

# Remote Actuator



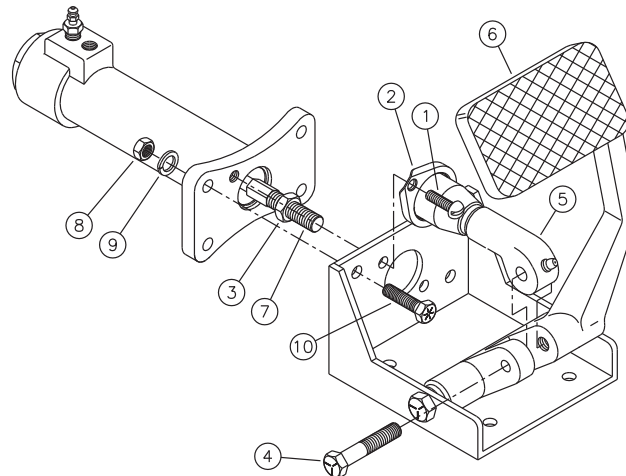
## Service Instructions

BE SURE TO READ GENERAL INSTALLATION GUIDELINES SHEET (81-600-001) BEFORE PROCEEDING

Model Number	Repair Kit Number	Pedal	Model Number	Repair Kit Number	Pedal	Model Number	Repair Kit Number	Pedal
02-460-061 (BF)	02-400-006	None	02-460-152 (HO)	02-400-172	None	03-460-062 (HO)	02-400-050	None
02-460-062 (BF)	02-400-006	None	02-460-153 (BF)	02-400-007	R-side	03-460-088 (HO)	02-400-172	None
02-460-066 (BF)	02-400-007	None	02-460-668 (HO)	02-400-050	None	03-460-092 (HO)	02-400-102	None
02-460-067 (BF)	02-400-007	None	03-460-050 (BF)	02-400-006	Center	03-460-131 (BF)	02-400-049	None
02-460-068 (HO)	02-400-050	None	03-460-054 (HO)	02-400-102	R-side	03-460-134 (HO)	02-400-113	None
02-460-072 (HO)	02-400-050	None	03-460-055 (BF)	02-400-049	Center	03-460-136 (HO)	02-400-111	None
02-460-073 (HO)	02-400-045	None	03-460-057 (BF)	02-400-049	None	12-460-026 (HO)	02-400-050	None
02-460-083 (BF)	02-400-260	None	03-460-058 (HO)	02-400-050	None			

BF = Brake Fluid HO = Hydraulic Oil

**NOTE:** If your product number is not listed, contact ZF Off-Highway Solutions Minnesota Inc. for information.



**FIGURE 1**

### REMOVING THE ACTUATOR FROM MACHINE AND SEPARATING ACTUATOR FROM PEDAL ASSEMBLY

(Refer to Figure 1)

1. Disconnect necessary fluid lines.
2. Remove unit from machine after removing three mounting bolts. Drain fluid from actuator before disassembly.
3. Remove two screws (1) and pull boot/collar (2) back over push rod (5).
4. Loosen nut (3) and remove cap screw (4).
5. Move push rod (5) away from pedal (6) and remove push rod (5) by turning counter clockwise. **NOTE: Push rod (7) does not need to be disconnected from piston in actuator.**
6. Remove four nuts (8), lock washers (9), and cap screws (10).
7. Separate actuator from pedal assembly.

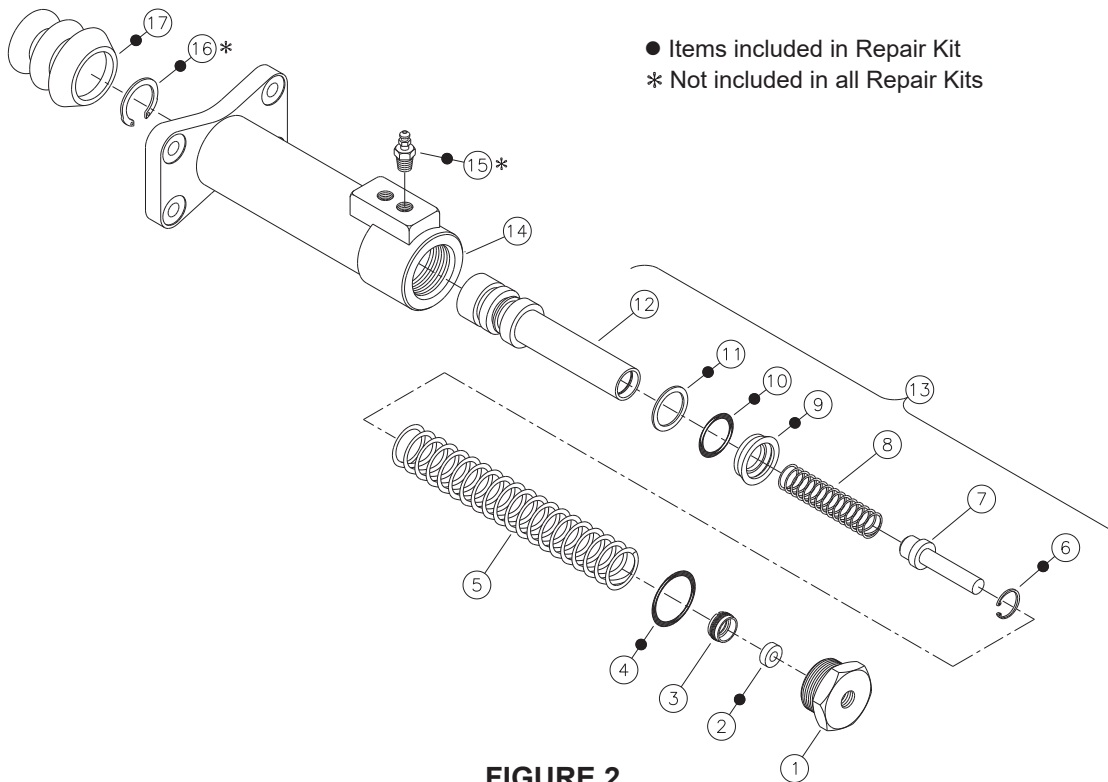
### CONNECTING ACTUATOR AND PEDAL ASSEMBLY AND MOUNTING BRAKE ACTUATOR ON MACHINE

(Refer to Figure 1)

#### NOTE

Connect the actuator and pedal assembly before installing on the machine.

1. Connect actuator to pedal assembly using four cap screws (10), lock washers (9), and nuts (8). Torque nuts and cap screws 24.4-31.2 N·m (18-22 lb·ft).
2. Install push rod (5) on push rod (7) and tighten nut (3) against push rod. **NOTE: Pedal angle is determined by the amount of push rod thread engagement.**
3. Align push rod (5) with slot in pedal (6) and install cap screw (4). Torque cap screw 13.6-16.3 N·m (10-12 lb·ft).
4. Push boot/collar (2) back into position and install two screws (1) and torque 5.1-6.2 N·m (45-55 lb·in).
5. Install unit on the machine. Connect the fluid lines. Bleed the system of air. Make several applications to be sure the actuator is working properly. **NOTE: All fittings must be inspected for leaks and tightened if leaks occur.**



- Items included in Repair Kit
- \* Not included in all Repair Kits

**FIGURE 2**

## DISASSEMBLY

(Refer to Figure 2)

1. Remove end plug (1) from housing (14).

### CAUTION

End plug (1) is under spring tension.

2. Remove retainer (3), seat (2) and o-ring (4) from end plug (1).
3. Remove spring (5) and piston assembly (13) from housing (14). **NOTE: Be careful not to damage piston or housing bore.**
4. Remove retaining ring (6), stem (7) and spring (8) from piston (12).
5. Remove cup (9), o-ring (10) and back-up ring (11) from piston (12). Not all models use back-up ring (11). **NOTE: Be careful not to damage grooves in piston.**
6. Remove boot (17). **NOTE: Not all models use boot (17).**
7. Remove retaining ring (16) from housing (14). **NOTE: Not all repair kits include new retaining ring. Do not remove retaining ring unless included in repair kit.**
8. Remove bleeder screw (15). **NOTE: Not all repair kits include new bleeder screw. Do not remove bleeder screw unless included in repair kit.**

## ASSEMBLY

(Refer to Figure 2)

LUBRICATE ALL RUBBER COMPONENTS FROM REPAIR KIT WITH CLEAN TYPE FLUID USED IN SYSTEM.

1. Clean all parts thoroughly before assembling.
2. Install new cup (9), new o-ring (10), and new back-up ring (11) on piston (12). Note direction of components. **NOTE: Not all models use back-up ring (11).**
3. Insert spring (8) and stem (7) into piston (12) and install new retaining ring (6).
4. Install piston assembly (13) and spring (5) in housing (14). Note direction of piston assembly. **NOTE: Be careful not to damage piston or housing bore.**
5. Insert new seat (2) into retainer (3) and install in end plug (1). Torque retainer 10.9-19.0 N·m (8-12 lb·ft).
6. Install new o-ring (4) on end plug (1) and install end plug into housing. Torque end plug 67.8-108.5 N·m (50-80 lb·ft).
7. Install new retaining ring (16). **NOTE: Not all repair kits include new retaining ring.**
8. Install new boot (17). **NOTE: Not all models use boot (17).**
9. Install new bleeder screw (15). Torque bleeder screw 16.3-19.0 N·m (12-14 lb·ft). **NOTE: Not all repair kits include new bleeder screw.**

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