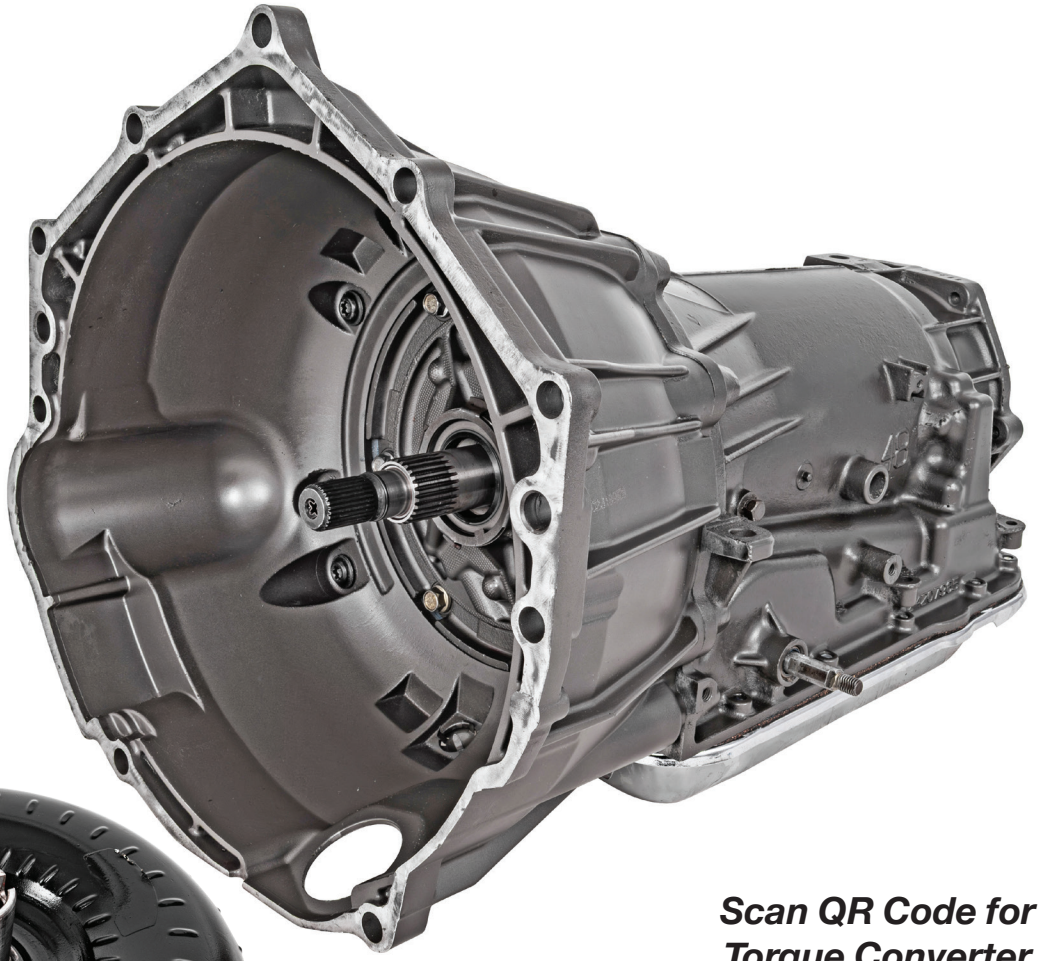
Installation Guide

Automatic Transmission & Torque Converters

Mechanical & Electronic



Scan QR Code for Torque Converter Installation Video

JEGS.com

1-800-345-4545

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Torque Converter: Common Overheating Issues

- Running a higher stall converter on numerically low rear end gear ratio can overheat and fail the converter due to it never reaching its stall (RPM) point at high cruising speeds.
- On electronically controlled transmission with a lockup type stall converter, the PCM must be re-calibrated to lock the converter during high cruising speeds.

Torque Converter: Before Installation

- Back flush transmission cooler and lines to prevent contamination of transmission and torque converter.
- A new or remanufactured torque converter **MUST** be installed with this transmission, do not reuse your original converter unless it has been professionally rebuilt.
- Inspect the flexplate before installing transmission. Look for bad teeth and cracks.
- Check that the transmission cooler lines are not kinked or touching the exhaust system.

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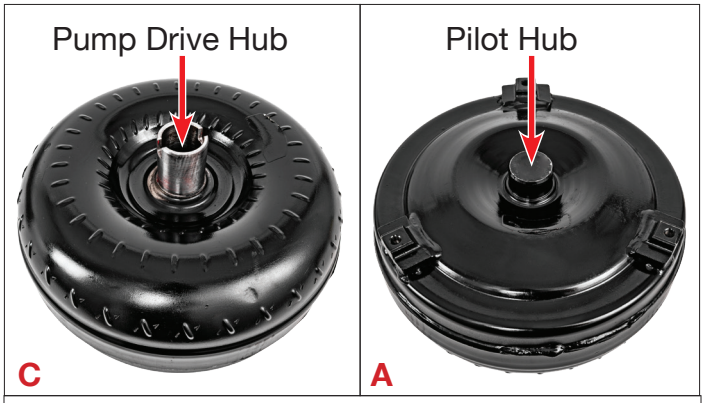
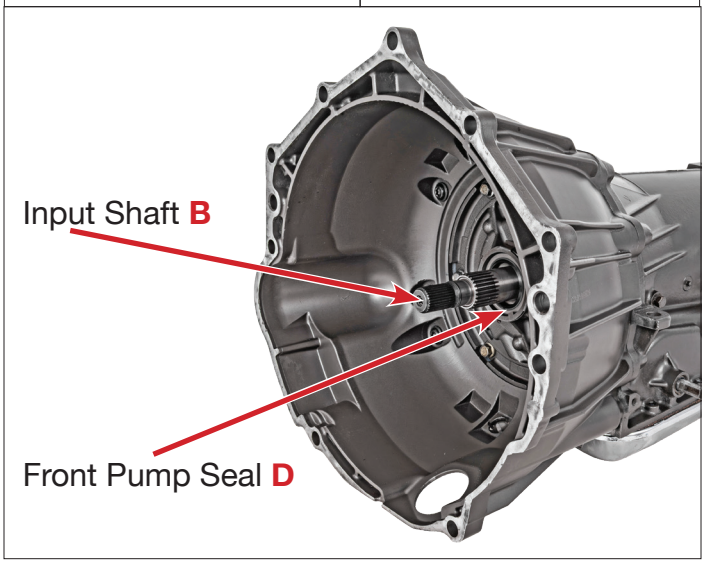
Torque Converter: Initial Preparations

- Use emery cloth to clean the torque converter **Pilot Hub (A)** and the crank pilot hole.
- Add two quarts of transmission into the torque converter
- Apply a film of the transmission fluid to the transmission **Input Shaft (B)** and torque converter **Pump Drive Hub (C)** also lube the transmission front **Pump Seal (D)**. This will also pre-lube the bearings and bushings.





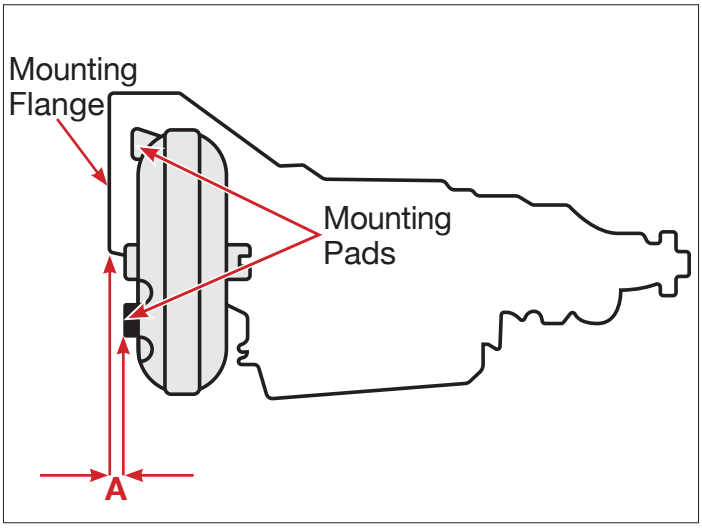
Torque Converter: Installation

Rotate the converter while gently pushing it into the transmission you will feel or hear a series of “clunks” as the converter engages with the transmission’s internal components.

- **FIRST CLUNK:** The input shaft spline engages the turbine.
- **SECOND CLUNK:** The stator splines engage the stator support shaft.
- **THIRD CLUNK** *(Final Engagement)*: The converter’s pump hub splines or flats engage the pump gears.

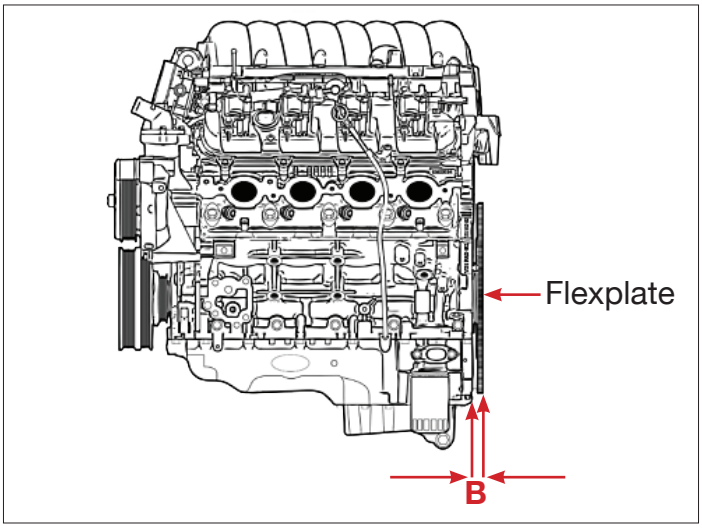
Measuring Torque Converter Depth Clearance

- Measure the depth from the transmission mounting flange to the torque converter mounting pad face. **(A)**



Measuring Torque Converter Depth Clearance Contd.

- Measure the distance from the engine block mating surface to the torque converter mounting surface on the flexplate. **(B)**



- **‘A’** must be greater than **‘B’**. If **‘A’** is not greater than **‘B’** check that the converter is fully engaged into the transmission or the flexplate is correct for the engine and installed correctly.
  - **‘A’** must never be greater than 1-1/8”. If so, please contact tech support.
  - **DEPTH CLEARANCE = A - B**
  - See common depth clearances on the next page.

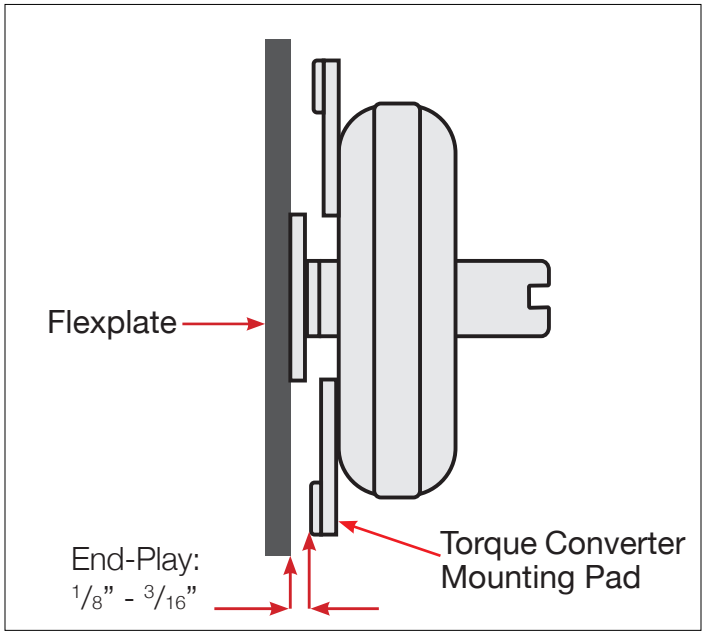
Common Depth Clearances

MAKE	TRANSMISSION	DEPTH*	FROM
Chrysler	TF-727	1-1/4"	From Bell Housing to Ring Gear
Chrysler	TF-727	19/32"	From Bell Housing to Pads
GM	TH350	1-1/8"	From Bell Housing to Pads
GM	TH700-R4	1-1/8"	From Bell Housing to Pads
GM	TH200-4R	1-1/8"	From Bell Housing to Pads
GM	TH400	1-3/16"	From Bell Housing to Pads
GM	Powerglide	1-1/8"	From Bell Housing to Pads
GM	4L80E	1-1/64"	From Bell Housing to Pads
GM	4L60E	1-1/64"	From Bell Housing to Pads
GM	Allison	1-1/8"	From Bell Housing to Pads
Ford	C6	1-1/8"	From Bell Housing to Pads
Ford	C4	1-1/8"	From Bell Housing to Pads
Ford	C4 (Case Fill)	27/32"	From Bell Housing to Pads
Ford	AODE	1-1/32"	From Bell Housing to Pads
Ford	AOD	1"	From Bell Housing to Pads
Ford	5R55S	1"	From Bell Housing to Motor Plate
Ford	E4OD	58/64"	From Bell Housing to Pads
Ford	4R100	58/64"	From Bell Housing to Pads
Ford	5R110	58/64"	From Bell Housing to Pads

** Distance may vary ±0.050"*

Installing the Transmission & Checking End-Play

- Install transmission to engine. Transmission housing flange must be flush with engine block all the way around before any bolts are tightened. **NEVER** use bolts to "draw up" transmission to engine.
- Once all of the bellhousing bolts are torqued to manufacturers specifications. The torque converter must be able to rotate freely. If it does NOT spin freely the torque converter may not be fully seated. Remove transmission and correct.
- Check the torque converter end-play. The converter should be able to move forward and backward a minimum of 1/8", and a maximum of 3/16". If the air gap is too small (less than 1/8"), the converter is likely not fully seated. If the air gap is too large, you may need to use shims, but only if it exceeds 3/16". Remove transmission and correct.



Completing Transmission Installation

SPECIAL NOTES

Ford C4 & C6:
Drain plugs must be exposed through holes in flexplate

Chrysler:
Align converter drain plug opposite small hole in flexplate. This will align all four converter bolts properly.

1. Apply Loctite® to torque converter bolts and tighten per manufacturer torque specifications.
2. Reinstall the dipstick tube.
3. **For non-electronic transmissions:**
   - With the transmission and shifter in neutral, install cable/linkage to transmission and check for proper movement in each gear. There should be no tension on the shift lever when in any gear and the cable end should slide in and out of the lever with no resistance.
   - If equipped install the vacuum modulator, check any hoses for leaks.
   - Connect any wiring that is needed, checking that the wire is in good condition.
   - Install the TV / Kickdown cable.
     A. For "self-adjusting" factory type cables they usually have a "D-shaped" or round button/tab on the cable housing near the throttle linkage.
     B. With the throttle fully closed press the

Completing Transmission Installation Contd.

button or tab and push the cable fully in (toward the firewall) to reset it.

C. Manually push the throttle lever to its Wide-Open Throttle (WOT) position. This will pull the cable housing back out with an audible “ratcheting” sound.

D. Slowly Release the throttle. The cable should be snug but without slack at idle.

E. Go for a moderate test drive. Shifts should be firm but smooth.

I. **If Shifts are Too Soft or Delayed:** tighten the cable slightly by manually pulling the housing back a click or two.

II. **If Shifts are Too Hard or Early:** loosen the cable slightly by pressing the button/tab and pushing the housing forward a click or two.

III. **Better to be Slightly Tight Than Too Loose:** a too-loose cable can cause the transmission to slip and burn out the clutches, so it’s better to err on the side of caution.

4. For electronic transmissions:

- Connect all harness connectors. Check for any damage or corrosion in the connector. Verify all connector pins firmly seated. Apply some dielectric grease to the end of the connector.
- Reconnect and linkage.

5. Reinstall cooler lines and tighten per manufacturer specifications.

6. Reinstall transmission crossmember and transmission mount.

7. Apply a film of the transmission fluid to the driveshaft yoke and install the driveshaft.

8. Reinstall exhaust.

9. With the rear wheels elevated at least 3” off the ground. Add (4) quarts of transmission fluid to the transmission.

10. With the transmission in park. Start the engine, always apply the brake before shifting into or out of park, run gear selector through all ranges with light throttle and recheck fluid level. Add transmission fluid until the dipstick shows you are a quart low. **DO NOT OVERFILL.** See charts to Right.

11. Lower the vehicle to the ground, start the engine, check the fluid level, and add fluid to the full mark.

CALCULATING TOTAL FLUID CAPACITY

Transmission Capacity
+ Torque Converter Capacity
= Total Fluid Capacity

GM 4L60E (6qts.) + 7” Converter (2qts) = 8qts. Total

Common Fluid Capacity Chart

MAKE	TRANSMISSION	QUARTS STOCK PAN
Ford	C4	5.5
Ford	C6	7
Ford	AOD/AODE	6.5
Ford	E4OD/4R100	10
Ford	4R70W/4R75W	14
GM	TH350	4
GM	TH400	6
GM	Powerglide (PG)	4
GM	TH200-4R	6
GM	700R4/4L60E/4L70E	6
GM	4L80E	7.7
Chrysler	TF-727	5
Chrysler	TF-904	5

** Remember you have already added 2qts. to the torque converter and 4qts. in the transmission.*

CONVERTER SIZE	QUARTS
7”	2
8”	2
9”	2.5
10”	3
11”	3.5
12”	4
13”	5

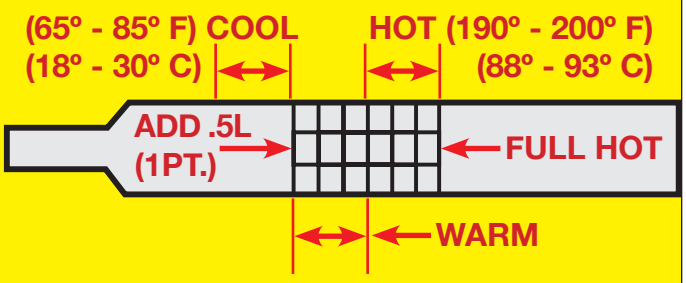
After Install To-Do’s

1. Check for any leaks, after several heat/cool cycles, re-torque all pan bolts with a torque wrench to 8 ft. lbs. (96 in. lbs.). Do not over-tighten pan bolts! Doing so may cause leaks or pan damage.
2. If installing on a modern electronically controlled vehicle check the following:
   - Check for DTC’s using a good automotive scan tool. Don’t rely on the dash light.
   - Clear any Engine DTC’s. If DTC’s are present, they could cause transmission failure. **Reset any adaptive learning in the TCM.**
   - A “Crank Relearn” or “CASE Relearn” may need to be performed anytime you remove anything attached to the engine Crankshaft. Not doing so can cause misfires and hard or harsh shifts.
   - In some applications if you happen to be removing or replacing the throttle position sensor (TPS) or removing the throttle body a “Throttle Relearn Procedure” may need done. This also can affect transmission operations.
   - Verify MAP/MAF sensor function. Electronic transmissions are highly sensitive to MAP (Manifold Absolute Pressure) and MAF (Mass Air Flow) signals. It is strongly recommended to verify proper operation of these sensors — and replace them if necessary — during installation. On GM vehicles, line pressure boost is regulated by engine load, which is determined by several sensor inputs and a control strategy known as torque modeling (introduced in the mid-1990s).

After Install To-Do's Contd.

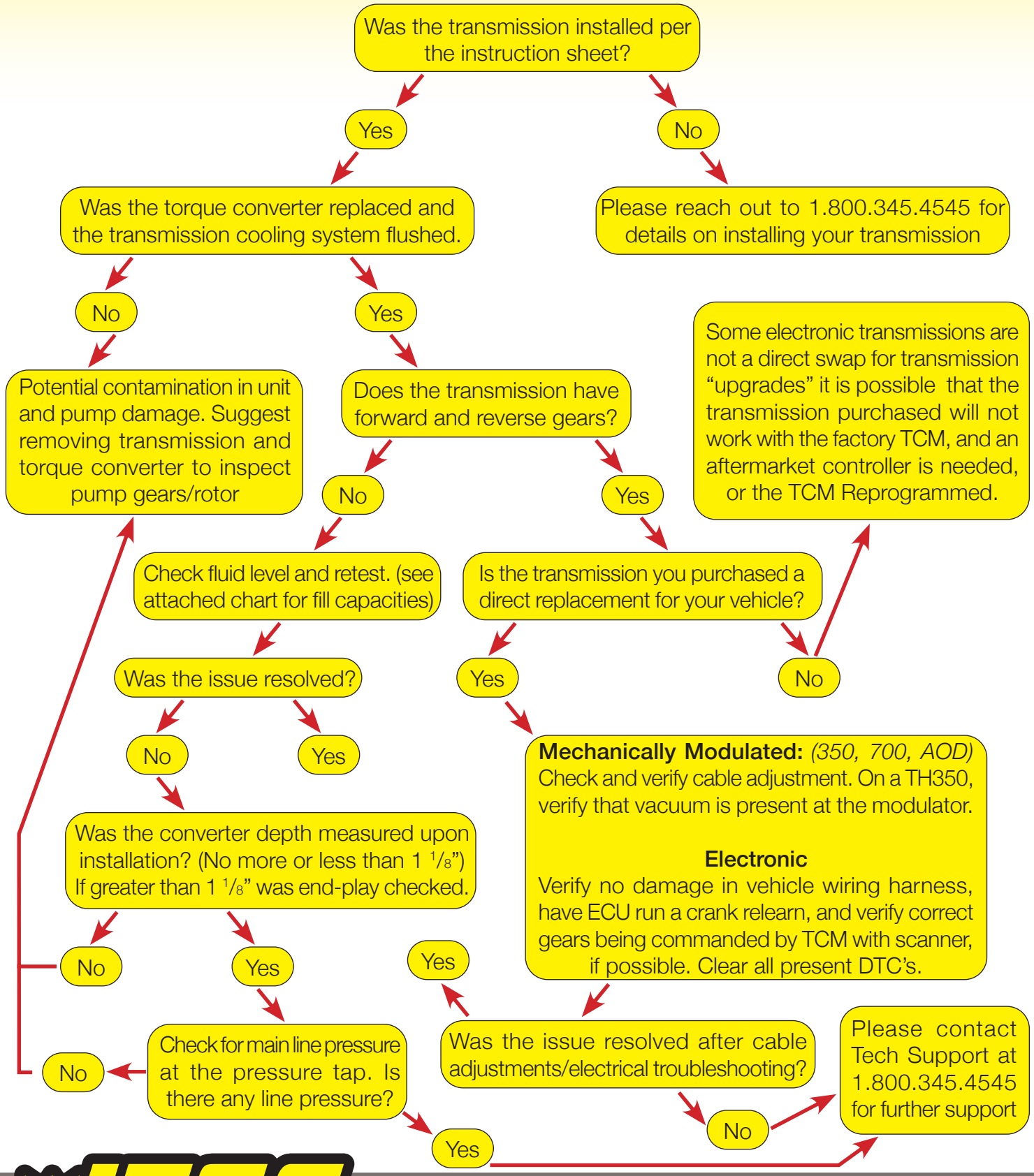
1. If line pressure is lower than required, this can cause slipping or transmission damage, often without triggering any DTCs. The MAF sensor is the primary input used by the PCM/TCM/ECM to calculate engine load. A faulty or skewed MAF signal can negatively affect both engine performance and shift quality.
2. Before replacing the MAF sensor, always confirm that no underlying engine performance issues are contributing to the problem. Be aware that over-oiled aftermarket air filters can contaminate the MAF element, leading to inaccurate airflow readings. In some cases, the MAF can be cleaned using an approved MAF sensor cleaner; in others, replacement may be required

CHECKING FLUID LEVEL



NOTE: Do not overfill. It takes only one pint to raise the level from "Add" to "Full" with a hot transmission

Troubleshooting Flowchart



Notes

Thank you for your purchase of this transmission from JEGS.

Prior to installation, please inspect your transmission for any damage or missing parts. If any components are missing or damaged please contact customer service at: 1.800.345.4545.

Return Information: Before modifying any of the parts in, or on, this transmission, please trial fit. ***Modified transmissions will not be accepted for return.***