Pingel Enterprise, Inc
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Since 1967

Pingel® Electric Speed Shifter Kit for H-D Dyna 2006-2012 Models with standard mid controls

Designed for Street Use

#77605 Installation Instructions

Read <u>all</u> 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.


Figure 1

Use a razor knife to cut the raised portion on the end of the handgrip that originally fit under the handlebar switch housing. If the grip is not secure after cutting remove and re-glue per manufacturers specifications.

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 switch housing and previously cut grip, see photo above. If the 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. When tightening the bracket, be certain to tuck the wires neatly into the grooved channel of the bracket. Covering this area with tape will hold the wires and help insure they don't get pinched and make sure the tape isn't put in a visible area.

If this handlebar control bracket is to be used on a custom motorcycle, the wires can be hidden inside the handlebars. This is accomplished by feeding the black cable up through the hole in the bottom of the bracket and then through a hole in the handlebars. Use caution to protect the wires (shrink wrap) where they pass any sharp edges, such as the handlebar hole.

Route the wires from the dual button handlebar control bracket neatly along the handlebar into the top fork tree area or inside the handlebar into the top fork tree area. Follow the existing wire loom under the fuel tank to underneath the seat. This is the approximate location that the control module will be mounted. Make sure to secure the wires along their route with the wire ties provided. Excess wire can be coiled 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 from 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. 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 positive soldered ring terminal to the positive battery post. Farther along in the installation the black wire will get hooked up to the negative battery post. 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.

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INSTALLATION OF ELECTRIC SHIFT CYLINDER:

Install the electric shift cylinder onto the shift cylinder support bracket using the Pingel clamp and (2) ¼-20 x ¾" 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, they will need adjustment in later steps.

Remove the two top front bolts on the primary cover (see (A) in figure 2). Install the electric shift cylinder support bracket, (B) figure 2, to the primary cover using (2) ¼-20 x 4½" socket head cap screws with ½" O.D. x ¼" I.D. washers on the bolts, 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.

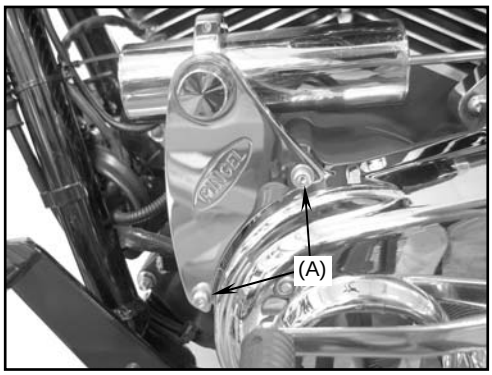

Figure 2

Remove the fastener that attaches the stock shift rod to the front stock shift lever. Remove the fastener that retains the stock shift rod to the back stock shift lever and completely remove the original shift rod. Install the supplied Pingel shift rod to the rear stock shift lever using a supplied 5/16-24 x 1¼" BHSCS with thread locker through one of the rod ends of the Pingel shift rod assembly, the 5/8" O.D. x 5/16 I.D. x .357" long spacer, (B) in figure 3, and thread into the rear stock shift arm and tighten. Attach the other end of the Pingel shift rod to the stock front shift lever by installing a supplied 5/16-24 x 1¼" BHSCS, (C) figure 3, with thread locker applied, through the Pingel shift arm bracket, (D) figure 3, the rod end of the Pingel shift rod and into the front stock shift arm making sure the arm is set into the pocket on the back of the Pingel shift arm bracket and tighten. Tighten the 8-32 x 3/16" socket set screw located on the right side of the Pingel shift arm bracket after applying thread locker.

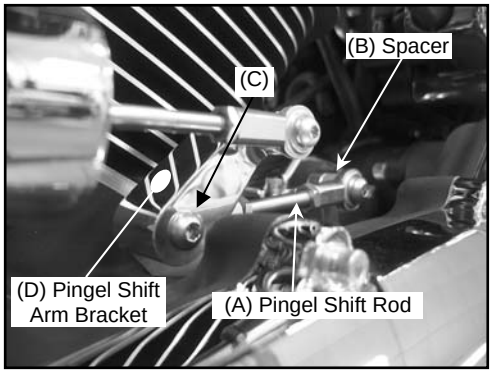

Figure 3

The rod end on the electric 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 Pingel shift lever bracket allowing for the thin flat ¼" 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 ¼" 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 ¼" washers to move the rod end closer to the shift peg bracket. **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. Install the ¼-20 x 1" button head socket cap screw through the rod end of the electric shift cylinder, the ¼" washer(s), and into the Pingel shift lever bracket using thread locker and tighten. Please refer to figures 4 & 5.

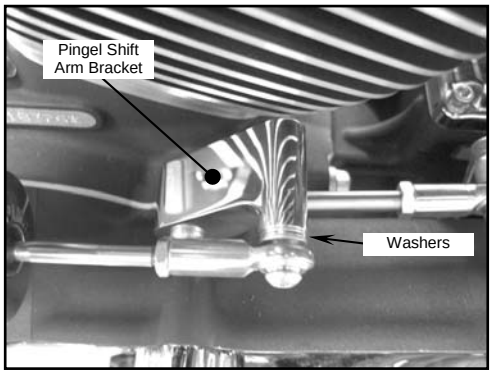

Figure 4

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 groove in the center of the length of the travel of the cylinder shaft. Adjust the cylinder housing front or back so the groove in the shaft is aligned with the plastic bushing located on the end of the cylinder housing, as shown in Figure 6, arrow A. With the shift cylinder in the correct position, tighten the two bolts on the Pingel clamp. Route the electric cable from the electric shift cylinder 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.

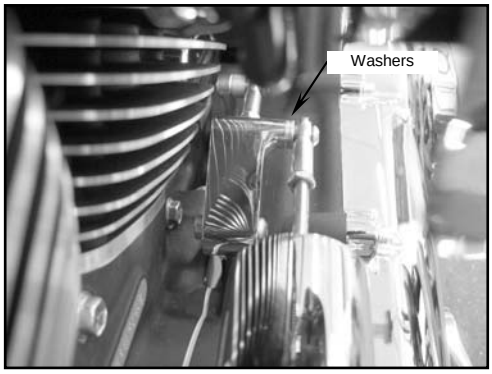

Figure 5

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Your Electric Speed Shifter kit installation should now be complete. Reconnect negative battery cable and the negative wire from the electric shifter fused harness. 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 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. Install the chrome cap over the ¾" hex nut that is exposed on the shift cylinder support bracket by holding it squarely on the nut and tapping it with a soft hammer, putting a rag between the hammer and chrome piece to avoid scratching. When doing this also support the mounting bracket from behind with help to avoid stress on bracket.

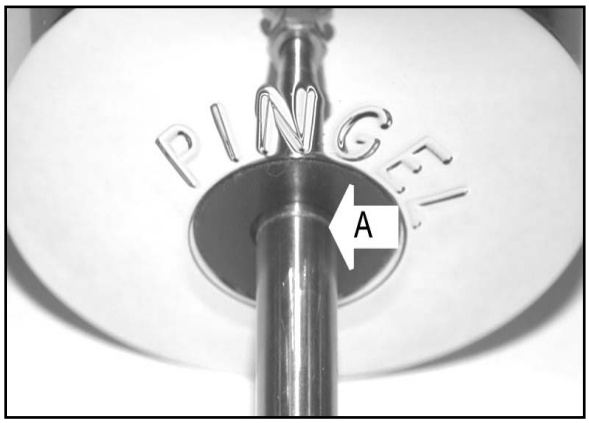

Figure 6

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, 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: 4th gear at 40mph, 3rd gear at 30mph, 2nd gear at 20mph and 1st 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 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.

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Items included: H-D Dyna 2006-2012 models with standard mid controls #77605

1 - 1" handlebar 2 piece dual button control assembly
1 - Electric shift cylinder
1 - Electric shift cylinder support bracket with cylinder clamp (threaded)
1 - Cylinder clamp (thru-holes)
2 - ¼-20 x 4½" SHCS
2 - ½" O.D. ¼" washers
4 - ¼" washer
1 - Pingel shift arm bracket with set screw
1 - Pingel shift rod assembly
1 - Fused wiring harness
1 - Control module
2 - Hook & loop pieces
1 - Electronic engine kill module
1 - Electronic engine kill module coil leads
2 - Ring terminals
3 - Blue quick tab connector
10 - 5½" wire ties
1 - Thread locker
1 - Extra 40-amp fuse
1 - Chrome ¾" hex nut cover
2 - 5/16-24 x 1¼" BHSCS
1 - ¼-20 x 1" BHSCS
1 - 5/8" OD x 5/16 ID x .357" long spacer

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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Dispute Resolution: All disputes, claims or controversies of an y kind that ma y 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

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