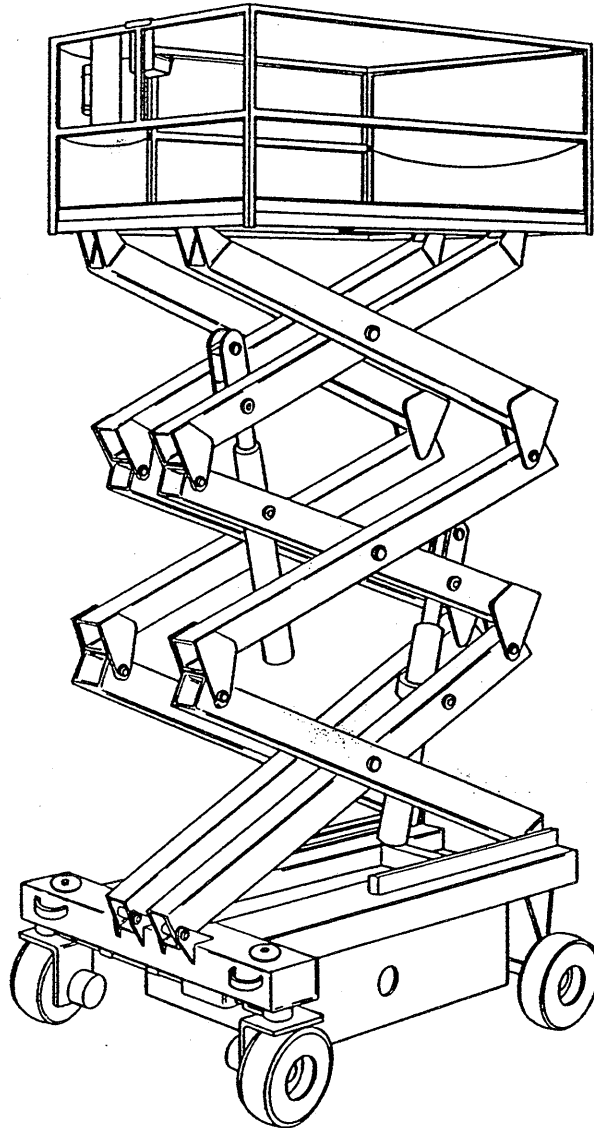


# **UP-RIGHT** **XL-C SERIES**



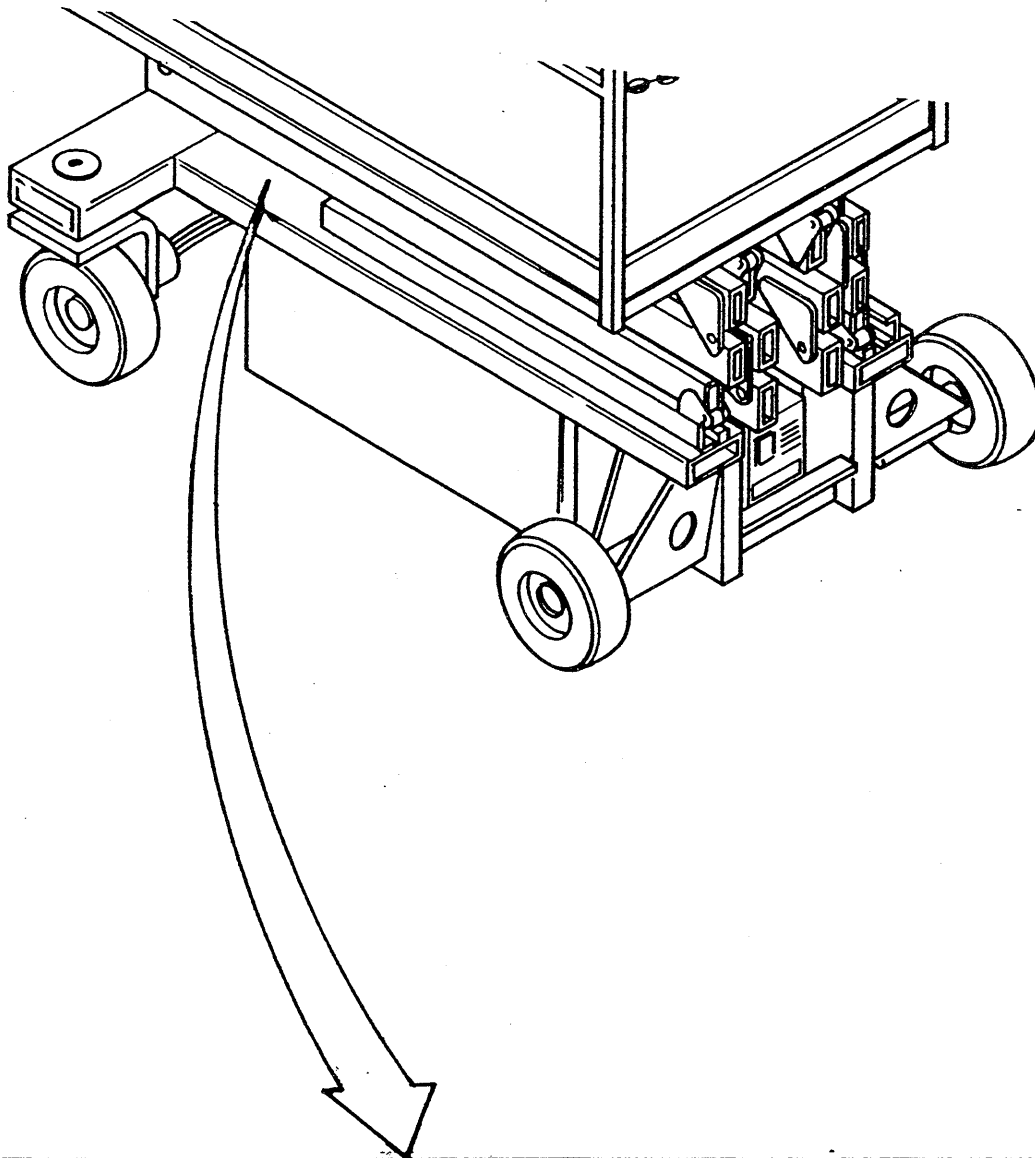
## **SERVICE & PARTS MANUAL**

**Information herein is subject to change without notice. When contacting Up-Right for service or parts information, be sure to include the MODEL and SERIAL NUMBERS from the equipment name plate.**

### **UpRight**

UpRight, Inc.  
1775 Park Street  
Selma, California 93662  
TEL: 559/891-5200  
FAX: 559/896-9012  
PARTSFAX: 559/896-9244

**Part No. 61799-000-00**



<b><i>UP-RIGHT INC.</i></b>	
1775 PARK ST.      SELMA, CA 93662	
MODEL NO. <input type="text"/>	MAX. PLATFORM HEIGHT <input type="text"/>
SERIAL NO. <input type="text"/>	BATTERY VOLTAGE <input type="text"/>
MAX. DISTRIBUTED LOAD <input type="text"/>	<input type="text"/>
CAUTION: CONSULT OPERATOR'S MANUAL BEFORE USE. THIS PLATFORM IS NOT ELECTRICALLY INSULATED	
<small>P/N 61205-000-00</small>	

Part Number

Identification Plate and Model Number

INSERT LATEST CHANGED PAGES.  
DESTROY SUPERCEDED PAGES.

## LIST OF EFFECTIVE PAGES

**NOTE:** The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Changes to diagrams are indicated by shaded areas.

\*Zero in this column indicates an original page.

RECORD OF CHANGES

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY



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## SECTION I

### INTRODUCTION AND GENERAL INFORMATION

#### 1-1. INTRODUCTION.

1-2. **PURPOSE.** This manual provides illustrations and instructions for the operation and maintenance of an UP-RIGHT XL-C SERIES Work Platform manufactured by Up-Right, Inc. Selma Operations, of Selma, California. (See Figure 1-1).

1-3. **SCOPE.** The operating instructions include both operation and maintenance responsibilities concerning an XL-C SERIES Work Platform's readiness. The functions cover scheduled maintenance, troubleshooting, repair, adjustment and replacement.

#### 1-4. GENERAL INFORMATION.

1-5. **ITEM DESCRIPTION.** All UP-RIGHT XL-C SERIES Work Platforms are self-propelled scissor lifts designed to be used as a means of elevating maintenance personnel and equipment and to provide a mobile work platform. They are designed to provide mobility with the platform in a raised or lowered position. Travel with the platform raised more than one foot is limited to the low speed range.

1-6. **PURPOSE AND LIMITATIONS.** The objective of the XL-C SERIES Work Platform is to provide a quickly deployable, self-propelled, variable height work platform. The elevating function shall only be used when the work platform is on a level paved or reinforced work area. The work platform is intended to be self-propelled when in relatively close proximity to the work area.

1-7. **SPECIFICATIONS.** Refer to Table 1-1.

Table 1-1. Specifications

Item	XL-19C	XL-19CW	XL-24C
Platform Size	29" x 77" Inside Toeboards	48" x 89" Inside Toeboards	48" x 89" Inside Toeboards
Capacities			
Maximum Platform	550 Lbs (750 Lbs Opt.)	1,000 Lbs	750 Lbs
Max Cantilever Cage/Extension	250 Lbs	250 Lbs	250 Lbs
Maximum Combined	Combined 550 Lbs	Combined 1000 Lbs	Combined 750 Lbs
Height			
Working Height	25 Ft	25 Ft	30 Ft
Max. Platform Ht.	19 Ft	19 Ft	24 Ft (23'11")
Min. Platform Ht.	44 In	44 In	50 In

Table 1-1. Specifications Continued

Item	XL-19C	XL-19CW	XL-24C
Dimensions			
Weight	2,650 Lbs	2,600 Lbs	3,195 Lbs Approx.
Overall Width	32-1/2 In	50-3/4 In	50-3/4 In
Overall Height	86 In	86 In	91-1/2 In
Overall Length	80 In	82 In	91 In
Driveable Height	19 Ft Standard 15 Ft w/Cage Extension or 750 Load Rating	19 Ft Standard	24 Ft Standard
Surface Speed			
Platform Lowered	0 to 2 MPH	0 to 2 MPH	0 to 2 MPH
Platform Raised	0 to .7 MPH	0 to .7 MPH	0 to .7 MPH
Energy Source	24 Volt Battery Pack 4 HP DC Electric Motor Four 220 Ampere Hour Batteries	24 Volt Battery Pack 4 HP DC Electric Motor Four 220 Ampere Hour Batteries	24 Volt Battery Pack 4 HP DC Electric Motor Four 220 Ampere Hour Batteries
Battery Charger	25 AMP	25 AMP	25 AMP
Battery Duty Cycle	25% for 8 Hours	25% for 8 Hours	25% for 8 Hours
Hydraulic Tank Capacity	4 Gallons	4 Gallons	4 Gallons
Lift System	Two Single Stage Lift Cylinders	Two Single Stage Lift Cylinders	Three Single Stage Lift Cylinders
Drive Control	2 Speed, Forward and Reverse	2 Speed, Forward and Reverse	2 Speed, Forward and Reverse
Control System	Toggle Switches for All Functions	Toggle Switches for All Functions	Toggle Switches for All Functions
Horizontal Drive	Dual Front Wheel	Dual Front Wheel	Dual Front Wheel
Tires	16 In Diameter Solid Rubber	16 In Diameter Solid Rubber (Option-16.5x6.5x8 Urethane Filled)	16 In Diameter Solid Rubber (Option-16.5x6.5x8 Urethane Filled)
Braking	Spring Applied, Hydraulic Release Parking Brake	Spring Applied, Hydraulic Release Parking Brake	Spring Applied, Hydraulic Release Parking Brake
Turning Radius	24 In Inside	24 In Inside	24 In Inside
Gradeability	25%	25%	25%
Wheel Base	62-1/2 In	63 In	63 In
Guardrails	42 In High**	42 In High	42 In High
Toeboard	6 In High	6 In High	6 In
** Optional guardrails fold down to 79 In for passage through 80 In height door.			
* Specifications subject to change without notice.			

1. Platform
2. Scissor Mechanism
3. Chassis
4. Energy and Power Module
5. Control Console

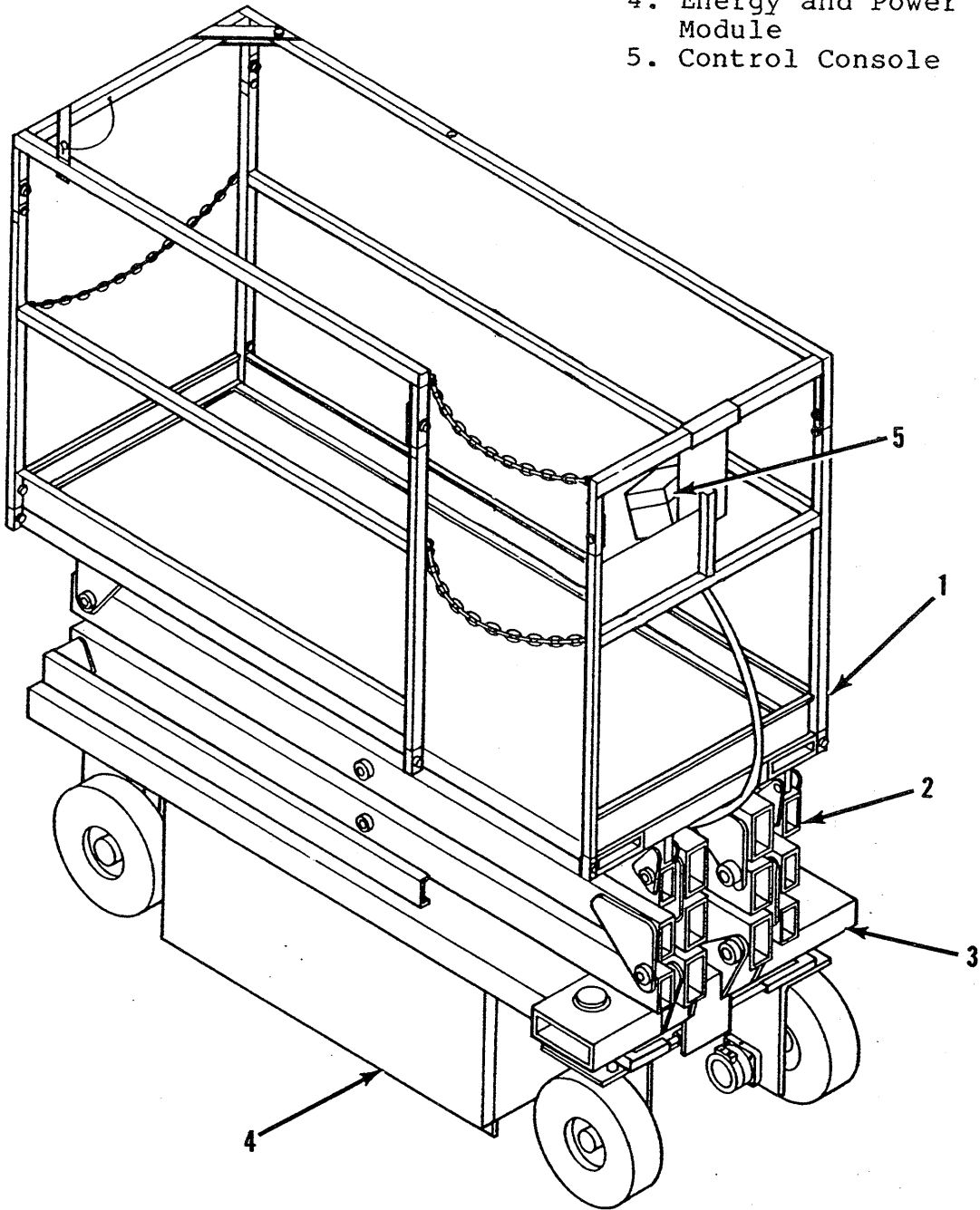


Figure 1-1. XL-C Work Platform

## SECTION II

### SAFETY

**2-1. RULES AND PRECAUTIONS. BEFORE USING AN UP-RIGHT XL-C SERIES WORK PLATFORM.** Read and then follow completely all Safety Rules and Precautions before operating an Up-Right XL-C Series Work Platform.

- a. Thoroughly **INSPECT** the work platform for cracked welds, loose hardware, hydraulic leaks damaged control cable, loose wire connections and tire damage.
- b. **DISTRIBUTE** all loads evenly on the platform. Do not exceed maximum platform load specifications.
- c. **SURVEY** the work area for surface hazards such as holes, drop-offs, bumps and debris before operating work platform.
- d. **LOOK** up, down & around for overhead obstructions and electrical conductors.
- e. **HOOK** chains across entrance after mounting platform.
- f. **CHECK** that all guardrails are in place and secured with all fasteners in place.
- g. **DO NOT** use damaged equipment. (Contact nearest UP-RIGHT Service Center for instructions.)
- h. **DO NOT** change operating or safety systems.
- i. **DO NOT** operate the work platform within ten feet of power lines. **THIS WORK PLATFORM IS NOT INSULATED.**
- j. **DO NOT** elevate the platform or drive the work platform while elevated unless on firm level surface.
- k. **DO NOT** attach overhanging loads or increase platform size.
- l. **DO NOT** use ladders or scaffolding on the platform.
- m. **DO NOT** sit, stand or climb on guardrail or midrail.
- n. **DO NOT** climb down scissors with the platform elevated.
- o. **DO NOT** recharge batteries near sparks or open flame; batteries that are being charged emit highly explosive hydrogen gas.
- p. **DO NOT** perform service on work platform while platform is elevated without blocking the scissors.



### SECTION III

#### PREPARATION FOR USE, SHIPMENT AND STORAGE

##### 3-1. PREPARATION FOR USE.

###### WARNING

**STAND CLEAR** when cutting the metal banding to avoid being cut when the banding snaps back.

- a. Remove the metal banding from the module covers and scissor linkage.
- b. Remove the banding from the control console.
- c. Lift the front of XL-C Series work platform and remove banding and blocks from front wheels.
- d. Lower work platform.
- e. Close the emergency lowering valve.
- f. Connect the negative battery lead terminal (1, Figure 3-1).

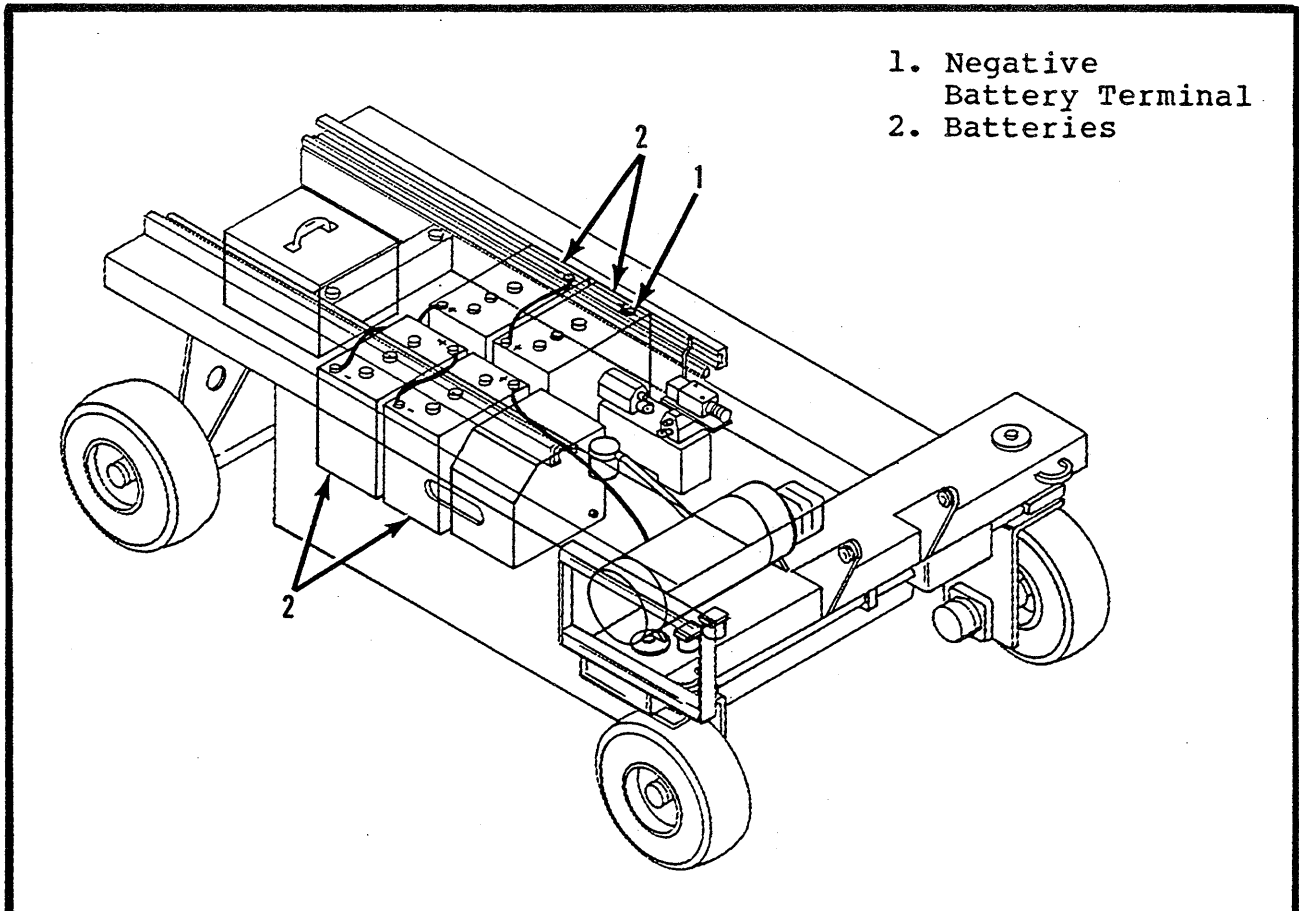


Figure 3-1. Batteries

**3-2. Preparation for shipment.**

- a. Grease all the grease fittings as per Paragraph 5-8.
- b. Fully lower the platform.
- c. Disconnect the battery negative (-) lead from the battery terminal (1, Figure 3-1).
- d. Band the control console to the front guardrail.
- e. Band the scissor linkage to the frame just behind the front wheels and at the rear wheels.
- f. For sea shipment, perform preservation per extended storage paragraph 3-4/a.

**3-3. TRANSPORT.**

- a. Maneuver the XL-C into transport position and chock wheels.

**NOTE**

If forklifting is required, lift from rear of the work platform.

- b. Place blocks under the front wheel yokes.
- c. Secure the work platform to the transport vehicle with chains or straps of adequate load capacity attached to the chassis tie down lugs.
- d. Open emergency lowering valve.

**3-4. STORAGE.** No preparation for storage is required for normal usage. Regular maintenance per Table 5-1 and Figure 5-1 should be performed. If the work platform is to be placed in long term storage (dead storage) use the following preservation procedure.

a. Preservation.

- (1) Clean painted surfaces. If the paint surface is damaged, repaint.

**NOTE**

This hydraulic system is filled to the operating level with approved fluid required for operation. Do not drain.

- (2) Fill the hydraulic tank to operating level.
- (3) Coat exposed portions of extended cylinder rods with an approved preservative and wrap with barrier material.

(4) Coat all exposed unpainted metal surfaces with preservative.

b. Batteries.

(1) Disconnect all the battery leads and secure to the chassis. Tape the connectors on the ends of the leads to the chassis.

(2) Remove the batteries and place in alternate service.

c. Front Wheel Yokes.

**CAUTION**

XL-C must be blocked under front wheel yokes to prevent damage to motor seals.

(1) Jack up front of work platform.

(2) Place blocks under front wheel yokes. The blocks must be high enough to prevent front tires from touching the ground.

(3) Lower work platform onto the blocks.

## SECTION IV

### OPERATION INSTRUCTIONS

#### 4-1. THEORY OF OPERATION.

**4-2. GENERAL FUNCTIONING.** The battery powered electric motor directly drives a two section hydraulic pump. This pump supplies oil under pressure to operate all the work platform functions. The oil flow is directed to the different functions by electrically activated solenoid valves.

**4-3. DRIVING (Figures 6-1 & 6-2).** With the Emergency Stop Switch on and the Key Switch in drive the machine will drive and steer in the direction you wish to travel. Driving Forward or Reverse will energize the Drive Coils, the Steering Bypass Coil and the Motor Relays to start the Electric Motor. Oil will now flow through the Drive Valve to the Brake Cylinder and the Hydraulic Motors. Driving in High Speed will also energize the High Speed Coil. This allows oil to combine from both sections of the Hydraulic Pump and flow through Hydraulic Motors to increase speed. Steering Left or Right will energize the Steering Coils and the Motor Relays. This allows oil to flow through the Steering Valve to the Steering Cylinder.

Driving in High Speed with platform elevated is the same, except the high speed check valve allows oil from one section of the pump to flow back to tank. This limits the machine to Low Speed.

**4-4. RAISING AND LOWERING PLATFORM.** With the Emergency Stop Switch on and the Key Switch in Lift, the platform will raise and lower. Raising the platform energizes the Lift Bypass Coil, Steering Bypass Coil, UP Coil and Motor Relays to start the Electric Motor. Oil will now flow through the Lift Valve to the Lift Cylinders. Lifting in HIGH Speed will also energize the High Speed Coil. This allows oil to combine from both sections of Hydraulic Pump and flow to the Lift Cylinders, increasing the speed in which the platform will raise. Lowering the platform electrically energizes the Down Alarm and the Down Coil. This allows the oil to flow out of the Lift Cylinders through an orifice, which controls the rate of descent, then back to the tank. Lowering the platform manually with Emergency Down Valve allows the oil to flow out of Lift Cylinders in the same manner.

**4-5. SAFETY DESIGN.** The XL-C Series has the following features to ensure safe operation.

- a. The drive speed is limited to CREEP speed when operating the work platform while platform is elevated.

- b. The platform descent rate is controlled by an orifice. The lift cylinders are equipped with velocity fuses to prevent descent should a hose fail.
- c. A holding brake is automatically engaged when the drive toggle switch is released.
- d. The control box is equipped with an emergency-off switch.
- e. Controls are guarded to prevent inadvertant operation.
- f. An alarm is provided to signal when the platform is lowering.
- g. A lift switch is located in the module on the chassis for lifting and lowering work platform from ground level.

**4-6. CONTROLS AND INDICATORS.** The controls and indicators for operation of the XL-C Series Work Platform are shown in Figure 4-1. The name and function of each control and indicator are listed in Table 4-1. The index numbers in the figure correspond to the index numbers in the table. The operator should know the location of each control and indicator and have a thorough knowledge of the function and operation of each before attempting to operate the unit.

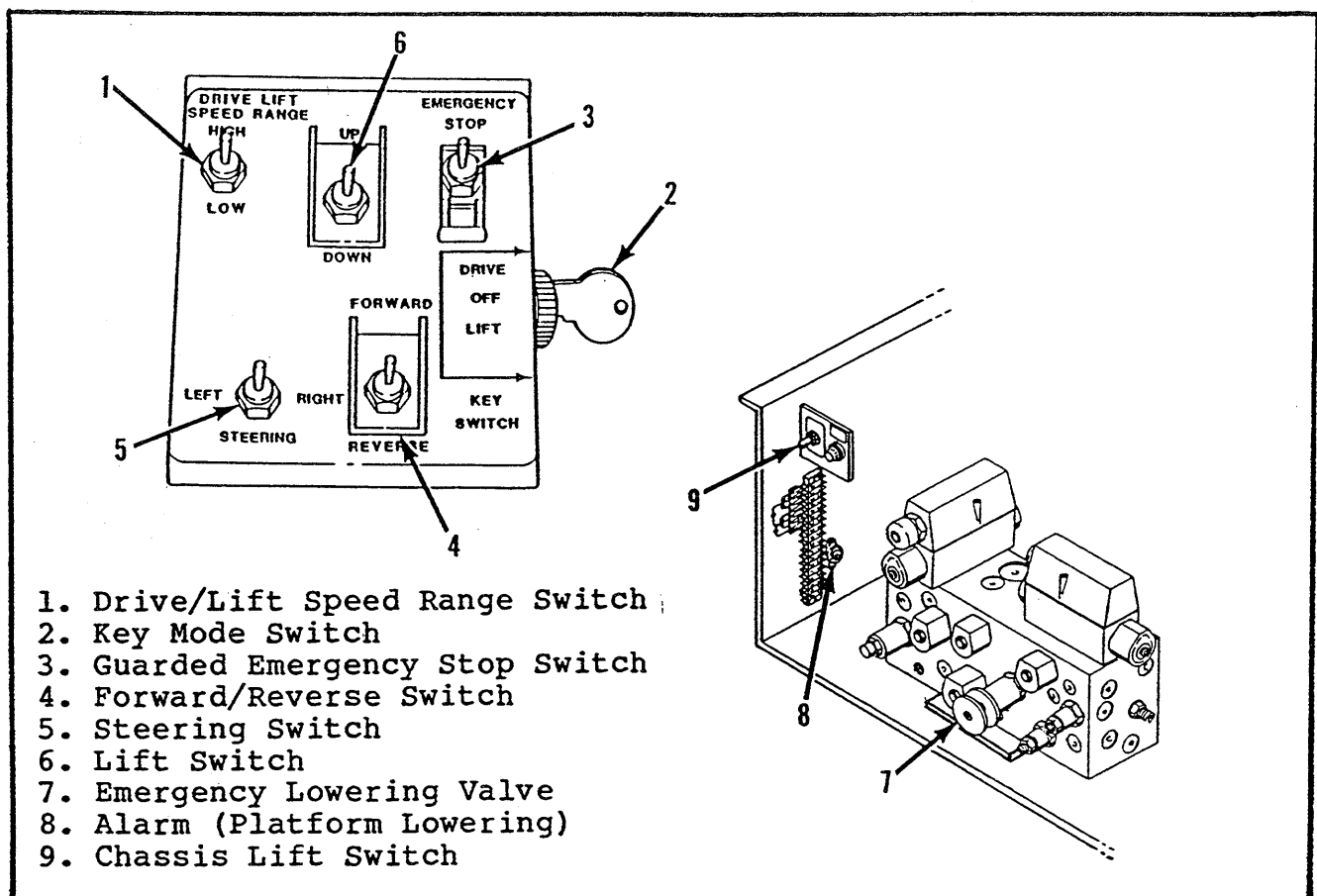


Figure 4-1. Controls and Indicators

Table 4-1. Controls and Indicators

INDEX NUMBER	NAME	FUNCTION
1	Drive/Lift Speed Range Switch	Provides a High and Low Speed.
2	Key Mode Switch	Provides power to Drive Switches or Lift Switch.
3	Guarded Emergency Stop Switch	Cuts off power to all circuits.
4	Forward-Reverse Switch	Provides power to drive Valves.
5	Steering Switch	Provides power to Steering Valves. Although the switch is self-centering, the steering system is not. The wheels must be steered back to straight. Observe the tires while maneuvering the work platform to ensure proper direction.
6	Lift Switch	Provides power to Lift and Down Valves.
7	Emergency Lowering Valve	When Knob is turned counterclockwise to OPEN position platform lowers. Valve is CLOSED by turning knob clockwise. The platform cannot be raised until the valve is closed.
8	Alarm (Platform Lowering)	Sounds an audible signal while platform is lowering when lift switch is used to lower the platform. If the Emergency Lowering Valve is used the alarm does not sound.
9	Chassis Lift Switch	Provides power for lifting and lowering platform at the ground level.

4-7. OPERATING PROCEDURES.

4-8. PRE-OPERATION CHECKOUT.

**WARNING**

DO NOT perform service on work platform with the platform elevated unless it is properly blocked.

- a. Open module covers and inspect for damage and missing parts.
- b. Remove the cap from the hydraulic reservoir and check the level of the oil with the platform fully lowered. Oil should be visible in strainer. Use Mobil 423 or equivalent.
- c. Check the fluid level in the batteries (See Section V, Paragraph 5-7).
- d. Check state of battery charge (See Section V, Paragraph 5-7/b).
- e. Check that A.C. extension cord has been disconnected from charger.
- f. Check that all guardrails are in place and secured with fasteners.
- g. Carefully inspect the entire work platform for damage such as cracked welds or structural members, loose or missing parts, oil leaks, damaged cables or hoses, loose connections and tire damage.

**WARNING**

Perform the following checks from the ground.

**WARNING**

**STAND CLEAR** of work platform while performing checks.

**NOTE**

Unhook control console from front guardrail and hold while performing the following tests.

- h. Before operating the work platform survey the work area for surface hazards such as holes, drop-offs, bumps and debris.
- i. Check in **ALL** directions for obstructions and electrical conductors.

- j. Lift the Emergency Stop Switch cover and position toggle to the **ON** position. (When switch guard is closed, Emergency Stop Switch will automatically go to **OFF** position).

**CAUTION**

Protect control console cable from possible damage while performing checks.

- k. Turn Mode Switch to **DRIVE** position.

**NOTE**

Step 1. should be performed with Speed Range Switch first in **LOW** and then **HIGH**.

- l. Push Drive Switch to **FORWARD** position then **REVERSE** position to check for speed and directional control.
- m. Move Steering Switch **RIGHT**. Then **LEFT** to check for steering control.
- n. Rehook control console to front guardrail and turn Mode Switch to **LIFT**.

**WARNING**

**LOOK** up and around for obstructions prior to operating the lift function.

**DO NOT** operate the work platform within 10 feet of any electrical power lines. **THIS WORK PLATFORM IS NOT INSULATED.**

**DO NOT** elevate the platform unless the work platform is on firm level ground.

**DO NOT** enter the scissor linkage while the platform is elevated.

- o. Push Chassis Lift Switch to **UP** position, check **LOW** and **HIGH** speeds and fully elevate platform.
- p. Visually inspect the scissor linkage, rollers, lift cylinder, cables and hoses for damage or erratic operation. Check for missing or loose parts.
- q. Lower the platform partially by pushing Chassis Lift Switch to **DOWN**, and check operation of the audible lowering alarm.
- r. Open the Emergency Lowering Valve to check for proper operation. Once the platform is fully lowered, close the valve.
- s. Close module covers.



- t. Turn Mode Switch to **OFF** and close Emergency Stop Switch Cover.

#### 4-9. OPERATION.

#### 4-10. TRAVEL WITH PLATFORM LOWERED (Figure 4-1).

- a. After mounting platform hook chains across entrance. Also check that chain at middle of rear guardrail is hooked in position.
- b. Check that route is clear of obstructions, holes and drop-offs and is capable of supporting wheel loads.
- c. Check clearances above, below and to the sides of platform.
- d. Turn the Guarded Emergency Stop Switch on the control console to the **ON** position.
- e. Turn Key Mode Switch to **DRIVE**.
- f. Set the Drive/Lift Speed Range Switch to **LOW** or **HIGH** depending on area in which you are traveling.
- g. Push Forward/Reverse to **FORWARD** position or **REVERSE** position to travel in desired direction.
- h. Move the Steering Switch to **RIGHT** or **LEFT** to turn work platform.

#### **NOTE**

Steering is not self-centering. Wheels must be returned to straight ahead position by operating Steering Switch.

#### 4-11. LIFTING PLATFORM.

#### **WARNING**

**LOOK** up and around for obstructions before performing the **LIFT** function.

**DO NOT** elevate the platform unless work platform is level.

**DO NOT** operate work platform within 10 feet of any electrical power lines. **THIS WORK PLATFORM IS NOT INSULATED.**

**DO NOT** perform service on work platform with the platform elevated, unless properly blocked.

- a. Turn Key Mode Switch to **LIFT** position.

- b. Push the Lift Switch to **UP** position and hold to elevate the platform.

**WARNING**

**NEVER** enter the scissor linkage while the platform is elevated.

- c. When the work task is completed, lower the platform by holding the Lift Switch in the **DOWN** position until the platform is fully lowered.

**4-12. TRAVEL WITH PLATFORM ELEVATED (Figure 4-1).**

**NOTE**

Work platform will travel at reduced speed when platform is elevated.

- a. Check that route is clear of persons, obstructions, holes and drop-offs and is capable of supporting the wheel loads.
- b. Check clearances above, below and to the sides of platform.
- c. Travel with platform elevated on hard level surface only.
- d. Turn Mode Switch to **DRIVE** position.

**WARNING**

**BEFORE** traveling in **REVERSE**, check that route is clear.

- e. Push Forward/Reverse to **FORWARD** or **REVERSE** for desired direction of travel.

**4-13. XL-C FOLD DOWN GUARDRAILS (Figure 4-2).**

a. Fold Down Procedure.

1. Remove control console from front guardrail and lay it on the platform deck.

2. Lift up on front top guardrail until slots disengage from pins. Fold guardrail back.

3. Remove retaining pin at right side of rear top guardrail rotate it to position along left top guardrail and pin in place.

4. Lift up on left top guardrail until slots disengage with pins and fold guardrail in.

5. Lift up on right top guardrail until slots disengage with pins and fold guardrail in.

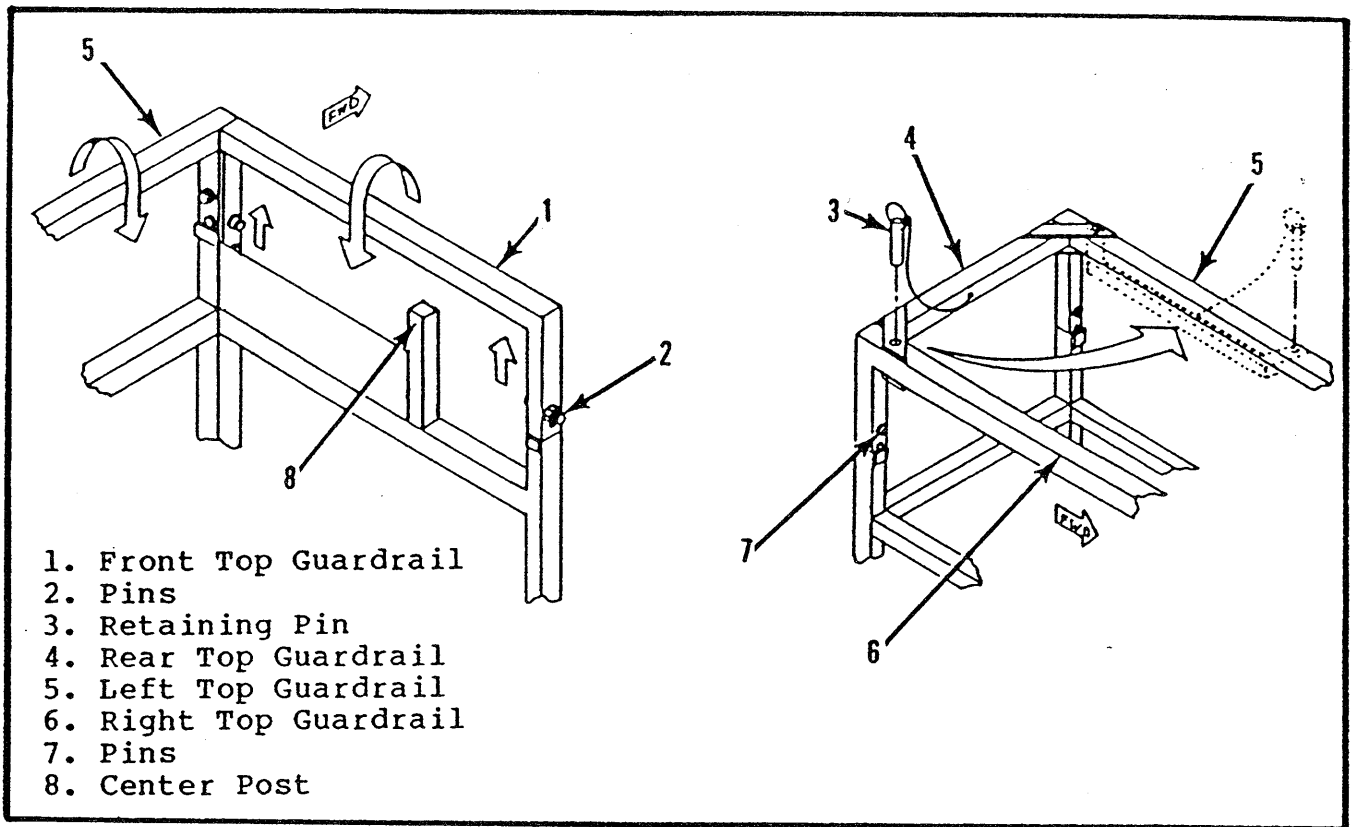


Figure 4-2. Fold Down Guardrails  
 (XL-19C Shown. Other Models Similar)

b. Erection Procedure.

1. Raise the right top guardrail and push down to engage pins with slots.

2. Raise the left top guardrail and push down to engage pins with slots.

3. Remove retaining pin from rear top guardrail (attached to left top guardrail), swing it into place across rear of work platform and pin to right top guardrail.

4. Raise front top guardrail and push down to engage the pins with the slots.

5. Hook control console over front guardrail and fit protruding screws on back of control console around center post of front guardrail.

## SECTION V

### MAINTENANCE INSTRUCTIONS

5-1. **SCOPE.** This section contains instructions for the maintenance of the XL-C Series Work Platform. Procedures for the operational checkout, adjustment, scheduled maintenance, troubleshooting, and repair/removal are included.

5-2. **LOCATION OF COMPONENTS.** Figure 5-1 shows components on complete work platform. Figure 5-2 shows components mounted directly to chassis and located in the control valve.

5-3. **SCHEDULED INSPECTION AND MAINTENANCE.**

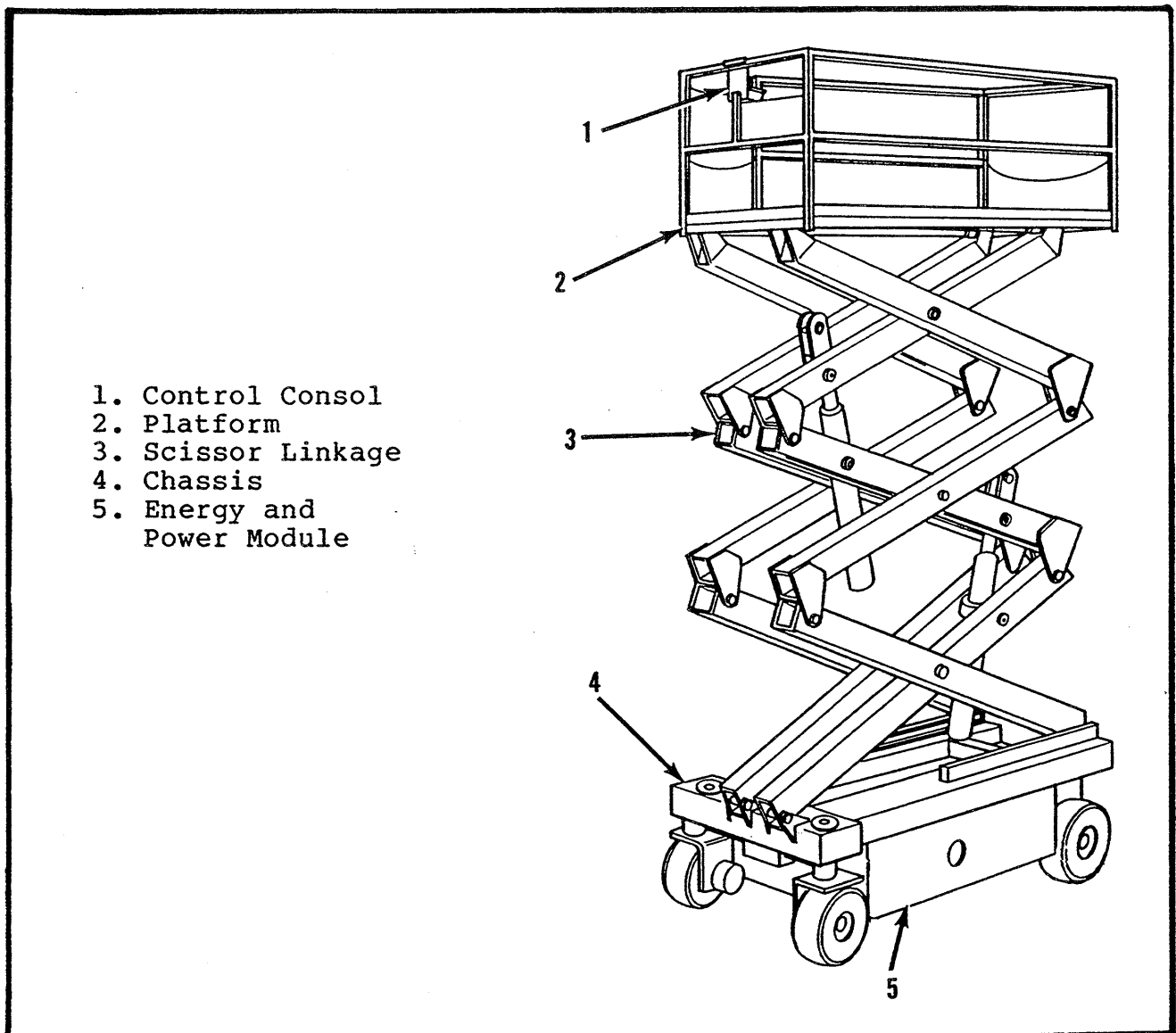
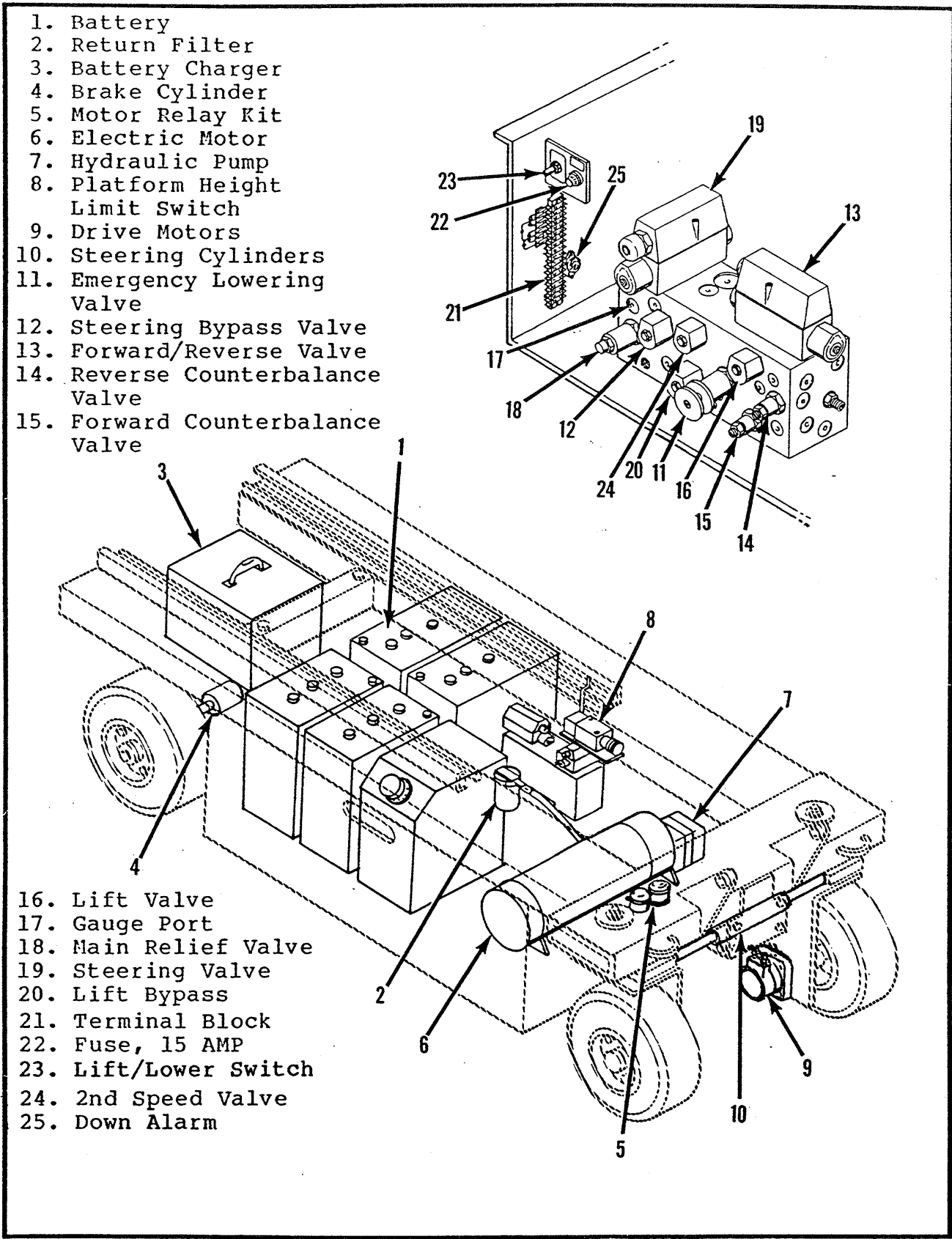


Figure 5-1. Location of Components



1. Battery
2. Return Filter
3. Battery Charger
4. Brake Cylinder
5. Motor Relay Kit
6. Electric Motor
7. Hydraulic Pump
8. Platform Height Limit Switch
9. Drive Motors
10. Steering Cylinders
11. Emergency Lowering Valve
12. Steering Bypass Valve
13. Forward/Reverse Valve
14. Reverse Counterbalance Valve
15. Forward Counterbalance Valve

16. Lift Valve
17. Gauge Port
18. Main Relief Valve
19. Steering Valve
20. Lift Bypass
21. Terminal Block
22. Fuse, 15 AMP
23. Lift/Lower Switch
24. 2nd Speed Valve
25. Down Alarm

Figure 5-2. Location of Components, Chassis

5-4. GENERAL. The complete inspection consists of periodic visual and operational checks, together with all necessary minor adjustments to assure proper performance. Refer to Table 5-1.

Table 5-1. Inspection, Checks and Services

INTERVAL	COMPONENT/LOCATION	INSPECTION/CHECK/SERVICES
Each Shift	Battery System/Chassis	Check electrolyte level. Check specific gravity. Clean exterior. Check cable condition. Charge batteries per paragraph 5-7/b.
	Hydraulic Oil Tank/Chassis	Check oil level and fill if necessary.
	Tires/Chassis	Check for damage.
	Control Linkage Cable/Scissors	Check the exterior of the cable for pinching, binding or wear.
	Deck and Guardrails/Platform	Check fasteners for tightness. Check welds for cracks. Check condition of deck.
	Arms/Scissors	Inspect for structural bend and weld cracking.
125 Hours	Control Valves/Hydraulic System	Check for leaks at valve bases. Check valve hose connections.
	Hoses/Hydraulic System	Check hose connections for serviceability. Check hoses for wear.
	Emergency Hydraulic System/Chassis Module	Open emergency down module and check for serviceability.
	Hydraulic Pump/Chassis	Check for leaks at mating surfaces. Check for hose fitting leaks. Check mounting bolts for tightness.
	Drive Motors/Chassis	Check for operation and leaks.

Table 5-1. Inspection, Checks and Services - Continued

INTERVAL	COMPONENT/LOCATION	INSPECTION/CHECK/SERVICE
125 Hours - Cont'd.	Steering System/ Chassis	Check hardware for tightness.
	Steering Cylinders/ Chassis	Check rods for gouges. Check Seals for leakage. Check hoses for serviceability. Check fittings for tightness.
	Wheel Bearings/ Chassis	Check wheel assembly for play.
	Pivot Pin Retainer/ Scissors	Check bolts for tightness.
	Lift Cylinders/ Hydraulic System	Check rods for gouges. Check mounting pivot pins for wear. Check seals for leaks. Check hoses for serviceability. Check fittings for tightness. Check snaprings.
	Control Console/ Platform	Check switches operation. Check cable for wear.
	Work Platform, Complete	Perform pre-operational checkout per paragraph 4-8.
	Work Platform, Complete	Lubricate per paragraph 5-8.
250 Hours	Batteries/Chassis	Clean terminals per paragraph 5-7/a.
	Hydraulic Oil Filter/ Chassis	Change filter per paragraph 5-9.
	Hydraulic Pump/Chassis	Wipe clean.
	Steering System/Chassis	Check hardware.
	Pivot Points/Scissors Rollers and Tracks/ Scissors Arms/Scissors	Check for wear. Check for wear and deformation. Check for bending and weld cracks.

Table 5-1. Inspections, Checks and Services - Continued.

INTERVAL	COMPONENT/LOCATION	INSPECTION/CHECK/SERVICE
250 Hours - Cont'd.	Entire Work Platform	Check component mountings for tightness. Check all fasteners for tightness. Check welds for cracks. Check hoses for serviceability. Check for and repair collision damage.
500 Hours	Entire Work Platform	Check for corrosion, remove and repaint.
1000 Hours	Hydraulic Oil/Chassis	Drain hydraulic tank and replace oil per paragraph 5-8.
	Wheel Bearings/ Chassis	Repack wheel bearings per paragraph 5-20.
2000 Hours	Wheel Bearings/ Chassis	Replace wheel bearings and seals per paragraph 5-20.

5-5. BLOCKING SCISSORS (FIGURE 5-3).

**WARNING**

**BEFORE** performing maintenance service on work platform while platform is elevated ensure that scissors are properly blocked.

**NOTE**

A 4x4 of firm wood with a length of 14 to 18 inches shall be used to block the scissors.

a. Installation.

- (1) Park the work platform on firm, level ground.
- (2) Open Guarded Emergency Stop Switch Cover on control console and position toggle in the ON position.
- (3) Turn Key Mode Switch on control console to **LIFT** position.
- (4) Push Chassis Lift Switch (located in hydraulic module) to **UP** position and elevate platform approximately four feet.



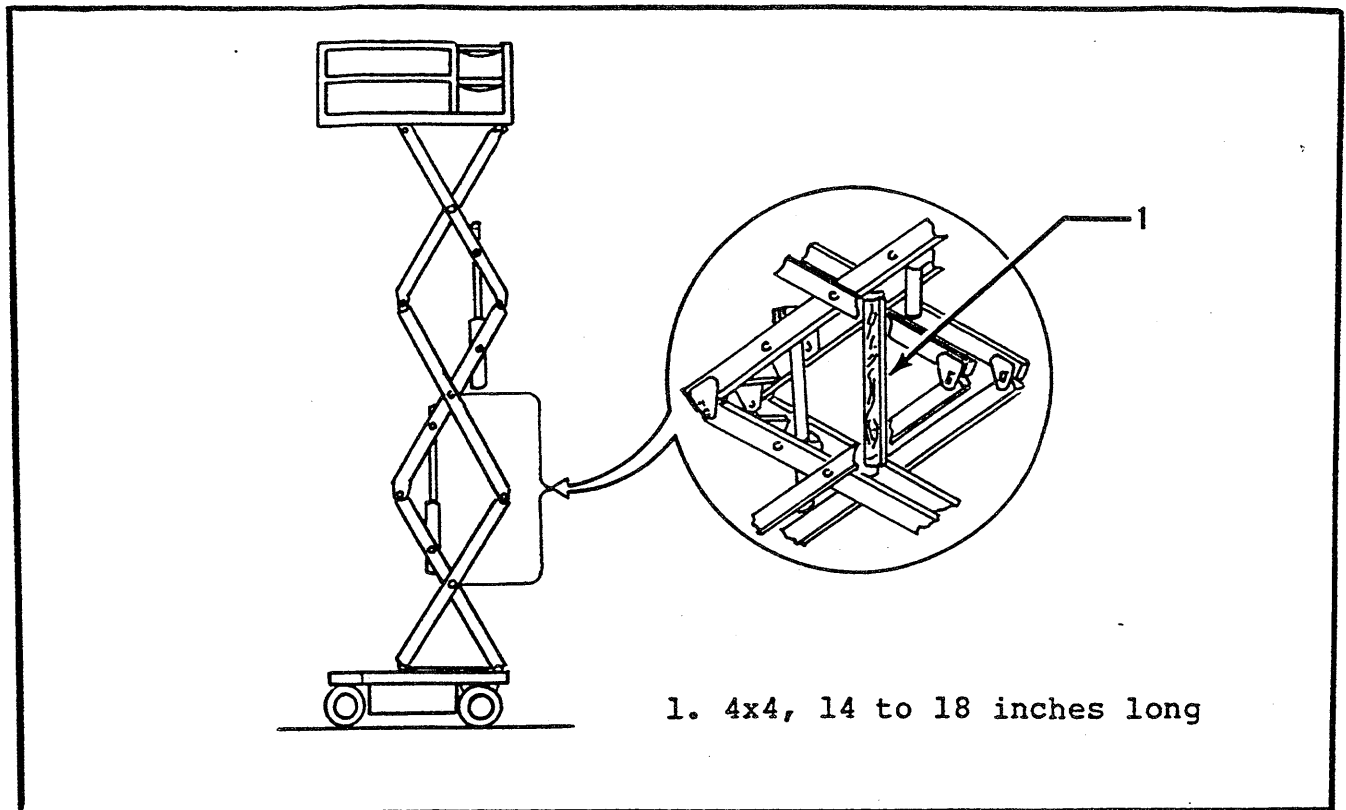


Figure 5-3. Blocking the Scissors

**WARNING**

**DO NOT** stand in scissors area while performing steps 5 and 6.

(5) Place 4x4 between center pivot assembly of the lower scissors arms and center pivot assembly of middle scissors arms.

(6) Push Chassis Lift Switch to **DOWN** position and gradually lower scissors until 4x4 is secured tightly between pivot points.

b. Removal.

**WARNING**

**DO NOT** stand in scissors area while removing block.

(1) Push Chassis Lift Switch to **UP** position and gradually raise platform.

(2) Remove 4x4 block.

(3) Push Chassis Lift Switch to **DOWN** position and completely lower platform.

(4) Turn Key Mode Switch to the **OFF** position and close Guarded Emergency Stop Switch Cover.

## 5-6. MAINTENANCE-DETAIL INSTRUCTIONS.

**5-7. BATTERY MAINTENANCE.** Electrical energy for the motor is supplied by four six volt batteries wired in series for 24 volts DC. Proper care and maintenance of the batteries and motor will ensure maximum performance from the work platform.

### a. Battery Inspection and Cleaning.

(1) Check battery fluid level daily, especially if work platform is being used in a warm, dry climate.

#### **CAUTION**

If battery water level is not maintained, batteries are not capable of full charge therefore creating a low discharge rate which will damage motor/pump unit and void warranty.

(2) Batteries and cables should be inspected periodically for signs of cracks in the cases, electrolyte leakage and corrosion of the terminals. Inspect cables for worn spots or breaks in the insulation and for broken cable terminals.

(3) Clean batteries which show signs of corrosion at the terminals, or onto which electrolyte has overflowed during charging. Use a baking soda or ammonia solution to clean the batteries, taking care not to get the solution inside the cells. Rinse thoroughly with clear water. Clean battery and cable contact surfaces to a bright metal finish whenever a cable is removed.

### b. Battery Charging (See Figure 5-4).

(1) Charge batteries at end of each work shift or sooner if batteries have been discharged.

#### **CAUTION**

Do not charge batteries when the work platform is in a hazardous area.

#### **CAUTION**

Permanent damage to batteries will result if batteries are not immediately recharged after discharging.

(2) Do not charge unused vehicles regularly except during winter storage on a monthly basis.

(3) When night air temperatures fall below 65 degrees F

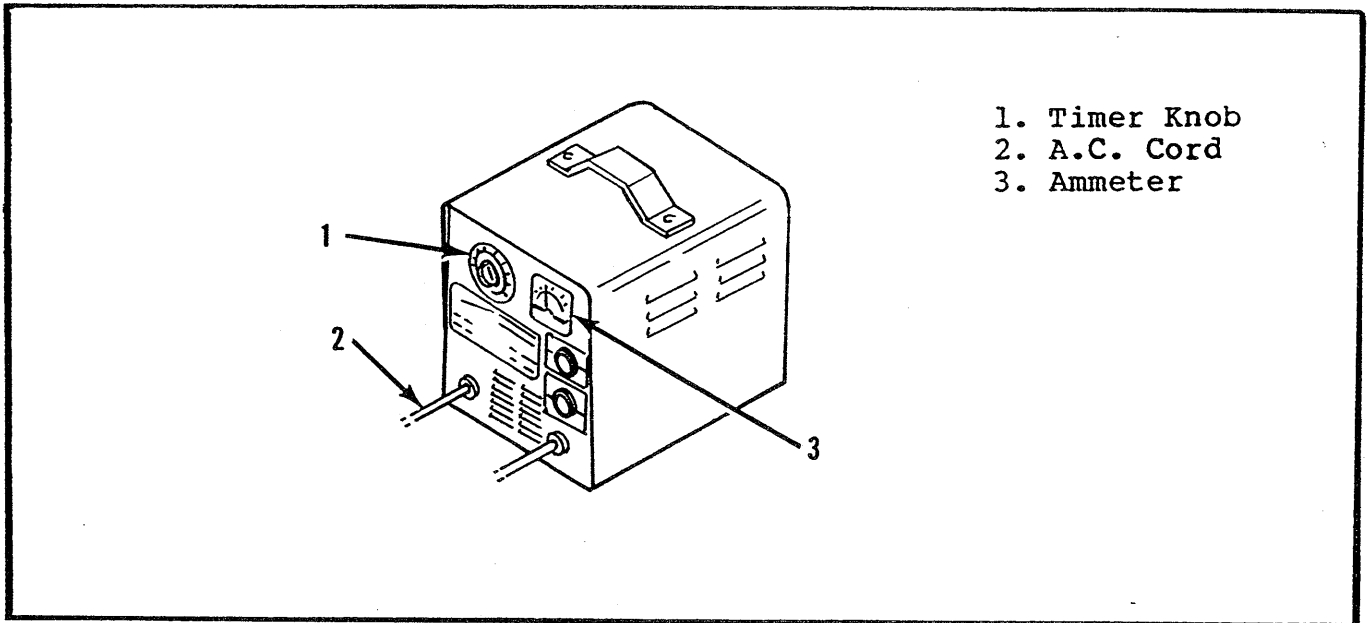


Figure 5-4. Battery Charger

batteries charged in unheated areas should be placed on charge as soon after use as possible. Under such conditions a 4 hour equalize charge once a week in the early afternoon will improve state of charge and battery life.

(4) With Timer Knob turned to **OFF**, connect A.C. Cord to a properly grounded 115 volt, 60Hz power supply.

(5) Set Timer Knob to 7 for lightly discharged batteries and to **ON** (16 hours) for well discharged batteries. Charger shuts off automatically at end of set period.

(6) Initial charge rate varies with state of discharge but finish rate should be in green area on Ammeter when all cells are good.

(7) To determine approximate full charge at start of day's use, turn Timer Knob to 1. Drop of Ammeter needle to green area in 15 minutes or less indicates full charge.

c. Battery Cell Equalization.

(1) The specific gravity of the electrolyte in the battery cells should be equalized monthly. To do this, charge batteries as outlined in Battery Charging. After this initial charge, check the electrolyte level in all cells and add water as necessary. Then, turn the charger on for additional eight hours. During this time, the charging current will be low (four amps) as cells are equalizing.

(2) After equalization, the specific gravity of all cells should be checked with a hydrometer. The temperature corrected specific gravity in this state should be 1.260. If any corrected readings are below 1.230, the batteries containing such cells should be replaced. At any rate, the specific gravity in all cells after equalization should not vary more than .010. If a wide variation exists, this is an indication for need of battery replacement.

(3) Do not check the specific gravity in a cell to which water has just been added. If there is not enough electrolyte in a fully charged cell to obtain a sample for the hydrometer, add water and continue charging for one to two hours to adequately mix the water and electrolyte.

**5-8. LUBRICATION.** Refer to Figure 5-5 for location of items that require lubrication service.

**5-9. HYDRAULIC OIL TANK AND FILTER (Figure 5-6).**

a. Operate the work platform to bring the hydraulic oil up to normal operating temperature.

b. Provide a suitable container to catch the drained oil. Hydraulic tank has a 4 gallon capacity.

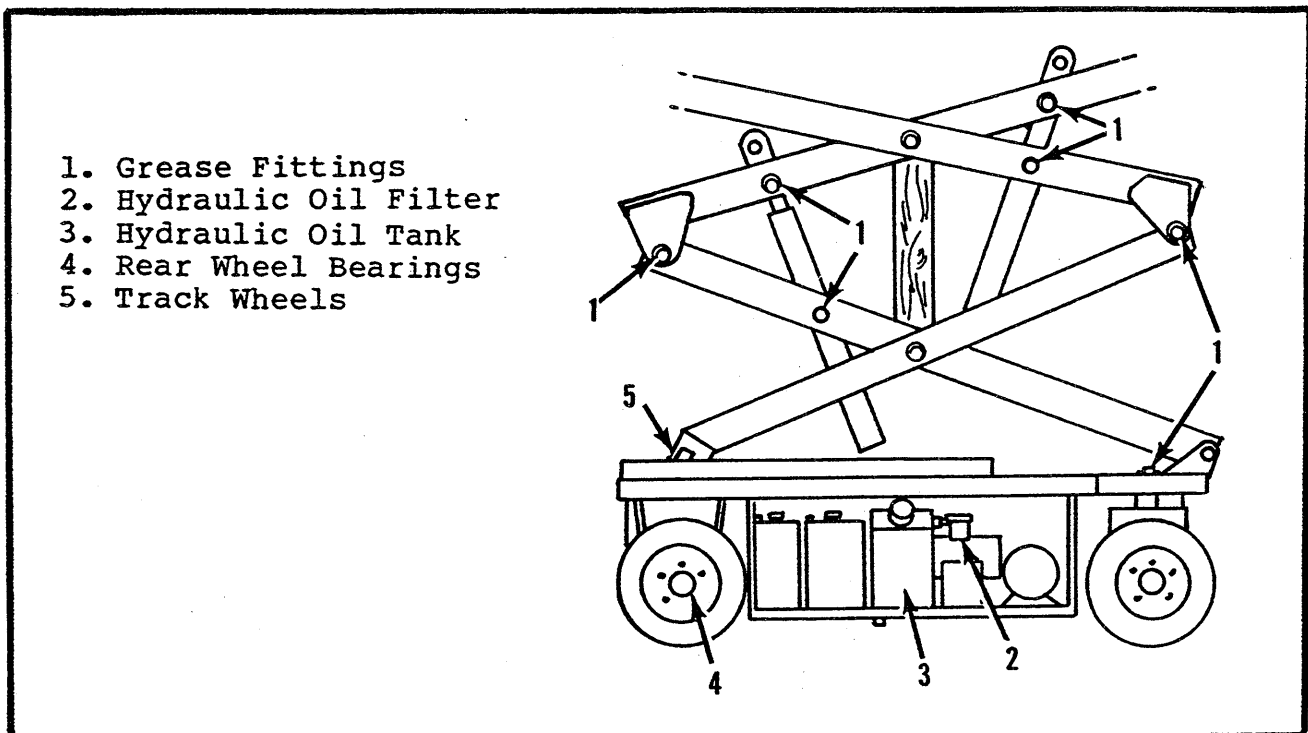


Figure 5-5. Lubrication Points

WARNING

The hydraulic oil may be of sufficient temperature to cause burns. Wear safety gloves and safety glasses when handling hot oil.

- c. Remove the drain plug and allow all oil to drain.
- d. Reinstall the drain plug.
- e. Unthread the filter from the filter head.
- f. Apply a thin film of clean hydraulic oil (Mobil 423 or equivalent) to the gasket of the replacement filter.
- g. Thread the replacement filter onto the filter head until the gasket makes contact then rotate the filter 3/4 of one turn further.
- h. Fill the hydraulic reservoir with Mobile 423 hydraulic oil or equivalent. Hydraulic tank has a 4 gallon capacity.

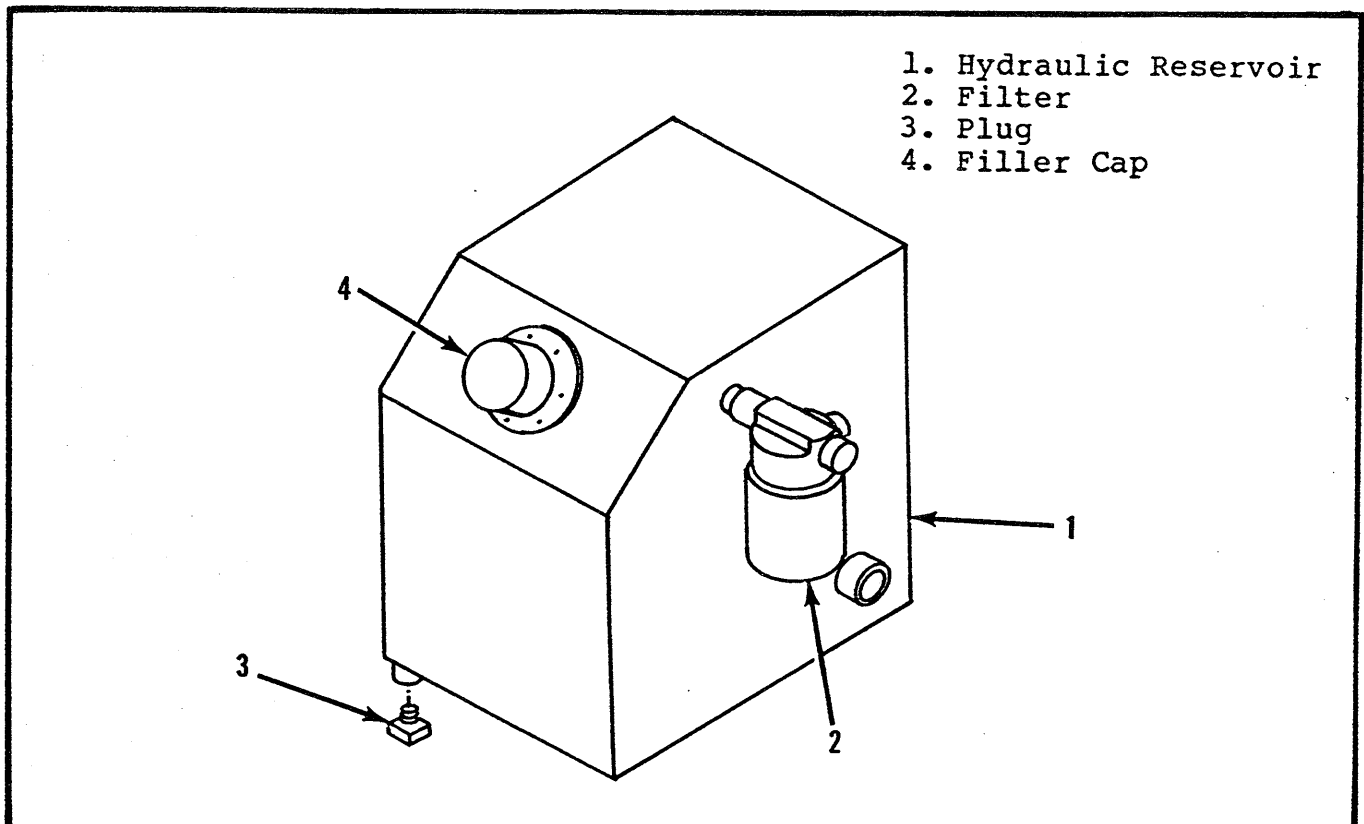


Figure 5-6. Hydraulic Oil Tank and Filter

## 5-10. TROUBLESHOOTING.

5-11. **SCOPE.** Table 5-2 provides a logical sequence of tests that are designed to isolate problems with XL-C Series machines. This table includes a list of probable causes and remedies.

## 5-12. SAFETY.

### WARNING

When troubleshooting, ensure that the work platform is resting on a firm, level surface. When performing any service which requires the platform to be raised, the scissors must be blocked as per paragraph 5-5. Disconnect the batteries when replacing or testing the continuity of any electrical component.

5-13. **GENERAL PROCEDURE.** Troubleshooting should be carried out in two steps, first by thoroughly looking at the electrical circuits and components that could cause the problem. Loose terminal connections and short circuits are always a potential probable cause when troubleshooting. Secondly, the hydraulic system should be examined, but only after electrical circuits and components have been found fault free. Refer to Tables 6-1 and 6-2 for Reference Designations used in Table 5-2.

**TABLE 5-2. Troubleshooting**

<b>TROUBLE</b>	<b>PROBABLE CAUSE</b>	<b>REMEDY</b>
All functions inoperable, electric motor does not start.	1. Blown control circuit fuse.	Check 15 amp Control Circuit Fuse (F1). Replace if blown.
	2. Faulty battery charger.	Check the voltage output of the battery charger. If less than 24 VDC, repair or replace.
	3. Faulty battery (ies).	After completely charging the batteries, test each battery (BT). Replace as required.
	4. Faulty electric motor.	While operating the steering function, check voltage across the Electric Motor (B) terminals. If 24 VDC is present, replace the Motor (B).
	5. Faulty motor relay (s).	While operating the steering, check voltage across the coil terminals of Motor Relays (CR1, CR2).

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
All functions inoperable. Electric motor does not start - Cont'd.		If no voltage is present, proceed with step 6. If 20 VDC or more, check continuity across the contact terminals of Motor Relays (CR1, CR2) while still operating the steering function. If there is no continuity, replace the defective Motor Relays (CR1, CR2).
	6. Guarded emergency stop failed open.	With the Guarded Emergency Stop Switch (S1) in the ON position, check continuity across the contacts. If none, replace.
All functions inoperable. Electric motor starts when control is actuated.	1. Hydraulic reservoir low.	Check hydraulic fluid level, top off as required.
	2. Damaged coupling.	Remove Pump (ASSY1) from Motor (B) and check coupling.
	3. Faulty hydraulic pump.	Check pressure and delivery of the Hydraulic Pump (ASSY1). Replace if required.
Electric Motor starts but no functions in low speed.	CV2	Check CV2 for contaminants and reset check ball in valve block.
Electric motor continues to run after controls are returned to the OFF position.	Motor relay contacts fused together.	With 0 voltage at the coil terminals of the Motor Relay (CR2) check continuity across the contact terminals. If there is continuity, replace the Motor Relay (CR1 and/or CR2).
Work platform will not drive or steer. Platform Up/Down functions properly.	Faulty key mode switch	With the Key Mode Switch (S2) in the DRIVE position, check continuity. Replace if faulty.

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
Steering inoperable or functions sluggishly.	1. Faulty steering switch.	Test Steering Switch (S4) for continuity. Replace if faulty.
	2. Faulty key mode switch.	Test Key Mode Switch (S2) for continuity. Replace if faulty.
	3. Faulty Diode (D3).	Check diode (D3) replace if faulty.
	4. Mechanical damage.	Inspect all steering components. Replace damaged parts.
	5. Steering valve stuck.	Inspect Steering Valve (V1). If spool is sticking, replace.
	6. Steering Cylinder piston seal leaking.	Check Steering Cylinder (CYL3) for leakage from one port to another. Repair as required.
Work platform will not steer right.	1. Faulty steering switch.	Test Steering Switch (S4) for continuity. Replace if faulty.
	2. Faulty diode.	Test Diodes (D1, D2). Replace if faulty.
	3. Faulty steer right solenoid.	Test Steer Right Solenoid (L1). If the proper voltage is present and the Coil is not magnetic, replace.
Work platform will not steer left.	1. Faulty steering switch.	Test Steering Switch (S4) for continuity. Replace if faulty.
	2. Faulty diode.	Test Diodes (D1, D2) Replace if defective.
	3. Faulty steer left solenoid.	Test Steer Left Solenoid (L2). If the proper voltage is present and the Coil is not magnetic, replace.



TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
Work platform will not drive forward or reverse. Lift function operable.	1. Faulty drive switch.	Check continuity of Drive Switch (S5).
	2. Faulty key mode switch.	Check continuity of Key Mode Switch (S2).
	3. Faulty diode.	Check Diode (D3) replace if faulty.
	4. Forward/reverse valve faulty.	Check the Forward/Reverse Valve (V4). If the spool is not shifting, replace the valve.
	5. Shuttle valve not seating.	Check for contaminants and reseal ball to valve block.
	6. Mechanical failure.	Inspect drive motor shafts, hubs, and keys.
	7. Worn drive motors.	Check hydraulic pressure being delivered to the Drive Motors (MOT1, MOT2). If sufficient, replace Drive Motors.
No drive in HIGH speed.	1. Lift cylinders have pressure on them.	Check to make sure platform is completely lowered.
	2. Faulty speed range switch.	Test Speed Range Switch (S6) for continuity. Replace if faulty.
	3. Faulty High speed coil.	Test High Speed Coil (L9). If proper voltage is present and coil is not magnetized, replace.
	4. Faulty High speed valve.	Replace High Speed Valve (V8).
	5. CV4	Check CV4 for contaminants and reseal in valve block.
No drive FWD but drives in REV.	1. Faulty drive switch.	Test Drive Switch (S5) for continuity. Replace if faulty.
	2. Faulty diode.	Test Diodes (D4,D5). Replace if faulty.

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
No drive FWD but drives in REV - Cont'd.	3. Faulty FWD coil.	Test FWD Coil (L3) if proper voltage is present and coil is not magnetized, replace.
	4. Faulty drive valve.	Inspect Drive Valve (V4) if spool is sticking replace.
	5. Faulty counter-balance valves.	Check pressure of Counter-balance Valves (V2,V3). Replace or reset valves as required.
	6. Shuttle valve.	Check for contaminants and reseal ball in Valve Block.
No drive REV but drives in FWD.	1. Faulty drive switch.	Test Drive Switch (S5) for continuity. Replace if faulty.
	2. Faulty diode.	Test Diodes (D4,D5). Replace if faulty.
	3. Faulty REV coil.	Test REV Coil (L5) if proper voltage is present and coil is not magnetized, replace.
	4. Faulty drive valve.	Inspect Drive Valve (V4) if spool is sticking replace.
	5. Faulty counter-balance valves.	Check pressure of Counter-balance Valves (V2,V3). Replace or reset valves as required.
	6. Shuttle valve.	Check for contaminants and reset ball in Valve Block.
Platform will not elevate or elevates slowly in LOW and HIGH speeds.	1. Emergency down valve open.	Close Emergency Down Valve (V10).
	2. Platform overload.	Observe maximum load rating (See Table 1-1).
	3. Faulty diode.	Test Diode (D6), replace if faulty.

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
Platform will not elevate, or elevates slowly - Cont'd.	4. Faulty lift valve coil.	Test Lift Valve Coil (L6). If proper voltage is present and the coil is not magnetized, replace.
	5. Height limit switch malfunction.	Test Height Limit Switch (S8) for continuity. Replace if required.
	6. Faulty lift switch.	While holding the Lift Switch (S3) in the LIFT position, check continuity. Replace if faulty.
	7. Faulty key mode switch.	Test Key Mode Switch (S2) for continuity. Replace if defective.
	8. Relief valve out of adjustment or faulty.	Adjust the Main Relief Valve (RV1). If not adjustable, replace.
	9. Lift valve sticking.	Replace the Lift Valve (V7).
	10. Lowering valve stuck in the OPEN position.	Replace the Lowering Valve (V11).
No drive or lift in LOW speed but steering OK.	1. Faulty steering bypass coil.	Test Steering Bypass Coil (L4). If proper voltage is present and coil is not magnetized replace.
	2. Faulty Steering bypass valve.	Replace Steering Bypass Valve (V6).
No lift in HI speed.	1. Faulty speed range switch.	Test Speed Range Switch (S6) for continuity. Replace if faulty.
	2. Faulty Hi speed coil.	Test Hi Speed Coil (L9) if proper voltage is present and the coil is not magnetized, replace.
	3. Faulty Lift Bypass Coil.	Test Lift Bypass Coil (L7) if proper voltage is present and the coil is not magnetized, replace.

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
	4. Faulty Hi speed valve.	Replace Hi Speed Valve.
	5. Faulty lift bypass valve.	Replace Lift Bypass Valve.
Platform drifts down after being elevated.	1. Emergency down valve partly open or faulty.	Ensure that the Emergency Down Valve (V10) is completely closed. If the platform still drifts down, replace the Emergency Down Valve (V10).
	2. Check valve leaking.	Check for contamination under Ball (CV3). Clean and reseal Ball in block.
	3. Leaky down valve cartridge.	Replace the Down Valve (V11).
	4. Faulty Valve O-rings.	Check and replace O-Rings on Emergency Lowering Valve (V10) Lowering Valve (V11) and Piston.
Work platform drives while lifting.	Faulty diode.	Test Diode (D4,D5). Replace if faulty.
Work platform lifts while driving.	Faulty diode.	Test Diode (D6). Replace if faulty.
Platform will not lower.	1. Faulty lowering valve coil.	Test Lowering Valve Coil (L8). If proper voltage is present and Coil is not magnetized, replace.
	2. Faulty key mode selector switch.	With the Key Mode Selector Switch (S2) in the LIFT position, check continuity. Replace if faulty.
	3. Faulty lift switch.	While holding the Lift Switch (S3) in the DOWN position, check continuity. Replace if defective.

TABLE 5-2. Troubleshooting - Continued

TROUBLE	PROBABLE CAUSE	REMEDY
	4. Lowering valve stuck.	Replace the Lowering Valve (V11).
	5. Plugged lowering speed orifice.	Remove and clean Orifice (ORF2).
	6. Velocity fuse valve sticking.	Replace the Velocity Fuse Valve (V5).
Down alarm horn does not sound.	Faulty down alarm horn.	Check voltage to Down Alarm Horn. If proper voltage is present, replace the Down Alarm Horn (HN).
Brake will not release.	Faulty brake cylinder.	Check and replace Seals in Brake Cylinder (CYL2).
Brake will not lock wheel.	1. Orifice plugged.	Remove and clean Brake Orifice (ORF1).
	2. Faulty brake cylinder.	Check and replace Seals in Brake Cylinder (CYL2).

5-14. ADJUSTMENTS.

5-15. SETTING HYDRAULIC PRESSURES (Figure 5-7).

NOTE

Check the hydraulic pressures whenever the manifold or relief valve has been serviced or replaced.

a. Main Relief Valve.

(1) Operate the hydraulic system 10-15 minutes to warm the oil.

(2) Remove the plug in the Gauge Port and install a 0-3000 psi pressure gauge.

(3) Disconnect one of the quick-disconnect connectors in the Lift Limit Switch wires (located by terminal block).

(4) Loosen the locknut on the Main Pump Relief Valve.

(5) Position the Chassis Lift Switch to UP position and hold it there.

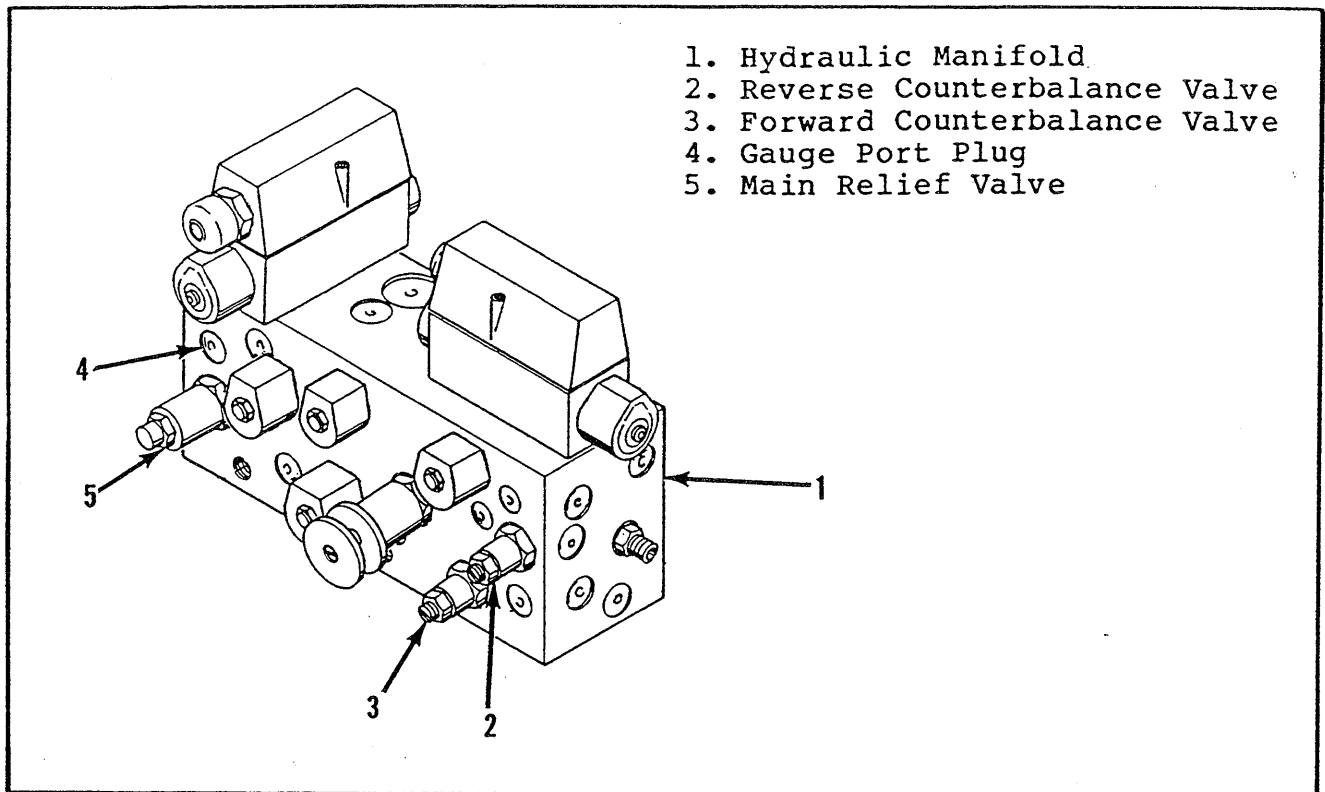


Figure 5-7. Hydraulic Pressure Adjustment

(6) Slowly screw the adjusting screw in to increase the pressure to 2000 psi for XL-19C, 2400 psi for XL-19CW or 2650 psi for XL-24C, then tighten the locknut.

(7) Reconnect the Lift Limit Switch wire.

(8) Remove pressure gauge and install plug.

d. Counterbalance Valve.

(1) Remove Gauge Port Plug and install an 0-3000 psi pressure gauge.

(2) Lift work platform and block front wheels off ground.

(3) Operate the hydraulic system 10 to 15 minutes to warm the hydraulic oil.

(4) Position the Key Mode Switch to **DRIVE**.

(5) Position Speed Range Switch to **LOW**.

(6) Position the Drive Switch to **FORWARD**.

(7) Adjust the **REVERSE** Counterbalance Valve by turning the adjustment screw **OUT** until the pressure gauge indicates 350 psi, then slowly turn the screw **IN** until the gauge indicates 300 psi. Lock adjustment with locknut.

(8) Position the Drive Switch to REVERSE.

(9) Adjust the FORWARD Counterbalance Valve by turning the adjustment screw OUT to achieve 350 psi, then slowly turning the screw IN to reach 300 psi. Lock the adjustment with the locknut.

(10) Position Drive Switch FORWARD, then position Drive Switch in REVERSE checking gauge to ensure pressures are 300 psi. Readjust as needed.

(11) Remove blocks and lower work platform to ground.

(12) Remove the gauge from the gauge port and reinstall plug.

(13) Operate the drive system and check proper speeds and braking.

**5-16. REPAIR.** The following procedures are to handle replacement of components that are damaged or worn beyond acceptable performance specifications.

#### **5-17. HYDRAULIC MANIFOLD (Figure 5-8).**

a. General. Though it is not necessary to remove the manifold to perform all maintenance procedures, a determination should be made prior to beginning as to whether or not the manifold should be removed before maintenance procedures begin.

b. Removal.

(1) Tag and disconnect the solenoid valve leads from the terminal strip.

(2) Tag, disconnect and plug hydraulic hoses.

(3) Remove the ESNA nuts, jam nut and bolts that hold the manifold to the mounting bracket.

(4) Remove manifold block.

c. Disassembly.

#### **NOTE**

Mark all components as they are removed so as not to confuse their location during assembly.

(1) Remove coils from solenoid valves.

(2) Remove solenoid valve and fitting.

(3) Remove spool valve covers and spool valves.

(4) Remove solenoid valves, main relief valve, counterbalance valves and emergency down valve.

(5) Remove fittings, springs and orifices.

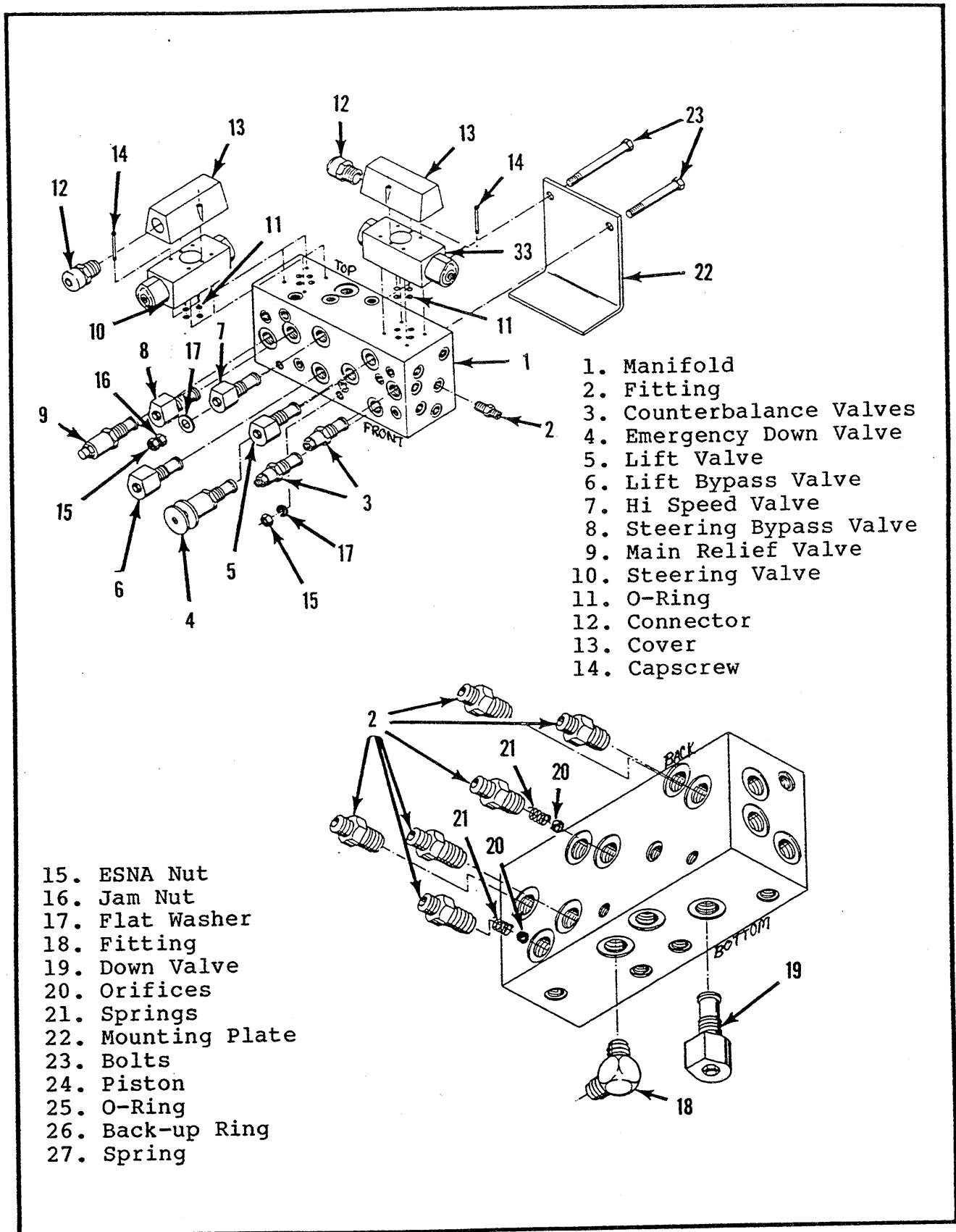


Figure 5-8. Hydraulic Manifold (Sheet 1 of 2)



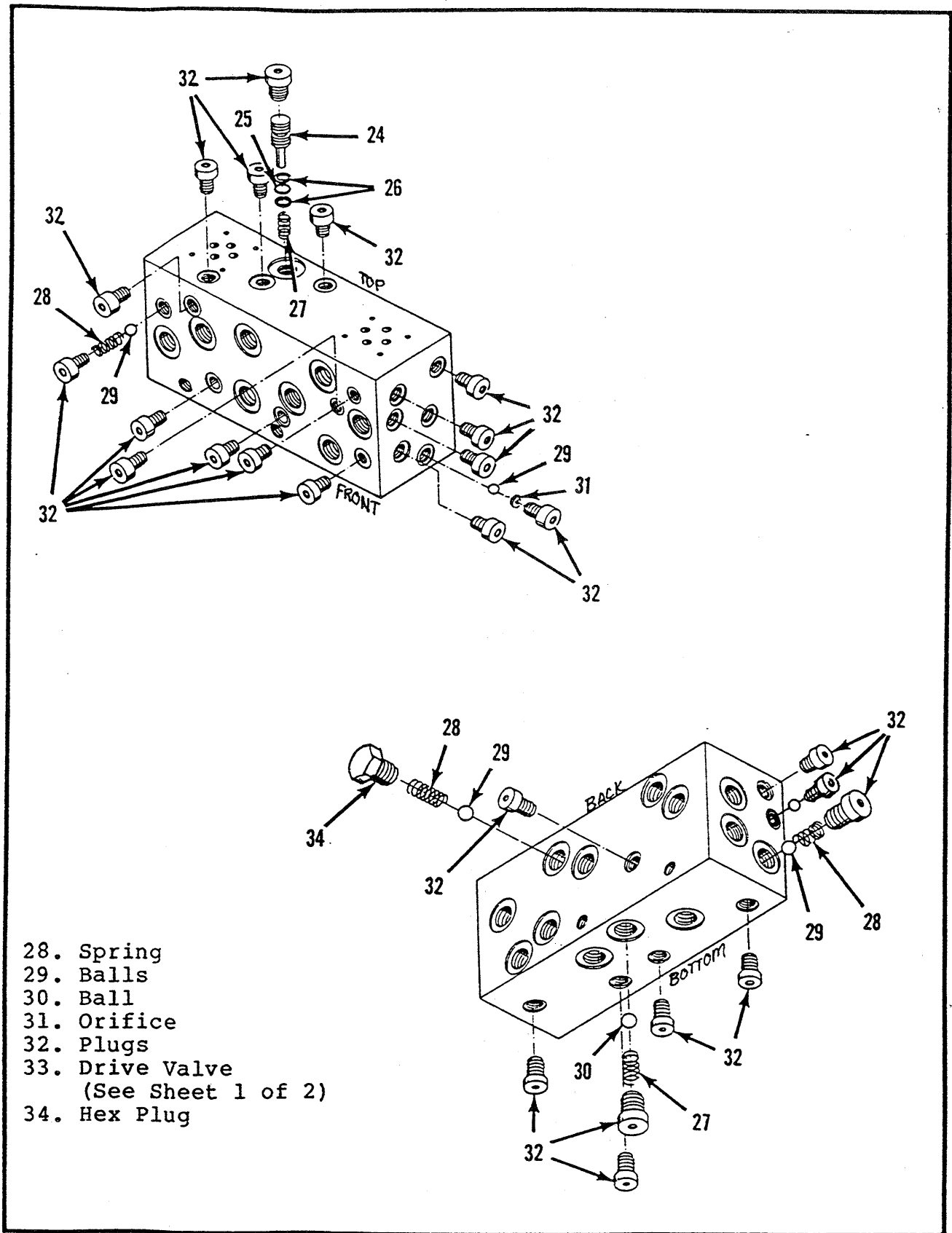


Figure 5-8. Hydraulic Manifold (Sheet 2 of 2)

(6) Remove plugs, spring and ball from back side of manifold block.

(7) Remove plugs, spring and ball from left side of manifold block. (2 places)

(8) Remove plugs, spring and ball from bottom of manifold block.

(9) Remove plugs, spring and ball from front of manifold block.

(10) Remove plugs, orifice and ball from right side of manifold block.

(11) Remove plugs, piston and spring from top of manifold block.

d. Cleaning and Inspection.

(1) Wash the manifold in cleaning solvent to remove built up contaminants and then blow out all passages with clean compressed air.

(2) Inspect the manifold for cracks, thread damage and scorings where O-rings seal against internal and external surfaces.

(3) Wash and dry each component and check for thread damage, torn or cracked O-rings and proper operation.

(4) Replace parts and O-rings found unserviceable.

e. Assembly.

NOTE

Lubricate all O-rings before installation to prevent damage to O-rings. Seat all balls in manifold block.

(1) Install spring, piston and plugs in top of manifold block.

(2) Install ball, orifice (use one drop of loctite #242) and plugs to right side of manifold block.

(3) Install ball, spring and plugs to front side of manifold block.

(4) Install ball, spring and plugs to bottom of manifold block.

(5) Install ball, spring and plugs to back of manifold block.

(6) Install ball, spring and plugs to left side of manifold block. (2 places)

(7) Install orifices, spring and fittings to back and right side of manifold block.

(8) Install emergency down valve, counterbalance valves, main relief valve and solenoid valves to front side of manifold block.

(9) Install spool valves to top of manifold block.

(10) Install fitting and solenoid valve.

(11) Install coils to solenoid valves.

f. Installation.

(1) Attach manifold assembly to mounting plate with bolts, jam nut and ESNA nut.

**Note**

Longer bolt and jam nut go in hole nearest the front of the module.

Attach all solenoid ground wires with ESNA nuts.

(2) Connect Solenoid leads to terminal strip (as previously tagged).

(3) Connect hydraulic hoses. Be certain to tighten hoses to manifold.

(4) Operate each hydraulic function and check for proper function and leaks.

**5-18. HYDRAULIC PUMP (Figure 5-9).**

a. Removal (Figure 5-9).

**NOTE**

If the hydraulic tank has not been drained, suitable means for plugging the hoses should be provided to prevent excessive fluid loss.

(1) Mark, disconnect and plug the hose assemblies.

(2) Loosen the upper right and lower left capscrews and remove the pump assembly from the motor. Ensure not to loose the shaft coupler.

b. Installation.

(1) Lubricate the pump and shaft coupler with general purpose grease and attach the pump and shaft coupler to the motor with the two long capscrews.

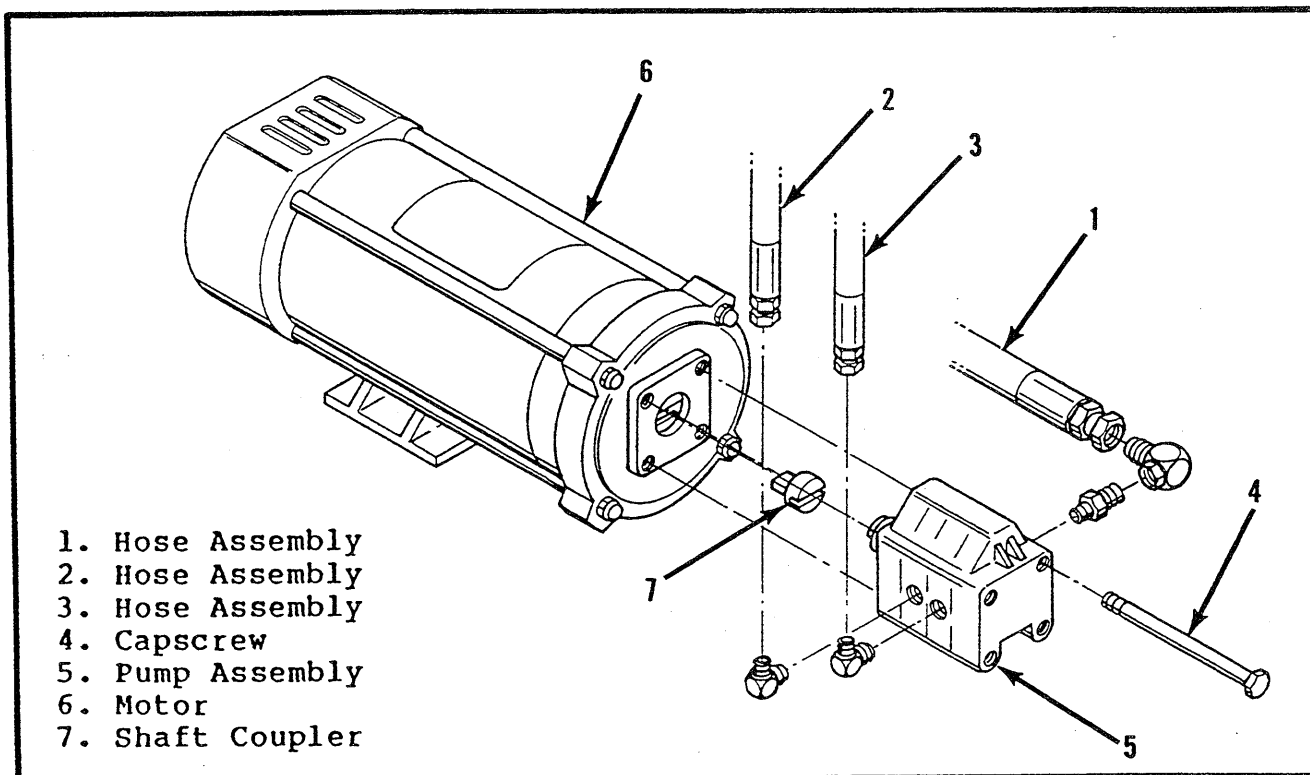


Figure 5-9. Hydraulic Pump Removal

(2) Use a criss-cross pattern and torque each capscrew a little at a time until all 4 capscrews are torqued to 20 ft. lbs.

(3) Unplug and reconnect the hydraulic hoses.

(4) Check the oil level in the hydraulic tank before operating the work platform.

#### 5-19. HYDRAULIC DRIVE MOTORS AND HUBS.

##### a. Removal (Figure 5-10).

(1) Park the work platform on firm level ground then block the wheels to prevent the work platform from rolling.

(2) Loosen the wheel lug bolts on the front corner to be raised.

(3) Use a 1.5 ton capacity jack to raise the desired front corner.

#### WARNING

Position blocks under the raised corner to prevent the work platform from falling if the jack fails.

(4) Remove the wheel lug bolts and wheel.

1. Spindle
2. Locknut
3. Drive Motor
4. Shaft Key
5. Capscrew
6. Hub
7. Hub Nut
8. Wheel
9. Lug Bolts
10. Cotter Pin

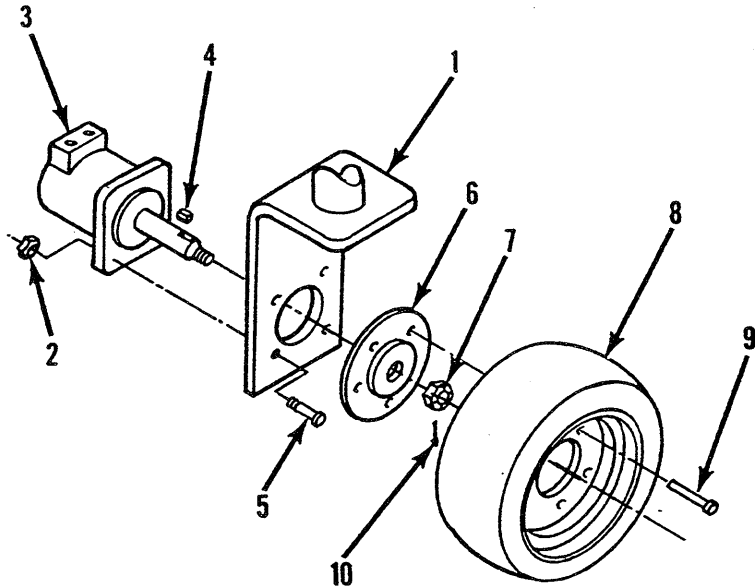


Figure 5-10. Drive Motor Removal

(5) Remove the cotter pin, locknut, hub and the shaft key.

**NOTE**

Before disconnecting hoses, thoroughly clean off all outside dirt around fittings. (After disconnecting hoses and before removing from vehicle, **IMMEDIATELY** plug port holes.)

(6) Tag, disconnect and plug the hose assemblies to prevent foreign material from entering.

(7) Remove the locknuts, capscrews and drive motor from the yoke.

**b. Installation.**

(1) Refer to Figure 5-10 and position the drive motor on the yoke and secure with capscrews and locknuts.

(2) Remove the plugs from the hose assemblies and connect to the drive motor.

(3) Install the shaft key, hub and locknut. Torque the locknut to 350 to 400 ft. lb. Install the cotter pin.

(4) Install the wheel with capscrews onto the hub. Torque to 40 ft. lb.

(5) Lower the jack and remove. Operate the drive system and check for leaks.

#### 5-20. WHEEL BEARINGS (Figure 5-11).

##### a. Removal.

##### NOTE

The following applies to one front wheel (on units with one wheel drive) and both rear wheels except the brake cylinder must be removed on the right side. (See Paragraph 5-22/a).

(1) Loosen the wheel lug nuts then raise the work platform until the tire to be worked on is off the ground.

(2) Install support blocks to prevent the work platform from falling if the jack fails.

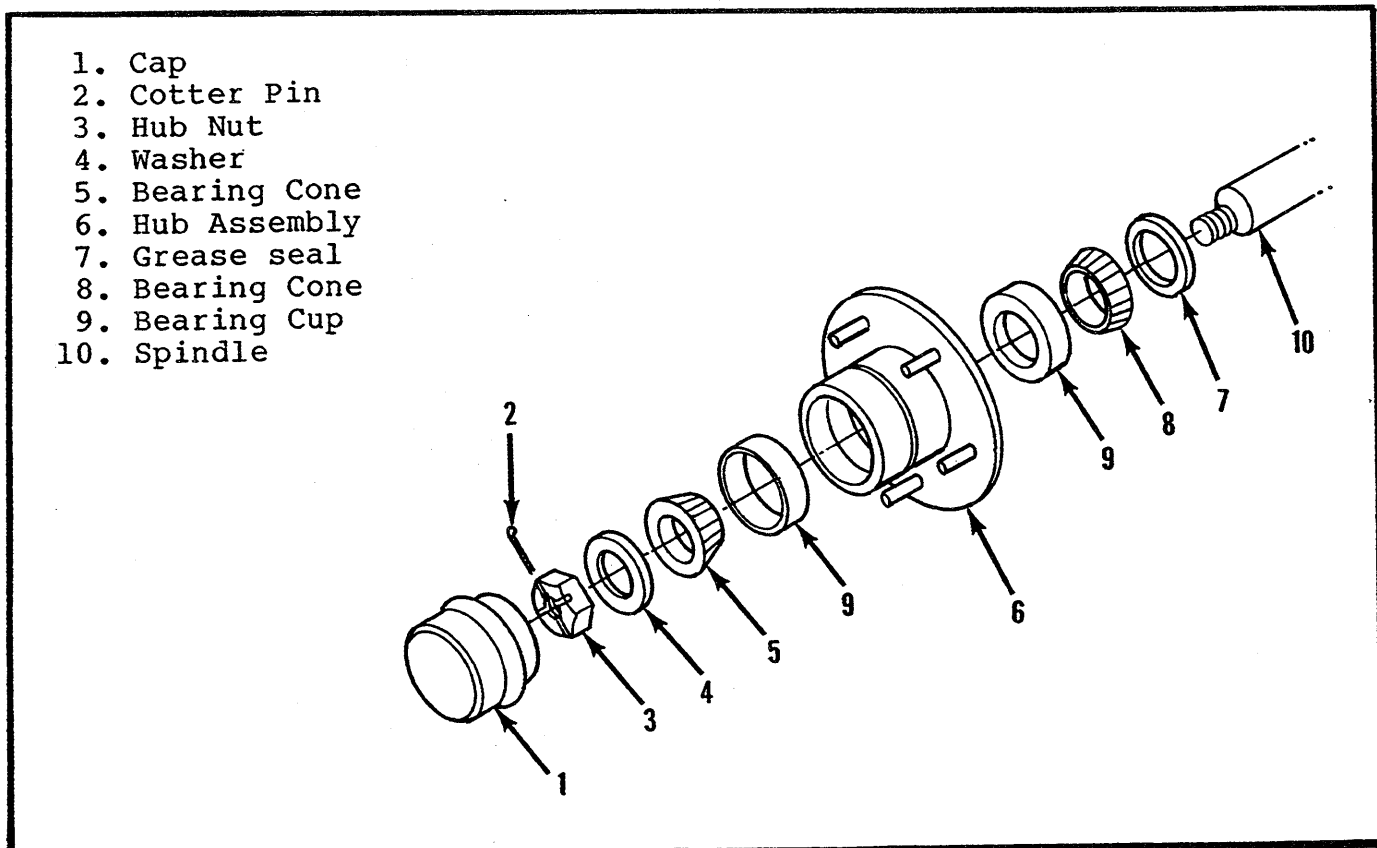


Figure 5-11. Wheel Bearings

- (3) Remove the wheel lug nuts and the wheel.
- (4) Remove the cap.
- (5) Straighten the cotter pin then withdraw it from the spindle and hub nut.
- (6) Remove the hub nut and washer.
- (7) Slide the entire hub assembly from the spindle and place on clean surface.
- (8) Remove the bearing cone and place on clean surface.
- (9) Remove the grease seal thus allowing the bearing cone to be removed.

#### NOTE

At this point, examine the bearing cups. If they are smooth, shiny and free of pits or any surface irregularities, **DO NOT** remove them.

(10) If the cups need replacement, remove them by tapping around the circumference of the inside surface of the cups from the opposite side using a long drift.

#### b. Installation.

(1) Position the replacement bearing cup over the opening in the hub assembly then position the worn cup over the replacement so that the bearing surfaces face each other. Use the old bearing cone as a drift to work the replacement into position by tapping evenly around the circumference.

(2) Apply a liberal coating of multi purpose grease to the bearing surface of each cup.

(3) Pack the bearing cone with multi purpose grease and position it within the rear bearing cup in the hub assembly install the new grease seal again using the worn bearing cup as a drift.

(4) Apply a thin coating of multi purpose grease to the spindle to protect the grease seal then slide the hub assembly onto the spindle.

(5) Pack the bearing cone with multi purpose grease and slide it onto the spindle until it seats in the outer bearing cup.

(6) Install the washer and hub nut. Tighten the hub nut, while rotating the assembly, until the hub drags then back the nut to the first slot that aligns with the cotter pin hole in the spindle.

(7) Install the cotter pin and bend the end up over the hub nut and the spindle.

(8) Install the cap and wheel/tire assemblies. Torque the lug nuts to 40 ft. lbs.

(9) Remove blocks and lower work platform to the ground.

### 5-21. BRAKE CYLINDER (Figure 5-12).

#### a. Removal.

(1) Block the wheels to prevent the work platform from rolling when the brake is removed.

(2) Disconnect the hose assemblies and cap the opening to prevent foreign material from entering.

(3) Remove the capscrews and lockwashers to remove the cylinder from the chassis.

#### b. Disassembly.

#### NOTE

Prepare a clean work area on which to service the internal parts.

(1) Remove the snap ring and withdraw the shaft and all attached components from the cylinder barrel.

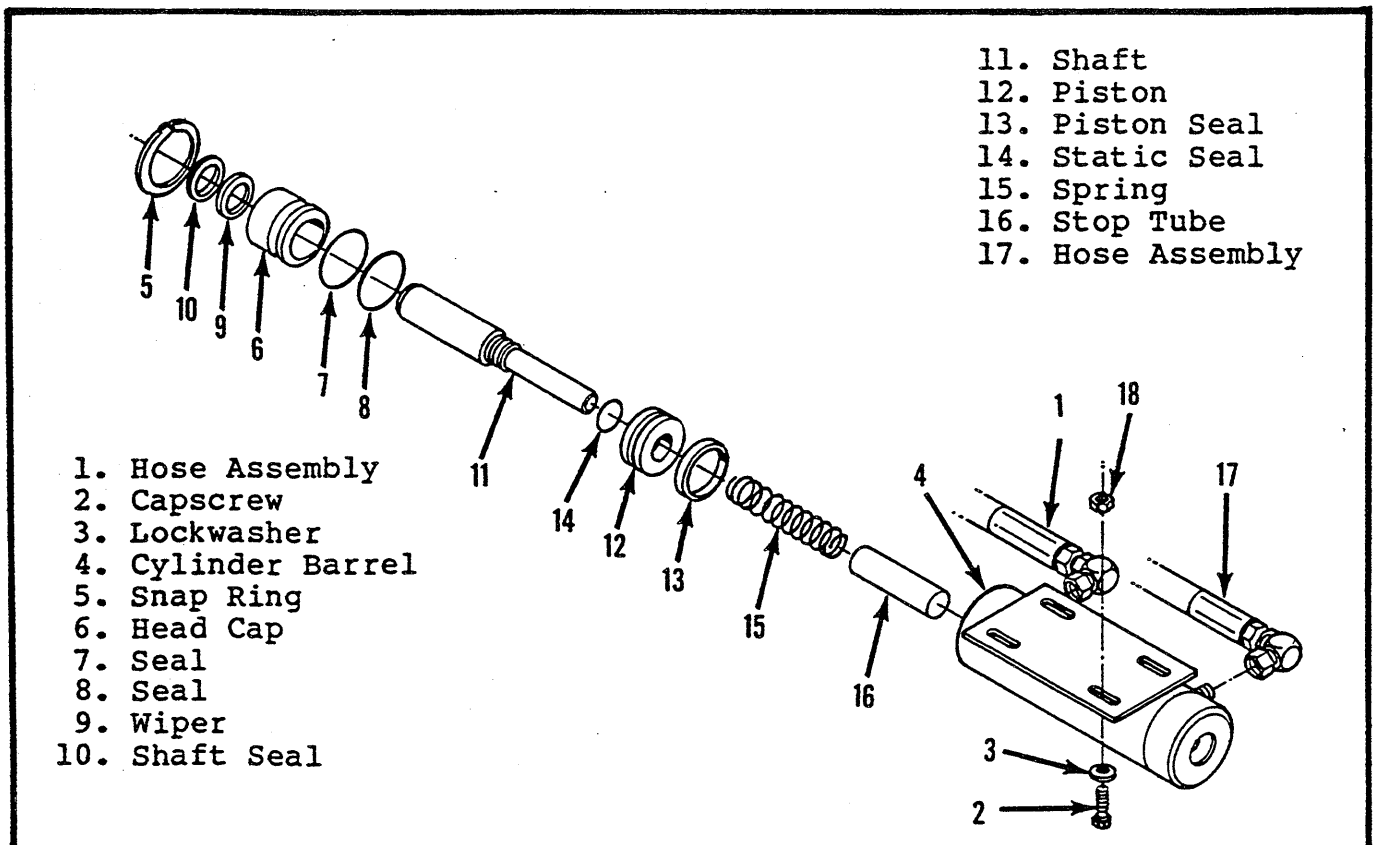


Figure 5-12. Brake Cylinder



(2) Remove the head cap from the shaft then remove the wiper, shaft seal and seals from the head cap.

(3) Unscrew the piston from the shaft and remove the static seal. Remove the piston seal from the piston.

(4) Remove the spring and stop tube from the cylinder barrel.

c. Cleaning and Inspection.

(1) Clean all metal parts in solvent and blow dry with filtered compressed air.

(2) Check all thread parts for stripped or damaged threads.

(3) Check the bearing surfaces inside of the head cap, outer edge surface of the piston, inside of the cylinder barrel and the shaft for signs of scoring or excessive wear.

(4) Check the spring for cracks.

(5) Replace any parts found unserviceable.

(6) Discard old seals.

d. Assembly and Installation.

(1) Install the piston seal on the piston then assemble the static seal, shaft and piston.

(2) Position the spring and stop tube on the shaft assembly.

(3) Lubricate the piston seal with clean hydraulic fluid, then install the shaft assembly in the cylinder barrel.

(4) Lubricate the seals with clean hydraulic fluid and install on the head cap.

(5) Install the shaft seal and wiper within the head cap.

(6) Lubricate entire assembly's seals and the shaft seal and wiper with clean hydraulic fluid then install the head cap onto the shaft and into the cylinder barrel.

(7) Secure with snap ring.

(8) Position the brake cylinder assembly on the chassis so that the shaft fully engages the brake disc, however the shaft must clear the brake disc once retracted. Secure with capscrews and lockwashers.

(9) Connect the hose assemblies.

(10) Operate the brake retract circuit and check that the shaft clears the brake disc. Check for leaks.

## 5-22. STEERING CYLINDER (Figure 5-13).

### a. Removal.

(1) Mark and disconnect the hose assemblies from the fittings and immediately cap the openings to prevent foreign material from entering.

(2) Remove the cotter pins and clevis pins.

(3) Remove the locknuts and capscrews to remove the cylinder assembly.

### b. Disassembly.

(1) Remove the tie rod nuts, tie rods and the end plates.

(2) Remove the headcaps from the barrel tube.

(3) Withdraw the entire shaft assembly from either end of the barrel tube.

(4) Remove the rod wipers, rod seals and static O-rings from the headcaps.

(5) Discard all the seals.

(6) Unscrew the No. 1 shaft from the No. 2 shaft and remove the piston.

(7) Remove the piston seal and static O-ring from the piston.

(8) Discard the static O-ring and piston seal.

### c. Cleaning and Inspection.

(1) Wash all the metal parts in cleaning solvent and blow dry with filtered compressed air.

(2) Inspect all the threaded components for stripped or damaged threads.

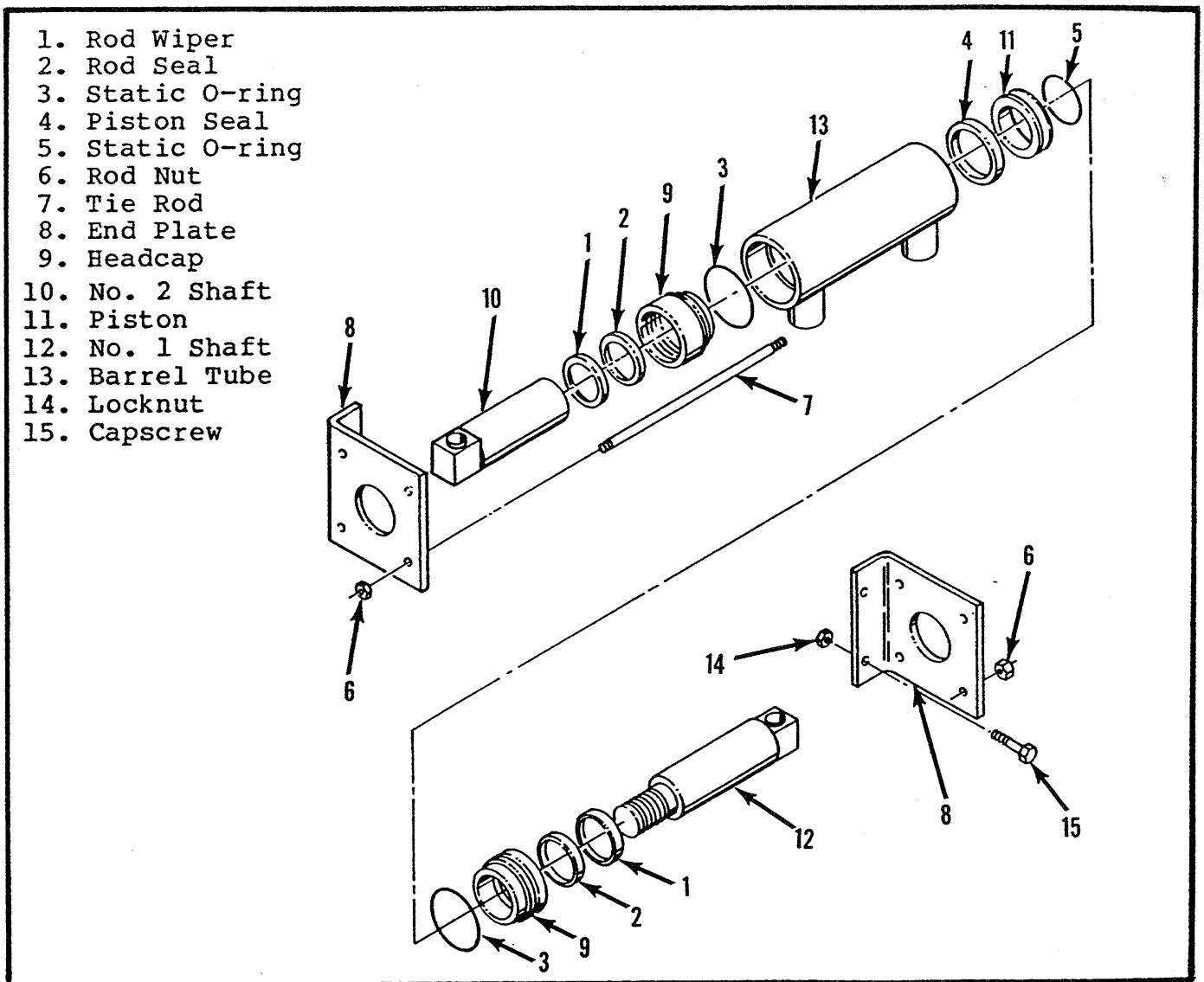


Figure 5-13. Steering Cylinder

(3) Check the inside surface of the barrel tube for scoring or excessive wear.

(4) Check the piston and head caps for scoring or excessive wear.

(5) Inspect the surface of both shafts for scoring or excessive wear.

(6) Replace all seals and O-rings.

d. Assembly and Installation.

(1) Install a replacement piston seal and static O-rings on the piston.

(2) Install the piston on the No. 1 shaft.

(3) Thread the No. 2 shaft onto the No. 1 shaft and tighten securely.

(4) Lubricate the piston seal and install the shaft assembly in the barrel tube.

(5) Lubricate and install replacement rod seals and static O-rings on the headcaps.

(6) Lubricate and install replacement rod wipers in the headcaps.

#### NOTE

Install spacers on XL-19CW and XL-19C cylinder rods only.

(7) Install the headcaps in the barrel tube.

(8) Install the end plates, tie rods and tie rod nuts and tighten securely.

(9) Position the cylinder assembly on the chassis and secure with capscrews and locknuts.

(10) Install the clevis pins and cotter pins.

(11) Connect the hose assemblies to the fittings.

(12) Operate the steering circuit several times throughout its entire range of travel to expel trapped air and check for leaks.

#### 5-23. LIFT CYLINDER REMOVAL (Figure 5-14).

##### a. Removal.

(1) Block scissor linkage as per paragraph 5-5 or optional scissors brace.

(2) Remove snap rings from cylinder pin.

(3) Remove cylinder pin and spacers from cylinder and plates.

(4) Provide a suitable container to catch the draining hydraulic fluid, then disconnect the hydraulic hose and fitting from the base of the cylinder. Immediately plug hose to prevent foreign material from entering.

(5) Attach a suitable hoisting device and sling to the top of the cylinder.

(6) Lift cylinder from collar.

(7) Move cylinder to a prepared work area.

##### b-1. Disassembly, For Threaded Rod Construction (Figure 5-15).

(1) Unscrew the gland nut and withdraw the rod tube from the barrel tube.

(2) Unscrew the clevis from the rod tube.

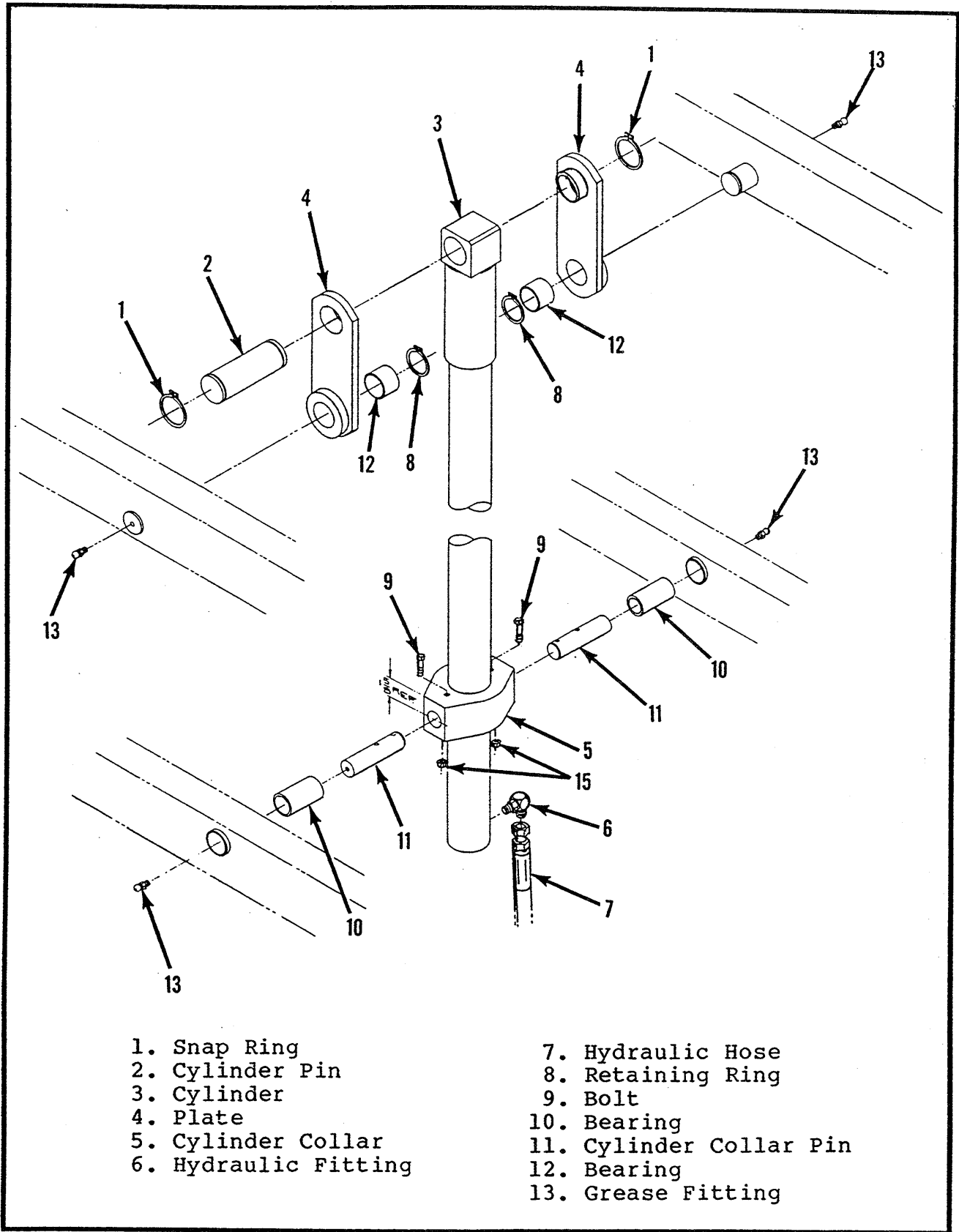


Figure 5-14. Lift Cylinder Removal

- (3) Withdraw the rod tube from the barrel tube.
- (4) Remove the bleeder screw from the clevis.
- (5) Remove the static O-ring from the clevis and discard.
- (6) Remove the piston wear ring and stop ring from the rod tube and discard.
- (7) Remove the static O-ring, rod wear ring, rod seal and rod wiper from the gland nut and discard.
- (8) Do not remove the velocity fuse unless replacement is necessary.

b-2. Disassembly, For Welded Rod Construction (Figure 5-15).

- (1) Unscrew gland nut and withdraw the rod tube from the barrel tube.
- (2) Remove the stop ring and wear ring from the rod tube.
- (3) Remove the gland nut from the rod tube.
- (4) Remove the bleeder screw assembly.
- (5) Remove the O-ring, wear ring, rod seal, and rod wiper from the gland nut and discard.
- (6) Remove the velocity fuse from the barrel tube.

c. Cleaning and Inspection (Figure 5-15).

- (1) Clean all the metal parts in cleaning solvent and blow dry with filtered compressed air.
- (2) Check the mating surfaces of the mount tube, barrel tube and rod tube for excessive wear or scoring.
- (4) Replace all parts found unserviceable.
- (5) Replace all seals and O-rings.

d-1. Reassembly, For Threaded Rod Construction (Figure 5-15).

- (1) Lubricate and install the static O-ring, rod wear ring, rod seal and rod wiper in the gland nut.
- (2) Install the piston wear ring and stop ring on the rod tube.
- (3) Lubricate and insert the rod tube through the bottom of the gland nut.
- (4) Lubricate and install the static O-ring on the clevis.

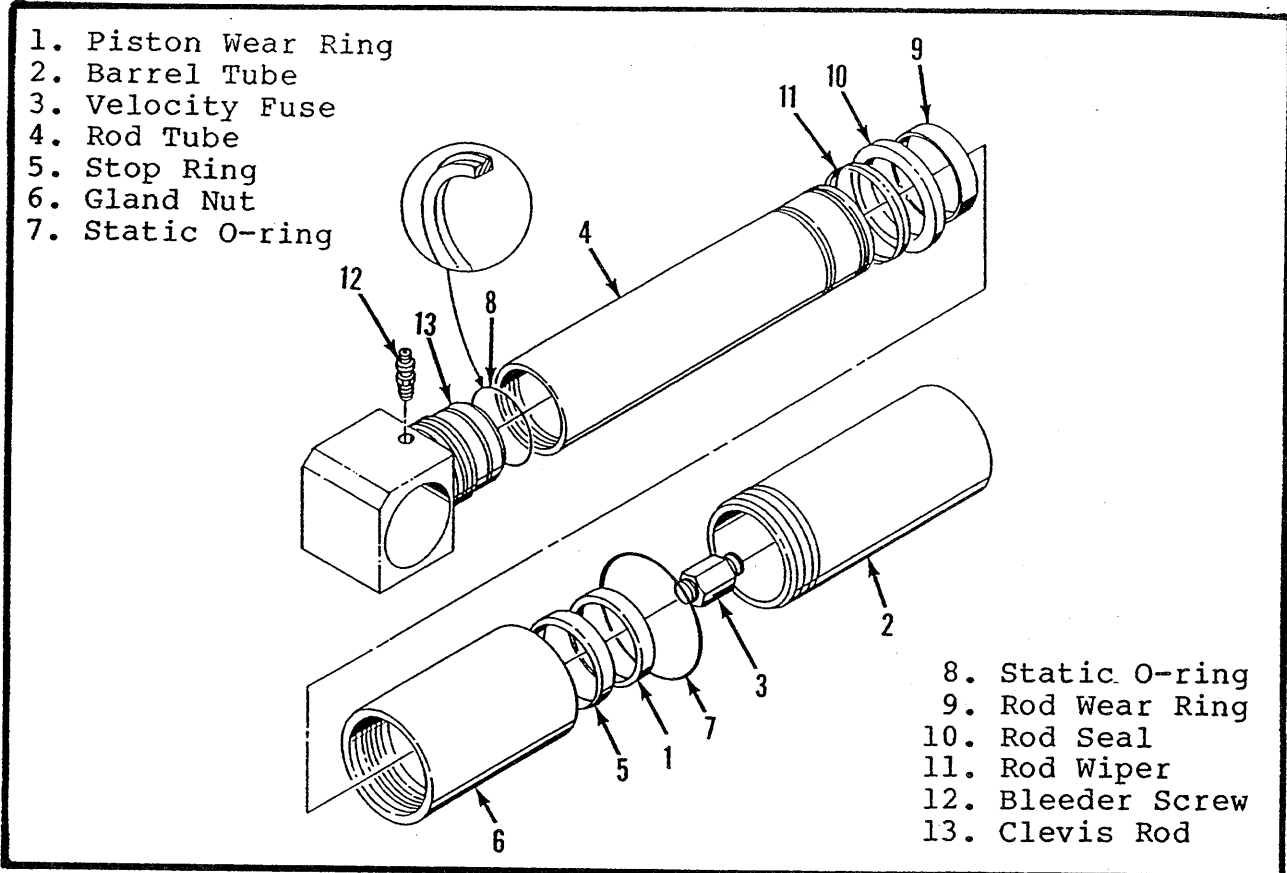


Figure 5-15. Lift Cylinder Disassembly  
 Threaded Rod Construction

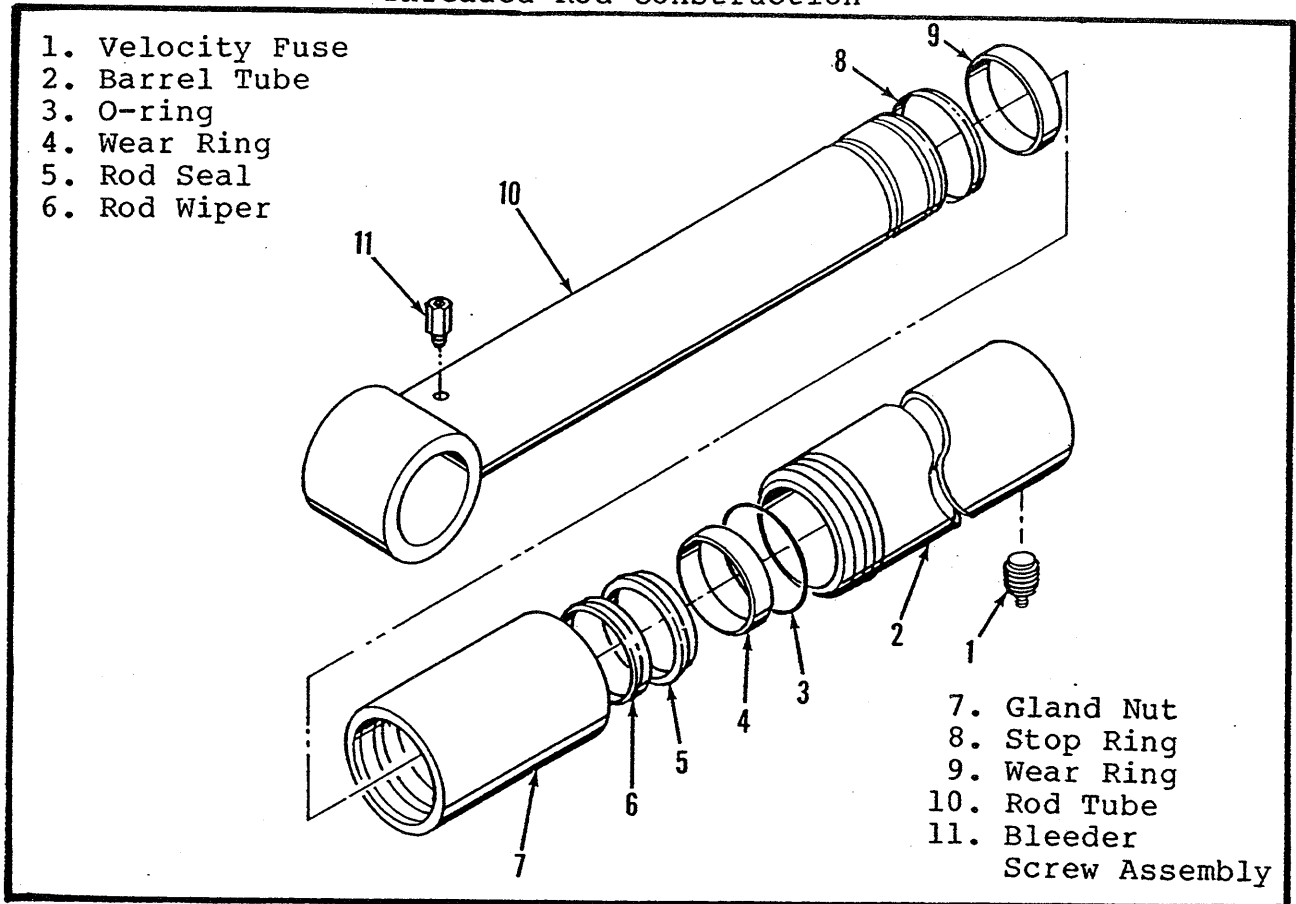


Figure 5-15. Lift Cylinder Disassembly  
 Welded Rod Construction

(5) Thread the clevis into the rod tube and tighten securely.

(6) Lubricate the inside surface of the barrel tube and slide over the rod tube. Thread the barrel tube into the gland nut and tighten securely.

(7) Install the bleeder screw. **DO NOT** tighten the bleeder screw.

d-2. Reassembly, For Welded Rod Construction (Figure 5-15).

(1) Lubricate and install the rod seal, wear ring, rod wiper and O-ring in the gland nut.

**NOTE**

Vaseline petroleum jelly or equivalent lubricant should be used.

(2) Place the gland nut installation rings in the grooves in the rod tube and lubricate.

(3) Slide the gland nut onto the rod tube.

(4) Remove the gland nut installation rings and install the stop ring and wear ring in the rod tube.

**NOTE**

Wear ring is to be installed in groove nearest the end of rod tube.

(5) Lubricate the rod tube and install in the barrel tube.

(6) Thread the gland nut onto the barrel tube and tighten securely.

(7) Install the bleeder screw assembly.

(8) Install the velocity fuse into the barrel tube port.

e. Installation (Figure 5-14).

**NOTE**

Lubricate the cylinder pin with hydraulic fluid prior to installation.

(1) Slide the lift cylinder into the cylinder collar.

(2) Connect the hydraulic fitting and the hydraulic hose.

(3) Raise the plates to align with the cylinder and install the cylinder pin.

(4) Install the snap rings to each end of the cylinder pin.



(5) Operate the hydraulic lift circuit with the bleeder screw (Figure 5-18) loose to allow trapped air to escape the lift cylinder. Once hydraulic fluid flows continuously from bleed port, tighten the bleeder screw. Check for leaks.

(6) Test with weight at rated platform load to check system operation.

#### 5-24. ELECTRIC MOTOR (Figure 5-16).

##### NOTE

Brush replacement is necessary if the brushes are damaged or excessively worn. Replace when Brush length is 5/16 inch. When replacement is needed, replace all brushes.

##### a. Removal and Disassembly.

(1) Remove the acorn nuts and lockwashers from the motor tie-bolts.

(2) Tap gently on the brush housing to separate the brush housing and brush plate assembly from the motor housing and armature.

(3) Remove the brush plate from the brush housing.

(4) Remove the brush screws and locknuts. Remove the brushes.

##### NOTE

Ensure that the brush springs and armature bearing spring are not lost when disassembling the brush housing and brush plate assembly.

##### b. Reassembly.

(1) Attach the brushes and tighten the brush screws and nuts.

(2) Ensure that the brush springs are in proper position.

(3) Slide the brushes completely into the brush guides. Retain brushes by sliding a round wooden toothpick or small dowel through the retainer holes provided in the brush guides and brush plate.

##### c. Installation.

(1) Slide the brush housing over the motor tie bolts against the motor housing. Ensure that the key on the brush housing engages the slot in the motor housing.

(2) Position the tie bolt insulator tube so the brush wires will not contact the motor tie rods.

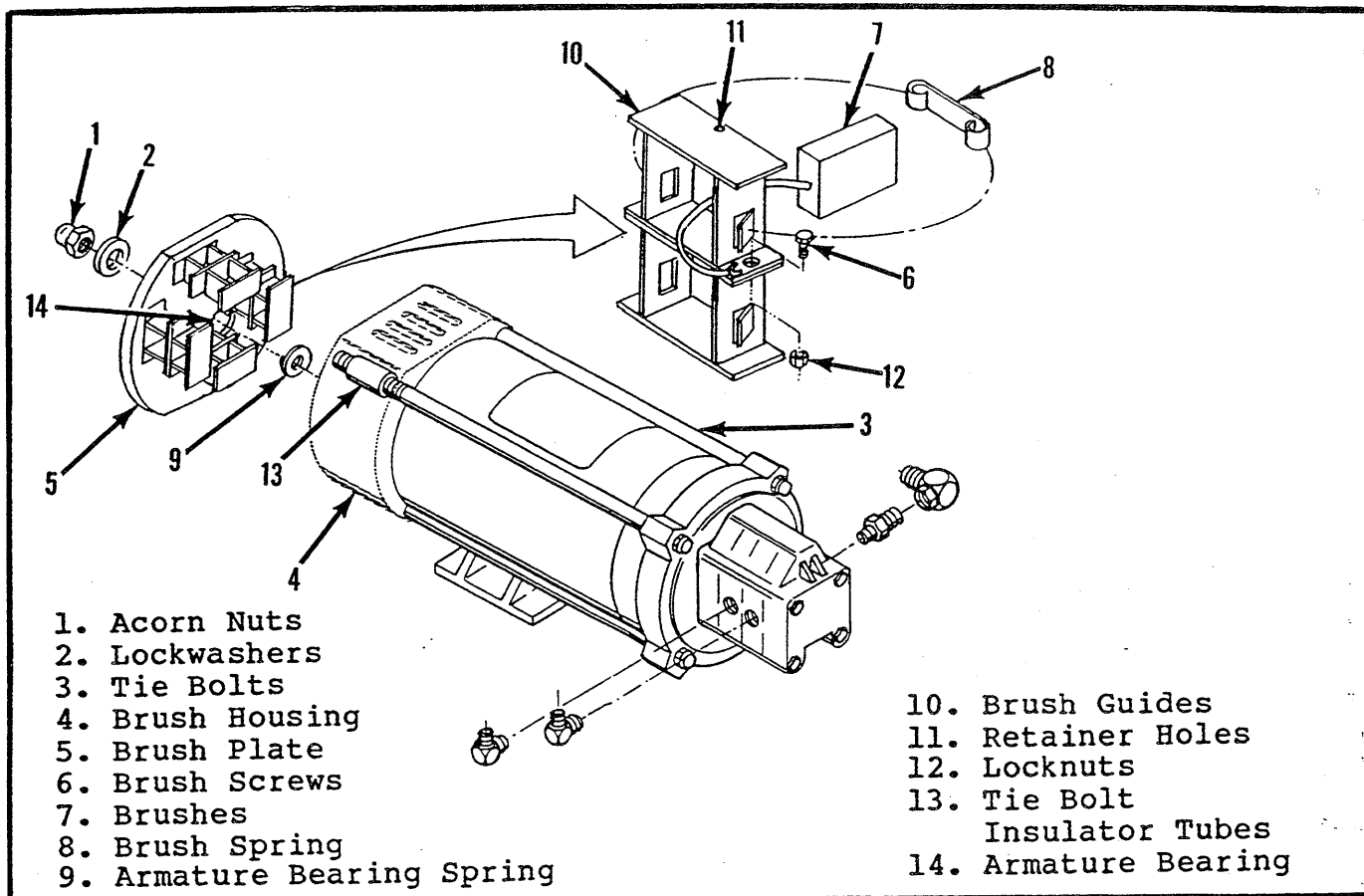


Figure 5-16. Electric Motor

NOTE

When performing step C-1 ensure that armature bearing spring is positioned properly in armature bearing.

(3) Slide the brush plate assembly into the brush housing and onto the armature bearing. Ensure that the brush plate aligning pin properly engages the aligning hole in the brush housing.

(4) Install the lockwashers and acorn nuts.

(5) Pull out the brush retainers (toothpicks).

## SECTION VI

### DIAGRAMS

**6-1. CONTENT.** This section contains electrical diagrams, hydraulic power diagrams, and associated information for maintenance purposes.

**6-2. USE.** The diagrams are to be used in conjunction with Table 5-2 TROUBLESHOOTING. They allow understanding of the make-up and functions of the systems for checking, tracing, and fault-finding during trouble analysis.

**6-3. INDEX OF DIAGRAMS.** The diagrams appear in the following order:

Figure 6-1. Electrical Diagram.  
Figure 6-2. Hydraulic Diagram.

**6-4. DIAGRAM LEGENDS.** The components that comprise the electrical and hydraulic systems are given a reference designation and are explained as to location and function in the following tables:

Table 6-1. Electrical Diagram Legend.  
Table 6-2. Hydraulic Diagram Legend.

**TABLE 6-1. Electrical Diagram Legend.**

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
B	Motor, Electric	Provides power to Drive Hydraulic Pump.	Front Center of Module.
BT	Batteries 6 volts	To store energy to power work platform.	Two per side rear of Module.
CR1 and CR2	Motor Relay	Connects Batteries to Motor.	Right front of Module.
D1	Diode	Provides power to Motor Relays when Steer Switch is activated <b>RIGHT.</b>	Between T1 and T2 on Fanning Strip.

TABLE 6-1. Electrical Diagram Legend - Continued

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
D2	Diode	Provides power to Motor Relays when Steer Switch is activated <b>LEFT</b> .	Between T3 and T2 on Fanning Strip.
D3	Diode	Provides power to Motor Relay when Lift and Drive Switches are activated.	Between T2 and T5 on Fanning Strip.
D4	Diode	Provides power to Steering Bypass and Speed Range Switch when Drive Switch is activated <b>FORWARD</b> .	Between T4 and T5 on Fanning Strip.
D5	Diode	Provides power to Steering Bypass and Speed Range Switch when Drive Switch is activated <b>REVERSE</b> .	Between T6 and T5 on Fanning Strip.
D6	Diode	Provides power to Steering Bypass and Speed Range Switch when Lift Switch is activated <b>UP</b> .	Between T7 and T5 on Fanning Strip.
F1	Fuse, 15 AMP	Provides over-load protection for the Control Circuit.	Left front of Module.
HN	Alarm, Down	Provides warning sound when deck is lowering.	Left front of Module.

TABLE 6-1. Electrical Diagram Legend - Continued.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
L1	Solenoid (coil)	Shifts Steer Valve to <b>RIGHT</b> turn position.	Right end of Spool Valve mounted on left top of Manifold Block.
L2	Solenoid (coil)	Shifts Steer Valve to <b>LEFT</b> turn position.	Left end of Spool Valve mounted on left top of Manifold Block.
L3	Solenoid (coil)	Shifts Drive Valve to <b>FORWARD</b> position.	Left end of Spool Valve mounted on right top of Manifold Block.
L4	Solenoid (coil)	Closes Steering Bypass Valve.	Top left of front of Manifold Block.
L5	Solenoid (coil)	Shifts Drive Valve to <b>REVERSE</b> position.	Right end of Spool Valve mounted on right top of Valve Manifold.
L6	Solenoid (coil)	Opens Lift Valve.	Top right Coil on front of Manifold Block.
L7	Solenoid (coil)	Closes Lift Bypass Valve.	Bottom Center Coil on front of Manifold Block.
L8	Solenoid (coil)	Opens Down Valve.	Center of bottom of Manifold Block.
L9	Solenoid	Closes High Speed Valve.	Top center Coil of front of Manifold Block.
S1	Switch, Guarded Emergency Stop.	Control Circuit shut off.	On Control Box right front.

TABLE 6-1. Electrical Diagram Legend - Continued

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
S2	Switch, Key Mode	Supplies power to Lift, Drive and Steer switch.	On Control Box side.
S3	Switch, Lift	Supplies power to Lift or Lower Valve Solenoids.	On Control Box left center.
S4	Switch, Steer	Supplies power to Steer Valve Solenoids.	On Control Box left rear.
S5	Switch, Drive	Supplies power to Drive Valve Solenoids.	On Control Box right rear.
S6	Switch, Speed Range	Supplies power to High Speed Valve Solenoids.	On Control Box left front.
S7	Switch, Chassis Lift	Supplies power to Lift or Lower Valve Solenoids.	Left front of Module.
S8	Switch, Platform Height Limit	Opens Lift Valve Solenoid Circuit when Deck is fully elevated.	Near left side Roller Track at center of work platform.

TABLE 6-2. Hydraulic Diagram Legend

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
ASSY1	Duplex Pump	Supplies hydraulic oil flow for Lift, Drive, and Steer.	On Electric Motor at left front of Module.
CV1	Check Valve	Prevents oil of both sections of Pump from combining.	Bottom front of left side of Manifold Block
CV2	Check Valve	Prevents oil of both sides of Pump from combining.	Top left of front of Manifold Block.
CV3	Check Valve	Prevents oil from flowing back through Lift Valve.	Top center of back of Manifold Block.
CV4	Check Valve	With platform down prevents oil from flowing to Tank in HIGH speed.	Back center of bottom of Manifold Block.
CV5	Check Valve	Allows Steering Valve to function at a higher pressure than drive.	Outer center of left side of Manifold Block.
CYL1	Cylinder, Steering	Provides force to turn front Wheels.	Center front of Chassis.
CYL2	Cylinder, Brake	Stops Machine from moving while parked.	Right rear side of Chassis.
CYL3	Cylinder, Lift	Provides force to lift Platform.	Inside the inner Scissors Frame Weldments.
FL1	Filter	Filters oil returning to Tank.	Right front of Module.

TABLE 6-2. Hydraulic Diagram Legend - Continued

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
MOT1	Drive Motor	Provides tractive effort for work platform.	on left front Steering Spindle.
MOT2	Drive Motor (Optional On Some Models)	Provides tractive effort for work platform.	On right front Steering Spindle.
ORF1	Orifice, Brake	Delays the engagement of the Brake Cylinder Shaft.	Bottom right of back of Manifold Block. surface.
ORF2	Orifice, Lift	Controls the platform rate of descent.	Center of back of Manifold Block.
SV1	Valve, Shuttle	Provides oil to Brake Cylinder when either Drive <b>FORWARD</b> or <b>REVERSE</b> are actuated.	Bottom center of right side of Manifold Block.
V1	Valve, Steer	Provides directional control for Steering Cylinder.	Left top of Manifold Block.
V2	Valve, Counterbalance <b>FORWARD</b>	Prevents machine from running away on slopes and cushions stops.	Right top of front of Manifold Block.
V3	Valve, Counterbalance <b>REVERSE</b>	Prevents machine from running away on slopes and cushions stops.	Right bottom of front of Manifold Block.
V4	Valve, Drive	Provides directional control of oil for drive functions.	Right top of Manifold Block.
V5	Valve, Velocity Fuse	Locks Lift Cylinders if lines break.	Inside each Lift Cylinder Port.



TABLE 6-2. Hydraulic Diagram Legend - Continued

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
V6	Valve, Steering Bypass	Prevents oil from bypassing while driving and lifting.	Top left of Manifold Block.
V7	Valve, Lift	Provides oil flow to Lift Cylinders.	Top right Coil on front of Manifold Block.
V8	Valve, High Speed	Prevents oil from bypassing while driving and lifting.	Top center Coil on front of Manifold Block.
V9	Valve, Lift Bypass	Prevents oil from bypassing while lifting.	Bottom center Coil on front of Manifold Block.
V10	Valve, Emergency Lowering	Provides manual means of allowing oil to flow from Lift Cylinders to Tank.	Bottom center of front of Manifold Block.
V11	Valve, Down	Allows oil to flow out of Lift Cylinders to Tank.	Center of bottom of Manifold Block.
RV1	Valve, Main Relief	Provides over pressure protection to Pump.	Left front of Manifold Block.

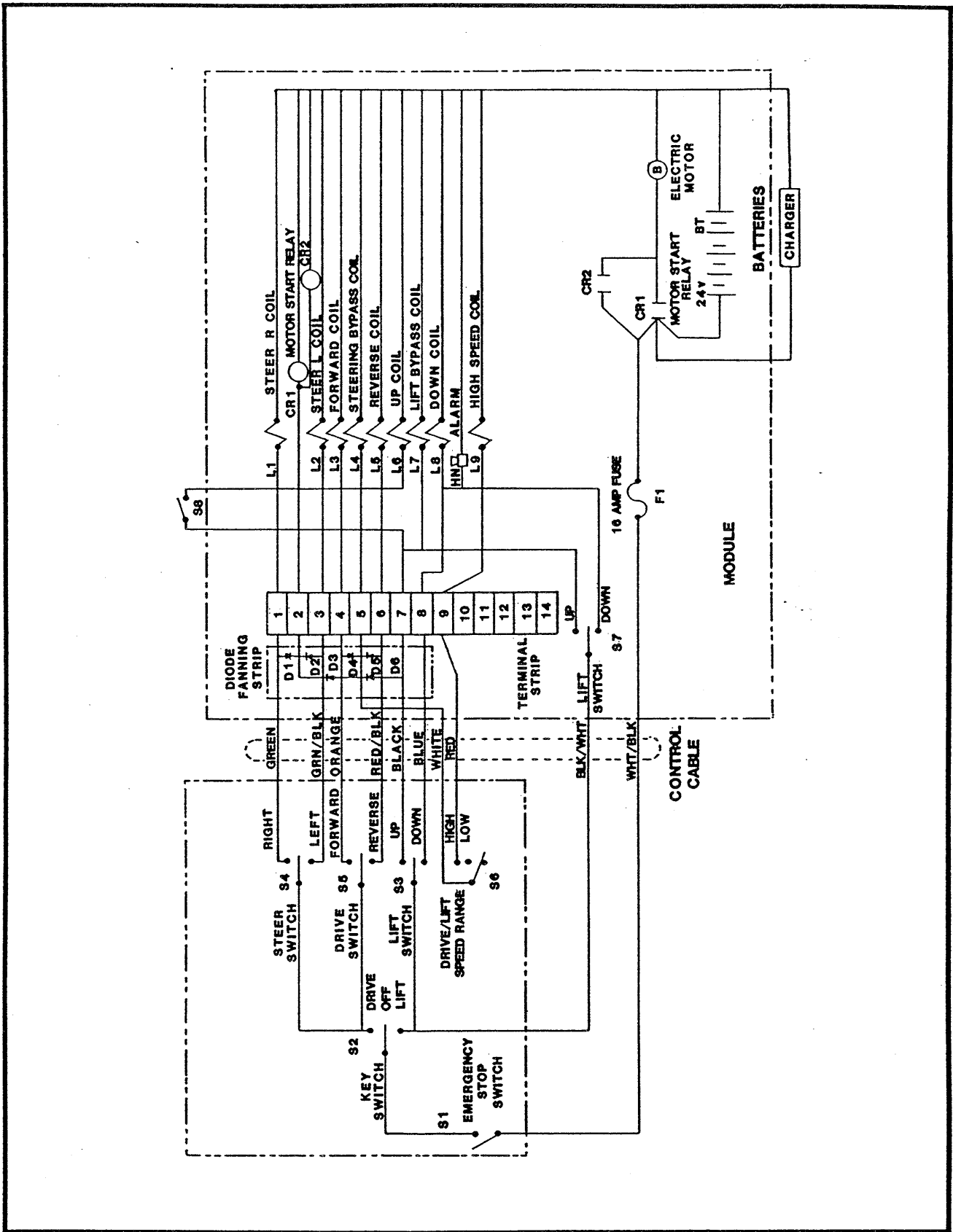


Figure 6-1. Electrical Diagram

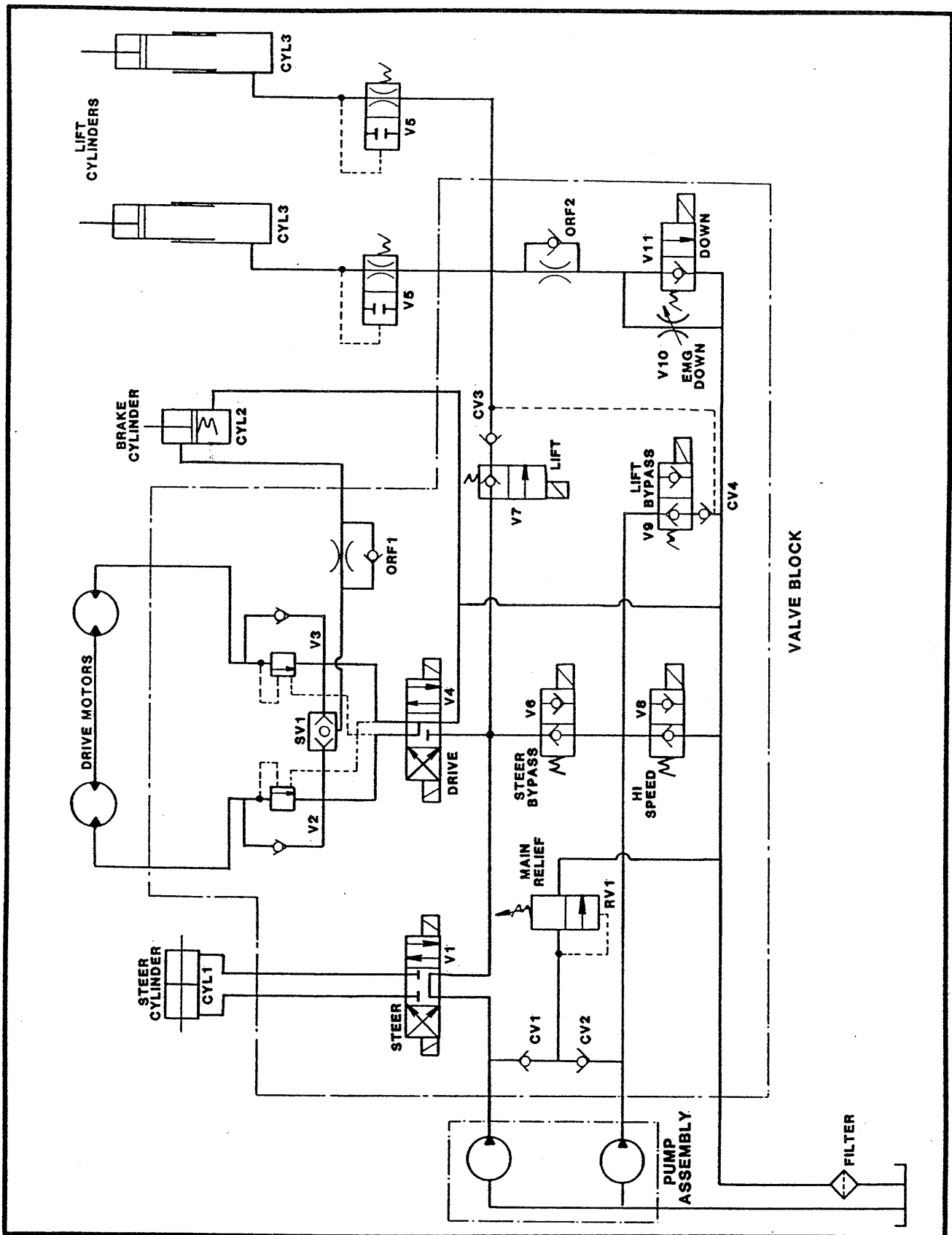


Figure 6-2. Hydraulic Diagram (Sheet 1 of 3)  
 XL-19C & XL-19CW,  
 Serial Nos. 3001 to 3592 and 5001 to 5161

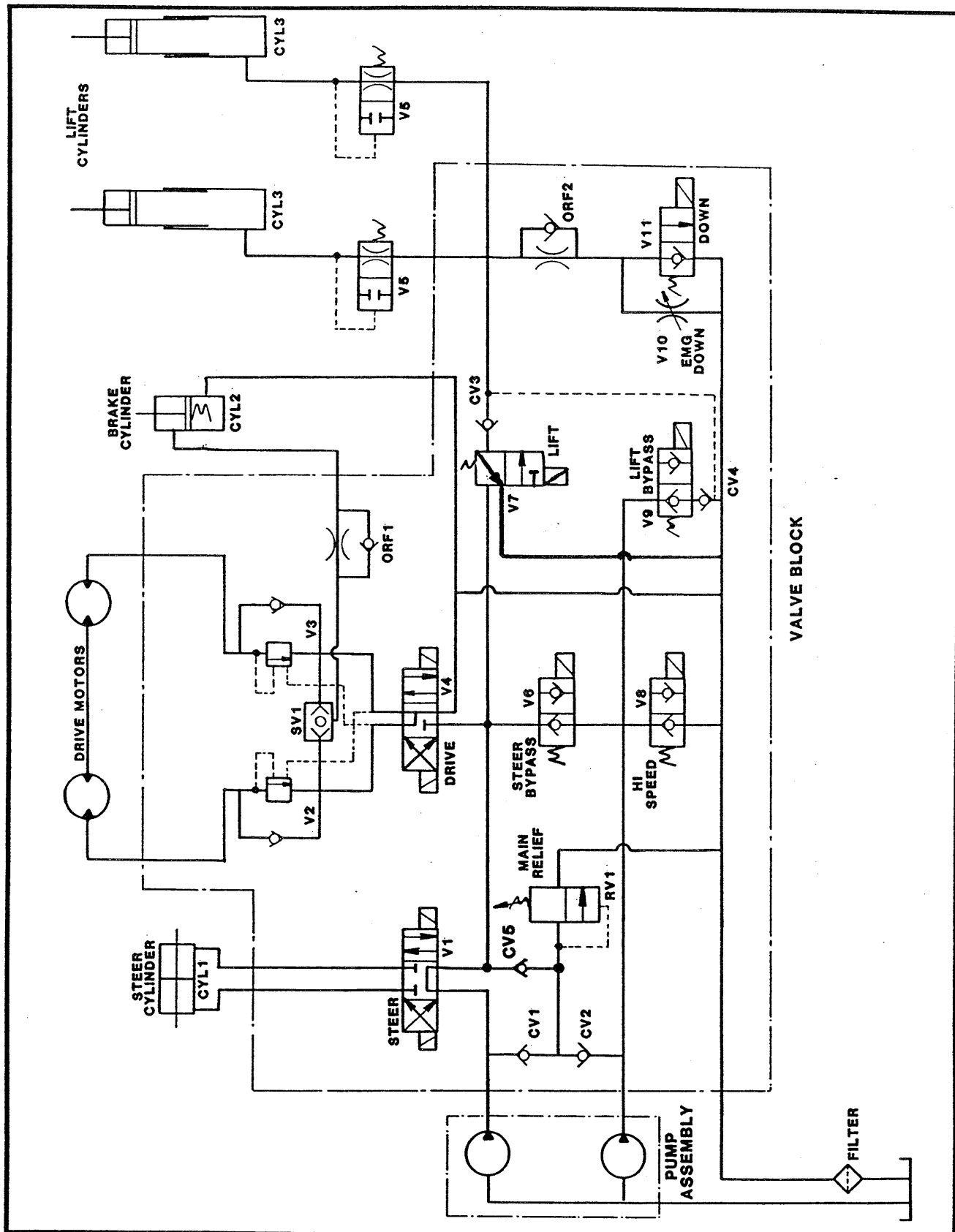


Figure 6-2. Hydraulic Diagram (Sheet 2 of 3)  
 XL-19C & XL-19CW,  
 Serial Nos. 3593 to Current and 5162 to Current

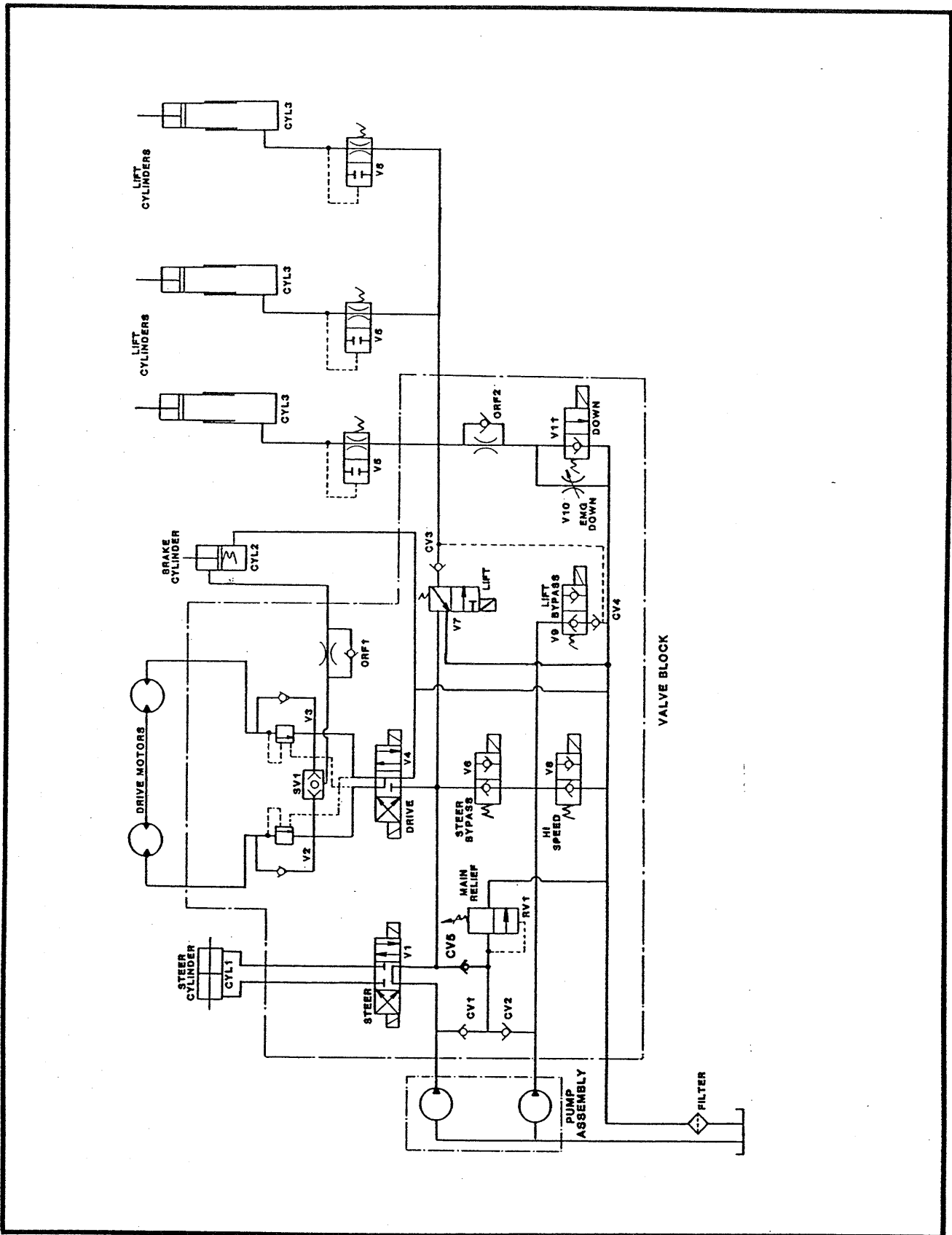


Figure 6-2. Hydraulic Diagram (Sheet 3 of 3)  
XL-24C

## SECTION VII

### ILLUSTRATED PARTS BREAKDOWN

**7-1. INTRODUCTION.** This section lists and illustrates the replaceable assemblies and parts of the XL-C Series Work Platform, as manufactured by UP-RIGHT INC.

**7-2. EXPLANATION OF COLUMNS IN ILLUSTRATED PARTS BREAKDOWN.**

**7-3. FIGURE AND INDEX NUMBER COLUMN.** The figure and index numbers correlate each parts list to its appropriate illustration. The first number in this column on each page of listings indicates the figure number of the associated illustration. The following numbers, preceded by a dash, correspond to the index numbers of each part on the illustration.

**7-4. PART NUMBER COLUMN.** This column contains the manufacturer's part number for each item listed.

**7-5. DESCRIPTION COLUMN.** This column contains the manufacturer's nomenclature for each assembly or part. Each part description is indented to show relationship. Reference to next higher assembly or detail parts breakdown follow the description where applicable.

**7-6. QUANTITY REQUIRED COLUMN.** This column contains the quantity required for each assembly in the higher assembly and for each detail part in an assembly.

**7-7. ABBREVIATIONS.** The following abbreviations are used in this Section.

AC. . . . .	Alternate Current
AMP . . . . .	Ampere
ASSY. . . . .	Assembly
BUTT. . . . .	Button
DC. . . . .	Direct Current
DIA . . . . .	Diameter
FT. . . . .	Feet
GA. . . . .	Gauge
HD. . . . .	Head
HEX . . . . .	Hexagon
HH. . . . .	Hexagon Head
HHC . . . . .	Hexagon Head Cap
HP. . . . .	Horse Power
HWH . . . . .	Hexagon Washer Head
LBS . . . . .	Pounds
LG. . . . .	Long
LH. . . . .	Left Head

MACH. . . . . Machine  
NHA . . . . . Next Higher Assembly  
NPT . . . . . Standard Pipe Thread  
RD. . . . . Round  
REF . . . . . Reference  
RH. . . . . Right Hand  
SLFTP . . . . . Self Tapping  
SOC . . . . . Socket  
UNC . . . . . Unified National Course  
UNF . . . . . Unified National Fine  
V . . . . . Volt  
VAC . . . . . Volts Alternate Current  
VDC . . . . . Volts Direct Current  
W/. . . . . With

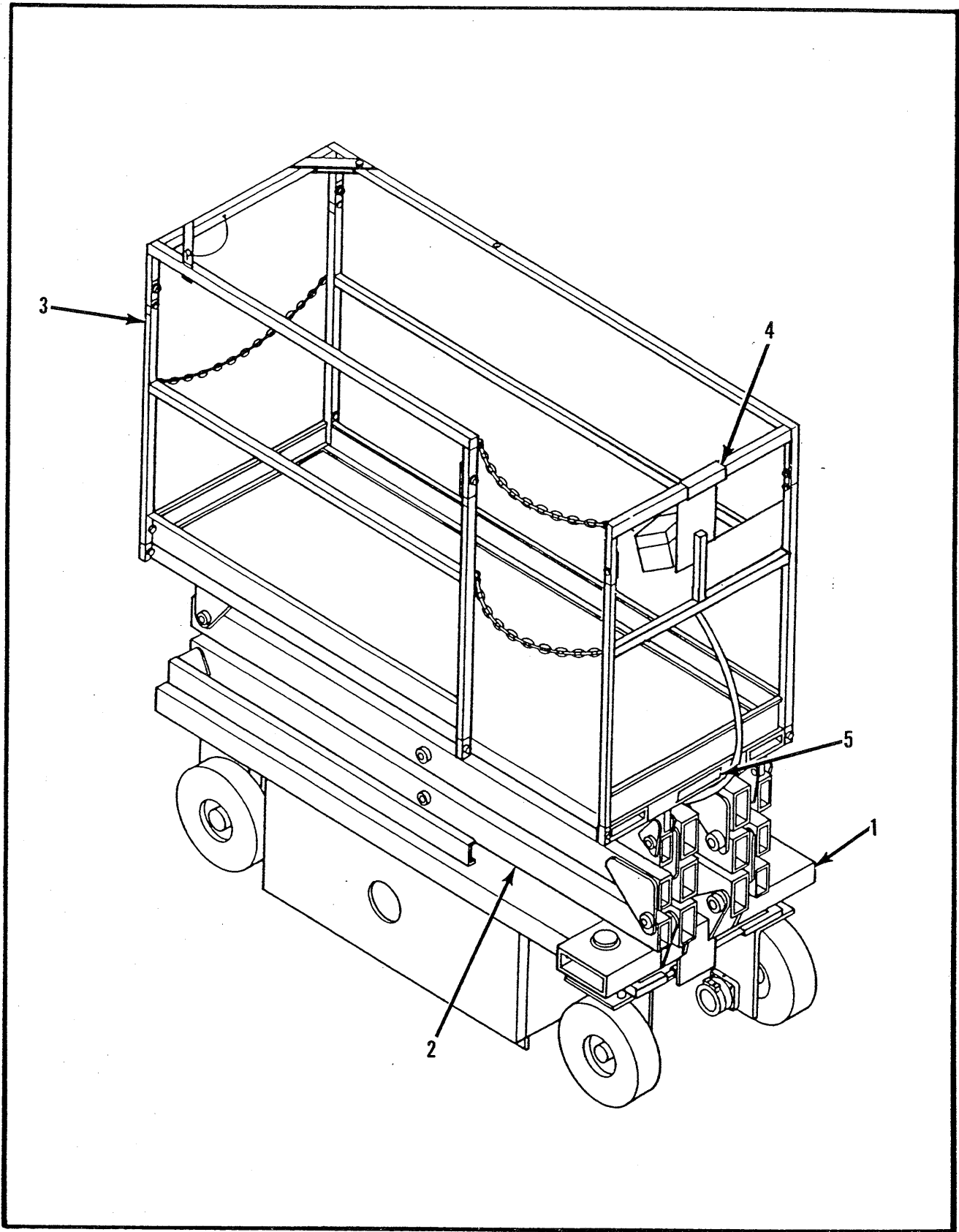


Figure 7-1. Work Platform, XL-19C



ITEM	PART	DESCRIPTION	QTY
7-1	61800-000-00	WORK PLATFORM, XL-19C . . . . .	1
-1	No Number	. CHASSIS ASSEMBLY. . . . . (See Figure 7-4)	1
-2	No Number	. SCISSORS ASSEMBLY . . . . . (See Figure 7-19, 7-20, 7-21)	1
-3	No Number	. FOLD DOWN GUARDRAIL INSTALLATION. . . . . (See Figure 7-22)	1
-4	61804-000-00	. CONTROLLER ASSEMBLY . . . . . (See Figure 7-25)	1
-5	61833-000-00	. DECAL KIT INSTALLATION. . . . . (See Figure 7-26)	1

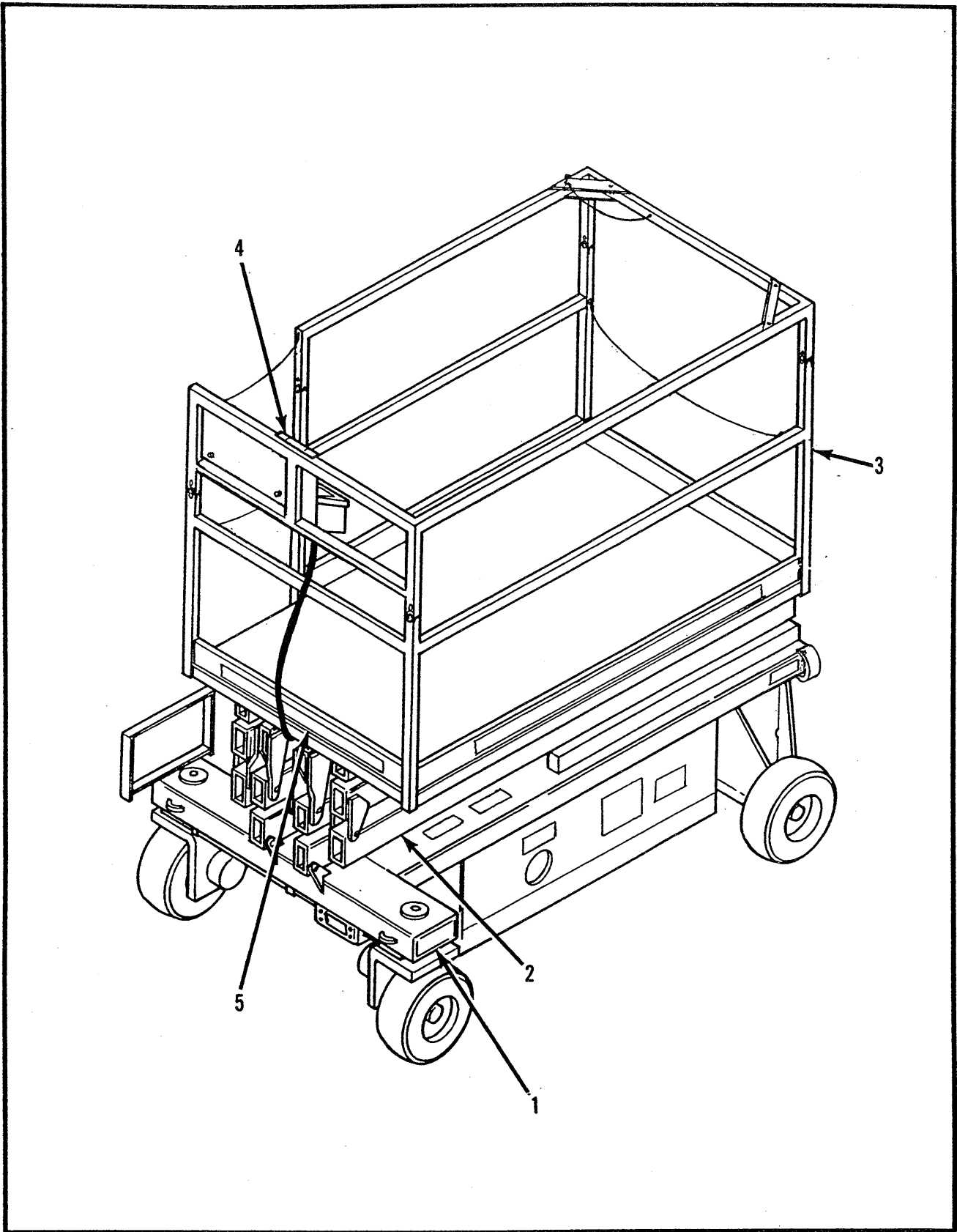


Figure 7-2. Work Platform, XL-19CW

ITEM	PART	DESCRIPTION	QTY
7-2	61850-000-00	WORK PLATFORM, XL-19CW. . . . .	1
-1	No Number	. CHASSIS ASSEMBLY. . . . . (See Figure 7-5)	1
-2	No Number	. SCISSORS ASSEMBLY . . . . . (See Figure 7-17)	1
-3	No Number	. FOLD DOWN GUARDRAIL INSTALLATION. . . . . (See Figure 7-23 Serial No. 5001 to 5030)	1
		. FOLD DOWN GUARDRAIL INSTALLATION. . . . . (See Figure 7-24 Serial 5031 to Current)	1
-4	61804-000-00	. CONTROLLER ASSEMBLY . . . . . (See Figure 7-25)	1
-5	61855-000-00	. DECAL KIT INSTALLATION. . . . . (See Figure 7-27)	1

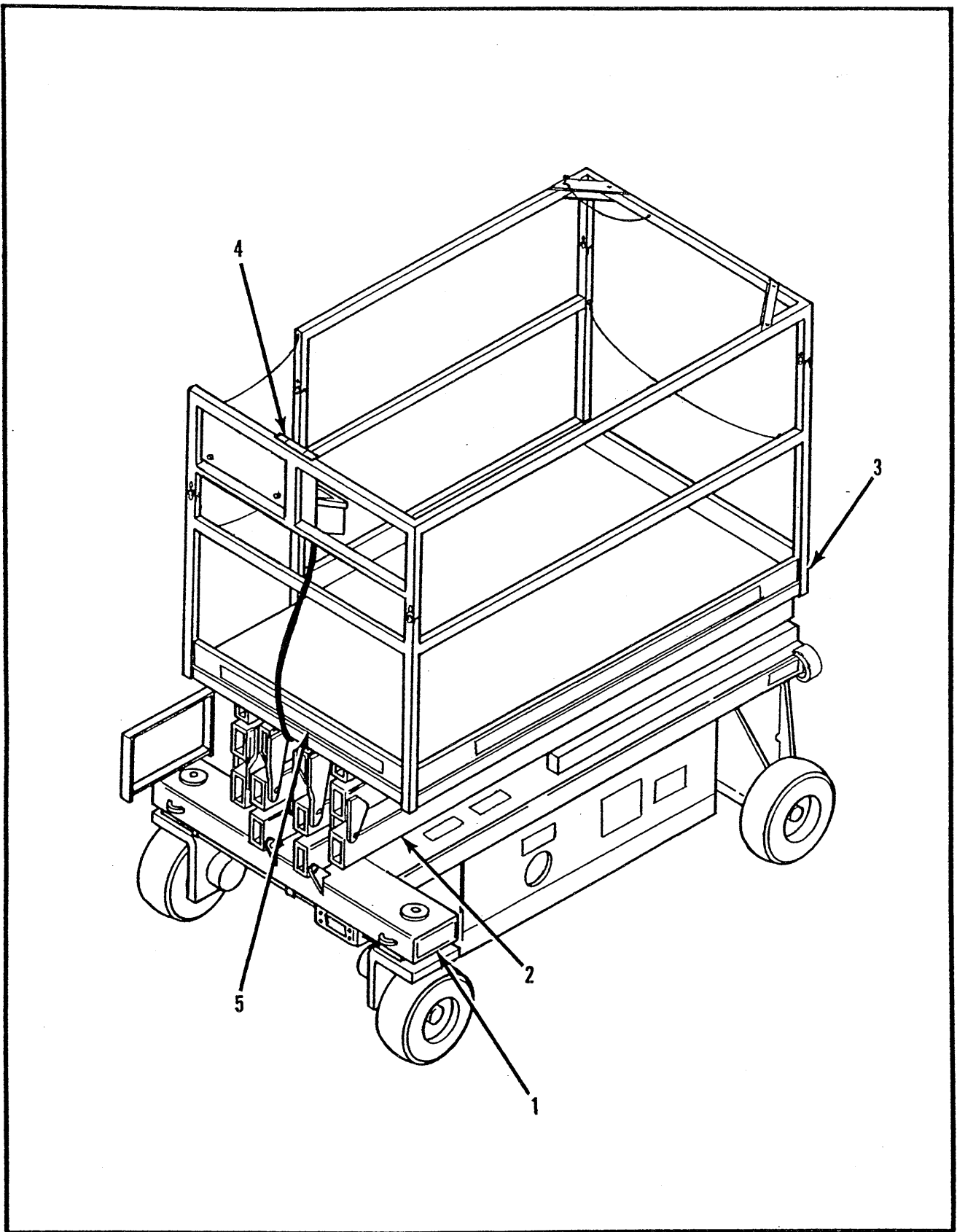


Figure 7-3. Work Platform, XL-24C

ITEM	PART	DESCRIPTION	QTY
7-3	61950-000-00	WORK PLATFORM, XL-24C . . . . .	1
-1	No Number	. CHASSIS ASSEMBLY. . . . . (See Figure 7-5)	1
-2	No Number	. SCISSORS ASSEMBLY . . . . . (See Figure 7-18)	1
-3	No Number	. FOLD DOWN GUARDRAIL INSTALLATION. . . . . (See Figure 7-24)	1
-4	61804-000-00	. CONTROLLER ASSEMBLY . . . . . (See Figure 7-25)	1
-5	61953-000-00	. DECAL KIT INSTALLATION. . . . . (See Figure 7-28)	1

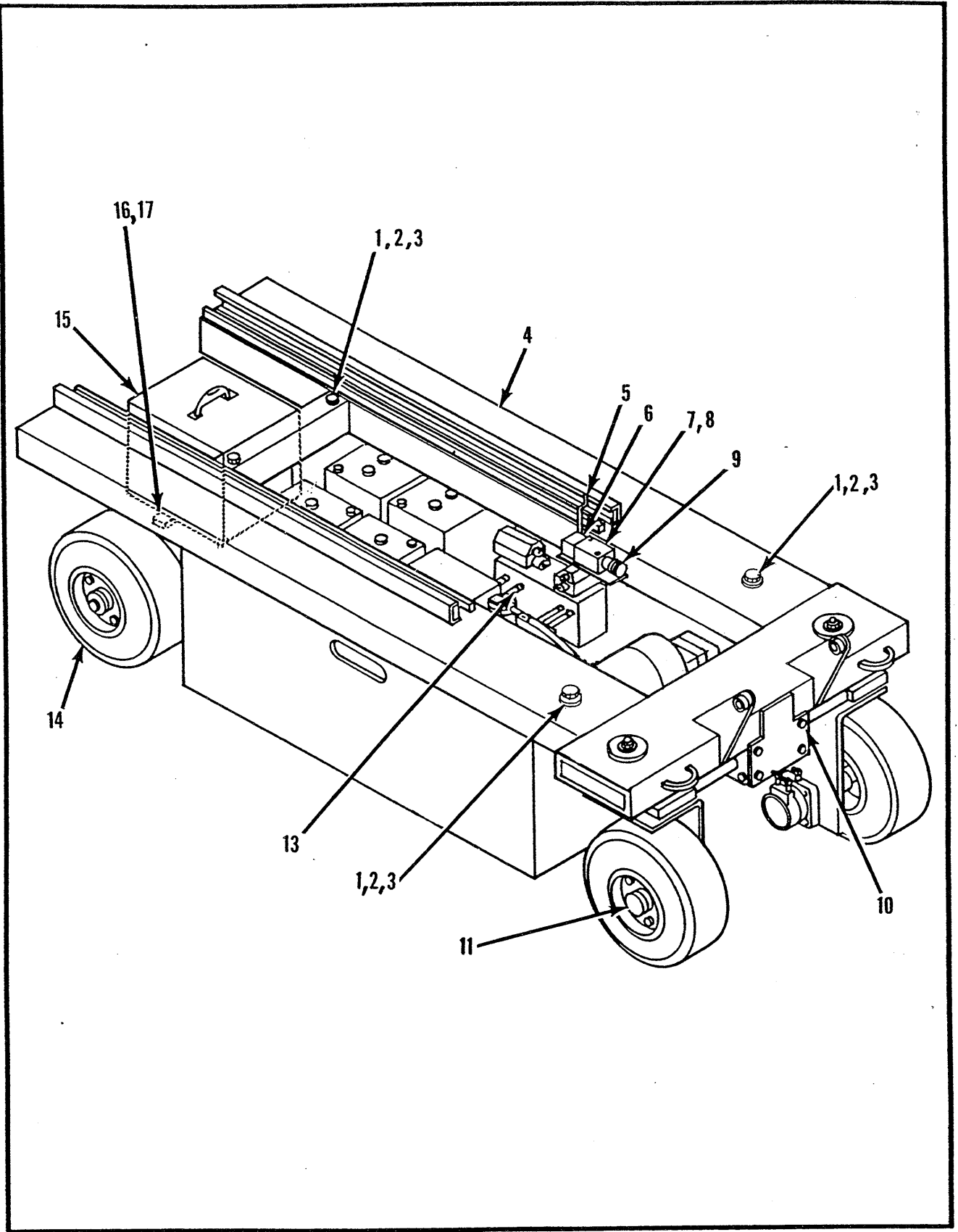


Figure 7-4. Chassis Assembly, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-4	No Number	CHASSIS ASSEMBLY, XL-19C. . . . .	REF
-1	11254-032-00	. SCREW, HHC 3/8-16 UNC GR5 x 4 . . . . .	4
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	8
-3	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	8
-4	61715-000-00	. FRAME WELDMENT. . . . .	1
-5	61753-000-00	. WAND, Platform Height . . . . .	1
-6	No Number	. SWITCH ASSEMBLY, Limit. . . . . (Telemecanique)	1
	15793-001-00	. . BODY, Switch. . . . .	1
	15793-002-00	. . HEAD, Switch. . . . .	1
	15793-004-00	. . . SWITCH. . . . .	1
	15793-003-00	. . LEVER . . . . .	1
	No Number	. SWITCH ASSEMBLY, Limit (Denison). . . . .	1
	29859-001-00	. . SWITCH, Limit . . . . .	1
	29859-003-00	. . . SWITCH. . . . .	1
	29860-000-00	. . ACTUATOR. . . . .	1
-7	11709-016-00	. SCREW, RD HD MACH 10-24 UNC x 2 . . . . .	2
-8	11248-003-00	. LOCKNUT, HEX 10-24 UNC x 2. . . . .	2
-9	29925-000-00	. CONNECTOR . . . . .	1
-10	No Number	. FRONT STEERING ASSEMBLY . . . . . (See Figure 7-6)	1
-11	No Number	. DRIVE MOTOR/WHEEL ASSEMBLY. . . . . (SEE FIGURE 7-8)	1
-12	No Number	. MODULE ASSEMBLY (See Figure 7-9). . . . .	1
-13	61805-000-00	. HOSE KIT/INSTALLATION . . . . . (See Figure 7-20)	1
-14	No Number	. REAR WHEEL AND HUB ASSEMBLY . . . . . (See Figure 7-13)	1
-15	10112-000-00	. CHARGER, Battery. . . . .	1
	27877-005-00	. . DIODE ASSEMBLY. . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-4	No Number	CHASSIS ASSEMBLY, XL-19C (Cont'd) . . . .	REF
	27877-006-00	. . FUSE. . . . .	2
	27877-007-00	. . AMMETER . . . . .	1
	27877-023-00	. . . LENS. . . . .	1
	10112-001-00	. . TIMER, 16 Hour. . . . .	1
-16	11829-006-00	. BOLT, Carriage 1/4-20 UNC x 3/4 . . . .	2
-17	11248-004-00	. SCREW, HEX 1/4-20 UNC . . . . .	2



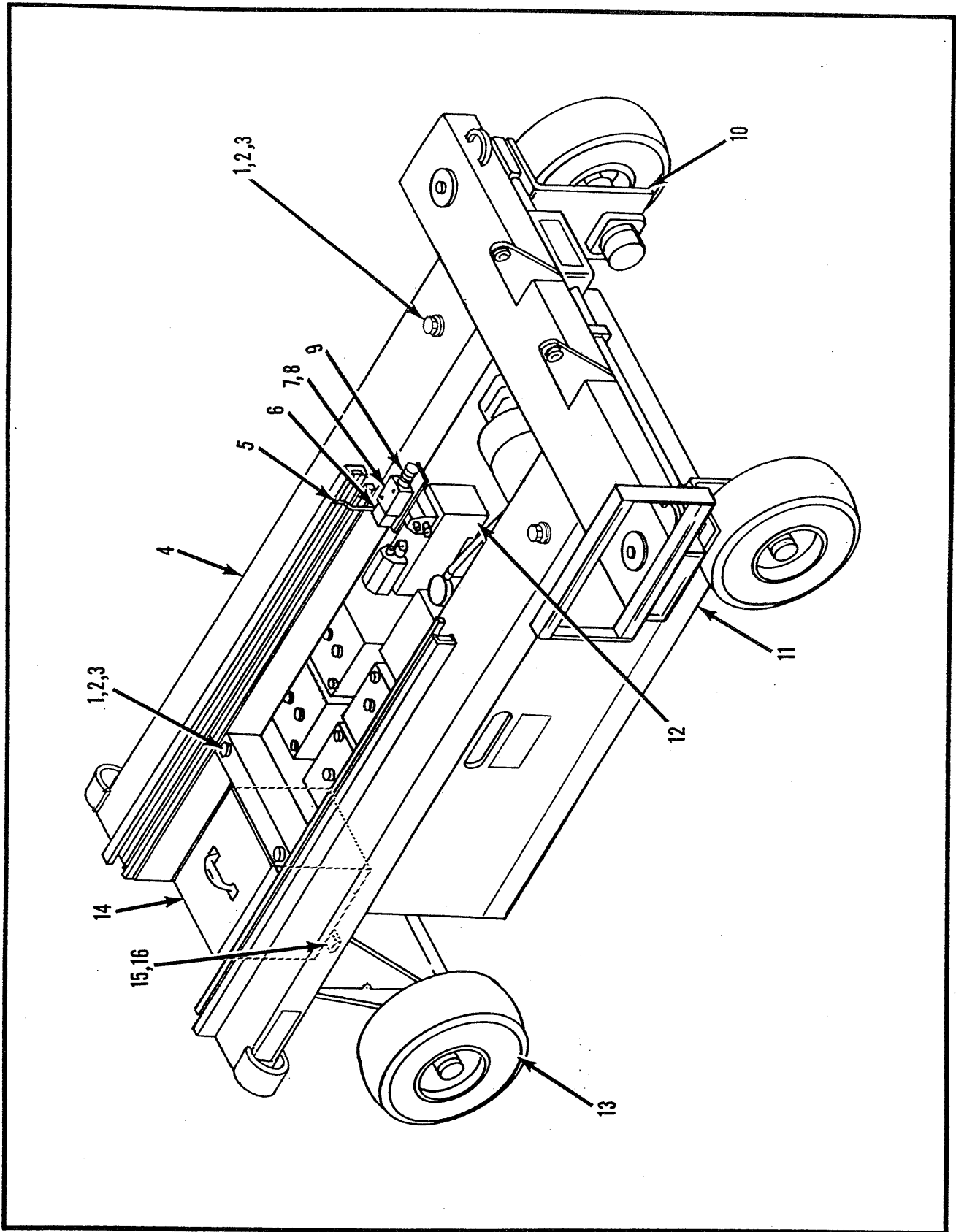


Figure 7-5. Chassis Assembly, XL-19CW & XL-24C

ITEM	PART	DESCRIPTION	QTY
7-5	No Number	CHASSIS ASSEMBLY, XL-19CW & XL-24C. . . .	REF
-1	11254-032-00	. SCREW, HHC 3/8-16 UNC GR5 x 4 . . . . .	4
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	8
-3	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	8
-4	61857-000-00	. FRAME WELDMENT. . . . .	1
-5	61753-000-00	. WAND, Platform Height . . . . .	1
-6	No Number	. SWITCH ASSEMBLY, Limit. . . . . (Telemecanique)	1
	15793-001-00	. . BODY, Switch. . . . .	1
	15793-002-00	. . HEAD, Switch. . . . .	1
	15793-004-00	. . . SWITCH. . . . .	1
	15793-003-00	. . LEVER . . . . .	1
-7	11709-016-00	. SCREW, RD HD MACH 10-24 UNC x 2 . . . . .	2
-8	11248-003-00	. LOCKNUT, HEX 10-24 UNC x 2. . . . .	2
-9	29925-000-00	. CONNECTOR . . . . .	1
-10	No Number	. FRONT STEERING ASSEMBLY . . . . . (See Figure 7-7)	1
-11	No Number	. MODULE ASSEMBLY (See Figure 7-9). . . . .	1
-12	61961-000-00	. HOSE KIT/INSTALLATION . . . . . (See Figure 7-21)	1
-13	No Number	. REAR WHEEL AND HUB ASSEMBLY . . . . . (See Figure 7-14)	1
-14	10112-000-00	. CHARGER, Battery. . . . .	1
	27877-005-00	. . DIODE ASSEMBLY. . . . .	2
	27877-006-00	. . FUSE. . . . .	2
	27877-007-00	. . AMMETER . . . . .	1
	27877-023-00	. . . LENS. . . . .	1
	10112-001-00	. . TIMER, 16 Hour. . . . .	1

ITEM	PART	DESCRIPTION	QTY
7-5	No Number	CHASSIS ASSEMBLY, XL-19CW & XL-24C. . . . (Continued)	REF
-15	11829-006-00	. BOLT, Carriage 1/4-20 UNC x 3/4 . . . .	2
-16	11248-004-00	. SCREW, HEX 1/4-20 UNC . . . . .	2

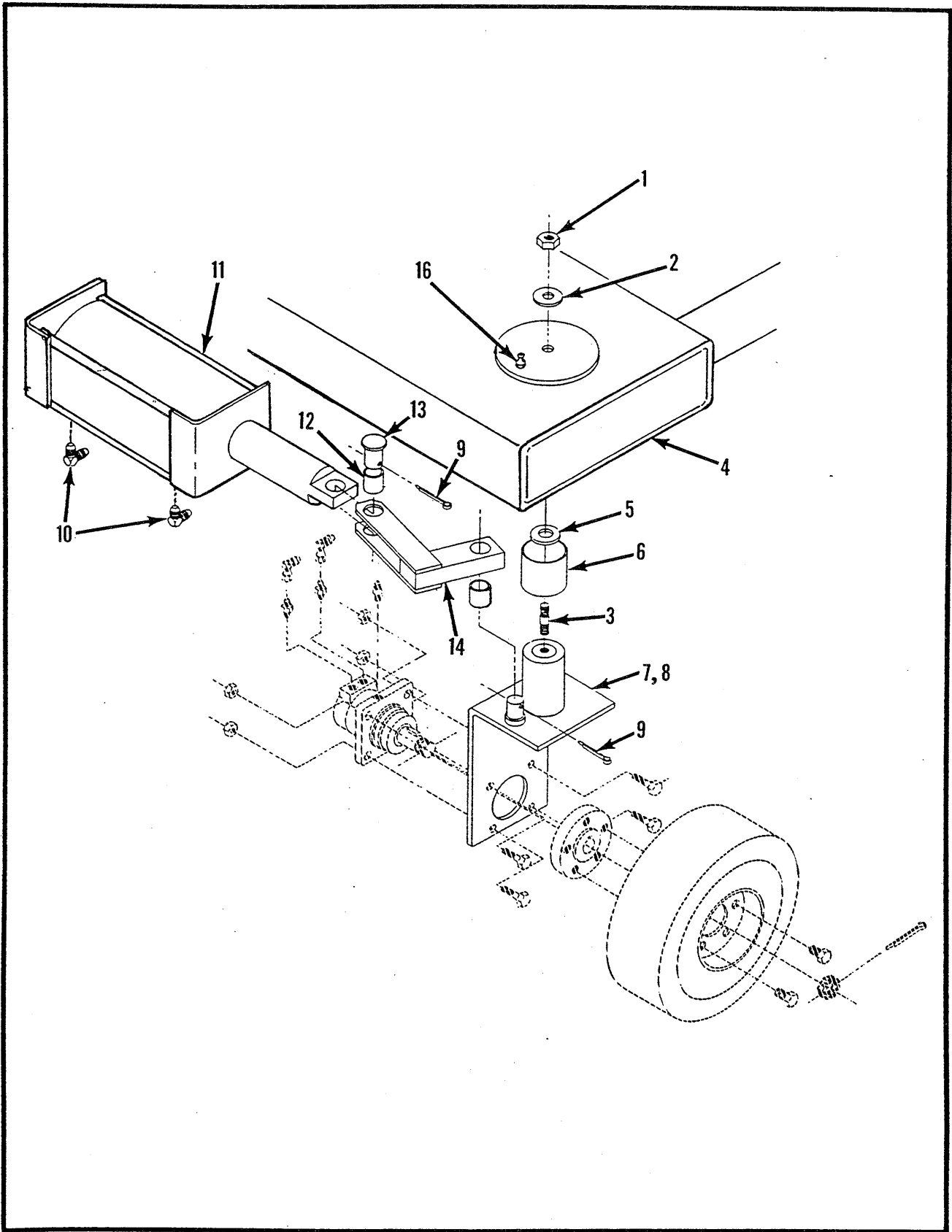


Figure 7-6. Front Steering Assembly, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-6	No Number	FRONT STEERING ASSEMBLY, XL-19C . . . . .	REF
-1	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	2
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-3	15795-001-00	. STUD. . . . .	2
-4	61715-000-00	. FRAME WELDMENT. . . . . (See Figure 7-4)	REF
-5	11782-008-00	. BEARING, Thrust . . . . .	2
-6	27931-032-00	. BEARING . . . . .	2
-7	61712-000-00	. YOKE, (Not Shown) . . . . .	1
-8	61713-000-00	. YOKE. . . . .	1
-9	11753-012-00	. PIN, Cotter . . . . .	3
-10	11940-006-00	. FITTING, Elbow. . . . .	2
-11	12802-000-00	. CYLINDER, Steering. . . . .	1
	12802-008-00	. . END PLATE SET . . . . .	1
	12802-014-00	. . SEAL KIT. . . . .	1
-12	27931-029-00	. BEARING . . . . .	4
-13	60741-000-00	. PIN . . . . .	2
-14	61731-000-00	. STEERING LINK WELDMENT. . . . .	2
-15	11752-016-00	. PIN, Cotter (Not Shown) . . . . .	1

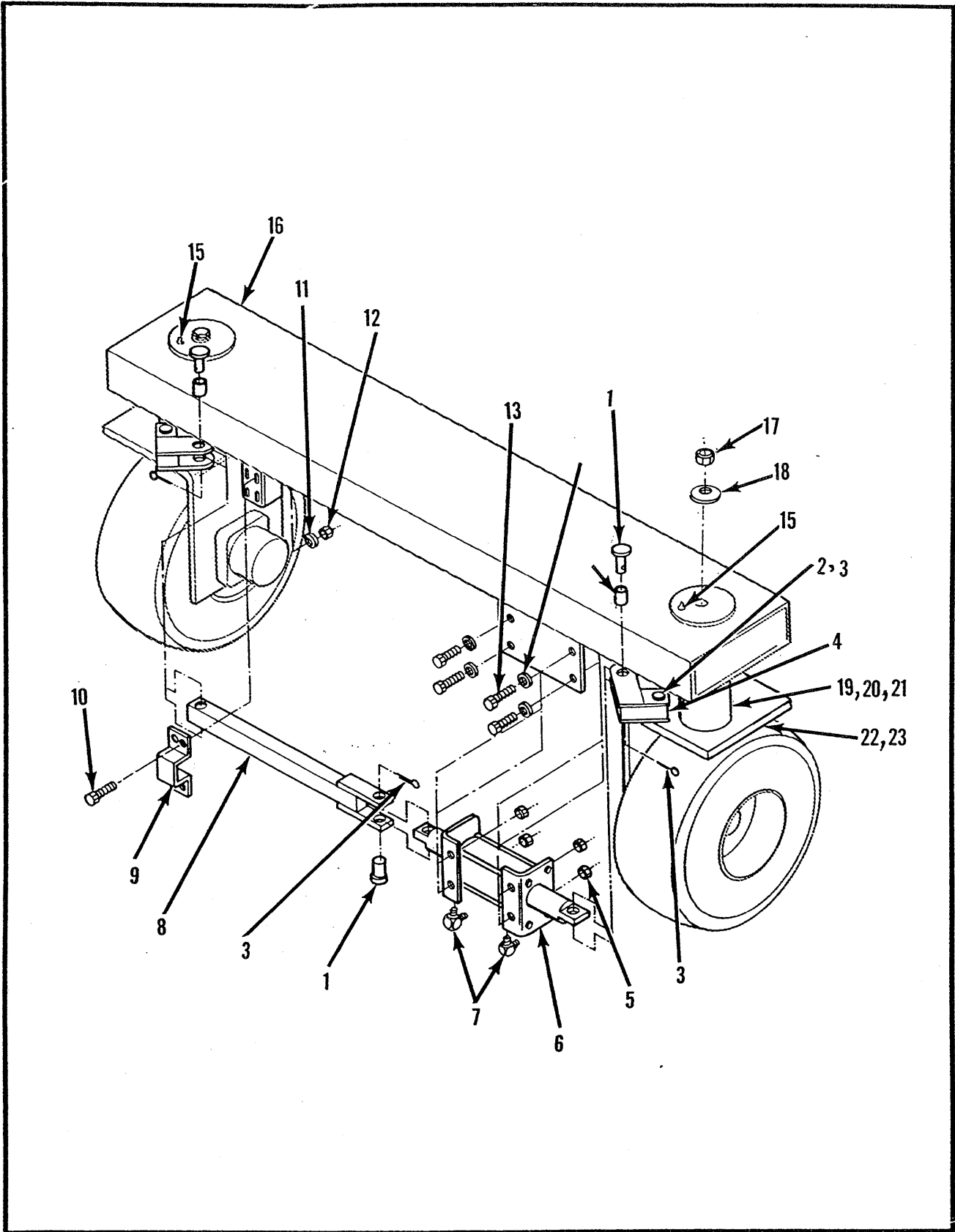


Figure 7-7. Front Steering Assembly, XL-19CW & XL-24C

ITEM	PART	DESCRIPTION	QTY
7-7	No Number	FRONT STEERING ASSEMBLY, XL-19CW & . . . . XL-24C	REF
-1	60741-000-00	. PIN . . . . .	3
-2	27931-032-00	. BEARING, Oilite . . . . .	5
-3	11753-012-00	. PIN, Cotter 1/8 x 1-1/2 . . . . .	9
-4	61731-000-00	. STEERING LINK . . . . .	2
-5	11248-006-00	. NUT, 3/8-16 UNC ESNA. . . . .	4
-6	61859-000-00	. CYLINDER, Steering. . . . .	1
	12802-014-00	. . SEAL KIT. . . . .	1
-7	11940-006-00	. FITTING . . . . .	2
-8	61860-000-00	. STEERING LINK WELDMENT. . . . .	1
-9	61863-000-00	. GUIDE . . . . .	1
-10	11252-008-00	. SCREW, HHC 1/4-20 UNC x 1 . . . . .	4
-11	11240-004-00	. WASHER, 1/4 . . . . .	4
-12	11248-004-00	. NUT, 1/4-20 UNC ESNA. . . . .	4
-13	11254-012-00	. SCREW, HHC 3/8-16 UNC x 1-1/2 . . . . .	4
-14	11240-006-00	. WASHER, 3/8 . . . . .	4
-15	13336-011-00	. FITTING, Grease 1/4-28 UNF. . . . .	2
-16	61857-000-00	. FRAME WELDMENT (See Figure 7-5) . . . . .	1
-17	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	2
-18	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-19	11782-008-00	. BEARING, Thrust . . . . .	2
-20	27931-032-00	. BEARING . . . . .	2
-21	15795-001-00	. STUD. . . . .	2
-22	61712-000-00	. YOKE, (Not Shown) . . . . .	1
-23	61713-000-00	. YOKE. . . . .	1

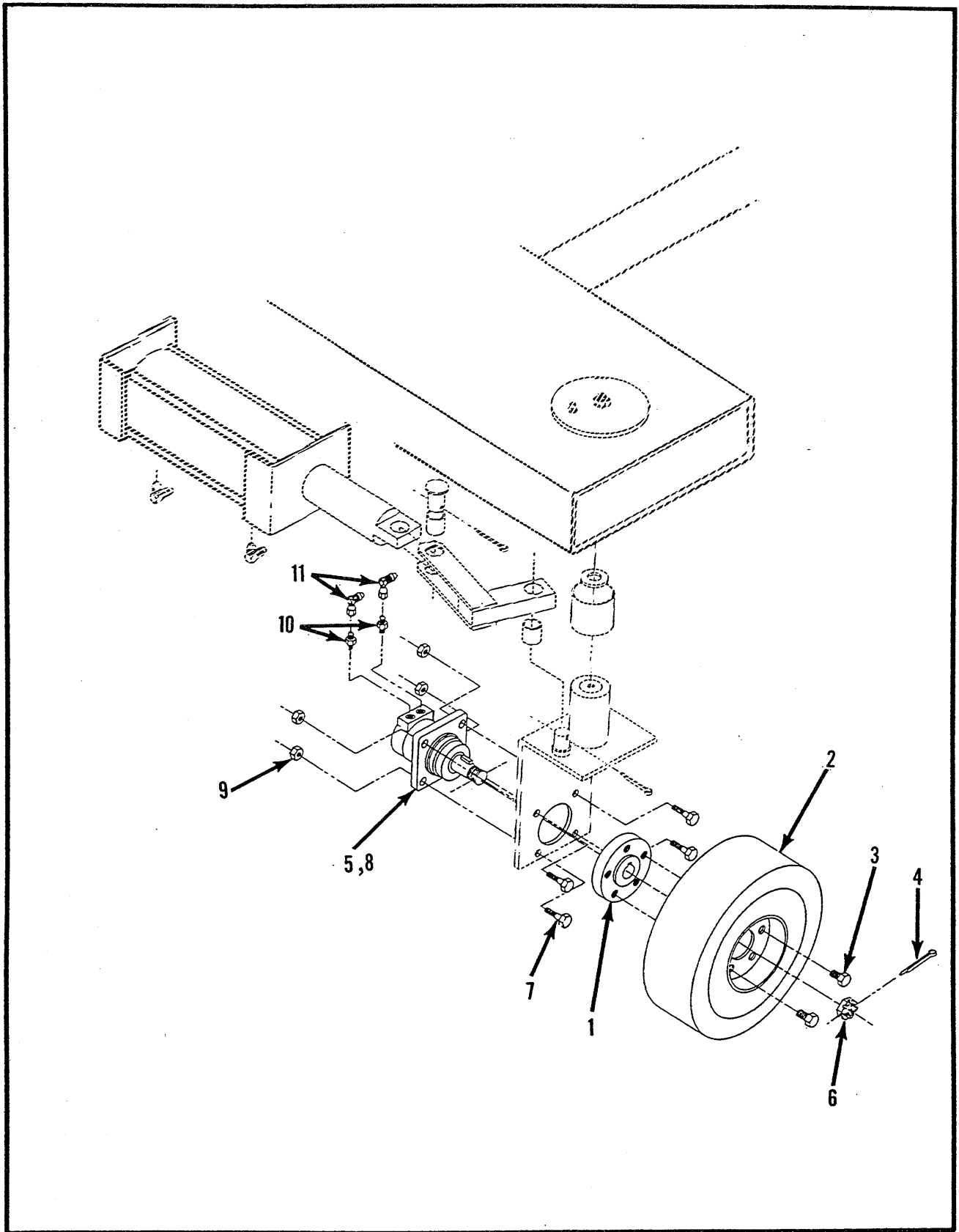


Figure 7-8. Drive Motor/Wheel Assembly, XL-C Series



ITEM	PART	DESCRIPTION	QTY
7-8	No Number	DRIVE MOTOR/WHEEL ASSEMBLY, . . . . . XL-C Series	REF
-1	60737-000-00	. HUB . . . . .	1
-2	61826-000-00	. WHEEL ASSEMBLY. . . . .	2
-3	14122-001-00	. BOLT, Wheel . . . . .	5
-4	11753-012-00	. PIN, Cotter . . . . .	5
-5	61817-001-00	. MOTOR, Drive. . . . .	1
	61817-010-00	. . SEAL KIT. . . . .	1
-6	12795-002-00	. . NUT, Castle 1-14 UNF. . . . .	1
-7	11256-018-00	. SCREW, HHC 1/2-13 UNC x 2-1/4 . . . . .	8
-8	61814-000-00	. SPINDLE WELDMENT RH, Single Wheel . . . Drive Machines Only, (Not Shown)	1
	05078-000-00	. CAP, Dust (Not Shown) . . . . .	1
	11274-016-00	. NUT, Slotted HEX 1-1/4 UNF. . . . . (Not Shown)	1
	11239-016-00	. WASHER, Flat 1 DIA ASTM (Not Shown) . .	1
	05100-001-00	. HUB (Not Shown) . . . . .	1
	11776-004-00	. . CUP, Bearing (Not Shown). . . . .	2
	11775-011-00	. CONE, Bearing (Not Shown) . . . . .	2
	05104-000-00	. SEAL, Grease (Not Shown). . . . .	1
	05105-000-00	. NUT, Lug (Not Shown). . . . .	5
-9	11248-008-00	. LOCKNUT, HEX 1/2-13 UNC . . . . .	8
-10	11941-013-00	. FITTING, Straight . . . . .	4
-11	11932-003-00	. FITTING, Elbow. . . . .	2

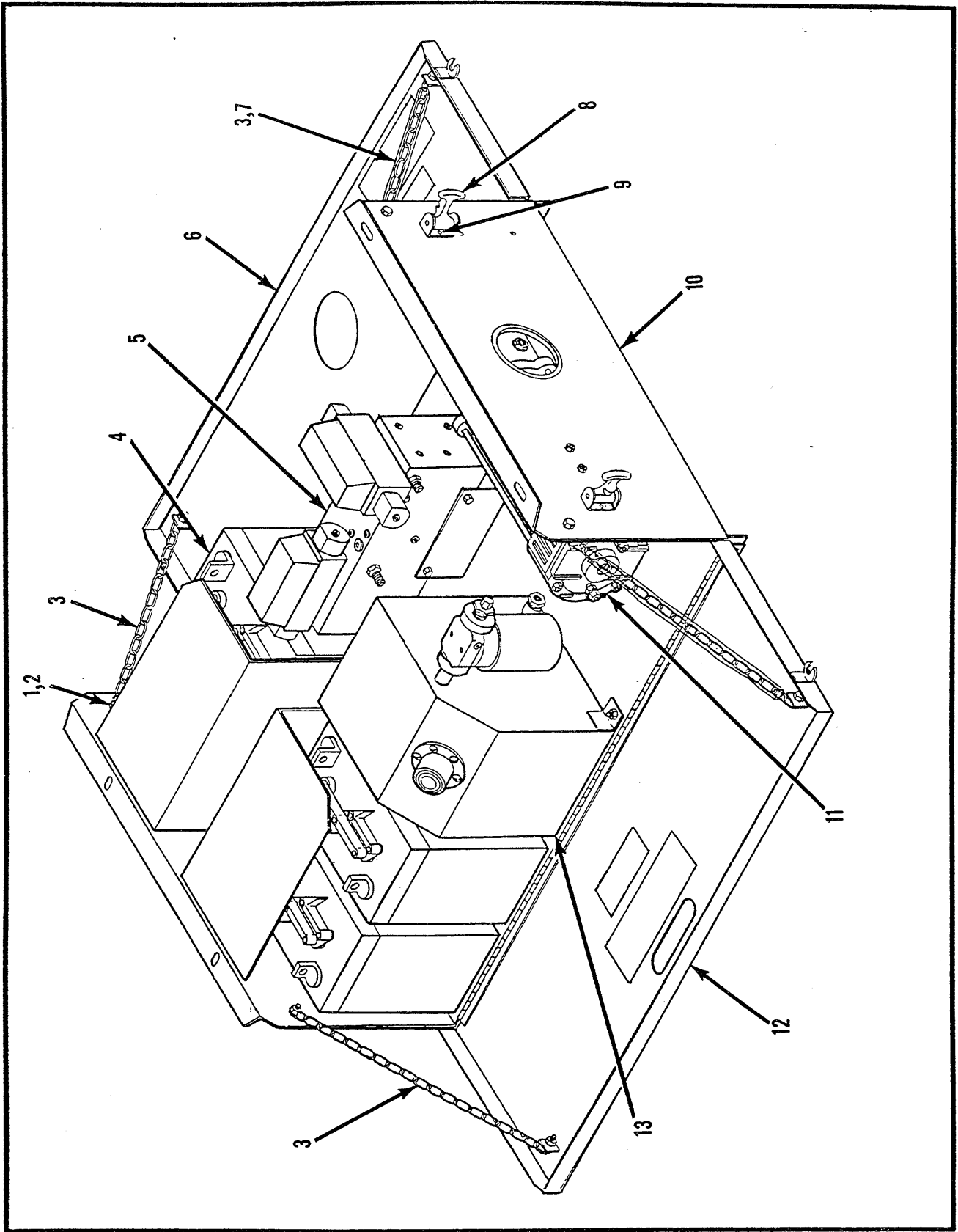


Figure 7-9. Module Assembly, XL-C Series

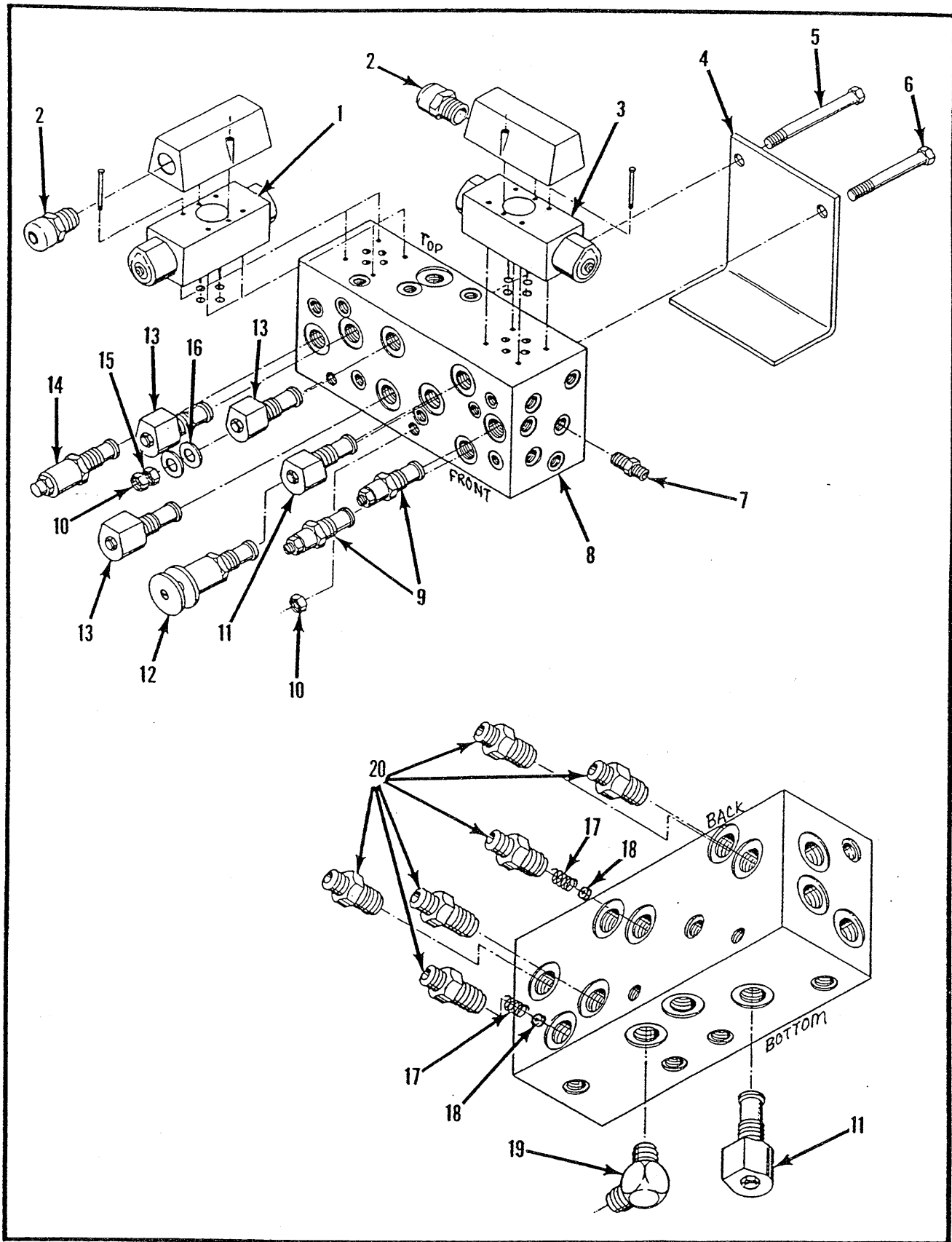


Figure 7-10. Hydraulic Manifold Assembly,  
 XL-19C Serial Nos. 3001 to 3592 and  
 XL-19CW Serial Nos. 5001 to 5161  
 (Sheet 1 of 2)

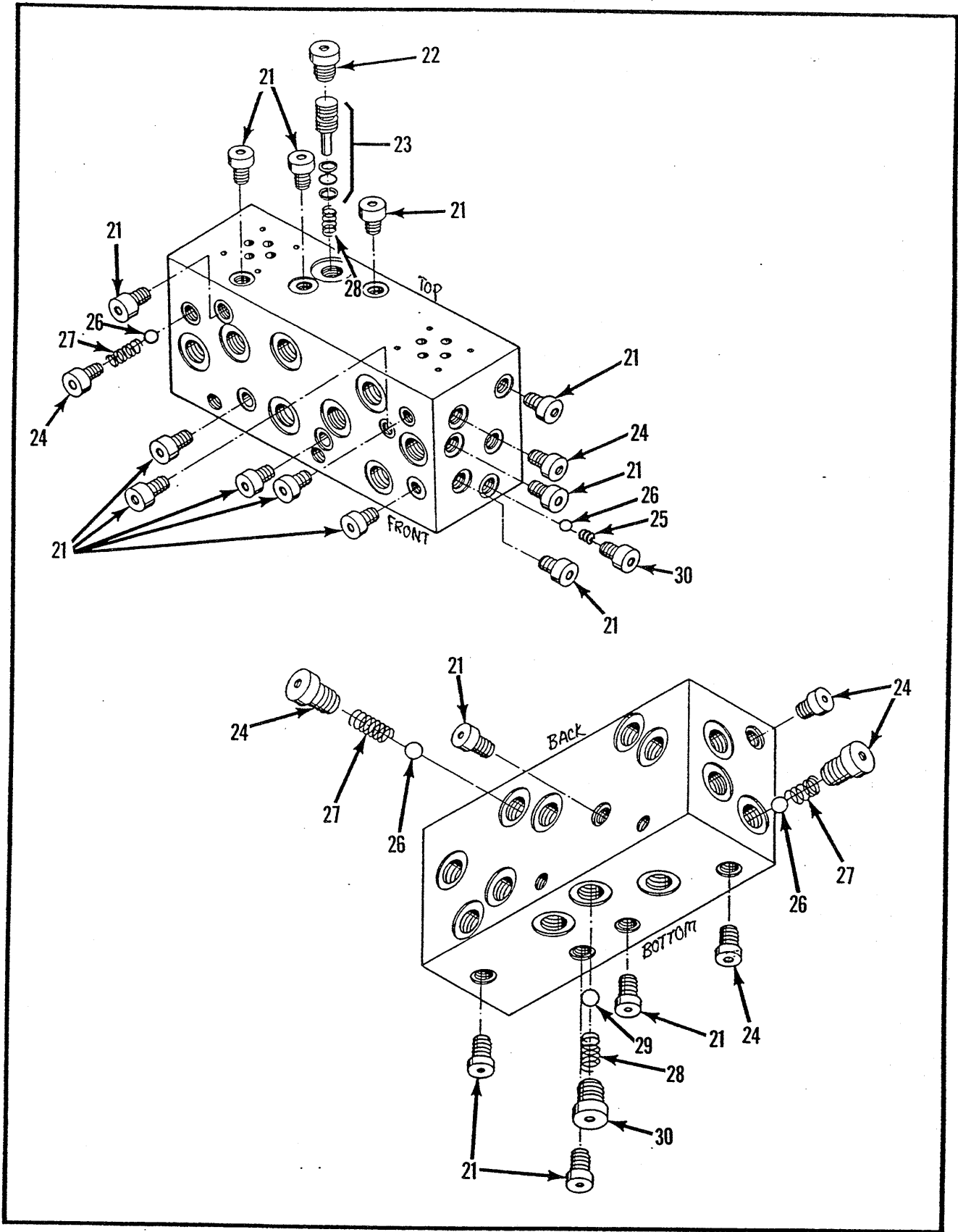


Figure 7-10. Hydraulic Manifold Assembly,  
 XL-19C Serial Nos. 3001 to 3592 and  
 XL-19CW Serial Nos. 5001 to 5161  
 (Sheet 2 of 2)

ITEM	PART	DESCRIPTION	QTY
7-10	61803-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-19C & . . . XL-19CW, Serial Nos. 3001 to 3592 and 5001 to 5161 (See Figure 7-9 for NHA)	REF
-1	15763-000-00	. VALVE, Solenoid, Steering . . . . .	1
	15760-001-00	. . COIL. . . . .	2
	13888-007-00	. . O-RING. . . . .	4
-2	29925-000-00	. CONNECTOR, Cable. . . . .	2
-3	15760-000-00	. VALVE, Solenoid, Drive. . . . .	1
	15760-001-00	. . COIL. . . . .	2
	13888-007-00	. . O-RING. . . . .	4
-4	61821-000-00	. BRACKET . . . . .	1
-5	11254-036-00	. SCREW, HHC 3/8-16 UNC x 4-1/2 . . . . .	1
-6	11254-032-00	. SCREW, HHC 3/8-16 UNC x 4 . . . . .	1
-7	11941-001-00	. FITTING, Straight . . . . .	1
-8	61820-000-00	. VALVE, Manifold . . . . .	1
-9	15900-000-00	. VALVE, Counterbalance . . . . .	2
	13888-059-00	. . O-RING, Small . . . . .	1
	13888-058-00	. . O-RING; Large . . . . .	1
-10	11248-006-00	. LOCKNUT, 3/8-16 UNC . . . . .	2
-11	15764-000-00	. VALVE, Solenoid, N.C. . . . .	2
	15762-001-00	. . COIL. . . . .	1
	15764-002-00	. . POPPET, N.C.. . . . .	1
	13888-057-00	. . O-RING, Small . . . . .	1
	13888-056-00	. . O-RING, Large . . . . .	1
-12	60388-000-00	. VALVE, Cartridge, Emergency Down. . . . .	1
	13888-057-00	. . O-RING, Small . . . . .	1
	13888-056-00	. . O-RING, Large . . . . .	1

ITEM	PART	DESCRIPTION	QTY
7-10	61803-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-19C & . . XL-19CW, Serial Nos. 3001 to 3592 and 5001 to 5161, (Continued)	REF
-13	15762-000-00	. VALVE, Solenoid, N.O. . . . .	3
	15762-001-00	. . COIL. . . . .	1
	15762-002-00	. . POPPET, N.O.. . . . .	1
	13888-057-00	. . . O-RING, Small . . . . .	1
	13888-058-00	. . . O-RING, Large . . . . .	1
-14	60390-000-00	. VALVE, Cartridge, Relief. . . . .	1
	13888-057-00	. . O-RING, Small . . . . .	1
	13888-056-00	. . O-RING, Large . . . . .	1
-15	11248-047-00	. NUT, Jam 3/8-16 UNC . . . . .	1
-16	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-17	05133-000-00	. SPRING. . . . .	2
-18	15919-000-00	. ORIFICE . . . . .	2
-19	11934-003-00	. FITTING, Elbow. . . . .	1
-20	11941-005-00	. FITTING, Straight . . . . .	6
-21	12004-002-00	. PLUG. . . . .	16
-22	12004-008-00	. PLUG. . . . .	1
-23	61819-000-00	. PISTON ASSEMBLY . . . . .	1
-24	12004-004-00	. PLUG. . . . .	6
-25	61728-000-00	. ORIFICE . . . . .	1
-26	05135-000-00	. BALL, Steel 5/16 DIA. . . . .	4
-27	15799-000-00	. SPRING. . . . .	3
-28	13987-005-00	. SPRING. . . . .	2
-29	61820-000-00	. BALL, Steel 7/16 DIA. . . . .	1
-30	12004-006-00	. PLUG. . . . .	2

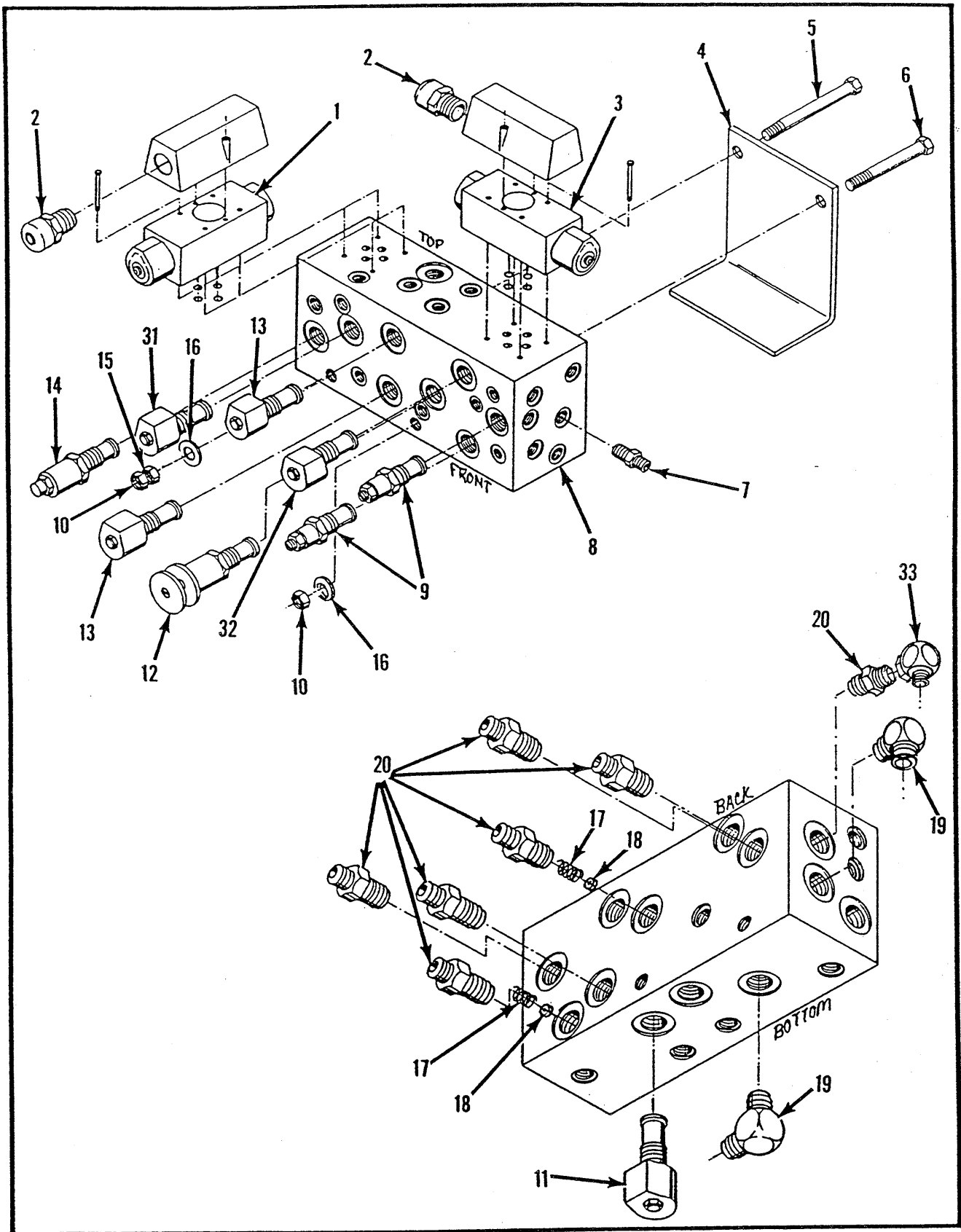


Figure 7-11. Hydraulic Manifold Assembly,  
 XL-19C Serial Nos. 3593 to Current and  
 XL-19CW Serial Nos. 5162 to Current  
 (Sheet 1 of 2)

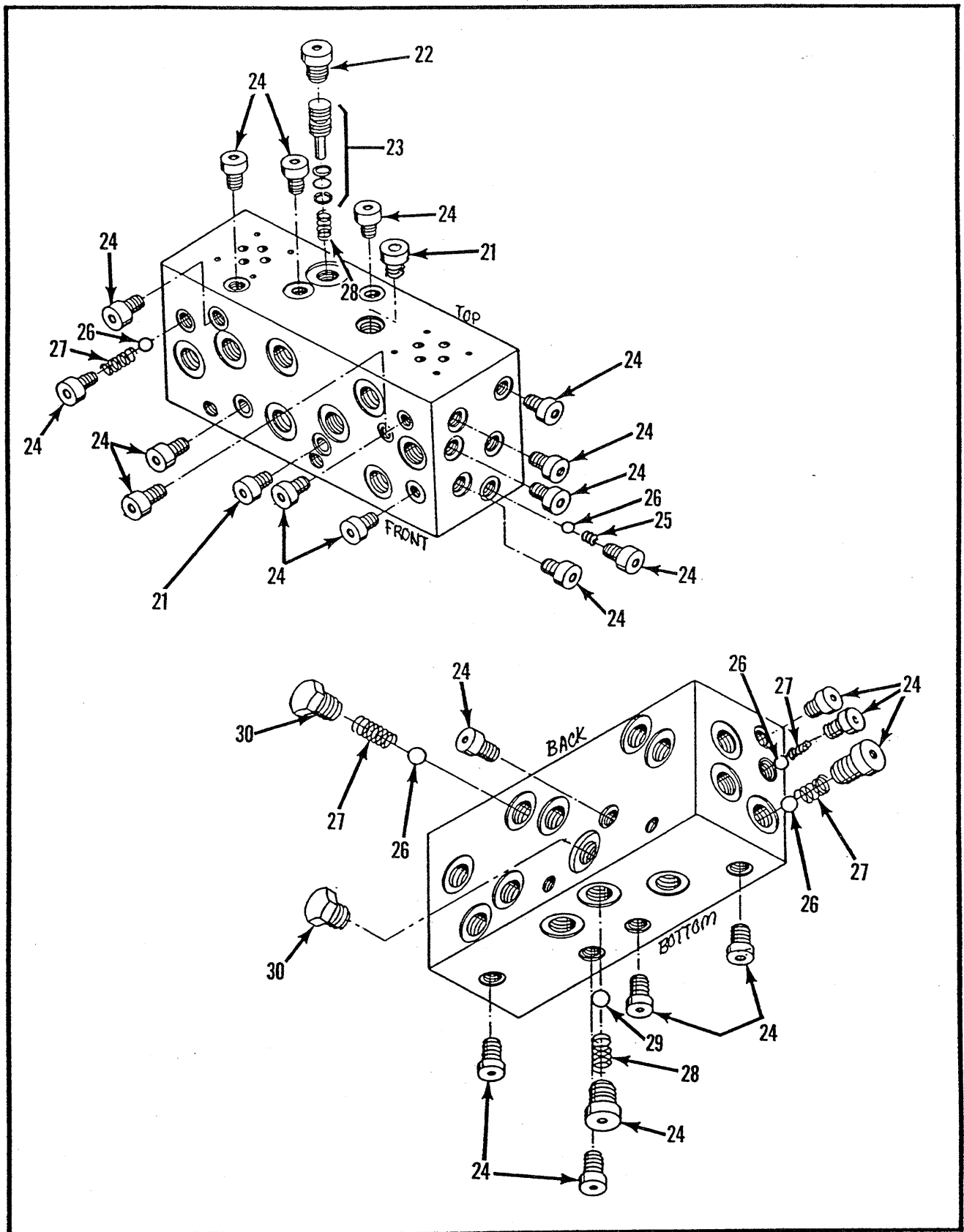


Figure 7-11. Hydraulic Manifold Assembly,  
 XL-19C Serial Nos. 3593 to Current and  
 XL-19CW Serial Nos. 5162 to Current  
 (Sheet 2 of 2)



ITEM	PART	DESCRIPTION	QTY
7-11	61847-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-19C & . . XL-19CW, Serial Nos. 3593 to Current and 5162 to Current (See Figure 7-9 for NHA)	REF
-1	15763-000-00	. VALVE, Solenoid, Steering . . . . .	1
	15760-001-00	. . COIL. . . . .	2
-2	29925-000-00	. CONNECTOR, Cable. . . . .	2
-3	15760-000-00	. VALVE, Solenoid, Drive. . . . .	1
	15760-001-00	. . COIL. . . . .	2
-4	61821-000-00	. BRACKET . . . . .	1
-5	11254-036-00	. SCREW, HHC 3/8-16 UNC x 4-1/2 . . . . .	1
-6	11254-032-00	. SCREW, HHC 3/8-16 UNC x 4 . . . . .	1
-7	11941-004-00	. FITTING, Straight . . . . .	1
-8	63218-000-00	. VALVE, Manifold . . . . .	1
-9	15900-000-00	. VALVE, Counterbalance . . . . .	2
-10	11248-006-00	. LOCKNUT, 3/8-16 UNC . . . . .	2
-11	15764-000-00	. VALVE, Solenoid, N.C. . . . .	1
	15762-001-00	. . COIL. . . . .	1
-12	60388-000-00	. VALVE, Cartridge, Emergency Down. . . . .	1
-13	15762-000-00	. VALVE, Solenoid, N.O. . . . .	2
	15762-001-00	. . COIL. . . . .	1
-14	60390-000-00	. VALVE, Cartridge, Relief. . . . .	1
-15	11248-047-00	. NUT, Jam 3/8-16 UNC . . . . .	1
-16	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-17	05133-000-00	. SPRING. . . . .	2
-18	15919-000-00	. ORIFICE . . . . .	2
-19	11934-004-00	. FITTING, Elbow. . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-11	61847-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-19C & . . . XL-19CW, Serial Nos. 3593 to Current and 5162 to Current, (Continued)	REF
-20	11941-005-00	. FITTING, Straight . . . . .	7
-21	12004-002-00	. PLUG. . . . .	2
-22	12004-008-00	. PLUG. . . . .	1
-23	61819-000-00	. PISTON ASSEMBLY . . . . .	1
-24	12004-004-00	. PLUG. . . . .	23
-25	61728-000-00	. ORIFICE . . . . .	1
-26	05135-000-00	. BALL, Steel 5/16 DIA. . . . .	4
-27	15799-000-00	. SPRING. . . . .	3
-28	13987-005-00	. SPRING. . . . .	2
-29	61827-000-00	. BALL, Steel 7/16 DIA. . . . .	1
-30	20021-006-00	. FITTING . . . . .	2
-31	63121-000-00	. VALVE, Solenoid . . . . .	1
-32	61797-000-00	. VALVE, Solenoid . . . . .	1
-33	11937-003-00	. FITTING, Elbow. . . . .	1

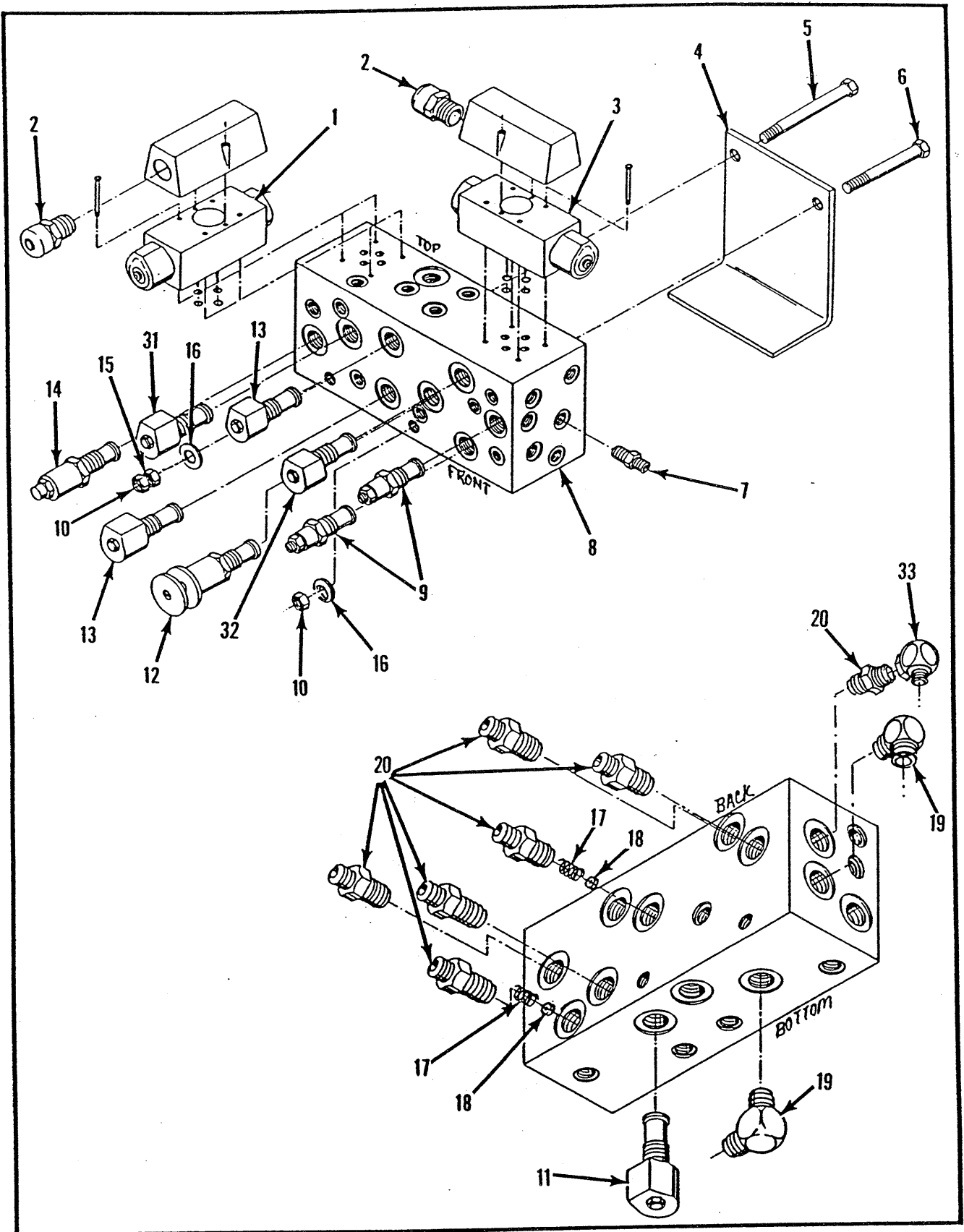


Figure 7-12. Hydraulic Manifold Assembly, XL-24C  
(Sheet 1 of 2)

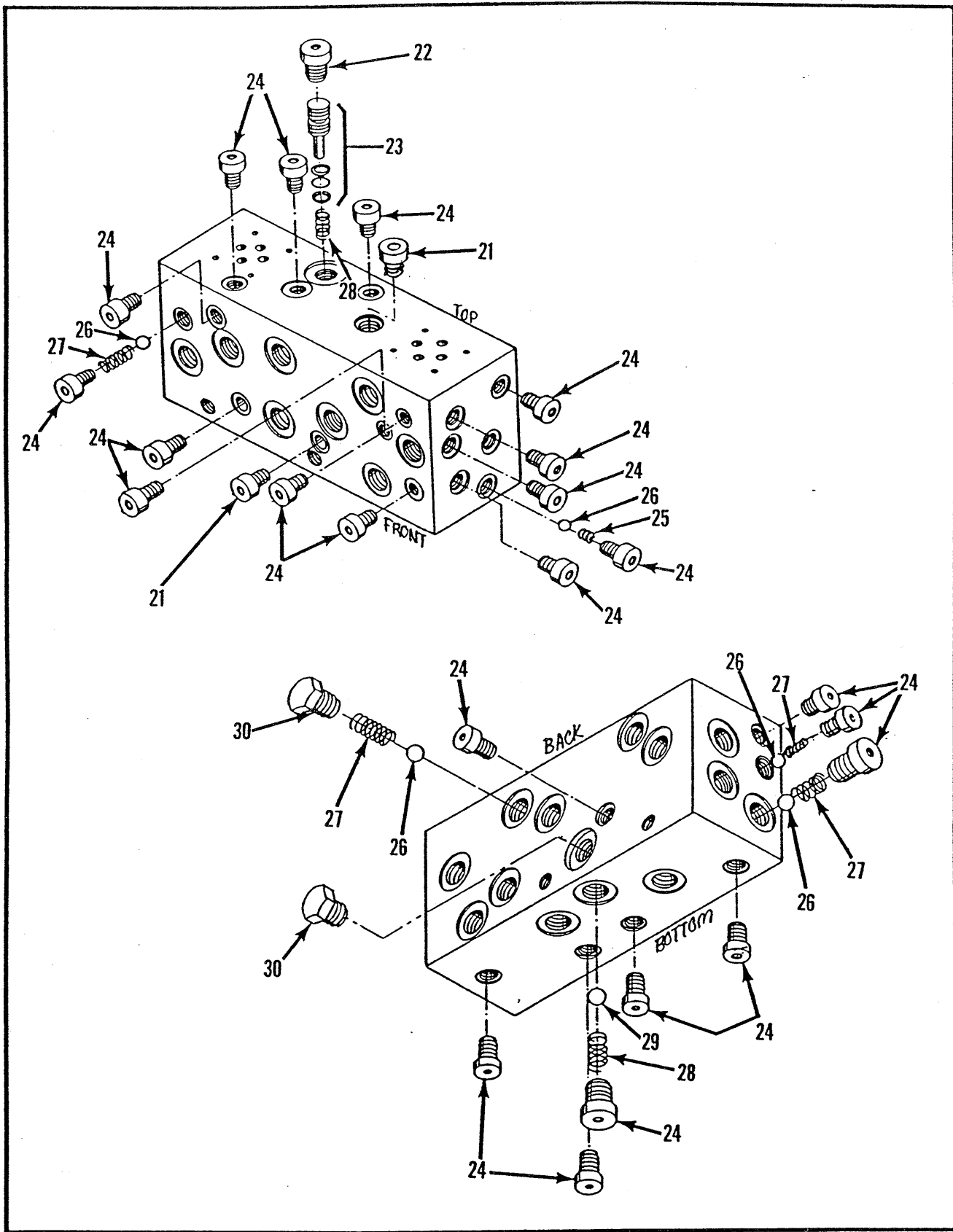


Figure 7-12. Hydraulic Manifold Assembly, XL-24C  
(Sheet 2 of 2)

ITEM	PART	DESCRIPTION	QTY
7-12	63233-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-24C . . . (See Figure 7-9 for NHA)	REF
-1	15763-000-00	. VALVE, Solenoid, Steering . . . . .	1
	15760-001-00	. . COIL. . . . .	2
-2	29925-000-00	. CONNECTOR, Cable. . . . .	2
-3	15760-000-00	. VALVE, Solenoid, Drive. . . . .	1
	15760-001-00	. . COIL. . . . .	2
-4	61821-000-00	. BRACKET . . . . .	1
-5	11254-036-00	. SCREW, HHC 3/8-16 UNC x 4-1/2 . . . . .	1
-6	11254-032-00	. SCREW, HHC 3/8-16 UNC x 4 . . . . .	1
-7	11941-004-00	. FITTING, Straight . . . . .	1
-8	63218-000-00	. VALVE, Manifold . . . . .	1
-9	15900-000-00	. VALVE, Counterbalance . . . . .	2
-10	11248-006-00	. LOCKNUT, 3/8-16 UNC . . . . .	2
-11	15764-000-00	. VALVE, Solenoid, N.C. . . . .	1
	15762-001-00	. . COIL. . . . .	1
-12	60388-000-00	. VALVE, Cartridge, Emergency Down. . . . .	1
-13	15762-000-00	. VALVE, Solenoid, N.O. . . . .	2
	15762-001-00	. . COIL. . . . .	1
-14	60390-000-00	. VALVE, Cartridge, Relief. . . . .	1
-15	11248-047-00	. NUT, Jam 3/8-16 UNC . . . . .	1
-16	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-17	05133-000-00	. SPRING. . . . .	2
-18	15919-001-00	. ORIFICE . . . . .	1
-19	11941-004-00	. FITTING, Elbow. . . . .	2
-20	11941-005-00	. FITTING, Straight . . . . .	7

ITEM	PART	DESCRIPTION	QTY
7-12	63233-000-00	HYDRAULIC MANIFOLD ASSEMBLY, XL-24C . . . (Continued)	REF
-21	12004-002-00	. PLUG. . . . .	2
-22	12004-008-00	. PLUG. . . . .	1
-23	61819-000-00	. PISTON ASSEMBLY . . . . .	1
-24	12004-004-00	. PLUG. . . . .	23
-25	61728-000-00	. ORIFICE . . . . .	1
-26	05135-000-00	. BALL, Steel 5/16 DIA. . . . .	5
-27	15799-000-00	. SPRING. . . . .	4
-28	13987-005-00	. SPRING. . . . .	2
-29	61827-000-00	. BALL, Steel 7/16 DIA. . . . .	1
-30	20021-006-00	. FITTING . . . . .	2
-31	63121-000-00	. VALVE, Solenoid . . . . .	1
-32	61797-000-00	. VALVE, Solenoid . . . . .	1
-33	11937-003-00	. FITTING, Elbow. . . . .	1

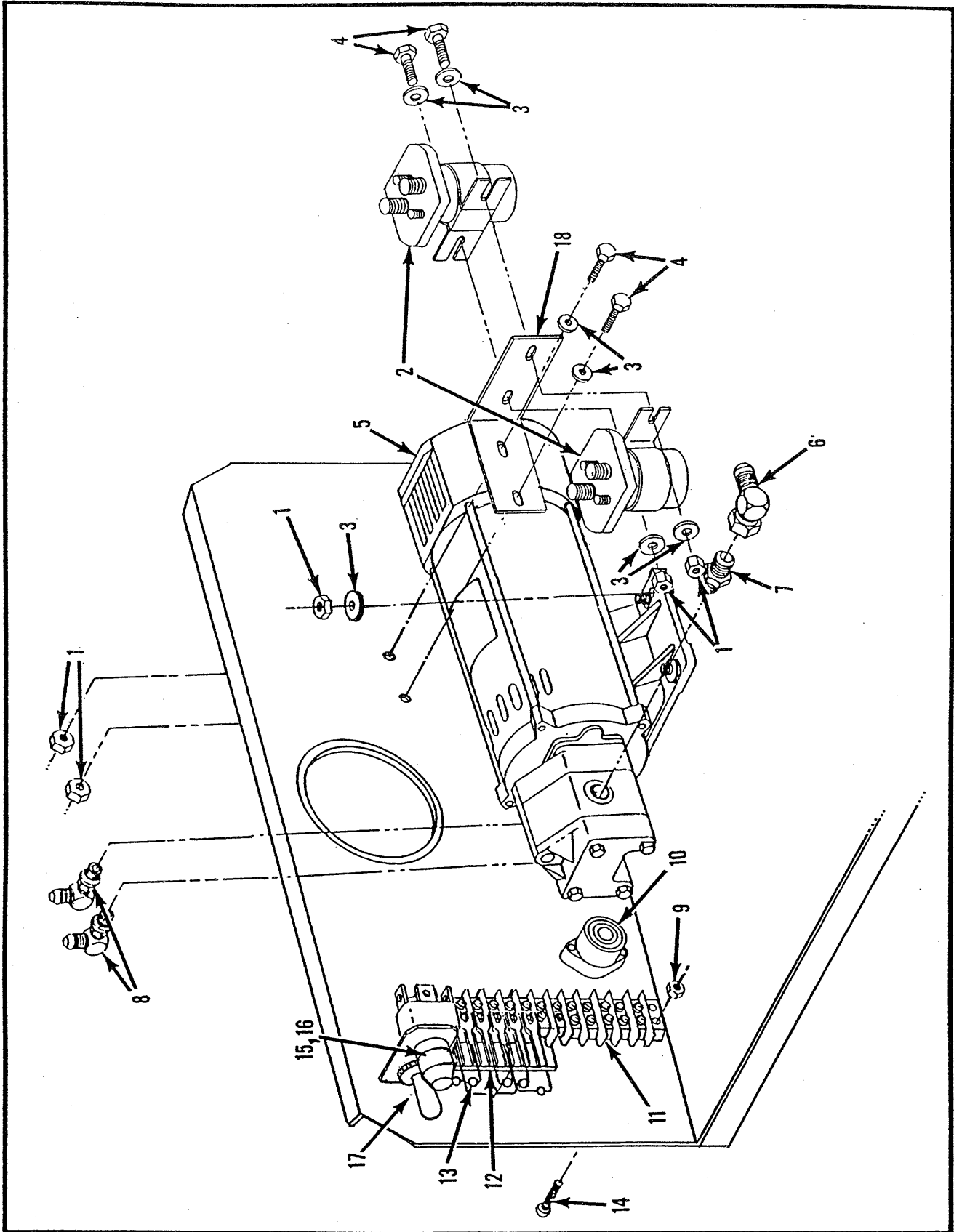


Figure 7-13. Pump/Motor and Electrical Components Installation, XL-C Series

ITEM	PART	DESCRIPTION	QTY
7-13	No Number	PUMP/MOTOR AND ELECTRICAL COMPONENTS. . . INSTALLATION, XL-C Series	REF
-1	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	8
-2	10122-000-00	. SOLENOID, 24 V. . . . .	2
-3	11240-004-00	. WASHER, Flat. . . . .	8
-4	11252-006-00	. SCREW, HHC 1/4-20 UNC GR5 x 3/4 . . . . .	4
-5	15797-000-00	. PUMP/MOTOR ASSEMBLY . . . . .	1
	15797-001-00	. . PUMP. . . . .	1
	15797-003-00	. . . SEAL KIT. . . . .	1
	15797-002-00	. . COUPLING. . . . .	1
	15797-004-00	. . MOTOR, Electric . . . . .	1
	15797-005-00	. . . BRUSHES SET . . . . .	1
	10145-001-00	. . . BRUSH . . . . .	4
-6	11937-007-00	. FITTING, Elbow. . . . .	1
-7	11941-012-00	. FITTING, Straight . . . . .	1
-8	11934-004-00	. FITTING, Elbow. . . . .	2
-9	11248-047-00	. LOCKNUT, HEX 6-32 UNC . . . . .	2
-10	15765-000-00	. BUZZER. . . . .	1
-11	29928-004-00	. BLOCK, Terminal . . . . .	1
-12	61806-000-00	. STRIP, Fanning. . . . .	1
-13	29825-002-00	. . DIODE . . . . .	7
-14	11715-006-00	. SCREW, RD HD MACH 6-32 UNC x 3/4. . . . .	2
-15	29701-000-00	. HOLDER, Fuse. . . . .	1
-16	29704-015-00	. FUSE, 15 AMP. . . . .	1
-17	12798-000-00	. SWITCH, Toggle. . . . .	1
-18	61829-000-00	. BRACKET . . . . .	1



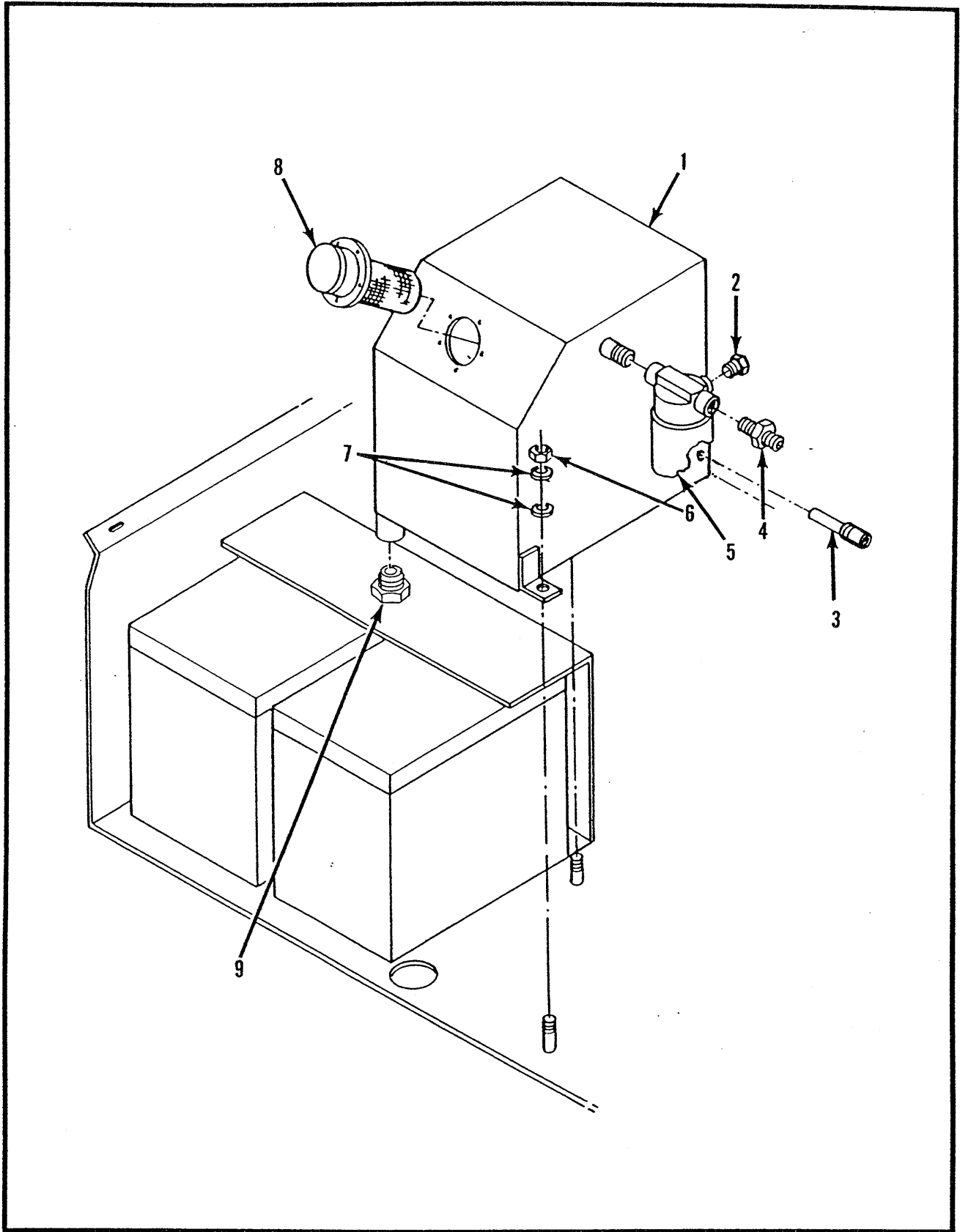


Figure 7-14. Hydraulic Tank Installation, XL-C Series

ITEM	PART	DESCRIPTION	QTY
7-14	No Number	HYDRAULIC TANK INSTALLATION, . . . . . XL-C Series	REF
-1	61822-000-00	. HYDRAULIC TANK WELDMENT . . . . .	1
-2	11290-002-00	. PLUG. . . . .	1
-3	61818-000-00	. FITTING, Suction Screen . . . . .	1
-4	11939-018-00	. FITTING, Straight . . . . .	1
-5	05154-001-00	. FILTER. . . . .	1
	05154-002-00	. . ELEMENT, Filter . . . . .	1
-6	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-7	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	4
-8	05963-000-00	. FILLER. . . . .	1
-9	21305-006-00	. Plug. . . . .	1

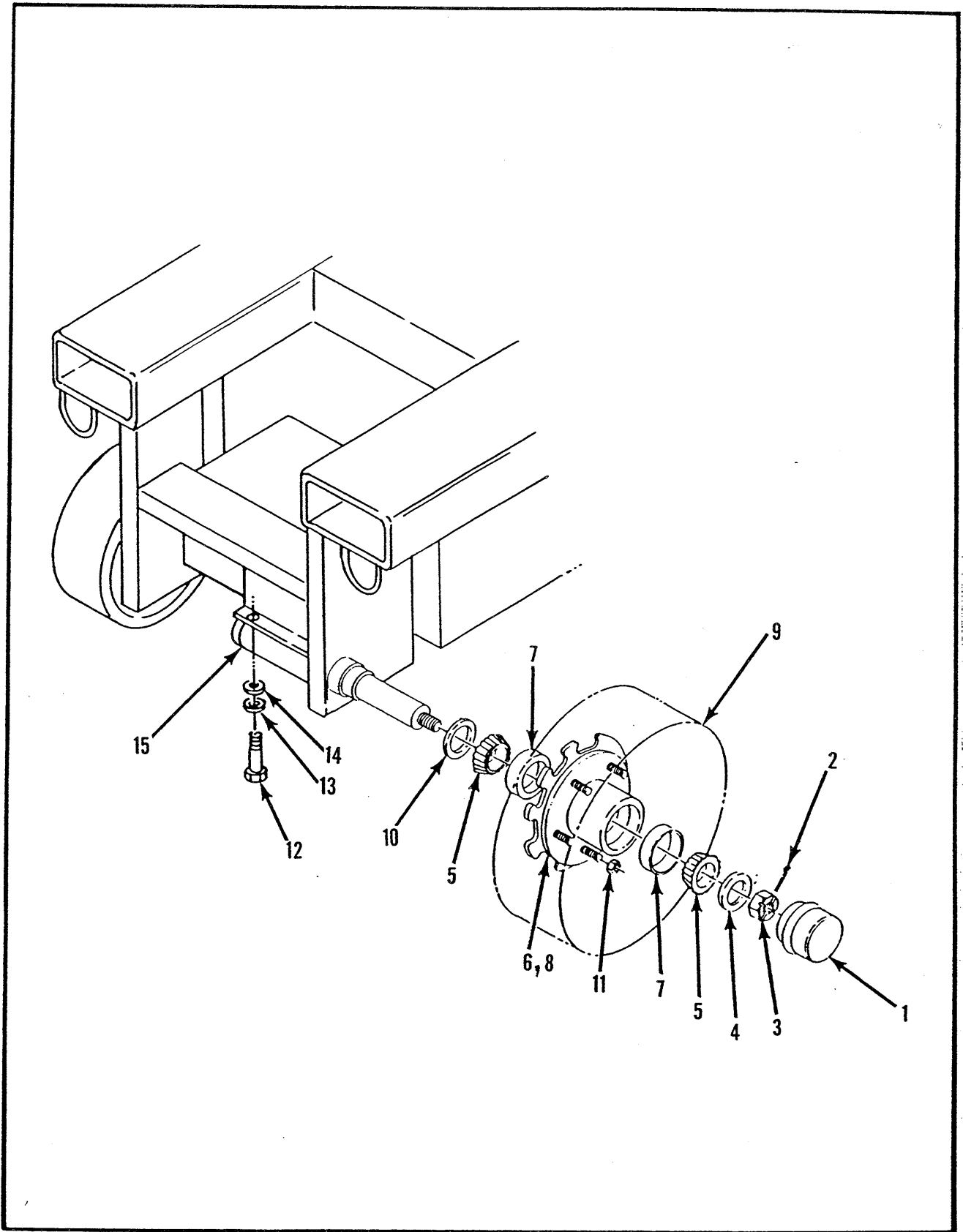


Figure 7-15. Rear Wheel and Hub Assembly, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-15	No Number	REAR WHEEL AND HUB ASSEMBLY, XL-19C . . . (See Figure 7-4 for NHA)	REF
-1	05078-000-00	. CAP, Dust . . . . .	2
-2	11753-012-00	. PIN, Cotter . . . . .	2
-3	11274-016-00	. NUT, Slotted HEX 1-1/4 UNF. . . . .	2
-4	11239-016-00	. WASHER, Flat 1 DIA ASTM . . . . .	2
-5	11775-011-00	. CONE, Bearing . . . . .	4
-6	60742-000-00	. HUB AND ROTOR WELDMENT-RH . . . . .	1
-7	11776-004-00	. . CUP, Bearing. . . . .	4
-8	05100-001-00	. HUB-LH (Not Shown). . . . .	1
-9	61826-000-00	. WHEEL ASSEMBLY. . . . .	2
-10	05104-000-00	. SEAL, Grease. . . . .	2
-11	05105-000-00	. NUT, Lug. . . . .	10
-12	11254-010-00	. SCREW, HHC 3/8-16 UNC GR5 x 1-1/4 . . . . .	4
-13	11238-006-00	. LOCKWASHER, Split 3/8 DIA . . . . .	4
-14	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	4
-15	60479-000-00	. CYLINDER, Brake . . . . .	1
	60211-014-00	. . SEAL KIT. . . . .	1

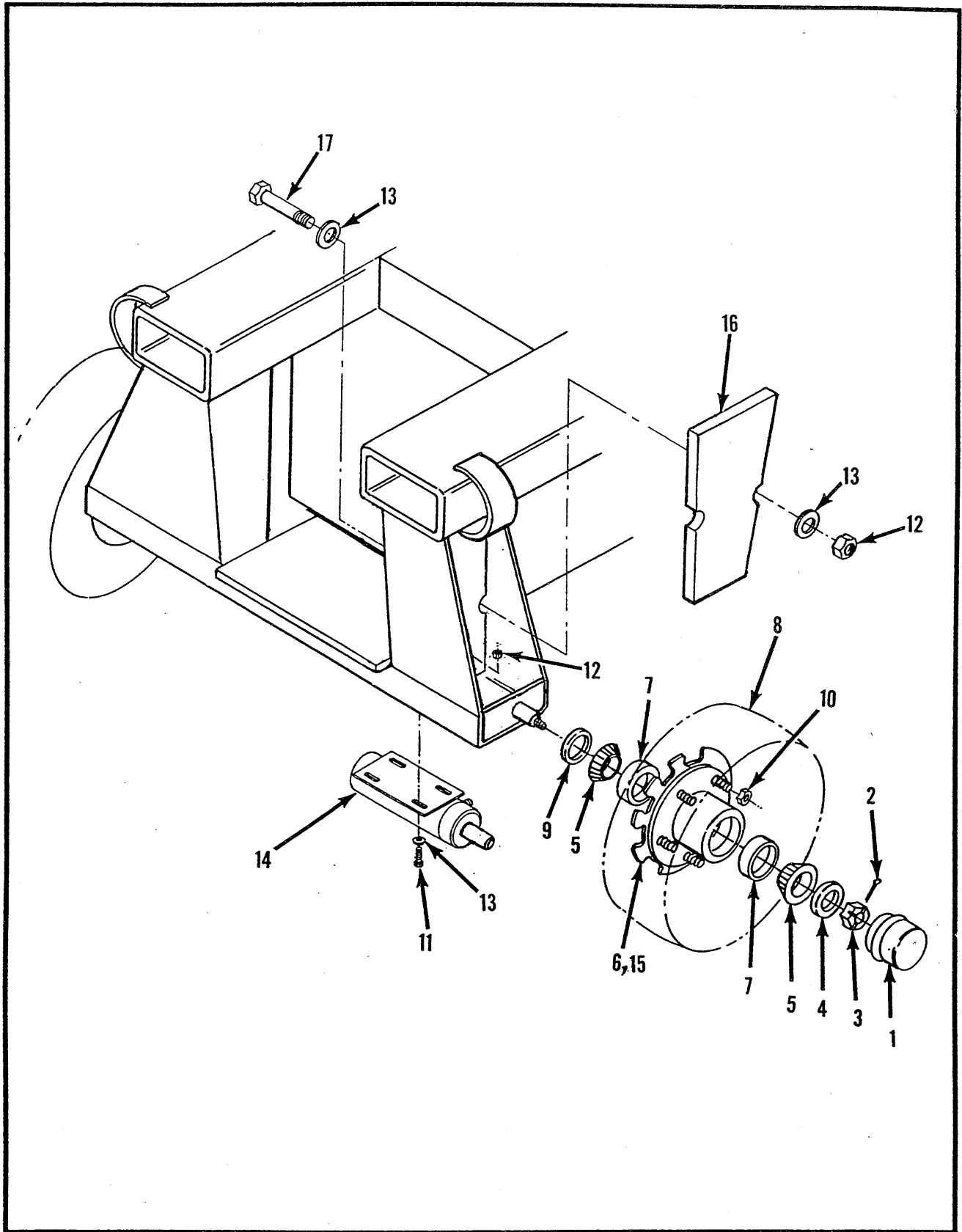


Figure 7-16. Rear Wheel and Hub Assembly, XL-19CW & XL-24C

ITEM	PART	DESCRIPTION	QTY
7-16	No Number	REAR WHEEL AND HUB ASSEMBLY, XL-19CW. . . & XL-24C	REF
-1	05078-000-00	. CAP, Dust . . . . .	2
-2	11753-012-00	. PIN, Cotter . . . . .	2
-3	11274-016-00	. NUT, Slotted HEX 1-1/4 UNF. . . . .	2
-4	11239-016-00	. WASHER, Flat 1 DIA ASTM . . . . .	2
-5	11775-011-00	. CONE, Bearing . . . . .	4
-6	60742-000-00	. HUB AND ROTOR WELDMENT-RH . . . . .	1
-7	11776-004-00	. . CUP, Bearing. . . . .	4
-8	61826-000-00	. WHEEL ASSEMBLY. . . . .	2
-9	05104-000-00	. SEAL, Grease. . . . .	2
-10	05105-000-00	. NUT, Lug. . . . .	10
-11	11254-010-00	. SCREW, HHC 3/8-16 UNC GR5 x 1-1/4 . . .	4
-12	11248-006-00	. NUT, 3/8-16 UNC ESNA. . . . .	4
-13	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	4
-14	60479-000-00	. CYLINDER, Brake . . . . .	1
	60211-014-00	. . SEAL KIT. . . . .	1
-15	05100-001-00	. HUB-LH (Not Shown). . . . .	1
-16	61989-000-00	. BALLAST-Rear (XL-24C Only). . . . .	8
-17	11254-044-00	. SCREW, HHC 3/8-16 UNC GR5 x 5-1/2, . . . (XL-24C Only)	4

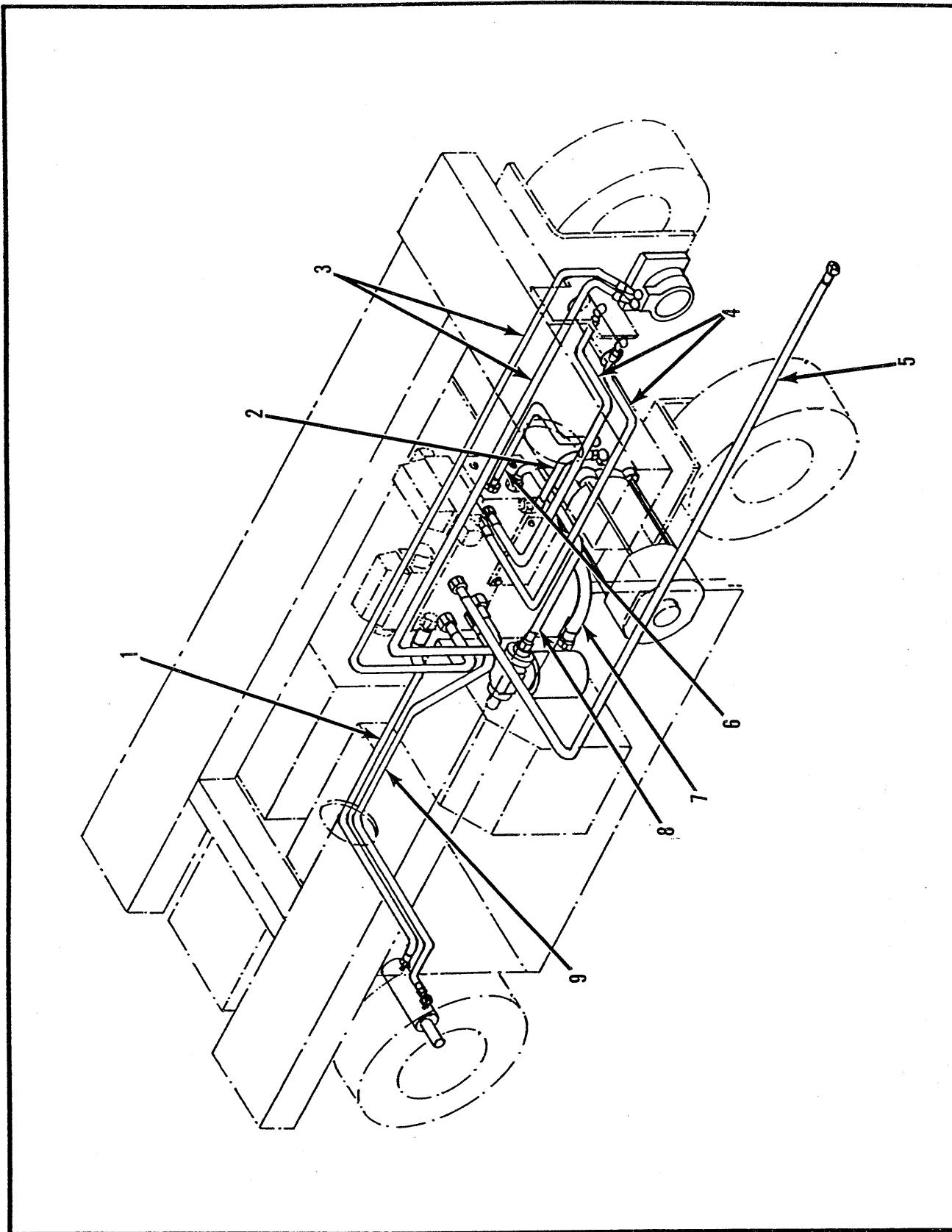


Figure 7-17. Hose Kit Installation-Chassis, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-17	61706-000-00	HOSE KIT INSTALLATION, Chassis, XL-19C. .	REF
-1	61131-003-00	. HOSE ASSEMBLY 1/4 x 37. . . . .	1
-2	60861-024-00	. HOSE ASSEMBLY 3/8 x 17. . . . .	1
-3	60889-005-00	. HOSE ASSEMBLY 3/8 x 50. . . . .	2
-4	60861-026-00	. HOSE ASSEMBLY 3/8 x 31. . . . .	2
-5	60861-017-00	. HOSE ASSEMBLY 3/8 x 100 . . . . .	1
-6	61791-003-00	. HOSE ASSEMBLY 3/8 x 14. . . . .	1
-7	61789-001-00	. HOSE ASSEMBLY 3/4 x 15-1/2. . . . .	1
-8	61791-004-00	. HOSE ASSEMBLY 3/8 x 33-1/2. . . . .	1
-9	60861-017-00	. HOSE ASSEMBLY 3/8 x 47-1/2. . . . .	1



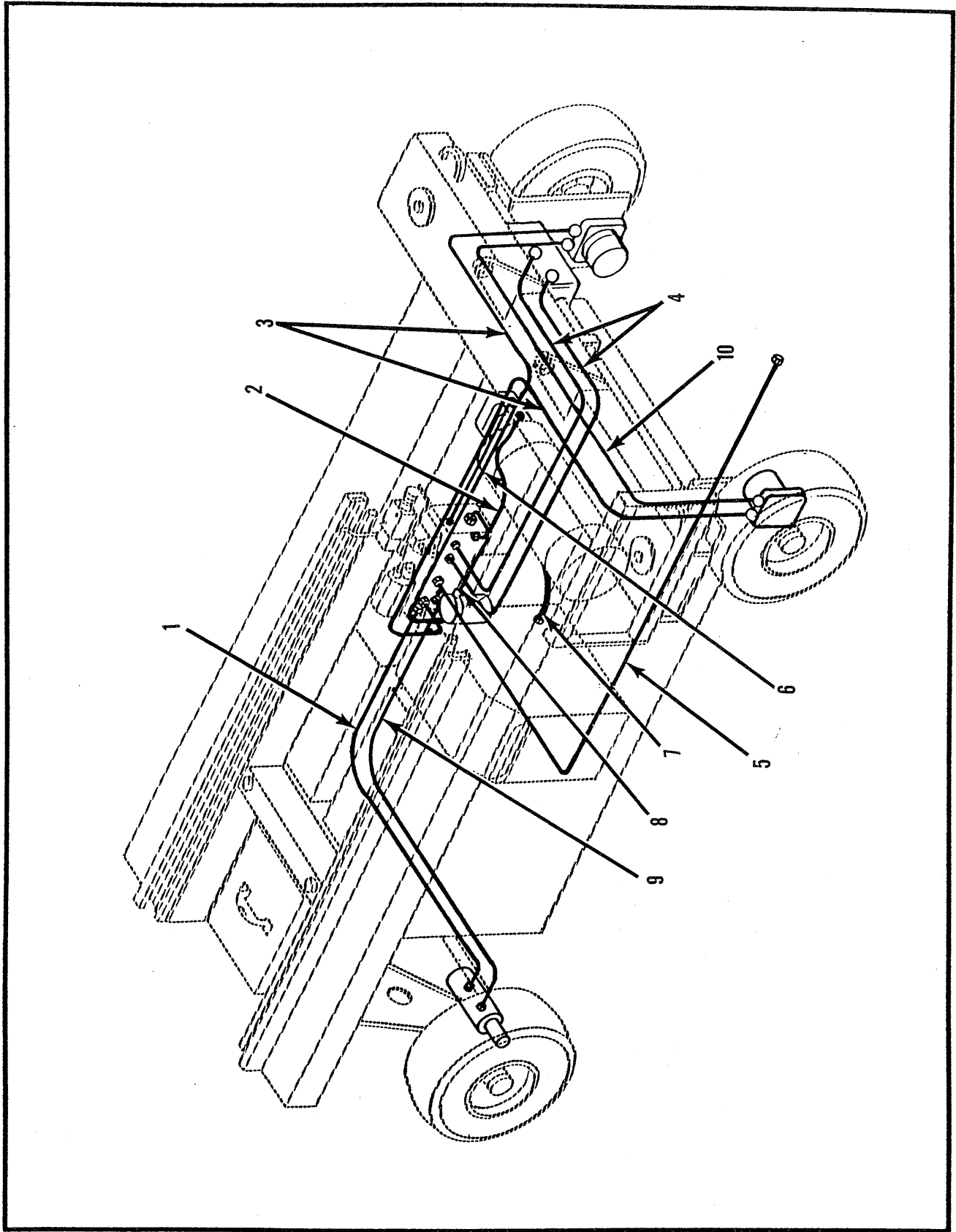


Figure 7-18. Hose Kit Installation-Chassis, XL-19CW & XL-24C

ITEM	PART	DESCRIPTION	QTY
7-18	61856-000-00	HOSE KIT INSTALLATION, Chassis, . . . . . XL-19CW & XL-24C	REF
-1	61131-005-00	. HOSE ASSEMBLY 1/4 x 47. . . . .	1
-2	60861-024-00	. HOSE ASSEMBLY 3/8 x 17. . . . .	1
-3	60889-007-00	. HOSE ASSEMBLY 3/8 x 60. . . . .	2
-4	60861-003-00	. HOSE ASSEMBLY 3/8 x 39-1/2. . . . .	2
-5	60861-017-00	. HOSE ASSEMBLY 3/8 x 100 . . . . .	1
-6	61791-003-00	. HOSE ASSEMBLY 3/8 x 14. . . . .	1
-7	61789-001-00	. HOSE ASSEMBLY 3/4 x 15-1/2. . . . .	1
-8	61791-004-00	. HOSE ASSEMBLY 3/8 x 33-1/2. . . . .	1
-9	60861-031-00	. HOSE ASSEMBLY 3/8 x 52-1/2. . . . .	1
-10	60809-008-00	. HOSE ASSEMBLY 3/8 x 64. . . . .	1

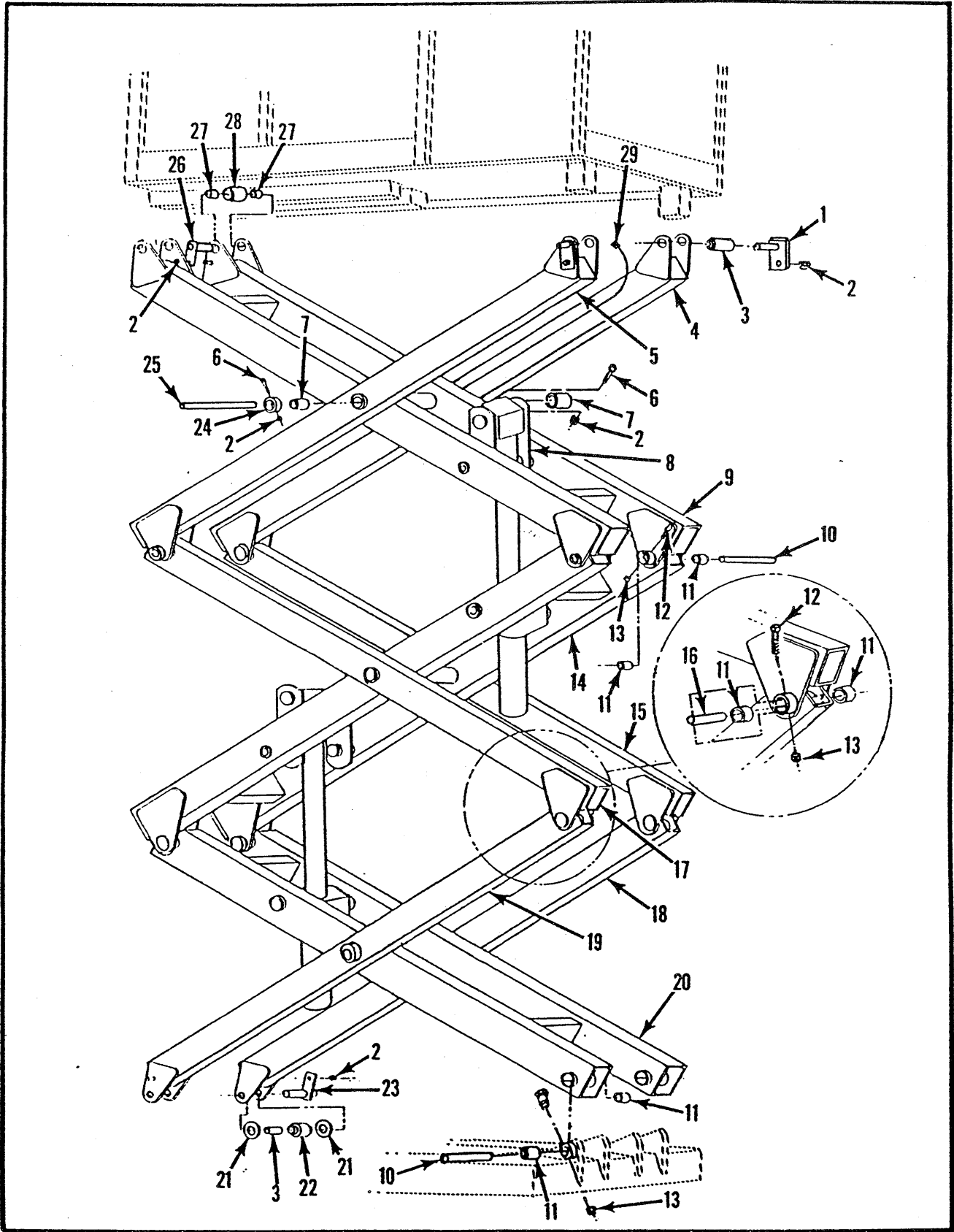


Figure 7-19. Scissors Assembly, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-19	No Number	SCISSORS ASSEMBLY, XL-19C, . . . . . Serial No. 2126 to Current	REF
-1	61506-000-00	. PIN WELDMENT. . . . .	2
-2	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	10
-3	27931-012-00	. BEARING . . . . .	4
-4	61756-000-00	. ARM WELDMENT, Upper-LH. . . . .	1
-5	61757-000-00	. ARM WELDMENT, Upper-RH. . . . .	1
-6	11254-022-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-3/4 . . . . .	10
-7	27931-006-00	. BEARING . . . . .	6
-8	No Number	. LIFT CYLINDER INSTALLATION. . . . . (See Figure 7-22)	2
-9	61723-000-00	. FRAME WELDMENT, Upper . . . . .	1
-10	61565-000-00	. PIN . . . . .	6
-11	11780-031-00	. BEARING . . . . .	20
-12	11253-016-00	. SCREW, HHC 5/16-18 UNC GR 5 x 2 . . . . .	8
-13	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	10
-14	61722-000-00	. FRAME WELDMENT, Center. . . . .	1
-15	61755-000-00	. ARM WELDMENT, Center-LH . . . . .	1
-16	61788-000-00	. PIN . . . . .	4
-17	61754-000-00	. ARM WELDMENT, Center-RH . . . . .	1
-18	61459-000-00	. ARM WELDMENT, Lower-LH. . . . .	1
-19	61469-000-00	. ARM WELDMENT, Lower-RH. . . . .	1
-20	61758-000-00	. FRAME WELDMENT, Lower . . . . .	1
-21	61536-000-00	. WASHER. . . . .	4
-22	60880-000-00	. WHEEL, Lower. . . . .	2
-23	60788-000-00	. PIN WELDMENT. . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-19	No Number	SCISSORS ASSEMBLY, XL-19C, . . . . . Serial No. 2126 to Current (Cont'd)	REF
-24	61471-000-00	. COLLAR. . . . .	3
-25	61470-000-00	. PIN, Center Pivot . . . . .	3
-26	61472-000-00	. PIN WELDMENT. . . . .	2
-27	27931-011-00	. BEARING . . . . .	4
-28	61473-000-00	. ROLLER. . . . .	2
-29	No Number	. HOSE AND CABLE INSTALLATION, . . . . . Scissors (See Figures 7-23)	1

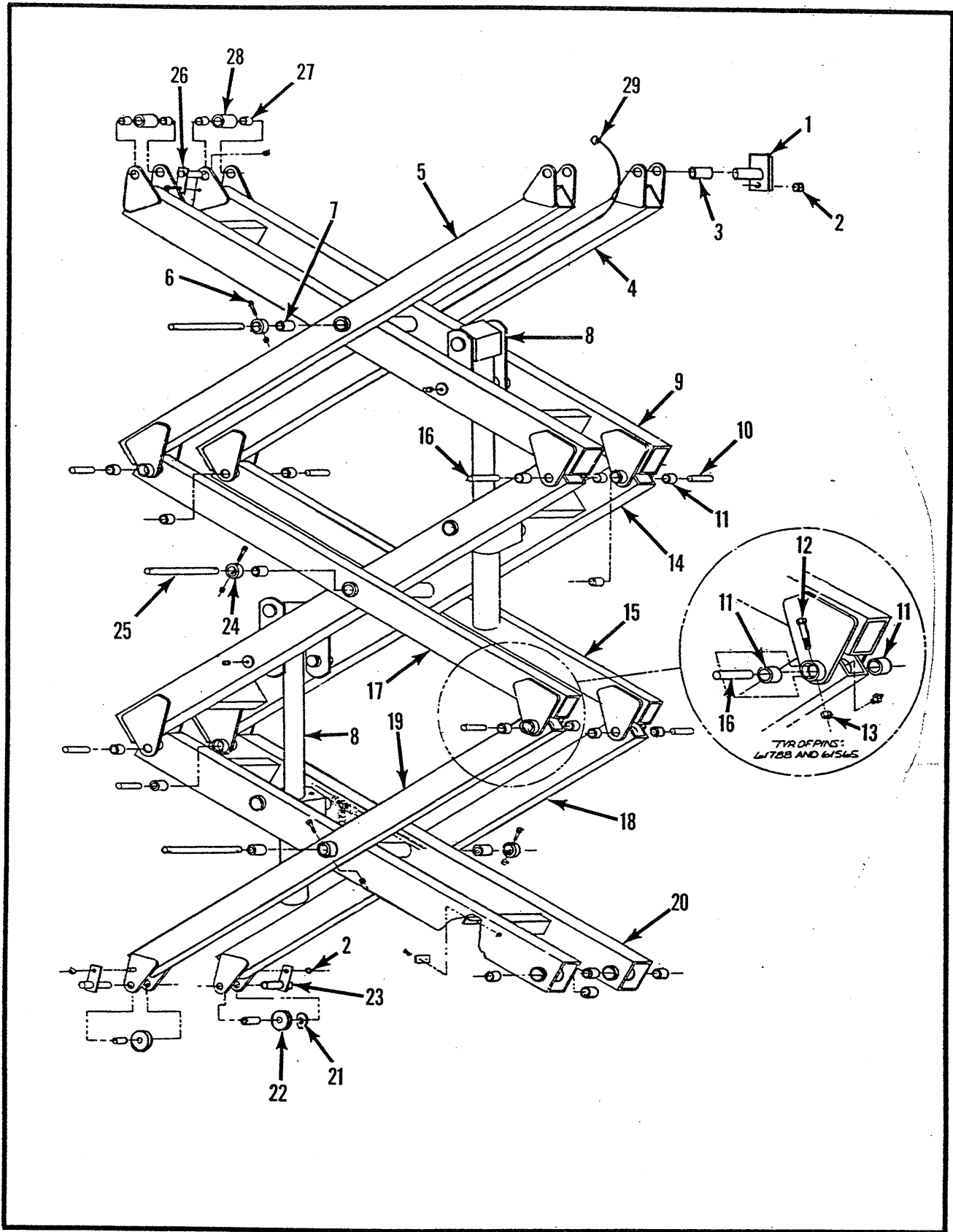


Figure 7-20. Scissors Assembly, XL-19CW

ITEM	PART	DESCRIPTION	QTY
7-20	No Number	SCISSORS ASSEMBLY, XL-19CW. . . . .	REF
-1	61506-000-00	. PIN WELDMENT. . . . .	2
-2	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	10
-3	27931-012-00	. BEARING . . . . .	4
-4	61756-000-00	. ARM WELDMENT, Upper, Outer-LH . . . . .	1
-5	61757-000-00	. ARM WELDMENT, Upper, Outer-RH . . . . .	1
-6	11254-022-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-3/4 . . . . .	10
-7	27931-006-00	. BEARING . . . . .	6
-8	No Number	. LIFT CYLINDER INSTALLATION. . . . . (See Figure 7-22)	2
-9	61723-000-00	. FRAME WELDMENT, Upper, Inner. . . . .	1
-10	61565-000-00	. PIN . . . . .	6
-11	11780-031-00	. BEARING . . . . .	20
-12	11253-016-00	. SCREW, HHC 5/16-18 UNC GR 5 x 2 . . . . .	8
-13	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	10
-14	61722-000-00	. FRAME WELDMENT, Center, Inner . . . . .	1
-15	61755-000-00	. ARM WELDMENT, Center, Outer-LH. . . . .	1
-16	61788-000-00	. PIN . . . . .	4
-17	61754-000-00	. ARM WELDMENT, Center, Outer-RH. . . . .	1
-18	61459-000-00	. ARM WELDMENT, Lower, Outer-LH . . . . .	1
-19	61469-000-00	. ARM WELDMENT, Lower, Outer-RH . . . . .	1
-20	61758-000-00	. FRAME WELDMENT, Lower, Inner. . . . .	1
-21	61536-000-00	. WASHER. . . . .	4
-22	60880-000-00	. WHEEL, Lower. . . . .	2
-23	60788-000-00	. PIN WELDMENT. . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-20	No Number	SCISSORS ASSEMBLY, XL-19CW. . . . .	REF
-24	61471-000-00	. COLLAR. . . . .	3
-25	61470-000-00	. PIN, Center Pivot . . . . .	3
-26	61472-000-00	. PIN WELDMENT. . . . .	2
-27	61473-000-00	. ROLLER. . . . .	2
-28	No Number	. HOSE AND CABLE INSTALLATION, . . . . . Scissors (See Figures 7-23)	1



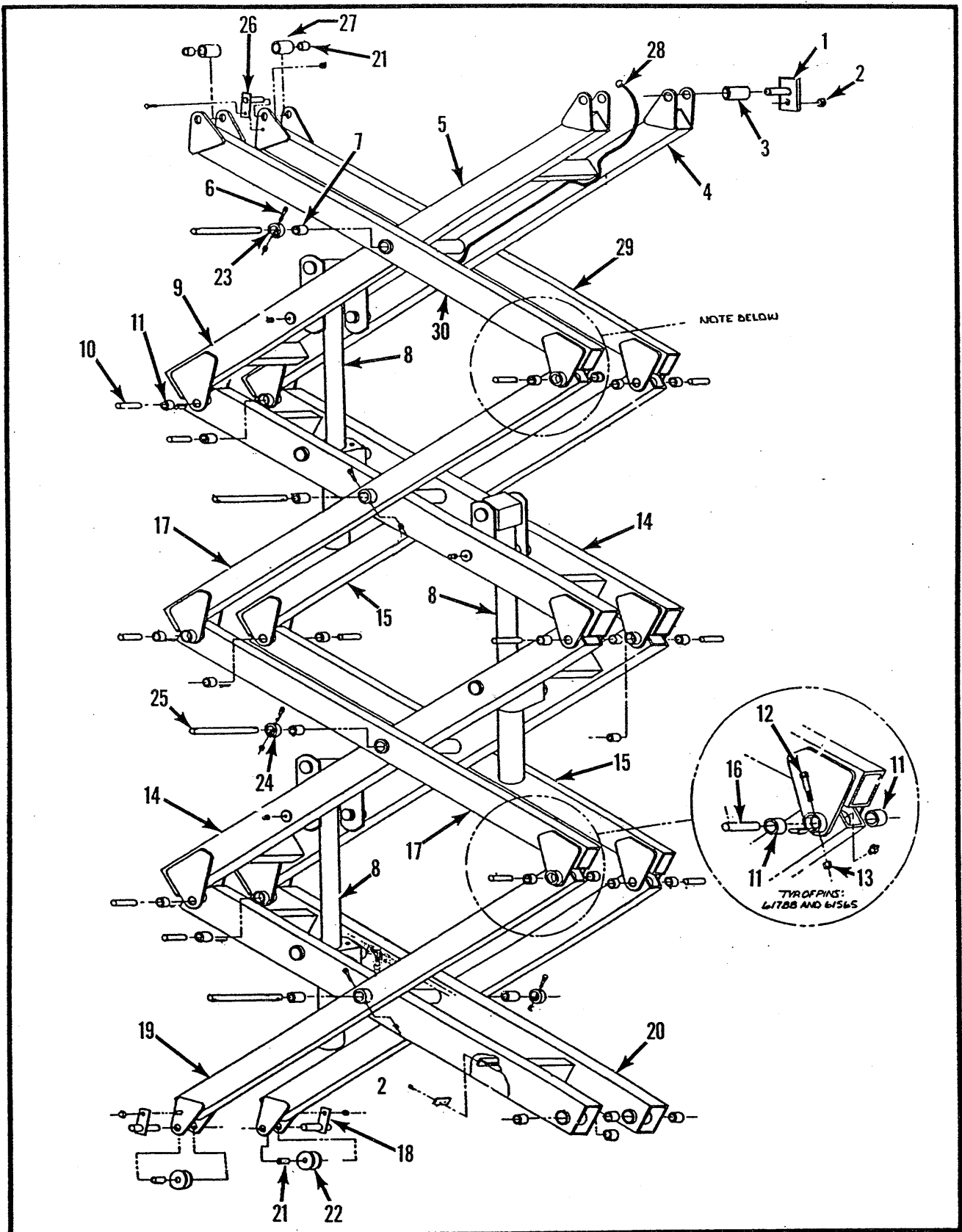


Figure 7-21. Scissors Assembly, XL-24C

ITEM	PART	DESCRIPTION	QTY
7-21	No Number	SCISSORS ASSEMBLY, XL-24C . . . . .	REF
-1	61506-000-00	. PIN WELDMENT. . . . .	2
-2	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	12
-3	27931-012-00	. BEARING . . . . .	4
-4	61756-000-00	. ARM WELDMENT, Upper, Outer-LH . . . . .	1
-5	61757-000-00	. ARM WELDMENT, Upper, Outer-RH . . . . .	1
-6	11254-022-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-3/4 . . . . .	8
-7	27931-006-00	. BEARING . . . . .	6
-8	No Number	. LIFT CYLINDER INSTALLATION. . . . . (See Figure 7-22)	3
-9	61723-000-00	. FRAME WELDMENT, Upper, Inner. . . . .	1
-10	61565-000-00	. PIN . . . . .	4
-11	11780-031-00	. BEARING . . . . .	20
-12	11253-016-00	. SCREW, HHC 5/16-18 UNC GR 5 x 2 . . . . .	12
-13	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	12
-14	61722-000-00	. FRAME WELDMENT, Center, Inner . . . . .	2
-15	61755-000-00	. ARM WELDMENT, Center, Outer-LH. . . . .	2
-16	61788-000-00	. PIN . . . . .	4
-17	61754-000-00	. ARM WELDMENT, Center, Outer-RH. . . . .	2
-18	61459-000-00	. ARM WELDMENT, Lower, Outer-LH . . . . .	1
-19	61469-000-00	. ARM WELDMENT, Lower, Outer-RH . . . . .	1
-20	61758-000-00	. FRAME WELDMENT, Lower, Inner. . . . .	1
-21	27931-006-00	. BEARING . . . . .	4
-22	61876-000-00	. WHEEL, Lower. . . . .	2
-23	60788-000-00	. PIN WELDMENT. . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-21	No Number	SCISSORS ASSEMBLY, XL-24C (Cont'd) . . . .	REF
-24	61471-000-00	. COLLAR. . . . .	3
-25	61470-000-00	. PIN, Center Pivot . . . . .	3
-26	61472-000-00	. PIN WELDMENT. . . . .	2
-27	61947-000-00	. ROLLER. . . . .	4
-28	No Number	. HOSE AND CABLE INSTALLATION, . . . . . Scissors (See Figure 7-24)	1
-29	61757-000-00	. SCISSOR ARM, Upper Outer, RH. . . . .	1
-30	61756-000-00	. SCISSOR ARM, Upper Outer, LH. . . . .	1

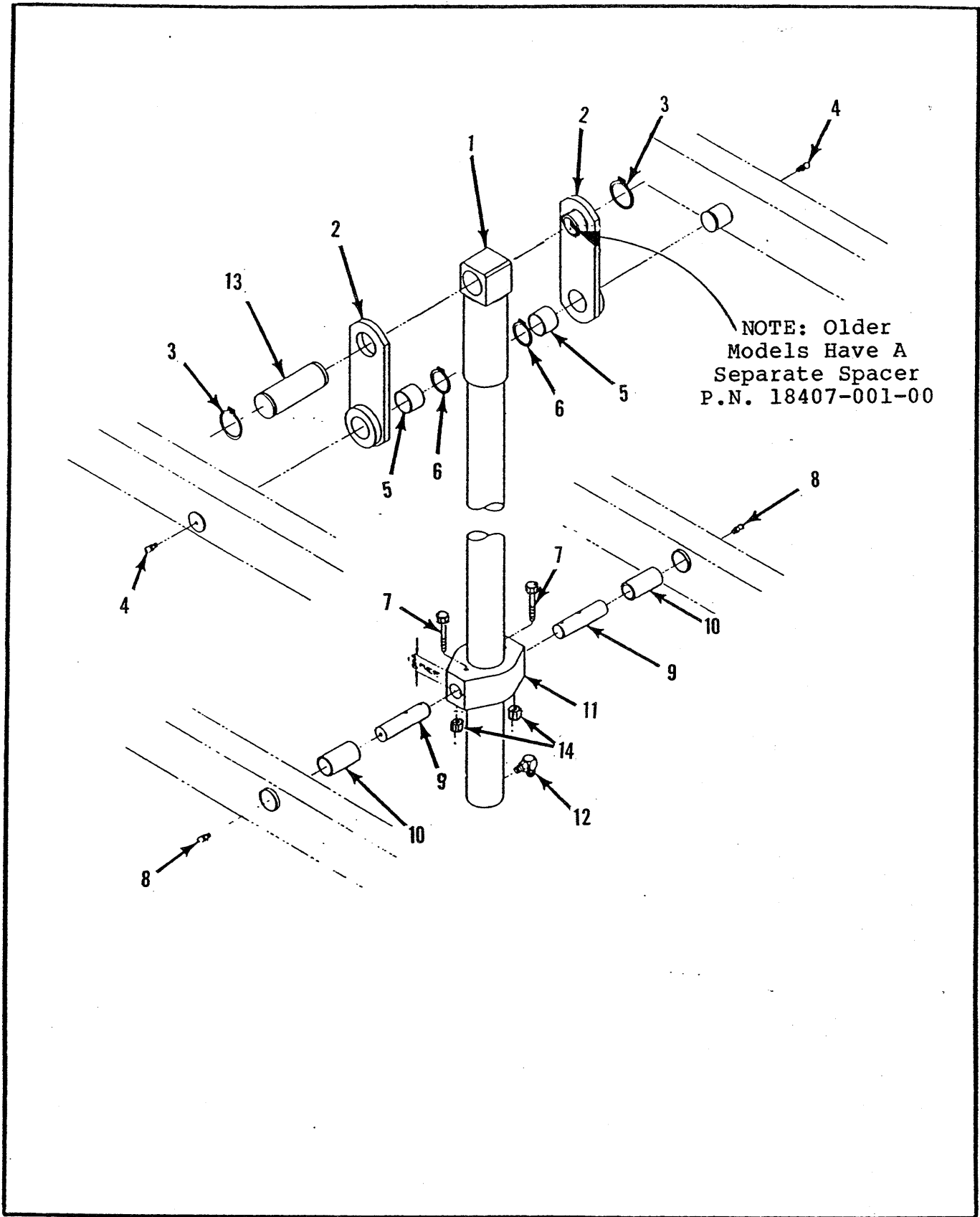


Figure 7-22. Lift Cylinder Installation, XL-C Series

ITEM	PART	DESCRIPTION	QTY
7-22	No Number	LIFT CYLINDER INSTALLATION, XL-C Series . (See Figures 7-19, 7-20 & 7-21 for NHA)	REF
-1	12794-000-00	. CYLINDER, Lift. . . . .	2
	12794-014-00	. . SCREW, Bleeder. . . . .	1
	14413-001-00	. . FUSE, Velocity. . . . .	1
	12794-013-00	. . SEAL KIT. . . . .	1
-2	60844-000-00	. PLATE WELDMENT. . . . .	4
-3	11764-034-00	. RING, Retaining . . . . .	4
-4	13336-001-00	. FITTING, Grease 1/8-27 NPT. . . . .	4
-5	60845-000-00	. BEARING . . . . .	4
-6	11764-027-00	. RING, Retaining . . . . .	4
-7	12553-028-00	. BOLT. . . . .	4
-8	13336-011-00	. FITTING, Grease 1/4-28 UNF. . . . .	4
-9	11783-008-00	. BEARING . . . . .	4
-10	61468-000-00	. PIN, Pivot Cylinder Collar. . . . .	4
-11	61474-000-00	. COLLAR, Cylinder. . . . .	2
-12	11934-007-00	. FITTING, Elbow. . . . .	2
-13	61467-000-00	. PIN, Cylinder . . . . .	2
-14	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	4

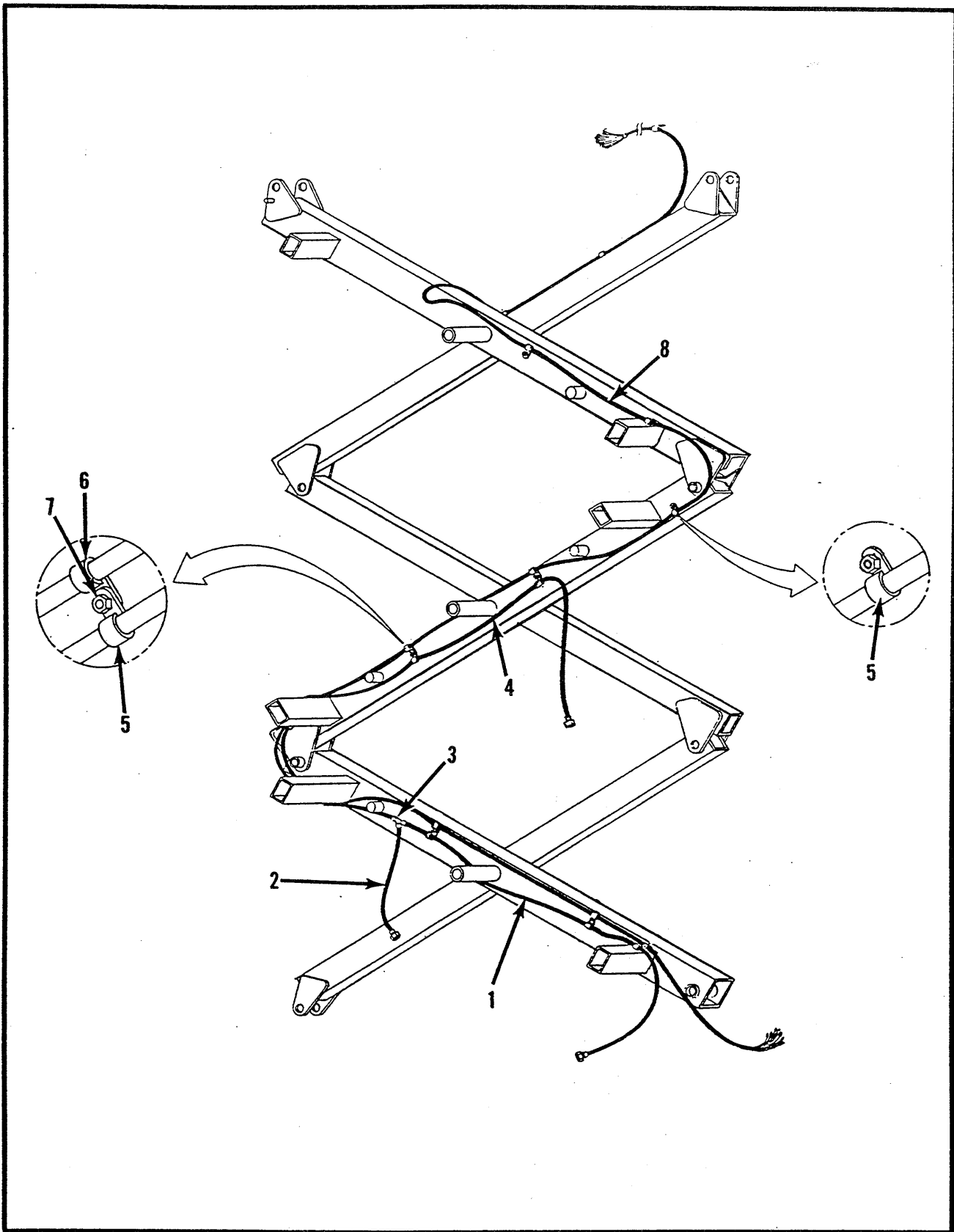


Figure 7-23. Hose and Cable Installation-Scissors,  
XL-19C & XL-19CW

ITEM	PART	DESCRIPTION	QTY
7-23	No Number	HOSE AND CABLE INSTALLATION, Scissors, . . XL-19C & XL-19CW	REF
-1	60861-017-00	. HOSE ASSEMBLY 3/8 x 100 . . . . . (See Figures 7-19 and 7-20)	REF
-2	60861-019-00	. HOSE ASSEMBLY 3/8 x 22. . . . .	1
-3	20032-003-00	. FITTING, Tee. . . . .	1
-4	60861-027-00	. HOSE ASSEMBLY 3/8 x 97-1/2. . . . .	1
-5	13919-004-00	. CLAMP, Cable. . . . .	13
-6	13919-006-00	. CLAMP, Hose . . . . .	7
-7	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	13
-8	61709-000-00	. CABLE, Control. . . . .	1

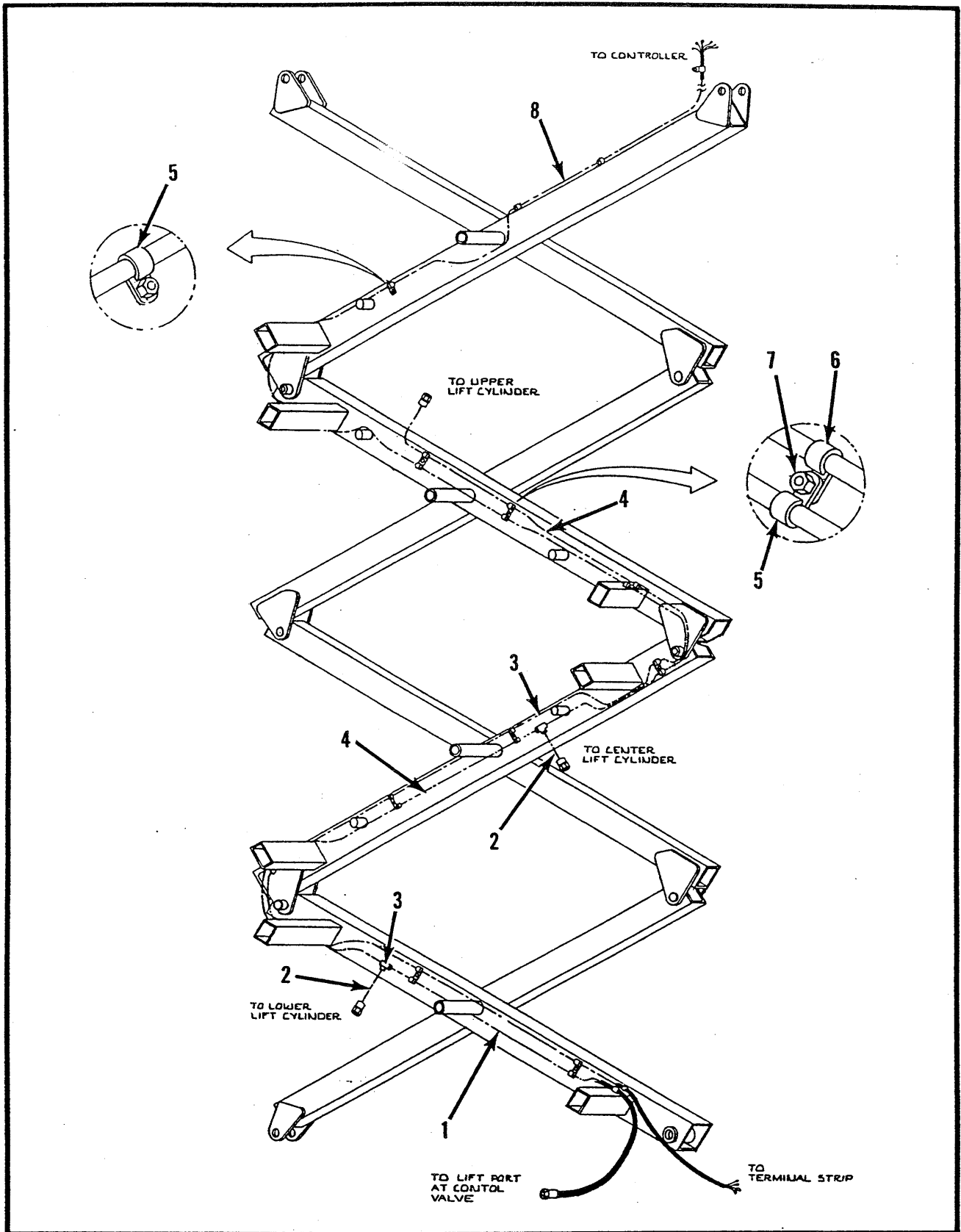


Figure 7-24. Hose and Cable Installation-Scissors, XL-24C



ITEM	PART	DESCRIPTION	QTY
7-24	No Number	HOSE AND CABLE INSTALLATION, Scissors, . . XL-24C	REF
-1	60861-017-00	. HOSE ASSEMBLY 3/8 x 100 . . . . . (See Figure 7-21)	REF
-2	60861-019-00	. HOSE ASSEMBLY 3/8 x 22. . . . .	2
-3	20032-003-00	. FITTING, Tee. . . . .	2
-4	60861-027-00	. HOSE ASSEMBLY 3/8 x 97-1/2. . . . .	2
-5	13919-004-00	. CLAMP, Cable. . . . .	13
-6	13919-006-00	. CLAMP, Hose . . . . .	7
-7	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	13
-8	61709-001-00	. CABLE, Control. . . . .	1

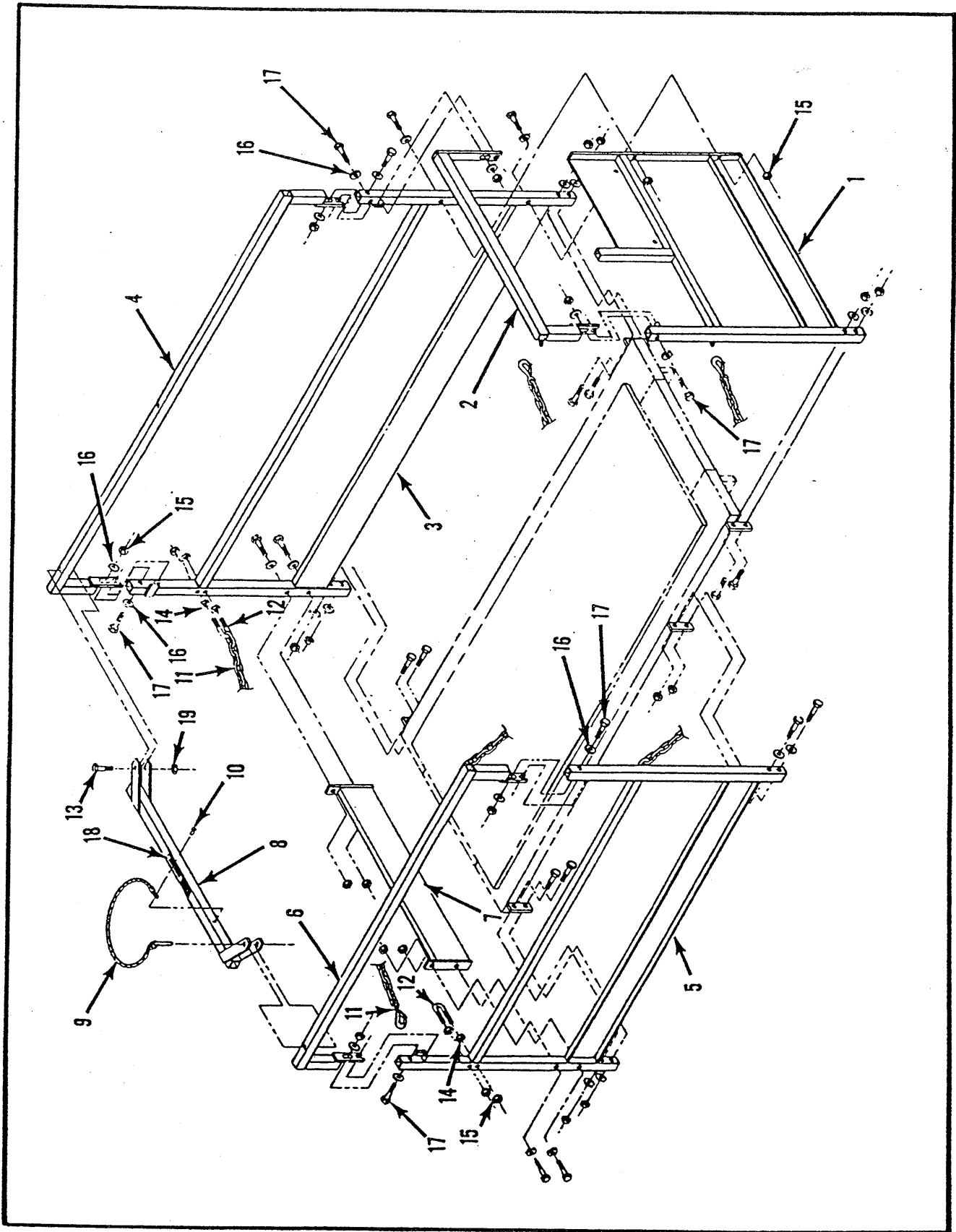


Figure 7-25. Fold Down Guardrail Installation, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-25	61760-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . . XL-19C	REF
-1	61762-000-00	. GUARDRAIL, Front Lower. . . . .	1
-2	61761-000-00	. GUARDRAIL, Front Upper. . . . .	1
-3	61766-000-00	. GUARDRAIL, Left Lower . . . . .	1
-4	61765-000-00	. GUARDRAIL, Left Upper . . . . .	1
-5	61764-000-00	. GUARDRAIL, Right Lower. . . . .	1
-6	61763-000-00	. GUARDRAIL, Right Upper. . . . .	1
-7	61767-000-00	. KICKRAIL. . . . .	1
-8	61768-000-00	. GUARDRAIL, Rear . . . . .	1
-9	61786-000-00	. LOCKING PIN ASSEMBLY. . . . .	1
-10	26554-001-00	. RIVET, Pop 1/4. . . . .	1
-11	61619-000-00	. GUARD CHAIN ASSEMBLY. . . . .	1
-12	14924-003-00	. U-BOLT. . . . .	2
-13	11253-022-00	. SCREW, HHC 5/16 UNC x 2-3/4 . . . . .	1
-14	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	4
-15	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	26
-16	11240-006-00	. WASHER, 3/8 DIA . . . . .	28
-17	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	22
-18	61787-000-00	. DECAL, Danger Guardrails. . . . .	1
-19	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	1
-20	62554-000-00	. RIVET, Pop 1/4 DIA .751-.875. . . . .	6
-21	20824-003-00	. PLYWOOD . . . . .	1
-22	61718-000-00	. PLATFORM WELDMENT . . . . .	1
-23	03613-000-00	. TUBE. . . . .	1
-24	03612-000-00	. CAP . . . . .	2

ITEM	PART	DESCRIPTION	QTY
7-25	61760-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . XL-19C (Continued)	REF
-25	11252-006-00	. SCREW, HHC 1/4-20 UNC x 3/4 . . . . .	2
-26	20398-012-00	. CLAMP . . . . .	2
-27	11250-004-00	. NUT, HEX 1/4-20 UNC . . . . .	2
-28	61999-000-00	. USER MANUAL . . . . .	1

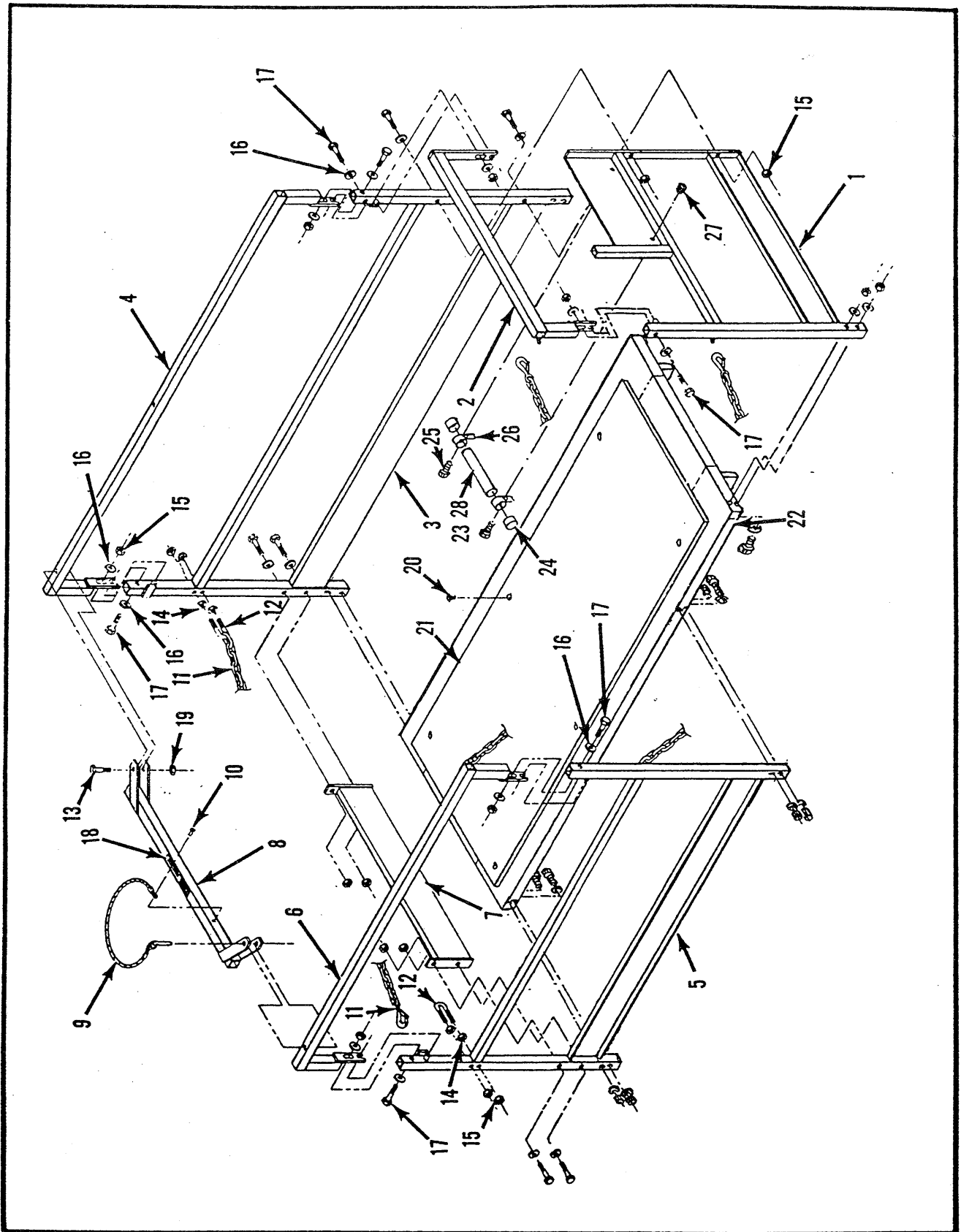


Figure 7-26. Fold Down Guardrail Installation,  
 XL-19CW Serial No. 5001 to 5030

ITEM	PART	DESCRIPTION	QTY
7-26	61896-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . XL-19CW Serial No. 5001 to 5030	REF
-1	63154-000-00	. GUARDRAIL, Front Lower. . . . .	1
-2	63158-000-00	. GUARDRAIL, Front Upper. . . . .	1
-3	63156-000-00	. GUARDRAIL, Left Lower . . . . .	1
-4	63160-000-00	. GUARDRAIL, Left Upper . . . . .	1
-5	63155-000-00	. GUARDRAIL, Right Lower. . . . .	1
-6	63159-000-00	. GUARDRAIL, Right Upper. . . . .	1
-7	63157-000-00	. KICKRAIL. . . . .	1
-8	63161-000-00	. GUARDRAIL, Rear . . . . .	1
-9	61786-000-00	. LOCKING PIN ASSEMBLY. . . . .	1
-10	26553-004-00	. RIVET, Pop 3/16 DIA . . . . .	1
-11	63173-000-00	. CHAIN GUARD ASSEMBLY. . . . .	1
-12	14924-003-00	. U-BOLT. . . . .	2
-13	11253-022-00	. SCREW, HHC 5/16 UNC x 2-3/4 . . . . .	1
-14	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	26
-15	11240-006-00	. WASHER, 3/8 DIA . . . . .	28
-16	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	22
-17	61787-000-00	. DECAL, Danger Guardrails. . . . .	1
-18	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	1
-19	11240-003-00	. WASHER, 3/16 DIA. . . . .	1
-20	62554-000-00	. RIVET, Pop 1/4 DIA .751-.875. . . . .	6
-21	24611-003-00	. PLYWOOD . . . . .	1
-22	61718-000-00	. PLATFORM WELDMENT . . . . .	1
-23	03613-000-00	. TUBE. . . . .	1

ITEM	PART	DESCRIPTION	QTY
7-26	61896-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . XL-19CW Serial No. 5001 to 5030	REF
-24	03612-000-00	. CAP . . . . .	2
-25	11252-006-00	. SCREW, HHC 1/4-20 UNC x 3/4 . . . . .	2
-26	20398-012-00	. CLAMP . . . . .	2
-27	11250-004-00	. NUT, HEX 1/4-20 UNC . . . . .	2
-28	61999-000-00	. USER MANUAL . . . . .	1

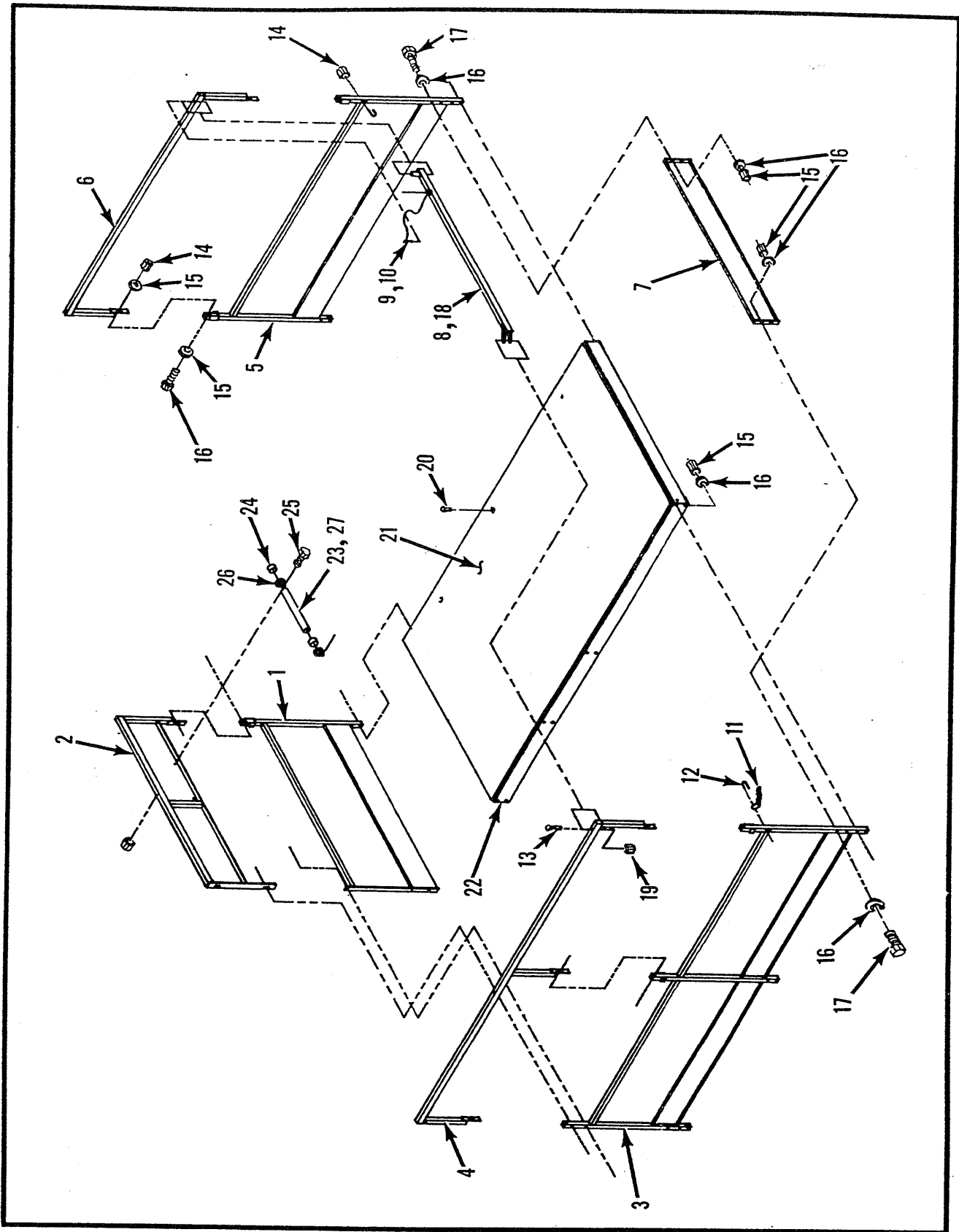


Figure 7-27. Fold Down Guardrail Installation, XL-19CW  
Serial No. 5031 to Current & XL-24C



ITEM	PART	DESCRIPTION	QTY
7-27	61956-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . XL-19CW Serial No. 5031 to Current & XL-24C	REF
-1	61971-000-00	. GUARDRAIL, Front Lower. . . . .	1
-2	63244-000-00	. GUARDRAIL, Front Upper. . . . .	1
-3	61978-000-00	. GUARDRAIL, Left Lower . . . . .	1
-4	61977-000-00	. GUARDRAIL, Left Upper . . . . .	1
-5	61991-000-00	. GUARDRAIL, Right Lower. . . . .	1
-6	61990-000-00	. GUARDRAIL, Right Upper. . . . .	1
	63243-000-00	. HANDRAIL, Right Hand. . . . .	1
-7	63157-000-00	. KICKRAIL. . . . .	1
-8	63161-000-00	. GUARDRAIL, Rear . . . . .	1
-9	61786-000-00	. LOCKING PIN ASSEMBLY. . . . .	1
-10	26554-001-00	. RIVET, Pop 1/4. . . . .	1
-11	63173-000-00	. GUARD CHAIN ASSEMBLY. . . . .	1
-12	14924-003-00	. U-BOLT. . . . .	2
-13	11253-022-00	. SCREW, HHC 5/16-18 UNC x 2-3/4. . . . .	1
-14	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	6
-15	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	26
-16	11240-006-00	. WASHER, 3/8 DIA . . . . .	28
-17	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	22
-18	61787-000-00	. DECAL, Danger Guardrails. . . . .	1
-19	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	1
-20	62554-000-00	. RIVET, Pop 1/4 DIA .751-.875. . . . .	12
-21	20824-006-00	. PLYWOOD . . . . .	1
-22	61993-000-00	. PLATFORM WELDMENT . . . . .	1
-23	03613-000-00	. TUBE. . . . .	1

ITEM	PART	DESCRIPTION	QTY
7-27	61896-000-00	FOLD DOWN GUARDRAIL INSTALLATION, . . . . XL-19CW Serial No. 5031 to Current & XL-24C (Continued)	REF
-24	03612-000-00	. CAP . . . . .	2
-25	11252-006-00	. SCREW, HHC 1/4-20 UNC x 3/4 . . . . .	2
-26	20398-012-00	. CLAMP . . . . .	2
-27	61999-000-00	. USER MANUAL . . . . .	1

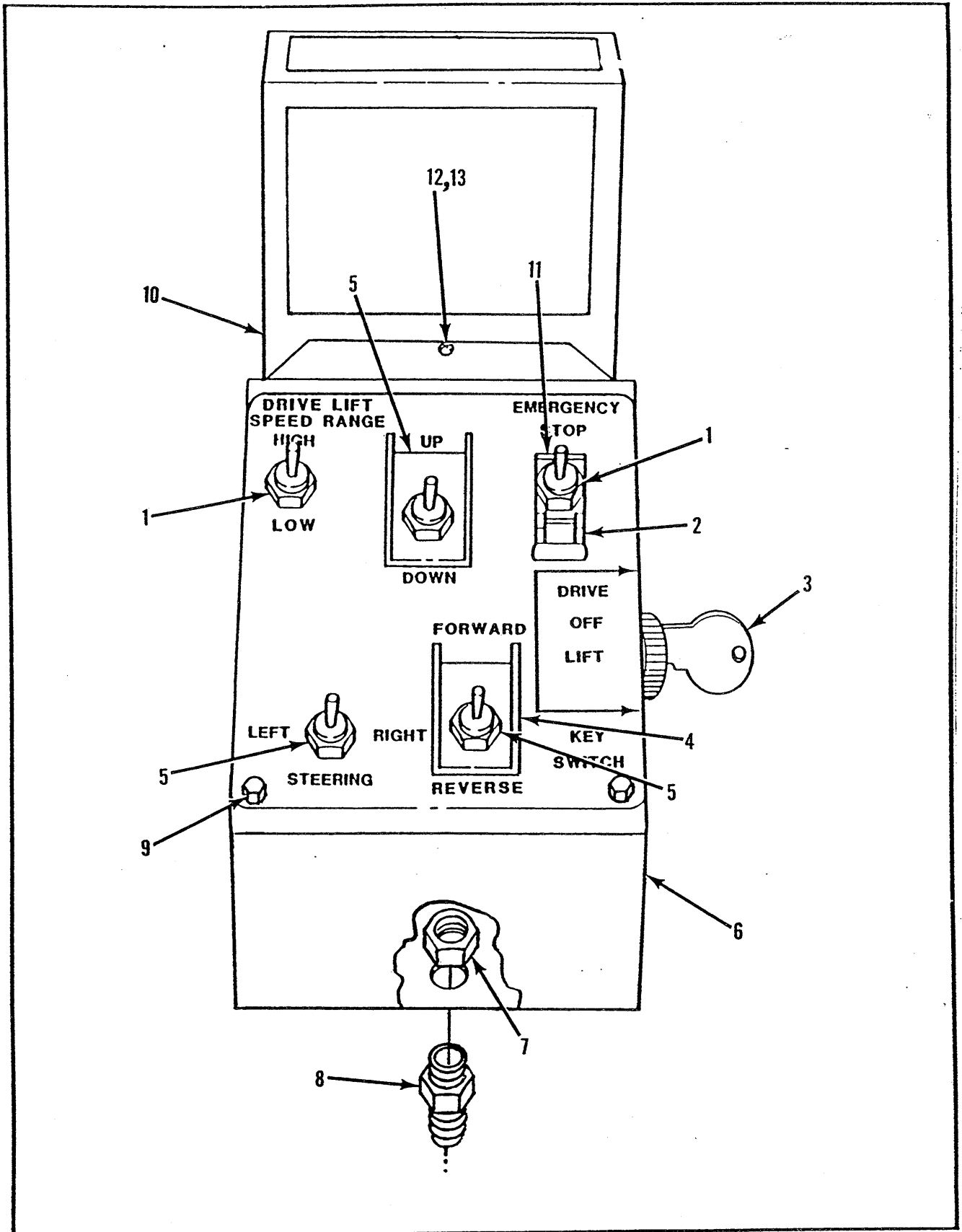


Figure 7-28. Controller Assembly, XL-C Series

ITEM	PART	DESCRIPTION	QTY
7-28	61804-000-00	CONTROLLER ASSEMBLY, XL-C Series. . . . .	REF
-1	12797-000-00	. SWITCH, Toggle, Emergency Stop. . . . .	2
-2	29936-006-00	. GUARD, Switch . . . . .	1
-3	15935-000-00	. SWITCH, Key Mode. . . . .	1
-4	08271-000-00	. GUARD, Switch . . . . .	2
-5	12798-000-00	. SWITCH, Toggle. . . . .	3
-6	61809-000-00	. BOX, Control. . . . .	1
-7	29939-003-00	. LOCKNUT, HEX. . . . .	1
-8	29925-003-00	. CONNECTOR . . . . .	1
-9	14073-006-00	. SCREW, HHC 8-32 UNC x 3/4 . . . . .	4
-10	61811-000-00	. HANGER WELDMENT . . . . .	1
-11	08271-000-00	. BOOT. . . . .	1
-12	11708-004-00	. SCREW, 8-32 UNC x 1/2 . . . . .	1
-13	11248-002-00	. NUT, HEX 8-32 UNC . . . . .	1

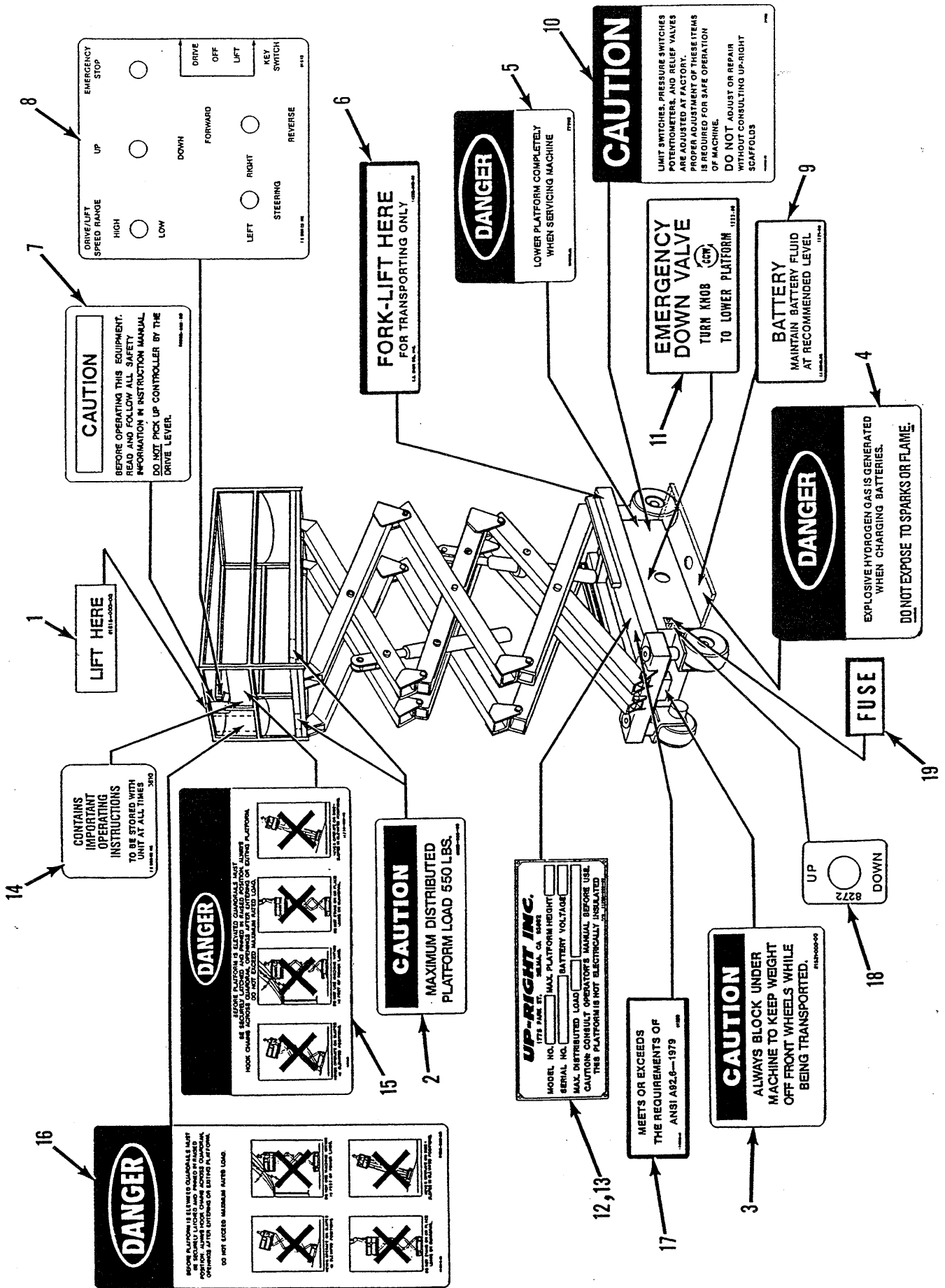


Figure 7-29. Decal Kit Installation, XL-19C

ITEM	PART	DESCRIPTION	QTY
7-29	61833-000-00	DECAL KIT INSTALLATION, XL-19C. . . . .	REF
-1	61515-000-00	. DECAL, Lift here. . . . .	1
-2	61520-000-00	. DECAL, Max Load 550 Lbs . . . . .	2
-3	61531-000-00	. DECAL, Caution. . . . .	1
-4	05225-000-00	. DECAL, Danger Hydrogen Gas. . . . .	2
-5	27993-000-00	. DECAL, Lower Platform . . . . .	2
-6	14222-003-99	. DECAL, Fork Lift Here . . . . .	2
-7	60865-000-00	. DECAL, Caution (Not Included in Kit). . . . .	REF
-8	61813-000-00	. DECAL, Controller (Not Included in Kit)	REF
-9	05221-000-00	. DECAL, Battery Fluid. . . . .	2
-10	27992-000-00	. DECAL, Caution Do Not Adjust. . . . .	1
-11	05223-000-00	. DECAL, Emergency Down Valve . . . . .	1
-12	61205-000-00	. NAME PLATE. . . . .	1
-13	26551-000-00	. RIVET, Pop 1/8 .188-.250 Grip . . . . .	4
-14	03610-000-00	. DECAL, Contains Important Operating Instructions	1
-15	61750-000-00	. DECAL, Optional, Danger Safety Rules. . (For Fold Down Guardrail)	1
-16	61512-000-00	. DECAL, Danger Safety Rules. . . . . (For Fixed Guardrails)	1
-17	61220-000-00	. DECAL, Meets or Exceeds . . . . .	1
-18	08272-000-00	. DECAL, Up, Down . . . . .	1
-19	08176-000-00	. DECAL, Fuse . . . . .	1
-20	61836-000-00	. DECAL, Up-Right XL-19 . . . . .	3
-21	61837-000-00	. DECAL, XL-19. . . . .	2
-22	61787-000-00	. DECAL, Danger Guardrails. . . . .	1
-23	61835-000-00	. DECAL, Up-Right XL-19 . . . . .	1

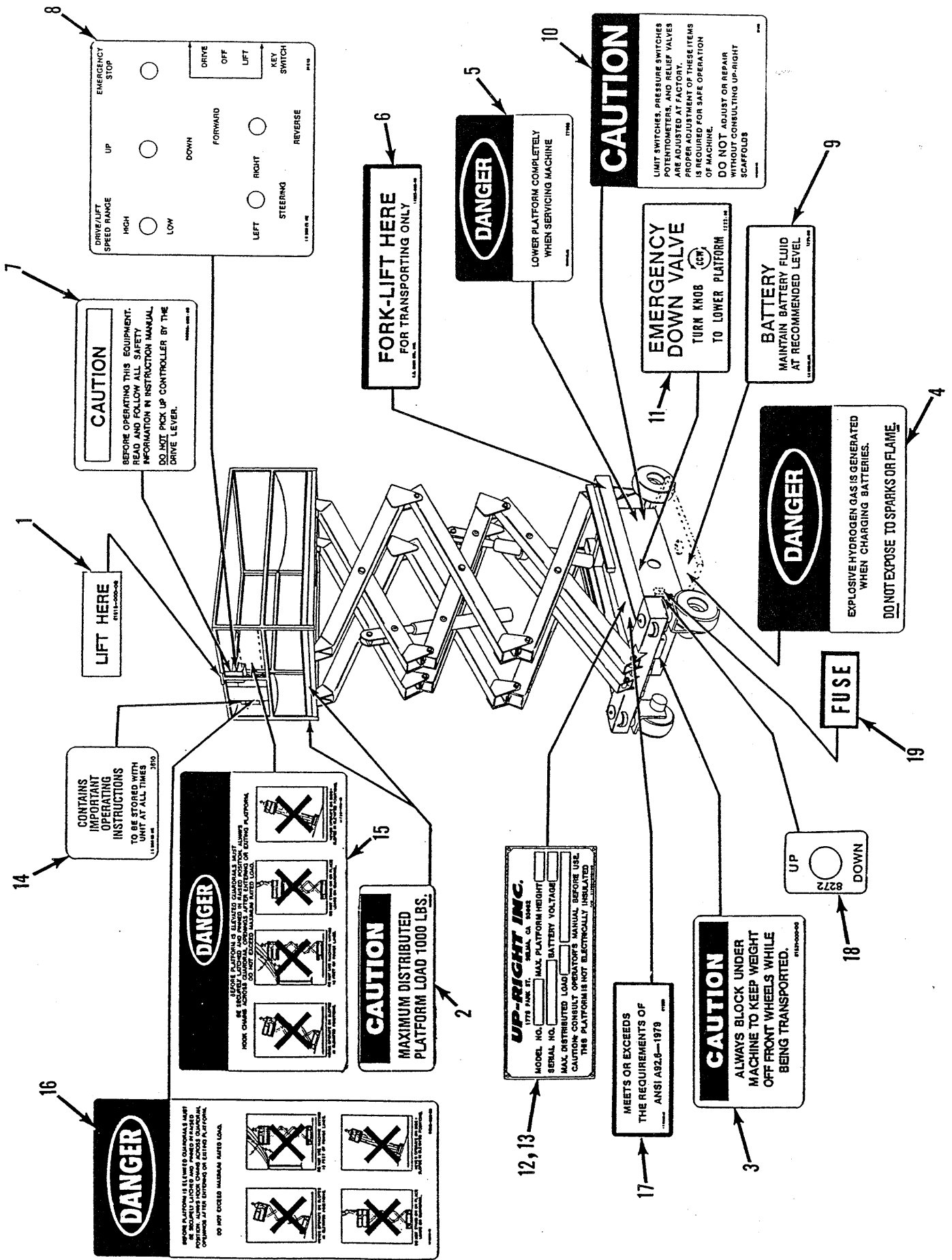


Figure 7-30. Decal Kit Installation, XL-19CW

ITEM	PART	DESCRIPTION	QTY
7-30	61855-000-00	DECAL KIT INSTALLATION, XL-19CW . . . . .	REF
-1	61515-000-00	. DECAL, Lift here. . . . .	1
-2	08442-003-00	. DECAL, Max Load 1000 Lbs. . . . .	2
-3	61531-000-00	. DECAL, Caution. . . . .	1
-4	05225-000-00	. DECAL, Danger Hydrogen Gas. . . . .	2
-5	27993-000-00	. DECAL, Lower Platform . . . . .	2
-6	14222-003-99	. DECAL, Fork Lift Here . . . . .	2
-7	60865-000-00	. DECAL, Caution (Not Included in Kit). . . . .	REF
-8	61813-000-00	. DECAL, Controller (Not Included in Kit)	REF
-9	05221-000-00	. DECAL, Battery Fluid. . . . .	2
-10	27992-000-00	. DECAL, Caution Do Not Adjust. . . . .	1
-11	05223-000-00	. DECAL, Emergency Down Valve . . . . .	1
-12	61205-000-00	. NAME PLATE. . . . .	1
-13	26551-000-00	. RIVET, Pop 1/8 .188-.250 Grip . . . . .	4
-14	03610-000-00	. DECAL, Contains Important Operating Instructions	1
-15	61750-000-00	. DECAL, Optional, Danger Safety Rules. . (For Fold Down Guardrail)	1
-16	61512-000-00	. DECAL, Danger Safety Rules. . . . . (For Fixed Guardrails)	1
-17	61220-000-00	. DECAL, Meets or Exceeds . . . . .	1
-18	08272-000-00	. DECAL, Up, Down . . . . .	1
-19	08176-000-00	. DECAL, Fuse . . . . .	1
-20	61835-000-00	. DECAL, XL-19 CW (Not Shown) . . . . .	1
-21	61836-000-00	. DECAL, XL-19 CW (Not Shown) . . . . .	5
-22	61787-000-00	. DECAL, Danger Guardrails. . . . .	1



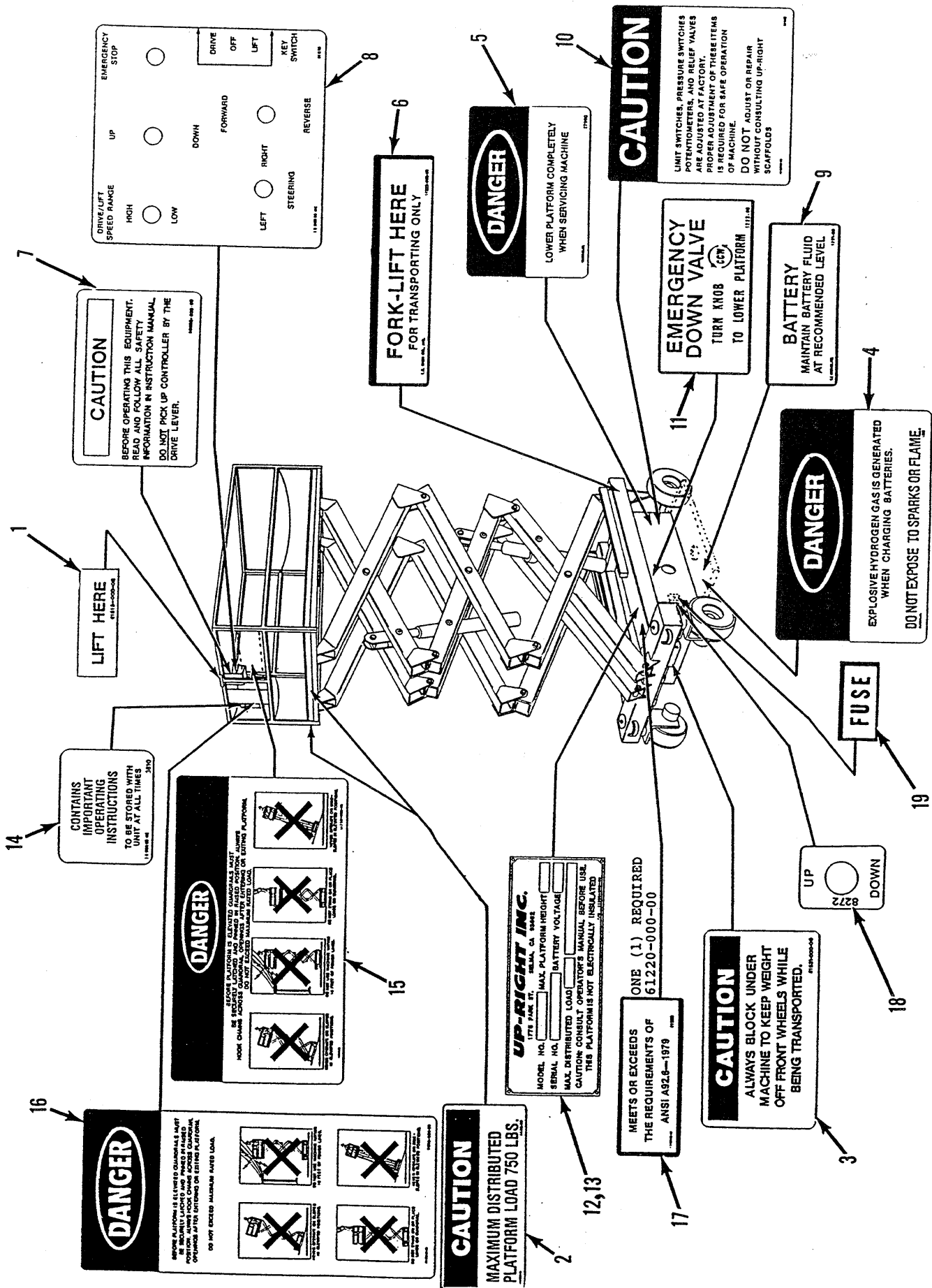


Figure 7-31. Decal Kit Installation, XL-24C

ITEM	PART	DESCRIPTION	QTY
7-31	61953-000-00	DECAL KIT INSTALLATION, XL-24C. . . . .	REF
-1	61515-000-00	. DECAL, Lift here. . . . .	1
-2	08442-006-00	. DECAL, Max Load 750 Lbs . . . . .	2
-3	61531-000-00	. DECAL, Caution. . . . .	1
-4	05225-000-00	. DECAL, Danger Hydrogen Gas. . . . .	2
-5	27993-000-00	. DECAL, Lower Platform . . . . .	2
-6	14222-003-99	. DECAL, Fork Lift Here . . . . .	2
-7	60865-000-00	. DECAL, Caution (Not Included in Kit). . . . .	REF
-8	61813-000-00	. DECAL, Controller (Not Included in Kit)	REF
-9	05221-000-00	. DECAL, Battery Fluid. . . . .	2
-10	27992-000-00	. DECAL, Caution Do Not Adjust. . . . .	1
-11	05223-000-00	. DECAL, Emergency Down Valve . . . . .	1
-12	61205-000-00	. NAME PLATE. . . . .	1
-13	26551-000-00	. RIVET, Pop 1/8 .188-.250 Grip . . . . .	4
-14	03610-000-00	. DECAL, Contains Important Operating Instructions	1
-15	61750-000-00	. DECAL, Optional, Danger Safety Rules. . (For Fold Down Guardrail)	1
-16	61512-000-00	. DECAL, Danger Safety Rules. . . . . (For Fixed Guardrails)	1
-17	61220-000-00	. DECAL, Meets or Exceeds . . . . .	1
-18	08272-000-00	. DECAL, Up, Down . . . . .	1
-19	08176-000-00	. DECAL, Fuse . . . . .	1
-20	61787-000-00	. DECAL, Danger Guardrails. . . . .	1
-21	61948-000-00	. DECAL, Up-Right XL-24 . . . . .	5
-22	61985-000-00	. DECAL, Up-Right XL-24 . . . . .	1

## SECTION VIII

### ILLUSTRATED PARTS BREAKDOWN FOR OPTIONS

8-1. **INTRODUCTION.** This section lists and illustrates the optional assemblies and parts available for XL-C Series machines, as manufactured and/or provided by Up-Right, Inc.

Note: Although not shown, foam filled tires are available as an option for the XL-19CW and XL-24C models. Part number 61899-000-00 should be used when ordering these tires.

Note: Remove Drive Valve Ground Wires from Ground and Connect to Wires from Switch

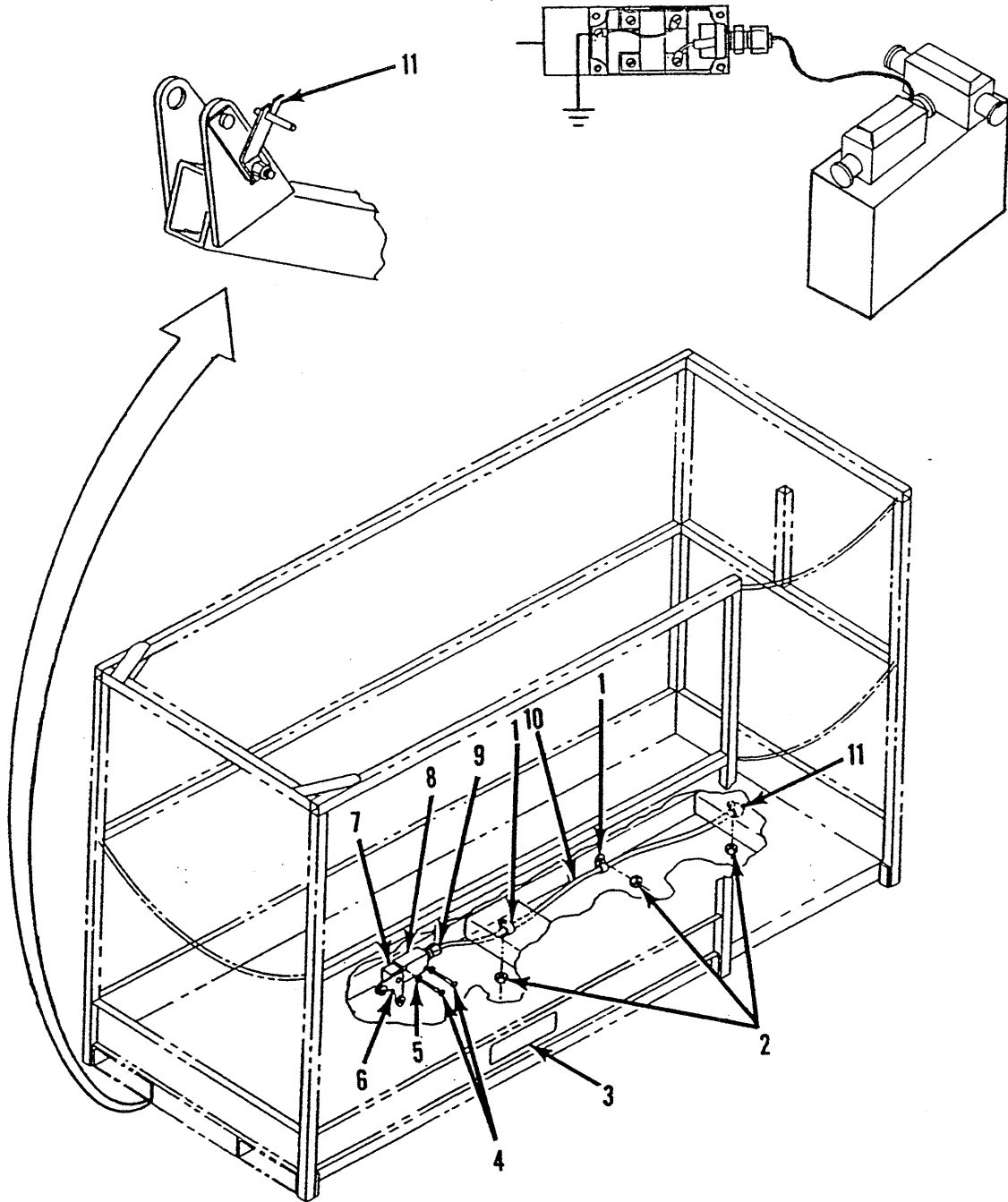


Figure 8-1. 750 LB. Capacity Option, XL-19C

ITEM	PART	DESCRIPTION	QTY
8-1	61580-000-00	750 LB CAPACITY OPTION, XL-19C. . . . .	REF
-1	13919-004-00	. CLAMP, Hose . . . . .	3
-2	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	3
-3	08442-006-00	. DECAL, 750 LBS. . . . .	2
-4	11709-012-00	. SCREW, RD HD MACH 10-24 UNC x 1-1/2 . .	2
-5	11238-002-00	. LOCKWASHER, Split 10 DIA. . . . .	2
-6	15793-006-00	. LEVER . . . . .	1
-7	15793-005-00	. HEAD, Switch. . . . .	1
-8	15793-001-00	. BODY, Switch. . . . .	1
	15793-004-00	. . SWITCH. . . . .	1
-9	29925-000-00	. CONNECTOR, Cable. . . . .	1
-10	29496-099-00	. CABLE, 2 COND 16 GA . . . . .	35 FT
-11	61644-000-00	. ACTUATOR WELDMENT . . . . .	1

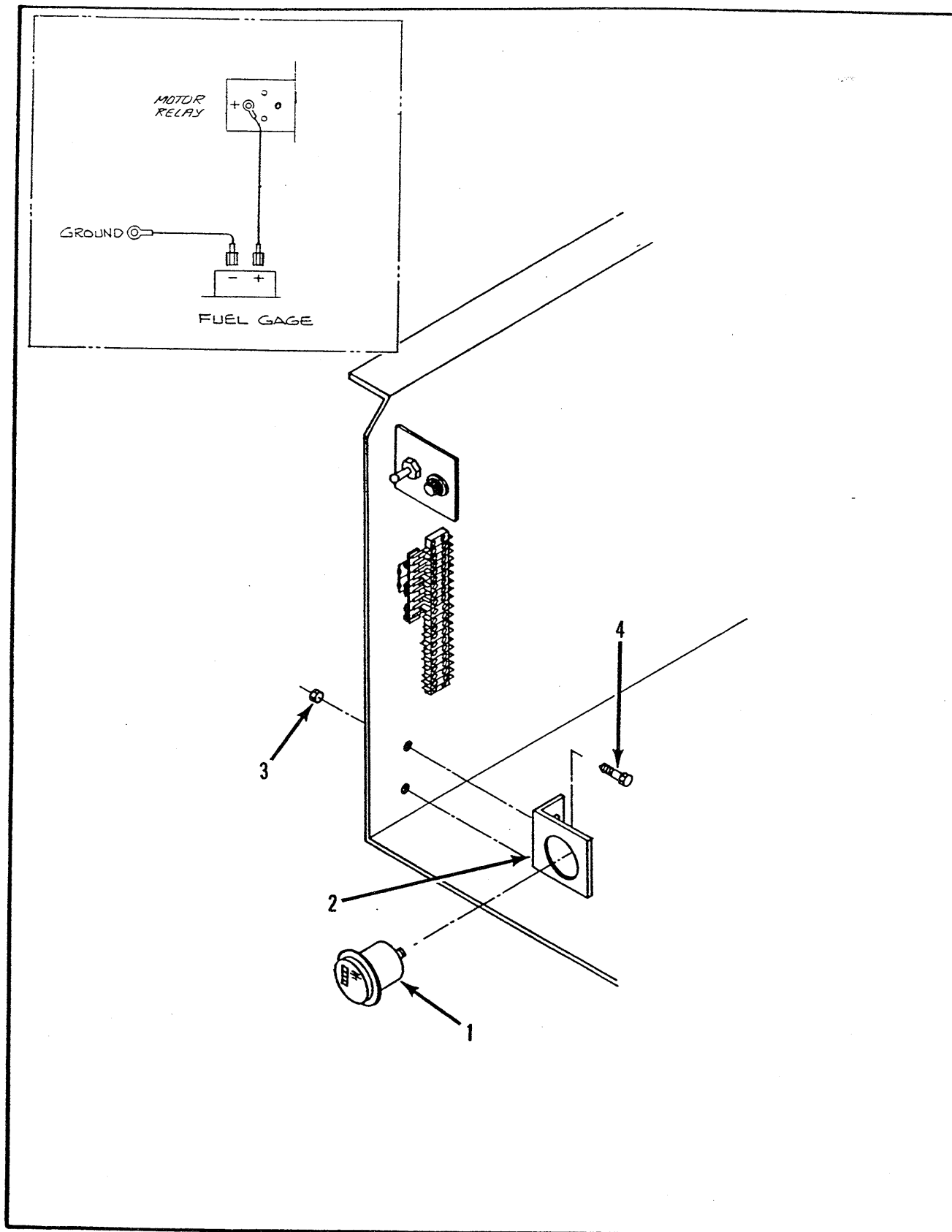


Figure 8-2. Battery Charge Indicator Option, XL-C Series

ITEM	PART	DESCRIPTION	QTY
8-2	61583-000-00	BATTERY CHARGER INDICATOR OPTION, . . . . XL-C Series	REF
-1	15746-000-00	. INDICATOR, Low Voltage. . . . .	1
-2	61647-000-00	. BRACKET . . . . .	1
-3	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-4	11252-008-00	. SCREW, HHC 1/4-20 UNC x 1 . . . . .	2

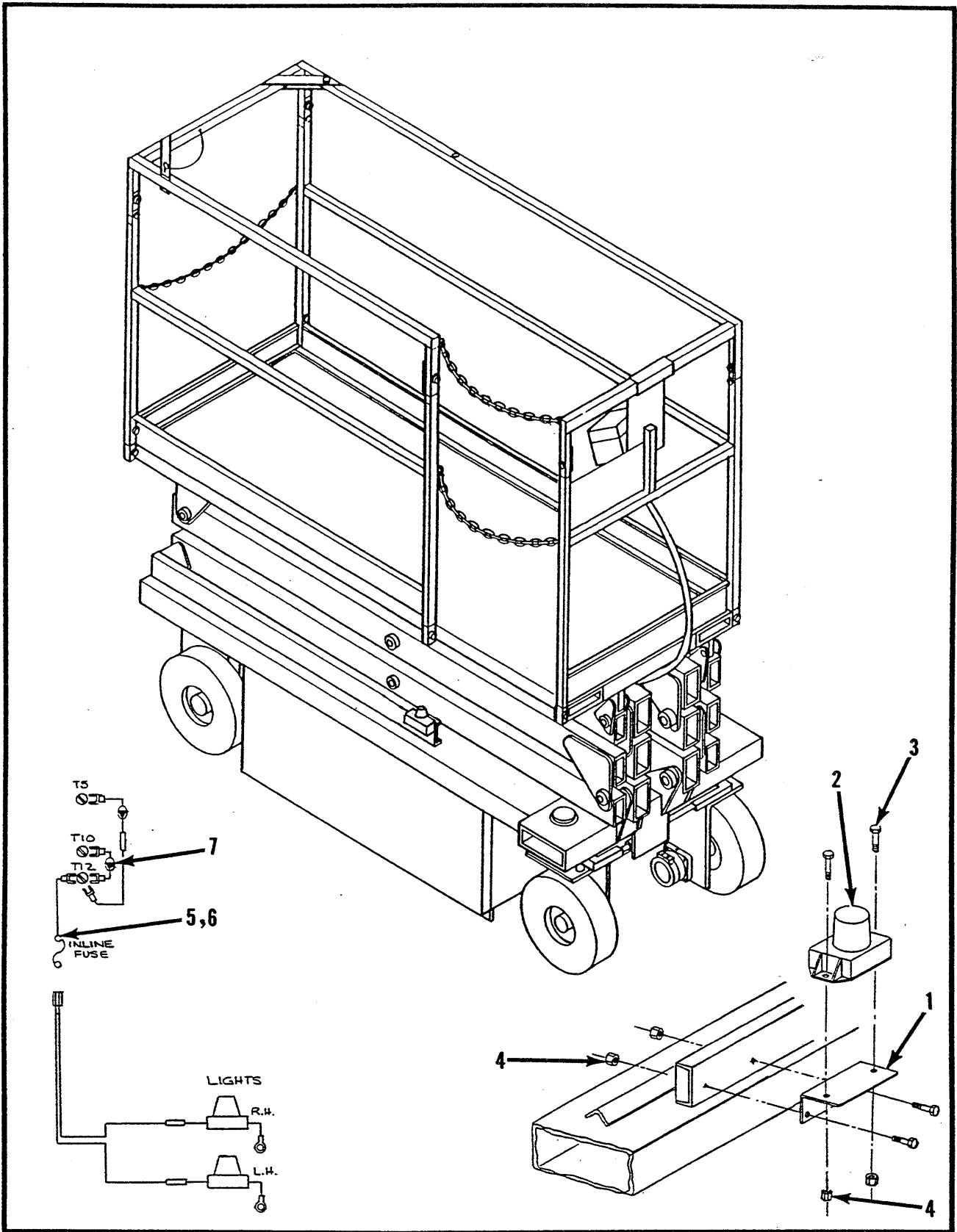


Figure 8-3. Flashing Amber Light Option, XL-C Series



ITEM	PART	DESCRIPTION	QTY
8-3	61918-000-00	FLASHING AMBER LIGHT OPTION, XL-C Series.	REF
-1	63193-000-00	. MOUNT, Light. . . . .	2
-2	12848-004-00	. LIGHT . . . . .	2
-3	11826-008-00	. SCREW, RD HD MACH 10-32 UNF x 1 . . . .	4
-4	11249-003-00	. LOCKNUT, HEX 10-32 UNF. . . . .	4
-5	29704-002-00	. FUSE, 2 AMP . . . . .	1
-6	29702-000-00	. HOLDER, FUSE. . . . .	1
-7	29825-003-00	. DIODE, 3 AMP. . . . .	2

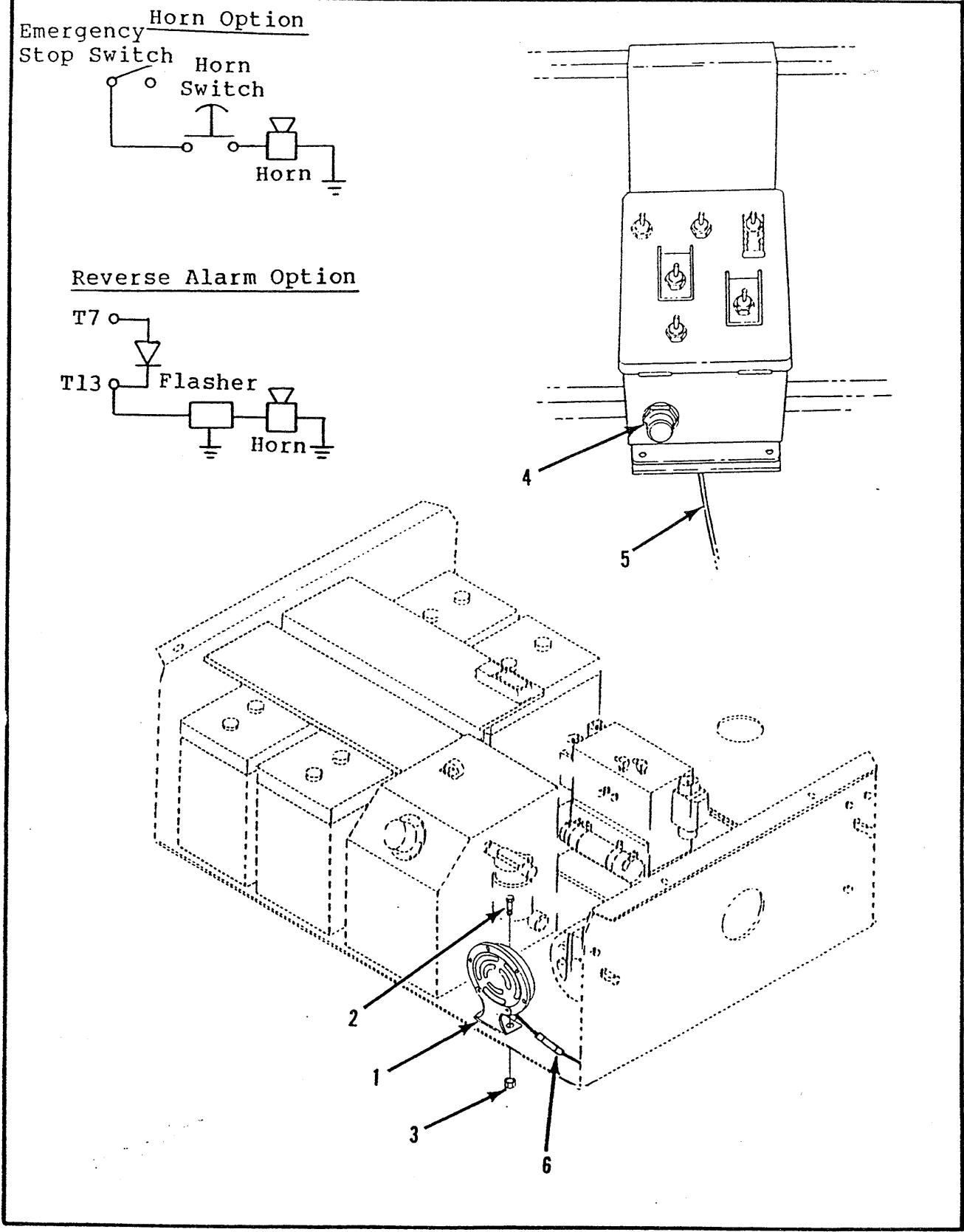


Figure 8-4. Horn and Reverse Alarm Option, XL-C Series

ITEM	PART	DESCRIPTION	QTY
8-4	61917-000-00	HORN OPTION, XL-C Series. . . . .	REF
-1	29958-000-00	. HORN. . . . .	1
-2	11252-008-00	. SCREW, HHC 1/4-20 UNC x 1 . . . . .	2
-3	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-4	13129-000-00	. PUSHBUTTON. . . . .	1
-5	29496-099-00	. CABLE, 2 COND. 16 AWG . . . . .	32 FT
8-4	61587-000-00	REVERSE ALARM OPTION, XL-C Series . . . .	REF
-1	29958-000-00	. HORN. . . . .	1
-2	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	2
-3	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	2
-6	08903-000-00	. FLASHER . . . . .	1

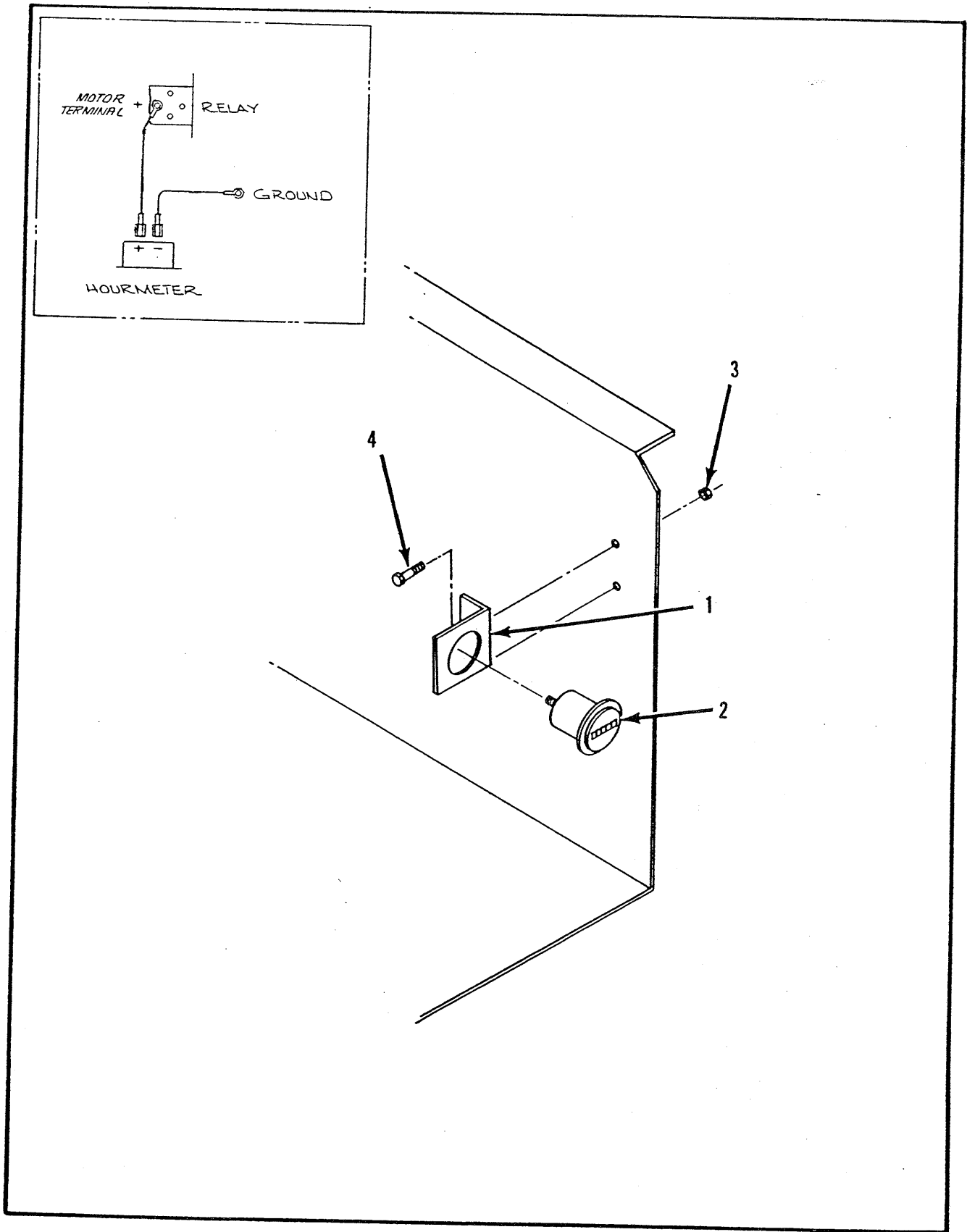


Figure 8-5. Hourmeter Option, XL-C Series

ITEM	PART	DESCRIPTION	QTY
8-5	61584-000-00	HOURMETER OPTION, XL-C Series . . . . .	REF
-1	61647-000-00	. BRACKET . . . . .	1
-2	15752-000-00	. HOURMETER . . . . .	1
-3	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-4	11252-008-00	. SCREW, HHC 1/4-20 UNC x 1 . . . . .	2

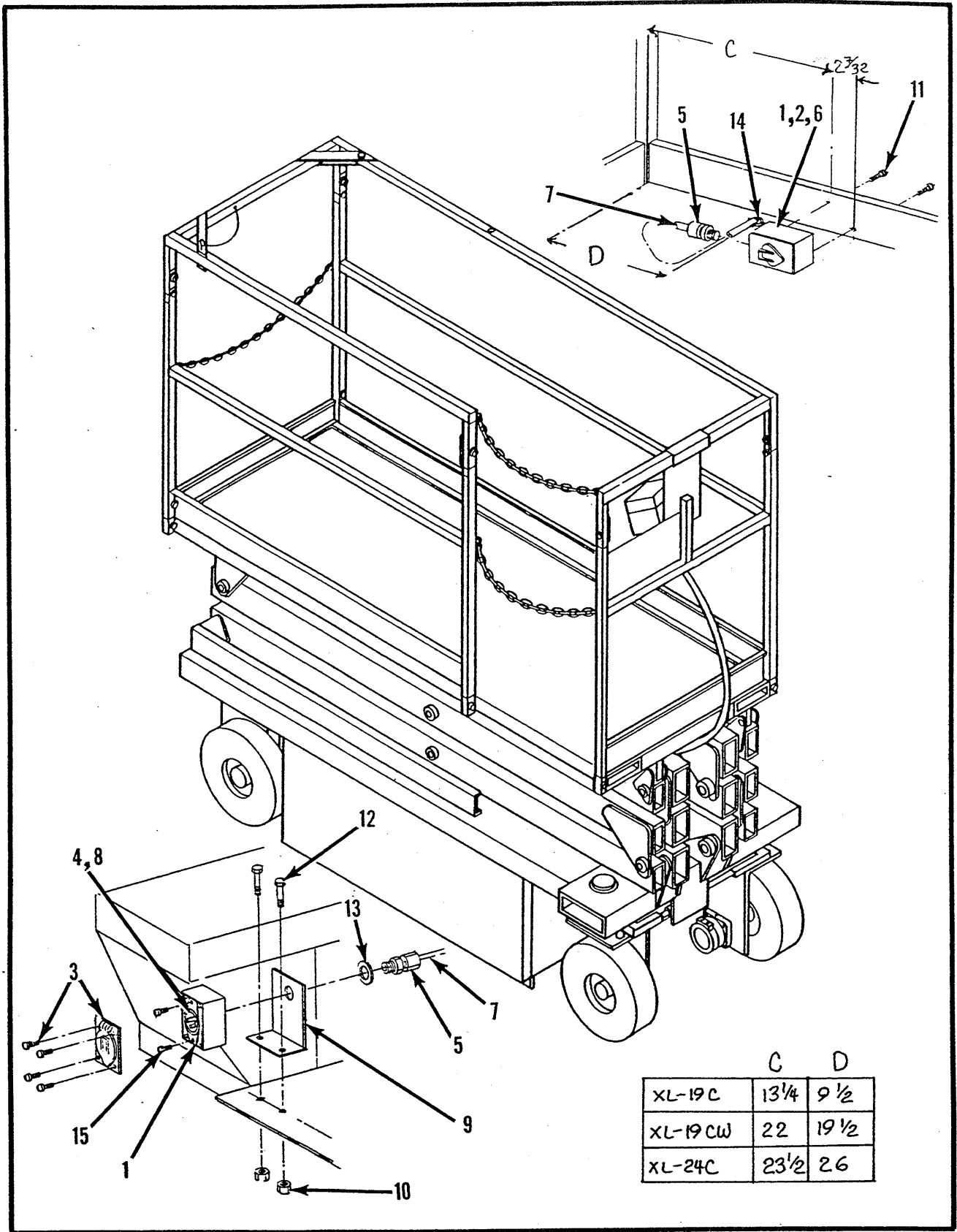


Figure 8-6. Power to Platform Option, XL-C Series

ITEM	PART	DESCRIPTION	QTY
8-6	61913-000-00	POWER TO PLATFORM OPTION, XL-C Series . .	REF
-1	15769-000-00	. BOX . . . . .	2
-2	08942-000-00	. RECEPTACLE. . . . .	1
-3	29962-000-00	. COVER, Box. . . . .	1
-4	29961-000-00	. FLANGE, Inlet . . . . .	1
-5	29925-003-00	. CONNECTOR, Cable. . . . .	2
-6	26611-002-00	. COVER, Box. . . . .	1
-7	29495-099-00	. CABLE, 3 COND 14 AWG. . . . .	41 FT
-8	15788-000-00	. SUBPLATE. . . . .	1
-9	61914-000-00	. BRACKET . . . . .	1
-10	11249-003-00	. NUT, 10-32 UNF. . . . .	2
-11	11811-006-00	. SCREW, RD HD 6-32 UNC x 1/2 . . . . .	4
-12	11826-008-00	. SCREW, RD HD 10-32 UNF x 1. . . . .	2
-13	11240-014-00	. WASHER, Flat 7/8 DIA. . . . .	1
-14	12956-010-00	. GROMMET . . . . .	2
-15	11715-004-00	. SCREW, RD HD MACH 6-32 UNC x 1/2. . . . .	2

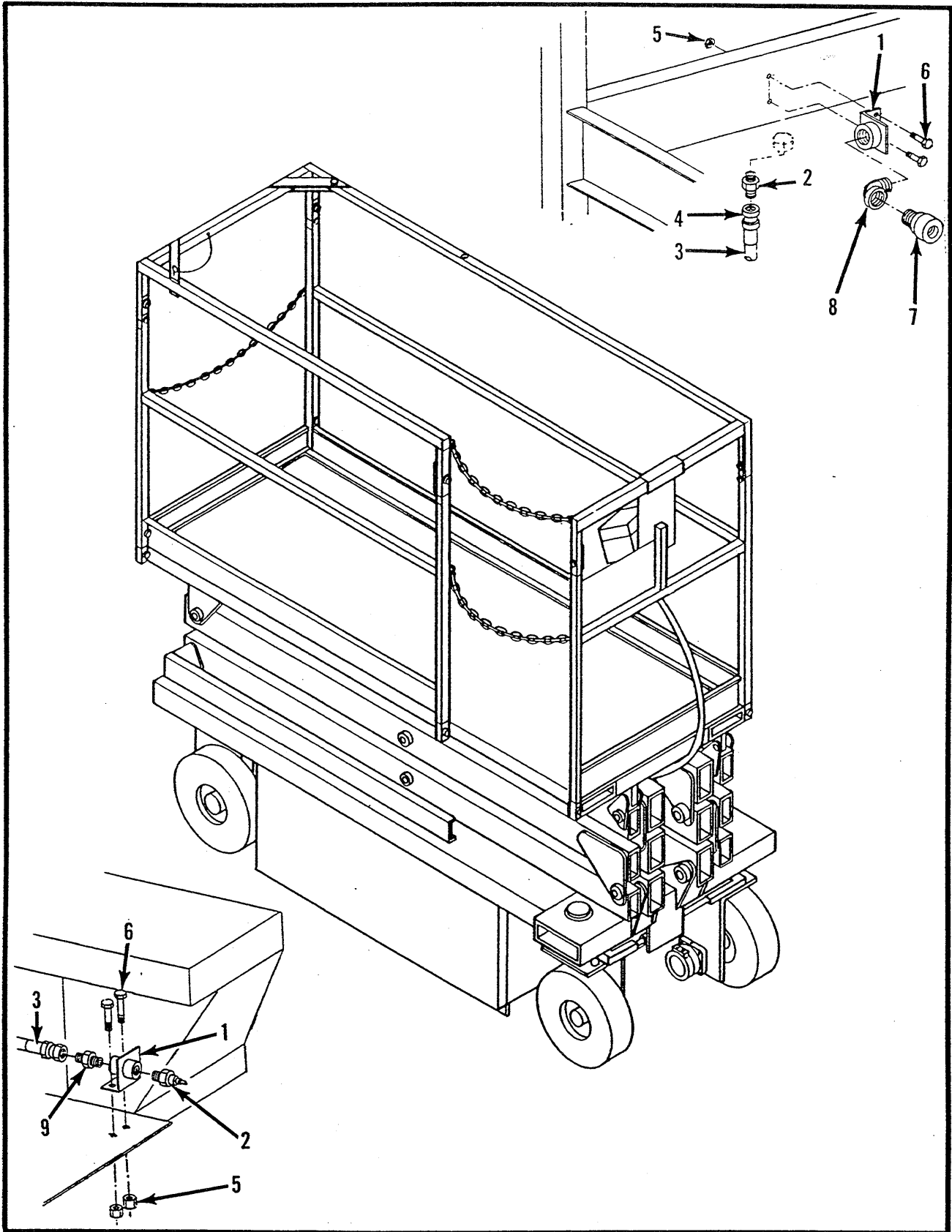


Figure 8-7. Air to Platform Option, XL-C Series



ITEM	PART	DESCRIPTION	QTY
8-7	61919-000-00	AIR TO PLATFORM OPTION, XL-C Series . . .	REF
-1	63191-000-00	. BRACKET . . . . .	1
-2	12728-000-00	. COUPLING, Male. . . . .	1
-3	15770-099-00	. HOSE, 3/8 (XL-19, XL-19CW). . . . .	28 FT
		. HOSE, 3/8 (XL-24) . . . . .	34 FT
-4	15773-005-00	. END, Hose . . . . .	2
-5	11249-003-00	. NUT, HEX 10-32 UNF. . . . .	4
-6	11826-005-00	. SCREW, RD HD 10-23 UNF x 1. . . . .	4
-7	12729-003-00	. COUPLING, Male. . . . .	1
-8	11917-007-00	. FITTING, Elbow. . . . .	1
-9	13487-004-00	. FITTING, Straight . . . . .	1

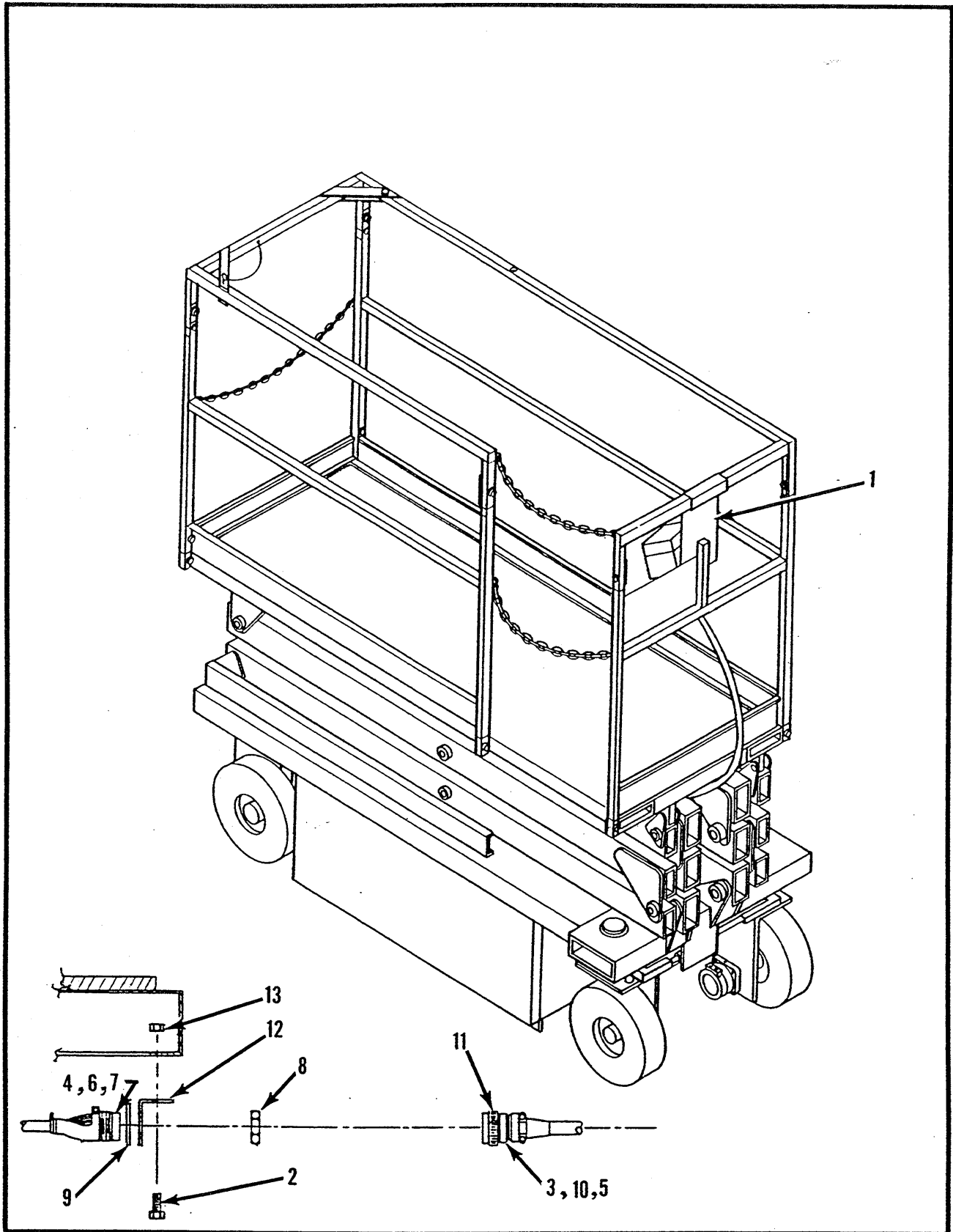


Figure 8-8. Removable Controller Option, XL-C Series

ITEM	PART	DESCRIPTION	QTY
8-8	61898-000-00	REMOVABLE CONTROLLER OPTION, . . . . . XL-C Series	REF
-1	61804-000-00	. CONTROLLER. . . . .	REF
-2	11252-026-00	. SCREW, HHC 1/4-20 UNC x 3-1/4, . . . . . (XL-19C)	1
	11252-006-00	. SCREW, HHC 1/4-20 UNC x 3/4, . . . . . (XL-19CW & XL-24)	1
-3	28800-001-00	. PLUG, Connector . . . . .	1
-4	28800-002-00	. RECEPTICAL. . . . .	1
-5	28800-004-00	. PIN, Contact. . . . .	12
-6	28800-005-00	. SOCKET. . . . .	12
-7	28800-007-00	. STRAIN RELIEF . . . . .	1
-8	28800-013-00	. NUT, Panel. . . . .	1
-9	28800-014-00	. LOCKWASHER. . . . .	1
-10	28800-015-00	. PLUG, Sealing . . . . .	11
-11	29904-008-00	. CLAMP, Cable. . . . .	1
-12	61839-000-00	. BRACKET, Cable. . . . .	1
-13	11248-004-00	. LOCKNUT, 1/4-20 UNC . . . . .	2

Note: For Wiring of Switch See  
750 LBS Option

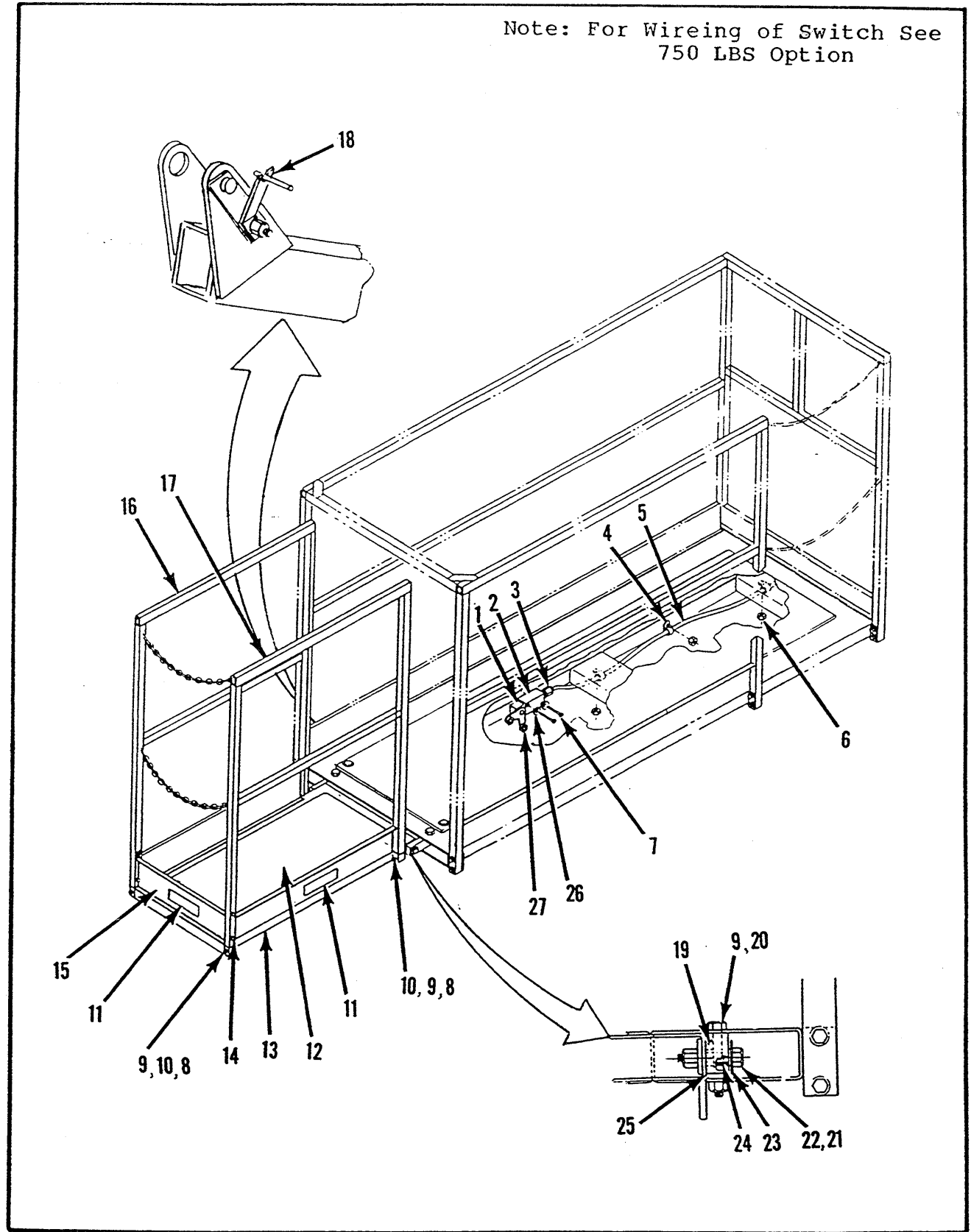


Figure 8-9. Fold Down Deck Option, XL-19C

ITEM	PART	DESCRIPTION	QTY
8-9	61581-000-00	FOLD DOWN DECK OPTION, XL-19C . . . . .	REF
-1	15793-005-00	. HEAD, Switch. . . . .	1
-2	15793-001-00	. BODY, Switch. . . . .	1
	15793-004-00	. . SWITCH. . . . .	1
-3	29925-000-00	. CONNECTOR, Cable. . . . .	1
-4	13919-004-00	. CLAMP . . . . .	3
-5	29496-099-00	. CABLE, 2 COND, 16 AWG . . . . .	32 FT
-6	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	3
-7	11709-012-00	. SCREW, RD HD MACH 10-24 UNC x 1 . . . . .	2
-8	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	10
-9	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	12
-10	11254-014-00	. SCREW, HHC 3/8-16 UNC x 1-3/4 . . . . .	4
-11	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-12	60086-000-00	. SAFETY WALK . . . . .	1
-13	61621-000-00	. DECK EXTENSION WELDMENT . . . . .	1
-14	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	4
-15	61633-000-00	. KICKRAIL. . . . .	1
-16	61629-000-00	. RAIL, LH. . . . .	1
-17	61628-000-00	. RAIL, RH. . . . .	1
-18	61644-000-00	. ACTUATOR. . . . .	1
-19	61636-000-00	. BAR, Pivot. . . . .	2
-20	11254-022-00	. SCREW, HHC 3/8-16 UNC x 2-3/4 . . . . .	4
-21	11256-020-00	. SCREW, HHC 1/2-13 UNC x 2-1/2 . . . . .	2
-22	11248-008-00	. LOCKNUT, HEX 1/2-13 UNC . . . . .	2
-23	11240-008-00	. WASHER, Flat 1/2 DIA. . . . .	2

ITEM	PART	DESCRIPTION	QTY
8-9	61581-000-00	FOLD DOWN DECK OPTION, XL-19C (Cont'd) . .	REF
-24	61635-000-00	. BUSHING, Pivot. . . . .	2
-25	61643-000-00	. SHIM, Pivot Bar . . . . .	2
-26	11240-003-00	. LOCKWASHER. . . . .	2
-27	15793-006-00	. LEVER . . . . .	1

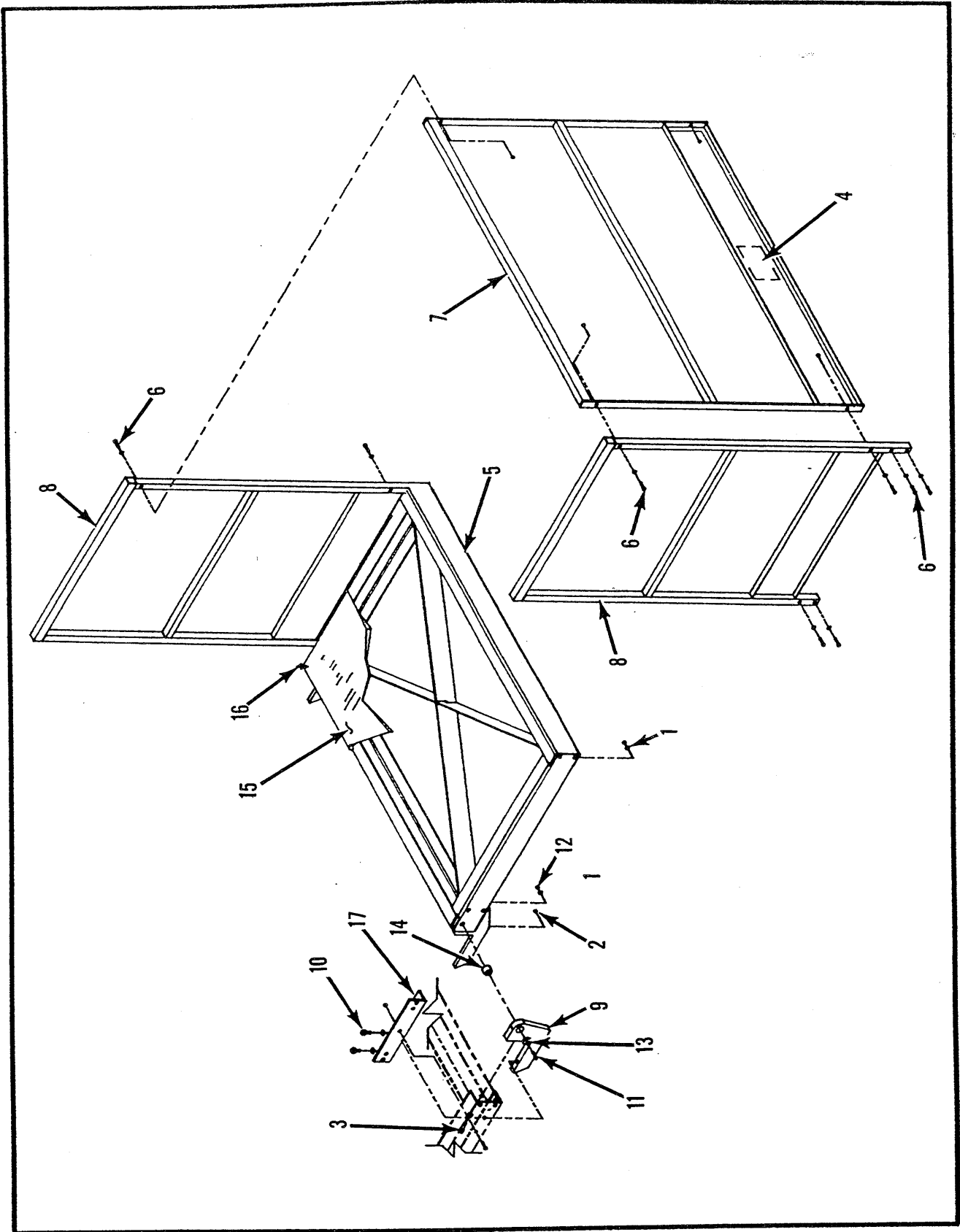


Figure 8-10. Fold Down Deck Option, XL-19CW  
Serial No. 5001 to 5030

ITEM	PART	DESCRIPTION	QTY
8-10	61895-000-00	FOLD DOWN DECK OPTION, XL-19CW, . . . . . Serial No. 5001 TO 5030	REF
-1	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	10
-2	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	12
-3	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	4
-4	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-5	61903-000-00	. DECK WELDMENT, Fold Down. . . . .	1
-6	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	4
-7	61901-000-00	. RAIL, Rear. . . . .	1
-8	61902-000-00	. RAIL, Side. . . . .	1
-9	61900-000-00	. PIVOT DECK. . . . .	2
-10	11254-022-00	. SCREW, HHC 3/8-16 UNC x 2-3/4 . . . . .	4
-11	11256-022-00	. SCREW, HHC 1/2-13 UNC x 2-3/4 . . . . .	2
-12	11248-008-00	. LOCKNUT, HEX 1/2-13 UNC . . . . .	2
-13	11240-008-00	. WASHER, Flat 1/2 DIA. . . . .	2
-14	61910-000-00	. BUSHING, Pivot. . . . .	2
-15	24611-005-00	. PLYWOOD . . . . .	1
-16	26554-006-00	. RIVET, Pop 1/4 DIA. . . . .	4
-17	61942-000-00	. ANGLE . . . . .	2



ITEM	PART	DESCRIPTION	QTY
8-11	61955-000-00	FOLD DOWN DECK OPTION, XL-19CW, Serial. . No. 5031 to Current, & XL-24C	REF
-1	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	26
-2	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	16
-3	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-4	61962-000-00	. DECK EXTENSION WELDMENT . . . . .	1
-5	24611-004-00	. PLYWOOD . . . . .	1
-6	26554-006-00	. RIVET, 1/4 DIA x 3/4. . . . .	8
-7	11254-016-00	. SCREW, HHC 3/8-16 UNC x 2 . . . . .	4
-8	61960-000-00	. RAIL, Side. . . . .	1
-9	61901-000-00	. RAIL, Rear. . . . .	1
-10	61900-000-00	. PIVOT, Deck . . . . .	2
-11	11254-022-00	. SCREW, HHC 3/8-16 UNC x 2-3/4 . . . . .	4
-12	11256-022-00	. SCREW, HHC 1/2-13 UNC x 2-3/4 . . . . .	2
-13	11248-008-00	. LOCKNUT, HEX 1/2-13 UNC . . . . .	2
-14	11240-008-00	. WASHER, Flat 1/2 DIA. . . . .	2
-15	61910-000-00	. BUSHING, Pivot. . . . .	2
-16	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	4
-17	61942-000-00	. ANGLE . . . . .	2

Note: For Wiring of Switch See  
750 LBS Option

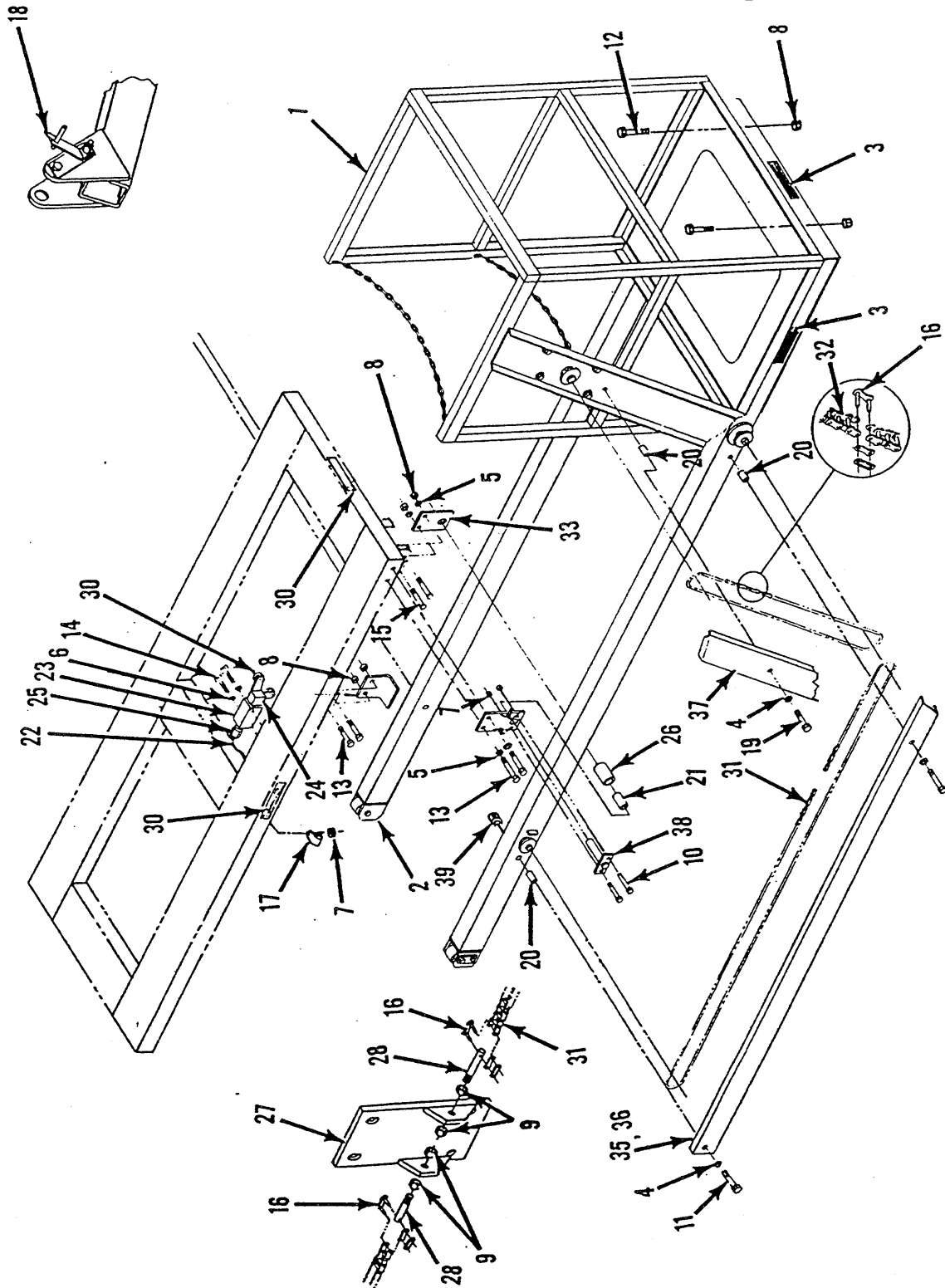


Figure 8-12. Cantilever Cage Option Installation, XL-19C

ITEM	PART	DESCRIPTION	QTY
8-12	61582-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19C	REF
-1	61601-000-00	. CAGE ASSEMBLY . . . . . (See Figure 8-15)	1
-2	61602-000-00	. ROLLING FRAME ASSEMBLY. . . . . (See Figure 8-17)	1
-3	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-4	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	8
-5	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	8
-6	11238-002-00	. LOCKWASHER, Split 10 DIA. . . . .	2
-7	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	13
-8	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	12
-9	11250-004-00	. NUT, HEX 1/4-20 UNC . . . . .	8
-10	11252-008-00	. SCREW, HHC 1/4-20 UNC . . . . .	4
-11	11252-030-00	. SCREW, HHC 1/4-20 UNC x 3-3/4 . . . . .	4
-12	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	4
-13	11254-010-00	. SCREW, HHC 3/8-16 UNC x 1-1/4 . . . . .	8
-14	11709-012-00	. SCREW, RD HD MACH 10-24 UNC x 1-1/2 . . . . .	2
-15	11741-010-00	. SCREW, Flat HD SOC 3/8-16 UNC . . . . . x 1-1/4	4
-16	11884-003-00	. LINK, Connecting. . . . .	5
-17	13919-004-00	. CLAMP, Hose . . . . .	3
-18	61644-000-00	. ACTUATOR WELDMENT . . . . .	1
-19	11252-016-00	. SCREW, HHC 1/4-20 UNC x 2 . . . . .	2
-20	17404-002-00	. SPACER. . . . .	5
-21	27931-010-00	. BEARING . . . . .	4
-22	29496-099-00	. CABLE, 2 COND 16 AWG. . . . .	32 FT

ITEM	PART	DESCRIPTION	QTY
8-12	61582-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19C (Cont'd)	REF
-23	15793-001-00	. BODY, Switch. . . . .	1
	15793-004-00	. . SWITCH. . . . .	1
-24	15793-005-00	. HEAD, Switch. . . . .	1
-25	29925-000-00	. CONNECTOR, Cable. . . . .	1
-26	61617-000-00	. ROLLER. . . . .	2
-27	61318-000-00	. BRACKET WELDMENT. . . . .	2
-28	61322-000-00	. SCREW, Chain Adjustment . . . . .	4
-29	61355-000-00	. SAFETY WALK . . . . .	1
-30	15793-006-00	. LEVER . . . . .	1
-31	05641-015-00	. CHAIN x 285 Pitches . . . . .	2
-32	05641-012-00	. CHAIN x 195 Pitches . . . . .	1
-33	61609-000-00	. BRACKET . . . . .	2
-34	61610-000-00	. RETAINER. . . . .	2
-35	61611-000-00	. GUARD, LH . . . . .	1
-36	61612-000-00	. GUARD, RH . . . . .	1
-37	61613-000-00	. GUARD . . . . .	1
-38	61615-000-00	. PIN . . . . .	2
-39	11246-004-00	. LOCKNUT, HEX Thin 1/4-20 UNC. . . . .	4

ITEM	PART	DESCRIPTION	QTY
8-13	61897-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19CW, Serial No. 5001 to 5030	REF
-1	61921-000-00	. CAGE ASSEMBLY . . . . . (See Figure 8-16)	1
-2	61922-000-00	. ROLLING FRAME ASSEMBLY. . . . . (See Figure 8-18)	1
-3	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-4	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	10
-5	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	2
-6	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	4
-7	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	24
-8	11250-004-00	. NUT, HEX 1/4-20 UNC . . . . .	8
-9	11252-008-00	. SCREW, HHC 1/4-20 UNC . . . . .	4
-10	11252-030-00	. SCREW, HHC 1/4-20 UNC x 3-3/4 . . . . .	4
-11	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	4
-12	11254-010-00	. SCREW, HHC 3/8-16 UNC x 1-1/4 . . . . .	10
-13	11254-032-00	. SCREW, HHC 3/8-16 UNC x 4 . . . . .	4
-14	11884-003-00	. LINK, Connecting. . . . .	5
-15	11252-016-00	. SCREW, HHC 1/4-20 UNC x 2 . . . . .	2
-16	17404-002-00	. SPACER. . . . .	5
-17	27931-010-00	. BEARING . . . . .	4
-18	61617-000-00	. ROLLER. . . . .	2
-19	61936-000-00	. TRACK CHANNEL, LH . . . . .	1
-20	61322-000-00	. SCREW, Chain Adjustment . . . . .	4
-21	61355-000-00	. SAFETY WALK . . . . .	1
-22	61937-000-00	. TRACK CHANNEL, RH . . . . .	1
-23	05641-011-00	. CHAIN x 291 Pitches . . . . .	2

ITEM	PART	DESCRIPTION	QTY
8-13	61897-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19CW Serial No. 5001 to 5030 (Cont'd)	REF
-24	05641-012-00	. CHAIN x 195 Pitches . . . . .	1
-25	61930-000-00	. GUIDE, Cantilever Cage. . . . .	1
-26	61611-000-00	. GUARD, LH . . . . .	1
-27	61612-000-00	. GUARD, RH . . . . .	1
-28	61613-000-00	. GUARD . . . . .	1
-29	61615-000-00	. PIN . . . . .	2
-30	11246-004-00	. NUT, ESNA 1/4-20 Thin . . . . .	4
-31	60643-000-00	. BEARING, Round Slide. . . . .	2
-32	11282-008-00	. SCREW, Flat HD 1/4-20 x 1 . . . . .	2

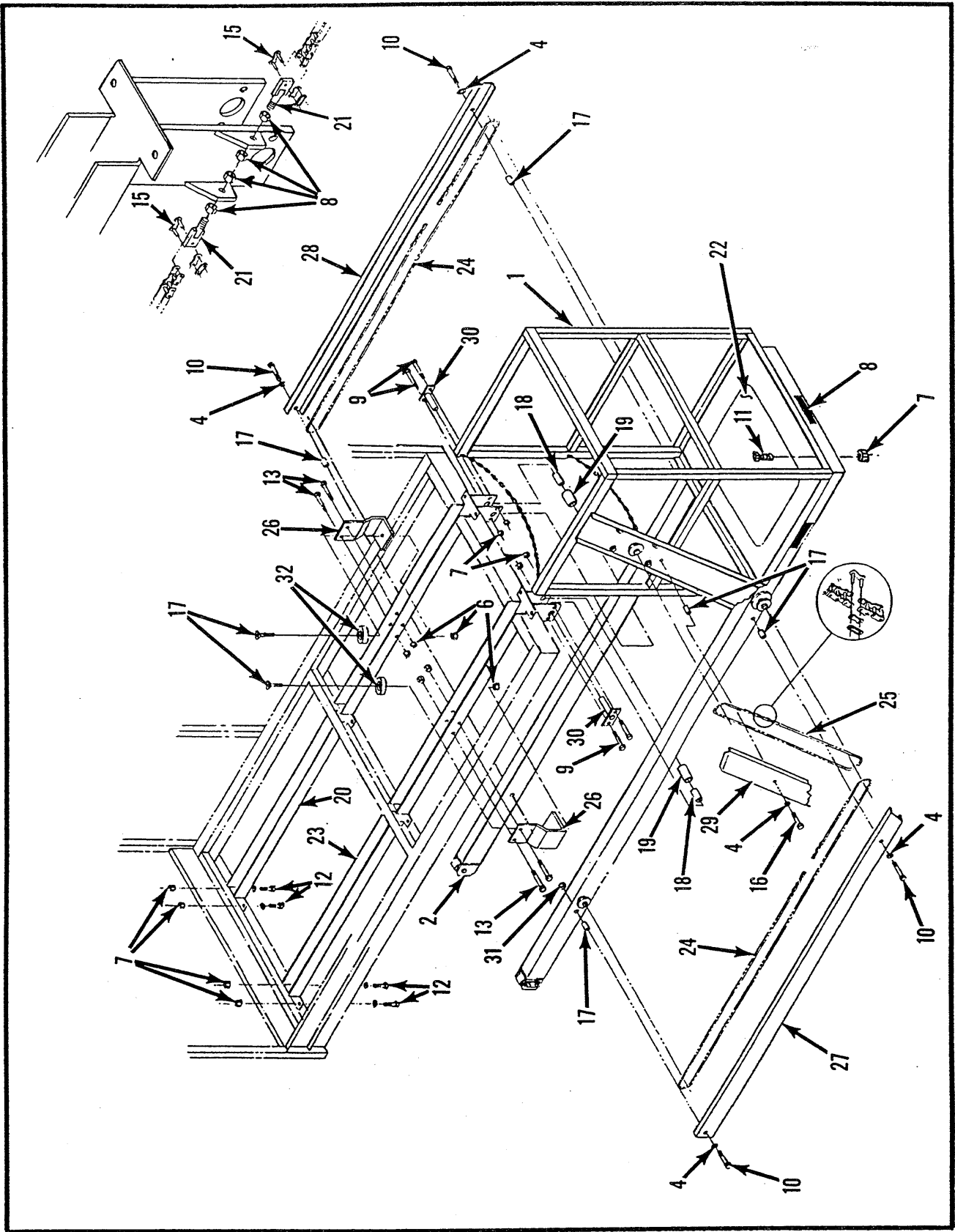


Figure 8-14. Cantilever Cage Option Installation, XL-19CW  
Serial No. 5031 to Current & XL-24C

ITEM	PART	DESCRIPTION	QTY
8-14	61951-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19CW Serial No. 5031 to Current & XL-24C	REF
-1	61921-000-00	. CAGE ASSEMBLY . . . . . (See Figure 8-16)	1
-2	61922-000-00	. ROLLING FRAME ASSEMBLY. . . . . (See Figure 8-18)	1
-3	05652-000-00	. DECAL, Max Load 250 LBS . . . . .	3
-4	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	10
-5	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	12
-6	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	4
-7	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	24
-8	11250-004-00	. NUT, HEX 1/4-20 UNC . . . . .	8
-9	11252-008-00	. SCREW, HHC 1/4-20 UNC . . . . .	4
-10	11252-030-00	. SCREW, HHC 1/4-20 UNC x 3-3/4 . . . . .	4
-11	11254-008-00	. SCREW, HHC 3/8-16 UNC x 1 . . . . .	4
-12	11254-010-00	. SCREW, HHC 3/8-16 UNC x 1-1/4 . . . . .	10
-13	11254-032-00	. SCREW, HHC 3/8-16 UNC x 4 . . . . .	4
-14	11828-008-00	. SCREW, Flat HD SOC 1/4-20 UNC x 1 . . . . .	2
-15	11884-003-00	. LINK, Connecting. . . . .	5
-16	11252-016-00	. SCREW, HHC 1/4-20 UNC x 2 . . . . .	2
-17	17404-002-00	. SPACER. . . . .	5
-18	27931-010-00	. BEARING . . . . .	4
-19	61617-000-00	. ROLLER. . . . .	2
-20	61964-000-00	. TRACK CHANNEL, RH . . . . .	1
-21	61322-000-00	. SCREW, Chain Adjustment . . . . .	4
-22	61355-000-00	. SAFETY WALK . . . . .	1
-23	61980-000-00	. TRACK CHANNEL, LH . . . . .	1



ITEM	PART	DESCRIPTION	QTY
8-14	61951-000-00	CANTILEVER CAGE OPTION INSTALLATION, . . . XL-19CW Serial No. 5031 to Current & XL-24C (Continued)	REF
-24	05641-011-00	. CHAIN x 291 Pitches . . . . .	2
-25	05641-012-00	. CHAIN x 195 Pitches . . . . .	1
-26	61930-000-00	. GUIDE, Cantilever Cage. . . . .	2
-27	61611-000-00	. GUARD, LH . . . . .	1
-28	61612-000-00	. GUARD, RH . . . . .	1
-29	61613-000-00	. GUARD . . . . .	1
-30	61615-000-00	. PIN . . . . .	2
-31	11246-004-00	. NUT, ESNA 1/4-20 Thin . . . . .	4
-32	60643-000-00	. BEARING, Round Slide. . . . .	2

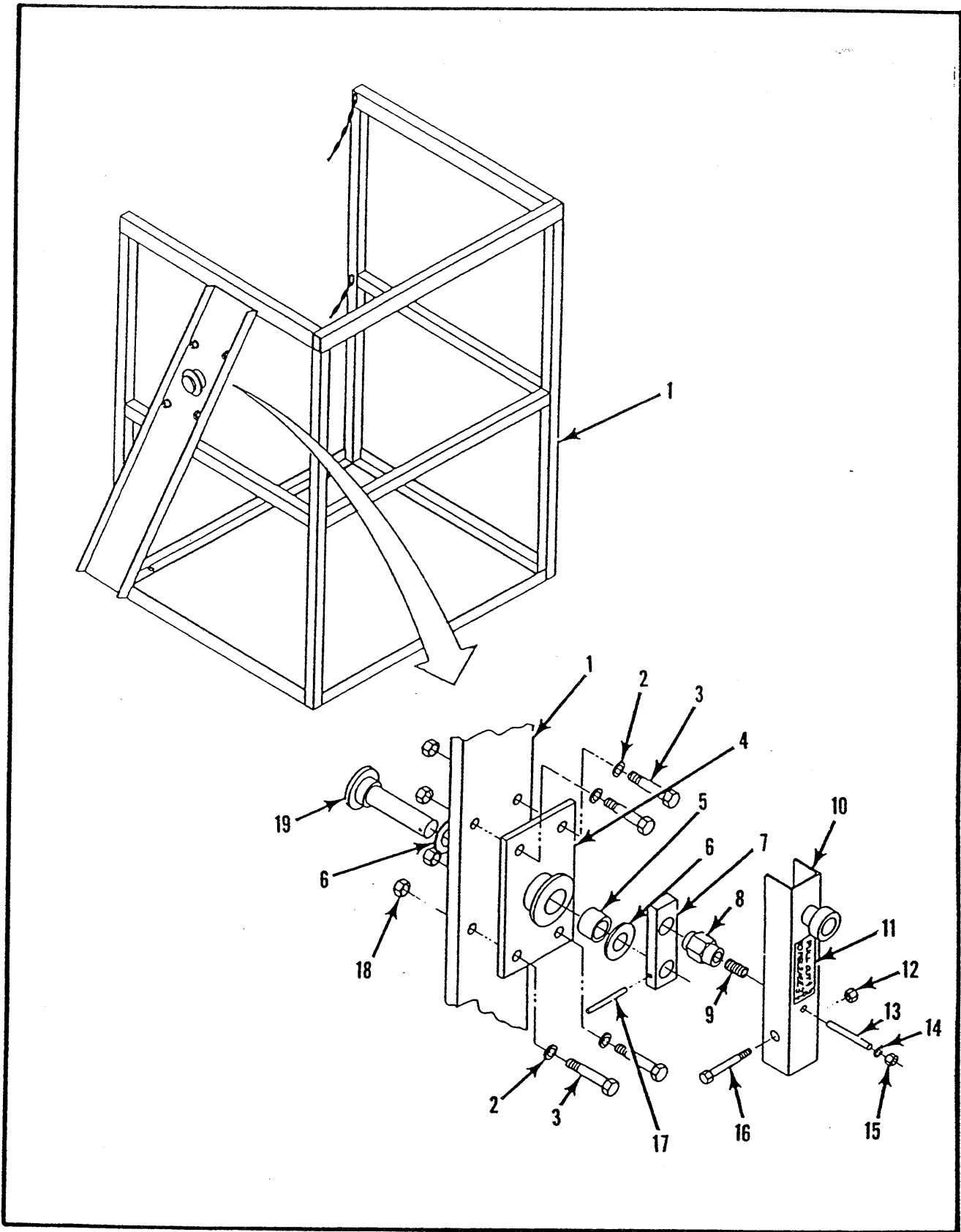


Figure 8-15. Cage Assembly, Cantilever Cage Option, XL-19C

ITEM	PART	DESCRIPTION	QTY
8-15	61601-000-00	CAGE ASSEMBLY, Cantilever Cage Option, . . XL-19C (See Figure 8-12 for NHA)	REF
-1	61603-000-00	. CAGE WELDMENT . . . . .	1
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	4
-3	11254-008-00	. SCREW, HHC 3/8-16 UNC GR5 x 1 . . . . .	4
-4	61316-000-00	. PLATE WELDMENT. . . . .	1
-5	27931-018-00	. BEARING . . . . .	1
-6	06452-000-00	. BEARING, Thrust . . . . .	2
-7	05346-000-00	. ARM . . . . .	1
-8	03443-001-00	. HOUSING . . . . .	1
-9	05376-000-00	. SPRING. . . . .	1
-10	61353-000-00	. HANDLE. . . . .	1
-11	61352-000-00	. DECAL, Pull Out . . . . .	1
-12	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	1
-13	05373-000-00	. PIN, Retaining. . . . .	1
-14	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	1
-15	11246-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	1
-16	11253-014-00	. SCREW, HHC 5/16-18 UNC x 1-3/4. . . . .	1
-17	11735-020-00	. PIN, Roll . . . . .	1
-18	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	4
-19	61307-000-00	. SHAFT . . . . .	1

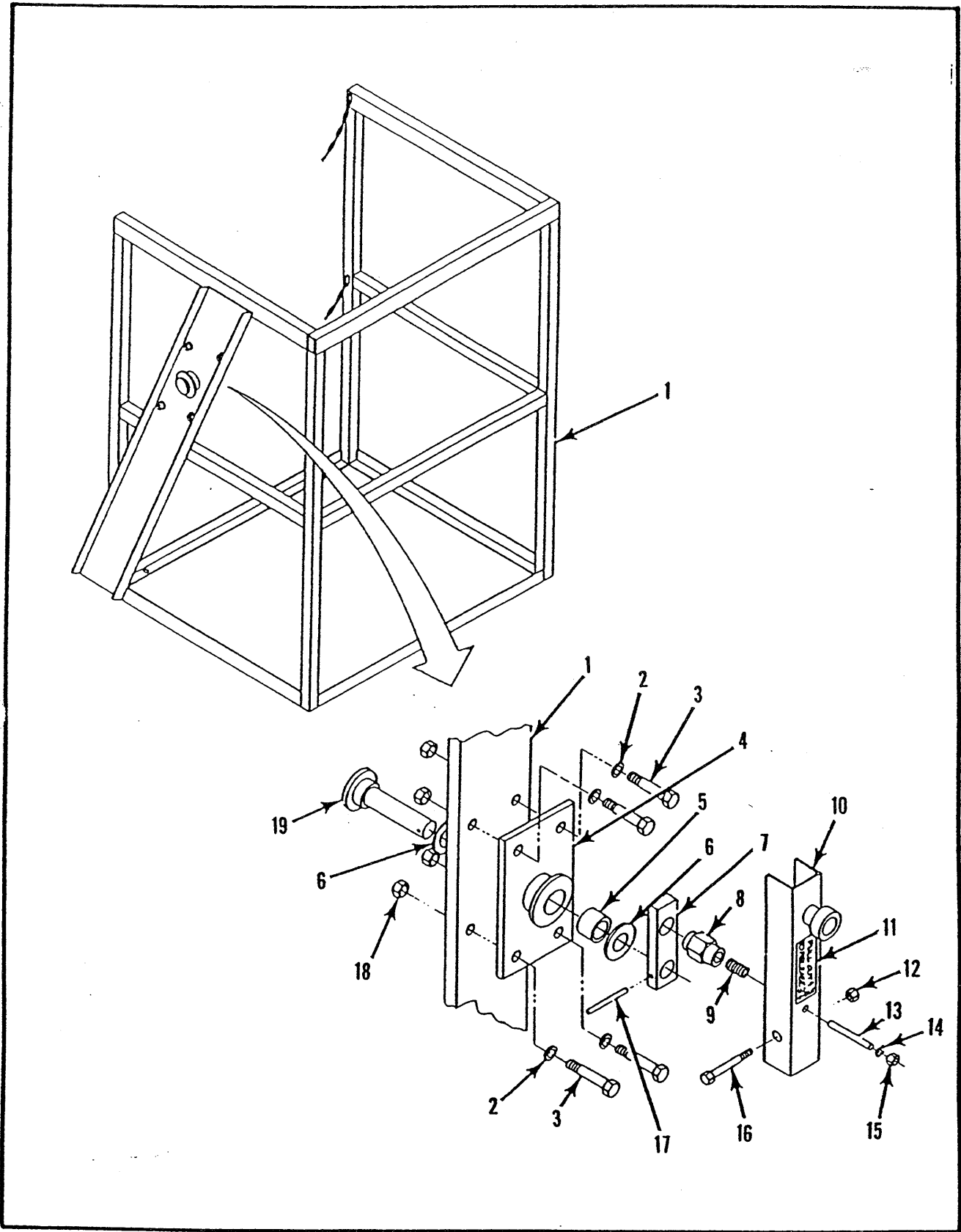


Figure 8-16. Cage Assembly, Cantilever Cage Option,  
XL-19CW & XL-24C

ITEM	PART	DESCRIPTION	QTY
8-16	61921-000-00	CAGE ASSEMBLY, Cantilever Cage Option, . . XL-19CW & XL-24C (See Figures 8-13 and 8-14 for NHA)	REF
-1	61923-000-00	. CAGE WELDMENT . . . . .	1
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	4
-3	11254-008-00	. SCREW, HHC 3/8-16 UNC GR5 x 1 . . . . .	4
-4	61316-000-00	. PLATE WELDMENT. . . . .	1
-5	27931-018-00	. BEARING . . . . .	1
-6	06452-000-00	. BEARING, Thrust . . . . .	2
-7	05346-000-00	. ARM . . . . .	1
-8	03443-001-00	. HOUSING . . . . .	1
-9	05376-000-00	. SPRING. . . . .	1
-10	61353-000-00	. HANDLE. . . . .	1
-11	61352-000-00	. DECAL, Pull Out . . . . .	1
-12	11248-005-00	. LOCKNUT, HEX 5/16-18 UNC. . . . .	1
-13	05373-000-00	. PIN, Retaining. . . . .	1
-14	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	1
-15	11246-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	1
-16	11253-012-00	. SCREW, HHC 5/16-18 UNC GR5 x 1-1/2. . . . .	1
-17	11735-020-00	. PIN, Roll . . . . .	1
-18	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	4
-19	61307-000-00	. SHAFT . . . . .	1



ITEM	PART	DESCRIPTION	QTY
8-17	61602-000-00	ROLLING FRAME ASSEMBLY, Cantilever. . . . Cage Option, XL-19C (See Figure 8-12 for NHA)	REF
-1	61604-000-00	. ROLLING FRAME . . . . .	1
-2	00173-000-00	. BEARING . . . . .	6
-3	11735-020-00	. PIN, Roll . . . . .	1
-4	61359-000-00	. SPROCKET. . . . .	1
-5	06452-000-00	. BEARING, Thrust . . . . .	4
-6	61340-000-00	. SPACER. . . . .	1
-7	61313-000-00	. SHAFT WELDMENT. . . . .	1
-8	61310-000-00	. SHAFT WELDMENT. . . . .	2
-9	11764-012-00	. RING, Retaining . . . . .	2
-10	11252-008-00	. SCREW, HHC 1/4-20 UNC GR5 x 1 . . . . .	2
-11	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	4
-12	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-13	61304-000-00	. PIN WELDMENT. . . . .	2
-14	61336-000-00	. ROLLER. . . . .	2
-15	27931-010-00	. BEARING : . . . . .	2

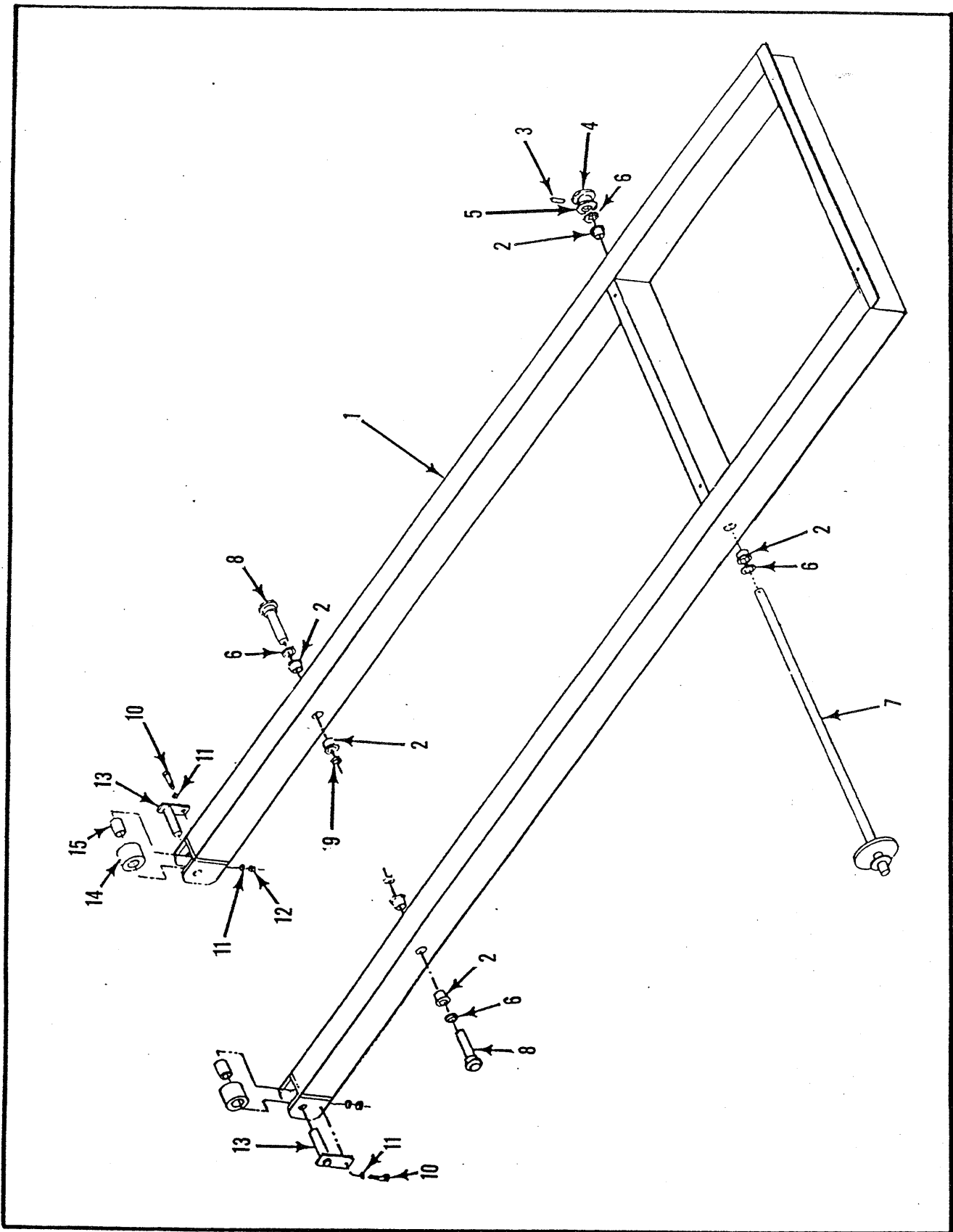


Figure 8-18. Rolling Frame Assembly, Cantilever Cage Option, XL-19CW & XL-24C



ITEM	PART	DESCRIPTION	QTY
8-18	61922-000-00	ROLLING FRAME ASSEMBLY, Cantilever. . . . Cage Option, XL-19CW & XL-24C (See Figures 8-13 and 8-14 for NHA)	REF
-1	61924-000-00	. ROLLING FRAME . . . . .	1
-2	00173-000-00	. BEARING . . . . .	6
-3	11735-020-00	. PIN, Roll . . . . .	1
-4	61359-000-00	. SPROCKET. . . . .	1
-5	06452-000-00	. BEARING, Thrust . . . . .	4
-6	61340-000-00	. SPACER. . . . .	1
-7	61927-000-00	. SHAFT WELDMENT. . . . .	1
-8	61310-000-00	. SHAFT WELDMENT. . . . .	2
-9	11764-012-00	. RING, Retaining . . . . .	2
-10	11252-008-00	. SCREW, HHC 1/4-20 UNC GR5 x 1 . . . . .	2
-11	11240-004-00	. WASHER, Flat 1/4 DIA. . . . .	4
-12	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-13	61304-000-00	. PIN WELDMENT. . . . .	2
-14	61336-000-00	. ROLLER. . . . .	2
-15	27931-010-00	. BEARING . . . . .	2

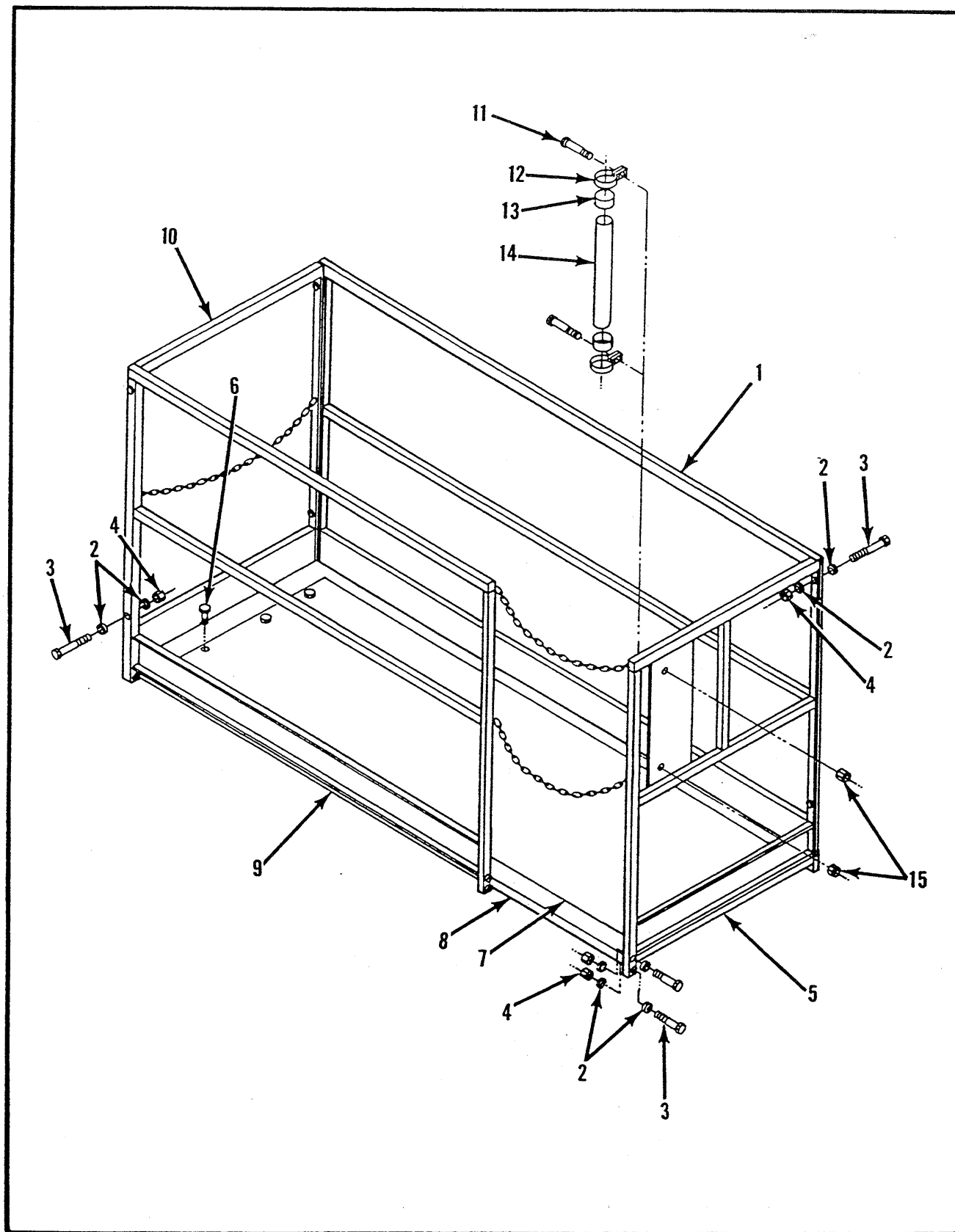


Figure 8-19. Fixed Guardrail Assembly Option, XL-19C

ITEM	PART	DESCRIPTION	QTY
8-19	No Number	FIXED GUARDRAIL ASSEMBLY OPTION, XL-19C .	REF
-1	61649-000-00	. GUARDRAIL, LH . . . . .	1
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	32
-3	11254-020-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-1/4 . . . . .	16
-4	11248-006-00	. LOCKNUT, HEX 3/8-16 . . . . .	16
-5	61651-000-00	. GUARDRAIL, Front. . . . .	1
-6	15794-008-00	. SCREW, Waferhead Tex 10-24 UNC x 1. . . . .	6
-7	20824-003-00	. PLYWOOD . . . . .	1
-8	61718-000-00	. PLATFORM WELDMENT . . . . .	1
-9	61650-000-00	. GUARDRAIL, RH . . . . .	1
-10	61648-000-00	. GUARDRAIL, Rear . . . . .	1
-11	11252-006-00	. SCREW, HHC 1/4-20 UNC GR5 x 3/4 . . . . .	2
-12	20398-012-00	. CLAMP . . . . .	2
-13	03612-000-00	. CAP . . . . .	2
-14	03613-000-00	. TUBE. . . . .	1
-15	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2

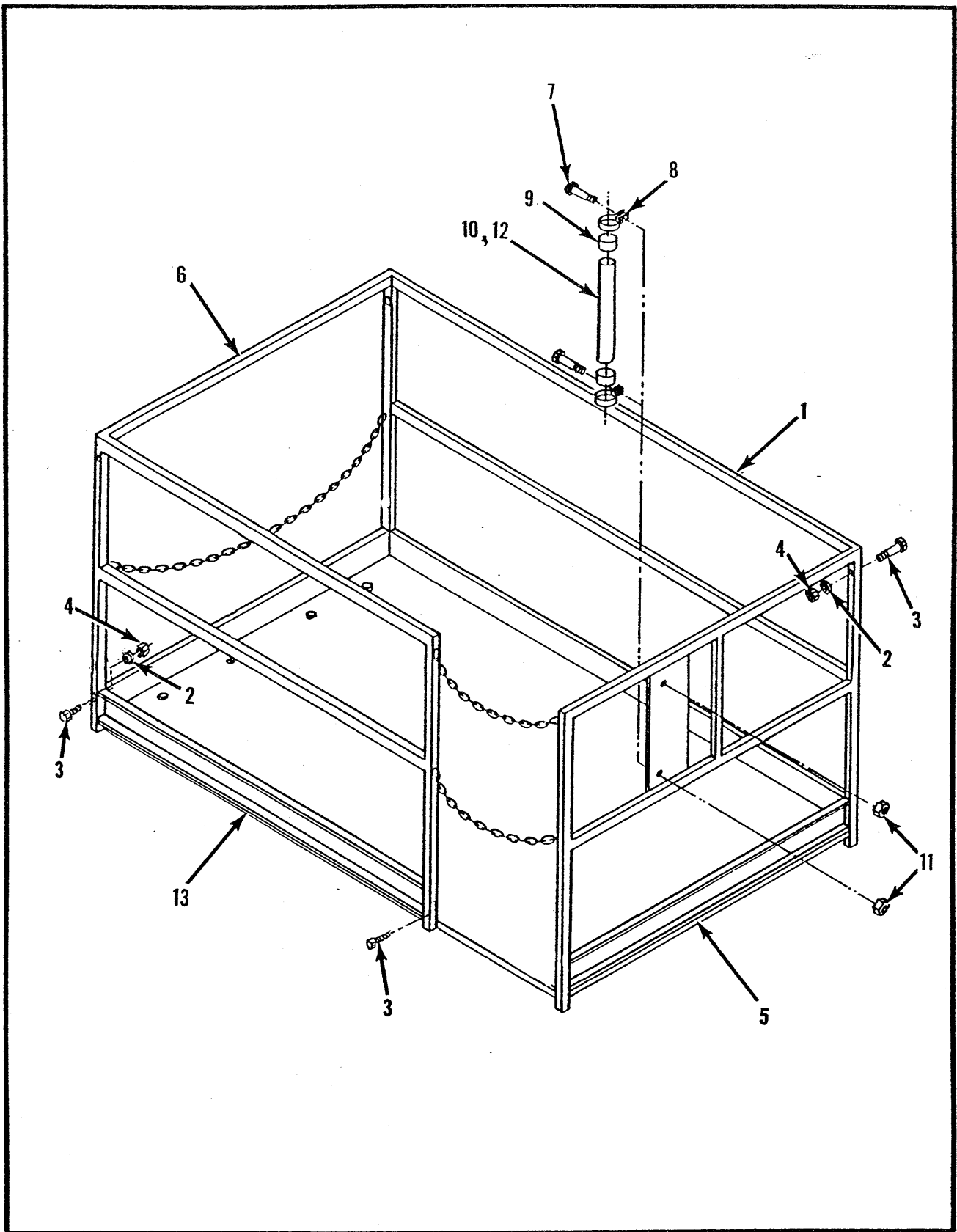


Figure 8-20. Fixed Guardrail Assembly Option, XL-19CW  
Serial No. 5001 to 5030

ITEM	PART	DESCRIPTION	QTY
8-20	No Number	FIXED GUARDRAIL ASSEMBLY OPTION, . . . . . XL-19CW, Serial No. 5001 to 5030	REF
-1	61865-000-00	. GUARDRAIL, LH . . . . .	1
-2	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	32
-3	11254-020-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-1/4 . . . . .	16
-4	11248-006-00	. LOCKNUT, HEX 3/8-16 . . . . .	16
-5	61867-000-00	. GUARDRAIL, Front. . . . .	1
-6	61864-000-00	. GUARDRAIL, Rear . . . . .	1
-7	11252-006-00	. SCREW, HHC 1/4-20 UNC GR5 x 3/4 . . . . .	2
-8	20398-012-00	. CLAMP . . . . .	2
-9	03612-000-00	. CAP . . . . .	2
-10	03613-000-00	. TUBE. . . . .	1
-11	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-12	61999-000-00	. USER MANUAL . . . . .	1
-13	61866-000-00	. GUARDRAIL, LH . . . . .	1

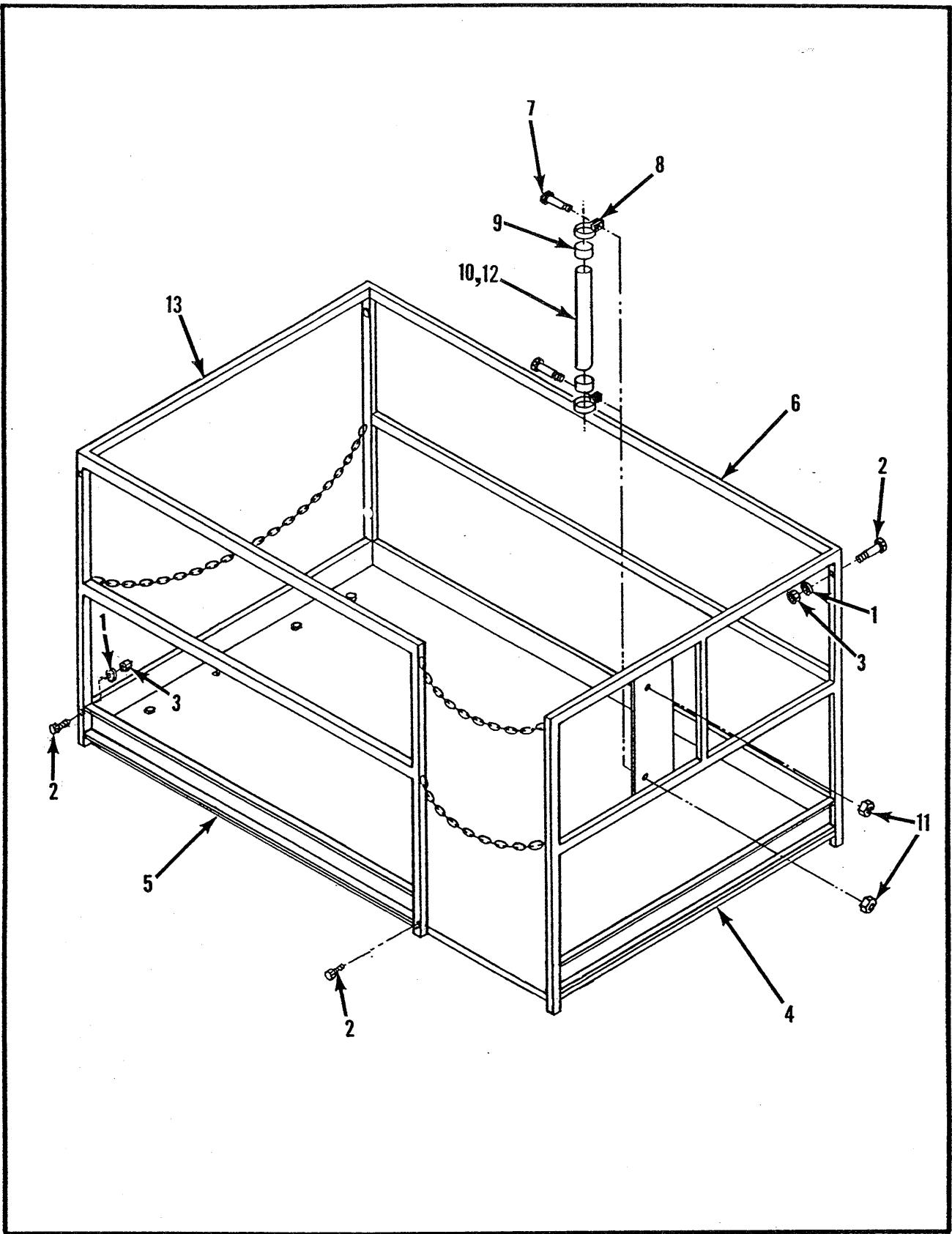


Figure 8-21. Fixed Guardrail Assembly Option, XL-19CW  
Serial No. 5031 to Current & XL-24C

ITEM	PART	DESCRIPTION	QTY
8-21	No Number	FIXED GUARDRAIL ASSEMBLY OPTION, . . . . . XL-19CW Serial No. 5031 to Current & XL-24C	REF
-1	11240-006-00	. WASHER, Flat 3/8 DIA. . . . .	32
-2	11254-020-00	. SCREW, HHC 3/8-16 UNC GR5 x 2-1/4 . . .	16
-3	11248-006-00	. LOCKNUT, HEX 3/8-16 UNC . . . . .	16
-4	61867-000-00	. GUARDRAIL, Front. . . . .	1
-5	61981-000-00	. GUARDRAIL, RH . . . . .	1
-6	61982-000-00	. GUARDRAIL, LH . . . . .	1
-7	11252-006-00	. SCREW, HHC 1/4-20 UNC GR5 x 3/4 . . . .	2
-8	20398-012-00	. CLAMP . . . . .	2
-9	03612-000-00	. CAP . . . . .	2
-10	03613-000-00	. TUBE. . . . .	1
-11	11248-004-00	. LOCKNUT, HEX 1/4-20 UNC . . . . .	2
-12	61999-000-00	. USER MANUAL . . . . .	1
-13	61864-000-00	. GUARDRAIL, Rear . . . . .	1