

INSTALLATION INSTRUCTIONS

E-Series

Push/Pull & Load Push
(Includes Mark 55 Push/Pull)

Number 684944-R3 EN

cascade[®]
corporation

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This Manual provides instructions for installing the Cascade Push/Pull and Load Push Attachment. Follow the suggested installation procedures for best results. If you have any questions or need more information, contact your nearest Cascade Service Department (see back cover).

Read the **WARNING** Statements placed throughout this Manual to emphasize safety during Attachment installation.

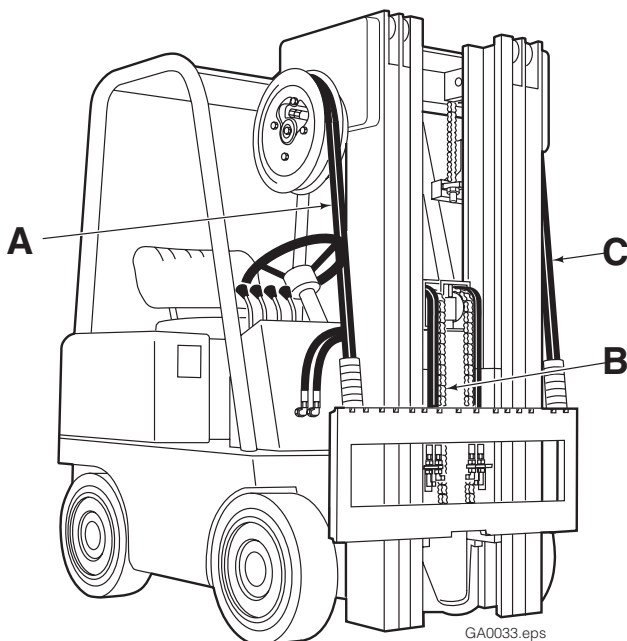
IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade for any required modifications.

R ECOMMENDED HYDRAULIC SUPPLY OPTIONS

The E-Series Push/Pull and Load Push will require one of the hydraulic supply arrangements listed, depending on the number of functions, and if solenoid adaption is required.

- Hoses and fittings for all functions should be No. 6 with a minimum internal diameter of 7 mm.

Refer to Cascade **Hose & Cable Reel Selection Guide**, Part No. 212199, to select the correct hose reel for the mast and truck.



Single Function:

(Push/Pull or Load Push)

A RH THINLINE™ 2-Port Hose Reel Group.

OR

B Mast Single Internal Hose Reaving Group.

Double Function without Solenoid: (Sideshift, Push/Pull)

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

OR

A and B RH THINLINE™ 2-Port Hose Reel Group and Mast Single Internal Hose Reaving Group.

OR

A RH THINLINE™ 4-Port Hose Reel Group.

Double Function with Solenoid:

A RH 6-N-1 Cable Hose Reel Group.

OR

A and B RH Cable Reel Group and Mast Single Internal Reaving.

Triple or Four Function with Solenoid: (with Hydraulically Adjustable Platens)

A RH 6-N-1 Cable Hose Reel Group.

(with Sheet-Sav™ or with both)

A and B RH 6-N-1 Cable Hose Reel Group and Mast Internal Reaving.

T RUCK REQUIREMENTS



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.

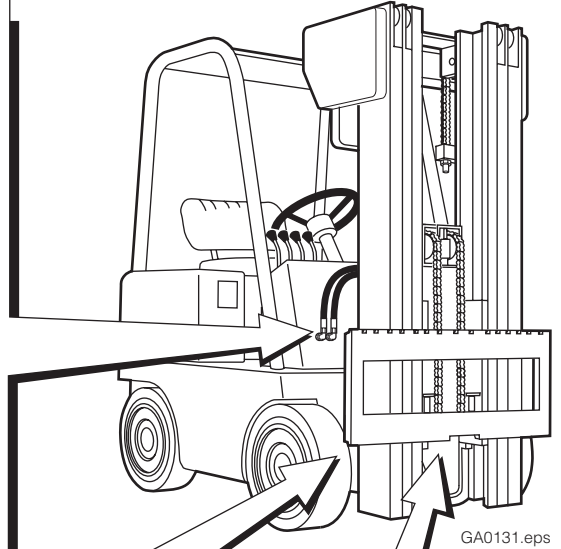
Truck Relief Setting

140 bar Recommended
160 bar Maximum

Truck Flow Volume ①

	Min. ②	Recommended	Max. ③
35E, 45E	15 L/min.	26 L/min.	38 L/min.

- ① Cascade E-Series Push/Pull and Load Push 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 reduced mechanism speeds.
- ③ Flow greater than maximum can result in excessive heating, reduced system performance and reduced hydraulic system life.



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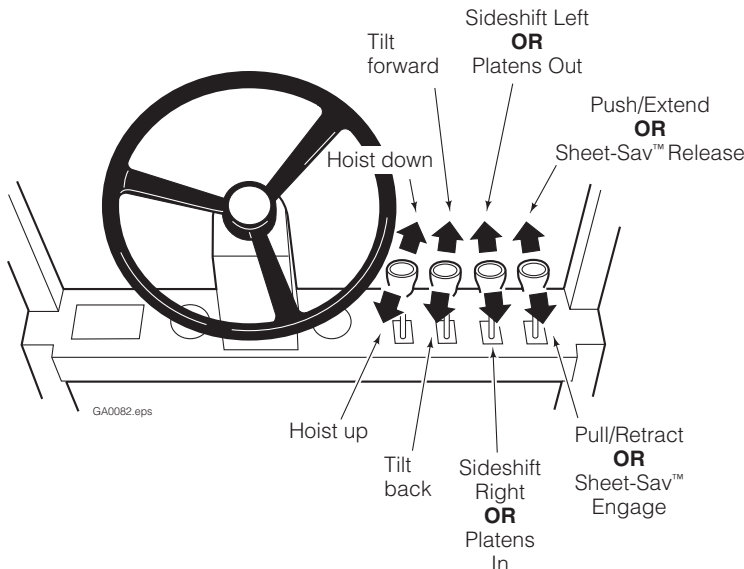
Carriage Mount Dimension (A) ITA (ISO)

	Minimum	Maximum
Class II	380.0 mm	381.0 mm
Class III	474.5 mm	476.0 mm

Carriage – Clean and inspect carriage bars. Assure that bars are parallel and that ends are flush. Grind smooth any protruding welds that may affect Sideshift lower bearings. Repair any damaged notches.

Auxiliary Valve Functions

Check for compliance with ITA (ISO) standards:



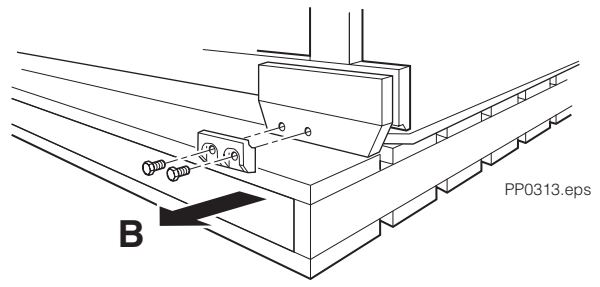
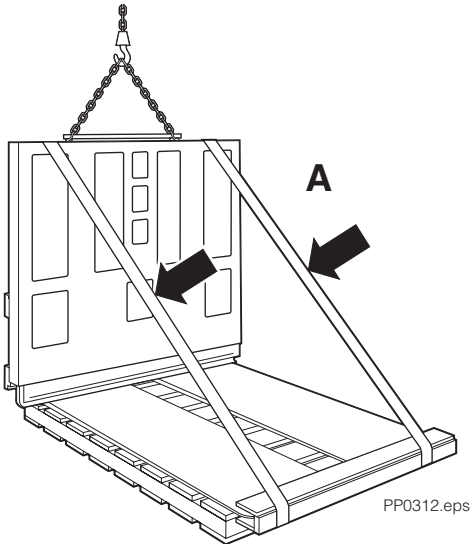
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INSTALLATION

Follow the steps shown to install the Push/Pull and Load Push on the truck. Read all **WARNINGS** and **CAUTIONS** carefully. If you don't understand a procedure, ask your supervisor, or call the nearest Cascade Service Department for assistance.

1 Remove banding and bolt-on lower hooks

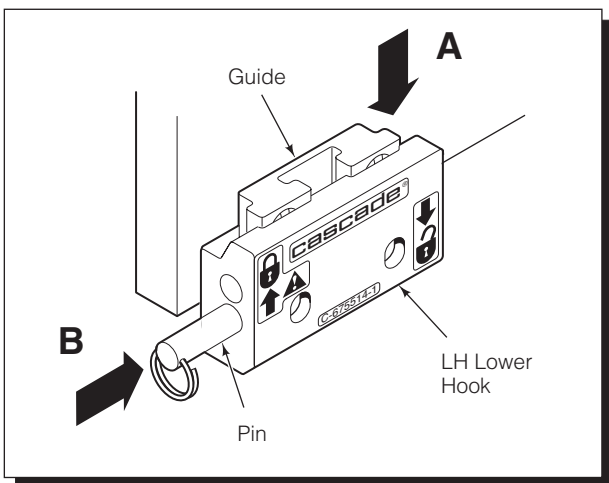
- A Remove banding.
- B Remove bolt-on lower hooks (if equipped).



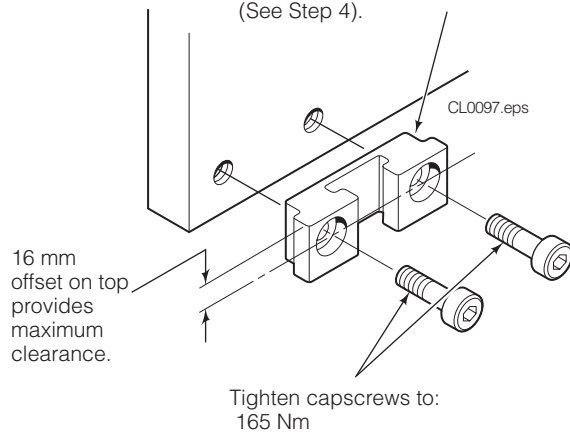
Back (Driver's) View

2 Unlock Quick-Change lower mounting hook

- A Remove pin and drop hooks into unlocked position.
- B Reinstall pin in lower hole (unlocked).



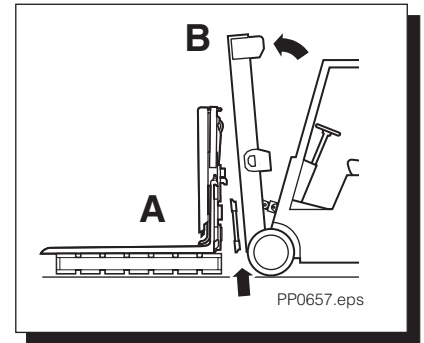
NOTE: Guides can be reversed to reduce hook-to-carriage clearance (See Step 4).



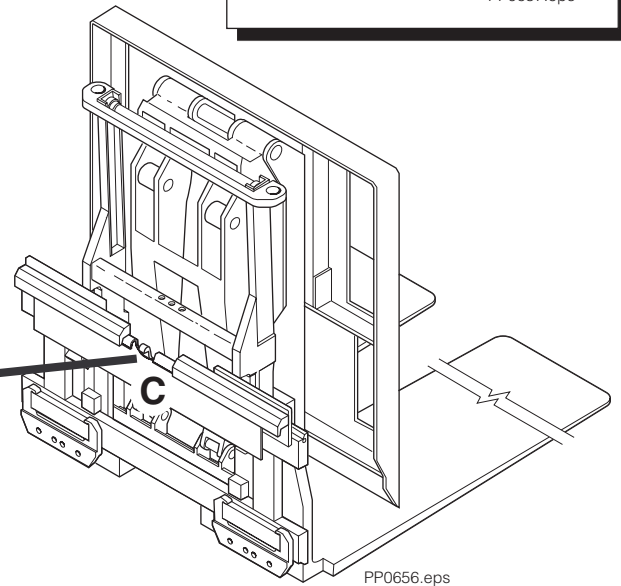
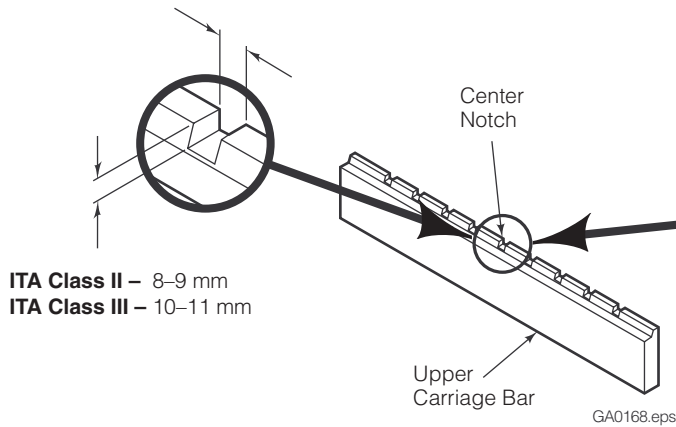
Tighten capscrews to:
165 Nm

3 Mount Attachment on truck carriage

- A** Center truck behind attachment.
- B** Tilt forward and raise carriage into position.
- C** Engage top mounting hook with carriage. Make sure center locator tab engages center notch on top carriage bar.
- D** Lift attachment 5 cm off pallet.

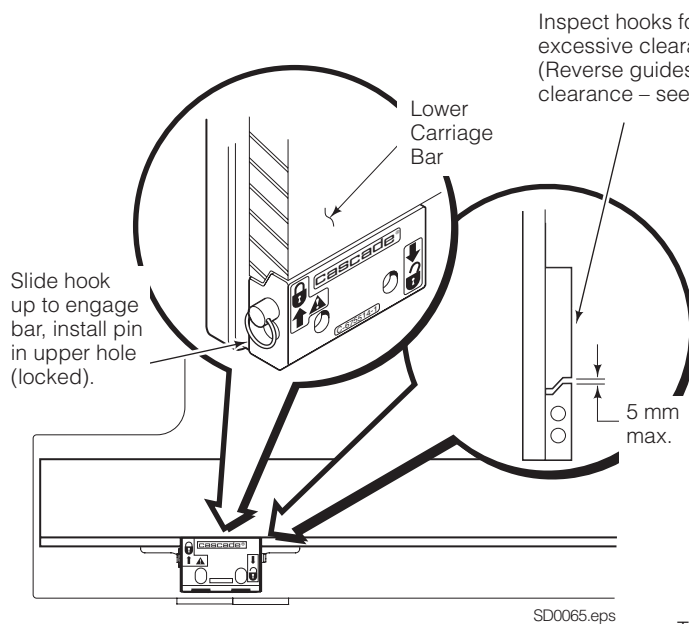


ITA Class II – 15–17 mm
ITA Class III – 18–20 mm



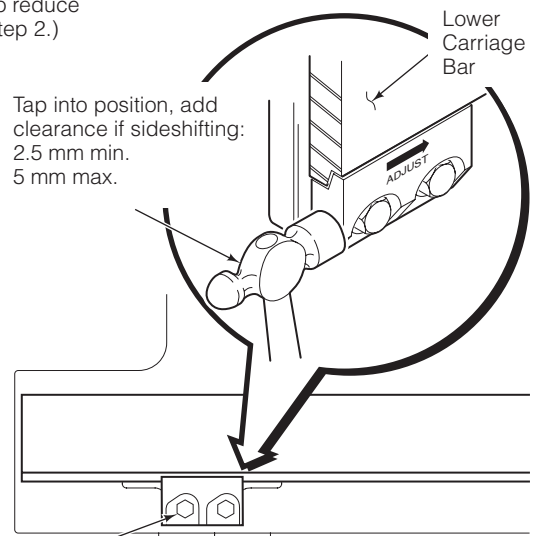
4 Install and engage lower hooks

QUICK-CHANGE TYPE



Inspect hooks for excessive clearance.
(Reverse guides to reduce clearance – see Step 2.)

BOLT-ON TYPE



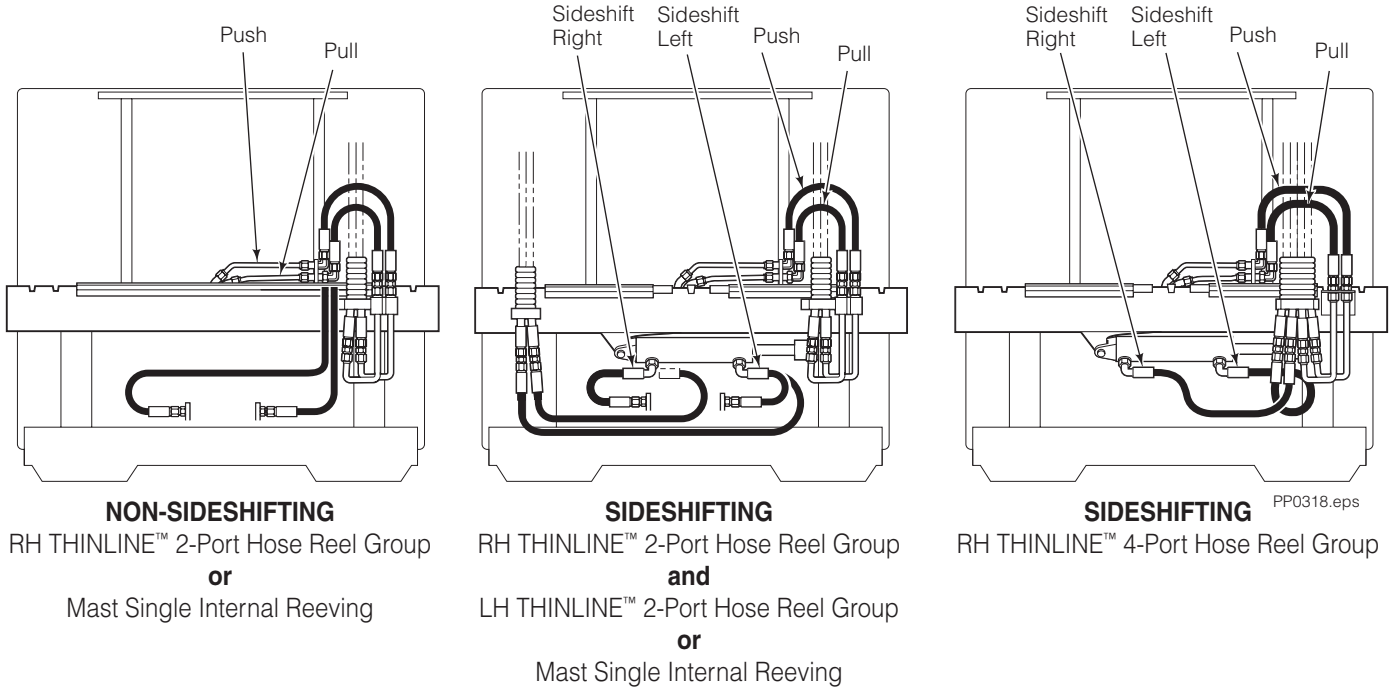
Tighten capscrews to:
165 Nm

5 Prepare hoses

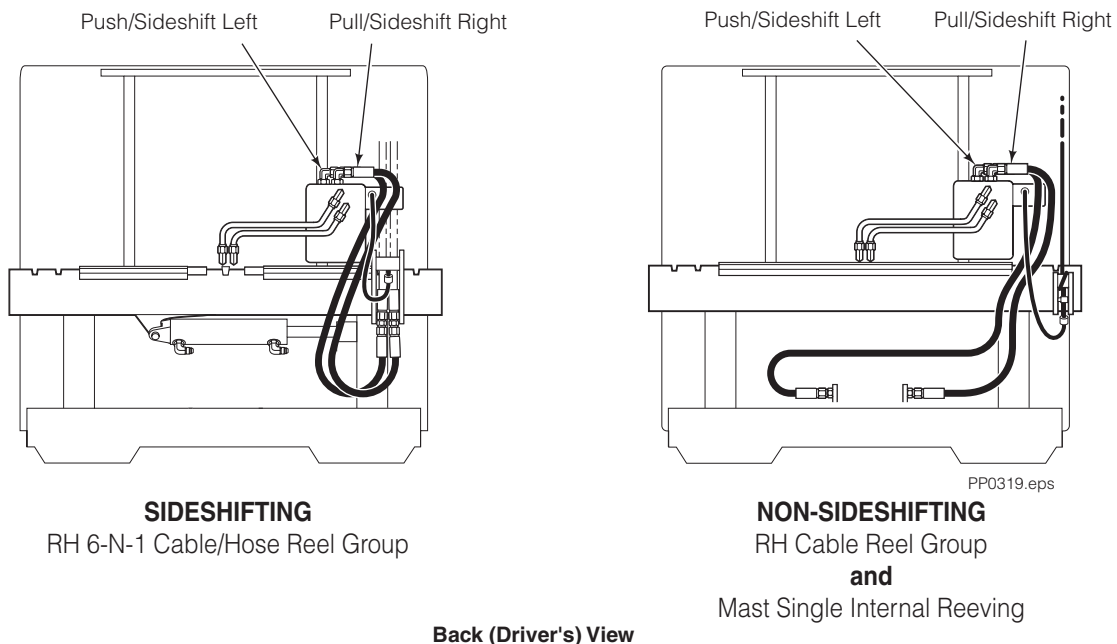
- A** Determine hose lengths required for hydraulic supply configuration of truck.
- B** Cut hoses to length, install end fittings or quick-disconnect kits.

CAUTION: Allow 10 cm extra hose length in each direction for sideshifting movement between Attachment and truck carriage.

SINGLE or TWO-FUNCTION WITHOUT SOLENOID ADAPTION



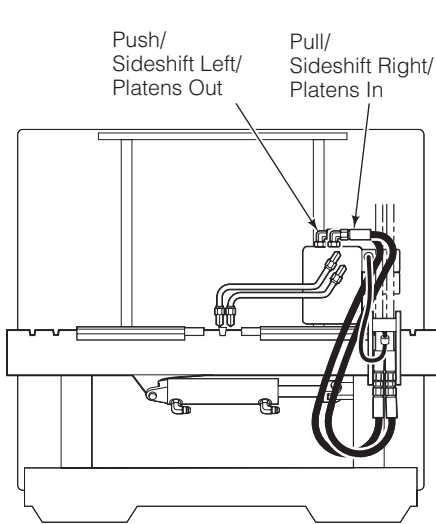
TWO-FUNCTION WITH SOLENOID ADAPTION



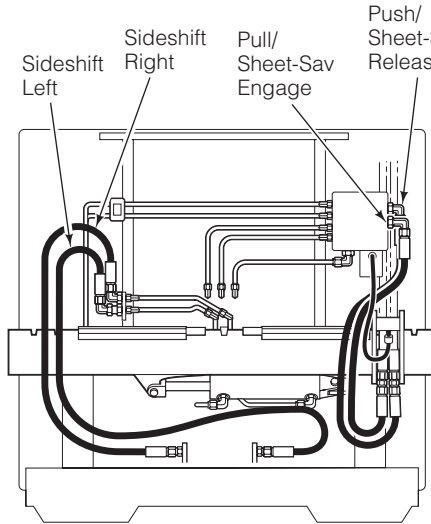
Back (Driver's) View

CAUTION: Allow 10 cm extra hose length in each direction for sideshifting movement between attachment and truck carriage.

THREE-FUNCTION WITH SOLENOID ADAPTION

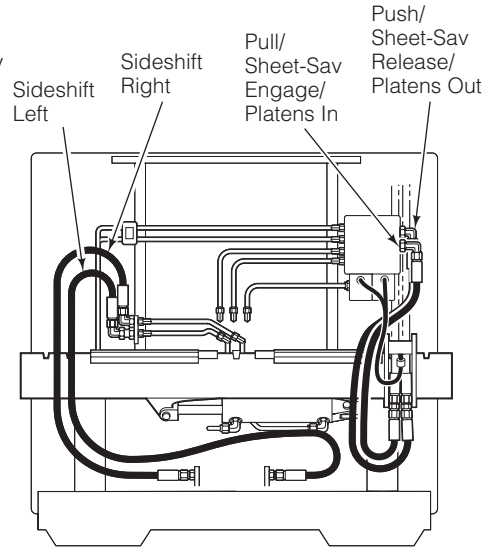


HYDRAULICALLY-ADJUSTABLE PLATENS
RH 6-N-1 Cable Hose Reel Group



SHEET-SAV™
RH 6-N-1 Cable Hose Reel Group
and
Mast Single Internal Reeving

FOUR-FUNCTION WITH SOLENOID ADAPTION



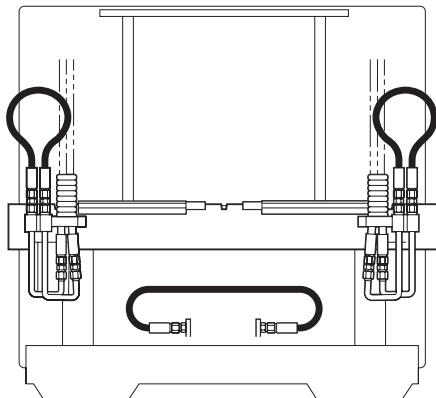
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HYDRAULICALLY-ADJUSTABLE PLATENS AND SHEET-SAV™
RH 6-N-1 Cable Hose Reel Group
and
Mast Single Internal Reeving

Back (Driver's) View

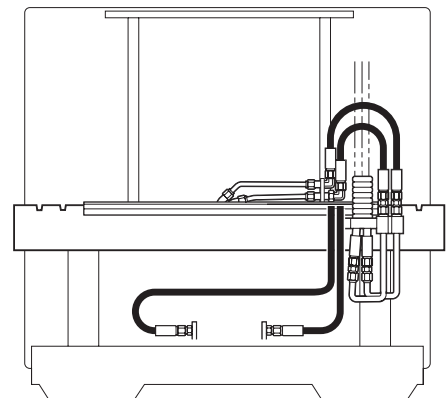
6 Flush hydraulic supply hoses

- A** Install hoses as shown.
- B** Operate auxiliary valves for 30 sec.
- C** Remove hoses.



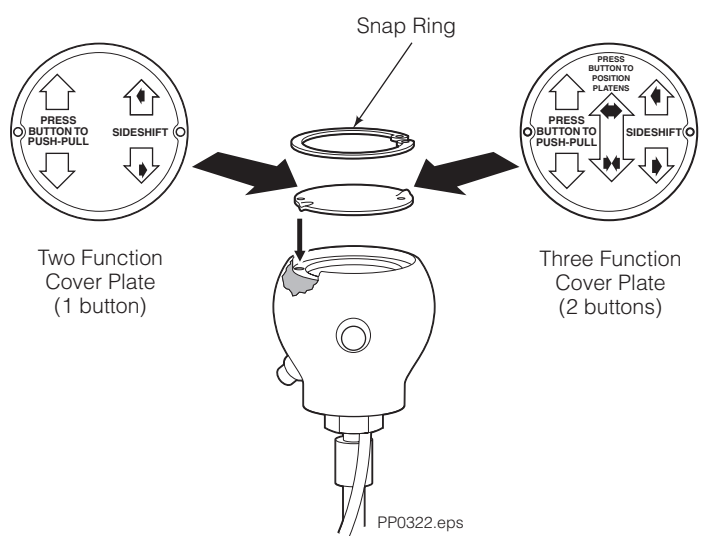
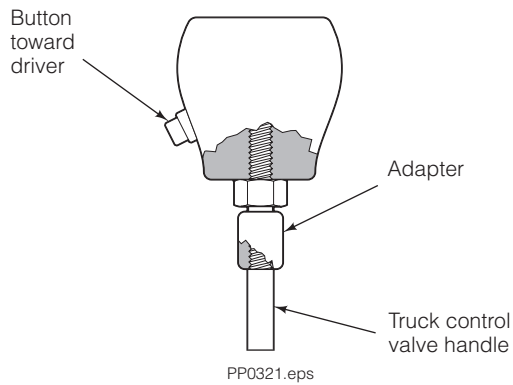
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7 Connect hoses prepared in Step 5 to Attachment fittings



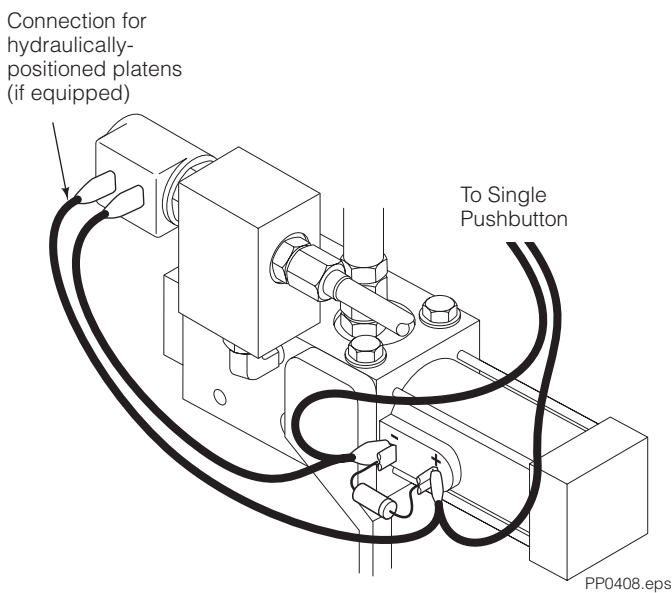
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8 Install solenoid control knob (Solenoid-equipped units)

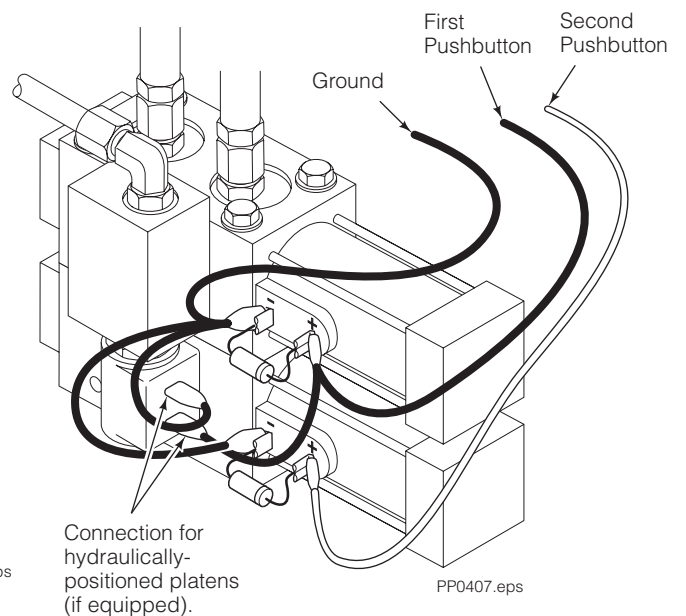


9 Install wiring – typical (Solenoid-equipped units)

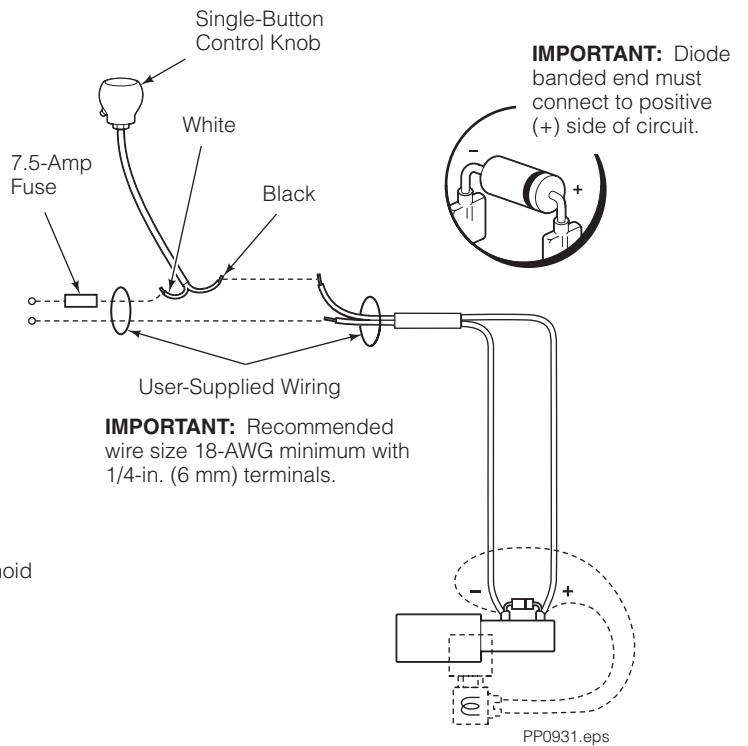
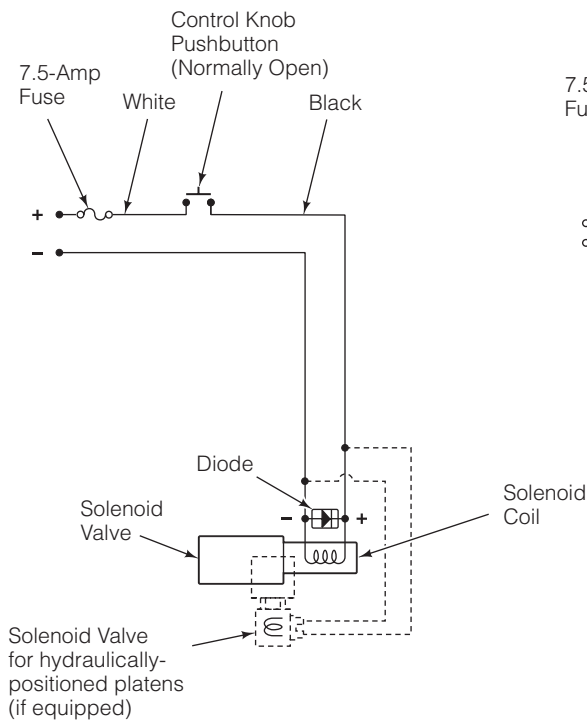
TWO-FUNCTION (Single-button control knob)



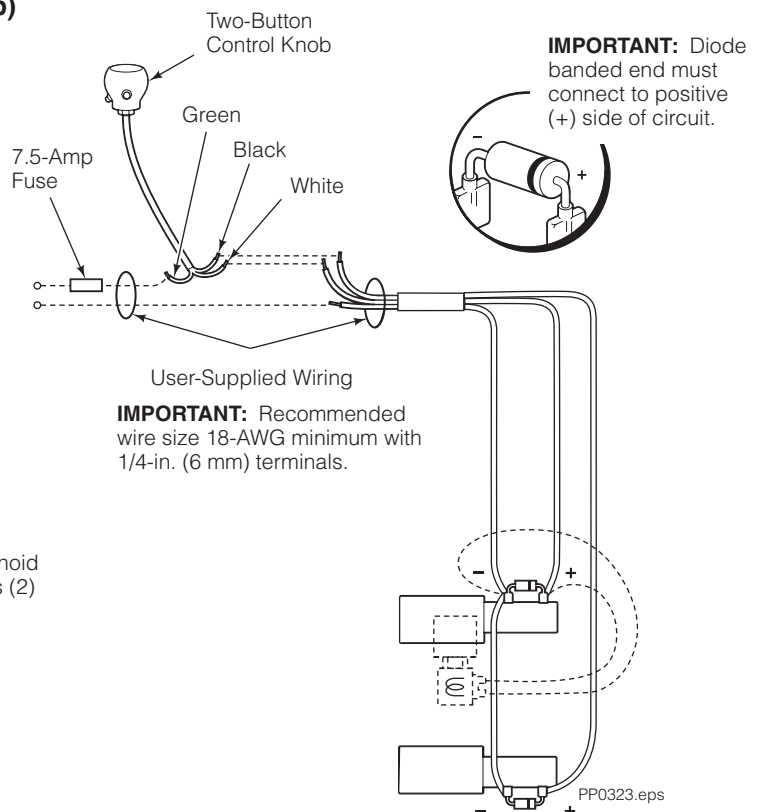
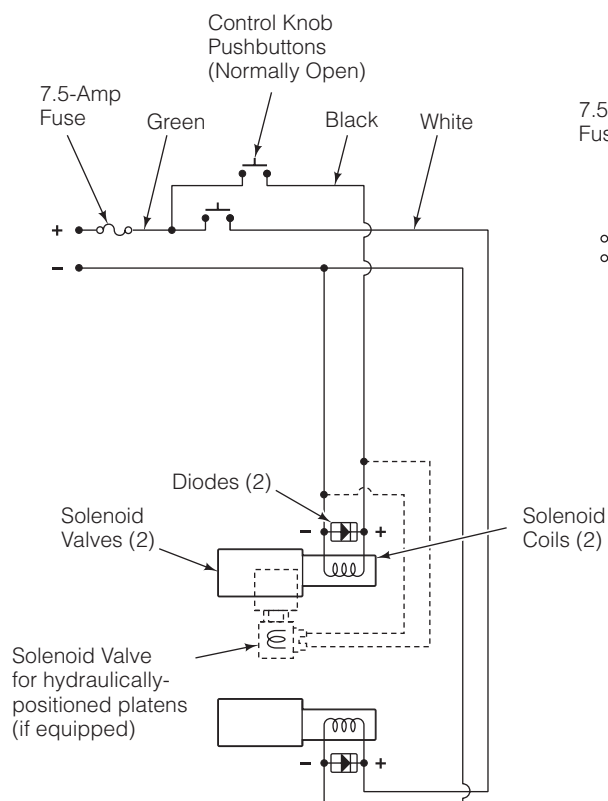
THREE-FUNCTION (Two-button control knob)



TWO-FUNCTION (Single-button control knob)



THREE-FUNCTION (Two-button control knob)



10 Cycle Attachment functions

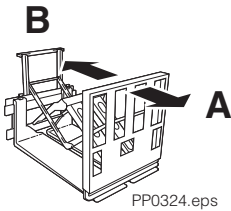
- With no load, cycle all Attachment functions several times.
- Check for operation in accordance with ITA (ISO) standards.
- Push/Pull a maximum load and sideshift left and right. Check for smoothness and adequate speed.
- Check for leaks at fittings, valves and cylinders.



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

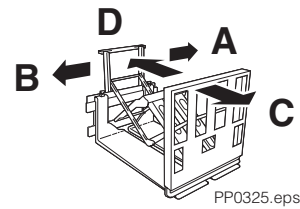
PUSH/PULL & LOAD PUSH

- A** Faceplate Push/Extend
- B** Faceplate Pull/Retract



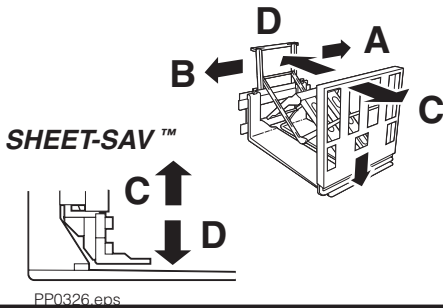
PUSH/PULL & LOAD PUSH WITH SIDESHIFT

- A** Sideshift Left
- B** Sideshift Right
- C** Faceplate Push/Extend
- D** Faceplate Pull/Retract



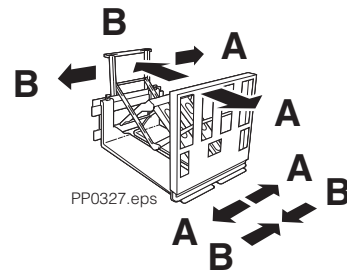
SOLENOID EQUIPPED WITH SHEET-SAV™

- A** Sideshift Left
- B** Sideshift Right
- C** Faceplate Push/Extend
- C** Sheet-Sav™ Release (press knob button)
- D** Faceplate Pull/Retract
- D** Sheet-Sav™ Engage (press knob button)

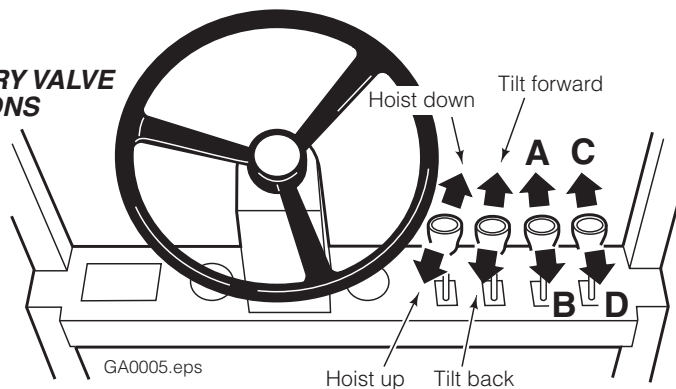


SOLENOID EQUIPPED WITH ADJUSTABLE PLATENS

- A** Sideshift Left
- A** Faceplate Push/Extend (press knob button 1)
- A** Platens Out (press knob button 2)
- B** Sideshift Right
- B** Faceplate Pull/Retract (press knob button 1)
- B** Platens In (press knob button 2)

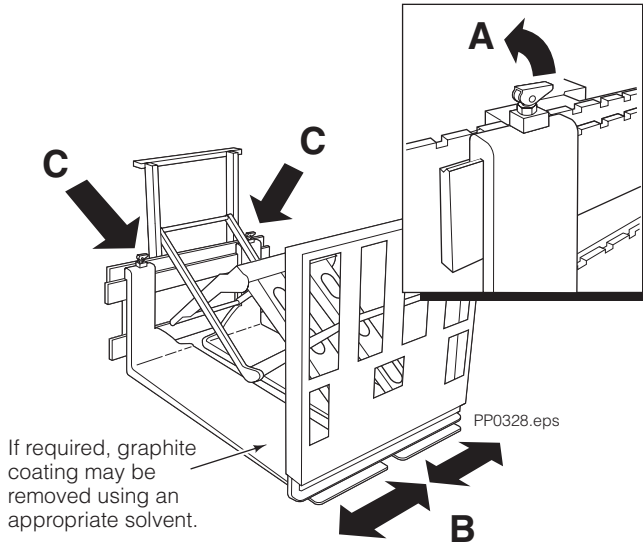


AUXILIARY VALVE FUNCTIONS



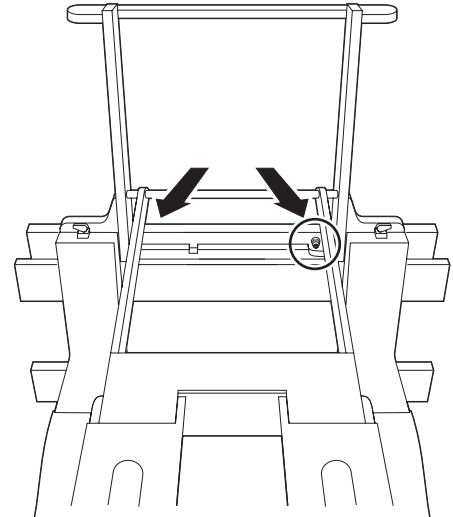
11 Adjust platens

- A** Release platen safety locks.
- B** Move platens to obtain 10-30 cm spacing required between platens.
- C** Engage platen safety locks.



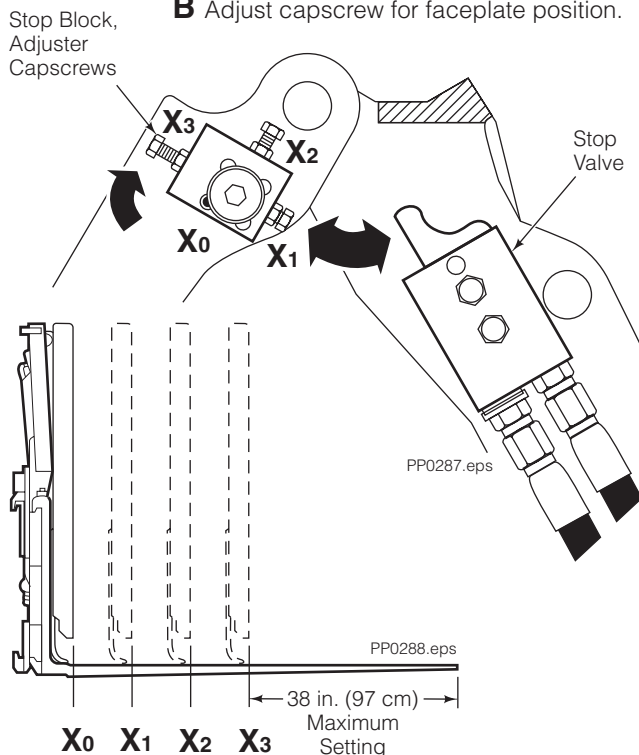
12 Lubricate sideshift bearings

NOTE: Sideshift Attachment to access grease fittings. Use general-purpose lithium based chassis grease (NLGI grade 2).



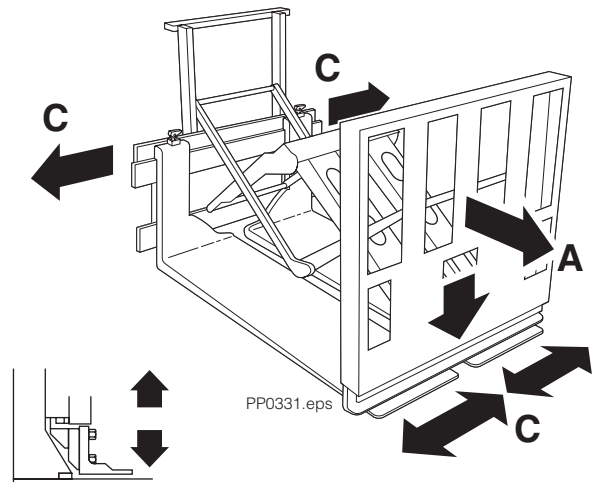
13 Adjust faceplate stop group (if equipped)

- A** Pull outward on stop block and turn to stop position to be adjusted.
- B** Adjust capscrew for faceplate position.



14 Purge air from attachment hydraulic system

- A** Push/Extend faceplate.
- B** Continue to hold auxiliary valve control lever open 10 sec. to remove trapped air.
- C** Repeat for other functions (sideshift, adjustable platens, gripper).

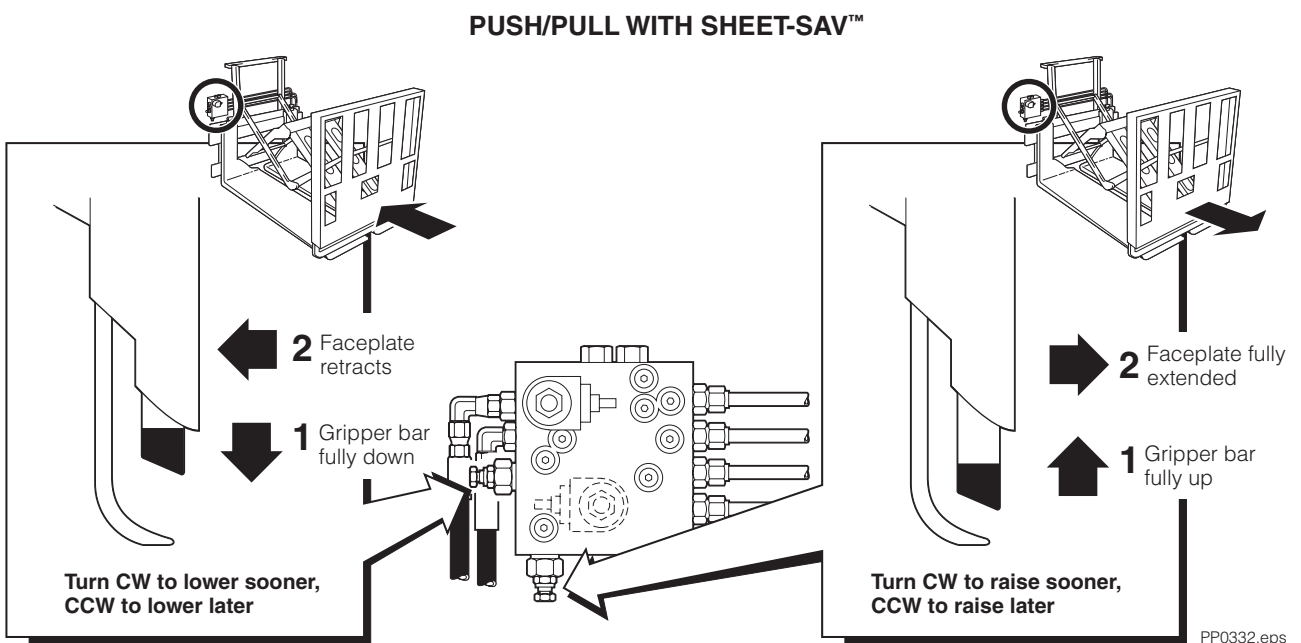
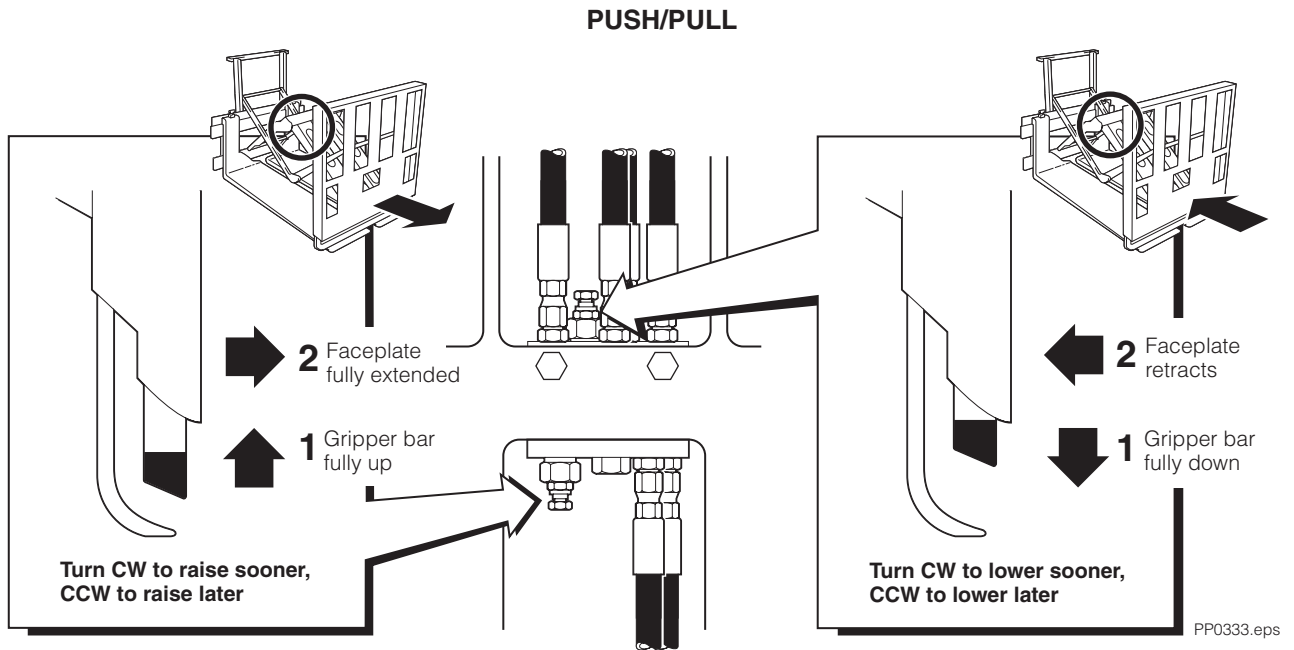


15 Adjust faceplate gripper bar (if required)

NOTE: The gripper bar is controlled by sequence valves which are Factory-adjusted to operate as follows:

Faceplate Extend – Gripper bar fully raised/up when faceplate reaches full extension.

Faceplate Retract – Gripper bar fully lowered/down before faceplate retracts.





WARNING: After completing maintenance procedures, 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.

100-Hour Maintenance

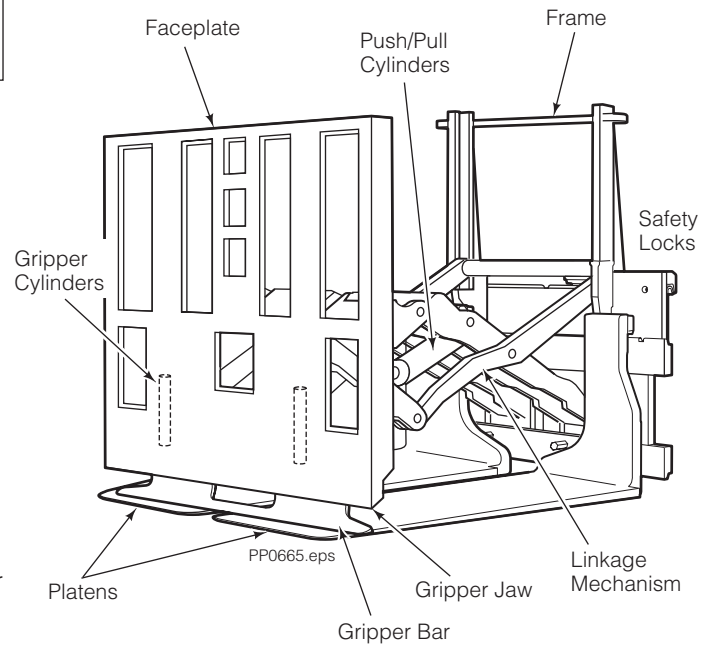
Every time the lift truck is serviced or every 100 hours of truck operation, whichever comes first, complete the following maintenance on the Attachment:

- Check for loose or missing bolts, worn or damaged hoses and hydraulic leaks.
- Inspect faceplate and frame sliding bearing blocks for lubrication. Lubricate as necessary with Dubois FGG-2 food industry grease (Cascade Part No. 669306).

500-Hour Maintenance

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

- Inspect all mechanism pivot point bushings and pins for excessive wear and replace as necessary. See Service Manual 686455.
- Tighten the mechanism pivot pin retainer capscrews to 10 ft.-lbs. (13 Nm).
- Tighten the gripper assembly capscrews to 165 Nm.
- Tighten the platen hook capscrews to 165 Nm.



Front View



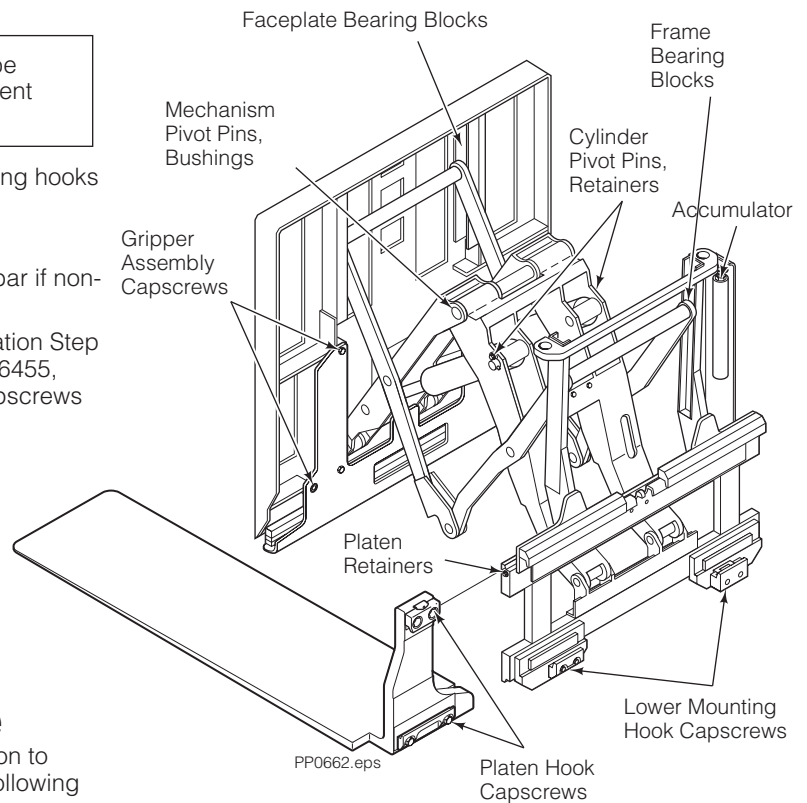
WARNING: Platen capscrews must be tightened regularly to prevent equipment damage or personnel injury.

- Check the clearance between the lower mounting hooks and the truck carriage bar:

Quick-Change Hooks – 5 mm maximum.

Bolt-on Hooks – Tight against lower carriage bar if non-sideshifting or 5 mm max. if sideshifting.

- If hook adjustment is necessary, refer to Installation Step 2 or 4 in this Manual, or see Service Manual 686455, Section 5. Tighten the lower hook mounting capscrews to 165 Nm.



Rear (Driver's) View

1000-Hour Maintenance

After each 1000 hours of truck operation, in addition to the 100 and 500-hour maintenance, perform the following procedures:

- Check accumulator pre-charge and adjust to truck relief pressure if required. Use Charging Kit 228235 and refer to Accumulator User Guide 227196 for procedures.

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

Zijn er vragen waarop u direct een antwoord nodig hebt? Neem dan contact op met uw dichtstbijzijnde serviceafdeling van Cascade. Of ga naar www.cascorp.com

Haben Sie Fragen, für die Sie sofort eine Antwort benötigen? Wenden Sie sich an Ihren nächsten Cascade-Kundendienst. Besuchen Sie uns online: www.cascorp.com

En cas de questions urgentes, contactez le service d'entretien Cascade le plus proche. Visitez le site Web www.cascorp.com.

Per domande urgenti contattare l'Ufficio Assistenza Cascade più vicino. Visitate il nostro sito all'indirizzo www.cascorp.com

¿Tiene alguna consulta que deba ser respondida de inmediato? Llame por teléfono al servicio técnico de Cascade más cercano. Visítenos en 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

