

## **Pingel® Electric Speed Shifter Kit for H-D Dyna Switchback 2012 Models with Floorboards Designed for Street Use #77606 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 All 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 volt meter), 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 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 BRACKET:**

Remove the left side handlebar switch housing. Loosen the clutch perch and slide it toward the fork 7/16". Retighten the clutch perch.

Notice that the grip has a raised portion on the end that originally fit under the handlebar switch housing; this needs to be trimmed back to between the grip and the flange area before installing the switch housing. See Figure #1. Note: Use a razor knife to cut the grip while it is still mounted on the handlebar. Reinstall the handlebar switch housing as close to the clutch perch as possible. Be certain that the grip is secure after cutting, if not, remove and re-glue per manufacturers specifications.



Install the dual button handlebar control bracket onto the handlebar between the switch housing and previously cut grip. Note: If the handlebar control bracket fits too tightly, move the clutch and switch housing more. If they are as far as they can go towards the forks, more material can be cut from the grip. 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 through 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 into the top fork tree area or inside the handlebar into the top fork tree area. From there, run the wire assembly along the frame towards the front seat. Under the front seat is the approximate location that the control module will be mounted. Make sure to secure the wires along their routing with the wire ties provided. Excess wire can be coiled up and hidden under the seat.

### **INSTALLATION OF CONTROL MODULE AND WIRE HARNESS:**

The mounting location of the control module is under the front seat. Note: the control module is supplied with Velcro for the bottom of the module to secure it. The wire assembly previously run from the handlebar control should now be connected to the control module. Note that there is a large 4-pin connector, a large 3-pin connector and a small 4-pin connector. The wires from the handlebar controls have the small round 4-pin connector 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 round 4-pin connector from the fused wire harness. This harness is placed under the seat. 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 a lead on the motorcycle that is switched 12v positive power. We have found that on all of our H-D motorcycles, the orange wire with the white stripe is a switched 12v power source, but you will need to consult the service manual for your motorcycle model to be certain you are connecting to the proper wire. Cut the small red wire to proper length and use the blue quick tab connector supplied or solder the wires together 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 supplied. Attach the soldered-on ring terminals to the battery posts, black to negative and large red to positive.

The electronic engine kill module may also be mounted under the front seat. See the instruction sheet included for electronic engine kill module wiring directions.

**INSTALLATION OF ELECTRIC SHIFT CYLINDER:**

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, adjusting the cylinder so the clamp is approximately 3/4 front to back (see Figure 2). Just snug these bolts for now, as adjustment will be needed.

Remove the two top front bolts on the primary cover. Install the electric shift cylinder support bracket, figure 2, to the primary cover using (1) 1/4-20 x 4 1/2" socket head cap screw with 1/2" O.D. x 1/4" I.D. washer for the front bolt and (1) 1/4-20 x 2" socket head cap screw with 1/2" O.D. x 1/4" I.D. washer for the rear bolt, use thread locker on each before tightening.

Loosen the retaining bolt on the stock outer shift arm. Push the inner shift lever towards the outside of the motorcycle and the outer stock shift lever towards the motorcycle and tighten the retaining bolt. The purpose of this procedure is to remove as much end play from the stock shift linkage assembly as possible but leaving it free to still pivot. Remove the chrome acorn nut and washer that attaches the shift rod to the inner stock shift lever.

Mark a spot 3/4" down from the center of the stock hole and half the width across on the stock shift arm as shown in figure 4. Center punch and drill a 1/4" hole on the mark.

Apply thread locker to the threads of the ball stud and install the Pingel hex standoff onto the inner shift rod by threading it onto the ball stud. Slide the standoff into the stock hole on the stock shift arm retaining it with the stock 5/16" washer and acorn nut which also has threadlocker applied tightening the assembly as shown in figure 3.

The rod end of the shift cylinder will be attached behind the stock shift lever where the 1/4" hole was drilled. Make certain that the rod end is in its resting position sideways and install the 1/4-28 x 1 button head socket cap screw through the drilled hole on the stock shift arm, the rod end on the shift cylinder and retain it with the 1/4-28 locknut, see figure 3. It is imperative that there is no side pressure or tension on the electric shift cylinder shaft or its mounting point as this would take away valuable power from the electric shift cylinder resulting in binding and missed shifts. **NOTE:** Due to inconsistencies in manufacturing by H-D, the stock inner shift arm lever may need to be gently bent in or out to properly perform this procedure.

**ADJUSTING THE CYLINDER FRONT TO BACK:**

Before adjusting the shift cylinder front to back make sure the motorcycle shift lever is in its resting position. While holding onto the electric shift cylinder housing, loosen the two screws on the clamp. Find the mark in the center of the length of the travel of the cylinder shaft. Adjust the cylinder housing front or back so the mark on the shaft is right at the plastic bushing located on the end of the cylinder housing, as shown in Figure 5, arrow A. With the shift cylinder in the correct position, tighten the two bolts of the Pingel clamp. Route the electric cable from the electric shift cylinder behind the engine and up to the control module, attaching it to the appropriate connector. Secure all wires away from heat and moving parts with the wire ties supplied.

Your electric shifter kit installation should now be complete. Reconnect the negative battery cable. Turn the ignition key on, pull in the clutch and push either button on the handlebar control and hold it for five seconds; this turns the control module on and must be done every time to activate the system. Check shifter movement by pushing either button on the handlebar control.

It will only be necessary to use the clutch when starting, stopping and finding neutral. Upshifting and downshifting will not require the use of the clutch. The operator can use the clutch manually without harm to any components, especially during downshifting to avoid "chirping" the rear tire.



Figure 2



Figure 3

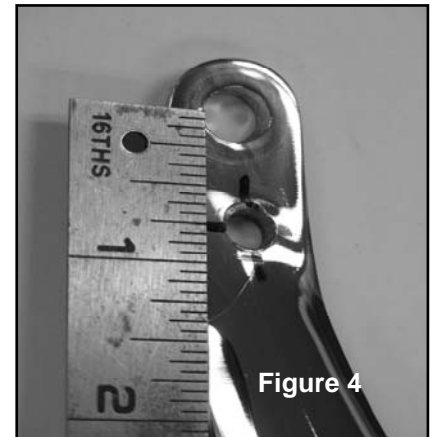
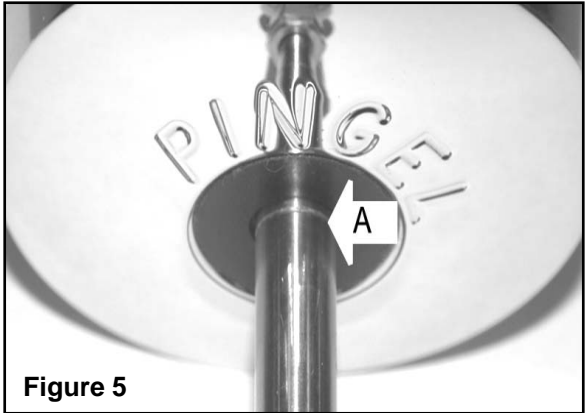


Figure 4

Test ride motorcycle. If shifting up or down is not achieved, you can loosen the Pingel clamp on the shift cylinder and adjust it front or back 1/16" to 1/8" at one time. Retighten the Pingel clamp and test ride motorcycle. When you get the 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 the adjustment. It may be easier to remove the entire support bracket from the primary cover to tighten the clamp bolts, then reinstall it using thread locker on the bolts.

**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.



**Figure 5**

**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, if you keep the rpm's between 1400-2000 you may be able to downshift without wicking the throttle, just a push of the button. If not, a slight crack of the throttle helps to smoothly go into lower gears. Our testing team has found that downshifting works best when shifting just under the following mph: 4<sup>th</sup> gear at 40mph, 3<sup>rd</sup> gear at 30mph, 2<sup>nd</sup> gear at 20mph and 1<sup>st</sup> gear at 10mph. Street riding may require the electronic kill module to be set to a longer kill time.

**Note:** Downshifting on a corner while leaning the bike may cause loss of control unless you use the clutch.

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

Installation of 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: H-D Dyna Switchback 2012 models with floorboards**

- |  |  |
|--|--|
| 1 - Electric shift cylinder support bracket with cylinder clamp (threaded) | 2 - .500 O.D. 1/4" washers                   |
| 1 - Cylinder clamp (thru-holes)  | 1 - 1/4"-20 x 4 1/2" SHCS                    |
| 1 - 1/4-28 x 1" BHSCS  | 2 - Ring terminals                           |
| 1 - Fused wiring harness   | 3 - Blue quick tab connector                 |
| 1 - 1" handlebar 2 piece dual button control assembly                      | 10 - 5 1/2" wire ties                        |
| 1 - Control module   | 1 - Thread locker                            |
| 1 - 1/4-28 lock nut  | 1 - Extra 40-amp fuse                        |
| 1 - Electric shift cylinder  | 1 - Pingel shift arm stand off               |
| 1 - 1/4"-20 x 2" SHCS  | 2 - Hook & loop pieces                       |
| 4 - 1/4" washers   | 1 - Electronic engine kill module            |
|  | 1 - Electronic engine kill module coil leads |

**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](mailto: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](http://www.pingelonline.com). Photos may be submitted by emailing them to [info@pingelonline.com](mailto:info@pingelonline.com). When submitting a photo, please include the motorcycle model and year.**

**Thank you again for your purchase!**

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