



# Technical Service Information

## CHRYSLER A604 PLANETARY FAILURE

**COMPLAINT:** Before or after overhaul, premature planetary gear failure occurs.

**CAUSE:** The cause may be:

1. Damaged turbine shaft sealing rings or a scored surface where they ride in the rear of the pump cover.
2. A worn bushing in the rear of the turbine shaft where the underdrive clutch hub rides.
3. A restriction in the underdrive clutch hub lubrication holes.
4. Worn bushings in the overdrive clutch hub and shaft.
5. Worn or misplaced (moved) bushings in the 2-4 sun gear hub or a restriction in the two lube holes.
6. End clearance too loose allowing the input drum to "Walk" back and forth causing a loss of lube pressure because of a possible mis-alignment of the lubrication holes.
7. A restricted or blocked oil cooler restricting lubrication flow to the planetary gear train.

**CORRECTION:** Inspect and repair or replace as needed:

Inspect "Turbine Shaft" sealing rings and the sleeve area in the rear of the pump cover for wear. Apply compressed air into hole "A" in turbine shaft and ensure the air exit's through hole "B" freely. (See Figure 1)

Inspect the bushing in the rear of the turbine shaft for wear or scoring. Ensure that the bushing clearance to the Underdrive clutch hub shaft is no more than .003" to .006." (See Figure 1)

Apply compressed air to hole "C," in the end of the Underdrive Clutch Hub Shaft, and ensure the air exits freely through holes "D" and "E" on the sides of the shaft as well as hole "F", which is the .062" hole in the "Splined" end of the shaft. (See Figure 2) Inspect the bushings inside of the "Overdrive Clutch Hub Shaft" for wear or scoring and ensure a snug fit on the "Underdrive Clutch Hub Shaft." Inspect lube holes "G" and "H" and ensure that the bushings are not covering or restricting the lube holes. Replace the overdrive clutch hub and shaft as necessary. (See Figure 3) Inspect the bushings in the "2-4 Sun Gear Hub" for wear or scoring and ensure a snug fit on the "Overdrive Clutch Hub Shaft." Inspect the bushing placement and ensure that the bushings have not "Walked" together causing the two .076" holes, "I" and "J", to be blocked or restricted. A small "Paper Clip" or "Scribe" bent at a 90° angle will serve as a good tool to check for restrictions in these lube holes. (See Figure 4) After re-assembly of the transaxle is completed, "Turbine Shaft" end play "MUST" be measured with the use of a "Dial Indicator." Use the chart in Figure 5 for the correct #4 shim thickness. This is "Critical, "Turbine Shaft End Play" must be between .005" to .015"



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- CORRECTION:**
7. Refer to Figure 6 and enlarge hole indicated by the arrow in the spacer plate, stamped with the number "33" **only**, for better lubrication.
  8. After the transaxle is installed into the vehicle check the amount of cooler flow entering the front cooler fitting by removing the cooler line and placing it into a container. Start the engine and ensure that **more** than 1 quart of fluid is flowing into the container every 20 seconds minimum. If there are any restrictions or not enough flow, the radiator or factory external cooler may require replacement. If the vehicle is equipped with the external "Cooler Bypass," refer to Figure 7 to ensure that the cooler lines are installed correctly onto the transaxle. If the transmission is equipped with the internal cooler bypass valve, refer to Figure 8 to ensure that the bypass valve is assembled correctly into the case.
  9. Refer to Figure 9 for a complete cross-sectional view of all the lube holes and their positioning after re-assembly.

**SERVICE INFORMATION:**

Overdrive Hub and Shaft (.050" larger in diameter).....4659615  
2-4 Sun gear and Hub (.050"larger bushing diameter).....4659618

**NOTE:** The overdrive clutch hub shaft was changed in diameter to prevent it from breaking. The 2-4 sun gear and hub was changed in diameter to accommodate the new overdrive clutch hub shaft. These parts will retro fit to previous design as long as they are used together.

**Figure 1**

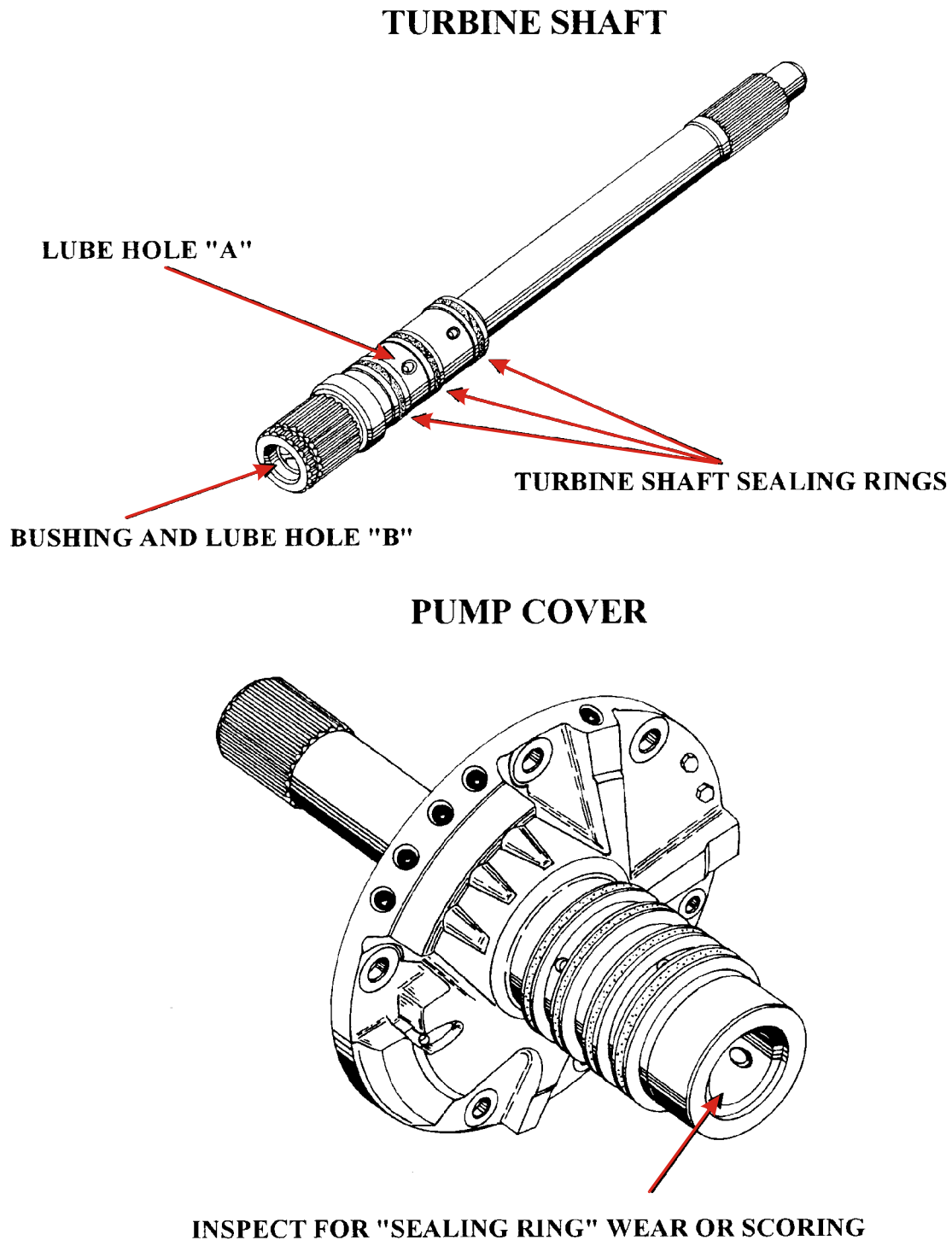


Figure 1

## UNDERDRIVE CLUTCH HUB AND SHAFT

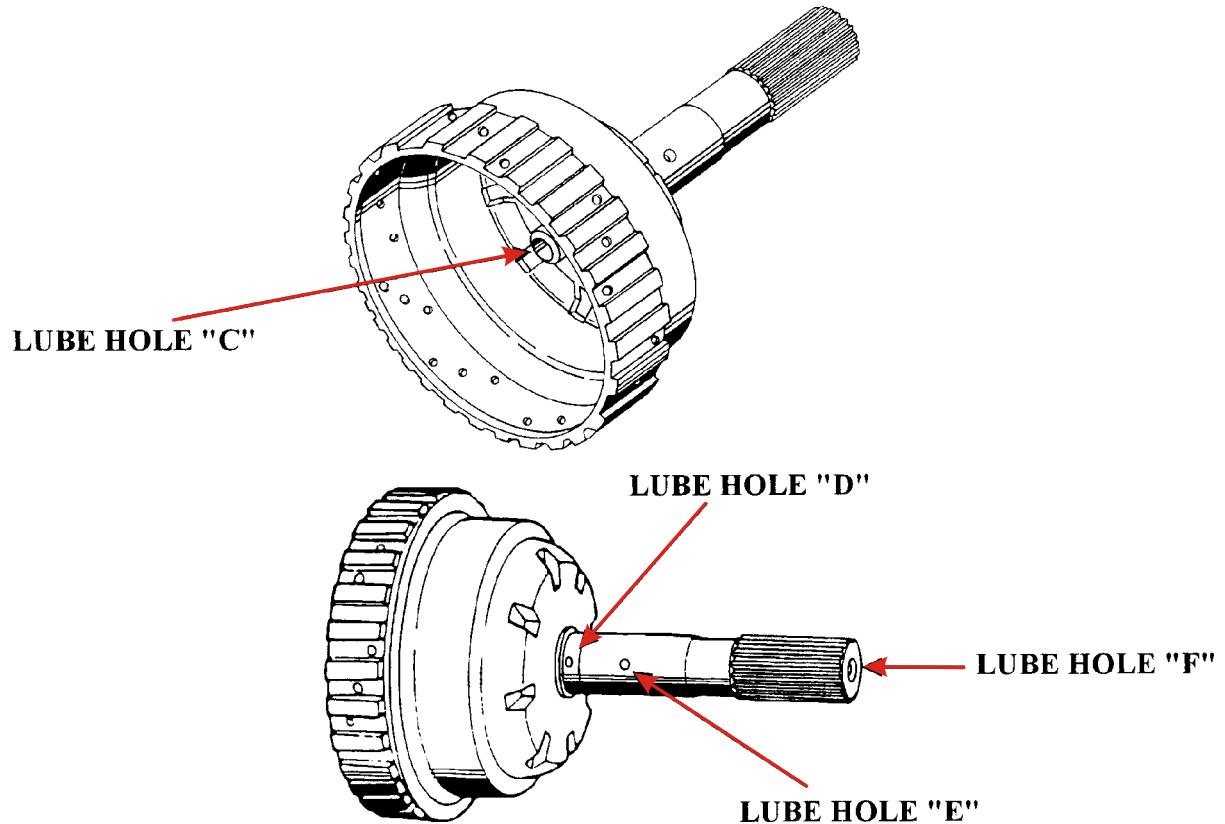


Figure 3

## OVERDRIVE CLUTCH HUB AND SHAFT

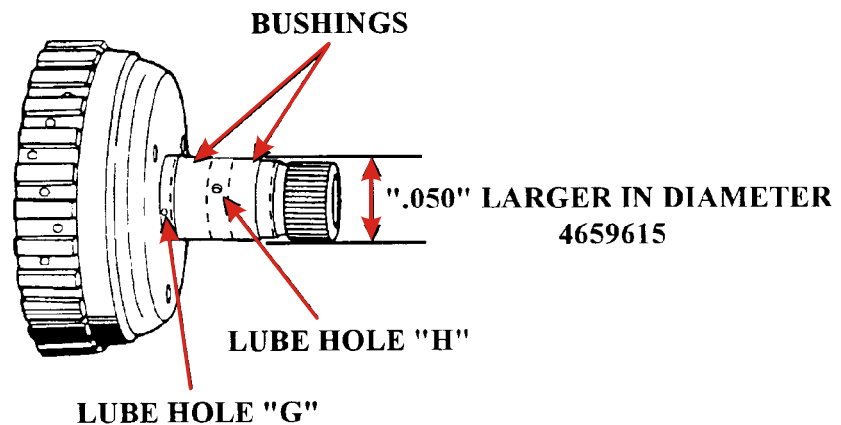


Figure 3

## 2-4 SUN GEAR HUB

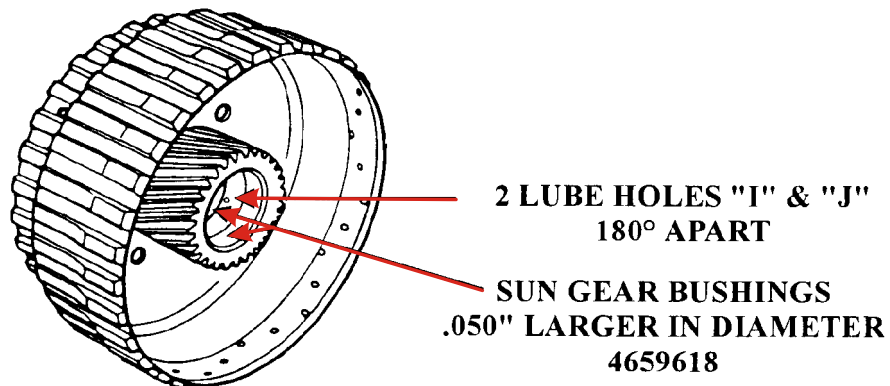
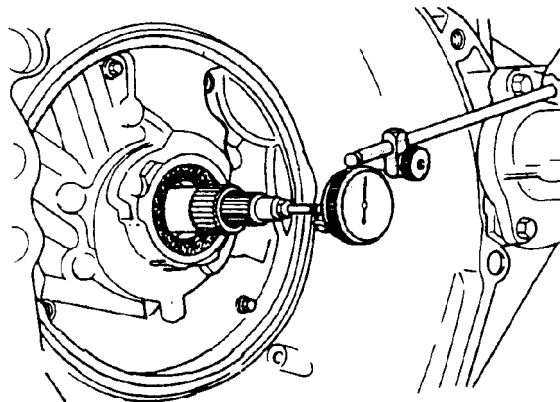


Figure 4

## END PLAY CHECK



"TURBINE SHAFT ENDPLAY" MUST BE BETWEEN .005"-.015"

#4 SHIM THICKNESS		PART NUMBER
mm	inch	
0.93-1.00	.037-.039	4431662
1.15-1.22	.045-.048	4431663
1.37-1.44	.054-.057	4431664
1.59-1.66	.063-.066	4431665
1.81-1.88	.071-.074	4431666
2.03-2.10	.080-.083	4431667
2.25-2.32	.089-.091	4431668
2.47-2.54	.097-.100	4431669
2.69-2.76	.106-.109	4446670
2.91-2.98	.114-.117	4446671
3.13-3.20	.123-.126	4446672
3.35-3.42	.132-.135	4446601

Figure 5

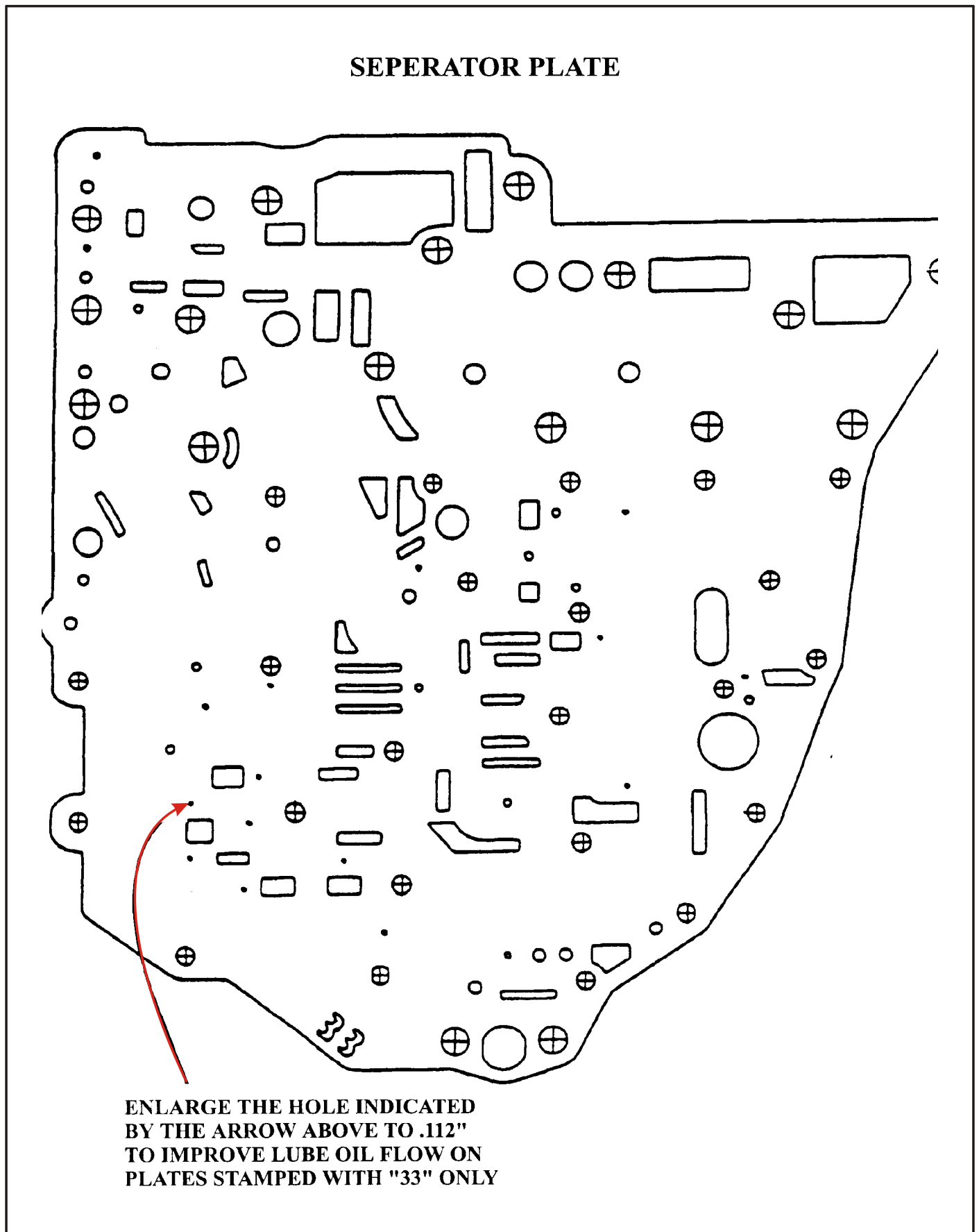
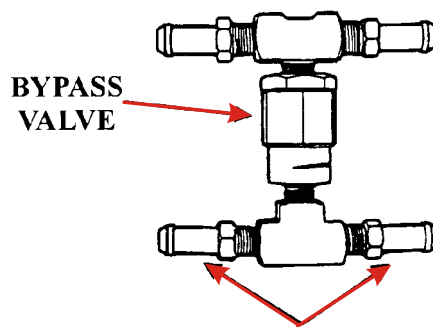
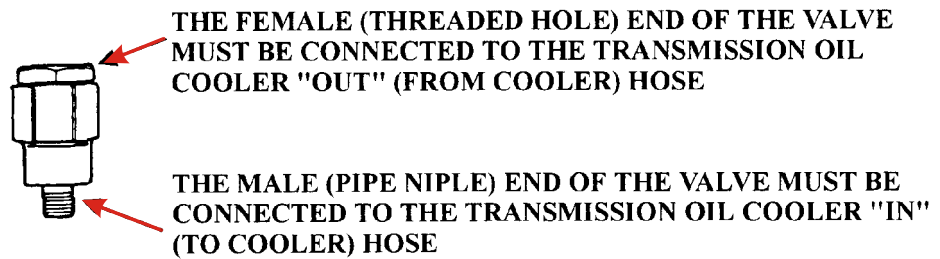


Figure 6

## EXTERNAL "COOLER BYPASS"



THIS SIDE OF THE BYPASS VALVE ASSEMBLY "MUST" BE CONNECTED TO THE TRANSMISSION OIL "IN" (TO COOLER) HOSE

**NOTE: THE BYPASS VALVE IS DIRECTIONAL. IF IT IS NOT CONNECTED TO THE TRANSAXLE OIL COOLER HOSES IN THE CORRECT OIL FLOW DIRECTION, THE BYPASS VALVE WILL NOT FUNCTION AND MAY CAUSE PLANETARY FAILURE.**

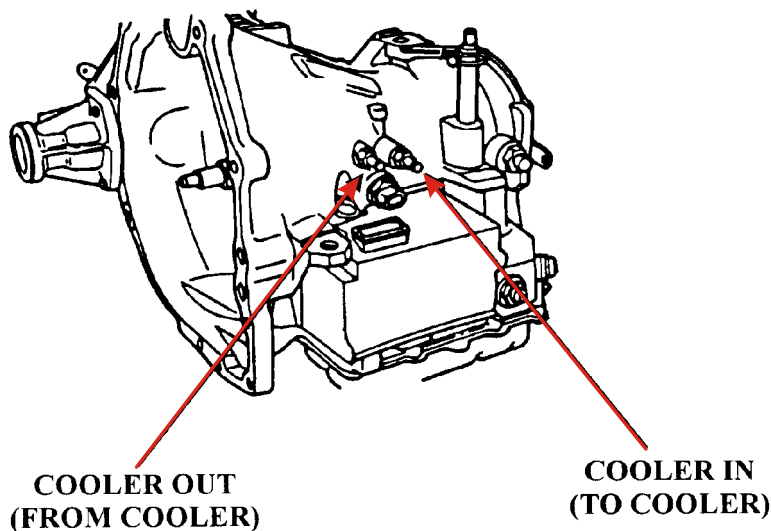
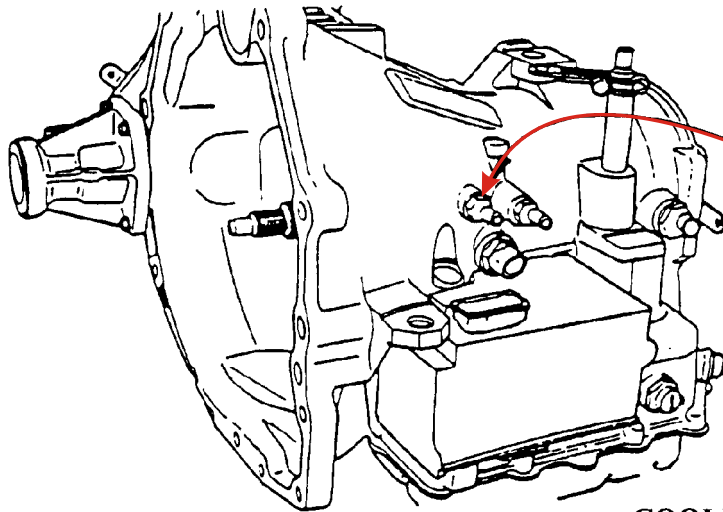


Figure 7

## INTERNAL COOLER BYPASS



THE CASE FOR THE INTERNAL COOLER BYPASS HAS ADDED MATERIAL BETWEEN COOLER FITTINGS TO ACCOMMODATE THE NEW COOLER BYPASS VALVE

COOLER BYPASS VALVE

INSTALL IN THE CASE PASSAGE UNDER THE OIL PUMP IN THE DIRECTION SHOWN

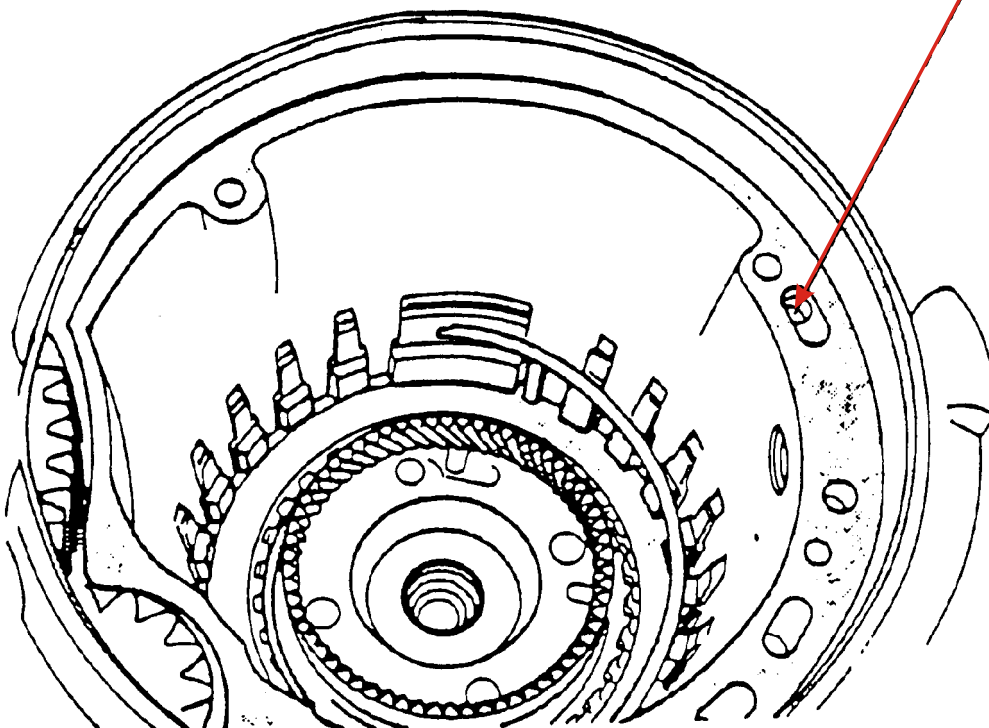
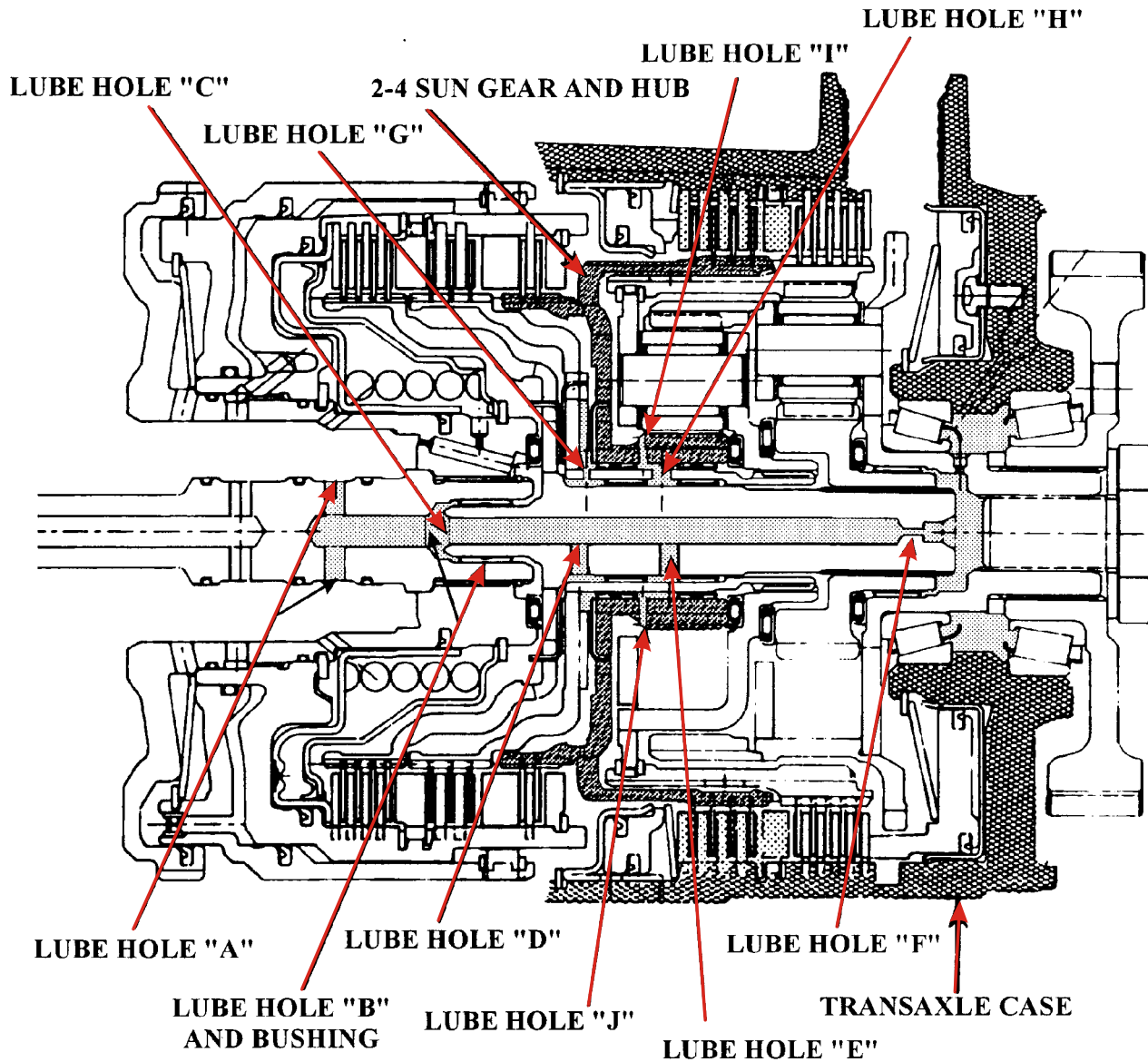


Figure 8



## LUBE FLOW CROSS-SECTION



LUBE HOLE I.D.	LOCATION
LUBE HOLE "A"	TURBINE SHAFT (See Figure 1)
LUBE HOLE "B"	TURBINE SHAFT (See Figure 1)
LUBE HOLE "C"	UNDERDRIVE CLUTCH HUB AND SHAFT (See Figure 2)
LUBE HOLE "D"	UNDERDRIVE CLUTCH HUB AND SHAFT (See Figure 2)
LUBE HOLE "E"	UNDERDRIVE CLUTCH HUB AND SHAFT (See Figure 2)
LUBE HOLE "F"	UNDERDRIVE CLUTCH HUB AND SHAFT (See Figure 2)
LUBE HOLE "G"	OVERDRIVE CLUTCH HUB AND SHAFT (see Figure 3)
LUBE HOLE "H"	OVERDRIVE CLUTCH HUB AND SHAFT (See Figure 3)
LUBE HOLE "I"	2-4 SUN GEAR HUB (See Figure 4)
LUBE HOLE "J"	2-4 SUN GEAR HUB (See Figure 4)

Figure 9