and the turn signal switch housing. This handlebar control bracket is set up to route the wires externally, but may also have its wires routed 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 control neatly along the handlebar and down to the desired location of the control module, or inside the handlebar down to the desired location of the control module. Make sure to secure wires along its routing with wire ties provided. Photo to the right is an installed example.



INSTALLATION OF CONTROL MODULE AND WIRE HARNESS:

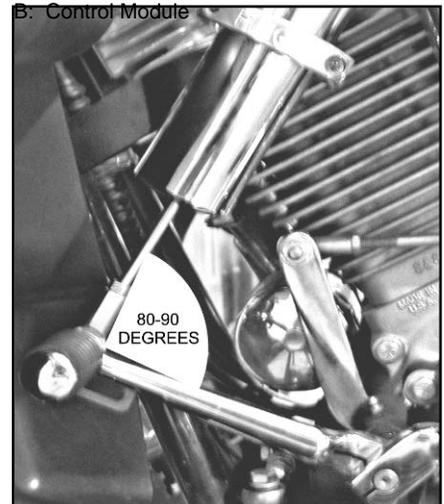
Mounting location of the control module: we found that in most installations mounting the control module under the seat is a suitable location, as shown in photo. **Note:** the control module has optional Velcro to use on the bottom of the box to secure it. The wire assembly previously run from the handlebar control will now be connected to the control module. The handlebar connector to the appropriate male receptacle on the control module.



has 4 pins and should be connected

- A: Electronic Engine Kill Module
- B: Control Module

The large 4-pin connector coming from the control module should be connected to the large 4-pin connector from the fused wire harness. The 3-pin connector from the 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 ignition switch is the best source for this connection. Use a voltmeter to find a good source. Now cut small red wire to proper length and use blue quick tab provided to make this connection. The large red and black battery wires can also be cut to proper length and then solder on the ring terminals provided. Now attach the soldered on ring terminals to the battery posts, black to the negative and large red to the positive.



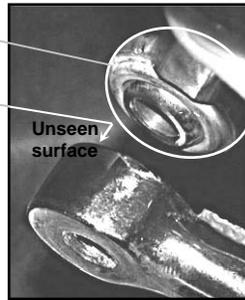
The electronic engine kill module should also be mounted under the seat if possible. See instruction sheet included with the electronic engine kill module.

INSTALLATION OF ELECTRIC SHIFT CYLINDER:

A steel shift cylinder support bracket with half of the Pingel shift cylinder clamp is supplied. This steel support bracket can be altered to fit your application. This steel support bracket needs to be mounted in a position so that the electric shift cylinder can pivot on the same plane as the shift lever arm plane, and so that the shift cylinder is 80-90 degrees to the shift lever pivot point, as shown in photo. Some installations may require a bracket to be welded or bolted to your existing shift lever; you must still maintain 80-90 degrees from the pivot point. See final page for sample installation photos. Install electric shift cylinder onto shift cylinder support bracket using supplied Pingel clamp and (2) 1/4-20 X 3/4" socket head cap screws. Just snug these bolts for now, as adjustment will be needed.



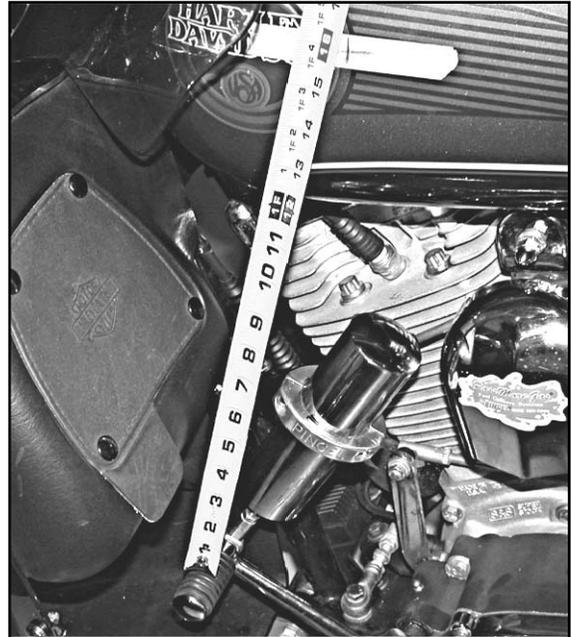
The rod end on the cylinder should be able to go past the point of mounting in each direction sideways. (Or shaft binding will occur). The point of mounting is the flat surface upon which the rod end



bolts to the shift lever bracket, as shown in photos. Now attach the rod end to its mounting location.

Safety Warning

The electric shift cylinder has 2-1/4" of total travel. When installed you must use nearly all the travel of the shift cylinder, make sure that the travel in each direction is stopped by the shifter linkage and not by bottoming out the electric shift cylinder. This can be done by shifting the transmission completely in one direction and holding it. Undo the bolt through the rod end and see that the rod end can still move 1/32" in the same direction. Repeat for the other direction. Not following this procedure could cause damage to the shift cylinder and loss of shifting ability.



This electric shift cylinder gains power as the travel is used in each direction. If all the possible travel is not used, inconsistent shifting can result. Now with help from another person, find the furthest up shift position on the shift lever arm, by measuring to a set location like a decal on the fuel tank, as shown in photo. Measure each gear; rocking the motorcycle forward and backward or turning the rear wheel will assure full movement into the next gear. Once each gear has been measured, put the motorcycle in the gear with the longest travel. While holding the shifter in the full up position, loosen the two bolts in the Pingel shift cylinder clamp. This will allow the shift cylinder to slide up or down.

While still holding shift lever up push the shift cylinder down, the cylinder should just bottom out of its travel. Move the shift cylinder back 1/32" and tighten cylinder clamp bolts while holding the shifter in the full up position. Note that some applications may have a longer up shift than down shift or vice versa. We had this occur on our 1992 H-D™ FLHTC with the stock transmission. The electric shift cylinder will still accommodate this difference as long as the complete travel of the shift cylinder is 2-3/16" up and down inclusive. This leaves 1/32" in each direction so as not to bottom out the electric shift cylinder. **Note:** If mounting the shift cylinder parallel and/or horizontal to the ground, you must install the Pingel shift cylinder clamp in the center of the shift cylinder or shaft binding will occur.

To finish the installation, route the electric cable from the electric shift cylinder neatly along the frame of the motorcycle to the control module. 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.

If the top button on the handlebar control bracket makes the shifter work the opposite way you would like, simply plug the switch reversing jumper in between the handlebar switch and the control box.

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 making sure not to bottom out the electric shift cylinder. Retighten Pingel clamp and retest ride motorcycle. This adjustment is fastidious and patience is required.

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.

Now the cylinder and bracket can be disassembled so you can paint the bracket. After painting reinstall making sure to use torque thread locker on all bolts.

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

Installation of the Electric Speed Shifter still maintains OEM Shifting.

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

Items Included: UNIVERSAL 4-COIL KIT

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|--|---|
| 1 - electronic engine kill module | 1 - electric shift cylinder |
| 1 - electronic engine kill module wire leads | 2 - ring terminals |
| 1 - electric shift cylinder support bracket with cylinder clamp (threaded) | 5 - blue quick tab connector |
| 1 - cylinder clamp (thru-holes) | 10 - wire ties |
| 1 - fused wiring harness | 1 - tube torque-thread locker |
| 1 - 7/8" or 1" handlebar button assembly | 1 - 40-amp fuse |
| 1 - control module | 1 - jumper plug for reversing the switches on the handlebar control |

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!

Sample shift cylinder installation photos

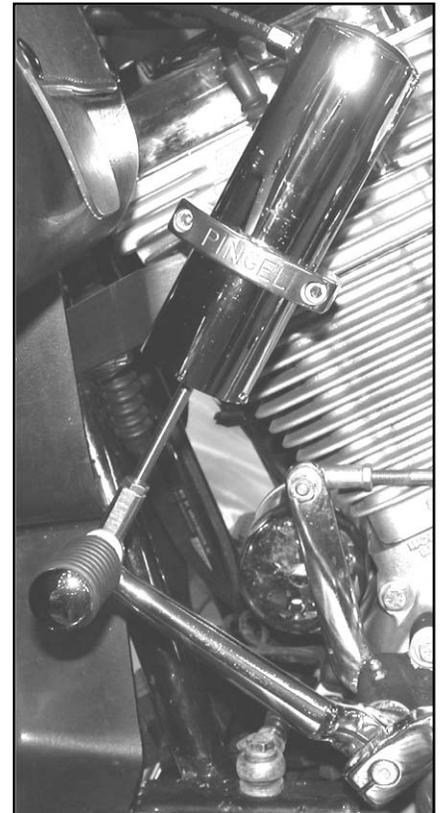


2001 Honda Shadow



2002 GSXR750

**1992 Harley-Davidson
Ultra Classic**



LIMITED WARRANTIES/LIABILITIES

Pingel Enterprise, Inc. assumes no responsibility or liability for damage or injury of any kind arising out of the use or misuse of any products. Pingel Enterprise, Inc.'s sole responsibilities with respect to products sold are to provide the following limited warranty:

Pingel Products: Pingel Enterprise, Inc. warrants to the original purchaser that the product shall be free from defects in parts and workmanship under normal use for 30 days from date of purchase. Pingel Enterprise, Inc.'s obligation under this warranty is limited to the repair or replacement of any part found to be defective when returned postpaid to the factory. The product must be returned with evidence of date and place of purchase, and detailed description of the problem. The warranty will not apply if the product has been installed in correctly, repaired, or damaged by modification, misuse, negligence or accident. The repair or replacement of such part, as needed, is your sole and exclusive remedy. No refunds will be given. Pingel Enterprise, Inc. makes no other warranty, expressed or implied with respect to its products and specifically disclaims any implied warranties of merchantability or fitness of any product for a particular purpose and except as herewith stated assumes no liability with respect to the product.

Dispute Resolution: All disputes, claims or controversies of any kind that may arise between you and Pingel Enterprise, Inc. shall be brought in the state court located in Adams County, Wisconsin. You agree that the sole venue and jurisdiction for such disputes shall be the above named court and hereby submit to the jurisdiction of that court.

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