# **CATERPILLAR®**

## Service Repair Manual

## **Models**

416D Backhoe Loader

Model: 416D BACKHOE LOADER BFP

Configuration: 416D Backhoe Loader BFP05178-17198 (MACHINE) POWERED BY 3054 Engine

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

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i02557471

## Transmission (Power Shift) - Assemble

**SMCS -** 3030-016-PM; 3066-016

### **Assembly Procedure**

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	152-7055	Spring Compressor	1
В	152-7085 (1)	Transmission Shaft Handler	1
	189-0409	Shackle As	1
C	6V-2157	Link Bracket	1
D	8T-5096	Indicator	1
E	1U-5702	Repair Stand	1

<sup>(1)</sup> CE Compliant

**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-rings, gaskets, and seals should always be replaced. A used O-ring may not have the same sealing properties as a new O-ring. Use **1U-6396** O-Ring Assembly Compound during the assembly procedure.

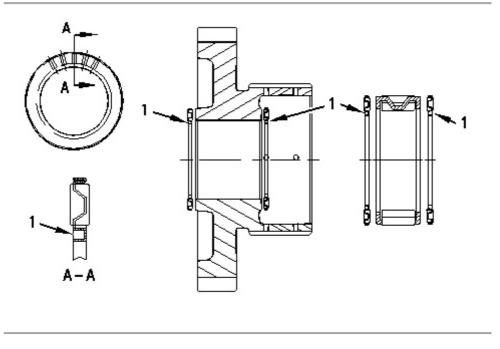


Illustration 1 g00731364

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.

### **Reverse Shaft**

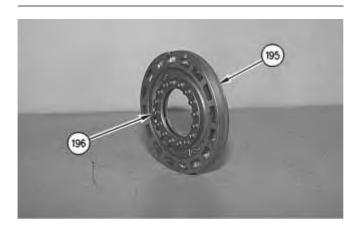


Illustration 2 g00730943

1. Install seal (195) and the O-ring on piston (195).



Illustration 3 g00731347

#### 2. Install piston assembly (194).

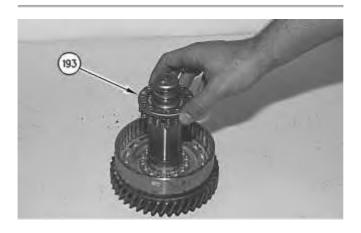


Illustration 4 g00731350

#### 3. Install spring assembly (193).

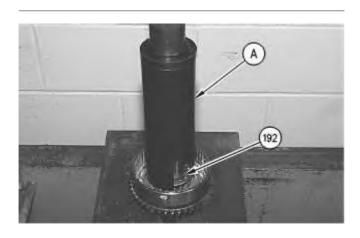


Illustration 5 g00731351

4. Use tooling (A) in order to compress the spring assembly. Install retaining ring (192) .

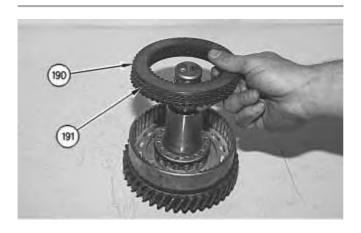


Illustration 6 g00731352

5. Install eight friction discs (190) and eight plates (191).

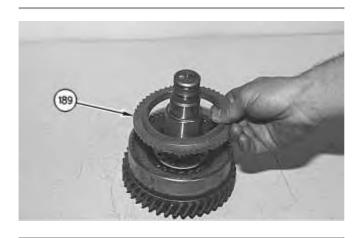
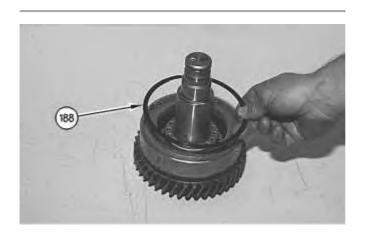


Illustration 7 g00731353

6. Install end plate (189).



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