



SILVER SPORT
Transmissions

MUSTANG FOX BODY 1979 - 1993



MAGNUM 6-SPEED INSTALLATION MANUAL

FOLLOW FACTORY SERVICE MANUAL (FSM) RECOMMENDED SAFETY PRECAUTIONS. TRANSMISSION REMOVAL AND INSTALLATION IS A LABOR INTENSIVE JOB, WHICH CAN RESULT IN SERIOUS INJURY OR DEATH IF CAUTION IS NOT TAKEN. PLEASE BE CAREFUL PERFORMING THIS JOB, OR HAVE A PROFESSIONAL PERFORM THE JOB FOR YOU. REFER TO FSM FOR ADDITIONAL DETAILS OF THE PROCEDURES BELOW, AS REQUIRED.

The material herein is the intellectual property of Silver Sport Transmissions, LLC (SST) and is to be used by SST customers or their authorized installers for the sole purpose of installing SST-supplied transmissions and related parts. Under no circumstances shall the manual or any portion thereof be copied, duplicated, distributed or incorporated in any written or printed document without the express written approval of Silver Sport Transmissions, LLC.

Before you start:

Test drive the vehicle, if possible, before you begin. Pay attention to noise and vibration and record your observations. At the end of the installation, perform another test drive to compare. It is also a good idea to measure engine driveline angle and driveshaft operating angles for your existing transmission to use as a comparison to the new angles after the Magnum is installed.

In addition to this manual, you should have received instructions for checking your bellhousing runout. **The bellhousing runout must be checked (and corrected if necessary) for Tremec's warranty coverage.**

You should also verify the parts you received. Compare the received items to the packing list provided in your shipment.

PLEASE READ THE INSTRUCTIONS BEFORE INSTALLATION

In addition to these instructions, you should receive the following instructions based on your order, **if applicable:**

1. All kits – MAA-00101 Inspection and Correction of Bellhousing to Crankshaft Runout
2. All kits – MAA-00100 Driveshaft Measuring Procedure
3. Hydraulic Kit Instructions for FORD– MAF-00203
4. MAA-00801 T56 Magnum Installation General Guidelines

Your invoice lists the individual hardware packs and where they are used.

NOTE: Transmission **must** be test shifted before installation. Due to jostling during shipping, some transmissions will not shift properly when removed from the box. Please make sure that the gear selector will move into each of the (6) possible positions while rotating the input shaft and checking for output shaft rotation. The rubber sleeve may need to be removed from the output shaft to allow it to turn easier (see photo on page 5). If the input shaft will not turn, slide the clutch disc over the input shaft and jerk the clutch disc left and right to break it free. If this does not correct the issue, call Silver Sport Transmissions at **888-609-0094** for instructions.

THIS CANNOT BE CORRECTED WITH THE TRANSMISSION INSTALLED IN THE CAR!
TEST SHIFT FIRST!

A.REMOVE EXISTING EQUIPMENT

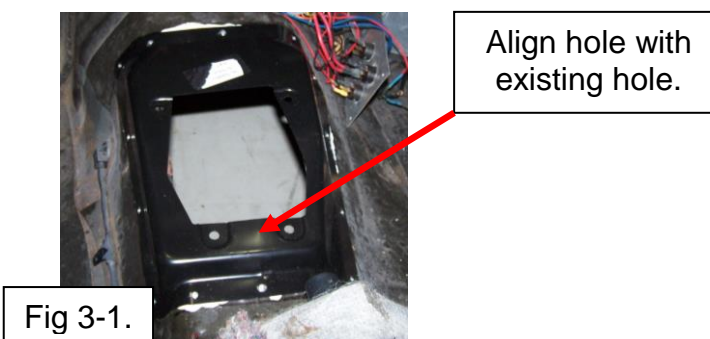
1. Disconnect negative (-) battery cable.
2. Remove any components that may be damaged when the engine/transmission is lowered (breather assembly, fan shroud, etc.).
3. Raise car securely on lift or jack stands. 6 ton stands are usually taller and will give you more room under the car. Eighteen inches or more of working room is recommended.
4. Remove exhaust, as required, for working clearance and to permit the back of the engine to drop for transmission removal and installation.
5. Place transmission neutral.
6. Remove upper and lower shift boot and trim ring.

7. If converting from automatic you may need to remove car seat(s) from car, sill plates, console, and pull carpet back to expose transmission tunnel for the factory 5 speed tunnel hump.
8. Remove shift lever and shifter from transmission.
9. Remove starter.
10. Remove driveshaft at rear differential and remove from car.
11. Disconnect speedometer cable from transmission and disconnect any electrical connections from transmission.
12. Disconnect clutch cable from clutch fork.
13. Secure rear of engine with hydraulic jack.
14. Secure transmission (jack recommended) to support transmission, in addition to engine support jack.
15. Raise the transmission off the crossmember and remove the isolator and the crossmember.
16. Unbolt transmission from engine, then move transmission unit rearward and remove from vehicle.
17. Disconnect the clutch fork from the linkage.
18. Remove bellhousing and clutch unit.
19. Remove clutch fork and release bearing from bellhousing. Inspect release bearing, fork, and pivot ball stud for wear. Contact Silver Sport for replacement or repair.
20. Inspect flywheel ring gear teeth (no cracks, chips, wear), and friction surface (no cracks). Silver Sport Transmissions strongly suggests removing flywheel and having it surfaced, then dynamically balanced at a reputable automotive machine shop **unless** the engine was externally balanced with the flywheel installed.
21. Remove pilot bushing using removal tool (not supplied).
22. Clean the bellhousing mounting surface of the engine, the crankshaft flange, the pilot bore in the crankshaft and the dowel pins.

B. TUNNEL MODIFICATION

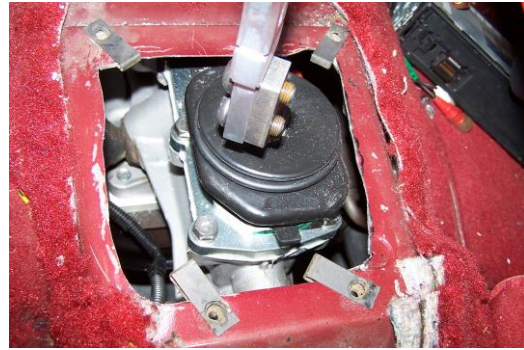
Due to variation in dimensions on these cars from the factory, some cars might need an additional tunnel modification to achieve the correct driveline angle to obtain acceptable driveshaft operating angles.

1. Cut out the template TMF-00404 to mark the area which will need to be removed from under the car. Cut out the designated area. NOTE: If you are converting a manual car be sure to only cut through one layer of sheet metal.
2. If you are converting from an automatic, place the new tunnel hump extension on the tunnel and align the left rear holes in the extension and the floor pan.



3. Use the hump extension to transfer the opening of the hole to the floor pan. Use this mark to trim the opening in the floor pan. Deburr the edges after cutting.
4. After the trimming is complete. Attach the hump extension to the floor pan with the rivets supplied or it can be welded in. Use a seam sealer such as LORD® Fuser 803DTM Metal Sealer or equivalent between new and old metal. Paint both sides for corrosion protection.

NOTE: If you are converting something other than a mustang the hump extension may not be needed, but additional trimming may be needed around the shifter opening. Use the lower shifter boot as a guide to drill the new holes in the floor pan.



C. TEST FITMENT

1. Once your floor has been trimmed, a trial fit for T56 Magnum tunnel clearance should be done.
2. Lower engine and install transmission to bellhousing using bolts from hardware pack HWM-PACK AT56. Support the transmission with a jack.
3. Attach isolator mount to transmission using Hardware Pack HWF-Pack C.
4. Raise the transmission enough to be able to install the new crossmember under the isolator mount. For added clearance for shifter stub to clear tunnel hole when transmission is being installed, place transmission into 5th or REV gear.

NOTE: DO NOT REMOVE SHIFTER TOWER FROM SHIFTER BASE PLATE to gain clearance for installation. Shift stub seal in shifter base plate could be damaged or not properly fitted on lower stub lever if tower is reinstalled on shifter base plate.

5. Verify 1/8 to 1/4" minimum clearance between T56 Magnum and tunnel. An easy way to check areas that you cannot see is to use a length of rubber hose that is 1/4" outside diameter. Loop it over the transmission at the bellhousing and see if you can slide it all the way to the tail housing. If the transmission has less than 1/4" clearance at any point in the tunnel, you may be able to "massage" the tunnel with a hammer and dolly to prevent cutting the tunnel.

6. This would be a good time to take the driveline measurement per the driveline instruction sheet so that the new SST driveshaft can be ordered. See MAA-00100 form in the customer info pack.
7. Once proper tunnel to Magnum transmission clearance has been verified, remove crossmember, transmission, and the bell housing to gain underside access to complete final tunnel sheet metal modification by painting exposed sheet metal surfaces for corrosion protection.

D. INSTALL NEW EQUIPMENT

1. Clean all mating engine surfaces and dowel pins. Verify dowel pin full diameter exposed length is greater than 3/8" to assure that Quick Time bell housing will be accurately positioned with the Quick Time engine backing plate installed. Reposition or replace with longer dowel pins BHM-15945 if necessary.
2. For Quick Time bell housing, be sure to install engine backing plate prior to installing flywheel. Install new flywheel and flywheel bolts torqued to factory spec. Be sure to tighten bolts in alternating cross pattern sequence. **NOTE:** Sealant may be required on flywheel bolts on some Windsor engines.
3. Install new pilot bearing assembly using a socket of similar diameter to the bearing and a mallet. Make sure the bearing is installed facing the right direction (see photo on next page). Gently tap bearing fully into crankshaft until bearing face is flush with crankshaft face.
NOTE: The pilot bearing is designed to be a slight press fit in the bore, and the pilot bearing hole is not always sized correctly in some crankshafts. Your pilot bearing OD should be between one-half of a thousandth and two thousandths of an inch (0.0005" - 0.002") larger than the ID of the hole in your crankshaft. If outside of this range, a different pilot bearing is required, or your crankshaft or pilot bearing may be modified to fit. Contact your local parts store or machine shop for a suitable replacement or to modify your existing parts.



4. Install bellhousing and inspect for proper alignment to crankshaft using dial indicator or test indicator (SST can provide these tools at extra cost). See "Inspection and Correction of Bellhousing To Crankshaft Runout" provided with your literature package. Make sure to record your runout data in a safe place, as it will be required in the event of a warranty issue. Mark offset dowel pin position if used to correct bellhousing runout, and carefully remove bellhousing.

IMPORTANT !!! Refer to MAA-00101 Inspection and Correction of Bellhousing to Crankshaft Runout

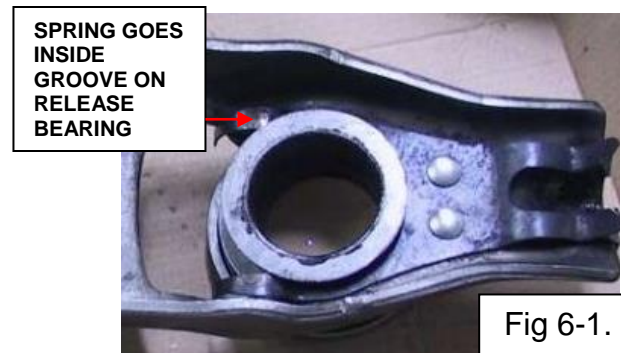
It is an absolute **requirement** that **runout** is **checked** and **corrected** **PRIOR** to installing the transmission. The runout specification for all of Silver Sport's kits is **0.005" (5 thousandths of an inch) MAXIMUM**. You **MUST** document the results **PRIOR** to installation of transmission and keep these measurements recorded in a safe place for your transmission warranty. Silver Sport's Customer Service will need this information if a warranty issue arises.

- Use the provided 26T alignment tool with large pilot dia end to center the clutch disk when applying torque to the pressure plate bolts. Install the bolts with medium thread locking compound per clutch instructions and tighten in a star pattern, one turn at a time to prevent distorting the pressure plate fingers, until the cover is snug against the flywheel. Torque the bolts to 35 lb.-ft. in a star pattern.

NOTE: When installing the pressure plate and clutch disk onto the flywheel, NEVER use power or air tools. Using power or air tools will cause the flanges of the pressure plate to distort. This will in turn cause uneven pressure plate finger heights, which will lead to inconsistent or unsuccessful clutch releases. See MAA-05000 clutch installation instructions for more details.

- Lower rear of engine as far as possible (required for new transmission installation).

- With the bellhousing still removed from the engine, install clutch fork and release bearing in the bellhousing if using mechanical clutch linkage. *The tips of the clutch fork and the spring fingers on the rear side of the clutch fork both fit inside the groove on the release bearing.* If you purchased the SST hydraulic system with your transmission, the hydraulic release bearing will already be installed and you will not be using a clutch fork.



- Install bellhousing to engine, while making sure that there are no hoses, cables, or wires caught between the bellhousing and engine block. Torque the fasteners to the specification found in your factory service manual.
- It will be easier to add ATF fluid at this point before completing the final installation of T56 Magnum transmission. See MAA-00801. The fill plug is on the left side of the transmission midway up the case. Use pipe sealant - but do not over tighten the tapered pipe plug until head is flush with boss. Be sure to use shipping plug installed into rear seal to prevent fluid loss during installation.

NOTE: DO NOT REMOVE SHIFTER TOWER FROM SHIFTER BASE PLATE to add ATF fluid. Shift stub seal in shifter base plate could be damaged or not properly fitted on stub lever if tower is reinstalled on shifter baseplate.

10. At this point, install a SST Hydraulic system (available separately) following instructions provided, MAM-00201.
11. When installing T56 Magnum transmission, use caution when inserting the input shaft into the clutch disc and pilot bearing. Do not allow weight of transmission to rest on assembly until fully engaged (doing so can misalign disc or damage pilot bearing).
12. Install transmission, using caution when inserting the input shaft into the clutch disc and pilot bearing. Do not allow weight of transmission to rest on assembly until fully engaged (doing so can misalign disc or damage pilot bearing). Due to the tight clearance around the upper right transmission to bellhousing bolt, a socket head bolt can be substituted for the hex head bolt if you do not have a suitable hex head wrench. The rubber sleeve may be temporarily removed from the output shaft, the slip yoke inserted and the output shaft rotated, as required, to facilitate engagement into clutch disk.

DO NOT UNDER ANY CIRCUMSTANCES use the transmission-to-bellhousing bolts to draw/pull the transmission up to the bellhousing!

This could damage the input shaft of the transmission and is not covered by Silver Sport Transmissions' Warranty. If the transmission will not slide up to the bellhousing, there is a problem. Stop and call Silver Sport Transmissions for a consultation.

NOTE: If the transmission stops approximately 1/2 inch away from seating fully against the bellhousing, install and **finger-tighten** bellhousing to transmission bolts. Connect clutch linkage and depress pedal lightly while pushing transmission forward to facilitate alignment of clutch disk to input shaft and pilot bearing. **DO NOT** force the transmission into engagement – damage to the pilot bearing may result. Tighten bellhousing to engine bolts once the transmission is seated against the bellhousing.

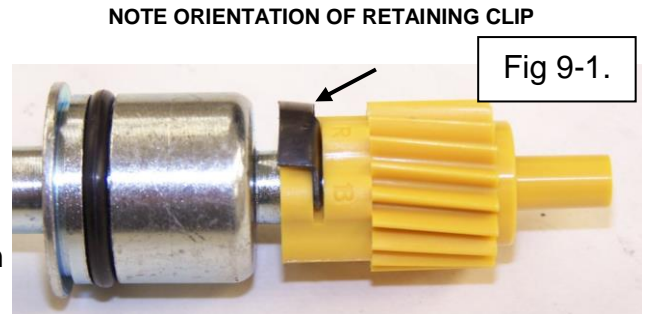
13. Once the transmission is fully seated by hand against the bellhousing, fasten with bolts provided (HWG-PACK A T56).
14. Raise up engine/transmission until transmission contacts the top of the tunnel.
15. Attach rubber isolator mount and exhaust hanger (if applicable) to transmission using 1/2-13 x 1" bolts and lock washers from hardware pack HWF-PACK C.
16. Attach new crossmember to the isolator mount with washers and nuts from Hardware Pack HWF-PACK A and raise transmission into place, lining up the bolt holes at the subframe. Verify 1/8 to 1/4" minimum clearance between magnum and tunnel. An easy way to check areas that you cannot see is to use a length of rubber hose that is 1/4" outside diameter. Loop it over the transmission at the bellhousing and see if you can slide it all the way to the tail housing. If the transmission has less than 1/4" clearance at any point in the tunnel, you may be able to "massage" the tunnel with a hammer and dolly to prevent cutting the tunnel.

17. Mount crossmember to subframe.

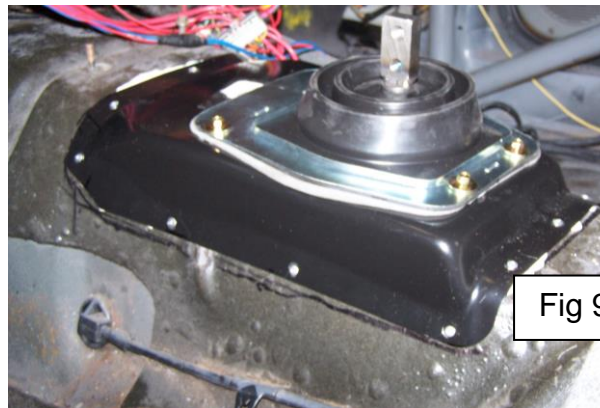


18. Remove shipping plug, and insert drive shaft slip yoke fully until touching transmission seal rubber dust boot. Then position the rear u-joint flange to the pinion flange and line up the holes. It may be helpful to be able to rotate the rear wheels. Mustang driveshaft flange to pinion flange bolts 70 to 95 ft lbs.
19. This would be a good time to double check driveline operating angles to confirm front and rear angles are within recommended values. Adjust as necessary.
20. Connect clutch linkage - do not preload mechanical release bearing. Adjust linkage as required. If using a SST hydraulic system (available separately), follow instructions provided.
21. Reinstall the starter.
22. Splice backup light harness into original harness. The backup light switch is on the right side of the main case.
23. The reverse lockout solenoid needs to be wired to be energized when shifting into REV. This can be done in one of two ways:
- Wire solenoid pigtail into the brake light circuit so the reverse lockout solenoid is energized when the brakes are applied. The reverse solenoid is at the rear of the transmission near the top of the extension housing. One wire from the reverse lockout solenoid pigtail must be grounded and can be connected to the crossmember.
 - Wire solenoid pigtail into the optional ELAP-T56RLO lockout control module. See instructions included with the module kit.
24. Re-install and tighten exhaust.

25. Install new speedo cable per MAA-00102. Wrap tape around speedometer cable ends to prevent damage and keep them clean while routing new speedometer cable to transmission. Remove rubber plug from the speedometer cable port on left side (see photo below) and install new speedometer cable with gear, clip and o-ring (HWA-PACK S) into transmission case. Install cable retainer bolt and tighten bolt to 4 lb.-ft. Connect cable to speedometer.



26. Reinstall shift tower if it was removed earlier.
27. Bolt on shifter handle with 3/8"-24 x 1" bolts and washers provided (HWA-PACK L). Use medium strength thread lock compound. Torque to 25 lb.-ft. Confirm shifter motion through all gears.
28. Install front carpet and seat(s).
29. Install the new boot, retainer ring, and/or console.



New boot and trim ring installed

30. Reinstall sill plates.
31. Connect throttle linkage to carburetor.
32. Tighten fan shroud if it was loosened earlier.
33. Reconnect the battery negative (-) cable.

E. FINAL INSTALLATION STEPS

1. If you did not fill the transmission with fluid before installation, remove the fill plug on the driver's side of the transmission and fill with 3 quarts, 21 ounces of transmission fluid, or until fluid runs out of the fill hole with the vehicle level. Reinstall the fill plug after adding fluid.
2. Start engine and allow engine to idle for a few minutes.
3. Check for leaks while warming up.
4. Slowly rev engine in neutral and listen for any unusual sounds or vibration.
5. Shift through all forward gears with the clutch disengaged (clutch pedal depressed).
6. Reverse is synchronized and uses a reverse lockout solenoid wired into the brake light wiring to ensure the vehicle is stopped prior to engaging reverse
7. Test drive at low speeds and low RPM.
8. Gradually increase engine RPM and vehicle speed.
9. Compare this test drive to the pre-installation test drive.
10. Drive conservatively for the first 500-1000 miles for transmission break-in.
11. If you experience vibration at highway speeds, verify that there is no body contact with the new transmission. If there is no contact, it may be necessary to adjust your driveline angle. Much has been written about driveline angles and how to determine them, and there is a lot of great information available online from multiple websites. If you need further help with your driveline angle, call Silver Sport Transmissions' Customer Service at 865-609-8187.

SPECIFICATIONS AND MAINTENANCE

TREMEC HighPerformance ManualTransmission Fluid is endorsed by Tremec for use in all Tremec brand aftermarket performance transmissions. **GM Synchronesh (part #88900333; formerly part #12345349) or Pennzoil (part #3501), DEXRON/MERCON ATF (non-synthetic), and Mobil 1 ATF** are the **ONLY** other fluids approved by Tremec. **The use of ANY other fluid will void your warranty.**

Silver Sport Transmissions recommends that the fluid be replaced after the first 500-1000 miles of normal driving, and then every 30,000 miles thereafter. It is acceptable to use the less-expensive DEXRON/MERCON fluid for the break-in period and then replace it with the Tremec HP MTF or GM Synchronesh.

FLUID CAPACITY: 3 QUARTS, 21 OUNCES (U.S.)

- Do not exceed input torque
700 lb-ft in 4th gear

- Gear ratios:

	CLOSE	WIDE
1 st	2.66	2.97
2 nd	1.78	2.10
3 rd	1.30	1.46
4 th	1.00	1.00
5 th	0.80	0.74
6 th	0.63	0.50

CONTACT INFORMATION

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SILVER SPORT TRANSMISSIONS IS DEDICATED TO YOUR SATISFACTION AND ENJOYMENT OF THIS PRODUCT. PLEASE SEND US PICTURES OF YOUR CAR ALONG WITH A TESTIMONIAL OF HOW YOU RATE THIS PRODUCT. WE WILL BE POSTING MANY CUSTOMER FEEDBACK LETTERS AND PICTURES ON OUR WEBSITE AND BROCHURES.

**ENJOY YOUR SILVER SPORT
TRANSMISSION SYSTEM!**