



**SILVER SPORT**  
*Transmissions*

**MOPAR A-BODY 1964-1976**



**TKO 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. Automatic to Manual conversion, General Guidelines MAA-00201
4. Manual Pedal Installation Instructions MAM-01501
5. 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 six 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 **865-609-8187 extension 118** for further instructions.

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

## A. REMOVE EXISTING EQUIPMENT

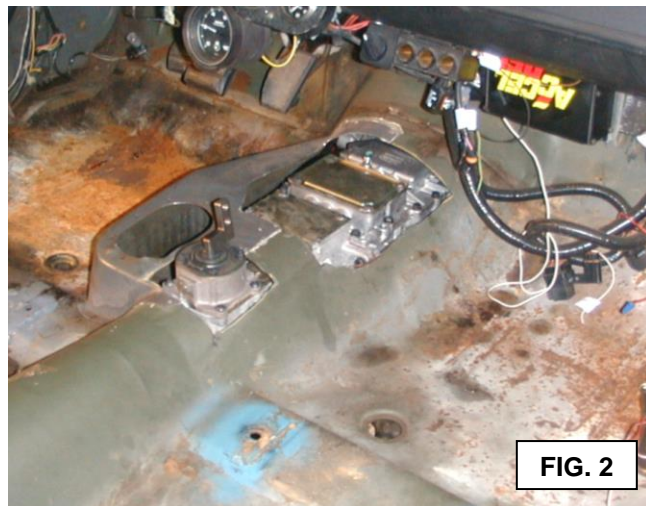
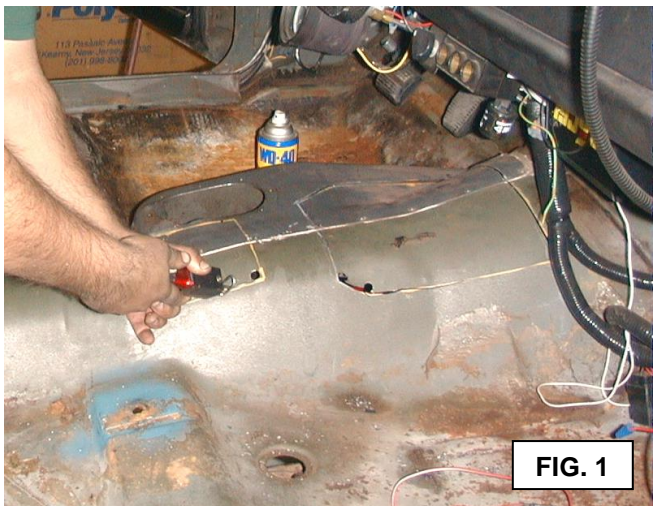
1. Disconnect negative (-) battery cable.
2. Remove breather assembly and fan shroud.
3. Remove distributor cap if the engine is a small block.
4. Place shifter in neutral. Remove shift boot and lever.
5. Remove console, if equipped.
6. Raise car securely on lift or jack stands. 6 ton stands are usually taller and will give you more room under the car. Eighteen 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 865-609-8187 extension 118.
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).
24. If you did not purchase a new bell housing from Silver Sport with your transmission system, you will need to send your factory bell housing to SST for modification. Write the RMA number you were given on the inside and outside of the bell housing with a permanent marker. If you do not have an RMA number, please call Silver Sport Transmissions' Customer Service at **865-609-8187 extension 118** to obtain one. Please **DO NOT** send SST your bell housing without marking it with an RMA number!

## B. SHEET METAL INSTALLATION

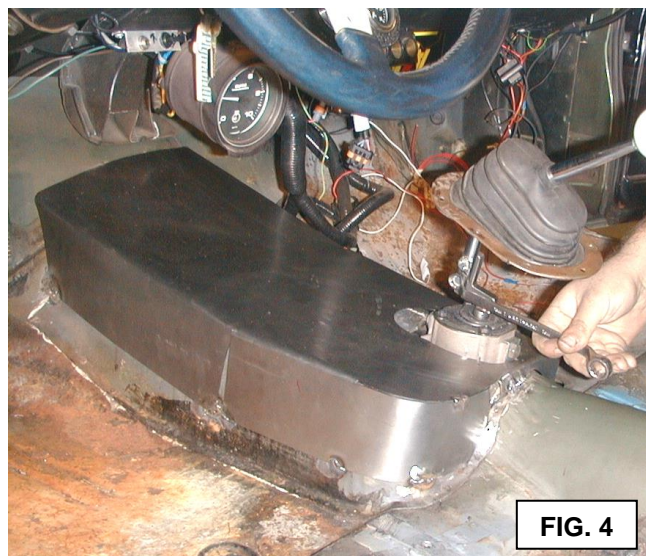
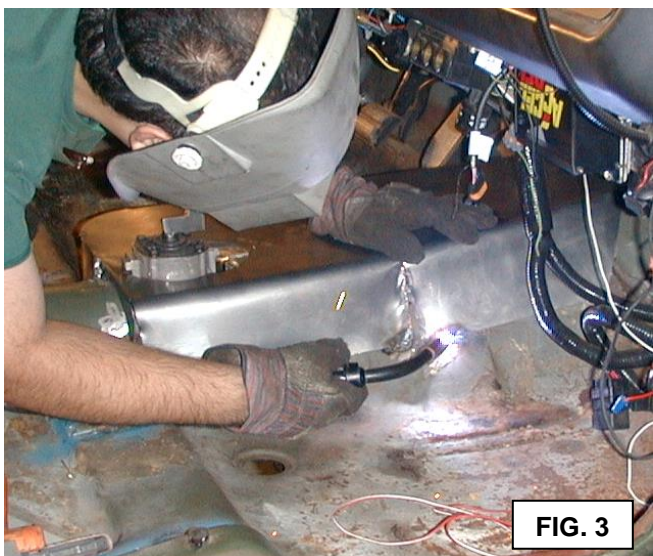
1. Remove the front seats and carpet.
2. To prepare for using the template provided, from under the car, drill a 3/16" diameter hole (template hole B) through the floor and torsion bar support rail flange immediately in front of the vertical face of the torsion bar support rail and at the top center of the floor hump.  
 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 as your kit's sheet metal is designed to accommodate this condition.

From inside the car, measure forward 10-1/2" from center of hole (B) along tunnel centerline. Drill a 3/16" diameter hole (template hole A) through the floor at this point.

3. From inside the car, lay cutout template on tunnel aligned at holes (A) and (B). Trace the outline of the two cutouts (large forward hole and shifter hole) on the floor tunnel (see Fig. 1) and cut out the sheet metal along the traced lines. De-burr all cut edges. Refer to Fig. 2 showing the tunnel cutouts with the transmission test fit in the car.



4. To install the add-on sheet metal, begin shaping the flat sheet metal by bending the rear portion of the add-on sheet metal down 90 degrees. From inside the car, lay the add-on sheet metal over the tunnel and align left to right with center of tunnel and align forward to back by putting the front of oval hole in the sheet metal 1/2" forward of the front edge of the shifter cutout in the floor tunnel. **NOTE:** The sheet metal provided in the kit for previous 4 speed equipped vehicles blocks off the original shifter hole.
5. Shape the add-on sheet metal over the tunnel and fasten the new sheet metal to the floor tunnel See (Fig. 3 and 4).



6. Lay a protective cover over the shifter hole and, from under the car, fill the cavity between the new sheet metal and floor tunnel with spray foam sealer. Use a putty knife to pack in and spread uniformly, and allow to dry for 12 hours.
7. Trim the foam after it has hardened and spray the underside of the car with spray undercoating. Trim the foam inside the car and paint the new sheet metal.

## TEST FITMENT

Due to OE manufacturing tolerances, age, collision repairs, K-member swaps, and slight differences across year models and drivetrain options, not all Mopar A-Bodies have identical dimensions from the engine mounts to the torsion bar rib. Many Mopar A-Bodies will need to trim the front upper lip of the torsion bar rib in order to get the TKO transmission all the way up in the tunnel. Some cars may need a small section of the torsion bar rib to be removed, and then the remaining section boxed back in. In order to determine if and how much of the torsion bar rib needs to be removed, you will need to test fit the transmission into the car.

1. Temporarily install bellhousing to engine. No clutch or flywheel is necessary for this step.
2. Lower engine, and install transmission to bellhousing using 7/16"-14 X 1-1/2" bolts and lockwashers provided (HWM-PACK A). Support the transmission with a jack.
3. Attach isolator mount to transmission using 1/2"-13 x 1-1/2" bolts and lockwashers provided (HWM-PACK D).
4. Raise the transmission enough to be able to install the new crossmember under the isolator mount. If the Vehicle Speed Sensor (VSS) on the passenger's side of the transmission contacts the torsion bar rib, it may be necessary to loosen the retaining bolt and rotate the sensor so that the plug faces downward. If the transmission contacts the torsion bar rib in the tunnel before it rises far enough to get the crossmember in place, mark the areas of interference carefully. Remove the transmission and modify the torsion bar rib as necessary to give 1/4" of clearance minimum between the transmission and any part of the tunnel. Re-install the transmission and verify fitment before proceeding.
5. Temporarily install the new crossmember to the torsion bar support in the car using your original bolts. Do not install nuts onto the bolts at this point.
6. Lower transmission with isolator mount onto the new crossmember. Install the crossmember to isolator nuts (HWM-PACK B) finger-tight.
7. Verify that there is at least 1/4" of clearance between all points on the transmission and the car body.
8. The next step is to measure for your driveshaft. Ensure that the rear suspension is weighted as the car will be when it is being driven. Take your length measurement and your U-joint dimensions as instructed on the Driveshaft Order Form in your instruction packet, and call Silver Sport Transmissions with those dimensions at (865) 609-8187. Then, press 118 for Customer Service.

## C. TRANSMISSION INSTALLATION

1. After the final clearance check and the driveshaft measurements, remove the transmission and bellhousing to complete the remaining work.
2. Reinstall the rubber sleeve on the output shaft if it was removed during test shifting to help prevent fluid leakage during the installation. Fill transmission with 2 quarts, 20 ounces of transmission fluid. **GM Synchronesh (part #88900333; formerly part #12345349) or Pennzoil (part #3501) is the recommended fluid and will provide the best shift quality.**

**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 GM Synchronesh.

3. 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.



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 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.
5. Using the provided clutch alignment tool, attach clutch disc (1-1/8" x 26 spline) and pressure plate to flywheel. Install each bolt only finger tight on the first round, then incrementally tighten each one in an alternating sequence until all six are snug. Then tighten each one in the same alternating sequence to 35 lb.-ft.

**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.

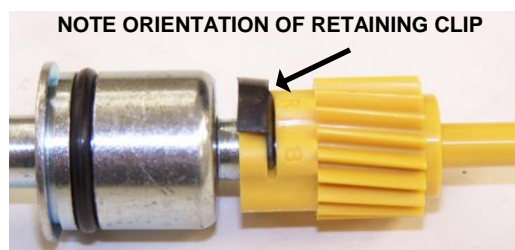
6. Lower rear of engine as far as possible (required for new transmission installation).
7. With the bellhousing still removed from the engine, install clutch fork and new SST release bearing in the bellhousing if using mechanical clutch linkage. **An original equipment style release bearing will not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

**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.

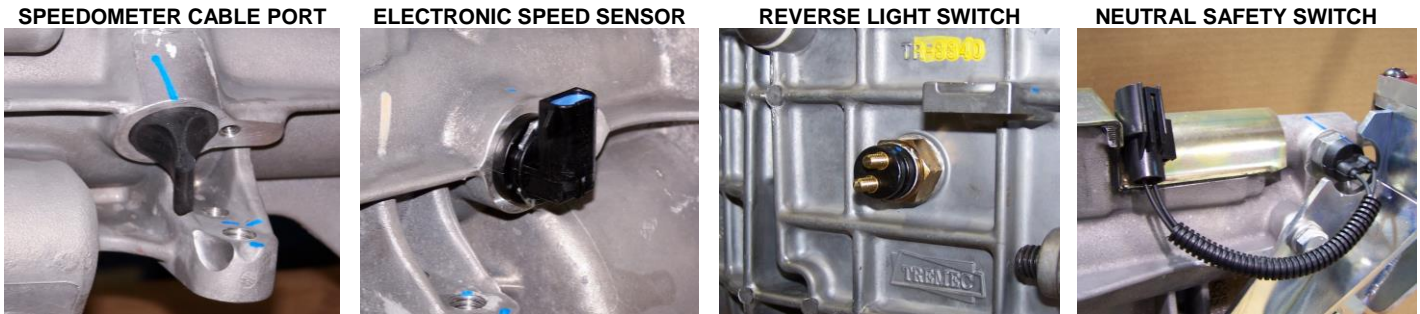
8. Install bell housing to engine, while making sure that there are no hoses, cables, or wires caught between the bellhousing and engine block. Torque the fasteners to the factory specification.
9. Install transmission, using caution when inserting the input shaft into the clutch disc and pilot bearing. 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 in order 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 ½ 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.

10. 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.
11. Raise up engine/transmission until transmission contacts the top of the tunnel.
12. Reinstall new crossmember using the original hardware to attach to the torsion bar rib. 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.
13. 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 be able to turn the rear wheels. Install rear straps and torque to factory specs. Make certain all parts are clean and properly assembled.
14. Install bellhousing inspection cover and starter.
15. Connect clutch linkage - do not preload mechanical release bearing. Adjust linkage as required. If using SST hydraulic system (available separately), follow instructions provided.
16. 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.



The TKO 500 and 600 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 tailshaft, 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.



17. The reverse light switch is located on the driver's side of the main case, and is a black-bodied switch with two 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.
18. 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.
19. Tighten exhaust.
20. Reinstall shift tower that was removed earlier.
21. Bolt on shifter handle with 3/8"-24 x 1" bolts and lockwashers (HWA-PACK L). Use medium duty threadlock compound. Torque to 25 lb.-ft. Confirm shifter motion through all gears.
22. Install shifter boot and retainer ring, and/or console if equipped.
23. Connect throttle linkage to carburetor.
24. Install distributor cap if removed earlier.
25. Reconnect idler arm to K-frame.
26. Install fan shroud and breather.
27. 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. **GM Synchronesh (part #88900333; formerly part #12345349) or Pennzoil (part #3501) is the recommended fluid and will provide the best shift quality. 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 GM Synchronesh. 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 865-609-8187 extension 118.

## SPECIFICATIONS AND MAINTENANCE

GM Synchronesh (part #88900333; formerly part #12345349) or Pennzoil (part #3501) is the recommended fluid and will provide the best shift quality. 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 GM Synchronesh.

FLUID CAPACITY: 2 QUARTS, 20 OUNCES (U.S.)

DO NOT EXCEED MAXIMUM  
INPUT TORQUE:

- TKO 500: 500 lb.-ft. in 4<sup>th</sup> gear
- TKO 600: 600 lb.-ft. in 4<sup>th</sup> gear

GEAR RATIOS:

- TKO 500
  - 1<sup>ST</sup> 3.27
  - 2<sup>ND</sup> 1.98
  - 3<sup>RD</sup> 1.34
  - 4<sup>TH</sup> 1.00
  - 5<sup>TH</sup> 0.68
- TKO 600
  - 1<sup>ST</sup> 2.87
  - 2<sup>ND</sup> 1.89
  - 3<sup>RD</sup> 1.28
  - 4<sup>TH</sup> 1.00
  - 5<sup>TH</sup> 0.64

(0.82 OPTIONAL)

### CONTACT INFORMATION

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SALES EXTENSION: 113

CUSTOMER SERVICE AND TECH SUPPORT  
EXTENSION: 118

[WWW.SHIFTSST.COM](http://WWW.SHIFTSST.COM)

*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!**