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

Pingel® Electric Speed Shifter Kit for H-D Dyna 1994-2005 Models with standard mid controls

Designed for Street Use

#77601 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 Speed Shift 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

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, 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 thru the hole on the center of the bracket and then thru a hole in the handlebars.

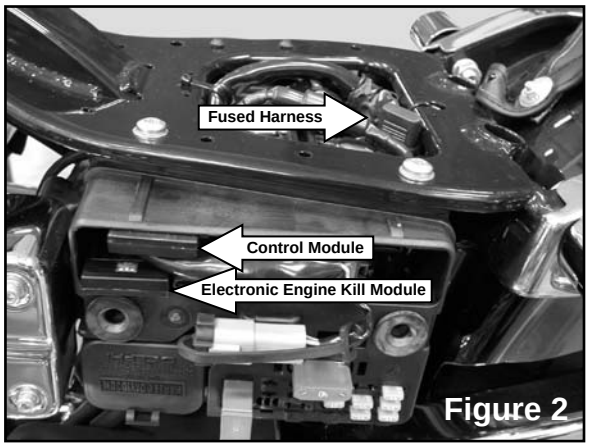

Figure 2

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. The control module these wires plug into will be mounted inside the fuse box (see Figure 2). 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 control module will be mounted inside the fuse box (see Figure 2). Note: the control module is supplied with Velcro for the bottom of the module to secure it if necessary. 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 handlebar connector has the small round 4 pins 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 in the compartment under the seat. The small round 3-pin connector on the wiring harness is used for the electronic engine kill module. There are three 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 such as an accessory feed wire (***must not*** be a wire directly to or from the ECM!). 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 preferably 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. Now 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 inside the fuse box. Note that the Dyna is a very compact motorcycle, not leaving space for many additions. See instruction sheet included for electronic engine kill module wiring directions.

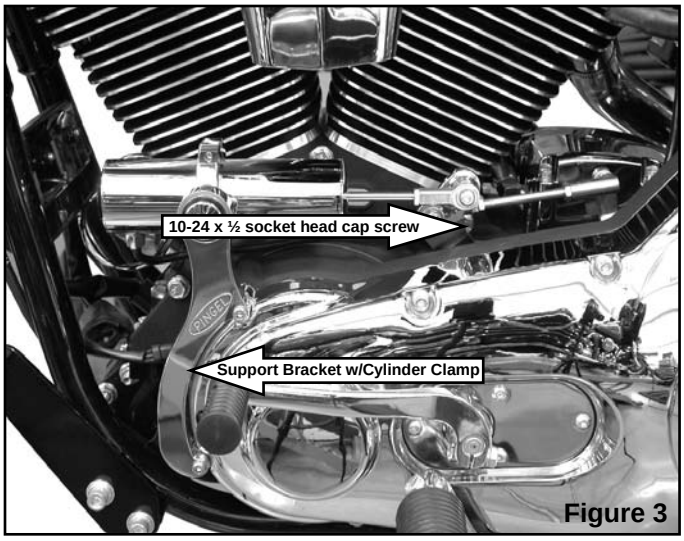

Figure 3

INSTALLATION OF ELECTRIC SHIFT CYLINDER:
Remove the chrome acorn nut from the forward stock shifter lever. Save this nut as it will be used later. Remove the 5/16-18 x 1" HHCS that connects the stock intermediate shift rod end to the forward stock shifter lever.

Assemble the Pingel shift arm lever onto the forward stock shifter lever by installing the 5/16-18 x 1½" HHCS through the hole on the forward stock shifter lever and into the Pingel shift arm lever, making sure the rod end on the stock intermediate shift rod is between the forward stock shifter lever and the Pingel shift arm lever. See Figure #4. Apply thread locker on protruding threads and install the stock 5/16" flat washer and stock 5/16-18 acorn nut and tighten. Note: It may be necessary to unbolt the back stock rod end from the rear shift arm on the transmission if you cannot get the 5/16-18 x 1½" HHCS into place. If this is required, make sure to use thread locker on the removed rod end and retighten it into the stock location after the previous steps are completed. Once the Pingel Shift Arm lever is installed on the forward stock shift arm lever, apply thread locker and tighten the 10-24 x 3/16" socket head set screw on the side of the Pingel shift arm lever.

Install the electric shift cylinder onto the shift cylinder to engine support bracket using the Pingel clamp and (2) ¼-20 x ¾" socket head cap screws, adjusting the cylinder so the clamp is approximately 2/3 front to back (see figure 3). Just snug these bolts for now, as adjustment will be needed.

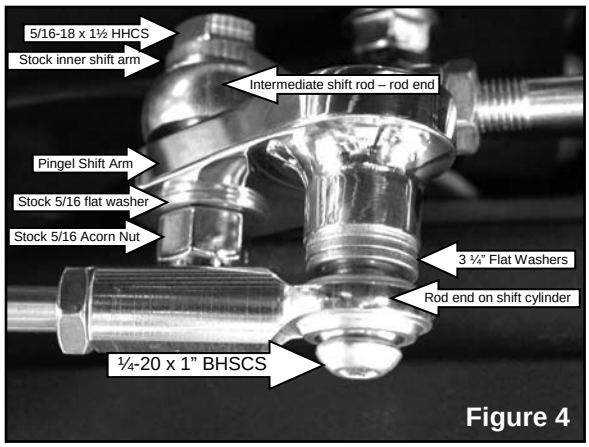

Figure 4

Remove the two front bolts on the primary cover. Install the electric shift cylinder and engine support bracket to the primary cover, using (2) ¼-20 x 1¾" socket head cap screws with thread locker on each and tighten evenly.

The rod end on the shift cylinder should be able to go past the point of mounting in each direction sidewise. The point of mounting is that flat surface upon which the rod end bolts to the Pingel shift arm lever allowing for the three thin flat ¼" washers also. 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 another thin ¼" flat washer to the existing washers to move the rod end away from the shift arm lever, or remove one or more of the thin flat ¼" washers to move the rod end closer to the shift arm lever. Using thread locker on the thread ends install the ¼-20 X 1" button head socket cap screw through the rod end of the electric shift cylinder and through the 1/4" flat washer(s) and into the Pingel shift arm lever. Note: Because of variations in H-D® manufacturing, it may be necessary to slightly bend the stock forward shifter arm lever that the Pingel shift arm bolts to so there is enough clearance for the rod end to be able to go past the point of mounting in each direction. Also, the stock shifter may have slop right and left, which when shifting could possibly bind the rod end even if it is set up correctly in the neutral position. This slop must be removed before setting up the final mounting point for the electric shift cylinder rod end.

Before adjusting the electric shift cylinder front to back make sure the motorcycle transmission is in neutral. While holding onto the electric shift cylinder housing, loosen the two ¼-20 x ¾" SHCS on the cylinder clamp. Now 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 right at the plastic bushing located on the end of the cylinder housing, as shown in figure 5, arrow A. Now with the shift cylinder in the correct position, tighten the two ¼-20 x ¾" SHCS of the Pingel clamp. Route the electric cable from the electric shift cylinder under the engine and up to the control module, attaching it to the appropriate connector. Secure all wires away from heat and moving parts with wire ties supplied.

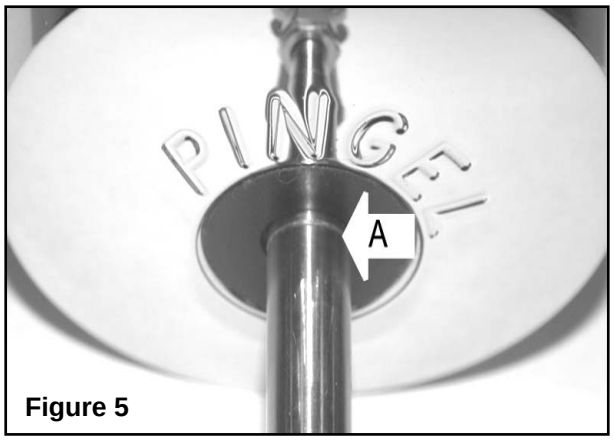

Figure 5

The Electric Speed Shifter kit installation should now be complete. Reconnect negative battery cable. Turn ignition key on (engine must be running), 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 the key is turned on (engine running) if you wish to use the electric shifter. Pull in clutch and check shifter movement by pushing either button on the handlebar control.

Test ride motorcycle. If shifting up or down is not achieved, loosen the Pingel clamp on the shift cylinder and adjust the cylinder forward or backward in 1/16" to 1/8" increments (forward if not downshifting, backward if not upshifting). Retighten Pingel clamp and test ride motorcycle. When the final adjustment is complete, remove and apply thread locker to the end threads of each clamp SHCS, but remove only one clamp SHCS at a time so as not to lose adjustment. Install the chrome cap over the ¾" hex nut that is exposed on the shift cylinder to engine support bracket by holding it squarely on nut and tapping it with a soft hammer, putting a rag in 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.

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.

Pingel recommends that after the installation of this kit, there should be an alternative method of shifting.

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

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

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

PINGEL®
Since 1967

Items included: H-D Dyna 1994-2005 models with standard mid controls

1 - Electric shift cylinder support bracket with cylinder clamp (threaded)
1 - Cylinder clamp (thru-holes)
2 - ¼-20 x 1¾" socket head cap screws
1 - Fused wiring harness
1 - 1" handlebar 2 piece dual button control assembly
1 - Control module
1 - 10-24 x 3/16" socket head set screw
1 - ¼-20 x 1" button head
4 - ¼" washer (includes 2 extra for possible adjustment)
1 - Electric shift cylinder
1 - 5/16-18 x 1½" hex head cap screw
2 - Ring terminals
3 - Blue quick tab connector
10 - 5½" wire ties
1 - Thread locker
1 - Extra 40-amp fuse
1 - Pingel shift arm lever
1 - Chrome ¾" hex nut cover
2 - Hook & loop Velcro piece
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.

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

Part No. INS-77601
Rev 06102014