

THICKNESS		IDENTIFICATION NUMBER AND/OR COLOR
1.66 - 1.77mm	(0.065" - 0.070")	1 - -
1.79 - 1.90mm	(0.070" - 0.075")	2 - -
1.92 - 2.03mm	(0.076" - 0.080")	3 - BLACK
2.05 - 2.16mm	(0.081" - 0.085")	4 - LIGHT GREEN
2.18 - 2.29mm	(0.086" - 0.090")	5 - SCARLET
2.31 - 2.42mm	(0.091" - 0.095")	6 - PURPLE
2.44 - 2.55mm	(0.096" - 0.100")	7 - COCOA BROWN
2.57 - 2.68mm	(0.101" - 0.106")	8 - ORANGE
2.70 - 2.81mm	(0.106" - 0.111")	9 - YELLOW
2.83 - 2.94mm	(0.111" - 0.116")	10 - LIGHT BLUE
2.96 - 3.07mm	(0.117" - 0.121")	11 - -
3.09 - 3.20mm	(0.122" - 0.126")	12 - -
3.22 - 3.33mm	(0.127" - 0.131")	13 - PINK
3.35 - 3.46mm	(0.132" - 0.136")	14 - GREEN
3.48 - 3.59mm	(0.137" - 0.141")	15 - GRAY

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Figure 23 Front Unit End Play Washer Thickness Chart

1. (2) Bolts (538).
2. Snap ring (530).
3. Install J-29334/J-7004. Use snap ring (532).
4. Center support (537).
5. Thrust washer (541).

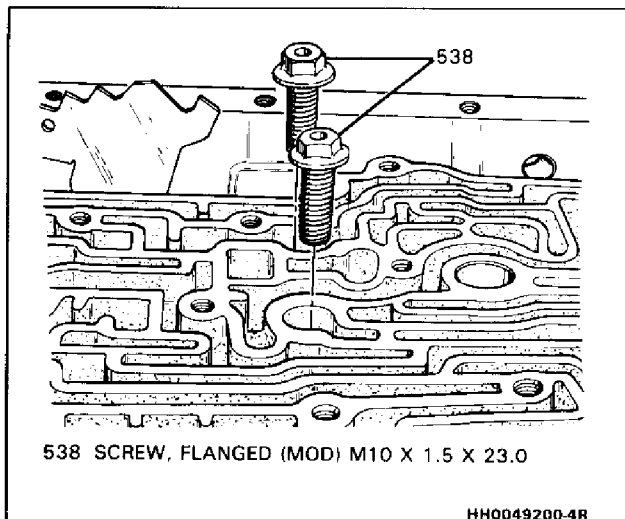


Figure 24 Removing Center Support Bolts

### Forward and Direct Clutch Disassembly

↔ Remove or Disconnect (Figures 27, 28, 29)

#### Tools Required

J-29337 Forward and Direct Clutch End Play Checking Device

1. Install J-29337 as shown.
2. Direct and Forward clutch assembly (604 and 618).
3. Direct clutch (604) from forward clutch (618).
4. Thrust washer (617).
5. Intermediate band assembly (602).
6. Band anchor pin (47).
7. Thrust washer (629).

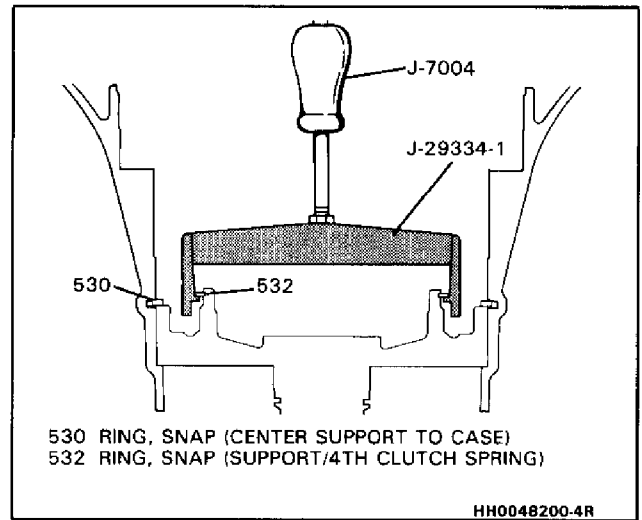


Figure 25 Removing Center Support

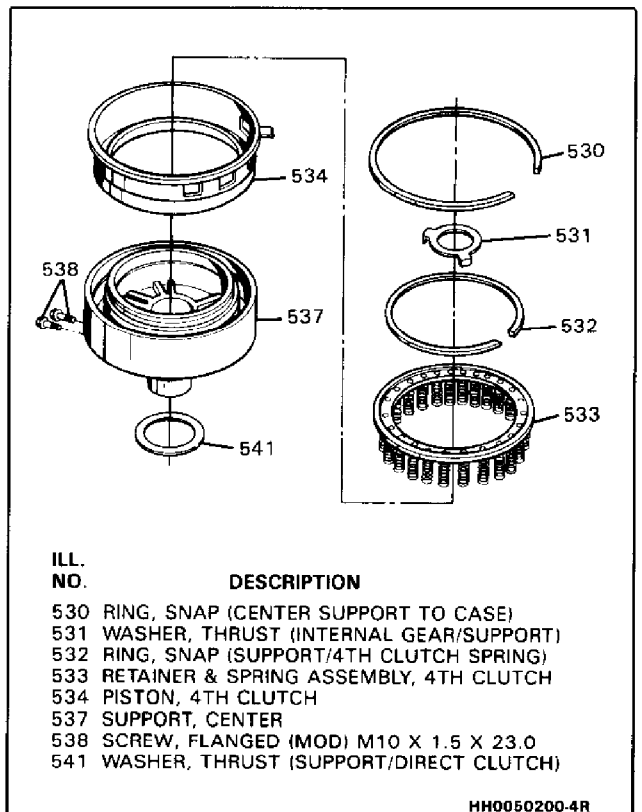


Figure 26 Center Support Assembly

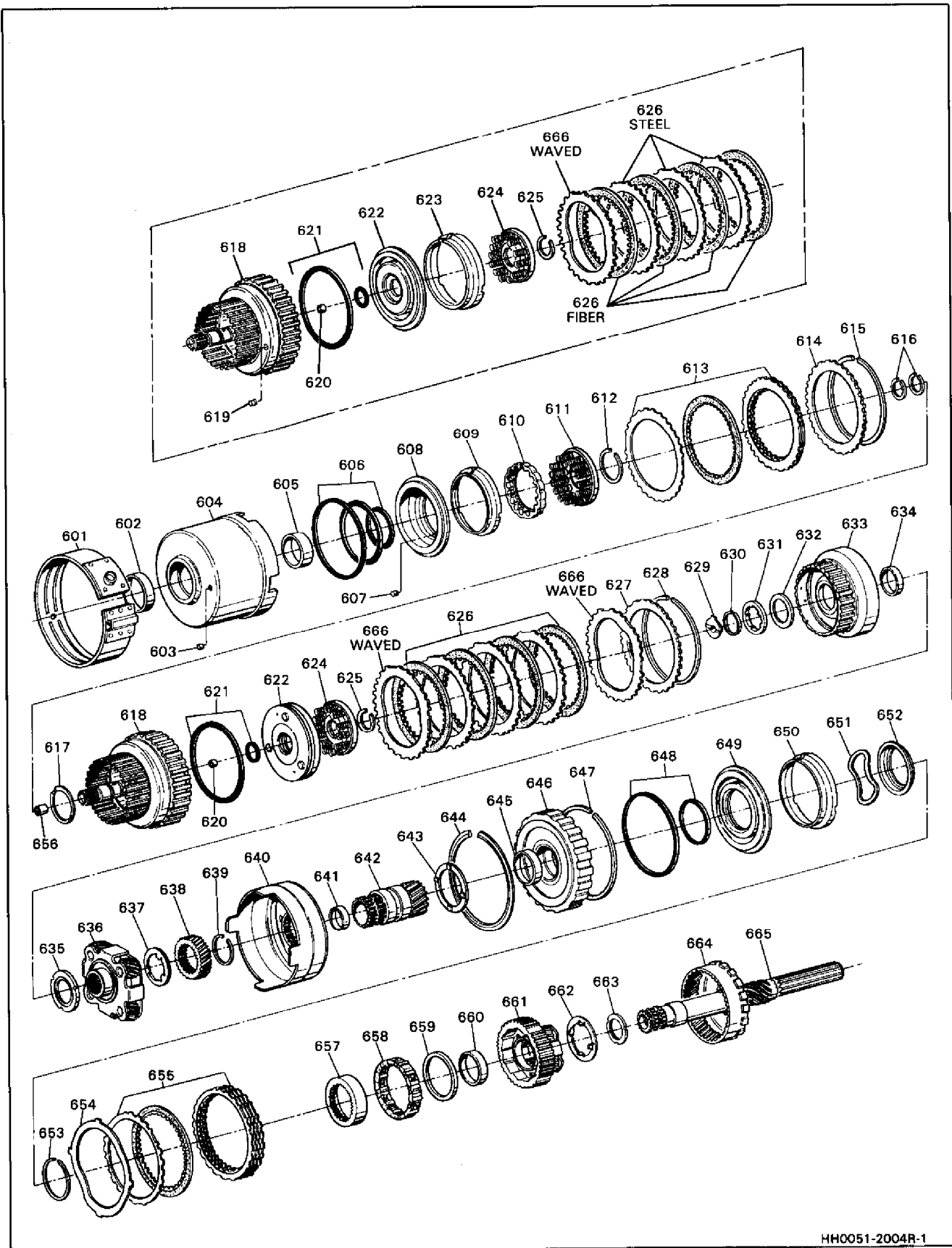
### Front Internal Gear to Output Shaft End Play

As a diagnostic aid, front gear end play should be checked prior to removing internal parts. If the end play is not within specifications, you should watch for worn or misassembled parts during disassembly.

📏 Measure (Figures 30 and 31)

#### Tools Required

- J-8001 Dial Indicator
- J-7057 Plunger Extension
- J-25013 Output Shaft and Rear Unit Support Fixture
- J-29332 Output Shaft Support Fixture Clamp



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★ Figure 27 Internal Components

★REVISED 5/87

ILL. NO.	DESCRIPTION
601	BAND ASSEMBLY, INTERMEDIATE
602	BUSHING, DIRECT CLUTCH (FRONT)
603	RETAINER & BALL ASSEMBLY, CHECK VALVE
604	HOUSING & DRUM ASSEMBLY, DIRECT CLUTCH
605	BUSHING, DIRECT CLUTCH (REAR)
606	SEALS, DIRECT CLUTCH PISTON
607	RETAINER & BALL ASSEMBLY, CHECK VALVE
608	PISTON ASSEMBLY, DIRECT CLUTCH
609	RING, CLUTCH APPLY (DIRECT)
610	GUIDE, RELEASE SPRING
611	RETAINER & SPRING ASSEMBLY, DIRECT CLUTCH
612	RING, SNAP (SPRING RETAINER)
613	PLATE ASSEMBLY, DIRECT CLUTCH
614	PLATE, CLUTCH BACKING
615	RING, SNAP (DIRECT CLUTCH HOUSING)
616	SEALS, RING (FORWARD CLUTCH SHAFT) TEF
617	WASHER, THRUST (DIRECT/FORWARD CLUTCH)
618	HOUSING ASSEMBLY, FORWARD CLUTCH
619	RETAINER & BALL ASM., CHECK VALVE (7 BRF ONLY)
620	PLUG, CUP (4.8 DIAMETER)
621	SEALS, FORWARD CLUTCH PISTON (PACKAGE)
622	PISTON ASSEMBLY, FORWARD CLUTCH
623	RING, CLUTCH APPLY (FORWARD) (7 BRF ONLY)
624	RETAINER & SPRING ASSEMBLY, FORWARD
625	RING, SNAP (FORWARD SPRING RETAINER)
626	PLATE, FORWARD CLUTCH (FLAT)
627	PLATE, CLUTCH BACKING
628	RING, SNAP (FORWARD CLUTCH HOUSING)
629	WASHER, THRUST (FORWARD CL./OUTPUT) (SEL.)
630	RING, SNAP (OUTPUT SHAFT)
631	WASHER, THRUST (SELECTIVE REAR)
632	WASHER, THRUST (INTERNAL GEAR/REAR SEL.)
633	GEAR, FRONT INTERNAL
634	BUSHING, FRONT INTERNAL GEAR
635	BEARING ASM., ROLLER (INTERNAL GEAR/CARRIER)
636	CARRIER ASSEMBLY, FRONT (COMPLETE)
637	BEARING ASSEMBLY, THRUST (FRT. CARRIER/SUN)
638	GEAR, FRONT SUN
639	RING, SNAP (INPUT DRUM/REAR SUN)
640	DRUM, INPUT
641	BUSHING, REAR SUN GEAR
642	GEAR, REAR SUN
643	WASHER, THRUST (INPUT DRUM/HOUSING)
644	RING, SNAP (HOUSING/CASE)
645	BUSHING, LO & REVERSE HOUSING
646	HOUSING ASSEMBLY, LO & REVERSE CLUTCH
647	SPACER, HOUSING TO CASE
648	SEALS, LO & REVERSE PISTON (INNER/OUTER)
649	PISTON ASSEMBLY, LO & REVERSE CLUTCH
650	RING, CLUTCH APPLY (13.13mm)
651	SPRING, WAVE (REVERSE CLUTCH RELEASE)
652	RETAINER, LO & REVERSE CLUTCH SPRING
653	RING, SNAP (RETAINER/HOUSING)
654	PLATE, LO & REVERSE CLUTCH (WAVE)
655	PLATE, LO & REVERSE CLUTCH (1.969 MST)
656	BUSHING, FORWARD CLUTCH HOUSING
657	RACE, LO ROLLER CLUTCH
658	ROLLER ASSEMBLY, LO CLUTCH
659	BEARING, THRUST (REAR CAM/LO RACE)
660	BUSHING, REAR CARRIER (53.13 X 9.53)
661	CARRIER ASSEMBLY, REAR (COMPLETE)
662	WASHER, THRUST (REAR CARRIER/INTERNAL GEAR)
663	BEARING ASSEMBLY, ROLLER THRUST (SUN/INT.)
664	GEAR, REAR INTERNAL
665	SHAFT, OUTPUT
666	PLATE, CLUTCH 1.585 (WAVED)

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★ Figure 27L Legend

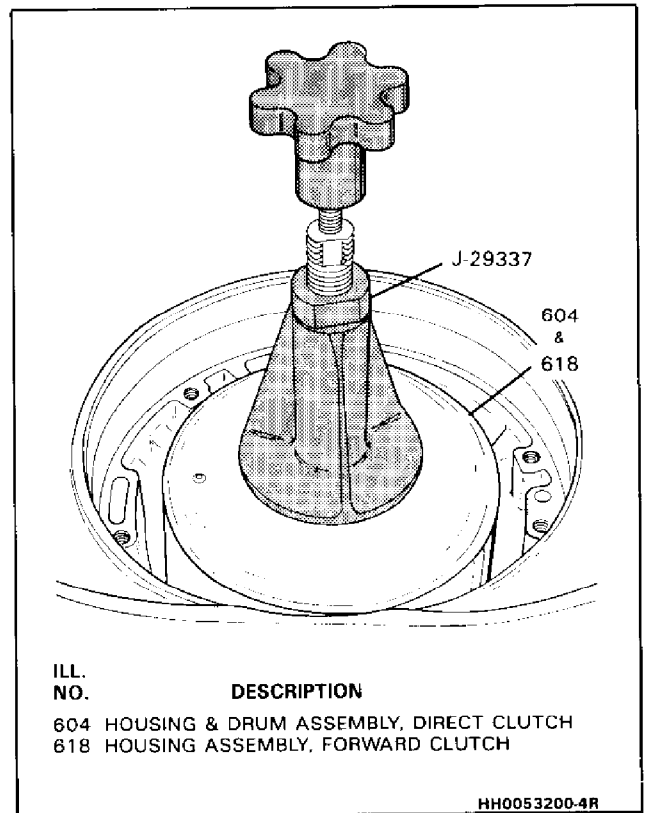


Figure 28 Removing Forward and Direct Clutch Housing

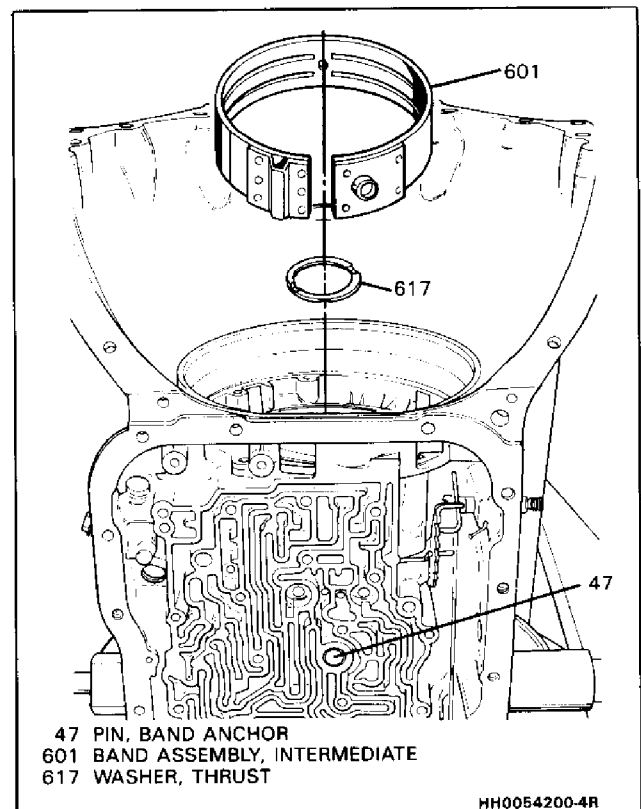


Figure 29 Removing Intermediate Band

## 200-4R-14 AUTOMATIC TRANSMISSION

1. Install clamp, J-7057, and J-8001 as shown.
2. Position J-7057 against the output shaft (665).  
- Zero dial indicator.
3. Turn the adjusting screw on J-29332 until white/scrib line begins to disappear.
4. Read dial indicator.  
End play should be 0.10mm-0.51mm(.004"-.025").

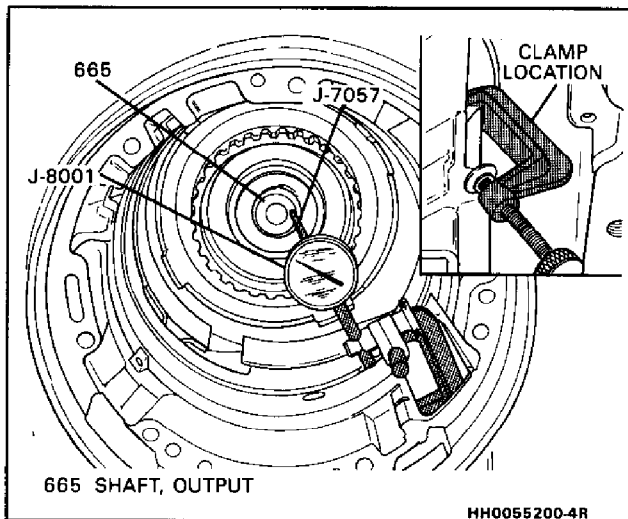


Figure 30 Output Shaft End Play Check

THICKNESS		IDENTIFICATION NUMBER AND/OR COLOR
2.90-3.01mm	(0.114" - 0.119")	1 - ORANGE
3.08-3.19mm	(0.121" - 0.126")	2 - WHITE
3.26-3.37mm	(0.128" - 0.133")	3 - YELLOW
3.44-3.55mm	(0.135" - 0.140")	4 - BLUE
3.62-3.73mm	(0.143" - 0.147")	5 - RED
3.80-3.91mm	(0.150" - 0.154")	6 - BROWN
3.98-4.09mm	(0.157" - 0.161")	7 - GREEN
4.16-4.27mm	(0.164" - 0.168")	8 - BLACK
4.34-4.45mm	(0.171" - 0.175")	9 - PURPLE

Figure 31 Rear Unit End Play Washer Thickness Chart

### ↔ Remove or Disconnect (Figure 32)

1. Snap ring (630), selective washer (631), and thrust washer (632).
2. Front internal gear (633).
3. Front carrier (636) and roller bearing (635).
4. Front sun gear (638) and thrust bearing (637).  
- Thrust bearing (637) has only one thrust race.
5. Input drum (640) and rear sun gear (642).
6. Tanged thrust washer (643).

### ↔ Remove or Disconnect (Figures 33 and 34)

Tools Required

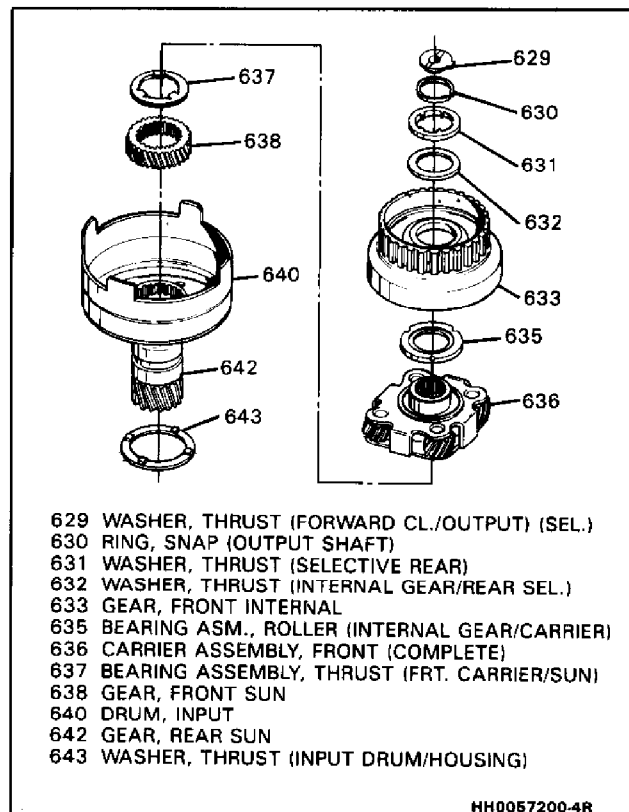


Figure 32 Removing Front Internal Gear, Carrier and Input Drum

#4 Easy out

"T" Handle Tap Wrench

J-28542 Reverse Clutch Housing Remover and Installer

1. Modify 6.3mm (#4) easy out as follows:  
- Grind approximately 20mm (3/4") from the end.
2. Insert the easy out into the case cup plug (46).
3. Case cup plug (46).  
**DO NOT REUSE CASE CUP PLUG**
4. Snap ring (644).  
- Beveled side should be facing up.
5. Install J-28542 as shown.
6. Lo and reverse clutch housing (646).
7. Spacer (647).

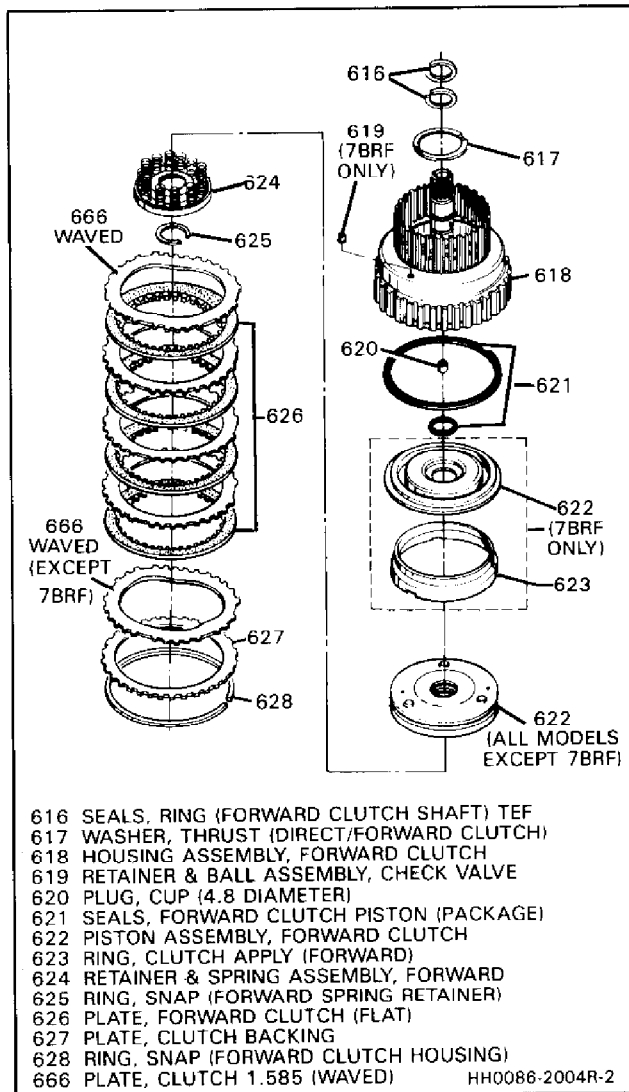
### Rear Carrier Removal

#### ↔ Remove or Disconnect (Figures 35 and 36)

1. Output shaft assembly (665).
2. Roller clutch (657/658) and rear carrier (661).
3. Thrust washer (662).
4. Wave plate (654) and Lo-reverse clutch plates (655).
5. Thrust washer (663).

**NOTICE:** The internal gear is pressed onto the output shaft. **DO NOT REMOVE.**

6. Rear internal gear (664).
7. Output shaft seal (33), if necessary.



★ Figure 68 Forward Clutch Housing Assembly

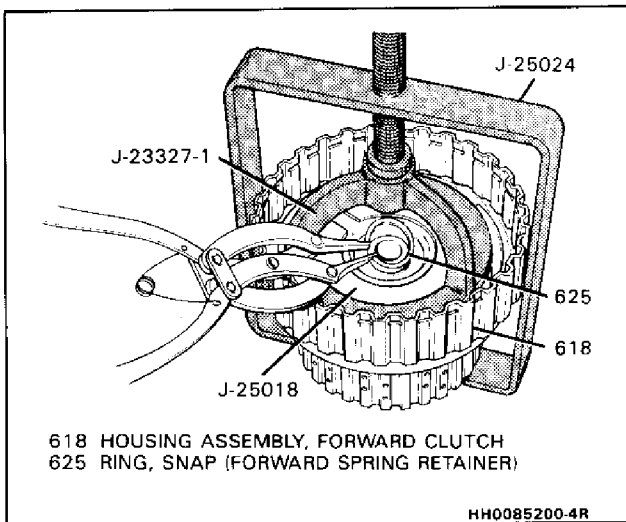


Figure 69 Removing Forward Clutch Snap Ring

**Inspect (Figure 71)**

- Check valve (619)

- ball must move freely
- leak test with solvent

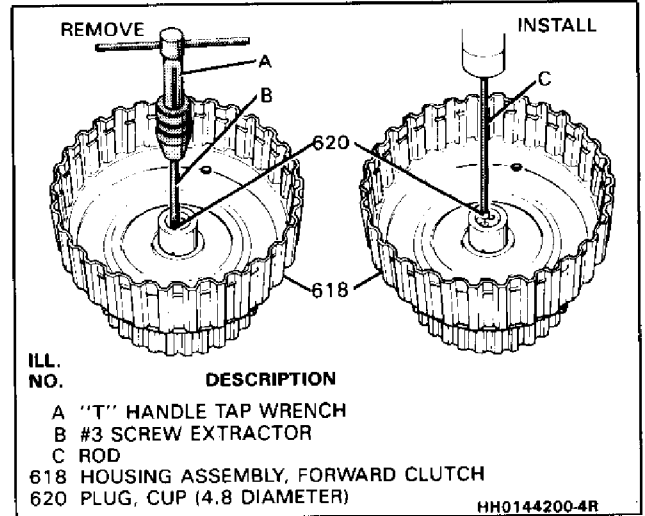


Figure 70 Removing and Installing Cup Plug

**Remove or Disconnect (Figure 71)**

**Tools Required**

10mm (3/8") Rod

1. Tap out check valve (619). Use 10mm (3/8") rod.

**Install or Connect (Figure 71)**

1. Using same tools, tap in check valve (619) until seated.

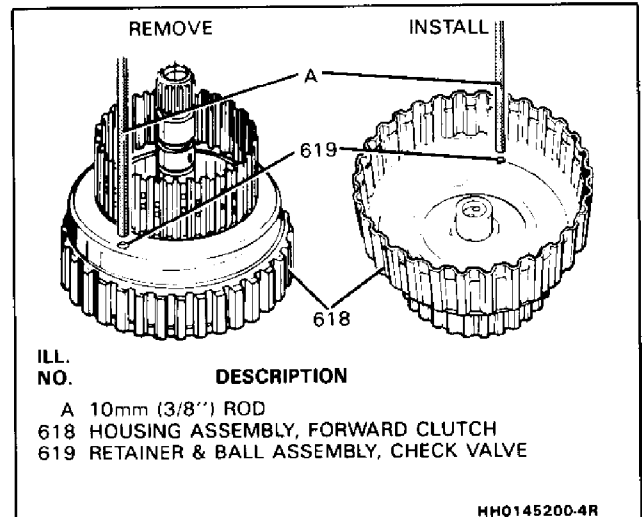


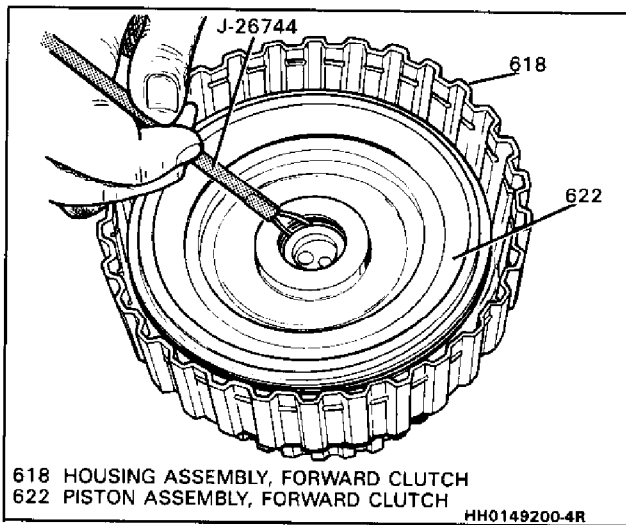
Figure 71 Removing and Installing Check Valve

**Assemble (Figure 72)**

**Tools Required**

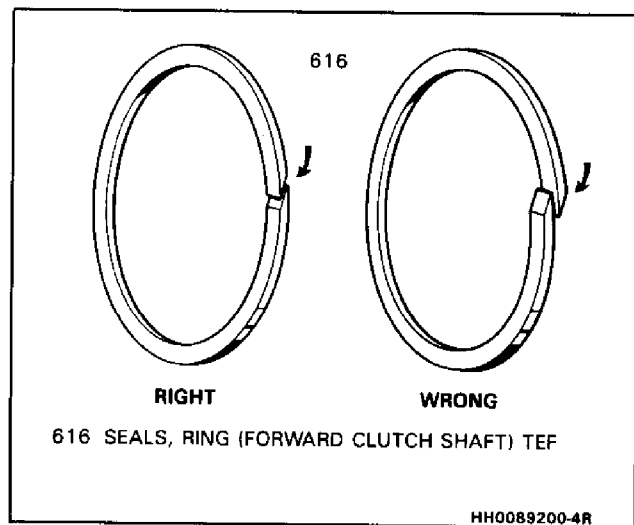
J-26744 Universal Seal Installer

1. Inner and outer piston seals (621).
  - lips face away from clutch apply ring
2. Lubricate seal with transmission fluid.
3. Piston (622). Use J-26744 while pushing down on piston.
4. Retainer and spring assembly (624).



618 HOUSING ASSEMBLY, FORWARD CLUTCH  
622 PISTON ASSEMBLY, FORWARD CLUTCH  
HH0149200-4R

Figure 72 Installing Seals Onto Forward Clutch Piston



616 SEALS, RING (FORWARD CLUTCH SHAFT) TEF

Figure 73 Installing Scarf Cut Seals

**✦ Assemble (Figures 68, 69 and 73)**

**Tools Required**

- J-23327 Clutch Spring Compressor
- J-25018 Forward Clutch Adapter
- J-25024 Forward Clutch Spring Compressor

1. Install J-23327, J-25018, and J-25024.
2. Compress retainer (624).
  - do not let retainer catch on snap ring groove
3. Remove J-23327, J-25018, and J-25024.
4. Waved steel plate (666).
5. Clutch plates (626)
  - soak in transmission fluid
  - start with composition plate and alternate with steel plates
6. Backing plate (627).
  - micro finish down
7. Snap ring (628)
  - composition plates must rotate freely.

**✦ Assemble (Figure 73)**

1. Forward clutch shaft seal rings (616), if necessary.
  - make sure cut ends are assembled as shown
  - retain with petrolatum

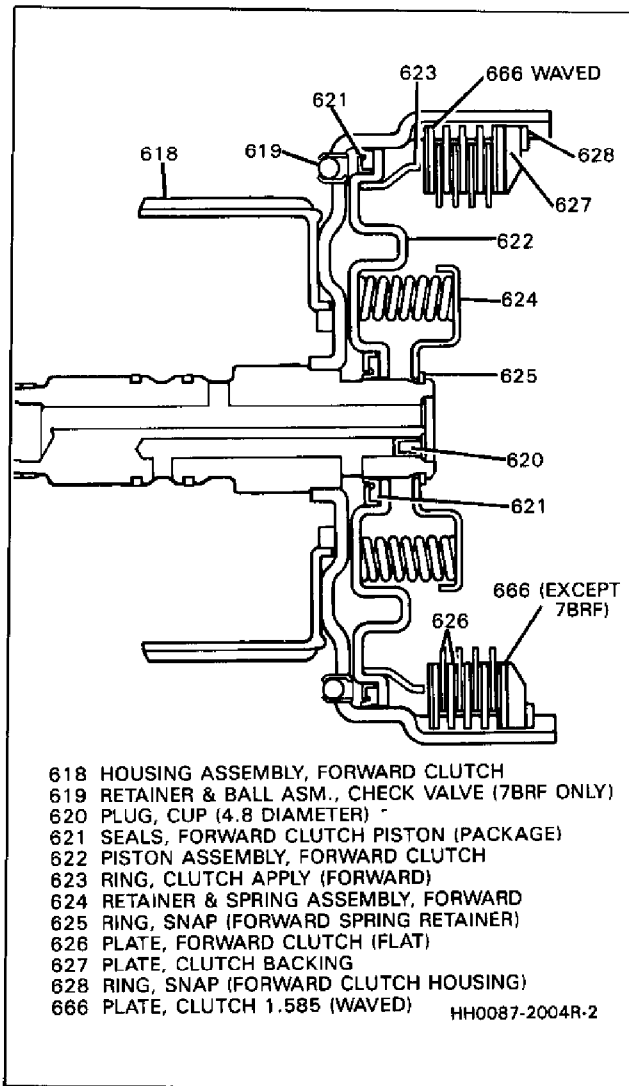
**Intermediate Band**

**🔍 Inspect (Figure 75)**

- Intermediate band (601) for:
  - burning
  - flaking
  - cracks

**↔ Install or Connect (Figure 75)**

1. Intermediate band (601).
2. Band anchor pin (47).



618 HOUSING ASSEMBLY, FORWARD CLUTCH  
619 RETAINER & BALL ASM., CHECK VALVE (7BRF ONLY)  
620 PLUG, CUP (4.8 DIAMETER) -  
621 SEALS, FORWARD CLUTCH PISTON (PACKAGE)  
622 PISTON ASSEMBLY, FORWARD CLUTCH  
623 RING, CLUTCH APPLY (FORWARD)  
624 RETAINER & SPRING ASSEMBLY, FORWARD  
625 RING, SNAP (FORWARD SPRING RETAINER)  
626 PLATE, FORWARD CLUTCH (FLAT)  
627 PLATE, CLUTCH BACKING  
628 RING, SNAP (FORWARD CLUTCH HOUSING)  
666 PLATE, CLUTCH 1.585 (WAVED) HH0087-2004R-2

★ Figure 74 Cross-Section Forward Clutch Housing