

U *SER MANUAL*

J-Series ***Integral Carriages –*** ***Sideshifter, Fork*** ***Positioner, Sideshifting*** ***Fork Positioner, Swing*** ***Frame & Slope Frame***

Manual Number 6082563-R1

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INTRODUCTION

This User Manual is for the Cascade J-Series Integral Sideshifter, Fork Positioner, Sideshift Fork Positioner, Swing Frame and Slope Frame. Contents include an Operator's Guide, Installation Instructions, and Periodic Maintenance. All specifications are shown in U.S. and (Metric) units where applicable.

IMPORTANT: Information in this manual is based on general attachments. Some functions and features are not shown. Contact Cascade for specific information.



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

WARNING: Do not operate this attachment unless you are a trained and authorized lift truck driver.

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 provided as additional information of special significance or to make the job easier.



WARNING – A statement preceded by 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.

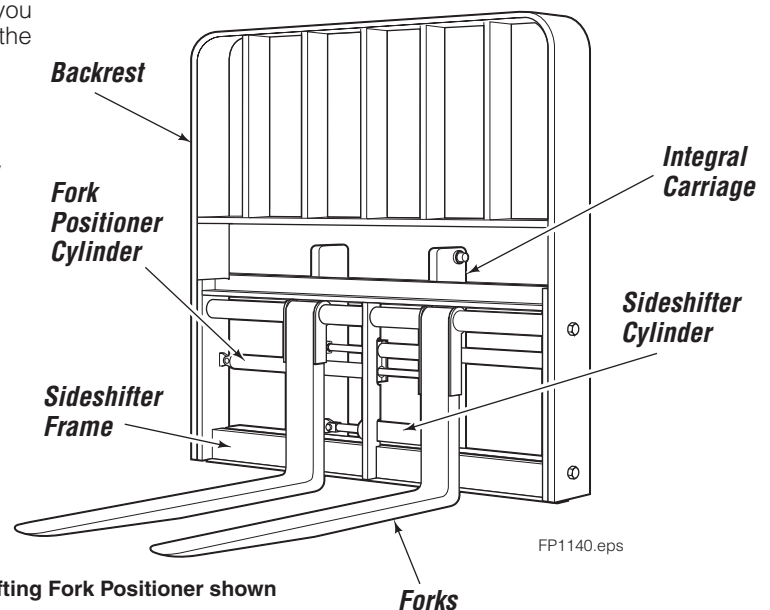
NOTE – A statement preceded by NOTE is information that is handy to know and may make the job easier.

OPERATION

This Section contains operating instructions for the Cascade J-Series Integral Attachments. It will help you avoid common errors which often cause damage to the equipment or product being handled.

This information is intended to simplify operator understanding about effective and safe attachment use and operation. Read this information thoroughly before operating the attachment. Be sure you know and understand all operating procedures and safety precautions. If you have any questions, or don't understand a procedure, ask your supervisor.

Emphasize Safety! Most accidents are caused by operator carelessness or misjudgment. You must watch for poorly maintained equipment and hazardous situations and correct them.



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OPERATION

Safety Rules – Industrial Lift Trucks

No riders



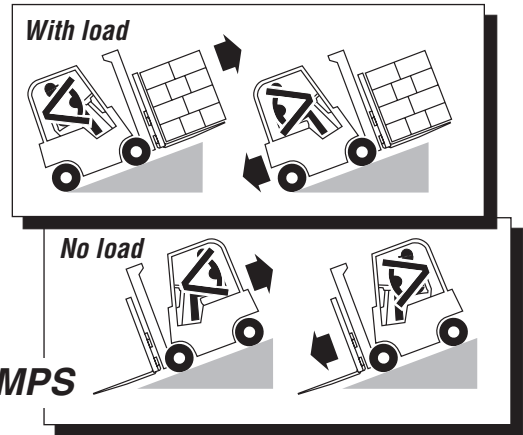
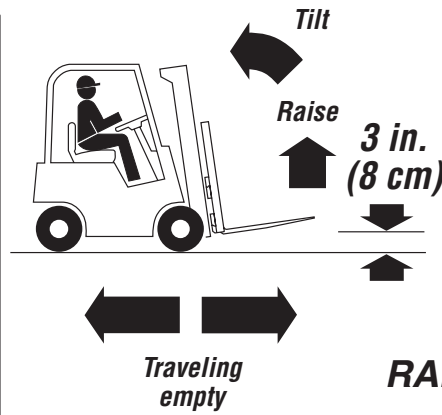
No reaching through mast



No standing under load



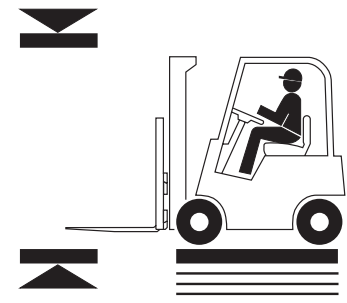
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No parking on ramp



No turning on ramp



Watch clearances

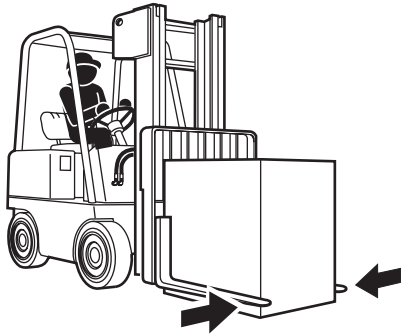
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TRAFFIC

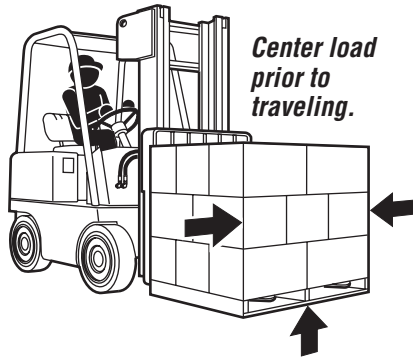
Observe
Workers
Stops
Wet floors
Bumps
Dips
Slow for two-way traffic
Sound horn, slow at intersection
Sound horn, slow at corner

OPERATION

Safety Rules – Handling Loads



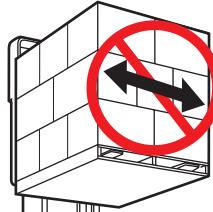
CAUTION: Do not put side loads on forks.



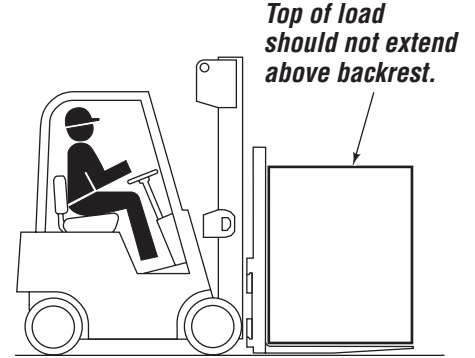
Center load prior to traveling.

Raise load prior to sideshifting.

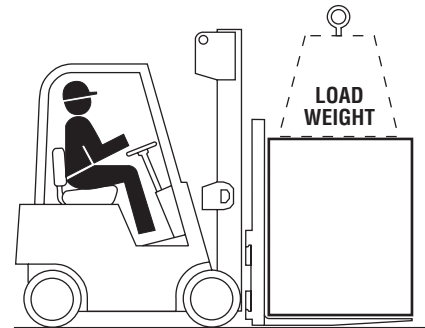
Limit sideshifting, swinging and sloping with raised load.



Limit truck movement with raised load.



Top of load should not extend above backrest.



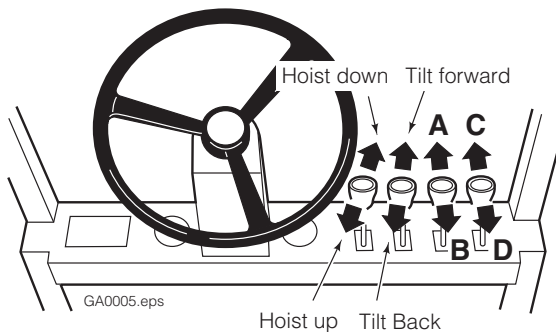
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Load weight must not exceed combined truck/attachment capacity (see truck nameplate).

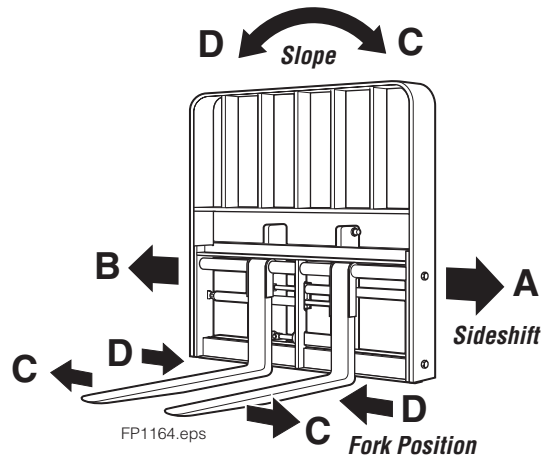
Total fork capacity (LH + RH fork) must be greater than load weight. Check capacity stamp on forks.

Integral Attachment Operation

AUXILIARY VALVE FUNCTIONS



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SIDESHIFT & FORK POSITION

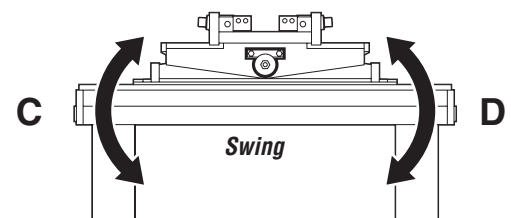
- A** Sideshift Left
- B** Sideshift Right
- C** Spread Forks
- D** Close forks

SIDESHIFT & SWING

- A** Sideshift Left
- B** Sideshift Right
- C** Swing Left
- D** Swing Right

SIDESHIFT & SLOPE

- A** Sideshift Left
- B** Sideshift Right
- C** Slope CCW
- D** Slope CW

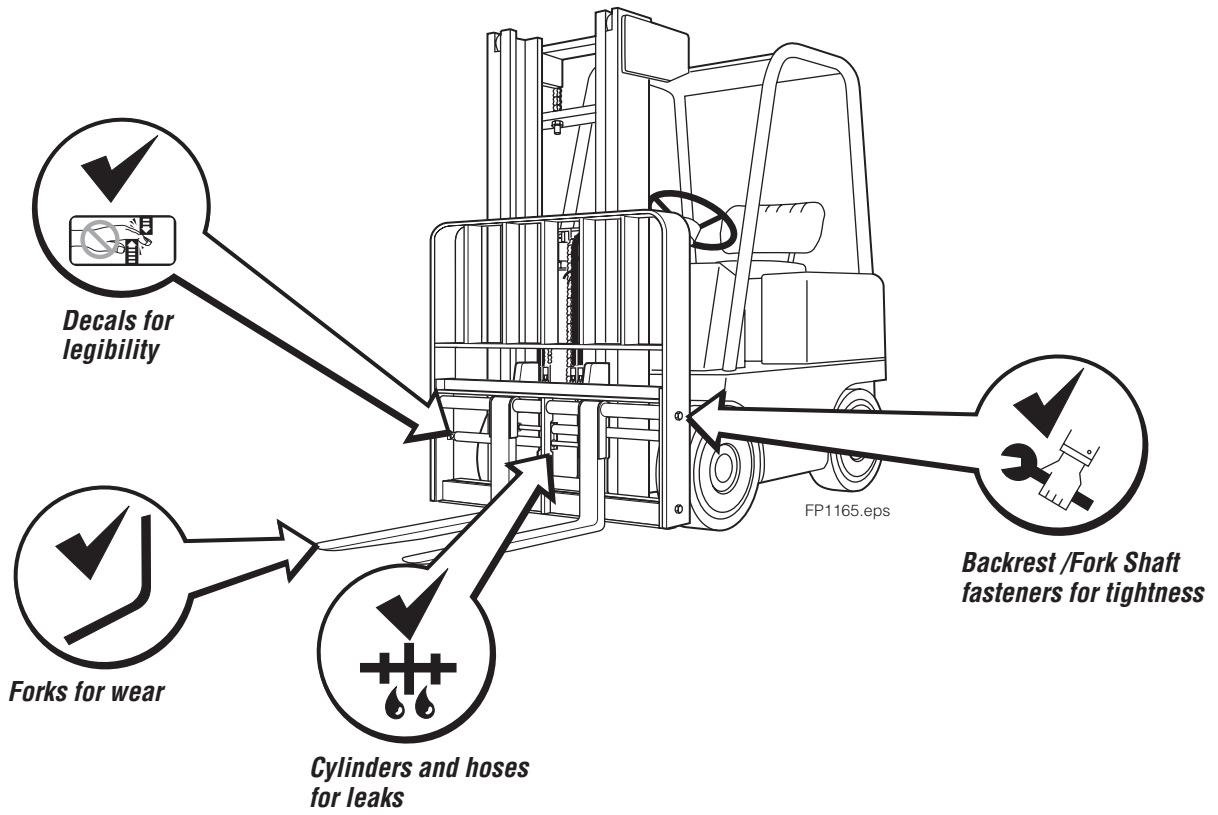


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OPERATION

Daily Inspection

Check items shown each day. Report problems to your supervisor. See Service Manual for troubleshooting and repair procedures.





SAFE OPERATION AND MAINTENANCE

OSHA Regulations – Trucks and Attachments (Specific Regulations from OSHA 1910.178)



WARNING: The safe operation and maintenance of industrial trucks is regulated by Occupational Safety and Health (OSHA) regulations 1910.178 and American National Standards Institute (ANSI) Safety Standard for Powered Industrial Trucks, ANSI B56.1. When operating and maintaining industrial trucks equipped with attachments you should pay particular attention to the following sections of these regulations. You should be familiar with **all** sections of these regulations. **Ask your employer for the complete regulations.**

(a) General Requirement

- (4) Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without manufacturers prior written approval. Capacity, operation and maintenance instruction plates, tags or decals shall be changed accordingly.
- (5) If the truck is equipped with front-end attachments other than factory installed attachments, the user shall request that the truck be marked to identify the attachments and show the appropriate weight of the truck and attachment combination at maximum elevation with load laterally centered.
- (6) The user shall see that all nameplates and markings are in place and maintained in a legible condition.

(e) Safety Guards

- (2) If the type of load presents a hazard, the user shall equip fork trucks with a vertical load backrest extension in accordance with (a)(2) following.
 - (a)(2) All new powered industrial trucks acquired and used by an employer after February 15, 1972 shall meet the design and construction requirements for powered industrial trucks established in the "American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1", except for vehicles intended primarily for earth moving or over-the-road hauling.

(l) Operator Training

Only trained and authorized operators shall be permitted to operate a powered industrial truck. Methods shall be devised to train operators in the safe operation of powered industrial trucks.

(m) Truck Operations

- (1) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- (2) No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- (3) Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.
- (4) The employer shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the truck.
- (5i) When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off and brakes set. Wheels shall be blocked if the truck is parked on an incline.
- (5ii) A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.
- (5iii) When the operator of an industrial truck is dismantled and within 25 feet of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized and the brakes set to prevent movement.
- (6) A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock or platform or freight car. Trucks shall not be used for opening or closing freight doors.

- (10) A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

(n) Traveling

- (4) The driver shall be required to slow down and sound the horn at cross isles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.
- (7i) When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.
- (7iii) On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.

(o) Loading

- (1) Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
- (2) Only loads within the rated capacity of the truck shall be handled.
- (3) The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.
- (4) Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- (5) A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- (6) Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

(p) Operation of the Truck

- (1) If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

(q) Maintenance of Industrial Trucks

- (1) Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.
- (5) All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- (6) Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional counter-weighting of fork trucks shall not be done unless approved by the truck manufacturer.
- (7) Industrial trucks shall be examined before being placed in service and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examinations shall be made at least daily. When industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.

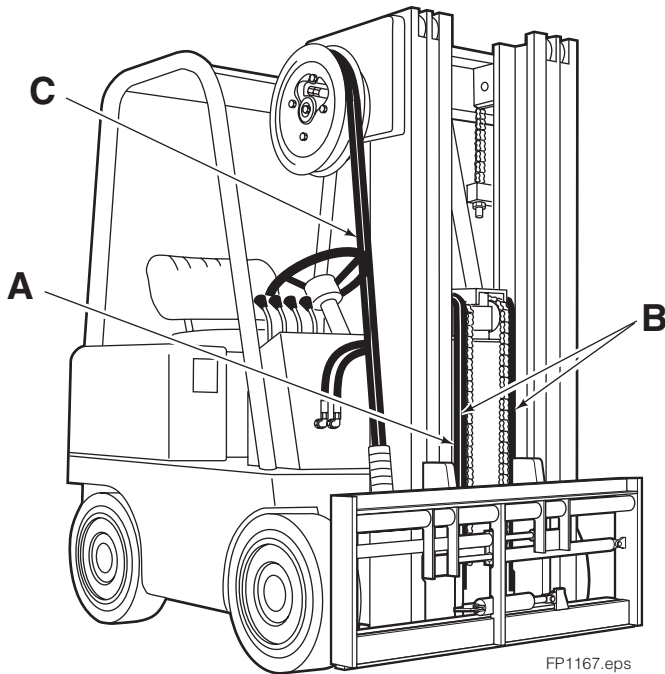
INSTALLATION

Recommended Hydraulic Supply

J-Series Integral Fork Positioner/Sideshifters can be operated with any of the hydraulic supply arrangements shown below. Refer to *Cascade Hose & Cable Reel Selection Guide*, Part No. 212199 to select the correct hose reel for the mast and truck.

Fork Positioning function: No. 3 hose/No. 4 fittings with 5/32 in. (4 mm) minimum I.D.

Sideshifting function: No. 4 hose/No. 6 fittings with 3/16 in. (5 mm) minimum I.D.



Sideshifting or Fork Positioning

A Mast Single Internal Reaving

Sideshifting Fork Positioner Non-Solenoid

B Mast Double Internal Reaving

OR

A & C Single Internal Hose Reaving and RH THINLINE™ 2-port Hose Reel.

Solenoid Adaption (on truck)

B Mast Double Internal Reaving

OR

A & C Single Internal Hose Reaving and RH THINLINE™ 2-port Hose Reel.

Solenoid Adaption (on attachment)

A & C Cable reel with Mast Single Internal Reaving

OR

C 6-N-1 Cable/Hose Reel

Swing Frame with Sideshift

Non-Solenoid

B Mast Double Internal Reaving

OR

A & C Single Internal Hose Reaving and RH THINLINE™ 2-port Hose Reel.

Slope Frame with Sideshift

Non-Solenoid

B Mast Double Internal Reaving

OR

A & C Single Internal Hose Reaving and RH THINLINE™ 2-port Hose Reel.

INSTALLATION

Truck Requirements

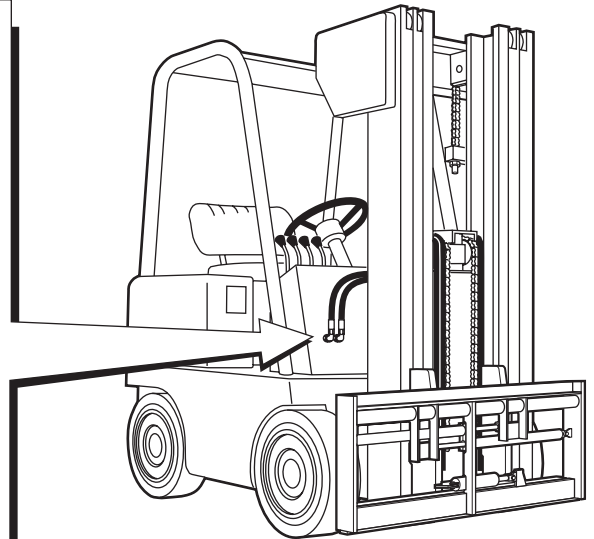
Truck Relief Setting

2300 psi (160 bar) Recommended
 2500 psi (170 bar) Maximum

Truck Flow Volume ^①

	Min. ^②	Recommended	Max. ^③
J-Series	15 GPM (56 L/min.)	25 GPM (95 L/min.)	35 GPM (132 L/min.)

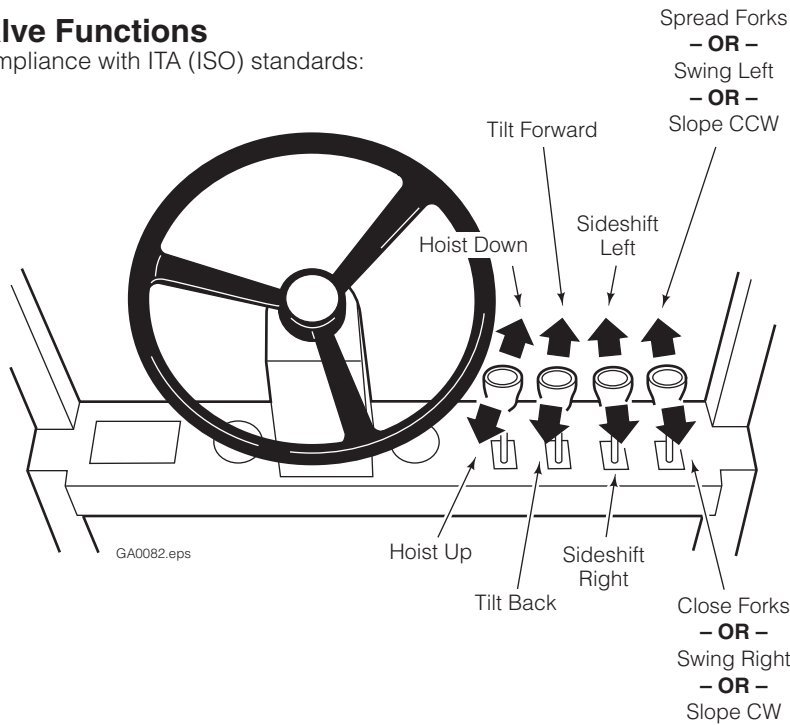
- ① Cascade J-Series Integral attachments are compatible with SAE 10W petroleum base hydraulic fluid meeting Mil. Spec. MIL-0-5606 or MIL-0-2104B. Use of synthetic or aqueous base hydraulic fluid is not recommended. If fire resistant hydraulic fluid is required, special seals must be used. Contact Cascade.
- ② Flow less than recommended will result in reduced system performance.
- ③ Flow greater than maximum can result in excessive heating, reduced system performance and short hydraulic system life.



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Auxiliary Valve Functions

Check for compliance with ITA (ISO) standards:



INSTALLATION

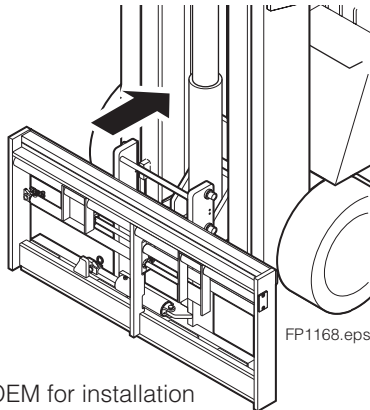
Attachment Installation

IMPORTANT: Integral attachment installation is an OEM or dealer responsibility. Some of the following steps may or may not be required, but are shown for reference. Refer to the appropriate OEM Service Manual for service and repair procedures.



WARNING: Check the attachment weight (located on the nameplate) to make sure the overhead hoist is at least the rated capacity of the attachment.

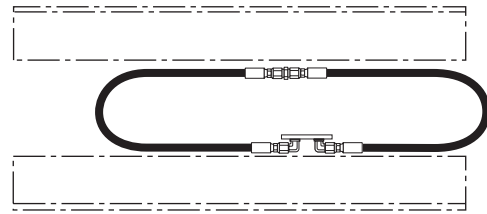
1 Integral attachment carriage and additional components should be installed in mast per OEM specifications and procedures.



NOTE: See OEM for installation details on load roller, sidethrust roller, chain anchor, etc.

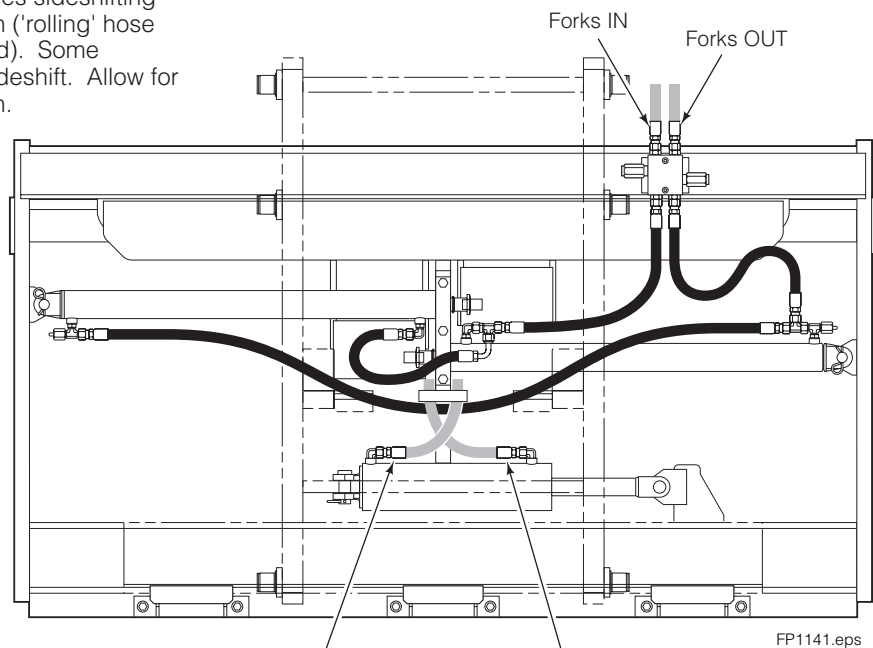
2 Flush supply hoses

- A** Connect supply hoses to supply terminals and connect together using union fittings as shown.
- B** Operate auxiliary valves for 30 sec.
- C** Remove union fittings.



3 Install hoses

CAUTION: Allow for 6 inches sideshifting movement in each direction ('rolling' hose arrangement recommended). Some attachments vary in total sideshift. Allow for movement in each direction.



Back (Driver's) View
(Sideshifting Fork Positioner shown)

4 Install Forks

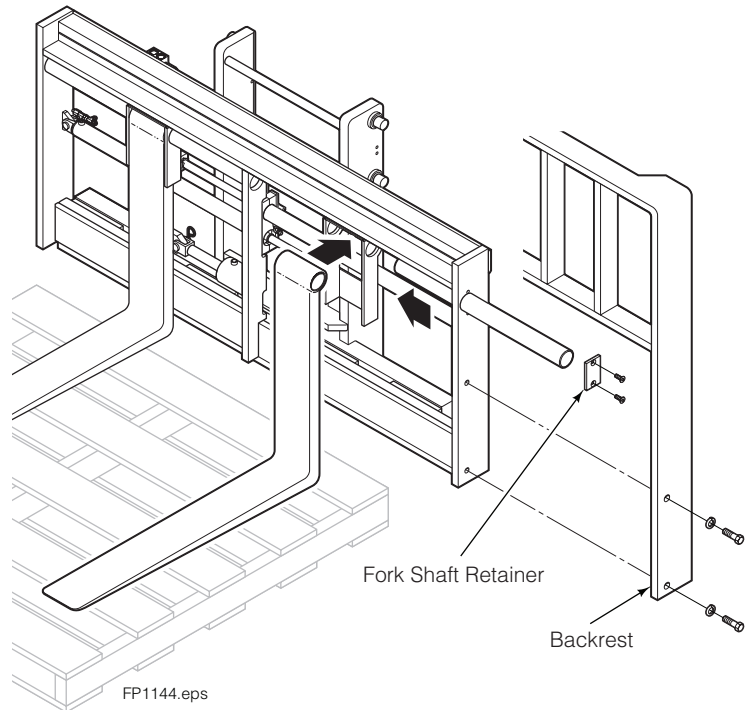
Use pallets or blocks as necessary to raise forks to installation height. Keep feet clear of forks when installing.

A If equipped, remove backrest. For reassembly, tighten Cascade backrests to 145 ft.-lbs. (195 Nm). For other backrests, see OEM recommendations.

B If equipped, remove fork shaft retainer capscrews. For reassembly, tighten capscrews to 50 ft.-lbs. (65 Nm).

C Pull the fork shaft out of the attachment enough to install fork into fork carrier.

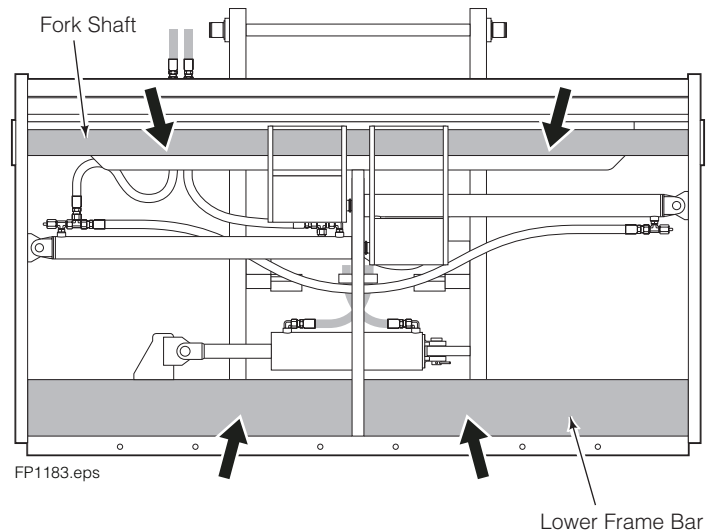
D Slide the fork shaft through the fork carrier and fork.



5 Check fork shaft and lower frame bar lubrication

The fork shaft and lower frame bar is prelubed at the factory with grease. No additional lubrication is required during installation.

NOTE: After 300 hours of operation, the fork shaft and lower frame bar should be checked for contamination. If there is contamination, clean fork shaft and lower frame bar. Apply chassis grease to the fork shaft and apply chassis grease or Slip-Plate (or equivalent 'paint-on' graphite) to the lower frame bar.

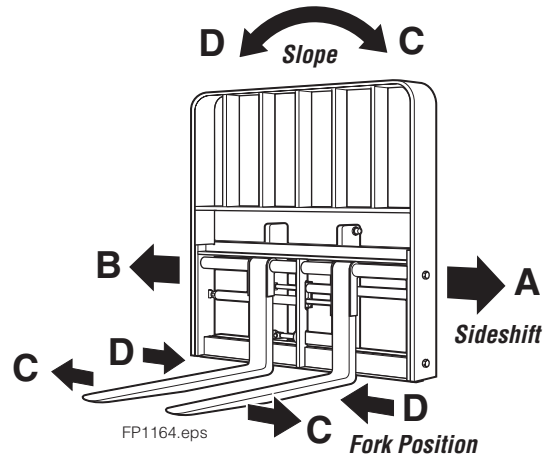
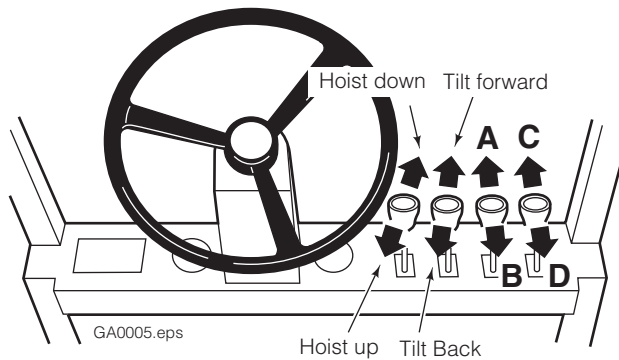


Front View
(Sideshifting Fork Positioner shown)

6 Cycle Fork Positioner functions

- Open and close forks several times. Sideshift left and right. Check for smoothness and equal movement.
- Check for operation in accordance with ITA (ISO) standards.
- Check for leaks at fittings, valve, cylinders.

AUXILIARY VALVE FUNCTIONS



SIDESHIFT & FORK POSITION

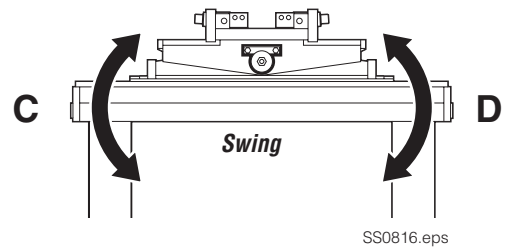
- A** Sideshift Left
- B** Sideshift Right
- C** Spread Forks
- D** Close forks

SIDESHIFT & SWING

- A** Sideshift Left
- B** Sideshift Right
- C** Swing Left
- D** Swing Right

SIDESHIFT & SLOPE

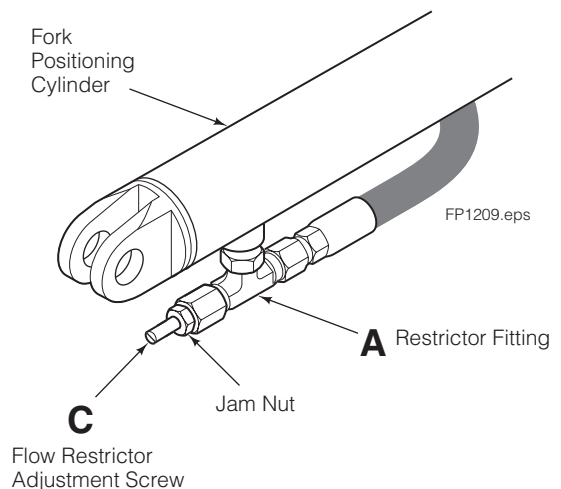
- A** Sideshift Left
- B** Sideshift Right
- C** Slope CCW
- D** Slope CCW



7 Adjust forks for equal movement (if required)

NOTE: Attachment is factory adjusted for equal fork movement when operated at recommended pressure and flow rate.

- A** Locate cylinder restrictor fittings. Loosen jam nuts and screw both flow restrictors in until they bottom. Screw each restrictor out (CCW) three turns.
- B** Spread forks fully, then close. Look for unequal fork movement.
- C** On faster fork (one that bottoms first), screw flow restrictor in (CW), 1/2 turn.
- D** Repeat steps B and C until fork movement is equal. Tighten jam nuts.





WARNING: After completing any service procedure, always test the Fork Positioner/Sideshifter through five complete cycles to make sure the attachment operates correctly before returning it to the job.

100-Hour

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 capscrews, worn or damaged hoses, and hydraulic leaks.
- Check fork shafts for bends, damage or wear. Replace if bent. Consult Cascade if damaged or worn.

300-Hour

After each 300 hours of truck operation, in addition to the 100-hour maintenance, perform the following procedures:

- Tighten Cascade backrest (if equipped) capscrews to the following torque values:

M12 Capscrew – 75 ft.-lbs. (100 Nm)

M16 Capscrew – 145 ft.-lbs. (195 Nm)

For other backrests, see OEM recommendations.

- **If equipped with zerk fittings** – Apply general purpose chassis grease to upper and lower bearings.
- **Inspect frame retainers for wear.** Replace if necessary. Tighten lower frame retainer capscrews to 165-200 ft.-lbs. (225-275 Nm).
- **Inspect fork shaft and front of lower frame bar for grease contamination.** Remove contaminated grease from fork shaft and lower frame bar. Apply a general purpose chassis grease to the fork shaft. Apply a general purpose chassis grease or Slip-Plate (or a 'paint-on' graphite equivalent) to the lower frame bar.

1000-Hour

After each 1000 hours of truck operation, in addition to the 100 and 300-hour maintenance, perform the following procedures:

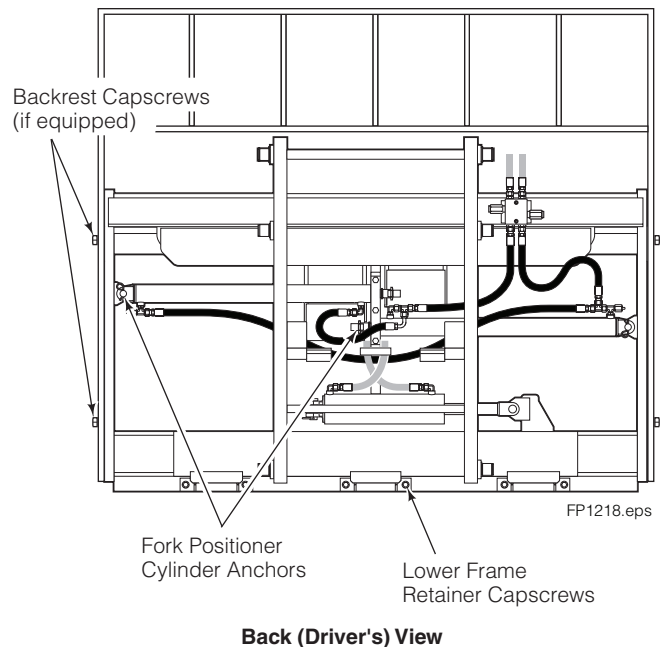
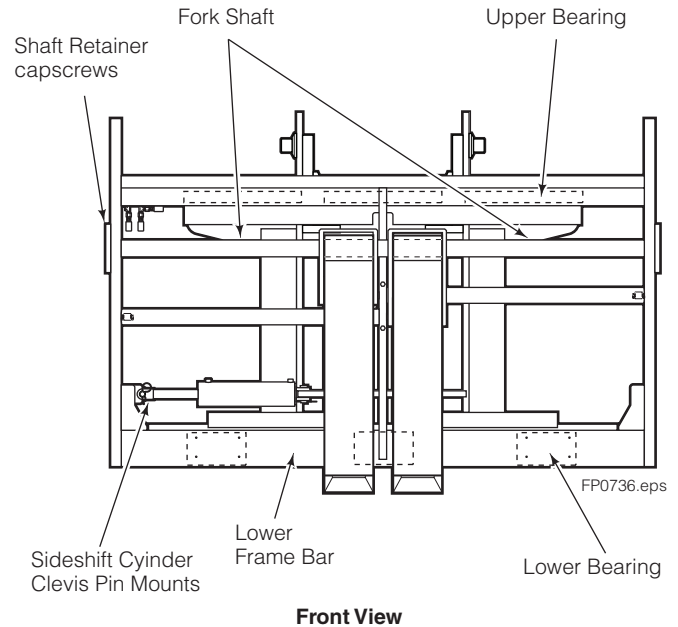
- **Inspect sideshift upper and lower bearings for wear.** If the frame is rubbing the carriage or lower bearing capscrews, replace the entire bearing set (see Service Manual for repair procedures).
- **Inspect forks for wear.**

NOTE: Cascade fork safety kit 3014162 is available with wear calipers, inspection sheets and safety poster. Also available Cascade fork hook & carriage bar wear gauge 209560 (CL II), 209561 (CL III) and 6105257 (CL IV).

- **Inspect sideshift cylinder pivot pins and clevis pins for wear.** Replace part as necessary.
- **Inspect fork position cylinder anchor nuts for wear.** Replace if necessary.

NOTE: Anchors operate with a loose clearance.

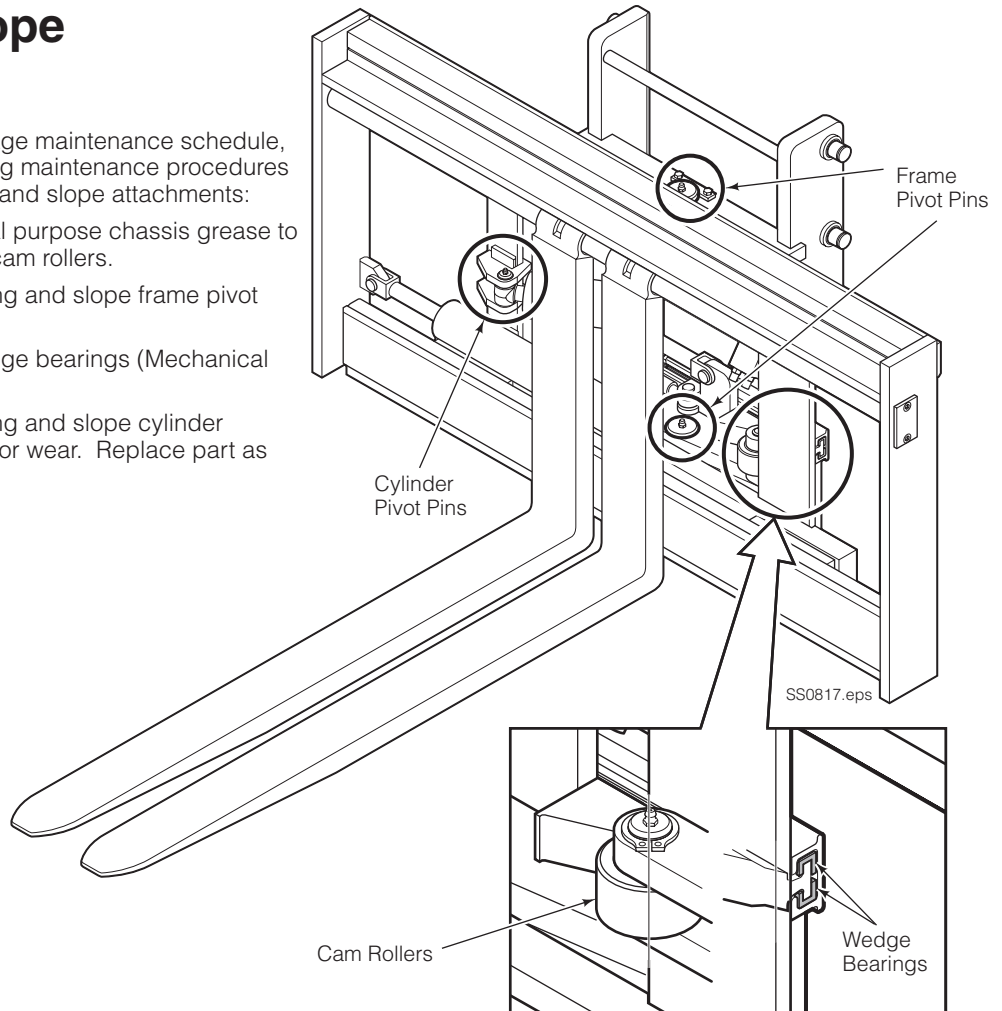
- Tighten lower bearing capscrews to 200 ft.-lbs. (270 Nm).
- Tighten fork shaft retainers capscrews (if equipped) to 49 ft.-lbs. (66 Nm).



Swing and Slope Attachments

In **addition** to the previous page maintenance schedule, where applicable, the following maintenance procedures must be completed on swing and slope attachments:

- **300 Hours** – Apply general purpose chassis grease to pivot pin zerks fittings and cam rollers.
- **1000 Hours** – Inspect swing and slope frame pivot points for wear.
- **1000 Hours** – Inspect wedge bearings (Mechanical swing frame) for wear.
- **1000 Hours** – Inspect swing and slope cylinder pivot pins and clevis pins for wear. Replace part as necessary.



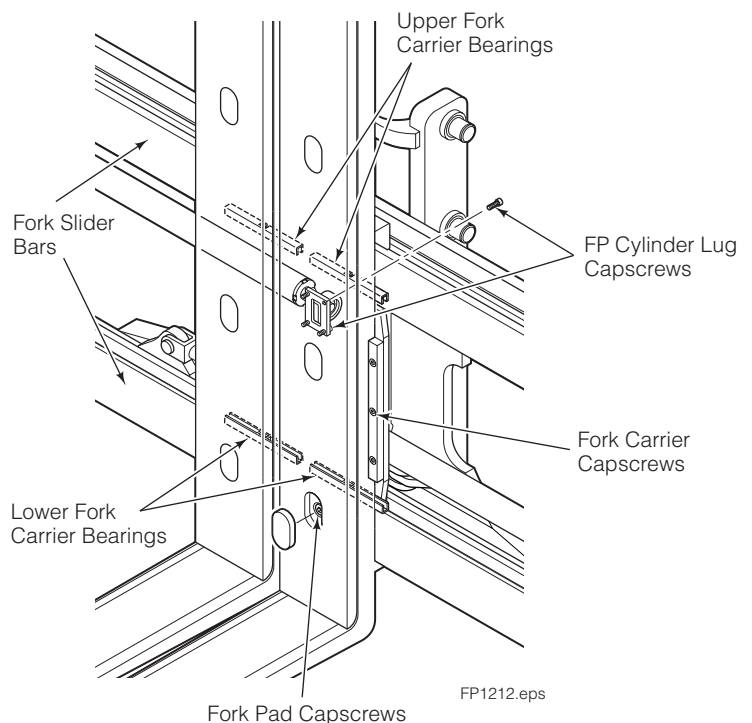
Hook-Type Fork Positioner Attachments

In **addition** to the previous page maintenance schedule, where applicable, the following maintenance procedures must be completed on hook-type fork positioner attachments:

- **300 Hours** – Apply general purpose chassis grease to fork carrier bearings.
- **300 Hours** – Tighten capscrews as follows:
 - FP Cylinder Lug** – 13-15 ft.-lbs. (18-20 Nm)
 - Fork Pad** – 500 ft.-lbs. (678 Nm)
 - Fork Carrier** – 28 ft.-lbs. (38 Nm)

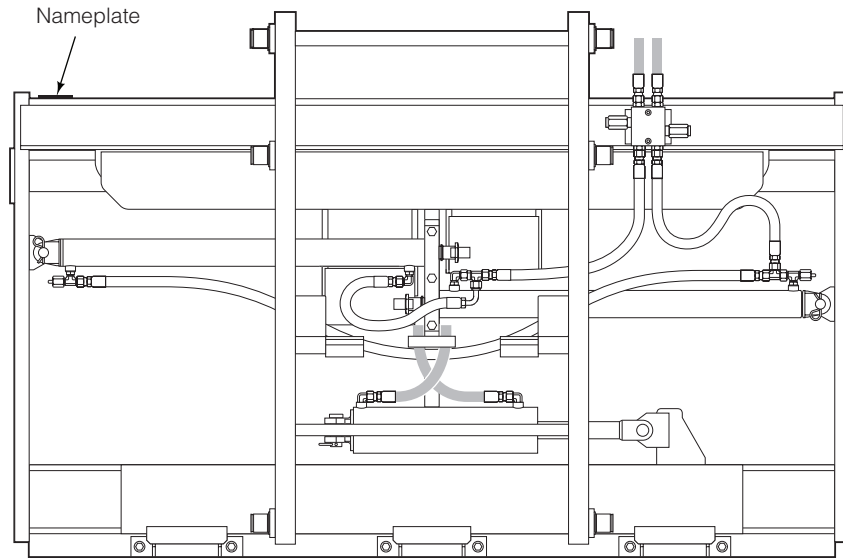
NOTE: Apply Loctite 242 to FP Cylinder Lug and Fork Pad capscrews.

- **300 Hours** – Apply general purpose chassis grease or Slip-Plate (or a 'paint-on' graphite equivalent) to the fork slider bars.



P RODUCT IDENTIFICATION

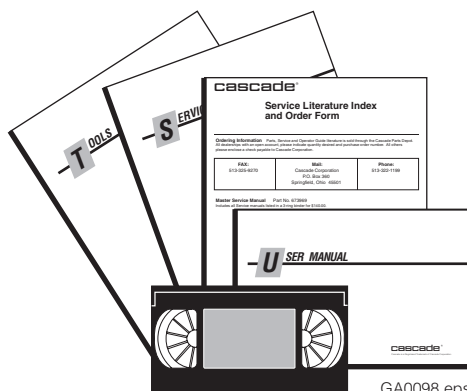
The product model number and serial number can be found on the nameplate located on the top left surface of the attachment. Refer to the nameplate for ordering replacement parts.



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**Back (Driver's View
(Sideshifting Fork Positioner shown))**

P UBLICATIONS



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PART NO.	DESCRIPTION
6082563	User Manual
6052504	Integral Carriage Service Manual
679929	Tool Catalog
673964	Literature Order Form

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
Parts Sales**
2501 Sheridan Ave.
Springfield, OH 45505
Tel: 888-CASCADE (227-2233)
Fax: 888-329-0234

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

Cascade do Brasil
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