INSTALLATION INSTRUCTIONS
and PERIODIC MAINTENANCE

F-Series

Fixed Frame Paper Roll Clamps

Manual Number 674510-R5

cascade® corporation

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IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade for any required modifications.

INTRODUCTION

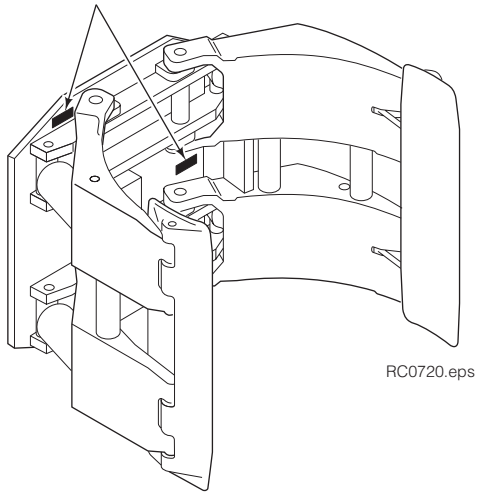
This manual provides installation instructions and periodic maintenance requirements for Cascade F-Series Fixed Frame Paper Roll Clamps.

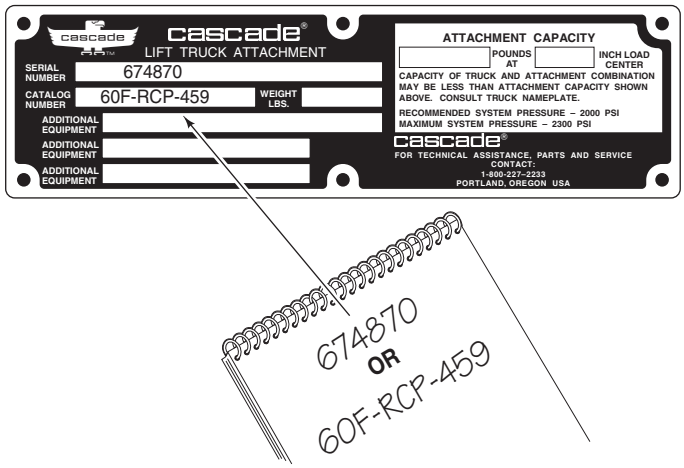
In any communication about the Roll Clamp refer to the product I.D. number stamped on the nameplate. If the nameplate is missing, the numbers can be found stamped on the front of the faceplate top or side.

IMPORTANT: All hoses, tubes and fittings on F-Series Roll Clamps are JIC.

NOTE: Specifications are shown in both U.S. and (Metric) units.

Nameplate Locations





SPECIAL DEFINITIONS

The statements shown below appear throughout this manual where special emphasis is required. Read all WARNINGS and CAUTIONS before proceeding with any work. Statements labeled IMPORTANT and NOTE are special information that is useful when servicing the attachment.

WARNING - A statement preceded by a WARNING is information that should be acted upon to prevent **bodily injury.** A WARNING is always inside a ruled box.

CAUTION – A statement preceded by CAUTION is information that should be acted upon to prevent machine damage.

IMPORTANT – A statement preceded by IMPORTANT is information that possesses special significance.

NOTE – A statement preceded by NOTE is information that is handy to know and may make the job easier.

RECOMMENDED HYDRAULIC SUPPLY

F-Series Fixed Frame Paper Roll Clamps provide the best performance with the hydraulic supply arrangements shown below. Refer to Cascade **Hose and Cable Reel Selection Guide**, Part No. 212119, to select the correct hose reel for the mast and truck. The hose and fitting requirements are:

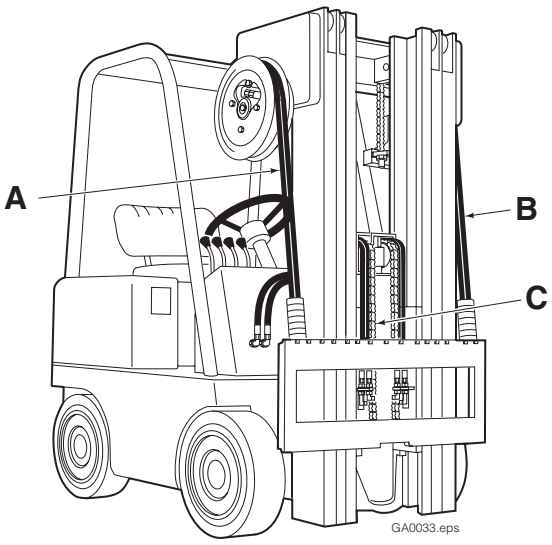
- **ROTATE Function –** Hoses and fittings should be No. 8 with 13/32 in. (10 mm) minimum I.D.
- **CLAMP Function –** Hoses and fittings for the CLAMP function should be:

  25F – No. 6 with 9/32 in. (7 mm) minimum I.D.
  38F-160F – No. 8 with 13/32 in. (10 mm) minimum I.D.

A and B
RH and LH THINLINE™ 2-Port Hose Reel Groups.

OR

A and C
RH THINLINE™ 2-Port Hose Reel Group and Mast Single Internal Hose Reeving Group.



Truck Relief Setting

25F, 28F (Rotate Circuit). 45-160F
2000 psi (138 bar) Recommended
2300 psi (160 bar) Maximum

38F (Clamp Circuit)
2300 psi (159 bar) Recommended
2600 psi (179 bar) Maximum

Truck Flow Volume ①

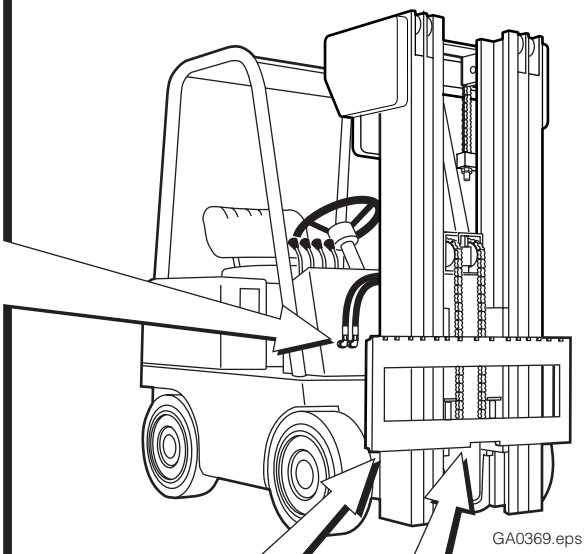
	Min. ②	Recommended	Max. ③
25F	5 GPM (19 L/min.)	7 GPM (26 L/min.)	10 GPM (38 L/min.)
38F Clamp	5 GPM (19 L/min.)	10 GPM (38 L/min.)	12 GPM (45 L/min.)
Rotate	5 GPM (19 L/min.)	12 GPM (45 L/min.)	15 GPM (57 L/min.)
45F, 60F, 66F	5 GPM (19 L/min.)	7 GPM (26 L/min.)	10 GPM (38 L/min.)
77F, 90F, 100F, 120F	10 GPM (38 L/min.)	15 GPM (57 L/min.)	20 GPM (76 L/min.)
130F, 150F, 160F	15 GPM (57 L/min.)	20 GPM (76 L/min.)	25 GPM (95 L/min.)

① Cascade Roll Clamps are compatible with SAE 10W petroleum base hydraulic fluid meeting Mil. Spec. MIL-0-5606 or MIL-0-2104B. Use of synthetic or aqueous base hydraulic fluid is not recommended. If fire resistant hydraulic fluid is required, special seals must be used. Contact Cascade.

② Flow less than recommended will result in a rotate speed less than 2 RPM.

③ Flow greater than maximum can result in excessive heating, reduced system performance and short hydraulic system life.

WARNING: Rated capacity of the truck/attachment combination is a responsibility of the original truck manufacturer and may be less than that shown on the attachment nameplate. Consult the truck nameplate.



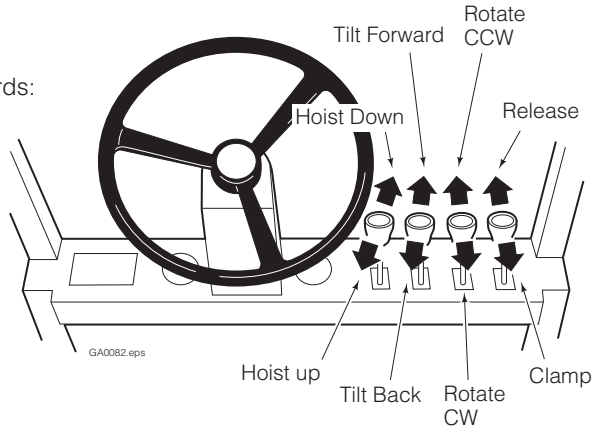
Clean and inspect carriage bars for damage and smoothness. Repair any protruding welds or damaged notches.

Carriage Mount Dimension (A) ITA (ISO)

	Minimum	Maximum
Class II	14.94 in. (380.0 mm)	15.00 in. (381.0 mm)
Class III	18.68 in. (474.5 mm)	18.74 in. (476.0 mm)
Class IV	23.44 in. (595.5 mm)	23.50 in. (597.0 mm)

Auxiliary Valve Functions

Check for compliance with ANSI (ISO) standards:



INSTALLATION

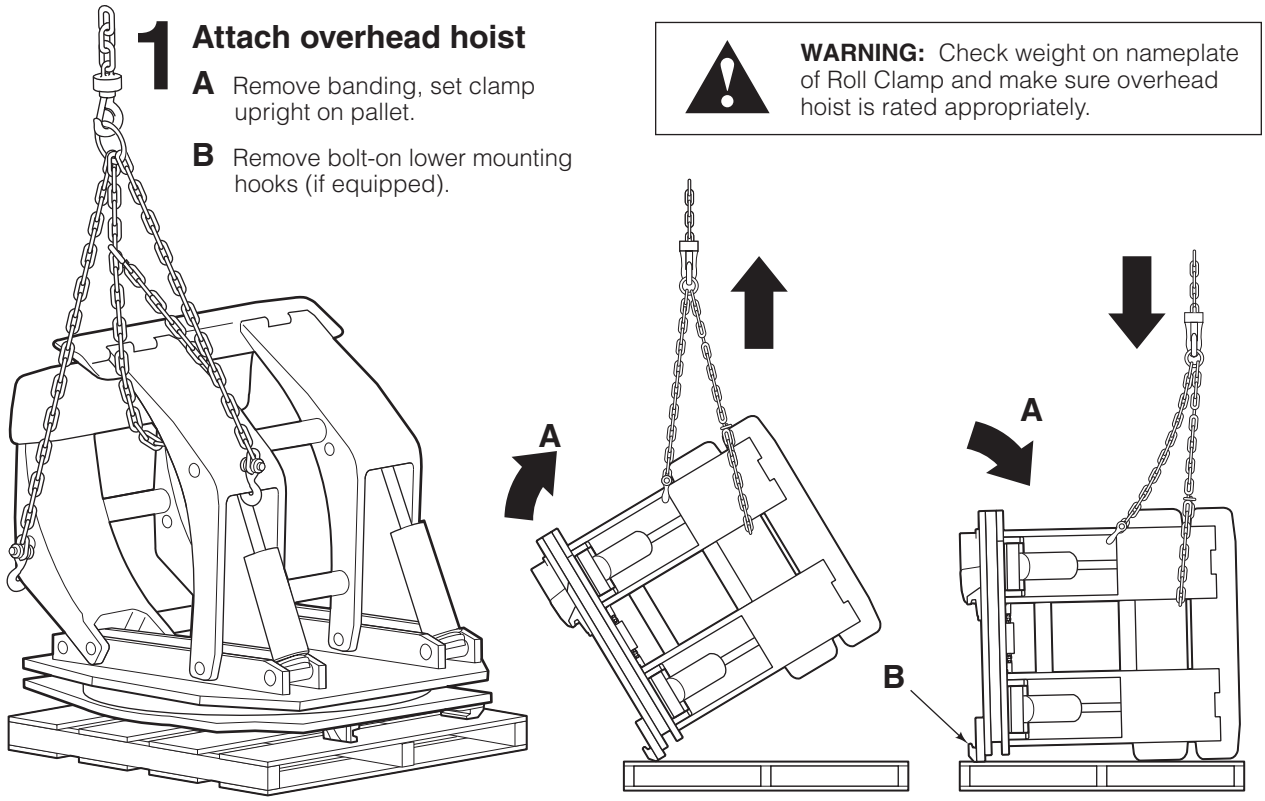
Follow the steps shown to install the Roll Clamp on the truck. Read and understand all **WARNING** statements. If you don't understand a procedure, ask your supervisor, or call the nearest Cascade Service Department for assistance.

1 Attach overhead hoist

A Remove banding, set clamp upright on pallet.

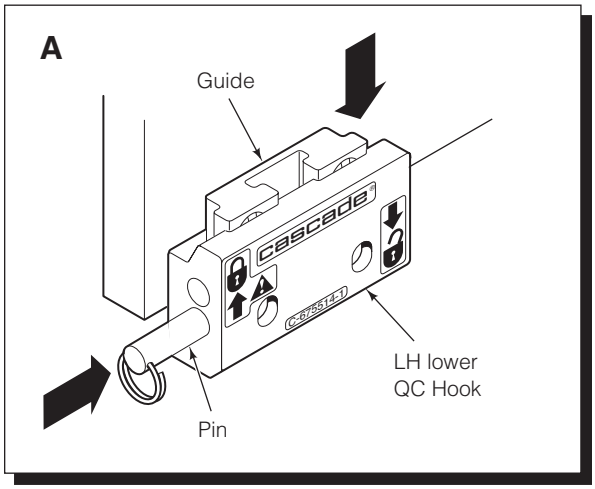
B Remove bolt-on lower mounting hooks (if equipped).

WARNING: Check weight on nameplate of Roll Clamp and make sure overhead hoist is rated appropriately.

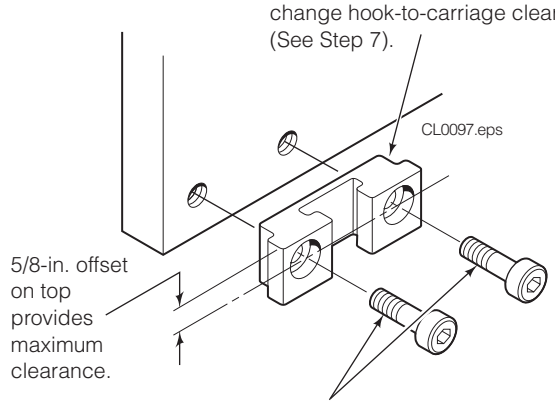


2 Unlock Quick-Change lower mounting hooks (if equipped)

A Move hooks into unlocked position (pin in lower hole).



NOTE: Guides can be reversed to change hook-to-carriage clearance (See Step 7).



Tighten Capscrews:
CL II & III – 110 ft.-lbs. (150 Nm)
CL IV 60F, 66F, 77F – 195 ft.-lbs. (265 Nm)
CL IV 90F and larger – 260 ft.-lbs. (360 Nm)

3 Preparing Hoses

A Position truck carriage behind Roll Clamp.

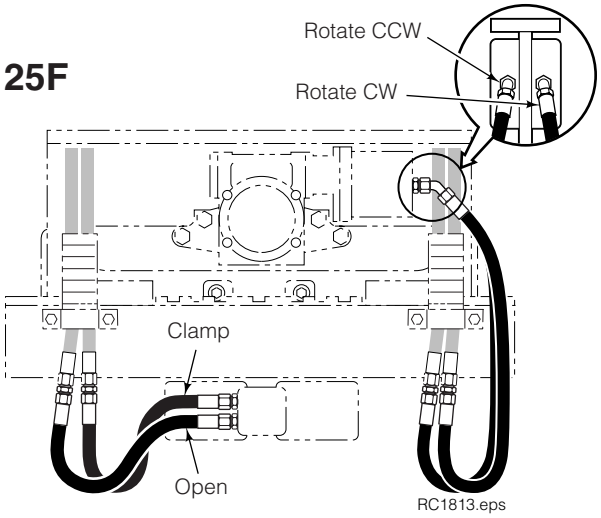
B Determine hose lengths required.

C Cut hoses to length, install end fittings.

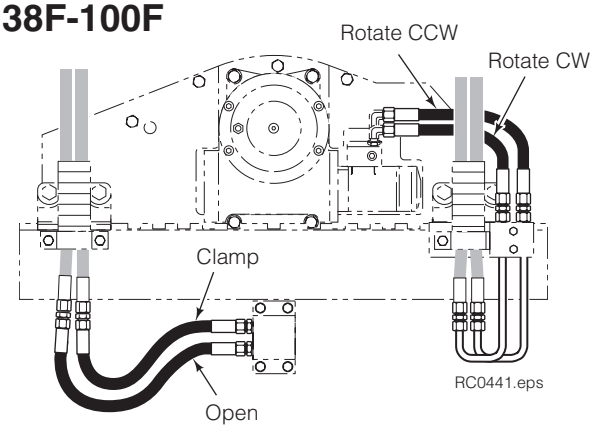
CAUTION: Hoses should be 2300 psi working pressure rated for all attachment functions.

INSTALLATION USING RH & LH 2-PORT *THINLINE*™ HOSE REELS:

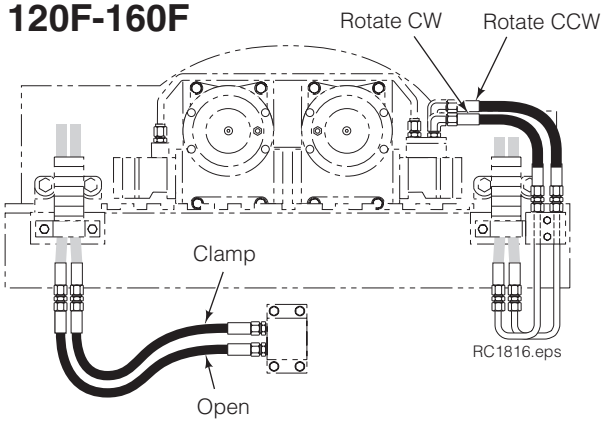
25F



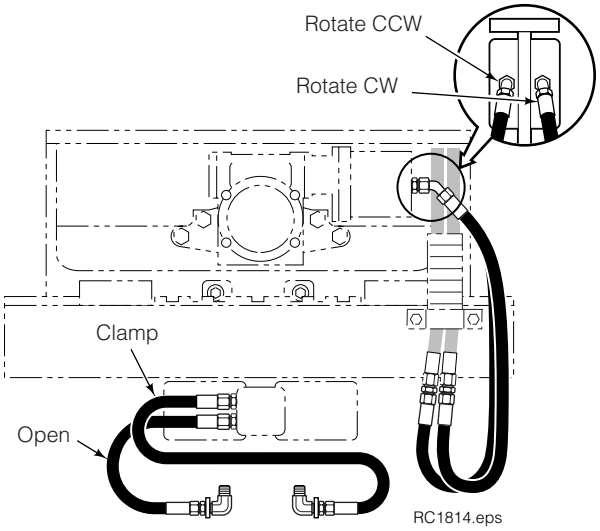
38F-100F

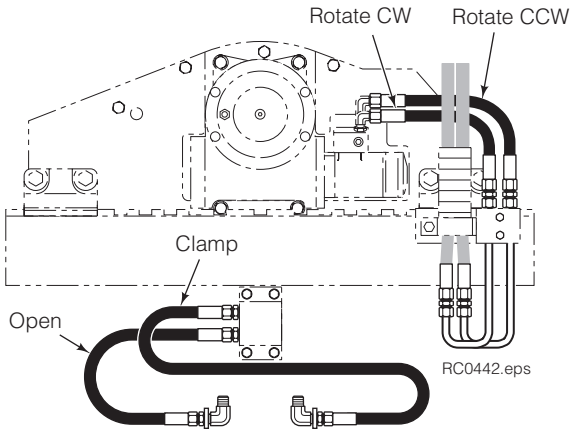


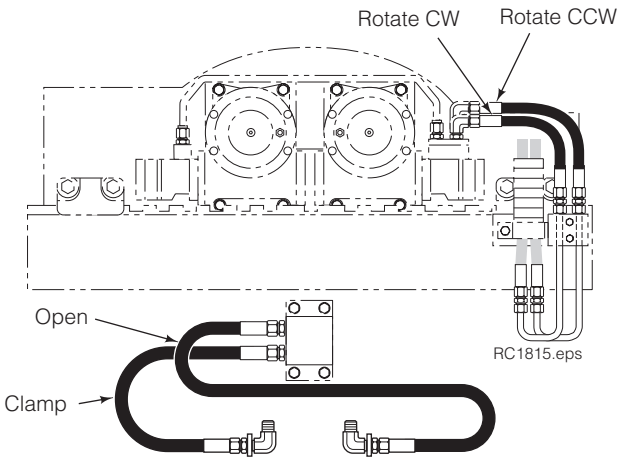
120F-160F



INSTALLATION USING RH 2-PORT HOSE REEL AND INTERNAL HOSE REEVING:







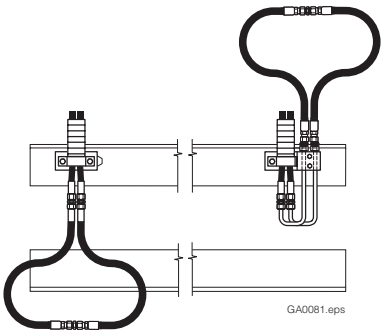
4 Flush hydraulic supply hoses

A Install hoses as shown.

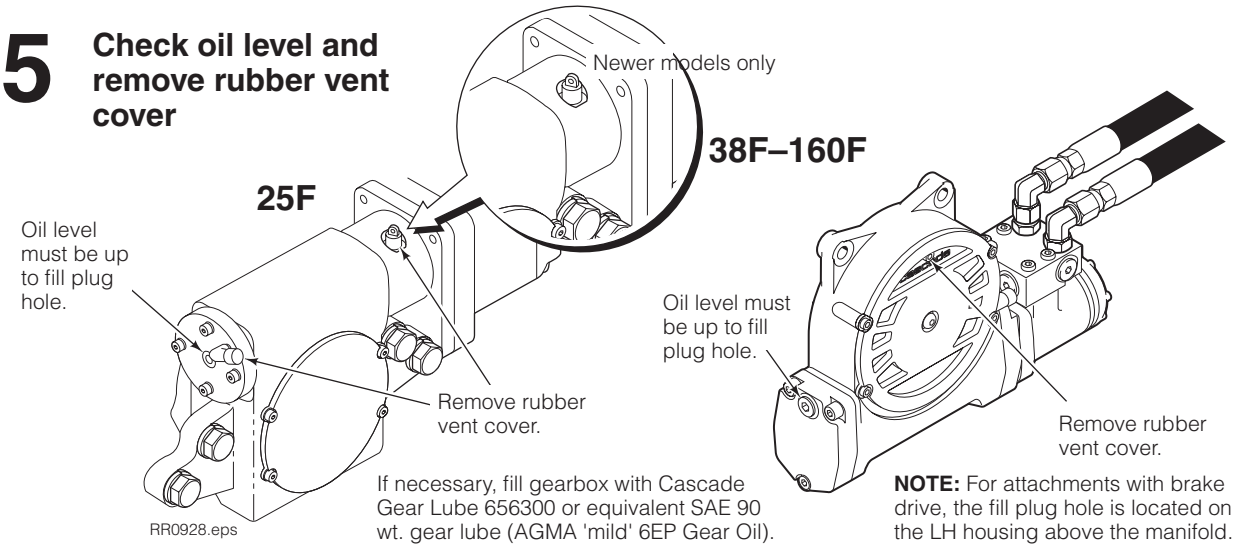
B Operate auxiliary valves for 30 sec.

C Remove union fittings.

D Install hoses to Roll Clamp fittings as shown in Step 3 above.



5 Check oil level and remove rubber vent cover



If necessary, fill gearbox with Cascade Gear Lube 656300 or equivalent SAE 90 wt. gear lube (AGMA 'mild' 6EP Gear Oil).

NOTE: For attachments with brake drive, the fill plug hole is located on the LH housing above the manifold.

6 Mount Clamp on truck carriage

A Center truck behind Roll Clamp.

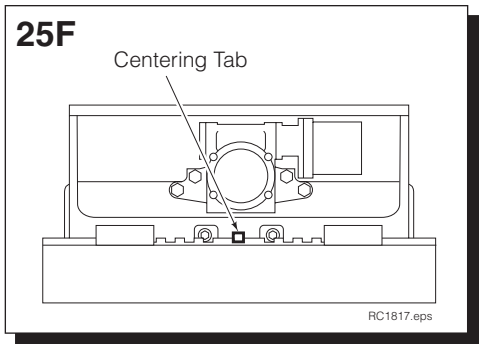
B Tilt forward and raise carriage into position.

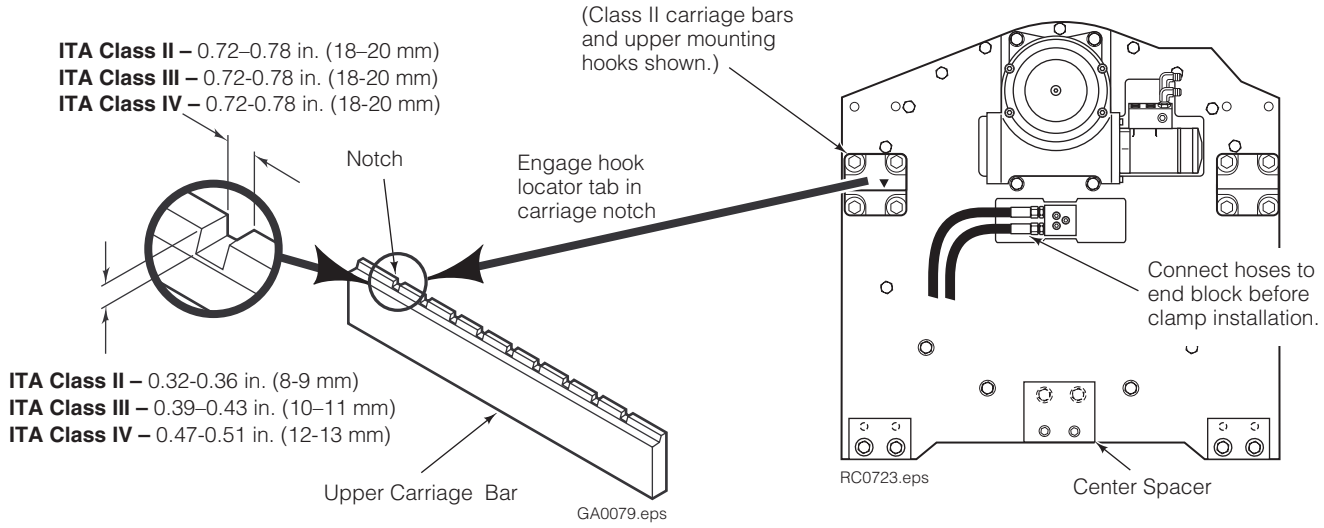
C Engage top mounting hooks with carriage.

25F – Make sure the centering tab engages the center notch on top carriage bar.

38F-160F – Make sure locator tab in left hook engages closest notch on top carriage bar.

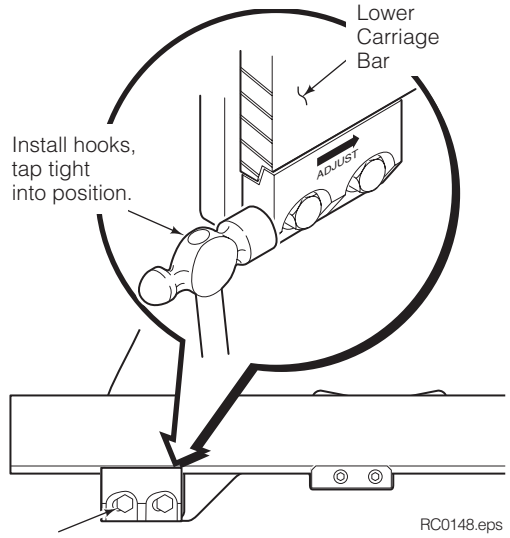
D Lift Clamp 2 in. (5 cm) off pallet.





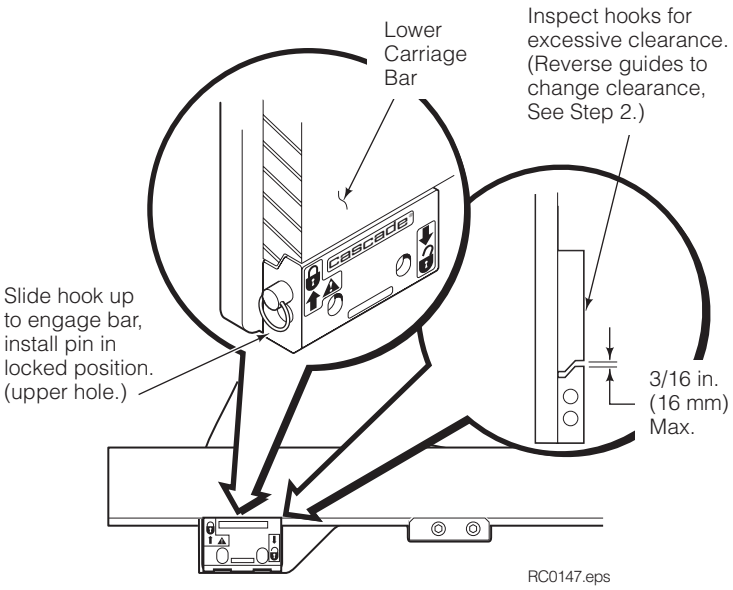
7 Install and engage lower hooks

BOLT-ON TYPE



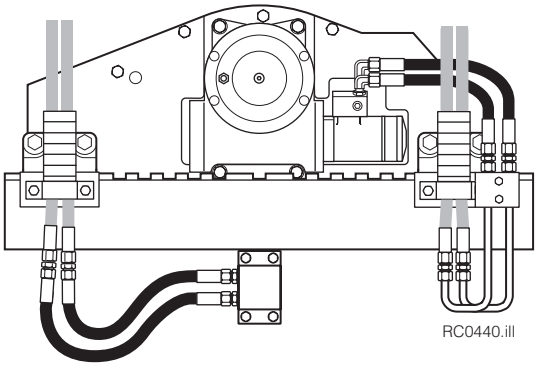
Tighten Capscrews:
CL II & III – 110 ft.-lbs. (150 Nm)
CL IV 60F, 66F, 77F – 195 ft.-lbs. (265 Nm)
CL IV 90F and larger – 260 ft.-lbs. (350 Nm)

QUICK-CHANGE TYPE (OPTIONAL)

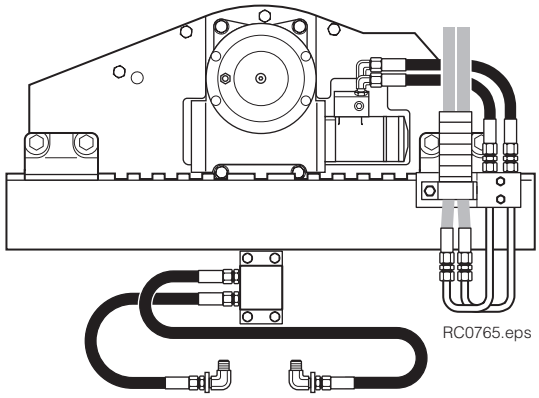


8 Connect hoses to hose terminal fittings as shown in Step 3

INSTALLATION USING RH & LH 2-PORT *THINLINE*™ HOSE REELS:



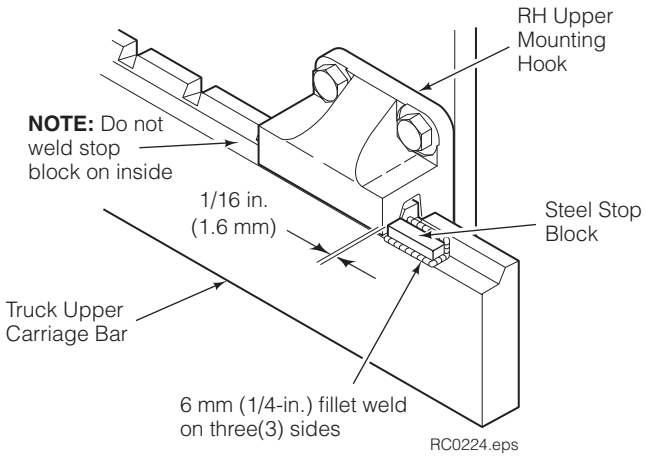
INSTALLATION USING RH 2-PORT HOSE REEL AND INTERNAL HOSE REEVING:



9 Install stop block kit

- Make sure the attachment is centered on carriage.
- Locate one stop block on the outside of each upper hook.

  NOTE: Stop blocks may be located vertically on each end of carriage bar if insufficient room exists outside of upper hooks.
- Preheat each stop block and carriage bar weld area to 325 ° F (180 ° C).
- Use AWS E7018 low hydrogen rod and weld a 1/4-in (6 mm) fillet full length on three (3) sides of each stop block.

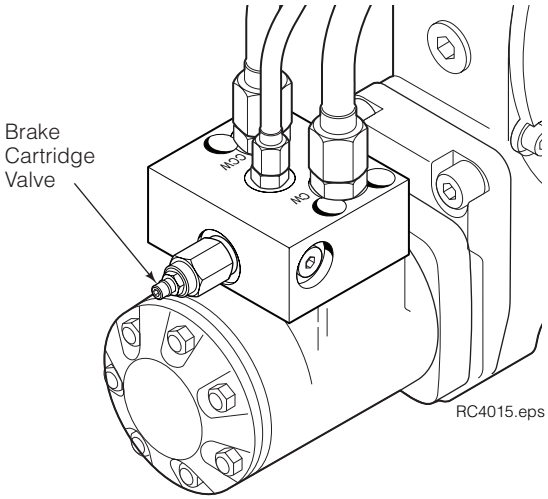


10 Dual Drive Brake Adjustment (if equipped)

Adjustment is not necessary, the cartridge valve is factory set to provide optimum performance for your application. If the cartridge needs to be adjusted, with the truck off, do the following:

- Loosen jam nut (3/8 in. Hex) on the valve cartridge. Use 1/8 in. Allen wrench to turn the adjustment screw all the way CCW.
- Turn the cartridge adjustment screw 3/4 of a turn, CW.

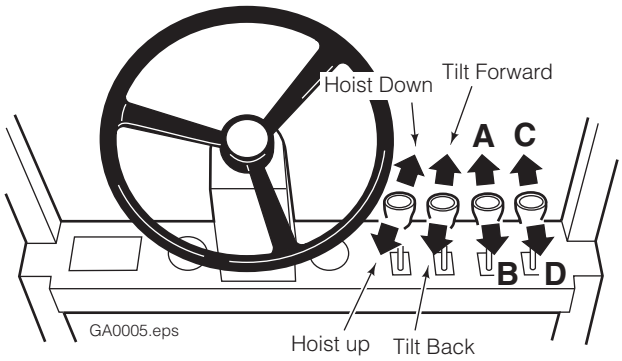
  CAUTION: Adjusting the cartridge beyond 3/4 turn will damage the brake.
- Tighten the jam nut.



11 Cycle Clamp Functions

WARNING: Make sure all personnel are clear of Clamp during testing.

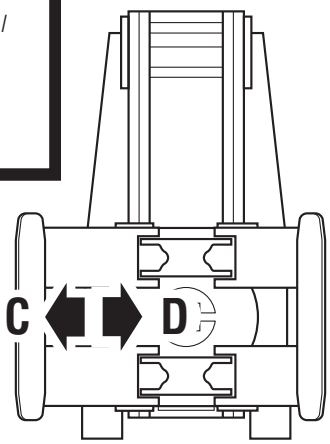
- With no load, cycle all functions several times.
- Check functions for operation in accordance with ITA (ISO) standards.
- Clamp and rotate a maximum load, check for smoothness and normal rotation.
- Check for leaks at fittings, revolving connection and cylinder rod ends.

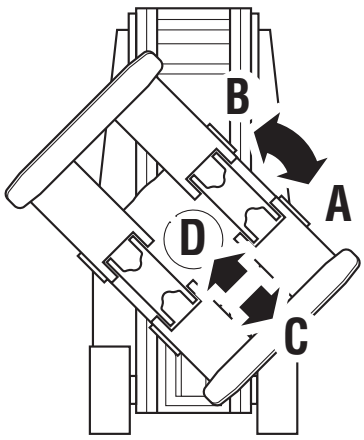


LONG ARM
(vertical & horizontal positions only)

C Release

D Clamp





ROTATE
(Driver's view)

A Counterclockwise (CCW)

B Clockwise (CW)

SHORT ARM
(45-degree position only)

A Open

B Close

12 Split Arm Relief Pressure Adjustment, if required – Type 1 (Full Arm Travel Circuit)

IMPORTANT: Revolving connection with relief valve controlled split-arm circuit must be adjusted for proper arm movement as follows:

A Confirm that the truck relief setting is between 2000–2600 psi (140–180 bar).

B Rotate the Clamp to the vertical roll handling position.

> **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.

C Install 5000-psi (345 bar) pressure gauges to each split long arm cylinder test port (No. 4 O-ring fitting required).

D Open the long arms. Clamp a split roll (30 in. diameter min.) or clamp-force indicator, between the short arm pad and **lower** split long arm pad. Build pressure until the upper arm begins to move. Release the lever and note the gauge pressure.

E Rotate the Clamp 180 degrees. Repeat step D for the **opposite** split long arm. Both pressures should be within 50 psi (3.5 bar). If not, adjust the relief cartridge (screw out CCW) on the arm with the higher pressure to equal the arm with the lower pressure.

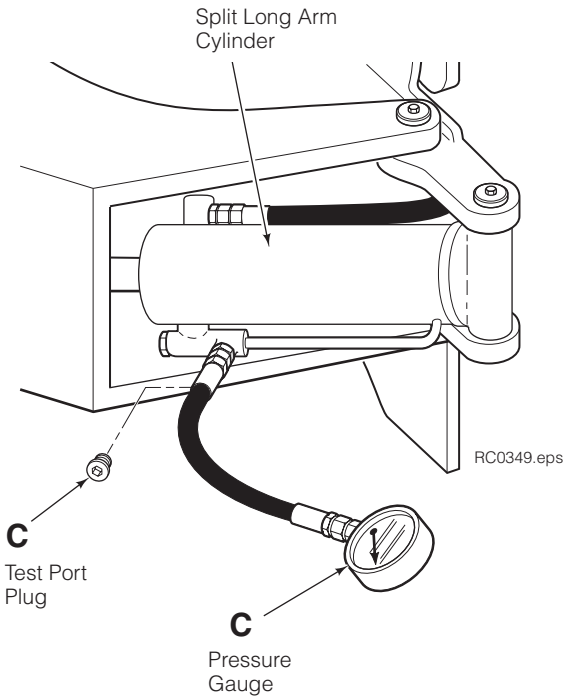
NOTE: 1 turn = approximately 400 psi (28 bar).

F At half throttle, compare the gauge pressure with truck relief pressure. Adjust both relief cartridges equally using 1/8 turn steps. Verify that the unclamped arm moves after the clamped arm stops and re-syncs upon opening.

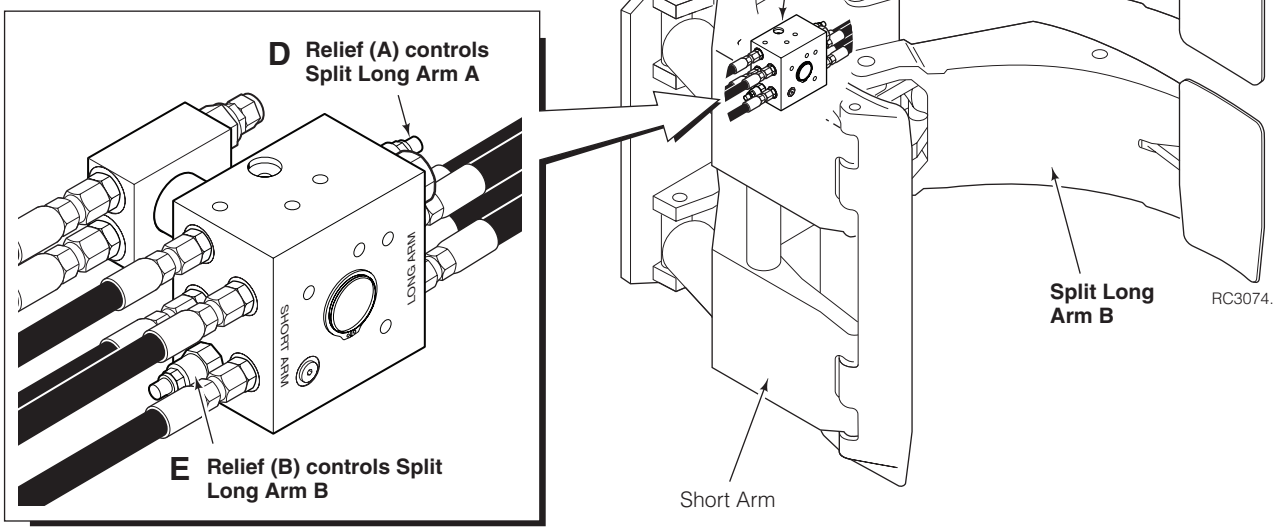
G Adjust the clamped arm pressure to approximately 200 psi (14 bar) lower than truck relief pressure. If not possible, lower relief settings equally and test until system resets. Start step F procedure again to maximize clamped arm pressure.

H Check that the clamp pressures are approximately equal (see step E). Tighten the jam nut on each relief cartridge.

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



IMPORTANT: If truck is equipped with a 3 or 4 pressure selection valve, adjust split arm relief cartridges while pressure selection valve is at its lowest supply setting.



100-Hour Maintenance

Every time the lift truck is serviced or every 100 hours of truck operation, whichever comes first, complete the following maintenance procedures:

- Check for loose or missing bolts, worn or damaged hoses and hydraulic leaks.
- Check contact pads edges for wear or sharp edges that could damage or tear paper rolls. Grind edges smooth.
- Check contact pad pivot pins for wear. Repair or replace as necessary.
- Lubricate plungers on 180-degree stop valve (if fitted).
- Check that load-holding hydraulic system is functioning properly. Cascade Clamp Force Indicators 830141 and 832442 are available for this test.
- Check decals and nameplate for legibility.

500-Hour Maintenance

After each 500 hours of truck operation, in addition to the 100-hour maintenance, perform the following procedures:

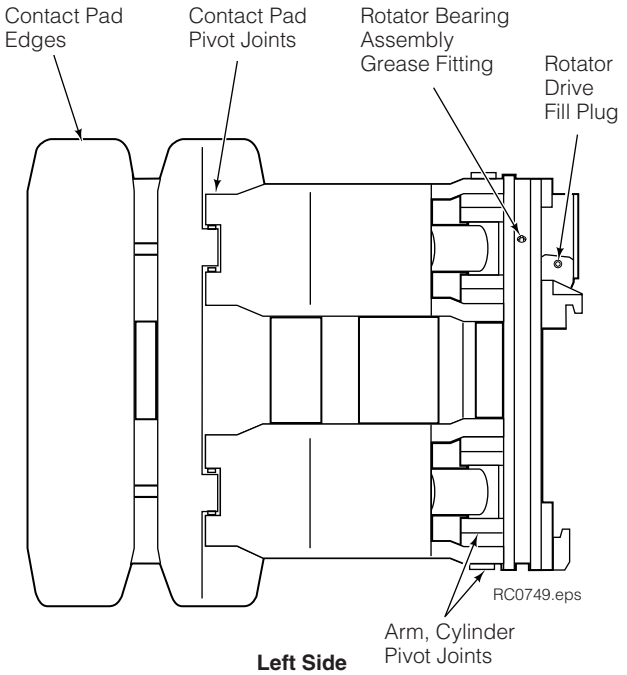
- Check sample of baseplate-to-bearing capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and replacement procedures.
- Check sample of bearing-to-faceplate capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and replacement procedures.
- Tighten lower mounting hook capscrews to 122 ft.-lbs. (165 Nm).
- Tighten rotator drive capscrews. See torque specs for specific models in Installation section, step 7.
- Lubricate rotator bearing assembly with EP-2 grease. (Whitmore 'Omnitask' or equivalent). Rotate clamp in 90-degree increments and grease in each position.
- Check rotator drive gearcase lubricant level. Lubricant should be up to bottom of fill plug hole. If necessary, fill with Cascade Rotator Drive Lubricant, Part No. 656300 or SAE 90 wt. gear lube (AGMA 'mild' 6 EP Gear Oil). Replace the plug.
- Inspect all arm, frame and cylinder pivot bushings for wear. Replace if necessary.
- Inspect all load-bearing structural welds on arms, frame and arm pivots, and cylinder pivot areas for visual cracks. Replace components as required.

2000-Hour Maintenance

After each 2000 hours of truck operation, in addition to the 100 and 500-hour maintenance, perform the following procedures:

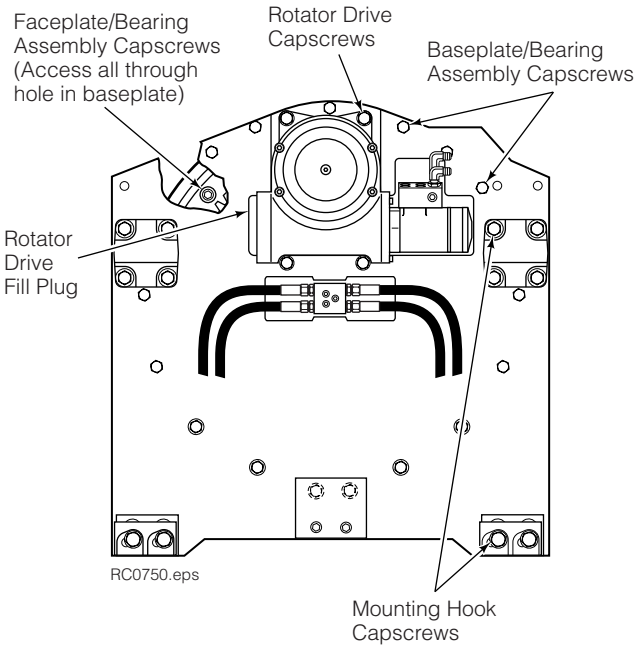
- Check all rotation bearing capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and replacement procedures.
- Inspect all arm and cylinder pivot pins for wear and replace if necessary.

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



Left Side

WARNING: A sampling of faceplate and baseplate bearing assembly capscrews must be checked for proper torque at 500 hours (see TB183). A complete inspection is required every 2000 hours. Failure to keep the capscrews tightened can result in attachment damage and serious injury.



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Do you have questions you need answered right now?
Call your nearest Cascade Service Department.
Visit us online at www.cascorp.com

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Fax: 86-592-651-2571

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