



SILVER SPORT

Transmissions

MOPAR A-BODY 1964-1976



TKX 5-SPEED MANUAL TO MANUAL

TRANSMISSION CONVERSION 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 FACTORY SERVICE MANUAL (FSM) FOR ADDITIONAL DETAILS OF THE PROCEDURES BELOW, AS REQUIRED.

FOR BOLT TORQUE SPECIFICATIONS, REFER TO YOUR FACTORY SERVICE MANUAL.

The material herein is the intellectual property of Silver Sport Transmissions ("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.

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.

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 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 – Inspection and Correction of Bellhousing to Crankshaft Runout MAA-00101
2. All kits – MAA-00100 Driveshaft Measuring Procedure
3. Manual Pedal Installation Instructions MAM-01501
4. Hydraulic Kit Instructions for MOPAR MAM-00201

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 more easily (see photo on page 6). 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 help.

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 breather assembly and fan shroud.
3. Remove distributor cap if the engine is a small block.
4. Place shifter in neutral. Remove shift boot and lever.
5. Remove console, if equipped.
6. Raise car securely on lift or jack stands. 6 ton stands are usually taller and will give you more room under the car. 18 inches or more of working room is recommended.
7. Measure and record the existing stock driveline angles with the weight of the vehicle supported by the rear axle. This information may be helpful later. 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 additional help determining your driveline angle, call Silver Sport Transmissions' Customer Service at 888-609-0094.
8. Remove exhaust, as required, for working clearance.
9. Disconnect idler arm from K frame and pull center link down.
10. Unbolt starter and set aside.
11. Remove clutch linkage at torque arm to clutch fork.
12. Remove bellhousing dust cover.
13. Disconnect driveshaft from differential and remove from car.
14. Remove shifter assembly.
15. Remove speedometer cable.
16. Disconnect reverse lamp wiring.
17. Secure rear of engine with hydraulic jack.
18. Unbolt transmission isolator from the crossmember and remove crossmember.
19. Secure transmission (jack recommended) and unbolt from bellhousing, then move rearward and remove from vehicle.
20. Remove bellhousing and clutch unit.
21. Remove clutch fork and release bearing from bellhousing. Inspect fork and pivot for wear. Contact Silver Sport Transmissions or your local parts supplier if replacements are needed.
22. Inspect flywheel ring gear teeth (no cracks, chips, wear), and friction surface (no cracks). Silver Sport Transmissions strongly suggests removing flywheel and having it resurfaced, then dynamically balanced at a reputable automotive machine shop **unless** the engine was externally balanced with the flywheel installed.
23. Remove pilot bushing using removal tool (not supplied).

B. TEST FITMENT AND TUNNEL MODIFICATION

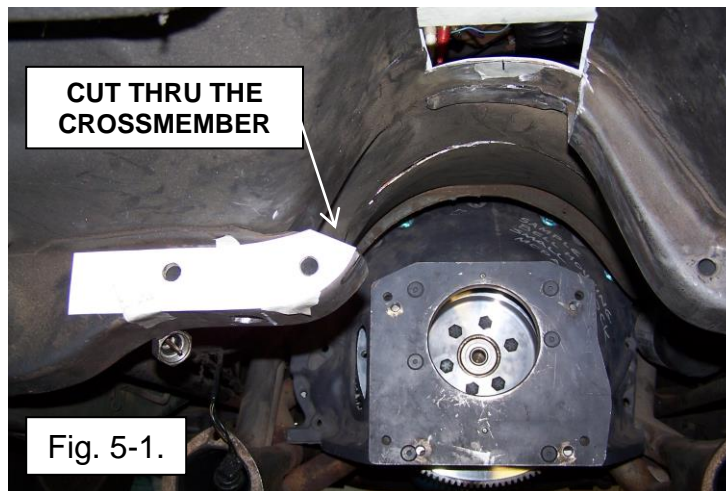


IMPORTANT: The TKX is a physically smaller transmission than the previous generation TKO and may not require any floor modification. Test fit the transmission before cutting the floor. Test fit the transmission into the car and check fitment with the crossmember and isolator mount installed. A minimum of 1/4 inch clearance around the entire transmission is required. Some dimpling of the floor may be all that is required for fitment or smaller cuts than the following instructions show. The amount of tunnel clearance that exists can vary from car to car. Silver Sport Transmissions' template and sheet metal is designed to be large enough to allow the TKO/TKX to fit in most if not all vehicles of this type, with plenty of clearance in the tunnel. Your car may not require as much clearance as our modification provides.

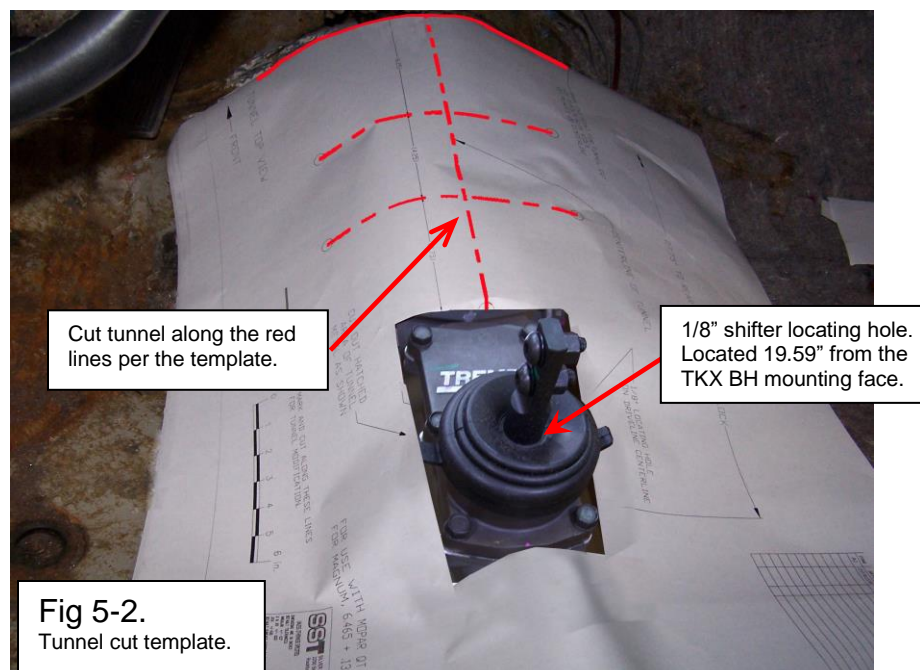
1. Remove the front seats and carpet.
2. Temporarily attach bell housing to the engine.
3. From rear face of bell housing (transmission mounting face), measure 19.59" on driveline centerline and mark center location on underside of tunnel. Drill 1/8" diameter shifter hole template locating hole thru tunnel.

NOTE: If you have a factory 4-speed body, do not use the factory 4-speed add-on hump in the tunnel for reference, use the main tunnel only. If you have an automatic or column shift vehicle, you do NOT need to add a 4-speed hump to your tunnel – the TKX shifter is located on the driveline centerline.

4. Using cutting template TMM-00701, align the cutout area with (2) holes on crossmember and tape to crossmember rear surface. See Fig 4-1. Mark the cutline and cut thru the crossmember.



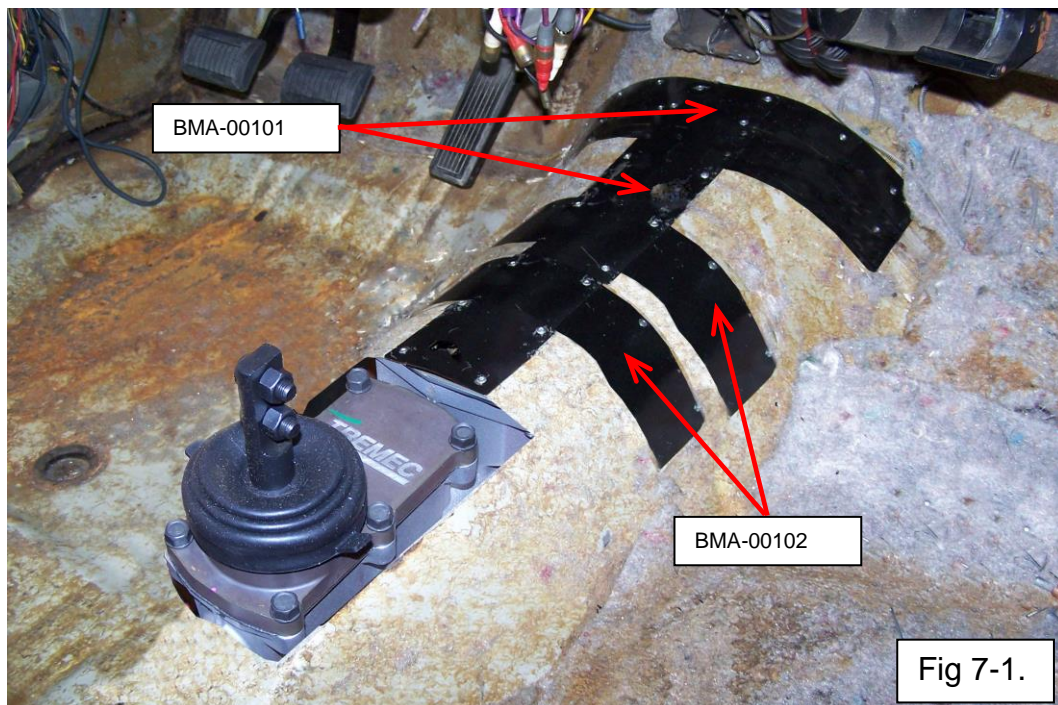
5. From inside the car, using cutting template TMM-00550, cut out the shifter hole cross hatched area and place template on top surface of tunnel aligned with the 1/8" template locating hole and tape to tunnel. Fig 4-2.
6. Mark the shifter hole area to cut by tracing around the hole cutout area.
7. Mark the sections to be cut by tracing on the floor for the lines designated on the paper template as shown in red on Fig 4-2.
8. Remove the paper template and cut tunnel down the center spine and (3) side to side cuts as shown. Carefully cut only along the passenger side of the shifter hole opening thru the tunnel sheet metal and thru the torsion bar crossmember on the underside of tunnel. Remove the cut section of the torsion bar crossmember from below as shown in Fig. 4-1.
9. Return to the shifter opening template on top surface of the tunnel and cut the remaining 3 sides of opening. Deburr edges of hole. See Fig 5-1.



10. Bell housing should still be temporarily installed on engine. No clutch or flywheel is necessary for this step.
11. Lower engine and install transmission to bellhousing using 7/16-14 bolts from hardware pack HWM-PACK A. Support the transmission with a jack. Reinstall the rubber sleeve on the output shaft if it was removed during test shifting to help prevent fluid leakage during the installation.
12. Attach isolator mount to TKX mounting pad with 1/2-13 x 1-1/2" bolts and washers from hardware pack HWM-PACK D.
13. Raise the transmission enough to be able to install the new crossmember under the isolator mount.
14. Temporarily install the new crossmember to the torsion bar crossmember using your original bolts. Do not install nuts onto the bolts. Lower transmission with the isolator mount attached onto the new crossmember.
15. The cut sections of the tunnel will be pulled up and out and bent to provide required clearance for the TKX transmission resulting in approx. 2" gap down the middle tunnel split cut.
16. Check for interference with floor tunnel. You will need a minimum of 1/4" of clearance between the transmission and the 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 additional cutting of the tunnel.



17. With proper clearance now set on cut tunnel areas, install body metal supplied in kit to cover the tunnel openings. Install the (4) body metal pieces supplied with kit to tunnel with screws or rivets as shown in Fig. 6-1. Trim excess body metal to fit as needed. Paint exposed sheet metal surfaces for corrosion protection.



18. To install the tunnel hump body metal, begin shaping the flat sheet metal BMM-11500 by bending the sides of the body metal down to fit over the tunnel and roll the rear sections to overlap and secure with rivets or screws. Corners can be welded or seam sealed. See Fig. 6-2 for picture of formed tunnel hump.
19. Attach the formed tunnel hump to tunnel with screws or rivets.
20. This would also 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.



21. Once proper tunnel to TKX transmission clearance has been verified after all the body metal pieces have been installed, remove crossmember and transmission to gain underside access to complete final tunnel sheet metal preparation.
22. Apply body sealer LORD Fuser 803DTM Metal Sealer or equivalent around perimeter joint on all body metal to prevent water intrusion. Paint exposed sheet metal surfaces for corrosion protection.

C. TRANSMISSION INSTALLATION

1. Remove the fill plug on the passenger's side of the transmission and fill with 2 quarts, 20 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. Remove your original pilot bushing or bearing (if equipped) using a pilot bearing removal tool. Clean the inside of the **larger** diameter recess in your crankshaft hub. This recess is the pilot bore for the nose of an automatic transmission torque converter. The new custom pilot bearing assembly will fit into this larger recess; **an original equipment style pilot bushing or bearing will not work with the SST 5-speed**. Install the new SST pilot bearing assembly using a bearing driver or a socket of similar diameter to the outer bronze bushing of the new bearing assembly. Make sure the bearing assembly is installed with the needle roller bearing protruding out towards transmission (see photo below). Gently tap bearing fully into crankshaft until the outer bearing face is flush with crankshaft face.



3. 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 Alignment" provided with your instruction packet. 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 the bellhousing.
4. 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.

NOTE: If using a diaphragm-style pressure plate, it will be necessary to remove the large over-center spring from the clutch pedal. The over-center spring can hold the clutch disengaged or cause unusual fluctuations at the clutch engagement and release points. If using a three-finger style pressure plate, the over-center spring will be retained.

5. Lower rear of engine as far as possible (required for new transmission installation).
6. With the bellhousing still removed from the engine, install clutch fork and new SST release bearing in the bellhousing if using mechanical clutch linkage. **An original equipment style release bearing will not fit the SST 5-speed.** If you purchased the SST hydraulic system with your transmission, the hydraulic release bearing will already be installed.

NOTE: Make sure you have the correct clutch fork for your car and engine. Check length by fully engaging the fork in the pivot bracket and release bearing, with the pushrod disconnected from the clutch fork. Verify that the pushrod is aligned with the fork eyelet. Silver Sport Transmissions can provide a new clutch fork, pivot, and boot kit if needed.

7. Install bell housing 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 factory specification.

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.

8. 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). The rubber tailshaft sleeve may be temporarily removed and the slip yoke inserted to rotate the tailshaft, as required, to facilitate engagement into clutch disk. **DO NOT** draw the transmission up to the bellhousing by tightening the transmission-to-bellhousing bolts!

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 have a helper depress the clutch pedal slightly 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.

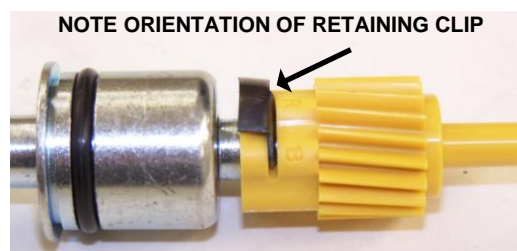
9. Once the transmission is fully seated by hand against the bellhousing, fasten with 7/16" x 1-1/2" bolts and washers provided (HWM-PACK A) and torque to 50 lb.-ft.

WARNING: THE FOLLOWING CAN CAUSE THE EARS OF THE TRANSMISSION CASE TO BREAK AND IS NOT COVERED UNDER WARRANTY (SEE PHOTO):

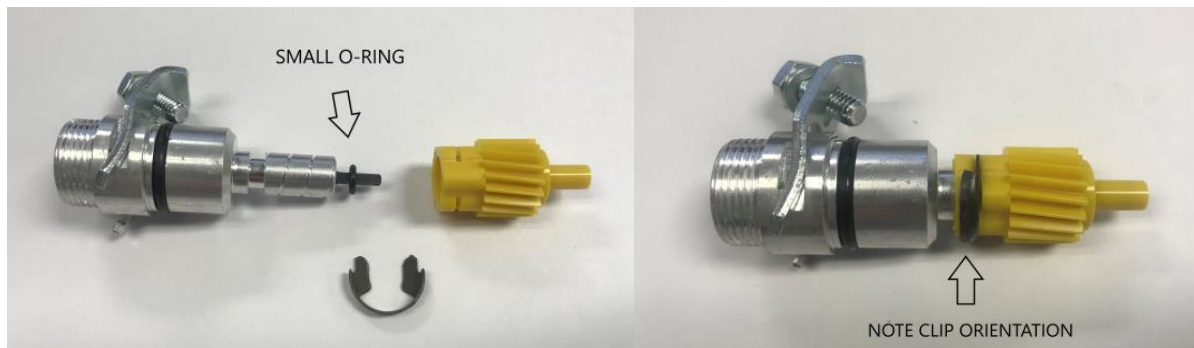
- a) DRAWING THE TRANSMISSION UP TO THE BELLHOUSING BY THE BOLTS.
 b) NOT TORQUING THE TRANSMISSION-TO-BELLHOUSING BOLTS TO 50 lb.-ft.
 c) NOT HAVING THE TRANSMISSION FULLY SEATED AGAINST THE BELLHOUSING WHEN TORQUING THE TRANSMISSION-TO-BELLHOUSING BOLTS.



10. Raise up engine/transmission until transmission contacts the top of the tunnel.
11. Reinstall new crossmember using the original hardware to attach to the torsion bar crossmember. Lower transmission fully onto crossmember and attach crossmember to mount with 3/8" flat washers, lock washers and nuts provided (HWM-PACK B). Confirm no interference to car body or noise will occur as the driveline moves under load. Confirm shifter is centered in tunnel hole.
12. The rubber tailshaft sleeve may be removed at this point (see step C-2 and photo on pg. 6). Install driveshaft by inserting the slip yoke into the rear of the transmission first. Then position the rear U-joint in the differential U-joint saddles. It may be helpful to turn the rear wheels. Install rear 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.
13. Install bellhousing inspection cover and starter.
14. Connect clutch linkage - do not preload mechanical release bearing. Adjust linkage as required. If using SST hydraulic system (available separately), follow instructions provided.
15. 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 (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.



*****Speedometer gear will have resistance when turning after assembled*****



The TKX have provision for electronic speedometer output also. The speed sensor is located on the passenger side of the transmission, directly opposite the mechanical speedometer output. The sensor is a standard two wire Ford, sine wave, with 12 pulses per revolution of output shaft, which equates to roughly 24,000 to 42,000 pulses per mile depending on axle ratio and tire size. For reference, a 26" tire with a 3.73 gear will produce 34,738 pulses per mile. Please refer to your speedometer's installation instructions or contact the speedometer manufacturer for information on connecting and calibrating your electronic speedometer.

REVERSE LIGHT SWITCH



NEUTRAL SAFETY SWITCH



MECHANICAL SPEEDOMETER PORT



ELECTRONIC SPEED SENSOR



16. The reverse light switch is located on the driver's side of the main case and is a black-bodied switch with (2) studs. The switch is a normally open, non-directional switch that will complete the lighting circuit when the transmission is in reverse. SST has provided a two-wire harness with your kit that will attach to the 5-speed reverse light switch. It can be spliced into your car's wiring harness in place of your original switch that was mounted to your 4-speed shift linkage.
17. The wire pigtail at the very back of the tailhousing is a neutral safety switch. It is a normally open, non-directional switch that will complete the circuit when the transmission is in neutral. The plastic connector may be removed and the neutral safety switch may be spliced in to your starter circuit between the ignition switch and the starter solenoid if you so choose.
18. Tighten exhaust.
19. Reinstall shift tower that was removed earlier.
20. Bolt on shifter handle with 3/8"-24 x 1" bolts and lock washers (HWA-PACK L). Use medium duty threadlock compound. Torque to 25 lb.-ft. Confirm shifter motion through all gears.
21. Install shifter boot and retainer ring, and/or console if equipped.
22. Connect throttle linkage to carburetor.
23. Install distributor cap if removed earlier.
24. Reconnect idler arm to K-frame.
25. Install fan shroud and breather.
26. Reconnect the negative (-) battery cable.

FINAL INSTALLATION STEPS

1. If you did not fill the transmission with fluid before installation, remove the fill plug on the passenger's side of the transmission and fill with 2 quarts, 20 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 it 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. Do not shift into reverse above idle speed or when moving forward, reverse is not synchronized. Shifting into reverse may require shifting into a forward gear first to prevent grinding.
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, recheck your driveline angles. If you need further help with diagnosing a vibration, call Silver Sport Transmissions' Customer Service and Technical Support at 888-609-0094.

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: 2.7 QUARTS (U.S.)

DO NOT EXCEED MAXIMUM
INPUT TORQUE:

- TKX: 600 lb.-ft. in 4th gear

GEAR RATIOS:

- TKX Wide Ratio
 - 1ST 3.27
 - 2ND 1.98
 - 3RD 1.34
 - 4TH 1.00
 - 5TH 0.72
- TKX Close Ratio
 - 1ST 2.87
 - 2ND 1.89
 - 3RD 1.28
 - 4TH 1.00
 - 5TH 0.68

(0.81 OPTIONAL)

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!**