



Service Repair Manual

Model

432E BACKHOE LOADER

Previous Screen

Product: BACKHOE LOADER

Model: 432E BACKHOE LOADER JBA

Configuration: 432E Backhoe Loader JBA00001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly

422E, 428E, 432E, 434E, 442E and 444E Backhoe Loaders Power Train

Media Number -KENR8841-01

Publication Date -01/05/2014

Date Updated -14/05/2014

i03305583

Transmission (Direct Drive) - Disassemble

SMCS - 3030-015-DD; 3066-015

S/N - DPH1-UP

S/N - EME1-UP

S/N - JBA1-UP

S/N - MAW1-UP

S/N - SEF1-UP

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-5750	Engine Stand	1
B	138-7574	Link Brackets	2
	6V-3009	Crossbar	1
	126-7181	Sliding Plate	4
	6V-4832	Forcing Screw	1
	C	8H-0663	Bearing Puller Gp
	126-7177	Puller Leg	2
	126-7178	Puller Leg	2
	126-7179	Puller Leg	2

D	4C-3652	Spring Compressor	1
E	1U-6400	Three Jaw Puller	1
F	8B-7551	Bearing Puller Gp	1
G	1P-1859	Retaining Ring Pliers	1

Start By:

- a. Remove the transmission. Refer to Disassembly and Assembly, "Transmission (Direct Drive) - Remove".

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

Note: Cleanliness is an important factor. Before the disassembly procedure, the exterior of the component should be thoroughly cleaned. This will help to prevent dirt from entering the internal mechanism.

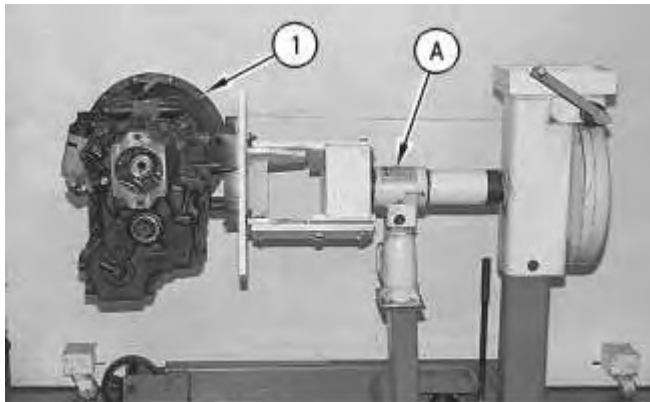


Illustration 1

g00728888

1. Install transmission (1) on Tooling (A). The weight of transmission (1) is approximately 205 kg (450 lb).
-

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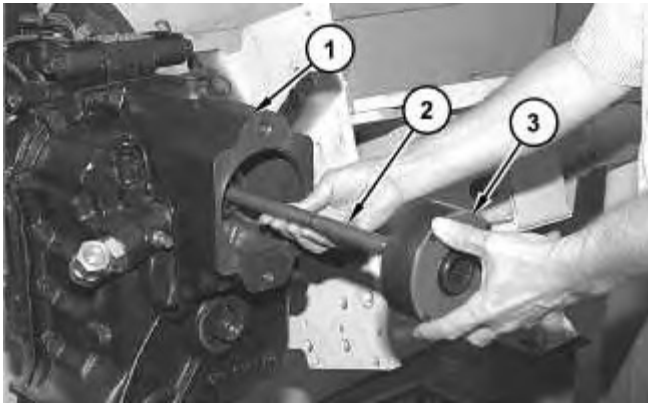


Illustration 2

g01688016

2. Remove implement pump drive shaft (2) and coupler (3) from transmission (1).



Illustration 3

g01688013

3. Remove bolts (4) and plate (5).



Illustration 4

g01688014

4. Remove gear (6).

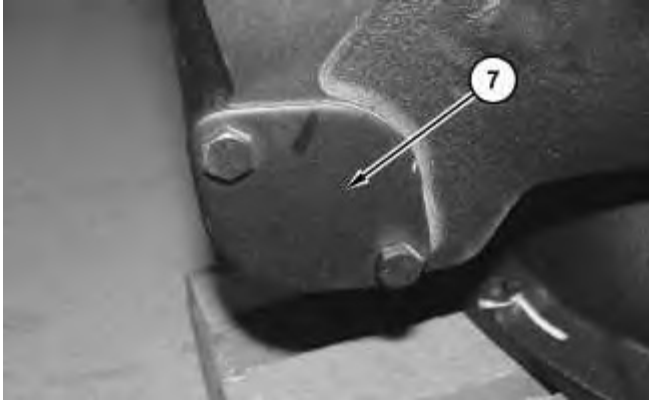


Illustration 5

g01688017

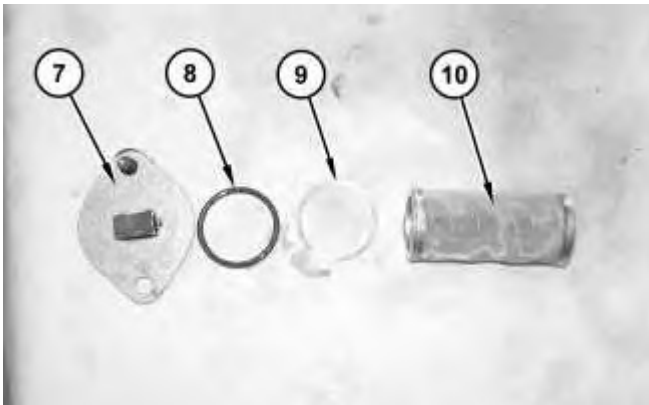


Illustration 6

g01688018

5. Remove cover (7), O-ring seal (8), spacer (9), and screen (10).

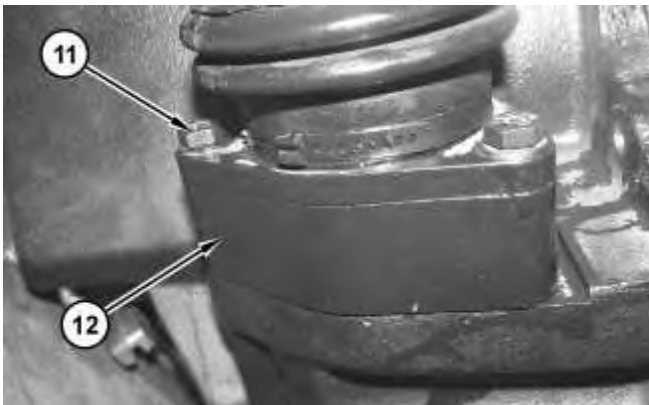


Illustration 7

g01688019

6. Remove bolts (11) and gear shift assembly (12).

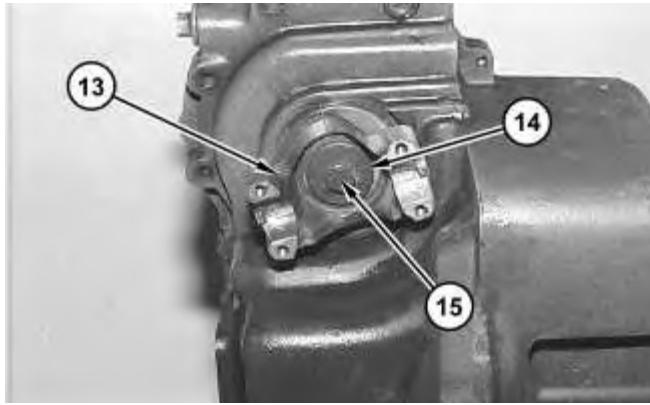


Illustration 8

g01688020

7. Remove bolt (15), washer (14), and yoke (13).

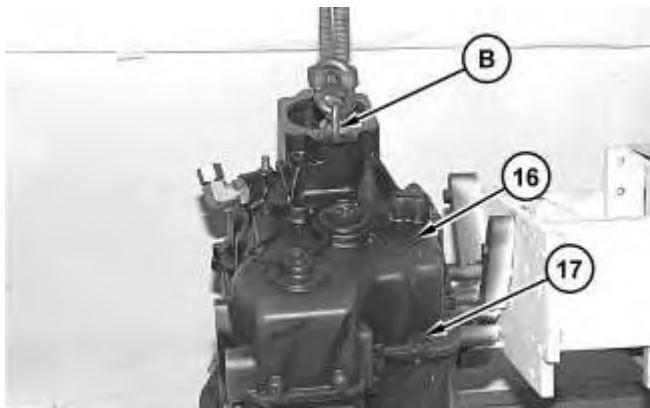


Illustration 9

g01688033

8. Attach Tooling (B) and a suitable lifting device to case (16). The weight of case (16) is approximately 42 kg (94 lb). Remove bolts (17) and case (16).

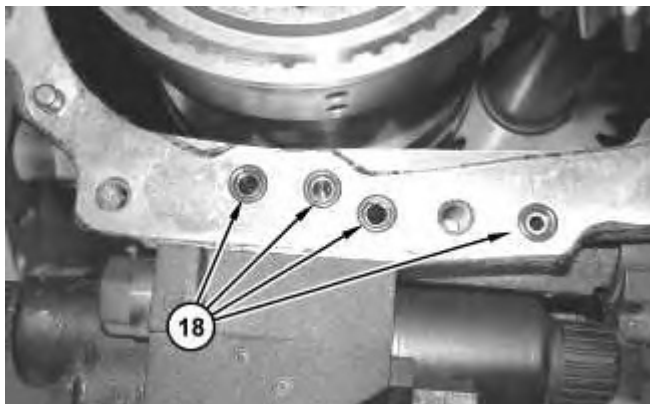


Illustration 10

g01688053

9. Remove O-ring seals (18).

Front Output Shaft

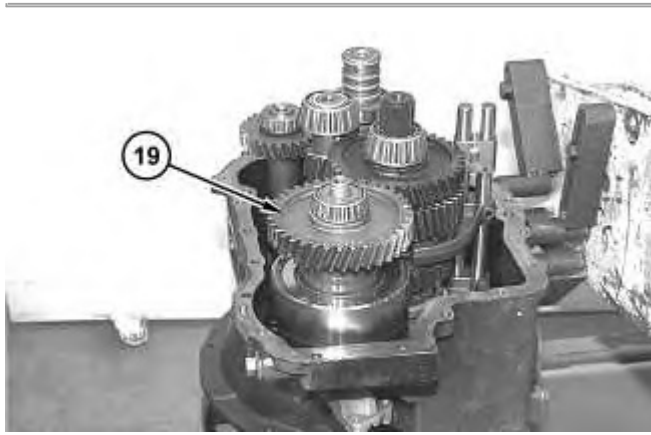


Illustration 11

g01688073

1. Remove front output shaft (19).

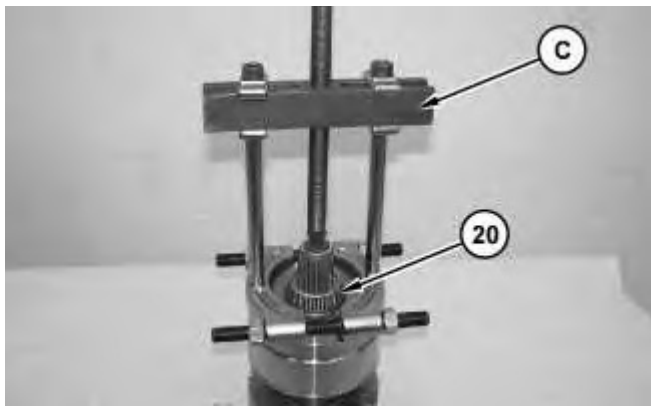


Illustration 12

g01688093

2. Use Tooling (C) in order to remove bearing cone (20).

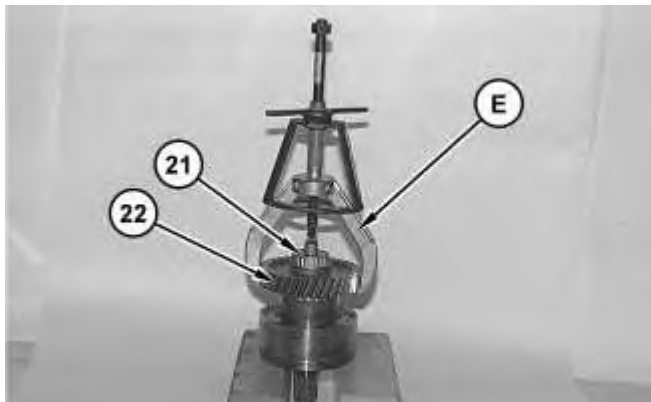


Illustration 13

g01688113

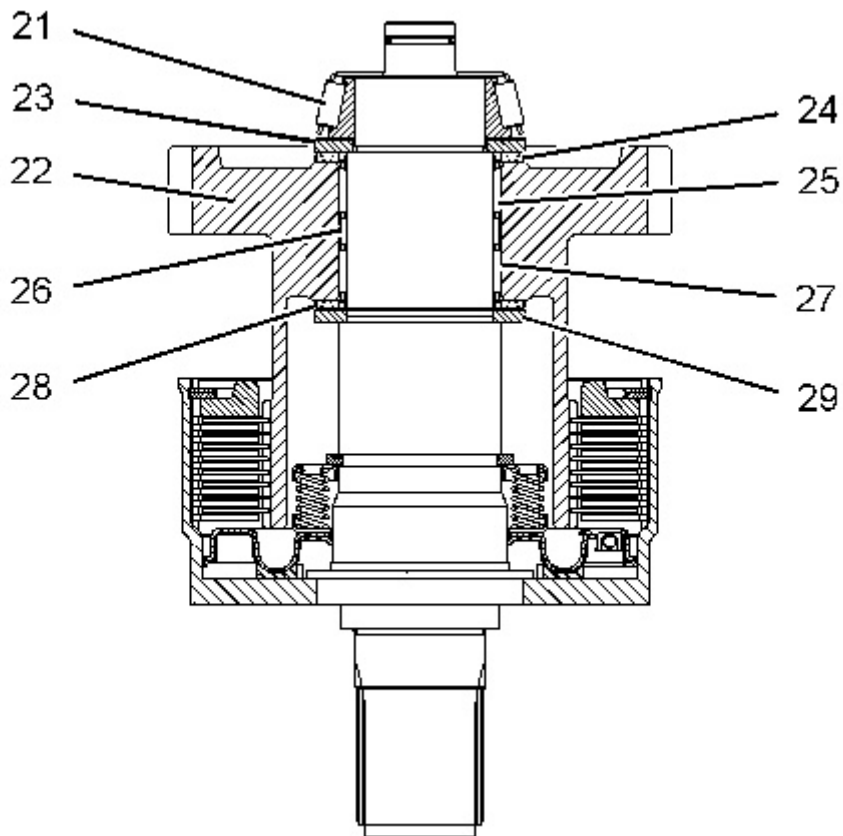


Illustration 14

g01690674

3. Use Tooling (E) in order to remove bearing cone (21) and gear (22). Remove bearing cone (21), thrust washer (23), needle bearing (24), gear (22), needle bearings (25), spacer (26), needle bearing (27), needle bearing (28), and thrust washer (29).

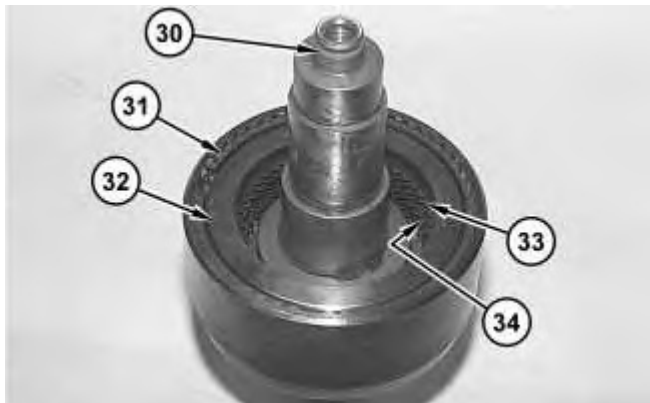


Illustration 15

g01688188

4. Remove ring seal (30). Remove retaining ring (31), plate (32), friction discs (33), and clutch discs (34).

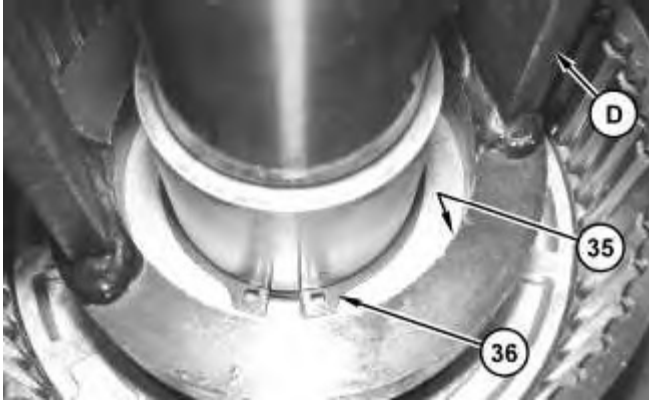


Illustration 16

g01688189

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

5. Use a suitable press and Tooling (D) in order to compress spring (35). Use Tooling (G) in order to remove retaining ring (36).



Illustration 17

g01688190

6. Remove retainer (37) and spring (35).



Illustration 18

g01688191

7. Release piston (38) by blowing 207 kPa (30 psi) of air into the lube passage, as shown.

Rear Output Shaft

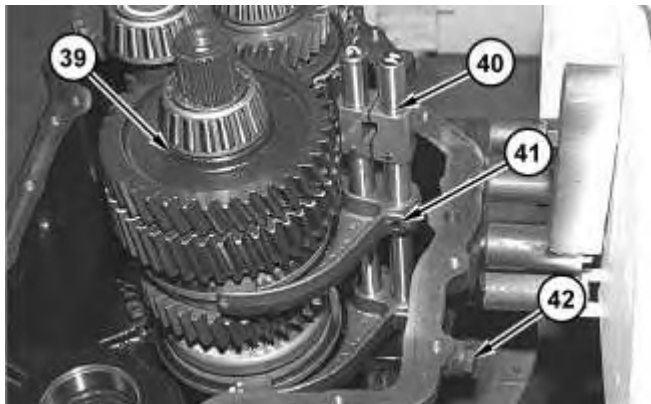
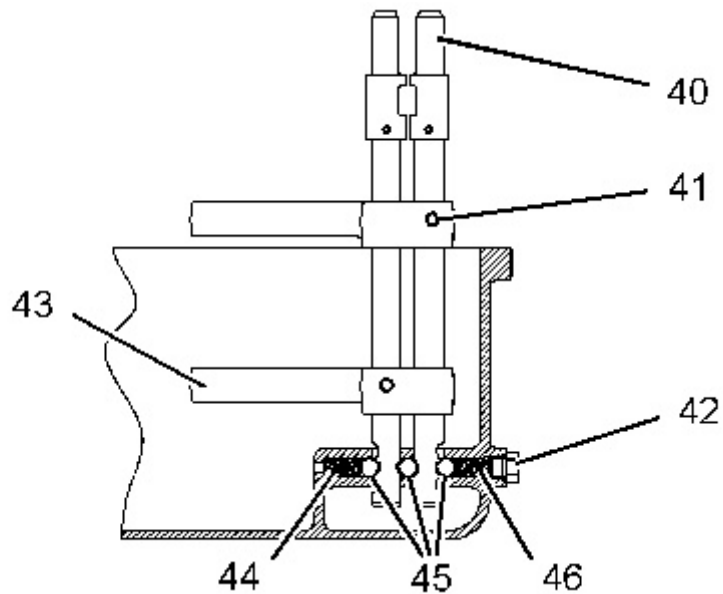


Illustration 19

g01688713



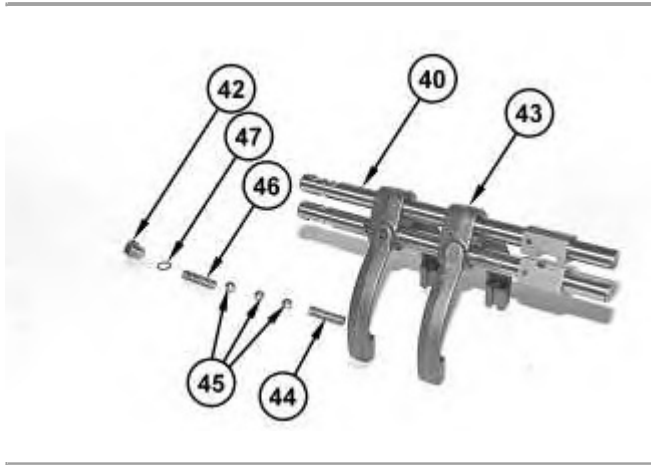


Illustration 21

g01688733

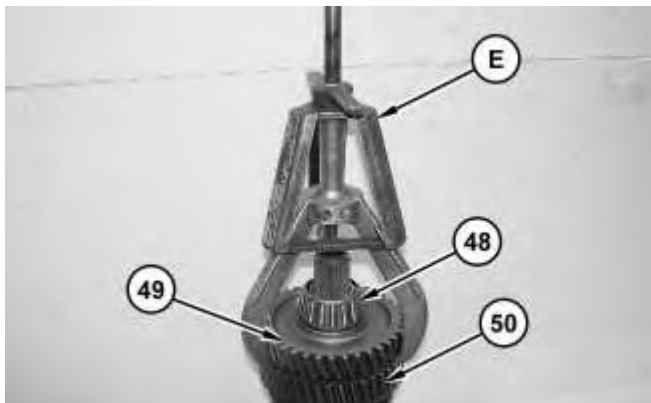
! WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

1. Remove screws (41) from each of the gearshift rods (40). Remove plug (42), O-ring seal (47), spring (46), and the outer ball (45).
2. Remove the outer gearshift rod (40) and the center ball (45).
3. Remove the inner gearshift rod (40), the inner ball (45), and spring (44).
4. Remove rear output shaft (39) and shift forks (43).



5. Use Tooling (E) in order to remove bearing cone (48) and gear (49). Remove gear (50).
-



Illustration 23

6. Remove bearings (51), spacer (52), and synchronizer (53).
-

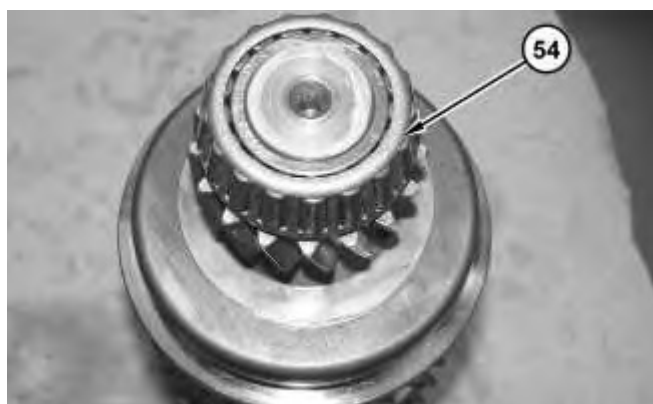


Illustration 24

7. Remove bearing cone (54).
-



Illustration 25

8. Use Tooling (G) in order to remove retaining ring (55). Remove gear (56).

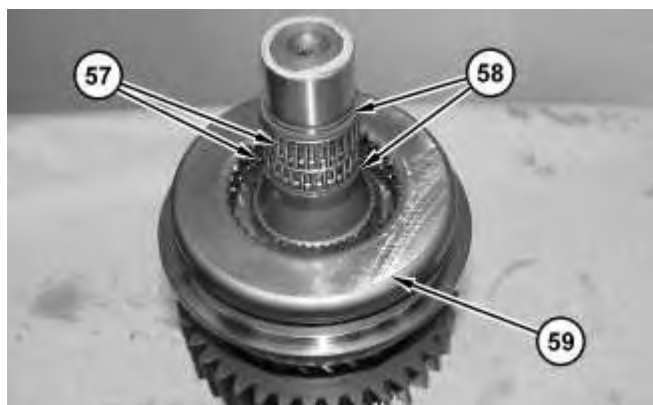


Illustration 26

g01688785

9. Remove spacers (58). Remove bearings (57). Remove synchronizer (59).

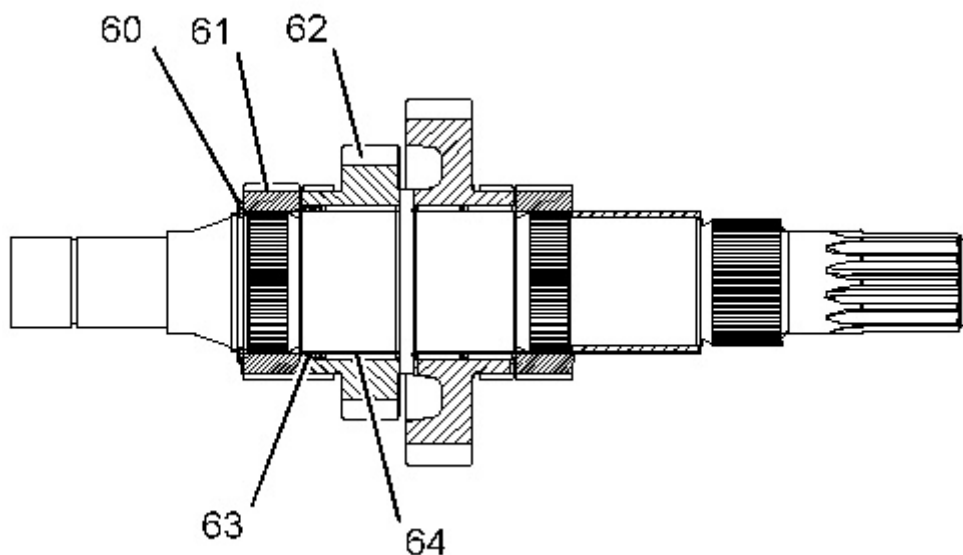


Illustration 27

g01688994

10. Use Tooling (G) in order to remove retaining ring (60). Remove sleeve (61), gear (62), spacer (63), and needle bearing (64).

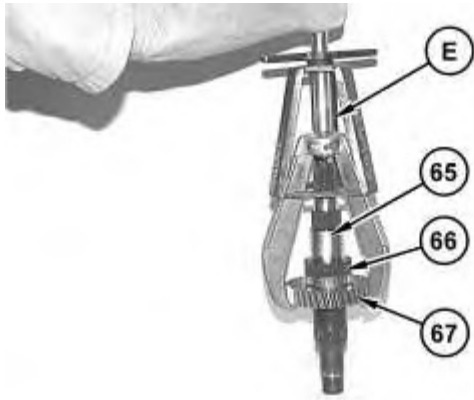


Illustration 28

g01689233

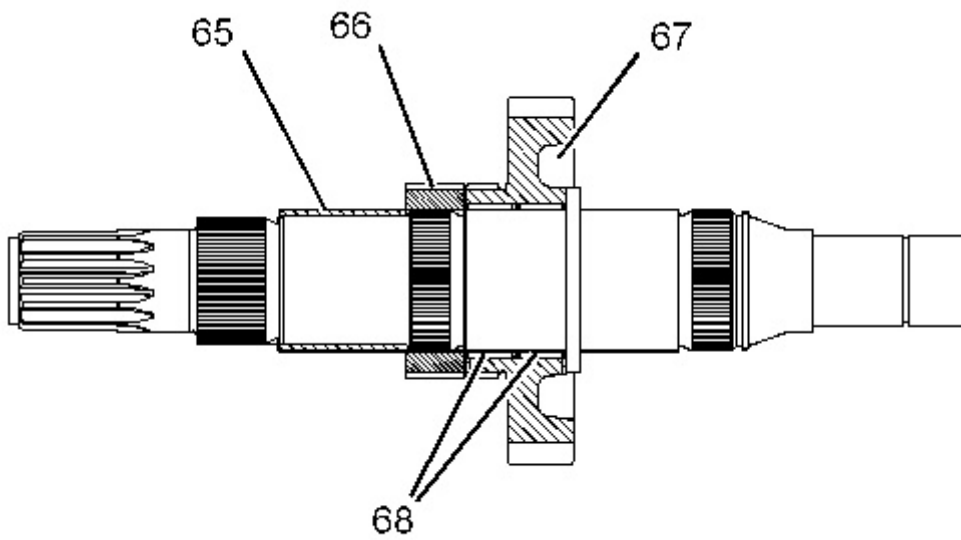


Illustration 29

g01688833

11. Use Tooling (E) in order to remove sleeve (65), sleeve (66), and gear (67). Remove needle bearings (68).

Countershaft



1. Remove direct drive shaft (69).

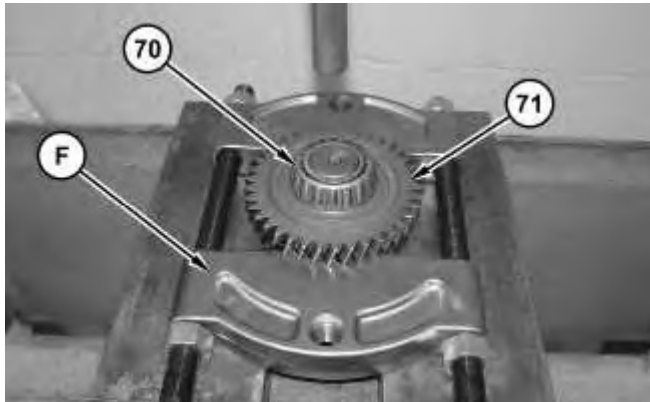


Illustration 31

2. Use Tooling (F) and a suitable press in order to remove gear (71) and bearing cone (70).

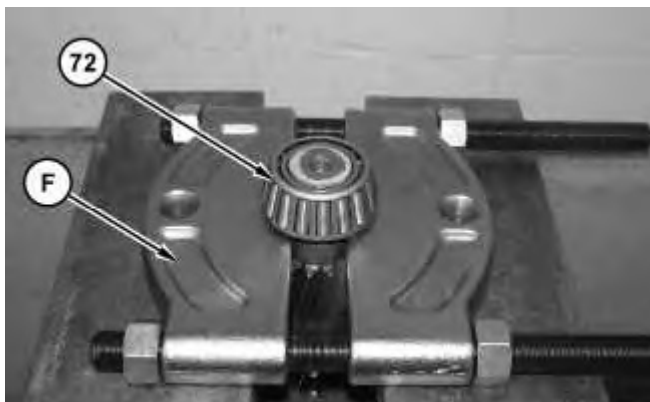


Illustration 32

3. Use Tooling (F) and a suitable press in order to remove bearing cone (72).

Idler Shaft



Illustration 33

g01689293

1. Remove reverse shaft (73).

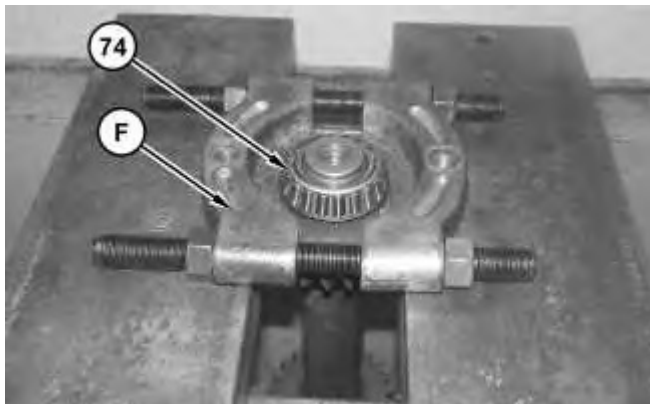


Illustration 34

g01689297

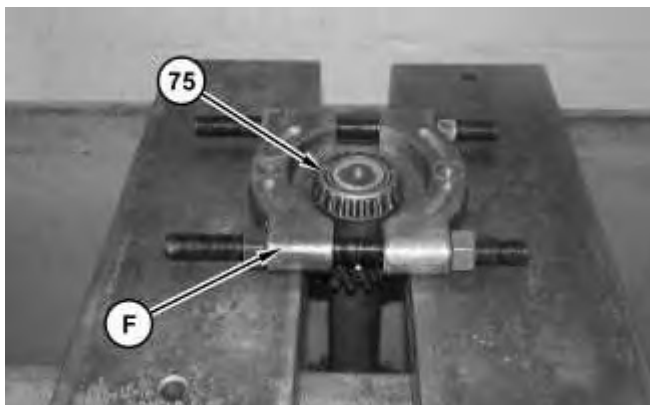


Illustration 35

g01689316

2. Use Tooling (F) and a suitable press in order to remove bearing cones (74) and (75).

Input Shaft

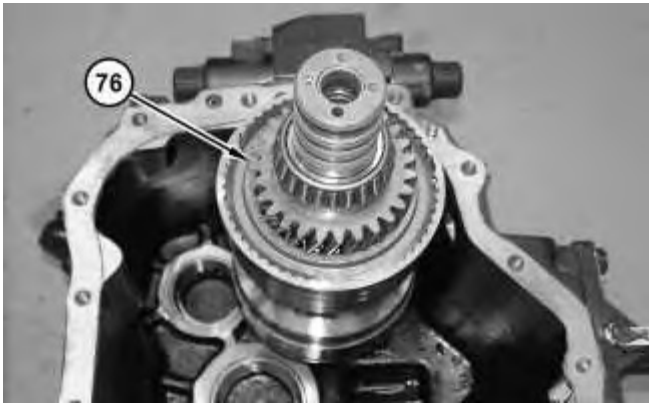


Illustration 36

g01689317

1. Remove input shaft (76).

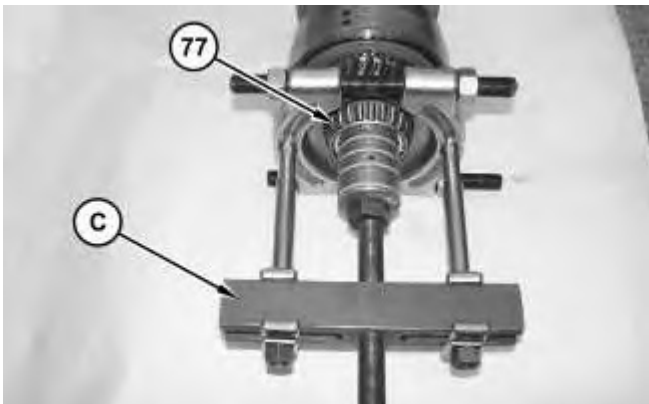


Illustration 37

g01689318

2. Use Tooling (C) in order to remove bearing cone (77).



Illustration 38

g01689319

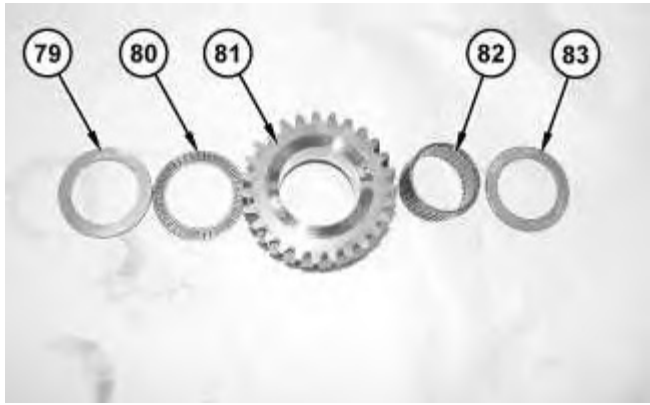


Illustration 39

g01689320

3. Use Tooling (G) in order to remove retaining ring (78).
4. Remove thrust washers (79) and (83), needle bearing (80), gear (81), and needle bearing (82).



Illustration 40

g01689321

5. Remove retaining ring (84), plate (85), friction discs (86), and clutch discs (87).

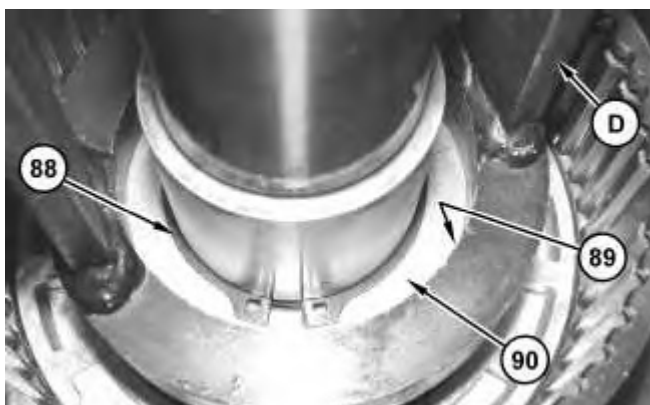


Illustration 41

g01689322

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

6. Use Tooling (D) and a suitable press in order to compress spring (89). Use Tooling (G) in order to remove retaining ring (88). Remove retainer (90) and spring (89).

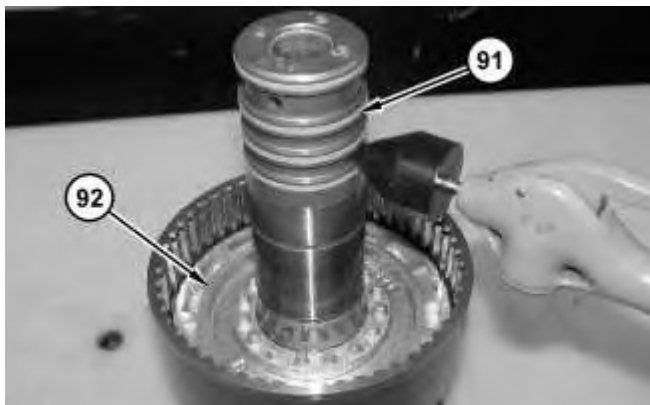


Illustration 42

g01689324

7. Remove ring seals (91). Release piston (92) by blowing 207 kPa (30 psi) of air into the lube passage, as shown.

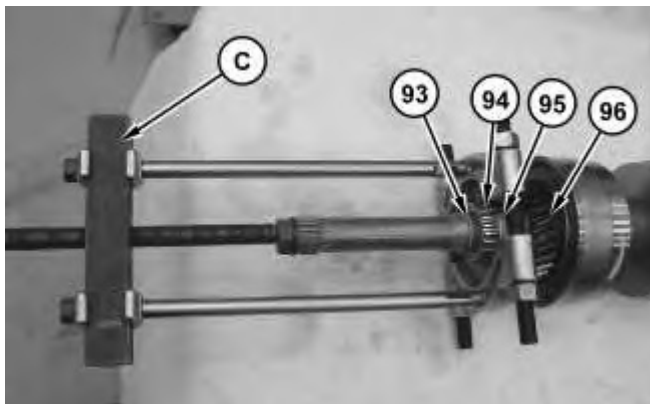


Illustration 43

g01689326

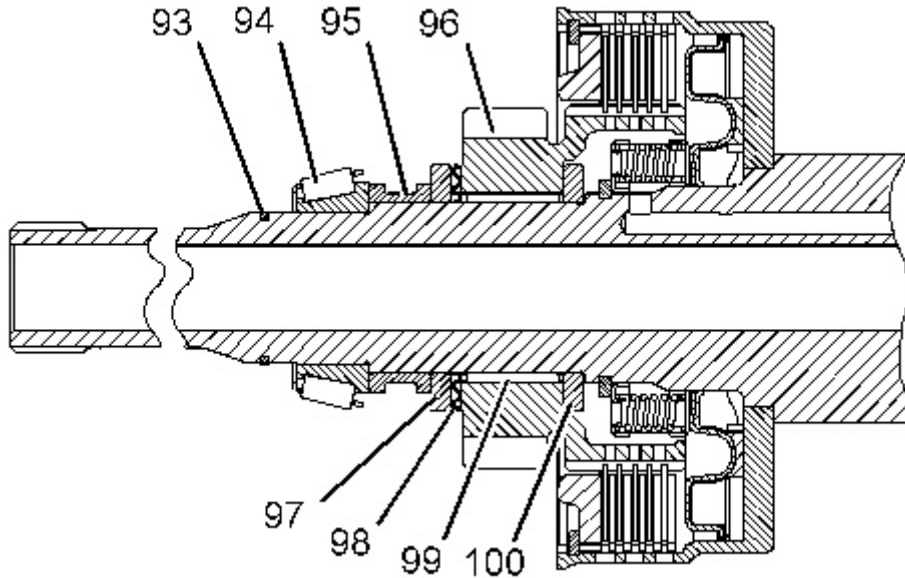


Illustration 44

g01689536

8. Remove ring seal (93). Use Tooling (C) in order to remove bearing cone (94) and spacer (95). Remove thrust washer (97), needle bearing (98), gear (96), roller bearing (99), and thrust washer (100).
9. Repeat Steps 5 through Steps 7 for the remainder of the input shaft.

Transmission Case

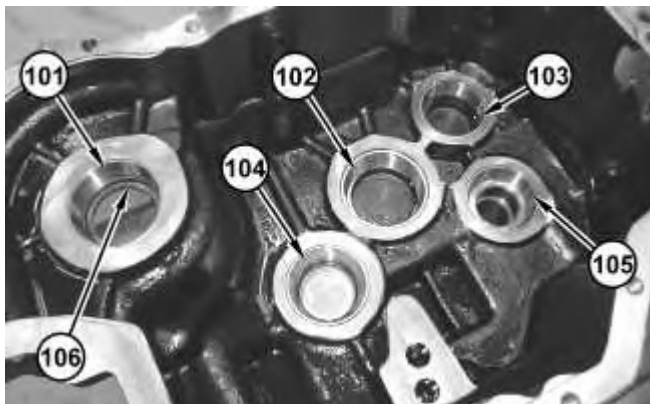


Illustration 45

g01689328

1. Remove bearing cup (101), bearing cup (102), bearing cup (103), bearing cup (104), and bearing cup (105) and lip seal (106) from the case.

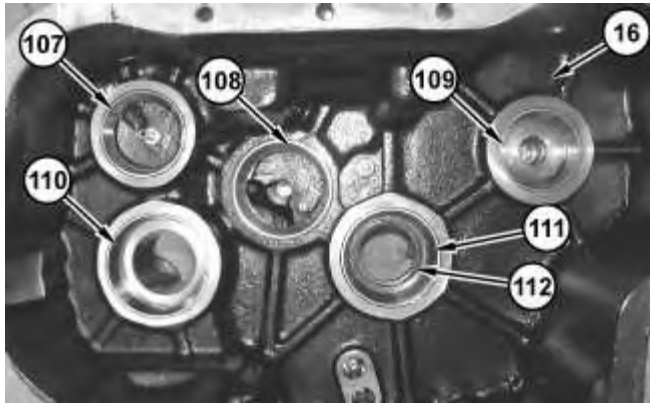


Illustration 46

g01689331

Note: Note the number of shims when you remove each of the bearing cups.

2. Remove bearing cup (107), bearing cup (108), bearing cup (109), and bearing cup (110) from case (16). Remove bearing cup (111) and lip seal (112) from the case (16).



Illustration 47

g01689333

3. Remove speed sensor (113).

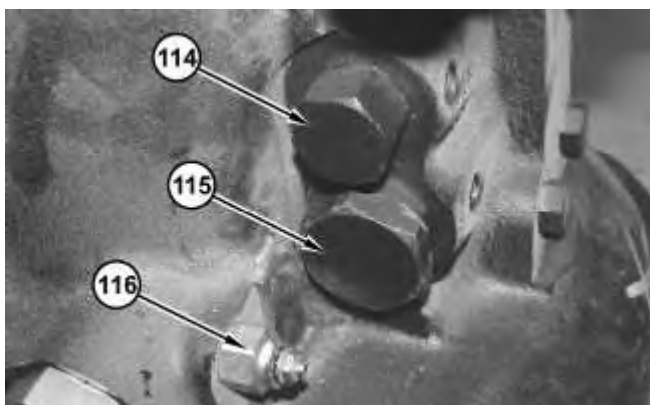


Illustration 48

g01689336

4. Remove relief valve (114), relief valve (115), and temperature sensor (116).

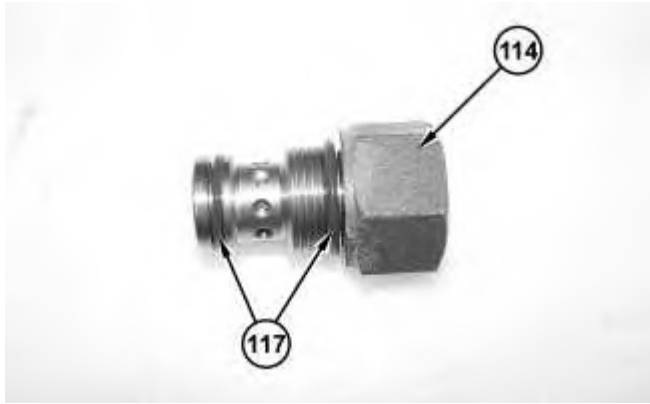


Illustration 49

g01689337

5. Remove O-ring seals (117) from relief valve (114).



Illustration 50

g01689353

6. Remove O-ring seals (118) from relief valve (115).

[Previous Screen](#)

Product: BACKHOE LOADER

Model: 432E BACKHOE LOADER JBA

Configuration: 432E Backhoe Loader JBA00001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly

422E, 428E, 432E, 434E, 442E and 444E Backhoe Loaders Power Train

Media Number -KENR8841-01

Publication Date -01/05/2014

Date Updated -14/05/2014

i03355351

Transmission (Direct Drive) - Assemble

SMCS - 3030-016-DD; 3066-016

S/N - EME1-UP

S/N - JBA1-UP

S/N - MAW1-UP

S/N - SEF1-UP

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-5750	Engine Stand	1
B	138-7574	Link Brackets	2
D	4C-3652	Spring Compressor	1
G	1P-1859	Retaining Ring Pliers	1
H	8T-5096	Indicator	1
J	1P-0510	Driver Gp	1
K	4C-9506	Retaining Compound	-
L	6V-6640	Sealant	-
M	1H-9721	Expansion Plug	1
N	9S-3263	Thread Lock Compound	-

Note: The transmission will be assembled in major components. The major components will then be assembled.

Note: Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

Note: Apply a light film of clean transmission oil to all components before assembly.

Note: O-ring seals, gaskets, and seals should always be replaced. A used O-ring seal may not have the same sealing properties as a new O-ring seal. Use Tooling (M) during the assembly procedure.

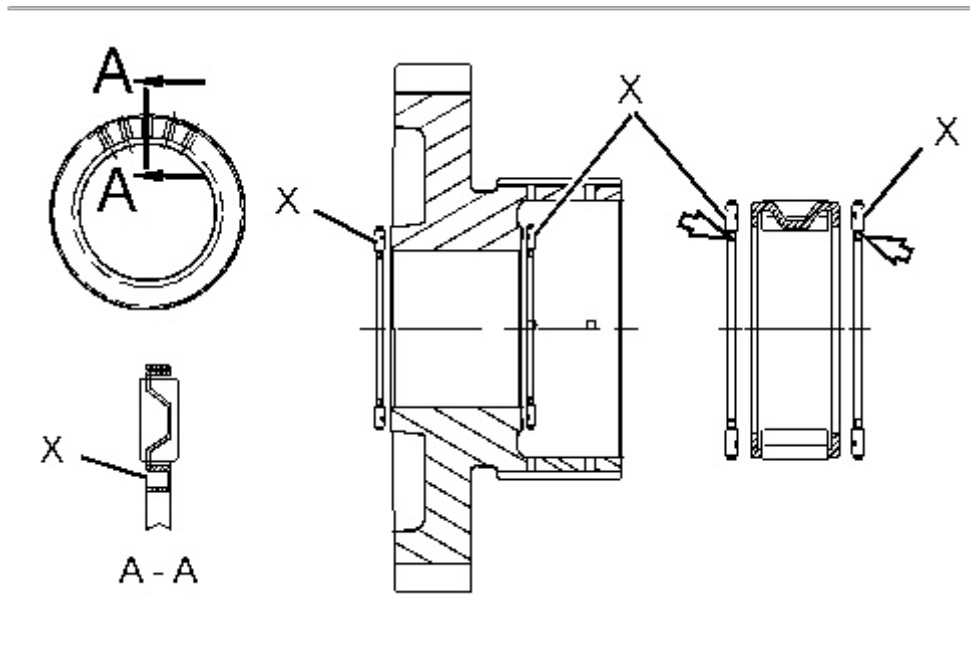


Illustration 1

g01692558

1. During the installation of all the needle bearings on the shafts, the open end of cups (X) must point away from the bearings or gears that are contacted.

Transmission case



Illustration 2

g01689353

1. Install O-ring seals (118) onto relief valve (115) .

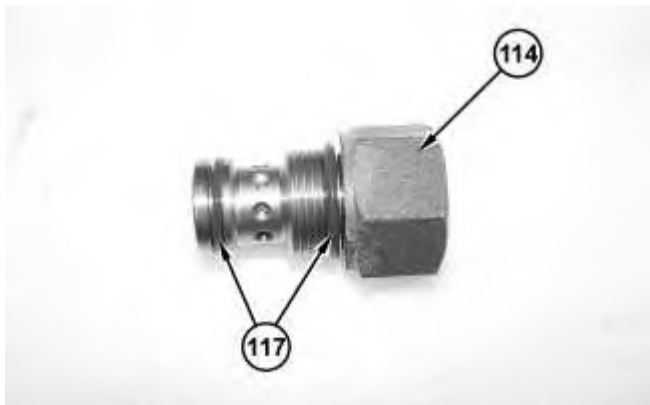


Illustration 3

g01689337

2. Install O-ring seals (117) onto relief valve (114) .

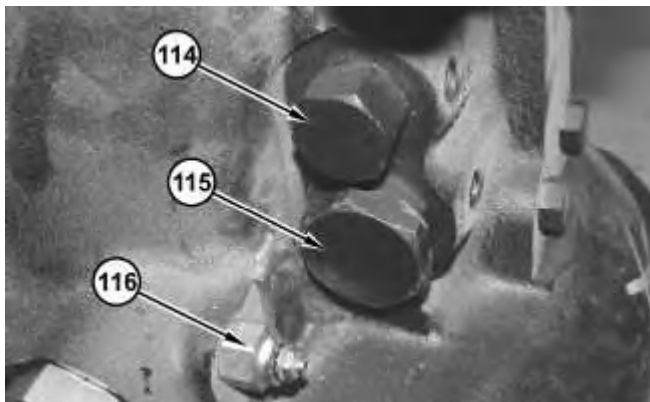


Illustration 4

g01689336

3. Install relief valve (114), relief valve (115), and temperature sensor (116). Tighten relief valve (114) to a torque of 17 to 22 N·m (150 to 195 lb in). Tighten relief valve (115) to a torque of 34 to 44 N·m (25 to 32 lb ft). Tighten temperature sensor (116) to a torque of 13 to 18 N·m (115 to 160 lb in).

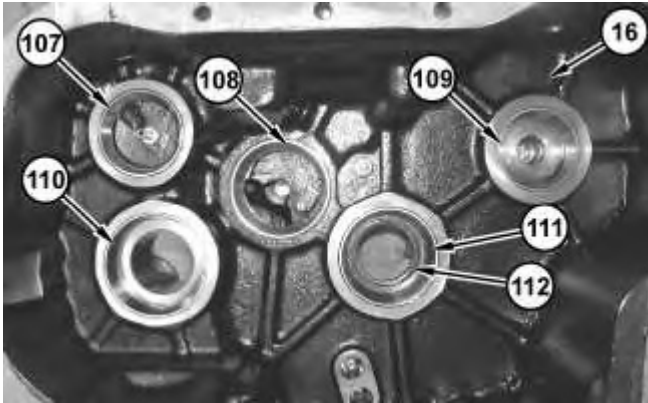


Illustration 5

g01689331

Note: Install the shims behind each bearing cup that was recorded on the disassembly procedure.

4. Install bearing cup (107), bearing cup (108), bearing cup (109), and bearing cup (110) into case (16). Install bearing cup (111) and lip seal (112) into case (16) .

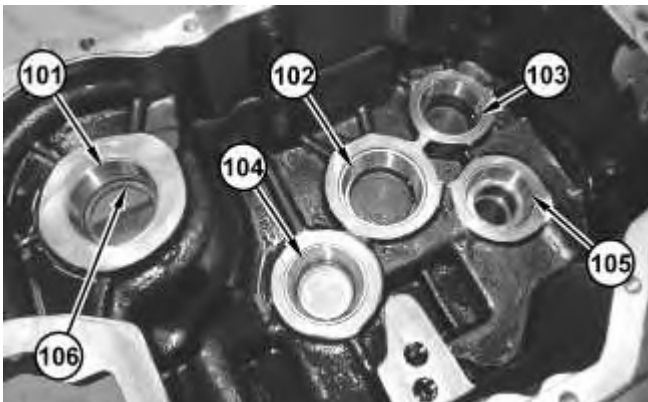


Illustration 6

g01689328

5. Install bearing cup (101), bearing cup (102), bearing cup (103), bearing cup (104), and bearing cup (105) into the case. Use Tooling (J) in order to install lip seal (106) into the case.

Input Shaft

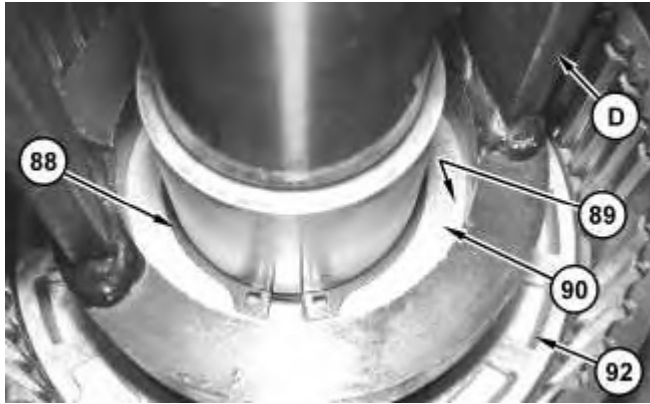


Illustration 7

g01689834

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

1. Install piston (92). Install spring (89) and retainer (90). Use Tooling (D) and a suitable press in order to compress spring (89). Use Tooling (G) in order to install retaining ring (88) .



Illustration 8

g01689321

2. Install clutch discs (87), friction discs (86), plate (85), and retainer ring (84) .

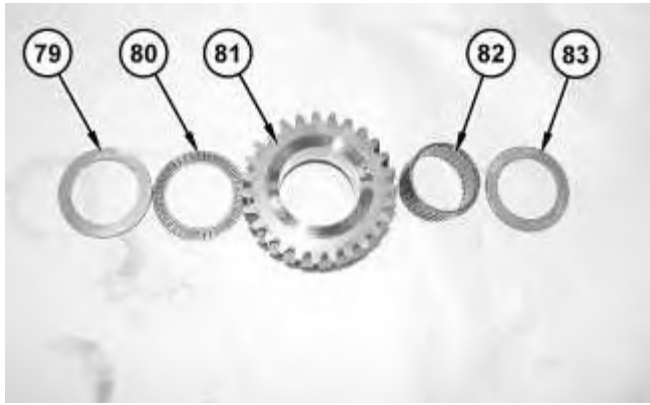


Illustration 9

g01689320



Illustration 10

g01689319

3. Install thrust washer (83), needle bearing (82), gear (81), needle bearing (80), and thrust washer (79). Use Tooling (G) in order to install retaining ring (78) .



Illustration 11

g01690073

4. Raise the temperature of bearing cone (77). Install bearing cone (77) .

5. Repeat Steps 1 through 2 for the opposite end of the input shaft.

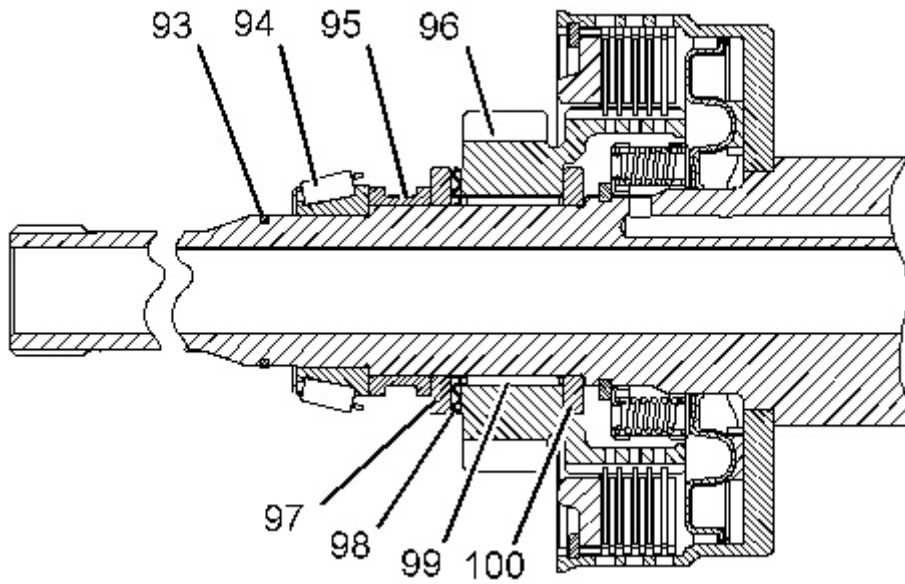


Illustration 12

g01689536

6. Install thrust washer (100), roller bearing (99), gear (96), needle bearing (98), thrust washer (97), and spacer (95).
7. Raise the temperature of bearing cone (94). Install bearing cone (94). Install ring seal (93).

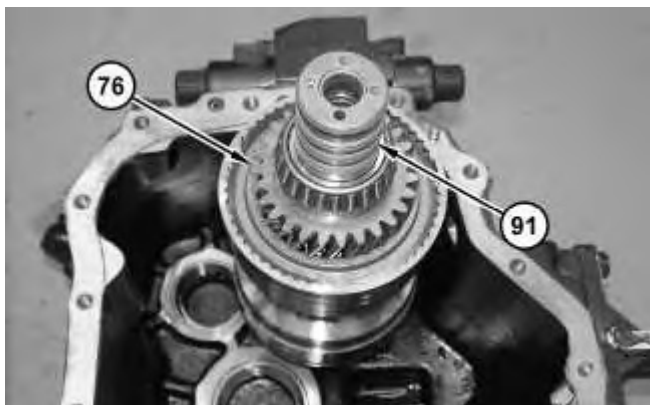


Illustration 13

g01690034

8. Install ring seals (91). Install input shaft (76).

Idler Shaft



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Illustration 14

g01690153

1. Raise the temperature of bearing cones (74) and (75) . Install bearing cones (74) and (75) .

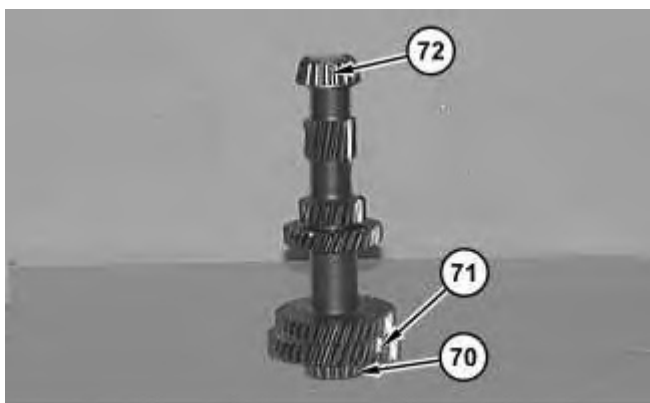


Illustration 15

g01689293

2. Install reverse shaft (73) .

Countershaft



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