



Installation packet

Your Level 3,4,5 Gearstar Performance Transmissions re-manufactured transmission is warranted against failure due to workmanship and/or parts used in the re-manufacturing process for a period of 3 Years/36,000 miles or 1 year/ 12,000 miles for 4x4 transmissions (whichever occurs first) from the date that the shipment is delivered/received. Our Level 1 transmission carries a 1-year 12,000-mile warranty. Our Level 2 transmission carries a 2-year 24,000-mile warranty. In the rare event that you should experience a problem with your transmission, we request that you call our technical service line at **330-434-2757**. Please call us before attempting to repair or remove the transmission – we will work with you to ensure there is a reason to do so. Any unauthorized internal tampering or alteration will VOID the transmission warranty. This excludes regular scheduled maintenance of your transmission.

We may ask you to ship the transmission back to us. Gearstar Performance Transmissions is not responsible for labor, parts or fluids incurred to remove or replace the transmission. Gearstar Performance Transmissions reserves the right to have the transmission returned to us for repair.

If failure is due to faulty materials or workmanship within the 3 years/36,000-mile period, we will repair or replace the transmission at no cost to you. If you have an electronically controlled transmission and your transmission has failed, you are required to email a copy of your transmission tune file to us to review. You can email the file to TECH@GEARSTAR.COM. If failure is caused in no way by faulty materials or workmanship, we will fix the transmission, and you will be billed only for the parts and labor needed. The customer is responsible for all shipping expenses to get the transmission to and from Gearstar Performance Transmissions. If the failure is due to faulty materials or workmanship, we will ship the transmission back to you at no additional cost.

This warranty does not cover loss or injury from the use of the product. This warranty is nontransferable and only applies to the owner of the vehicle at the time of installation. Gearstar Performance Transmissions reserves the right to change the terms and conditions of this warranty at any time.

Acceptance of this warranty agreement is verified by the receipt of the transmission purchased. No other warranty, whether written or implied, is valid for this transmission. If you are unsure that your installation or application will void this warranty, please call before performing the installation. We will make every effort to assist you with any questions or concerns you may have.

Any other items purchased from Gearstar Performance Transmissions will be covered by the individual manufacturer's warranty.

We are enthusiasts and we understand that not all builds progress and finish as planned, and it may be longer than you initially thought to install this transmission. If this happens and you are approaching the end of the warranty period prior to the transmission being installed and/or used, we offer a service that will reinstate your original warranty and reset the clock. To take advantage of this service, we ask that you contact us and schedule a time to ship your transmission back to us. We will then inspect, and dyno test your transmission to ensure that everything is still operating to the Gearstar Performance Transmissions standards. Once the transmission has passed our tests, we will reinstate the 3-years/36,000-mile or the 1-year 12,000-mile warranty. The Cost of this service is \$500.00. All costs associated with this service are the sole responsibility of the customer.

Install tips and information to prevent a transmission failure.

Failure of your transmission due to any of the below items will void any warranty offered from Gearstar Performance Transmissions.

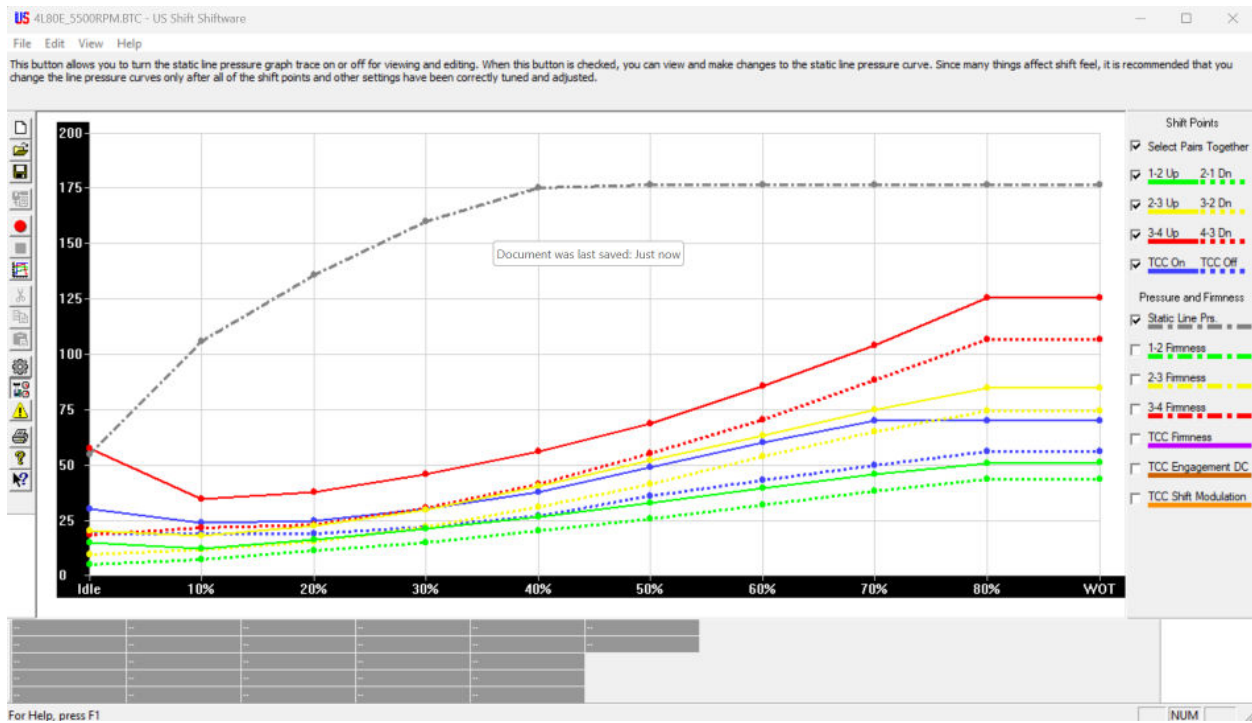
All our transmissions are built to the exact specifications that are given to us by you, the customer. Every single transmission has been run on our transmission dyno for a minimum of 100 miles before it has left our shop. A custom dyno video has been provided to you ensuring you that the transmission is working perfectly before it has left our shop. Sometimes things break or fail, we understand that! We are here to support you and take care of these issues as long as it was due to our workmanship or a part that we installed. We cannot honor our warranty when the failure occurred due to issues out of Gearstar Performance Transmissions' control. This includes negligence, improper installation, improper cooling causing overheating of the transmission, lack of education on the electronic controls, and calibration and/or tuning done to the transmission.

Every transmission that leaves our shop includes a transmission cooler. Depending on the level transmission you have or if you have purchased the larger cooler it will vary in size. The cooler that is provided in the level II and Level II transmissions is rated at 20,000 BTU. The cooler in the level IV is rated at 30,000 BTU's. Depending on your application, it may be necessary to upgrade to a larger cooler. We provide coolers because if you have previously experienced a transmission failure, you will have material through the cooling system. This includes the radiator transmission cooler. Unless you have a brand-new radiator that you are putting in, you must bypass the radiator and only use a standalone cooler. The type of cooler we are referring to is a tube and fin style. This should be mounted in the front of the application and must be able to get proper air flow across the cooler. Can you mount it remotely in the back of the application? Yes, you can, but you need to make sure that it has air flow moving across the cooler. This means if you mount it horizontally there must be some type of air dam to direct the flow of air across the cooler. What if you want to use a frame mounted cooler? NO, those coolers are not designed for cooling transmissions. Use of this style cooler will void your warranty.

If you have purchased an electronically controlled transmission, you must use a transmission control module. This can be a factory computer, or if you are doing a retro fit, you will be using a standalone transmission controller. The transmission controller is the brain of your transmission. This will tell your transmission when it is time to shift, what the line pressures need to be, and when to engage lockup.

This is all done through the information that is provided by you, the customer. If you are using one of the controllers supplied by us, it will come preprogrammed for the engine and transmission. If you need to make any adjustments, such as shift timing, tire size, gear ratio etc., please contact us to verify the proper way to make these changes. If you are using a standalone controller or are using a factory computer, we require that you send a copy of the calibration for us to review and sign off that it is correct for your transmission. Please forward a copy of the calibration to Tech@gearstar.com If the transmission calibration file is not signed off by Gearstar Performance Transmissions, your warranty will be void.

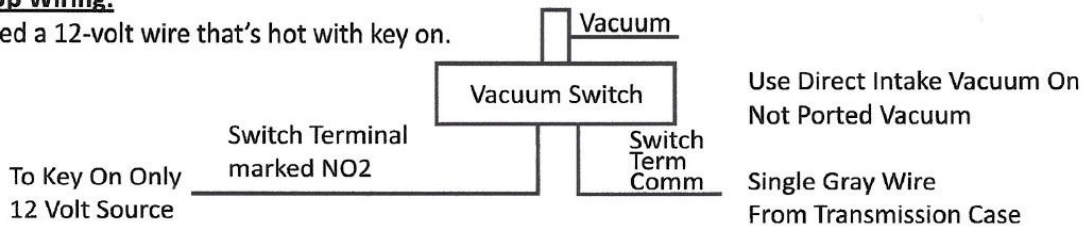
Transmission Calibration. Using any standalone transmission controller, you must be extremely cautious when adjusting the transmission line pressures, and other settings in the tune. Below is a 4L80E transmission screen shot of the US Shift Quick 4 transmission controller. The Quick 4 controller comes preprogrammed with a tune for your electronic transmission. When you are adjusting the transmission through the controller or the computer software, if you are not sure of what you are doing you can cause failure. Please refer to the manufacturer instructions on how to save and export a tune file for our review.



If you have purchased a 700R4, 200-4R, transmission, the TV cable must be adjusted properly. The 700R4, 200-4R transmissions will come with a new GM style TV cable. This is an adjustable cable and will fit many applications that are not listed on the application chart. The instruction sheet is located on the next page of this packet. Some tips from our techs: 1.) When you have the cable installed and you are ready to start making your first adjustments, make sure the cable is banjo string tight. 2.) Make sure you have full throttle on your cable. This may require someone to be in the car pressing the gas pedal down. Ensure there is no binding, and that the carburetor can reach wide open throttle. Do not make your adjustments from the brass fitting.

Lock-Up Wiring:

- ❑ Need a 12-volt wire that's hot with key on.



The switch is adjustable from 6" to 22" of vacuum. Turning the screw clockwise will make the trigger point happen sooner as the vacuum drops. (Roughly 6" at max turns in.) Turning the screw counterclockwise will push the trigger point back until a lower vacuum is achieved. (Roughly 1" at max turns out.) If your vehicle surges in and out of lock-up, please turn the vacuum switch adjustment screw 2 turns counterclockwise.

If you have purchased an AOD transmission, the TV cable adjustment can only be made using a pressure gauge. We have supplied you with a pressure gauge to make the adjustments. **DO NOT ATTEMPT TO SET THE TV CABLE WITHOUT USING THE PRESSURE GAUGE.** If you have purchased the Lokar TV cable, please follow the instructions that are packaged with the cable. The transmission pressure port is located on the passenger side rear of the transmission. The TV port is marked in red, and on the case of the transmission. **With our AOD transmissions we do want the pressure adjustments to be 45-50 psi** not the 35 psi that is stated in the Lokar instructions. This can be achieved with the supplied gauge. This pressure will need to be set with the parking brake on and the shifter in the NEUTRAL position. If you are not able to see this pressure, please contact our tech line at **330-434-2757**. If the transmission is shifting light, tighten the throttle pressure cable 1/8" at a time until the shift points are within spec. If the transmission is shifting late and hard loosen the throttle pressure cable 1/8" at a time until the shift points are within specs. **If proper shift timing is not obtainable a geometry kit will need to be installed.**

****Shift points may vary due to differential gear ratio and speedometer calibration.**

1st to 2nd gear up shift at light to medium throttle should be between 21-26mph.

2nd to 3rd gear up shift at light to medium throttle should be between 32-40mph.

3rd to 4th gear up shift at light to medium throttle should be between 45-50mph.

Dyno Testing: If you are going to dyno test your vehicle, there is a very specific way to perform a chassis dyno with an automatic transmission. You must ensure that the gear selector is in the D or 3 position for 4 speed transmissions. If you have the shifter in the OD position during the run, the transmission will fail. If you are using an electronic transmission, you must still manually have it selected in OD or failure will happen. If you have an electronic O/D button, please make sure this is disabled. Never allow the transmission to get into overdrive or 4th gear or allow the torque converter to lock up. You need to make sure the proper cooling is being done with your transmission and allow the fluid to return to a normal operating temperature. We recommend our transmission fluid temperature to be between 170-180 degrees. This is no different on a chassis dyno. Improper airflow or cooling will cause failure to the transmission, and this will void your warranty.

Transmission fluid level: Your transmission has been dyno tested and was filled with fluid before it left our transmission dyno. We drained 2-3 quarts of transmission fluid out of your transmission before we packaged and shipped it. This allows for the fluid to drain down from the converter and stay in the pan. We have included several quarts of fluid with your package that you will need to add to your new transmission. Before starting your engine and transmission, please check to make sure you have transmission fluid in your transmission. You will be able to see where the transmission dipstick goes. You should see fluid up to the pan rail of the transmission before your dipstick is installed. Using this mark is a good place if you are using an aftermarket dipstick for the fluid level. After you have found where the full level will be on the dipstick and fluid has been filled, when you start the application allow the transmission to run and check the fluid on the dipstick ensuring proper level is maintained. Always check fluid level on a level surface. Keep in mind fluid will expand when the temperature increases. You should have a COLD and a WARM mark on your dipstick to indicate this. If your fluid level is overfilled or underfilled you can cause damage or failure to your transmission. After you have taken the application for a test drive, check the fluid level again as it may need additional fluid added after the first drive.

Service and break in: Since we have dyno tested your transmission and we have put 100 miles on it we have already performed the break in procedure. Gearstar Performance Transmissions recommends that you service the transmission using the following guidelines.

Heavy towing or extreme duty applications- every 12,000 miles or once a year

Casual driving, hot rods, etc- every 24,000 miles or every other year.

Torque converter installation: Your Gearstar Performance Transmission package will have your torque converter already fully installed into your transmission. Your transmission has a torque converter locking plate bolted to the bellhousing to ensure that the torque converter does not move during shipping. You will need to remove this plate when you are ready to install the transmission to the engine. Once the bellhousing has been bolted to the engine, you will need to check the spacing between the flexplate and the torque converter mounting pads. This measurement should be between .125" and .1875". The best way to check this measurement is going to be moving a drill bit between the mounting pads and the flexplate. This measurement is very important to keep the converter engaged into the pump. If this measurement is greater than .1875" the converter will be pulled out of the pump causing damage and failure to the transmission. Some converters may require the use of shims between the converter and flexplate. Each shim needs to be the same thickness on the mounting pads. If different thicknesses are used it will cause the converter to rotate oblong and cause damage to your transmission. If you are unable to get the proper distance, please contact our technical line at **330-434-2757**.

Torque converter torque specs: We have supplied you with Loctite to attach the converter to the flexplate. You should refer to the manufacturer torque specs for the converter fasteners. Using the supplied fasteners, they can be torqued up to 35 ft-lbs. in three equal steps.

Common Torque Specs

GM Small block and big block engines:

Flexplate to crankshaft: 60ft-lbs

Torque converter to Flexplate: 35ft-lbs

GM LS engines with 6 bolt crankshaft:

Flexplate to Crankshaft: 1st) 15ft-lbs 2nd) 37ft-lbs 3rd) 74ft-lbs

Torque converter to flexplate: 35ft-lbs
 GM LS engines with 8 bolt crankshaft:
 Flexplate to crankshaft: 1st) 11ft-lbs 2nd) 22 ft-lbs. 3rd) 45 degrees
 Torque converter to flexplate: 35ft-lbs
 Ford small block and big block engines:
 Flexplate to crankshaft: 75ft-lbs
 Torque converter to flexplate: 35ft-lbs
 Ford Modular and Coyote engines
 Flexplate to crankshaft: 75ft-lbs
 Torque converter to flexplate: 35ft-lbs
 Mopar Gen 3 Hemi engines:
 Flexplate to crankshaft: 70ft-lbs
 Torque converter to flexplate: 35ft-lbs
 Transmission mount bolt torque spec: 49 Ft-lbs
 Transmission pan torque spec: 12-15 Ft-lbs

Transmission Fluid Type and Capacity using a standard depth pan

| Transmission Type | Fluid Type | Fluid amount with standard pan |
|-------------------|----------------------------|--------------------------------|
| Powerglide | Full Synthetic Dextron VI | 6-8 QTS |
| TH350 | Full Synthetic Dextron VI | 9-10 QTS |
| TH400 | Full Synthetic Dextron VI | 9-10 QTS |
| 2004R | Full Synthetic Dextron VI | 10-11 QTS |
| 700R-4 | Full Synthetic Dextron VI | 10-11 QTS |
| 4L60E/65E/70E | Full Synthetic Dextron VI | 10-11 QTS |
| 4L80E/85E | Full Synthetic Dextron VI | 14 QTS |
| 6L80/90 | Full Synthetic Dextron VI | 12-13 QTS |
| 8L90 | Mobil1 Synthetic LV ATF HP | 11 QTS |
| C4 | Full Synthetic Dextron VI | 8 QTS |
| C6 | Full Synthetic Dextron VI | 10 QTS |
| AOD | Full Synthetic Dextron VI | 11 QTS |
| 4R70W | Full Synthetic Dextron VI | 12 QTS |
| E4OD | Full Synthetic Dextron VI | 14-16 QTS |
| 6R80 | Mercon LV | 13 QTS |
| 727 | Full Synthetic Dextron VI | 10 QTS |
| NAG-1 | ATF+4 | 8-9 QTS |

Cooler fitting sizes and locations

4R70W - top fitting is return lower fitting is pressure

Stock fitting size 5/16

4L60/4L65E/4L70E/4L80E

4L60/65/70E- Top fitting is the return lower fitting is the pressure

4L80/85E – Front fitting is the pressure rear fitting is the return

Stock fitting size is 5/16

We highly recommend the following brands for additional accessories that you might be looking for to complete your project.

Lokar Performance Products- www.Lokar.com 1-877-469-7440 - Automatic transmission shifters, dipstick and tube, kickdown and TV cables

Dakota Digital- www.dakotadigital.com 605-332-6513 – direct fit electronic gauge clusters

Converter pull back.

- Unbolt the torque converter bolts from the flexplate. The torque converter should be able to spin independently from the flexplate.
- Slide the torque converter inward to the transmission pump. This will create a gap between the converter and the flexplate.
- Measure the gap between the flexplate and the converter. The easiest way to achieve this measurement is with a set of drill bits. Start with a 1/8" drill bit and go up until you can't fit the drill bit between the converter and flexplate. Once you have this measurement ensure it is between 1/8" to 3/16".
 - If the gap is larger than 3/16" you will need to insert the correct thickness shim to ensure the gap is within the range.
 - **If you are using an SFI approved flexplate it will be thicker than an OE flexplate. With a SFI approved flexplate the pullback measurement will be between 3/32" but no more than 3/16"

There are several thickness options for shims. Once you have the measurement if you need converter shims, please contact us and we will help you on what thickness shim is needed.

- After the distance has been checked and verified apply a small amount of Loctite to the converter bolts. Recommended is Loctite 242
- Hand thread the converter bolts in the converter
- Torque the torque converter bolts to the following
 - Chevrolet Small Block & Big Block – 35 Ft lbs
 - Chevrolet LS – 35 Ft lbs
 - Ford Small Block – 35 Ft lbs
 - Gen III Hemi – 35 Ft lbs

We would like to thank you for your purchase, and we are just as excited as you are to get your application back on the road! Please confirm the converter pull out measurement below and sign off on the warranty paperwork for this to be active. Again, we ask you to contact our tech line 330-434-2757 if you have any questions about your installation, and please email us a copy of your tune file if have an electronic transmission to TECH@GEARSTAR.COM before you take your application out on the first drive to ensure the settings are correct. **Transmission cores must be returned to Gearstar within 30 days of receiving your new transmission to be eligible for credit.**

Name: _____ Date: _____

Torque converter pull out measurement: _____

Signature: _____ Date: _____

Please return this form to ADMIN@GEARSTAR.COM or fax it to us at 330-434-3634



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