Pingel Enterprise, Inc
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Phone (608) 339-7999 Fax (608) 339-9164

Since 1967

Pingel® Electric Speed Shifter Kit for Honda VTX1800C 2004-2006 & VTX1800F 2002-2006
Designed for Street Use
#77004 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 All Electric 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:
Loosen the clutch master cylinder perch and slide it toward the fork 7/16". Retighten the clutch master cylinder perch. Measure from the newly positioned clutch master cylinder perch to the turn signal switch housing and record this dimension. Disassemble the turn signal 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 re-drill the hole closer to the clutch master cylinder perch in the handlebar. Drill the hole the same diameter as the original hole.

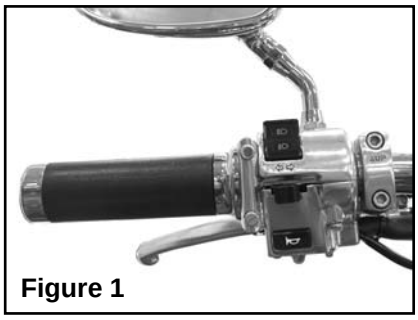
Figure 1

Reassemble the turn signal switch housing to the newly drilled location. Install the dual button handlebar control bracket onto the handlebar as close to the switch housing as possible, See figure 1. Note: When tightening, be certain to tuck the wires neatly into the grooved channel of the dual button handlebar control bracket so they are not pinched or damaged. The 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 the handlebar (or inside the handlebar) and under the fuel tank. From there run the wire assembly under the frame towards the area under the front seat; this is the approximate location that the control module will be mounted. Be certain to secure the wires along their routing with the wire ties provided. Excess wire can be coiled and hidden in the area under the front seat.

INSTALLATION OF CONTROL MODULE AND WIRE HARNESS:
The mounting location of the control module is under the front seat, see figure 2. The control module is supplied with Velcro for the bottom of the box to secure it.

The wire assembly previously run from the handlebar control will now be connected to the control module. Note that there is a large round 4-pin connector, a small round 4-pin connector and a large round 3-pin connector. The handlebar connector has the small round 4-pin connector and should be connected to the appropriate male receptacle on the control module.


Figure 2

The large round 4-pin connector coming from the control module should be connected to the large 4-pin connector from the fused wire harness. 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. Cut the small red wire to the proper length and use the blue quick tab connector provided to make this connection or preferably solder 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 the negative and large red to the positive. The electronic engine kill module is also mounted under the front seat. See the instruction sheet that is included with the electronic engine kill module.

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INSTALLATION OF ELECTRIC SHIFT CYLINDER:

Remove the two top bolts on the left crankcase cover. Install the electric shift cylinder support bracket, (A) figure 3, to the left crankcase cover using (2) 6mm x 1.0 x 45mm socket head cap screws with thread locker on each before tightening. See figure 3.

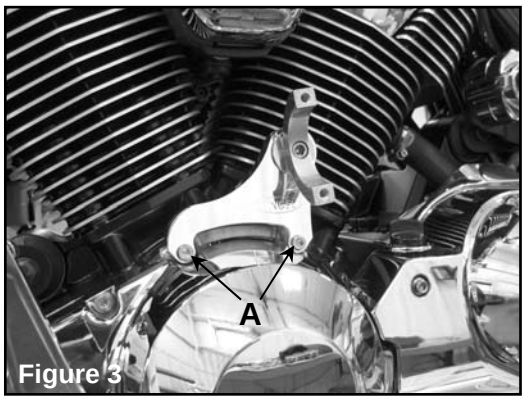

Figure 3

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 ¾ front to back (see figure 4). Just snug these bolts for now, as adjustment will be needed.

Remove the stock left foot peg bracket from the motorcycle and swing it and the stock shifter assembly towards the outside of the motorcycle. Remove the shift lever retaining bolt from the footpeg and loosen the shift rod jam nut. Remove the stock shift lever from the footpeg and shift rod by twisting the assembly. The Pingel shift lever bracket will now be installed onto the back of the stock shift lever as shown in figure 5. Be certain to push the bracket all the way down towards the pivot hole of the shift lever. Using a #25 drill bit placed through the holes of the Pingel shift lever bracket, make two small marks on the back of the shift lever by twisting the drill bit with your fingers, see figure 6. Place the marked shift lever on the top back of a vise, an anvil or other stable surface and center punch the two small points marked on the backside of the stock shift lever, as shown in figure 7. Use a 3/16" drill bit and drill the 2 points that were center punched. **Be certain to securely clamp the shift lever when drilling so it does not "helicopter" and injure you or others!**


Figure 4

Attach the Pingel shift lever bracket to the stock shift lever using two ¼-20 x ¾" button head cap screws with thread locker. With the Pingel bracket attached, install the shift lever onto the shift rod and foot peg. Install the foot peg bracket back onto the motorcycle.

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 lever bracket allowing for the thin flat ¼" washer(s) 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 1 or more thin ¼" 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 ¼" flat washer(s) to move the rod end closer to the shift arm lever. Note: (4) ¼" flat washers are supplied to aid in alignment. Install the ¼-28 x 2" button head socket cap screw through the shift arm bracket, the .623 o.d. x .250 i.d. x .4375 long aluminum spacer, the ¼" washer(s), the rod end of the electric shift cylinder and into ¼-28 locknut and tighten, see figure 8.


Figure 5

Before adjusting the shift cylinder front or back make sure the motorcycle transmission is in a 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 cylinder shaft. Adjust the cylinder housing front or back so the groove in the shaft is exactly at the plastic bushing, located on the bottom of the cylinder housing, as shown in (A) figure 9. With the shift cylinder in the correct position, tighten the two bolts of the Pingel clamp.

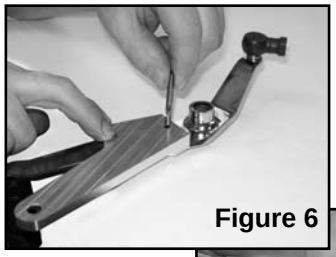
Figure 6

Route the cable from the electric shift cylinder to the control module, attaching it to the appropriate connector. Secure all wires away from heat and moving parts with the wire ties supplied.

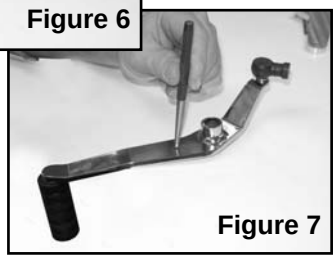
Figure 7

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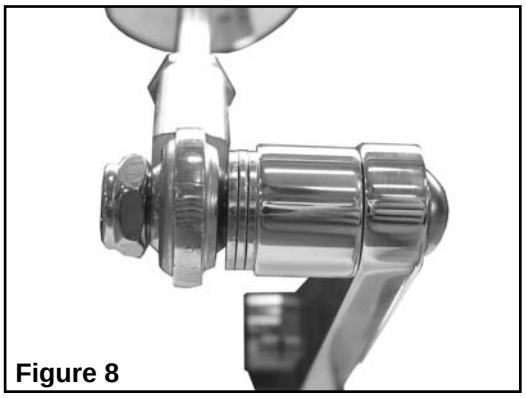

Figure 8

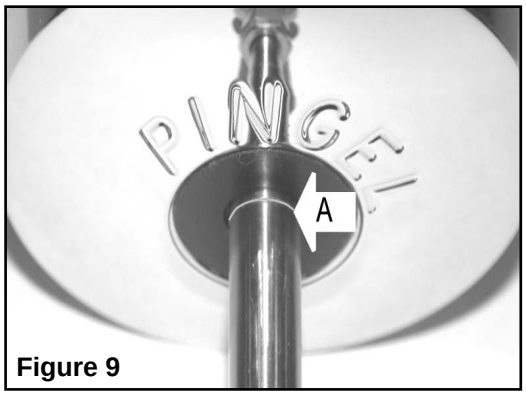

Figure 9

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.

Test ride motorcycle. If shifting up or down is not achieved, you can loosen the Pingel clamp on the shift cylinder and adjust front or back 1/16" to 1/8" at one time. Retighten Pingel clamp and retest ride motorcycle. When you get 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 your 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. A twist of the throttle on slightly when hitting the shift button will help 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 may 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 unless using the clutch.

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

Installation of 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.

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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Items included: #77004 Honda VTX1800C 2004-2006 VTX1800F 2002-2006

1 - Shifter lever bracket
1 - Electric shift cylinder support bracket with cylinder clamp (threaded)
1 - Cylinder clamp (thru-holes)
2 - 6mm x 1.0 x 45mm SHCS
2 - ¼-20 x ¾" BHSCS
1 - ½-28 x 2" BHSCS
1 - ¼ - 28 locknut
4 - ¼" washers
1- .623 o.d. x .250 i.d. x .4375 long aluminum spacer
1 - Electric shift cylinder
1 - Fused wiring harness
1 - 1" handlebar dual button control assembly
1 - Control module
2 - Hook & loop pieces
1 - Electronic engine kill module
1 - Electronic engine kill module wire leads
2 - Ring terminals
3 - Blue quick tab connector
10 - Wire ties
1 - Tube thread locker
1 - 40-amp fuse

THANK YOU for purchasing a PINGEL ENTERPRISE, INC., product. View our entire product line at www.pingelonline.com