

**Product:** BACKHOE LOADER

**Model:** 428D BACKHOE LOADER MBM

**Configuration:** 428D Backhoe Loader MBM00001-UP (MACHINE) POWERED BY 3054C Engine

## **Disassembly and Assembly**

### **416D, 420D, 424D, 428D, 430D, 432D, 438D and 442D Backhoe Loaders Power Train**

**Media Number -RENR3578-12**

**Publication Date -01/04/2010**

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i01381641

## **Transmission (Direct Drive) - Assemble**

SMCS - 3030-016-DD; 3066-016

### **Assembly Procedure**

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	137-8102	Spring Compressor	1
B	1P-1859	Snap Ring Pliers	1
C	4C-3652	Spring Compressor	1
D	6V-2157	Link Bracket	1
E	8T-5096	Indicator	1
F	1U-5750	Engine Stand	1

**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.

## **Transmission case**

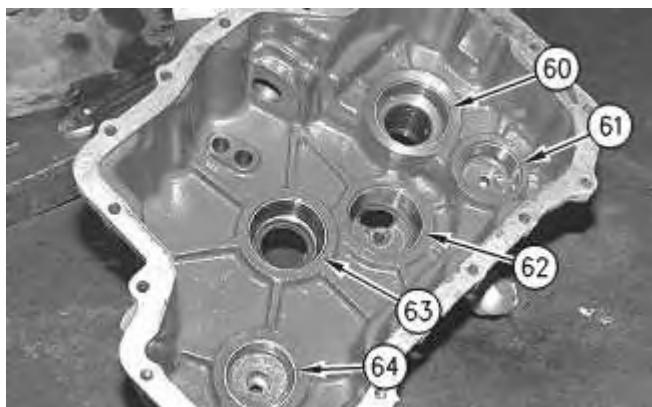


Illustration 1

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

1. Install bearing cups (60), (61), (62), (63), and (64) .

## (Direct Drive) Input Shaft

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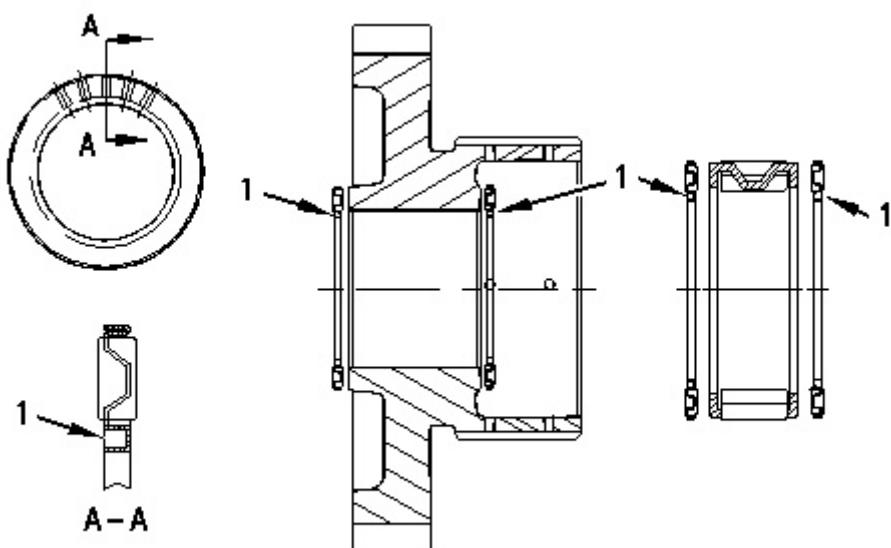


Illustration 2

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1. Install the needle thrust bearings on the shafts. The open end of cups (1) must point away from the bearings or gears that are contacted.
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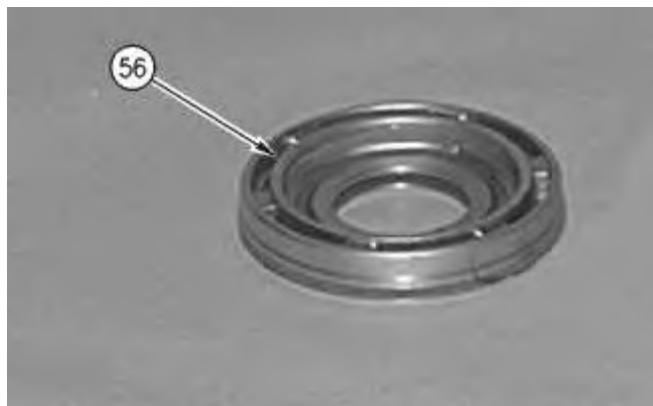


Illustration 3

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2. Install the seals on piston (56) .

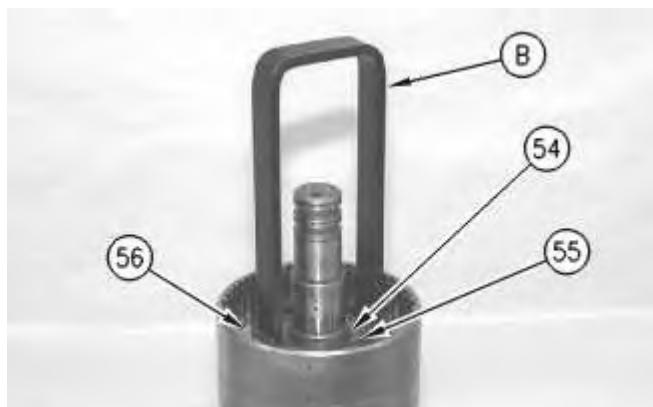


Illustration 4

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3. Install piston (56). Install the retainer and spring (55). Use tooling (A) and a suitable press in order to compress spring (55). Use tooling (B) in order to install snap ring (54) .

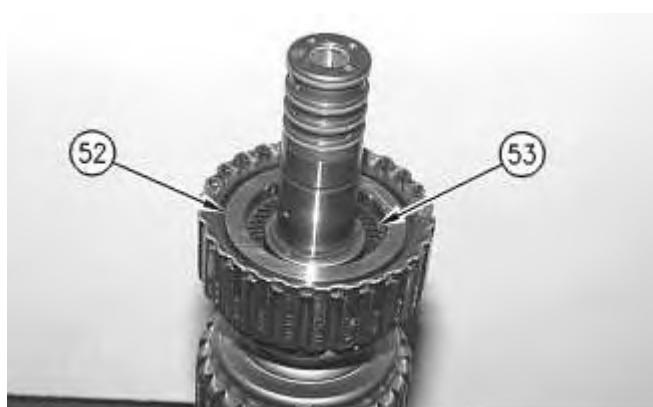


Illustration 5

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4. Install clutch pack (53) and retainer (52) .
5. Repeat Steps 2 through 4 for the opposite end of the input shaft.

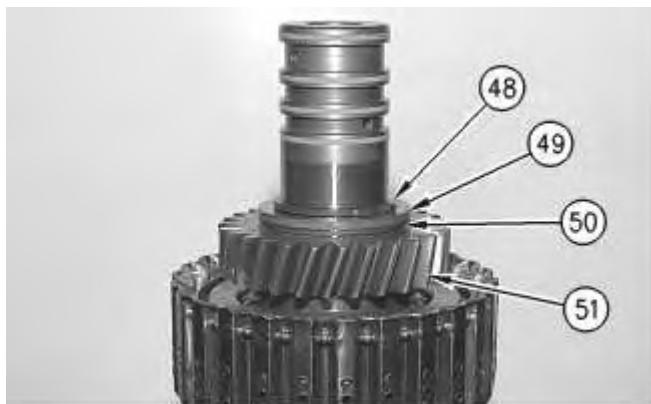


Illustration 6

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6. Install gear (51), needle bearing (50), and spacer (49). Use tooling (B) in order to install snap ring (48) .



Illustration 7

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7. Heat bearing cone (57) to 135 °C (275 °F). Install bearing cone (57) .
8. Install the input shaft.

## (Direct Drive) Reverse Shaft

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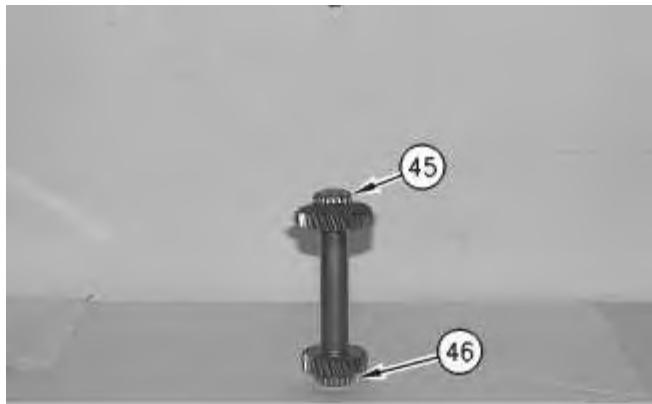


Illustration 8

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1. Heat bearing cones (45) and (46) to 135 °C (275 °F). Install bearing cones (45) and (46) .
2. Install the reverse shaft.

## (Direct Drive) Shaft

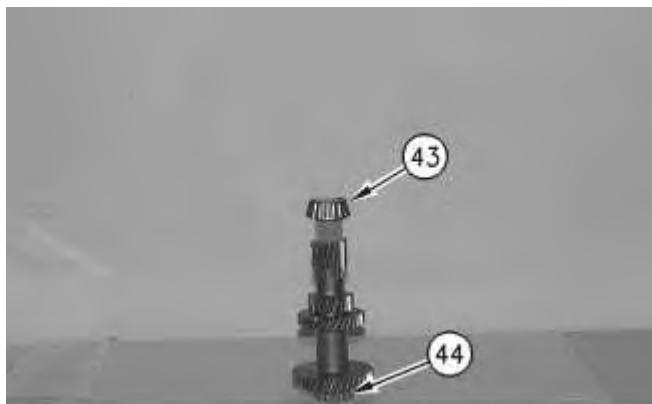


Illustration 9

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1. Heat bearing cones (45) and (46) to 135 °C (275 °F). Install bearing cones (45) and (46) .
2. Install the shaft.

## (Direct Drive) Output Shaft (Rear)



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Illustration 10

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1. Install gear (42) .
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Illustration 11

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2. Install housing (41) and gear (40). Use tooling (B) in order to install snap ring (39) .
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Illustration 12

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3. Install synchronizer (38). Install gear (37). Heat bearing cone (36) to 135 °C (275 °F). Install bearing cone (36).



Illustration 13

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4. Install synchronizer (35), spacer (34), and bearings (33).

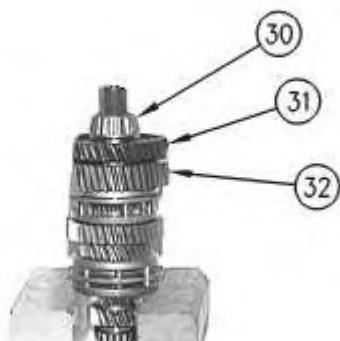


Illustration 14

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5. Install gear (31) and (32). Heat bearing cone (30) to 135 °C (275 °F). Install bearing cone (30).
  6. Install the output shaft (rear) in the transmission.
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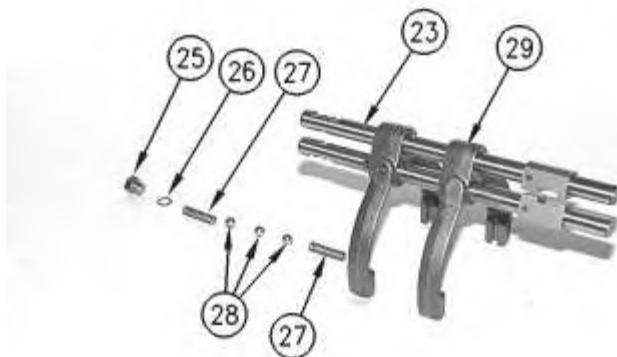


Illustration 15

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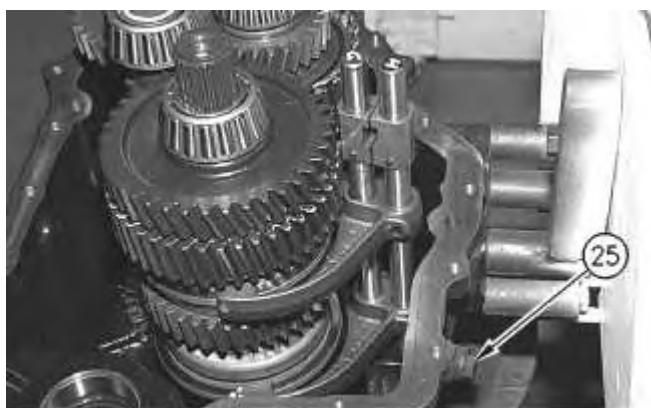


Illustration 16

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7. Install two gearshift rods (23) on shift forks (29). Install the gearshift rods in the transmission. Install three balls (28), two springs (27), and O-ring (26). Install plug (25).

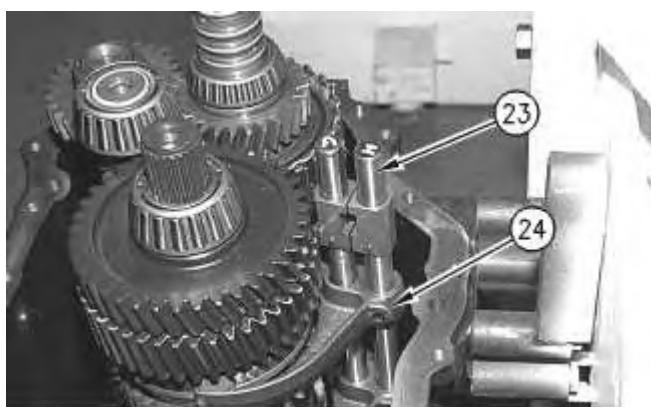


Illustration 17

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8. Install screws (24) on each of the gearshift rods (23).



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