

THE AUTOMATIC CARGO RELEASE (NOT FOR ARMY USE)

3-25. The automatic cargo release is a two-piece unit that operates on a load-tension activated hydraulic arming delay principal. It has no internal maintenance or repair.

Note: The service life of the release is 10 years from the date of manufacture.

a. Physical and Functional Characteristics. The physical and functional characteristics of the automatic cargo release are shown in Figure 3-60.

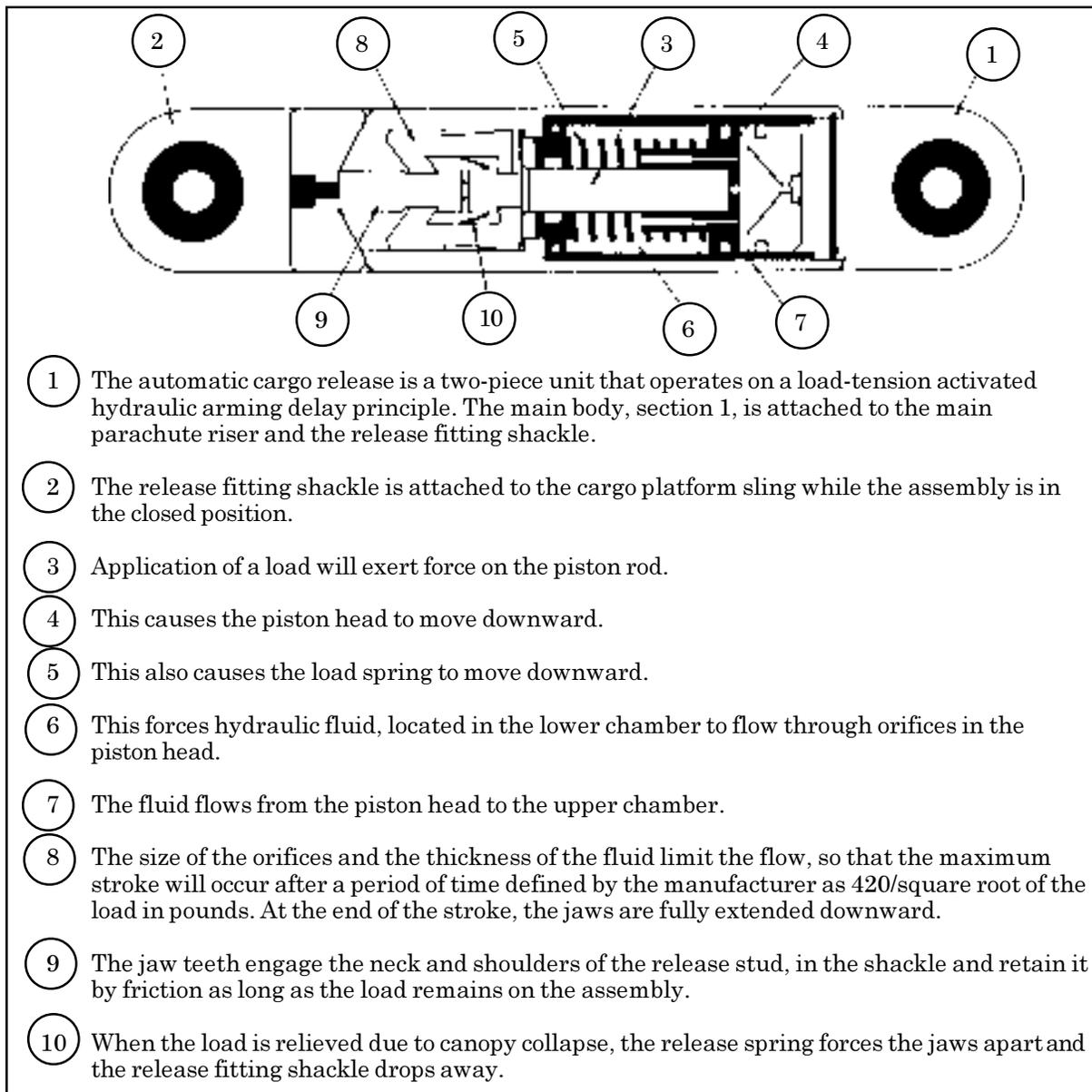


Figure 3-60. Physical and Functional Characteristics

b. Original Receipt Inspection. After removing the unit from its packaging, visually verify that all components of Figure 3-60 are present and in acceptable condition for use (no corrosion, deformation, leakage, or other abnormalities). Perform a pre-drop activation test as shown in Figure 3-61.

Note: When testing the Automatic Cargo Release the main body must be facing up.

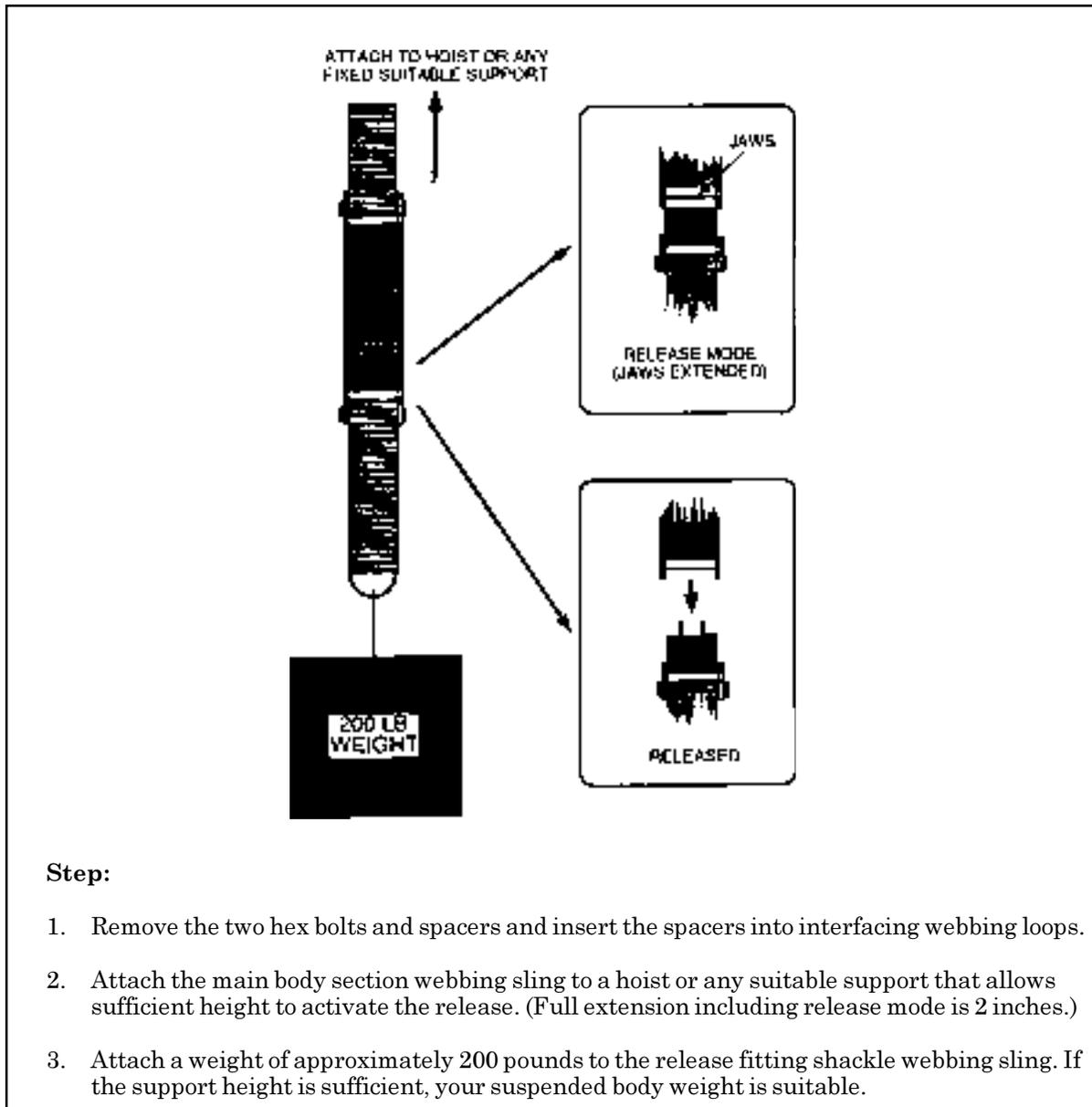


Figure 3-61. Pre-Drop Activation Test

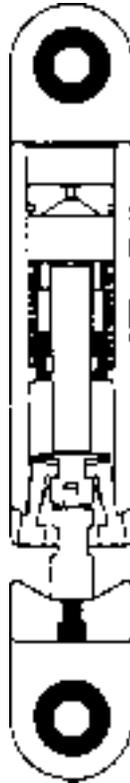


Step:

4. Time the arming delay starting from when the load is applied to when the jaws of the release extend below the cutouts in the bottom section of the main body section. Release mode should occur after 30 to 40 seconds under a 200-pound load. If the release mode and full extension is reached in less than 30 seconds under a suspended load of 200 pounds, the release is to be considered unserviceable.

Figure 3-61. Pre-Drop Activation Test (Continued)

CAUTION
Ensure the release fitting shackle is held when the weight is released to prevent it falling upon separation which could cause personal injury.



Step:

5. When the release mode has been achieved, simulate impact by lowering the hoist (if used) until the load is relieved; or if body weight is used, (ensure the release fitting shackle is held securely to prevent personal injury upon separation), quickly release the load. The spring loaded jaws will kick outward releasing the release fitting shackle which allows the cargo release unit to immediately separate. The outer lip on the jaws will catch on the lip of the main body section, holding the piston extracted and retaining the jaws in the open position.

Figure 3-61. Pre-Drop Activation Test (Continued)

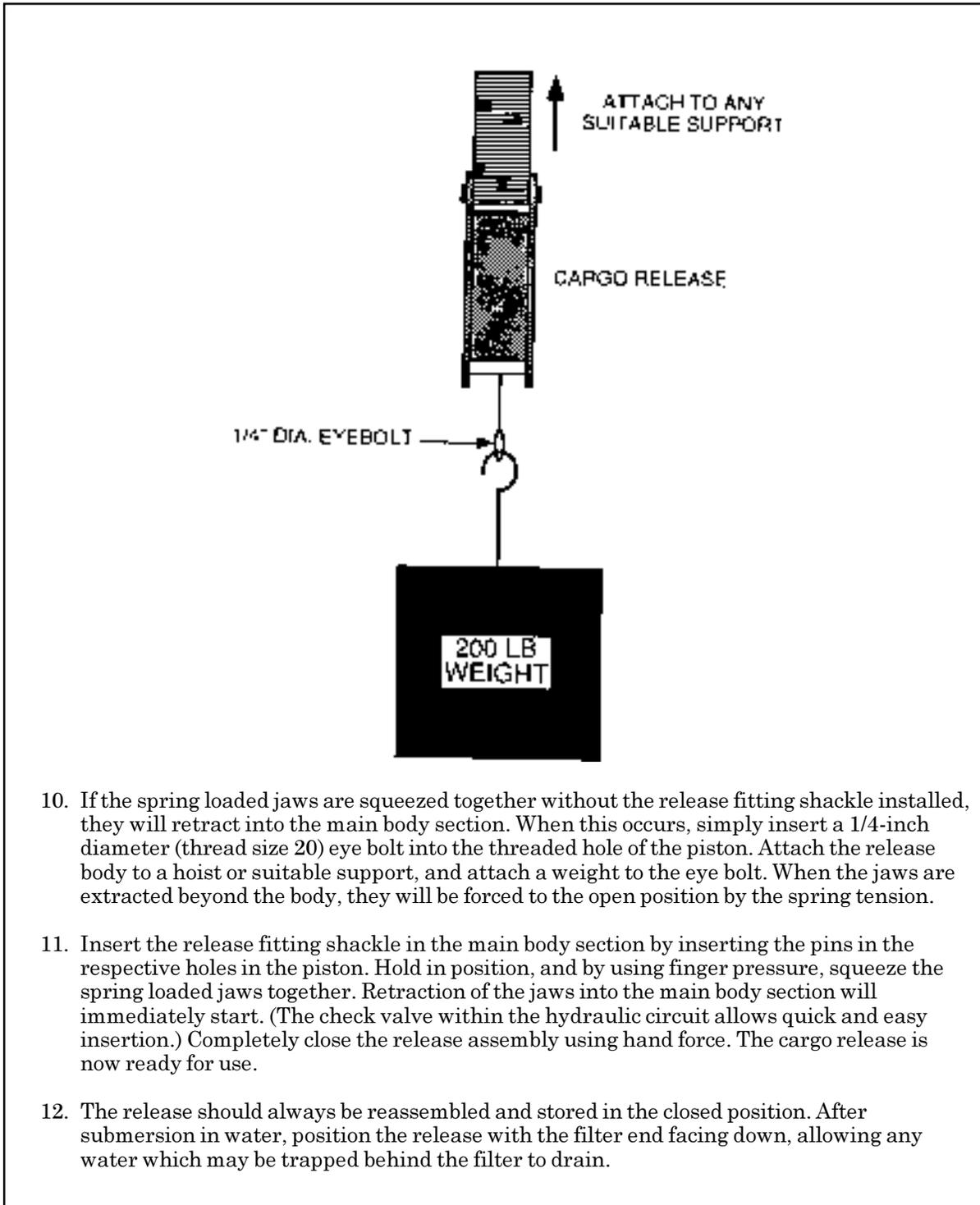
Step:

6. Inspect the main body section for fluid leakage. The jaws and release fitting shackle should be totally dry. The silicone fluid is clear and if any evidence of leakage is apparent, it will appear as wet and glistening. If leakage is evident, the release will not be used.

Note: The automatic cargo release part number 811-00220 incorporates a removable filter. The automatic cargo release part number 811-00220-1/-2 incorporates a nonremovable solid aluminum cap.

7. Inspect the presence, condition, and security of the removable filter. The filter is a thin silver disc of porous metal located on the end of the main body section. The removable filter is held securely in the main body piston cavity by a washer and retaining ring.
8. Inspect for presence, condition, and security of the solid aluminum cap. The cap is located on the end of the main body section.
9. Preparation for reuse is accomplished by simply flushing foreign particles from the unit and air drying.

Figure 3-61. Pre-Drop Activation Test (Continued)



10. If the spring loaded jaws are squeezed together without the release fitting shackle installed, they will retract into the main body section. When this occurs, simply insert a 1/4-inch diameter (thread size 20) eye bolt into the threaded hole of the piston. Attach the release body to a hoist or suitable support, and attach a weight to the eye bolt. When the jaws are extracted beyond the body, they will be forced to the open position by the spring tension.
11. Insert the release fitting shackle in the main body section by inserting the pins in the respective holes in the piston. Hold in position, and by using finger pressure, squeeze the spring loaded jaws together. Retraction of the jaws into the main body section will immediately start. (The check valve within the hydraulic circuit allows quick and easy insertion.) Completely close the release assembly using hand force. The cargo release is now ready for use.
12. The release should always be reassembled and stored in the closed position. After submersion in water, position the release with the filter end facing down, allowing any water which may be trapped behind the filter to drain.

Figure 3-61. Pre-Drop Activation Test (Continued)

c. Installation For Airdrop. Instructions for installing the cargo release are shown in Figure 3-63.

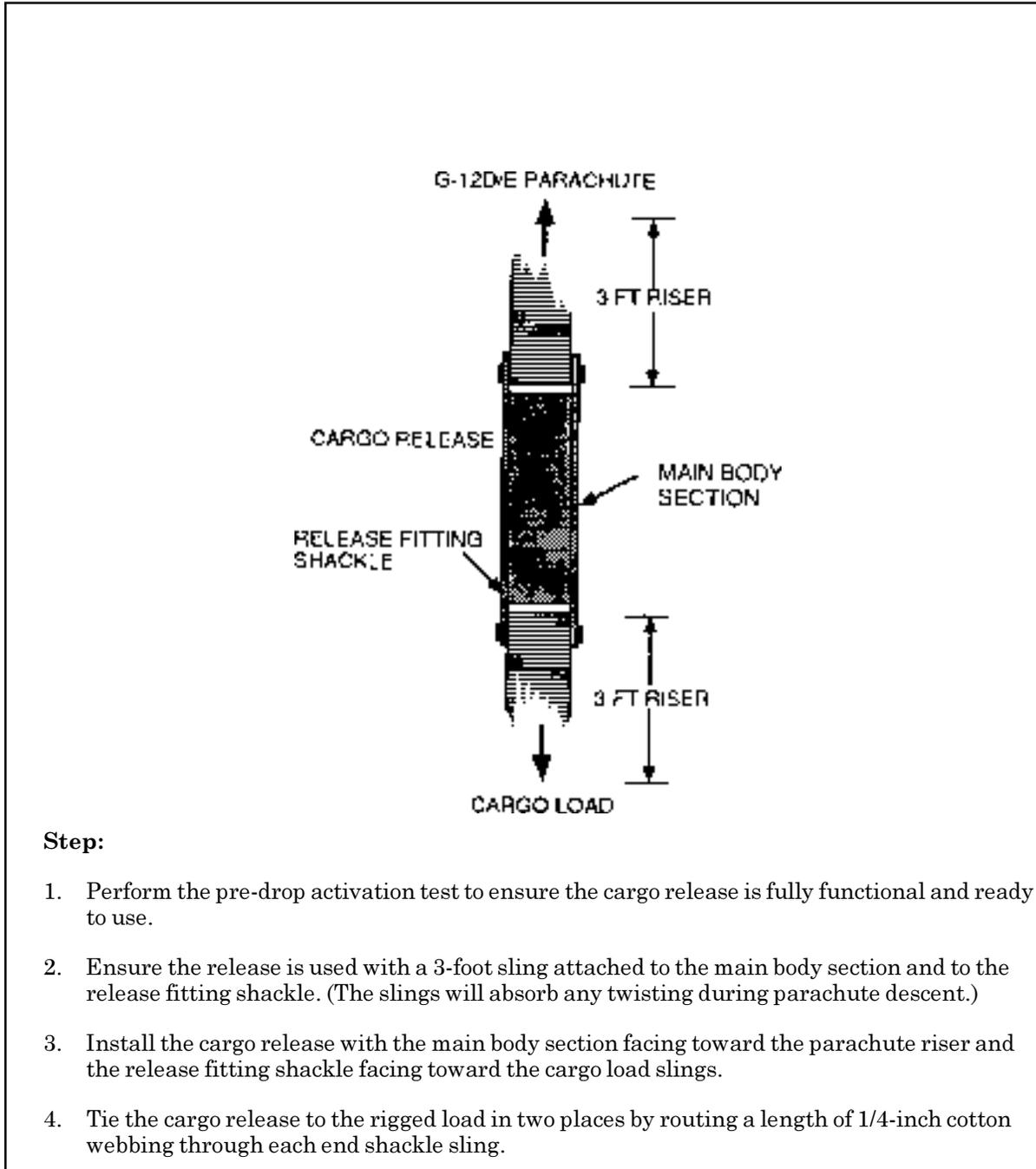


Figure 3-62. Cargo Release Installed

d. Post Drop Maintenance. Perform post drop maintenance according to the following:

Step:

1. Remove the retaining ring in the upper cargo release assembly using Truarc ring pliers. To remove the filter and washer, hold the release filter end downward. The filter and washer should fall out. Thoroughly rinse the main body section and release fitting shackle with fresh water. Direct flow using a water hose or faucet would be ideal. If the cargo release has not been maintained, the filter may adhere to the housing bore. Where severe corrosion exists, the filter may have to be replaced.
2. Thoroughly rinse the main body section and release fitting shackle with fresh water. (For nonremovable solid aluminum cap)
3. Inspect the cargo release visually for obvious damage. Use low pressure air if available to dry the unit. Minor leakage of the silicone fluid will be very difficult to detect at this point.

Note: The release fitting shackle assembly, (number 811-00324-1) may be procured through normal supply channels.

4. Reassemble the unit by inserting the release fitting shackle into the main body section and squeezing the spring loaded jaws together. Completely close the release assembly using hand pressure. If the release does not close fully and the ball locks cannot snap in place, then the unit should be subjected to the pre-drop inspection test.
5. To completely dry, hang or stand the assembled unit with the filter end (main body section) facing down to allow drainage of any water that may have accumulated behind the filter.
6. Any discrepancies found or suspected will be cause for rejection. Return the unit with a brief description of the problem and a point of contact to: Commander, Code 461100D, Naval Air Warfare Center Weapons Division, 1 Administration Circle, China Lake, CA 93555-6001. Do not return the unit to the manufacturer.

PARACHUTE RISERS ATTACHED TO THE PARACHUTE RELEASE

3-26. Lay the parachute release on top of the load with the bolt end of the parachute connectors toward the cargo parachutes. Bolt the parachute riser extensions to the parachute connectors of the M-1 or M-2 parachute releases as shown in Figures 3-63 through 3-65.

Note: Bolt the parachute riser extensions to the parachute connectors from rigger's right to left. They must be in the numerical order given for four-, six-, and eight-parachute loads. For seven-parachute loads, delete the eighth riser extension.

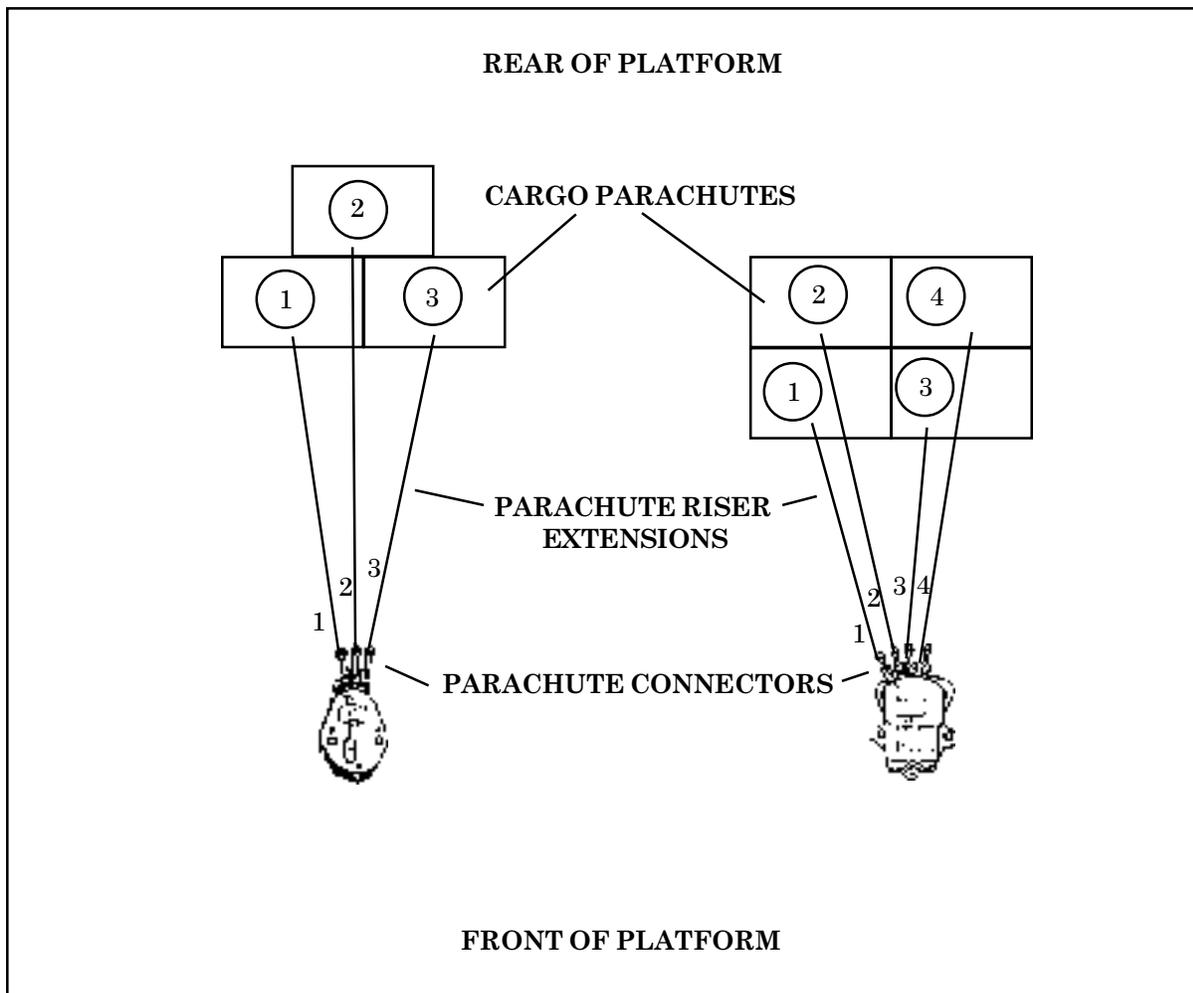


Figure 3-63. Three and Four Parachute Riser Extensions Attached to the Parachute

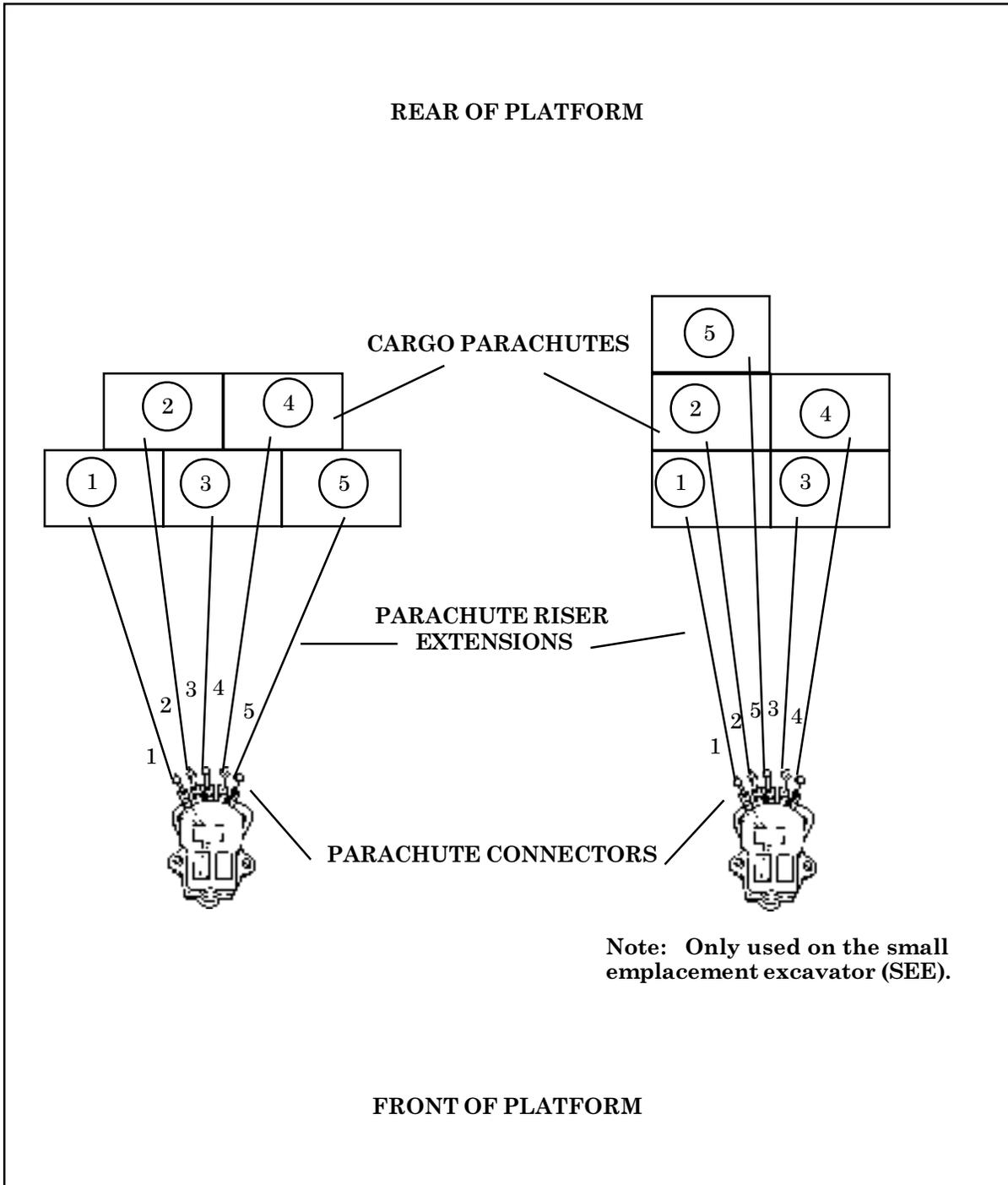


Figure 3-64. Five Parachute Riser Extensions Attached to the Parachute

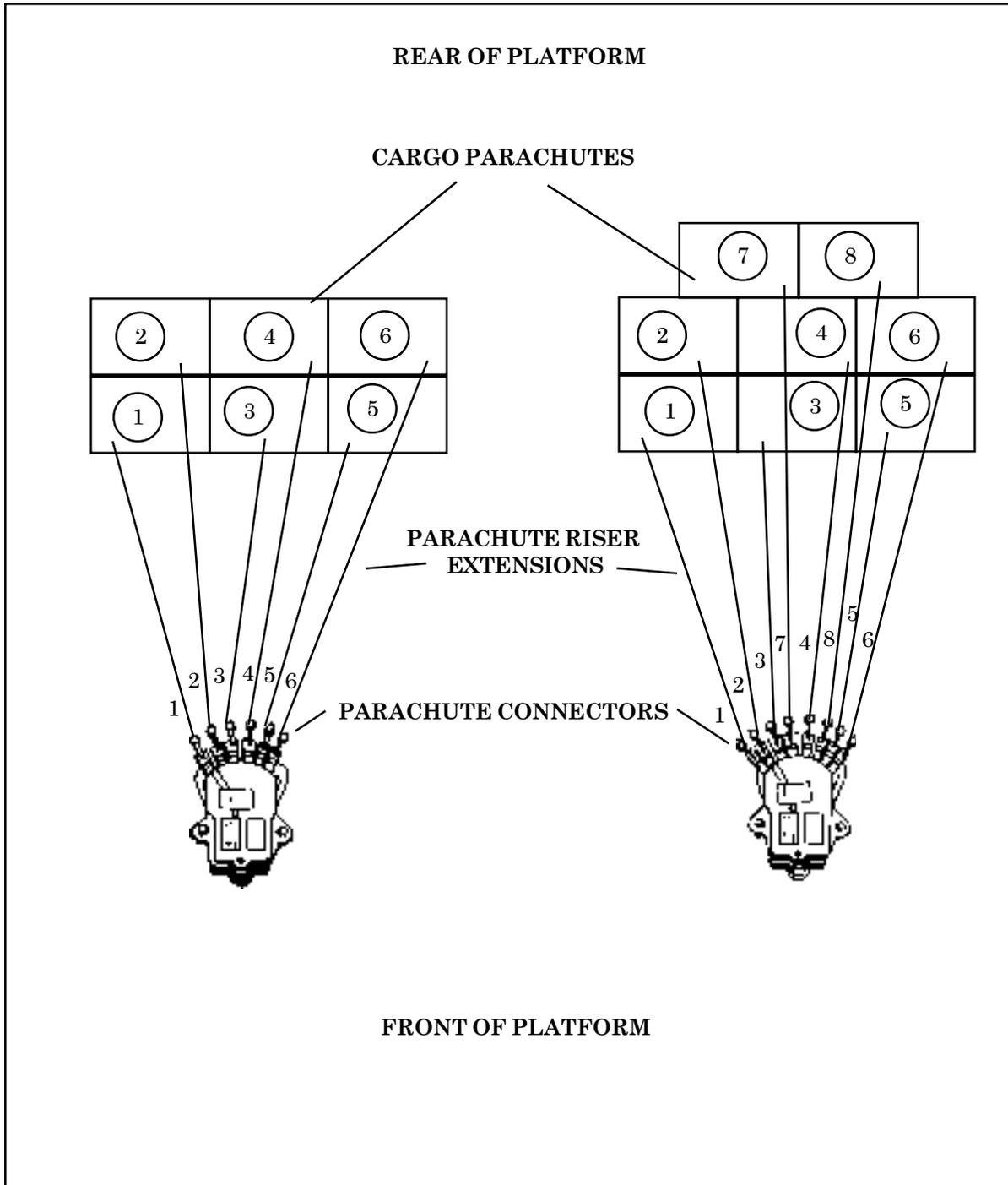


Figure 3-65. Six and Eight Parachute Riser Extensions Attached to the Parachute

Section VII

Extraction Lines And Parachutes

EXTRACTION LINES

3-27. The size and length of the extraction line used depends on the aircraft used and the size of the cargo extraction parachute rigged on the load.

CAUTION

While attaching the extraction line to the cargo extraction parachute, ensure that the keepers on the extraction line and the adapter web are pushed tight against the link and are taped in place with cloth-backed tape. If a keeper is not present on the adapter web or extraction line, tape in place with cloth-backed tape.

C-130/MC-130 AIRCRAFT

3-28. The primary method of airdrop platform extractions uses a 60-foot extraction line attached to a cargo extraction parachute as detailed in the following paragraphs.

a. One 15-Foot Cargo Extraction Parachute.

(1) Attach a 60-foot (1-loop), type XXVI nylon webbing extraction line as shown in Figure 3-66.

(2) Attach the adapter web of the 15-foot extraction parachute as shown in Figure 3-66.

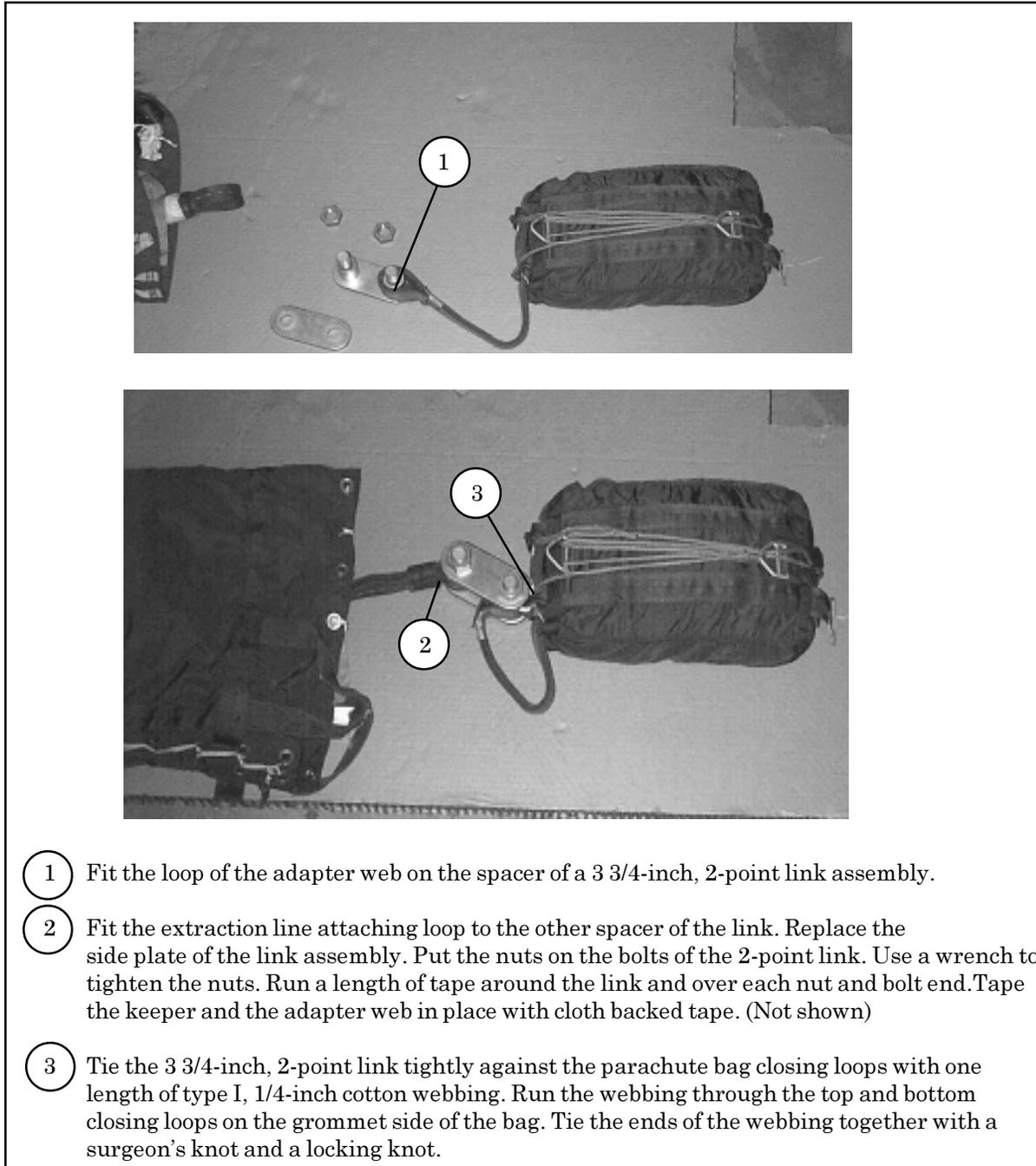


Figure 3-66. Extraction Line Attached to 15-Foot Extraction Parachute

b. One 22-Foot Cargo Extraction Parachute. The 22-foot cargo extraction parachute uses a 60-foot (3-loop), type XXVI nylon webbing extraction line. Attach the line to the parachute by adapting the procedures shown in Figure 3-67 using a 3 3/4-inch, 2-point link.

c. One 28-Foot Cargo Extraction Parachute. The 28-foot, cargo extraction parachute uses a 60-foot (3-loop), type XXVI nylon webbing extraction line. Using a 5 1/2-inch, 2-point link, attach the line to the parachute by adapting the procedures shown in Figure 3-67.

Note: See Table 2-11 to determine the proper link assembly (3 3/4- or 5 1/2-inch) to use.

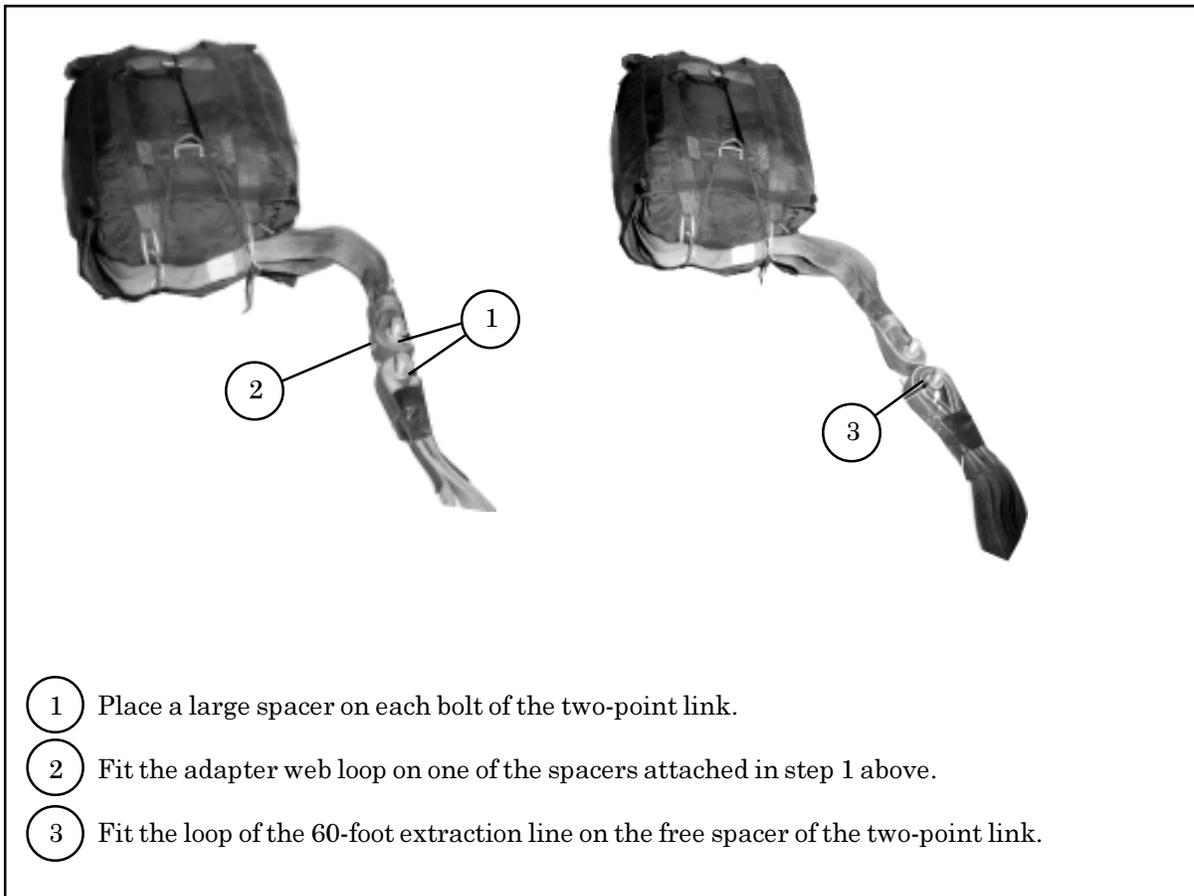
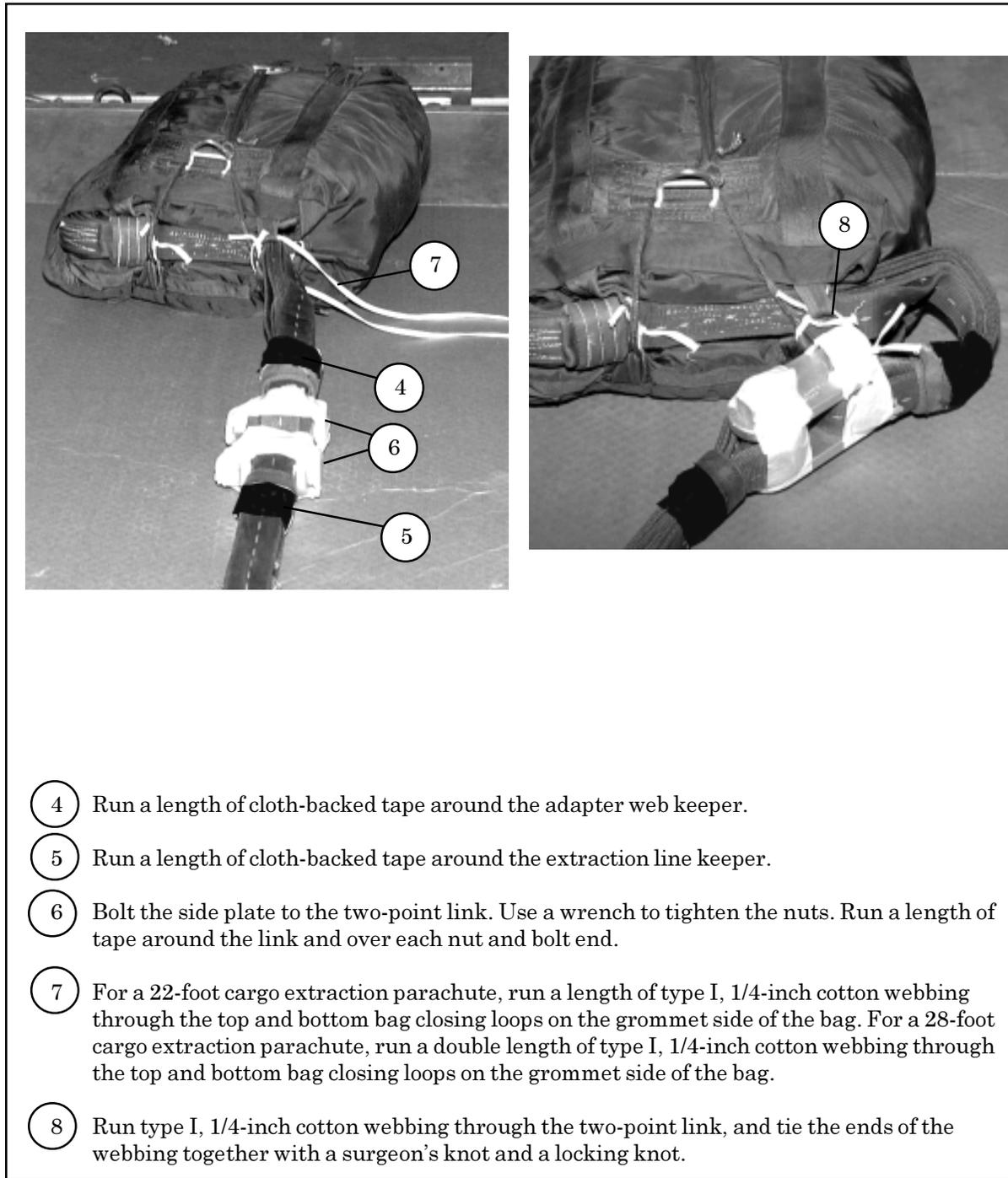


Figure 3-67. Extraction Line Attached to 22- or 28-Foot Cargo Extraction Parachute With a 3 3/4- or 5 1/2-Inch, Two-Point Link Assembly



- ④ Run a length of cloth-backed tape around the adapter web keeper.
- ⑤ Run a length of cloth-backed tape around the extraction line keeper.
- ⑥ Bolt the side plate to the two-point link. Use a wrench to tighten the nuts. Run a length of tape around the link and over each nut and bolt end.
- ⑦ For a 22-foot cargo extraction parachute, run a length of type I, 1/4-inch cotton webbing through the top and bottom bag closing loops on the grommet side of the bag. For a 28-foot cargo extraction parachute, run a double length of type I, 1/4-inch cotton webbing through the top and bottom bag closing loops on the grommet side of the bag.
- ⑧ Run type I, 1/4-inch cotton webbing through the two-point link, and tie the ends of the webbing together with a surgeon's knot and a locking knot.

Figure 3-67. Extraction Line Attached to 22- or 28-Foot Cargo Extraction Parachute With a 3 3/4- or 5 1/2-Inch, Two-Point Link Assembly (Continued)

d. Two 28-Foot Cargo Extraction Parachutes. A cluster of two 28-foot cargo extraction parachutes as shown in Figure 3-68, is attached to one end of a 60-foot (6-loop), type XXVI nylon webbing line. The other end of the line is attached to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft.

C-141 AIRCRAFT

3-29. A low-velocity airdrop platform load rigged for aerial delivery from a C-141 aircraft needs an extraction line based on the size of the extraction parachute. All extraction lines used on loads rigged for a C-141 aircraft must be continuous, type XXVI nylon webbing extraction lines. Attach the extraction line to the cargo extraction parachute as follows:

a. One 15-Foot Cargo Extraction Parachute. Attach a continuous 160-foot (1-loop), type XXVI nylon extraction line to the parachute by adapting procedures shown in Figure 3-66.

b. One 22-Foot Cargo Extraction Parachute. The 22-foot cargo extraction parachute needs a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line. Attach the line to the parachute by adapting the procedures shown in Figure 3-67.

c. One 28-Foot Cargo Extraction Parachute. The 28-foot cargo extraction parachute needs a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line. Attach the line to the parachute by adapting the procedures shown in Figure 3-67.

d. Two 28-Foot Cargo Extraction Parachutes. A cluster of two 28-foot cargo extraction parachutes, as shown in Figure 3-68 needs a continuous 120-foot (6-loop), type XXVI nylon webbing extraction line. The extraction line is attached to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft.

EXTRACTION PARACHUTE CLUSTERS

3-30. Cluster two 28-foot cargo extraction parachutes for an initial extraction as shown in Figure 3-68 and for a sequential extraction as shown in Figure 3-69.

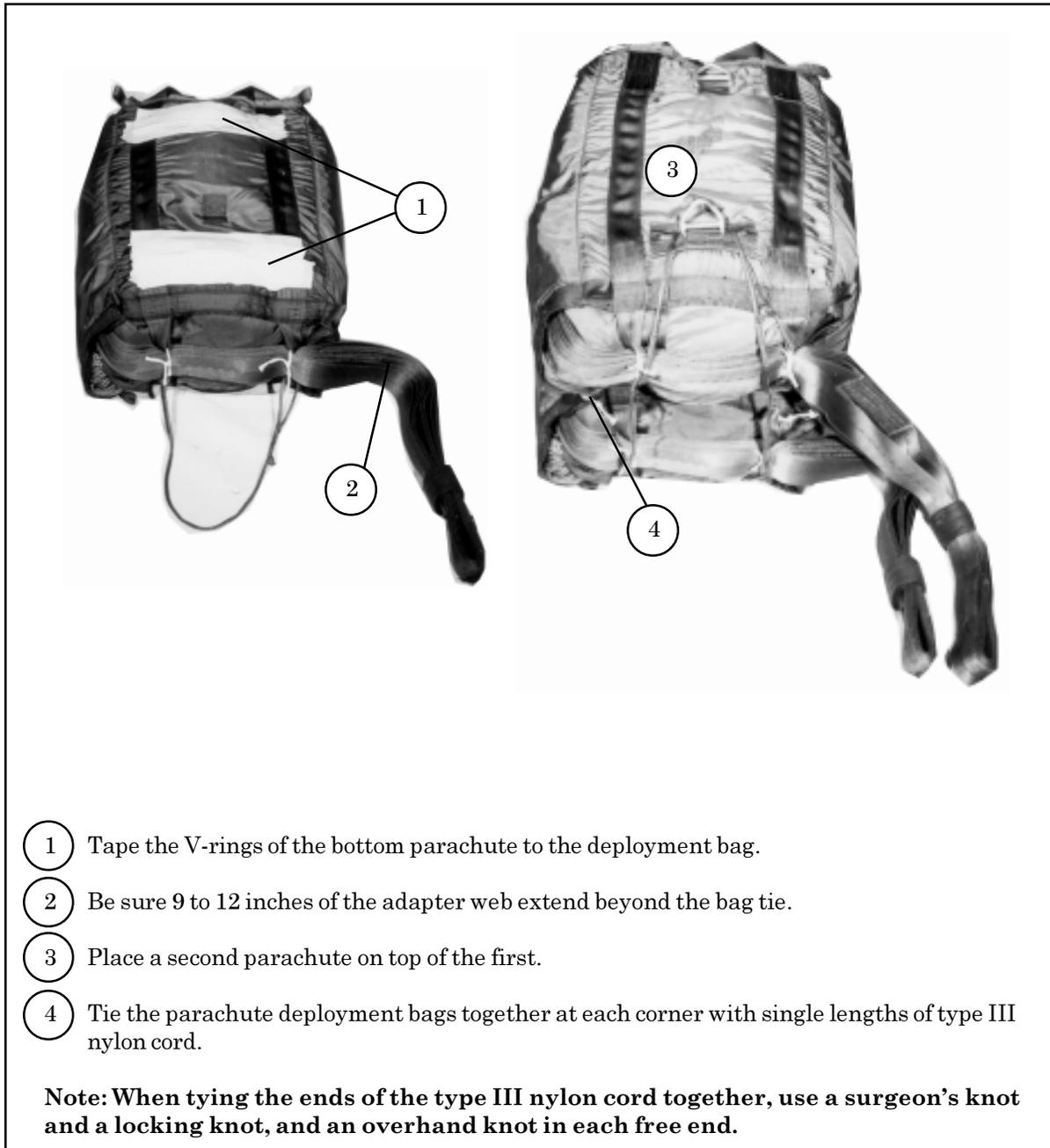


Figure 3-68. Clustering Extraction Parachutes for an Initial Extraction from C-130/C-141 Aircraft

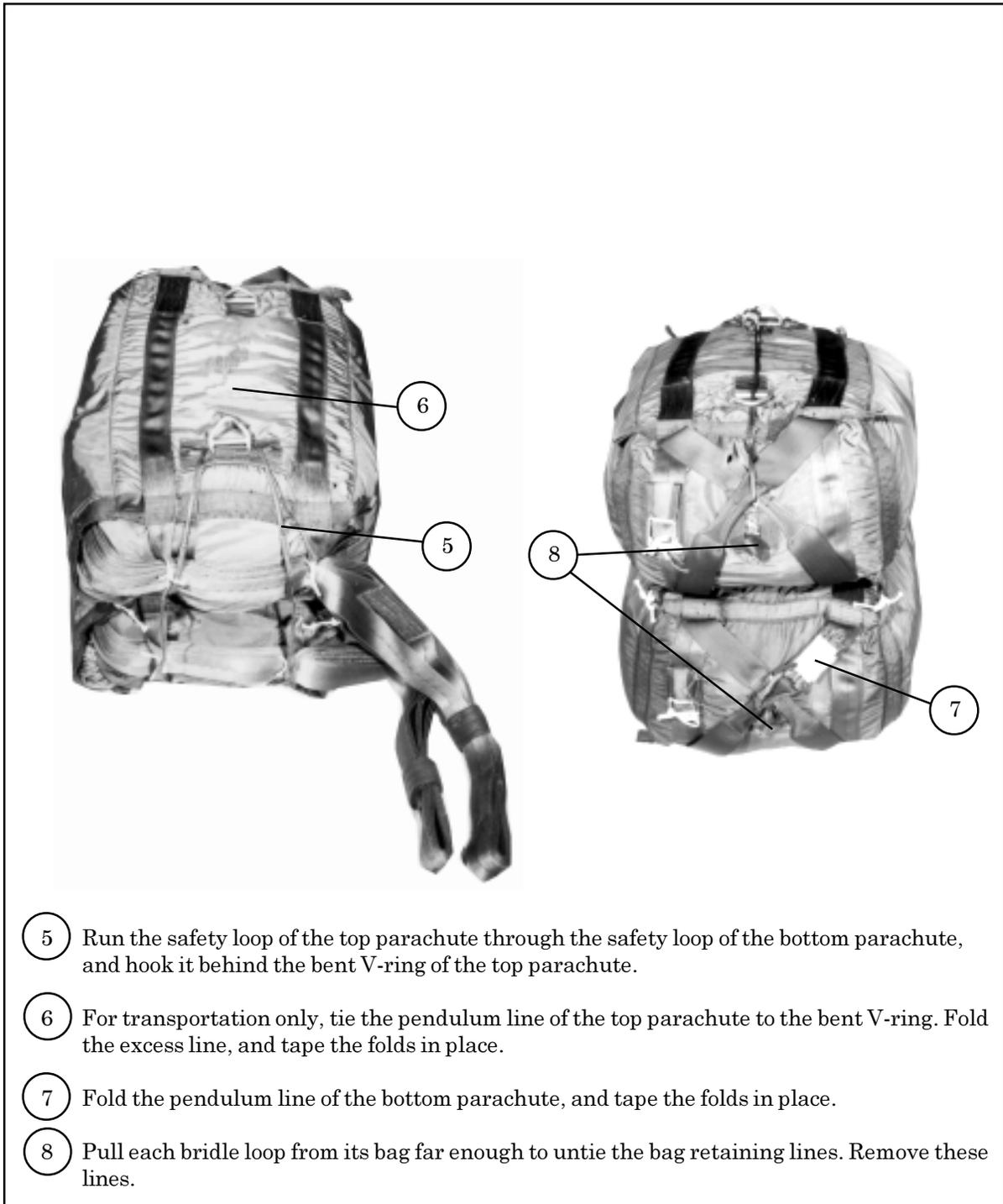


Figure 3-68. Clustering Extraction Parachutes for an Initial Extraction from C-130/C-141 Aircraft (Continued)