

I **INSTALLATION INSTRUCTIONS**

E-Series

Quick Fork Mount (QFM™) Push/Pull

Manual Number 684948-R6

cascade®
corporation

Cascade is a Registered Trademark of Cascade Corporation

C ONTENTS

<u>Recommended Hydraulic Supply</u>	<u>i</u>
<u>Truck Requirements</u>	<u>1</u>
<u>Installation Procedure</u>	<u>2</u>
<u>Periodic Maintenance</u>	<u>10</u>

This Manual provides instructions for installing the Cascade Quick Fork Mount (QFM™) Push/Pull. 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.

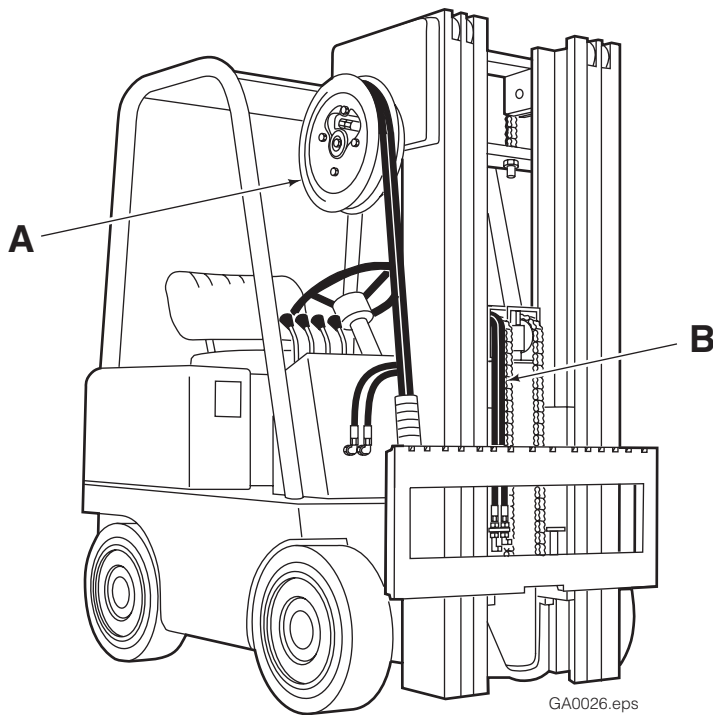
IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade for any required modifications.

R ECOMMENDED HYDRAULIC SUPPLY OPTIONS

The E-Series Quick Fork Mount (QFM™) Push/Pull requires one of the hydraulic supply arrangements listed.

- Hoses and fittings for all functions should be No. 6 with a minimum internal diameter of 9/32 in. (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 Reeling Group.

Double Function (Push/Pull with Sheet-Sav™)

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

OR

A and B RH Cable Reel Group and Mast Single Internal Hose Reeling Group.

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.

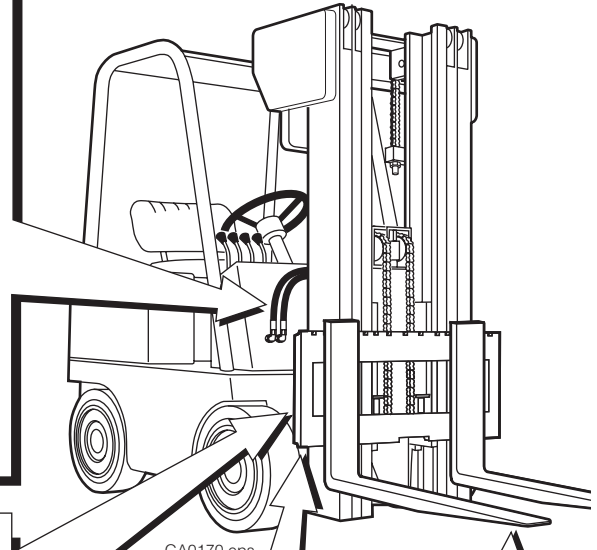
Truck Relief Setting

2000 psi (140 bar) Recommended
2300 psi (160 bar) Maximum

Truck Flow Volume ①

	Min. ②	Recommended	Max. ③
35E, 45E	4 GPM (15 L/min.)	7 GPM (26 L/min.)	10 GPM (38 L/min.)

- ① Cascade E-Series QFM™ Push/Pull is compatible with SAE 10W petroleum base hydraulic fluid meeting Mil. Spec. MIL-O-5606 or MIL-O-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.



GA0170.eps

Carriage

Clean and inspect carriage bars for damage. Repair any damaged notches.

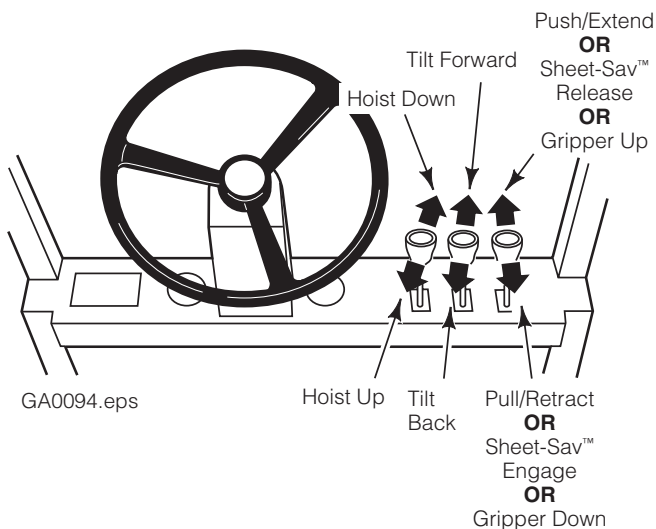


Carriage Mount Dimension (A) ITA (ISO)

	Minimum	Maximum
Class II	14.96 in. (380.0 mm)	15.00 in. (381.0 mm)
Class III	18.68 in. (474.5 mm)	18.74 in. (476.0 mm)

Auxiliary Valve Functions

Check for compliance with ITA (ISO) standards:



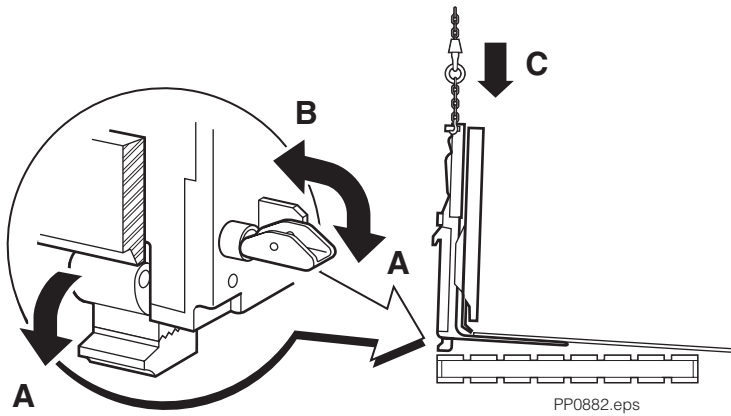
WARNING: The QFM™ Push/Pull requires forks to support the attachment and load. Forks up to 1.8 in. (45 mm) thick and 40-46 in. (1015-1168 mm) long can be used. 42 in. (1066 mm) forks with bottom taper are recommended. Forks over 1.5 in. (38 mm) thick require a spacer kit. Sideshifter components (if equipped) must not protrude in front of carriage bars.

INSTALLATION

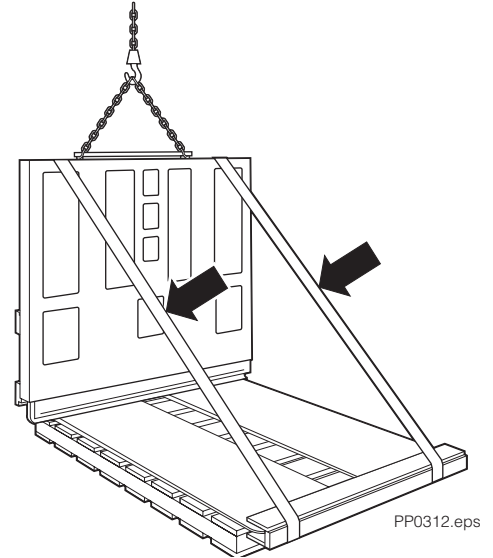
Follow the steps shown to install the Push/Pull and Load Push on the truck. Read all **WARNINGS** and **CAUTIONS** carefully. If you don't understand a procedure, ask your supervisor, or call the nearest Cascade Service Department for assistance.

2 Turn down lower hooks

- A** Open safety lockpin and turn down lower hooks.
- B** Close safety lockpin to secure hooks down.
- C** Lower Push/Pull onto pallet.

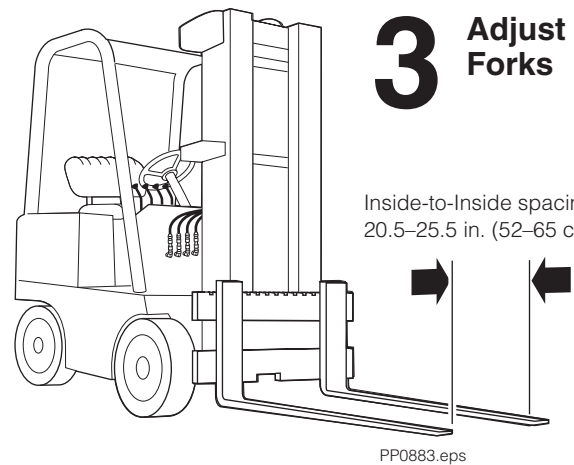


1 Remove banding, attach overhead hoist



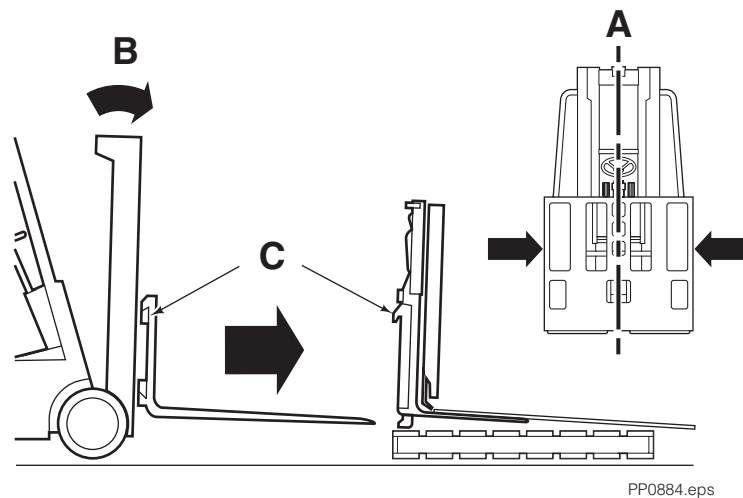
3 Adjust Forks

Inside-to-Inside spacing
20.5–25.5 in. (52–65 cm)



4 Engage Attachment

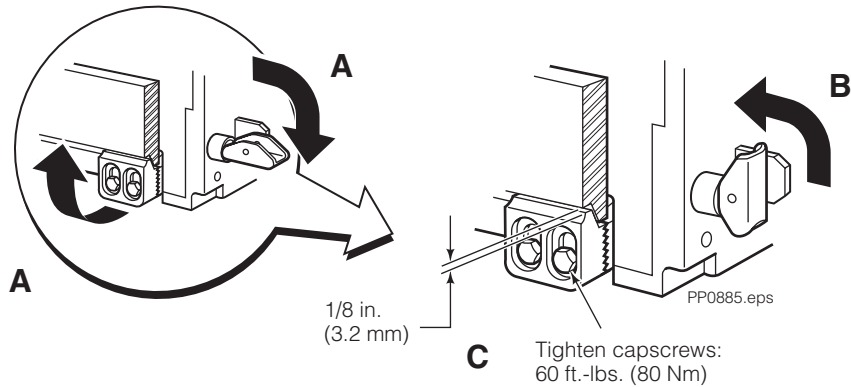
- A** Center truck behind Push/Pull.
- B** Tilt mast slightly forward and drive forks under the attachment.
- C** Engage upper hooks with carriage top bar.



INSTALLATION

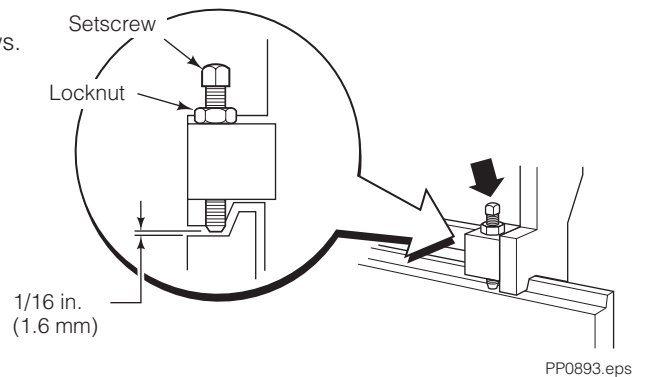
5 Engage lower hooks

- A Open safety lockpin and turn hooks up.
- B Release safety lockpin to secure hooks up.
- C Adjust clearance and tighten hook capscrews.

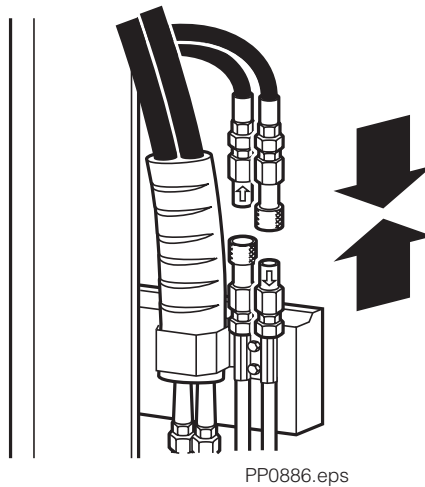


6 Adjust and lock upper hook setscrews

- A Adjust clearance for upper hook setscrews.
CAUTION: Do not overadjust.
- B Tighten locknuts.



7 Install Quick-Disconnect (QD) Connector Kits 671422



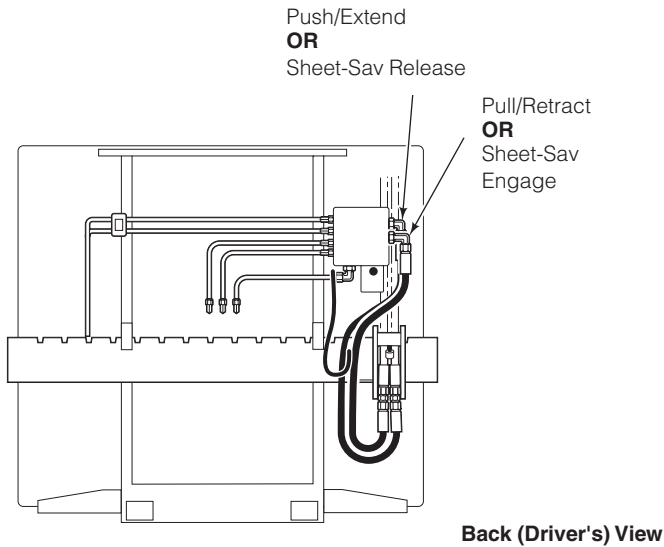
8

Prepare hoses

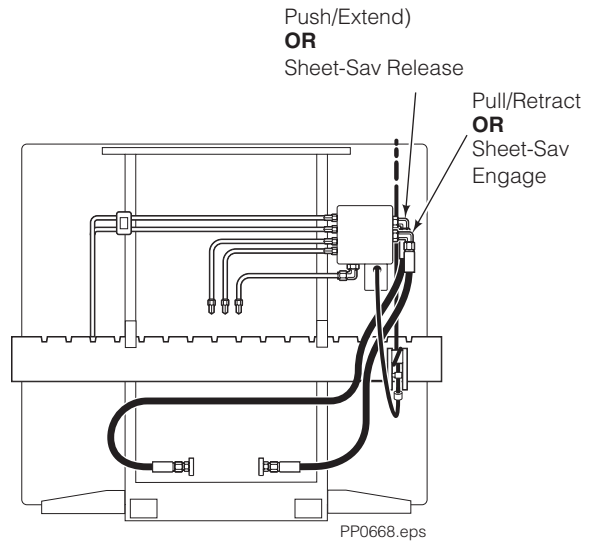
- A** Determine hose lengths required for hydraulic supply configuration of truck.
- B** Cut hoses to length, install end fittings or quick-disconnect kits.

CAUTION: Allow 4-6 in. (10-15 cm) extra hose length for vertical motion for Sheet-Sav™ and Independent Gripper functions. Do not secure hoses until unit is tested (see Step 12).

DOUBLE-FUNCTION PUSH/PULL with SHEET-SAV™

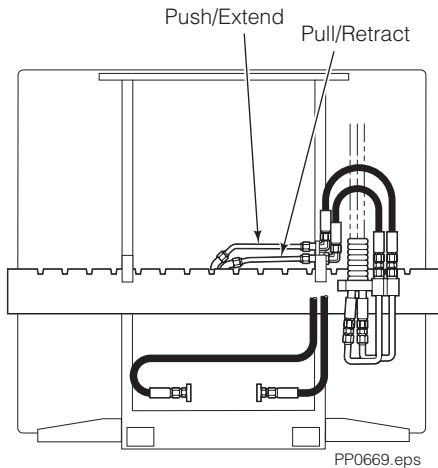


SHEET-SAV™
RH 6-N-1 Cable Hose Reel Group



SHEET-SAV™
RH Cable Reel Group
and
Mast Single Internal Reaving

SINGLE FUNCTION PUSH/PULL

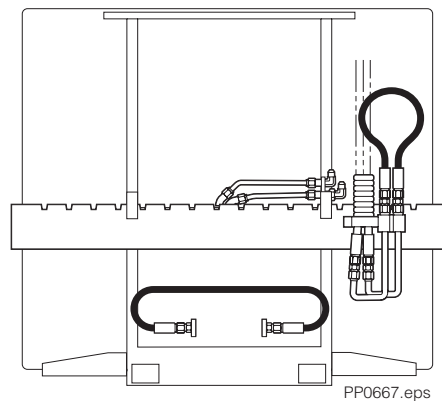


PUSH/PULL
RH THINLINE™ 2-Port Hose Reel Group
OR
Mast Single Internal Reaving

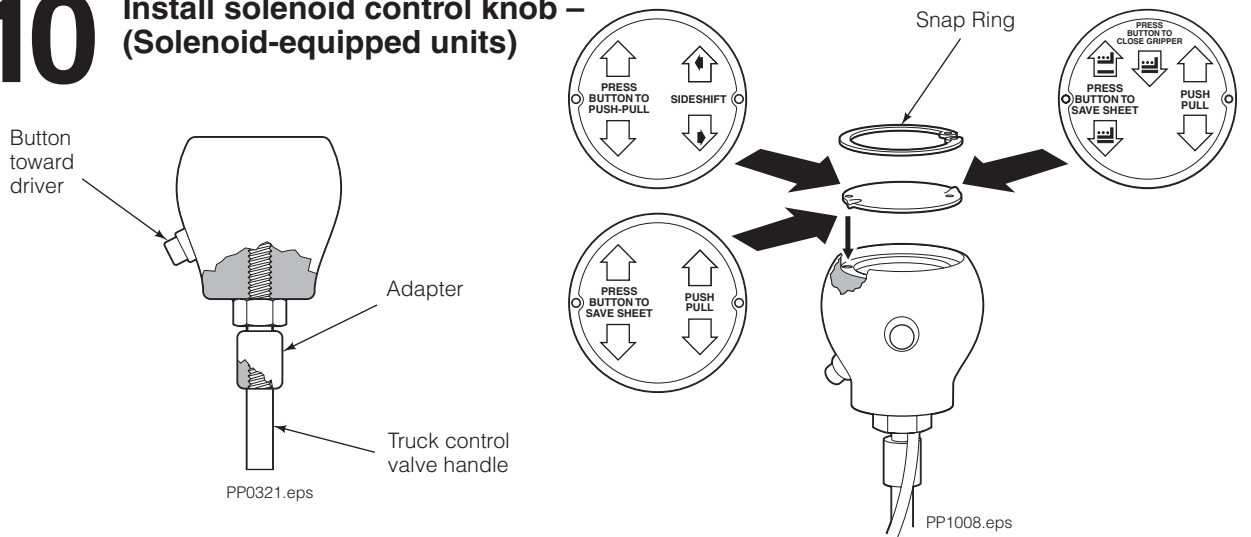
9

Flush hydraulic supply hoses

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



10 Install solenoid control knob – (Solenoid-equipped units)

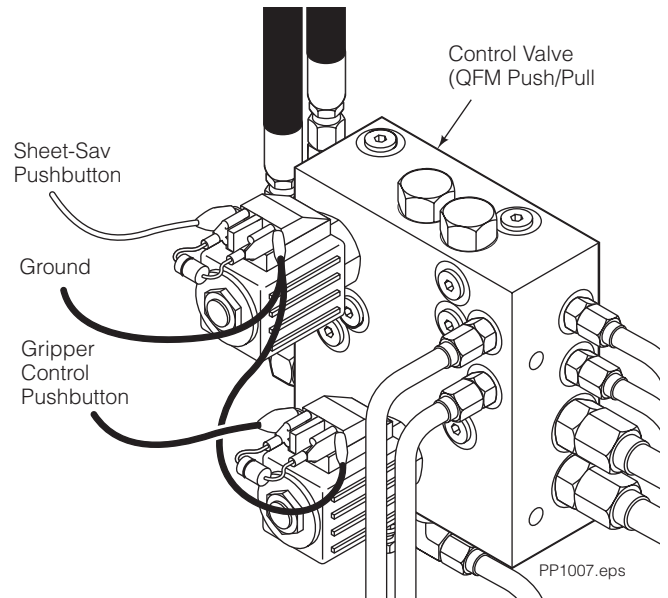
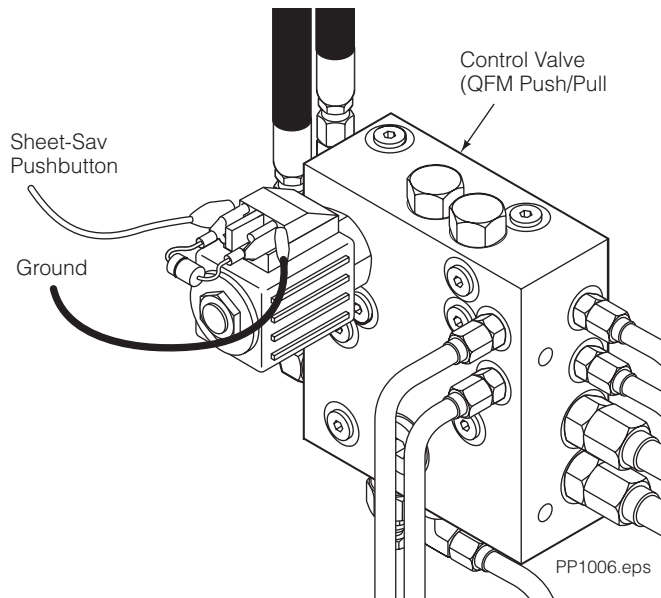


11 Install solenoid wiring for units equipped with Sheet-Sav™ and/or Independent Gripper Control

TWO-FUNCTION
(Single-button control knob)

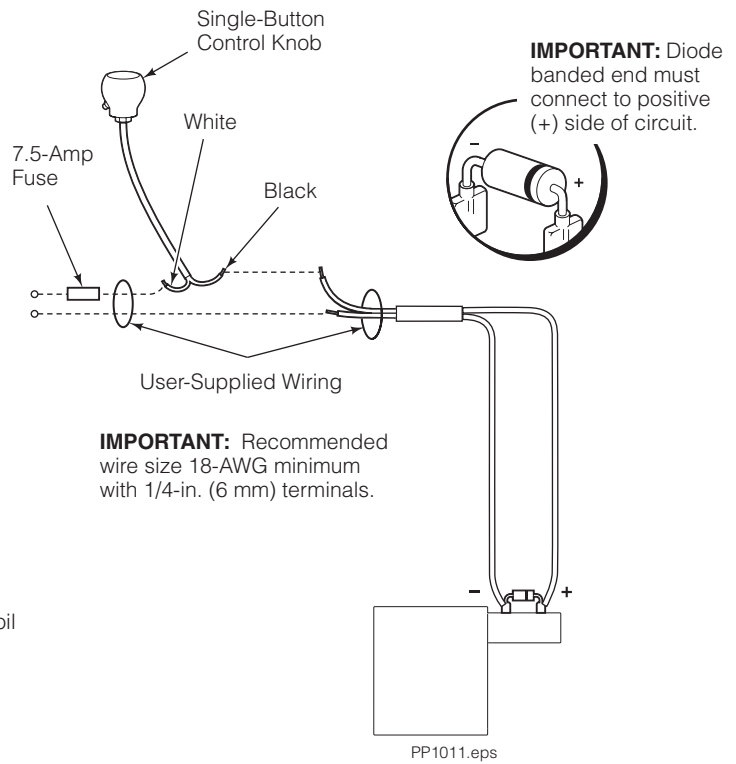
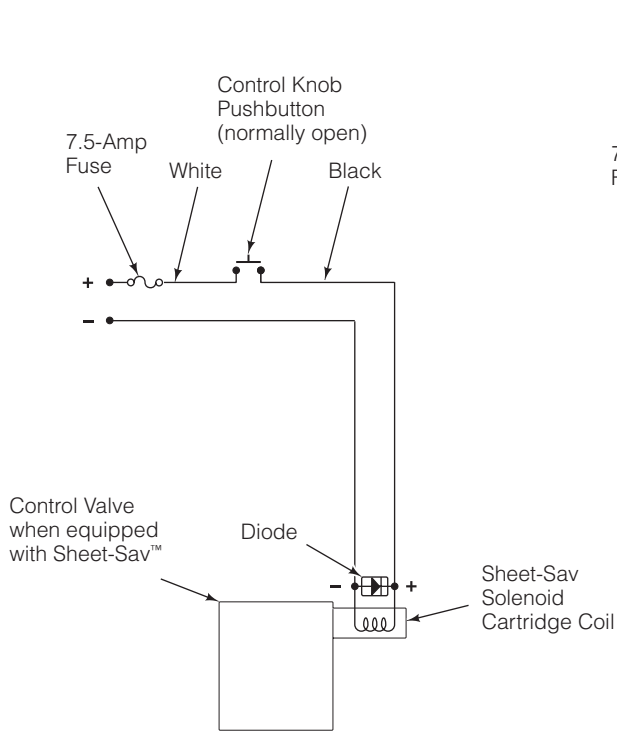
THREE-FUNCTION
(Two-button control knob)

Circuit Schematics on next page.

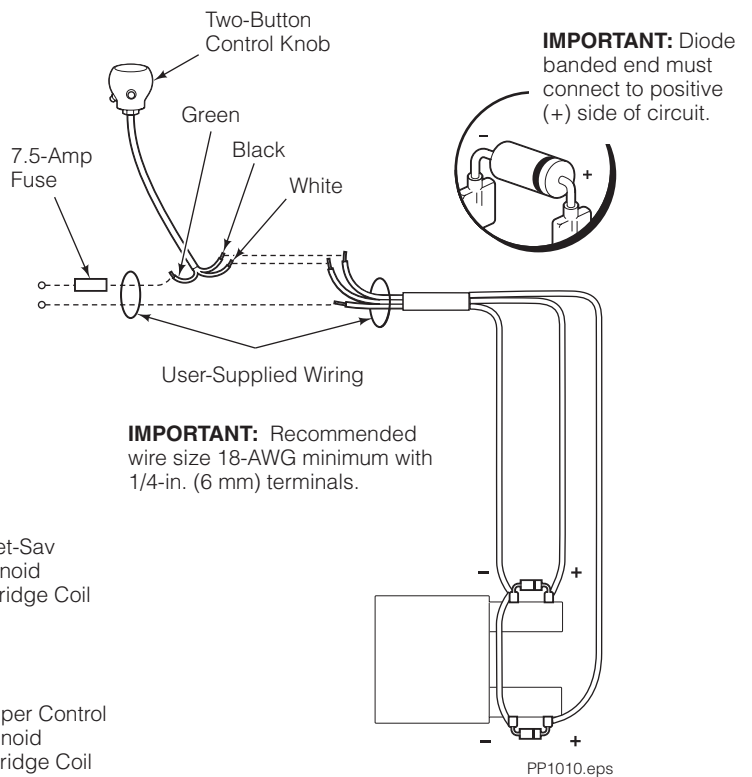
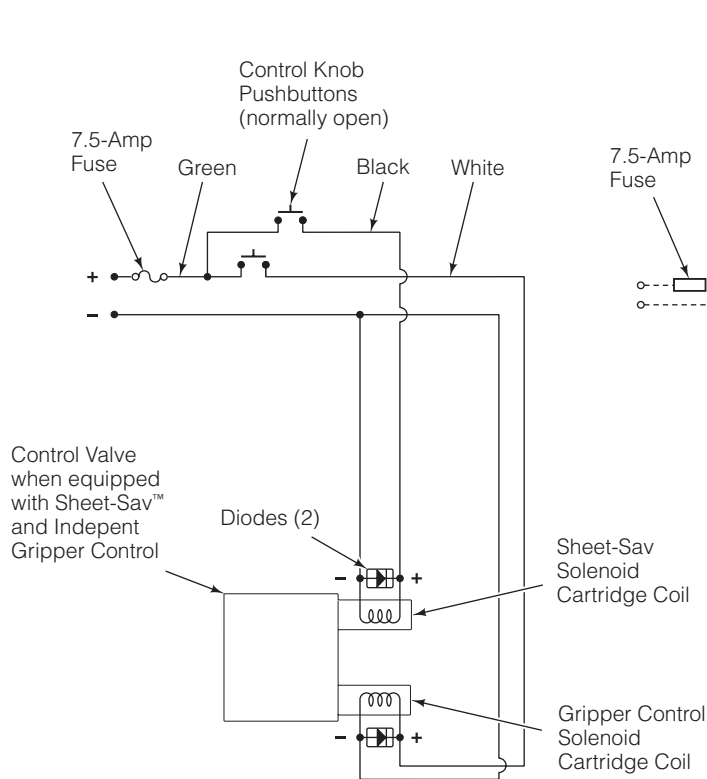


Back (Driver's) View

SCHEMATIC (Single-button control knob)



SCHEMATIC (Two-button control knob)



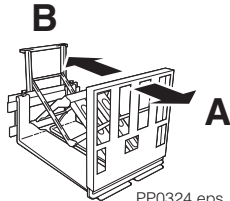
12 Cycle Attachment functions

- With no load, cycle all attachment functions several times.
- Check for operation in accordance with ITA (ISO) standards.
- Push/pull a maximum load, sheet save, control gripper bar. 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

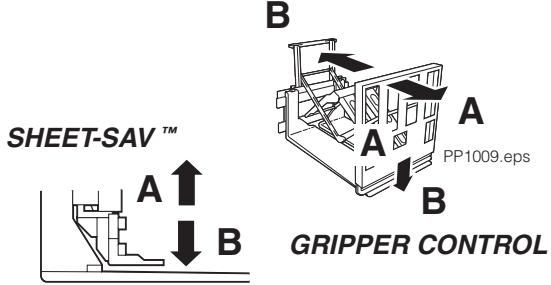
- A** Faceplate Push/Extend
- B** Faceplate Pull/Retract



PP0324.eps

PUSH/PULL WITH SHEET-SAV™ GRIPPER CONTROL

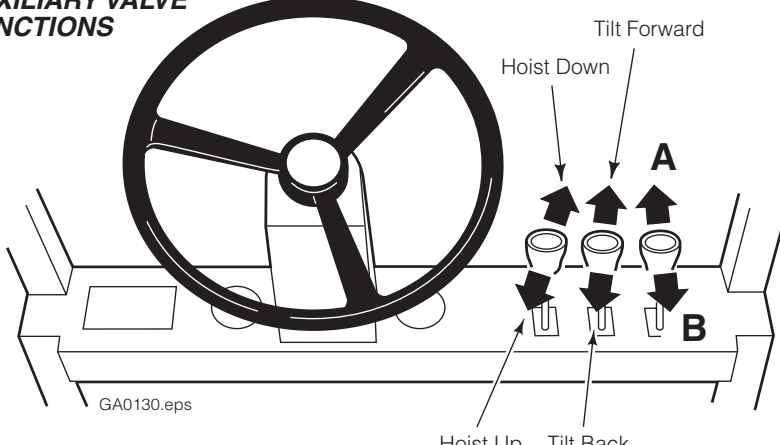
- A** Faceplate Push/Extend
- A** Sheet-Sav™ Release (*release knob button 1*)
- A** Gripper Up (*release knob button 2*)
- B** Faceplate Pull/Retract
- B** Sheet-Sav™ Engage (*press knob button 1*)
- B** Gripper Down (*press knob button 2*)



PP1009.eps

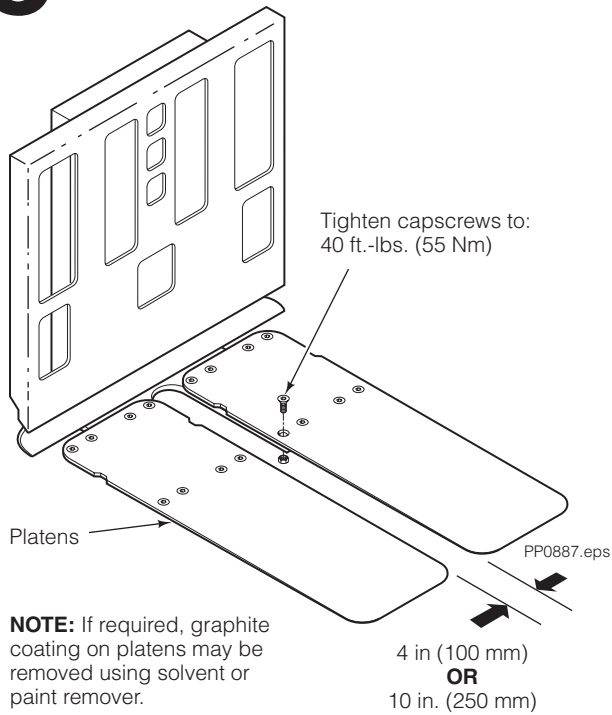
SHEET-SAV™ GRIPPER CONTROL

AUXILIARY VALVE FUNCTIONS



GA0130.eps

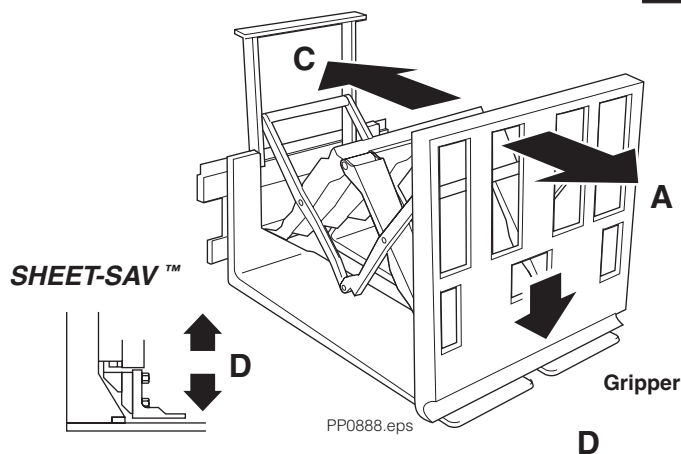
13 Adjust platens (if required)



NOTE: If required, graphite coating on platens may be removed using solvent or paint remover.

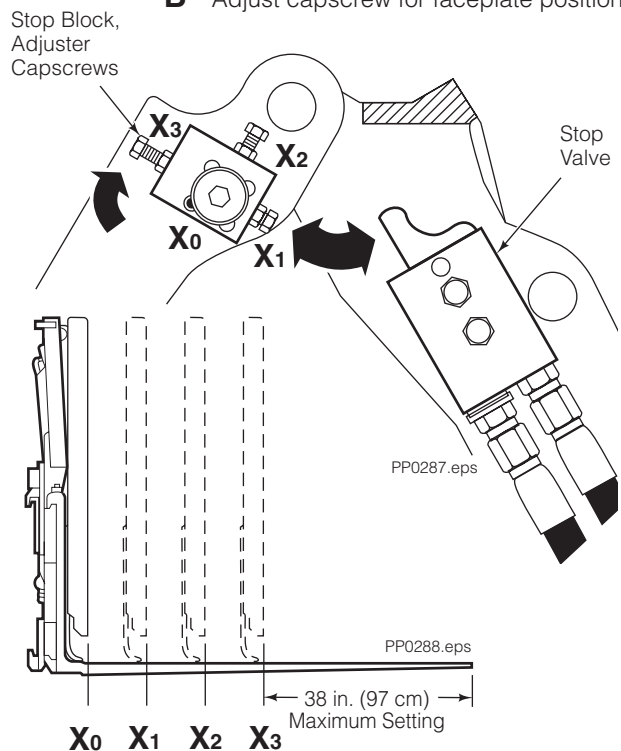
15 Purge air from attachment hydraulic system

- A** Extend/Push faceplate.
- B** Continue to hold auxiliary valve control lever open 10 sec. to remove trapped air.
- C** Retract faceplate.
- D** Repeat for other functions.



14 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.

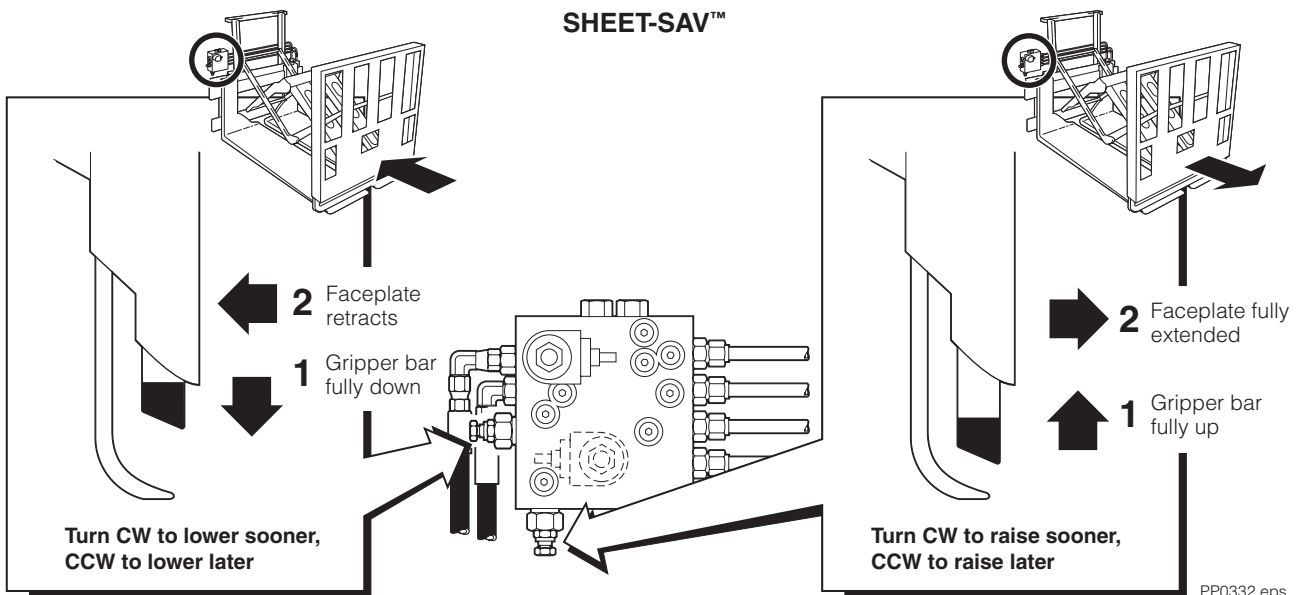
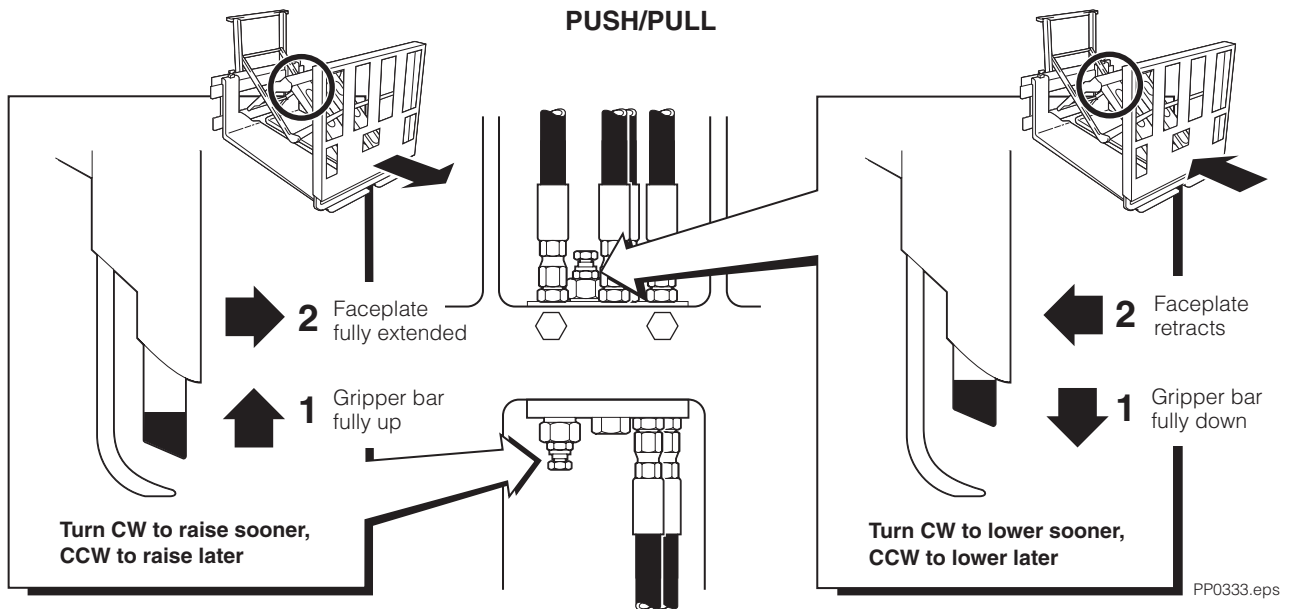


16 Adjust faceplate gripper bar (if required)

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 rollers on faceplate and frame for wear. Rollers operate without lubrication. If required, use 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 arm pivot pin retainer capscrews to 10 ft.-lbs. (13 Nm).
- Tighten the gripper assembly (if equipped) capscrews to 120 ft.-lbs. (165 Nm).
- Tighten the platen mounting capscrews to 40 ft.-lbs. (60 Nm).



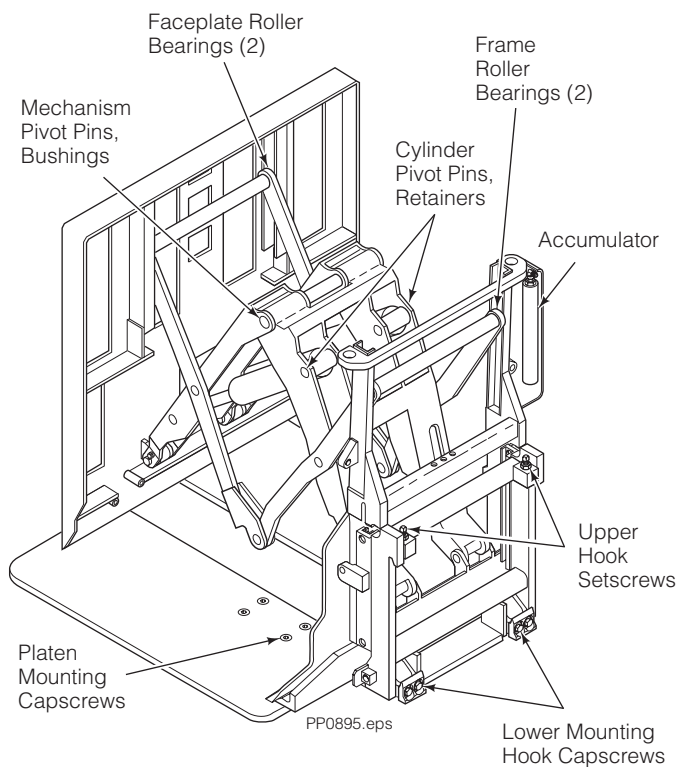
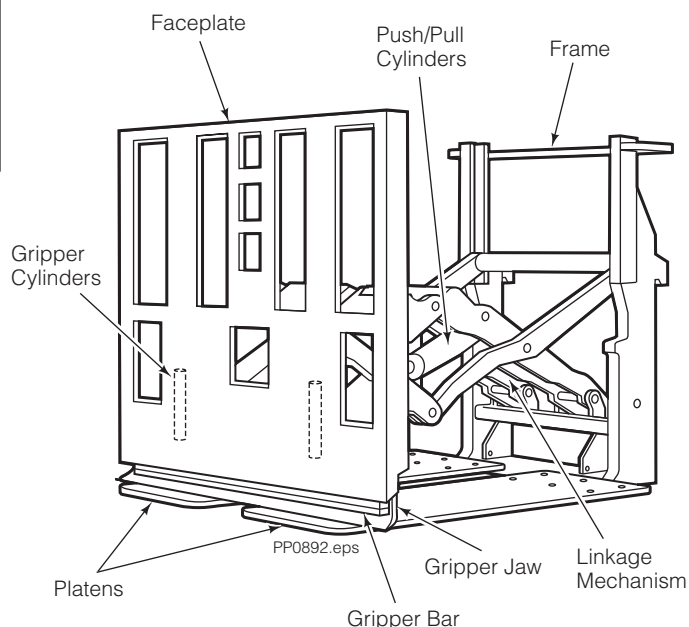
WARNING: Platen capscrews must be tightened regularly to prevent equipment damage or personnel injury.

- Check for 1/8 in. (3.2 mm) maximum clearance between lower mounting hooks and truck carriage bar. Refer to Step 5 in this manual if adjustment is necessary.
- Check for 1/16 in. (1.6 mm) maximum clearance between upper hook setscrews and truck carriage bar. Refer to Step 6 in this manual if adjustment is necessary.
- Tighten lower hook capscrews to 60 ft.-lbs. (80 Nm).

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.



Blank

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

