



## TRANSMISSION REMOVAL

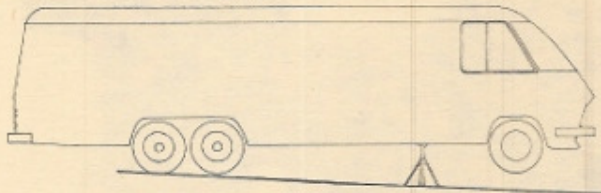


Figure 88 — JACKING VEHICLE — With a hydraulic jack placed at the forward crossmember of the sub-frame or at the sub-frame/bumper mount rails, elevate the vehicle so the floor to underside of the bumper height is 3'6". Place a rated 6-ton jackstand at both right and left frame rails at approximately 6" behind the sub-frame.

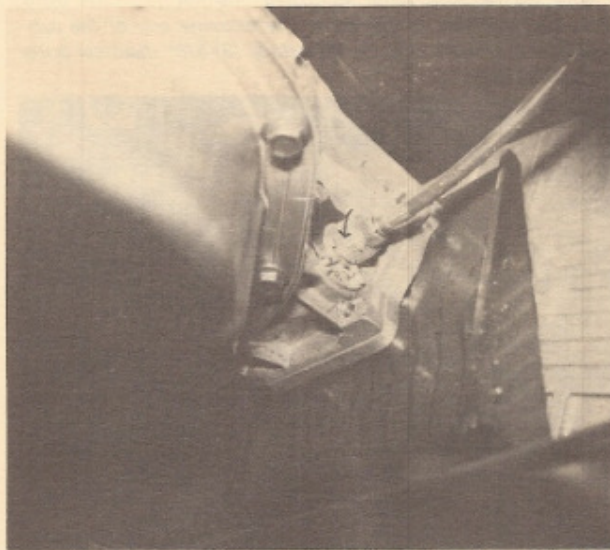


Figure 89 — SPEEDOMETER CABLE REMOVAL — Disconnect the speedometer cable, located at the far left side of the transmission.

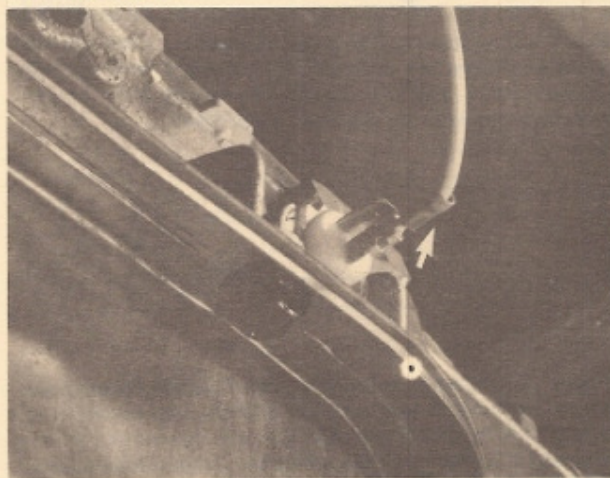


Figure 90 — THROTTLE KICK-DOWN SWITCH DISCONNECT — Remove the wire lead to the throttle kick-down switch, located at the lower left side of the transmission.

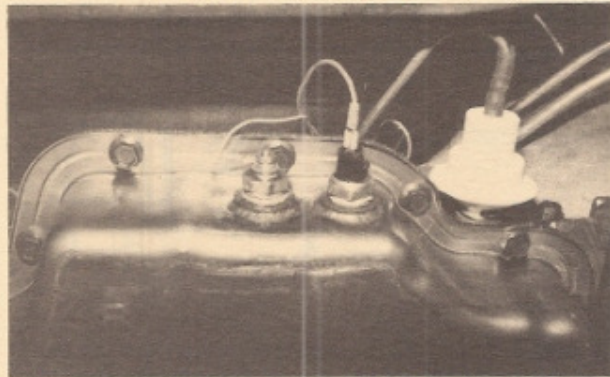


Figure 91 — VACUUM LINE DISCONNECT — Disconnect the vacuum line to the shift modulator.

TRANSMISSION TEMPERATURE SENSOR PROBES — Remove wires located at right side of the transmission oil pan. Mark lines for reinstallation.

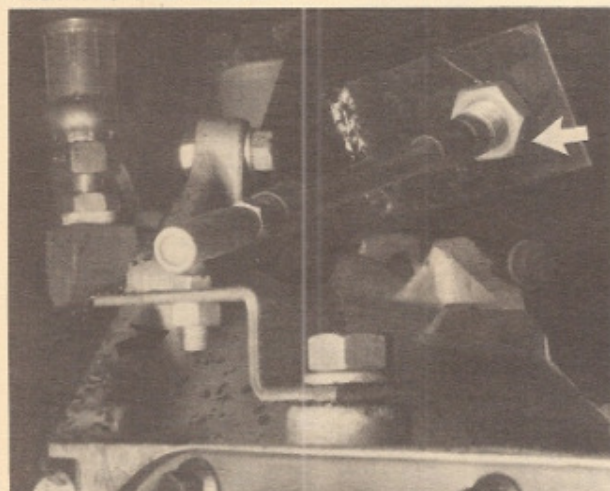


Figure 92 — SHIFT CABLE REMOVAL — Remove the transmission shift cable by removing the nut from the stud at the shift lever. Also, remove the large nut at shift cable and bracket at the bellhousing.

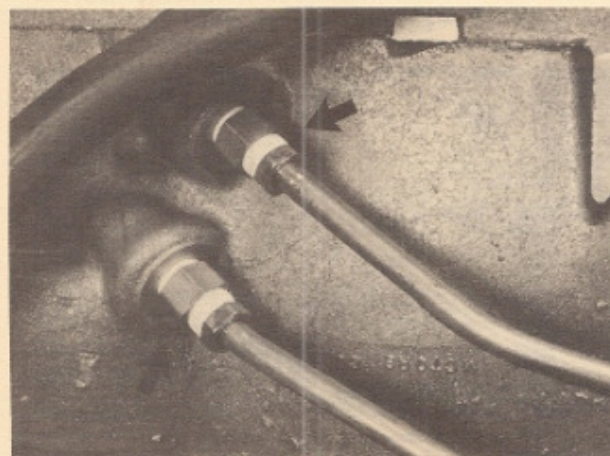


Figure 93 — TRANSMISSION COOLANT LINES DISCONNECT — Disconnect the transmission fluid coolant lines.





## TRANSMISSION REMOVAL (Continued)

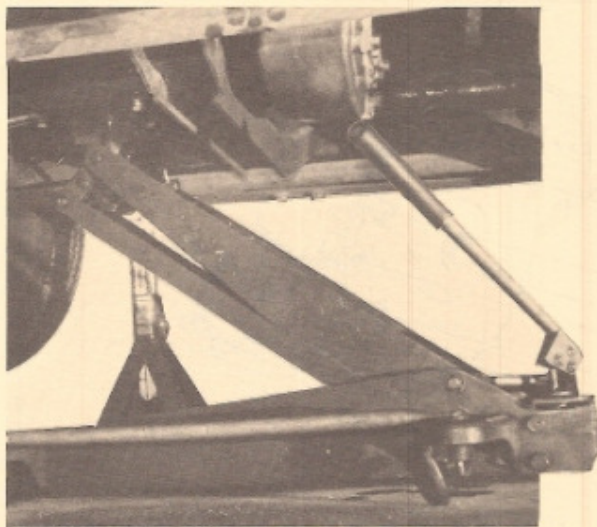


Figure 94 — TRANSMISSION JACK — With the transfer case removed (see page XX), remove the support bracket for the transfer case. NOTE: Be sure to support the transmission with a transmission jack before proceeding.

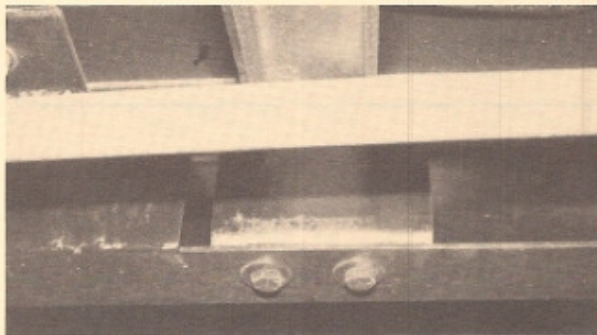


Figure 95 — No. 3 CROSSMEMBER — No. 3 crossmember is held securely with four (4) 1/2" diameter bolts located at each side on the frame rail. Two bolts are located at the plate facing outward toward center of the vehicle and two bolts are located underside of the frame rail. Remove these bolts and slide the crossmember toward the rear of the vehicle. For reinstallation, torque these bolts to 75-80 ft. lbs.

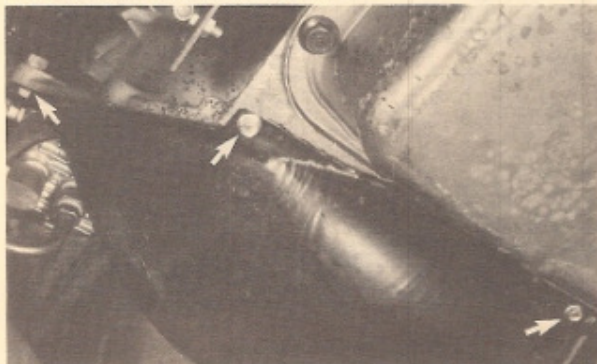


Figure 96 — DUST COVER REMOVAL — Remove three (3) 3/8" self-tapping screws and one (1) 3/8" bolt that secures the dust cover of the transmission.

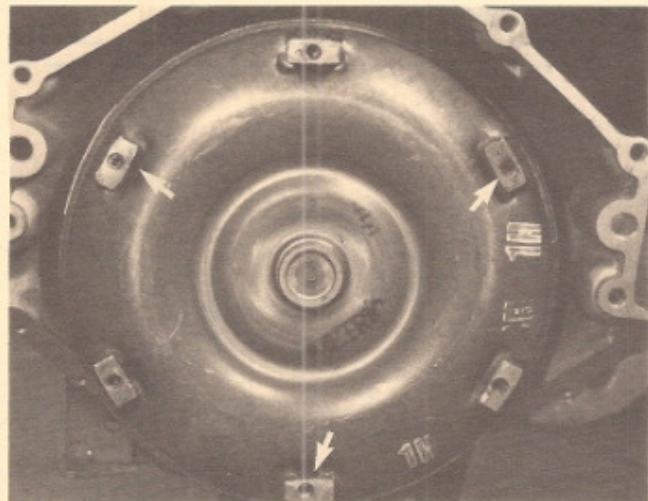


Figure 97 — TORQUE CONVERTER — With the dust cover removed, unbolt the six (6) 15mm bolts that secure the torque converter to the flywheel. (See figure 100.)



Figure 98 — BELLHOUSING — Remove the six (6) 9/16" head bolts about the bellhousing that secure the transmission to the engine.

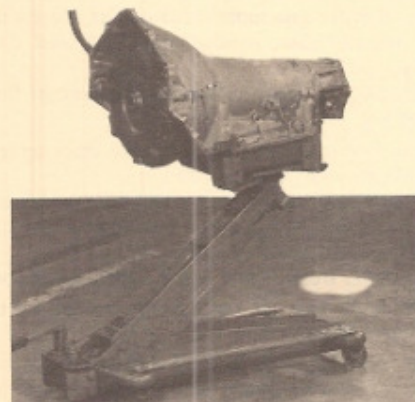


Figure 99 — LOWER TRANSMISSION — Carefully maneuver the transmission with the torque converter rearward approximately 4". Lower transmission and torque converter.





## TRANSMISSION REMOVAL (Continued)

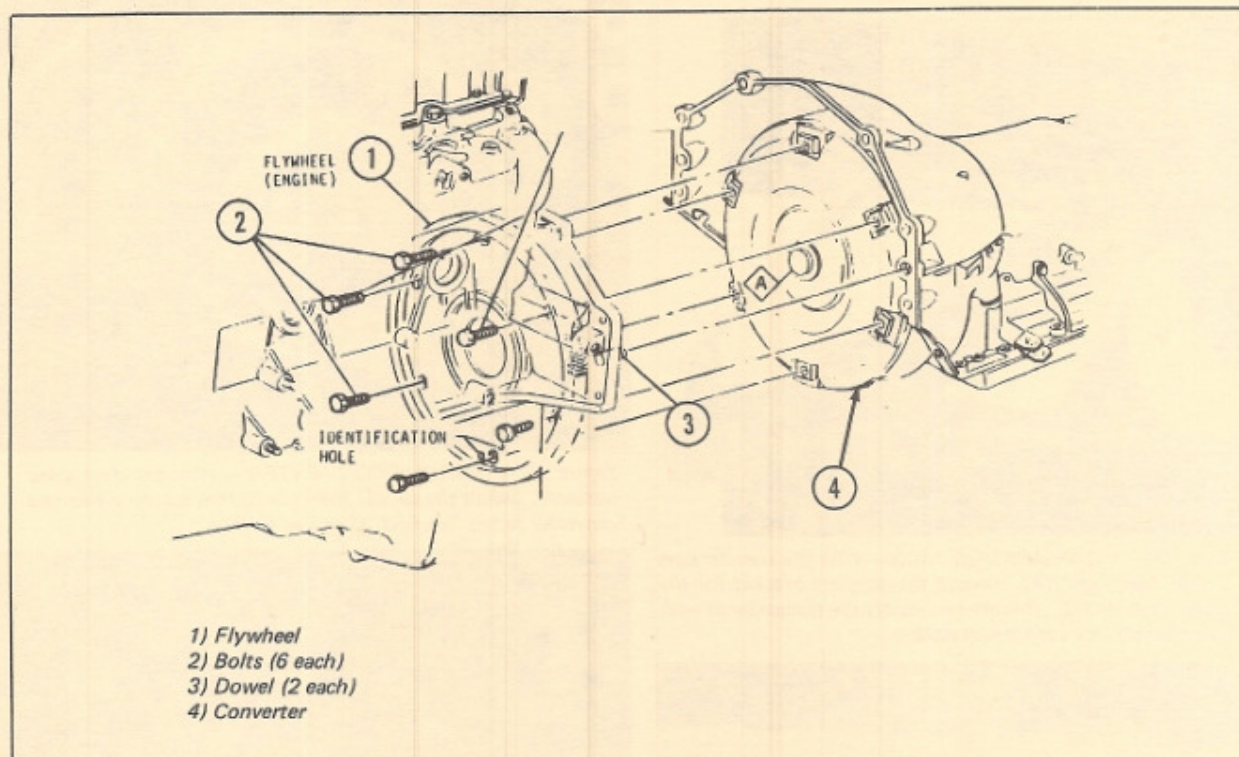


Figure 100 — Torque Converter to Flywheel Installation

## TRANSFER CASE REMOVAL

1. Remove drive line rear "U" bolts and swivel drive line away from transfer case output shaft.
2. Place a transmission jack under transmission and raise transmission, transfer case, and drive line to relieve strain on rear transfer case support plate bolts. Place a drain pan under transfer case; remove drain plug and drain fluid from case.
3. Remove two (2) upper bolts from transfer case first. (Figure 101.)
4. Remove the lower four (4) nuts from studs on rear of the transmission case. (Figure 103.)  
NOTE: It may be necessary to raise and lower transmission and case 1 1/2" to get better access in removing (and to install) nuts and bolts securing units.
5. Remove rear transmission and transfer case support plate, by removing two (2) bolts at the bottom of the plate. (See figure 104.)
6. Lower transfer case and transmission approximately 1 1/2" to clear the underside of coach floor during transfer case removal.
7. With two men working, slip transfer case off rear studs.

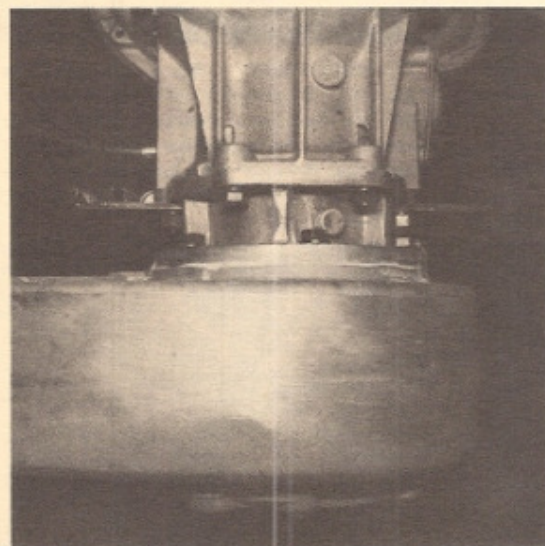
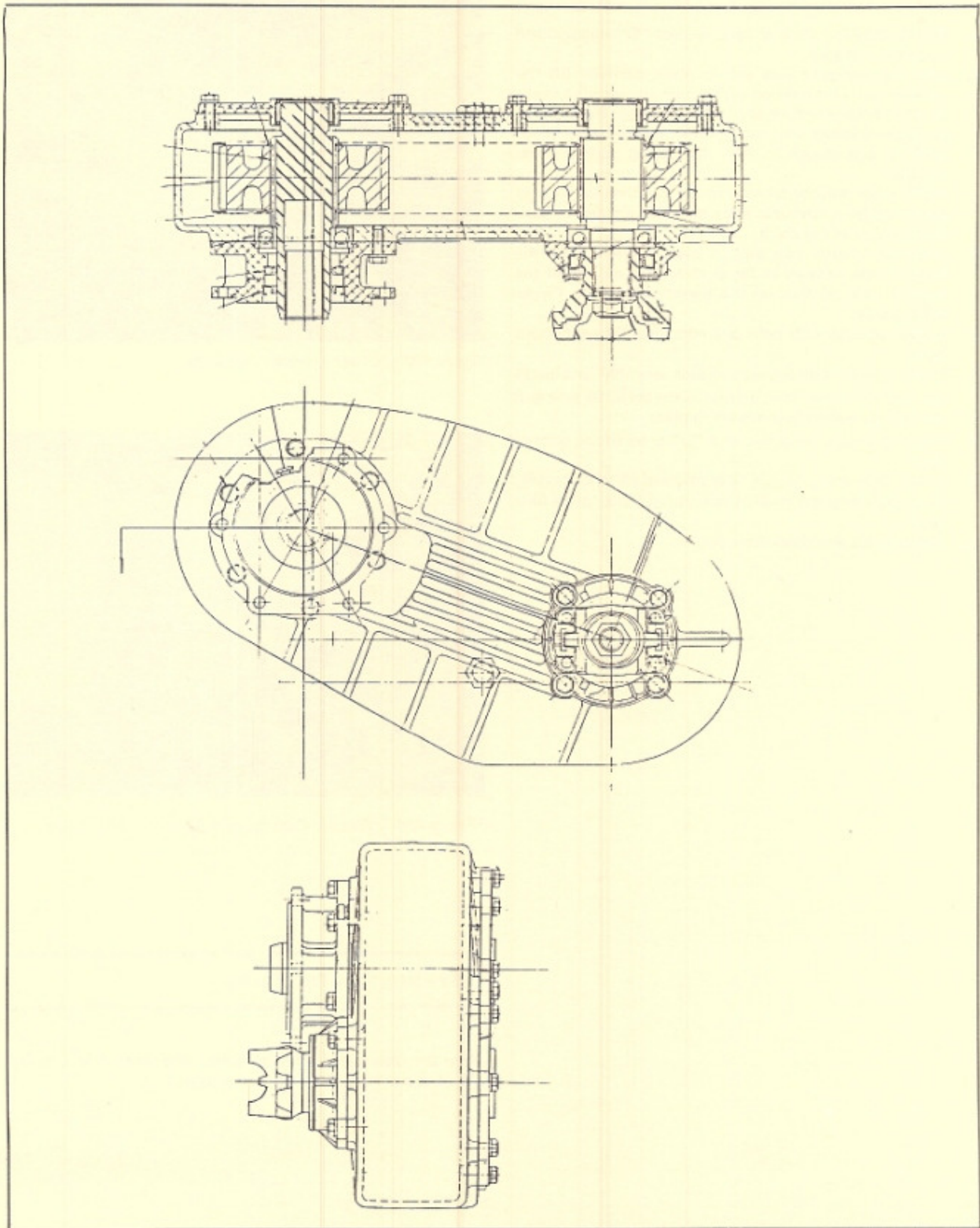


Figure 101 — Upper Transfer Case Bolts



## TRANSFER CASE

*Figure 102 – Drive Train Transfer Case*





## TRANSFER CASE INSTALLATION

1. Before installing transfer case, inspect "O" ring seal and replace if damaged.
2. With the hydraulic jack still in place, carefully lift the transfer case into position on the rear transmission studs. Be sure that the bottom four (4) studs of the transmission protrude through the back of the transfer case about 3/16" or just enough to allow the support plate to be replaced.  
NOTE: Care must be taken to insure that the case is safely supported by a mechanic since the studs are just to position the case at this point.
3. After the transfer case support plate is placed, slide the transfer case forward as far as it will go and install the bottom four (4) nuts on the transmission studs. Finger tighten only.
4. Install upper two (2) bolts and nuts; then tighten bottom nuts.
5. Lower transfer case and transmission assembly, and install the two (2) lower rear transfer plate bolts. Be sure that the two (2) rubber bushings are in place.
6. Reinstall engine drive line and "U" bolts to the transfer case.
7. Install drain plug; remove filler plug and fill with Dextron II or equivalent automatic transmission fluid. Install filler plug.
8. Remove jack and check for leaks.

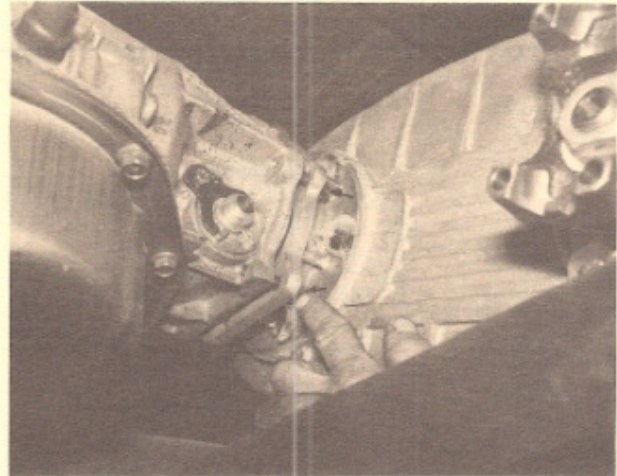


Figure 103 – Lower Transfer Case Bolts

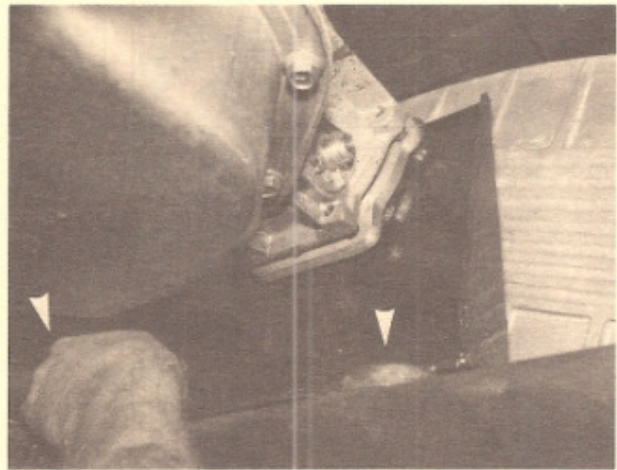


Figure 104 – Transfer Case Support Bolts

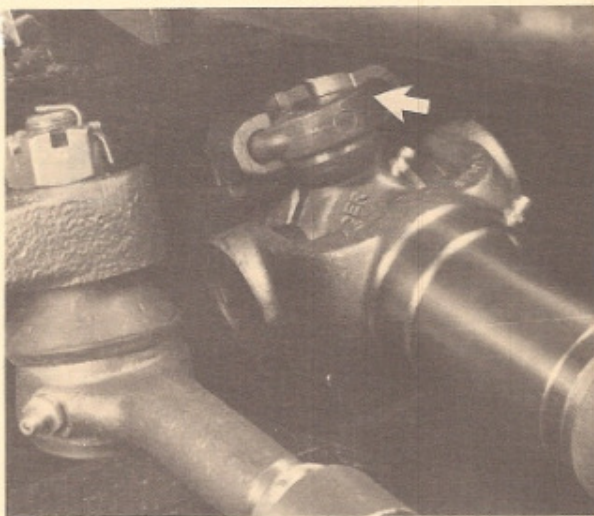
## DIFFERENTIAL REMOVAL

For the differential removal, follow the steps shown in the illustrations beginning on the next page.

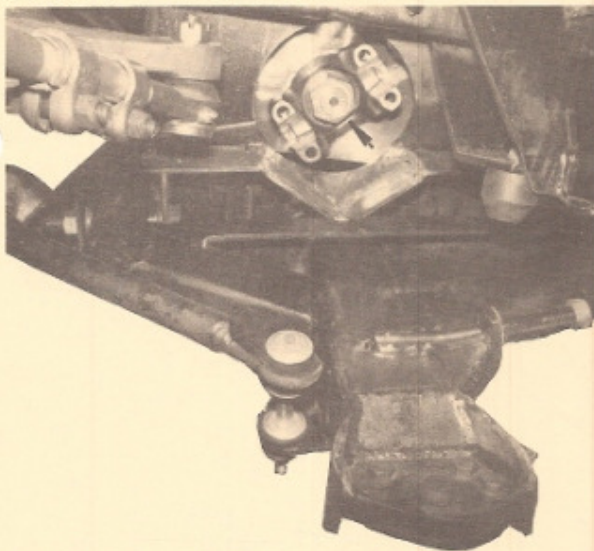




## DIFFERENTIAL REMOVAL

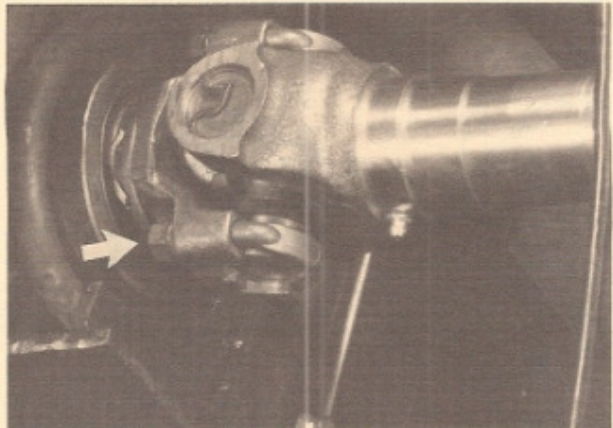


**Figure 105 – AXLE SHAFT REMOVAL** – Disconnect both axle shafts at the differential by removing four (4) nuts from the two (2) "U" bolts at each universal.



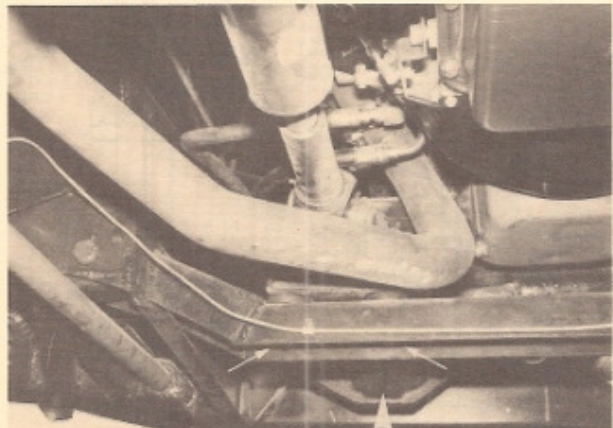
**Figure 106 – INNER YOKE REMOVAL** – Remove 1 11/16" retaining nut that secures the inner yoke. Remove the inner yoke by using a claw puller.

**Figure 110 – SIDE MOUNTING BRACKETS** – Remove the three (3) 1/2" diameter bolts that secure the differential to the side mounting brackets. The side mounting brackets are located inside the frame rails. Loosen the two (2) bolts topside of the support brackets for easier removal of the differential. Carefully lower and maneuver the differential away from the chassis.

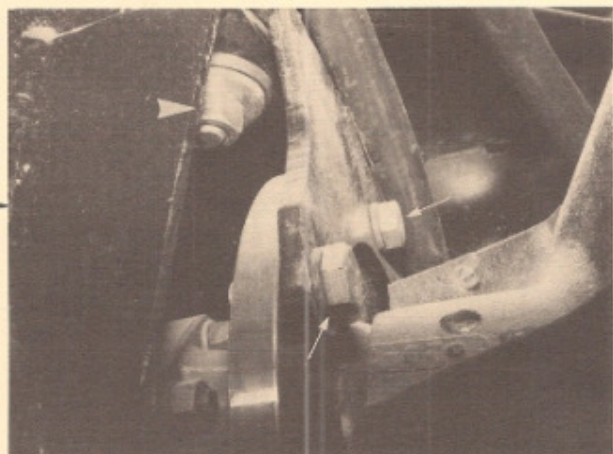


**Figure 107 – DIFFERENTIAL UNIVERSAL DISCONNECT** Remove the four (4) nuts to the two (2) "U" bolts at the main driveshaft universal at the differential. Slide the drive shaft toward the rear and to one side.

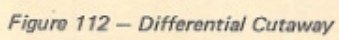
**Figure 108 – FLOOR JACK** – Place a hydraulic floor jack beneath the differential to take the pressure from the crossmember supporting the differential.



**Figure 109 – "U" BOLT REMOVAL** – Remove the large "U" bolt that secures the differential to the crossmember support.











## AXLE HALF-SHAFT

**REVCON HALF-SHAFT SERVICE** — These joints are precision built and should be treated and serviced with care. Freedom from grit and other harmful substances, as well as proper lubrication, is important. Use only a best grade, non-channeling lubricant, free from corrosive agents. Usually, in wheel applications, the same lubricant may be used in the joint as is used for the wheel bearings and is usually of a No. 1 or No. 2 consistency. It should be of a type which will cling to the surfaces and be of proper consistency for the climate in which it is to be used.

**Half-Shaft Interchangeability of Parts** — All joints up to and including the "OC" (1 1/4") series are furnished with either standard or oversized .009+ balls. All joints from and including the "OE" (1 1/2") series are furnished with either standard or oversized .012+ balls. All standard ground assemblies have interchangeable parts in like assemblies, and all oversize ground assemblies have interchangeable parts in like assemblies.

All oversize parts are electrically etched with either a .009+ or .012+ and can readily be identified. The etching can be found on the ground locating face of the outer race; on the ground face of the inner race, and on either ground face of the ball cage. The balls can be identified with micrometers.

### Half-Shaft Recommended Greases —

|               |                        |
|---------------|------------------------|
| Amoco         | Rykon, EP #1           |
| Mobil Oil Co. | Mobilplex, EP #1 or #2 |
| Pure Oil Co.  | POCO HT-EP #2          |
| Shell Oil Co. | Alvania EP #1 or #2    |
| Sun Oil Co.   | Sunaplex 991 EP        |
|               | or                     |
|               | Prestige 741 EP        |

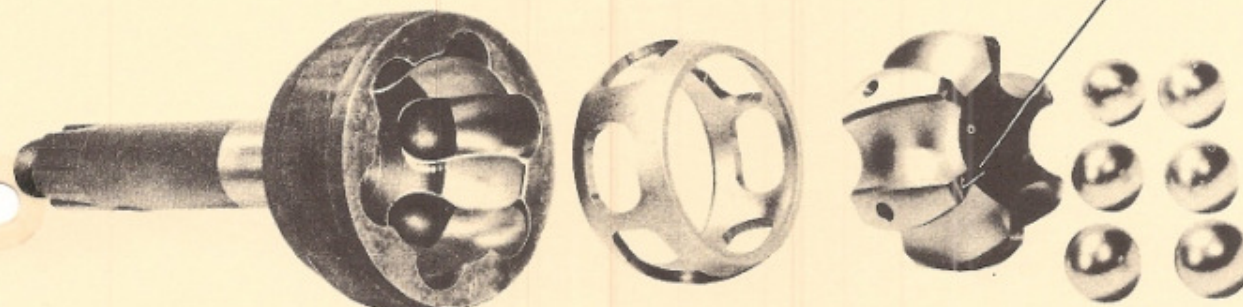
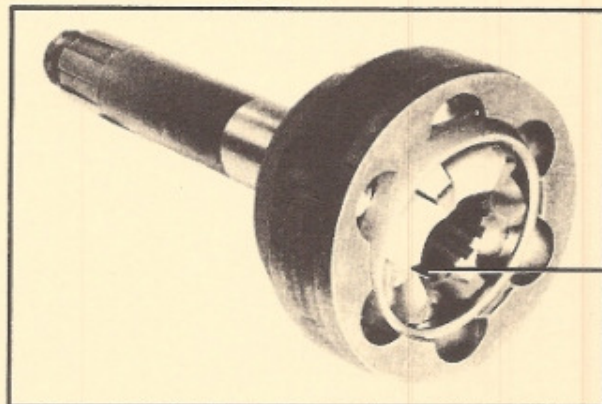


Figure 113 — Bell Joint Assembly (Half-Shaft Assembly)

### HALF-SHAFT DISASSEMBLY —

1. Remove axle shaft. Several different shaft locking means are employed and specific instructions are available from Con-Vel engineering.
2. Tilt inner race to double angle of cage (see figure 114) until one ball can be removed. Roll inner race and cage into corresponding position for removal of adjacent ball. Proceed until all six balls are removed.
3. Position cage and inner race at right angles with outer race so that rectangular cage openings mesh with opposite teeth of outer race (see figure 115). Withdraw cage and inner race assembly.
4. Turn inner race within cage until one tooth projects through rectangular opening of cage (see figure 116). Roll inner race out of cage.

### HALF-SHAFT REASSEMBLY —

1. Clean and lightly lubricate all parts.
2. Secure outer race in upright position with large opening facing upward.
3. Put inner race into cage by inserting one inner race tooth into rectangular opening of cage and roll inner race in place (see figure 116).
4. Insert cage and inner race into outer race. Position rectangular openings of cage to clear opposite teeth of outer race (figure 115). Lower cage with inner race into place and turn into position. Inner race must be positioned so stamped arrow on face is exposed as shown in figure 113.
5. Tilt inner race and cage so that one ball can be inserted through cage opening into groove (figure 114). Inner race should be inclined approximately twice the cage angle. Then roll all parts to corresponding position for adjacent ball, and so on until all balls are assembled. A slight amount of tapping with a soft object may be necessary during assembly, but do not use excessive force while inserting the balls, because it is possible to lock the joint after two or three balls are inserted, and some difficulty may be experienced in trying to insert the remaining balls.

Stamped Arrow on Inner Race  
must be on this Exposed Face





# AXLE HALF-SHAFT (Continued)



Figure 114 — Tilting inner race.



Figure 116 — Turning inner race within cage.

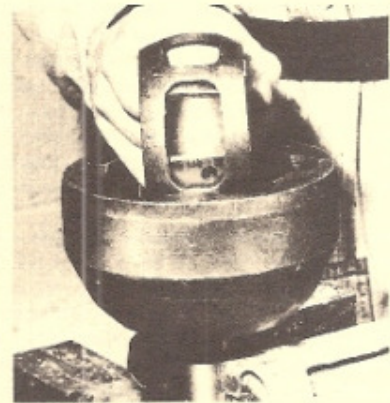


Figure 115 — Positioning cage and inner race.

6. Fill splined hole and cavity below splined hole with lubricant.
7. Inset splined shaft into inner race by placing shaft end into the inner race until the snap ring rests in the large chamfer. Centralize the snap ring with the fingers. Use a soft hammer and strike a sharp blow downward on the end of the shaft; the snap ring will collapse and slide through the splined hole to lock the shaft with the snap ring expanding against the inner chamfer of the spline. It is important that the snap ring be well centered before driving the shaft down. Other shaft locking means are employed. Specific instructions are available from Con-Vel engineering.
8. A locking tendency while swinging the shaft across center is usually present when the joint is not rotating. This may be disregarded and will not occur when the joint is rotating during operation.
9. Cover joint to guard against entry of foreign particles or grit.
10. When joint is installed in housing, fill housing to specified grease quantity, or level.