Pingel Enterprise, Inc
2072 11th Ave Adams, Wisconsin 53910
www.pingelonline.com
Phone (608) 339-7999 Fax (608) 339-9164

Since 1967

Pingel® Electric Speed Shifter Kit for H-D Dyna 2006-2013 Models with standard forward controls

Designed for Street Use

#77604 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 Shift 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.

Figure 1

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.

Part No. INS-77604
Rev 06102014

Pingel Enterprise, Inc
2072 11th Ave Adams, Wisconsin 53910
Since 1967
www.pingelonline.com
Phone (608) 339-7999 Fax (608) 339-9164

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.

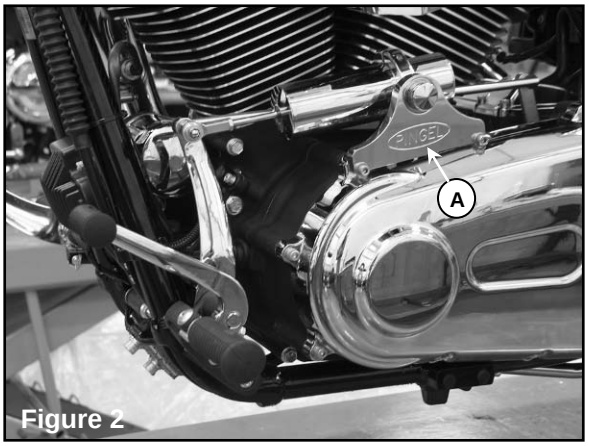


Figure 2

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, as adjustment will be needed.

Remove the two top front bolts on the primary cover. Install the electric shift cylinder support bracket, (A) figure 2, to the primary cover using (1) ¼-20 x 4½" socket head cap screw with ½" O.D. x ¼" I.D. washer for the front bolt and (1) ¼-20 x 2" socket head cap screw with 1/2" O.D. x ¼" I.D. washer for the rear bolt, use thread locker on each before tightening.

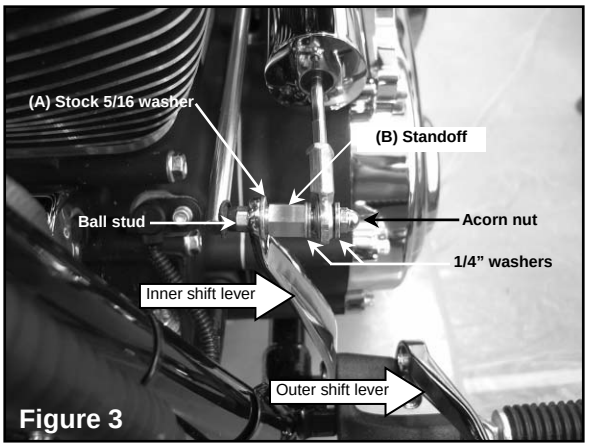
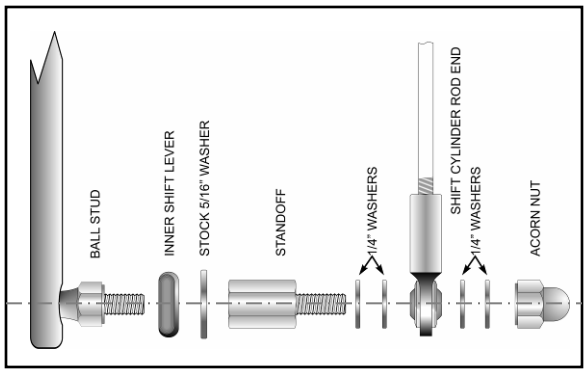


Figure 3

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. If the end play cannot be removed from the stock shift linkage, two plastic washers are supplied that can be installed between the shift arm and its mounting bracket to help remove the end play, use one or both washers if needed. Remove the chrome acorn nut that attaches the shift rod to the inner stock shift lever. Save this nut to return to stock form as it will not be used on the electric shifter kit. Slide the standoff, (B) figure 3, into the rod end of the electric shifter (do not insert washers or attach the acorn nut at this time). Place the stock 5/16" flat washer over the ball stud threads of the inner shift lever as shown in (A) figure 3. Install the standoff onto the inner shift lever by threading it onto the ball stud. Tighten the assembly but removal will be required after the next step. Make certain that the rod end is in its resting position sideways (It is imperative that there is no side pressure or tension on the electric shift cylinder shaft). Take the supplied ¼" washers and hold them up to the space between the rod end of the electric shift cylinder and the shoulder of the standoff taking note how many washers it will take to fill the space. **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. Remove the standoff from the ball stud then from the rod end of the electric shift cylinder using the same procedure mentioned above. Place the previously noted number of washers onto the male end of the standoff and insert it into the rod end of the electric shift cylinder. Apply thread locker to the threads of the ball stud and install the standoff as previously instructed and tighten the assembly. Install the remainder of the ¼" washers onto the standoff, apply thread locker to the threads and install the supplied ¼-28 chrome acorn nut and tighten. Note: you must use a total of (4) ¼" washers on the standoff to have the correct thickness for the ¼-28 chrome acorn nut to properly tighten. **Example**: If you use (3) washers thickness between the shoulder of the Pingel standoff and the rod end of the electric shift cylinder you will have (1) washer on the outside of the rod end of the electric shift cylinder then the chrome acorn nut. If you use (2) washers thickness between the shoulder of the Pingel shift arm standoff and the rod end of the electric shift cylinder you will have (2) washers on the outside of the rod end of the electric shift cylinder then the chrome acorn nut. If you use (1) washer thickness between the shoulder of the Pingel standoff and the rod end of the electric shift cylinder you will have (3) washers on the outside of the rod end of the electric shift cylinder then the chrome acorn nut.



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. If the rod end does not line up correctly, you will either move one or more of the ¼" flat washers to the shoulder side of the standoff to move the rod end out, or move one or more of the ¼" flat washers to the acorn nut side to move the rod end in. Remember to keep the correct thickness of four washers so the chrome acorn nut will tighten correctly.

Part No. INS-77604
Rev 06102014

Pingel Enterprise, Inc
2072 11th Ave Adams, Wisconsin 53910
www.pingelonline.com
Phone (608) 339-7999 Fax (608) 339-9164

Since 1967

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 mark on the shaft is right at the plastic bushing located on the end of the cylinder housing, as shown in Figure 4, 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.

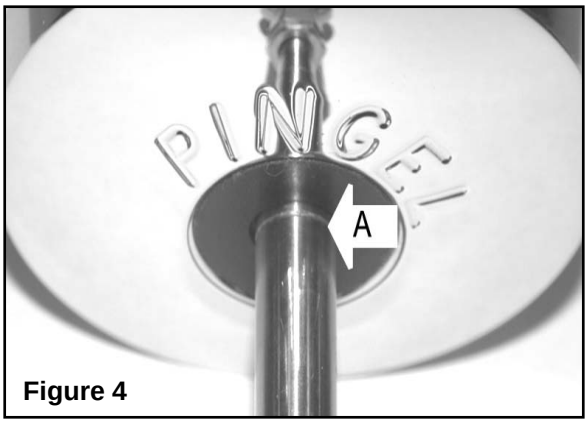


Figure 4

Your Electric Speed 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.

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.

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 Shift Kit still maintains OEM Shifting.

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

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

Part No. INS-77604
Rev 06102014

Pingel Enterprise, Inc
2072 11th Ave Adams, Wisconsin 53910
www.pingelonline.com
Phone (608) 339-7999 Fax (608) 339-9164

Since 1967

Items included: H-D Dyna 2006-2012 models with standard forward controls

1 - Electric shift cylinder support bracket with cylinder clamp (threaded)
1 - Cylinder clamp (thru-holes)
1 - ¼-20 x 2" SHCS
1 - Fused wiring harness
1 - 1" handlebar 2 piece dual button control assembly
1 - Control module
1 - ¼-20 x 4½" SHCS
4 - ¼" washer
2 - .500 O.D. ¼" washers
1 - ¼-28 chrome acorn nut
1 - Electric shift cylinder
2 - Ring terminals
3 - Blue quick tab connector
10 - 5½" wire ties
1 - Thread locker
1 - Extra 40-amp fuse
1 - Pingel shift arm stand off
2 - Plastic washers
1 - Chrome ¾" hex nut cover
2 - Hook & loop pieces
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 Shift 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!

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 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

Made In U.S.A.

Part No. INS-77604
Rev 06102014