

# **INSTALLATION INSTRUCTIONS**

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## ***C-Series*** ***Fork Positioners***

*Manual Number 219990*

**cascade**<sup>®</sup>  
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This Manual provides instructions for installing Cascade C-Series Fork Positioners.

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).

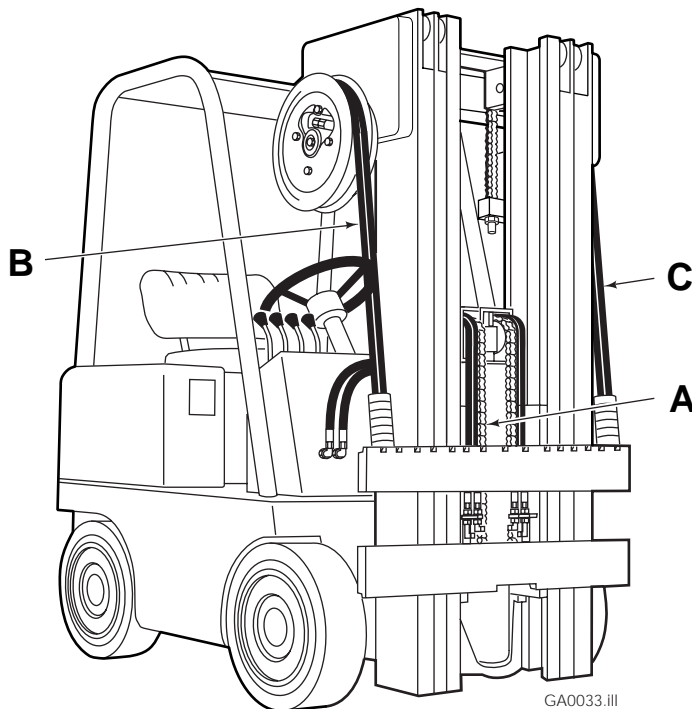
Read the **WARNING** Statements placed throughout this Manual to emphasize safety during Fork Positioner installation.

**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

C-Series Fork Positioners 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. Hose and fitting requirements are as follows:

- All hoses and fittings for the fork-positioning and sideshifting (if equipped) functions should be at least No. 6 with 9/32 in. (7 mm) minimum I.D.



### Non-Sideshifting

- A Mast Single Internal Reeving
- OR
- C LH THINLINE™ 2-Port Hose Reel Group

### Sideshifting

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

### Solenoid Adaption

- A and B Mast Single Internal Reeving and RH Cable Reel Group
- OR
- B RH 6-N-1 Cable/Hose Reel 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 <sup>①</sup>

	Min. <sup>②</sup>	Recommended	Max. <sup>③</sup>
<b>55C, 100C, 120C, 150C</b>	5 GPM (19 L/min.)	7 GPM (26 L/min.)	10 GPM (38 L/min.)

① Cascade C-Series Fork Positioners are 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 can result in slow and unequal fork movement.

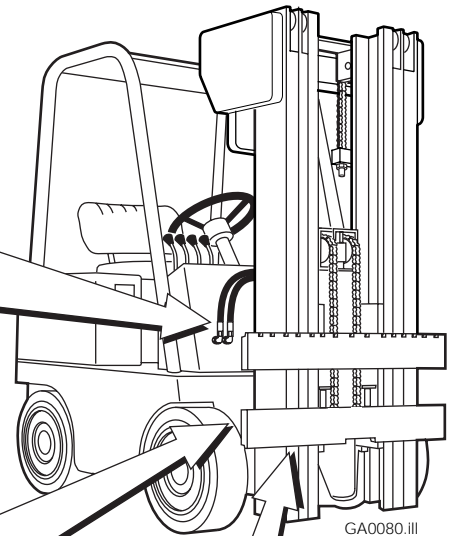
③ Flow greater than maximum can result in excessive heating, reduced system performance and short hydraulic system life.



## Carriage Mount Dimension (A) ITA (ISO)

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

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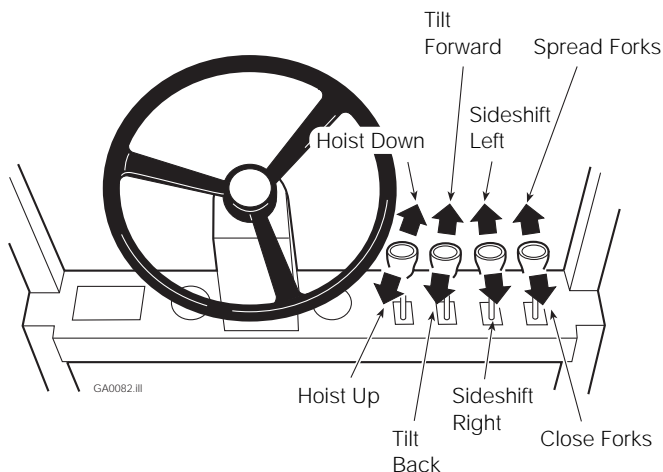


## Carriage

Clean carriage bars and inspect for damaged notches

## Auxiliary Valve Functions

Check for compliance with ITA (ISO) standards:

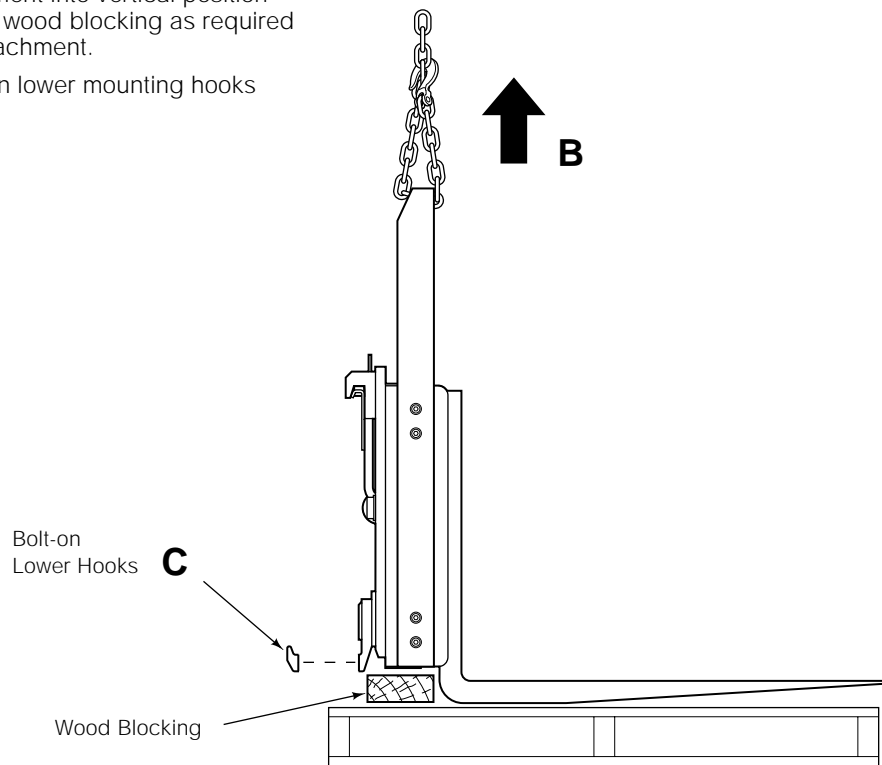


## 1 Attach overhead hoist

- A** Remove banding.
- B** Attach hoist to top of backrest as shown and lift Attachment into vertical position on pallet. Use wood blocking as required to stabilize Attachment.
- C** Remove bolt-on lower mounting hooks (if equipped).



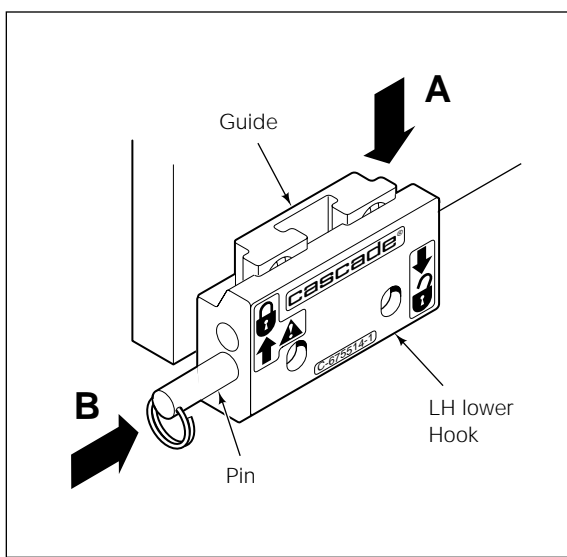
**WARNING:** Make sure overhead hoist has a rated capacity of at least 2000 lbs. (910 kg.)



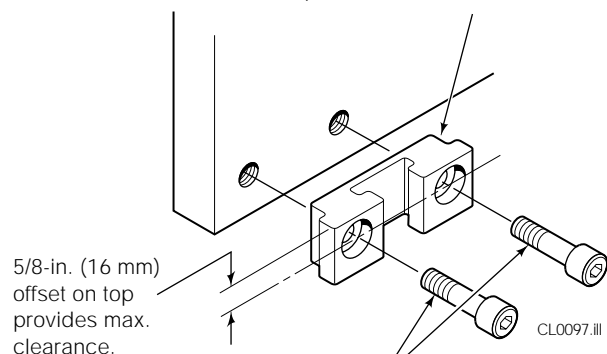
FP0202.III

## 2 Unlock quick-change lower mounting hooks (if equipped)

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



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

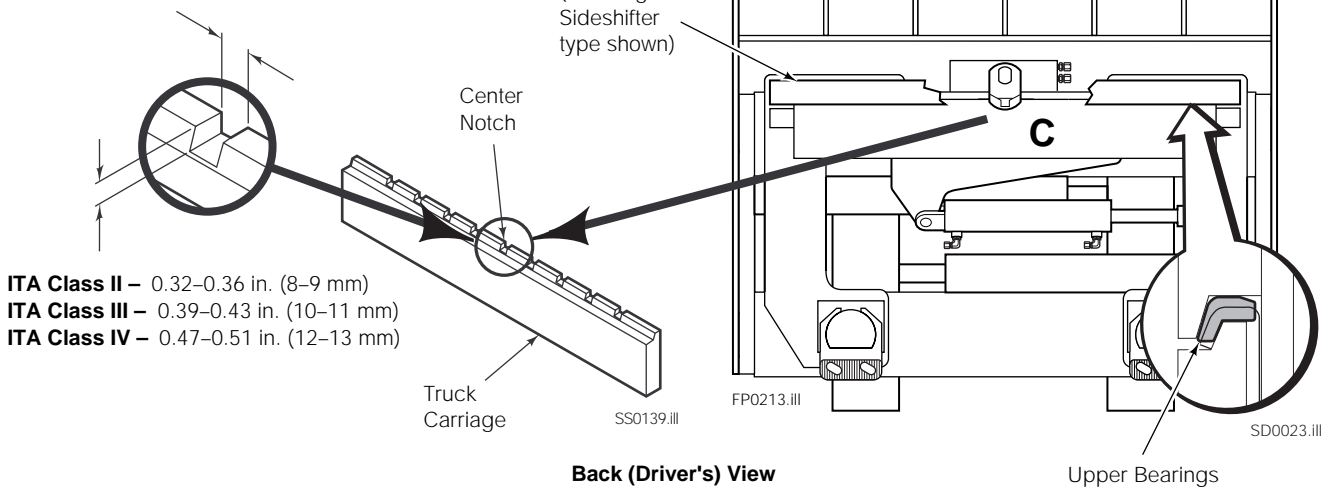


Tighten Capscrews:  
**Class II, III Mounting** – 165 ft.-lbs. (225 Nm)  
**Class IV Mounting** – 190 ft.-lbs. (255 Nm)

## 3 Mount Fork Positioner on truck

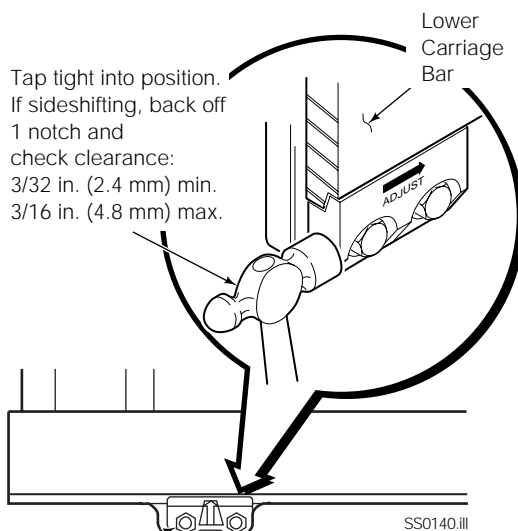
- A** Center truck behind Attachment.
- B** Hang Attachment onto truck carriage.
- C** Engage upper mounting hooks. On sideshifting units, make sure upper bearings are in place and centering tab engages center notch on truck carriage.

ITA Class II – 0.60–0.66 in. (15–17 mm)  
 ITA Class III – 0.72–0.78 in. (18–20 mm)  
 ITA Class IV – 0.72–0.78 in. (18–20 mm)



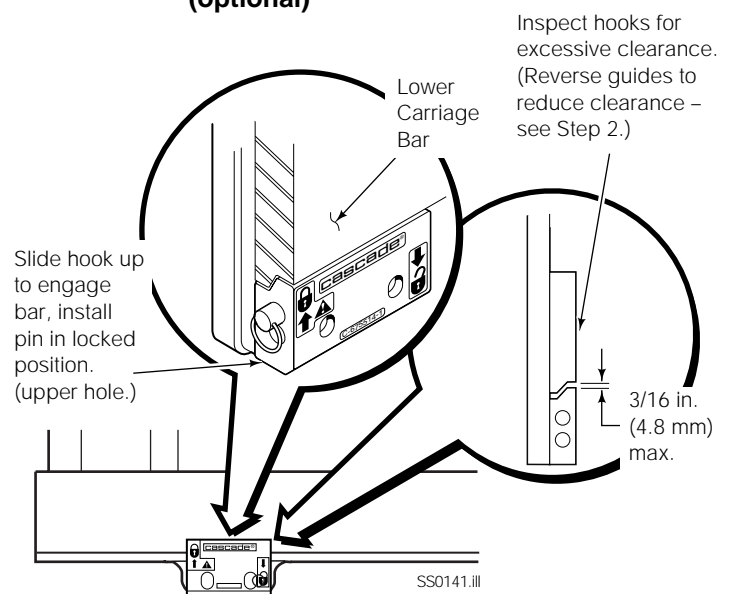
## 4 Install or engage lower hooks

### BOLT-ON TYPE



Tighten Capscrews:  
**Class II, III Mounting** – 120 ft.-lbs. (165 Nm)  
**Class IV Mounting** – 190 ft.-lbs. (255 Nm)

### QUICK-CHANGE TYPE (optional)

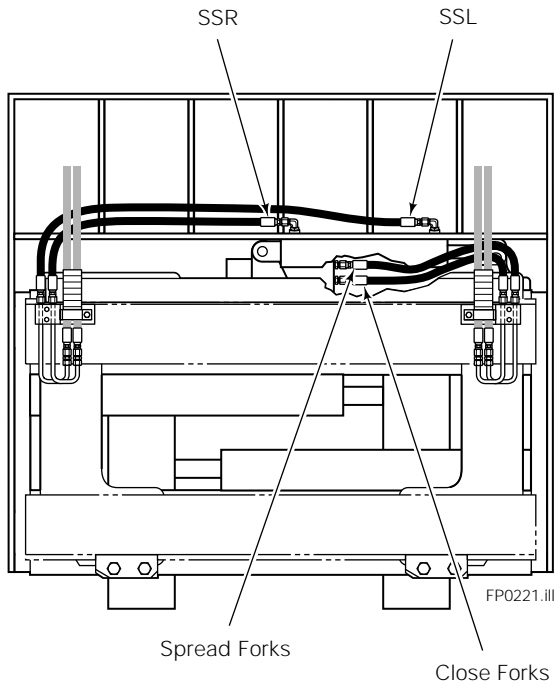


## 5 Prepare hoses

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

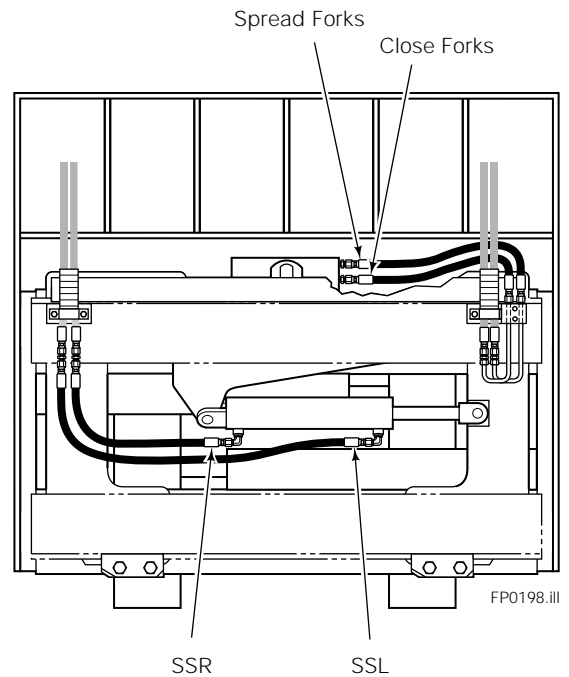
### HOSE REELS

55C – Sideshifting / Non-sideshifting



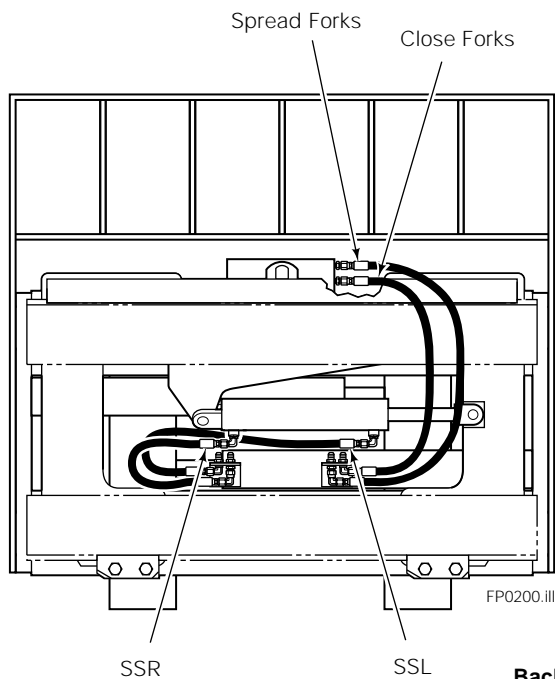
### HOSE REELS

100, 120, 150C – Sideshifting / Non-sideshifting



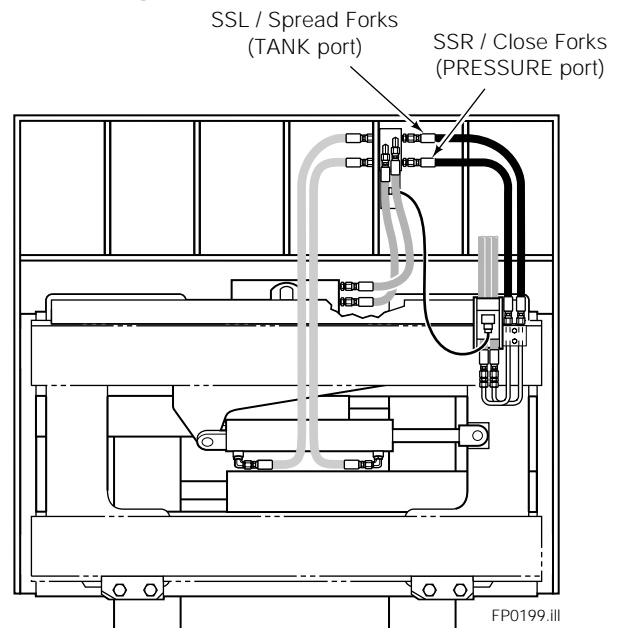
### INTERNAL HOSE REEVING

Sideshifting / Non-sideshifting



### SOLENOID – 6-N-1 CABLE/HOSE REEL

Sideshifting

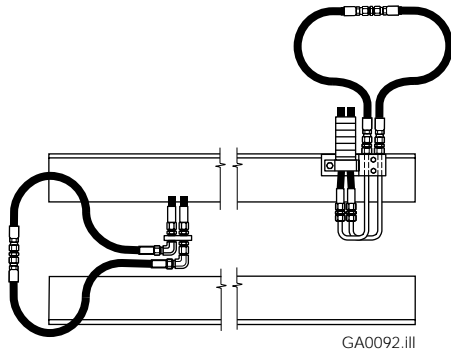


Back (Driver's) Views

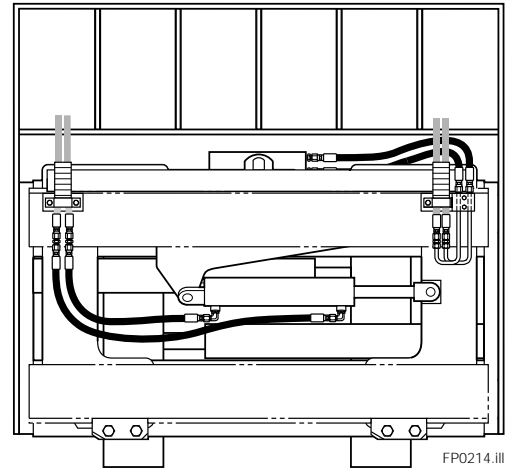
# INSTALLATION

## 6 Flush hydraulic supply hoses

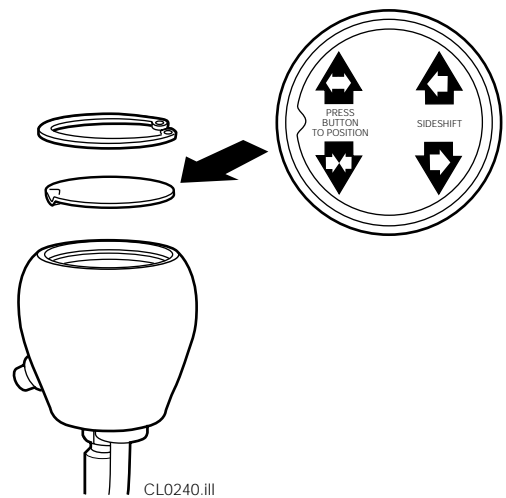
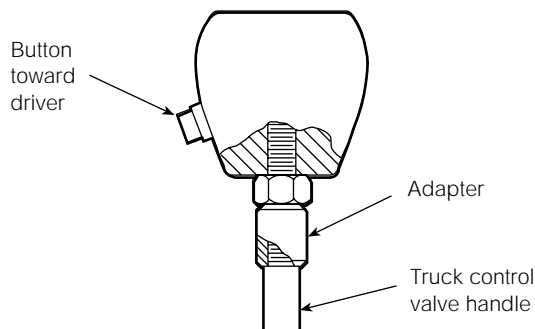
- A** Install hoses to hose terminals on carriage. Connect using union fittings.
- B** Operate auxiliary valves for 30 sec.
- C** Remove union fittings.



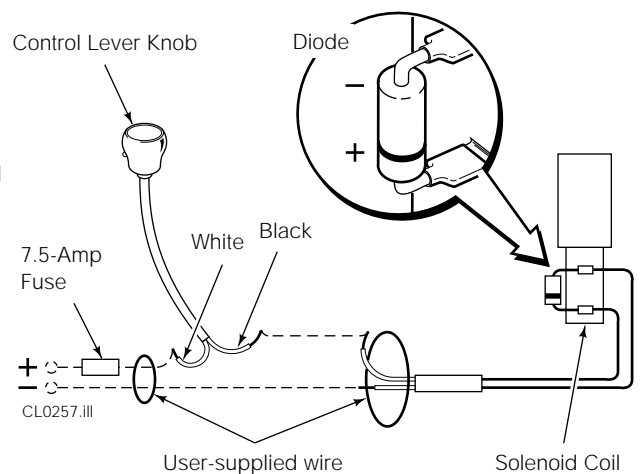
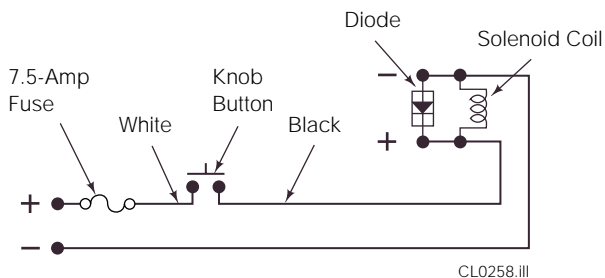
## 7 Connect hoses prepared in Step 5 to Attachment fittings



## 8 Install solenoid control knob – (Solenoid equipped units)



## 9 Install wiring – (Solenoid equipped units)

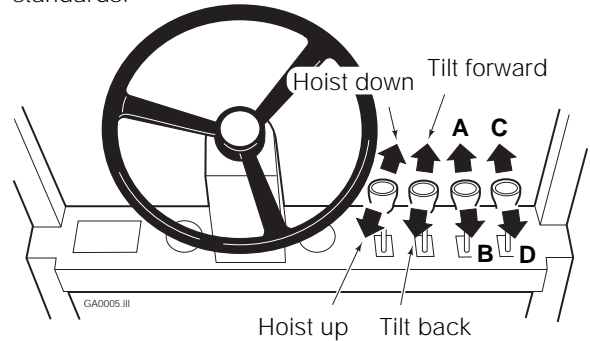


## 10 Cycle Fork Positioner functions

- Spread forks and close forks several times. Sideshift (if equipped) 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.

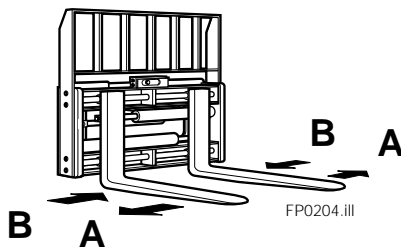
### AUXILIARY VALVE FUNCTIONS

Check for compliance with ITA (ISO) standards:



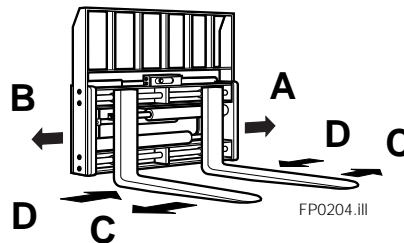
#### NON-SIDESHIFTING

- A** Spread Forks
- B** Close Forks
- C** (not used)
- D** (not used)



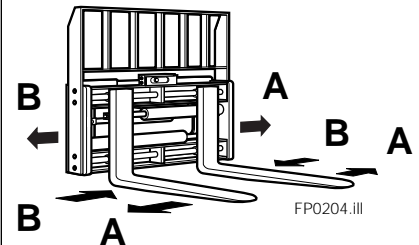
#### SIDESHIFTING

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



#### SIDESHIFTING WITH SOLENOID VALVE

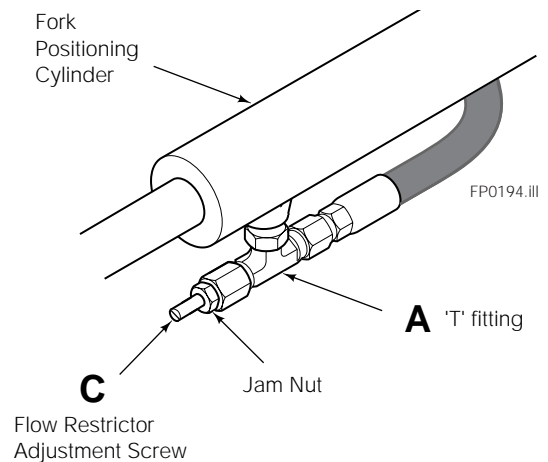
- A** Sideshift Left
- A** Spread Forks (press knob button)
- B** Sideshift Right
- B** Close Forks (press knob button)



## 11 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 'T' fittings with flow restrictor adjustment. 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.



Front View





**WARNING:** After completing any service procedure, always test each function through five complete cycles. First test with no load, 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 procedures on the Fork Positioner:

- Check for loose or missing bolts, worn or damaged hoses and hydraulic leaks.

## 500-Hour Maintenance

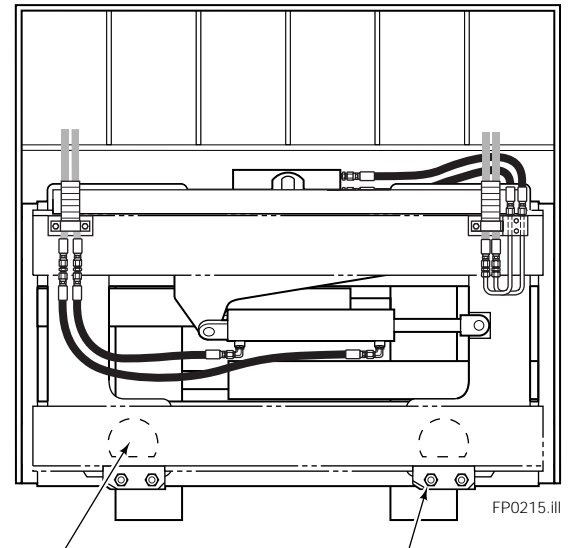
After each 500 hours of truck operation, in addition to the 100-hour maintenance, perform the following procedures.

- Tighten lower hook capscrews to:
  - Class II, III Mounting** – 120 ft.-lbs. (165 Nm)
  - Class IV Mounting** – 190 ft.-lbs. (255 Nm)
- Apply chassis grease to fork bearing grease fittings.
- Apply chassis grease to fork cylinder rod anchors.
- Apply chassis grease to sideshifter (if equipped) upper bearing grease fittings and lower flat bearings.

## 1000-Hour Maintenance

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

- Inspect fork bearings for wear and replace if necessary.
- Inspect fork cylinder rod anchors for wear and replace if necessary.
- Inspect sideshifter (if equipped) upper and lower bearings for wear and replace if necessary.



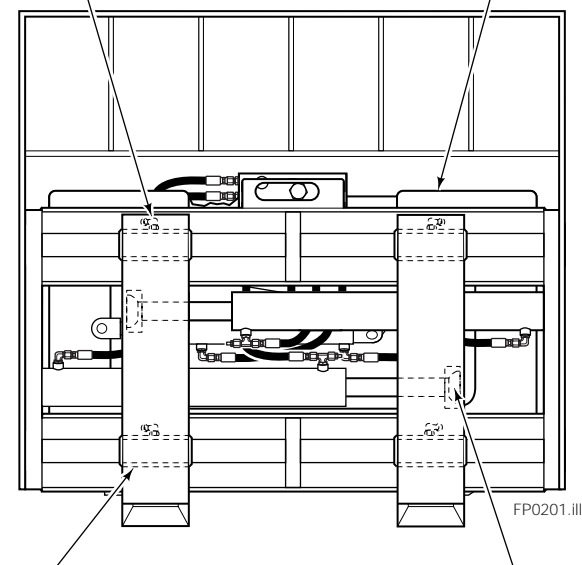
Sideshifter  
Lower Bearings (2)

Lower Mounting Hook  
Capscrews (4)

**Back (Driver's) View**

Fork Bearing  
Grease Fittings (4)

Sideshifter Upper Bearing  
Grease Fittings (2).  
(sideshift to expose fittings.)



Fork  
Bearings (4)

Cylinder Rod  
Anchors (2)

**Front View**

**Do you have questions you need answered right now?** Call your nearest Cascade Service Department.

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