



# Installation Instructions

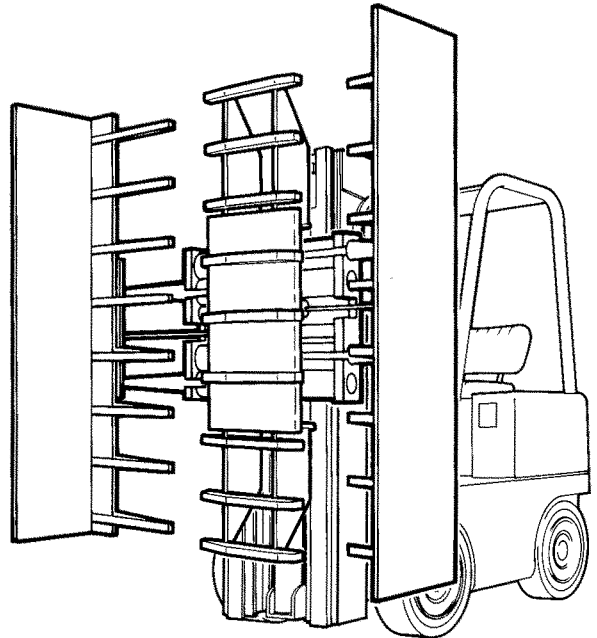
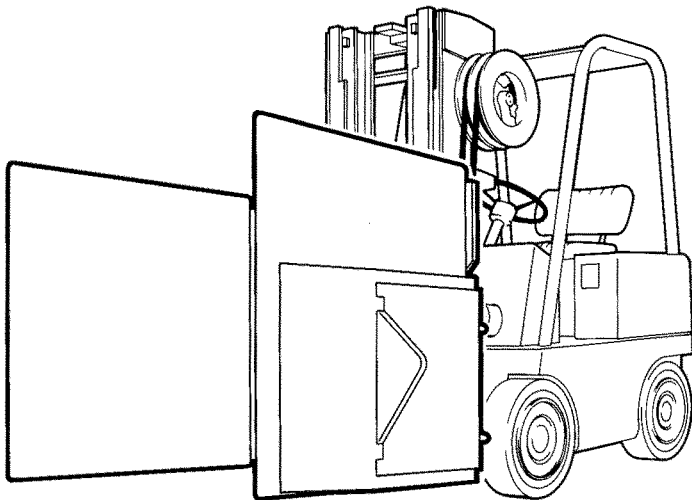
## Carton Clamp and Appliance Clamp Models: 20C, 35C, and 60C

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

### 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.



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# A. Truck System Requirements

- Truck relief valve setting:  
**Clamps with conventional check valve assembly:** 2000 psi maximum  
**Clamps with Hi-Ball valve assembly:** 1700 psi minimum, 2000 psi maximum
- Truck hydraulic system should provide the following rates of flow:  
**20C Carton Clamp and Appliance Clamp with conventional check valve:** 2-6 gpm  
**35C and 60C Carton Clamps with conventional check valve:** 8-18 gpm.  
**All Clamps with Hi-Ball valve:** 3-7 gpm
- Recommended hose and fitting size: No. 8 (1/2 inch ID) with minimum fitting orifices of 13/32 inch.

- Truck carriage must conform to the Industrial Truck Association (ITA) dimensional standards as shown in the following chart.

Mounting	Dimension A (in.)	
	Min.	Max.
Class II (20C, 35C)	14.94	15.00
Class III (60C)	18.68	18.74

- Make sure the truck carriage is clean and the notches are undamaged.

# B. Prior to Installation

- Install the hydraulic hoses to the **truck junction blocks** using the correct Cascade Attachment Installation Kit. The part numbers are as follows:

**Carton Clamps with a conventional valve:** C-663587

**Carton Clamps with a Hi-Ball valve:** C-663586

**Appliance Clamp with a conventional valve:** C-663639

**Appliance Clamp with a Hi-Ball valve:** C-663640

OR,

use hoses and fittings as shown in Figure 1, 2, 3, or 4. Be careful not to pinch, twist, or otherwise damage the hoses.

### IMPORTANT

In order to conform to industry standard practice, the hoses should be connected to the truck auxiliary valves as indicated by the following chart.

Function, in order of location from operator	Attachment Movement	Motion of the operator's hand
Sideshift	Sideshift Right	Rearward or Up
	Sideshift Left	Forward or Down
Clamp	Clamp (close)	Rearward or Up
	Release (open)	Forward or Down

### CAUTION:

- Flush the hoses as follows to prevent damage to the attachment check valve assembly and the cylinders. Refer to the appropriate plumbing diagram.
  - Connect the hoses from each junction block together.
  - Start the truck and actuate the truck control valves in both directions for about 30 seconds to carry any debris left in the hoses to the truck hydraulic tank and filter.

NOTE: The Junction Blocks on your Truck may be Reversed from those Shown.

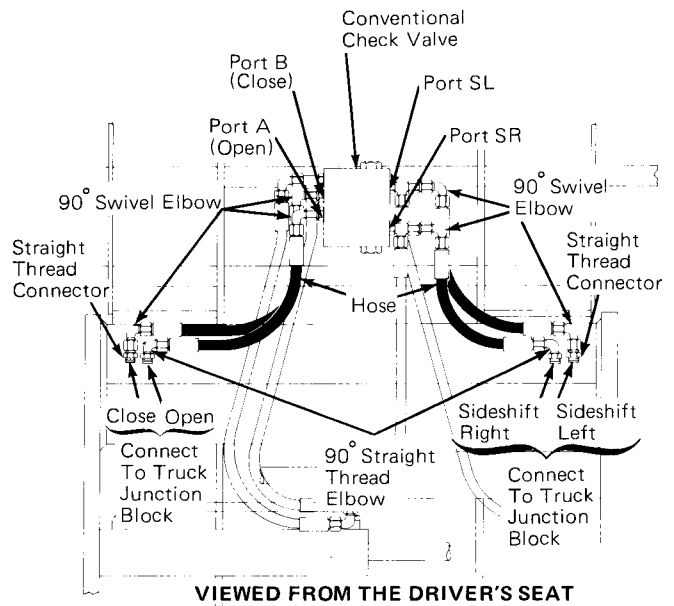
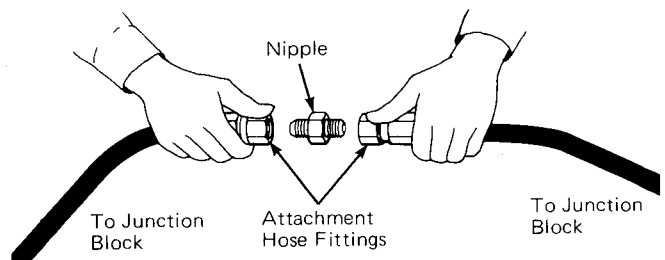


Figure 1. Plumbing Diagram, Carton Clamps with a Conventional Valve



NOTE: The Junction Blocks on Your Truck may be Reversed from those Shown.

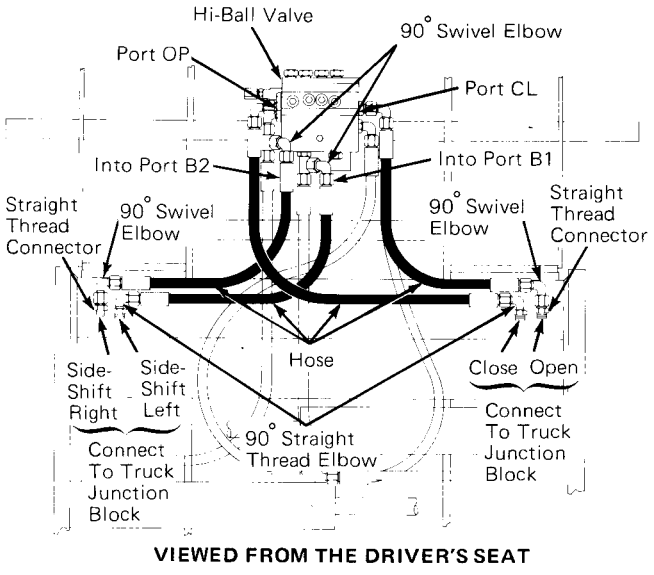


Figure 2. Plumbing Diagram, Carton Clamps with a Hi-Ball Valve

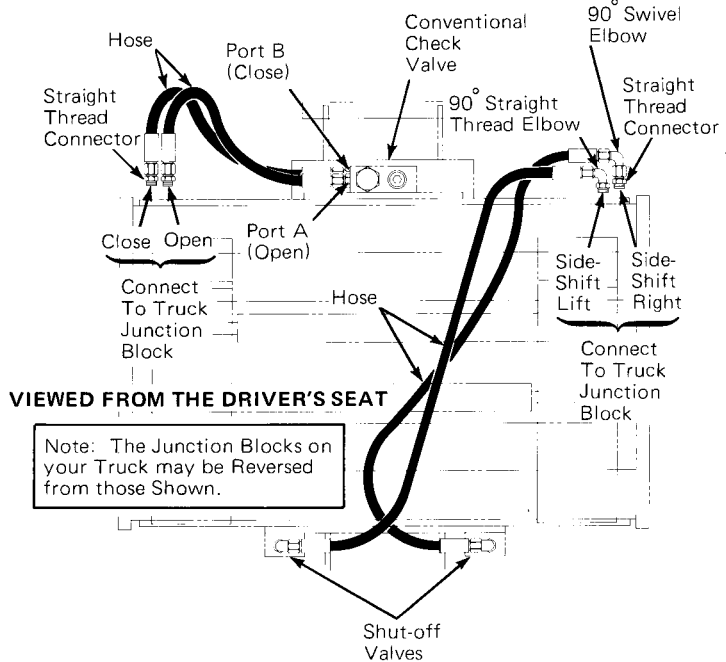


Figure 3. Plumbing Diagram, Appliance Clamp with a Conventional Valve

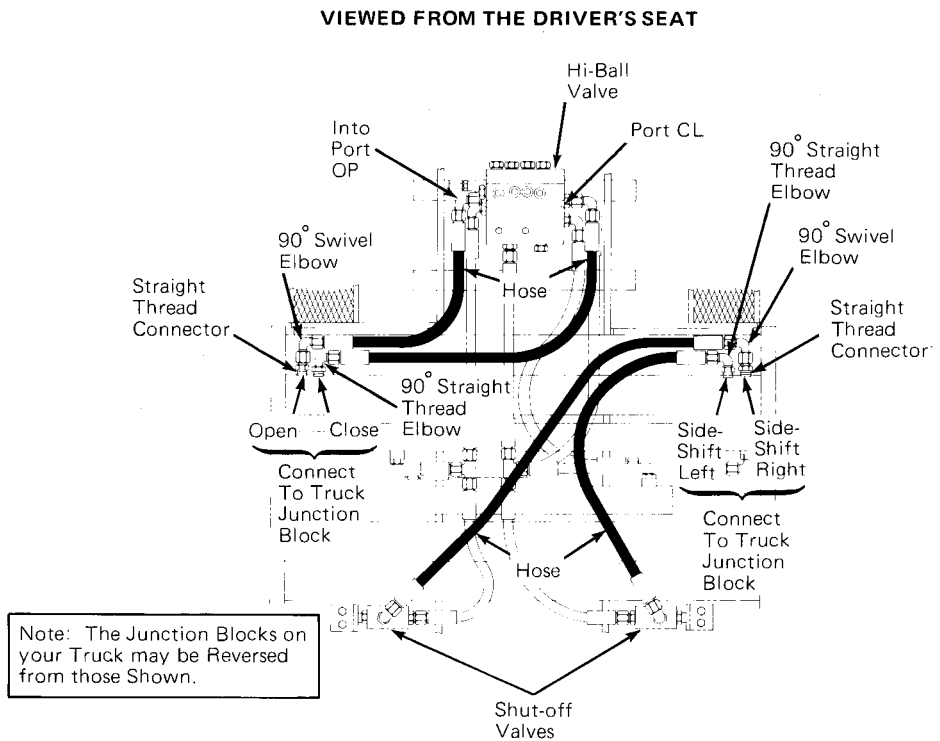
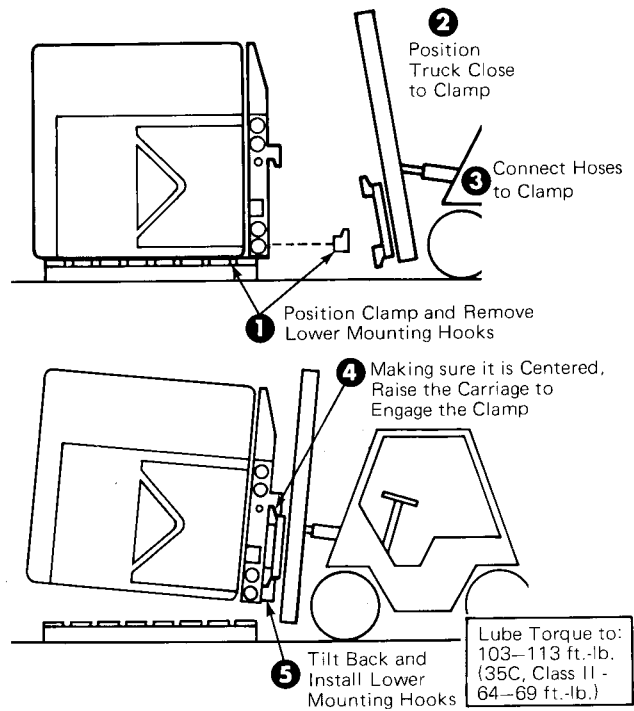


Figure 4. Plumbing Diagram, Appliance Clamp with a Hi-Ball Valve

## C. Installation

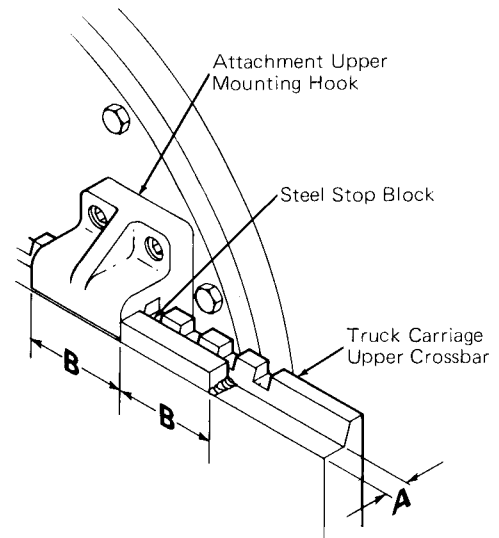
- 1 Using a suitable hoist and chain, position the clamp as shown and remove the lower mounting hooks.
  - 2 Position the truck close enough so the hoses on the junction blocks can be connected to the attachment.
  - 3 Connect the hoses to the attachment as shown in the appropriate plumbing diagram.
  - 4 Raise the truck carriage and engage the attachment upper mounting hooks. Make sure the centering block on the attachment aligns with the center notch on the carriage.
- IMPORTANT:** Some models have a positioning block welded to the inside of the upper mounting hook. Center the attachment on the carriage, making sure the positioning block is engaged in a notch on the carriage.
- 5 Tilt the mast back and install the lower mounting hook. Lube-torque the capscrews to 103-113 ft.-lb. (35C, Class II—64-69 ft.-lb.).



## D. Attachment Stop Blocks

Cascade recommends that a steel block be permanently welded on each side of the truck carriage upper crossbar adjacent to each attachment upper mounting hook. To perform the installation:

1. Select square steel stock with a width about equal to the flat of the carriage upper crossbar (dimension A).
2. Cut two blocks from the stock, each about as long as the width of the attachment upper mounting hook (dimension B).
3. Position the blocks adjacent to the upper mounting hooks. The blocks should not extend behind the flat of the carriage upper crossbar (dimension A).
4. Weld the blocks in place. Make sure you protect adjacent hoses and hydraulic components from weld splatter.



## E. Prior to Operation

- 1 Check the cylinder anchor nuts to make sure they are secure. If your clamp has old-style anchor nuts, make sure the spring retainer is in place. If you have new-style anchor nuts, make sure they are properly staked.
- 2 Before picking up a load, operate the attachment through several cycles to force any air from the system to the truck hydraulic tank. Check for leaks.
- 3 Pick up a maximum load and operate the clamp. If the clamp does not function correctly, recheck the plumbing. If the clamp drops the load, contact Cascade's Service Department, telephone 800-547-5266 (toll-free), or, in Oregon, call 666-1511.

**WARNING:** Make sure there are no people in the vicinity of the attachment when picking up a load.

