



**SILVER SPORT**  
*Transmissions*

# **CORVETTE**

## **1968-1982**



### **4-SPEED**

### **ELECTRONICALLY CONTROLLED**

### **AUTOMATIC TRANSMISSION**

### **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.

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

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THANK YOU!  
FOR PURCHASING THE MOST COMPLETE AUTOMATIC TRANSMISSION  
CONVERSION SYSTEM AVAILABLE FOR YOUR CLASSIC CAR!  
SILVER SPORT IS READY TO ASSIST YOU WITH TECHNICAL SUPPORT  
DURING THE INSTALLATION AND TESTING OF YOUR NEW  
TRANSMISSION. DO NOT HESITATE TO CONTACT OUR CUSTOMER  
SERVICE DEPARTMENT IF YOU HAVE A QUESTION.

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 receive a “Transmission Control Unit” installation manual.

Please verify the parts you received before beginning the installation. Compare the received items to the packing list provided in your shipment.

**NOTE: THIS TRANSMISSION SYSTEM WILL NOT FIT WITH EXHAUST  
PIPES THAT GO THROUGH THE FACTORY CROSSMEMBER. CUSTOM  
EXHAUST WILL BE REQUIRED.**

**PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION**

## **Transmission removal procedure**

- Disconnect negative battery cable
- Lift & secure vehicle
  - Place vehicle on lift or secure on jackstands (at least 18" vertical clearance is required under vehicle to move new transmission into place).
- Transmission access
  - Remove as necessary: exhaust, heat shields, brackets, etc. To allow access for transmission removal.
  - Remove emergency brake cable and pulley.
  - Make reference notes for reinstallation.
- Remove driveshaft
  - Disconnect driveshaft from differential at rear universal joint.
  - Disconnect driveshaft from slip yoke and remove driveshaft from car.
  - Secure slip yoke to transmission with safety wire to prevent it falling out during transmission removal.



- Disconnect parts attached to transmission
  - Disconnect shift cable.
  - Disconnect speedometer cable from transmission and dash, and remove from car.
  - Disconnect transmission oil cooler lines from transmission and from the rubber hoses near the radiator, and remove the transmission oil cooler lines. Leave the rubber hoses connected to the radiator.
  - Remove any other brackets, etc. As needed.
- Remove starter
  - Make sure negative battery cable is disconnected.
  - Remove starter from car or move for clearance.
- Disconnect torque converter
  - Remove dust cover to gain access to torque converter bolts.
  - Loosen and remove (3) torque converter bolts.



REMOVE  
TORQUE  
CONVERTER  
BOLTS

- Remove transmission
  - Support transmission (transmission jack recommended).

- Unbolt transmission crossmember.
- Raise transmission until it contacts the underside of the tunnel.
- Remove the transmission crossmember.
- Lower transmission as far as it will go to gain access to the bellhousing bolts.
- Support engine with hydraulic jack.
- Unbolt bellhousing from engine.
- Move transmission rearward from engine and remove from vehicle. If the transmission dipstick tube interferes with the firewall, it may be necessary to raise the transmission and remove the dipstick tube before removing the transmission from the vehicle.
- Thoroughly inspect your flexplate for bad teeth, cracks, loose or missing balance weights that could cause vibration. Replace if necessary.

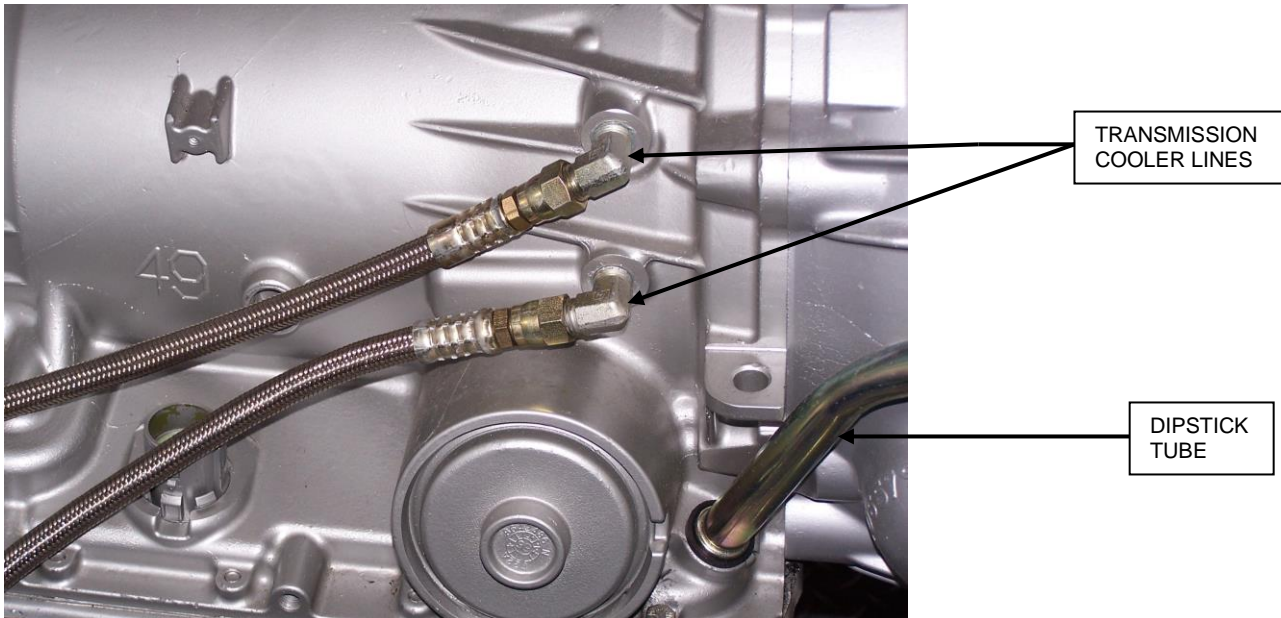
**WARNING:**

DO NOT ALLOW THE TRANSMISSION NOSE TO TILT DOWNWARD, OR THE TORQUE CONVERTER MAY SLIDE OFF THE TRANSMISSION INPUT SHAFT!

**NOTE:** FLUSH EXISTING TRANSMISSION OIL COOLER TO REMOVE ALL OLD TRANSMISSION FLUID AND ANY DEBRIS THAT MAY BE PRESENT IN THE EXISTING COOLER.

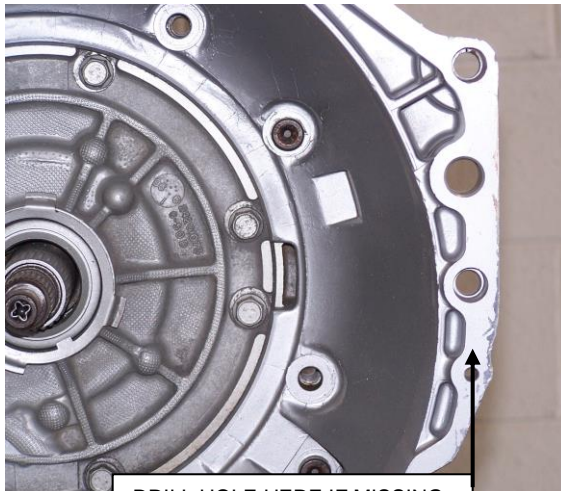
## Transmission preparation

- Carefully remove new transmission from shipping carton
  - Inspect transmission carefully for damage. Report any damage to silver sport transmissions' customer service immediately at 888-609-0094.
- Attach components to transmission
  - Insert the new dipstick tube into the opening on the passenger's side of the transmission.
  - Remove existing quick-disconnect fittings from the a41 and install the supplied 90 degree fittings into both transmission oil cooler line ports on the passenger's side of the transmission using teflon pipe sealant.
  - **Do not** use teflon tape or the case could crack!
  - Attach the supplied braided steel transmission oil cooler lines to the 90 degree fittings. Final orientation shown below.



- Check for dust cover attachment hole
  - Some bellhousings are missing the small hole on the driver's side that is used to secure the dust cover. Verify that the bellhousing you received has this hole.
  - If not, temporarily bolt the dust cover to the bellhousing to use as a template. Mark the spot with a center punch, and drill a hole through the bellhousing using a #1 (or 7/32") drill bit.





DRILL HOLE HERE IF MISSING

- Final preparation for install

- Secure the unit to the transmission jack.
- Remove the torque converter retaining tabs. . Do not discard the retaining tabs or bolts, they will be needed if the transmission ever needs to be returned for service.
- Verify torque converter bolt pattern matches your flexplate bolt pattern **before** you install transmission in vehicle. If your flexplate bolt pattern does not match you will need a flexplate with a 10.75 inch bolt circle.



REMOVE  
RETAINING  
TAB

- Remove plug protection plate and discard.



PROTECTION  
PLATE

- Install isolator mount to bottom of transmission tailhousing using hardware pack hwg-pack h.



- Never install a solid isolator mount – this could cause case to break.

**IMPORTANT NOTE:**

**DO NOT REMOVE THE TORQUE CONVERTER UNLESS ABSOLUTELY NECESSARY.** THERE IS AN O-RING ON THE INPUT SHAFT THAT IS EASILY DAMAGED WHEN INSTALLING THE TORQUE CONVERTER.

IF THE TORQUE CONVERTER IS REMOVED FROM THE INPUT SHAFT, BEFORE INSTALLATION FIRST MAKE SURE THE GARTER SPRING IS STILL IN PLACE INSIDE THE PUMP-TO-TORQUE CONVERTER SEAL. MAKE SURE THE TORQUE CONVERTER IS STRAIGHT WHEN RE-INSTALLING. SUPPORT THE WEIGHT OF THE TORQUE CONVERTER AND ROTATE IT AS YOU INSTALL IT. DO NOT SLIDE THE CONVERTER INTO PLACE WITH THE WEIGHT OF THE CONVERTER RESTING ON THE INPUT SHAFT.

**IMPORTANT NOTE:**

IF THE TORQUE CONVERTER IS REMOVED FROM THE TRANSMISSION INPUT SHAFT, CONFIRM FULL ENGAGEMENT BY CHECKING OFFSET DIMENSION USING A STRAIGHT EDGE (AS SHOWN BELOW.) OFFSET FROM BELLHOUSING FACE TO MOUNT PADS MUST BE **1"** WHEN INSTALLING. ROTATE TORQUE CONVERTER DURING REASSEMBLY TO FULLY ENGAGE TO INPUT SHAFT.



## **Transmission control unit install**

- Install transmission controller (tcu) and wiring harness before installing transmission into vehicle
  - This will allow clearance for proper fitment of wiring harness and easy access to underbody.
  - Switch to “compushift install guide” (compushift controller) or “tcu installation manual” (maa-04000)(ez tcu controller) now.
  - Return to this point in the instructions when you have completed the tcu installation.

**NOTE:** THE CONDITION OF YOUR VEHICLE'S ELECTRICAL SYSTEM CAN AFFECT THE OPERATION OF THE TRANSMISSION. MAKE SURE THAT THE TCU HAS A STABLE AND RELIABLE 12V SWITCHED POWER SOURCE AND A GOOD GROUND CONNECTION. VERIFY THAT THE ENGINE AND TRANSMISSION HAVE A GOOD GROUND CONNECTION TO THE CHASSIS.

## **Transmission installation**

- Lift transmission into place
  - If available, use a transmission jack to maneuver the unit into the vehicle.

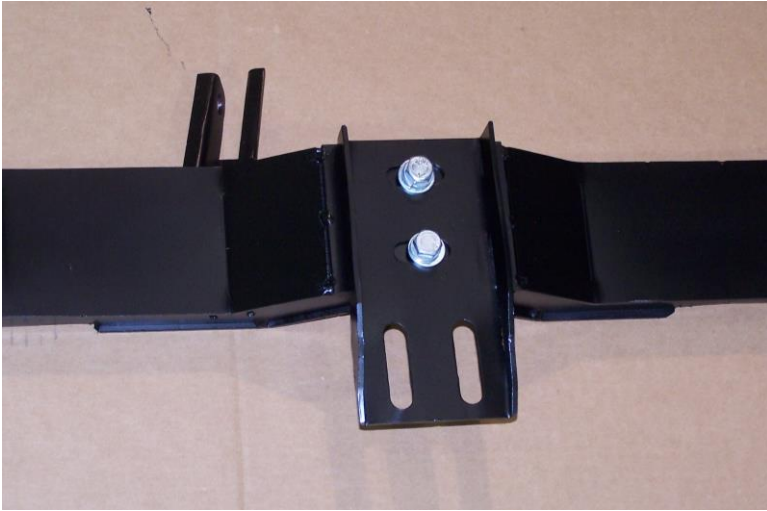


- Be careful of interference with sensors and vehicle wires during insertion.
- Be careful not to pinch tcu wiring harness above transmission.

**WARNING:**  
DO NOT ALLOW THE TRANSMISSION NOSE TO TILT DOWNWARD, OR THE TORQUE CONVERTER MAY SLIDE OFF THE TRANSMISSION INPUT SHAFT!

- Engage transmission to engine
  - Guide torque converter pilot into crank carefully.
  - Attach bellhousing to engine using your original bolts. Secure the dipstick tube by passing one of the bellhousing to engine bolts through the dipstick tube brace.

- Install perch onto crossmember using hardware pack hwg-pack I. Do not tighten bolts yet.



- Place crossmember under tailhousing
  - Attach new crossmember to frame using your original bolts. Tighten crossmember to frame bolts.



- Position perch so that the bolt holes in the isolator mount are aligned with the slots in the perch.
  - Install perch to isolator mount bolts (hardware pack hwg-pack b) loosely, and tighten the perch to crossmember bolts.
  - Lower transmission and allow isolator mount to rest on perch temporarily.
- Confirm proper clearance around transmission
  - In the case of body interference, confirm stock engine mount height, stock crossmember attachment point, stock tunnel, etc. Check for deteriorated body mounts, as that will reduce clearance in the tunnel as well.
  - There should be a minimum of 1/4" clearance between tunnel and transmission at any point.
  - If it is necessary to move the transmission left or right to gain clearance, you may support the transmission again with the jack, and loosen the perch to crossmember bolts. Move the transmission and perch to the left or right as needed. Tighten the perch to crossmember bolts again after the desired clearance is achieved.
  - Tighten perch to isolator mount bolts.



- Attach torque converter to flexplate

- Rotate the torque converter so that the flexplate bolt holes align with the tapped holes in the torque converter. Many chevrolet flex plates have six bolt holes, only three of them will line up with the torque converter.
- Fasten flex plate to torque converter using the supplied m10 x 1.5mm flexplate bolts (qty 3).



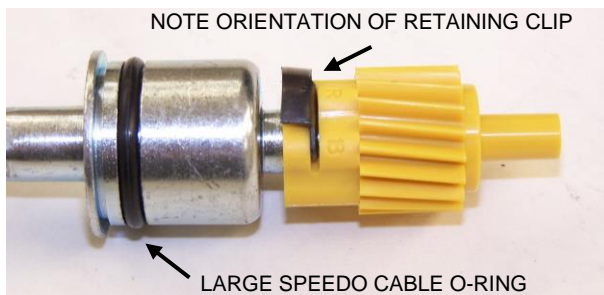
- Install dust cover

- Use hardware pack hwg-pack m to attach the dust cover to the bellhousing. The self-tapping screw is used in the small hole that was either verified or drilled out earlier in the instructions.

- Install starter

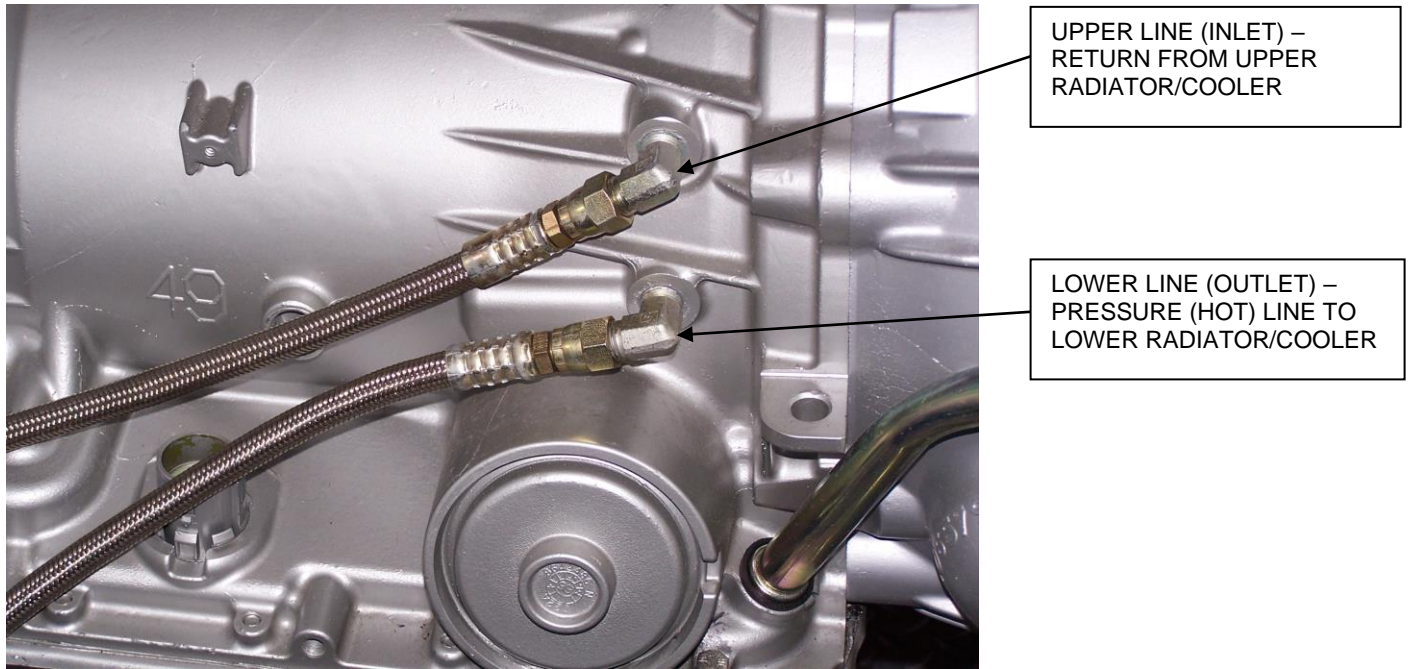
- Attach speedometer cable using hardware pack hwa-pack s

- Connect supplied speedometer cable to the speedometer.
- Install small o-ring on speedometer cable.
- Install supplied gear over cable end to trap the small o-ring and insert retaining clip.
- Retaining clip flange must face away from gear towards cable to avoid interference with drive gear.
- Lightly lubricate large speedo cable o-ring with transmission fluid, and install a shown.



## **Final installation**

- Connect transmission oil cooler lines
  - Route transmission oil cooler lines along passenger side frame rail and above the upper control arm.
  - Make sure that the transmission oil cooler lines will not come in contact with any moving parts or the exhaust.
  - Connect the transmission oil cooler line from the lower (outlet) port on the transmission to the factory rubber line going to the lower (inlet) port of the transmission oil cooler in the radiator. It may be necessary to trim excess length from your factory rubber line.
  - If auxiliary transmission oil cooler is not being used, connect the transmission oil cooler line from the upper (inlet) port on the transmission to the factory rubber line coming from the upper (outlet) port of the transmission oil cooler in the radiator. It may be necessary to trim excess length from your factory rubber line.



- Install auxiliary transmission oil cooler (if included)
  - Follow attachment instructions included with transmission oil cooler.
  - Auxiliary transmission oil cooler inlet will be connected to stock radiator outlet (top port).
  - Auxiliary transmission oil cooler outlet will be connected to the transmission oil cooler line going to the upper (inlet) port on the transmission.

**NOTE: IF AUXILIARY TRANSMISSION OIL COOLER IS USED, FLUID MUST CIRCULATE THROUGH THE TRANSMISSION OIL COOLER IN THE RADIATOR FIRST, AND THEN THE AUXILIARY TRANSMISSION OIL COOLER.**

- Attach shift mechanism
  - Refer to instruction supplement including with shifter modification kit for converting your shift mechanism from the original 3 speed to the new a41 4-speed overdrive shift pattern.
  - If using an aftermarket shifter, it must be compatible with a thm700r4 / 4l60 / 4l60e model transmission.
- **NOTE: BE SURE TO ROUTE THE SHIFT CABLE WITHOUT SHARP BENDS. SHARP BENDS CAN RESTRICT FREE CABLE MOTION WITHIN THE CABLE SHEATH RESULTING IN HIGH SHIFTING EFFORT.**
- Install emergency brake pulley and cable

- Attach driveshaft

- Slide the slip yoke all the way into tailhousing.
- Insert driveshaft into tunnel and attach to the differential.



- Pull slip yoke out to meet the front u-joint and attach.



- Fill with fluid

- **Note:** transmission has been filled with mobil 1 synthetic atf for testing, and then partially drained for shipping. 5 to 6 quarts of mobil 1 remain in the transmission you have received.
- Regular dexron ® iii or mercon® fluid may be used, but the benefits of the synthetic fluid are then lost.
- Add fluid 1 quart at a time until fluid reaches the bottom of the "hot" range on the dipstick. **Do not overfill!** - this will cause fluid to aerate and foam resulting in higher heat and possible low pressure problems.
- The transmission could require an additional 6 to 8 quarts to be added, depending on how much remained in the transmission after draining at the factory.

## VEHICLE TESTING

- Final check

- Make sure transmission is filled to the bottom of the “hot” range on the dipstick.
- Reconnect battery and confirm function of brake lights.
- With ignition switched to ‘on’ (not ‘start’), confirm that reverse lights are lit when transmission is shifted into reverse.
- Confirm function of neutral safety switch by performing the following steps:
  1. Disable the ignition coil to prevent accidental starting of engine.
  2. Make sure no people, pets, equipment etc. Are in front of the vehicle.
  3. Shift transmission into ‘drive’ (od or 4<sup>th</sup>)
  4. With foot firmly on brake pedal, briefly turn the ignition switch to ‘start’ to momentarily “bump” the starter.
  5. If starter functions, check the adjustment and wiring of the neutral safety switch and repeat this check.
  6. Shift transmission into reverse and all forward gears and confirm that it will not start unless in park or neutral.
  7. If all gears are correctly locked out as expected, reconnect ignition coil and proceed to the next step.

- Start-up

- Make sure transmission is filled to the bottom of the “hot” range on the dipstick.
- With lever in ‘park’, start engine and allow to idle for a few minutes.
- Check for leaks while engine and transmission are warming up.
- Note that transmission fluid level will drop as the pump fills the torque converter. Add ½ quart of atf at a time until fluid reaches the bottom of the “hot” range on the dipstick.
- Slowly rev engine while in ‘park’ and observe any unusual sound or vibration.
- With foot firmly on brake pedal and engine at idle, shift transmission through all gears.

- Test drive

- Beginning in ‘reverse’ or ‘drive’, test drive at low speeds and low engine rpm in an area free from pedestrians or traffic congestion.
- Gradually increase engine rpm then increase vehicle speed, observing any unusual sound or vibration.
- Re-check fluid after test drive. With transmission fluid hot, engine running and the transmission in “park”, it should be filled to the middle of the “hot” range on the dipstick. **Do not overfill!!!**
- Drive conservatively for the first 500-1000 miles to break-in the transmission.
- Compare this test drive with initial test drive.

**IMPORTANT NOTE:**  
HARD LAUNCHES SHOULD BEGIN IN  
MANUAL-LOW AND USE MANUAL SHIFTING  
IN ORDER TO MAXIMIZE TRANSMISSION  
LONGEVITY. THIS WILL AVOID  
OVERLOADING SPRAG CLUTCH UNDER  
MAXIMUM TORQUE WHILE IN ‘DRIVE’.



## **SPECIFICATIONS AND MAINTENANCE**

Change transmission fluid and filter every 30,000 miles.

Filter & gasket application is 2001 chevrolet 1500 2wd pickup truck, gm # 24208576 or equivalent.

Do not exceed the following torque measured at the engine crankshaft:

- STAGE 1: 450 LB-FT
- STAGE 2: 550 LB-FT
- STAGE 3: 650 LB-FT

## **GEAR RATIOS:**

- 1<sup>ST</sup> GEAR = 3.06:1
- 2<sup>ND</sup> GEAR = 1.63:1
- 3<sup>RD</sup> GEAR = 1.1:1
- 4<sup>TH</sup> GEAR = 0.70:1
- REVERSE = 2.29:1

### **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  
AUTOMATIC TRANSMISSION!**