

Pingel® Electric Speed Shifter Kit for Buell X9SX/X12S 2003-2005 Models #77450 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 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 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:

Loosen the clutch perch and slide it toward the fork 7/16". Retighten the clutch perch. Next take a measurement from the newly positioned clutch perch to the turn signal switch housing. Record this dimension. Disassemble switch housing. Looking at the inside of the turn signal housing you will notice a raised portion in the housing that fits into a hole in the handlebar. Using the dimension recorded earlier, you will now redrill the hole closer to the fork on the handlebar. Drill the hole the same diameter as the original hole. Reinstall the handlebar switch housing as close to the clutch perch as possible.



Figure 1

Install the dual button handlebar control bracket onto the handlebar between the switch housing and 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.

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 under the seat by the battery (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.

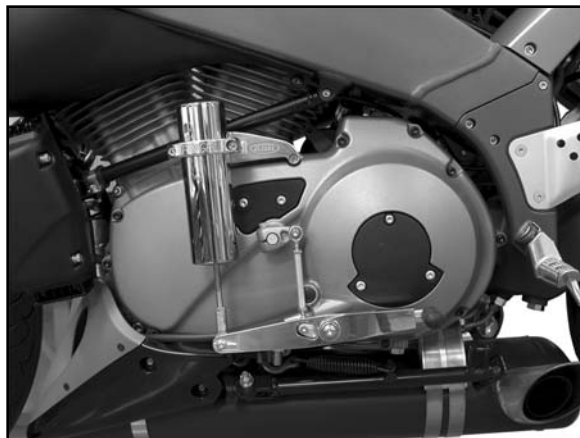
INSTALLATION OF CONTROL MODULE AND WIRE HARNESS:

The control module will be mounted under the seat by the battery (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



Figure 2

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 such as an accessory feed wire (must not be a wire directly to or from the ECM!). 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 under the seat. See instruction sheet included for electronic engine kill module wiring directions.

INSTALLATION OF ELECTRIC SHIFT CYLINDER:

Remove the bolt retaining the stock shifter lever. Slide the stock shifter lever off the center shaft. Because of variances in the motorcycle manufacturing, confirm that the stock shift lever fits into the Pingel shift lever. This is accomplished by lining up the center bushing hole on the stock shifter lever with the center bushing hole in the Pingel shifter lever (make sure the Pingel shifter lever has the pocket facing towards the engine and the hole in the end of the Pingel shifter lever is to the front of the motorcycle). Make sure the stock shifter lever fits into the pocket in the Pingel shifter lever. If not, you will need to file the stock shifter lever or the pocket in the Pingel shifter lever until it does fit and both center bushing holes align.

Install the 1/2" O.D. x 5/16 I.D. x 1-1/8 LONG steel bushing through the center bushing hole of the Pingel shifter lever, through the center bushing hole in the stock shifter lever and into the side of the primary case, retaining this assembly with the 5/16-18 x 2" BHSCS and washer with threadlocker on threads. See figure 4. Apply threadlocker to the 10-24 x 3/16 socket set screw on the bottom of the Pingel shifter lever and tighten until the lever is snug against the stock shifter lever.

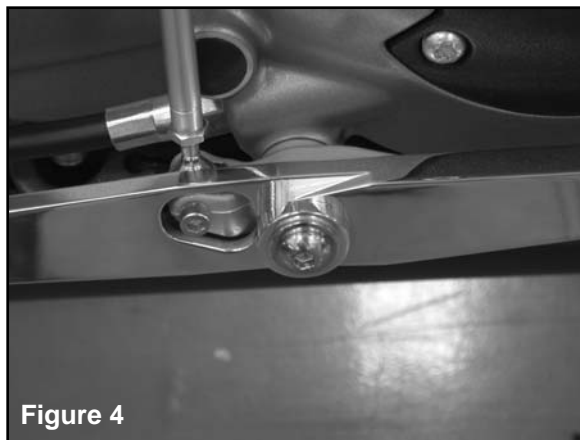


Figure 4

Remove the two top bolts on the primary cover directly above the shifter shaft. Install the electric shift cylinder to engine support bracket to the primary cover, using (2) 1/4-20 x 2 1/2" socket head cap screws with thread locker on each and tighten evenly. See figure 3.

Install the electric shift cylinder onto the electric shift cylinder to engine 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 1/4 of the way down from the top (see figure 3). Just snug these bolts for now, as adjustment will be needed.

The rod end on the shift cylinder should be able to go past the point of mounting in each direction sidwise. 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 1/4" 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 1/4" 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 1/4" washers to move the rod end closer to the shift arm lever. Install the 1/4-28 x 1" button head socket cap screw through the Pingel shifter lever and through the 1/4" flat washer(s) and through the rod end of the electric shift cylinder, retaining the bolt with the 1/4-28 locknut on the backside.

Before adjusting the electric shift cylinder up or down make sure the motorcycle transmission is in neutral. While holding onto the electric shift cylinder housing, loosen the two 1/4-20 x 3/4" 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 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 figure 5, arrow A. Now with the shift cylinder in the correct position, tighten the two 1/4-20 x 3/4" SHCS of 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 wire ties supplied.

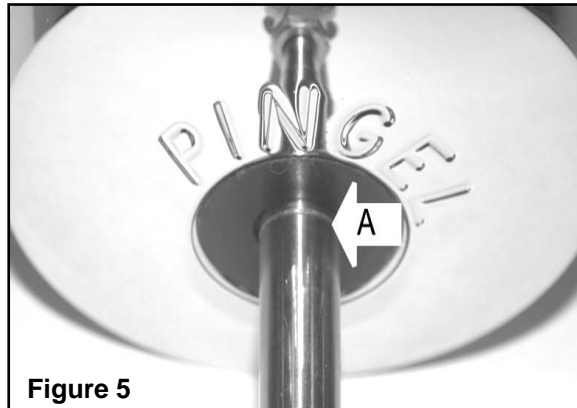


Figure 5

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 up or down in 1/16" to 1/8" increments (up if not downshifting, down 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.

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, a slight crack of the throttle helps to smoothly go into lower gears, also if there is no load on transmission a simple push of the button should be sufficient. 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.

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.

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

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

Items included: Buell X9SX/X12S 2003-2005 models

- | | |
|--|---|
| 1 - Electric shift cylinder support bracket with cylinder clamp (threaded) | 1 - 5/16-18 x 2" button head socket cap screw |
| 1 - Cylinder clamp (thru-holes) | 1 - 5/16 flat washer |
| 2 - 1/4-20 x 2 1/2" socket head cap screws | 2 - Ring terminals |
| 1 - Fused wiring harness | 3 - Blue quick tab connector |
| 1 - 7/8" handlebar dual button control assembly reversed wired | 10 - 5 1/2" wire ties |
| 1 - Control module | 1 - Thread locker |
| 1 - 10-24 x 3/16" socket set screw | 1 - Extra 40-amp fuse |
| 1 - 1/4-28 x 1" button head | 1 - Pingel shift arm lever |
| 5 - 1/4" washer (includes 2 extra for possible adjustment) | 2 - Hook & loop Velcro piece |
| 1 - 1/4-28 locknut | 1 - Electronic engine kill module |
| 1 - Electric shift cylinder | 1 - Electronic engine kill module coil leads |
| | 1 - 1/2" O.D. x 5/16 I.D. x 1-1/8" long steel bushing |

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:

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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.

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