



# INSTALLATION INSTRUCTIONS

1815 Patterson Ave. Deland, FL, 32724 – [ftiperformance.com](http://ftiperformance.com)

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## F2514PBM

FTI Powerglide Billet Aluminum Transbrake Valvebody – Mud Brake

Shift Pattern: PRN21 (forward)

### This Kit Includes:

- |                            |                          |                            |
|----------------------------|--------------------------|----------------------------|
| • (1) PG Valve-body        | • (1) Manual Valve       | • (17) Reverse Springs     |
| • (1) Trans-brake Solenoid | • (1) Transbrake Valve   | • (1) T.B. Valve Spring    |
| • (1) Servo Spring         | • (1) High-Flow Filter   | • (1) Filter Block & Plate |
| • (1) VB to Case bolt      | • (1) Trans-brake gasket |                            |

**Note:** This transmission DOES NOT require the transbrake to engage reverse. Selecting reverse with this valvebody WILL engage reverse regardless of vehicle speed or direction.

**Disclaimer:** Included in the following documents are detailed instructions on how to install your new FTI Billet Valvebody. Please keep in mind that racing is dangerous, and a product such as this one is crucial to a properly functioning racecar. Failure to properly install this product can lead to catastrophic failure. If you are unsure about any of the steps in this instruction sheet, please consult a professional immediately for assistance or contact FTI's tech support line at 386-736-5816.

**Pre-installation Setup:** Please make sure your work environment is level and clean to ensure a safe work environment. Carefully raise your vehicle to a safe height in preparation to remove your Powerglide transmission. Safely secure the vehicle with a minimum of 4 jackstands or a like product. Using a 10qt or bigger drain pan, drain majority of the fluid from your transmission. Remove any components around or connected to your transmission. Carefully remove your transmission from your vehicle, please be mindful of the torque converter during this process. Once your transmission is removed from the vehicle, we can take the transmission over to the bench where we will start our valve body kit installation.

**Warranty:** Each FTI Powerglide Billet Valvebody is covered by our standard 1-year warranty against any manufacturing defect. If you suspect there to be a warranty issue with your valve body, please contact us immediately for trouble shooting and valvebody testing if necessary. All FTI solenoids are covered by a 90-day warranty, if you suspect your solenoid of a warranty issue, please contact FTI immediately for troubleshooting steps. Please note, any warranty claims that are submitted due to improper installation or operation are subject to denial of claims solely at the discretion of the manufacturer.

**Line Pressure:** All FTI Powerglide valve bodies come pre-set to 240-275psi line pressure for use in an aftermarket case. If you are installing this valvebody in a stock case, you must adjust the pressure regulator located on the valvebody to prevent excessive line pressure that can damage your factory case. To do so remove the cap of the pressure regulator and turn the internal adjustment screw  $\frac{1}{2}$  to  $\frac{3}{4}$  of a turn counterclockwise. Re-install the pressure regulator cap afterwards.

**Note:** If you are replacing a pre-existing transbrake valvebody, please confirm line pressure after install to ensure proper transmission operation.



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**Instructions:** **Note:** Please skip forward to Step #6 if your transmission is already equipped with a Transbrake or you have an aftermarket case.

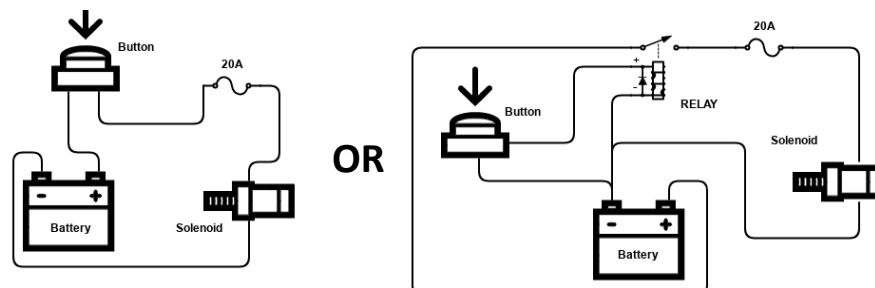
1. Completely disassemble your Powerglide until you are left with a bare case.
2. Using a 5/16" drill bit carefully drill a hole as illustrated in [figure 1](#). The hole shown in [figure 1](#) will be drilled all the way through to the inside of the case (Make sure you have removed the reverse piston prior to this step)
3. Using the same 5/16" drill bit, carefully enlarge the small hole located on the bottom of the case as illustrated in [figure 2](#). This hole should intersect with the hole you created in step #2.
4. Using a deburring tool, lightly deburr the holes created in step #2 and #3.
5. Once deburring is complete, thoroughly clean your case to remove any metal shavings, dirt, or other build up that can lead to potential transmission failure. Make sure you pay close attention to the rear of the case where you just drilled your holes during this step.
6. Standing the transmission up on its rear (a foot press is recommended), re-install your reverse apply piston into your transmission. Make sure to use a liberal amount of transmission assembly gel on the lip seals to help ensure they are not damaged during this step.
7. Carefully arrange the provided (17) FTI quick release reverse springs onto your piston (discard the 17 factory reverse springs). Carefully place your reverse spring retainer on top of the springs.
8. Using a transmission foot press or a similar compression tool, compress the reverse springs and their retainer. With the springs and retainer compressed, install the retaining snap ring into the case (make sure the snap ring is fully seated in the case). Release the pressure from the reverse springs, letting the snap ring hold the retainer and springs in place.
9. If your transmission has a wave steel in the reverse clutch pack, discard of it. Re-install your rear clutch pack, alternating steel. Clutch, steel clutch until you have 5 clutches. (Clutches and steels available directly from FTI if needed)
10. Check your reverse clutch clearance and adjust the stack as needed to get your reverse clutch clearance within .050" and .075"
11. Next, re-install your ring gear, planetary, governor support, tail housing, direct drum, band, band hardware, input shaft and pump. Leave the servo, servo cover, pan, and servo spring off for the following steps.
12. Slide the FTI provided servo spring over your servo & servo pin assembly and carefully install the servo and servo spring into the case.
13. With some very slight tension from the servo, install your servo cover into the case.
14. Next, Install your band strut and band anchor. Pay careful attention to the band apply strut as it is directional [figure 8](#).
15. Carefully remove the servo tube from the factory Valvebody. This will be reused with the new FTI billet valvebody.
16. Place the longer end of the servo supply tube into the FTI Billet Valvebody [figure 3](#).
17. Next pre-install the transbrake valve and spring into the valvebody with the spring first, followed by the transbrake valve [figure 5](#) (You can use transmission assembly gel to help hold the spring in place while installing the transbrake valve). FTI hand fits each transbrake valve; gently push on the valve with your finger to confirm the valve is moving freely within in the bore.

18. Carefully set the FTI Powerglide valvebody on your case. Pay close attention to the servo supply tube to ensure it is properly seated in the case without damaging it. Before moving to the next step take this time to also check your manual valve and make sure it is properly connected to your shift linkage figure 4.
19. Tighten the Valvebody down using the (6) 5/16-18 x 1 1/2" factory Valvebody to case bolts plus (1) 5/16-18 x 1 1/2" bolt supplied by FTI. You will have 1 shorter factory Valvebody to case bolt that is no longer needed. (Torque spec for valvebody to case bolts: 150 in/lbs)
20. Install the transbrake solenoid onto the case in the modulator hole figure 6. Make sure the included gasket is placed in between the solenoid and case prior to tightening the solenoid. Do not grab the solenoid body to tighten the solenoid, make sure to use the properly sized wrench on the hex of the solenoid. (Apply a small amount of Loctite to the solenoid threads during this step)
21. Starting with the filter block first, followed by the filter plate, install the supplied dacron high flow filter into the valvebody figure 7.
22. Before installing the pan, double check to make sure shifter linkage is engaged with the manual valve and the band is properly seated with the band hardware, band pin and servo pin. Install your pan gasket and deep aluminum pan.
23. Using an in/lb. torque wrench, tighten the band pin down to 74 in/lbs. (please note this measurement is INCH pounds, torquing the band to 74 FOOT pounds will cause failure with your transmission).
24. After tightening the band down to its proper spec, loosen the band 3 1/2 turns and lock down the band pin using the jam nut. You have now properly adjusted your band.
25. You are now complete with the installation of your FTI Powerglide billet valvebody. Following the installation of your transmission back into your car, FTI highly recommends checking line pressure to confirm proper transmission operation. Aftermarket case units should be in the 240-275PSI range and stock cases should be in the 200-220psi range. (Line pressure can be checked using the 1/8 pipe plug port in the servo cover)

## Solenoid Wiring:

**Note:** DO NOT ground your solenoid to your transmission case.

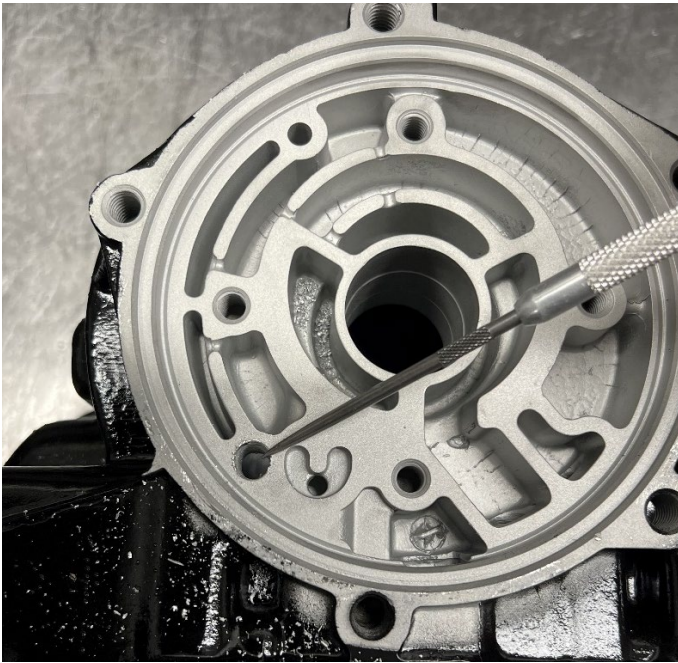
The FTI supplied transbrake solenoid is a simply electromagnetic coil solenoid. We recommend 12-14awg wire with a 20A fuse. Please check the amperage ratings of the device or button you will be using to control your solenoid to ensure it is rated for at least 20A. If it is not a relay circuit can be used if you choose to do so. For consistency in bracket racing applications, we do not recommend the use of a relay.





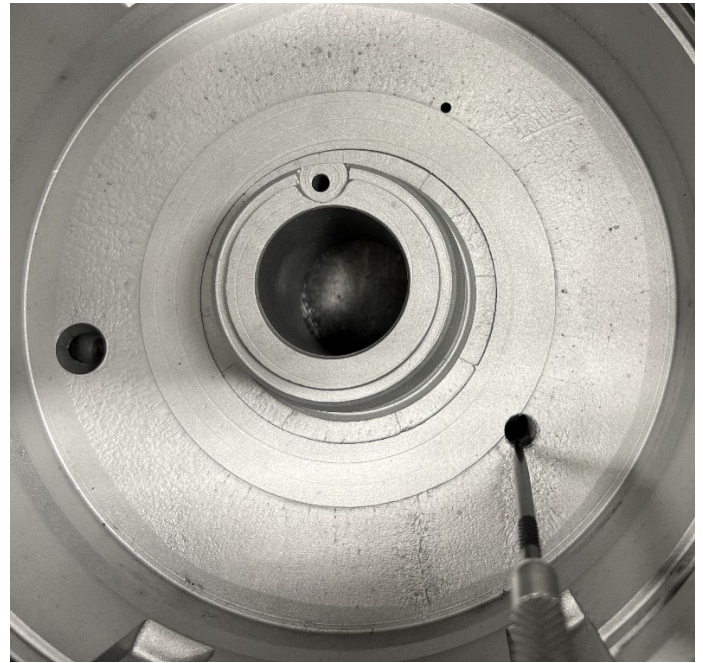
**Figure 1**

Step #2



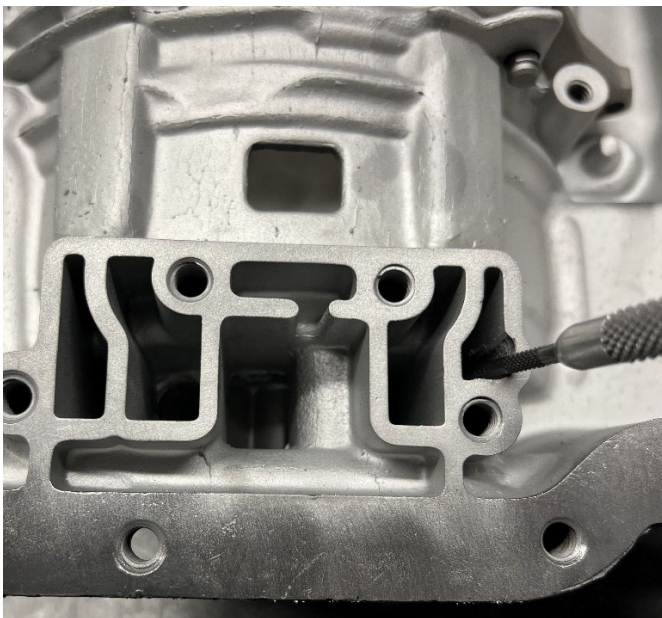
**Figure 2**

Step #3



**Figure 3**

Step #3





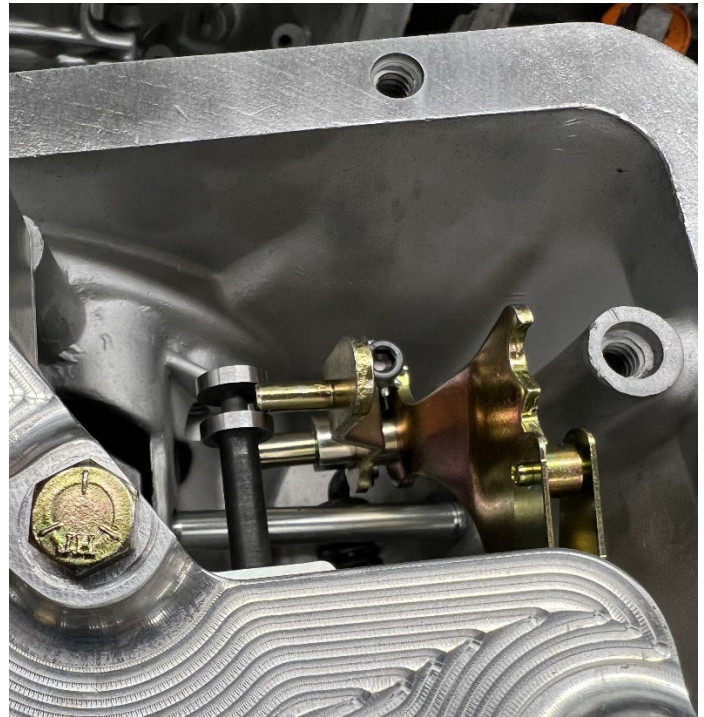
**Figure 4**

Step #18



**Figure 4**

Step #18



**Figure 5**

Step #17



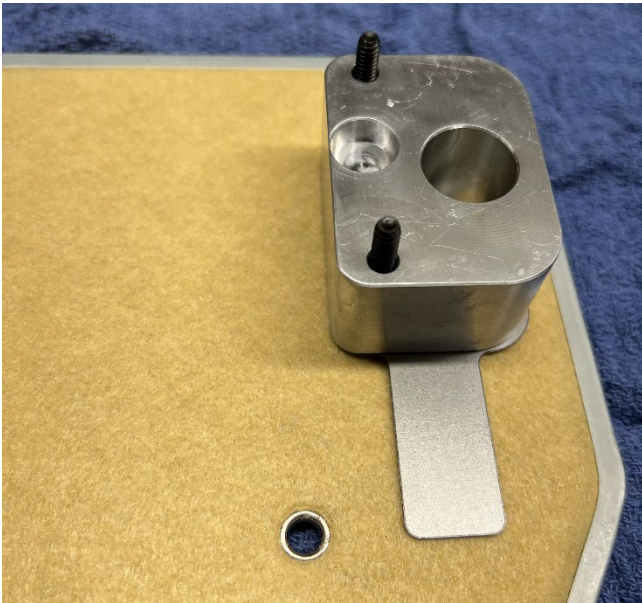
**Figure 6**

Step #20



**Figure 7**

Step #21



**Figure 8**

Step #14

