INSTALLATION INSTRUCTIONS

and PERIODIC MAINTENANCE

F-Series

Swing Frame Paper Roll Clamps

Manual Number 674511 R-4

cascade® corporation

CONTENTS

INTRODUCTION

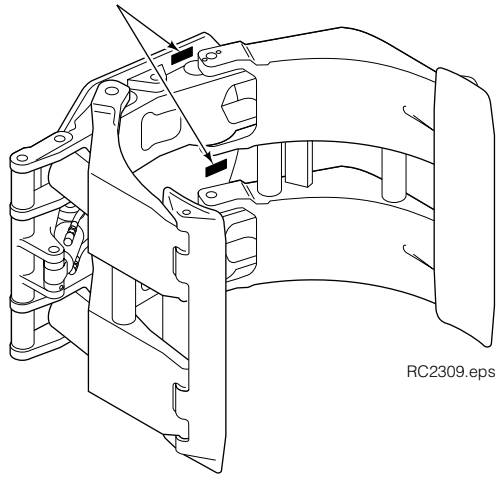
This Manual provides installation instructions and periodic maintenance requirements for the Cascade F-Series Swing Frame Paper Roll Clamps.

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.

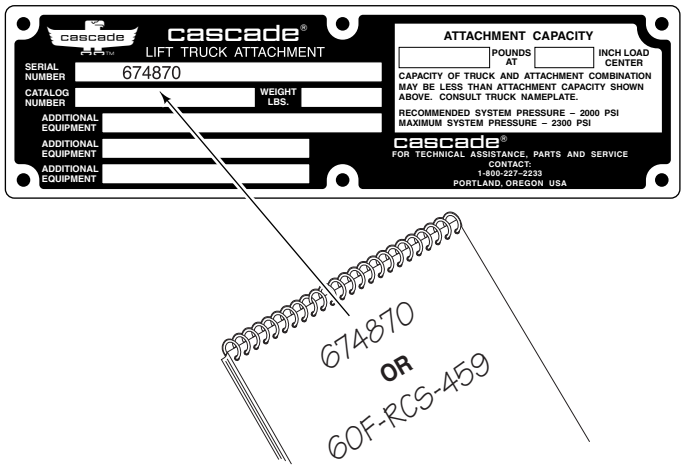
IMPORTANT: All hoses, tubes and fittings on F-Series Roll Clamps are JIC.

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

Nameplate Locations



RC2309.eps



SPECIAL DEFINITIONS

The statements shown 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 Swing Frame Paper Roll Clamps provide the best performance with the hydraulic supply arrangement **A and B**. Refer to Cascade *Hose and Cable Reel Selection Guide*, Part No. 212199, 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 & SWING Functions –** Hoses and fittings should be No. 8 with 13/32 in. (10 mm) minimum I.D., except for internal reeving arrangements where hoses and fittings may be No. 6 minimum with 9/32 in. (7 mm) minimum I.D.

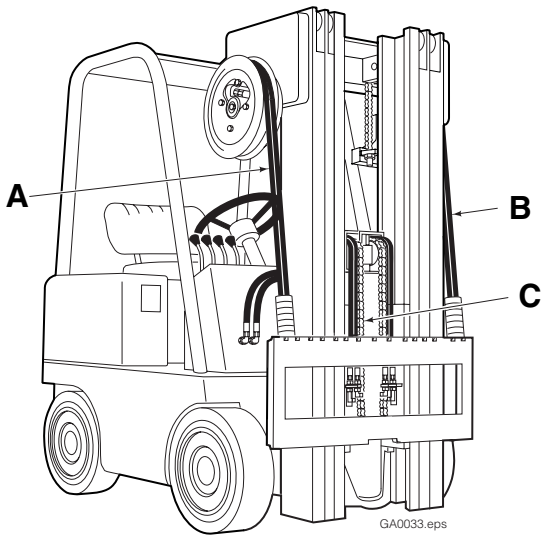
A and B
RH THINLINE™ 2-Port Hose Reel Group and
LH THINLINE™ 4-Port Hose Reel Group.

OR (optional)

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

OR (optional)

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



Truck Relief Setting

25F, 38F (Rotate Circuit), 45F–160F

2000 psi (138 bar) Recommended
2300 psi (159 bar) Maximum

38F (Clamp Circuit)

2300 psi (159 bar) Recommended
2600 psi (179 bar) Maximum

Truck Flow Volume ①

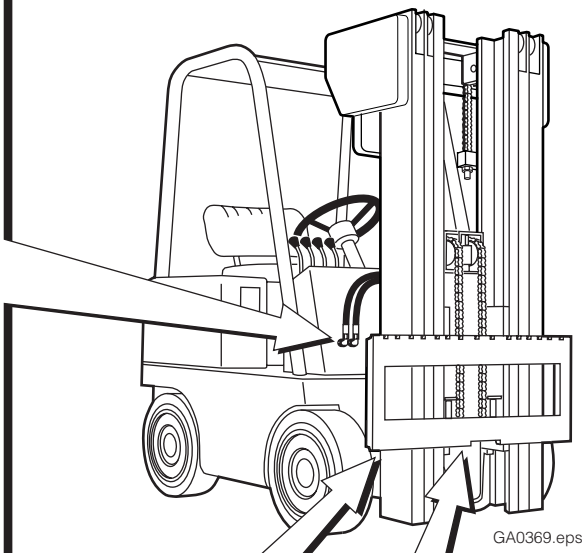
	Min.②	Recommended	Max.③
25F	5 GPM (19 L/min)	7 GPM (26 L/min)	10 GPM (38 L/min)
38F Clamp	5 GPM (19 L/min)	10 GPM (38 L/min)	12 GPM (45 L/min)
Rotate	5 GPM (19 L/min)	12 GPM (45 L/min)	15 GPM (57 L/min)
45F, 60F 66F	5 GPM (19 L/min)	10 GPM (38 L/min)	15 GPM (57 L/min)
77F, 90F, 100F 120F	10 GPM (38 L/min)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



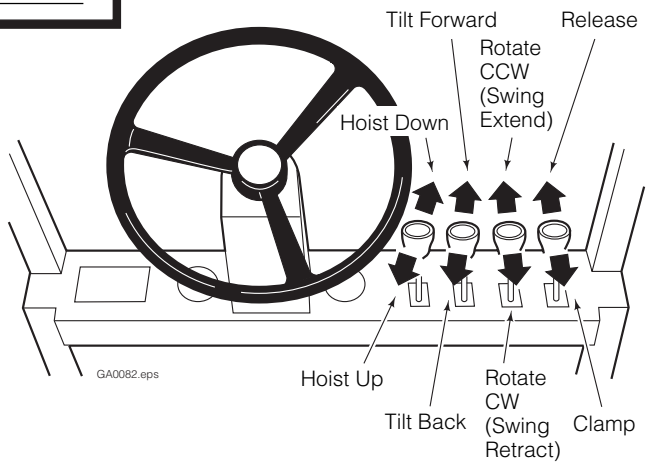
Clean and inspect carriage bars for damage and smoothness. Repair any protruding welds or damaged notches.

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 ITA(ISO) standards.



Follow the Steps shown to install a Swing Frame Paper Roll Clamp. 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.

NOTE: Swing Frame Clamps require a solenoid-operated control valve group to convert a two (2) function auxiliary control valve to three (3) function operation.

Control Valve Group Installation

(All Models except 77F Serial Numbers 675414–675467)

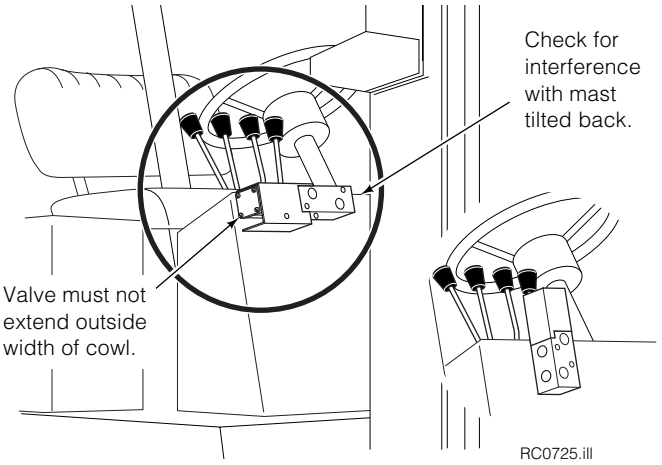
This Section describes installation procedures for all Swing Frame Clamps except 77F Models (see Section 2.3-3 for 77F Models). For hose reel information, refer to Installation Instructions 673835 for THINLINE™ 2-Port Hose Reels, and Installation Instructions 675395 for THINLINE™ 4-Port Hose Reels (needed for masts without internal reeving). Control valve groups for different voltages are listed in the Table opposite.

Control Valve Group Part Number	Truck Voltage
674924	12V
674925	24V
674926	36V
674927	48V

1 Determine an appropriate mounting location for the control valve on the truck cowl. The valve can be mounted horizontally or vertically. The valve must not extend outside the width of the cowl or interfere with the truck mast when tilted back.

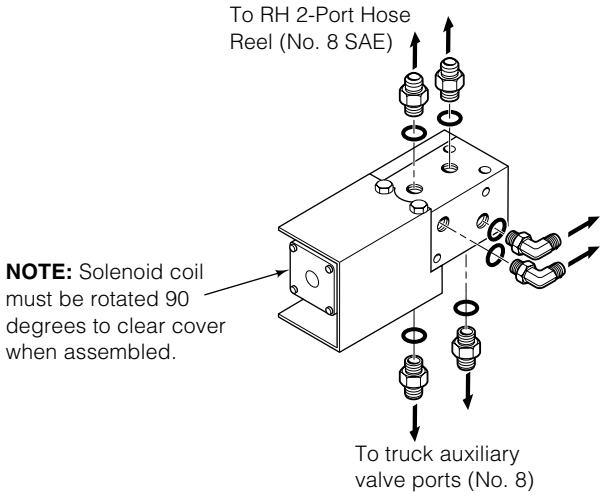
2 Assemble the solenoid valve, fittings, cover and subplate. Position the assembly on the truck cowl noting any clearance problems.

HORIZONTAL MOUNT

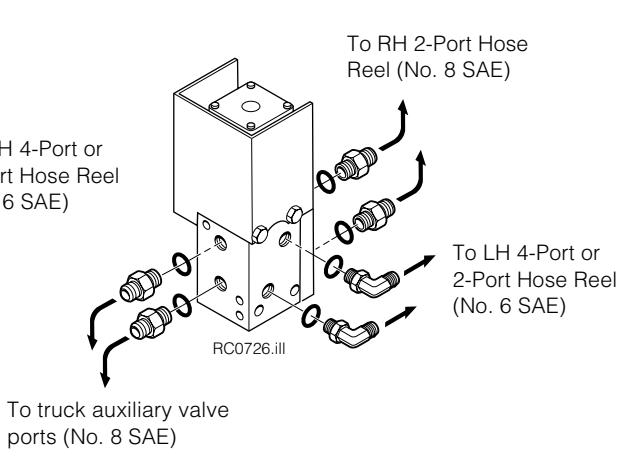


VERTICAL MOUNT

HORIZONTAL MOUNT



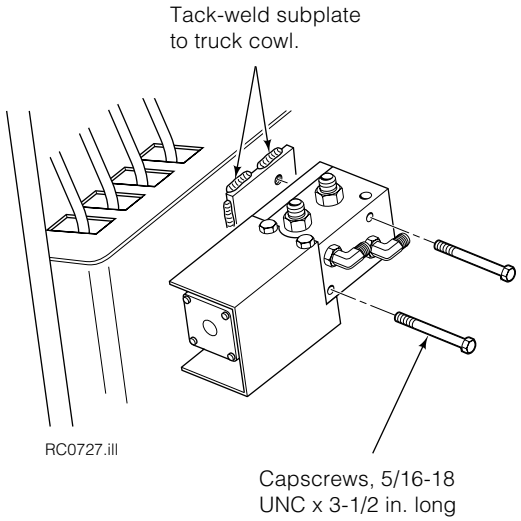
VERTICAL MOUNT



Control Valve Group Installation (Continued)

(All Models except 77F Serial Nos. 675414–675467)

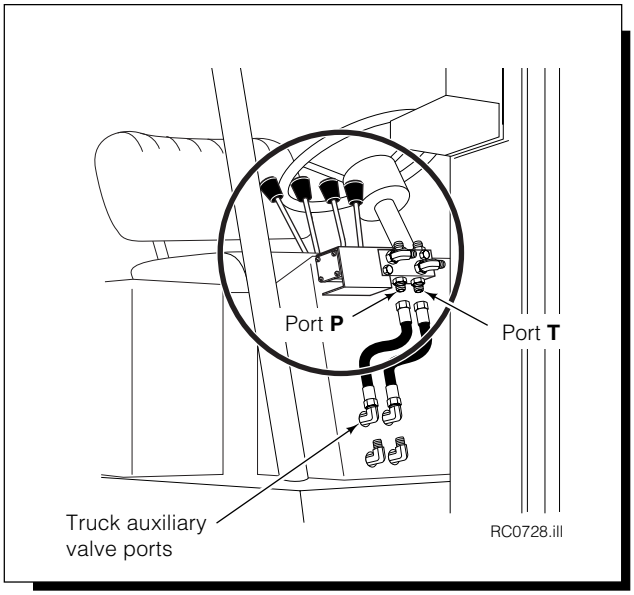
3 Mark the mounting location on the truck cowl. Grind and clean the area in preparation for welding. Tack-weld the subplate to the cowl and mount the valve to the subplate with the capscrews supplied in the kit.



NOTE: Horizontal mount only shown

4 Measure and assemble two hoses (user-supplied) to run from the solenoid valve **P** and **T** ports to the **truck valve** ports. Install the hoses.

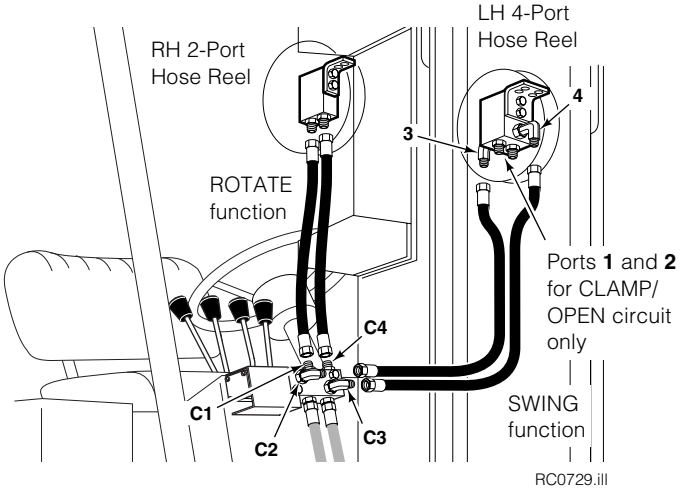
IMPORTANT: Proceed to Step 7 if lift truck is equipped with mast internal hose reeving.



Installation with RH 2-Port and LH 4-Port Hose Reels

5 **Rotate Function –** Measure and assemble two hoses (user-supplied) to run from the control valve **C1** and **C4** ports to the **RH hose reel**. Install hoses.

Swing Function – Measure and assemble two hoses (user-supplied) to run from the control valve **C2** and **C3** ports to the **LH 4-port hose reel 3 and 4** ports. Install hoses.

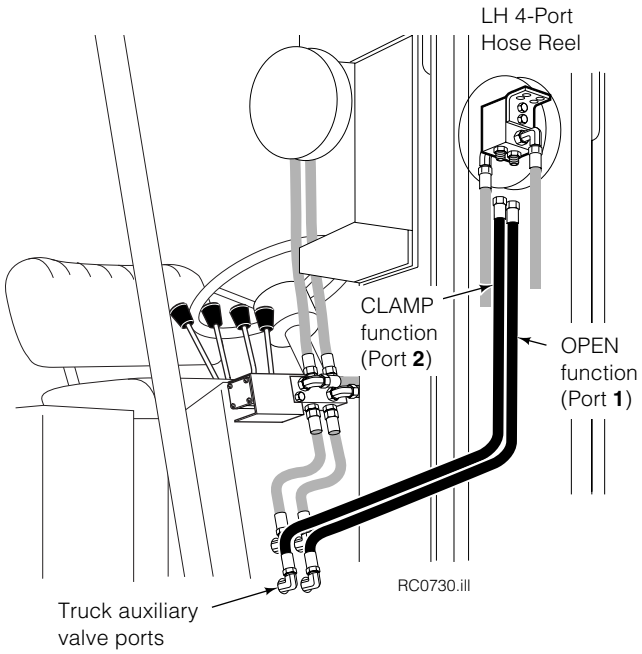


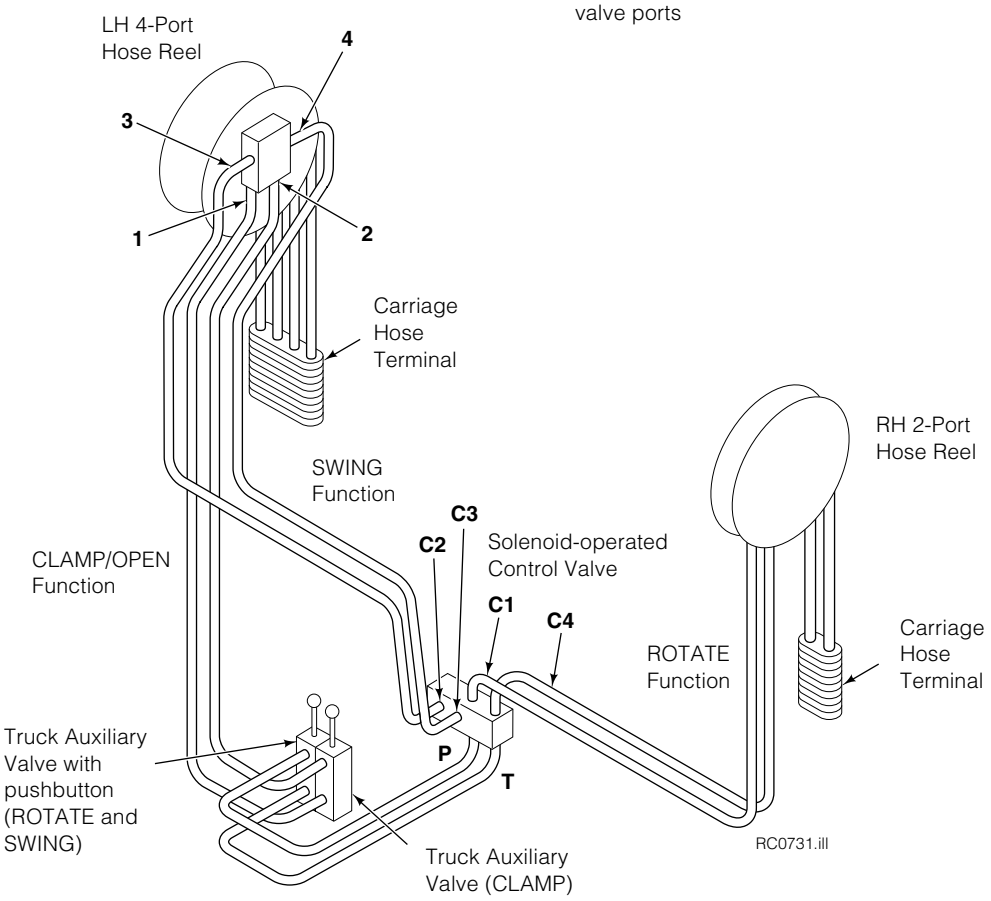
Control Valve Group Installation (Continued)

(All Models except 77F Serial Numbers 675414–675467)

6 **Clamp Function –** Measure and assemble two hoses (user-supplied) to run from the **truck valve** ports to the **LH 4-port hose reel 1 and 2** ports. Install hoses.

> **WARNING:** The hose operating the OPEN function must connect to **Port 1** on the 4-port hose reel.





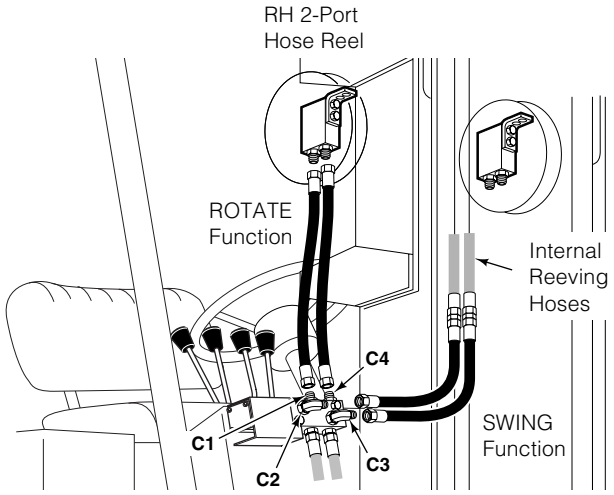
Control Valve Group Installation (Continued)

(All Models except 77F Serial Numbers 675414–675467)

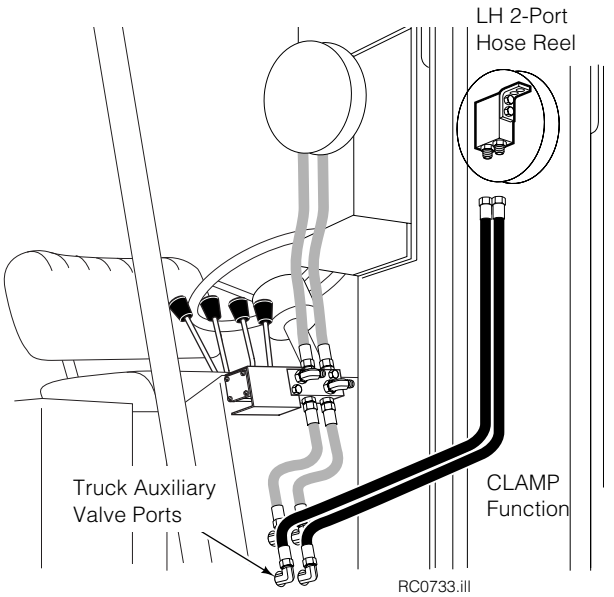
Installation with RH and LH 2-Port Hose Reels and Internal Hose Reeving

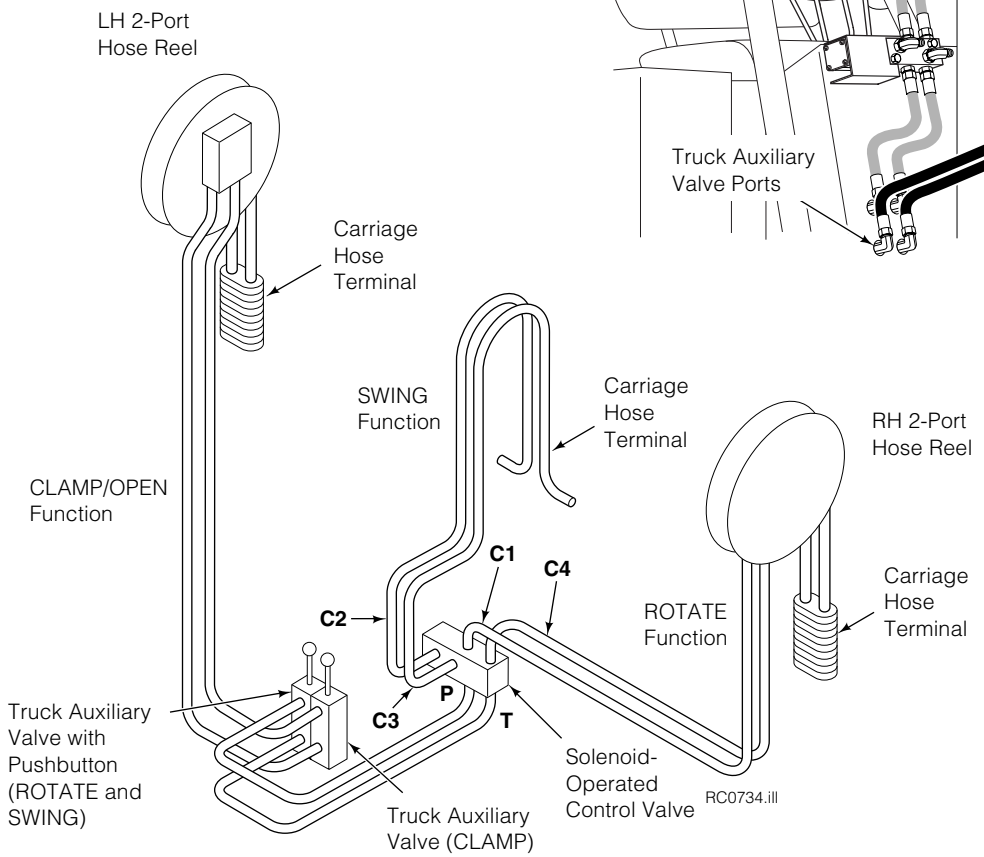
7 **Rotate Function –** Measure and assemble two hoses (user-supplied) to run from the control valve **C1** and **C4** ports to the **RH hose reel**. Install hoses.

Swing Function – Measure and assemble two hoses (user supplied) to run from the control valve **C2** and **C3** ports to the **internal hose reeving hoses.** Install hoses.



8 **Clamp Function –** Measure and assemble two hoses (user supplied) to run from the **truck valve** ports to the **LH 2-Port hose reel**. Install hoses.





Control Valve Group Installation (Continued)

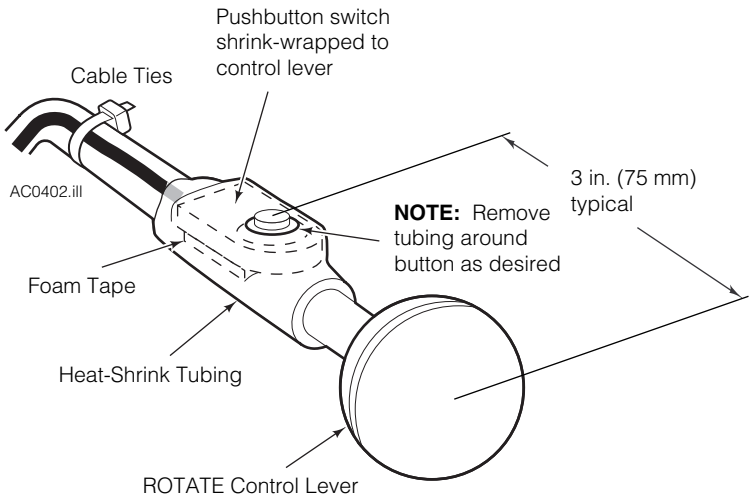
(All Models except 77F Serial Numbers 675414–675467)

9 Locate the auxiliary valve lever that operates the hydraulic hoses connected to the solenoid control valve **P** and **T** ports. Install a new knob with pushbutton, or shrink-wrap the alternate pushbutton switch onto the control lever.

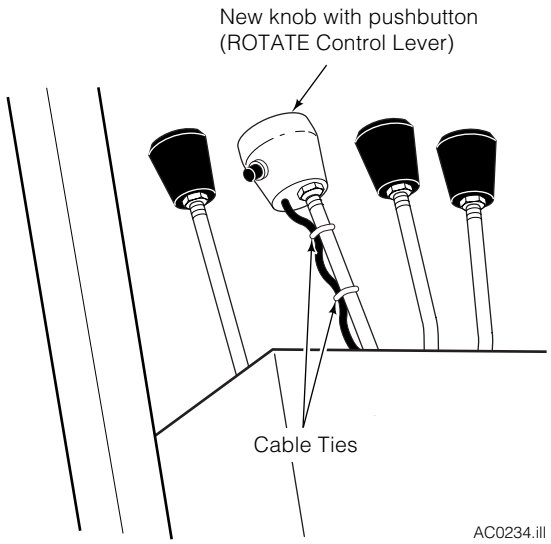
IMPORTANT: Lever should control the ROTATE function per ITA (ISO) standards. When the pushbutton is depressed, the lever should activate the SWING function.

CAUTION: Secure cable with cable ties to avoid pinching at truck cowl during handle movement.

PUSHBUTTON SWITCH ON CONTROL LEVER

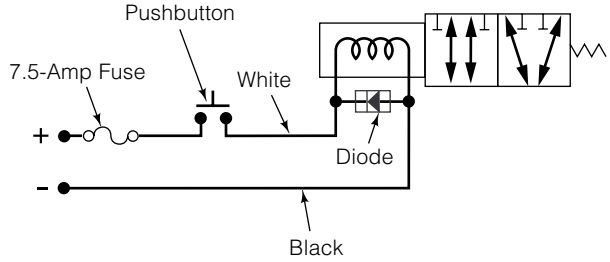


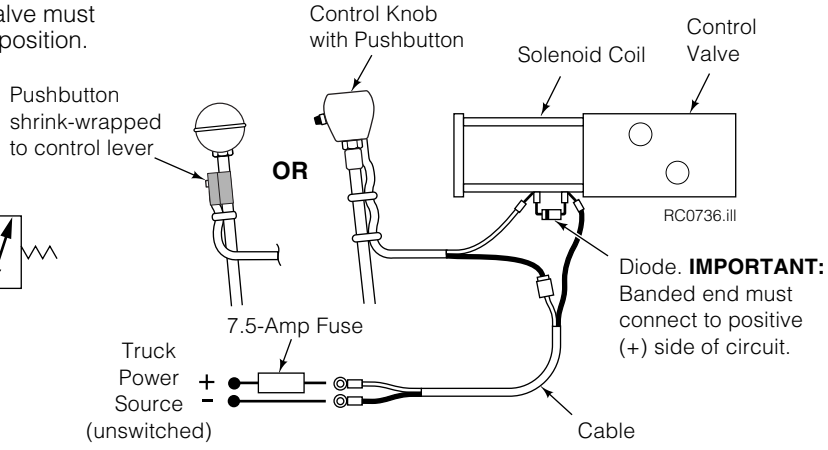
SOLENOID KNOB WITH PUSHBUTTON



10 Connect the wiring from the pushbutton and control valve terminals to the truck electrical system as shown.

IMPORTANT: Fuse must be connected to an unswitched positive terminal – control valve must be able to energize with truck key in off position.





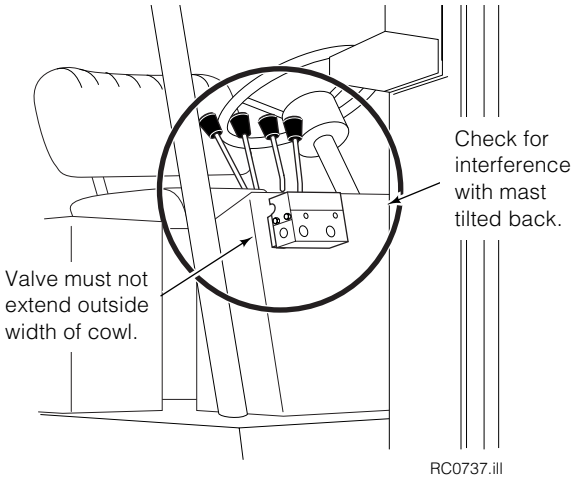
Control Valve Group Installation

(77F Model Serial Numbers 675414–675467)

This Section describes procedures for installation of Solenoid Control Valve Groups on early 77F Model Swing Frame Clamps. For hose reel information, refer to Installation Instructions 673835 for THINLINE™ 2-Port Hose Reels, and Installation Instructions 675395 for THINLINE™ 4-Port Hose Reels (for masts without internal reeving). Control valves groups for different truck voltages are listed in the Table opposite.

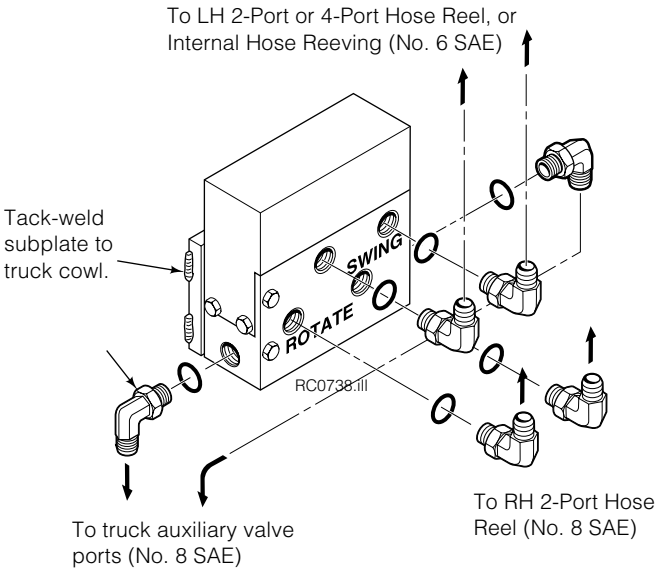
Control Valve Group Part Number	Truck Voltage
675125	12V
675115	24V
675126	36V
675127	48V
675128	72V

1 Determine an approximate mounting location for the control valve on the truck cowl. The valve must not extend outside the width of the cowl or interfere with the truck mast when tilted back.

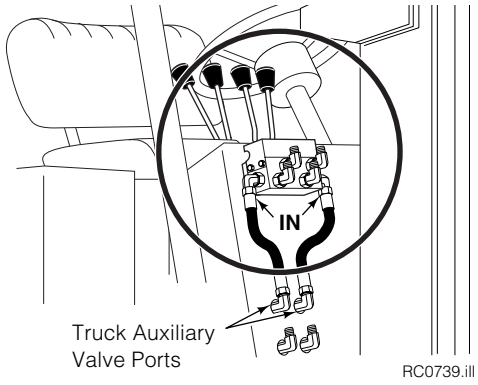


2 Assemble the control valve, fittings, cover and subplate. Position the assembly on the truck cowl noting any clearance problems.

3 Mark the mounting location on the truck cowl. Grind and clean the area in preparation for welding. Tack-weld the subplate to the cowl and mount the valve to the subplate with the capscrews supplied in the kit.



4 Measure and assemble two hoses (user-supplied) to run from the solenoid valve **IN** ports to the **truck valve** ports. Install the hoses.



Control Valve Group Installation (Continued)

(77F Model Serial Numbers 675414–675467)

IMPORTANT: Proceed to Step 7 if lift truck is equipped with mast internal hose reeving.

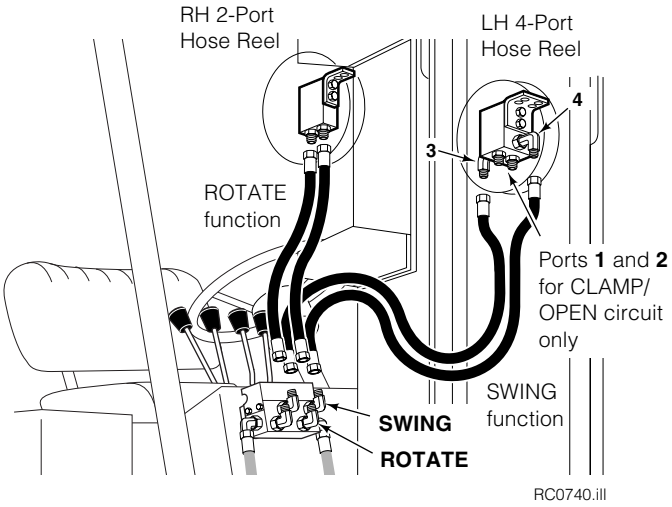
Installation with RH 2-Port and LH 4-Port Hose Reels

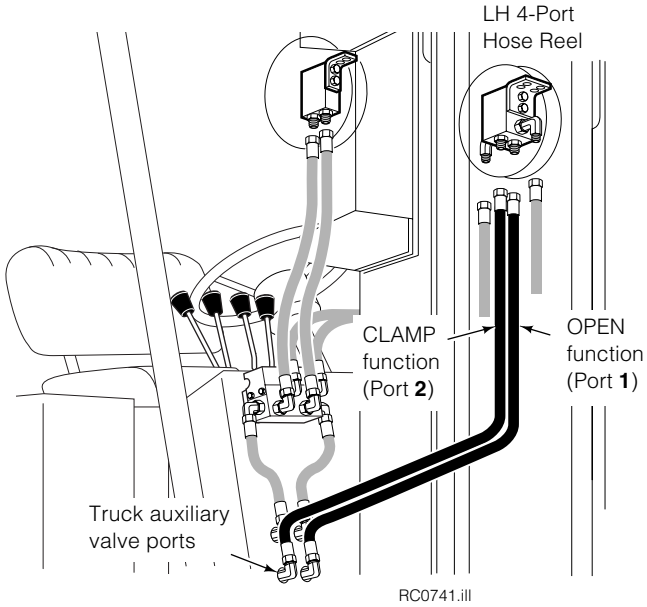
5 **Rotate Function –** Measure and assemble two hoses (user-supplied) to run from the control valve **ROTATE** ports to the **RH 2-port hose reel**. Install hoses.

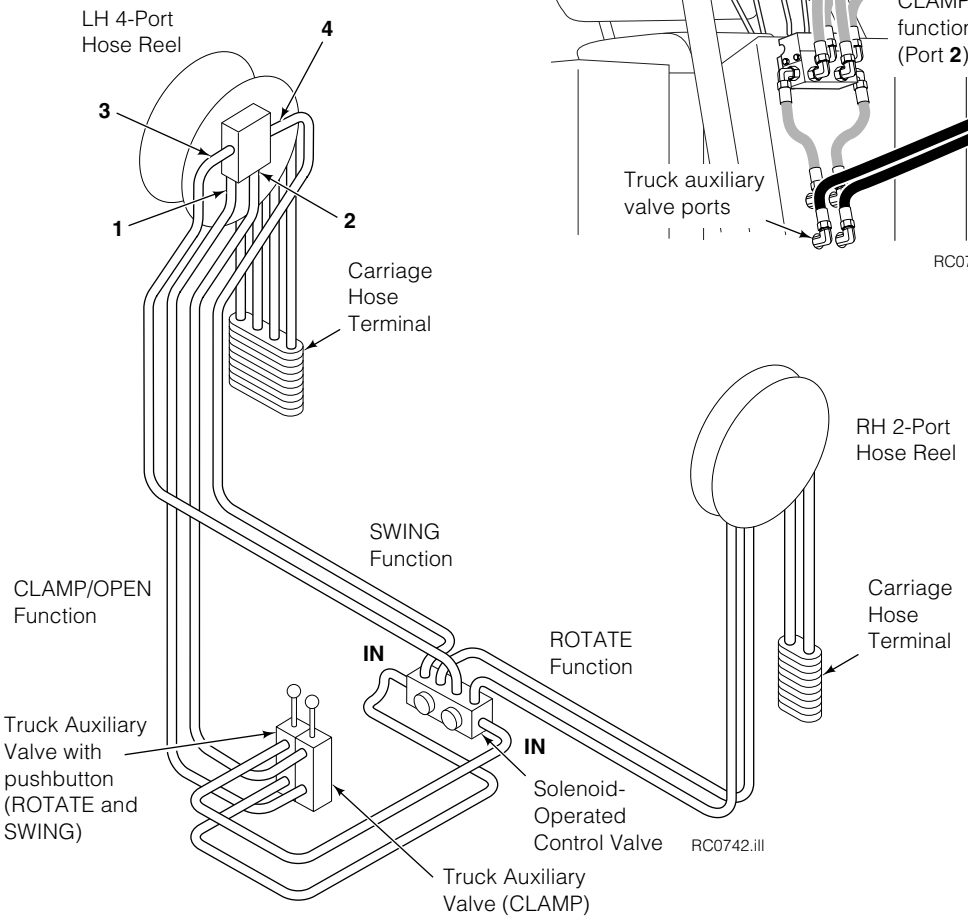
Swing Function – Measure and assemble two hoses (user-supplied) to run from the control valve **SWING** ports to the **LH 4-port hose reel 3 and 4** ports. Install hoses.

6 **Clamp Function –** Measure and assemble two hoses (user-supplied) to run from the **truck valve** ports to the **LH 4-port hose reel 1 and 2** ports. Install hoses.

> **WARNING:** The hose operating the OPEN function must connect to **Port 1** on the 4-port hose reel.







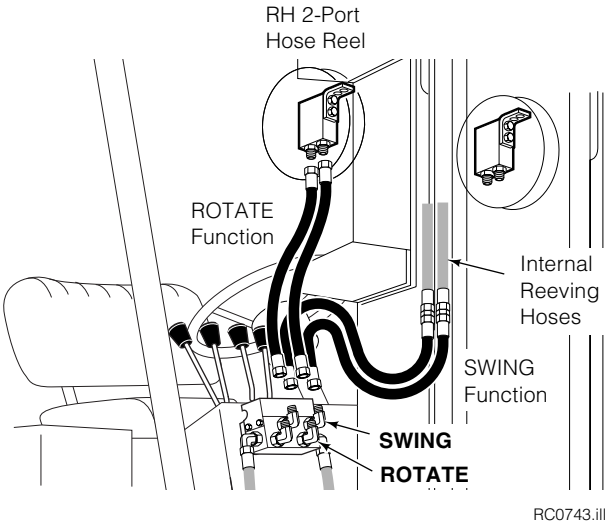
Control Valve Group Installation (Continued)

(77F Model Serial Numbers 675414–675467)

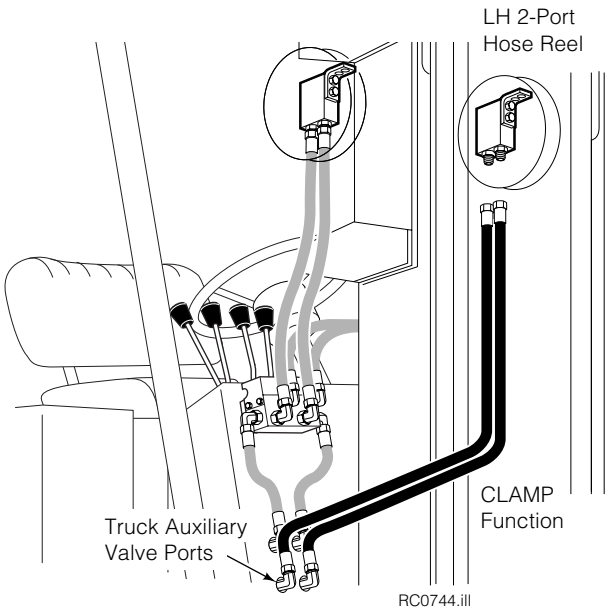
Installation with RH and LH 2-Port Hose Reels and Internal Hose Reeving

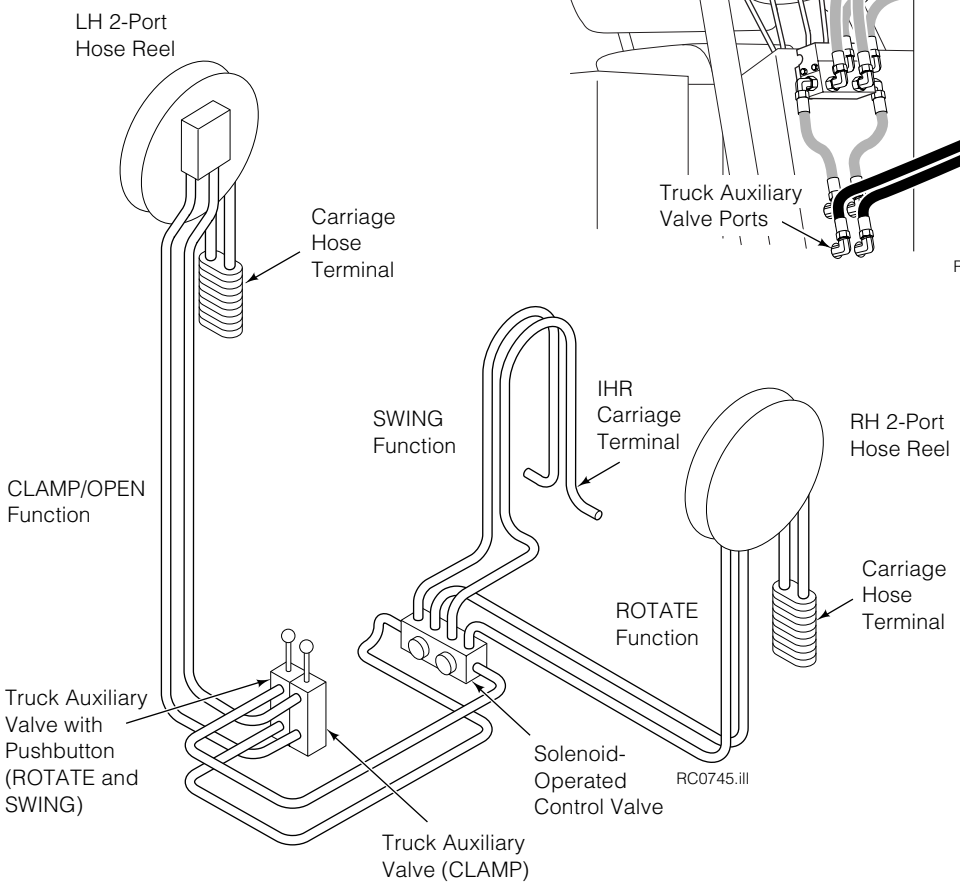
7 **Rotate Function –** Measure and assemble two hoses (user-supplied) to run from the control valve **ROTATE** ports to the **RH 2-Port hose reel**. Install hoses.

Swing Function – Measure and assemble two hoses (user supplied) to run from the control valve **SWING** ports to the **internal hose reeving hoses.** Install hoses.



8 **Clamp Function –** Measure and assemble two hoses (user supplied) to run from the **truck valve** ports to the **LH 2-Port hose reel**. Install hoses.





Control Valve Group Installation (Continued)

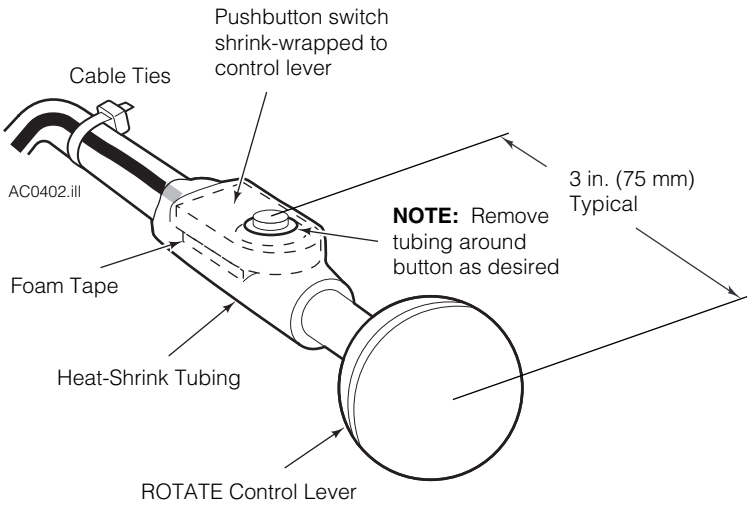
(77F Model Serial Numbers 675414–675467)

9 Locate the auxiliary lever that operates the hydraulic hoses connected to the solenoid control valve **IN** ports. Install a new knob with pushbutton, or shrink-wrap the alternate pushbutton switch onto the control lever.

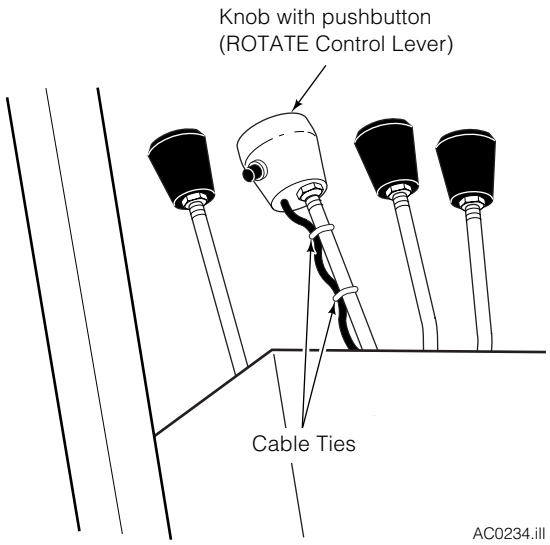
IMPORTANT: Lever should control the ROTATE function per ITA (ISO) standards. When the pushbutton is depressed, the lever should activate the SWING function.

CAUTION: Secure cable with cable ties to avoid pinching at truck cowl during handle movement.

PUSHBUTTON SWITCH ON CONTROL LEVER

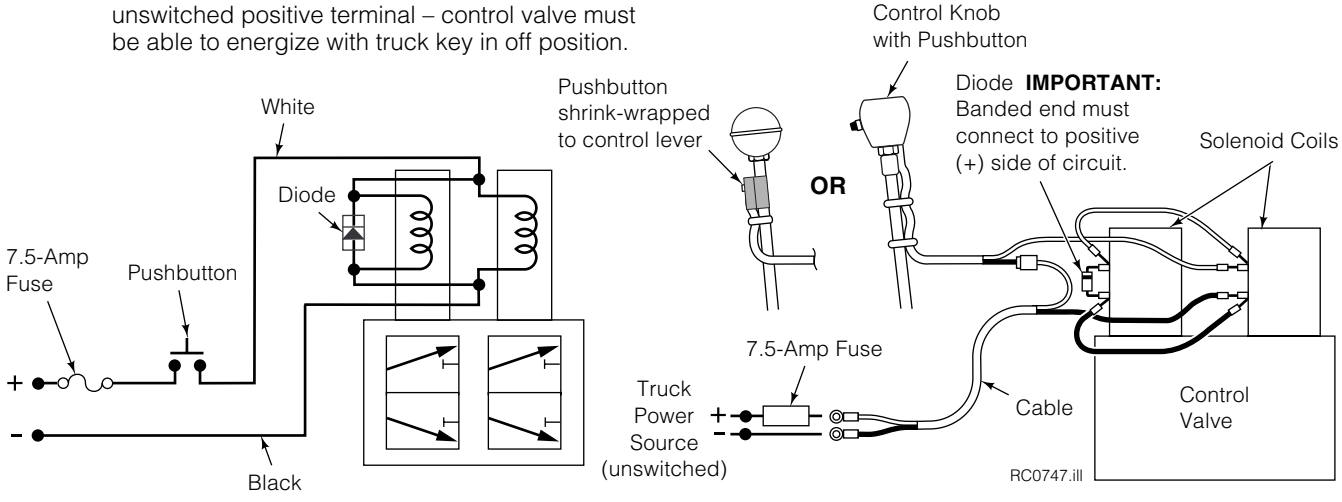


SOLENOID KNOB WITH PUSHBUTTON



10 Connect the wiring from the pushbutton and control valve coil terminals to the truck electrical system as shown.

IMPORTANT: Fuse must be connected to an unswitched positive terminal – control valve must be able to energize with truck key in off position.



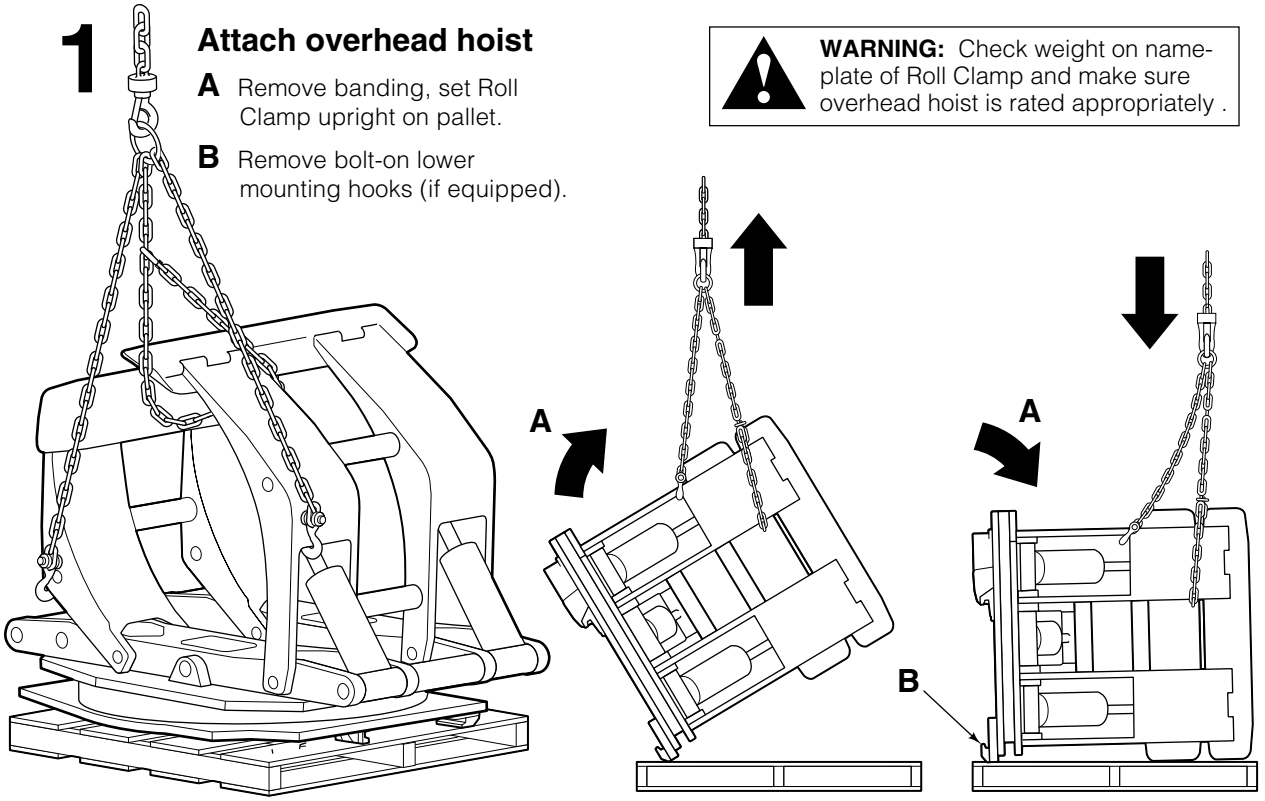
Clamp Installation

1 Attach overhead hoist

A Remove banding, set Roll Clamp upright on pallet.

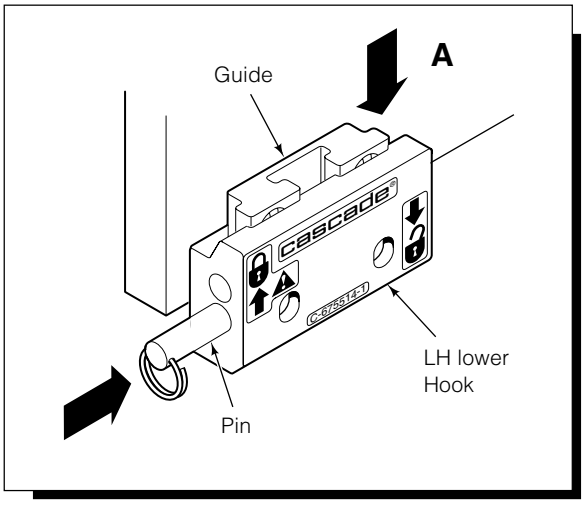
B Remove bolt-on lower mounting hooks (if equipped).

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

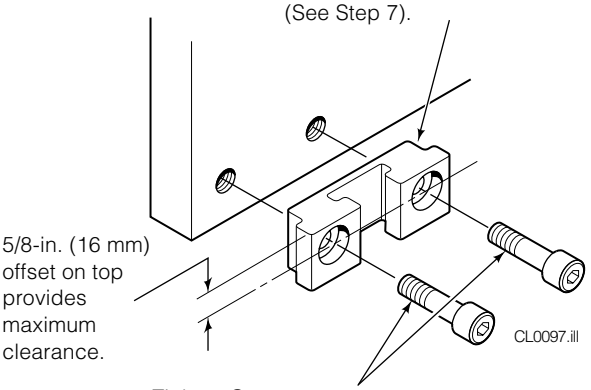


2 Unlock Quick-Change lower mounting hooks (if equipped)

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 38F, 45F, 60F, 66F – 110 ft.-lbs. (150 Nm)
CL IV 60F, 66F, 77F – 195 ft.-lbs. (265 Nm)
CL IV 90F, 100F, 120F – 260 ft.-lbs. (360 Nm)

3 Prepare Hoses

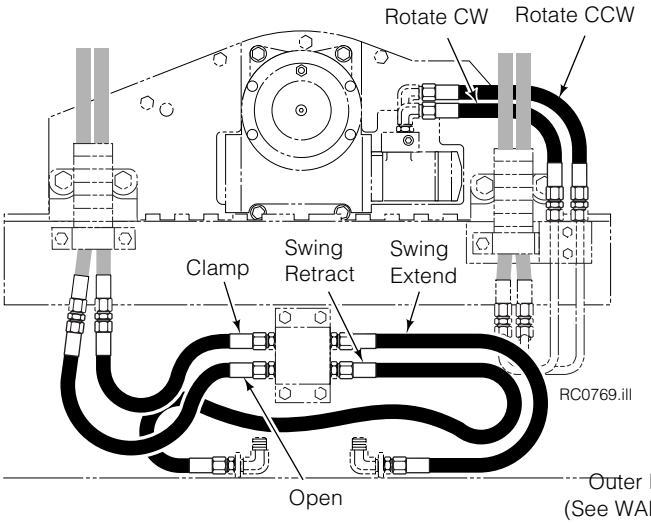
A Position truck carriage behind Roll Clamp.

B Determine hose lengths required.

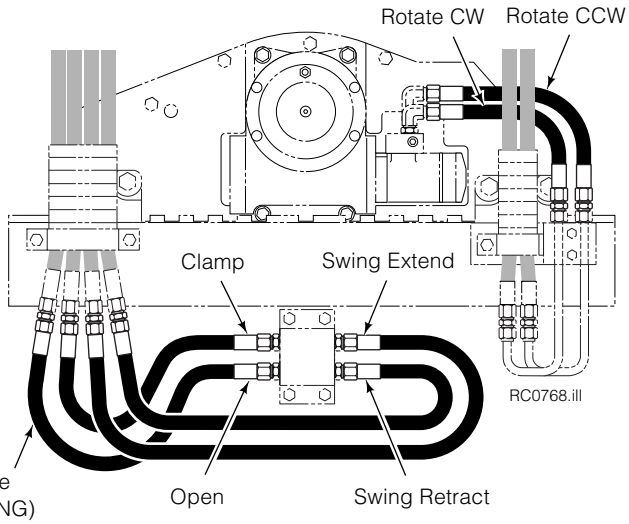
C Cut hoses to length, install end fittings.

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

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



INSTALLATION USING RH 2-PORT HOSE REEL and LH 4-PORT HOSE REEL:



WARNING: Hose connecting revolving connection OPEN port to 4-port hose reel must be connected to outer-most hose on reel only.

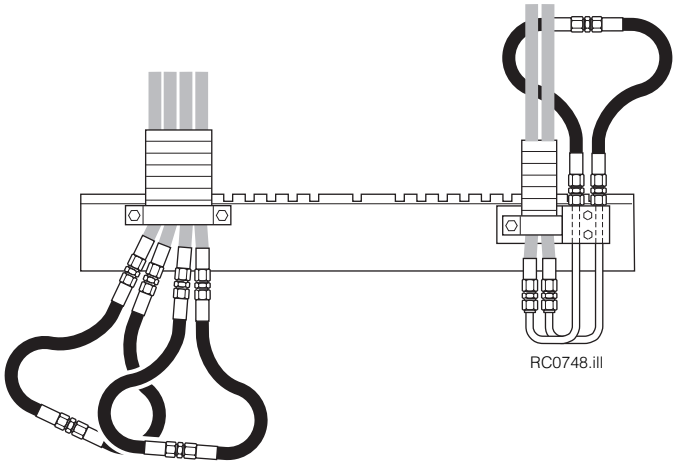
4 Flush hydraulic supply hoses

A Install hoses as shown below.

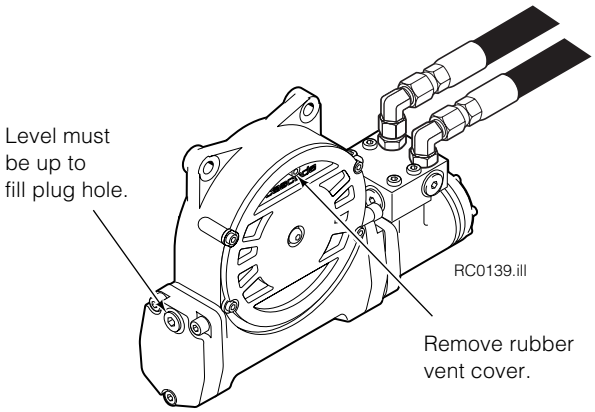
B Operate auxiliary valves for 30 sec.

C Remove union fittings.

D Install hoses to revolving connection fittings as shown in Step 3 above.



5 Check lubricant 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).

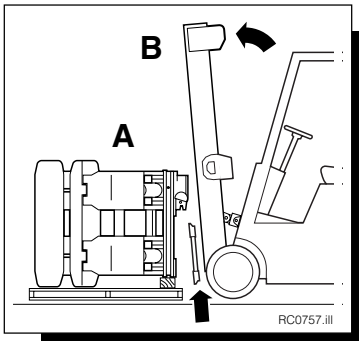
6 Mount Clamp on truck carriage

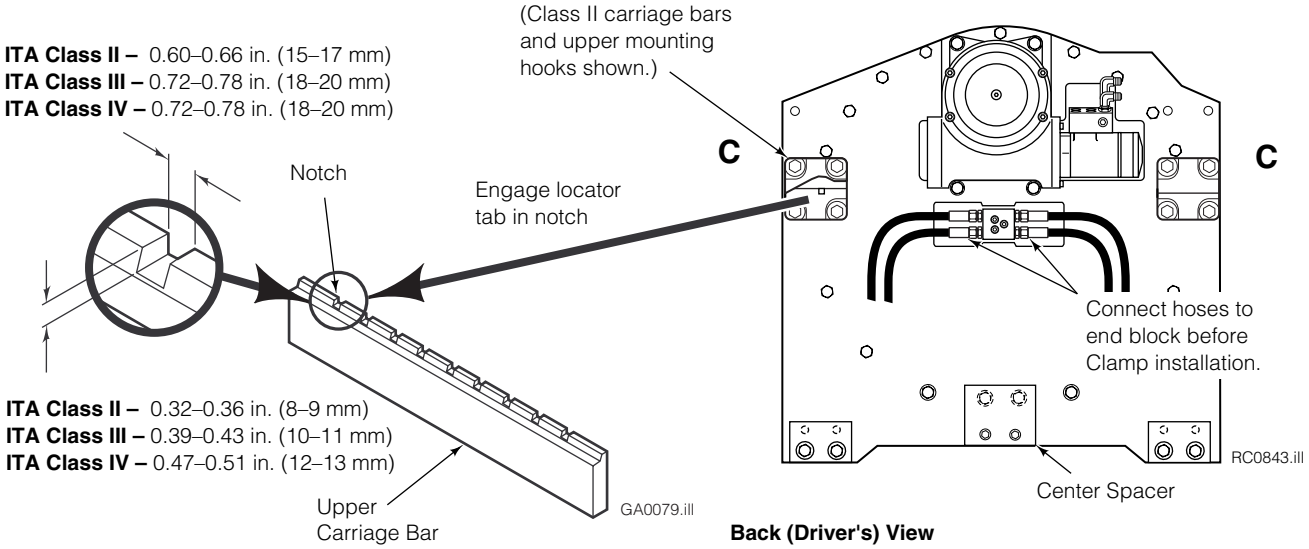
A Center truck behind Roll Clamp.

B Tilt forward and raise carriage into position.

C Engage top mounting hooks with carriage. Make sure left hook engages closest notch on top carriage bar.

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

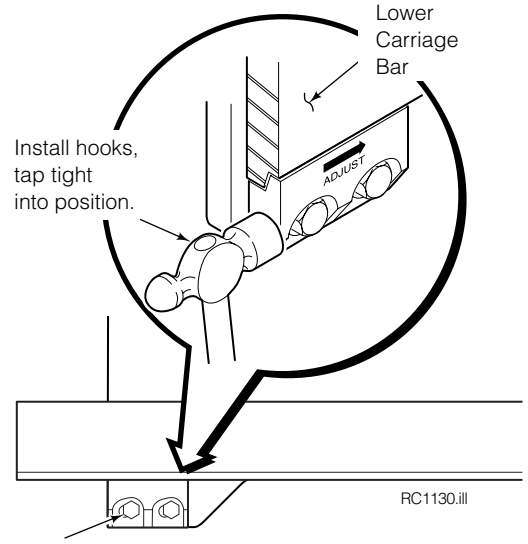




Back (Driver's) View

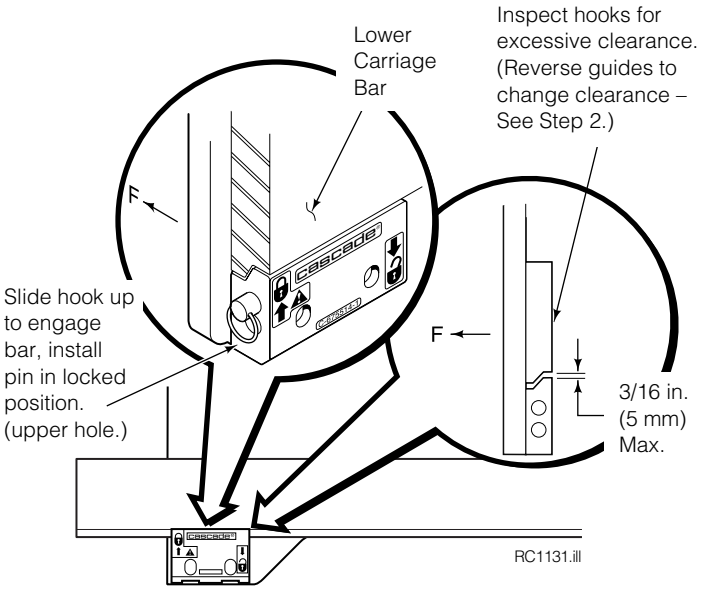
7 Install and engage lower hooks

BOLT-ON TYPE

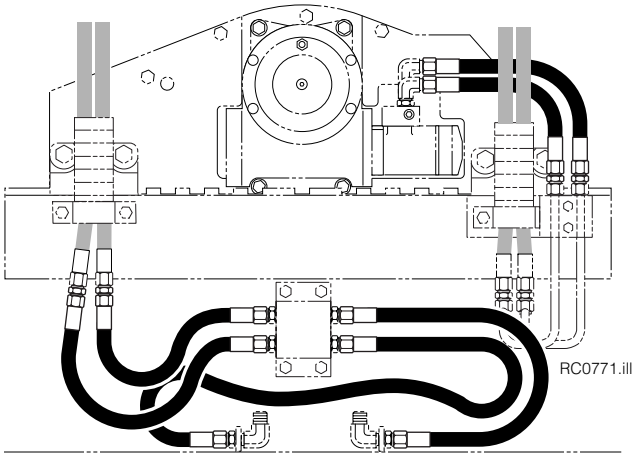


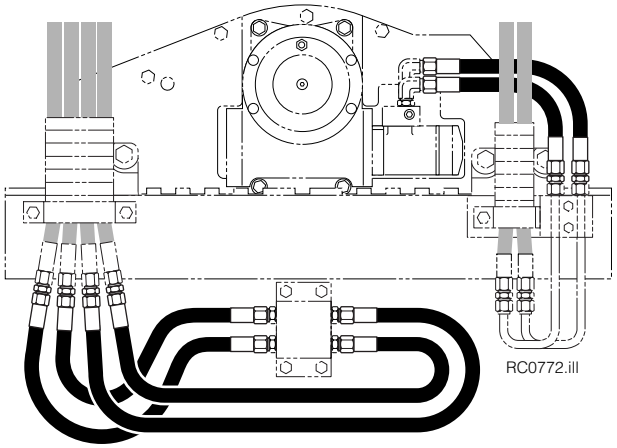
Tighten Capscrews:
CL II & III 38F, 45F, 60F, 66F – 110 ft.-lbs. (150 Nm)
CL IV 60F, 66F, 77F – 195 ft.-lbs. (265 Nm)
CL IV 90F, 100F, 120F and larger – 260 ft.-lbs. (350 Nm)

QUICK-CHANGE TYPE (OPTIONAL)



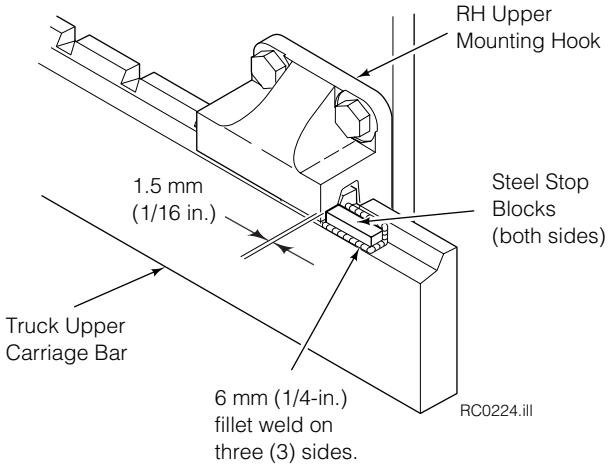
8 Connect hoses to hose terminal fittings as shown in Step 3





9 Install stop block kit

- Preheat each stop block and carriage bar weld area to 325° F (180° C).
- Use AWS E-7018 low hydrogen rod and weld a 6 mm (1/4 in.) fillet full length on three (3) sides of each stop block.



Back (Driver's) View

10 Cycle Clamp functions

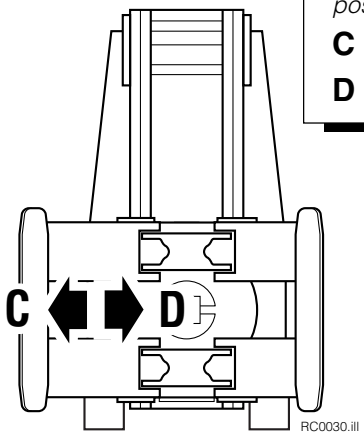
WARNING: Make sure all personnel are clear of the Clamp during testing.

- 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

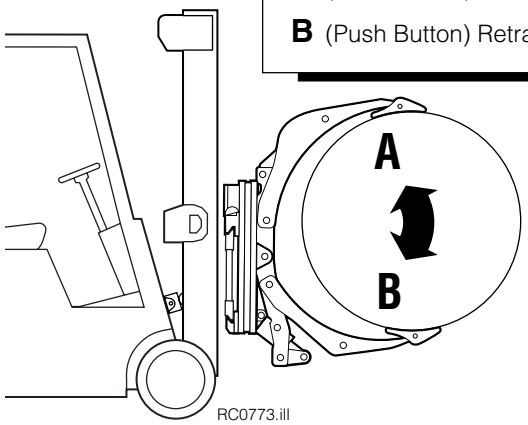
D Clamp



SWING
(Bilge handling shown)

A (Push Button) Extend

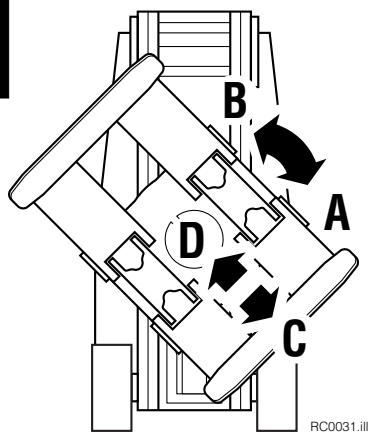
B (Push Button) Retract



ROTATE
(Driver's view)

A Counterclockwise (CCW)

B Clockwise (CW)

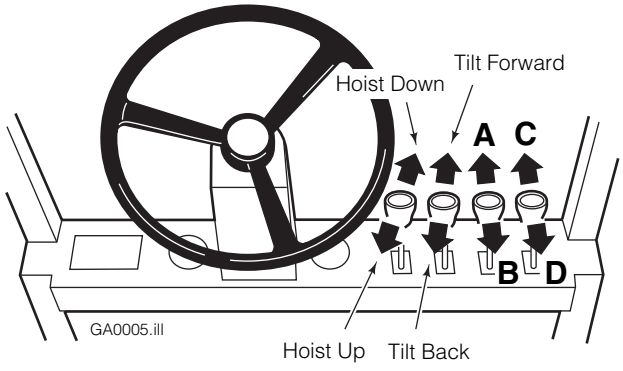


SHORT ARM
(45-degree position only)

C Open

D Close

AUXILIARY VALVE FUNCTIONS



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 the edges of the contact pads for wear or sharp nicks that could damage or tear paper rolls. Grind the edges smooth.
- Check the contact pad pivot joints 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. Clamp Force Indicators 830141, 832442 and 200645 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:

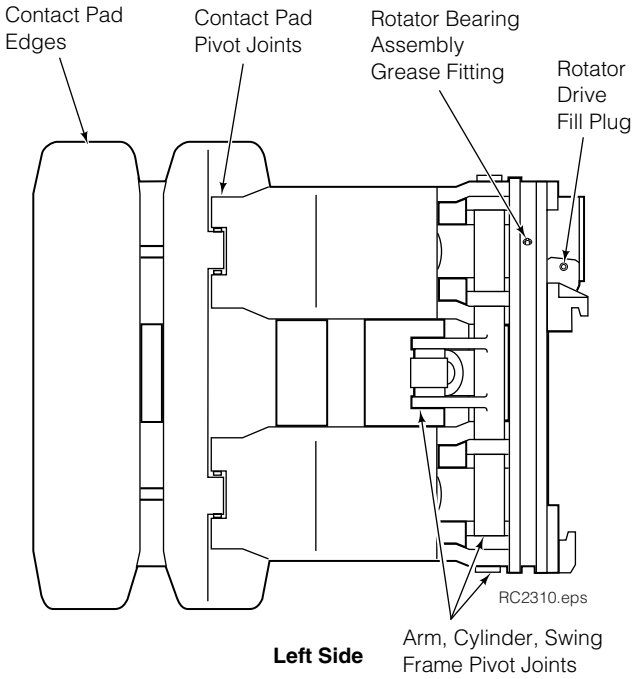
- Check sample of baseplate-to-bearing assembly capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and replacement procedures.
- Check sample of faceplate-to-bearing assembly capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and relacement procedures.
- Tighten mounting hook capscrews. See torque specs for specific Models in Installation Step 7.
- Tighten rotator drive capscrews to 75 ft.-lbs. (105 Nm).
- 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 plug.
- Inspect all arm, frame and cylinder pivot bushings for wear and replace if necessary.
- Inspect all load-bearing structural welds on arms, swing frame pivots, 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:

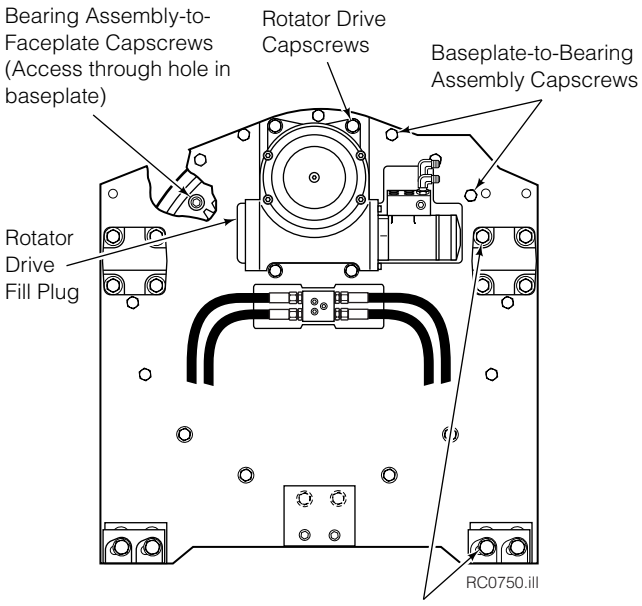
- Check all rotation bearing capscrews for proper torque value. See Technical Bulletin TB183 or Service Manual 674512 for checking and replacement procedures.
- Inspect all arm and cylinder pivot pins for wear. Replace if necessary.

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 Clamp 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), and all capscrews checked at every 2000 hours. Failure to keep the capscrews tightened can result in attachment damage and serious injury.



Back (Driver's) View

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

AMERICAS

Cascade Corporation
U.S. Headquarters
2201 NE 201st
Fairview, OR 97024-9718
Tel: 800-CASCADE (227-2233)
Fax: 888-329-8207

Cascade Canada Inc.
5570 Timberlea Blvd.
Mississauga, Ontario
Canada L4W-4M6
Tel: 905-629-7777
Fax: 905-629-7785

Cascade do Brasil
Rua João Guerra, 134
Macuco, Santos - SP
Brasil 11015-130
Tel: 55-13-2105-8800
Fax: 55-13-2105-8899

EUROPE-AFRICA

Cascade Italia S.R.L.
European Headquarters
Via Dell'Artigianato 1
37030 Vago di Lavagno (VR)
Italy
Tel: 39-045-8989111
Fax: 39-045-8989160

Cascade (Africa) Pty. Ltd.
PO Box 625, Isando 1600
60A Steel Road
Sparton, Kempton Park
South Africa
Tel: 27-11-975-9240
Fax: 27-11-394-1147

ASIA-PACIFIC

Cascade Japan Ltd.
2-23, 2-Chome,
Kukuchi Nishimachi
Amagasaki, Hyogo
Japan, 661-0978
Tel: 81-6-6420-9771
Fax: 81-6-6420-9777

Cascade Korea
121B 9L Namdong Ind.
Complex, 691-8 Gojan-Dong
Namdong-Ku
Inchon, Korea
Tel: +82-32-821-2051
Fax: +82-32-821-2055

Cascade-Xiamen
No. 668 Yangguang Rd.
Xinyang Industrial Zone
Haicang, Xiamen City
Fujian Province
P.R. China 361026
Tel: 86-592-651-2500
Fax: 86-592-651-2571

Cascade India Material Handling Private Limited
No 34, Global Trade Centre
1/1 Rambaugh Colony
Lal Bahadur Shastri Road,
Navi Peth, Pune 411 030
(Maharashtra) India
Phone: +91 020 2432 5490
Fax: +91 020 2433 0881

Cascade Australia Pty. Ltd.
1445 Ipswich Road
Rocklea, QLD 4107
Australia
Tel: 1-800-227-223
Fax: +61 7 3373-7333

Cascade New Zealand
15 Ra Ora Drive
East Tamaki, Auckland
New Zealand
Tel: +64-9-273-9136
Fax: +64-9-273-9137

Sunstream Industries Pte. Ltd.
18 Tuas South Street 5
Singapore 637796
Tel: +65-6795-7555
Fax: +65-6863-1368

10-2005

Part Number 674511-R4