



SILVER SPORT
Transmissions

1978 – 1988 GM G-BODY

T56 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.

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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 results.

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 T56 Magnum is installed.

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

PLEASE READ ALL 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. Hydraulic throw out bearing kit – Hydraulic Kit Instructions for GM MAG-00402 (FTE style) or MAG-00404 (RAM style).
3. MAA-00801 – T56 Magnum Installation General Guidelines

NOTE: This 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 shift gate positions while rotating the input shaft and checking for output shaft rotation. If the input shaft will not turn, slide a 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 assistance.

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

A. REMOVE EXISTING EQUIPMENT

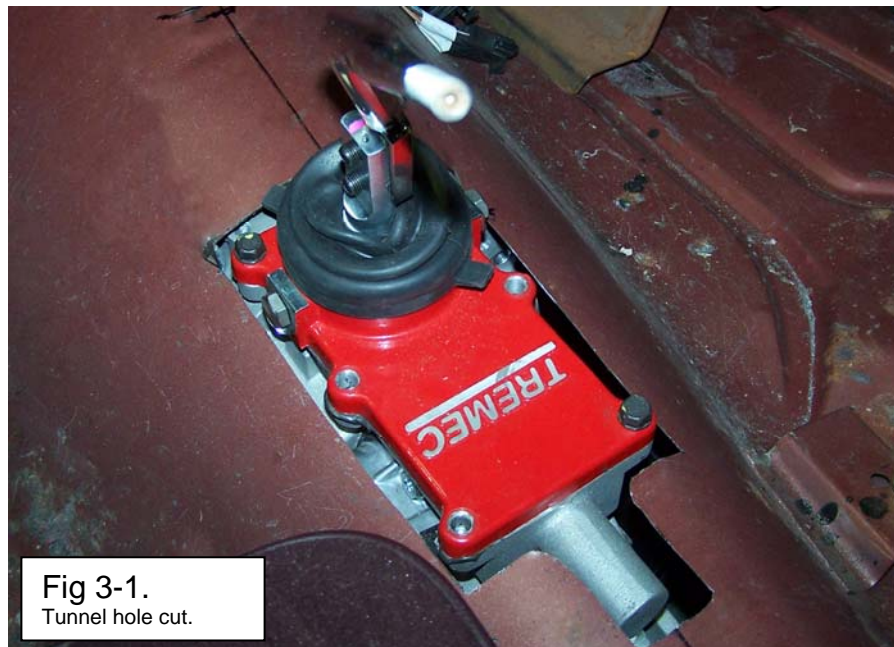
1. Disconnect negative (-) battery cable.
2. Place transmission in neutral. Remove shifter knob and boot.
3. Remove console. Note location and orientation of all components and wiring.
4. Remove front seats and carpet.
5. Remove engine cooling fan and fan shroud.
6. Remove breather assembly & ignition cluster cover/distributor cap from engine.
7. Raise car securely on lift or jack stands.
8. Loosen exhaust at manifold pipe.
9. Unbolt starter and set aside.
10. Remove drive shaft at rear differential pinion yoke and remove from car.
11. Remove bell housing dust cover/inspection cover.
12. Remove linkage pin & clip at torque arm to clutch fork.
13. Remove shifter assembly.
14. Remove speedometer cable.
15. Remove exhaust pipes as required for working clearance and permit engine to drop.
16. Unbolt transmission isolator and remove crossmember.
17. Loosen brake cable lines and secure for working clearance.
18. Disconnect backup switch wiring.

19. Secure rear of engine with hydraulic jack.
20. Secure transmission (jack recommended) and unbolt 4 speed transmission from bellhousing, then move rearward in vehicle and remove.
21. Remove manual transmission bellhousing, clutch pressure plate and clutch disk.
22. Remove manual transmission clutch fork and release bearing from bellhousing. Inspect release bearing, fork, and pivot ball stud for wear. Contact Silver Sport Transmissions for replacement or repair.
23. 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.
24. Remove the manual transmission pilot bushing.

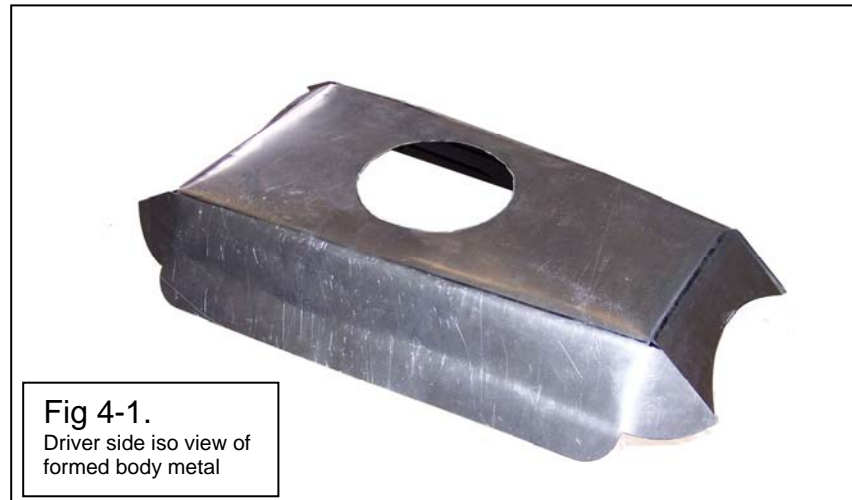
B. TUNNEL MODIFICATION

Because the T56 Magnum transmission is much larger than factory original manual or automatic transmission, some tunnel modification will be required to install the T56 Magnum transmission to the proper driveline angle to obtain acceptable driveshaft operating angles. It is important to use the Silver Sport Transmission supplied tunnel cutting template and the body metal supplied in the kit.

1. Cutout the tunnel cut template and construct the template as per the instructions printed on template TMG-00903. Position the rear of template to be aligned with floor brace and centered on the tunnel.
2. Tape template to floor. Mark area to cut.
3. Carefully cut the area marked and remove template. See Fig 3-1 for top view of finished tunnel hole cut (Shown with T56 Magnum installed - reference only).

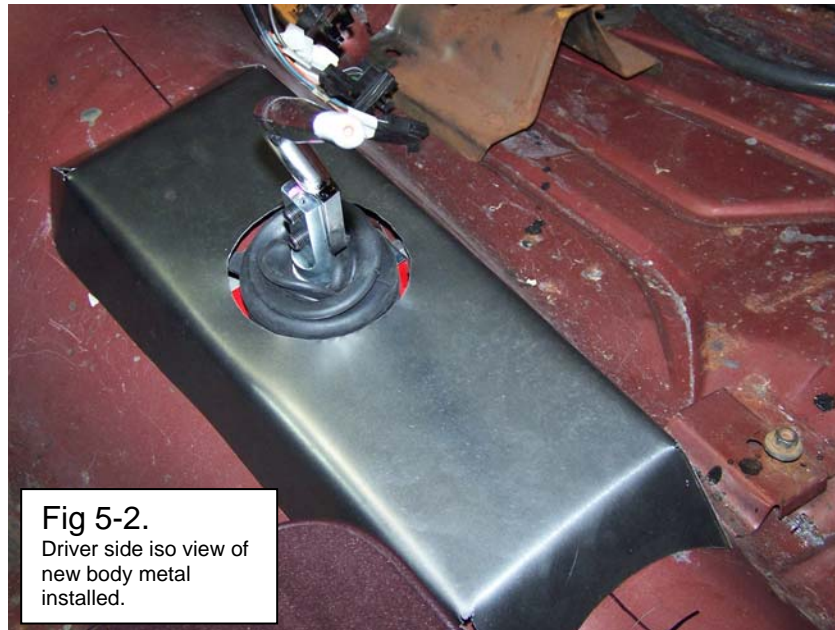


4. Form the new tunnel body metal by bending and aligning tabs. The body metal will need to be custom fitted to match the contour around the newly cut opening in your tunnel. The final shape of new tunnel body metal should look similar to picture shown in Fig 4-1.



5. Once the new body metal has been formed and fitted to your tunnel, a trial fit for T56 Magnum clearance should be done before permanently attaching the new tunnel body metal.
6. Temporarily attach bell housing, without clutch components, to the engine.
7. Temporarily install T56 Magnum transmission to bell housing using bolts from Hardware Pack HWG-PACK A T56. For added clearance for offset 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.
8. Attach isolator mount to transmission using Hardware Pack HWG-PACK H. Using jack, raise rear of engine/transmission as far as possible to allow crossmember to be installed.
9. Position crossmember perch area under isolator and lower transmission to rest on crossmember. Keep transmission secured to jack – there is no need to install the crossmember to isolator bolts for this clearance fit check.
10. Verify 1/8-1/4” minimum clearance between T56 Magnum and tunnel.

11. Complete the body metal custom fit to match the tunnel contour with the opening centered around the MAGNUM shifter. Mark location of the formed tunnel body metal to floor. See Fig 5-2.



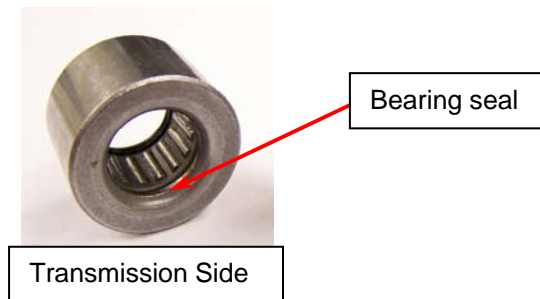
12. This would be a good time to take the driveline measurement per the driveline measuring procedure sheet so that the new SST driveshaft can be ordered. See MAA-00001 customer info pack.
13. Remove crossmember and the transmission in order to gain access to complete final tunnel installation.
14. Attach formed tunnel body metal to car using rivets, screws, or by welding.
15. Apply body sealer LORD Fuser 803DTM Metal Sealer or equivalent around perimeter joint to prevent water intrusion. Paint exposed sheet metal surfaces for corrosion protection.

C. 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 block installed. Reposition or replace with longer dowel pins if necessary.

2. If using Quick Time bell housing, be sure to install engine block plate prior to installing flywheel. Install new flywheel and flywheel bolts torqued to factory spec. Be sure to tighten bolts in alternating pattern sequence.
3. Install new pilot bearing assembly into crankshaft using a socket of similar diameter to the bearing and a rubber mallet. Gently tap bearing fully into crankshaft until bearing face is flush with crankshaft face.

NOTE: The side with the needle roller bearing grease seal faces the transmission. If pilot bearing OD is larger than crankshaft ID by more than 0.002", a different pilot bearing is required. Contact SST or your local parts store for a suitable replacement.



4. Using clutch alignment tool, attach clutch disc and pressure plate to flywheel. Install each bolt with medium thread locking compound only finger tight on the first round, then incrementally tighten each one in a star pattern sequence until all are snug. Torque each one in the same sequence to 35 lb-ft.
 - a. **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.**
 - b. See MAA-05000 clutch installation instructions for more details.
5. Lower rear of engine as far as possible (required for new transmission installation).
6. Install bellhousing to engine, while making sure 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 or Quick Time instructions.

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

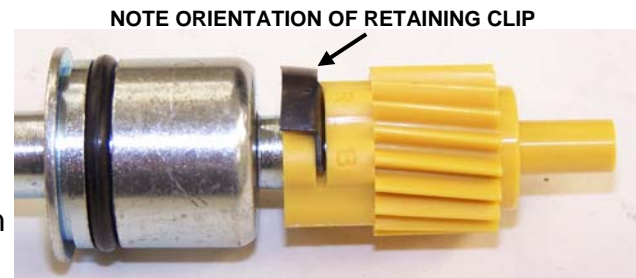
It is an absolute **requirement** that runout is **checked** and **corrected** **PRIOR** to installing the transmission. The runout specification for all of Silver Sport's kits is **0.005" (5 thousandths of an inch) MAXIMUM**. You **MUST** document the results **PRIOR** to installation of transmission 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.

7. It will be easier to add transmission 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 base plate.
8. At this point either install the clutch pedal rod, "Z" bar mounts, "Z" bar, retainer springs, and pushrod. If using a SST Hydraulic system (available separately) follow instructions provided, MAG-00402.
9. 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).
10. **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' Technical Support at 888-609-0094 for a consultation.

NOTE: If the transmission stops approximately 1/2" 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.

11. Once the transmission is fully seated by hand against the bellhousing, fasten with bolts provided (HWG-PACK A T56).
12. Raise up engine/transmission until transmission contacts the top of the tunnel.
13. If not already installed after tunnel clearance check, attach rubber isolator mount to transmission using M10-1.5 x 30 bolts and lock washers (HWG-PACK H).
14. Repeating the same procedure as before for installing crossmember (Section B – Steps 8-9), place your crossmember on the frame rails so that perch mounting slots lines up with the new isolator mount holes. Lower transmission fully onto crossmember, and attach to mount with hardware pack HWG-PACK B. Confirm no interference to car body or noise will occur as the driveline moves under load.
15. Attach the crossmember to the frame using your original hardware.

16. Remove shipping plug and insert slip yoke fully until touching transmission seal rubber dust boot. Set driveshaft into position at differential and seat u-joints into differential pinion yoke. Make certain all parts are clean and properly assembled.
17. Install straps and torque to factory specs: 17 lb-ft for 1310/1330 U-bolts; 24 lb-ft for 1350 U-bolts (excessive torque can distort bearing cap leading to premature failure). Double check your assembly.
18. 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.
19. Install E-brake cable. Adjust tension per factory specs.
20. Reinstall bell housing dust cover/inspection cover and starter.
21. Connect clutch linkage - do not preload release bearing. Adjust linkage as required.
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:
 - a. 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.
 - b. 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.
26. 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 right) 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.
27. Bolt on upper shift handle with 3/8"-24 x 1" bolts and washers provided (HWA-PACK L). Use medium strength thread locking compound. Torque to 25 lb.-ft. Confirm shifter motion through all gears.
28. Install lower shift boot (SBA-9648 with retainer plate and carpet.
29. Install front console (if equipped) and front seats.
30. Install new 6 speed shift pattern plate.
31. Reconnect battery negative (-) cable.
32. Install shifter boot and retainer ring, and/or console if equipped.
33. Connect throttle linkage to carburetor.
34. Install distributor cap and breather.
35. Tighten fan shroud if it was loosened earlier.
36. Reconnect the negative (-) battery cable.



QUALITY CHECK

It is important you confirm your work:

1. All bolts tightened to specifications
2. Full fill transmission fluid. Do not over tighten plug until head is flush with boss. This is tapered pipe plug.
3. Driveshaft fully assembled at both ends. Minimum 1/4" clearance around moving parts.
4. Shifter operates smoothly through all gears.
5. No vibration at idle speed, upper RPM or highway speed.



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 web-site and catalogs.

D. FINAL INSPECTION AND START UP PROCEDURE

- Start engine and let idle for 2 minutes.
- Slowly rev engine in neutral and listen for odd noises. Feel for vibration in driveline.
- With clutch disengaged, shift through all gears. Do not shift into reverse at RPM higher than idle.
- Test drive at low speeds and low RPMs. Gradually test higher RPMs, then higher speeds.
- If you experience a vibration at cruising speeds, it may be necessary to adjust the rear end angle to achieve the correct driveshaft angle. Please refer to factory manuals for measurement and adjustment methods.
- If you experience a vibration at zero speed, as you rev up engine with clutch released, a faulty flywheel/clutch plate balance may exist. If vibration occurs when depressing the clutch pedal only a release bearing may be faulty.
- 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.
- Drive easy for 500 miles break-in period.
- Change oil at 30,000 miles.
- Spare parts are available from SST or an authorized TREMEC distributor.

E. SPECIFICATIONS

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

- Gear ratios:

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

FLUID CAPACITY: (approximately 3 quarts, 21 ounces)

TREMEC HighPerformance ManualTransmissionFluid is endorsed by Tremec for use in all aftermarket high performance Tremec brand manual transmissions. **Dexron III Automatic Transmission Fluid (ATF) and Mobil 1 ATF are the only other fluids approved by Tremec.**

The proper fill level is achieved when the oil reaches the fill plug hole.