

## CHAPTER 8

### CERTIFIED DUAL-POINT RIGGING PROCEDURES FOR ENGINEER EQUIPMENT

#### 8-1. INTRODUCTION

This chapter contains rigging procedures for dual-point lift of engineer equipment loads that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified dual-

point rigging procedures for engineer equipment loads are in this section. Paragraphs 8-2 through 8-35 give detailed instructions for rigging loads.

**NOTE: Reach Pendants may be used on dual point loads. Place a Reach Pendant on each apex fitting. A static discharge person is not required when using a Reach Pendant.**

#### 8-2. D5B Tractor Dozer, Sectionalized

**a. Applicability.** The following items in Table 8-1 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-1. D5B Tractor Dozer, Sectionalized**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Tractor, Dozer, D5B, Power Section	18,915	25K	8/57	CH-47	100
Tractor, Dozer, D5B, Track Section	13,735	25K	12/21	CH-47	110

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) (2 each) with two additional apex fittings.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Four persons can sectionalize this load in 2 1/2 hours and rig each section in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

**(1) Preparation.** Prepare the load using the following steps:

- (a) Sectionalize the dozer according to the operator's manual. Do not remove the winch and winch pump.
- (b) Remove the exhaust stack and secure it on top of the winch with Type III nylon cord.
- (c) Remove the pre-air cleaner and secure it on the seat with Type III nylon cord.
- (d) Tape all lights and gages.
- (e) Secure the seat with Type III nylon cord.
- (f) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for

proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-1.

**NOTE: Hookup of this load presents substantial risk of damage to the load or injury to the hookup personnel. Use of a reach pendant is recommended for this load.**

(3) **Hookup.** Two hookup teams are required for this load. The power section hookup team stands on the top of the power section. The static wand person discharges the static electricity with the static wand. The forward hookup person stands on the driver's seat and places apex fitting 1 onto the forward cargo hook. The aft hookup

person stands on the engine compartment and places apex fitting 2 onto the aft cargo hook. The track section hookup team stands on top of the track section. The static wand person discharges the static electricity with the static wand. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

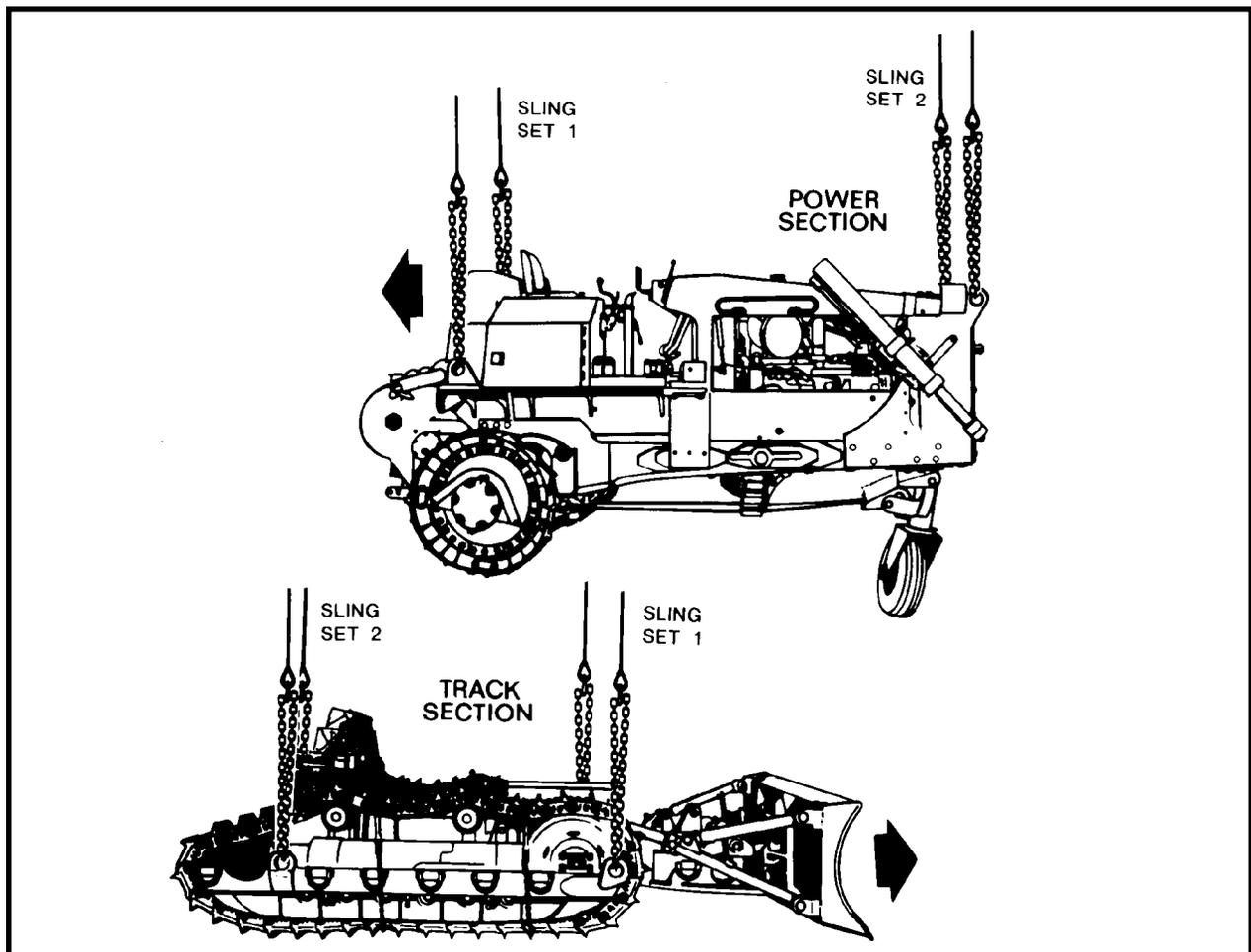


Figure 8-1. D5B Tractor Dozer, Sectionalized

<b>RIGGING STEPS POWER SECTION</b>	<b>RIGGING STEPS TRACK SECTION</b>
<ol style="list-style-type: none"> <li>1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the fuel tank.</li> <li>2. Loop the chain end of the left and right sling legs through their respective lift provisions located on each side of the fuel tank. Place the correct link from Table 8-1 in the grab hook.</li> <li>3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the engine compartment.</li> <li>4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front corners. Place the correct link from Table 8-1 in the grab hook. Secure excess chain with tape or Type III nylon cord.</li> <li>5. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</li> </ol>	<ol style="list-style-type: none"> <li>1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the forward (blade) end.</li> <li>2. Loop the chain end of the left and right sling legs through their respective lift provisions located in front of the forward wheels. Place the correct link from Table 8-1 in the grab hook. Secure excess chain with tape or Type III nylon cord.</li> <li>3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the rear end of the track section.</li> <li>4. Loop the chain end of the left and right sling legs through their respective lift provisions located near the aft end of the track. Place the correct link from Table 8-1 in the grab hook. Secure excess chain with tape or Type III nylon cord.</li> <li>5. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</li> </ol>

*Figure 8-1. D5B Tractor Dozer, Sectionalized (continued)*

### 8-3. Tractor, Full-Track, Case Model 1150

**a. Applicability.** The following item in Table 8-2 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-2. Tractor, Full-Track, Case Model 1150**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Tractor, Full-Track, with Bucket, Case Model 1150	27,000	40K	8/16	CH-53	110

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting .

(a) Chain length, part number 607050, from a 40,000-pound capacity sling set (4 each).

(b) Coupling link, part number 577-0815, from a 40,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Raise the bucket 2 to 3 feet off the ground.

(b) Tape the air filter intake, the exhaust pipe opening, and all lights.

(c) Ensure the winch line is completely reeled in.

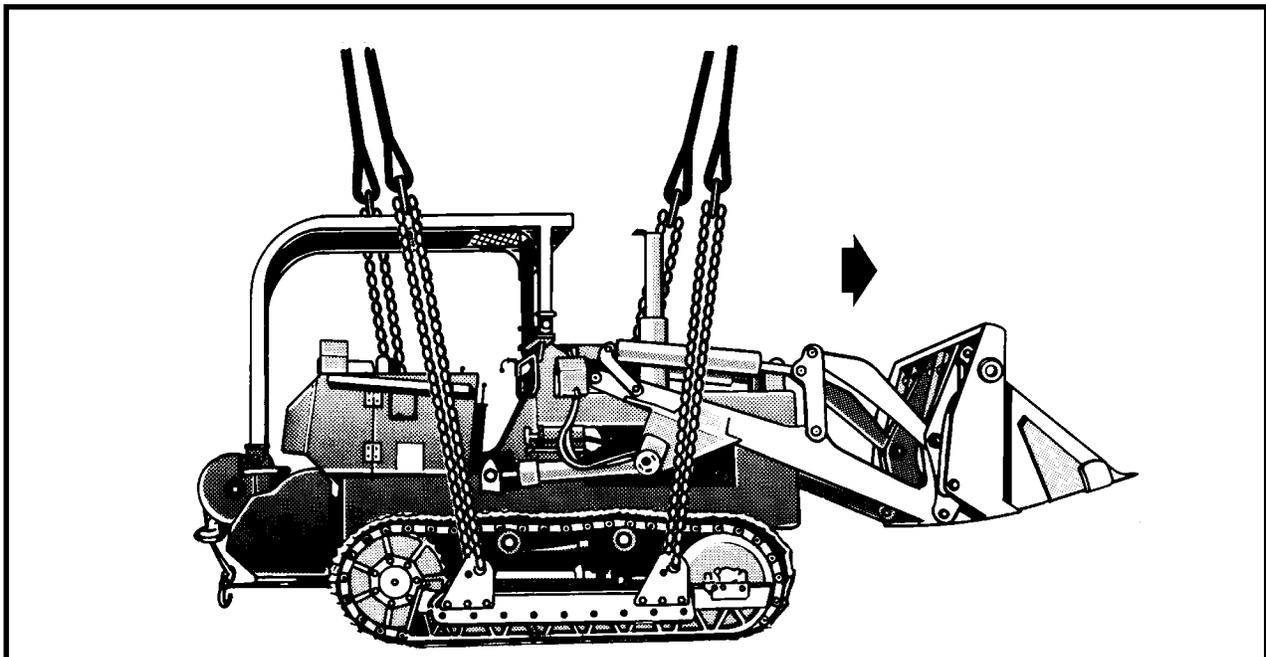
(d) Engage the hand brake and place the transmission in neutral.

(e) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-2.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the engine deck and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the Roll Over Protection System (ROPS) and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the tractor and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

**NOTE:** The additional chain section is added after each sling leg chain is looped through the lift provision because the coupling link will not fit through the opening in the lift provision.

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the engine compartment.

2. Loop the chain end of the left and right sling legs through their respective lift provisions located aft of the front idler. Using the coupling link, add the chain length to the sling leg chain. Place the correct link from Table 8-2 in the grab hook.

3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the ROPS.

4. Loop the chain end of the left and right sling legs through their respective lift provisions located forward of the aft drive sprockets. Using the coupling link, add the chain length to the sling leg chain. Place the correct link from Table 8-2 in the grab hook. Secure the excess chain with tape or Type III nylon cord.

5. Pad the chains where they contact the load.

6. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-2. Tractor, Full-Tracked, Case Model 1150*

## 8-4. Tractor, Full-Track, Case Model 1150E

**a. Applicability.** The following item in Table 8-3 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-3. Tractor, Full-Track, Case Model 1150E**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Tractor, Full-Track, Case Model 1150E	24,062	40K	5/50	CH-53	75

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting .

(a) Chain length, part number 607050, from a 40,000-pound capacity sling set (2 each).

(b) Coupling link, part number 577-0815, from a 40,000-pound sling set (2 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

(6) Tiedown assembly, chain, MB-1 (10,000-pound capacity).

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Raise the bucket 2 to 3 feet off the ground. Secure the blade in the UP position with the MB-1 tiedown chain.

(b) Twist the lights inward. Tape the exhaust pipe opening, lights, and all glass.

(c) Ensure the winch line is completely reeled in.

(d) Engage the hand brake and place the transmission in neutral.

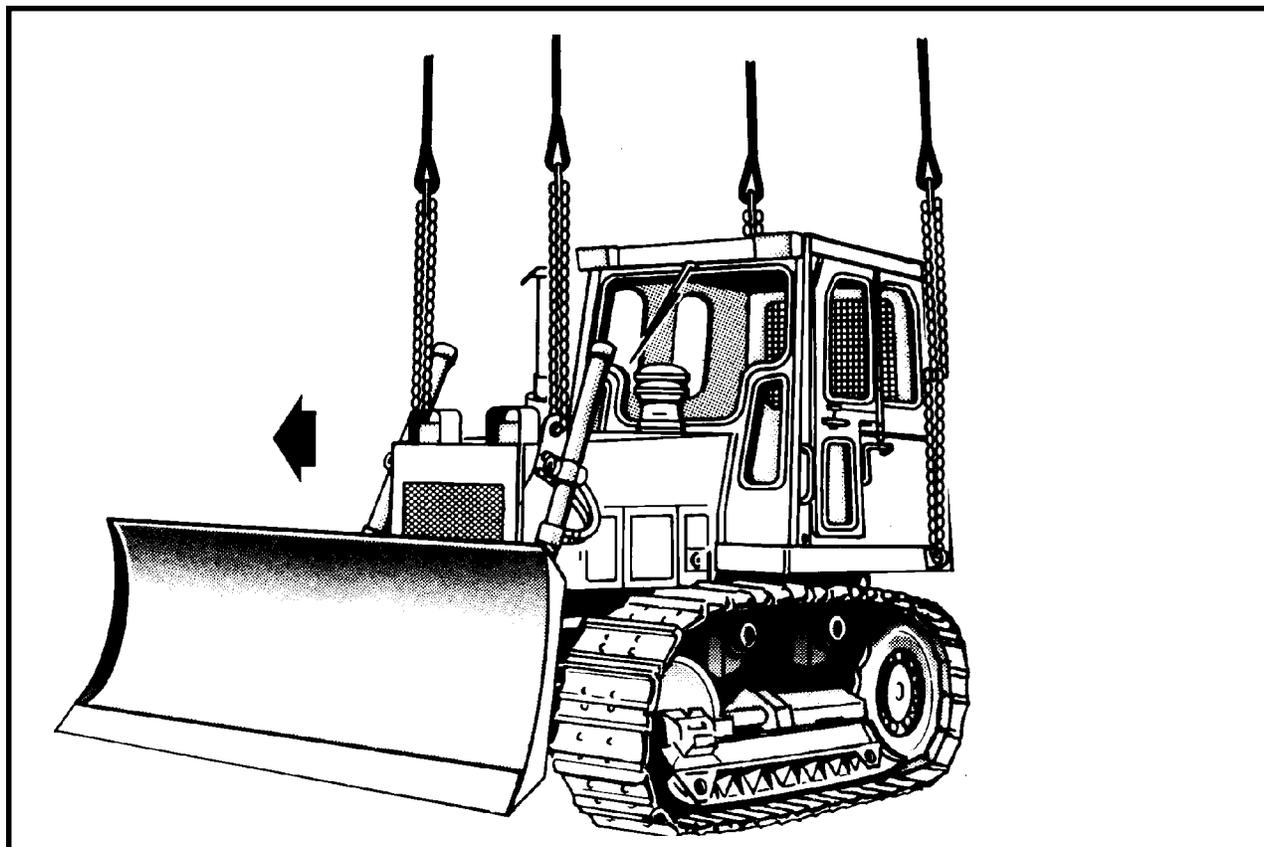
(e) Secure all lids, caps, and doors with tape or Type III nylon cord.

(f) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-3.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the engine deck and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the rear of the deck or on top of the cab and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the tractor and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



**RIGGING STEPS**

**NOTE:** The additional chain section is added to the aft sling leg chain after the sling leg chain is looped through the lift provision because the coupling link will not fit through the opening in the lift provision.

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the engine compartment.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front end of the engine compartment. Place the correct link from Table 8-3 in the grab hook.
3. Place two sling legs on apex fitting number 2. Posi-

tion apex fitting number 2 on top of the cab.

4. Loop the chain end of the left and right sling legs through their respective lift provisions located near the base of the cab. Using the coupling link, add the chain length to the sling leg chain. Place the correct link from Table 8-3 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Pad the chains where they contact the load.
6. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-3. Tractor, Full-Tracked, Case Model 1150E*

## 8-5. Tractor (Dozer), Full-Tracked, Type III, JD450G

**a. Applicability.** The following items in Table 8-4 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-4. Tractor (Dozer), Full-Tracked, Type III, JD450G**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Tractor (Dozer), Full-Tracked, Type III, JD450G	18,300	25K	3/10	CH-47	100
Tractor (Dozer), Full-Tracked, Type III, JD450G, without ROPS	17,700	25K	3/10	CH-47	100
Tractor (Dozer), Full-Tracked, Type III, JD450G, without ROPS and Winch	16,160	25K	3/10	CH-47	100

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity) with one additional apex fitting .

(a) Chain length, part number 38850-00053-102, from a 25,000-pound capacity sling set (4 each).

(b) Coupling link, part number 664241, from a 25,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Heavy padding (1/4 section of a steel-belted tire or a length of fire hose or equivalent) (2 each).

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Connect one additional chain length to each chain on each sling set with a coupling link.

(b) Prepare the tractor for mission needs using the operator's manual. Special tools may be required to remove the ROPS or winch.

(c) Tape rear sling guides on the ROPS, all lights, gages, and glass.

(d) Engage the hand brake and place the transmission in neutral.

(e) Secure all loose equipment with tape or Type III nylon cord.

(f) Ensure the fuel tank is not over 3/4 full. Ensure the fuel tank cap is in the vent position. Inspect the oil filter caps and battery caps for proper installation.

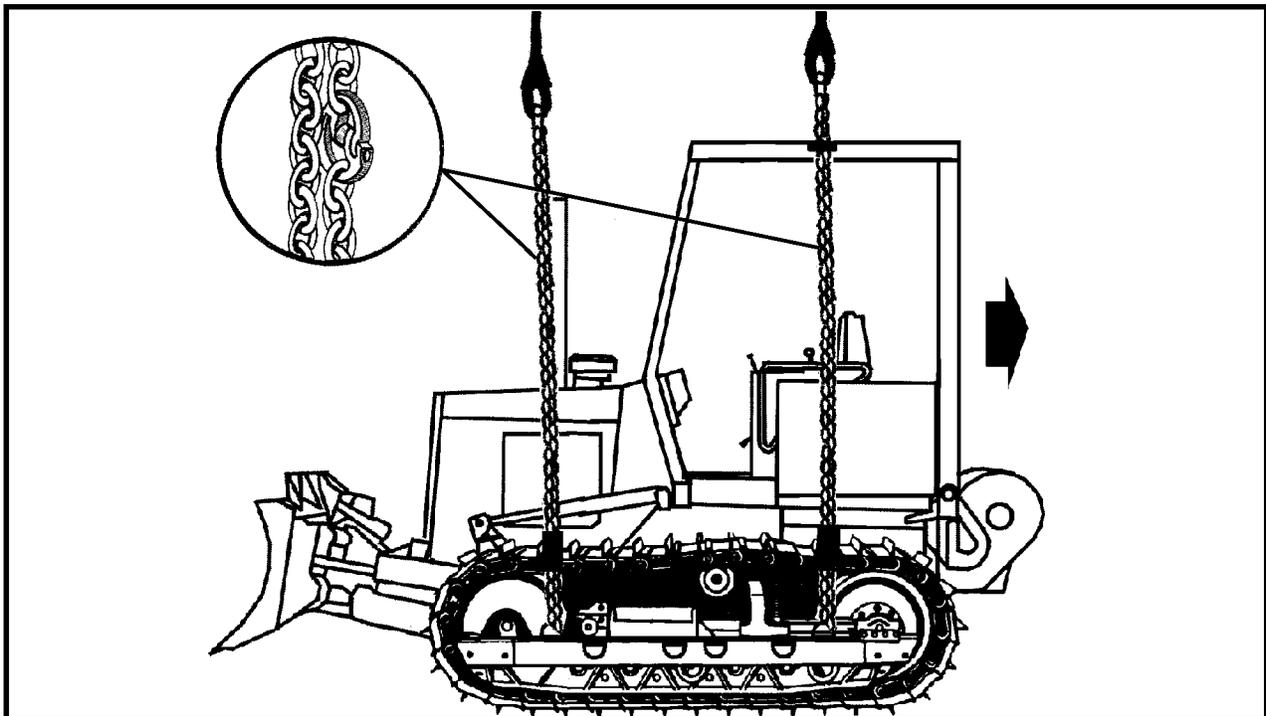
(2) **Rigging.** Rig the load according to the steps in Figure 8-4.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of

the dozer and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the ROPS or aft deck and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the dozer and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured,

the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



**RIGGING STEPS**

**NOTE: Padding for the rear chains cannot be added until the chains have been routed through the sling guides and attached to the grab hooks.**

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the engine compartment.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located aft of the front idler. Place the correct link from Table 8-4 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the ROPS.

4. Loop the chain end of the left sling leg through the left rear sling guide on the ROPS, down through the left rear lift provision, and back up through the left rear sling guide. Place the correct link from Table 8-4 in the grab hook. Secure the excess chain with tape or Type III nylon cord. Repeat the above procedures using the right sling leg on the right side of the dozer.
5. Secure heavy padding to the slings in the area where they contact the tracks.
6. Raise the apex fittings above the dozer. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-4. Tractor (Dozer), Full-Track, Type III, JD450G*

## 8-6. Tractor, Wheeled, Industrial, Case Model 580

**a. Applicability.** The following item in Table 8-5 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-5. Tractor, Wheeled, Industrial, Case Model 580**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Tractor, Case, 580	10,000	15K	37/59	CH-53	110

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (15,000-pound capacity) with one additional apex fitting .

(a) Chain length, part number 34080-4, from a 15,000-pound capacity sling set (2 each).

(b) Coupling link, part number 31611, from a 15,000-pound sling set (2 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (2 each).

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Connect one additional chain length to each chain on sling set number 1 with a coupling link.

(b) Raise the front bucket halfway and tilt the bucket

towards the rear.

(c) Position the backhoe arm with the bucket in the UP position. Secure the arm with the CGU-1/B tiedown straps to prevent swinging. Route the tiedowns from the stabilizer to the arm.

(d) Engage the hand brake and place the transmission in neutral.

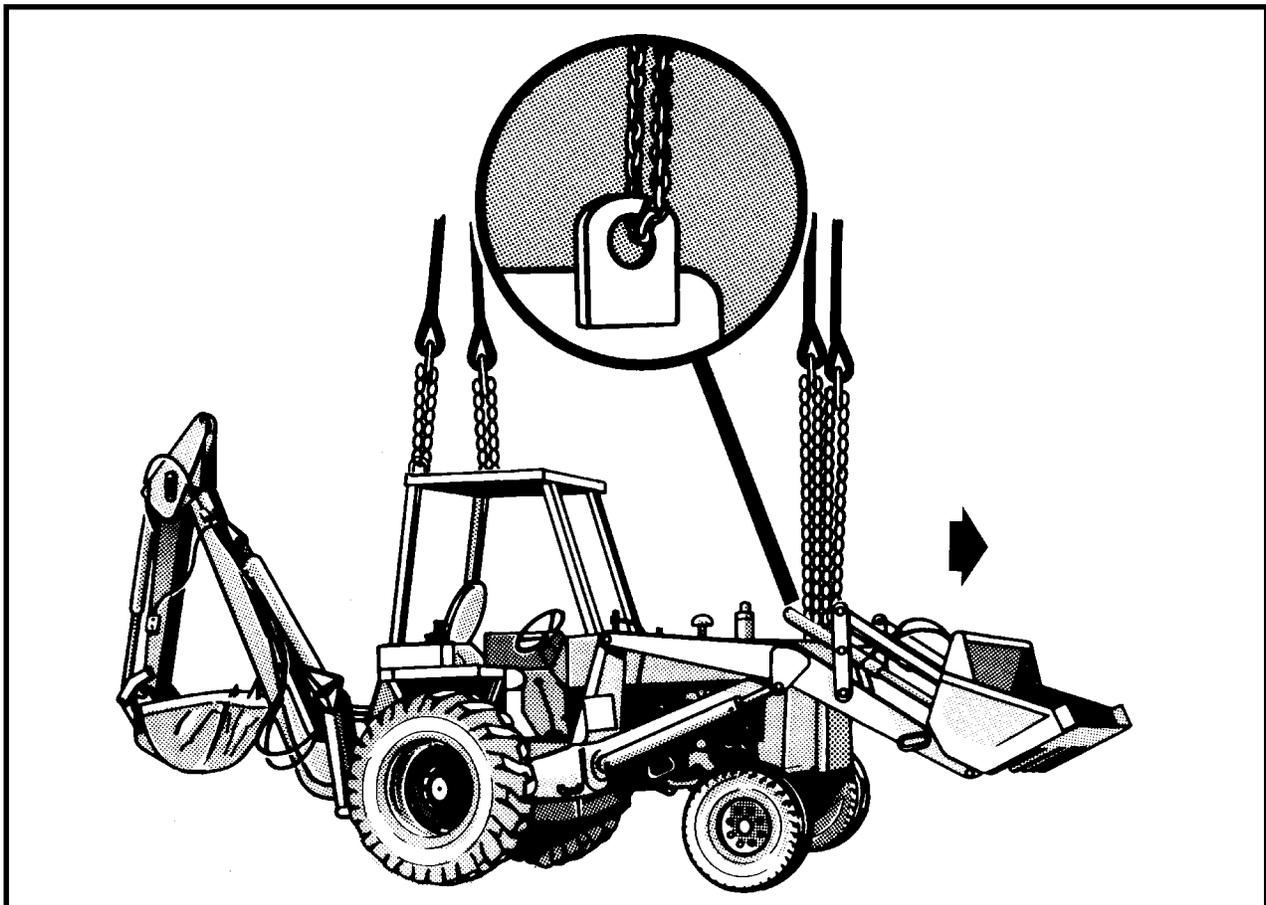
(e) Secure all caps lids and doors with tape or Type III nylon cord. Tape all lights, gages, and glass.

(f) Ensure the fuel tank is not over 3/4 full. Ensure the fuel tank cap is in the vent position. Inspect the oil filter caps and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-5.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the engine deck and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the ROPS or aft deck and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the dozer and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the engine compartment.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front corners of the engine hook. Place the correct link from Table 8-5 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the ROPS.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the rear corners of the ROPS. Place the correct link from Table 8-5 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Raise the apex fittings above the tractor. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-5. Tractor (Dozer), Full-Tracked, Type III, JD450G*

## 8-7. Small Emplacement Excavator (SEE)

**a. Applicability.** The following items in Table 8-6 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-6. Small Emplacement Excavator (SEE)**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Small Emplacement Excavator	16,240	25K	Listed in Rigging Steps	CH-47	100
Small Emplacement Excavator	16,240	40K	Listed in Rigging Steps	CH-53	125

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity) with one additional apex fitting (CH-47 only).

**OR**

(2) Sling set (40,000-pound capacity) with one additional apex fitting (CH-53 only).

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Elevate the bucket halfway and tilt toward the rear. Ensure that the front end loader assembly travel locks located at the end of both front end loader boom cylinders are properly pinned in place.

(b) Secure the steering wheel, doors, and all loose equipment with tape or Type III nylon cord.

(c) Remove the pre-air cleaner and secure it on the seat with Type III nylon cord.

(d) Tape the exhaust pipe opening, all lights, and glass.

(e) Fold side mirrors inboard and tie together with Type III nylon cord. Tape the windshield wipers to the windshield and secure the engine compartment hood with tape or Type III nylon cord.

(f) Engage the hand brake and place the transmission in neutral.

(g) Secure all hydraulic lines with tape or Type III nylon cord.

(h) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

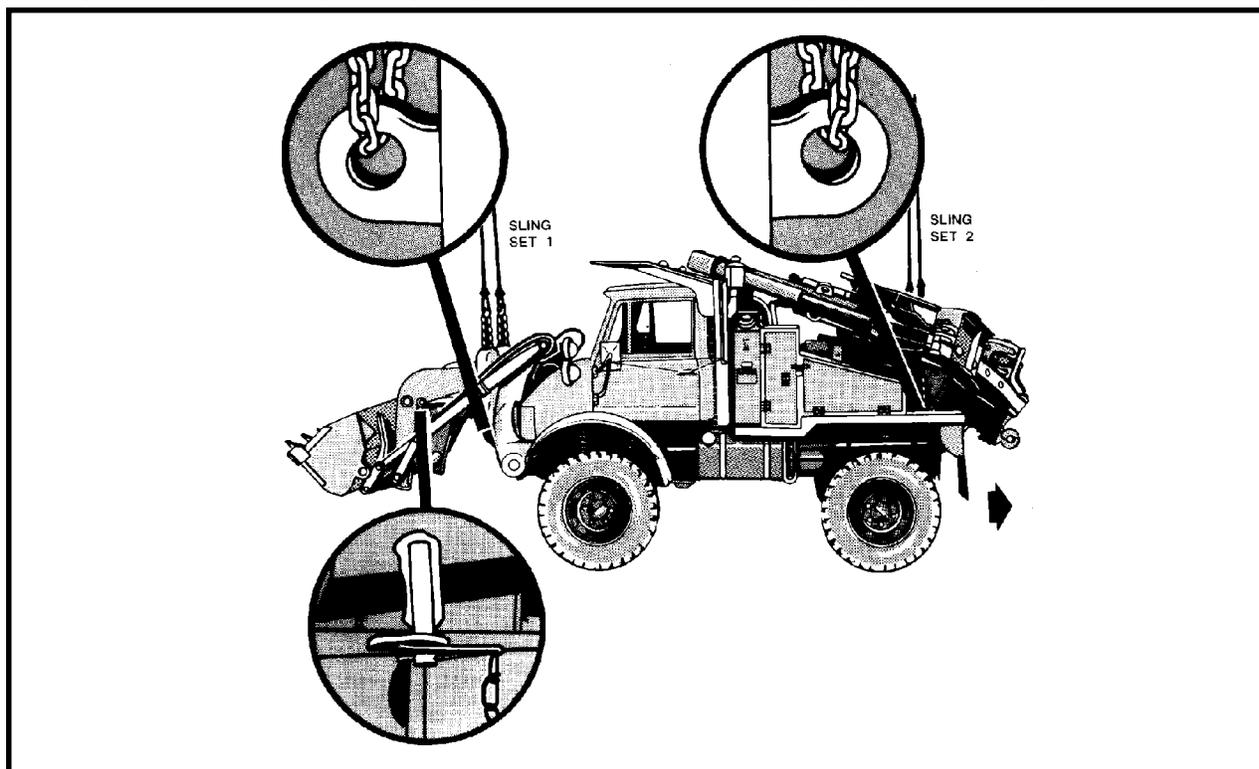
(2) **Rigging.** Rig the load according to the steps in Figure 8-6.

(3) **Hookup.** Two hookup teams are required for this load. The static wand person discharges the static electricity with the static wand. The forward hookup person stands on top of the FOPS and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on top of the FOPS and places apex fitting 1 onto the aft

cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area

underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

**NOTE: Use the conversion chart in Appendix B for 40,000-pound capacity sling set link counts**

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on forward end of the FOPS.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front bumper inboard of the front end loader support arms. Place link 3 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the aft end of the FOPS.
4. Loop the chain end of the left sling leg through the

left lift provision (closest to the operator's seat) located at the top left between the left rear wheel and frame. Place link 5 in the grab hook.

5. Loop the chain end of the right sling leg through the right lift provision (closest to the backhoe bucket) located at the top right between the right rear wheel and frame. Place link 10 in the grab hook. Secure the excess chain with tape or Type III nylon cord.

6. Pad the chains where they contact the load.

7. Raise the apex fittings above the tractor. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 8-6. Small Emplacement Excavator (SEE)

## 8-8. High Mobility Materiel Handler (HMMH)

**a. Applicability.** The following item in Table 8-7 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-7. High Mobility Materiel Handler (HMMH)**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
High Mobility Materiel Handler	15,650	25K	3/56	CH-47	110

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) with one additional apex fitting .
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Ensure all travel locks are pinned in place.
  - (b) Secure the steering wheel, doors, and all loose equipment with tape or Type III nylon cord.
  - (c) Fold side mirrors inboard and tie together with

Type III nylon cord. Tape the windshield wipers to the windshield and secure the engine compartment hood with tape or Type III nylon cord.

(d) Engage the hand brake and place the transmission in neutral.

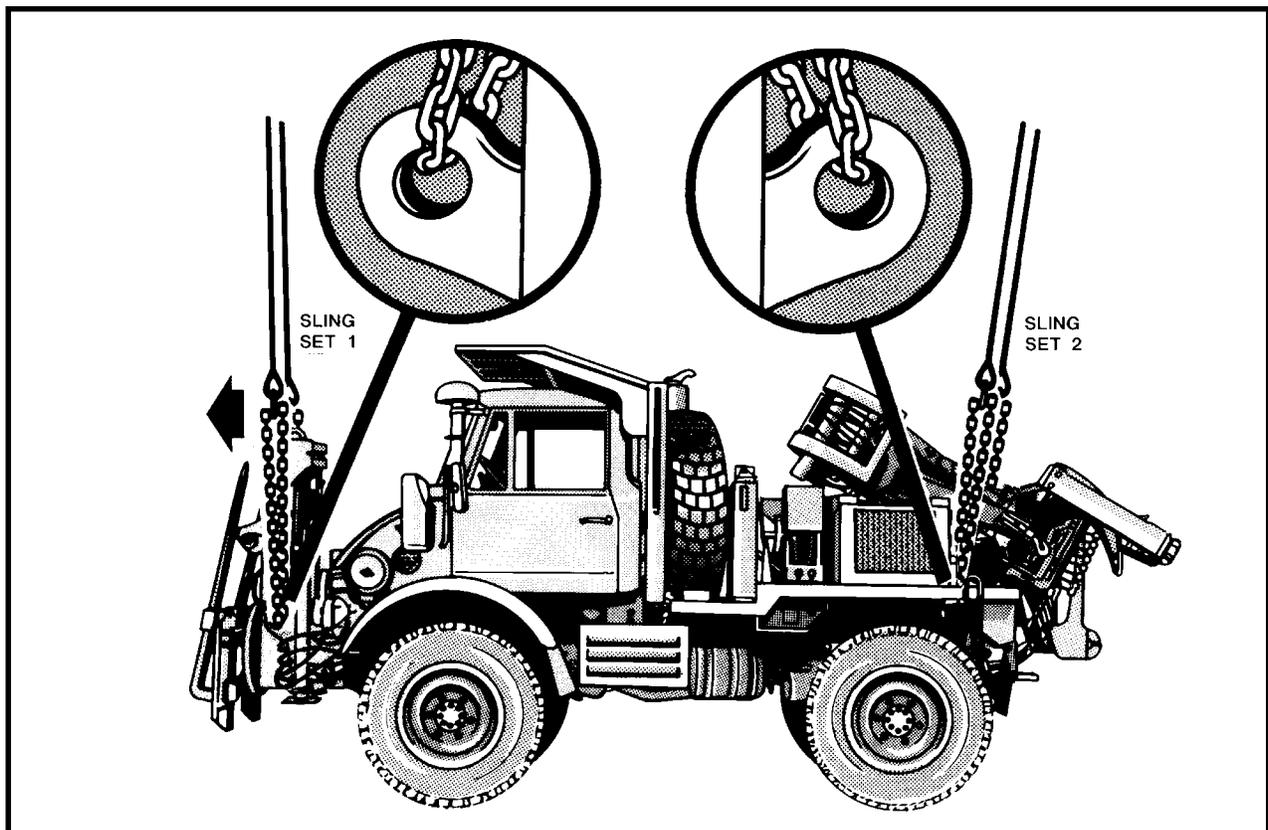
(e) Secure all hydraulic lines with tape or Type III nylon cord.

(f) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-7.

(3) **Hookup.** Two hookup teams are required for this load. The static wand person discharges the static electricity with the static wand. The forward hookup person stands on top of the FOPS and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on top of the FOPS and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on forward end of the FOPS.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located near the front bumper outboard of the forklift frame. Place the correct link from Table 8-7 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the aft end of the FOPS.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the frame inboard of the rear wheels. Place the correct link from Table 8-7 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Pad the chains where they contact the load. Position the aft sling legs at their contact point with the crane boom and tie or tape (breakaway technique).
6. Raise the apex fittings above the tractor. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 8-7. High Mobility Materiel Handler (HMMH)

## 8-9. 950BS Scoop Loader, Sectionalized

**a. Applicability.** The following items in Table 8-8 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-8. 950BS Scoop Loader, Sectionalized**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Loader, Scoop, 950BS, Work Section	15,830	25K	55/3	CH-47	120
Loader, Scoop, 950BS, Power Section	16,110	25K	10/20	CH-47	120

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity) (2 each) with two additional apex fittings.

(a) Chain length, part number 38850-00053-102 from a 25,000-pound capacity sling set (2 each).

(b) Coupling link, part number 664241, from a 25,000-pound sling set (2 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tiedown assembly, 15-foot dacron (2 each).

(6) Tiedown assembly, chain, MB-1 (10,000-pound capacity) (2 each).

**c. Personnel.** Four persons can sectionalize the scoop loader in 2.5 hours. Two persons can prepare and rig this load in 20 minutes per section.

**d. Procedures.** The following procedures apply to this load:

**(1) Preparation.** Prepare the load using the following steps:

(a) Sectionalize the scoop loader according to the instructions in the operator's manual.

(b) Secure the bucket lift arm assembly to the work section housing with two MB-1 chain tiedown assemblies. Pass a chain around the left side of the bucket control group arm cross tube, through the lift point on the housing, and secure the running ends with an MB-1 tensioning device. Repeat this procedure on the right side of the cross tube.

**CAUTION**  
**THE CHAINS MUST BE TIGHT TO PREVENT SAGGING OF THE HYDRAULIC SYSTEM DURING FLIGHT.**

(c) Cover all hitch pins and pivot holes with plastic and tape to prevent contamination by dust and dirt on both sections.

(d) Tape all lights.

(e) Secure tool basket lid, located in the bucket, with Type III nylon cord.

(f) Secure all power section hoses and cables located on the front of the section with Type III nylon cord.

(g) Secure the floating axle in level position with two

15-foot dacron tiedown assemblies. On the left side, pass the running end of a tiedown strap down through the tiedown provision aft of the axle, under the axle, and up through the tiedown provision forward of the axle. Secure the running ends of the strap using a D-ring and load binder on top of the axle. Repeat this procedure on the right side. Fold and secure excess webbing and load binder with cotton webbing or tape.

(h) Install the low velocity airdrop suspension provisions on the left and right sides of the operator's platform (these provisions are used as forward lift provisions for sling load). Torque the mounting bolts to 640 + 80 foot-pounds.

(i) Remove the exhaust stack and stow on the component tray mounted in the work section bucket. Cover the opening of the exhaust stack with tape.

(j) Remove the pre-air cleaner and pad. Stow the pre-air cleaner in the stowage compartment located behind the operator's seat. Cover the opening of the pre-air cleaner with tape.

(k) Fold the back of the operator seat down and secure in place with Type III nylon cord. Secure the seat belt over the seat back.

(l) Tape all lights and gages.

(m) Secure all doors and covers with tape or Type III nylon cord.

(n) Place controls in neutral and release brakes.

(o) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-8.

(3) **Hookup.** Two hookup teams are required for each section. The static discharge person discharges the static electricity. The work station hookup team stands on the left and right fenders. The static discharge person discharges the static electricity. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aircraft must then move forward in order to hookup apex fitting number two. The aft hookup person places apex fitting 2 onto the aft cargo hook. The power station hookup team stands on the operator's platform and engine hood. The static discharge person discharges the static electricity. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

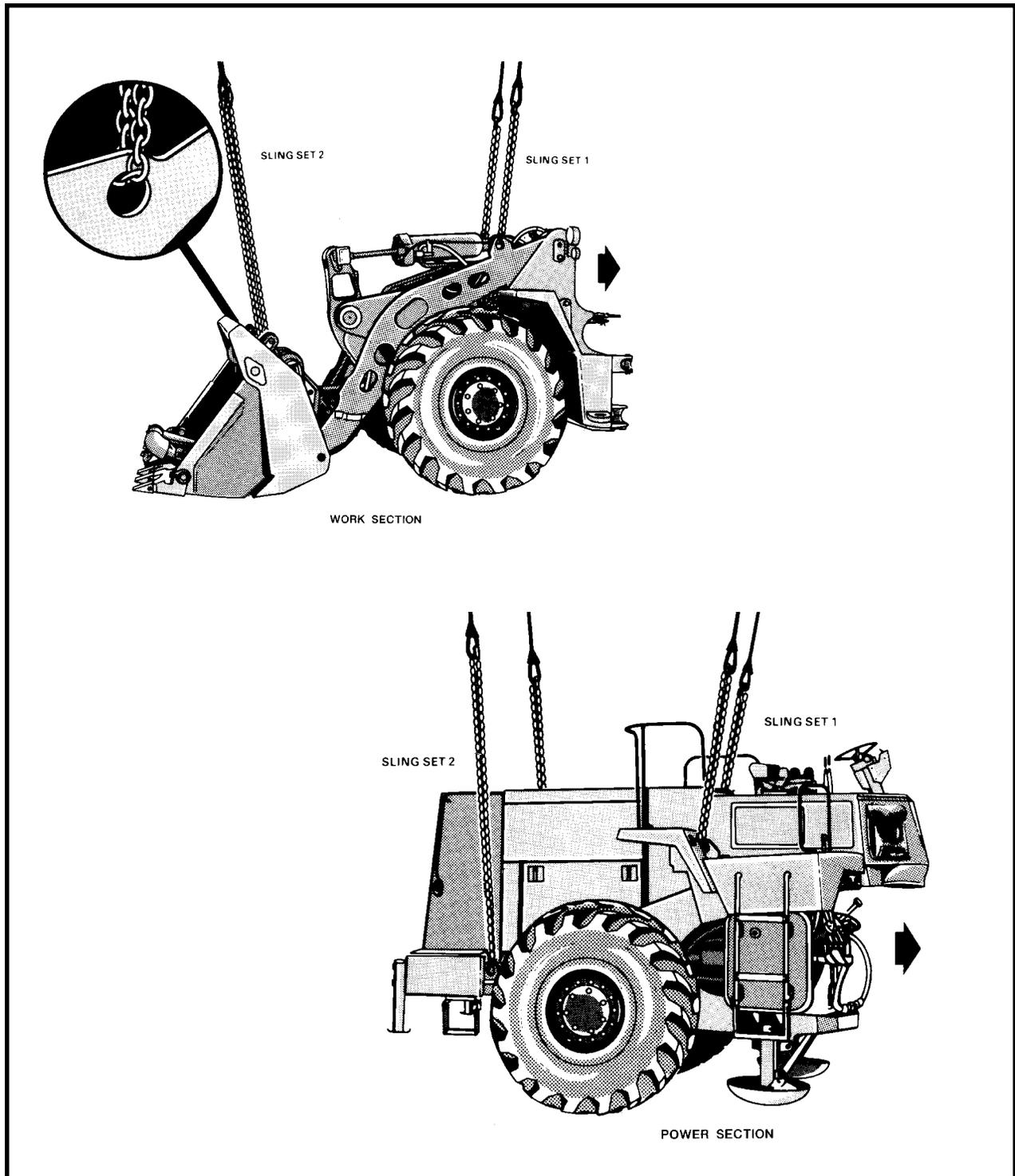


Figure 8-8. 950BS Scoop Loader, Sectionalized

<b>RIGGING STEPS WORK SECTION</b>	<b>RIGGING STEPS POWER SECTION</b>
<p><b>1.</b> Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the aft end of the work section (opposite the bucket end).</p> <p><b>2.</b> Loop the chain end of the left and right sling legs through their respective lift provisions located on top of the bucket lift arms. Place the correct link from Table 8-8 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</p> <p><b>3.</b> Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the bucket.</p> <p><b>4.</b> Loop the chain end of the left and right sling legs through their respective lift provisions located on the rear of the bucket. Place the correct link from Table 8-8 in the grab hook.</p> <p><b>5.</b> Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</p>	<p><b>1.</b> Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the power section immediately behind the operator's seat.</p> <p><b>2.</b> Loop the chain end of the left and right sling legs through their respective lift provisions located on the operator's platform. Place the correct link from Table 8-8 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</p> <p><b>3.</b> Place two sling legs on apex fitting number 2. Using the coupling links add an additional chain length to each sling leg chain. Position apex fitting number 2 on top of the engine deck.</p> <p><b>4.</b> Loop the chain end of the left and right sling legs through their respective lift provisions located on the forward end of the battery box. Place the correct link from Table 8-8 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</p> <p><b>5.</b> Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</p>

*Figure 8-8. 950BS Scoop Loader, Sectionalized (continued)*

## 8-10. 130GS Grader, Sectionalized

**a. Applicability.** The following items in Table 8-9 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-9. 130GS Grader, Sectionalized**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
130GS Grader, Front Section with Scarifier and ROPS and Low-Velocity Airdrop (LVAD) suspension provisions removed	16,120	25K	3/77	CH-47	100
130GS Grader, Rear Section	14,270	25K	36/56	CH-47	100

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) (2 each) with two additional apex fittings.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding
- (6) Strap, cargo, tiedown (as required).
- (7) Plastic bags.

**c. Personnel.** Two persons can prepare and rig each section in 20 minutes after removing the ROPS and LVAD suspension provision and sectionalizing the grader.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Sectionalize the grader according to the instructions in the operator's manual.

(b) Remove the ROPS and LVAD suspension provisions mounted on the front bolster.

(c) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(d) On the front section use CGU-1/B tiedown straps to secure each side of the front axle to front tiedown points.

(e) Loosen the front headlight var, rotate 180 degrees, and retighten. Pad headlights with padding and tape.

(f) Tape the worklight on the front end of the operator's platform.

(g) Secure the steering wheel to the horizontal control bar on both sides with Type III nylon cord.

(h) Secure the seat with Type III nylon cord.

(i) Cover all pivot points in the articulated hitch group with plastic bags and tape.

(j) On the rear section, cover all pivot points in the articulated hitch group with plastic bags and tape.

(k) Remove the throttle handle and place in the toolbox.

(l) Tape all lights and gages.

(m) Pad the instrument panel with padding and tape.

(n) Remove the exhaust stack and air cleaner and secure to the top rails with Type III nylon cord.

(o) Pad and tape the rear working lights and tail-lights.

(p) Secure the doors closed with Type III nylon cord.

(2) **Rigging.** Rig the load according to the steps in Figure 8-9.

(3) **Hookup.** Two hookup teams are required for each section. The static discharge person discharges the static electricity. The front section hookup team stands on top of the front section. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The rear section hookup team stands on top of the engine compartment. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

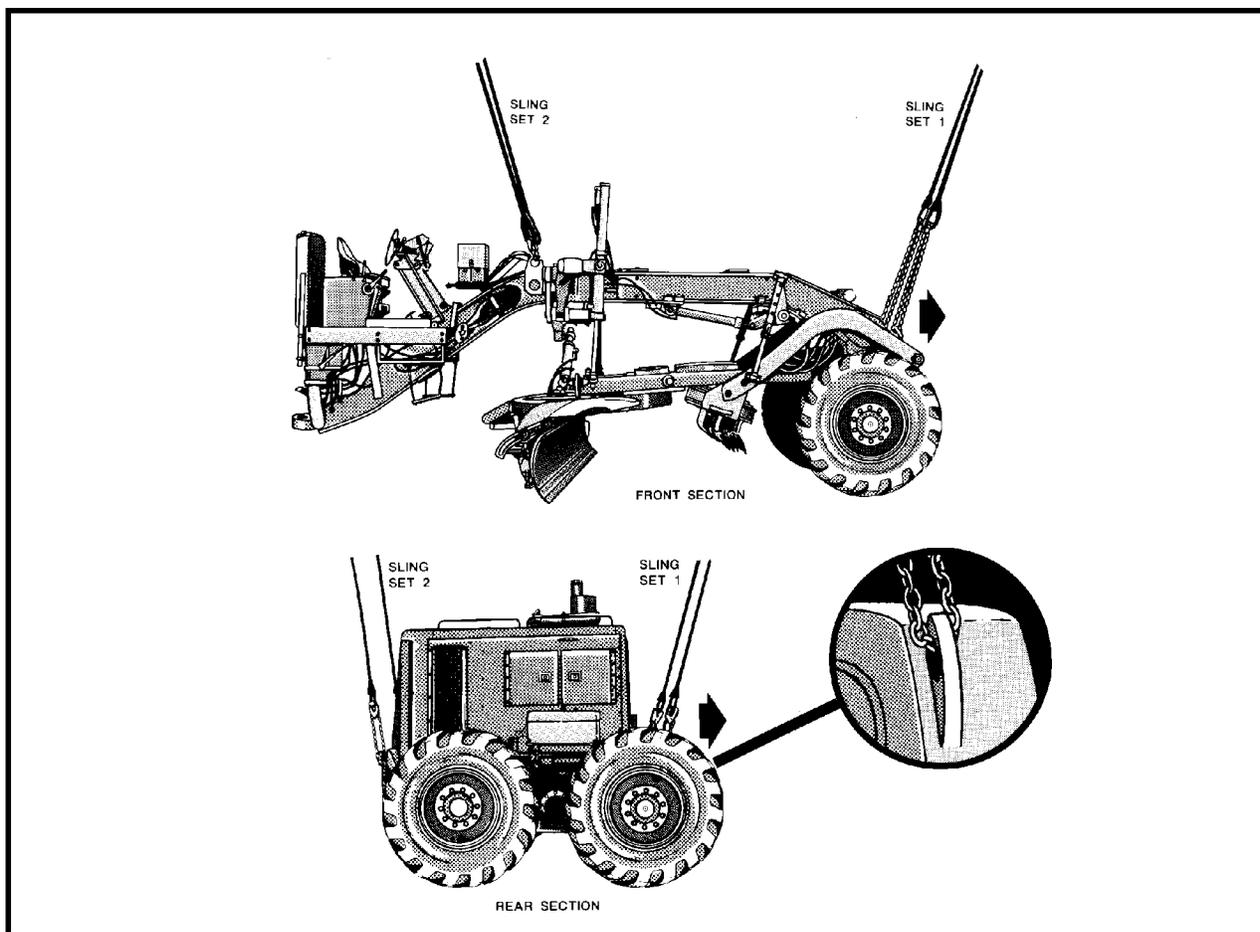


Figure 8-9. 130GS Grader, Sectionalized

<p align="center"><b>RIGGING STEPS FRONT SECTION</b></p>	<p align="center"><b>RIGGING STEPS REAR SECTION</b></p>
<ol style="list-style-type: none"> <li>1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the front wheels.</li> <li>2. Loop the chain end of the left and right sling legs through their respective lift provisions. Place the correct link from Table 8-9 in the grab hook.</li> <li>3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the front section above the blade.</li> <li>4. Loop the chain end of the left and right sling legs through their respective lift provisions. Place the correct link from Table 8-9 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</li> <li>5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</li> </ol>	<ol style="list-style-type: none"> <li>1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 in front of the forward set of wheels.</li> <li>2. Loop the chain end of the left and right sling legs through their respective lift provisions located inboard of the forward wheels. Place the correct link from Table 8-9 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</li> <li>3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 behind the rear set of wheels.</li> <li>4. Loop the chain end of the left and right sling legs through their respective lift provisions. Place the correct link from Table 8-9 in the grab hook. Secure the excess chain with tape or Type III nylon cord.</li> <li>5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.</li> </ol>

*Figure 8-9. 130GS Grader, Sectionalized (continued)*

## 8-11. 613BS Scraper, Elevating, Sectionalized

**a. Applicability.** The following item in Table 8-10 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-10. 613BS Scraper, Elevating, Sectionalized**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
613BS Scraper, Elevating	16,330	25K	40/15	CH-47	120

**NOTE: The scraper power section is not certified as a dual point load because of the suspension point configuration.**

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Plastic bags (4 each).

**c. Personnel.** Four persons can sectionalize the scraper in one hour. Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Sectionalize the scaper according to the instructions in the operator's manual.
  - (b) Stow elevator motor hoses and hanger arms on

elevator flights in the bowl, and secure with Type III nylon cord.

(c) Secure hydraulic cylinders up in the stowed position with doubled Type III nylon cord.

(d) Fold and secure the step located on the outside of the bowl.

(e) Fold and secure all hoses and wires with Type III nylon cord.

(f) Tape all lights.

(g) Secure the toolbox lid with Type III nylon cord.

(h) Cover all hitch pin and pin holes with plastic bags and tape.

(2) **Rigging.** Rig the load according to the steps in Figure 8-10.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands forward of the rock guard and places apex fitting 1 (bumper end) onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

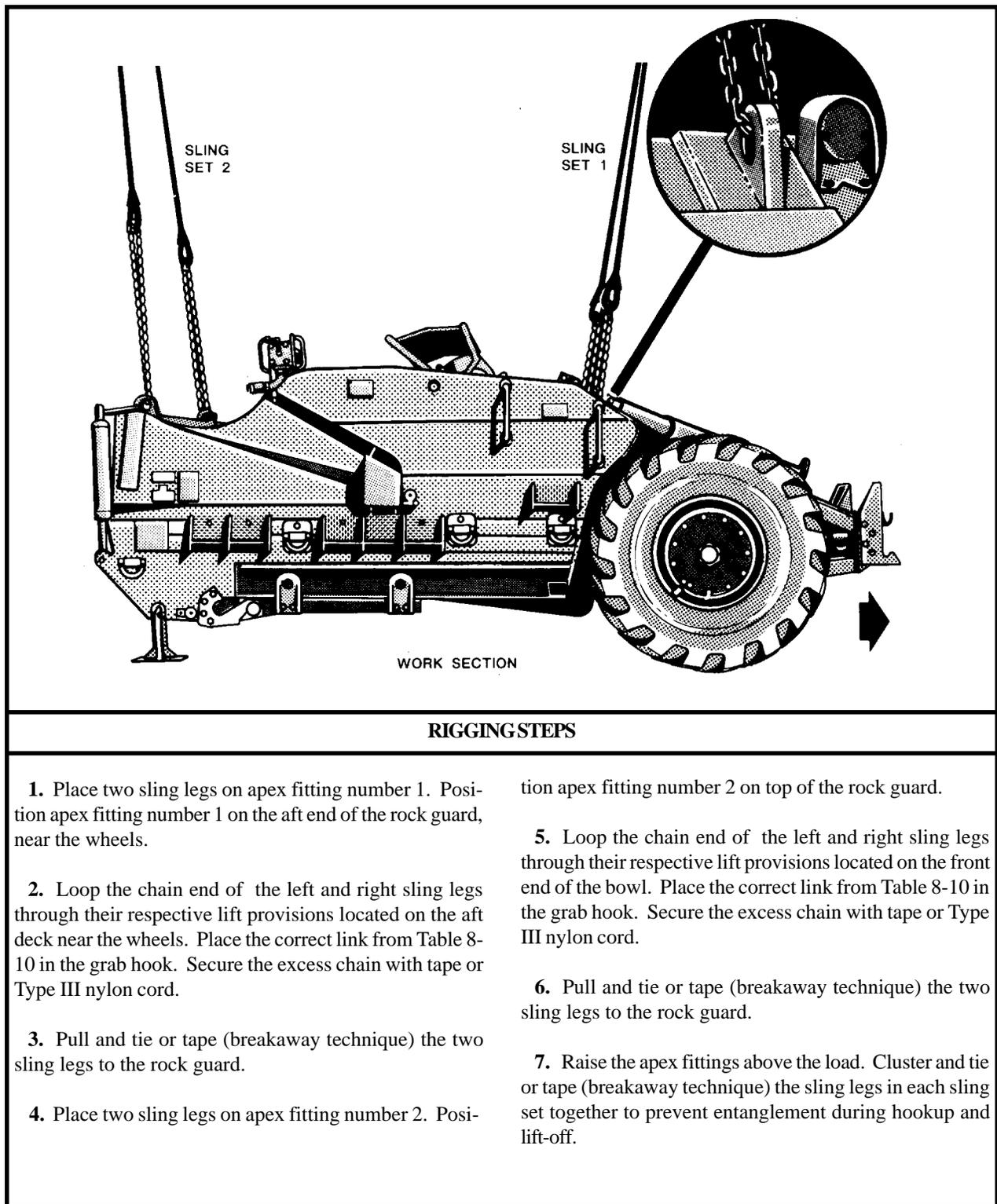


Figure 8-10. 613BS Scraper, Elevating, Sectionalized

## 8-12. 613WDS Water Distributor, Sectionalized

**a. Applicability.** The following item in Table 8-11 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-11. 613WDS Water Distributor, Sectionalized**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
613WDS Water Distributor work section	15,400	25K	30/45	CH-47	120

**NOTE: The scraper power section is not certified as a dual point load because of the suspension point configuration.**

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Plastic bags (4 each).

**c. Personnel.** Four persons can sectionalize the scraper in one hour. Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Sectionalize the scaper according to the instructions in the operator's manual.
  - (b) Secure the distribution control panel and cable

on top of the tank with Type III nylon cord.

- (c) Secure hydraulic cylinders up in the stowed position with doubled Type III nylon cord.
- (d) Ensure the tank manhole cover is closed and secured.
- (e) Secure the hose and reel with Type III nylon cord.
- (f) Close and secure the toolbox and hose stowage compartment covers with Type III nylon cord.
- (g) Cover all hitch pin and pin holes with plastic bags and tape.

(2) **Rigging.** Rig the load according to the steps in Figure 8-11.

(3) **Hookup.** Two hookup teams are required for this load and stand on the work section. The static discharge person discharges the static electricity. The forward hookup person places apex fitting 1 (bumper end) onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

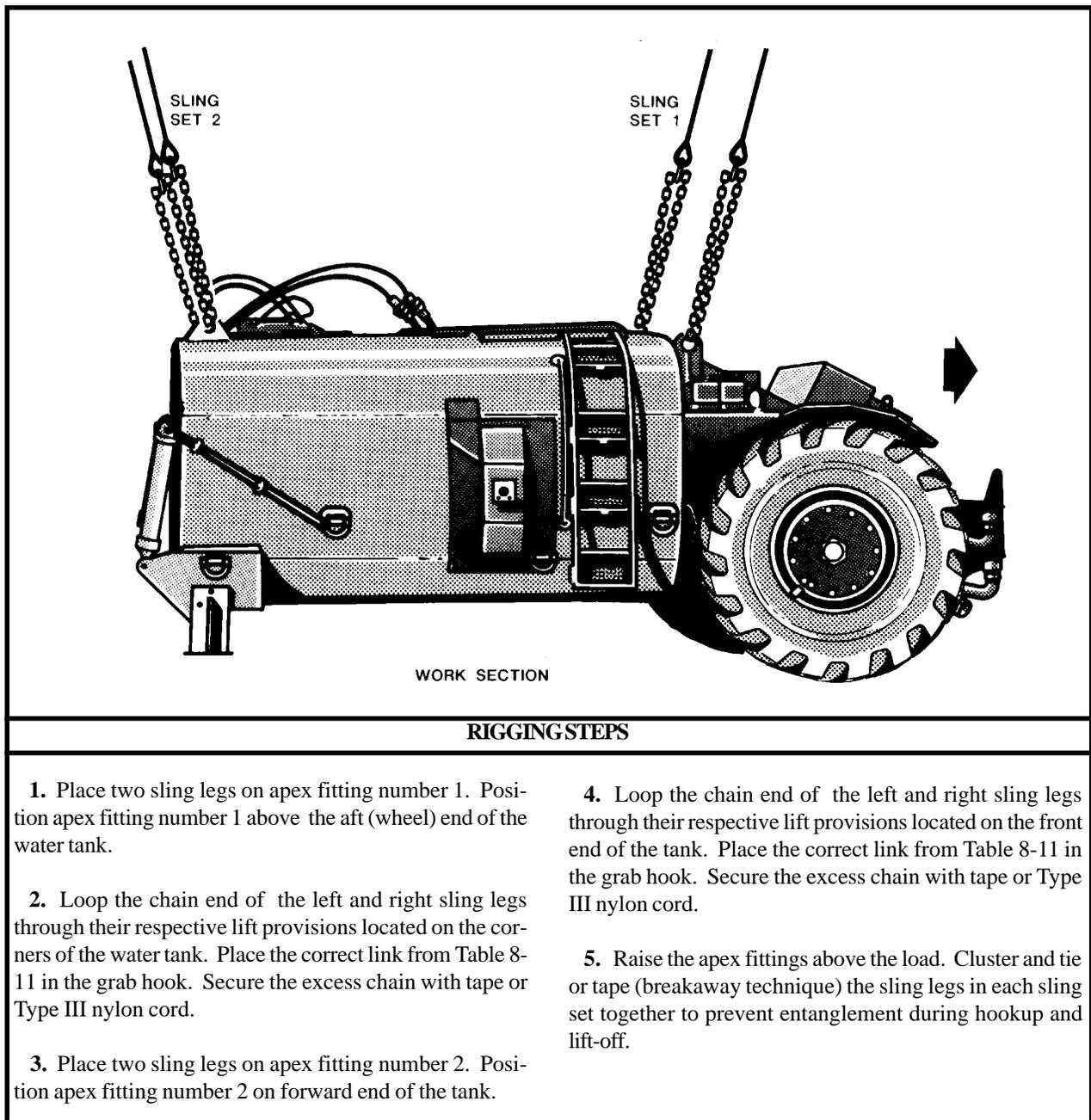


Figure 8-II. 613WDS Water Distributor, Sectionalized

### 8-13. Roller, Towed, Vibrating

**a. Applicability.** The following item in Table 8-12 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-12. Roller, Towed, Vibrating**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Roller, Towed, Vibrating, Smooth Drum, Airmobile	4,830	10K	3/3	CH-47	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (10,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) Lift the tongue and position the support leg in its stowed or travel position and secure with Type III nylon cord.

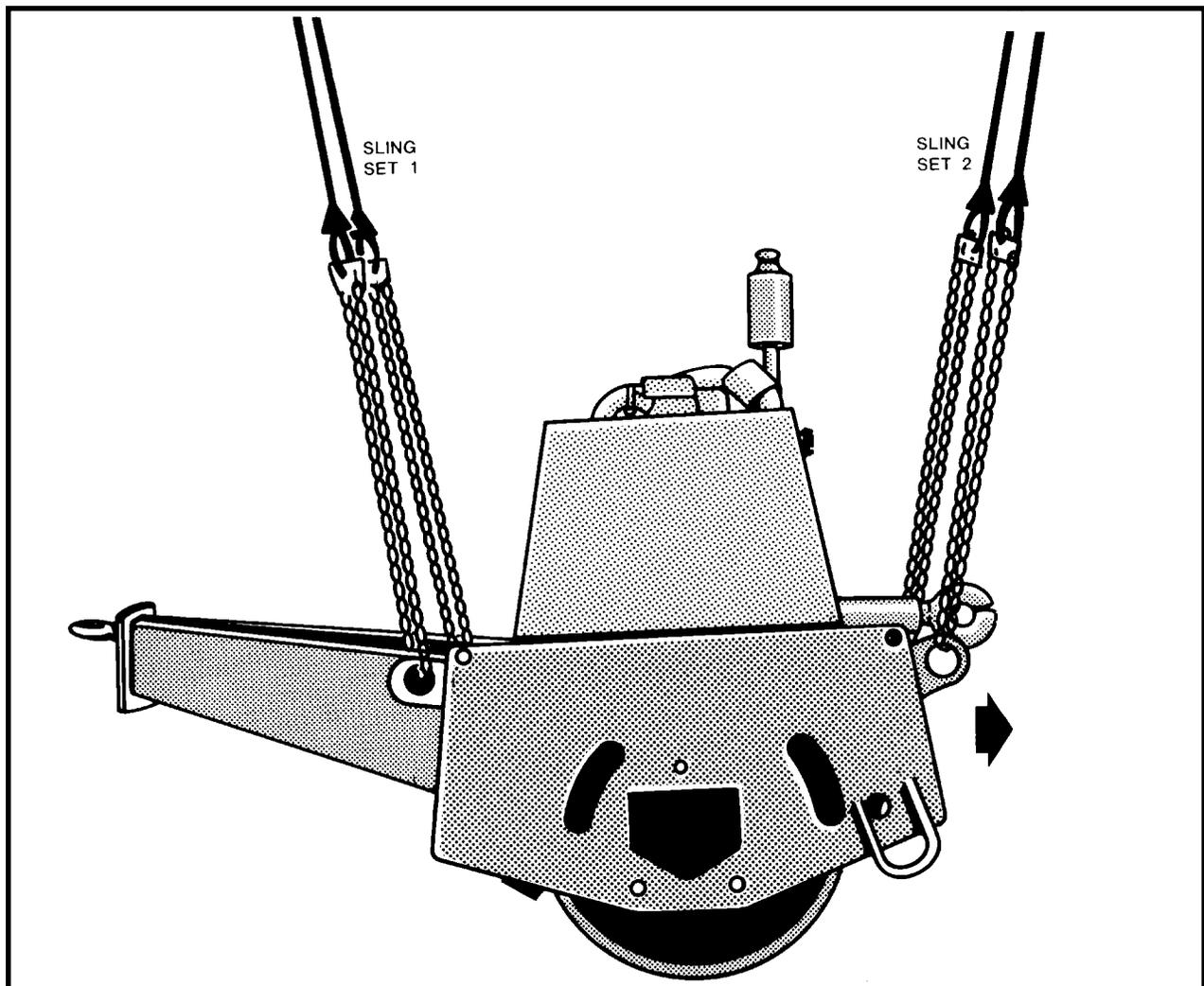
(b) Secure the battery box cover, fuel cap, hoses, and any loose items with tape or Type III nylon cord.

(c) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-12.

(3) **Hookup.** Two hookup teams are required for this load and stand beside the roller. The static discharge person discharges the static electricity. The forward hookup person places apex fitting 2 onto the forward cargo hook. The aft hookup person places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the sections and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



**RIGGING STEPS**

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on the tongue.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the tongue end of the roller. Place the correct link from Table 8-12 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 behind the roller.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the rear end of the roller. Place the correct link from Table 8-12 in the grab hook.
5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-12. Roller, Towed, Vibrating*

## 8-14. Roller, Compactor, Vibrator

**a. Applicability.** The following item in Table 8-13 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-13. Roller, Compactor, Vibrator**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Roller, Compactor, Vibrator	24,340	40K	41/3	CH-53	80

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting .

(a) Chain length, part number 607050, from a 40,000-pound capacity sling set (2 each).

(b) Coupling link, part number 577-0815, from a 40,000-pound sling set (2 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding

(6) Strap, cargo, tiedown, CGU-1/B (as required).

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following

steps:

(a) Ensure the roller is secured in the down position according to the instructions in the operator's manual. Secure all hatches and door panels with CGU-1/B tiedown straps.

(b) Tape the air filter intake and the exhaust pipe opening. Tape the windows, lights, and reflectors.

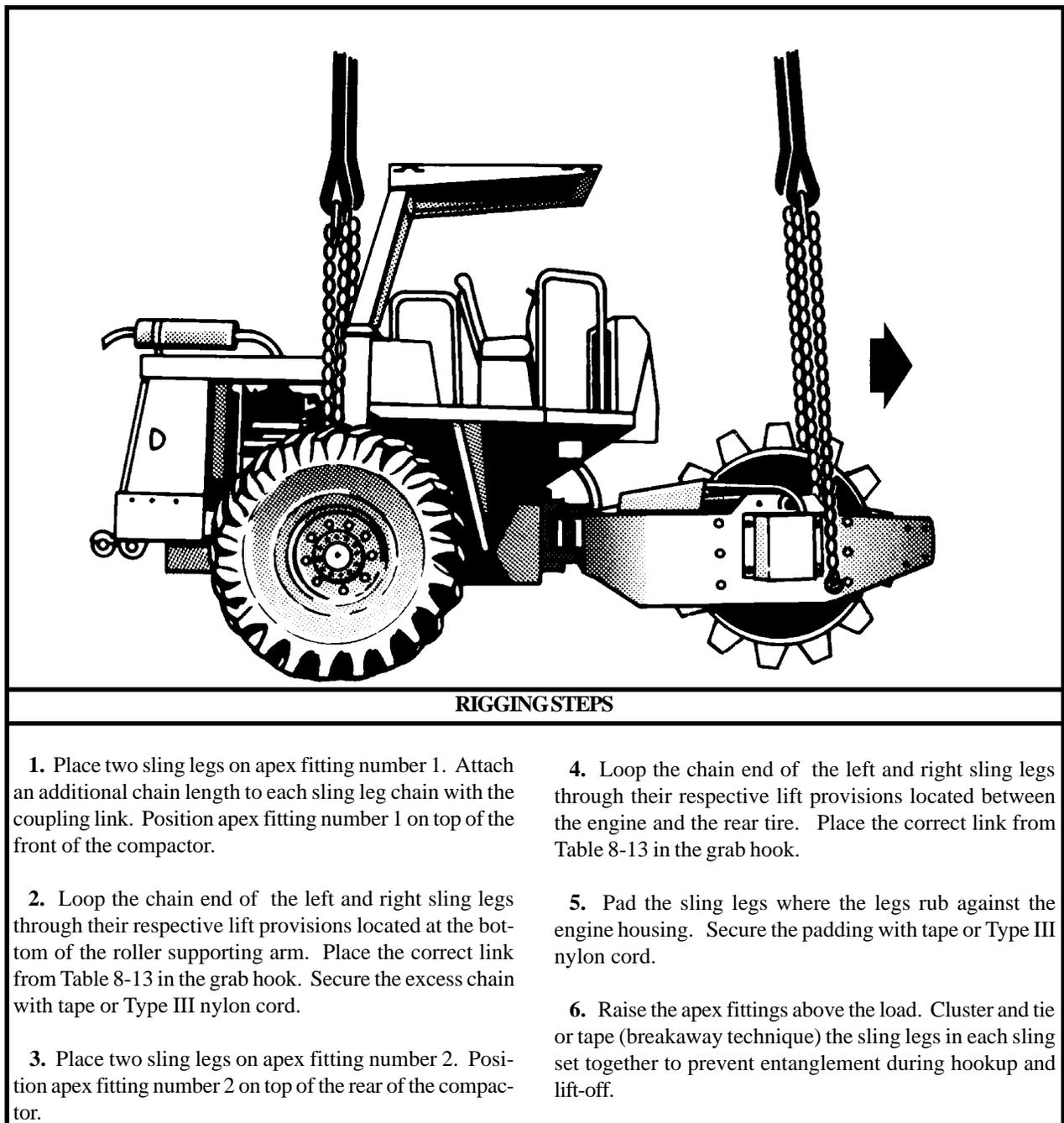
(c) Engage the hand brake and place the transmission in neutral.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-13.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the forward end of the compactor and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the rear of the compactor and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-13. Roller, Compactor, Vibrator*

## 8-15. Towed Rollers

**a. Applicability.** The following items in Table 8-14 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-14. Towed Rollers**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Roller, Towed, RO3402	4,600	10K	3/30	CH-47	120
Roller, Hercules, PT-11	3,520	10K	3/3	CH-47	105

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity) with one additional apex fitting.

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown. CGU-1/B (2 each).

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

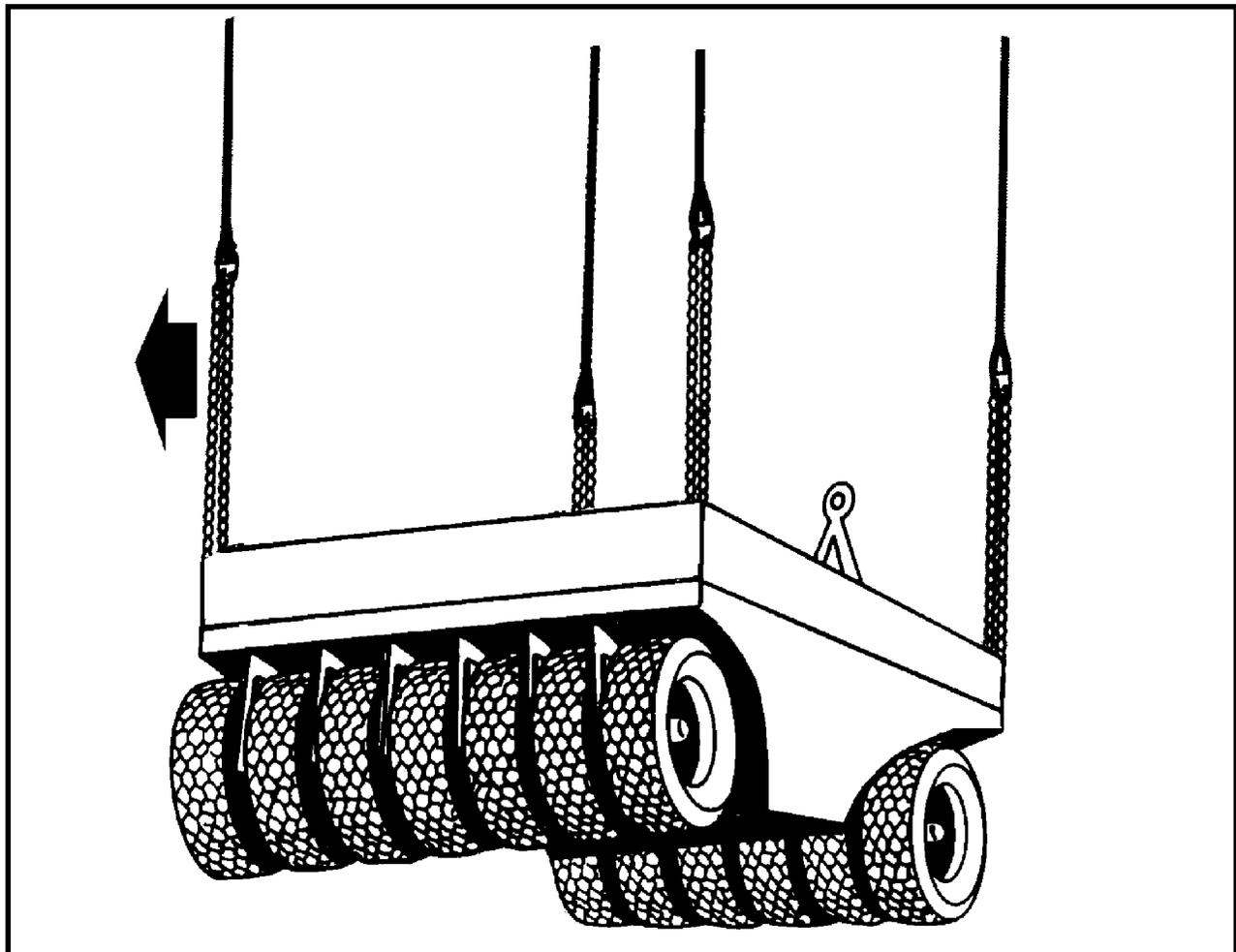
(a) Secure the drain plugs with tape.

(b) Raise the tongue and secure with the CGU-1/B tiedown straps.

(2) **Rigging.** Rig the load according to the steps in Figure 8-14.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the forward end of the roller and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the rear of the roller and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the roller.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front corner of the roller. Place the correct link from Table 8-14 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the roller.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the rear corners of the roller. Place the correct link from Table 8-14 in the grab hook.
5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-14. Towed Rollers*

## 8-16. Mine Clearing Line Charge Mounted on M353 Trailer

**a. Applicability.** The following item in Table 8-15 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-15. Mine Clearing Line Charge Mounted on M353 Trailer**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Mk155 Launcher with M68A2 Demolition Charge and Mk22 Rocket Motor	6,372	10K	3/3	CH-47	140

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (10,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (4 each).

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Ensure all components are securely attached together.
  - (b) Ensure the storage box lid is closed and secure.

Secure safety chains, hoses, and any other loose items with tape or Type III nylon cord.

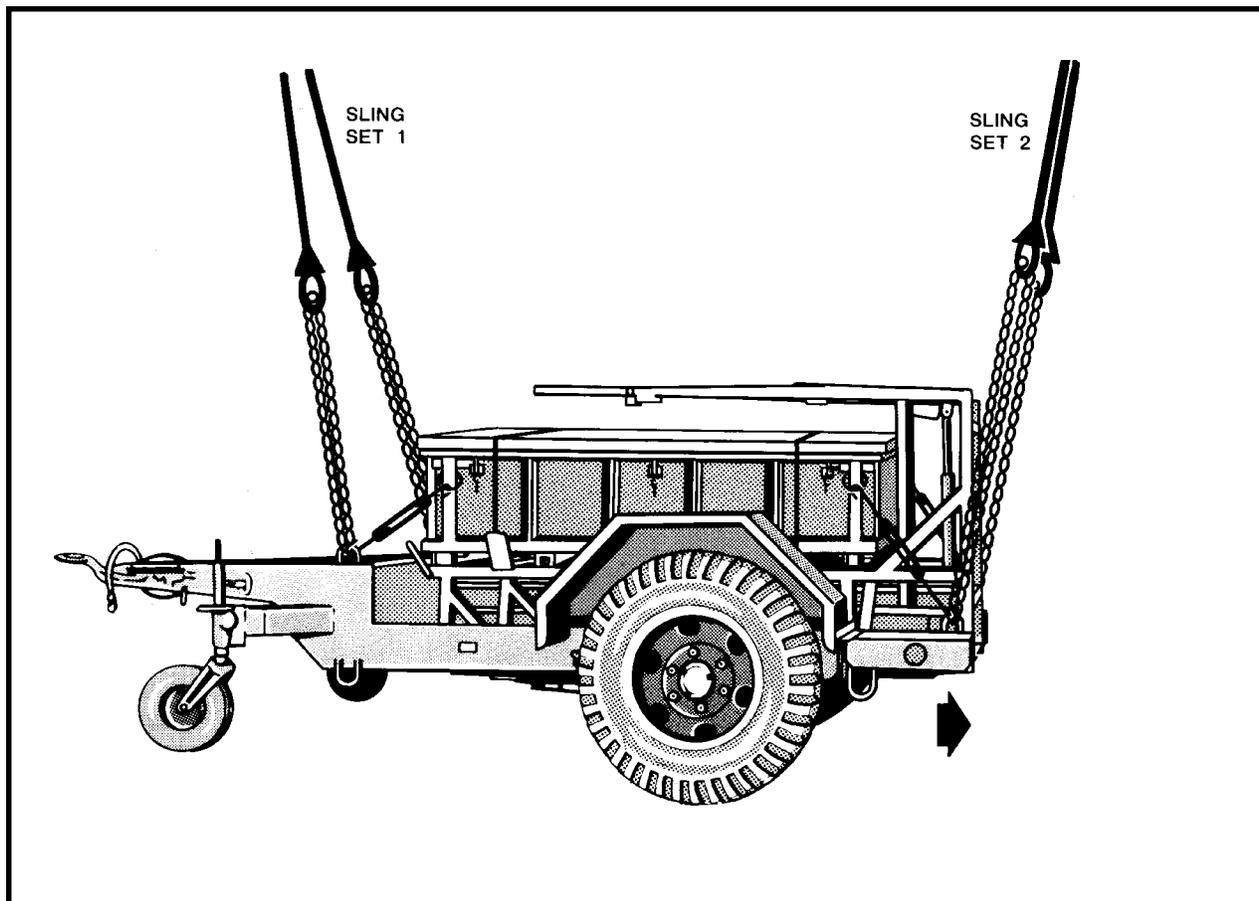
- (c) Engage the parking brake.

**NOTE: The rocket motor cannot be safely secured to the load in this configuration; therefore, the rocket motor box must be kept separate and loaded internally into the helicopter.**

(2) **Rigging.** Rig the load according to the steps in Figure 8-15.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the trailer chassis and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the trailer chassis and places apex fitting 1 (lunette end) onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on the trailer tongue.

2. Loop the chain end of the left and right sling legs through their respective lift provisions located aft of the trailer leveling wheels. Place the correct link from Table 8-15 in the grab hook.

3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the aft end of the launcher.

4. Loop the chain end of the left and right sling legs

through their respective lift provisions located aft of the trailer wheels by the bumper. Place the correct link from Table 8-15 in the grab hook.

5. Pull and tie or tape (breakaway technique) the sling legs to the launch rail.

6. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 8-15. Mine Clearing Line Charge Mounted on M353 Trailer

## 8-17. Mine Clearing Line Charge Mounted on M200A1 Trailer

**a. Applicability.** The following item in Table 8-16 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-16. Mine Clearing Line Charge Mounted on M200A1 Trailer**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Mk155 Launcher with M68A2 Demolition Charge and Mk22 Rocket Motor	6,002	10K	10/3	CH-47	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (10,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (4 each).

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

**(1) Preparation.** Prepare the load using the following steps:

- (a) Ensure all components are securely attached together.
- (b) Ensure the storage box lid is closed and secure. Secure safety chains, hoses, and any other loose items

with tape or Type III nylon cord.

(c) Engage the parking brake.

(d) Ensure the launch is in the collapsed or storage position.

**NOTE: The rocket motor cannot be safely secured to the load in this configuration; therefore, the rocket motor box must be kept separate and loaded internally into the helicopter.**

**(2) Rigging.** Rig the load according to the steps in Figure 8-16.

**(3) Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the demolition box and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the demolition box (lunette end) and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

**(4) Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

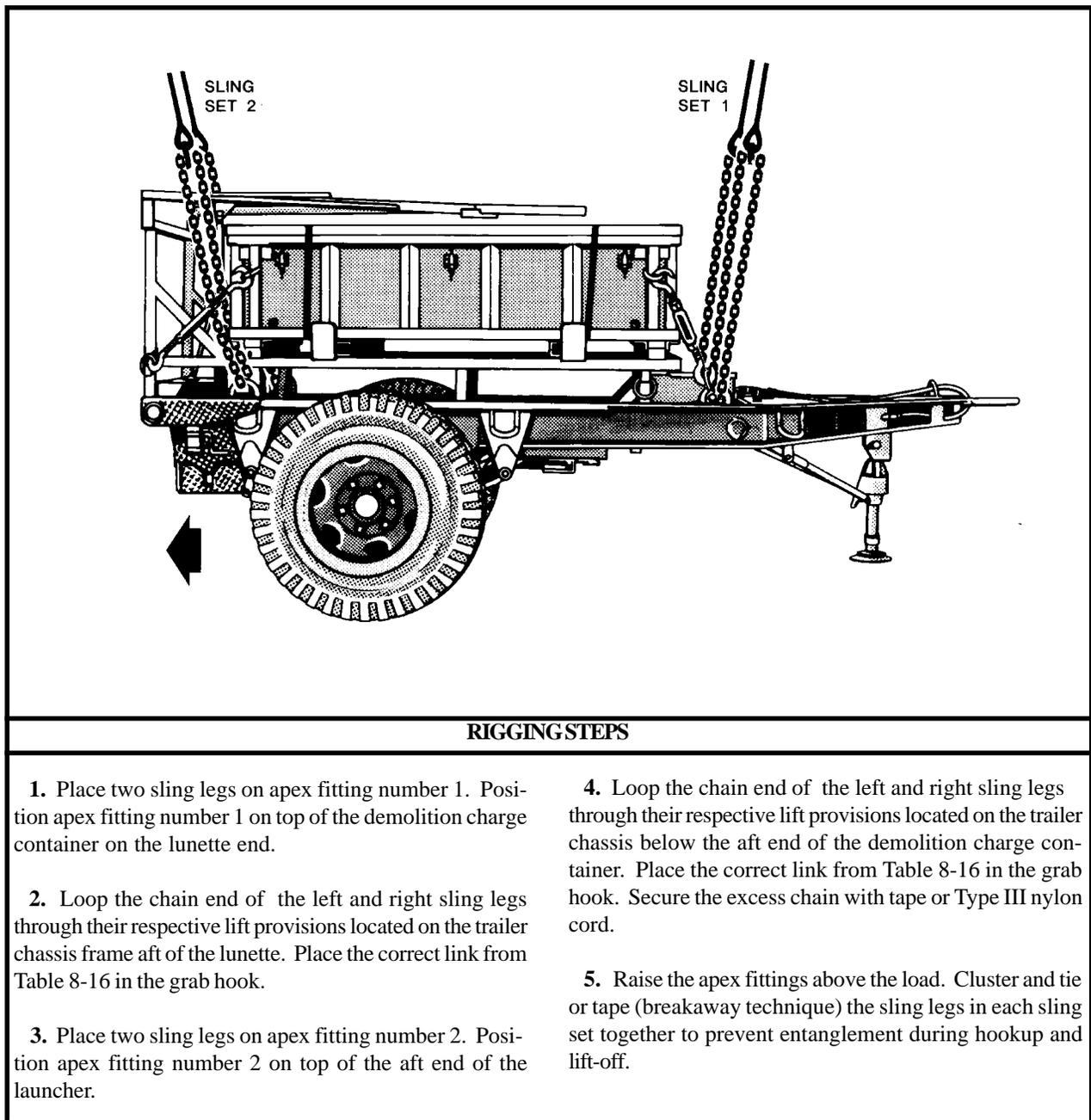


Figure 8-16. Mine Clearing Line Charge Mounted on M200A1 Trailer

## 8-18. LRT-110, 7 1/2-Ton Crane

**a. Applicability.** The following item in Table 8-17 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-17. LRT-110, 7 1/2-Ton Crane**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
7 1/2-Ton Crane, Type II, LRT-110	24,230	25K	3/3	CH-47	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (1 each).
- (6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.
- (7) Webbing, tubular, nylon, 1/2-inch, 1,000-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Fold the side mirrors in toward the cab and secure with tape or Type III nylon cord. Tape the windshield wipers to the windshield.

(b) Ensure the front wheels are straight and secure

the steering wheel with Type III nylon cord.

(c) Engage the hand brake.

(d) Secure the doors, toolbox cover, and all loose equipment with tape or Type III nylon cord.

(e) Secure the hook-block assembly to the end of the boom mast with a CGU-1/B tiedown strap.

(f) Secure the boom light power cable with tape or Type III nylon cord.

(g) Insert wooden cable wedges at the drum to prevent the cable from unspooling if the cable becomes slack.

(h) Secure the cable wedges with 1/2-inch tubular nylon.

(i) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(2) **Rigging.** Rig the load according to the steps in Figure 8-17.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the engine deck and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the cab top and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured,

the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

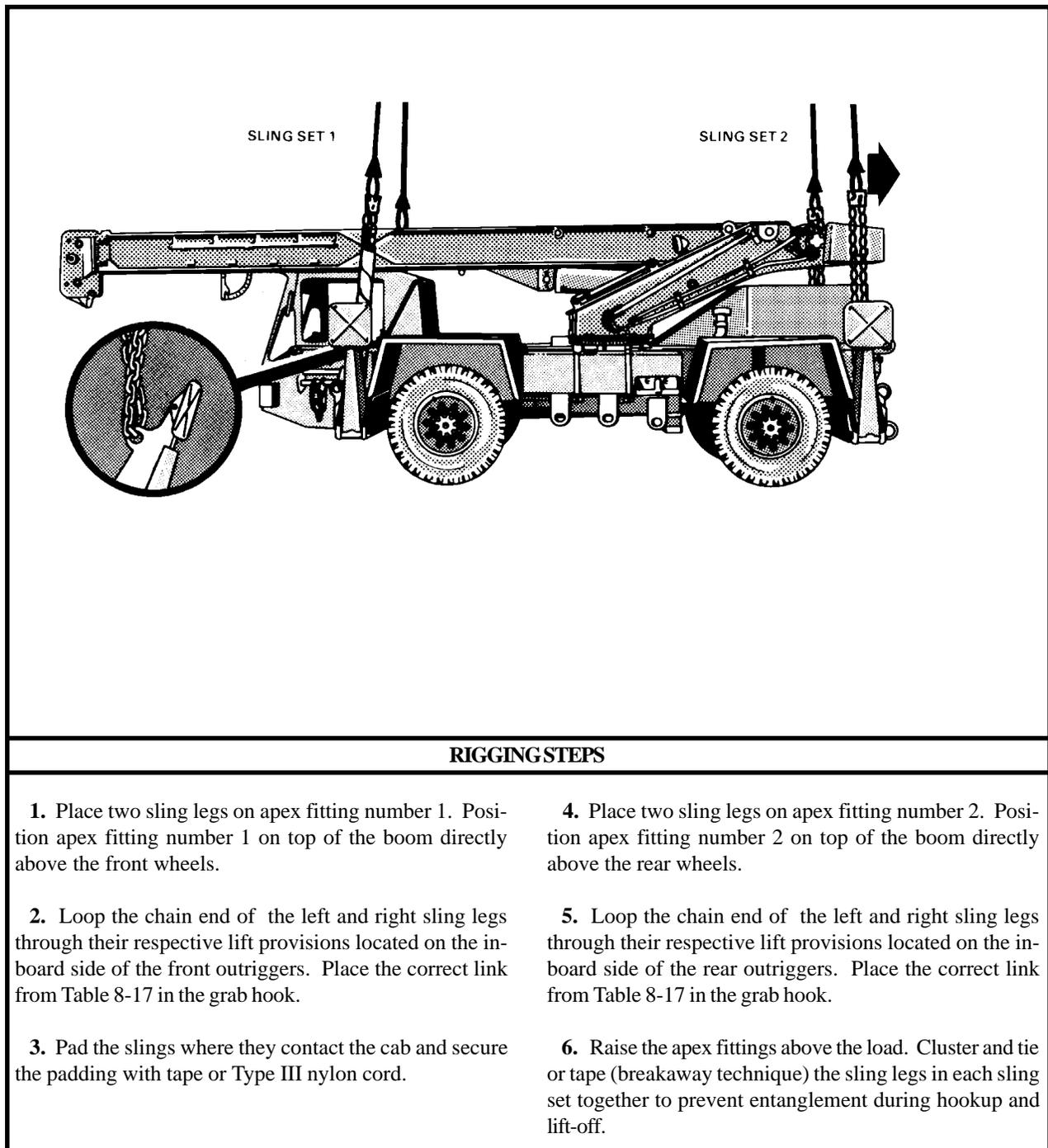


Figure 8-17. LRT-110, 7 1/2-Ton Crane

## 8-19. LRT-110, 7 1/2-Ton Crane (Boom)

**a. Applicability.** The following item in Table 8-18 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-18. LRT-110, 7 1/2-Ton Crane (Boom)**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Boom Section, 7 1/2-Ton Crane, Type II, LRT-110	8,600	10K	3/3	CH-47	140

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (10,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (1 each).
- (6) Webbing, tubular, nylon, 1/2-inch, 1,000-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) Sectionalize the crane according to the instructions in the operator's manual.
- (b) Secure the hook-block assembly to the end of the boom mast with a CGU-1/B tiedown strap.

(c) Secure the boom light power cable with tape or Type III nylon cord.

(d) Insert wooden cable wedges at the drum to prevent the cable from unspooling if the cable becomes slack.

(e) Secure the cable wedges with 1/2-inch tubular nylon.

(f) Secure the boom hydraulic hoses with tape or Type III nylon cord. Ensure the hoses are clear of the boom base.

(2) **Rigging.** Rig the load according to the steps in Figure 8-18.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands beside the rear (counterweight) end and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands beside the middle of the boom and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

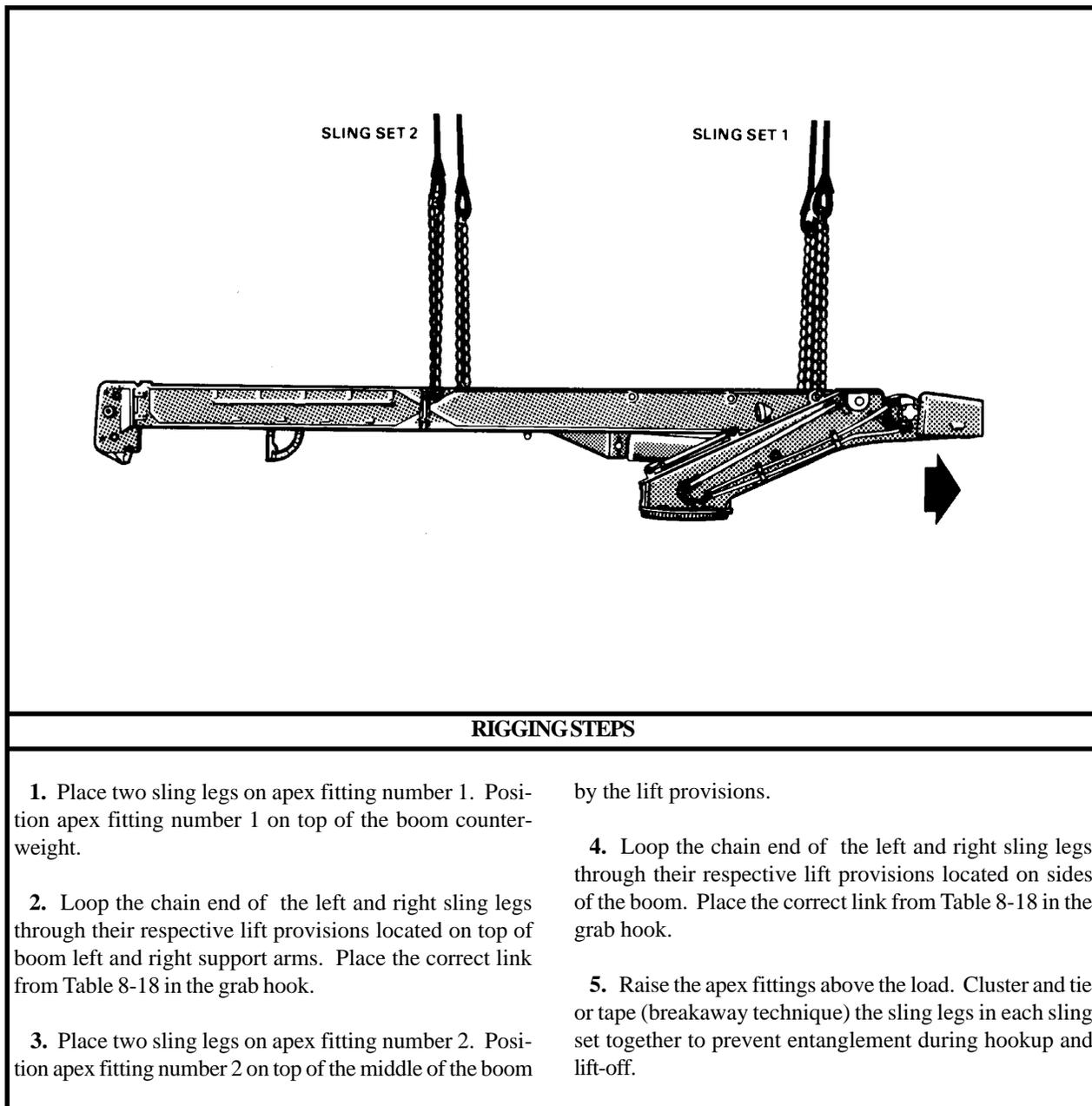


Figure 8-18. LRT-110, 7 1/2-Ton Crane (Boom)

## 8-20. LRT-110, 7 1/2-Ton Crane (Power Unit)

**a. Applicability.** The following item in Table 8-19 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-19. LRT-110, 7 1/2-Ton Crane (Power Unit)**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Power Unit, 7 1/2-Ton Crane, Type II, LRT-110	15,600	25K	3/3	CH-47	140

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity) with one additional apex fitting.

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (1 each).

(6) Webbing, tubular, nylon, 1/2-inch, 1,000-pound breaking strength.

(7) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Sectionalize the crane according to the instructions in the operator's manual.

(b) Fold the side mirrors in toward the cab and secure with tape or Type III nylon cord. Tape the windshield wipers to the windshield.

(c) Ensure the front wheels are straight and secure the steering wheel with Type III nylon cord. Engage the hand brake.

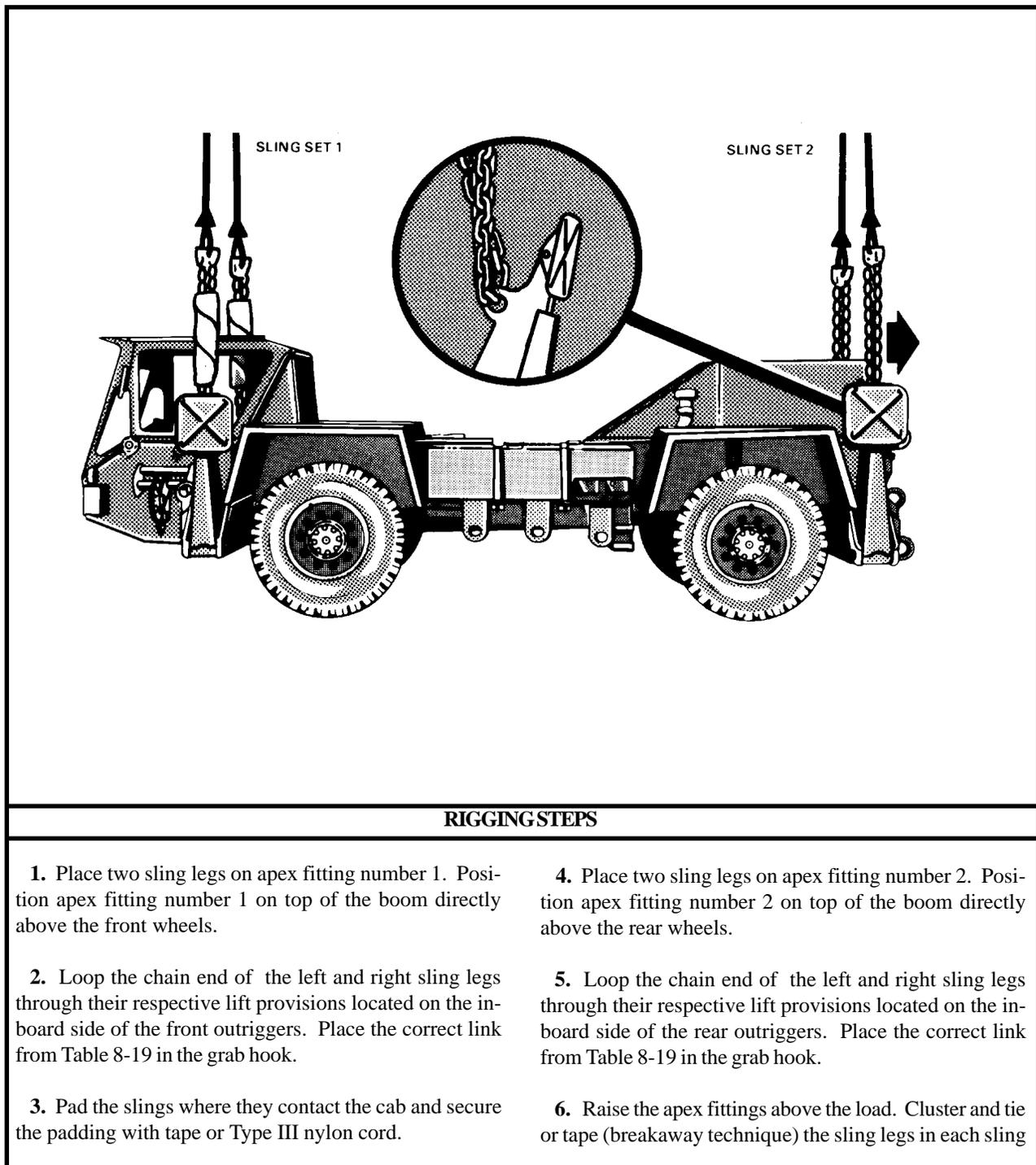
(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Secure the doors, toolbox cover, and all loose equipment with tape or Type III nylon cord.

(2) **Rigging.** Rig the load according to the steps in Figure 8-19.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the engine deck and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on the cab top and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-19. LRT-110, 7 1/2-Ton Crane (Power Unit)*

## 8-21. SP-7 Wheel-Mounted Crane

**a. Applicability.** The following item in Table 8-20 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-20. SP-7 Wheel-Mounted Crane**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
SP-7 Wheel-Mounted Crane (Pettibone)	27,640	40K	3/11	CH-53	100

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting.

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (as required).

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Ensure the boom is secured in the down position according to the operator's manual.

(b) Secure all hatches and doors with tiedown straps or Type III nylon cord.

(c) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel using Type III nylon cord.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

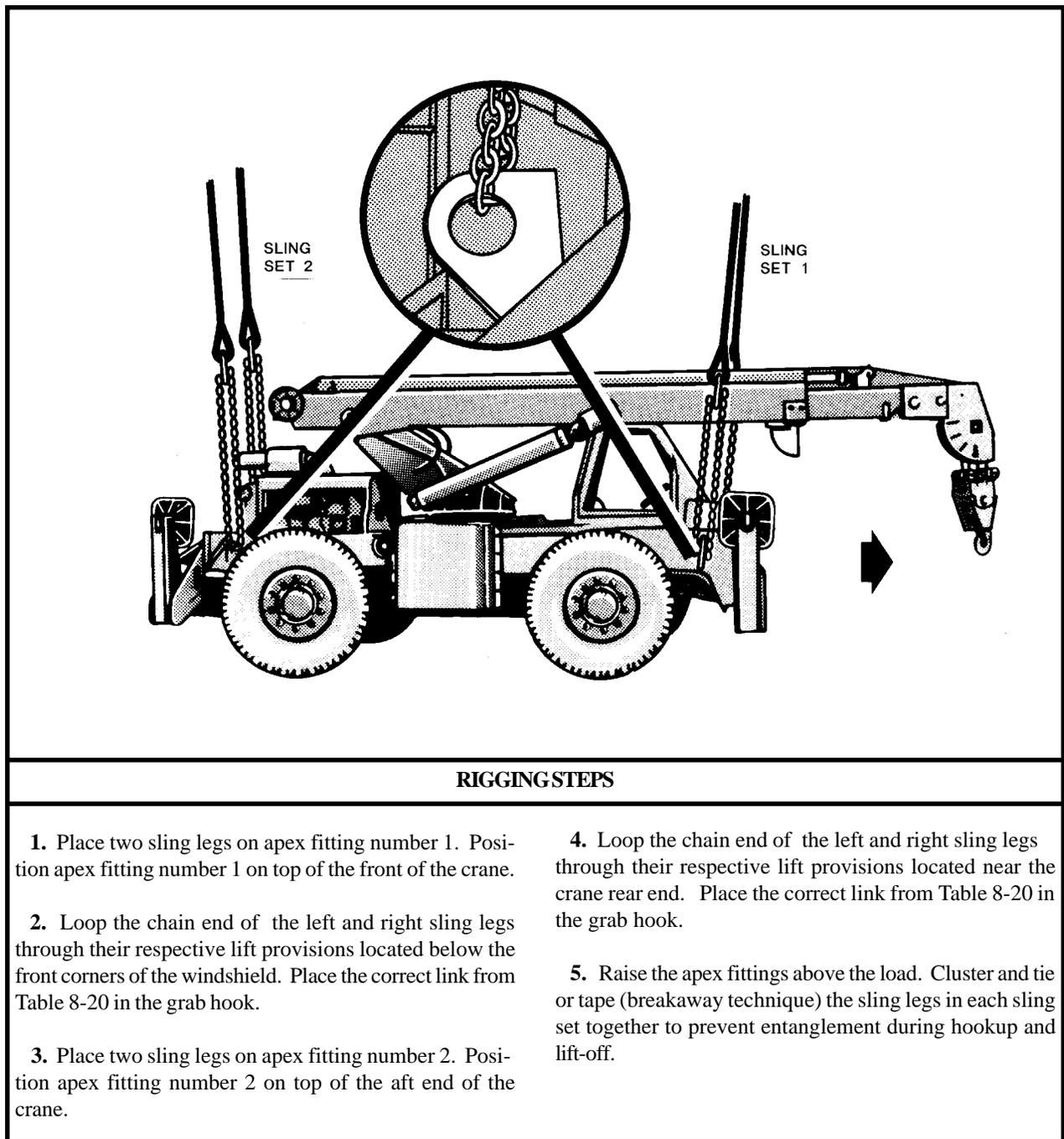
(e) Engage the hand brake and place the transmission in neutral.

(f) Tape all windows, lights, and reflectors. Tape the exhaust opening.

(2) **Rigging.** Rig the load according to the steps in Figure 8-20.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the front of the crane and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the rear of the crane and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-20. SP-7 Wheel-Mounted Crane*

## 8-22. Truck, Forklift, MC-4000

**a. Applicability.** The following item in Table 8-21 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-21. Truck, Forklift, MC-4000**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Truck, Forklift, Rough Terrain, MC-4000, TAMCN B2565	8,600	15K	3/25	CH-53	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (as required).

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) Engage the parking brake and place the transmission in neutral.
- (b) Secure the seat cushion with Type III nylon cord.
- (c) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel using Type III nylon cord.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Insert the articulating lock pin to keep the forklift front and rear sections from twisting in flight.

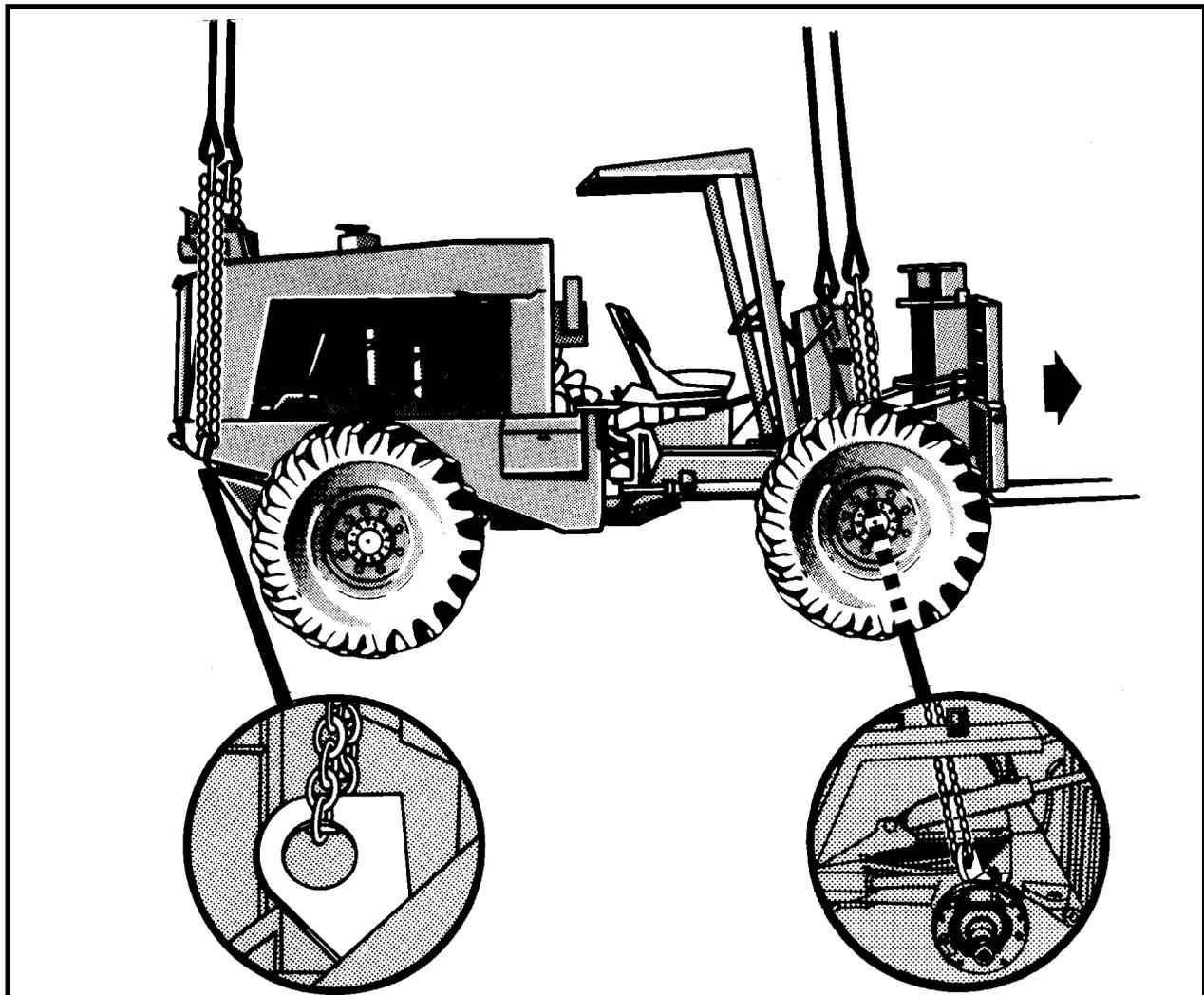
(f) Raise the fork tines approximately 1 foot above the ground. Lift the ends of the fork tines by hand to point upward. Secure the fork tines to the lift cylinder frame using the tiedown strap.

(2) **Rigging.** Rig the load according to the steps in Figure 8-21.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person kneels on top of the ROPS and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the engine deck and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Position sling set number 1 on top of the ROPS.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located between the front tire and the chassis. Place the correct link from Table 8-21 in the grab hook.
3. Position sling set number 2 on top of the engine deck.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the rear of the forklift. Place the correct link from Table 8-21 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 8-21. Truck, Forklift, MC-4000

## 8-23. Truck, Forklift, RT-4000 (USMC)

**a. Applicability.** The following item in Table 8-22 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-22. Truck, Forklift, RT-4000**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Truck, Forklift, RT-4000	10,860	15K	3/40	CH-53	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (as required).

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Engage the hand brake and place the transmission in neutral.

(b) Raise the fork tines approximately 1 foot above the ground. Lift the ends of the fork tines by hand to point upward. Secure the fork tines to the lift cylinder frame using the tiedown strap.

(c) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel using Type III nylon cord.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

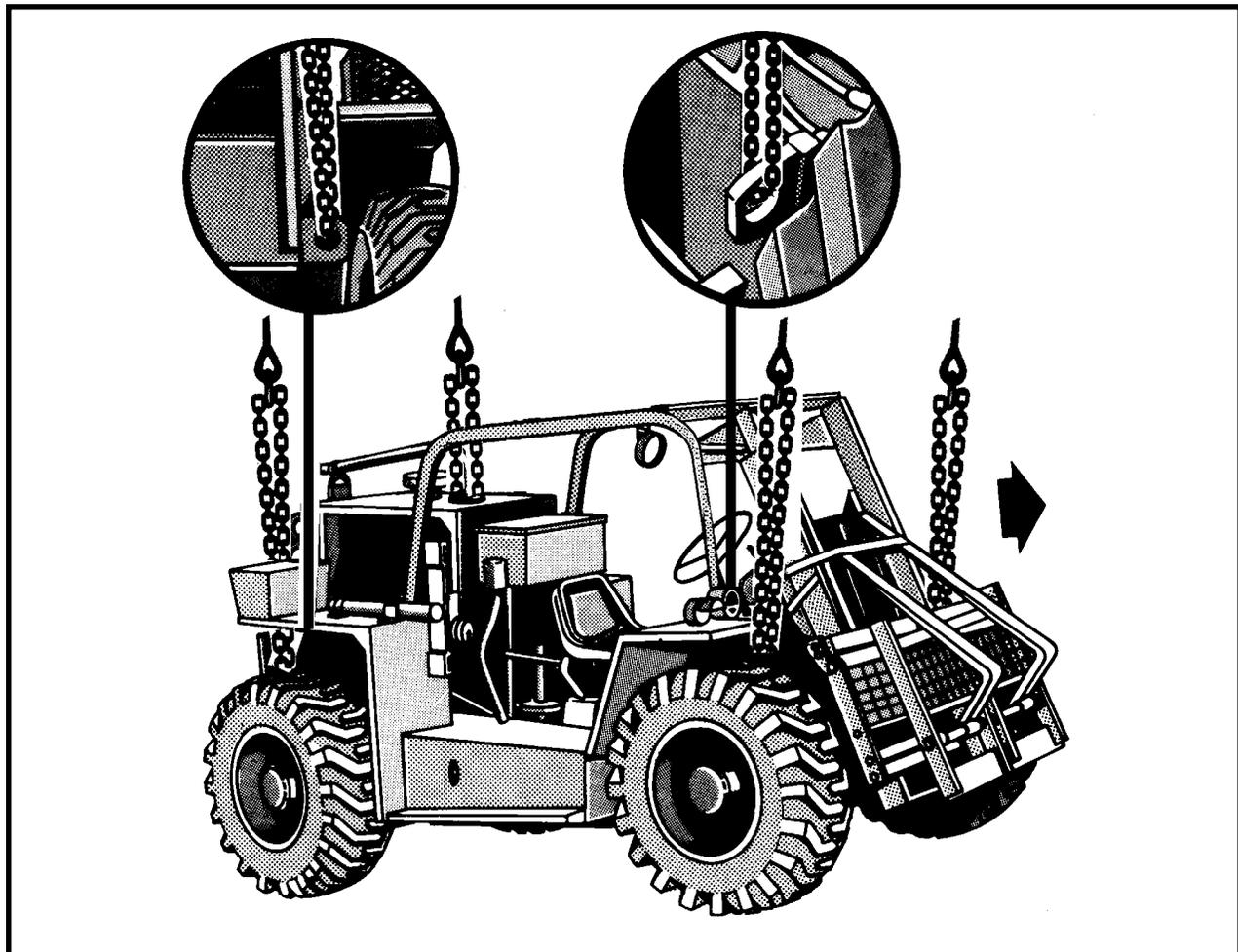
(e) Tape the opening in the exhaust pipe.

(2) **Rigging.** Rig the load according to the steps in Figure 8-22.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the FOPS and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the engine deck and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Position sling set number 1 on top of the FOPS.
2. Loop the chain end of the left and right sling legs through their respective lift provisions (not the tiedown provisions) located directly above the forward axle housing between the front tire and the hydraulic cylinder. Place the correct link from Table 8-22 in the grab hook.
3. Position sling set number 2 on top of the engine deck.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located above the rear winch. Place the correct link in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Pull the front sling legs up and tape or tie (breakaway technique) the grablinks to the front side of the upper light bracket.
6. Pull the rear sling legs together on top of the engine deck and tape or tie (breakaway technique) the grablinks together.
7. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 8-22. Truck, Forklift, RT-4000

## 8-24. Truck, Forklift, MC-6000

**a. Applicability.** The following item in Table 8-23 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-23. Truck, Forklift, MC-6000**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Truck, Forklift, MC-6000	19,800	40K	5/5	CH-53	130

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting.

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (4 each).

(6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Position the forks so they are sitting on the travel blocks and tilted all the way to the rear.

(b) Secure the engine access doors with CGU-1/B tiedown straps.

(c) Secure the rear access doors with CGU-1/B tiedown straps.

(d) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel using Type III nylon cord.

(e) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(f) Engage the parking brake and place the transmission in neutral.

(g) Secure the toolbox lid with Type III nylon cord.

(2) **Rigging.** Rig the load according to the steps in Figure 8-23.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the front fenders and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the engine deck and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

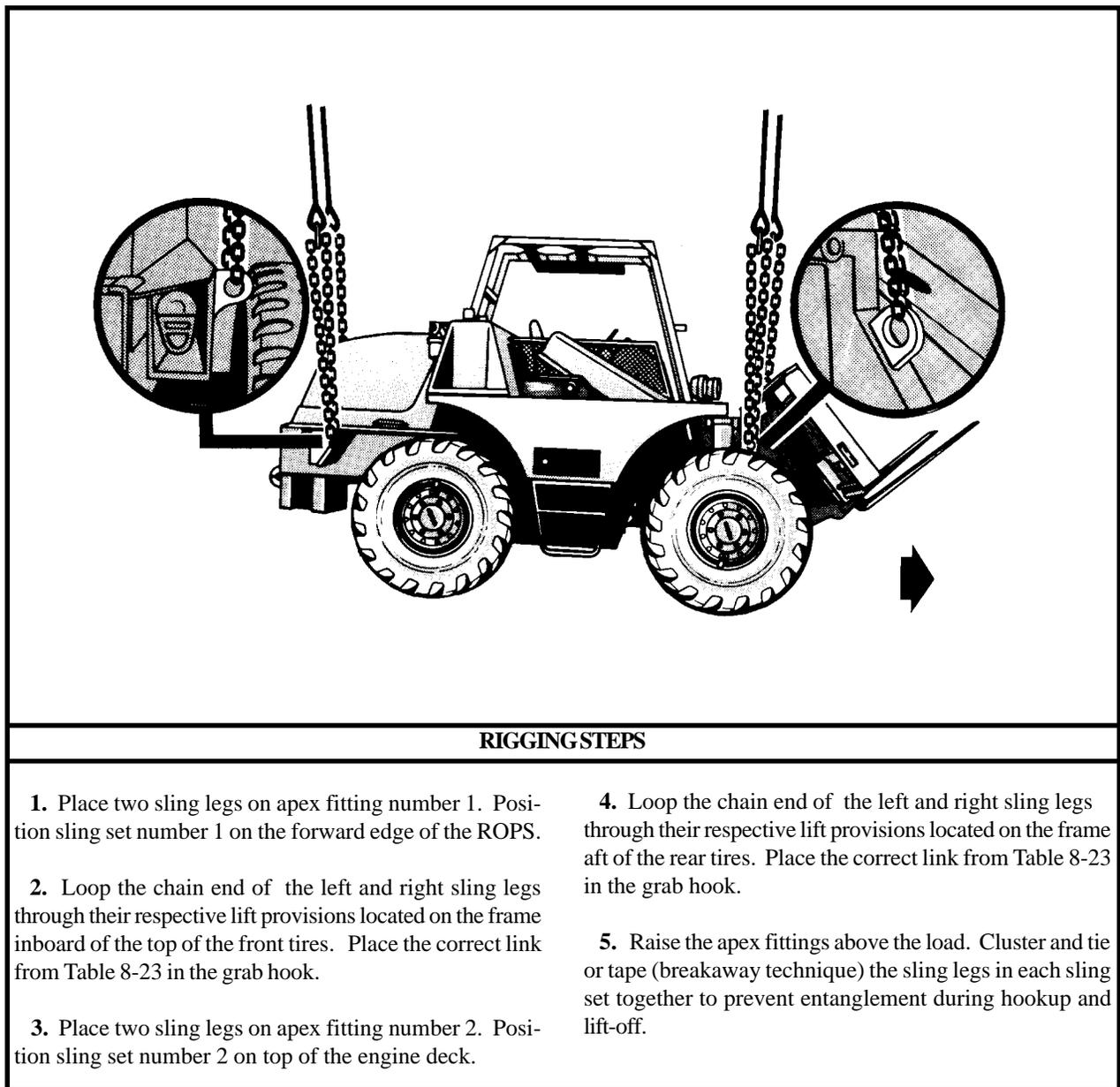


Figure 8-23. Truck, Forklift, MC-6000

## 8-25. Extendable Boom Forklift (USMC)

**a. Applicability.** The following item in Table 8-24 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-24. Extendable Boom Forklift**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Forklift, Extendable Boom	25,640	40K	3/40	CH-53	120

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (40,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (as required).

**c. Personnel.** Two persons can prepare and rig this load in 10 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Secure the forks against the carriage with the CGU-1/B tiedown straps.
  - (b) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel using Type III nylon cord.

(c) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(d) Raise the carriage 10-inches off the ground. Retract and raise the boom.

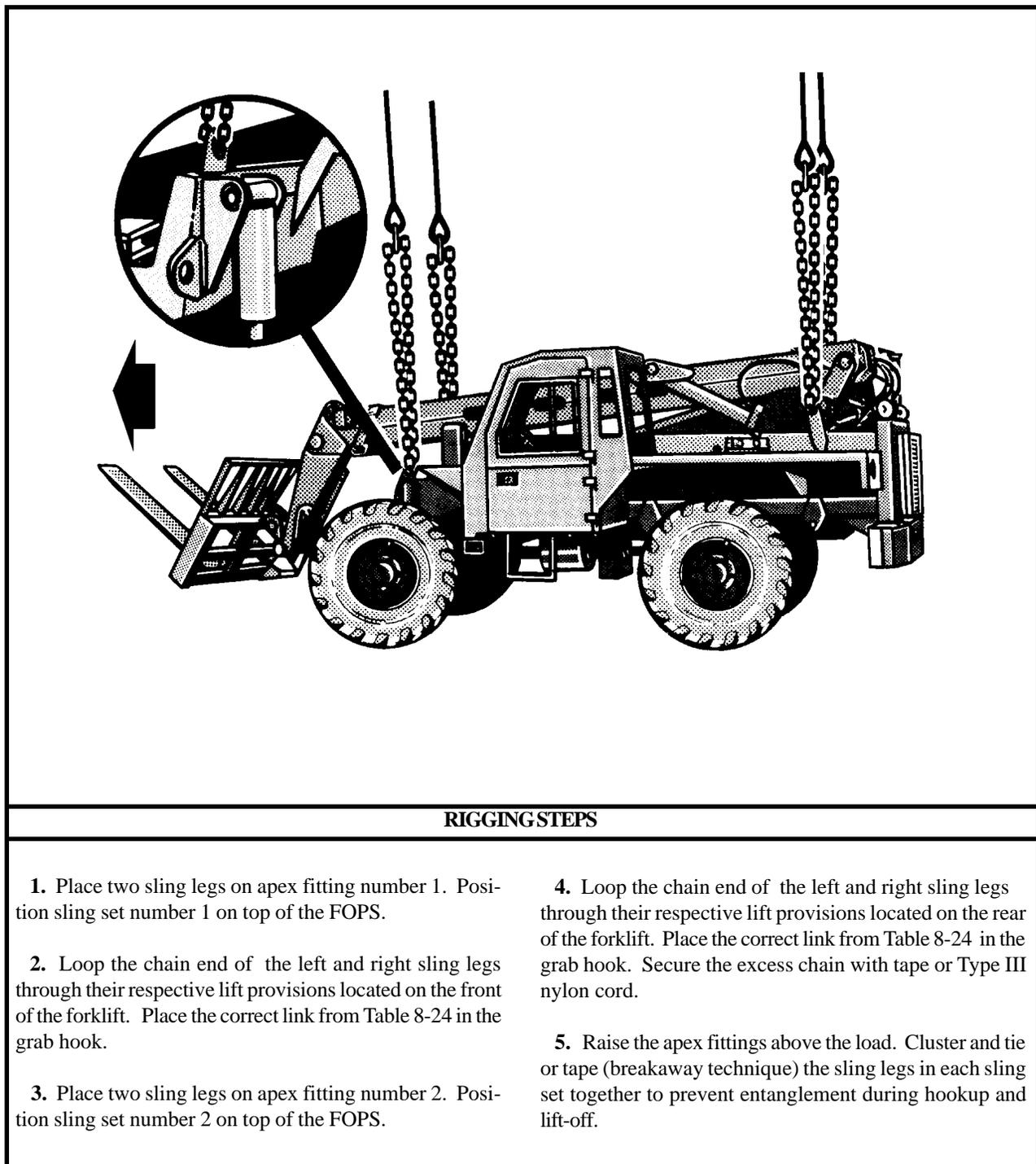
(e) Set the handbrake and place the transmission in neutral.

(f) Tape the end of the exhaust pipe.

(2) **Rigging.** Rig the load according to the steps in Figure 8-24.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the FOPS and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the FOPS and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-24. Extendable Boom Forklift*

## 8-26. Boat, Bridge Erection

**a. Applicability.** The following item in Table 8-25 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-25. Boat, Bridge Erection**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Boat, Bridge Erection, 27-foot	6,000	15K	4/8	CH-53	30

**CAUTION**  
This load becomes extremely unstable at airspeeds above 30 knots.

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Remove the canvas cover and stow in the rear (stern) section.

(b) Secure all loose equipment with tape or Type III nylon cord.

(c) Attach the front section to the rear section of the boat.

(d) Tape all glass items, lights, and reflectors.

(e) Ensure both cradles are not attached to the boat sections.

(2) **Rigging.** Rig the load according to the steps in Figure 8-25.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the stern section and places apex fitting 2 onto the forward cargo hook. The aft hookup person stands on top of the bow and places apex fitting 1 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

**NOTE: Brief the helicopter crew to relax the sling leg tension and hover to the side before releasing the web ring to prevent damaging the boat.**

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

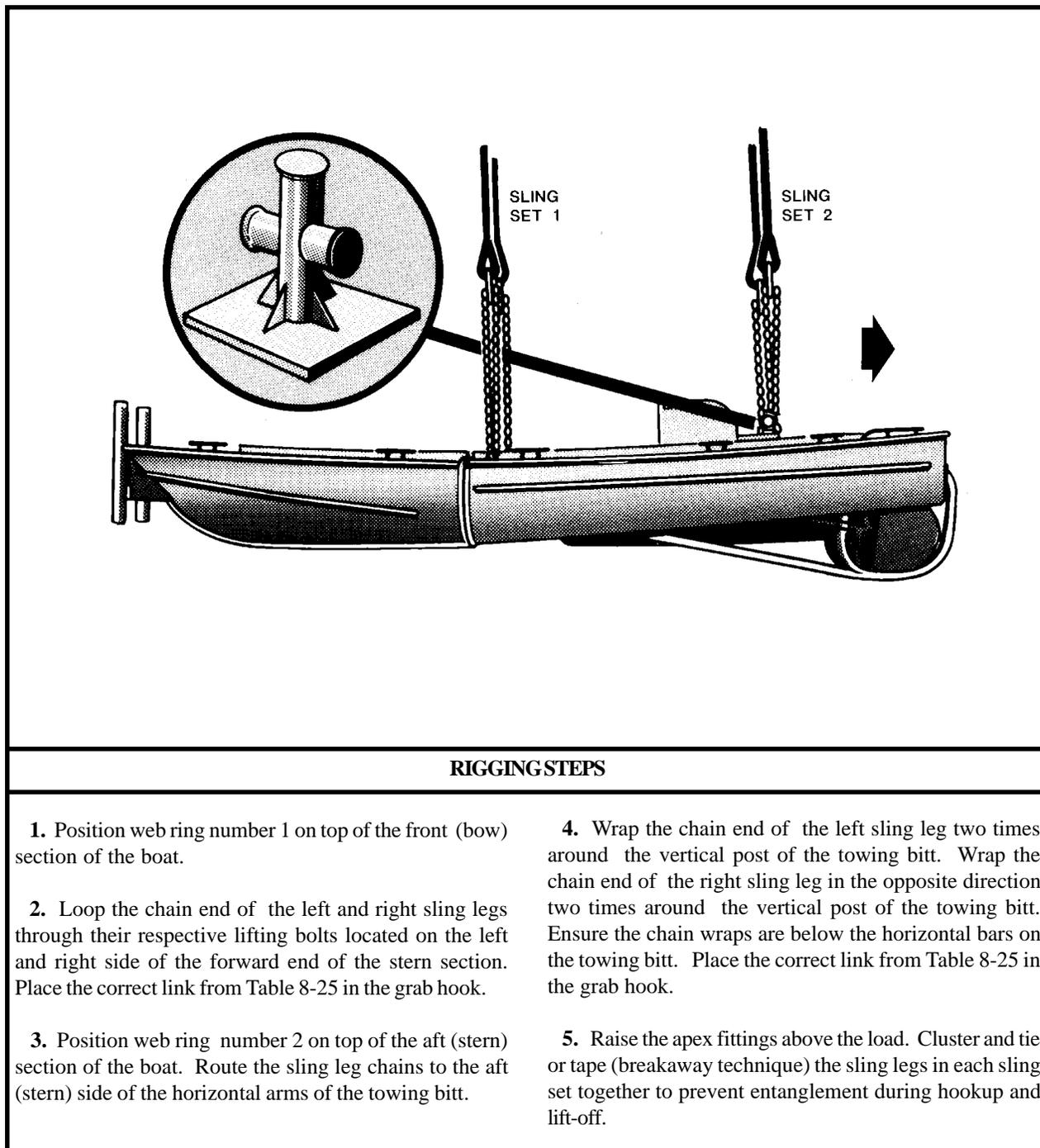


Figure 8-25. Boat, Bridge Erection

## 8-27. Ribbon Bridge Erection Boat, MK2

**a. Applicability.** The following item in Table 8-26 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-26. Ribbon Bridge Erection Boat, MK2**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Ribbon Bridge Erection Boat, MK2	9,040	10K 15K	10/5	CH-47 CH-53	130 70

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).

**OR**

(2) Sling set (10,000-pound capacity) with one additional apex fitting.

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Clevis assembly, medium, MS70087-2, or clevis assembly, large, MS70087-3 (4 each).

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Lower and secure the antenna.

(b) Remove the cab.

**NOTE: Do not sling load the boat with the cab installed.**

(c) Secure all loose equipment with tape or Type III nylon cord.

(d) Secure all hatches and panels with padlocks or a double length of Type III nylon cord. Secure the jet hatches with padlocks or a double length of Type III nylon cord and anchor cleats.

(e) Tape the mast assembly upper stowage pin.

(f) Attach four clevises to the four boat lifting points (triangular structures with holes) mounted on the boat side rails. The front lifting points are approximately 8.5 feet from the front of the boat. The rear lifting points are approximately 7.5 feet from the rear of the boat.

(2) **Rigging.** Rig the load according to the steps in Figure 8-26.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands in the bow of the boat and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands in the stern of the boat and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

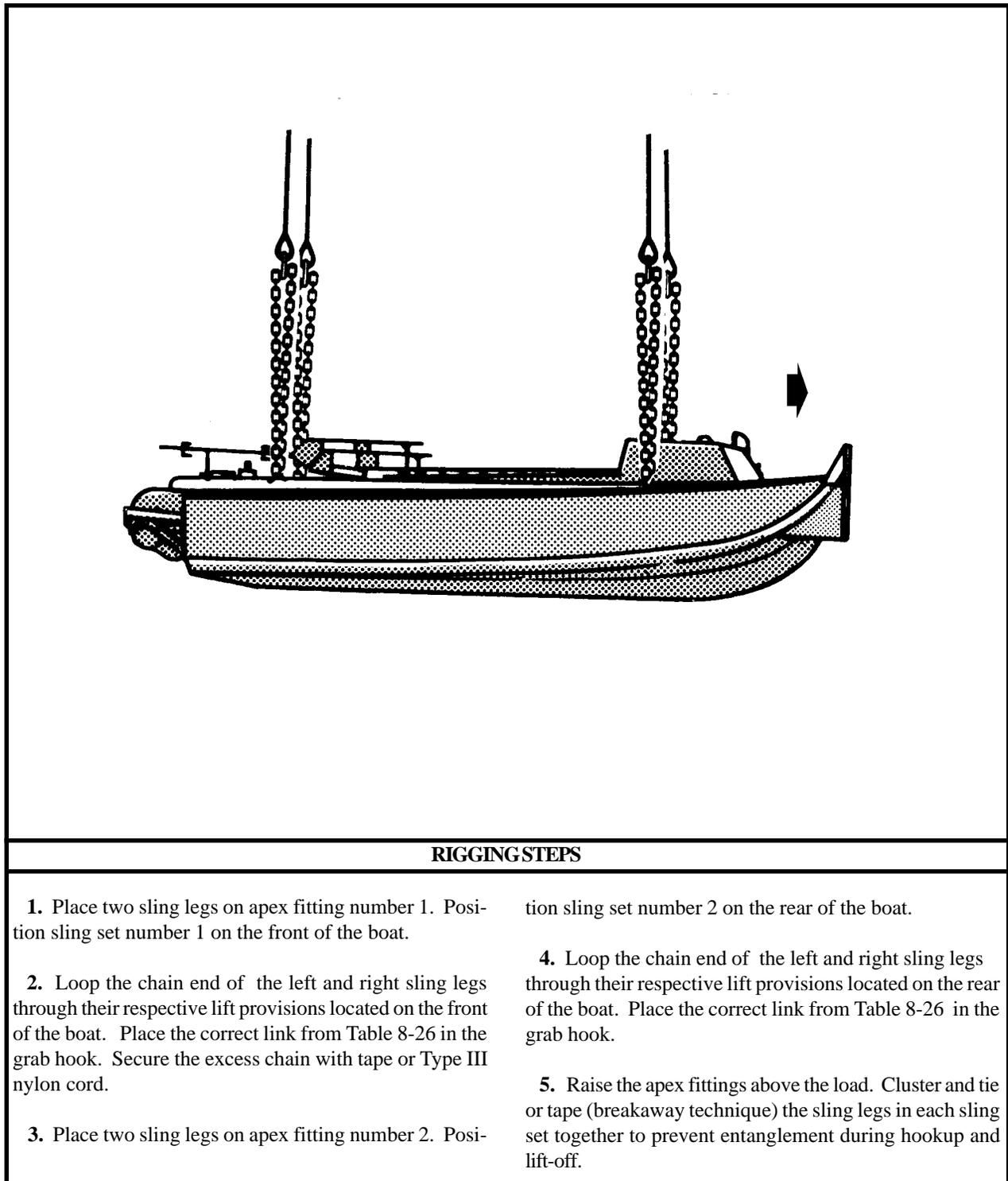


Figure 8-26. Ribbon Bridge Erection Boat, MK2

## 8-28. Ribbon Bridge Interior Bay

**a. Applicability.** The following item in Table 8-27 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-27. Ribbon Bridge Interior Bay**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Ribbon Bridge, Interior Bay	11,800	25K 15K	3/15	CH-47 CH-53	130 100

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).
- OR**
- (2) Sling set (25,000-pound capacity) with one additional apex fitting.
- (3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (4) Cord, nylon, Type III, 550-pound breaking strength.
- (5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) The end with the roadway lock is the front of the

load.

- (b) Ensure all the bay latches are securely fastened.

(2) **Rigging.** Rig the load according to the steps in Figure 8-27.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the bridge and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on top of the bridge and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

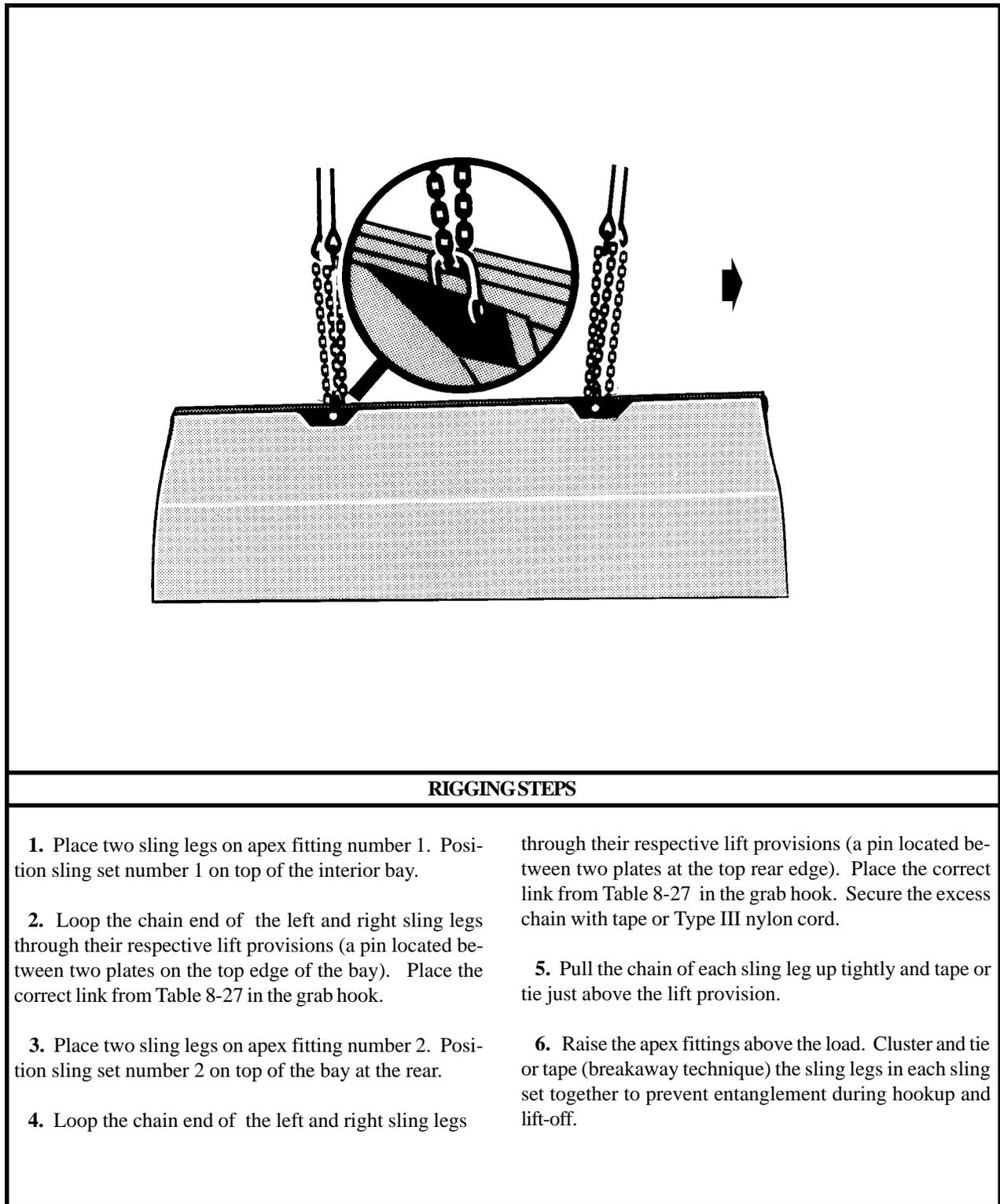


Figure 8-27. Ribbon Bridge Interior Bay

## 8-29. Ribbon Bridge, Ramp Bay

**a. Applicability.** The following item in Table 8-28 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-28. Ribbon Bridge, Ramp Bay**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Ribbon Bridge, Ramp Bay	11,560	25K 15K	3/50	CH-47 CH-53	130 70

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (15,000-pound capacity) (2 each).

**OR**

(2) Sling set (25,000-pound capacity) with one additional apex fitting.

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) The short end of the bay is the front of the load.

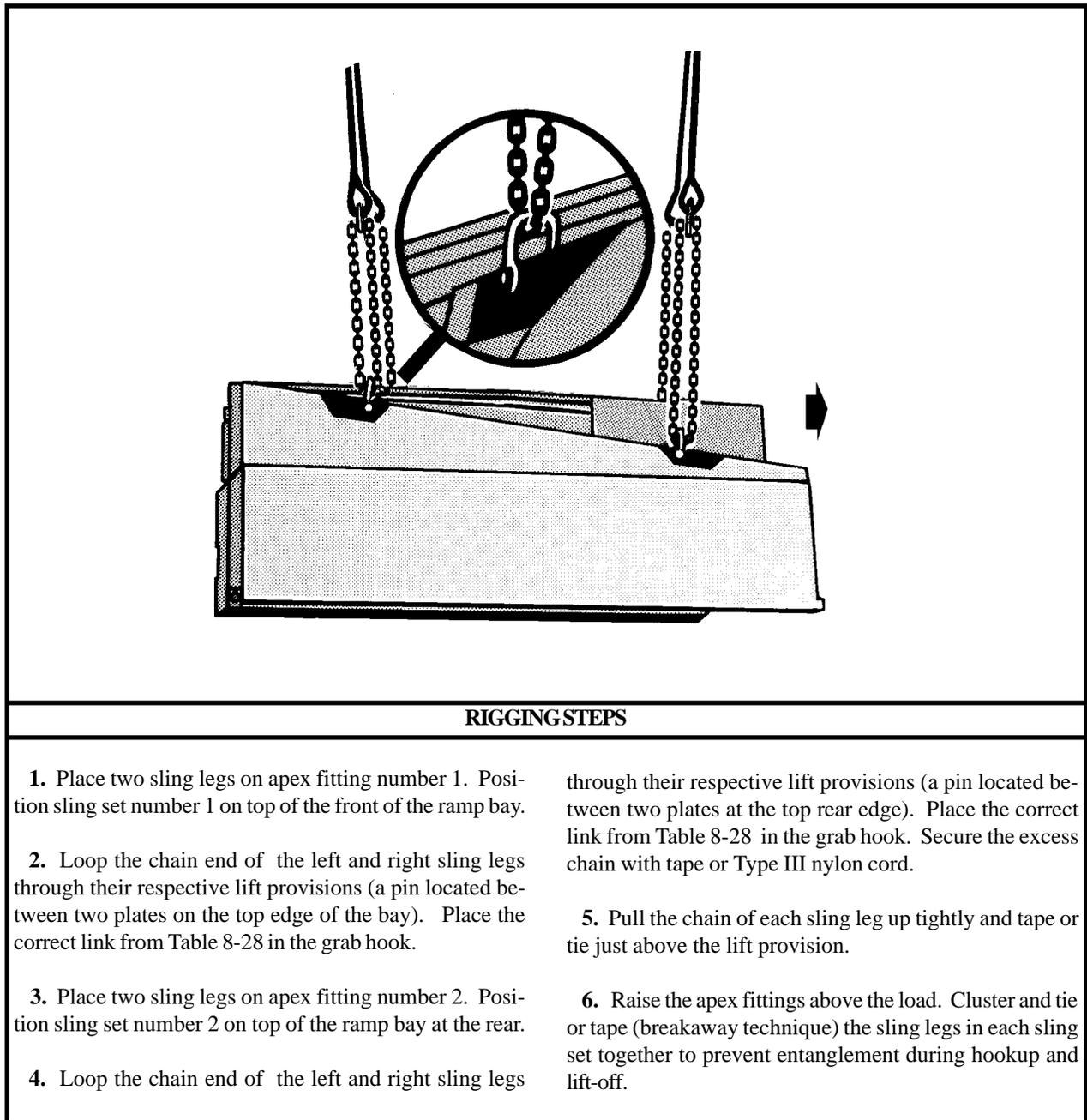
(b) Ensure all the bay latches are securely fastened.

(2) **Rigging.** Rig the load according to the steps in Figure 8-28.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the ramp bay and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on top of the ramp bay and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-28. Ribbon Bridge, Ramp Bay*

### 8-30. Medium Girder Bridge (USMC)

**a. Applicability.** The following item in Table 8-29 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-29. Medium Girder Bridge**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Medium Girder Bridge, five bay, double story, one end, undecked, with building frame, and launching nose	18,240	40K	5/5	CH-53	80

**CAUTION**  
**DUE TO THE EXTREME LENGTH OF THIS LOAD THE AIRCRAFT RADAR ALTIMETER BECOMES UNRELIABLE. ENSURE THE PILOTS ARE NOTIFIED PRIOR TO PICKUP.**

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting.

(a) Additional chain lengths, part number 607050 (4 each).

(b) Additional coupling links, part number 577-0815 (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (8 each).

(6) Tiedown assembly, chain, MB-1 (12 each).

(7) Fire hose, 2 1/2-inch or larger, 8-foot long (12 each).

**c. Personnel.** Four persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Ensure the launching nose is snug against the Bankseat Beam located on the front of the bridge.

(b) Ensure all tiedown chains and straps are tight and the hydraulic jacks are safety wired in place.

(c) Tape all ratchets and chain tensioners.

(d) Attach an additional chain length to each sling leg chain using the coupling links.

(e) Slide an 8-foot length of fire hose on each sling leg chain.

(2) **Rigging.** Rig the load according to the steps in Figure 8-29.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the left girder and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the left girder and places apex fitting 2 onto the aft cargo hook. The

hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the

helicopter to the designated rendezvous point.

**(4) Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

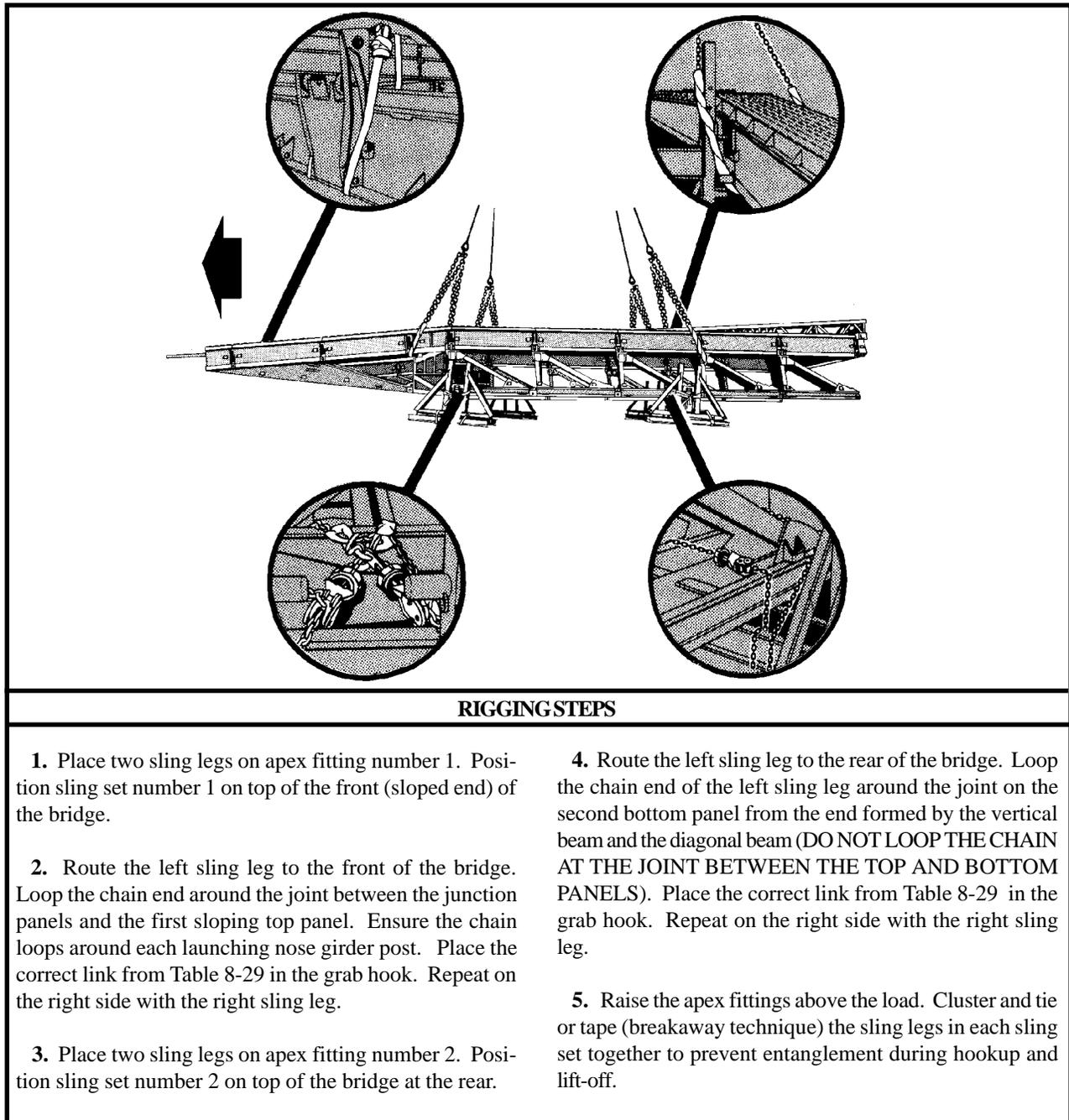


Figure 8-29. Medium Girder Bridge

## 8-31. Pneumatic Tool and Compressor Outfit / Hydraulic Pioneer Tool Outfit (PTO) on M353 Trailer

**a. Applicability.** The following items in Table 8-30 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-30. Tool Outfits on M353 Trailer**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Pneumatic Tool and Compressor, TAMCN B0395	8,040	15K	5/30	CH-53	120
Hydraulic Pioneer Tool Outfit (PTO)	6,740	10K	3/30	CH-47	110

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).

**OR**

(2) Sling set (10,000-pound capacity) with one additional apex fitting.

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable substitute.

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) Engage both hand brakes.

(b) Ensure the fuel tanks are not over 3/4 full. Inspect the fuel tank cap, oil filler cap, and battery caps for proper installation. Secure all loose gear and doors.

(c) Secure the light cable to the drawbar with tape or Type III nylon cord.

(d) Tape all glass items, lights, and reflectors.

(e) Secure the two small wheels.

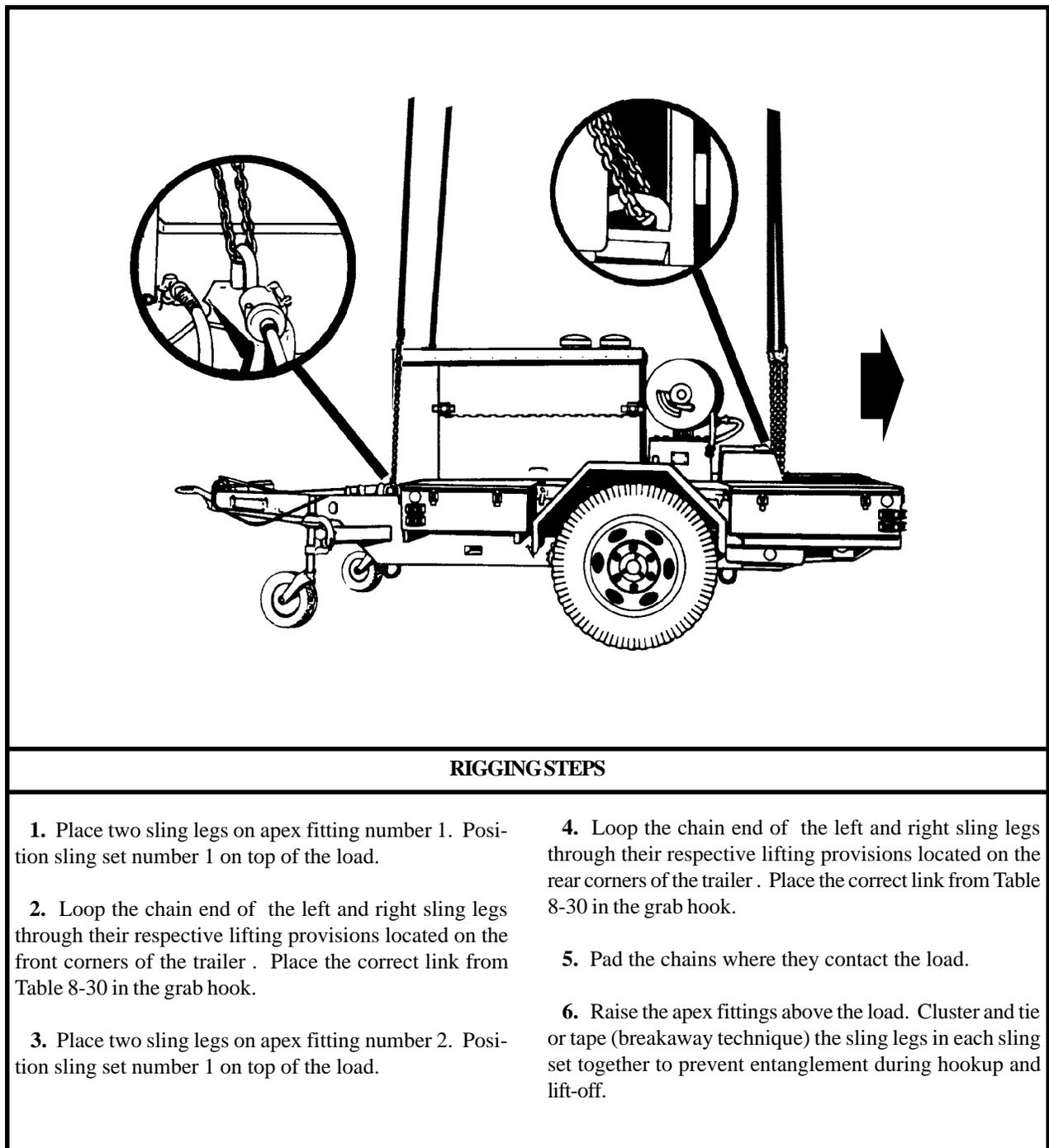
(2) **Rigging.** Rig the load according to the steps in Figure 8-30.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the compressor and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on top of the compressor and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

**NOTE: Brief the helicopter crew to relax the sling leg tension and hover to the side before releasing the web ring to prevent damaging the boat.**

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-30. Tool Outfits on M353 Trailer*

## 8-32. 35-Foot Riverine Assault Craft (RAC) With or Without Trailer

**a. Applicability.** The following items in Table 8-31 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-31. 35-Foot Riverine Assault Craft (RAC) With or Without Trailer**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
35-Foot Riverine Assault Craft (RAC)	13,800	40K	3/10	CH-53	70
35-Foot Riverine Assault Craft (RAC) with Trailer	15,800	40K	3/10	CH-53	110

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity) with one additional apex fitting.

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown (10,000-pound capacity) (4 each).

**c. Personnel.** Four persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) Place dunnage under the tongue of the trailer and retract the landing gear leg.

(b) Ensure the trailer is secured to the hull with the three attaching straps and the forward (bow) chain. Pad

the RAC where the straps make contact.

(c) Engage the parking brake or chock the wheels.

(d) Stack and secure any extra equipment at the lowest point in the RAC with tiedown straps or Type III nylon cord.

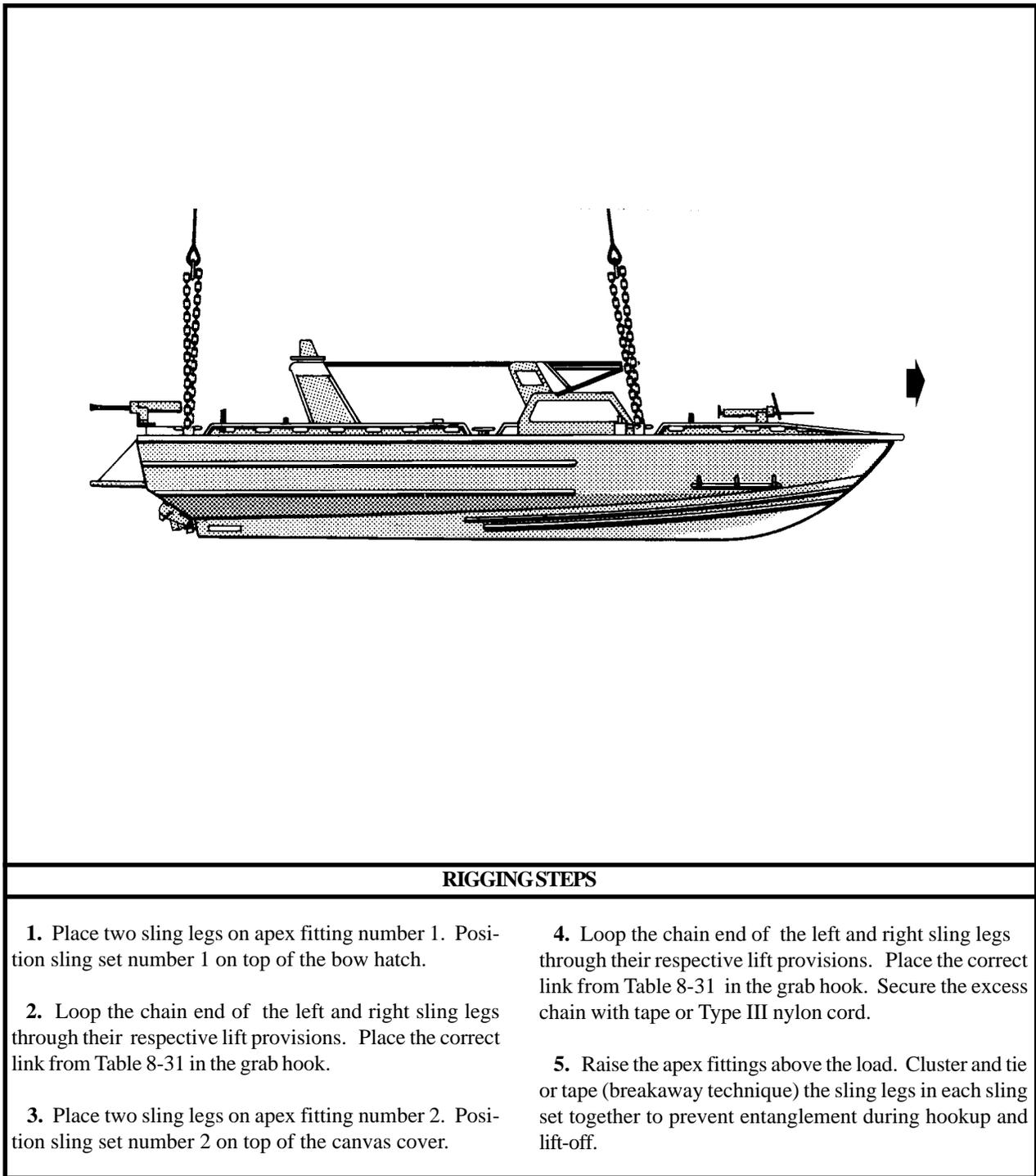
(e) Secure the weapons and install sight covers on the dial sights with tape or Type III nylon cord.

(f) Secure hatch cover, firing platforms, unused lines and equipment with tape or Type III nylon cord.

(2) **Rigging.** Rig the load according to the steps in Figure 8-31.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the forward deck and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the aft transom deck and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-31. 35-Foot Riverine Assault Craft (RAC) With or Without Trailer*

### 8-33. Water Purification Unit, Reverse Osmosis (ROWPU)

**a. Applicability.** The following item in Table 8-32 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-32. Water Purification Unit, Reverse Osmosis (ROWPU)**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Water Purification Unit, Reverse Osmosis, MC 257, 600 gph, Skid Mounted	7,400	15K	5/5	CH-53	90

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (15,000-pound capacity) (2 each).
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Two persons can prepare and rig this load in 15 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

- (a) Secure all boxes, containers, and loose equipment with tape or Type III nylon cord.

- (b) Tape all glass fixtures, reflectors, and gages.

(2) **Rigging.** Rig the load according to the steps in Figure 8-32.

**NOTE: When using the 15,000-pound capacity multileg sling set, tie or tape the inner sling legs to the outer sling legs.**

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the unit and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on top of the unit and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

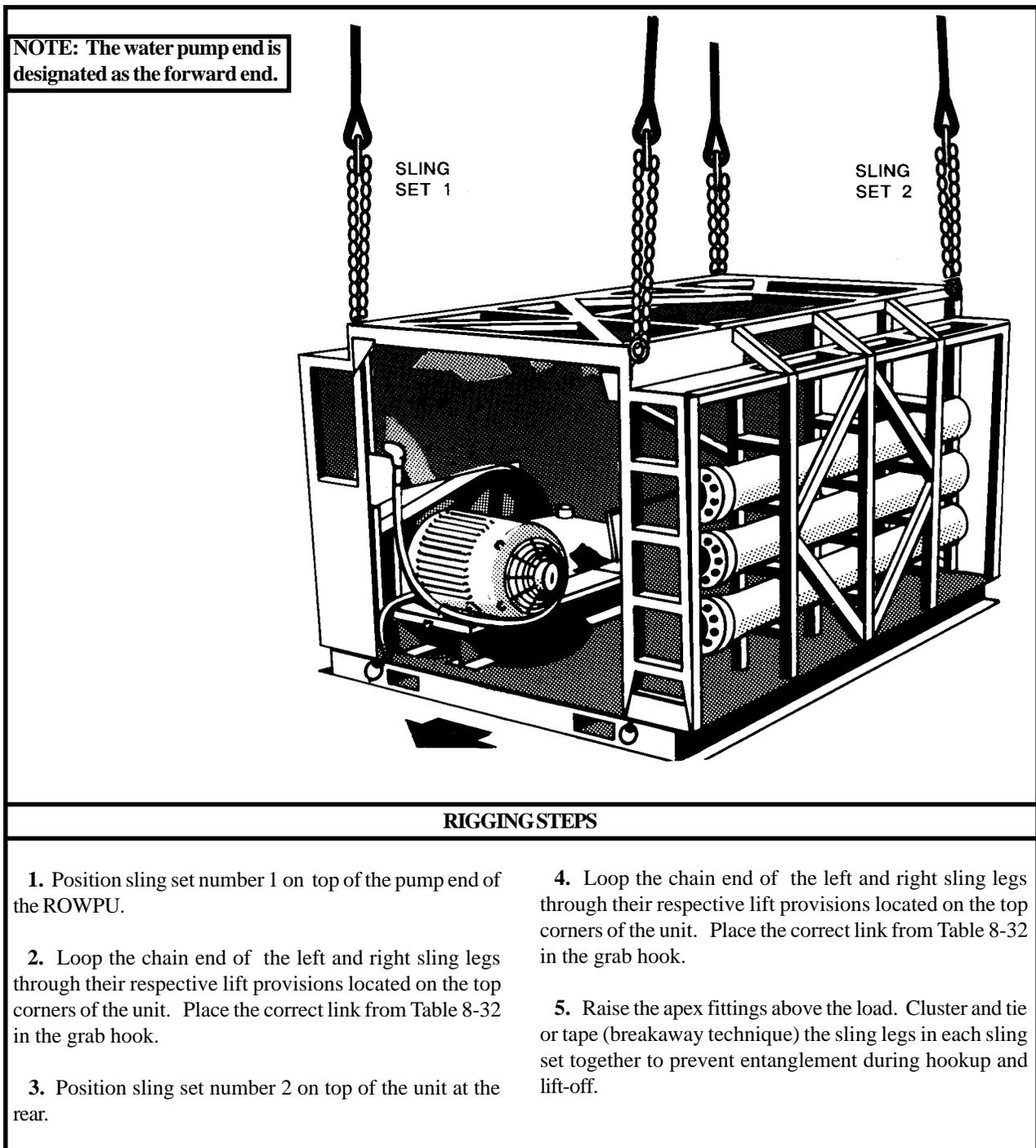


Figure 8-32. Water Purification Unit, Reverse Osmosis

### 8-34. Water Purification Unit, Reverse Osmosis (ROWPU), Trailer Mounted

**a. Applicability.** The following item in Table 8-33 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-33. Water Purification Unit, Reverse Osmosis (ROWPU), Trailer Mounted**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Water Purification Unit, Reverse Osmosis, 600-gph, Trailer Mounted	17,800	25K	3/10	CH-47	100

**b. Materials.** The following materials are required to rig this load:

- (1) Sling set (25,000-pound capacity) with one additional apex fitting.
- (2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.
- (3) Cord, nylon, Type III, 550-pound breaking strength.
- (4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.
- (5) Strap, cargo, tiedown, CGU-1/B (4 each).
- (6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding

**c. Personnel.** Two persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

- (1) **Preparation.** Prepare the load using the following steps:
  - (a) Drain the water from the unit.
  - (b) Retract the trailer jacks.

(c) Remove the canvas from the unit.

(d) Secure all hoses and loose equipment with tape or Type III nylon cord.

(e) Tape all reflectors, lights, and gages.

(f) Secure the generator doors with CGU-1/B straps.

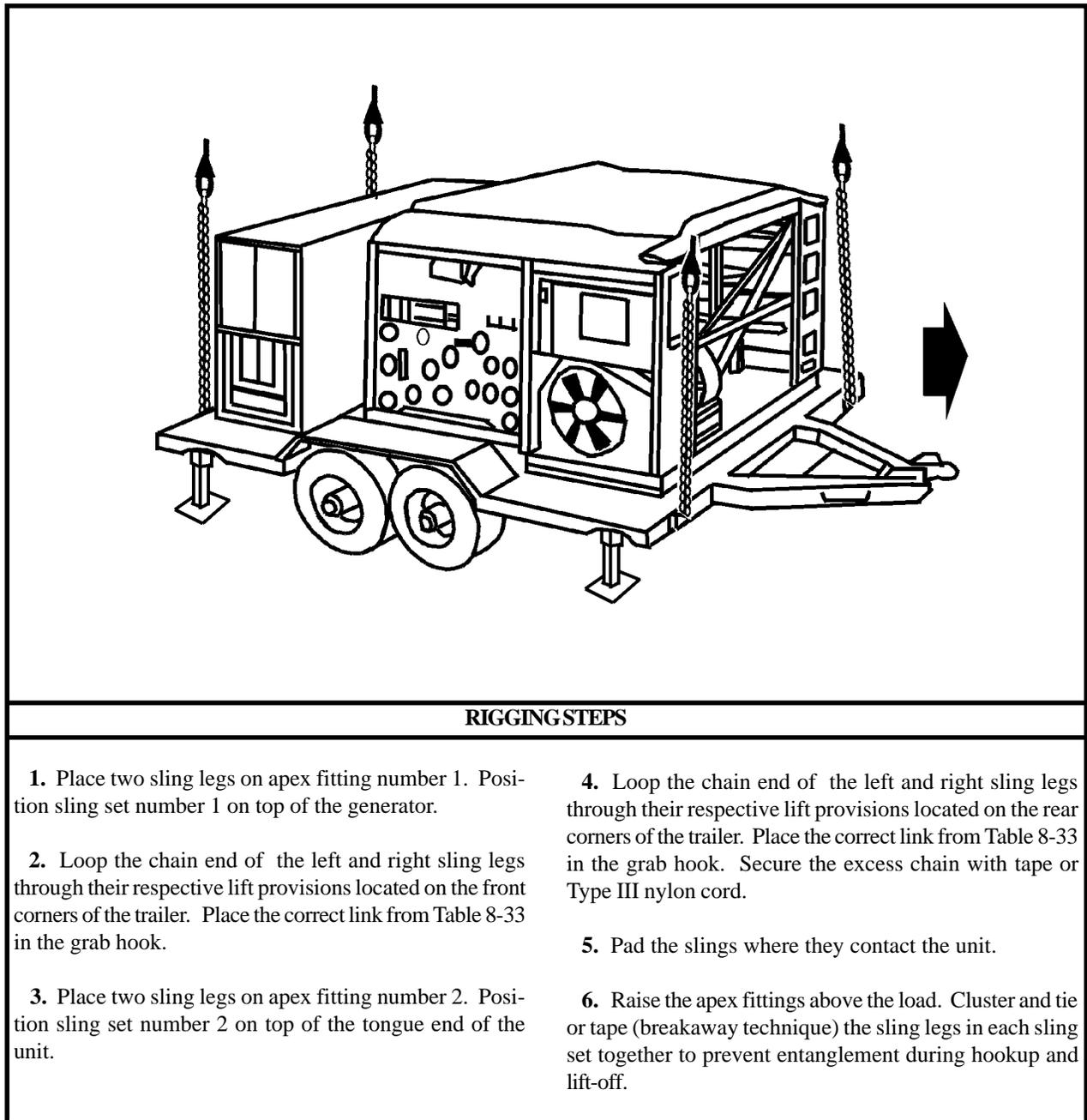
(g) Ensure the fuel tanks are not over 3/4 full. Inspect the fuel tank cap, oil filler cap, and battery caps for proper installation.

(h) Engage the hand brake.

(2) **Rigging.** Rig the load according to the steps in Figure 8-33.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on top of the generator and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the frame and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



*Figure 8-33. Water Purification Unit, Reverse Osmosis, Trailer Mounted*

### 8-35. Inland Petroleum Distribution System (IPDS), Mainline Pump on 20-Foot Flatrack

**a. Applicability.** The following item in Table 8-34 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 8-34. Inland Petroleum Distribution System (IPDS), Mainline Pump on 20-Foot Flatrack**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Inland Petroleum Distribution System (IPDS), Mainline Pump on 20-Foot Flatrack	19,500	25K	2/30	CH-47	125

**b. Materials.** The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity) with one additional apex fitting.

(a) Additional chain lengths, part number 38850-00053-102 (4 each).

(b) Additional coupling links, part number 664241 (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

**c. Personnel.** Three persons can prepare and rig this load in 20 minutes.

**d. Procedures.** The following procedures apply to this load:

(1) **Preparation.** Prepare the load using the following steps:

(a) The pump end of the flatrack is the forward end

of the load.

(b) Secure all loose equipment with tape or Type III nylon cord.

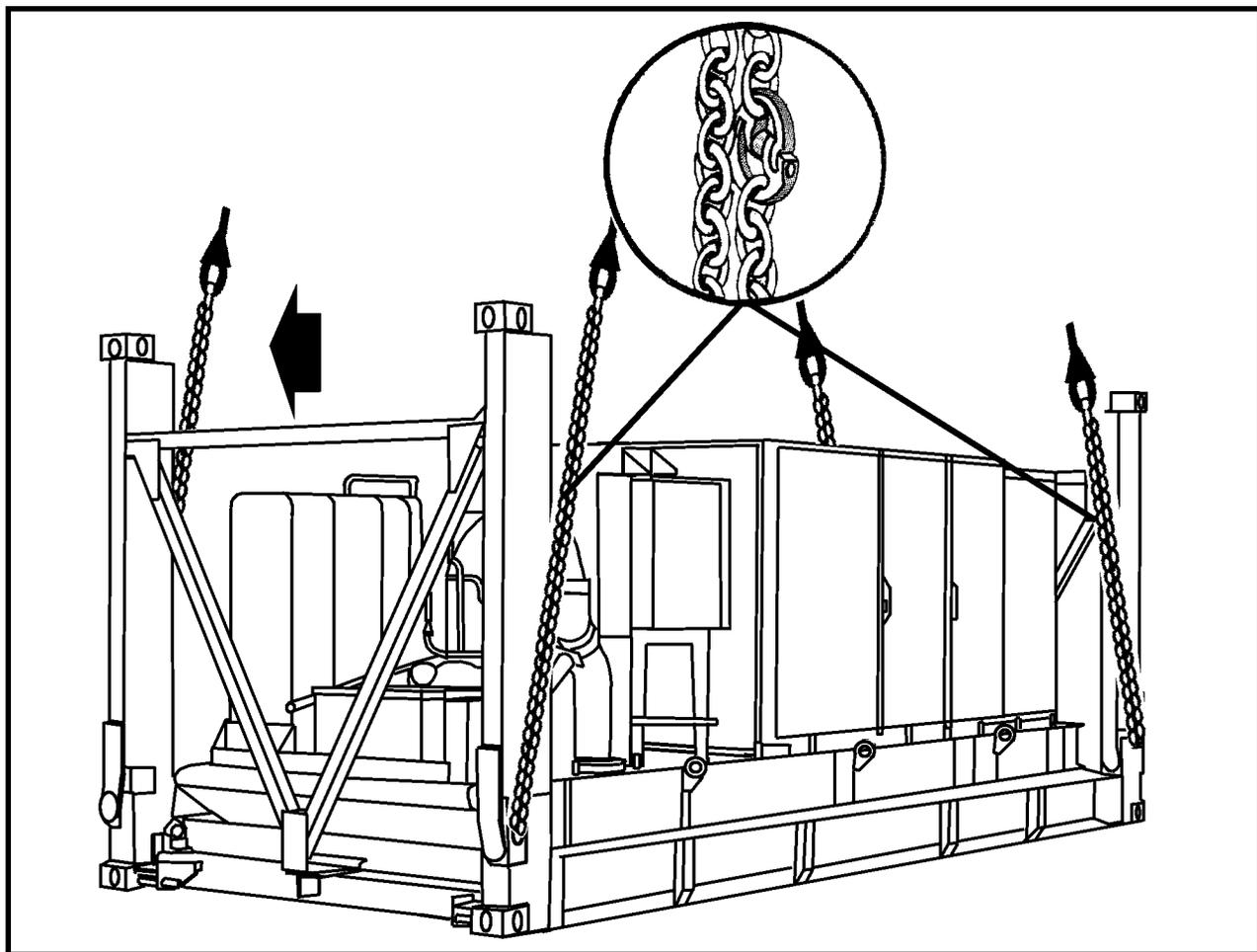
(c) Attach an additional chain length to each sling leg chain using a coupling link.

(2) **Rigging.** Rig the load according to the steps in Figure 8-34.

(3) **Hookup.** Two hookup teams are required for this load. The static discharge person discharges the static electricity. The forward hookup person stands on the engine cover and places apex fitting 1 onto the forward cargo hook. The aft hookup person stands on the engine cover and places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the load and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

**NOTE: Brief the pilot to relax the sling tension and hover to the side of the load when releasing the apex fitting to prevent damaging the load.**

(4) **Derigging.** Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



#### RIGGING STEPS

1. Place two sling legs on apex fitting number 1. Position sling set number 1 on top of the pump closet on the forward end.
2. Loop the chain end of the left and right sling legs through their respective lift provisions located on the front portion of the container. Place the correct link from Table 8-34 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position sling set number 2 on top of the engine compartment near the aft end.
4. Loop the chain end of the left and right sling legs through their respective lift provisions located on the aft end of the pump. Place the correct link from Table 8-34 in the grab hook. Secure the excess chain with tape or Type III nylon cord.
5. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

*Figure 8-34. Inland Petroleum Distribution System (IPDS), Mainline Pump on 20-Foot Flatrack*