

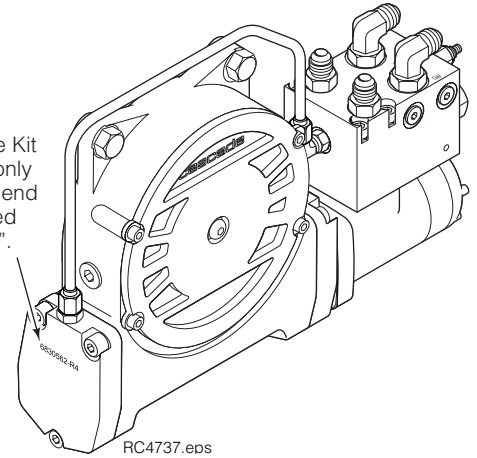


# Installation Instructions

## Rotator Drive Assembly Service Kits 6839416 and 6839420

This sheet provides installation instructions for service kits 6839416 and 6839420. Service kit 6839416 includes a preassembled spring stack and a preassembled cover with dowel pins, seal collar with seals, pressure plates, friction discs, piston and brake rotor. Service kit 6839420 includes a seal collar with seals. After servicing the brake components, perform the Rotation Drift Test. Also included is a disabling brake procedure (for temporary circumstances only) and a troubleshooting section. Perform troubleshooting prior contacting Cascade Service.

**NOTE:** Service Kit 6839420 can only be installed in end covers stamped with "6830562".



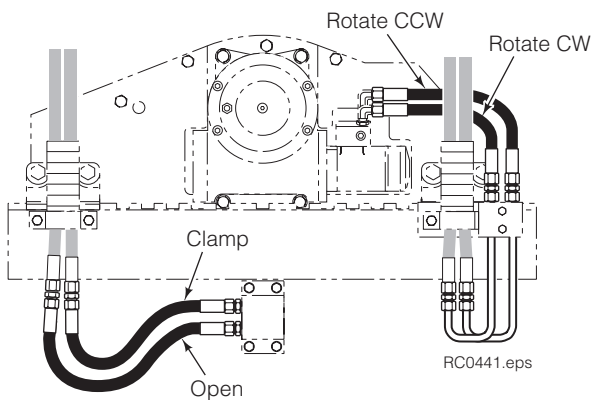
### Attachment and Drive Group – Removal and Installation

- 1 If possible, rotate the attachment to the vertical roll handling position. Extend the arms outside the width of the frame.

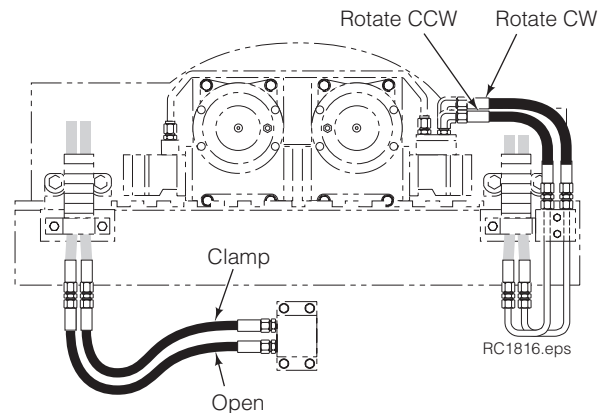


**WARNING:** Before removing any hoses, relieve pressure in the hydraulic system. With the truck off, open the truck auxiliary control valve(s) several times in both directions.

- 2 Disconnect and plug the hydraulic supply hoses to the attachment. Tag hoses for reassembly.



Single Drive  
Back (Driver's) View



Dual Drive  
Back (Driver's) View

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## Attachment and Drive Group – Removal and Installation (Continued)

**3** Disconnect the lower hooks:

**Bolt-On Hooks** – Remove the lower mounting hooks. For reassembly, tap hooks tight against lower carriage bar and tighten the capscrews to a torque of:

**Single Drive:**

**CL IV 90F, 100F** – 260 ft.-lbs. (350 Nm)

**Dual Drive:**

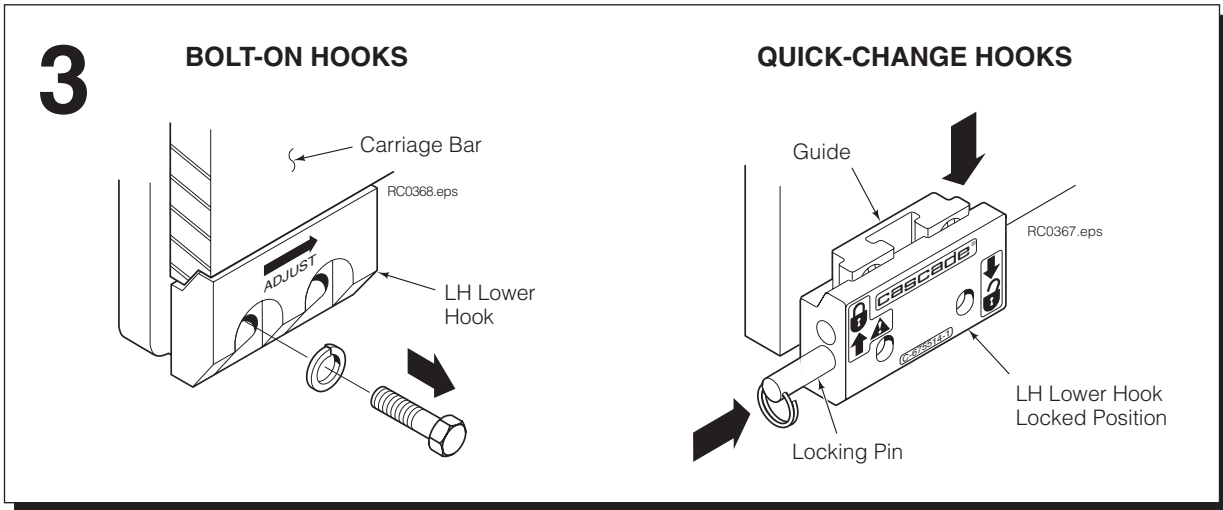
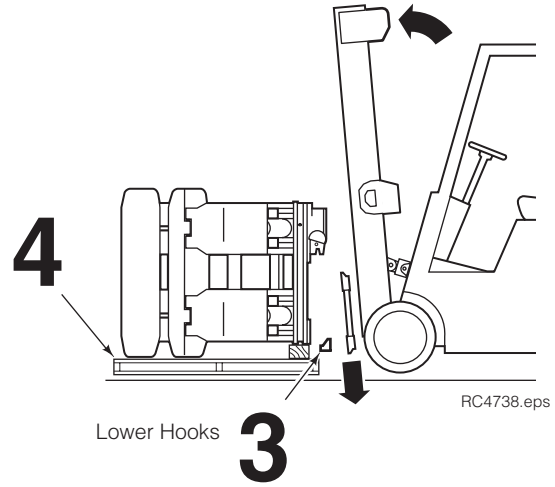
**120F-150F** – 200 ft.-lbs. (270 Nm)

**160F CL IV** – 235 ft.-lbs. (320 Nm)

**160F CL V** – 250 ft.-lbs. (340 Nm)

**Quick-Change Hooks** – Pull out the locking pins and drop the lower hooks to the unlocked position. Reinstall the pins in the lower holes. For reassembly, slide the hooks up to the locked position and install the locking pins in the top holes.

**4** Set the attachment on a pallet. Tilt the mast forward and lower the carriage to remove the attachment from the truck.



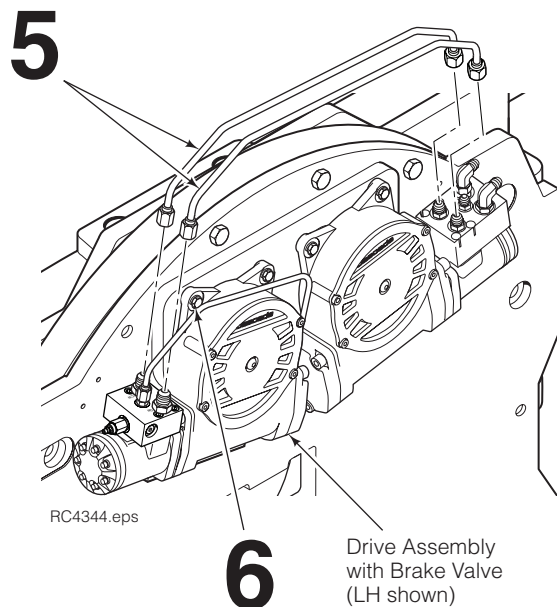
**5 Dual Drives** – Disconnect the crossover tubes from the check valve and brake valve assemblies.

**6** Remove the capscrews fastening the drive assembly with the brake valve to the baseplate. For reassembly, tighten the capscrews to a torque of 75 ft.-lbs. (100 Nm).

**7** Continue to “Installing Service Kits 6839416 and 6839420” section.

**8** For reassembly, reverse the above procedures with the following exceptions:

- After the drive group has been reinstalled, check the gearcase lubricant level. Lubricant must be up to the bottom of the fill plug hole. If necessary, fill with Cascade Gear Lube Part No. 656300, or SAE 90 wt. gear lube (AGMA 'mild' 6 EP Gear Lube).
- Refer to F-Series Roll Clamp Installation Instructions 674510 (Fixed Frame) or 674511 (Swing Frame).

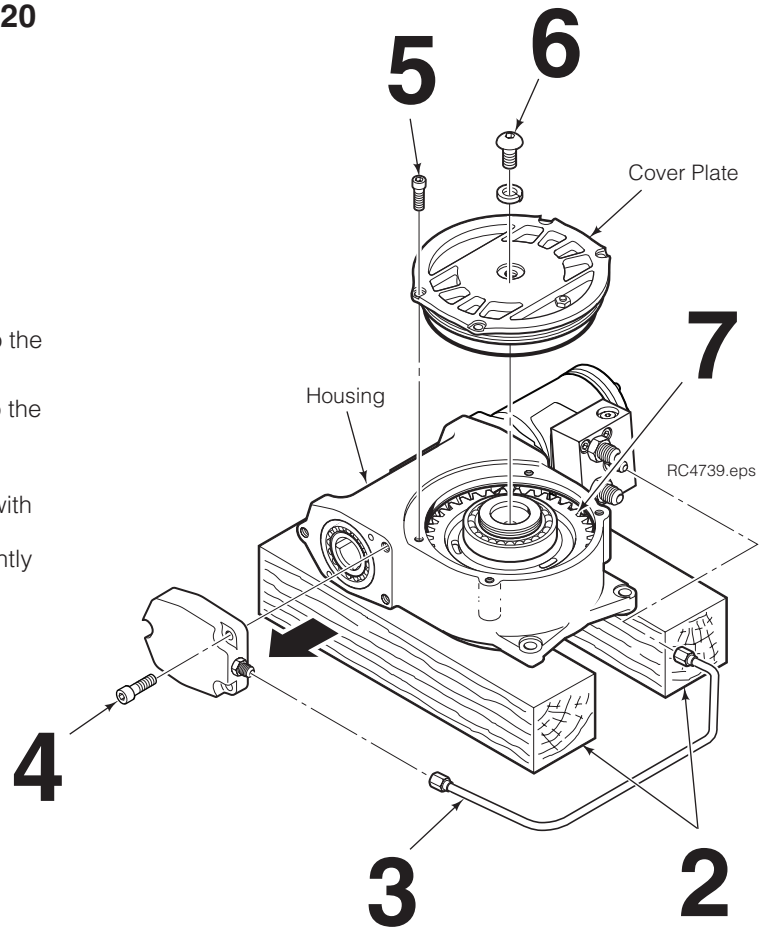


**Dual Drive Roll Clamp shown**

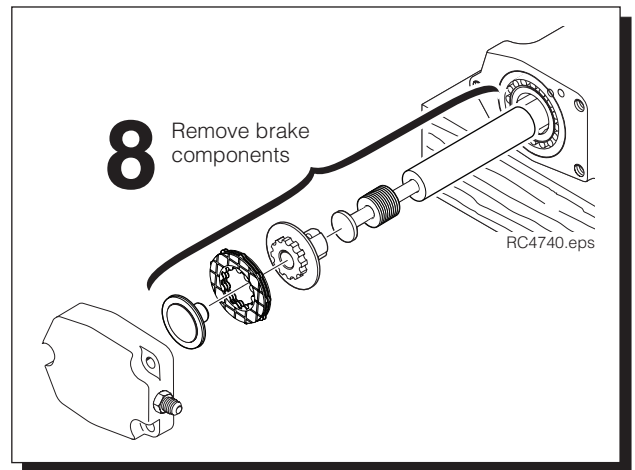
## Installing Service Kits 6839416 and 6839420

**NOTE:** Service Kit 6839420 can only be installed in end covers stamped with "6830562".

- 1 Perform section "Attachment and Drive Group Removal and Installation".
- 2 Lay the drive group, pinion down, on two 4 x 4 in. (10 x 10 cm) wood blocks placed on both sides of the pinion.
- 3 Remove brake tube. Do not discard.
- 4 Remove the three capscrews fastening the end cover to the housing. Remove end cover.
- 5 Remove the four capscrews fastening the cover plate to the housing.
- 6 Remove the center capscrew plug from the cover plate and install a (early) 3/8 in. NC or (later) M10 capscrew with a minimum thread length of 2 in. (50 mm). Remove the cover plate by turning the capscrew clockwise while lightly tapping around the sides of the cover plate.
- 7 Turn drive group over and drain the lubricant from the housing.

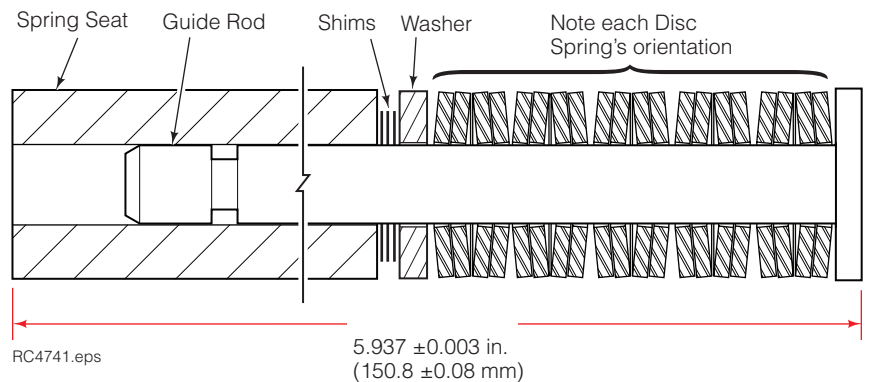


- 8 Remove brake components.  
**IMPORTANT:** If installing Kit 6839420, keep components.



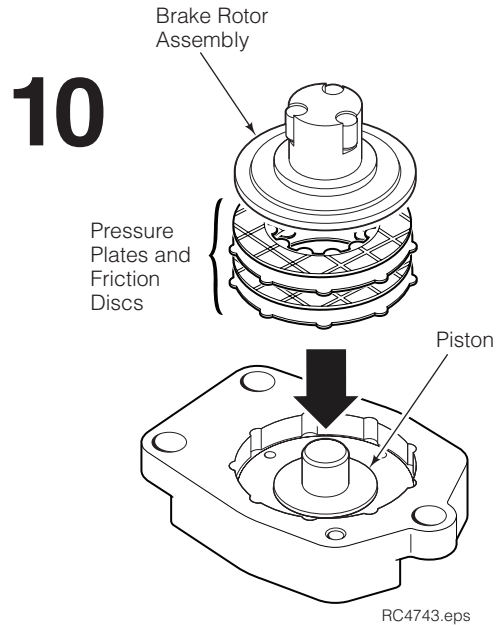
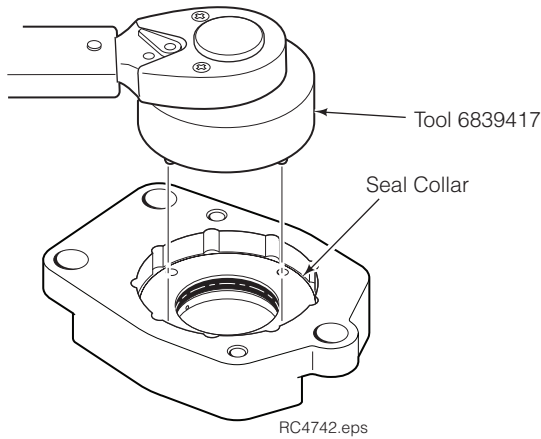
- 9 **Kit 6839416** – Verify kit spring stack disc springs are oriented (as shown) and the overall length is  $5.937 \pm 0.003$  in. ( $150.8 \pm 0.08$  mm).

**Kit 6839420** – Inspect drive group disc springs for damage and verify the overall length is  $5.937 \pm 0.003$  in. ( $150.8 \pm 0.08$  mm). Replace disc springs as needed.

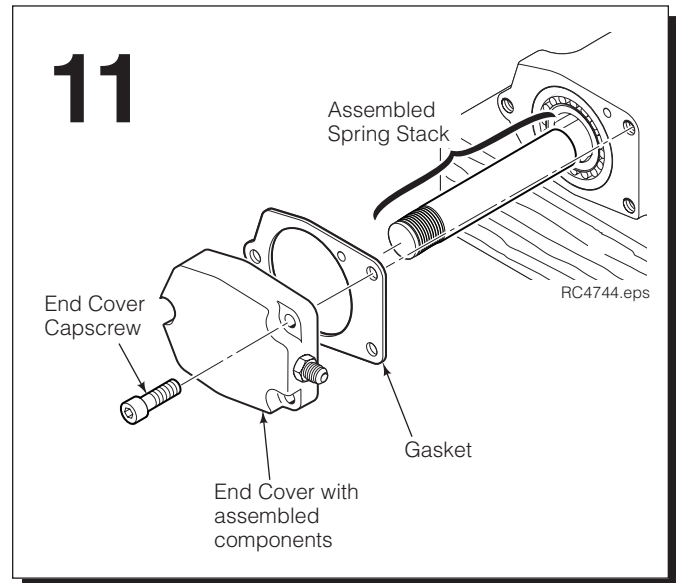


**Disc Spring Stack Diagram**

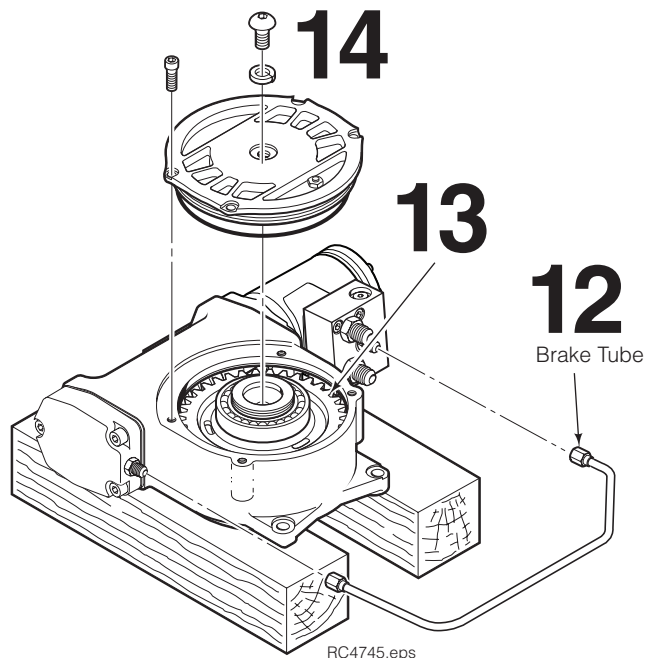
- 10 Kit 6839420** – Use tool 6839417 to remove the seal collar from the end cover. Install new seal collar, using the tool to seat and tighten into the end cover to a torque of 120 ft.-lbs. (160 Nm). Seat the piston in the seal collar. Stack pressure plates, friction discs and brake rotor assembly into the cover.



- 11** Apply Loctite 515 sealant (Cascade Part No. 668184) to both surfaces of the new end cover gasket (Cascade Part No. 6805513) and the capscrews. Install the assembled end cover with components, gasket, spring stack and capscrews, as shown. Tighten the capscrews to a torque of 65 ft.-lbs. (90 Nm). Remove excess sealant.



- 12** Install brake tube.
- 13** With the gearcase laying flat, fill with 56 fluid ounces (540 ml) of Cascade Gear Lube Part No. 656300, or SAE 90 wt. gear lube (AGMA 'mild' 6EP Gear Lube).
- 14** Install the cover plate and O-ring. Install the four cover plate capscrews and tighten to a torque of 15 ft.-lbs. (20 Nm). Install the center hole plug.
- 15** Reinstall drive group to baseplate and attachment to truck by reversing the steps in section "Attachment and Drive Group Removal and Installation". Perform "Adjustment & Troubleshooting" Section.



**WARNING:** After completing any service procedure, always test the attachment through five complete cycles. First test the attachment empty, then test with a load to make sure the attachment operates correctly before returning it to the job.

## Disabling Brake Circuit

The following steps are for temporarily disabling the brake circuit for a short term.

**1** Perform section "Attachment and Drive Group Removal and Installation".

**2** Lay the drive group, pinion down, on two 4 x 4 in. (10 x 10 cm) wood blocks placed on both sides of the pinion.

**3** Remove brake tube. Do not discard.

**4** Remove the three capscrews fastening the end cover to the housing. Remove end cover.

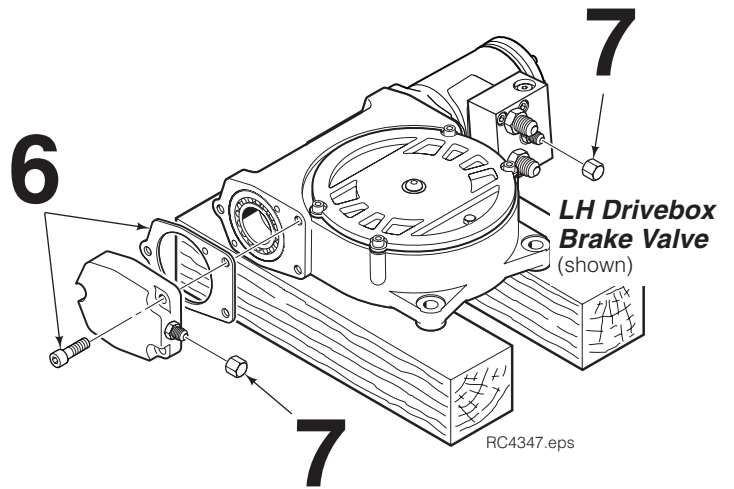
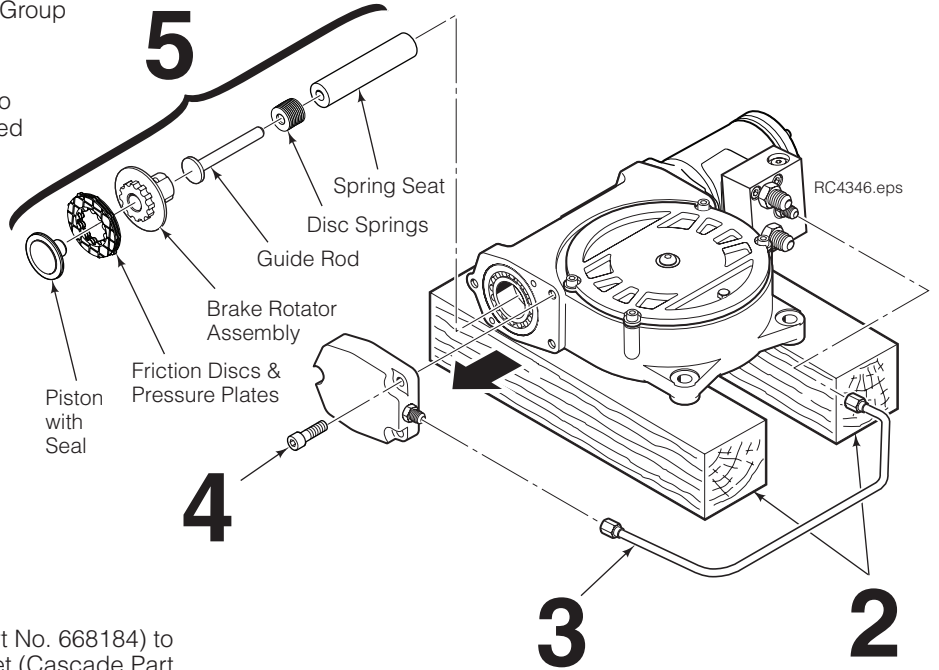
**5** Remove the piston with seal, friction disks, pressure plates, brake rotor assembly, guide rod, disc springs and spring seat.

**NOTE:** The seal collar in the end cover does not need to be removed, if equipped.

**6** Apply Loctite 515 sealant (Cascade Part No. 668184) to both surfaces to a new end cover gasket (Cascade Part No. 6805513) and the capscrews. Install the gasket and end cover. Tighten the capscrews to a torque of 65 ft.-lbs. (90 Nm). Remove excess sealant.

**7** Cap brake fittings on brake valve and end cover with No. 4 metal caps.

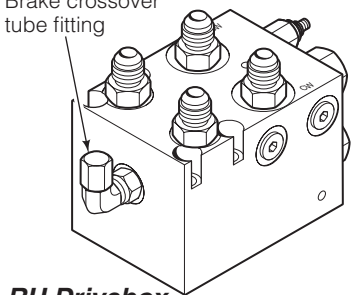
**8** Reinstall drive group and attachment to truck by reversing the steps in "Attachment and Drive Group Removal and Installation".



**WARNING:** After completing any service procedure, always test the attachment through five complete cycles. First test the attachment empty, then test with a load to make sure the attachment operates correctly before returning it to the job.

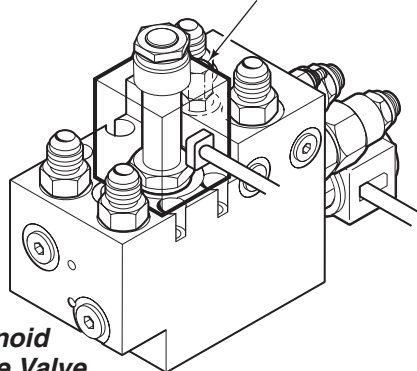
**7**

Brake crossover tube fitting



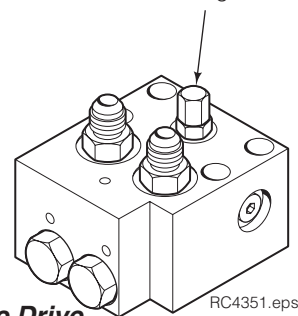
**RH Drivebox Brake Valve**

Brake crossover tube fitting



**Solenoid Brake Valve**

Brake crossover tube fitting



**Single Drive Brake Valve**

RC4351.eps

## Rotation Drift Test

Place a mark at the top center of the baseplate and rotate bearing. Place rotation limit marks at 10°, approximately 6 in. (15 cm), each side of top center on the faceplate. All marks should be viewable by the driver.

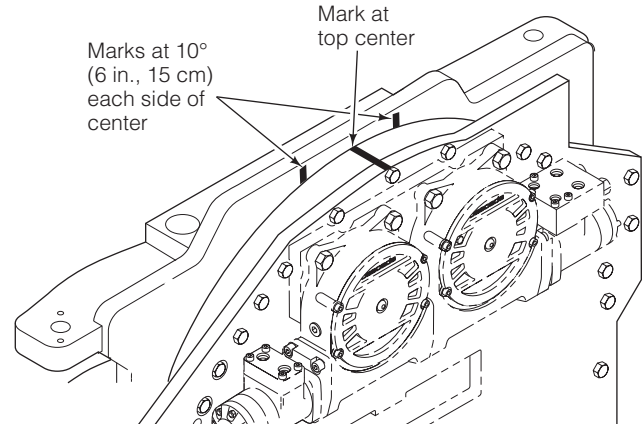
- Clamp roll with pads at bottom of roll.



**WARNING:** Make sure all personnel are clear of the attachment during testing.

- Lift roll 15 in. (38 cm) off floor to provide clearance for rotation drift test.
- Rotate roll 10° CW and wait 30 sec. No drift is allowed.
- Rotate roll 10° CCW and wait 30 sec. No drift is allowed.
- If roll drift occurs, troubleshoot brake as described in the section below.

**NOTE:** If the brake circuit is disabled, contact Cascade.



RC4704.eps

## Adjustment and Troubleshooting

**NOTE:** Refer to the schematic on the following page.

**Truck Requirements** – Review attachment hydraulic specifications in F-Series Service Manual 674512.

**Tools required** – In addition to a normal selection of mechanic's hand tools, the following are required:

- Pressure Gauge Kit (3 kits required): 5000 psi (345 bar) – Cascade Part No. 671212.
- Assorted fittings and hoses, as required.

**Troubleshooting Procedure** – Perform the following troubleshooting steps:

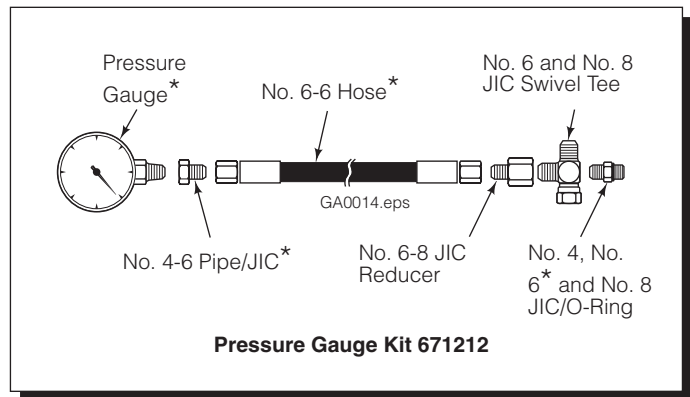
- 1 Install the three pressure gauges and tee fittings to the rotator motor fittings and brake drive fitting. Replace brake drive tube with a hose.
- 2 With gauges installed, rotate the attachment CCW. During rotation the gauges should read:

**Gauge 1** – High, up to 2300 psi (160 bar)

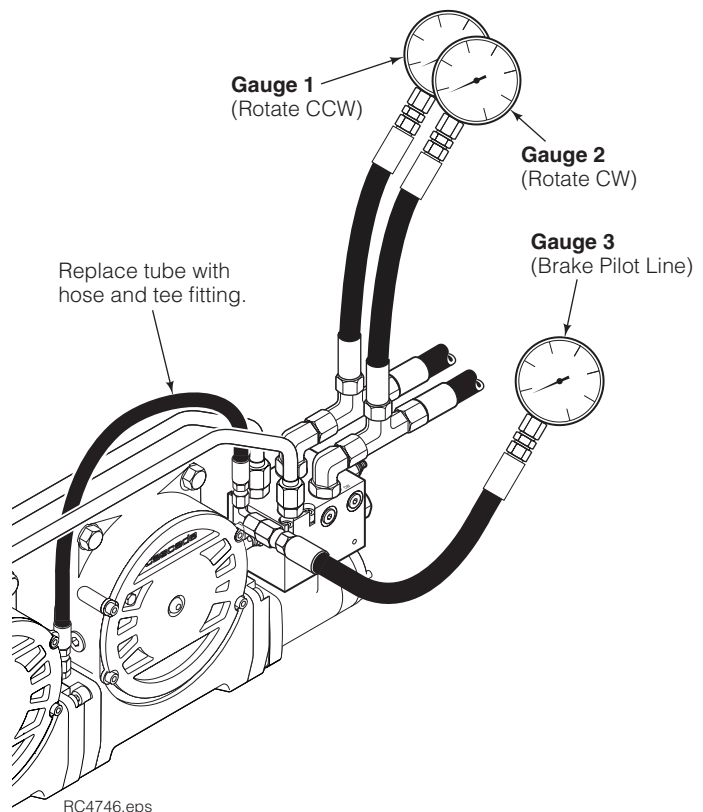
**Gauge 2** – Low, approximately 200 psi (14 bar)

**Gauge 3** – Between 700-1000 psi (48-70 bar), must not exceed 1000 psi (70 bar)

- If rotation is jerky and **Gauge 3** is less than 700 psi (48 bar) while rotating, turn in the relief cartridge on the drive motor valve to bring the pressure within the range of 700-1000 psi (48-70 bar).
- If **Gauge 3** is greater than 1000 psi (70 bar) while rotating, turn out the relief cartridge on the valve to bring pressure within the range of 700-1000 psi (48-70 bar).



Pressure Gauge Kit 671212



RC4746.eps

## Adjustment and Troubleshooting (continued)

**3** Stop rotating the attachment. Gauges should read:

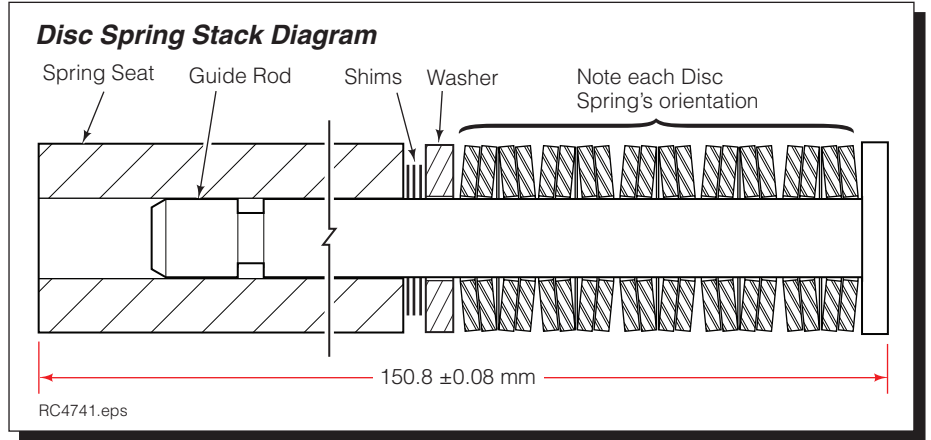
**Gauge 1** – Less than 300 psi (21 bar)

**Gauge 2** – Less than 300 psi (21 bar)

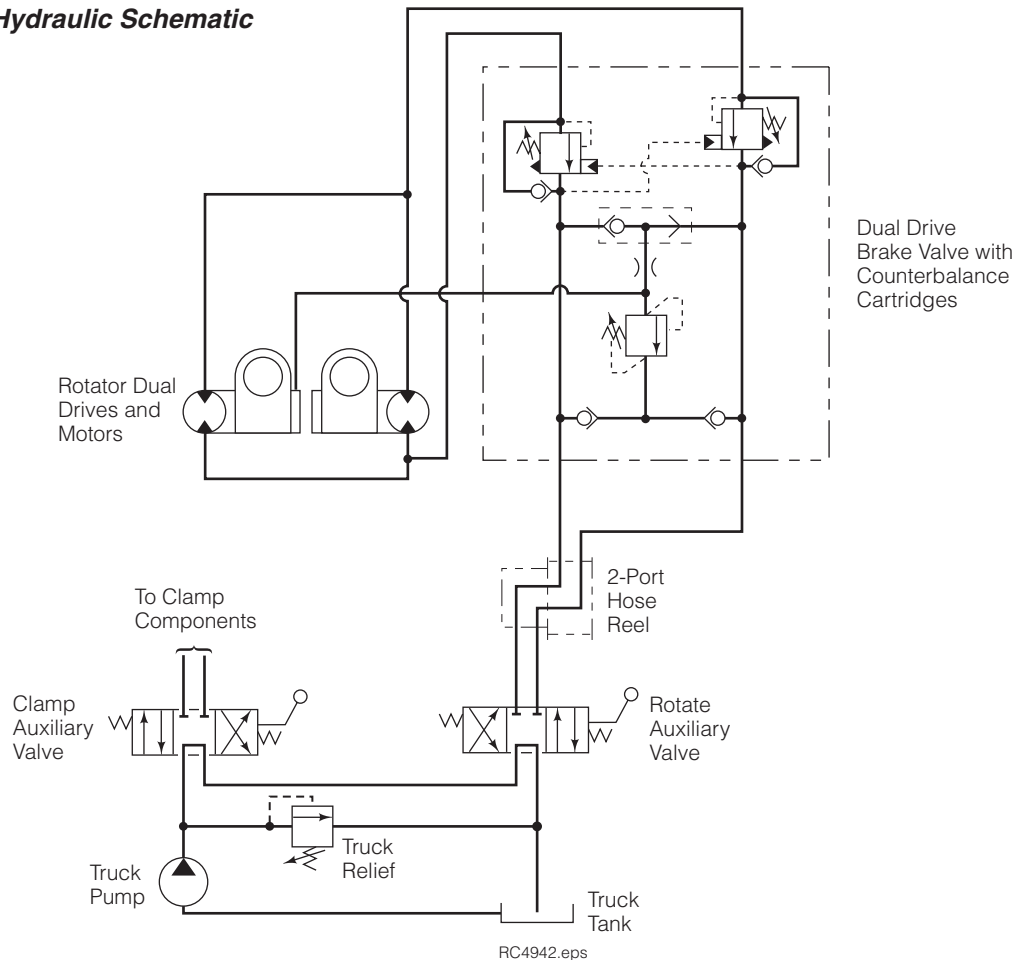
**Gauge 3** – Less than 300 psi (21 bar)

- If **Gauge 1** and/or **Gauge 2** is greater than 300 psi (21 bar), the hydraulic system requires an independent tank line. Install Cascade Pressure Relief Kit 6043749 and hose 207299.
- If drifting occurs and **all gauges** read less than 300 psi (21 bar) while drifting occurs, verify that the disc springs are stacked in the correct orientation, as shown. Check the overall length and shim as required. Verify that the disc springs are in good condition.

**NOTE:** If further troubleshooting is required, before contacting Cascade, record all gauge readings.



## Hydraulic Schematic



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