Please read all instructions before the installation of the ATS Co-Pilot

Thank you for purchasing the ATS Ford 5R-110 Co-Pilot. This manual is to assist you with your installation and operation of the unit. If you are installing the unit for a customer, please pass this manual on to your customer for future reference.

Understanding the ATS Co-Pilot

The purpose of the Co-Pilot is to ramp up the transmission line pressure. By increasing the line pressure to the transmission clutch packs, the transmission’s holding force increases, eliminating slip. The Co-Pilot increases the line pressure only when necessary by monitoring the load the engine is under. By applying the necessary pressure to prevent slippage under high demand conditions and not subjecting the transmission to high line pressures when not necessary, we can increase the life of your transmission.

Note: Due to the design of factory shift solenoids, this feature is maximized with an ATS Transmission with ATS shift solenoids.

Using the ATS Co-Pilot
The control panel on the face of the Co-Pilot control box allows the driver to select and view the shift firmness setting. When the round button on the left side of the Co-Pilot face is depressed and the blue light is turned off, the Co-Pilot is disabled. This will allow the factory PCM (Powertrain Control Module) to operate the vehicle as it does in stock form. The OFF position is indicated by none of the lights being lit on the face of the box. To activate the unit, depress the round button (ATS Button) on the left side of the face, one of the blue lights on the face will light up, the light also indicates the level the Co-Pilot was set on before it was last shut OFF.

The best way to become familiar with the operation of the ATS Co-Pilot is to set the ATS Co-Pilot to the maximum (highest) shift firmness (up arrow) available as well as the lowest setting. Try all the settings to decide which is best for you.

**Setting up the ATS Co-Pilot for installation**

The ATS Co-Pilot can be set up for your preferences. The Co-Pilot unit will need to be disassembled to access the dipswitches on the electronic board. You will need a 1/16\textsuperscript{th} - inch hex (Allen wrench) to remove the face from the Co-Pilot. After the face has been removed, the electronic board can slide out of the casing from the front. The digital face is attached to the circuit board with a ribbon cable so do not force the board from the case. There are two (2) switches on the circuit board; the switches allow the user to select the desired features. The settings are listed below. When reinstalling the face on the Co-Pilot do not over tighten the 2 small screws on the face.

![Figure 1 - Dipswitch Location](image)
Dipswitch selection:

SWITCH #1: Tire Size Compensation

Enabling this feature recalibrates the Co-Pilot computer to compensate for very large tires (35 inches or taller). These tires can throw off the vehicle speed sensor signal if it is not already corrected with vehicle computer re-flash from a Ford dealership. Do not enable this feature until you have confirmed that the lockup is not occurring at the correct speed.

To enable tire size compensation, flip switch to the ON position
To disable tire size compensation, flip switch to the OFF position

We preset this switch to the off position.

SWITCH #2: Leave this switch set in the OFF position

Co-Pilot Mounting Location

Find a convenient location to mount the Co-Pilot control box within reach and view of the driver. We recommend locating the unit just to the right of the driver on the lower dash panel (above the driver’s right knee). Use the supplied Velcro to secure it to the dash. Before sticking the Velcro to the dash thoroughly clean the area with a cleaner such as acetone or brake cleaner (or any cleaner that evaporates without leaving a residue).

Mount the larger Computer box (with the PCM Connector port) behind the power steering reservoir next to the firewall. Route the wire loom with the white connector through the firewall to the Co-Pilot control box and plug it into the back. There is a plastic plug in the firewall that you can cut or drill through. Seal the hole with a rubber grommet.
Wiring

Remove the driver’s side battery cover and disconnect the negative terminals on all vehicle batteries before starting installation. We urge you to solder all connections for reliable results. These wire connections must be shielded from the elements (we recommend heat shrink tubing).

Locate the PCM, which is on the driver’s side of the engine between the battery and the inner fender. It may ease installation to remove the driver’s side battery. The PCM has three connectors; there are two wires that need to be tapped which are in the rear connector (closest to the firewall). Remove the connector by pulling back on the white lock tab, and tap the wires as directed below:

For 2003-2004: Tap the **Yellow with White** wire that is in **Pin 25** with the **Brown** wire.
   Tap the **Light Green with Black** wire that is in **Pin 41** with the **Orange** wire.

For 2005+: Tap the **White with Red** wire that is in **Pin 25** with the **Brown** wire.
   Tap the **Light Green with Black** wire that is in **Pin 41** with the **Orange** wire.
Reconnect the PCM connector by pressing the white lock tab all the way down and then unplug the Connector furthest from the firewall. Plug that connector into the Co-Pilot Computer Box and take the connector from the Co-Pilot Computer Box and connect it in place of the stock connector. Note: You will need to redirect this connector’s wire loom under the power steering reservoir to reach the Co-Pilot Computer Box.

Take the black wire from the Co-Pilot Computer Box and connect it to one of the PCM hold-down bolts to provide a good ground. (See the picture on page 4)

Make sure that the Co-Pilot Computer Box and all wires are secured and reattach the negative battery terminals. The wiring of your Co-Pilot is complete.
Have Any Questions?

Thank you for purchasing the ATS Co-Pilot. Please check our website at http://www.atsdiesel.com for technical support and other performance products. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

Contact Information

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We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our Technical Support Website to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at mailto:Suggestions@ATSDiesel.com.
ATS Diesel Performance
Limited Warranty Statement

ATS Diesel Performance warrants the original purchaser that any parts purchased shall be free from defects in material and workmanship. ATS Diesel Performance is the warrantor of this product, in the event this produce is purchased form a distributor or retailer other that ATS Diesel Performance the customer must contact ATS Diesel Performance for any warranty concerns, not the purchasing dealer. A defect is defined as a condition that would render the product inoperable. This warranty does not cover deteriorating of plating, paint or any other coating. ATS liability is limited to the repair or replacement, at ATS’s option, of any warrantable product returned prepaid with a complete service history and proof of purchase to the factory. A valid proof of purchase is a dated bill of sale. Repaired or replaced, product will be returned to the customer, freight collect on a like-for-like part number basis. Accepted warranty units, which have been replaced, become the sole property of ATS.

A Return Product Authorization number obtained in advanced from an ATS customer service representative must accompany products returned for warranty determination. ATS will be the final authority on all warranty decisions.

This warranty shall not apply to any unit which has been improperly stored or installed, subjected to misapplication, improper operating conditions, accidents, or neglect; or which has been improperly repaired, altered or otherwise mistreated by the owner or his agent.

This warranty shall terminate at the end of 12 months in service with the original user. Labor cost incurred by the removal and replacement of an ATS product, while performing warranty work, will be the responsibility of the vehicle owner; in no case does the obligation of ATS Diesel Performance exceed the original purchase price of the product as indicated on the original bill of sale.

Except as set forth in this warranty, ATS disclaims any implied warranty, including implied warranties of merchantability and fitness for a particular purpose. ATS also disclaims any liability for incidental or consequential damages including, but not limited to, repair labor, rental vehicles, hotel costs or any other inconvenience costs. This warranty is in lieu of all warranties or guarantees, either expressed or implied, and shall not extend to any customer or to any person other than the original purchaser residing within the boundaries of the continental US or Canada.

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