

# Maintenance/Service Manual

Model 36000  
Powershift Transmission  
3-4-6 Speed  
Short Drop



**SPICER OFF-HIGHWAY COMPONENTS**



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below

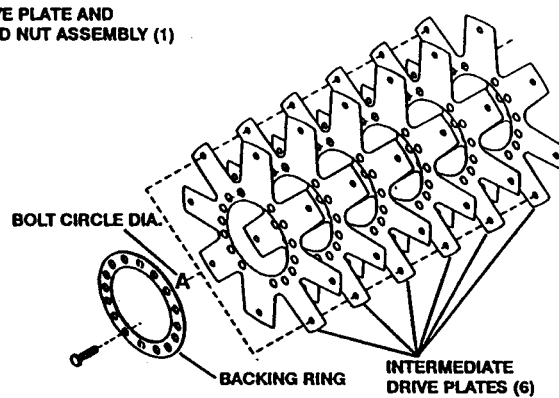
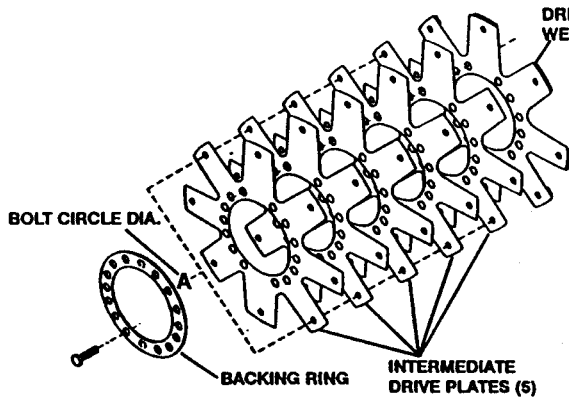


- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

## HR 36000 Series Transmission Converter Drive Plate INSTALLATION INSTRUCTIONS Proper Identification by Bolt Circle Diameter

Measure the "A" dimension (Bolt Circle diameter) and order Drive Plate Kit listed below



"A" Dimension (Bolt Circle Diameter)

15.00" [381,000 mm] diameter  
Kit No. 802587-10mm

16.00" [406,400 mm] diameter  
Kit No. 802558-10mm

16.00" [406,400 mm] diameter  
Kit No. 802590-7/16-20

16.875" [428,625 mm] diameter  
\*\* Kit No. 802609-7/16-20

17.00" [431,800 mm] diameter  
Kit No. 802593-10mm

17.00" [431,800 mm] diameter  
Kit No. 802562-7/16-20

Each kit will include the following parts:

- 5 Intermediate Drive Plates
- 1 Drive Plate Assembly
- 1 Backing Plate
- 14 Drive Plate Mounting Capscrews
- Instruction Sheet
- \*\* 1 pc. Drive Plate Mounting Spacer is included in Kit No. 802609.

"A" Dimension (Bolt Circle Diameter)

16.00" [406,400 mm] diameter  
Kit No. 802594 W/O Nuts

Each kit will include the following parts:

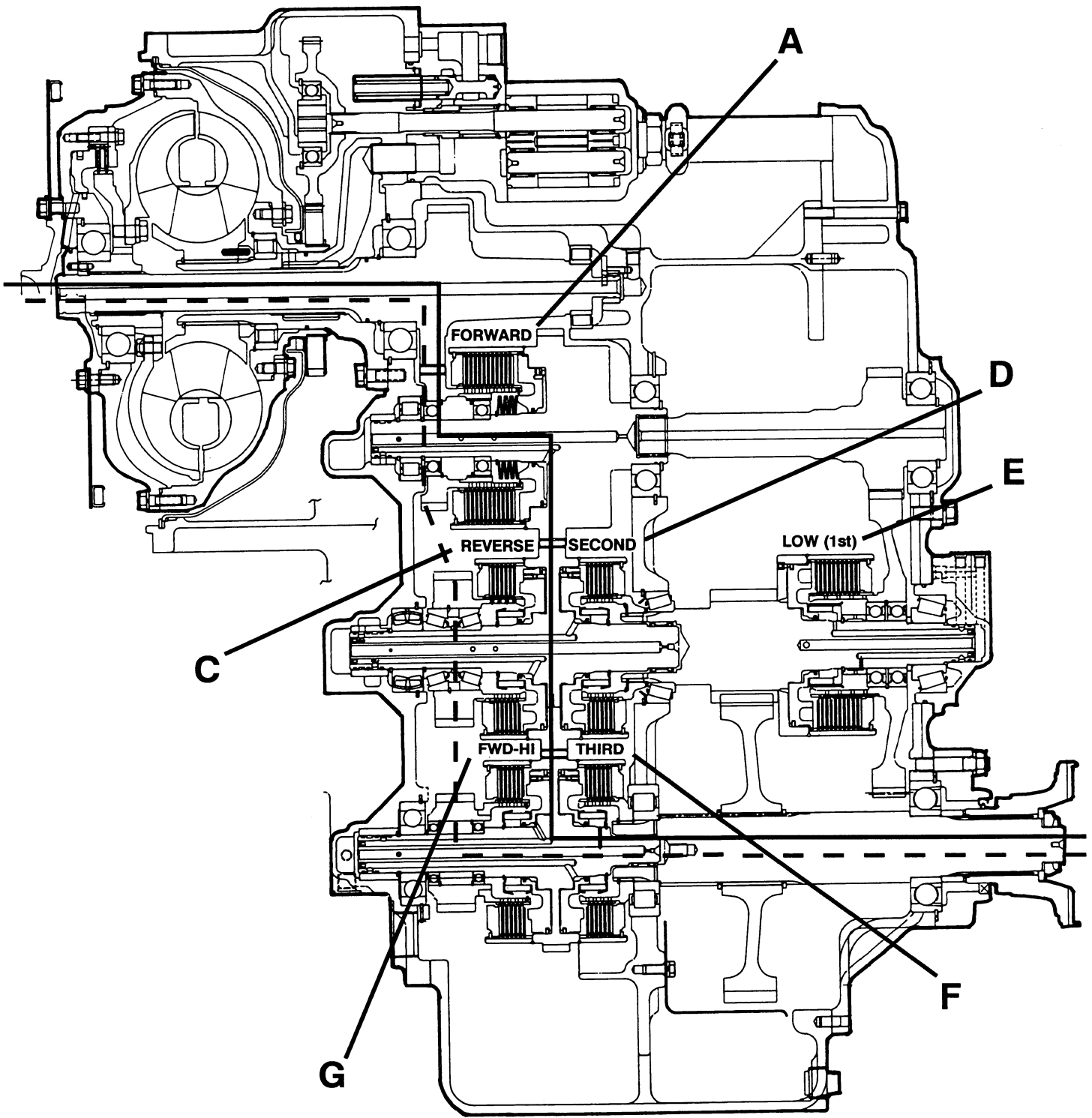
- 6 Intermediate Drive Plates
- 1 Backing Plate
- 14 Drive Plate Mounting Capscrews
- Instruction Sheet

**NOTE:** Assembly of flexplates must be completed within a 15 minute period from start of screw installation. If the screw is removed for any reason it must be replaced. The adhesive left in the tapped holes must be removed with the proper tap and cleaned with solvent. Dry the hole thoroughly and use a new screw for reinstallation.



Position drive plate and weld nut assembly on Impeller cover with weld nuts toward cover. Align intermediate drive plate and backing ring with holes in impeller cover. **NOTE:** Two dimples 180° apart in backing ring must be out (toward engine flywheel). Install capscrews. Tighten capscrews 52 - 57 ft-lbs torque [70.4 - 77.1 N·m].

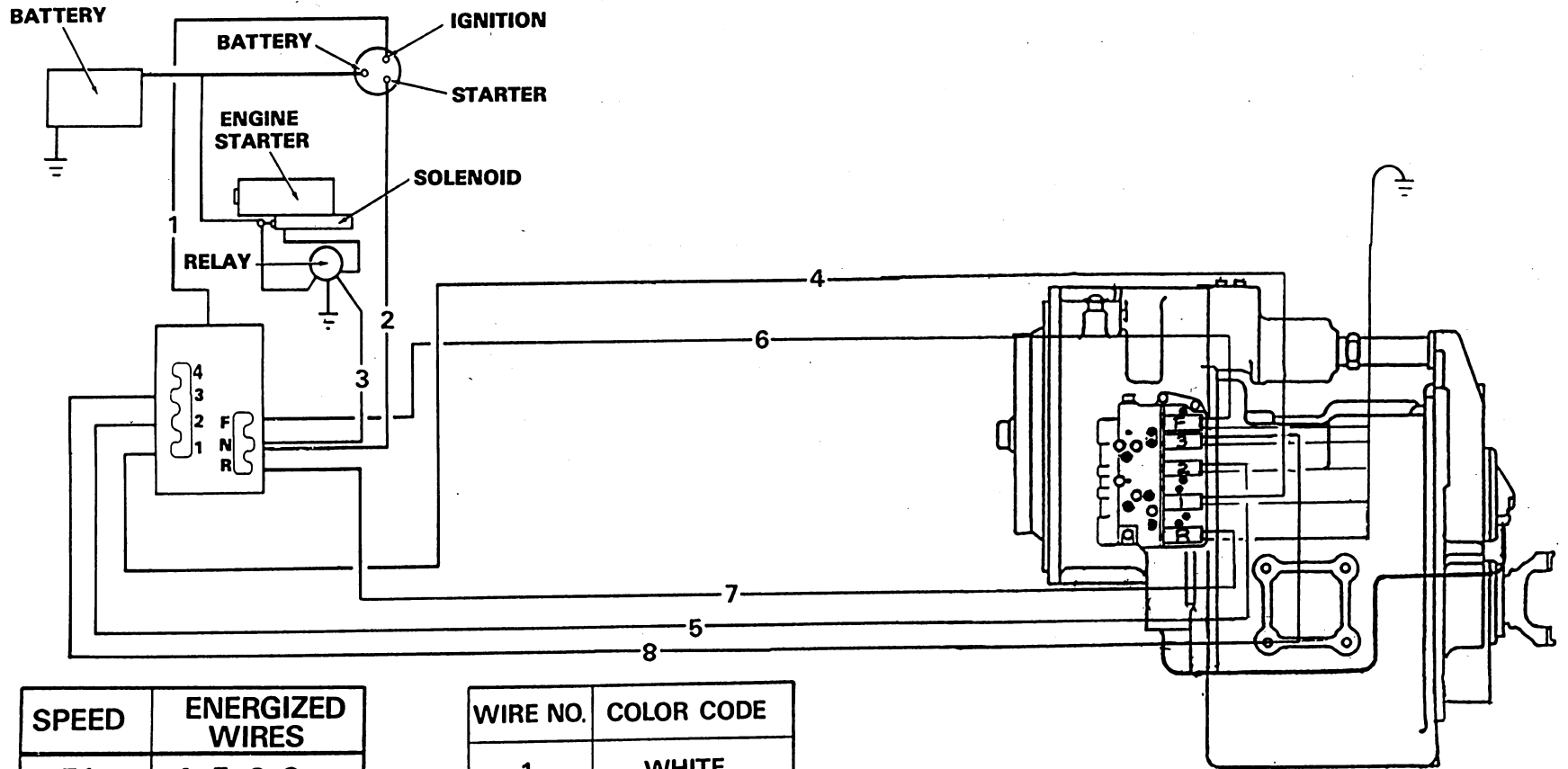
# 36000 POWER FLOW SIX SPEED TRANSMISSION



Forward 5th   
 Forward 6th

Direction & Speed	Engage Clutch						
	A	C	D	E	F	G	
Forward 5th	●				●		
Forward 6th					●	●	

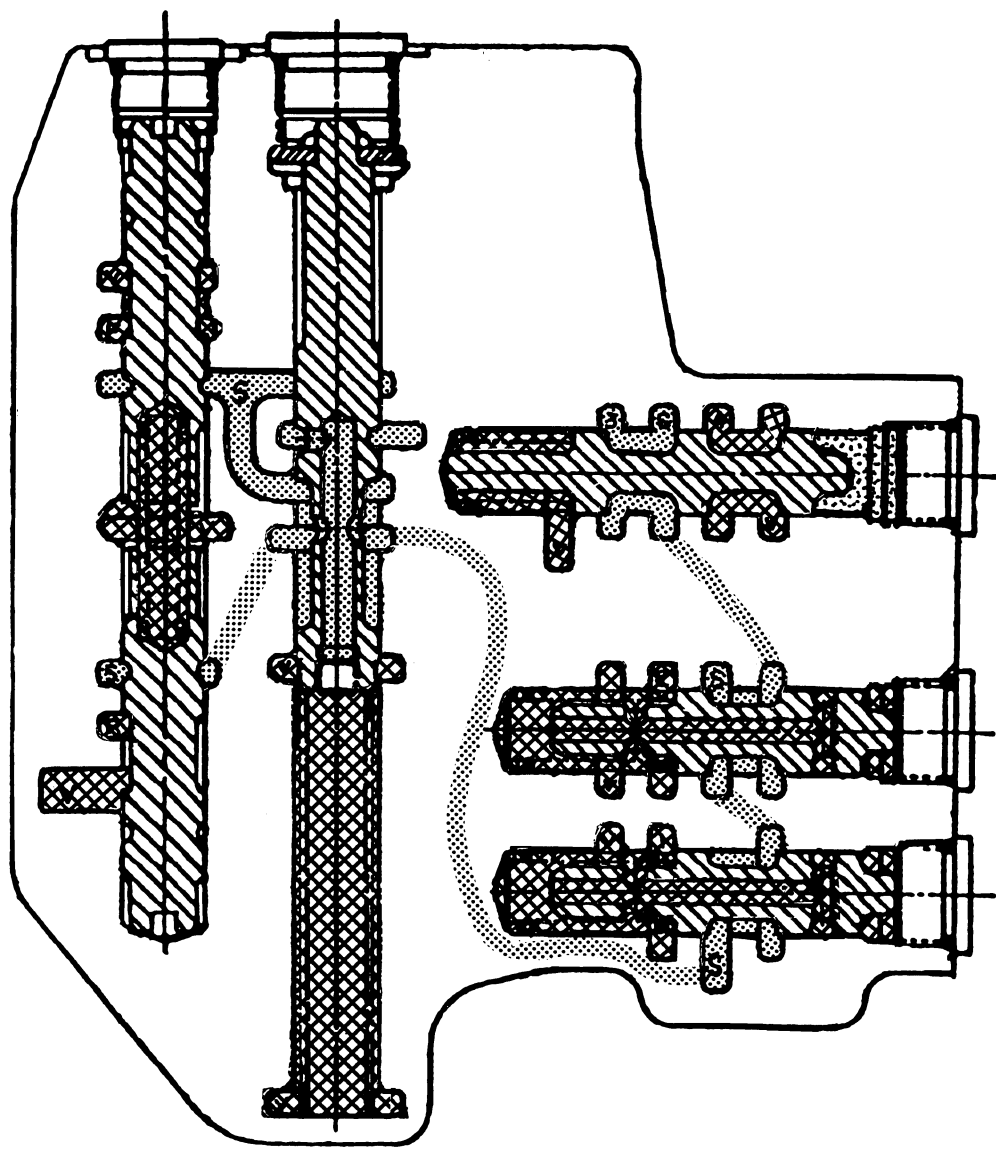
# 4 SPEED TRANSMISSION and ELECTRIC SOLENOID CONTROL WIRING DIAGRAM 12VDC and 24VDC



SPEED	ENERGIZED WIRES
F1	4-5-6-8
F2	5-6-8
F3	6-8
F4	6
N	2-3
R1	4-5-7-8
R2	5-7-8
R3	7-8
R4	7

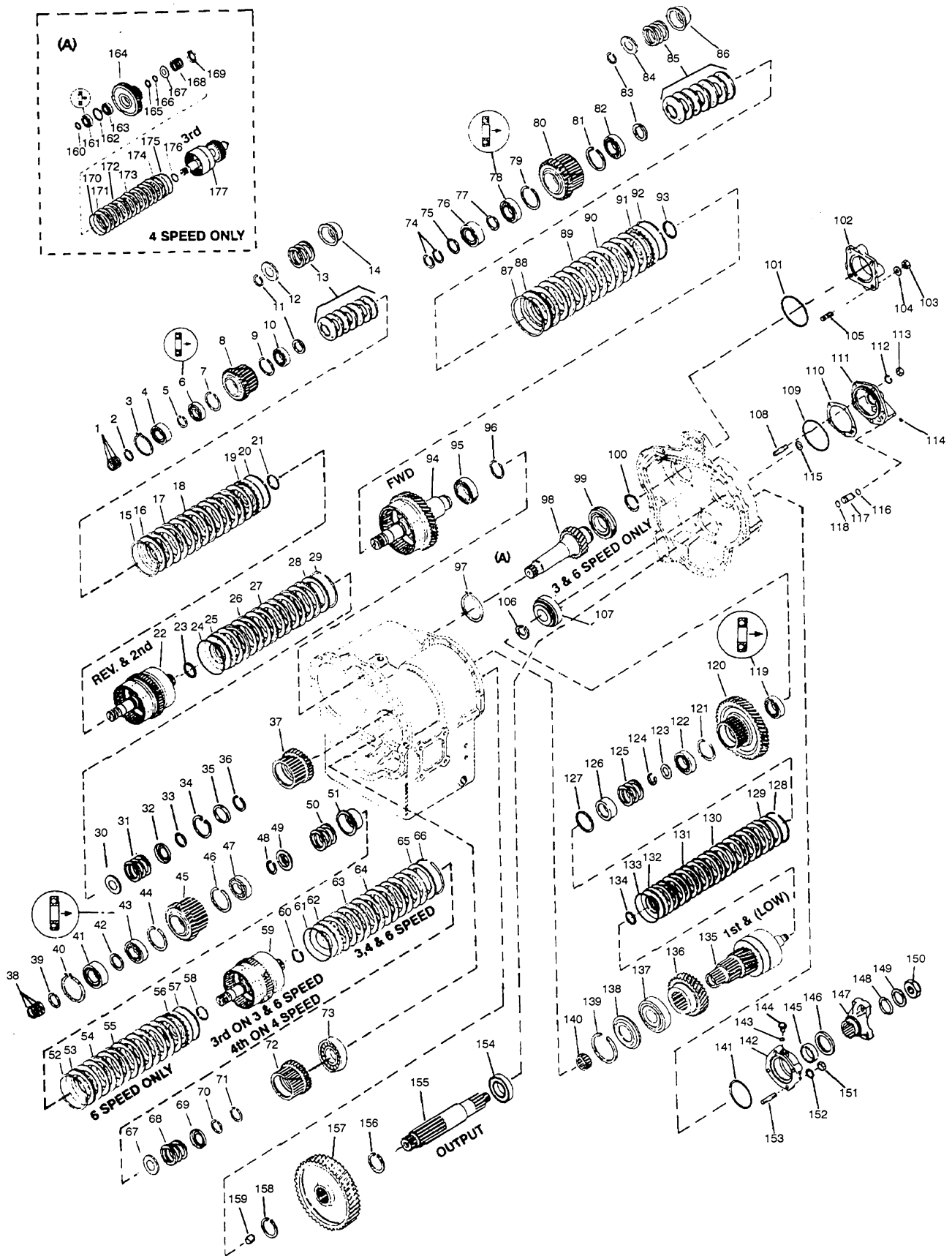
WIRE NO.	COLOR CODE
1	WHITE
2	BLACK
3	RED
4	YELLOW
5	GREEN
6	BLUE
7	BROWN
8	ORANGE

# 36000 SERIES ELECTRIC CONTROL VALVE HYD CIRCUIT NEUT. 3rd (4 SPEED)



-  Clutch Pressure
-  Pilot Pressure
-  Vent

# 36000 CLUTCH GEAR GROUP 3,4& 6 SPEED-SHORT DROP



## MAINTENANCE AND SERVICE

The instructions contained herein cover the disassembly and reassembly of the transmission in a sequence that would normally be followed after the unit has been removed from the machine and is to be completely overhauled. It must also be understood that this is a basic HR36000 3, 4 & 6 speed short drop transmission with many options. Assemblies may vary on specific models. The units are very similar to trouble shoot,

disassemble, repair, and reassemble.

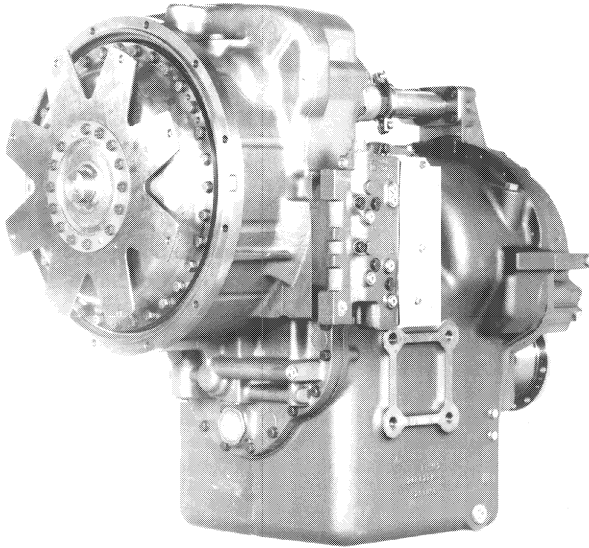
**CAUTION:** Cleanliness is of extreme importance and an absolute must in the repair and overhaul of this unit. Before attempting any repairs, the exterior of the unit must be thoroughly cleaned to prevent the possibility of dirt and foreign matter entering the mechanism.

Drain as much oil as possible before disassembly.

See Figure 393 for LHR (Converter Lock-up) Disassembly and Reassembly.

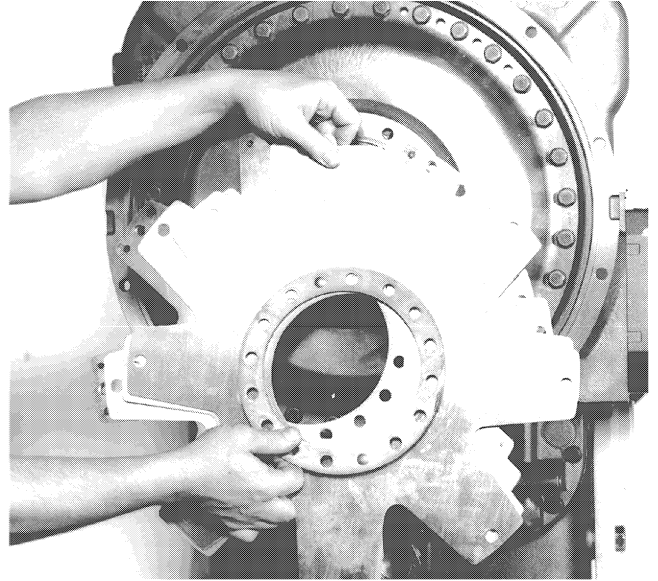
See Figure 509 for R-Model (Remote Mounted Transmission) Front Cover.

## DISASSEMBLY



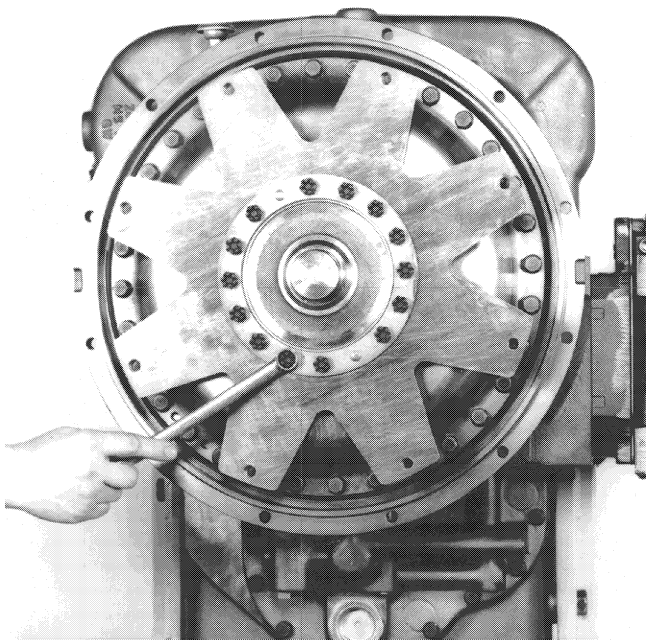
**Figure 1**

Side view HR36000 short drop transmission.



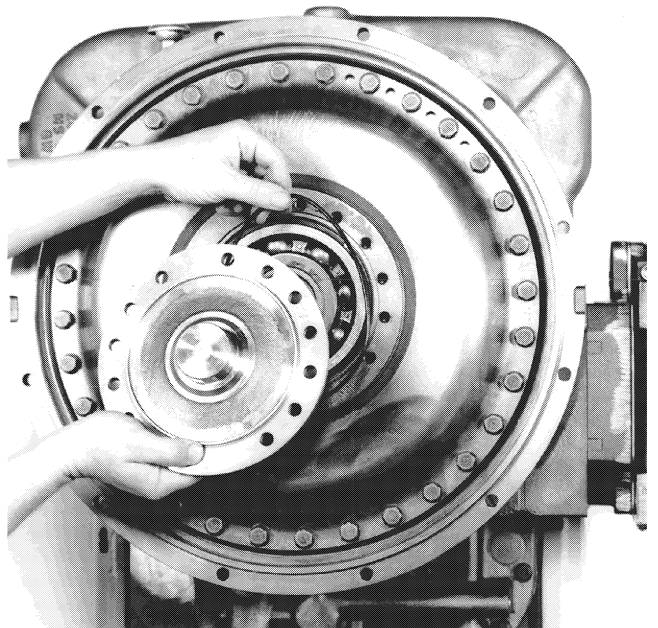
**Figure 3**

Remove drive plates and backing ring.



**Figure 2**

Remove drive plate mounting plate cap screws.



**Figure 4**

Remove impeller cover bearing cap and "O" ring.

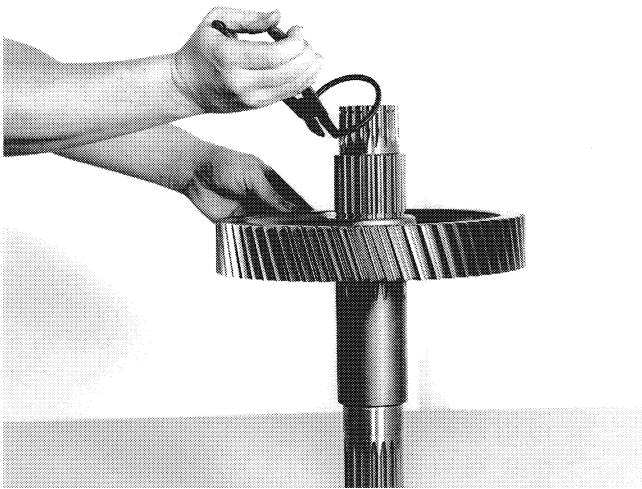
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below

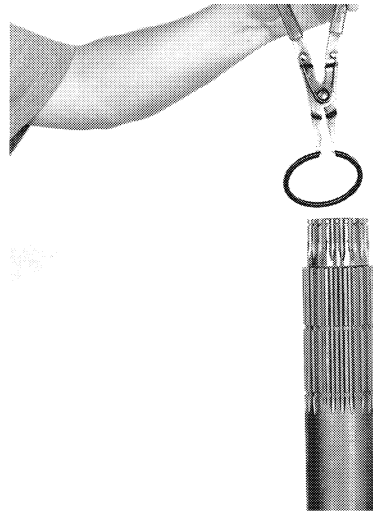


- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

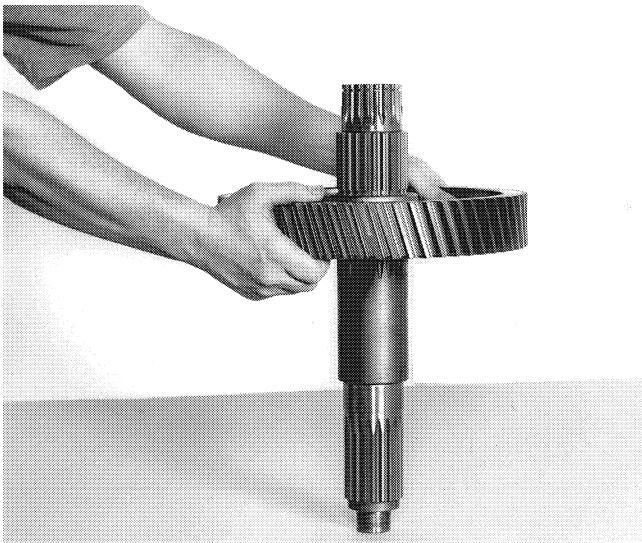
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL



**Figure 59**  
Remove output gear retaining ring.



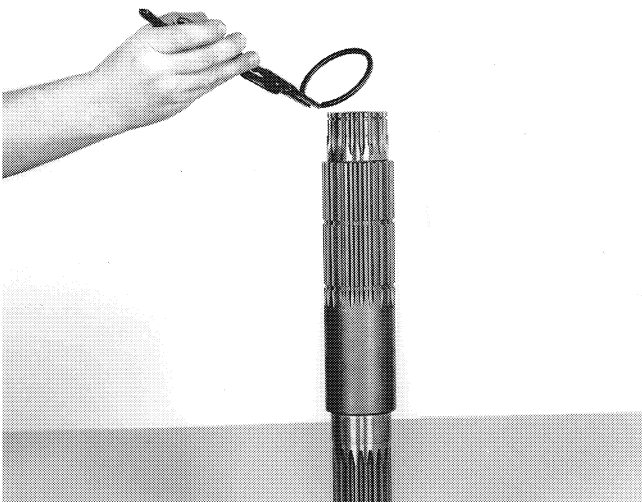
**Figure 62**  
Install output gear inner retaining ring.



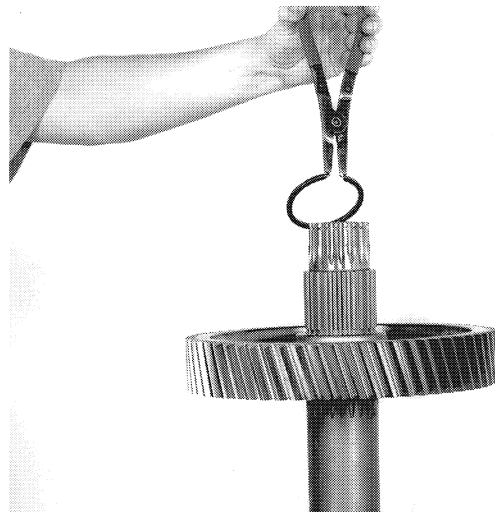
**Figure 60**  
Remove output gear.



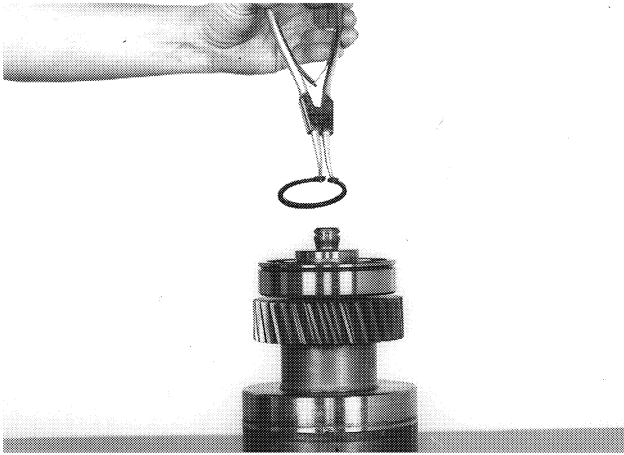
**Figure 63**  
Position output gear on shaft with long hub of gear toward inner ring.



**Figure 61**  
If needed remove output gear inner retaining ring.

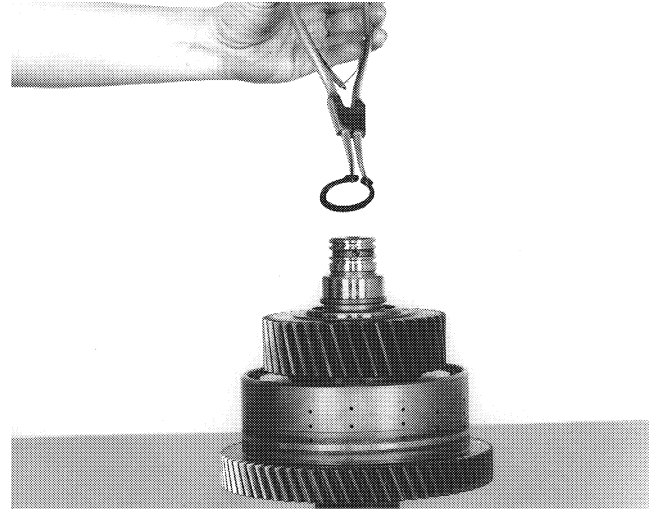


**Figure 64**  
Install outer retainer ring.



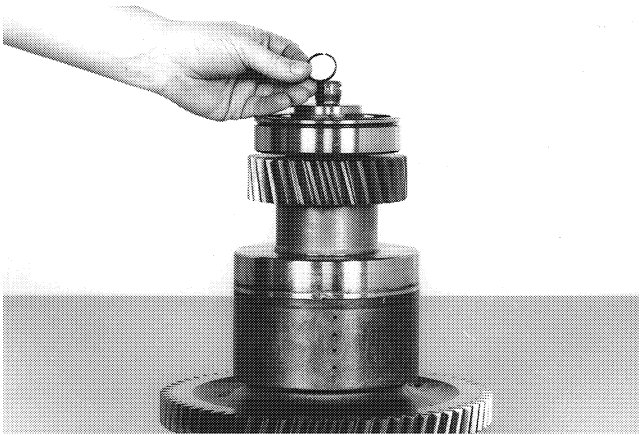
**Figure 119**

Install bearing snap ring.



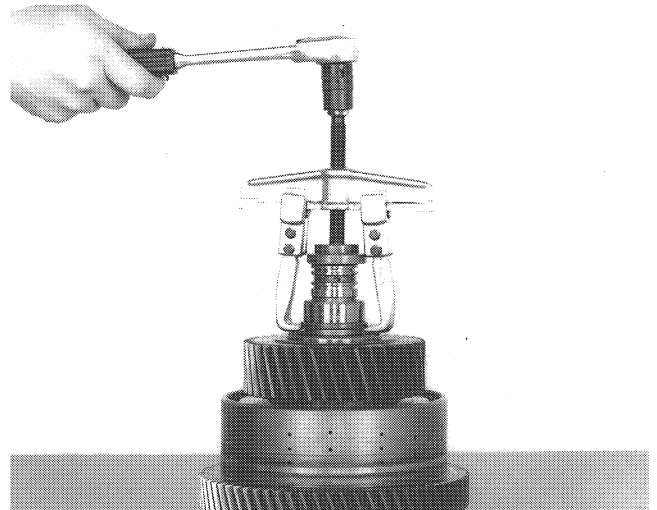
**Figure 122**

Remove the front bearing inner race retaining ring.



**Figure 120**

Install clutch shaft rear oil sealing ring. Grease ring to stabilize in ring groove.

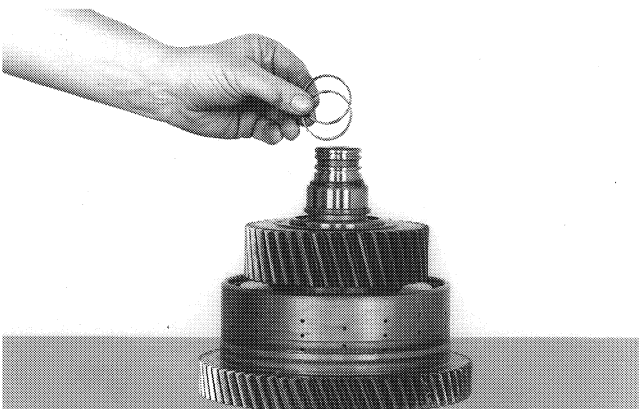


**Figure 123**

Remove front bearing inner race.

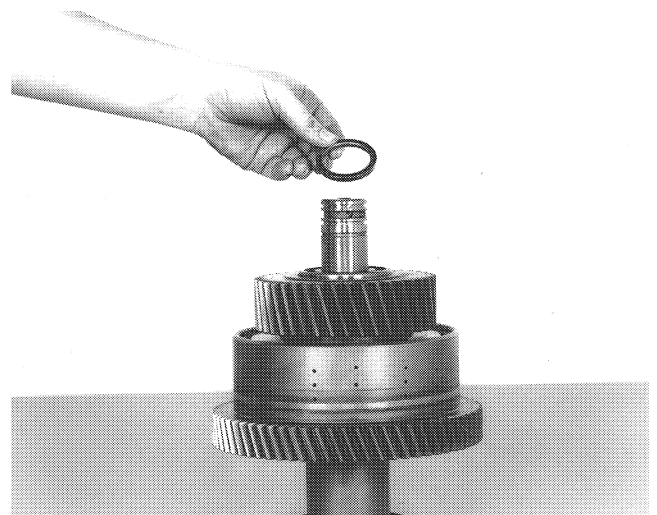
**FORWARD CLUTCH  
DISASSEMBLY AND REASSEMBLY**  
(Non-modulated. For modulated clutches  
see modulation section.)

**DISASSEMBLY**



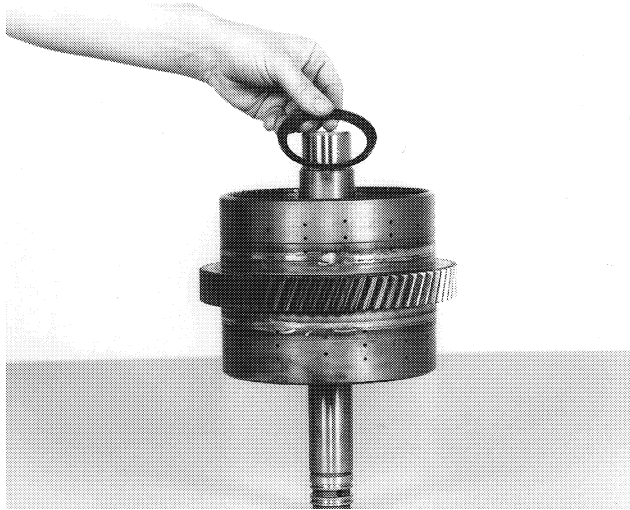
**Figure 121**

Remove forward clutch shaft oil sealing rings.

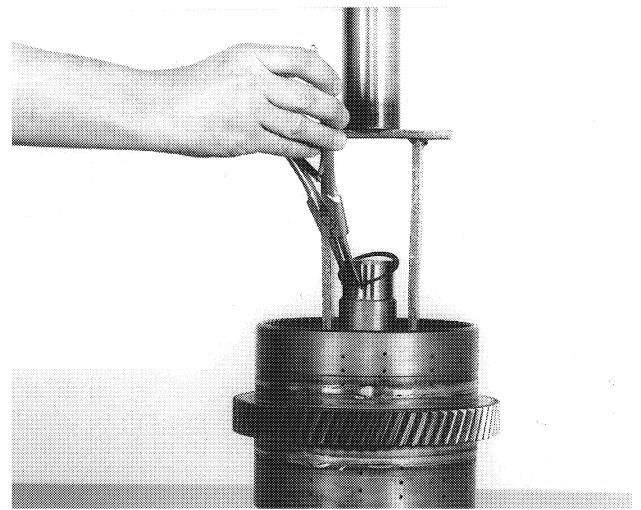


**Figure 124**

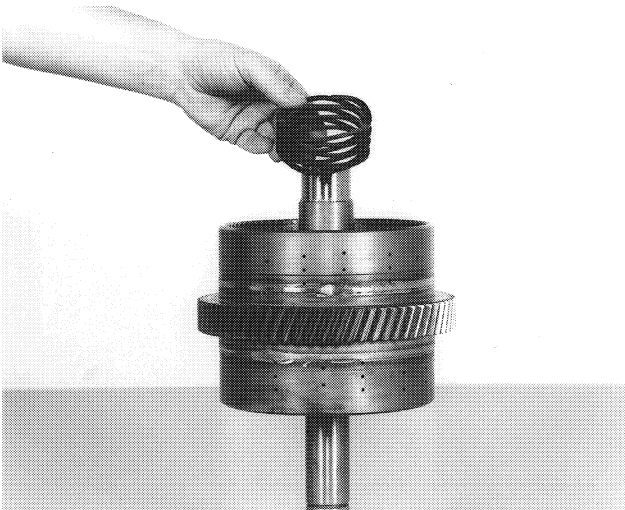
Remove bearing spacer.



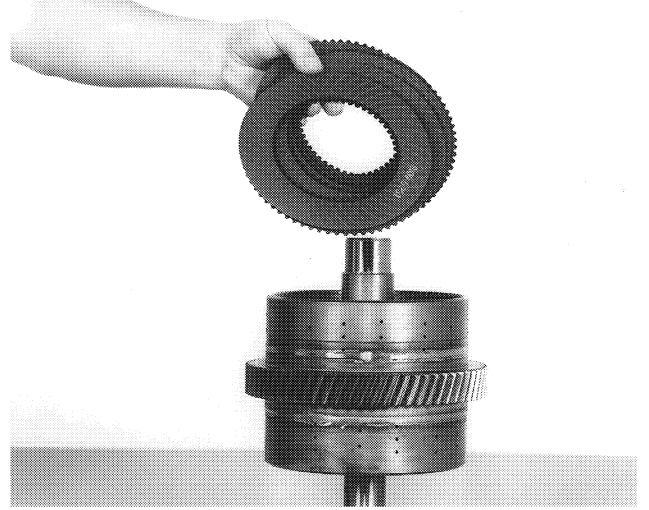
**Figure 179**  
Position wave spring and thrust washer on clutch piston.



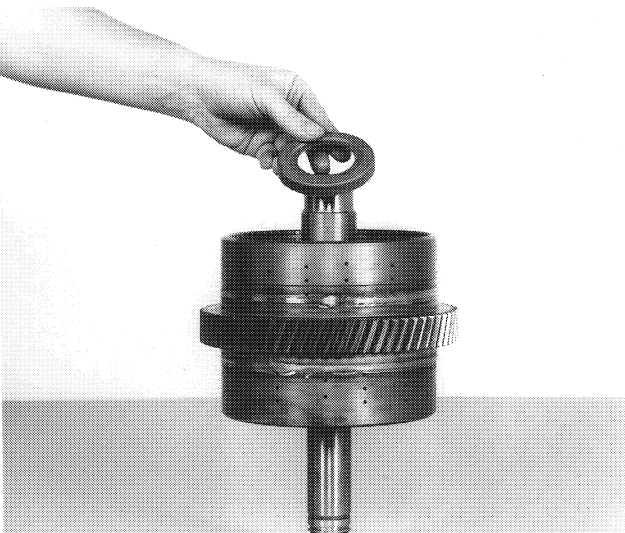
**Figure 182**  
Compress wave spring and install spring retainer ring being certain ring is in full position in ring groove.



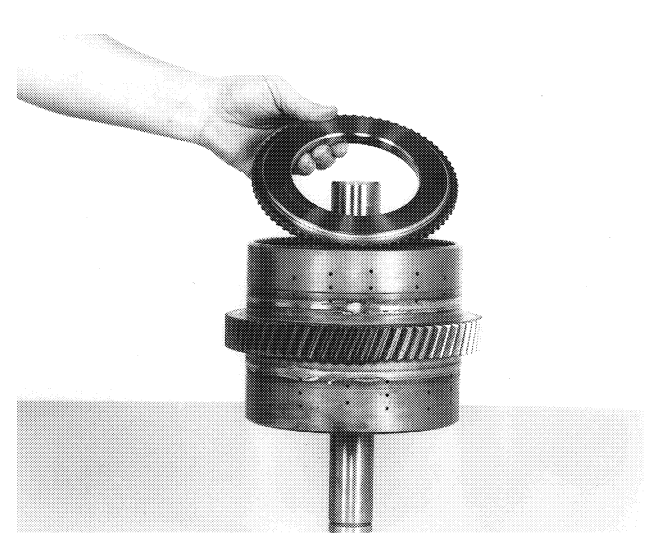
**Figure 180**  
Position wave spring on thrust washer.



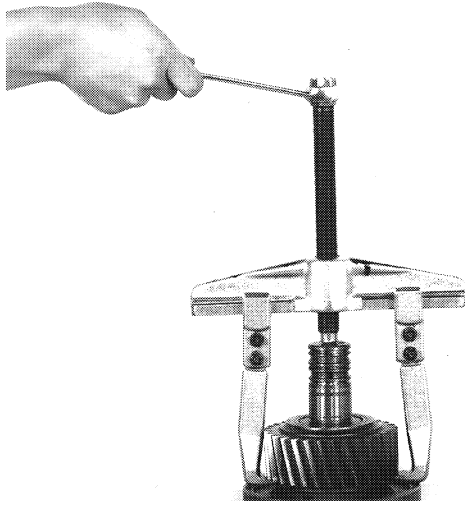
**Figure 183**  
Install one steel disc. Install one friction disc. Alternate steel and friction discs until proper amount of discs are installed. First disc next to piston is steel, last disc installed is friction.



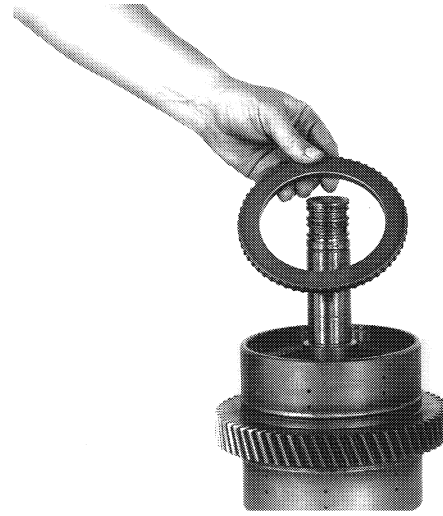
**Figure 181**  
Position wave spring retainer on wave spring.



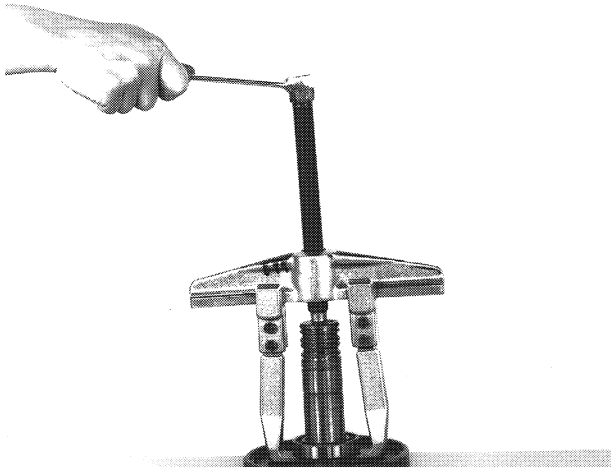
**Figure 184**  
Position clutch disc backing plate on discs.



**Figure 239**  
Remove clutch gear and outer bearing.



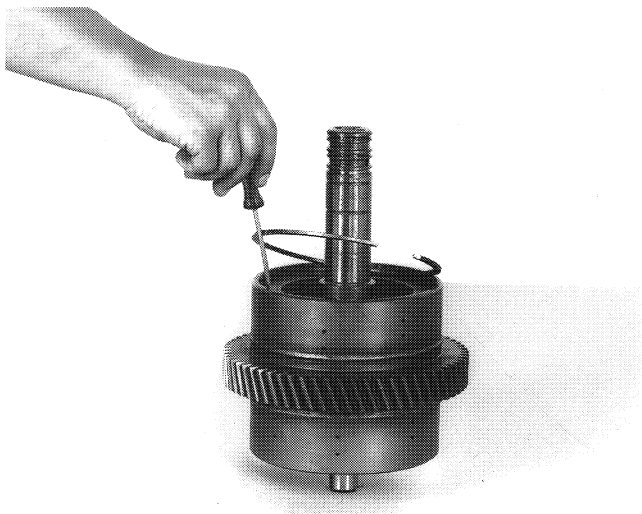
**Figure 242**  
Remove clutch disc backing plate.



**Figure 240**  
Remove clutch gear inner bearing.



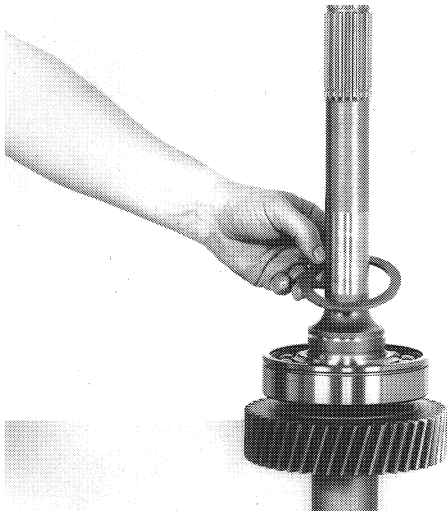
**Figure 243**  
Remove inner and outer clutch discs.



**Figure 241**  
Remove backing plate retainer ring.

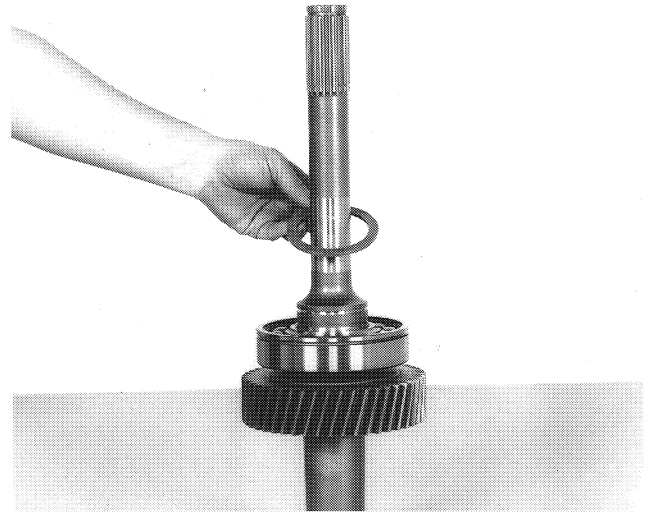


**Figure 244**  
Compress piston return wave spring. Remove return spring retainer ring. Remove ring retainer, wave spring and spring retainer.



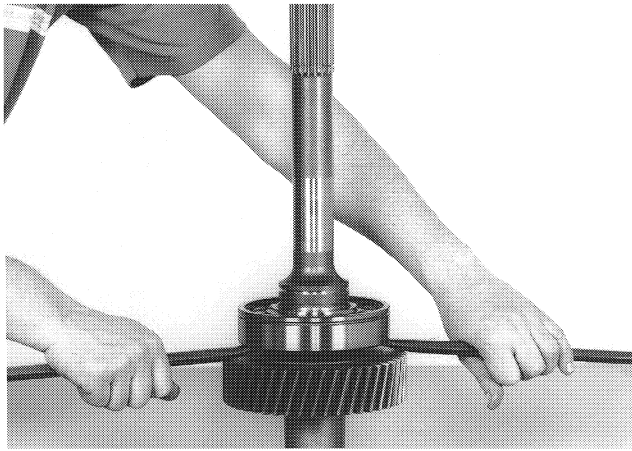
**Figure 299**

Remove bearing washer.



**Figure 302**

Position bearing washer on shaft.



**Figure 300**

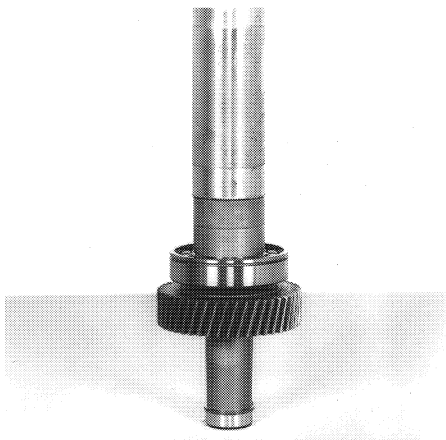
Pry bearing up far enough to press or pull bearing from turbine shaft.



**Figure 303**

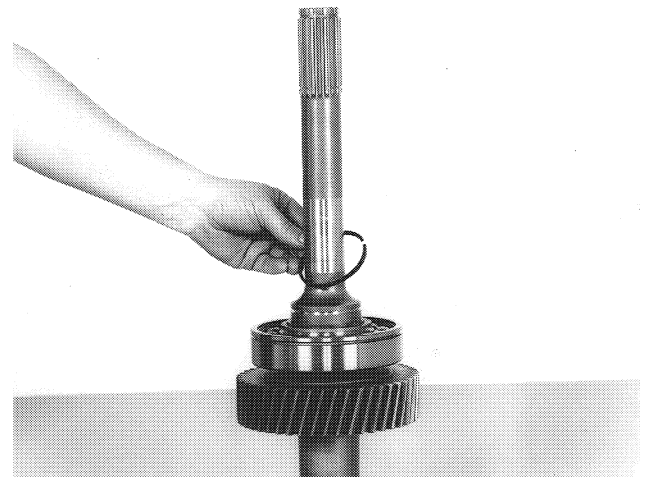
Install bearing snap ring.

**REASSEMBLY**  
See cleaning and inspection page



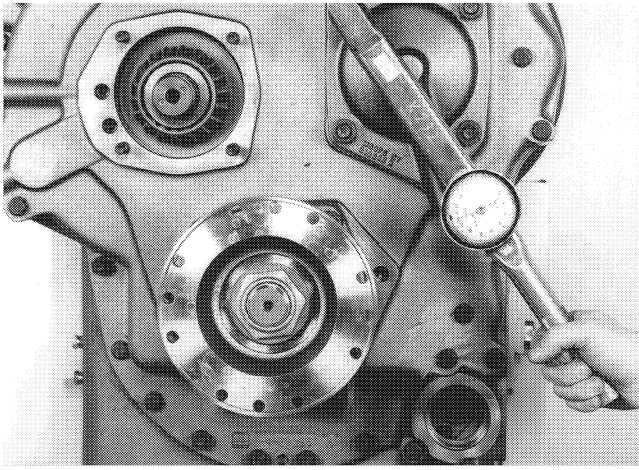
**Figure 301**

Press bearing on turbine shaft with outer diameter ring groove up.



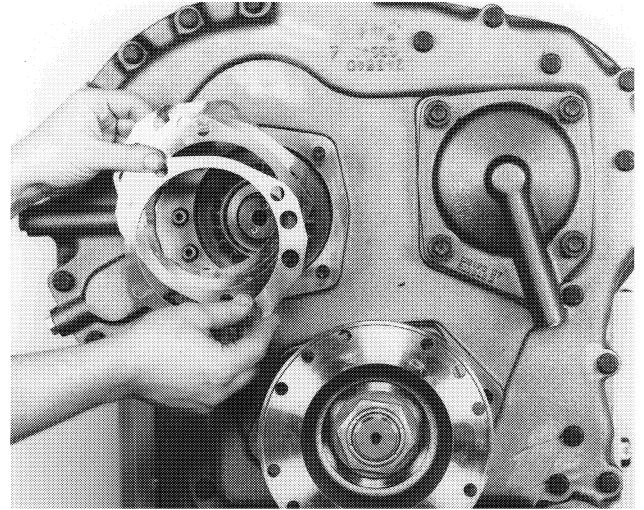
**Figure 304**

Pack oil sealing ring groove with grease. Install sealing ring and center ring in groove.



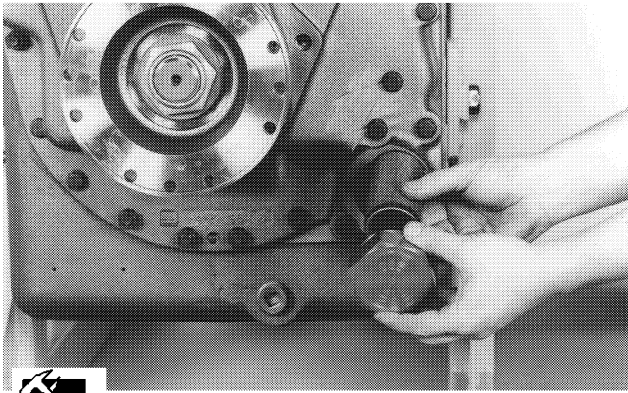
**Figure 358**

Install lockwasher and stud nuts, tighten to specifications.



**Figure 361**

Position pre-selected shim pack on studs.



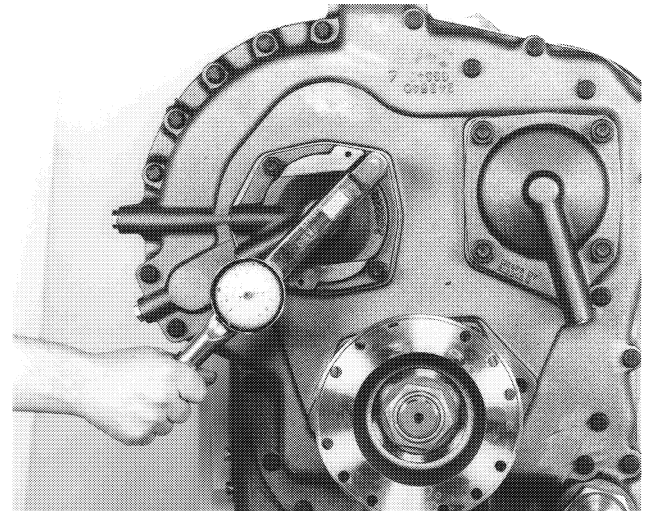
**Figure 359**

Install oil sump screen assembly and plug. Tighten plug 10 to 15 LBF.-FT. [13-20 N•m].

**REFER TO PAGE 10-94 FOR LOW (1ST) CLUTCH TAPER BEARING ADJUSTMENT.**

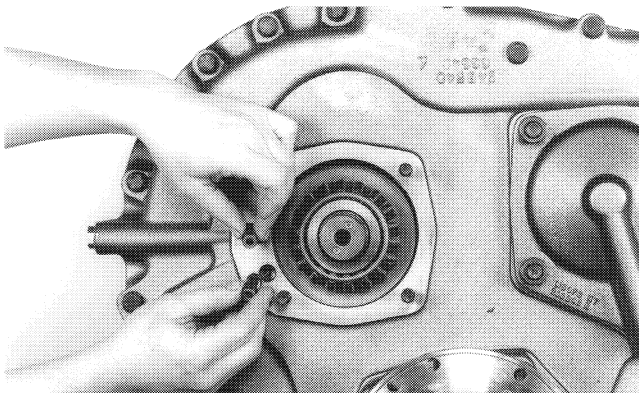
**NOTE: After low (1st) clutch taper bearing adjustment and bearing cap and shims are installed and torqued, return transmission to an upright position.**

Remove low clutch rear bearing cap and shims and proceed to Figure 360.



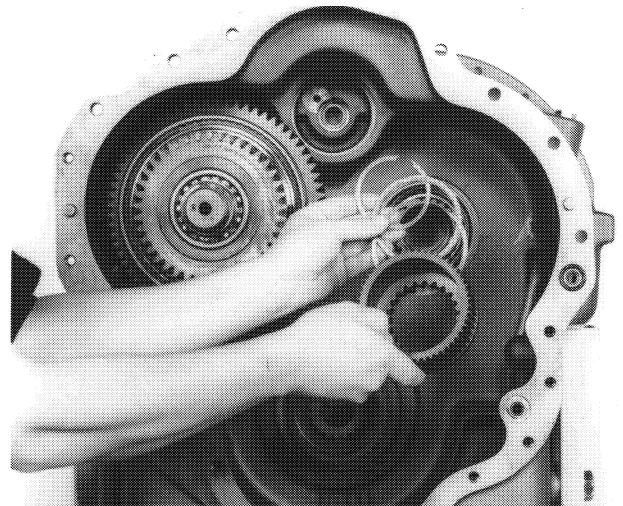
**Figure 362**

Install bearing cap, washers and stud nuts. Tighten to specified torque.



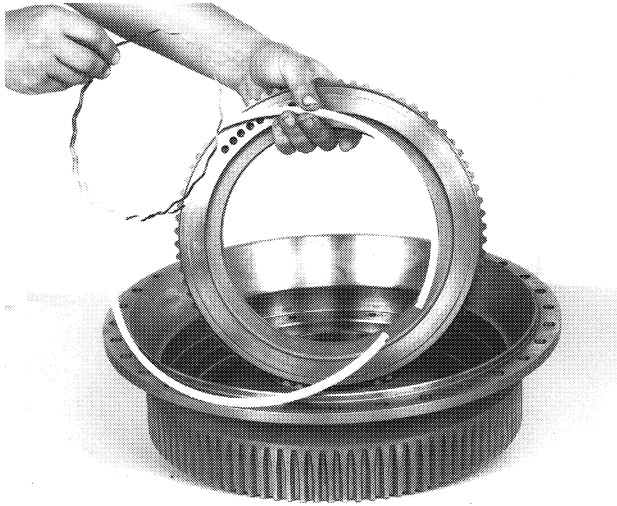
**Figure 360**

Install new "O" rings on the clutch pressure and lube transfer tubes, position tubes in rear cover. Pack oil sealing ring grooves with grease, install sealing rings and center rings in ring grooves.



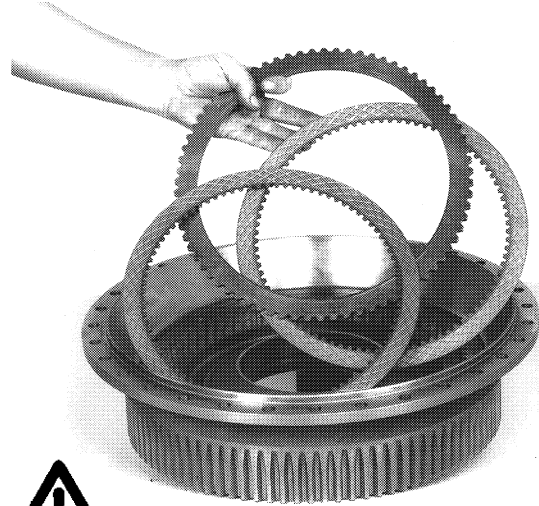
**Figure 363**

Position the 2nd speed clutch disc hub on the low (1st) clutch shaft. Install disc hub retainer ring. Install retainer ring retainer. Install ring retainer, retainer ring. See Figure 364.



**Figure 415**

Position lock-up piston outer oil sealing ring expander spring in ring groove. Install oil sealing ring over expander spring being sure lock joints securely fastened. Expander spring gap to be 180° from sealing ring hook joint. Grease ring to facilitate assembly into impeller cover. **NOTE: Not all units will have an expander spring under the piston ring.**



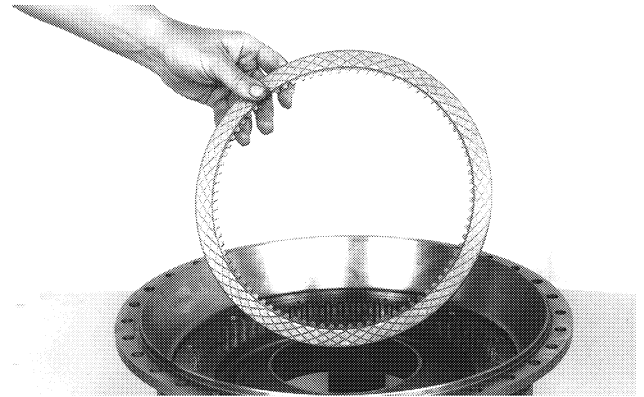
**Figure 418**

Install lock-up disc (friction). **NOTE: Some units will have two (2) lock-up discs (friction) and one steel disc, if you have a two (2) lock-up discs, install one (1) friction disc (teeth on the inner diameter of disc). Install steel disc (teeth on the outer diameter). Install second friction disc. The steel disc separates the two friction discs.**



**Figure 416**

Position lock-up piston in impeller cover using caution as not to damage the inner and outer piston rings.



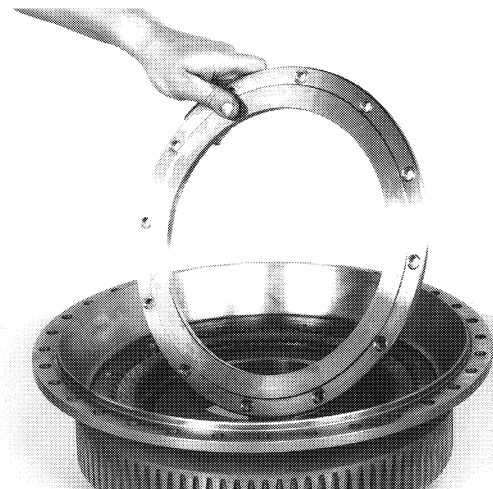
**Figure 419**

Some units will have only one (1) friction disc as shown in Figure 419 Install friction disc.



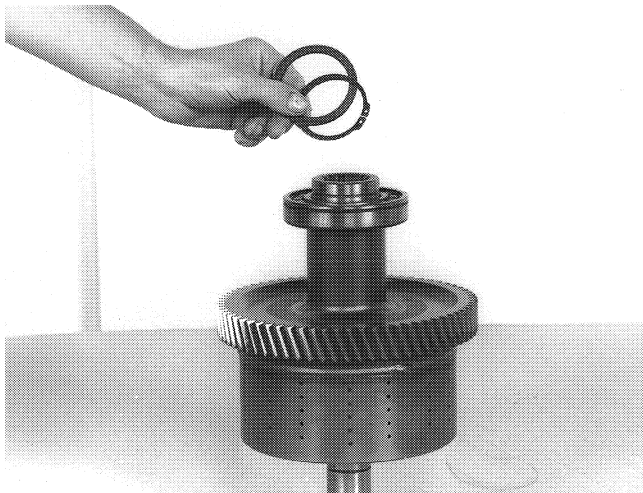
**Figure 417**

Position drive disc in impeller cover, aligning holes in drive disc with holes in impeller cover.



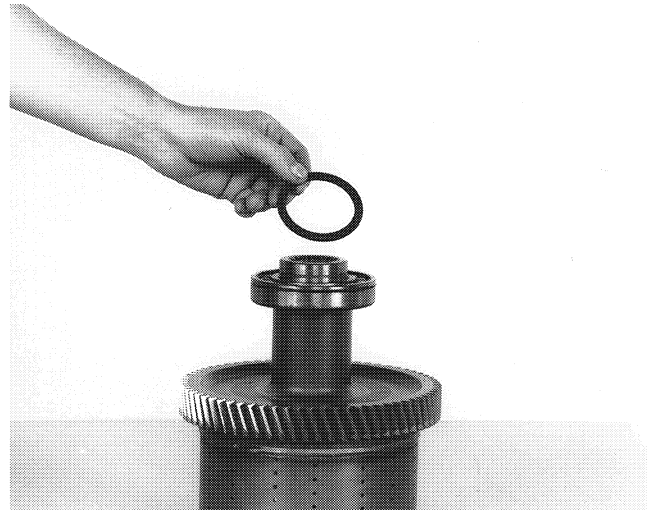
**Figure 420**

Position lock-up backing plate in impeller cover aligning holes in backing plate with holes in drive disc and impeller cover.



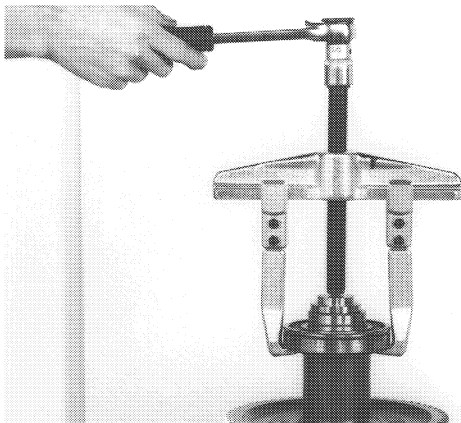
**Figure 458**

Remove forward clutch shaft rear bearing retainer ring and thrust washer. **NOTE: Not all units will have a thrust washer.**



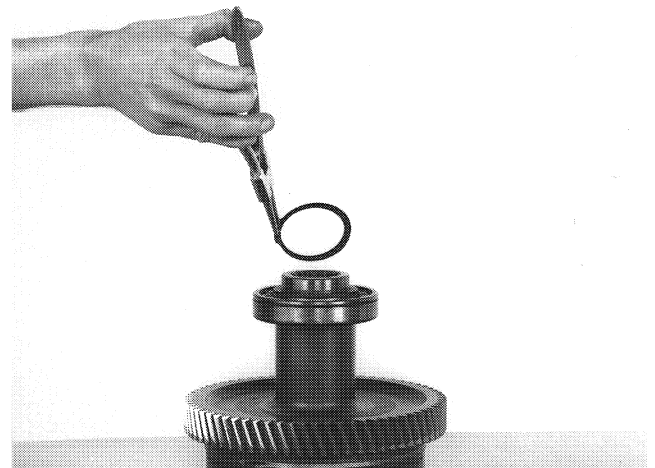
**Figure 461**

Position bearing thrust washer on shaft. See note in figure 458.



**Figure 459**

Remove rear bearing.

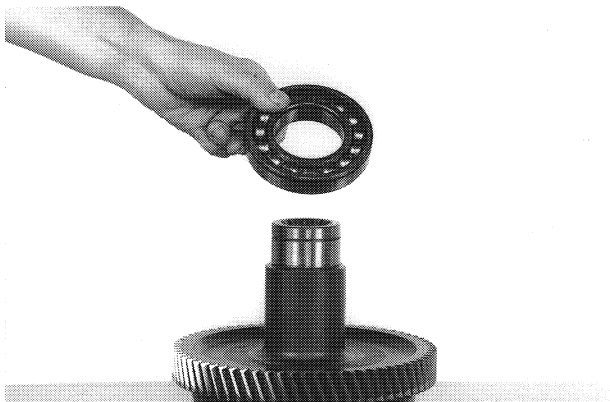


**Figure 462**

Install bearing retaining ring.

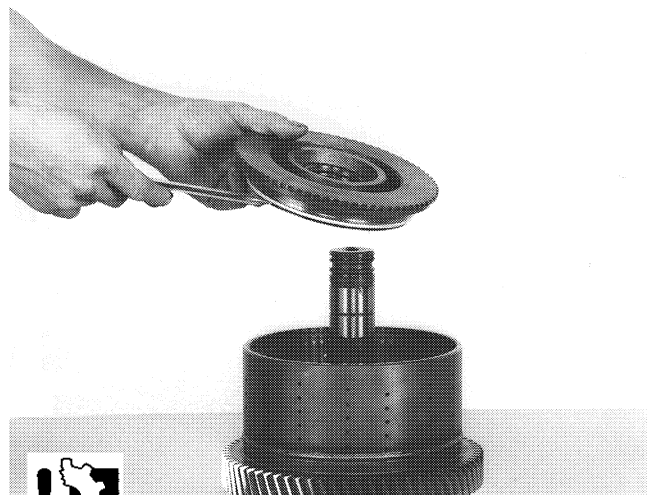
## FORWARD CLUTCH REASSEMBLY

See cleaning and inspection page.  
(Modulation only)



**Figure 460**

Install rear bearing on shaft with bearing outer locating ring groove up. (To the rear).



**Figure 463**

Install clutch piston inner and outer seal rings. Grease rings to facilitate assembly into clutch drum. Install piston in drum.



CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: [www.heydownloads.com](http://www.heydownloads.com) by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL