



# INSTALLATION INSTRUCTIONS

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## TH400 TRANSMISSION

**Disclaimer:** Included in the following documents are detailed instructions on how to install your new FTI TH400 transmission. Remember 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. Please keep in mind that all vehicles are different, these instructions have been generalized to cover most applications. 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. Make sure you disconnect your battery cables and safely tuck them away from the battery to prevent any arcing or other mishaps. Next carefully raise your vehicle to a safe height in preparation to remove your transmission. Safely secure the vehicle with a minimum of 4 jackstands or a like product. Make sure there is plenty of room between your vehicle and the ground to slide your transmission underneath the car during this installation.

**Warranty:** Each FTI TH400 transmission is covered by our standard 90-day warranty against any manufacturing defect. If you suspect there to be a warranty issue with your product, please contact us immediately for trouble shooting and further assistance if necessary. 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.

### Operation:

1. Under no circumstance should you ever do a burnout in 1<sup>st</sup> gear. Shifting from 1<sup>st</sup> to 2<sup>nd</sup> during a burnout WILL cause damage to the intermediate sprag which will result in loss of 2<sup>nd</sup> gear. Instead, always start your burnout in 2<sup>nd</sup> gear.
2. DO NOT shift the transmission while the vehicle is off the ground and there is no load on the drivetrain. This can also lead to sprag and other failures as the result of improper operation.
3. DO NOT downshift from 2<sup>nd</sup> to 1<sup>st</sup> while the vehicle is in motion.

### Shifter Adjustment:

Shifter Adjustment is crucial to proper operation of a transmission, especially performance-based units such as this one. Once your transmission is installed using the instructions below, please make sure to follow the shifter adjustment instructions carefully and closely.

1. Start with the car still in the air, safely on jackstands or a lift and install the supplied shifter arm that will be supplied with your shifter along with any bracketry and cables.
2. Before connecting the cable to the shift lever, place the shifter in 1<sup>st</sup> gear, and then place the transmission 1<sup>st</sup> gear. Adjust the cable until the shifter pin slides in and out of the shifter arm with ease or without pre-loading the shifter arm.
3. With the cable still connected, shift the shifter to the 2<sup>nd</sup> gear position.



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4. Check the cable pin again in 2<sup>nd</sup> gear making sure that the pin engages with the shifter arm with ease and does not pre-load the shifter arm.
5. Once the 1<sup>st</sup> and 2<sup>nd</sup> gear adjustment is satisfactory, move the shifter to the rest of the positions and confirm the shifter has been adjusted correctly.
6. If you need to adjust your shifter at all for 3<sup>rd</sup>, reverse, neutral, or park, make sure you double check your adjustments in 1<sup>st</sup> and 2<sup>nd</sup> again to ensure there is still no load on the pin. If you experience any issues during this process, please contact a professional or call FTI Technical Support.

**NOTE:** Please make sure to carefully read the instructions provided with your shifter during your installation to ensure your shifter is correct for your transmission. An improperly chosen or installed shifter can very quickly damage a perfectly good transmission.

## Instructions:

1. Start by draining the fluid from your transmission. If your pan has a drain plug feel free to use that to drain your fluid. If not, start by slowly loosening the rear half of the pan and working forward as you loosen the pan. Fluid will start to slowly drain from the pan. Continue this until you can easily lower the pan and pour the remaining fluid into the drain pan. Reinstall the pan once the transmission is done draining.
2. Remove the converter bolts.
3. Remove the drive shaft and the starter.
4. Unhook the cooler lines, dipstick & tube, shifter, and any harnesses that may be attached to the transmission.
5. Using a transmission jack to support the weight of the transmission, remove the crossmember and bellhousing bolts holding the transmission to the engine block.
6. Carefully remove the transmission and converter from the block and lower them from the car.
7. Bring the transmission and converter out from underneath the car.
8. Take this time to check the flex plate for any cracks, chipped teeth, or other signs of wear that might suggest replacing the flex plate.
9. Take the new converter (if applicable) and hold it up against the motor & flex plate to confirm proper fitment. Ensure that the converter pads are sitting flat against the flex plate simultaneously and the pilot of the converter is engaged with the crank by at least a 1/8in.
10. Once you have confirmed the converter properly fits the engine, add up to a quart of NEW transmission fluid to the new converter.
11. Carefully install the converter into the transmission. Listen for 3 distinct clicks as the converter goes all the way onto the transmission. (Standing the transmission on the tail shaft may help with this step) Use the following measurements to confirm the converter is seated all the way into the transmission.
  - a. GM TH350/Powerglide: 1.125" from bellhousing to converter pads.
  - b. GM TH400: 1.187" from bellhousing to converter pads.
  - c. GM 700R4/4L60E/2004R: 1.125" from bellhousing to converter pads.
  - d. GM 4L80E: 1.030 from bellhousing to converter pads.



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- e. Ford C6/C4: 1.125" from bellhousing to converter pads.
  - f. Ford AODE: 1.030" from bellhousing to converter pads.
  - g. Ford AOD: 1.000" from bellhousing to converter pads.
  - h. Chrysler 727: 1.250" from bellhousing to ring gear
  - i. Distances may vary plus or minus .050".
12. Remove any debris, dirt, or other material from the crankshaft pilot hole and lubricate it using anti-seize. Clean and lubricate the dowel pins with anti-seize as well.
  13. Slide the transmission & converter back underneath the car and place them on the transmission jack. Raise the transmission up to the block.
  14. Carefully align the dowel pins (and converter studs if any) with the block and mount the transmission to the block. DO NOT use bellhousing bolts to pull the transmission up to the engine, make sure the bell is perfectly flat against the engine before tightening any bellhousing bolts. **Note: Any damage caused by improper transmission or torque converter installation is not covered under warranty and will be subject to additional charges to repair.**
  15. After the bell housing bolts are tight, check to make sure the converter can spin by hand in the transmission and crank. If not, please contact FTI for additional assistance.
  16. Align the converter bolt holes on the converter with the bolt holes on the flex plate. (Some applications may only use 3 of the 6 flex plate bolt holes)
  17. Using feeler gauges, calipers, or a drill bit, measure the gap between the converter and the flex plate. Converter spacing should be between **1/8" and 3/16" (.125" to .187")**. If converter spacing is larger than spec, add shims to each bolt until converter spacing is correct. If converter spacing is too small, please contact FTI technical support for additional assistance.
  18. Reinstall your cross member, driveshaft, starter, shifter cable, cooler lines, dipstick & tube, harness, etc.
  19. Remove the car from the jackstands and lower the car back onto the ground.
  20. Once the transmission and its related components are installed and you are ready get the car going; Add 5 quarts of new fluid to your TH400 transmission through the dipstick tube.
  21. With the car in park and your foot firmly on the brakes. Start your car and add 3 more quarts of transmission fluid.
  22. After adding the additional 3 quarts, leave the car running in park and use your dipstick to check the fluid level in the transmission. Add fluid as needed until the dipstick reads full.
  23. Once your dipstick reads full, secure the dipstick in the tube. While firmly holding the brake pedal, cycle the transmission through each gear, reverse, neutral, 1<sup>st</sup>, 2<sup>nd</sup>, and finally 3<sup>rd</sup>. Then return the car to park. Check the fluid levels again and add fluid if needed.
  24. Congratulations you have just completed the installation of your FTI TH400 transmission. Proceed with a short test drive to ensure all gears are properly and the trans-brake is holding correctly (if equipped). If you experience ANY issues during your test drive, please contact FTI Performance Customer Service for further assistance.