

## Pingel® Electric Speed Shifter Kit for 2006-2007 H-D VRSCD Night Rod Designed for Street Use #77804 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 BRACKET:**

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

Disassemble the left handlebar switch housing. 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 battery compartment. Alongside the battery 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 alongside the battery.

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

The mounting location of the control module is alongside the battery. 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 alongside the battery. 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. 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. The small red lead can be connected to a lead on the motorcycle that is switched 12v positive power. 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 alongside the battery. See the instruction sheet included for electronic engine kill module wiring directions.

**INSTALLATION OF ELECTRIC SHIFT CYLINDER:**

Remove the two top back bolts on the primary cover, (A) figure 2. Install the electric shift cylinder support bracket to the primary cover using the 6mm x 50mm socket head cap screws with thread locker on each, then tighten, see close-up in figure 2.

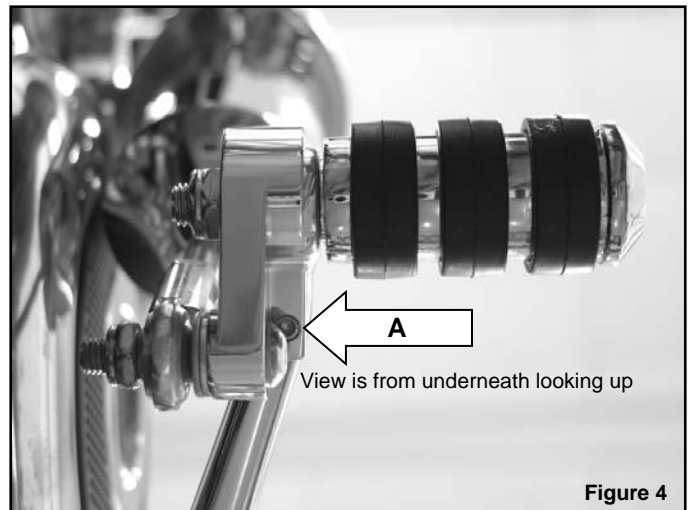
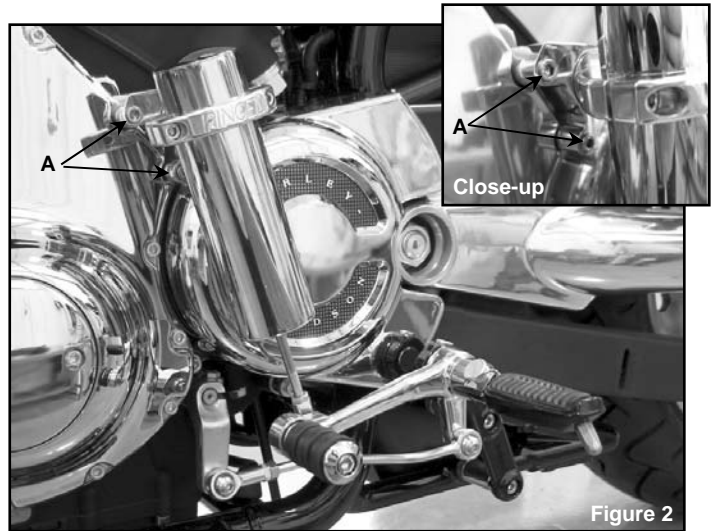
Install the electric shift cylinder onto the shift cylinder support bracket using the Pingel clamp and (2) 1/4-20 x 3/4" socket head cap screws, adjusting the cylinder so the clamp is approximately 3/4 up the cylinder as shown in figure 2. Just snug these bolts for now, as adjustment will be needed.

Remove the stock shift peg toe piece. Install the supplied shift peg toe piece using the polished 5/16-24 x 3" socket head cap screw and tighten to the stock shift lever. Install the Pingel shift lever bracket onto the back side of the stock shift lever, as shown in figure 3, and secure using the supplied 5/16-24 lock nut and tighten. Insert the 10-24 x 3/16" socket set screw (apply thread locker) into the hole on the bottom of the Pingel shift lever bracket (see A in figure 4) and tighten it against the stock shift lever. Note: Use care not to over tighten this set screw.

Remove the (2) bolts that hold the left front footpeg bracket on. Install the supplied 8mm x 1.25 x 70mm shcs through the top hole of the footpeg bracket, the short stock spacer, (1) of the supplied .270 thick spacers and into the top threaded frame hole using thread locker and tighten. Install the supplied 8mm x 1.25 x 60mm shcs through the bottom hole of the footpeg bracket, the long stock spacer, (1) of the supplied .270 thick spacers and into the bottom threaded frame hole using thread locker and tighten. See figure 5.

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 arm lever washer where 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 (1) or more thin 1/4" flat washer(s) to the existing washer(s) to move the rod end away from the shift arm lever, or remove (1) or more thin flat 1/4" washer(s) to move the rod end closer to the shift arm lever. Note: (4) 1/4" flat washers are supplied to aid in alignment. Put the 1/4-28 x 1 1/4" button head socket cap screw through the Pingel shift lever bracket on the shift lever, the 1/4" flat washer(s), the rod end of the electric shift cylinder and into the 1/4-28 locknut and tighten, as shown in figure 6.

Before adjusting the shift cylinder up and down 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 groove in the center of the length of the travel of the cylinder shaft. Adjust the cylinder housing up or down so the groove in the shaft is right at the plastic bushing located on the end of the cylinder housing, as shown in (A) figure 7. 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.



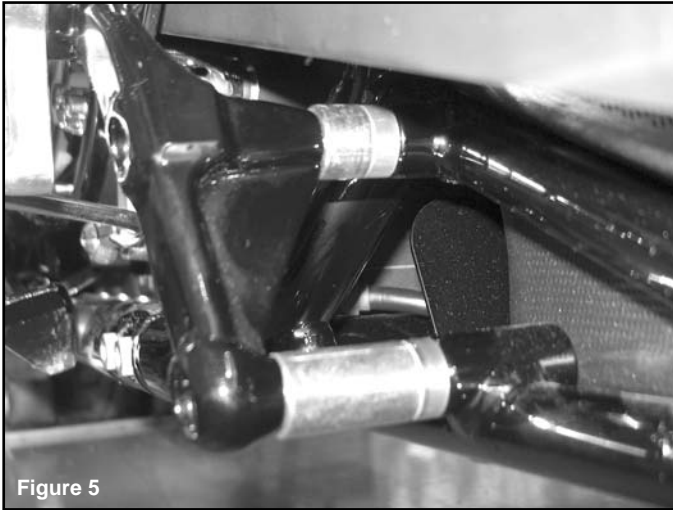


Figure 5

Your Electric Speed Shifter kit installation should now be complete. Reconnect the negative battery cable. Turn 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.

Test ride motorcycle. If shifting up or down is not achieved, you can loosen the Pingel clamp on the shift cylinder and adjust it up or down 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.

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



Figure 6

**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, 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.

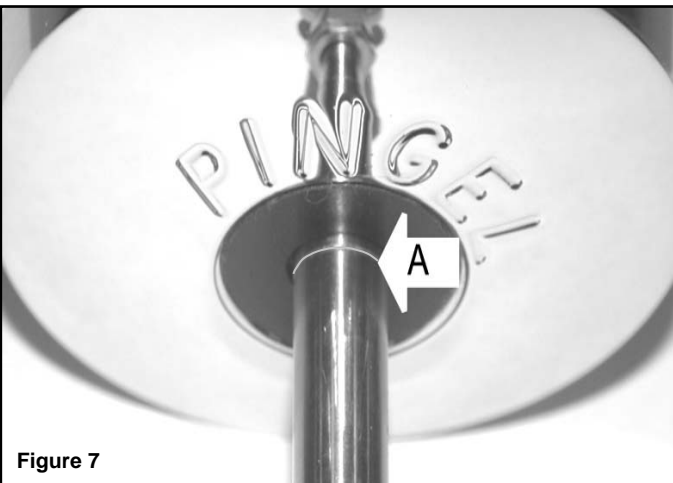


Figure 7

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

Installation of Electric 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: 2006 H-D VRSCD Night Rod

- |  |  |
|--|--|
| 1 - 1" handlebar 2 piece dual button control assembly                      | 1 - ¼-28 x 1¼" BHSCS                         |
| 2 - 6mm x 50mm SHCS  | 4 - ¼" washer                                |
| 1 - Electric shift cylinder support bracket with cylinder clamp (threaded) | 1 - ¼-28 locknut                             |
| 1 - Electric shift cylinder  | 1 - Fused wiring harness                     |
| 1 - Cylinder clamp (thru-holes)  | 1 - Control module                           |
| 1 - Shift peg toe piece  | 2 - Hook & loop pieces                       |
| 1 - 5/16-24 x 3" SHCS (polished)   | 1 - Electronic engine kill module            |
| 1 - Pingel shift arm bracket   | 1 - Electronic engine kill module coil leads |
| 1 - 5/16-24 thin locknut   | 2 - Ring terminals                           |
| 1 - 10-24 x 3/16" socket set screw   | 3 - Blue quick tab connector                 |
| 2 - .788 o.d. x .339 i.d. x .270 thick aluminum spacers                    | 10 - 5½" wire ties                           |
| 1 - 8mm x 1.25 x 70 mm SHCS  | 1 - Thread locker                            |
| 1 - 8mm x 1.25 x 60 mm SHCS  | 1 - Extra 40-amp fuse                        |

**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!**

### LIMITED WARRANTIES/LIABILITIES

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**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 incorrectly, 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.



**THANK YOU** for purchasing a PINGEL ENTERPRISE, INC., product. View our entire product line at [www.pingelonline.com](http://www.pingelonline.com)