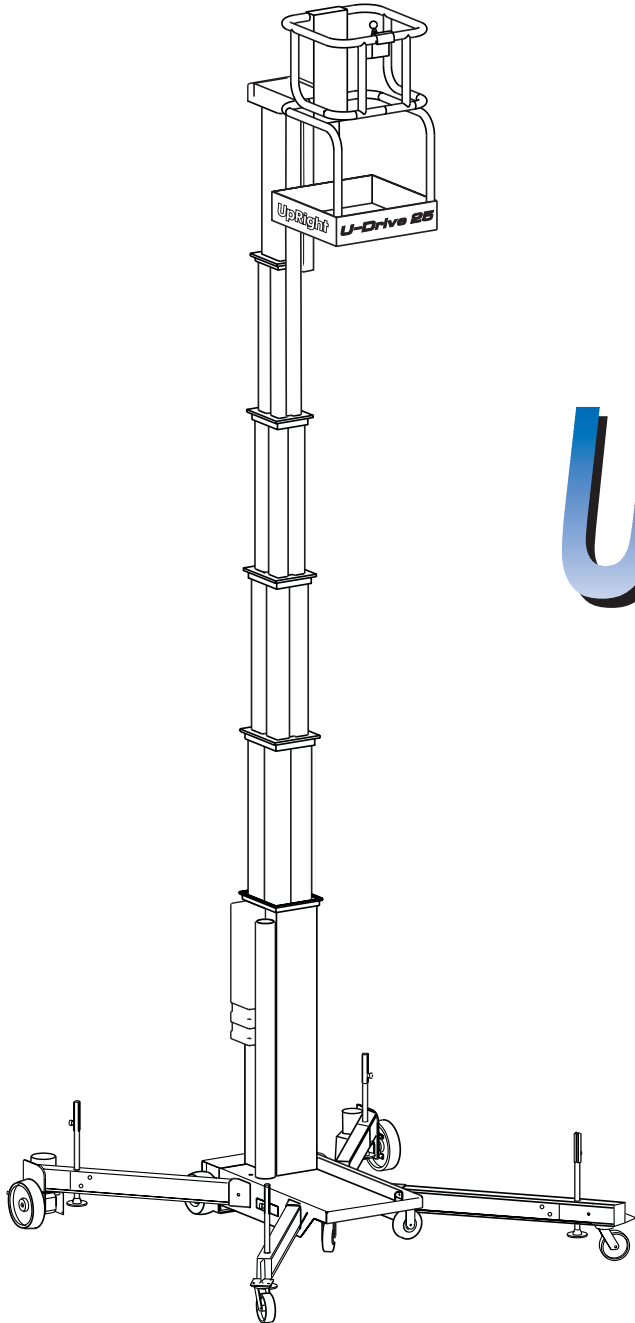


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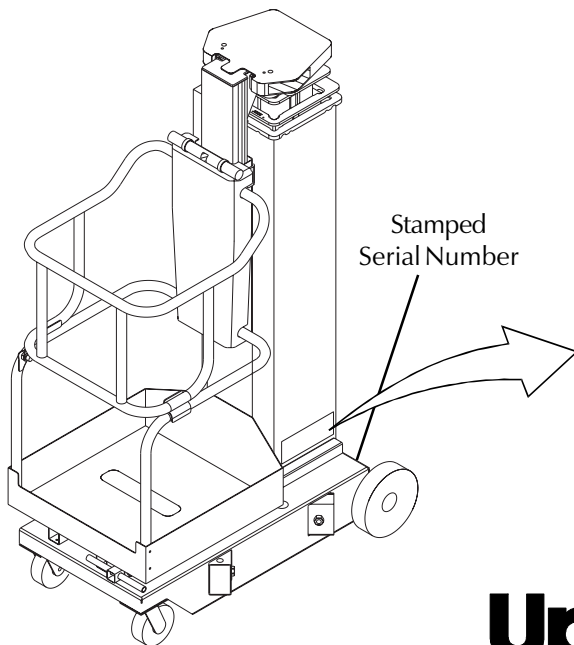
U-Drive 25

PORTABLE PERSONNEL LIFT

Service & Parts Manual

SERVICE & PARTS MANUAL U-Drive 25 Portable Personnel Lift Serial Numbers 1001 to Current

When contacting UpRight for service or parts information, be sure to include the MODEL and SERIAL NUMBERS from the equipment nameplate. Should the nameplate be missing the SERIAL NUMBER is also stamped on the top face of the chassis.



UpRight, Inc.	
1775 PARK ST. SELMA, CA 93662 USA	
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"/>	
CAUTION: CONSULT OPERATOR'S MANUAL BEFORE USE.	
THIS PLATFORM IS NOT ELECTRICALLY INSULATED	
<small>P/N 61205-000-00</small>	

UpRight

Call Toll Free in U.S.A.

1-800-926-LIFT

For Parts:

1-888-UR-PARTS

UpRight, Inc.

1775 Park Street

Selma, California 93662

TEL: 559/891-5200

FAX: 559/896-9012

PARTSFAX: 559/896-9244

P/N 069317-000

069317-0009812.05-K

Forward

Introduction

HOW TO USE THIS MANUAL

This manual is divided into 6 sections. The first page of each section is marked with a black tab that lines up with one of the thumb index tabs on the right side of this page. You can quickly find the first page of each section without looking through the table of contents which follows this page. The section number printed at the top corner of each page can also be used as a quick reference guide.

SPECIAL INFORMATION



DANGER



Indicates the hazard or unsafe practice **will** result in severe injury or death.



WARNING



Indicates the hazard or unsafe practice **could** result in severe injury or death.



CAUTION



Indicates the hazard or unsafe practice could result in **minor** injury or property damage.

NOTES: Give helpful information.

WORKSHOP PROCEDURES

CAUTION: Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause personal injury, or could damage a machine or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by UpRight, Inc., might be done, or of the possible hazardous consequences of each conceivable way, nor could UpRight Inc. investigate all such ways. Anyone using service procedures or tools, whether or not recommended by UpRight Inc., must satisfy themselves thoroughly that neither personal safety nor machine safety will be jeopardized.

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures and tables.

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Machine Preparation & Operation

2.0

Information on how to Operate the Work Platform and how to prepare for it for operation.

Maintenance

3.0

Preventative maintenance and service information.

Troubleshooting

4.0

Causes and solutions to typical problems.

Schematics

5.0

Schematics and valve block diagram with description and location of components.

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1.0 Introduction

PURPOSE OF EQUIPMENT

The UpRight Personnel Lift is a portable lift designed to elevate personnel and light equipment to work above the ground.

GENERAL DESCRIPTION

The U-Drive 25 consists of a Platform, Mast and Chassis.

Platform

The platform is an aluminum structure supported by a steel cage support attached to the mast. It has 43.5-inch high "clamshell" upper and lower guardrail assembly with gas spring assist for opening and closing, six (6) inch toeboards and integrated midrail.

Mast

The platform is raised and lowered by a seven stage mast assembly that is driven by a single stage hydraulic lift cylinder and a series of leaf chains. A DC electric motor powers a hydraulic pump which in turn energizes the cylinder. Solenoid operated valves control the raising and lowering of the Platform.

Chassis

The Chassis is a steel structure that consists of the first stage of the Mast Assembly, control box, battery charger, DC Motor, hydraulic pump and reservoir, 12v battery, and four Outriggers.

Operator Controls

Controls consist of a Lower Emergency Stop Switch, Upper Emergency Stop Switch, Key Switch and two push button controls: Power On and Enable, two toggle switches: Drive/Lift and High/Low and a joystick. The Enable button must be pushed along with the Joystick to operate the machine. An Emergency Lowering Valve is located on the power unit at the base of the machine.

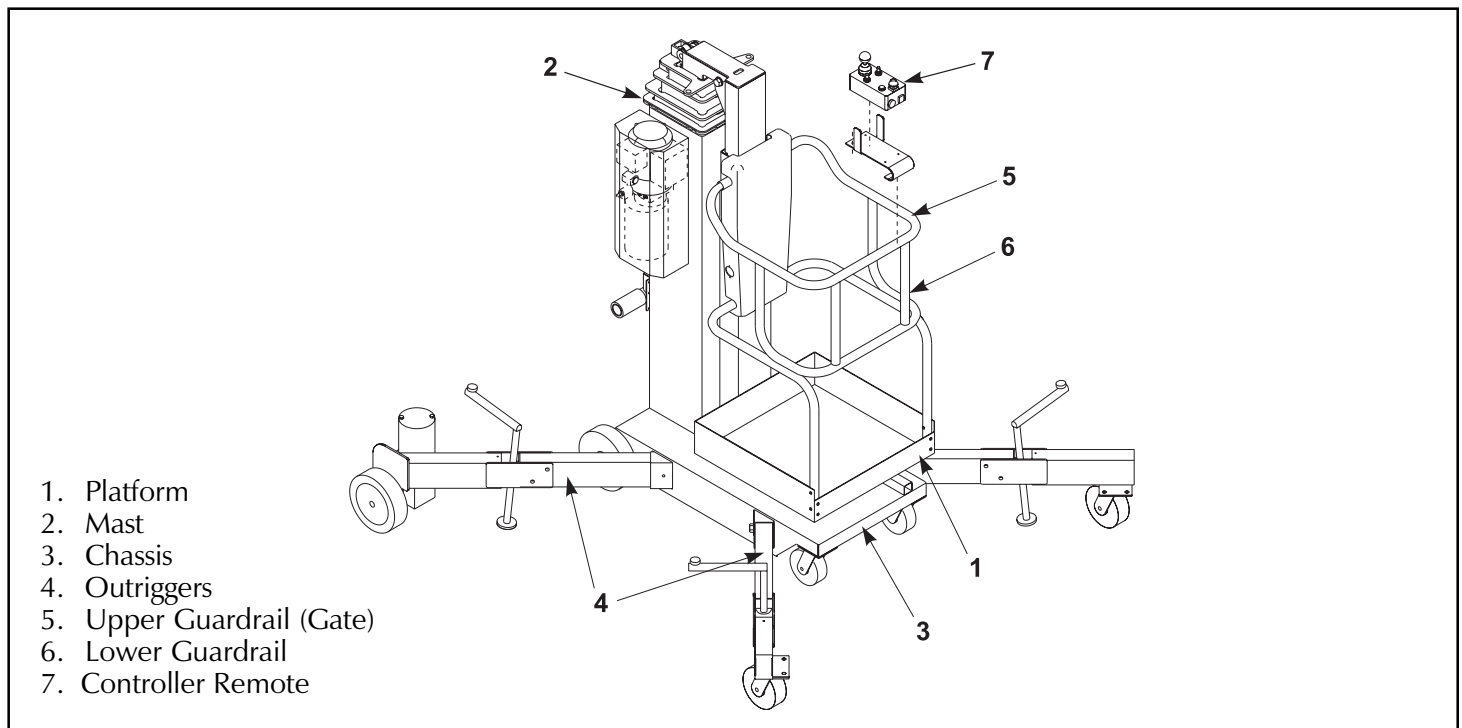
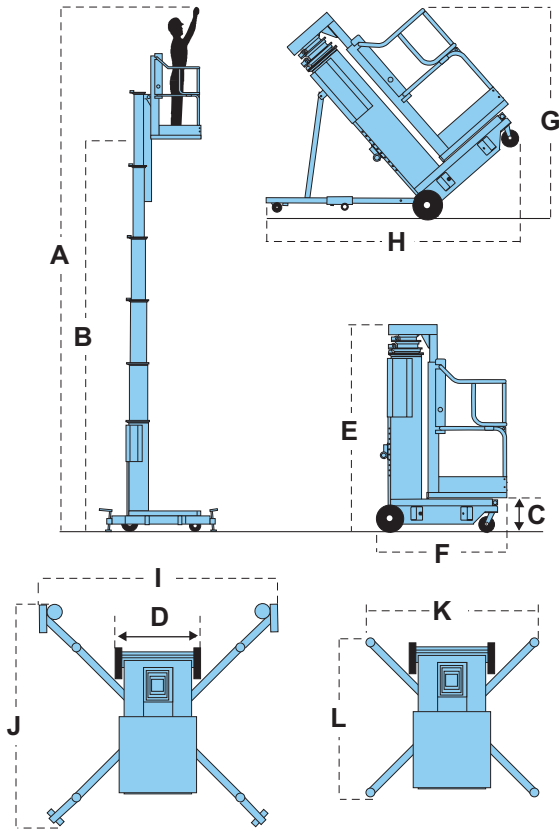


Figure 1-1: U-Drive 25 Portable Personnel Lift

Introduction & Specifications

Table 1-1: Specifications



ITEM	U DRIVE 25
Platform Height	
Working Height (A)	25 ft. (7.62 m)
Platform Height (B)	15 in. (38 cm)
Platform Capacity	350 lbs. (159 kg)
Stored Dimensions	
Vertical Height (E)	79 in. (1.98 m)
Width (D)	29 in. (74 cm)
Depth (F)	49 in. (1.24 m)
Footprint (screw jacks only)	
Width/Length (K/L)	59 in. (1.5 m)/56 in. (1.42 m)
Footprint (wheels attached)	
Width/Length (I/J)	80.5 in. (2.1 m)/75 in. (1.9 m)
Weight-overall	
Battery Box	903 lbs. (409.6 kg)
Guardrail Height	43.5 in. (1.1 m)
Toe Board Height	6 in. (152 mm)
System Voltage	
DC Electric Power Source	2-12 Volt Battery, Grp. 22 60 Amp/Hrs., Min. Wt. 52 lbs. (23.6 kg)
Battery Charger	120 VAC 60 Hz or 220 VAC 50 Hz Output: 5 Amps, 24 Volts D.C.
Maximum Hydraulic System Pressure	2400 PSI (165 bar)
Drive Speed	2 MPH/0.2MPH
Raising Speed	22 Seconds

*Specifications subject to change without notice.

Meets or exceeds all applicable requirements of OSHA and ANSI A92.3-1990.

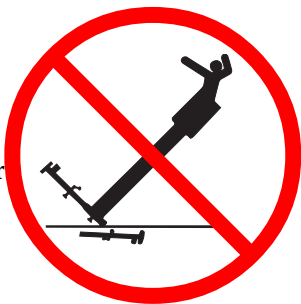
*Specifications subject to change without notice.

WARNING

All personnel shall carefully read, understand and follow all safety rules, operating instructions and the Scaffold Industry Association's MANUAL OF RESPONSIBILITIES before performing maintenance on or operating any UpRight aerial work platform.

SAFETY RULES

NEVER elevate platform unless all four (4) outriggers have been properly installed. All wheels or screwjacks must be in solid contact with a firm surface before the platform is elevated.



NEVER attempt to push the UpRight Lift with people or materials on the platform or with the platform elevated.



NEVER operate the machine within ten feet of power lines. **THIS MACHINE IS NOT INSULATED.**



NEVER sit, climb, or stand on the platform guardrails or midrail.



NEVER elevate platform without first leveling the base.

MACHINE must be driven only on smooth level floor surface.

NEVER use ladders, planks or other devices to increase the height of the platform.

NEVER attach overhanging loads to the platform or increase the platform size.

NEVER elevate platform if it contains more than one person or more than rated load (see specifications back page).

LOOK up, down and around for overhead obstructions and electrical conductors.

NEVER change operating or safety systems.

NEVER use outriggers from one model on another model.

CLOSE and secure cage after entering platform.

INSPECT the machine thoroughly for cracked welds, loose or missing hardware, hydraulic leaks, damaged control or power cables and loose wire connections.

NEVER use the machine as a freight or personnel elevator.

NEVER recharge battery near sparks or open flame. Batteries that are being charged emit highly explosive hydrogen gas.

AFTER USE secure the work platform against unauthorized use by turning key switch off and removing key.

NEVER replace any component or part with anything other than original UpRight replacement parts without the manufacturer's consent.

NEVER use machine as a welding ground. Welding ground must be attached to same structural element which is being repaired.

Read, understand and follow all safety rules and operating instructions before attempting to operate the machine.

2.1 Preparation for Use



WARNING



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

1. Remove the metal banding securing the battery box (DC machines only) and the machine to the crate.
2. Remove the battery box from the crate (DC machines only).
3. Disassemble the crate.
4. Remove any other banding or straps from the machine.
5. Using a forklift, raise the machine up far enough to remove the base of the crate (Figure 2-1). Lower the machine.
6. Place a lifting strap through the lifting lugs on the cage support assembly and to a suitable lifting device. With the lifting device, raise the machine to its vertical position.

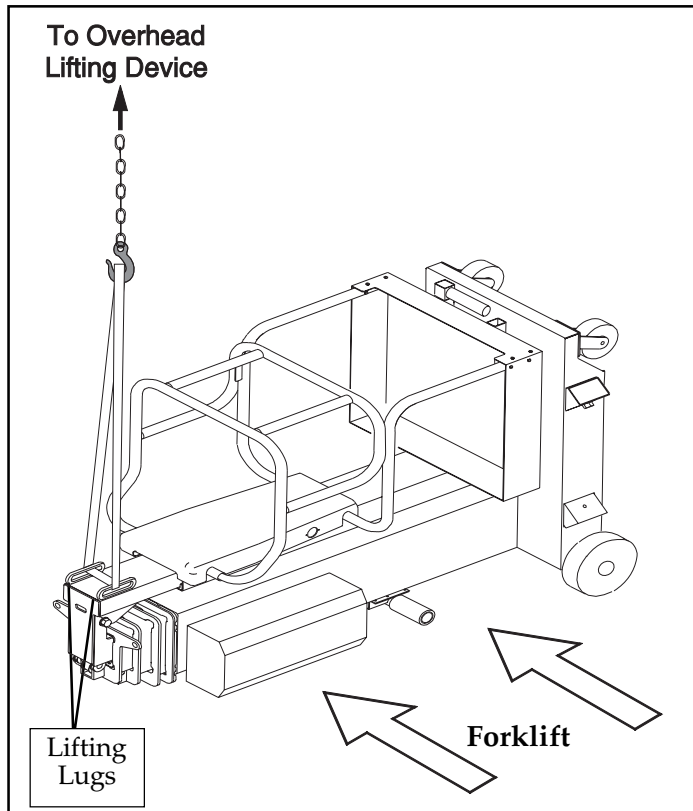


Figure 2-1: Lifting UL Lifts

7. For DC machines, hang the battery box on the pegs provided on the back of the mast and connect the battery quick connector. If necessary plug the Battery Charger cord into a grounded AC outlet of proper voltage and frequency to charge the battery.

2.2 Preparation For Ship

The following instructions are for shipping the machine by a freight carrier.

For instructions on transporting U-Drive lifts short distances by pick-up or small flat bed truck see *Section 2.11*.

1. Fully lower the Platform.
2. Disconnect the battery quick connector and remove the battery box from the rear of the mast assembly (Figure 2-2).
3. Band the Platform Assembly to the Chassis.
4. Place a lifting strap through the lifting lugs located on the cage support assembly and to a suitable lifting device (Figure 2-1). Lower the machine with the lifting device to the horizontal position.
5. Using a forklift, raise the machine up far enough to place the base of the crate under the machine. Lower the machine onto the base of the crate.
6. Band the machine and the battery box to the base of the crate.
7. Assemble the rest of the crate around the machine and band together.

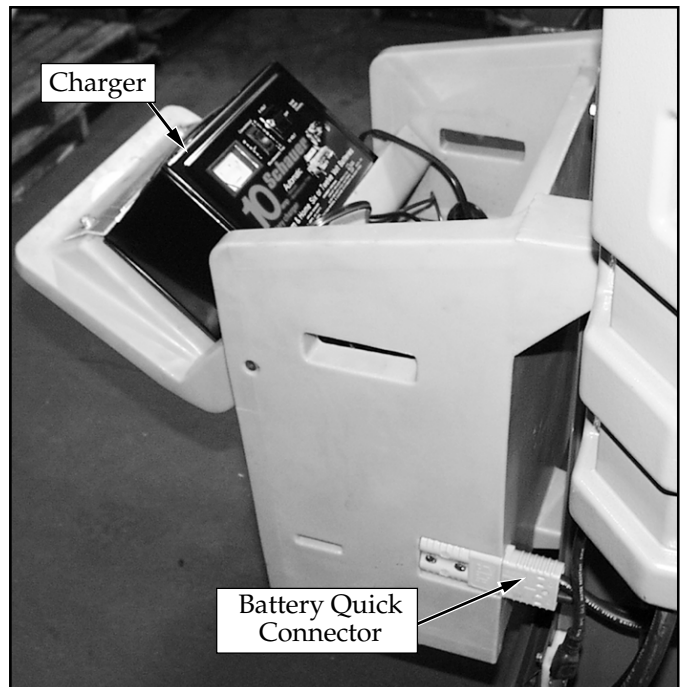


Figure 2-2: Battery Box

2.3 Storage

No preparation is required for normal storage. Regular maintenance per *Table 3-1* should be performed. If the Lift is to be placed in long term storage (dead storage) use the following preservation procedure.

PRESERVATION

1. Clean painted surfaces. If the paint surface is damaged, repaint.
2. Check the level of the hydraulic oil with the cage fully lowered. Unscrew the reservoir cap/dipstick; oil should be visible on the dipstick. Add ISO #46 hydraulic oil if necessary.

BATTERY

Remove the battery and place in alternate service.

2.4 Outrigger Installation

1. Remove the outriggers from storage locations on sides of mast.
2. Insert into outrigger socket in base (Fig. 2-3).
3. Push in until locking pin engages hole in end of outrigger. Pull outward on outrigger to ensure engagement.
4. Repeat the above steps for all other outriggers. Make sure all four (4) locking pins are engaged if using machine with screwjacks only.

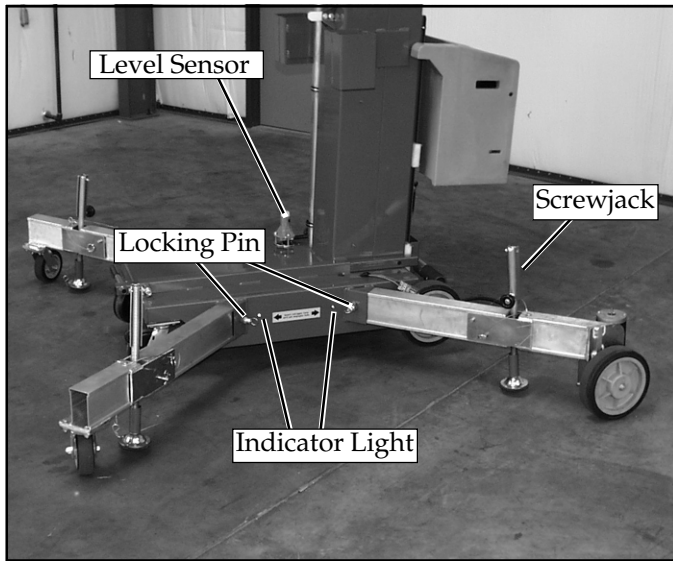


Figure 2-3: Installing outriggers

2.5 Wheel Installation

1. After outriggers have been installed, turn screwjacks clockwise until wheels can be installed.
2. Install rear wheels into rear outriggers. Pin wheels in place using pins provided.

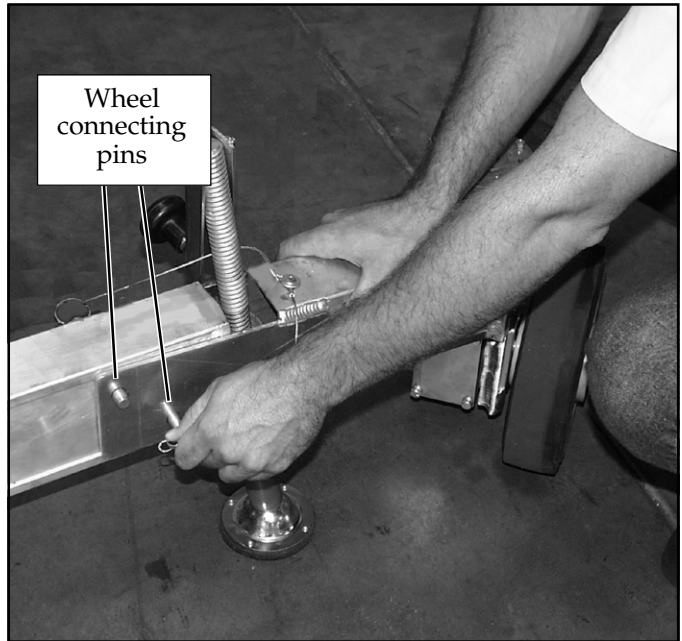


Figure 2-4: Installing wheels

3. Plug connector from rear wheels into connector from chassis wiring.

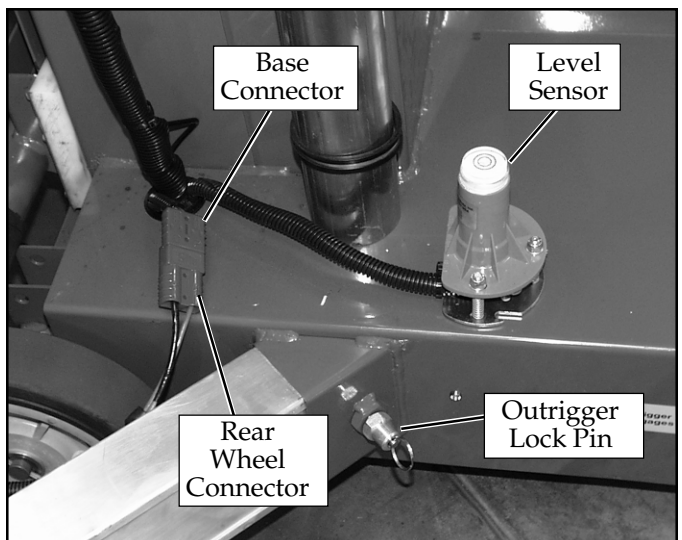


Figure 2-5: Connecting rear wheel cables

4. Install front wheels. Pin front wheels in place using pins provided.



WARNING



BE SURE all wheels are securely attached. Pull on wheels to check for loose pins.

5. Raise screwjacks (turn counterclockwise) until wheels are resting on ground. Be sure screwjacks are high enough to avoid interference with the ground when machine is driven.



WARNING



DO NOT use machine if screwjack limiting tubes have been removed. **Remove machine from service and repair before using.**

IMPORTANT: All four wheels must be in solid contact with the ground and each outrigger indicator light must be lit before the machine is operated.

2.6 Pre-Operation & Safety Test



DANGER



NEVER perform this test from the platform.

1. On a solid level surface, install outriggers and wheels.
2. Lower platform completely. Remove fill cap on hydraulic tank and check for proper hydraulic oil level.
3. Activate lift function on platform controller while pushing level sensor out of alignment. Listen for audible tilt alarm.
4. **Platform should not elevate.**



WARNING



DO NOT use a machine that elevates when level sensor is off of level or tension has been released on an outrigger. **Remove machine from service and repair before using.**

5. Release level sensor and fully elevate platform.
6. Visually inspect elevating assembly, chains and straps. Check for missing or loose parts.
7. Partially lower platform and listen for audible lowering alarm.
8. Turn Emergency Lowering Valve knob to check for proper operation. To close Emergency Lowering Valve, turn the knob until it snaps back in.

2.7 Operation Using Wheels

Before operating the machine, be sure that:

- The operator has been thoroughly trained on this machine.
- The operator has read, fully understands, and follows this Operator Manual and the Scaffold Industry Association's MANUAL OF RESPONSIBILITIES.
- The unit has been properly set up with all outriggers and wheels properly installed and machine has passed the Safety Interlock Test (page 2-7).

NOTE: Platform will not elevate unless all four outriggers and wheels are properly installed with wheels firmly in contact with floor and each outrigger indicator lamp lit.

1. Check for external damage to the mast.
2. Turn Key to **ON**, Key Switch is located on the left side of the mast (Fig. 2-7).
3. Pull out on Lower Emergency Stop Button, located on the left side of the mast, to turn switch ON.

IMPORTANT: In the event of an emergency push the button in to cut power to all controls.

4. Check that the area above the platform is clear before elevating the platform.
5. Release latch and raise upper half of cage. Enter the platform.
6. Lower upper half of the cage after entering platform making sure latch is engaged.
7. Pull out on Emergency Stop Button, located on platform control panel.

IMPORTANT: In the event of an emergency push the button in to cut power to all controls.

8. Push ON/OFF button. Green LED will blink.
9. Adjust Drive/Lift and High/Low switches for desired operation.

10. Holding Enable button down, push joystick ahead or back to move or raise machine.

NOTE: Move joystick right or left while driving forward or backwards to turn machine. Machine will only drive at high speed when platform is fully lowered.

NOTE: High/Low switch affects drive speed only. Lift/Lower speed is constant.

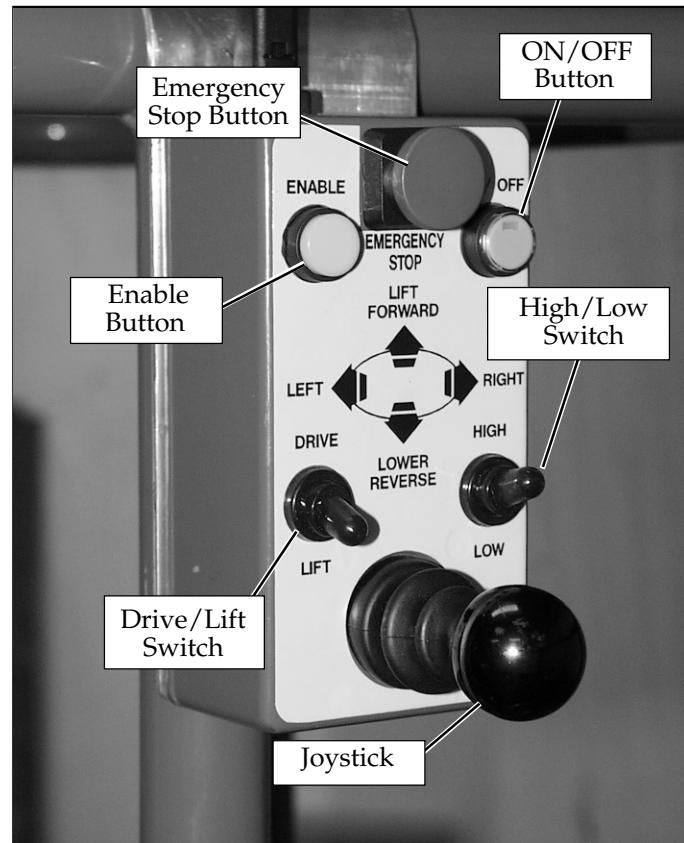


Figure 2-6: Platform Controls

IMPORTANT: Machine is designed to travel on smooth flat surfaces only.

WARNING

If the platform should fail to lower, **NEVER** climb down the mast.

11. Check that the area below the platform is clear before lowering the platform.
12. After use, secure unit from unauthorized use by turning Key Switch to **OFF** and removing key.

EMERGENCY LOWERING

WARNING

If the platform should fail to lower, **NEVER** climb down the mast.

Ask a person on the ground to open the Emergency Lowering Valve to lower the platform. This valve is located through a cutout in the power unit cover on the left side of the mast.

1. Pull the knob out and turn one quarter turn either direction to open the Emergency Lowering Valve.
2. To close the Emergency Lowering Valve, turn the knob until it snaps back in.

NOTE: Once the platform is fully lowered, be certain that the Emergency Lowering Valve is closed again. The platform will not elevate if the Emergency Lowering Valve is open.

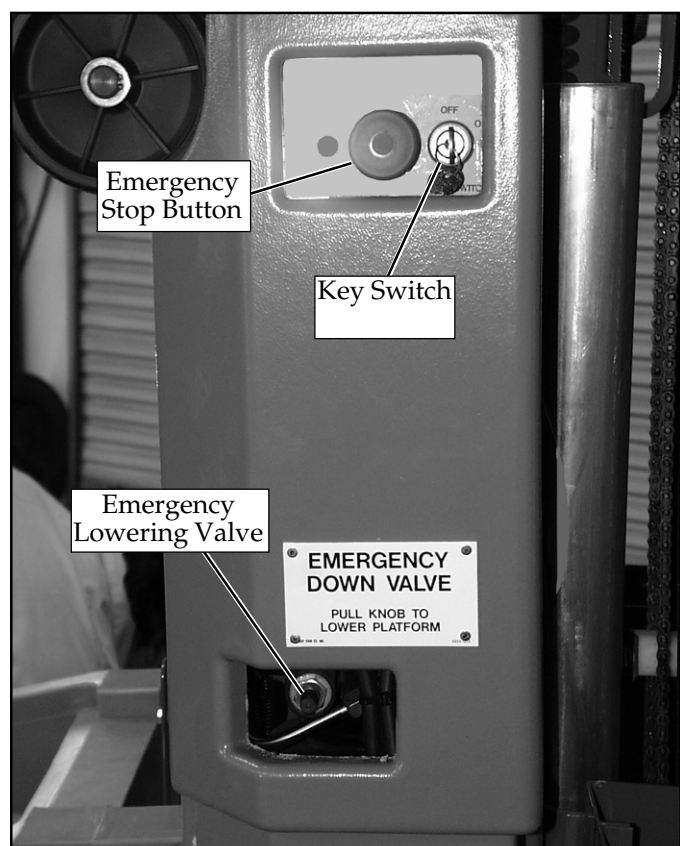


Figure 2-7: Base Controls

AFTER USE EACH DAY

1. Ensure that the platform is fully lowered.
2. Park the machine on level ground, preferably under cover.
3. Secure against vandals, children or unauthorized operation by turning the Key Switch to **OFF** and remove the key.

2.8 Safety Interlock Test

DANGER

NEVER perform this test from the platform.

1. Properly install all four (4) outriggers and level base using screwjacks.
2. Release the tension on one (1) outrigger by turning the screwjack counterclockwise, until the indicator lamp is no longer lit.
3. Activate lift switch on side of mast to elevate the platform. **Platform should not elevate.**

WARNING

DO NOT use a machine that elevates when tension has been released on an outrigger. **Remove machine from service and repair before using.**

4. Re-level the base with all four (4) outriggers then repeat step 2 with another outrigger.
5. Repeat steps 2, 3 & 4 until all four (4) outriggers have been tested.

2.9 Operation Using Outriggers Only

Before operating the machine, insure that:

- The operator has been thoroughly trained on this machine.
- The operator has read, fully understands, and follows this Operator Manual and the Scaffold Industry Association's MANUAL OF RESPONSIBILITIES.
- The unit has been properly set up with all four (4) outriggers properly installed and the base leveled, and the machine has passed the Safety Interlock Test.

Note: Platform will not elevate unless all four outriggers are properly installed with screwjack pads firmly in contact with floor and each outrigger indicator lamp lit.

1. Check for external damage to the mast.
2. Turn Key to **ON**, Key Switch is located on the left side of the mast (Fig. 2-7).
3. Pull out on Lower Emergency Stop Button, located on the left side of the mast, to turn switch ON. In the event of an emergency push the button in to cut power to all controls.
4. Enter the platform by releasing the latch and lifting up on the upper half of the cage.
5. Lower upper half of the cage after entering platform making sure latch is engaged.
6. Check that the area above the platform is clear before elevating the platform.
7. Pull out on Emergency Stop Button, located on platform control panel. In the event of an emergency push the button in to cut power to all controls.
8. Push ON/OFF button. Green LED will blink.
9. Adjust Drive/Lift switch to Lift position.
10. Holding Enable button down, push joystick ahead to raise machine.

NOTE: High/Low switch affects drive speed only. Lift/Lower speed is constant.

11. Check that the area below the platform is clear before lowering the platform.
12. After use, secure unit from unauthorized use by turning Key Switch to **OFF** and remove key.

EMERGENCY LOWERING

WARNING

If the platform should fail to lower, **NEVER** climb down the mast.

Ask a person on the ground to open the Emergency Lowering Valve to lower the platform. This valve is located through a cutout in the power unit cover on the left side of the mast (Fig. 2-7).

1. Pull the knob out and turn $\frac{1}{4}$ turn to open the Emergency Lowering Valve.
2. To close the Emergency Lowering Valve, turn the knob until it snaps back in.

Once the platform is fully lowered, be certain that the Emergency Lowering Valve is closed again. The platform will not elevate if the Emergency Lowering Valve is open.

2.10 Battery Maintenance

WARNING

Hazard of explosive gas mixture. Keep sparks, flame and smoking materials away from battery.

Always wear safety glasses when working with batteries.

Battery fluid is highly corrosive. Rinse away any spilled fluid thoroughly with clean water.

Always replace battery with UpRight battery or manufacturer approved replacement weighing at least 52 lbs. (23.6 kg) each.

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

If electrolyte level is less than $\frac{3}{8}$ in. (10 mm) above plates add distilled water only. DO NOT use tap water with high mineral content, it will shorten battery life.

Keep terminals and tops of batteries clean.

Refer to the Service Manual to extend battery life and for complete service instructions.

BATTERY CHARGING

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

⚠ WARNING ⚠

Charge battery in a well ventilated area.
Do not charge battery when the work platform is in an area containing sparks or flames.
Permanent damage to battery will result if not immediately recharged after discharging.
Keep charger dry.

1. Check battery fluid level. If electrolyte level is lower than 3/8 in. (10 mm) above plates add distilled water only.
2. Verify charger voltage switch is set to 12 volts.
3. Connect extension cord (12 ga. (1.5 mm²) conductor minimum and 50 ft. (15 m) in length maximum) to charger plug.
Connect extension cord to properly grounded outlet of proper voltage and frequency.
4. Set charger control to "Conventional" setting. Charger ammeter should indicate charge rate.
5. When battery is fully charged, charger automatically turns itself off. Disconnect extension cord.

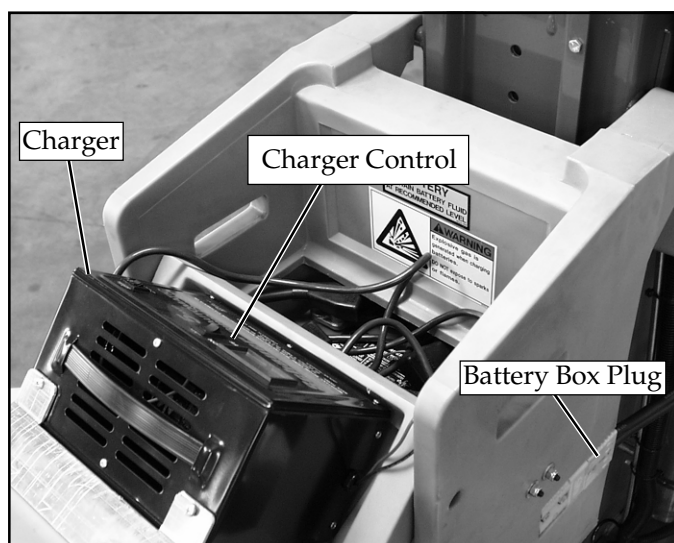


Figure 2-8: Battery Box

2.11 Loading

1. Disconnect the plug from the battery box and remove the battery box from the rear of the machine (Fig. 2-8).

⚠ CAUTION ⚠

The battery box is heavy, 94.5 lbs. (42.9 kg), lift properly (or have someone help you) to prevent back injury.

⚠ WARNING ⚠

Make sure loader fully engages tailgate or vehicle bed.

2. Raise the loader support bracket and engage the retaining pin in the top hole of the loader channel (Fig. 2-9).
3. Secure the loader to the loader support bracket with the gravity hook.
4. Position the unit so the back of the machine comes in contact with the vehicle bed or tailgate.
5. Release the gravity hook and slide the loader down until it comes into contact with the vehicle bed or tailgate. Then reposition the loader support bracket so the retaining pin is in the **first** available hole above the loader.
6. Release the locking pin and pull the handle out until the locking pin engages the hole in the end of the handle (Fig. 2-10).
7. Lift up on the handle, using the loader as a pivot, until the unit rotates to a horizontal position in the vehicle bed (Fig. 2-11).
8. Push the base of the unit towards the front of the vehicle bed. The machine will slide on the loader until the rear wheels are on the bed. The unit may then be rolled on the rear wheels and upper casters.
9. Return the handle to the stored position, making sure the locking pin engages the handle.
10. Secure unit with suitable strength rope or tie straps using forklift pockets located under the base of the unit and upper caster axle.



CAUTION



To prevent damage to the mast assembly, do not place rope or tie straps across the mast assembly when securing the unit for transportation.

DO NOT overtighten the rope or tie straps, damage to the machine will result.

UNLOADING

1. Unsecure the unit.
2. Release the locking pin and pull the handle out until the locking pin engages the hole in the end of the handle.

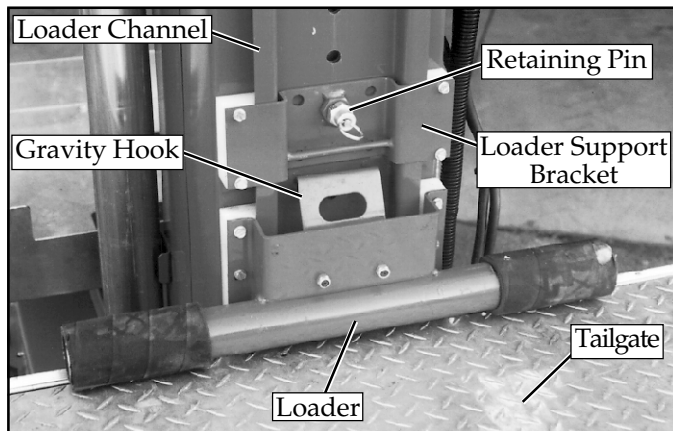


Figure 2-9: Loader in load position

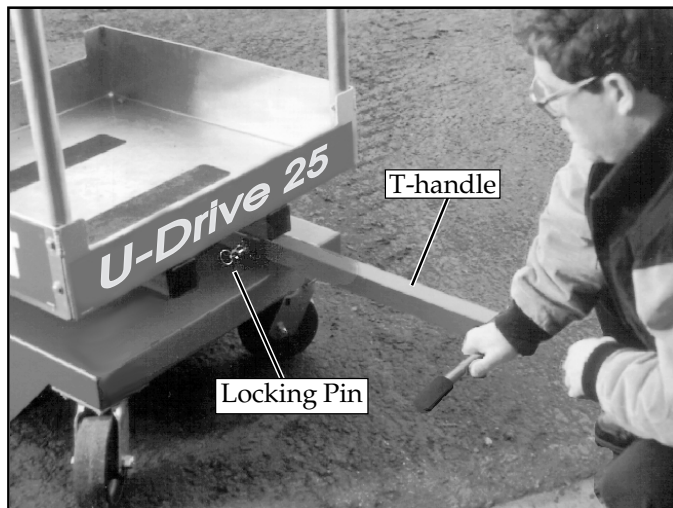


Figure 2-10: Handle positioning

3. Roll the unit back until the rear wheels are off the edge of the tailgate or vehicle bed.
4. Pull downward on the handle, allowing the unit to slide on the loader. As the unit stops sliding on the loader, it will pivot on the loader to an upright position. Gradually counterbalance the unit's weight by applying an upward force on the handle. This allows the unit to settle gently on the wheels, avoiding undue impact on the unit.
5. Return the handle to the stored position, making sure the locking pin engages the handle.
6. Replace the battery and reconnect the battery box plug making certain it is fully engaged.



Figure 2-11: Tilting machine onto or off of a vehicle

3.0 Introduction

This section contains instructions for the maintenance of the U-Drive 25 Lift. Procedures for the operational checkout adjustment, scheduled maintenance, and repair/removal are included.

Referring to *Section 2* will aid in understanding the operation and function of the various components and systems of the U-Drive Lift and help in diagnosing and repair of the machine.



SPECIAL TOOLS

The following is a list of special tools that are required to perform certain maintenance procedures. These tools may be purchased from your dealer.

Description	Part Number
Spanner Wrench For U-Drive 25	062521-010
Strap Wrench	062482-000
Tie Rod Tensioner (2 req'd.)	062738-000
Tensioner Bracket (2 req'd.)	062739-000
Tee Adapter	020733-002
Adapter	014048-001
Adapter	011923-003
0-3000 PSI Pressure Gauge	014124-030

3.1 Preventative Maintenance (Table 3-1)

The complete inspection consists of periodic visual and operational checks, together with all necessary adjustments to assure proper performance. Daily inspection will prevent abnormal wear and prolong the life of all systems. The inspection and maintenance schedule is to be performed at regular intervals. Inspection and maintenance shall be performed by personnel who are trained and familiar with mechanical and electrical procedures. Complete descriptions of the procedures are in the text following the table.

	WARNING	
<p>Before performing preventative maintenance, familiarize yourself with the operation of the machine.</p> <p>Never enter the area below the Platform when the Platform is elevated.</p>		

The Preventative Maintenance Table has been designed to be used for machine service and maintenance repair. **Please copy the following page and use the Preventative Maintenance Table as a checklist when inspecting a machine for service.**

Preventative Maintenance Table Key

Interval

Daily=each shift or every day
30d=every month or 30 days
3m=every 3 months
1y=every year

Y=Yes/Acceptable

N=No/Not Acceptable

R=Repaired/Acceptable

Preventative Maintenance Report

Date: _____
Owner: _____
Model No: _____ Serial No: _____
Serviced By: _____
Service Interval: _____

BATTERY CHARGING (Figure 3-3)

Charge batteries at end of each work shift or sooner if battery has been discharged.

Charge batteries in a well-ventilated area.

Do not charge batteries when the lift is in an area containing sparks or flames.

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

Never leave charger operating unattended for more than two days.

Table 3-1: Preventative Maintenance

COMPONENT	INSPECTION OR SERVICES	INTERVAL	Y	N	R
Battery System	Check electrolyte level	Daily			
	Check battery cable condition	Daily			
	Charge batteries	Daily			
	Check charger condition & operation	Daily			
	Check specific gravity	30d			
	Clean exterior	3m			
	Clean terminals	3m			
Hydraulic Oil	Check oil level	Daily			
	Drain and replace oil (ISO #46)	1y			
Hydraulic System	Check for leaks	Daily			
	Check line connections	30d			
	Check for exterior wear	30d			
Emergency Hydraulic System	Open the emergency lowering valve and check for serviceability	Daily			
Emergency Down	Check procedure for Emergency Down batteries	3m			
Hydraulic Pump	Check for fitting leaks	Daily			
	Wipe clean	30d			
	Check for leaks at mating surfaces	30d			
	Check mounting bolts for proper torque	30d			
Controls	Check condition & operation	Daily			
Control Cable	Check the exterior of the cable for pinching, binding or wear	Daily			
Platform Deck and Rails	Check fasteners for proper torque	Daily			
	Check welds for cracks	Daily			
	Check condition of deck	Daily			
	Check entry way closure	Daily			
Elevating Assembly	Inspect for external damage, dents, loose rivets or cracks	Daily			
	Check chains and sheaves for wear	3m			
	Inspect and adjust sequence straps	30d			
Chassis	Check cables for pinch or rubbing points	Daily			
	Check welds for cracks	Daily			
	Check casters for damage	Daily			
	Check component mounting for proper torque	3m			
Lift Cylinder	Check for leaks	Daily			
	Check fitting for proper torque	30d			
Entire Unit	Perform pre-operation inspection	Daily			
	Check for and repair collision damage	Daily			
	Lubricate	3m			
	Check fasteners for proper torque	3m			
	Check for corrosion; remove and repaint	3m			
Labels	Check for peeling, missing, or unreadable labels & replace	Daily			
Drive Wheels	Check for loose components	Daily			

3.2 Lubrication

Refer to Figure 4-1 for location of items that require lubrication service. Use an aerosol chain lubricant for all components to be lubricated that require oil.

CASTERS

Using a grease gun, apply 1 or 2 shots of multi-purpose bearing grease to each zerk fitting. Swivel casters have two zerk fittings, one at the wheel bearing and one at the swivel.

CHAINS

1. Ensure that Platform is fully lowered.
2. Apply enough aerosol chain lubricant to exposed section of chain to allow lubricant to run down chain.

SCREW JACKS

Apply a moderate amount of aerosol chain lubricant to each screwjack assembly.

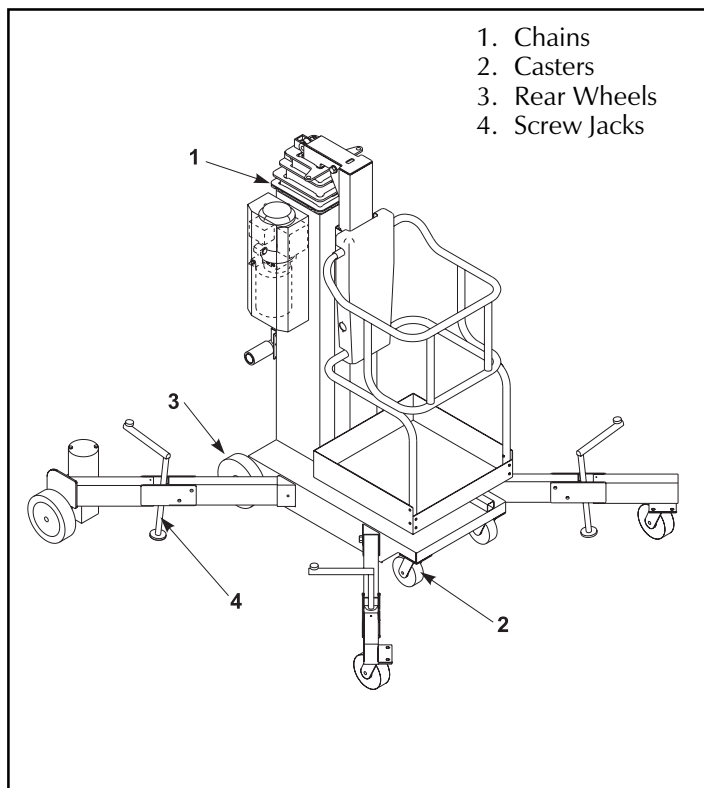


Figure 3-1: Lubrication

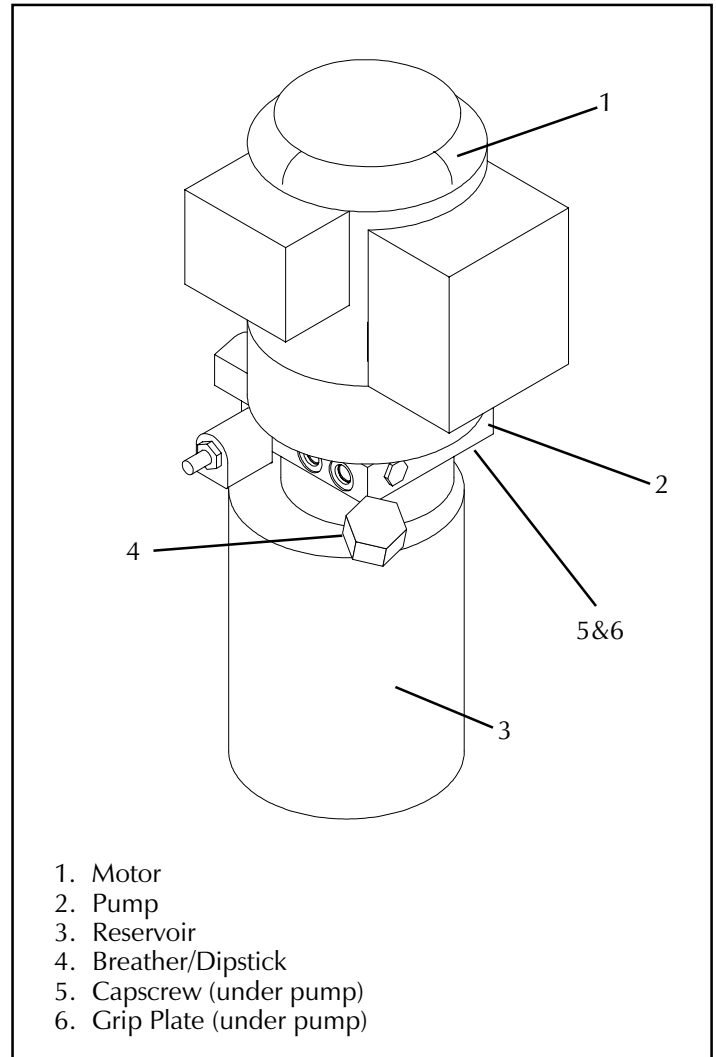


Figure 3-2: Hydraulic Power Unit

HYDRAULIC OIL RESERVOIR (Figure 3-2)

Verify that Platform is fully lowered.



1. Remove hydraulic reservoir from pump by removing four screws and four grip plates.
2. Provide a suitable container (reservoir has a 1.5 gallon (5.7 l) capacity) and dispose of hydraulic fluid properly; contact your local oil recycler.

Note: Ensure o-ring is in place on pump when installing hydraulic reservoir.

3. Reinstall hydraulic reservoir to pump assembly with grip plates and screws.
4. Fill hydraulic reservoir through the dipstick hole with ISO #46 hydraulic fluid. Hydraulic reservoir has a 1.5 gallon (5.7 l) capacity.



3.3 Battery Maintenance

Electrical energy for the motor is supplied by two 12-volt batteries. Proper care and maintenance of the battery and motor will ensure maximum performance from the lift.

	WARNING	
<p>Hazard of explosive gas mixture. Keep sparks, flame and smoking materials away from batteries.</p> <p>Always wear safety glasses when working with batteries.</p> <p>Battery fluid is highly corrosive. Rinse away any spilled fluid thoroughly with clear water.</p>		

BATTERY INSPECTION AND CLEANING

Check battery fluid level daily, especially if work platform is being used in a warm, dry climate. If required, add distilled water only; use of tap water with high mineral content will shorten battery life.



	CAUTION	
<p>If battery water level is not maintained, battery will not fully charge, creating a low discharge rate which will damage Motor/Pump unit and void warranty.</p>		

Batteries 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.

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

BATTERY CHARGING (Figure 3-3)

Charge batteries at end of each work shift or sooner if battery has been discharged.

	CAUTION	
<p>Charge batteries in a well-ventilated area.</p> <p>Do not charge batteries when the lift is in an area containing sparks or flames.</p> <p>Permanent damage to batteries will result if batteries are not immediately recharged after discharging.</p> <p>Never leave charger operating unattended for more than two days.</p> <p>Never disconnect cables from batteries when charger is operating.</p> <p>Keep charger dry.</p>		

When night air temperatures fall below 65°F (18°C) a battery charged in an unheated area should be placed on charger 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.

1. Check battery fluid level. If electrolyte level is lower than $\frac{3}{8}$ in. (10 mm) above plates add distilled water only.
2. Verify charger voltage switch is set to 12 volts.
3. The battery charger is located at the rear of the mast. Connect extension cord (12 gauge conductor minimum and 50 ft. (15 m) in length maximum) to the charger plug. Connect other end of extension cord to properly grounded outlet of proper voltage and frequency.
4. Set charger control to "conventional" setting. Charger ammeter should indicate charge rate.
5. When batteries are fully charged, charger automatically turns itself off. Disconnect extension cord.

BATTERY CELL EQUALIZATION

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 distilled water as necessary. Then, turn the charger on for an additional eight hours. During this time, the charging current will be low (four amps) as cells are equalizing.

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 battery should be replaced.

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.

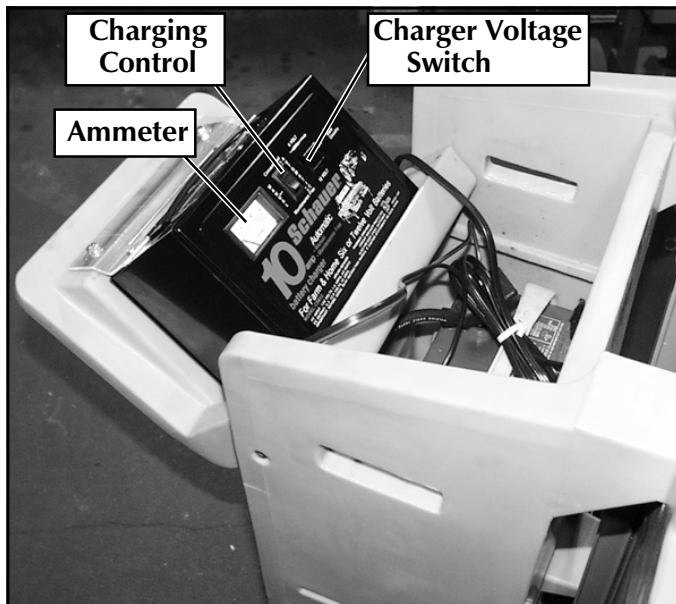


Figure 3-3: Battery Charger

3.4 Setting System Relief Valve (Figure 3-4)

Check the hydraulic system pressure whenever the pump or relief valve has been serviced or replaced.

⚠	WARNING	⚠
<p>The hydraulic oil may be of sufficient temperature to cause burns. Wear safety gloves and safety glasses when handling hot oil.</p>		

1. Install outriggers and level unit as normal, (see section 3 for operating instructions), and operate the hydraulic system for 5-10 minutes to warm the hydraulic oil.
2. Place rated load on the platform (see table 1-1 for specifications). **Do Not** use live weight for this procedure.
3. Remove the cap from the System Relief Valve (fig. 3-4), and turn the adjustment screw counter-clockwise two full turns.
4. Operate controls to elevate machine. (Machine will not raise until Relief Valve is properly adjusted [approximately 1800 PSI].)
5. Turn the System Relief Valve Clockwise (fig. 3-4) until the machine begins to rise.
6. Replace cap on System Relief Valve.

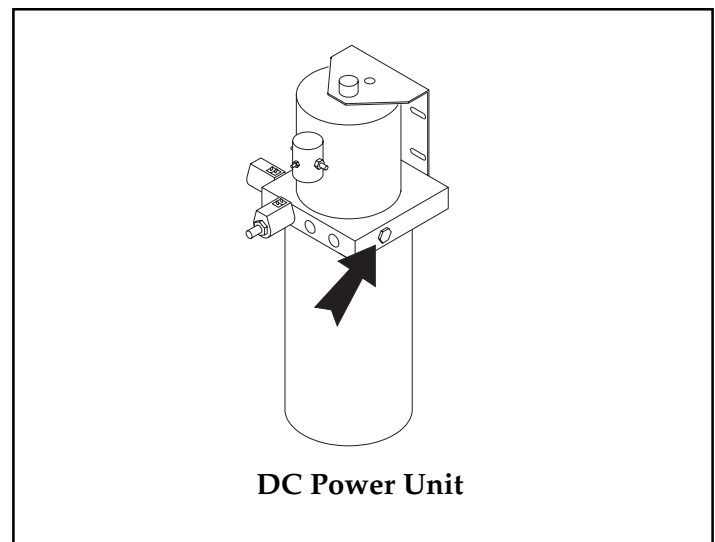


Figure 3-4: System Relief Valve

3.5 Mast Assembly (Figure 3-6,3-7) Disassembly

Using a suitable lifting device, lower the work platform into a horizontal position (Figure 3-5). If possible, place the machine onto a sturdy work table using a forklift.



WARNING



Never attempt to lower lift into a horizontal position without the use of a suitable lifting device; bodily injury or damage to the machine may result.

NOTE: Mark all components as they are removed so they can be reinstalled in the correct sequence and location.

Platform Assembly Removal (Figure 3-6)

1. Extend elevating assembly far enough to expose the eight screws attaching the cage support assembly to stage 6 by opening the emergency lowering valve and pulling on the cage guardrail.
2. Remove cover from front of platform assembly.

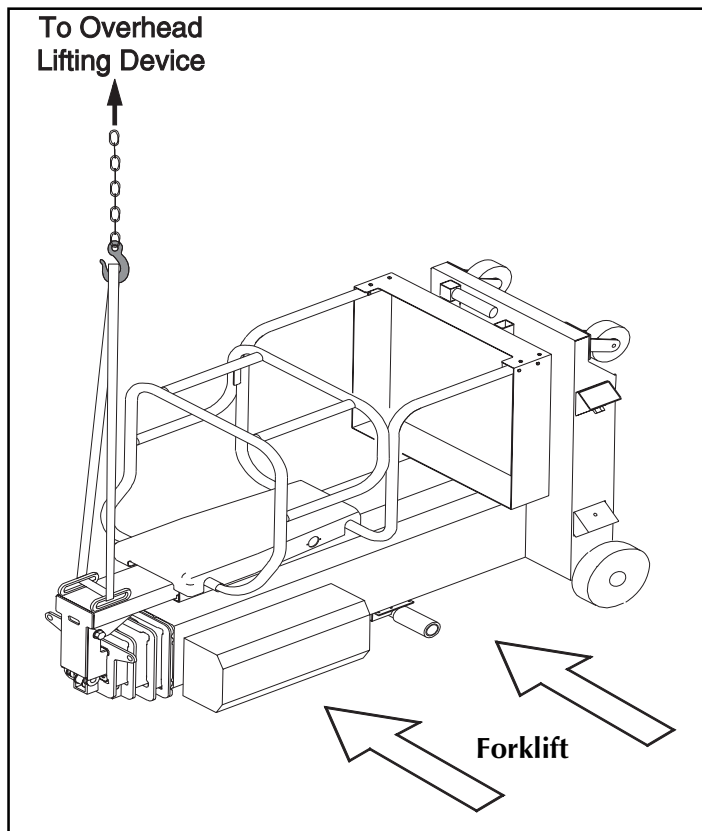


Figure 3-5: Lifting/Lowering UL Lift

3. Remove cotter pins, and drive out chain retaining pins from the top front of stage 5.
4. Loosen screws from strap retainer on stage 5 top casting. Pull strap free of retainer.
5. Remove cage support screws, slide the cage support out of the sixth stage mast and set aside. It should not be necessary to remove the pinch shield. Be careful not to damage the control cable.

Note: to remove the platform assembly from the cage support assembly, follow steps 6-10 below.

6. Remove cable sheaves from cage support weldment, and strain reliefs from stage 5 top casting.
7. Loosen screws from strap retainer on platform assembly weldment and free strap from retainer.
8. Remove two screws and washers holding stop bracket located at top of platform assembly weldment. Remove the stop bracket.
9. Slide the cage support weldment out of the top of the platform assembly weldment.
10. Slide bearings in platform assembly may now be inspected / replaced if necessary.

#6 Mast

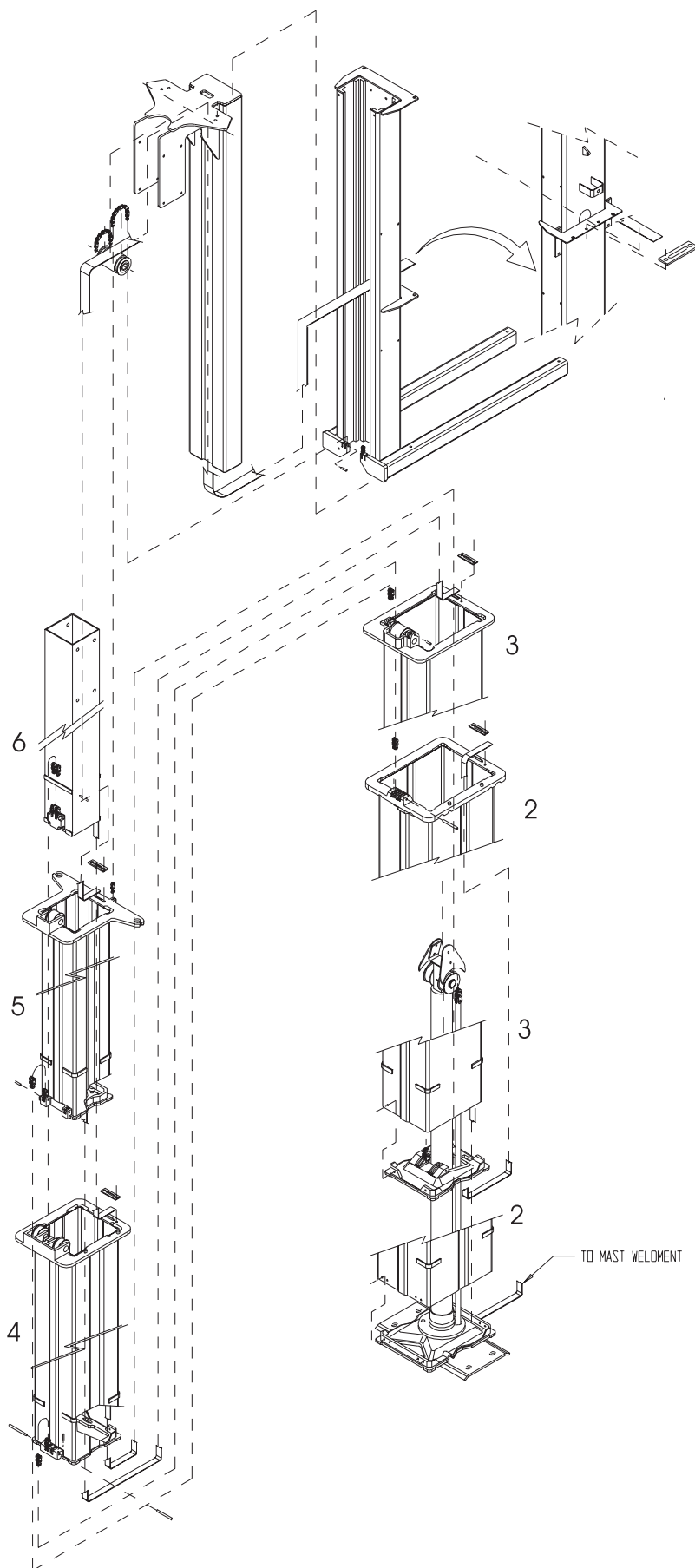
1. Remove sequence strap retainer on the top of #4 mast.
2. Remove the Allen head screws holding the top mast bearings between the #5 and #6 mast. Remove the top mast bearings.
3. Slide #6 mast out of #5 mast. As mast is removed, the bottom four mast bearings will fall out; note their orientation for re-assembly.
4. Disconnect chain from top of #4 mast.

#5 Mast

1. Remove sequence strap retainer on the top of #3 mast.
2. Remove the Allen head screws holding the top mast bearings between the #4 and #5 mast. Remove the top mast bearings.
3. Slide #5 mast out of #4 mast. As mast is removed, the bottom four mast bearings will fall out; note their orientation for re-assembly.
4. Disconnect chain from top of #3 mast.

#4 Mast

1. Remove sequence strap retainer on the top of #2 mast.
2. Remove the Allen head screws holding the top mast bearings between the #3 and #4 mast. Remove the top mast bearings.
3. Slide #4 mast out of #3 mast. As mast is removed, the bottom four mast bearings will fall out; note their orientation for re-assembly.



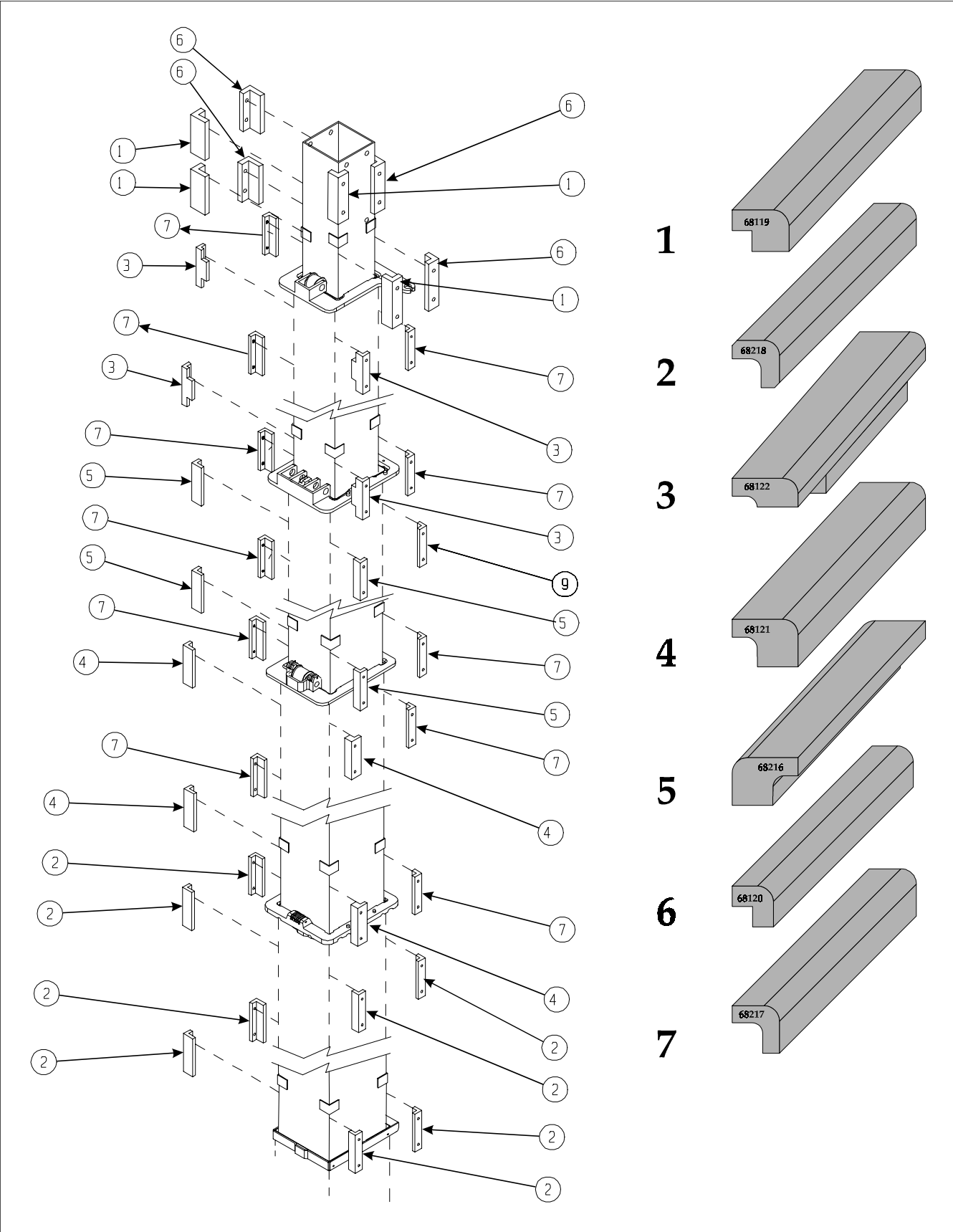


Figure 3-7: Mast Assembly, Bearing Detail

3.5 Mast Assembly (Cont.)

4. Disconnect chain from top of #2 mast.
5. Remove cylinder by following instructions in *Section 3.7*.

#3 Mast

1. Remove sequence strap retainer on the top of #1 mast.
2. Remove the Allen head screws holding the top mast bearings between the #2 and #3 mast. Remove the top mast bearings.
3. Slide #3 mast out of #2 mast. As mast is removed, the bottom four mast bearings will fall out; note their orientation for re-assembly.

#2 Mast

1. Remove the Allen head screws holding the top mast bearings between the #1 and #2 mast. Remove the top mast bearings.
2. Slide #2 mast out of #1 mast. As mast is removed, the bottom four mast bearings will fall out; note their orientation for re-assembly.

ASSEMBLY (Figure 3-7)

Note: Use WD-40 lubricant as necessary to aid in reassembly.

#2 Mast

1. Set #2 mast in place.
2. Install bottom lower bearings.
3. Install bottom upper bearings.
4. Slide #2 mast in all the way except 12-15" (30 -38 cm).
5. Install top bearings and secure with retaining screws using Loctite® 242 or equivalent on the threads.
6. Slide #2 mast in completely.

#3 Mast

1. Set #3 mast in place with the sequencing strap inside.
2. Install bottom lower bearings.
3. Install bottom upper bearings.
4. Slide #3 mast in all the way except 12-15" (30 -38 cm).
5. Install top bearings and secure with retaining screws using Loctite® 242 or equivalent on the threads.
6. Place a 10" (25 cm) long wood block between #3 and #2 masts, slide #3 mast down tight against block. Pull sequencing strap completely out of the bottom of assembly.
7. Install cylinder assembly by following instructions in section 4.6.

#4 Mast

1. Set #4 mast in place with the sequencing strap inside and the chains on the bottom.
2. Install bottom lower bearings.
3. Install bottom upper bearings.
4. Slide mast #4 in, make sure chains are not twisted.
5. Install top bearings and secure with retaining screws using Loctite® 242 or equivalent on the threads.
6. Install chains around #3 sheave and down through #3 casting, secure to #2 casting with new roll pins.
7. Use a center punch to dimple pin hole after roll pins are installed.

#5 Mast

1. Set #5 mast in place with the sequencing strap inside.
2. Install bottom lower bearings.
3. Install bottom upper bearings.
4. Slide #5 mast in, make sure chains are not twisted.
5. Install top bearings and secure with retaining screws using Loctite® 242 or equivalent on the threads.
6. Install chains around #4 sheaves and down through #4 casting, secure to #3 casting with new roll pins.
7. Use a center punch to dimple pin holes after all roll pins are installed.
8. Slide mast in, leaving 10" (25 cm) exposed.

#6 Mast

1. Set #6 mast in place with the sequencing strap inside.
2. Run the remaining sequencing strap (from platform assembly) through the slot in the bottom of stage #6 and up through the inside. Leave just enough slack on the outside to reach the attachment point at the top of stage #5.
3. Install bottom lower bearings.
4. Install bottom upper bearings.
5. Slide #6 mast in, make sure chains are not twisted.
6. Install top bearings and secure with retaining screws using Loctite® 242 or equivalent on the threads.
7. Install #6 chain around #5 sheave and through casting, secure to #4 casting with new roll pins.
8. Use a center punch to dimple pin holes after all roll pins are installed.
9. Pull the sequencing strap attached to the bottom of mast #6 out through the bottom of the mast assembly. Be sure not to pull the strap that is attached to the top of mast #5.

3.5 Mast Assembly (Cont.)

Platform Support Assembly

1. Slide cage support weldment into the top of the platform assembly weldment.
2. Install stop bracket and retaining screws / washers.
3. Feed chains over sheave.
4. Install cable sheaves with cables to the top of cage support weldment.
5. Feed sequencing strap from inside mast #6 over sheave and out through the slot in the top of the cage support weldment.
6. Install cage support weldment to mast #6 using eight screws, tighten.
7. Attach chains to #5 casting front using new cotter pins.

Sequencing Strap Installation

When installing straps, make sure they are not twisted.

1. Feed fish tape up through the bottom slot in cage support weldment and out through the top slot.
2. Attach strap to fish tape and pull out through bottom slot.
3. Feed fish tape down through the opening in the front of the platform support weldment and out through the bottom of the platform support weldment.
4. Attach strap to fish tape and pull out through opening. Attach strap to platform support weldment, pull tightly and secure with strap clamp and screws using Loctite® 242 or equivalent on the threads.
5. Fish #6 strap up through mast between fourth and fifth stages with fish tape.
6. Fish #5 strap up through mast between third and fourth stages with fish tape.
7. Fish #4 strap up through mast between third and second stages with fish tape.
8. Fish #3 strap up through mast between first and second stages with fish tape.
9. Install strap #6 to #4 top casting.
10. Install strap #5 to #3 top casting.
11. Install strap #4 to #2 top casting.
12. Install strap #3 to top of #1 mast weldment.
13. Install the strap clamps and retaining screws using Loctite® 242 or equivalent on the threads. Pull straps tight while tightening retaining screws.

3.6 Cylinder Assembly

SEAL REPLACEMENT (Figure 3-8)

Note: The Lift Cylinder Seal can be accessed from the bottom of the Lift without removing the Cylinder Assembly.

Using a suitable lifting device, lower the work platform into a horizontal position (Figure 3-5). If possible, place the machine onto a sturdy work table using a forklift.



WARNING



Never attempt to lower lift into a horizontal position without the use of a suitable lifting device; bodily injury or damage to the machine may result.

1. Remove cylinder mounting plate fasteners and retaining ring.
2. Remove tie rod nuts, count the number of turns required to bring the nut flush with the tie rod end and record for reference during installation. The tension on the tie rods maintains the left / right positioning of the cylinder within the mast assembly, reinstalling the nuts with the proper tension will speed up adjustment later.
3. Remove the cylinder mounting plate. Be careful not to allow the tie rods to suck back inside of the mast assembly, replace the nuts on the tie rod ends temporarily to prevent this.
4. Remove hydraulic line from the cylinder fitting and cap the cylinder fitting to prevent contaminants from entering the cylinder.



CAUTION



Marring the surface of the cylinder rod will damage cylinder seals and cause leakage. Use a strap wrench to prevent rod damage.

5. Extend cylinder rod at least twelve inches by hand. Apply heat to rod near end cap to loosen Loc-tite®.



WARNING



Wear safety glasses and heat resistant gloves when operating torch. Do not touch hot surfaces without proper protection.

6. Using a Strap Wrench, 62482-000, to secure the cylinder rod, unscrew the cylinder rod end. If necessary, thread a 9/16 x 18 bolt into end cap port to use as a lever. Remove rod end cap and orifice / bleeder tube assembly.

7. Remove the seal retainer, using the spanner wrench, 62521-010.
8. Clean all sealing surfaces with solvent. Inspect cylinder rod for excessive wear, replace if necessary.
9. Remove all seals from seal retainer, rod end cap and discard.

Note: Apply clean hydraulic fluid to new cylinder seal, threads and all sliding surfaces prior to assembly. If necessary, soften new seals with warm water (180°F [82°C]) to aid in installation.

10. Twist the pressure seal into a 'C' shape and snap into seal groove in seal retainer, making sure the lip of the seal is facing inward.
11. Using the same method, install the rod wiper into the seal retainer outer groove, making sure that the blade of the seal is facing outward from the seal retainer.
12. Replace static seals in rod end cap and seal retainer by stretching them into place. Be careful not to cut the seal during installation.
13. Install the seal retainer onto rod using a sharp blow from a hard rubber mallet to overcome seal squeeze. Slide seal retainer into place and tighten using the spanner wrench.
14. Rod and rod end threads must be absolutely clean. Spray threads with Loctite® primer #7471, allow to dry for five minutes. Coat threads liberally with Loctite® #242. Thread rod end cap onto rod, tighten using strap wrench to hold rod.
15. Push rod back into cylinder for reassembly.
16. Reconnect hydraulic line.

17. Remove nuts from tie rod ends and set the cylinder mounting plate into place. Secure mounting plate with fasteners.
18. Install tie rod nuts flush with tie rod ends, torque each nut the exact number of turns used to remove it.
19. Reinstall retaining ring.
20. Using a suitable lifting device, raise the lift to its normal vertical position.
22. Bleed air from cylinder by cycling the mast to full extension several times. The cylinder is self bleeding; air will be forced out of the cylinder during the lowering cycle.
23. If necessary, remove pinch shield and check alignment of cylinder within mast assembly by peering down the mast with a flashlight. The cylinder may be moved left or right by tightening one or the other of the tie rod nuts.



CAUTION



If cylinder is not centered, mast may "hang" when lowering.



WARNING



Keep hands clear of the mast assembly when the pinch shield is removed for inspection purposes; pinching injury to hands may result.

Never operate a machine with the pinch shield removed, except for inspection.

1. Static Seal #1
2. Rod Wiper
3. Pressure Seal
4. Static Seal #2
5. Stop Rings (non replaceable)
6. Rod End Cap
7. Orifice
8. Snap Ring
9. Seal Retainer
10. Bleeder Tube
11. Cylinder Rod
12. Cylinder Body

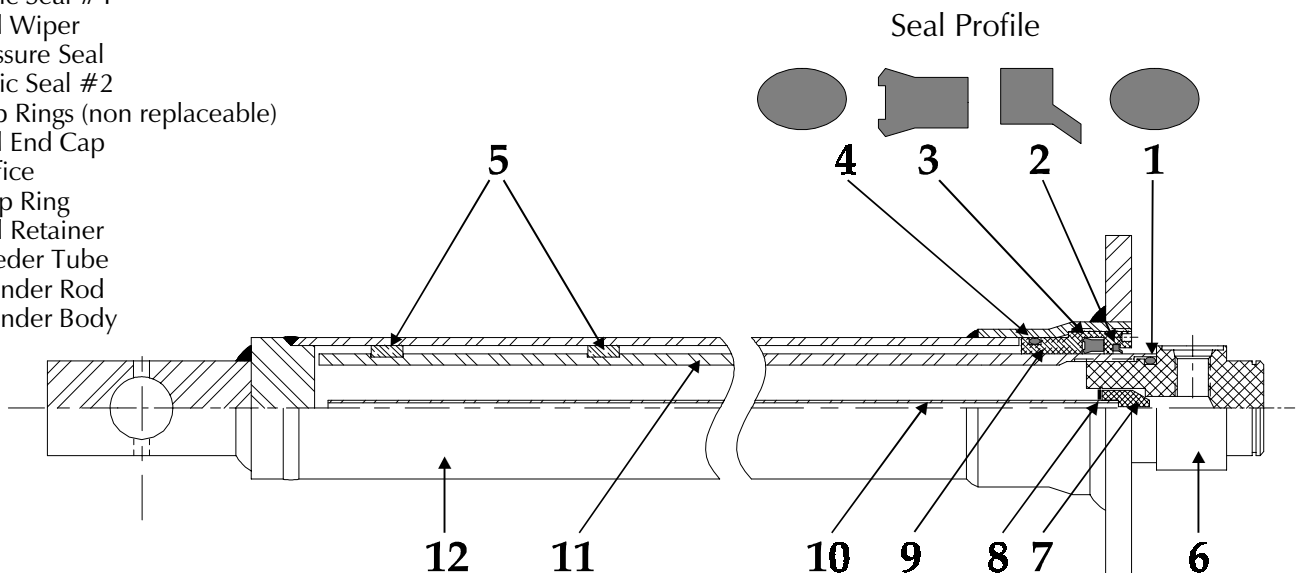


Figure 3-8: lift Cylinder

3.6 Cylinder Assembly (Cont.)

ORIFICE VALVE CLEANING

Using a suitable lifting device, lower the work platform into a horizontal position (Figure 3-5). If possible, place the machine onto a sturdy work table using a forklift.



WARNING



Never attempt to lower lift into a horizontal position without the use of a suitable lifting device; bodily injury or damage to the machine may result.

1. Remove cylinder mounting plate fasteners and retaining ring.
2. Remove tie rod nuts, count the number of turns required to bring the nut flush with the tie rod end and record for reference during installation. The tension on the tie rods maintains the left / right positioning of the cylinder within the mast assembly, reinstalling the nuts with the proper tension will speed up adjustment later.
3. Remove the cylinder mounting plate. Be careful not to allow the tie rods to suck back inside of the mast assembly, replace the nuts on the tie rod ends temporarily to prevent this.
4. Remove hydraulic line from the cylinder fitting and cap the cylinder fitting to prevent contaminants from entering the cylinder.



CAUTION



Marring the surface of the cylinder rod will damage cylinder seals and cause leakage. Use a strap wrench to prevent rod damage.

5. Extend cylinder rod at least twelve inches by hand. Apply heat to rod near end cap to loosen Loc-tite®.



WARNING



Wear safety glasses and heat resistant gloves when operating torch. Do not touch hot surfaces without proper protection.

6. Using a Strap Wrench, 62482-000, to secure the cylinder rod, unscrew the cylinder rod end. If necessary, thread a 9/16 x 18 bolt into end cap port to use as a lever. Remove rod end cap and orifice / bleeder tube assembly.
7. Remove snap ring to release orifice / bleeder tube from rod end cap.

8. Clean orifice valve hole with a straight pin. Flush with solvent to remove any contamination that may remain in bleeder tube.
9. Reinstall orifice / bleeder tube into rod end cap and secure with snap ring.
10. Replace static seal on red end. Existing seal may have been damaged by heating rod.
11. Rod and rod end threads must be absolutely clean. Spray threads with Loctite® primer #7471, allow to dry for five minutes. Coat threads liberally with Loctite® #242. Thread rod end cap onto rod, tighten using strap wrench to hold rod.
12. Push rod back into cylinder for reassembly.
13. Reconnect hydraulic line.
14. Remove nuts from tie rod ends and set the cylinder mounting plate into place. Secure mounting plate with fasteners.
15. Install tie rod nuts flush with tie rod ends, torque each nut the exact number of turns used to remove it.
16. Reinstall retaining ring.
17. Using a suitable lifting device, raise the lift to its normal vertical position.
18. Bleed air from cylinder by cycling the mast to full extension several times. The cylinder is self bleeding; air will be forced out of the cylinder during the lowering cycle.
19. If necessary, remove pinch shield and check alignment of cylinder within mast assembly by peering down the mast with a flashlight. The cylinder guide bearings must not be touching the inside surface of #6 mast. The cylinder may be moved left or right by tightening the left or right tie rod nuts respectively.



CAUTION



If cylinder is not centered, mast may "hang" when lowering.



WARNING



Keep hands clear of the mast assembly when the pinch shield is removed for inspection purposes; pinching injury to hands may result.

Never operate a machine with the pinch shield removed, except for inspection.

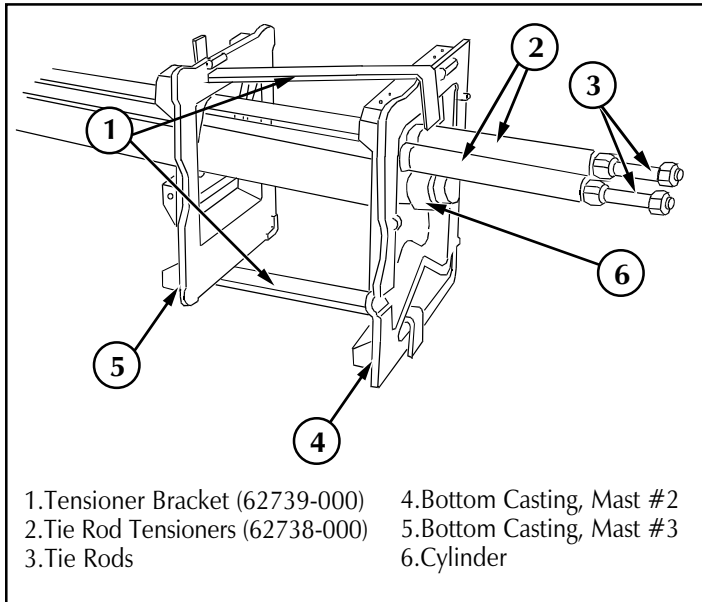


Figure 3-9: Cylinder Assembly Installation

CYLINDER REMOVAL (Figure 3-9)

Using a suitable lifting device, lower the work platform into a horizontal position (Figure 3-5). If possible, place the machine onto a sturdy work table using a forklift.

⚠ WARNING ⚠

Never attempt to lower lift into a horizontal position without the use of a suitable lifting device; bodily injury or damage to the machine may result.

1. Remove cylinder mounting plate fasteners and retaining ring.
2. Remove tie rod nuts, count the number of turns required to bring the nut flush with the tie rod end and record for reference during installation. The tension on the tie rods maintains the left / right positioning of the cylinder within the mast assembly, reinstalling the nuts with the proper tension will speed up adjustment later.
3. Remove the cylinder mounting plate. Be careful not to allow the tie rods to suck back inside of the mast assembly, replace the nuts on the tie rod ends temporarily to prevent this.
4. Remove hydraulic line from the cylinder fitting and cap the cylinder fitting to prevent contaminants from entering the cylinder.
5. Remove sequence strap retainers on the top of #3 and #2 masts.
6. Remove front and rear mast access plates from the bottom of the #1 mast.

7. Remove the screws and washers, attaching the #2 and #3 bottom castings to the #2 and #3 mast assemblies.
8. While keeping tension on the tie rods, slide the cylinder and #2 and #3 bottom castings out the bottom of the UL Lift far enough to expose both castings.
9. Install cylinder Tensioner Brackets, 62739-000 on #2 and #3 bottom castings. Remove tie rod nuts and install the Tie Rod Tensioners, 62738-000. Remove all slack from the chains with the Tie Rod Tensioners.
10. Remove cylinder assembly from mast assembly.

INSTALLATION

NOTE: Cylinder assembly must have Tension Brackets, Tensioner Spacer and Tie Rod Tensioners installed to remove slack from chain.

1. Slide cylinder assembly into mast assembly until #3 bottom casting is at the bottom of the mast assembly.
2. Install the screws and washers attaching the #3 bottom casting to the #3 mast assembly.
3. Remove cylinder Tensioner Brackets from #2 and #3 bottom castings and Tie Rod Tensioners from tie rods. Install tie rod nuts finger tight.
4. While maintaining tension on the tie rods to keep slack out of the chains, slide cylinder assembly completely into the mast assembly.
5. Install the screws and washers attaching the #2 bottom casting to the #2 mast assembly.
6. Install front and rear mast cover plates on the bottom of #1 mast.
7. Fish #4 strap between #3 and #2 mast with fish tape.
8. Slide #4 strap through #2 casting.
9. Fish #3 strap between #2 and #1 mast with fish tape.
10. Install strap #4 to #2 top casting.
11. Install strap #3 to #1 top casting.
12. While maintaining tension on the sequencing straps, install strap retainers using Loctite® 242 or equivalent on the threads of the retainer screws.
13. Reconnect hydraulic line.
14. Remove nuts from tie rod ends and set the cylinder mounting plate into place. Secure mounting plate with fasteners.
15. Install tie rod nuts flush with tie rod ends, torque each nut the exact number of turns used to remove it.
16. Reinstall retaining ring.

3.6 Cylinder Assembly (Cont.)

INSTALLATION (CONT.)

17. Using a suitable lifting device, raise the lift to its normal vertical position.
18. Bleed air from cylinder by cycling the mast to full extension several times. The cylinder is self bleeding; air will be forced out of the cylinder during the lowering cycle.
19. If necessary, remove pinch shield and check alignment of cylinder within mast assembly by peering down the mast with a flashlight. The cylinder guide bearings must not be touching the inside surface of #6 mast. The cylinder may be moved left or right by tightening the left or right tie rod nuts respectively.



WARNING



Keep hands clear of the mast assembly when the pinch shield is removed for inspection purposes; pinching injury to hands may result .

Never operate a machine with the pinch shield removed, except for inspection.

3.7 Torque Specifications

HYDRAULIC COMPONENTS

Use the following values to torque hydraulic components used on UpRight Work Platforms.

Note: Always lubricate threads with clean hydraulic oil prior to installation.

Table 3-2: Hydraulic Component Torque

TYPE: SAE PART SERIES	CARTRIDGE POPPET (Ft/Lbs Nm)		FITTINGS (Ft/Lbs Nm)		HOSES (In/Lbs Nm)	
#4	N/A	N/A	N/A	N/A	135-145	15-16
#6	N/A	N/A	10-20	14-27	215-245	24-28
#8	25-30	34-41	25-30	34-41	430-470	49-53
#10	35-40	47-54	35-40	47-54	680-750	77-85
#12	85-90	115-122	85-90	115-122	950-1050	107-131
#16	130-140	176-190	130-140	176-190	1300-1368	147-155

Coil nuts: 30 In/Lbs (3 Nm)

FASTENERS

Use the following values to torque fasteners used on UpRight Work Platforms unless a specific torque value is called out for the part being installed.

Table 3-3: Bolt Torque

THREAD SIZE <small>American National Standard-UNF (fine)</small>	WIDTH ACROSS FLATS	TORQUE VALUE	
		ENGLISH	METRIC
1/4	7/16	110 In/Lbs	12 Nm
5/16	1/2	190 In/Lbs	22 Nm
3/8	9/16	30 Ft/Lbs	41 Nm
7/16	5/8	50 Ft/Lbs	68 Nm
1/2	3/4	75 Ft/Lbs	102 Nm
5/8	15/16	150 Ft/Lbs	203 Nm
3/4	1 1/8	250 Ft/Lbs	339 Nm
7/8	1 5/16	400 Ft/Lbs	542 Nm
1	1 1/2	600 Ft/Lbs	813 Nm

4.0 Introduction

Section 4-1 provides information on the electronic control system. Tables 4-2 & 4-3 contain troubleshooting Truth Tables for the U-Drive 25.



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, ensure that all four (4) outriggers are properly installed.

Unplug the machine or disconnect the battery when replacing or testing the continuity of any electrical component.

GENERAL PROCEDURE

Check for Fault Flash Codes (LED on Power On indicator). Repair/replace component indicated by Flash Code. If no Flash Code is displayed, refer to Truth Table (Table 4.1). Thoroughly study hydraulic and electronic schematics. Check for loose connections and short circuits. Check/repair/replace each component in the Truth Table which is listed under each machine function which does not operate properly.

4.1 Diagnostics

Important: The controller system is programmed at the factory for optimum performance. If controller programming error is suspected, return module to the factory for reprogramming.

Any fault condition on the actuator module or the power module will cause the Power On indicator (located on platform controls) to flash. Flashing occurs in bursts of flashes separated by a two second pause. The Flash Code (number of flashes) indicates the nature of the fault.

Note: If the controller encounters a Flash Code 1, 9, or 10 (possible bad connection) the machine will operate at "Creep" speed until the fault is diagnosed and corrected.

Table 4-1: Flash Code Legend

FLASH CODE	PROBABLE CAUSE	ACTION
1 Flash	Faulty connection between control modules (Tam and power module).	Check/replace connections between modules.
2 Flashes	Accessory fault (possible bad switch on platform controller).	Check/replace switches on platform controller.
3 Flashes	Left motor- left motor or connections are faulty	Check/replace left motor or connections.
4 Flashes	Right motor- right motor or connections are faulty.	Check/replace right motor or connections.
5 or 6 Flashes	Not used Not used	Replace one or more modules if machine will not move or gives a Flash Code of 5 or 6.
7 Flashes	Low battery	Charge batteries.
8 Flashes	Over voltage (voltage is over 32 volts)	Reduce voltage.
9 or 10 Flashes	Communications fault	Check/replace cables between modules.
11 Flashes	Stall time-out fault motor at or above current limit	Turn machine off and back on.
12 Flashes	Module mismatch (compatibility problem between modules)	Replace power module, Tam module or platform controller.

Troubleshooting

Component	Function	Lower Controls	Upper Controls	Raise Platform	Lower Platform	Drive	Steer	Tilt Alarm (Alm2)	Down Alarm (Alm1)
Battery BATT		X	X						
Battery Quick Disconnect		X	X						
100 A Fuse FU		X	X	X	X	X	X	X	X
Controller CONTR		X	X	X	X	X	X	X	X
Power Module PM		X	X	X	X	X	X	X	X
Diode D1					X				
Diode D2					X				X
Diode D3					X				
Diode D4					X				X
Diode D5				X					
Diode D6				X	X	X	X		
Diode D7				X	X	X	X		
Diode D8				X	X	X	X		
Diode D9				X	X	X	X		
Diode D10				X	X	X	X		
Diode D11				X	X	X	X		
Diode D12				X	X	X	X		
Diode D13								X	
Lift Motor MOT1				X	X				
Drive Motor MOT2						X	X		
Drive Motor MOT3						X	X		
Relay R1				X	X	X	X		
Interlock Relay R2				X	X	X	X		
Interlock Relay R3				X	X	X	X		
Interlock Relay R4				X	X	X	X		
Interlock Relay R5				X	X	X	X		
E-Stop Relay R6				X	X	X	X		
Tilt Sensor Relay R7				X	X	X	X	X	
Proximity Relay R8				X	X	X	X		
Operator Remote REM				X	X	X	X		
Power Module Resistor RES1						X	X		
Power Module Resistor RES2						X	X		
Proximity Resistor RES3						X	X		
Tilt Sensor SEN						X	X	X	
Down Solenoid SOL1				X		X			
Lift Solenoid SOL2				X					
Key Switch S1		X	X	X	X	X	X	X	X
Interlock Switch S2				X	X	X	X		
Interlock Switch S3				X	X	X	X		
Interlock Switch S4				X	X	X	X		
Interlock Switch S5				X	X	X	X		
Platform Down Switch S6				X	X				
Proximity Switch S7						X			
Chassis Emergency Stop Switch S8		X							
Platform Emergency Stop Switch S9			X						
Enable Switch S10		X	X	X	X	X	X	X	
On/Off Switch S11		X	X	X	X	X	X	X	
Drive/Lift Switch S12		X	X	X	X	X	X		
Hi/Low Switch S13		X	X			X	X		
Down Solenoid SOL1		X	X		X				
Lift Solenoid SOL2		X	X	X					
Joystick JOYS		X	X	X	X	X	X		
Printed Circuit Board PCB			X	X	X	X	X		
Tilt Alarm (off for normal operation)								X	
Down Alarm									X

Table 4-2 Troubleshooting Guide - Electrical Schematics

<div> <div>Component</div> <div>Function</div> </div>	Raise Platform	Lower Platform
Check Valve CV	X	
Cylinder CYL	X	X
Filter FLT1	X	
Filter FLT2	X	
Orifice ORF	X	X
Pump P	X	
Relief Valve RV	X	
Two-way Valve V1 (Normally Closed)	X	
Two-way Valve V2 (Normally Open)		X
Velocity Fuse VF	X	X

Table 4-3 Troubleshooting Guide - Hydraulic Schematics

Notes:

5.0 Introduction

This section contains electrical and hydraulic schematics and associated information for maintenance purposes.

The diagrams are to be used in conjunction with Tables in the *Troubleshooting Guide*. They allow understanding of the makeup and functions of the systems for checking, tracing, and faultfinding during troubleshooting analysis.

The components that comprise the electrical and hydraulic systems are given a reference designation and are explained as to function and location in the following tables.

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Figure 5-1: Controller Remote	5-3
Figure 5-2: Electrical Schematic	5-3
Figure 5-3: Hydraulic Schematic	5-4

5.1 Electrical Schematics

U-Drive 25 069304-000

Table 5-1: Electrical Schematic Legend

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
ALM1	Alarm	Down alarm	Lower Control Box
ALM2	Tilt Alarm	Provides warning sound when slope of machine exceeds 2deg. side to side or fore and aft.	Lower Control Box
BATT	Battery 12V (2)	Main Power	Battery Box on back of Mast
CONTR	Power Module	Controls drive motors	Chassis
D1	Diode	Power to R1	Lower Control Box
D2	Diode	Power to ALM1	Lower Control Box
D3	Diode	Power to ALM1	Lower Control Box
D4	Diode	Power to ALM1	Lower Control Box
D5	Diode	Spike Protection	Lower Control Box
D6	Diode	Spike Protection	Lower Control Box
D7	Diode	Spike Protection	Lower Control Box
D8	Diode	Spike Protection	Lower Control Box
D9	Diode	Spike Protection	Lower Control Box
D10	Diode	Spike Protection	Lower Control Box
D11	Diode	Spike Protection	Lower Control Box
D12	Diode	Spike Protection	Lower Control Box
D13	Diode	Spike Protection	Lower Control Box
FU	Fuse 100A	Main Power protection	Lower Control Box
L1	Indicator Light	Indicates Proper Outrigger installation	Chassis
L2	Indicator Light	Indicates Proper Outrigger installation	Chassis
L3	Indicator Light	Indicates Proper Outrigger installation	Chassis
L4	Indicator Light	Indicates Proper Outrigger installation	Chassis
MOT1	Lift Motor	Raise Platform	Power Module
MOT2	Motor	Wheel drive motor	Rear Outrigger
MOT3	Motor	Wheel drive motor	Rear Outrigger

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
PM	Power Module	Powers Machine	Power Module
R1	Interlock Relay	Energize lift motor	Lower Control Box
R2	Interlock Relay	Outrigger Interlock Relay	Lower Control Box
R3	Interlock Relay	Outrigger interlock Relay	Lower Control Box
R4	Interlock Relay	Outrigger interlock Relay	Lower Control Box
R5	Interlock Relay	Outrigger interlock Relay	Lower Control Box
R6	Relay	E-Stop Relay	Lower Control Box
R7	Relay	Tilt Sensor Relay	Lower Control Box
R8	Relay	Proximity Switch Relay	Lower Control Box
REM	Remote	Operator controls	Remote
RES1	Resistor 680 Ohm		Power Module
RES2	Resistor 680 Ohm		Power Module
RES3	Resistor 10 K	Low Drive Speed	Lower Control Box
SEN	Tilt Sensor	Indicate Out of Balance	Lower Control Box
S1	Key Switch	Power to Machine	Upper Controller
S2 - S5	Interlock Switch	Outrigger Interlock	Upper Controller
S6	Platform Down Sw.	Indicated Platform Down	Upper Controller
S7	Proximity Switch	Sets Hi/Low Speed	Lower Control Box
S8	Emergency Stop Sw.	Stop all Functions	Lower Control Box
S9	Emergency Stop Sw.	Stop all Functions	Remote Control Box
S10	Enable Switch	Drive/Lift Interlock	Remote Control Box
S11	On/Off Switch	Controller On/Off	Remote Control Box
S12	Drive/Lift Switch	Activate Drive/Lift	Remote Control Box
S13	Hi/Lo Switch	Activate Drive/Lift	Remote Control Box
JOYS	Joystick	Controls Drive/Lift functions	Remote Control Box
PCB	PCB	Circuit Board	Remote Control Box
SOL1	Solenoid	Down Solenoid	Power Module
SOL2	Solenoid	Lift Solenoid	Power Module

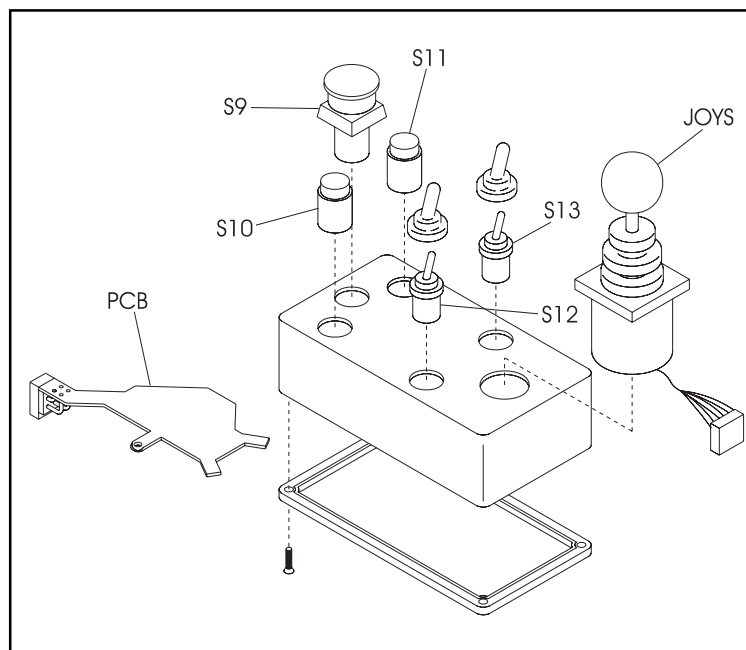


Figure 5-1: Controller Remote, U-Drive 25

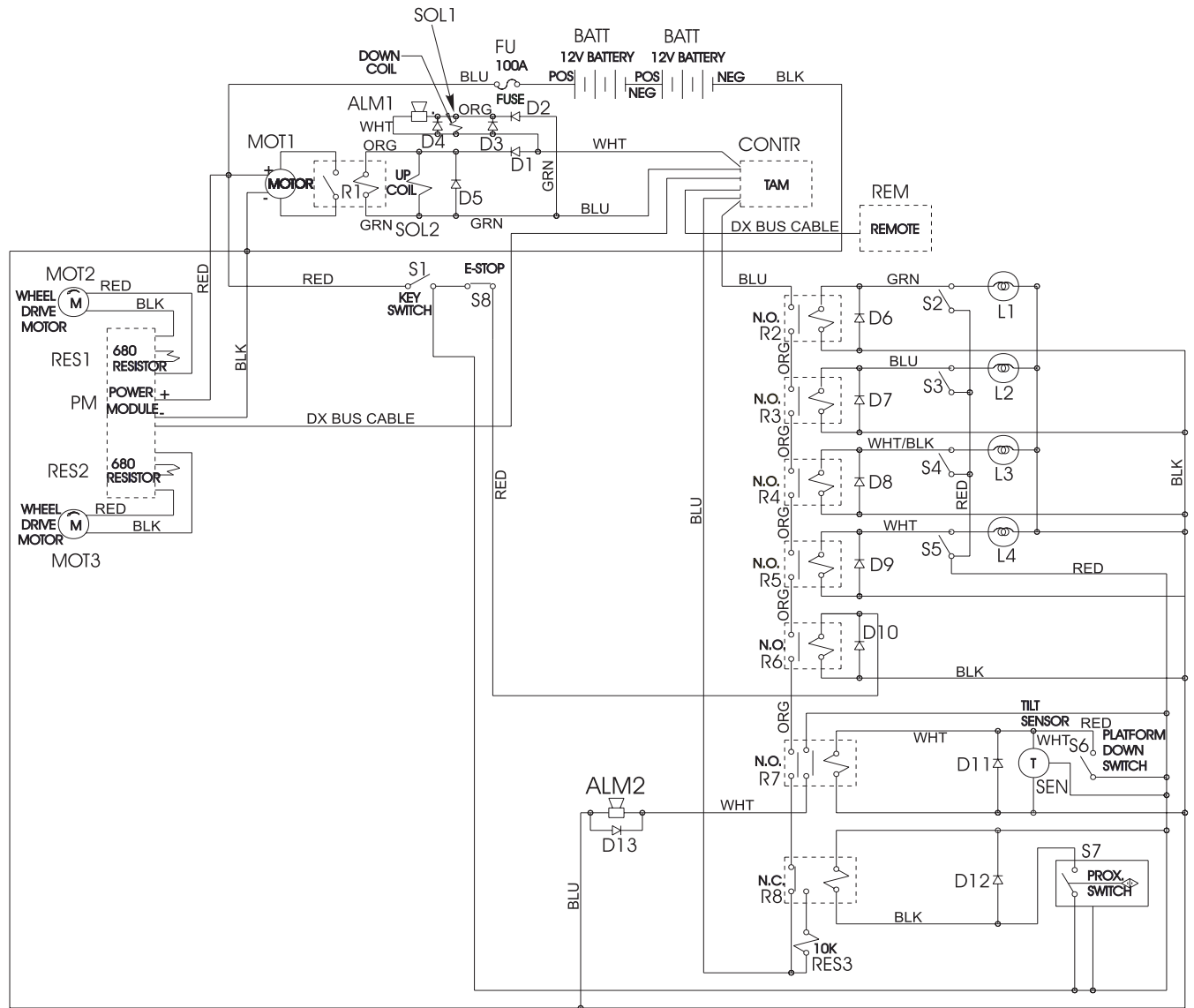


Figure 5-2: Electrical Schematic U-Drive 25 069304-000

5.2 Hydraulic Schematic U-Drive 25
068011-001

Table 5-2: Hydraulic Schematic Legend

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
CV	Valve, Check	Allows flow in one direction.	Inline with CYL.
CYL	Cylinder	Operates Lift	On lift assembly.
FLT1	Filter	Seperates matter held in suspension from fluid.	Inline with Pump.
FLT2	Filter	Seperates matter held in suspension from fluid going to Lift Valve V1	Inline with Lift Valve V1
ORF	Cushion Down Orifice	Controls flow out of CYL	Inline with CYL
P	Pump	Supplies hydraulic pressure to system.	Lower Power Module.
RV	Relief Valve	Limits maximum pressure by releasing oil.	Valve Assembly Lower Power Module.
V1	Valve, Two-Way Norm. Closed	Allows flow when energized.	Valve Block Assembly.
V2	Valve, Two-Way Norm. Open	Stops flow when energized.	Valve Block Assembly.
VF	Velocity Fuse	Regulates de-pressurization	Inline with CYL

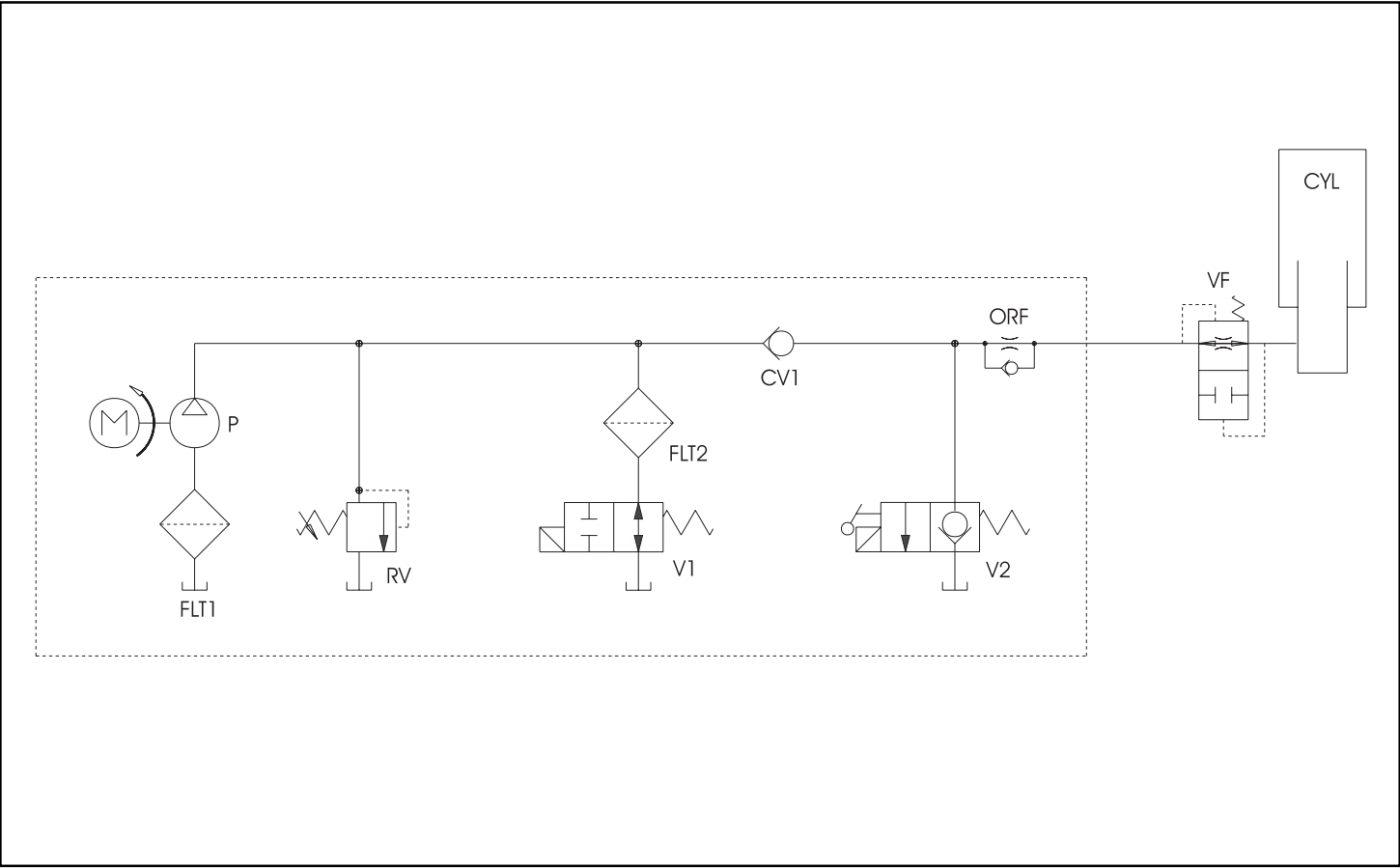


Figure 5-3: Hydraulic Schematic U-Drive 25

6.0 Introduction

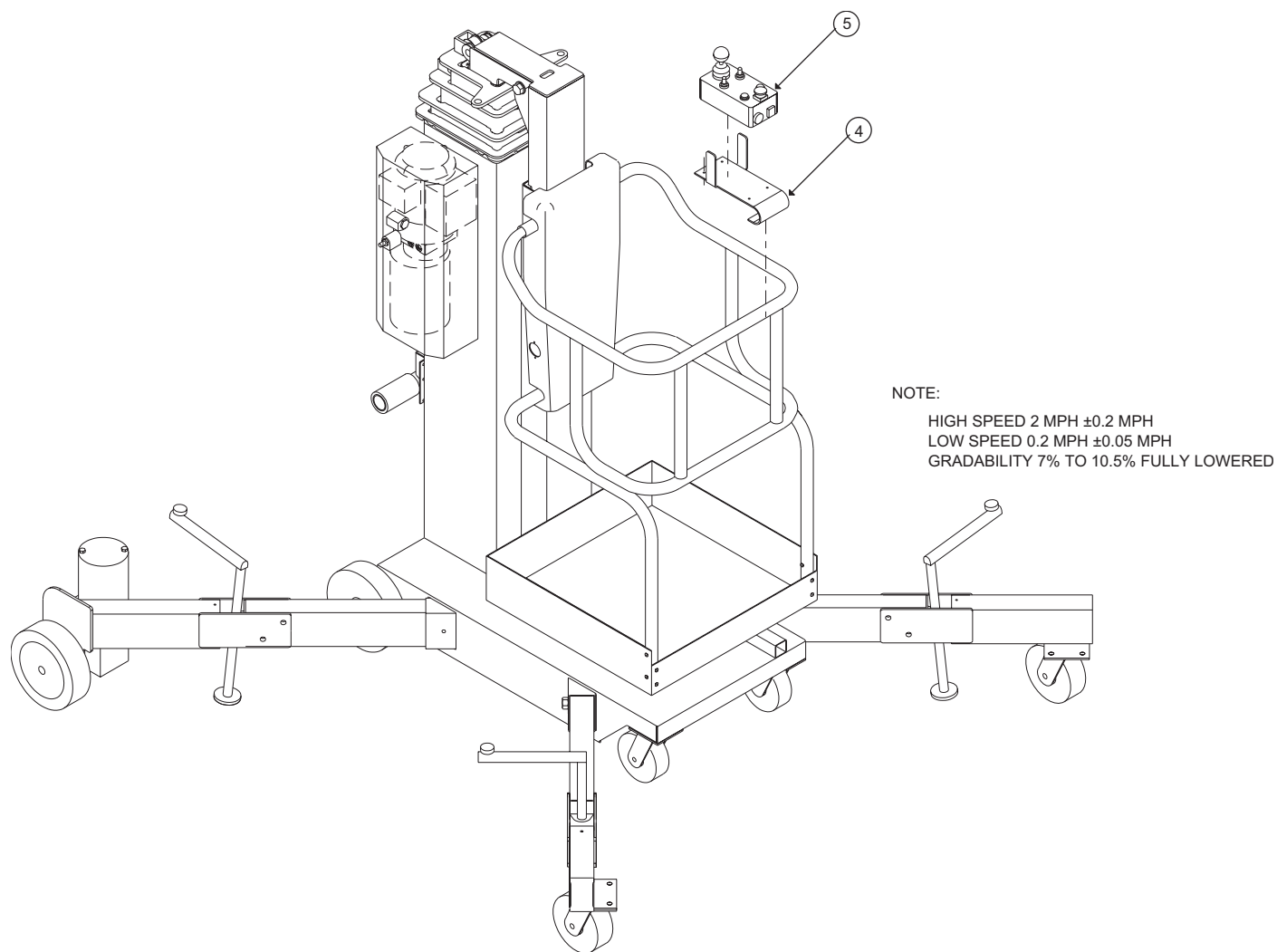
This section lists and illustrates the replaceable assemblies and parts of the U-Drive 25 Portable Personnel Lifts, as manufactured by Upright, Inc.

Each parts list contains the component parts for that assembly indented to show relationship where applicable.

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Illustrated Parts Breakdown



Illustrated Parts Breakdown

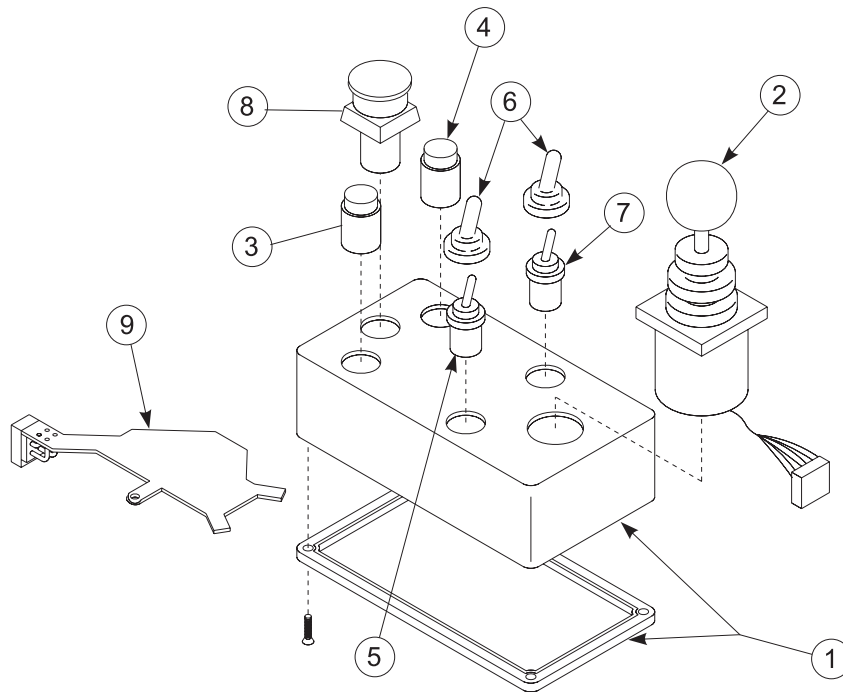
Section
6.2

FINAL ASSY U-DRIVE 25
069300-000

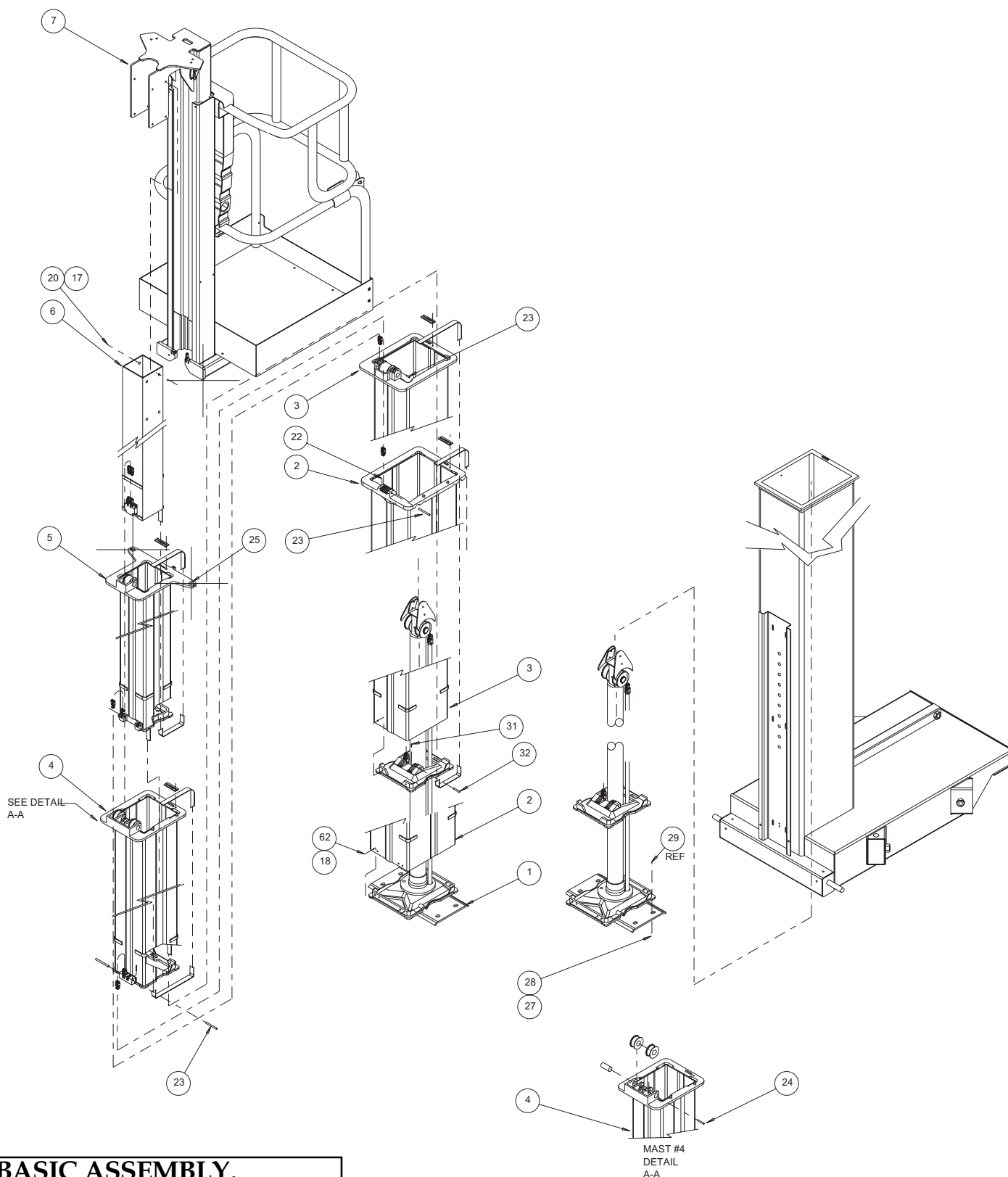
CONTROLLER, REMOTE
069350-020

ITEM	PART	DESCRIPTION	QTY.
1	069301-000	BASIC ASSY	1
2	069303-000	POWER OPTION DOMESTIC	
3	069305-000	LABEL KIT/INST.	1
4	065648-003	CONTROLLER MOUNT	1
5	069350-020	CONTROLLER REMOTE	1
6	011709-003	SCREW 10-24 UNC X 3/8	4
	069304-000	ELECT. SCH.	REF
	068011-001	HYD. SCH.	REF

ITEM	PART	DESCRIPTION	QTY.
1	069350-022	BOX WITH LID	1
2	069350-024	JOYSTICK ASSEMBLY	1
3	069350-025	ENABLE SWITCH	1
4	069350-026	ON/OFF SEITCH	1
5	069350-027	DRIVE/LIFT SWITCH	1
6	069350-028	TOGGLE SWITCH SEAL	2
7	069350-029	HI/LOW SWITCH	1
8	069350-030	EMERGENCY STOP SWITCH	1
9	069350-034	PC BOARD	1



**CONTROLLER ASSEMBLY,
U-Drive 25**



**BASIC ASSEMBLY,
U-Drive 25**
DRAWING 1 OF 3

Illustrated Parts Breakdown

Section
6.2

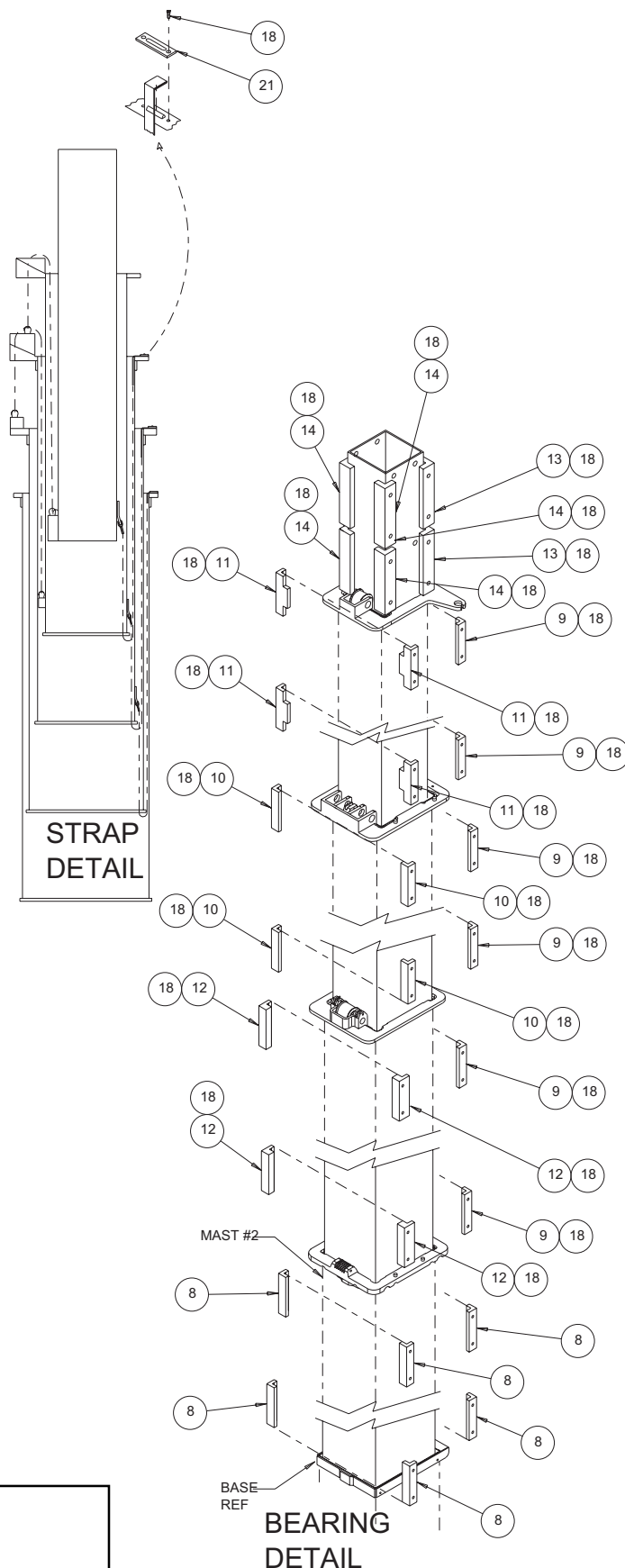
BASIC ASSY - MAST ASSY, DOM

069301-000

ITEM	PART	DESCRIPTION	QTY.
1	068074-005	LIFT CYLINDER ASSY	1
2	068050-001	2ND STAGE MAST ASSY	1
3	068056-001	3RD STAGE MAST ASSY	1
4	068061-001	4TH STAGE MAST ASSY	1
5	068066-001	5TH STAGE MAST ASSY	1
6	068070-001	6TH STAGE MAST ASSY	1
7	068160-013	CAGE SUPPORT ASSY	1
8	068218-000	MAST BEARING	8
9	068217-000	MAST BEARING	12
10	068216-000	MAST BEARING	4
11	068122-000	MAST BEARING	4
12	068121-000	MAST BEARING	4
13	068120-000	MAST BEARING	4
14	068119-000	MAST BEARING	4
15			
16			
17	011238-006	WASHER SPLIT 3/8	4
18	012553-005	SCREW SOC HD 1/4-20 UNC X 5/8	40
19			
20	011823-005	SCREW BUTT HD 3/8-16 X 5/8	8
21	062129-000	STRAP RETAINER	5
22	011735-020	ROLL PIN	2
23	068145-000	PIN LEAF CHAIN	4
24	068141-000	PIN CHAIN	2
25	029903-004	CABLE CONNECTOR	1
26	—	—	—
27	011256-014	SCREW 1/2-13 UNC X 1 3/4	4
28	011240-008	WASHER 1/2 STD FLAT	4
29	011248-008	NUT HEX ESNA 1/2-13 UNC	4
30	063926-007	PLUG	2
31	011735-020	ROLL PIN	2
32	068140-000	PIN	2

SEE NEXT PAGE

Illustrated Parts Breakdown



BASIC ASSEMBLY,
U-Drive 25
DRAWING 2 OF 3

Illustrated Parts Breakdown

Section
6.2

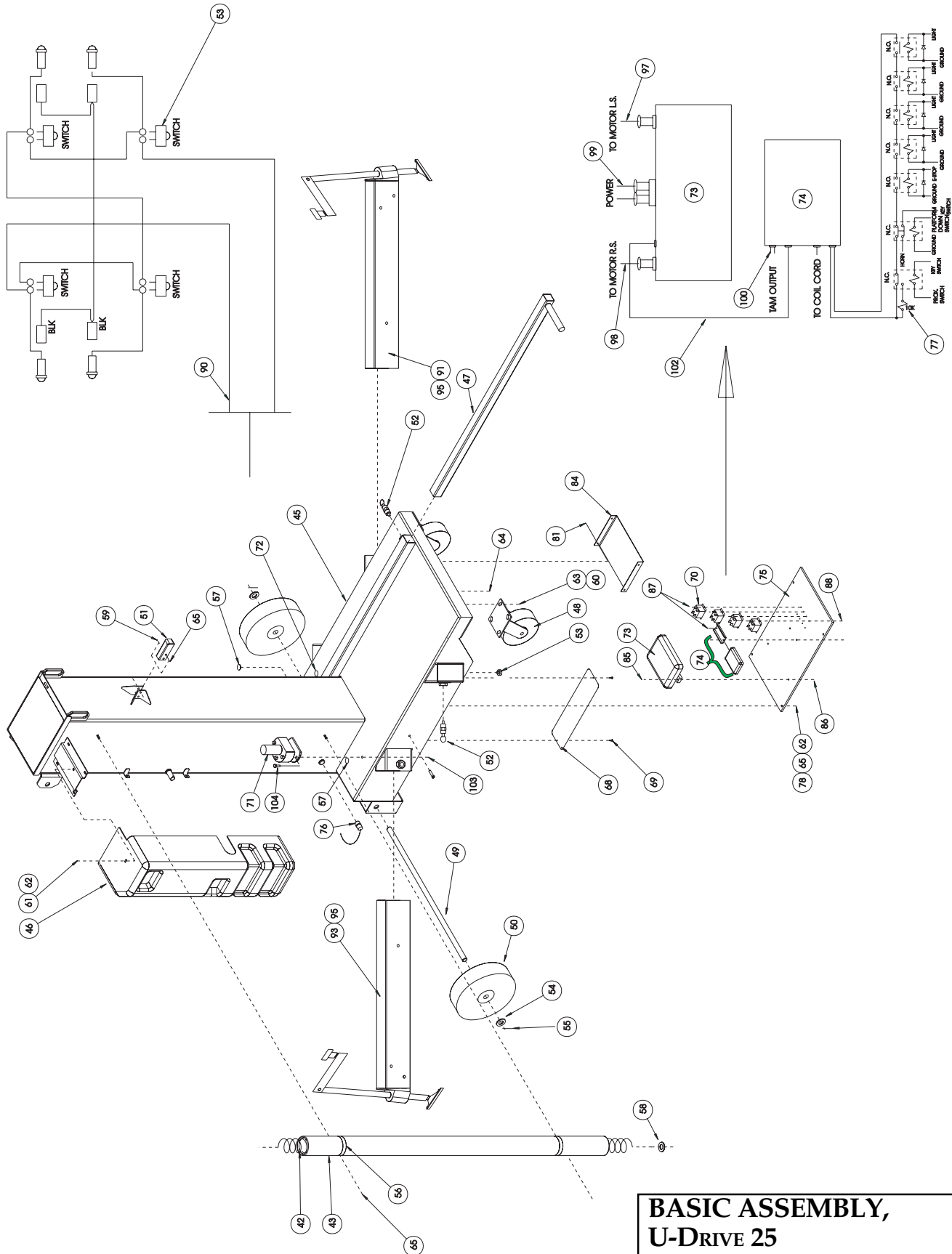
BASIC ASSY - MAST ASSY, DOM

069301-000

ITEM	PART	DESCRIPTION	QTY.
1	068074-005	LIFT CYLINDER ASSY	1
2	068050-001	2ND STAGE MAST ASSY	1
3	068056-001	3RD STAGE MAST ASSY	1
4	068061-001	4TH STAGE MAST ASSY	1
5	068066-001	5TH STAGE MAST ASSY	1
6	068070-001	6TH STAGE MAST ASSY	1
7	068160-013	CAGE SUPPORT ASSY	1
8	068218-000	MAST BEARING	8
9	068217-000	MAST BEARING	12
10	068216-000	MAST BEARING	4
11	068122-000	MAST BEARING	4
12	068121-000	MAST BEARING	4
13	068120-000	MAST BEARING	4
14	068119-000	MAST BEARING	4
15			
16			
17	011238-006	WASHER SPLIT 3/8	4
18	012553-005	SCREW SOC HD 1/4-20 UNC X 5/8	40
19			
20	011823-005	SCREW BUTT HD 3/8-16 X 5/8	8
21	062129-000	STRAP RETAINER	5
22	011735-020	ROLL PIN	2
23	068145-000	PIN LEAF CHAIN	4
24	068141-000	PIN CHAIN	2
25	029903-004	CABLE CONNECTOR	1
26	—	—	—
27	11256-014	SCREW 1/2-13 UNC X 1 3/4	4
28	11240-008	WASHER 1/2 STD FLAT	4
29	11248-008	NUT HEX ESNA 1/2-13 UNC	4
30	63926-007	PLUG	2
31	11735-020	ROLL PIN	2
32	68140-000	PIN	2

SEE NEXT PAGE

Illustrated Parts Breakdown



**BASIC ASSEMBLY,
U-Drive 25
DRAWING 3 OF 3**

Illustrated Parts Breakdown

Section
6.2

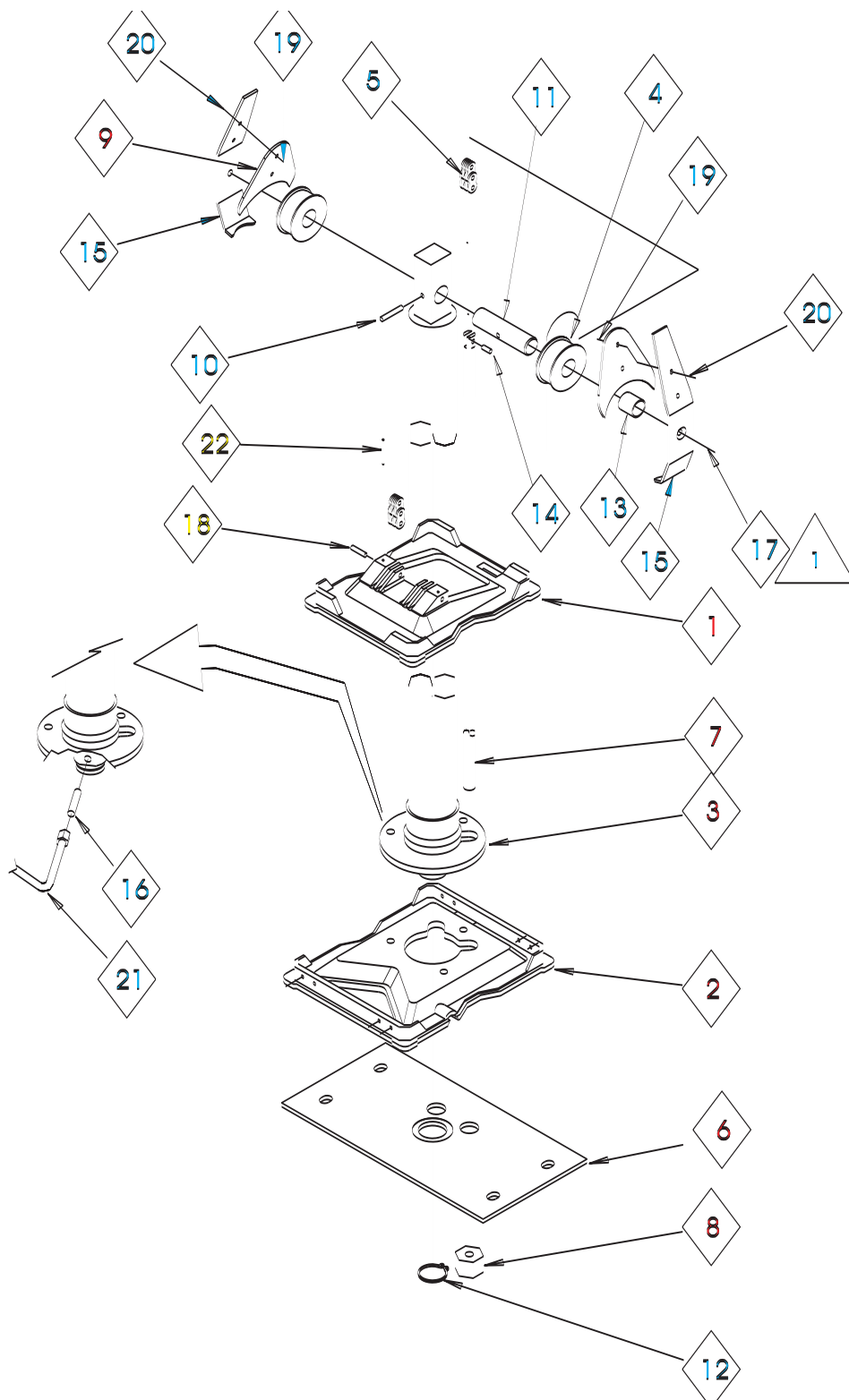
BASIC ASSY

069301-000

ITEM	PART	DESCRIPTION	QTY.
40	068194-000	LOADER ASSY	1
42	067988-010	RETRACTILE CORD ASSY	1
43	062226-002	CABLE STORAGE TUBE	1
45	069044-000	CHASSIS WELDMENT	1
46	068215-000	MOTOR COVER	1
47	067995-000	LIFTING ARM ASSEMBLY	1
48	068221-000	CASTER	2
49	068645-000	AXLE SHAFT	1
50	068222-000	WHEEL 10 X 2 1/2	2
51	068158-000	#1 SECTION SLIDE	1
52	003570-000	RETAINING PIN	5
53	062881-000	SWITCH	4
54	011240-012	WASHER FLAT 3/4	2
55	068646-000	ROLL PIN	2
56	020398-024	CLAMP	2
57	011868-032	GROMMET	2
58	011868-019	GROMMET	2
59	011252-010	SCREW HHC 1/4-20UNC X 1 1/4	2
60	011254-006	SCREW HHC 3/8-16 X 3/4	8
61	011825-004	SCREW MRH 1/4-20	3
62	011240-004	WASHER 1/4 STD FLAT	20
63	011240-006	WASHER 3/8 STD FLAT	16
64	014252-006	NUTZERT 3/8-16UNC	8
65	011248-004	NUT HHC 1/4-20UNC	10
67	068133-000	LIGHT INDICATOR	4
68	068728-000	COVER, CHASSIS	2
69	005503-003	SCREW, #6 SELF TAPPING	4
70	063951-002	RELAY	7
71	029945-011	LEVEL SENSOR	1

ITEM	PART	DESCRIPTION	QTY.
72	066516-006	PLUG HOLE	1
73	069350-010	POWER MODULE	1
74	069350-000	DX-TAM	1
75	069340-000	CONTROL MOUNTING PLATE	1
76	065366-001	PROX SWITCH	1
77	029731-011	RESISTOR 10K	1
78	011252-006	SCREW HHC 1/4-20 X 3/4	4
79	014066-004	SCREW HWH SLFTP 1/4 X 1/2	4
80	029601-013	CONN RING #10	8
81	062786-004	SCREW 10-32 X 1/2	4
84	069367-000	CHASSIS COVER CHANNEL	1
85	011728-006	SCREW SOC HD CAP 10-32 X 3/4	2
86	011249-003	NUT HEX ESNA 10-32	2
87	011708-004	SCREW MRH #8-32 X 1/2	10
88	011248-002	NUT HEX ESNA 8-32	10
89	011254-008	SCREW 3HHC 3/8-16 UNC X 1	6
90	069360-000	WIRE HARNESS	1
91	069327-000	FRONT OUTRIGGER R.H.	1
92	069327-001	FRONT OUTRIGGER ASSY L.H.	1
93	069326-000	REAR OUTRIGGER ASSY L.H.	1
94	069326-001	REAR OUTRIGGER ASSY R.H.	1
95	069337-000	OUTRIGGER WELDMENT	4
97	069357-000	MOTOR WIRE HARNESS	2
99	069358-000	POWER WIRE HARNESS	1
100	069359-000	TAM WIRE HARNESS	1
101	069360-000	WIRE HARNESS CHASSIS	1
102	069361-000	DX BUS CABLE	1
103	011248-004	NUT HEX ESNA 5/16-18 UNC	2
104	011253-006	SCREW HHC 5/16-18 UNC X 3/4	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

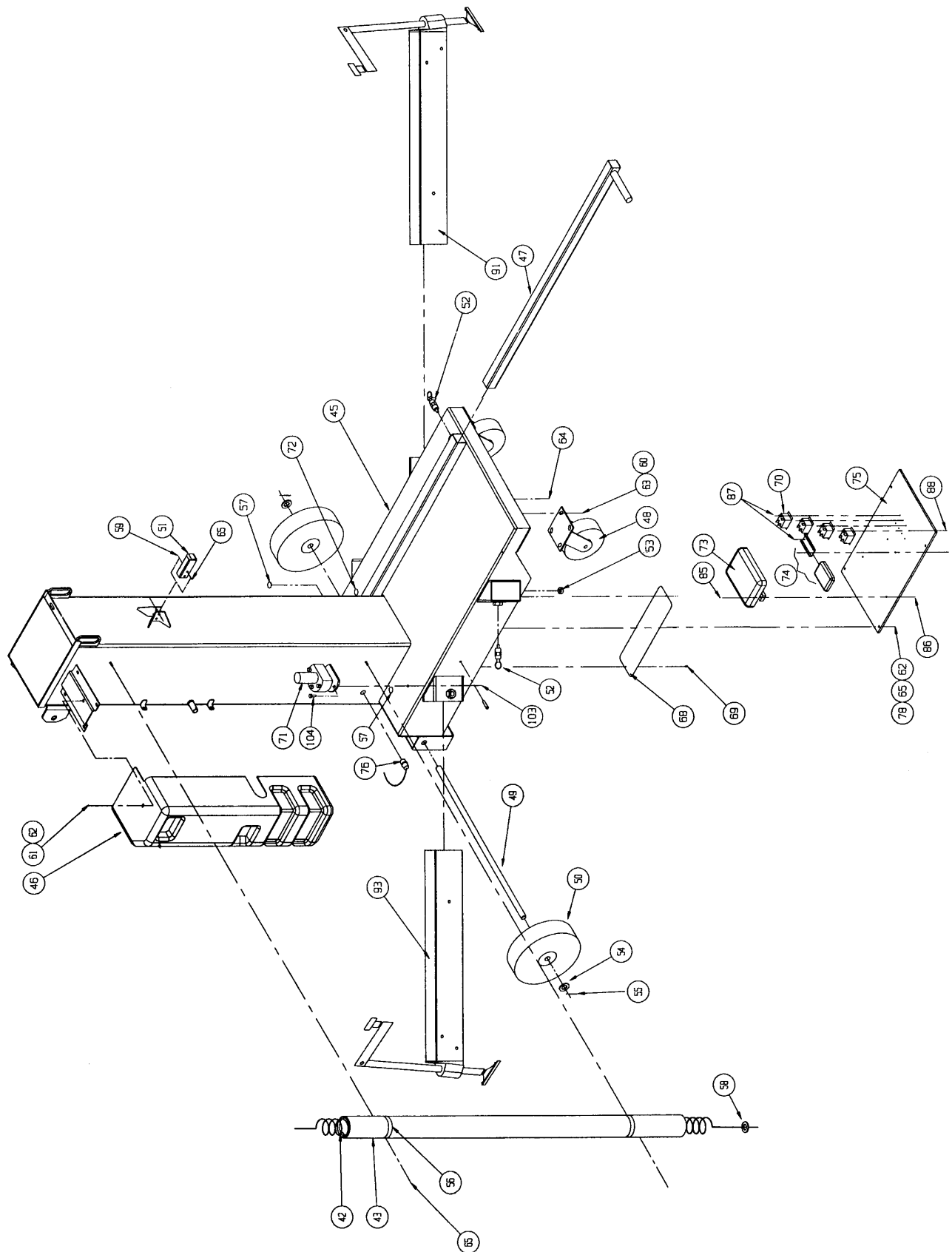
Section
6.2

LIFT CYLINDER ASSY, DOM

068074-001

ITEM	PART	DESCRIPTION	QTY.
1	068129-000	3 RD STAGE BOTTOM CASTING	1
2	068128-000	2 ND STAGE BOTTOM CASTING	1
3	068113-004	LIFT CYLINDER	1
4	068076-000	CYLINDER SHEAVE	2
5	062164-000	CHAIN	2
6	068089-000	CYLINDER MOUNT	1
7	068080-001	TIE RODS	2
8	011248-010	LOCKNUT 5/8-11 UNC	2
9	068079-000	CYLINDER GUIDE BEARING	2
10	011737-010	ROLLPIN	1
11	068081-000	PIN CYLINDER	1
12	011764-023	RETAINING RING	1
13	062642-022	BEARING 16DU16	2
14	062169-004	MASTER LINK	2
15	062655-001	CHAIN GUARD	2
16	011941-001	FITTING ST O RING 4MB - 4MJ	1
17	011828-006	SCREW FLAT HD SOCKET 1/4-20 X 3/4	2
18	068143-000	CHAIN PIN	2
19	011240-002	WASHER #8 FLAT	4
20	026553-008	RIVET 3/16	4
21	068075-001	HYD TUBE	1
22	011737-010	ROLLPIN 1/4 X 1-1/4	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

Section
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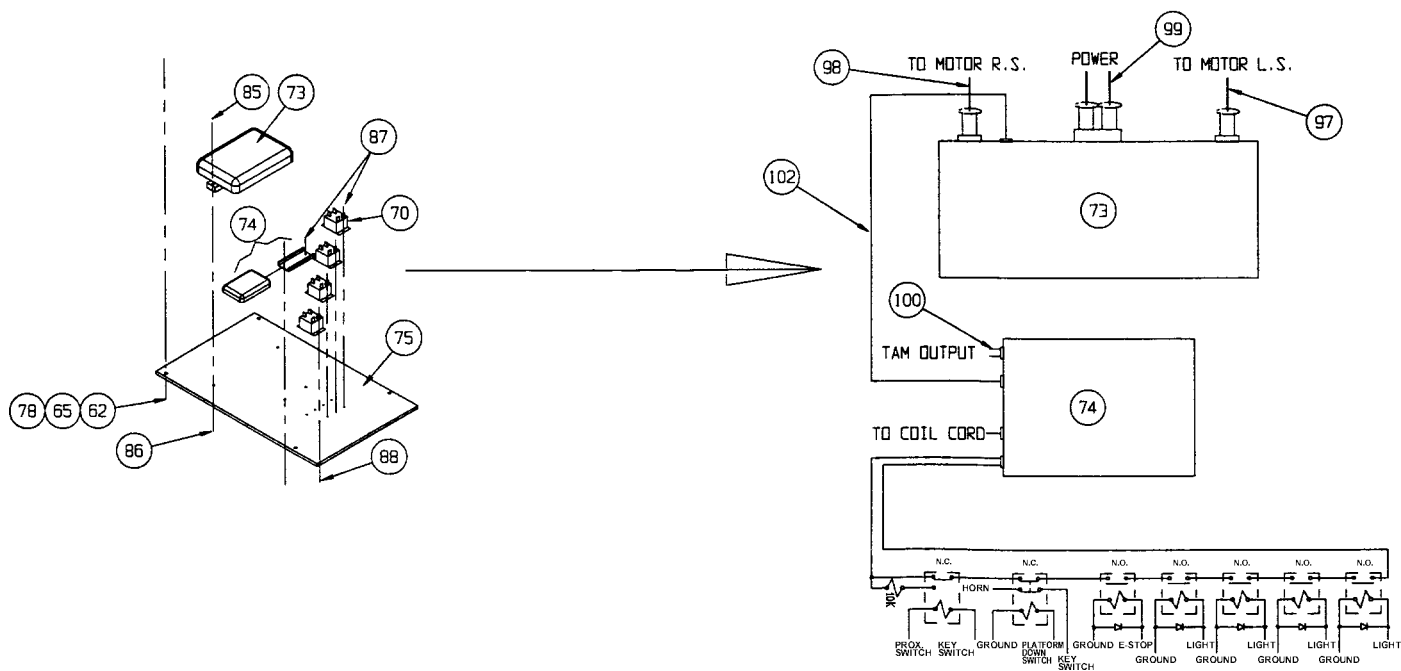
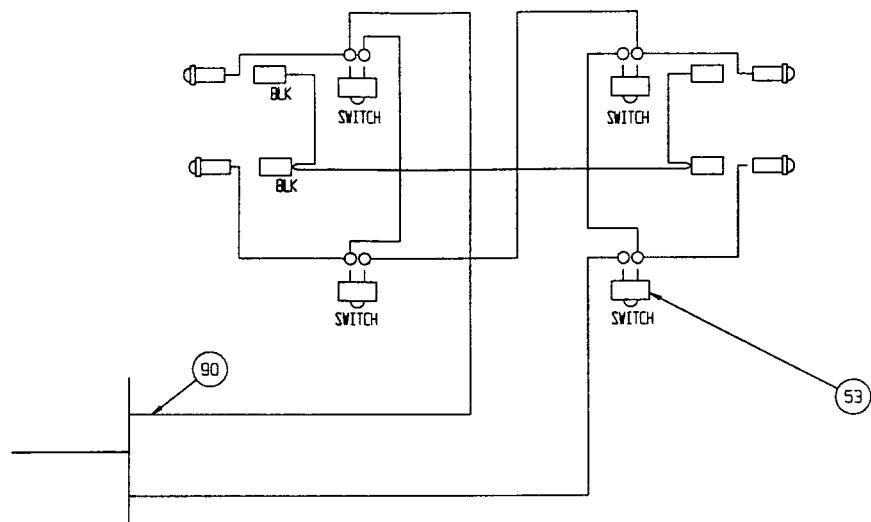
BASIC ASSY

069301-000

ITEM	PART	DESCRIPTION	QTY.
40	068194-000	LOADER ASSY	1
41			
42	067988-010	RETRACTILE CORD ASSY	1
43	062226-002	CABLE STORAGE TUBE	1
44			
45	068020-001	CHASSIS WELDMENT	1
46	068215-000	MOTOR COVER	1
47	067995-000	LIFTING ARM ASSEMBLY	1
48	068221-000	CASTER	2
49	068645-000	AXLE SHAFT	1
50	068222-000	WHEEL 10 X 2 1/2	2
51	068158-000	#1 SECTION SLIDE	1
52	003570-000	RETAINING PIN	5
53	062881-000	SWITCH	4
54	011240-012	WASHER FLAT 3/4	2
55	068646-000	ROLL PIN	2
56	020398-024	CLAMP	2
57	011868-032	GROMMET	2
58	011868-019	GROMMET	2
59	011252-010	SCREW HHC 1/4-20 UNC X 1 1/4	2
60	011254-006	SCREW HHC 3/8-16 X 3/4	8
61	011825-004	SCREW MRH 1/4-20	3
62	011240-004	WASHER 1/4 STD FLAT	20
63	011240-006	WASHER 3/8 STD FLAT	16
64	014252-006	NUTZERT 3/8-16 UNC	8
65	011248-004	NUT HHC 1/4-20 UNC	10
66			
67	068133-000	LIGHT INDICATOR	4
68	068728-000	COVER CHASSIS	2
69	005503-003	SCREW, #6 SELF TAPPING	4
70	029863-009	RELAY	7
71	029945-011	LEVEL SENSOR	1
72	066516-006	PLUG HOLE	1
73	069350-010	POWER MODULE	1
74	069350-000	DX-TAM	1

ITEM	PART	DESCRIPTION	QTY.
75	069340-000	CONTROL MOUNTING PLATE	1
76	065366-001	PROX SWITCH	1
77			
78	011252-006	SCREW HHC 1/4-20 X 3/4	4
79	014066-004	SCREW HWH SLFTP 1/4 X 1/2	4
80	029601-013	CONN RING #10	8
81			
82			
83			
84			
85	011728-006	SCREW SOC HD CAP 10-32 X 3/4	2
86	011249-003	NUT HEX ESNA 10-32	2
87	011708-004	SCREW MRH #8-32 X 1/2	10
88	011248-002	NUT HEX ESNA 8-32	10
89	011254-008	SCREW 3HHC 3/8-16 UNC X 1	6
90	069360-000	WIRE HARNESS	1
91	069327-000	FRONT OUTRIGGER R.H.	1
92	069327-001	FRONT OUTRIGGER ASSY L.H.	1
93	069326-000	REAR OUTRIGGER ASSY L.H.	1
94	069326-001	REAR OUTRIGGER ASSY R.H.	1
95			
96			
97	069357-000	MOTOR WIRE HARNESS L.H.	1
98	069357-001	MOTOR WIRE HARNESS R.H.	1
99	069358-000	POWER WIRE HARNESS	1
100	069359-000	TAM WIRE HARNESS	1
101	069360-000	WIRE HARNESS CHASSIS	1
102	069361-000	DX BUS CABLE	1
103	011248-004	NUT HEX ESNA 5/16-18 UNC	2
104	011253-006	SCREW HHC 5/16-18 UNC X 3/4	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

Section
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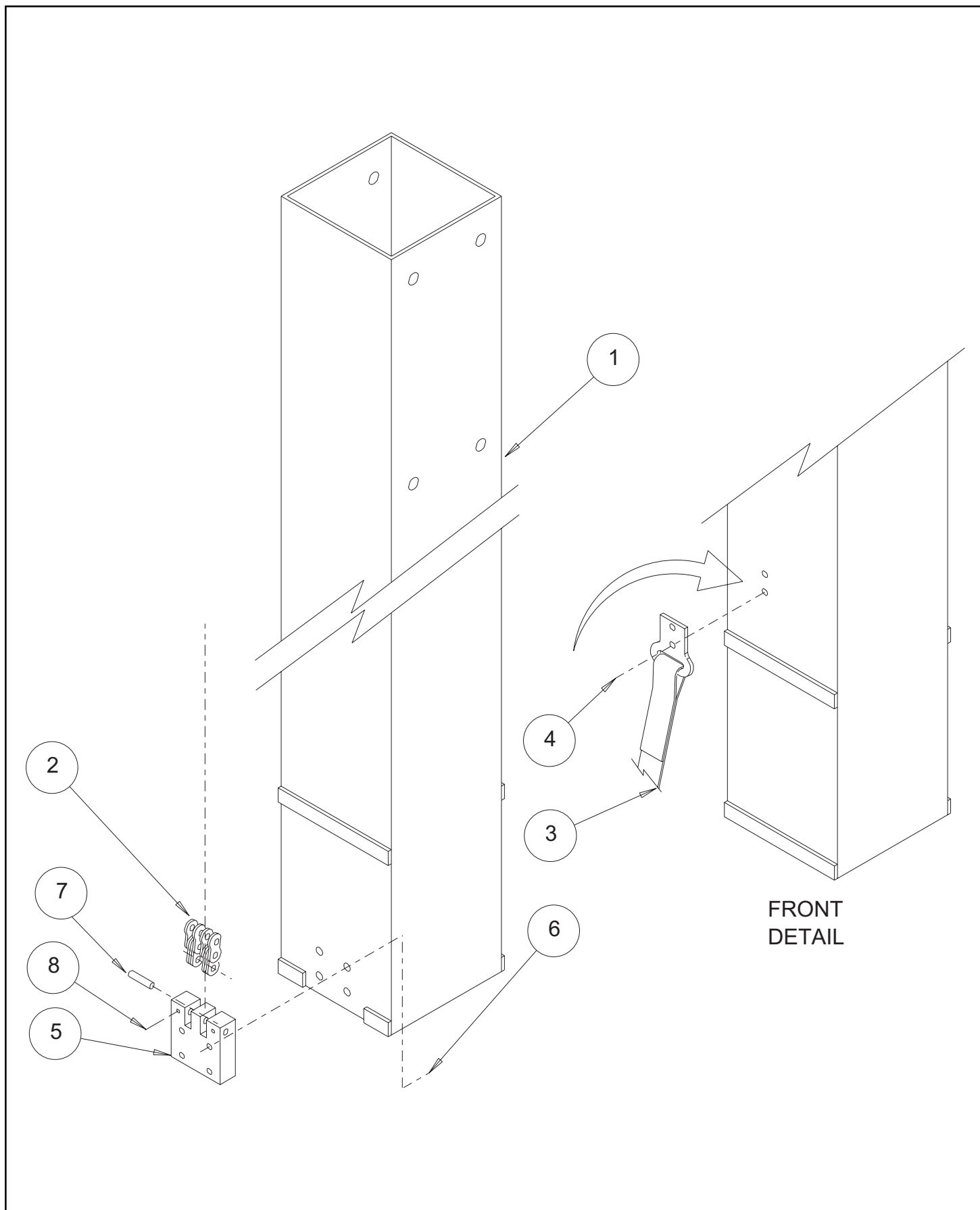
BASIC ASSY

069301-000

ITEM	PART	DESCRIPTION	QTY.
40	068194-000	LOADER ASSY	1
41			
42	067988-010	RETRACTILE CORD ASSY	1
43	062226-002	CABLE STORAGE TUBE	1
44			
45	068020-001	CHASSIS WELDMENT	1
46	068215-000	MOTOR COVER	1
47	067995-000	LIFTING ARM ASSEMBLY	1
48	068221-000	CASTER	2
49	068645-000	AXLE SHAFT	1
50	068222-000	WHEEL 10 X 2 1/2	2
51	068158-000	#1 SECTION SLIDE	1
52	003570-000	RETAINING PIN	5
53	062881-000	SWITCH	4
54	011240-012	WASHER FLAT 3/4	2
55	068646-000	ROLL PIN	2
56	020398-024	CLAMP	2
57	011868-032	GROMMET	2
58	011868-019	GROMMET	2
59	011252-010	SCREW HHC 1/4-20 UNC X 1 1/4	2
60	011254-006	SCREW HHC 3/8-16 X 3/4	8
61	011825-004	SCREW MRH 1/4-20	3
62	011240-004	WASHER 1/4 STD FLAT	20
63	011240-006	WASHER 3/8 STD FLAT	16
64	014252-006	NUTZERT 3/8-16 UNC	8
65	011248-004	NUT HHC 1/4-20 UNC	10
66			
67	068133-000	LIGHT INDICATOR	4
68	068728-000	COVER CHASSIS	2
69	005503-003	SCREW, #6 SELF TAPPING	4
70	029863-009	RELAY	7
71	029945-011	LEVEL SENSOR	1
72	066516-006	PLUG HOLE	1
73	069350-010	POWER MODULE	1
74	069350-000	DX-TAM	1

ITEM	PART	DESCRIPTION	QTY.
75	069340-000	CONTROL MOUNTING PLATE	1
76	065366-001	PROX SWITCH	1
77			
78	011252-006	SCREW HHC 1/4-20 X 3/4	4
79	014066-004	SCREW HWH SLFTP 1/4 X 1/2	4
80	029601-013	CONN RING #10	8
81			
82			
83			
84			
85	011728-006	SCREW SOC HD CAP 10-32 X 3/4	2
86	011249-003	NUT HEX ESNA 10-32	2
87	011708-004	SCREW MRH #8-32 X 1/2	10
88	011248-002	NUT HEX ESNA 8-32	10
89	011254-008	SCREW 3HHC 3/8-16 UNC X 1	6
90	069360-000	WIRE HARNESS	1
91	069327-000	FRONT OUTRIGGER R.H.	1
92	069327-001	FRONT OUTRIGGER ASSY L.H.	1
93	069326-000	REAR OUTRIGGER ASSY L.H.	1
94	069326-001	REAR OUTRIGGER ASSY R.H.	1
95			
96			
97	069357-000	MOTOR WIRE HARNESS L.H.	1
98	069357-001	MOTOR WIRE HARNESS R.H.	1
99	069358-000	POWER WIRE HARNESS	1
100	069359-000	TAM WIRE HARNESS	1
101	069360-000	WIRE HARNESS CHASSIS	1
102	069361-000	DX BUS CABLE	1
103	011248-004	NUT HEX ESNA 5/16-18 UNC	2
104	011253-006	SCREW HHC 5/16-18 UNC X 3/4	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

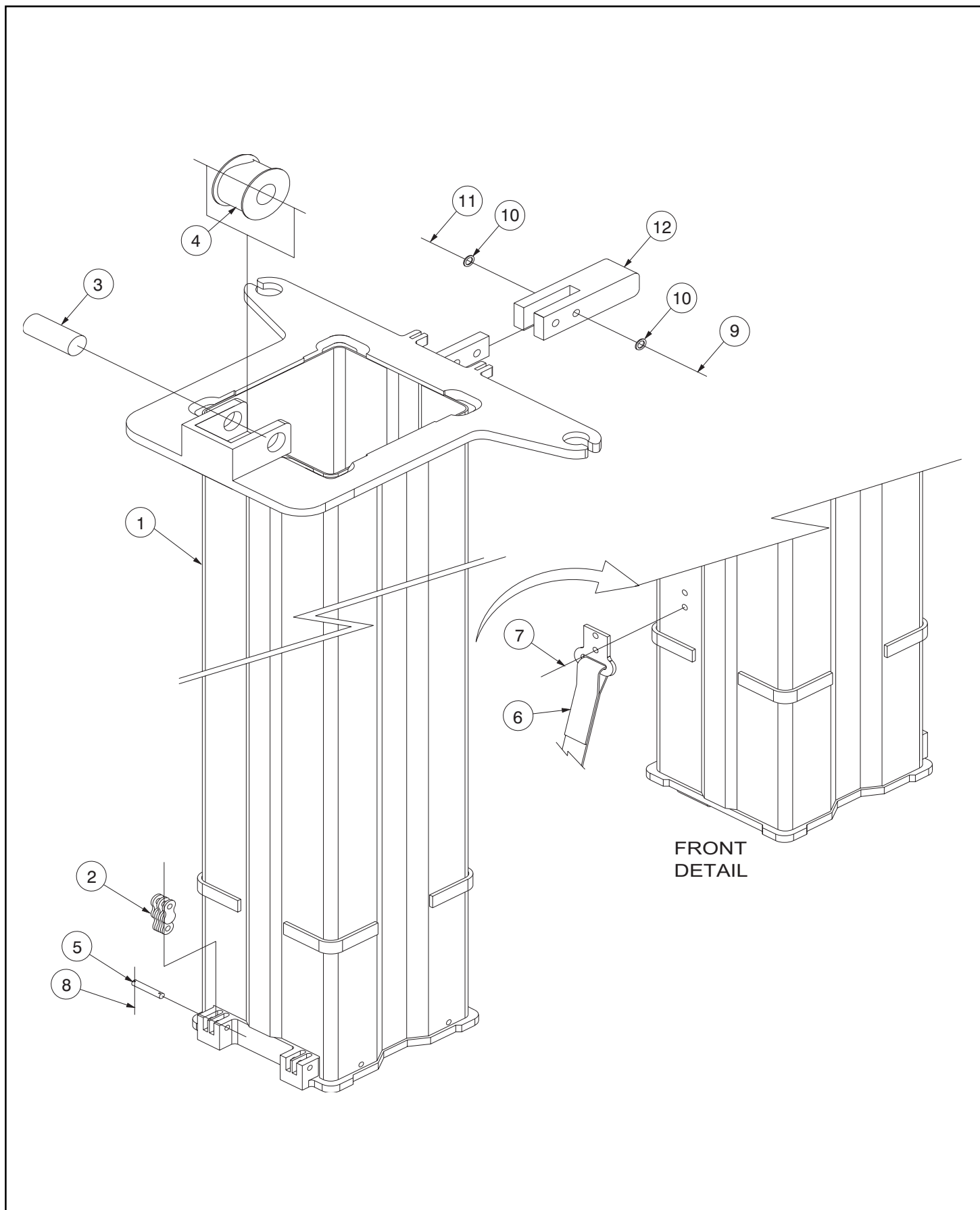
Section
6.2

6TH STAGE ASSY

068070-VAR

ITEM	PART	DESCRIPTION	QTY.
1	068071-001	6TH STAGE WELDMENT - 25	1
	068071-002	6TH STAGE WELDMENT - 32	
	068071-003	6TH STAGE WELDMENT - 40	
	068071-004	6TH STAGE WELDMENT - 48	
2	062166-141	CHAIN - 25	2
	062166-181	CHAIN - 32	
	062166-213	CHAIN - 40	
	062166-249	CHAIN - 48	
3	062753-000	STRAP ASSY	1
4	026553-006	RIVET 3/16 .375-.500 GRIP	2
5	068073-000	CHAIN BLOCK	1
6	011821-005	SCREW BUTT HD 1/4-20 UNC	4
7	068144-000	CLEVIS PIN 6B	2
8	011735-005	ROLL PIN 1/8 DIA X 5/8 LG	2
9	068219-099	UHMW WEAR STRIP X 1 1/2 FT	.25

Illustrated Parts Breakdown



Illustrated Parts Breakdown

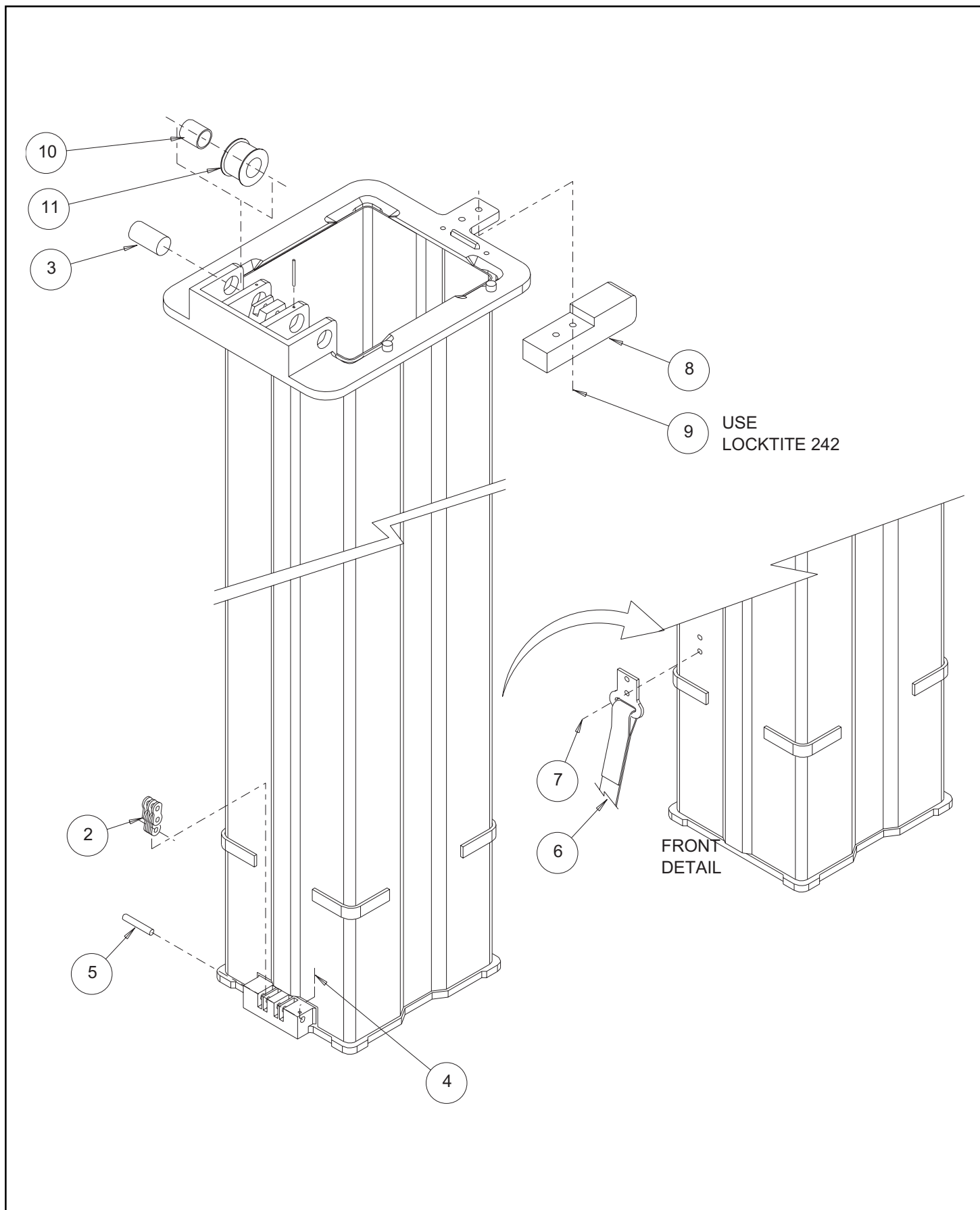
Section
6.2

5TH STAGE MAST ASSY

068066-001/-004

ITEM	PART	DESCRIPTION	QTY.
1	068069-001	5TH STAGE MAST ASSY - 25	1
	068069-002	5TH STAGE MAST ASSY - 32	
	068069-003	5TH STAGE MAST ASSY - 40	
	068069-004	5TH STAGE MAST ASSY - 48	
2	062167-141	CHAIN - 25	2
	062167-181	CHAIN - 32	
	062167-213	CHAIN - 40	
	062167-249	CHAIN - 48	
3	068138-000	SHAFT	1
4	068135-000	SHEAVE, 5 STAGE TOP	1
5	068140-000	PIN	2
6	062753-000	STRAP ASSY	1
7	026553-002	RIVET 3/16	2
8	011751-004	PIN, COTTER 1/16 X 1/2	4
9	011252-016	SCREW HHC 1/4-20 X 2	2
10	011240-004	WASHER 1/4 STD FLAT	4
11	011248-004	NUT 1/4-20 UNC ESNA	2
12	068097-000	5TH STAGE GUIDE	1

Illustrated Parts Breakdown



Illustrated Parts Breakdown

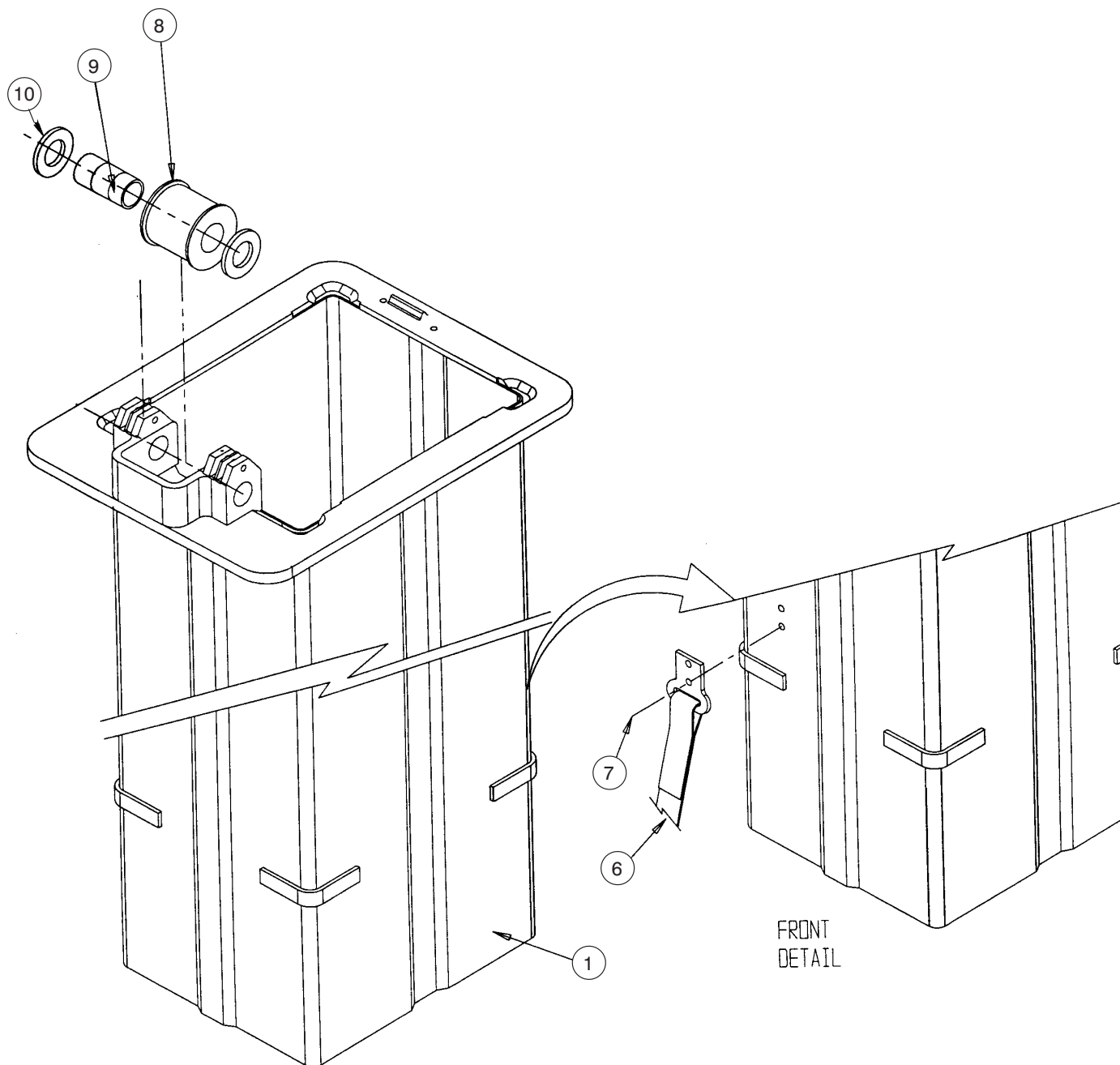
Section
6.2

4TH STAGE MAST ASSY

068061-001 THRU -004

ITEM	PART	DESCRIPTION	QTY.
1	068064-001	4TH STAGE MAST ASSY - 25	1
	068064-002	4TH STAGE MAST ASSY - 38	
	068064-003	4TH STAGE MAST ASSY - 40	
	068064-004	4TH STAGE MAST ASSY - 48	
2	062168-113	CHAIN - 25	2
	062168-139	CHAIN - 38	
	062168-165	CHAIN - 40	
	062168-193	CHAIN - 48	
3	068138-000	SHAFT	1
4	011753-020	SHAFT	1
5	068146-000	PIN	1
6	062753-000	STRAP ASSY	1
7	026553-002	RIVET 3/16	2
8	068065-000	#4 SECTION SLIDE	1
9	012553-008	SCREW SOCKET HED CAP 1/4-20 UNC X 1	1
10	062642-016	BEARING	2
11	068136-000	SHEAVE	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

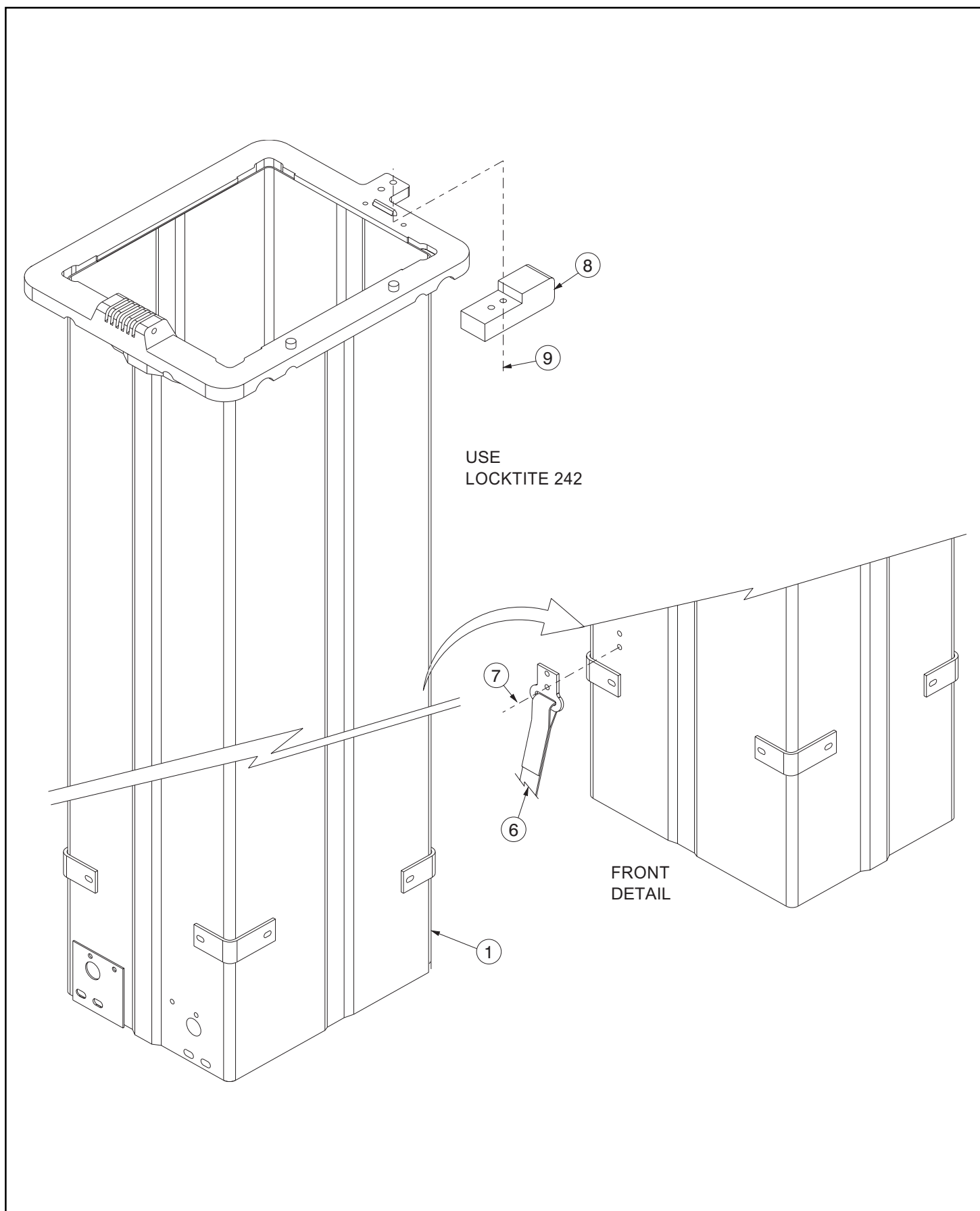
Section
6.2

3RD STAGE MAST ASSY

068056-VAR

ITEM	PART	DESCRIPTION	QTY.
1	068060-001	3RD STAGE MAST ASSY - 25	1
	068060-002	3RD STAGE MAST ASSY - 38	
	068060-003	3RD STAGE MAST ASSY - 40	
	068060-004	3RD STAGE MAST ASSY - 48	
2			
3	068139-000	SHAFT	1
4	011735-012	PIN	1
5			
6	062753-000	STRAP ASSY	1
7	026553-002	RIVET 3/16	2
8	068137-000	SHEAVE	1
9	062642-010	BEARING	3
10	011786-005	MAC. BUSHING	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

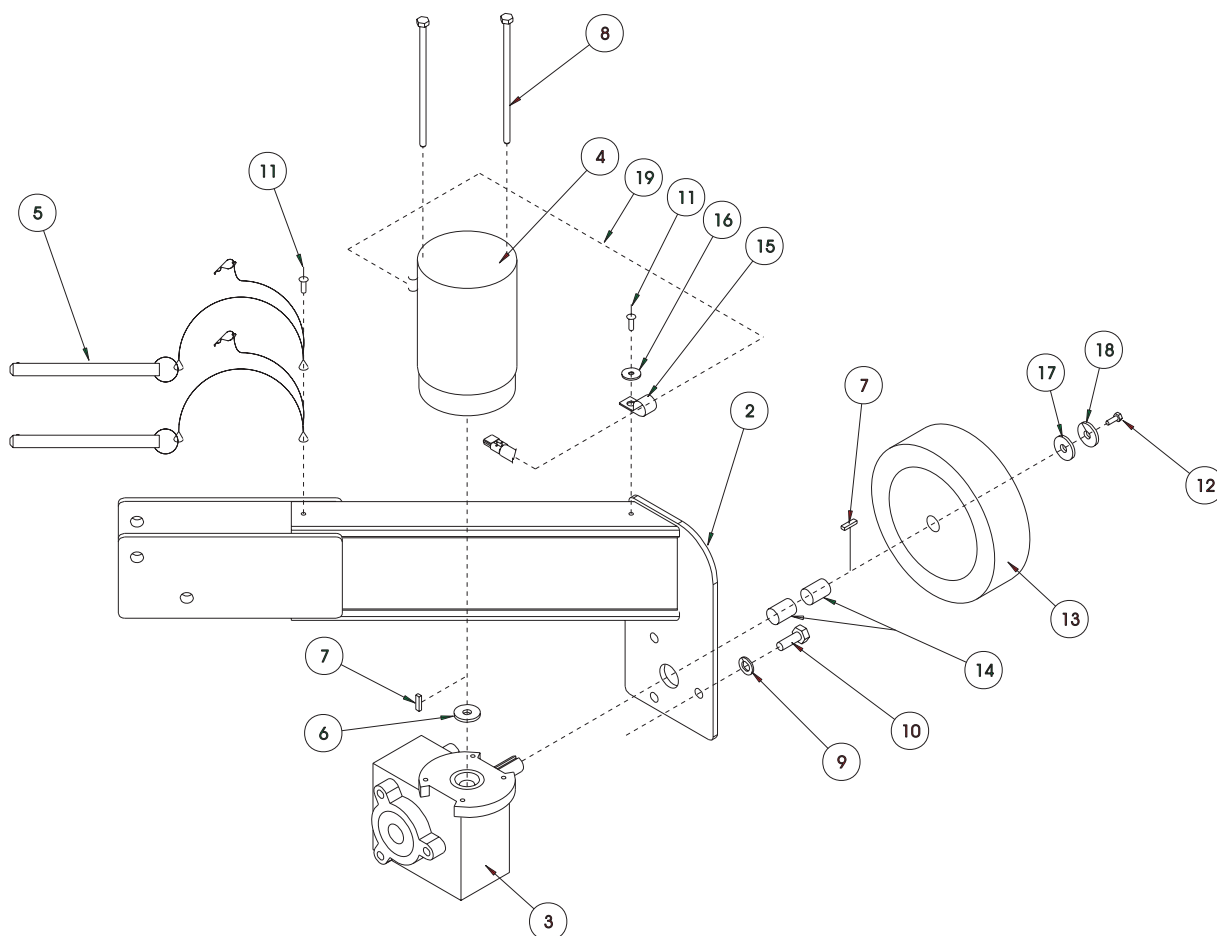
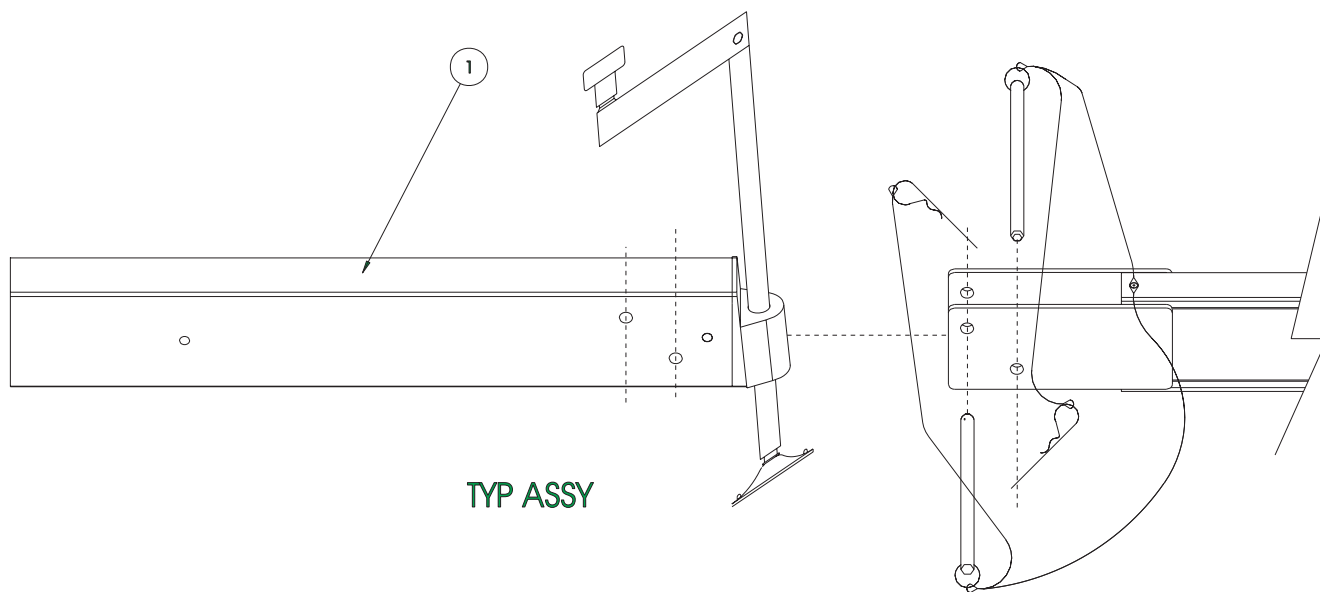
Section
6.2

2ND STAGE MAST ASSY

068050-000

ITEM	PART	DESCRIPTION	QTY.
1	068055-001	2ND STAGE MAST ASSY - 25	1
2			
3			
4			
5			
6	062753-000	STRAP ASSY	1
7	026553-002	RIVET 3/16	2
8	068053-000	#2 SECTION SLIDE	1
9	011703-016	SCREW SOCKET HEX SET 1/4-20 UNC X 1	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

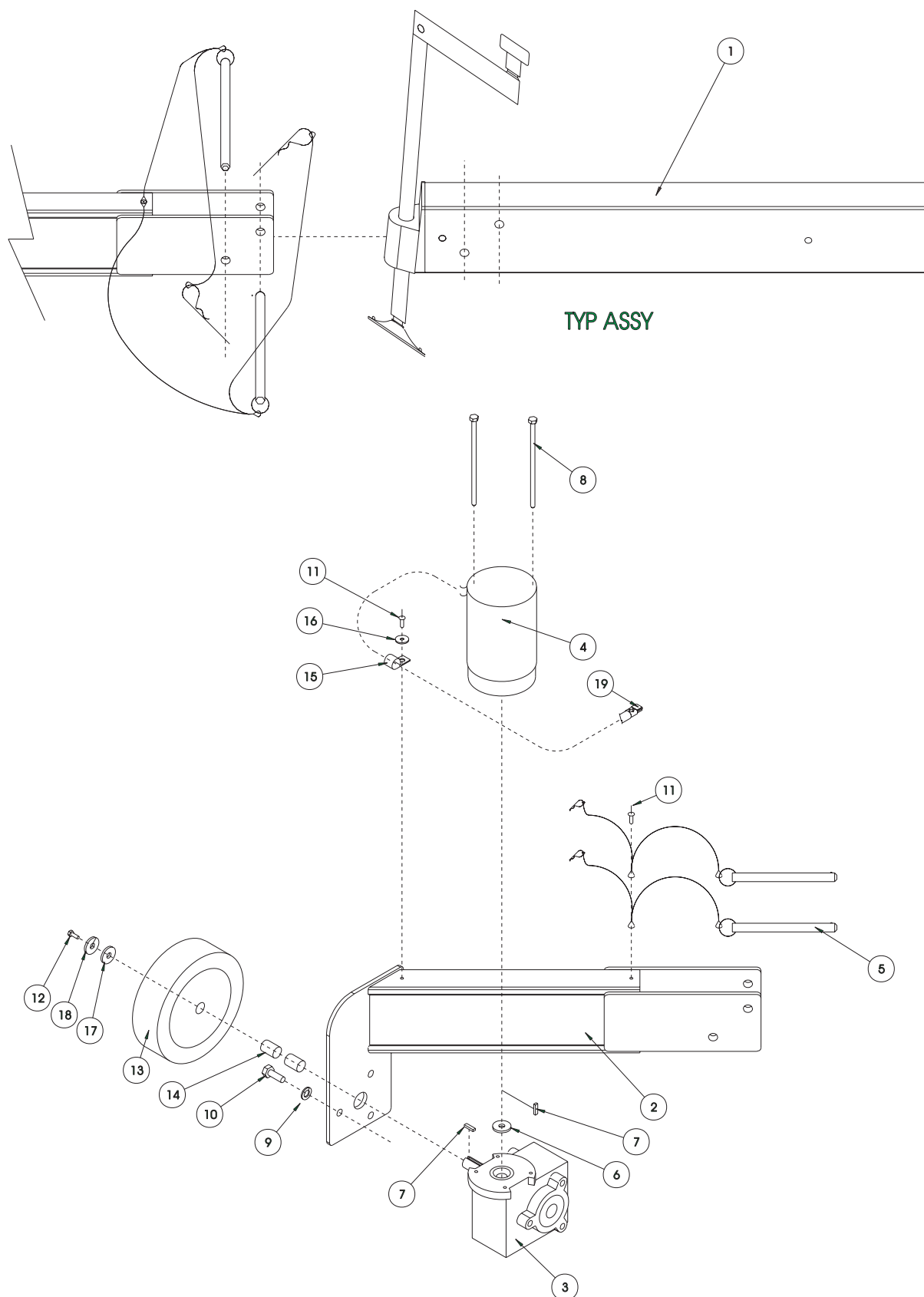
Section
6.2

REAR OUTRIGGER ASSY L.H.

069326-000

ITEM	PART	DESCRIPTION	QTY.
1	069337-000	OUTRIGGER ASSY	REF
2	069343-001	MOTOR MOUNT WELDMENT L.H.	1
3	069354-000	GEARBOX	1
4	069352-000	DRIVE MOTOR	1
5	062319-000	PIN/LANYARD ASSY	2
6	069352-003	SPACER MOTOR	1
7	069352-004	MOTOR KEY	2
8	069334-000	MOTOR SCREW	2
9	011238-006	WASHER SPLIT LOCK 3/8	3
10	011254-008	SCREW HHC 3/8-16 UNC X 1	3
11	026554-003	RIVET POP 1/4 X 3/8	1
12	011253-006	SCREW HHC 5/16-18 UNC X 3/4	1
13	068222-001	WHEEL	1
14	011786-005	BUSHING	2
15	013919-009	CLAMP 5/8 DIA	1
16	011240-004	WASHER 1/4 STD FLAT	1
17	011240-005	WASHER 5/16 STD FLAT	1
18	011238-005	WASHER SPLIT LOCK 5/16	1
19	068332-005	CABLE ASSY	1

Illustrated Parts Breakdown



Illustrated Parts Breakdown

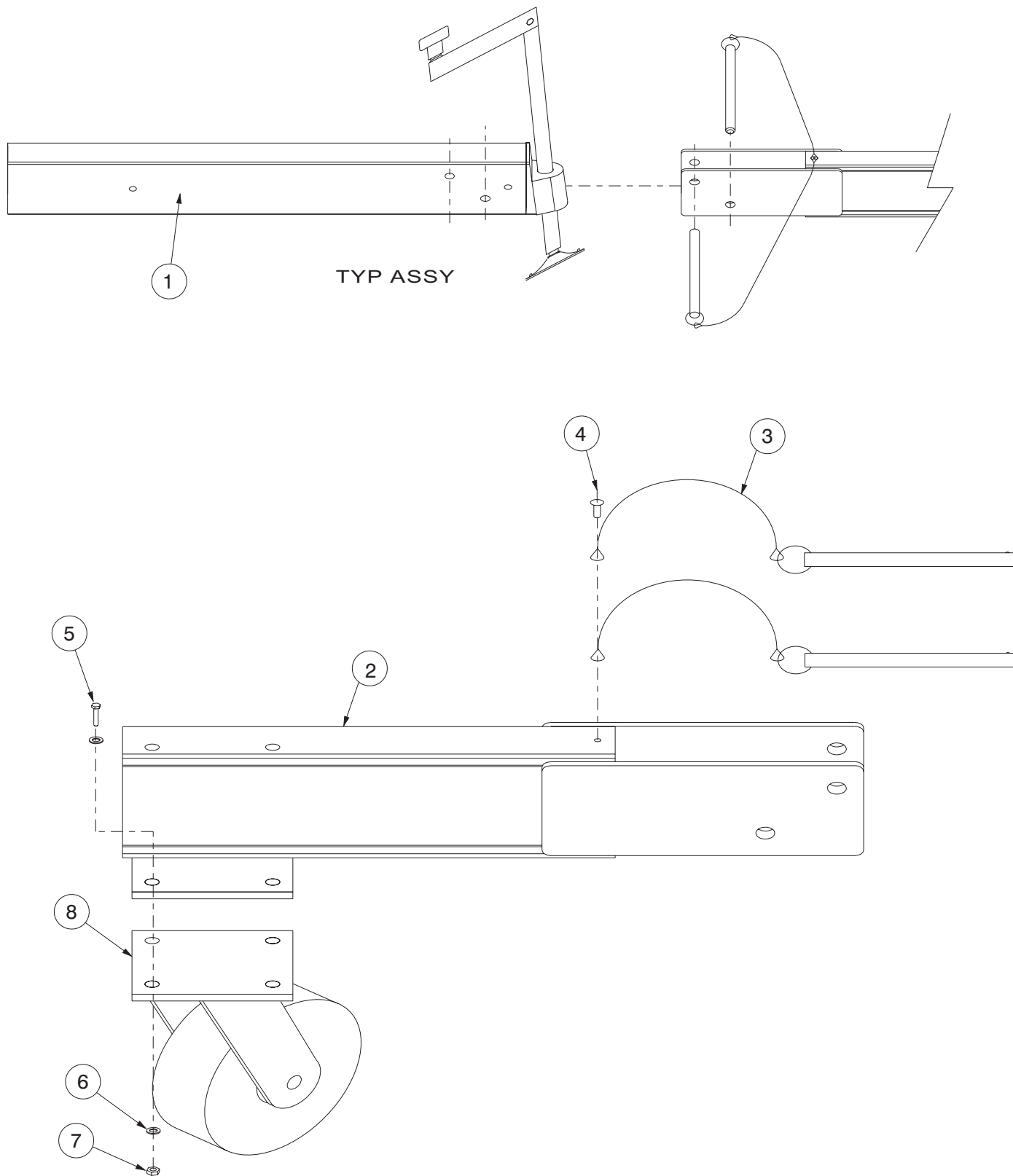
Section
6.2

REAR OUTRIGGER ASSY R.H.

069326-001

ITEM	PART	DESCRIPTION	QTY.
1	069337-000	OUTRIGGER ASSY	REF
2	069343-000	MOTOR MOUNT WELDMENT R.H.	1
3	069354-001	GEARBOX	1
4	069352-000	DRIVE MOTOR	1
5	062319-000	PIN/LANYARD ASSY	2
6	069352-003	SPACER MOTOR	1
7	069352-004	MOTOR KEY	2
8	069334-000	MOTOR SCREW	2
9	011238-006	WASHER SPLIT LOCK 3/8	3
10	011254-008	SCREW HHC 3/8-16 UNC X 1	3
11	026554-003	RIVET POP 1/4 X 3/8	1
12	011253-006	SCREW HHC 5/16-18 UNC X 3/4	1
13	068222-001	WHEEL	1
14	011786-005	BUSHING	2
15	013919-009	CLAMP 5/8 DIA	1
16	011240-004	WASHER 1/4 STD FLAT	1
17	011240-005	WASHER 5/16 STD FLAT	1
18	011238-005	WASHER SPLIT LOCK 5/16	1
19	068332-005	CABLE ASSY	1

Illustrated Parts Breakdown

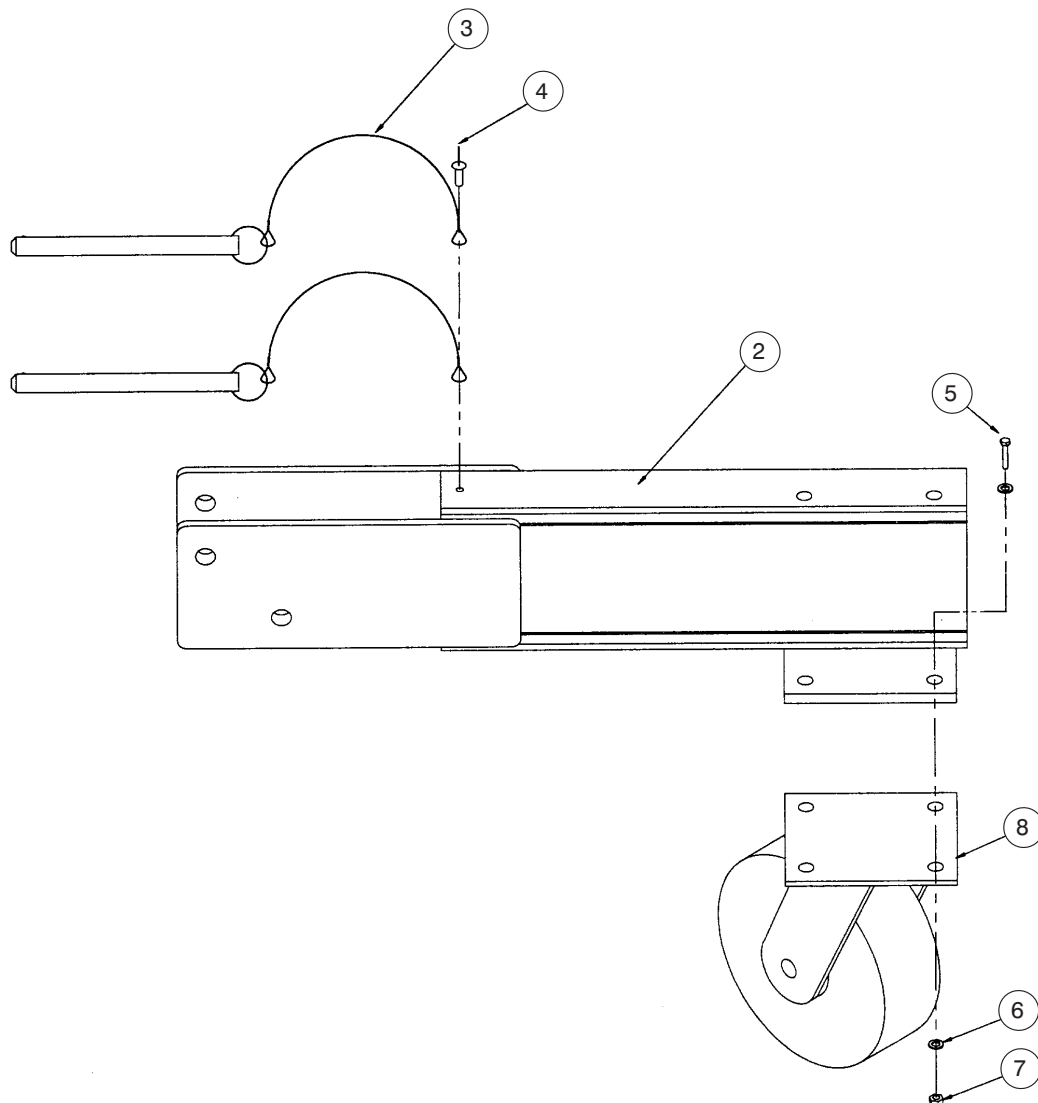
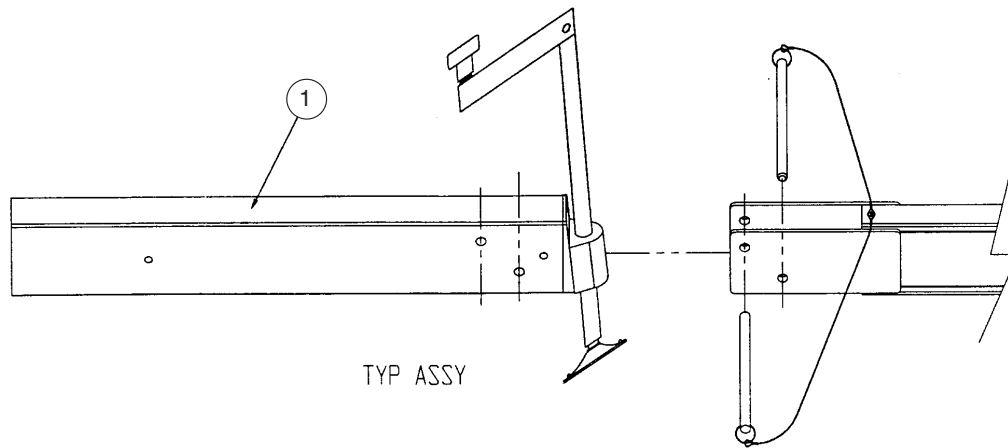


FRONT OUTRIGGER ASSY L.H.

069327-001

ITEM	PART	DESCRIPTION	QTY.
1	069337-000	OUTRIGGER ASSY	REF
2	069342-001	CASTER MOUNT WELDMENT L.H.	1
3	062319-000	PIN/LANYARD ASSY	2
4	026554-003	RIVET POP 1/4 X 3/8	1
5	011254-006	SCREW HHC 3/8-16 UNC X 3/4	4
6	011240-006	WASHER 3/8 STD FLAT	8
7	011248-006	NUT HEX ESNA 3/8-16 UNC	4
8	068221-001	CASTER	1

Illustrated Parts Breakdown

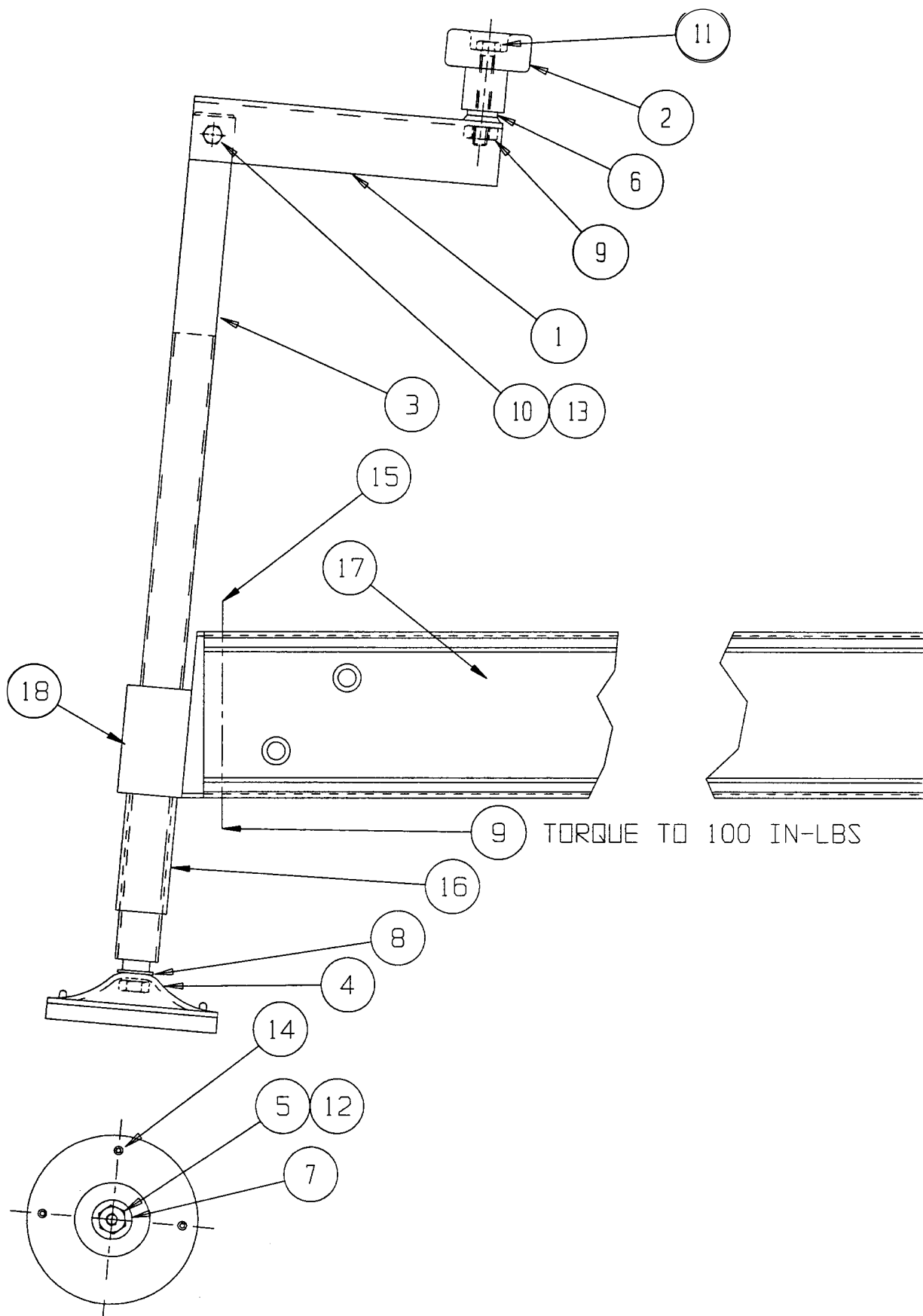


FRONT OUTRIGGER ASSY R.H.

069327-000

ITEM	PART	DESCRIPTION	QTY.
1	069337-000	OUTRIGGER ASSY	REF
2	069342-000	CASTER MOUNT WELDMENT R.H.	1
3	062319-000	PIN/LANYARD ASSY	2
4	026554-003	RIVET POP 1/4 X 3/8	1
5	011254-006	SCREW HHC 3/8-16 UNC X 3/4	4
6	011240-006	WASHER 3/8 STD FLAT	8
7	011248-006	NUT HEX ESNA 3/8-16 UNC	4
8	068221-001	CASTER	1

Illustrated Parts Breakdown



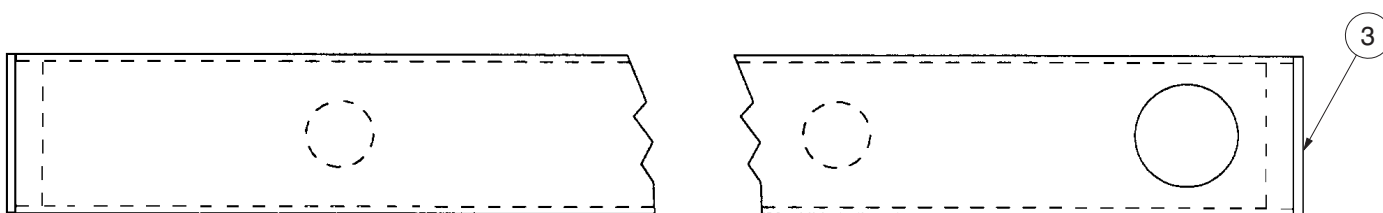
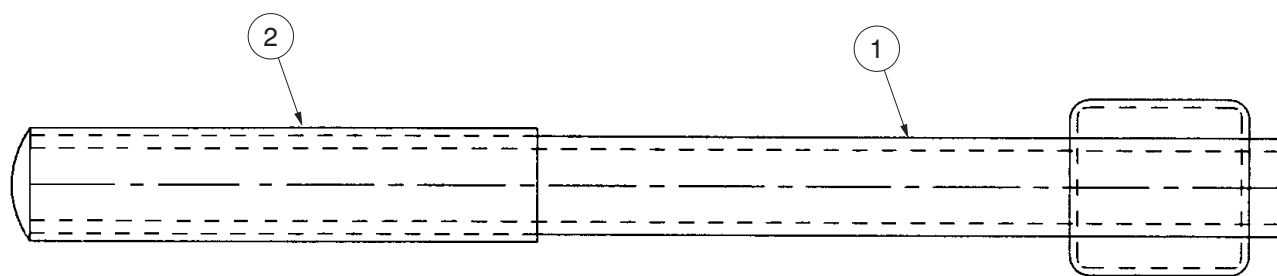
Illustrated Parts Breakdown

Section
6.2

OUTRIGGER ASSY

069337-000

ITEM	PART	DESCRIPTION	QTY.
1	003471-000	HANDLE ARM	1
2	003508-000	KNOB	1
3	062636-000	SCREW	1
4	003532-000	PAD ASSEMBLY	1
5	011238-005	WASHER SPLIT LOCK 5/16	1
6	011240-004	WASHER 1/4 FLAT	2
7	011240-005	WASHER 5/16 FLAT	1
8	014996-010	WASHER 5/8 SAE FLAT	1
9	011248-004	NUT HEX ESNA 1/4-20 UNC	2
10	011248-005	NUT HEX ESNA 5/16-18 UNC	1
11	011252-018	SCREW HHC 1/4-20 UNC X 2 1/4	1
12	011253-008	SCREW HHC 5/16-18 UNC X 1	1
13	011253-014	SCREW HHC 5/16-18 UNC X 1-3/4	1
14	026553-005	RIVET POP 3/16 X 3/8	4
15	011252-036	SCREW HHC 1/4-20 UNC X 4 1/2	1
16	018179-004	TUBE 1 3/8 X .065 WALL X 3 1/4	1
17	069341-000	OUTRIGGER CHASSIS ARM WELDMENT	1
18	068148-001	OUTRIGGER SCREW CASTING	1

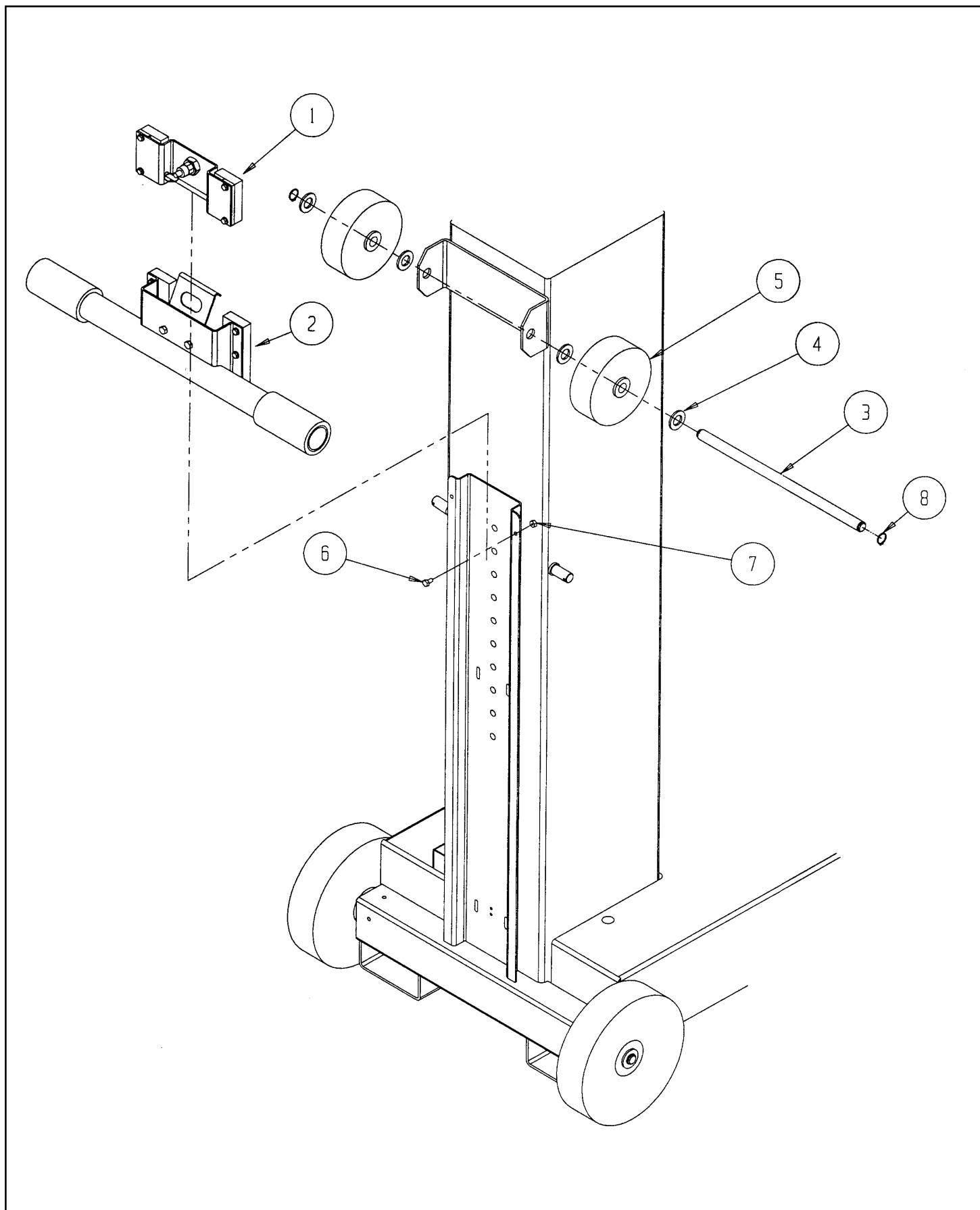


LIFT TUBE ASSEMBLY

067995-000

ITEM	PART	DESCRIPTION	QTY.
1	068915-001	LIFT TUBE WELDMENT	1
2	062843-001	GRIP	1
3	063926-010	PLUG, 1 1/2 SQ	2

Illustrated Parts Breakdown

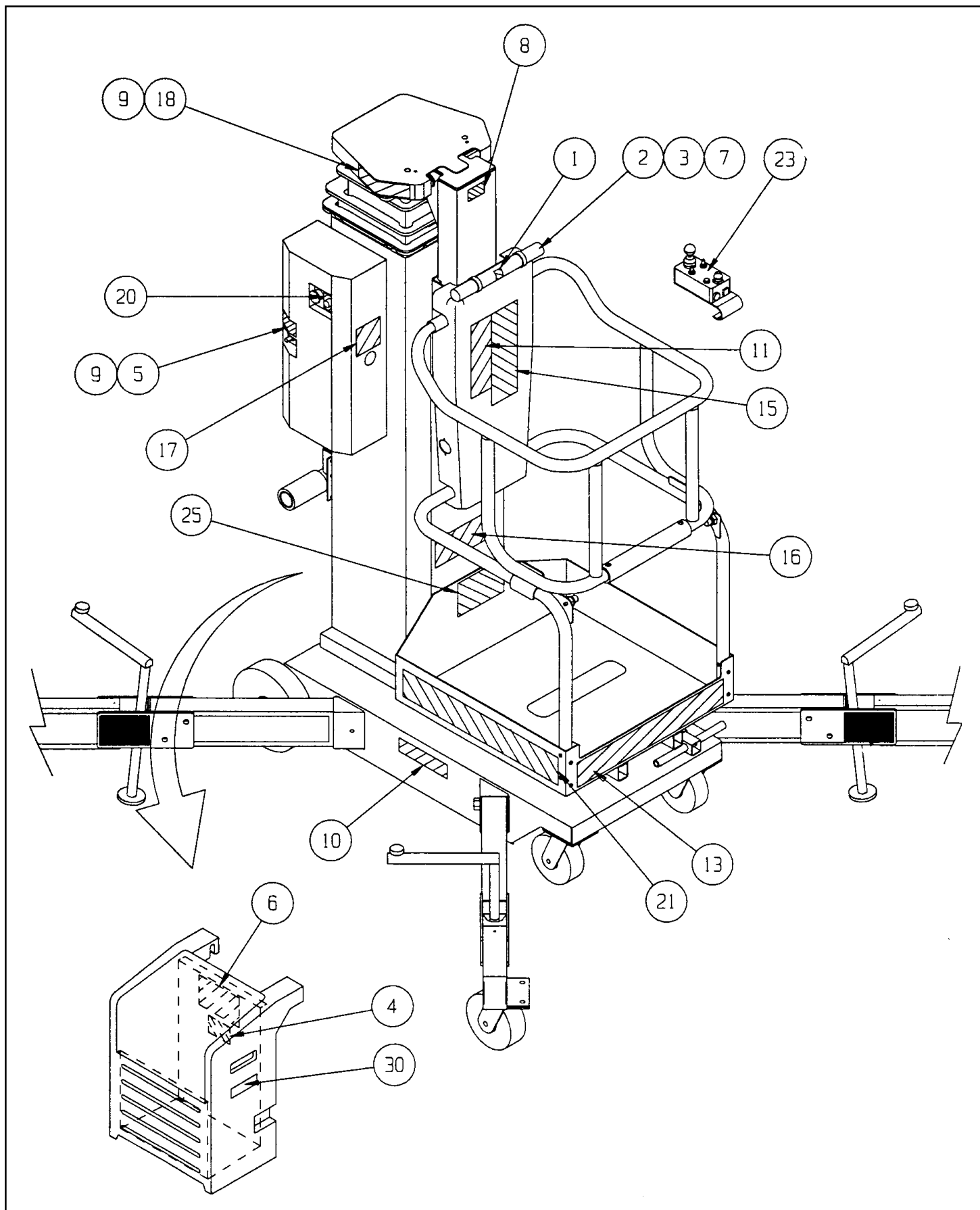


LOADER ASSEMBLY

068194-000

ITEM	PART	DESCRIPTION	QTY.
1	068190-000	LOADER STOP BRACKET ASSY	1
2	068186-000	LOADER BAR ASSY	1
3	068197-000	SHORT AXLE SHAFT	1
4	011240-012	FASHER FLAT 3/4	4
5	068220-000	WHEEL	2
6	011252-004	SCREW HHC 1/4-20 UNC X 1/2	2
7	011248-004	NUT HEX ESNA 1/4-20 UNC	2
8	011764-012	RETAINING RING	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

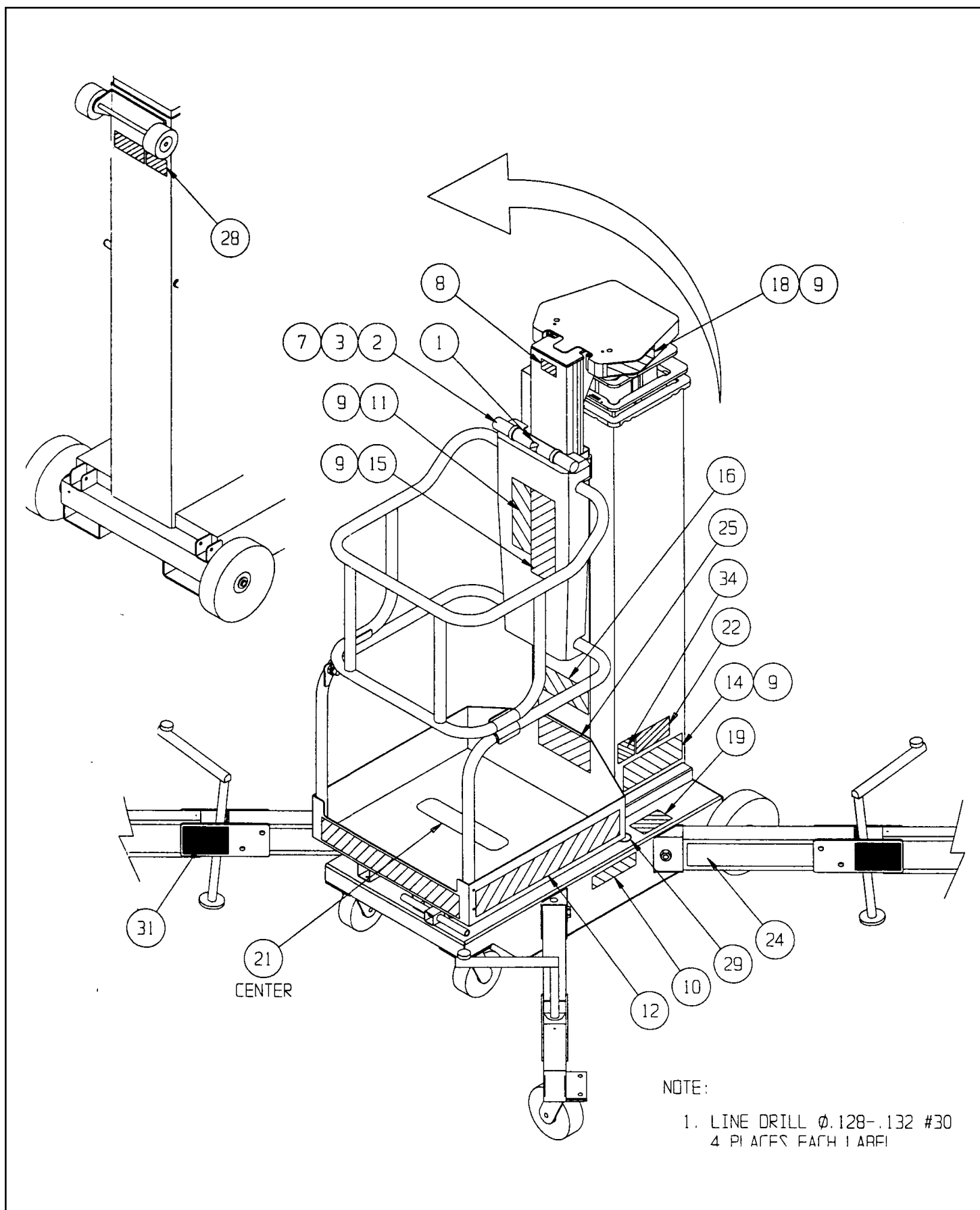
Section
6.2

LABEL KIT/INSTALLATION

069305-000/001

ITEM	PART	DESCRIPTION	QTY.
1	003610-000	LABEL, OPERATING INSTRUCTIONS	1
2	065099-000	INSTRUCTION TUBE ASS'Y	1
3	069316-000	USER MANUAL	1
4	005221-000	LABEL, BATTERY FLUID	1
5	005223-003	LABEL, EMERGENCY DOWN	1
6	066552-000	LABEL, WARNING HYDROGEN GAS	1
7	060577-001	ANSI MANUAL	1
8	064444-000	LABEL, USA	1
9	026551-004	RIVET, POP 1/8, 126-, 187 GRIP	20
10	062218-001	LABEL, INSERT OUTRIGGER	2
11	066554-002	LABEL, WARNING USE	1
12	061683-008	LABEL, UPRIGHT	2
13	069330-000	LABEL, UL25 U-DRIVE	1
14	061205-000	NAME PLATE	1
15	066550-010	LABEL, WARNING BEFORE USING	1
16	066557-011	LABEL, WARNING MAX LOAD 350 LBS	1
17	062217-000	LABEL, HYDRAULIC FLUID	1
18	066553-002	LABEL, WARNING PINCH POINT	2
19	066551-005	LABEL, WARNING CENTER BUBBLE	1
20	069338-000	LABEL, CONTROL SWITCH	1
21	060830-000	SAFETY WALK	1
22	061220-010	LABEL, ANSI	1
23	069335-000	LABEL, CONTROLS UPPER	1
24			
25	062821-002	LABEL, WARNING TIPPING HAZARD	1
26			
27	062725-002	LABEL, WARNING LOADER	1
28	062575-001	LABEL, WARNING DO NOT LOWER	1
29	000942-000	ORBIT LEVEL	1
30	069366-000	LABEL, 24 VOLT BATTERY PACK	1
31	069364-000	LABEL, PINS INS.	8

Illustrated Parts Breakdown



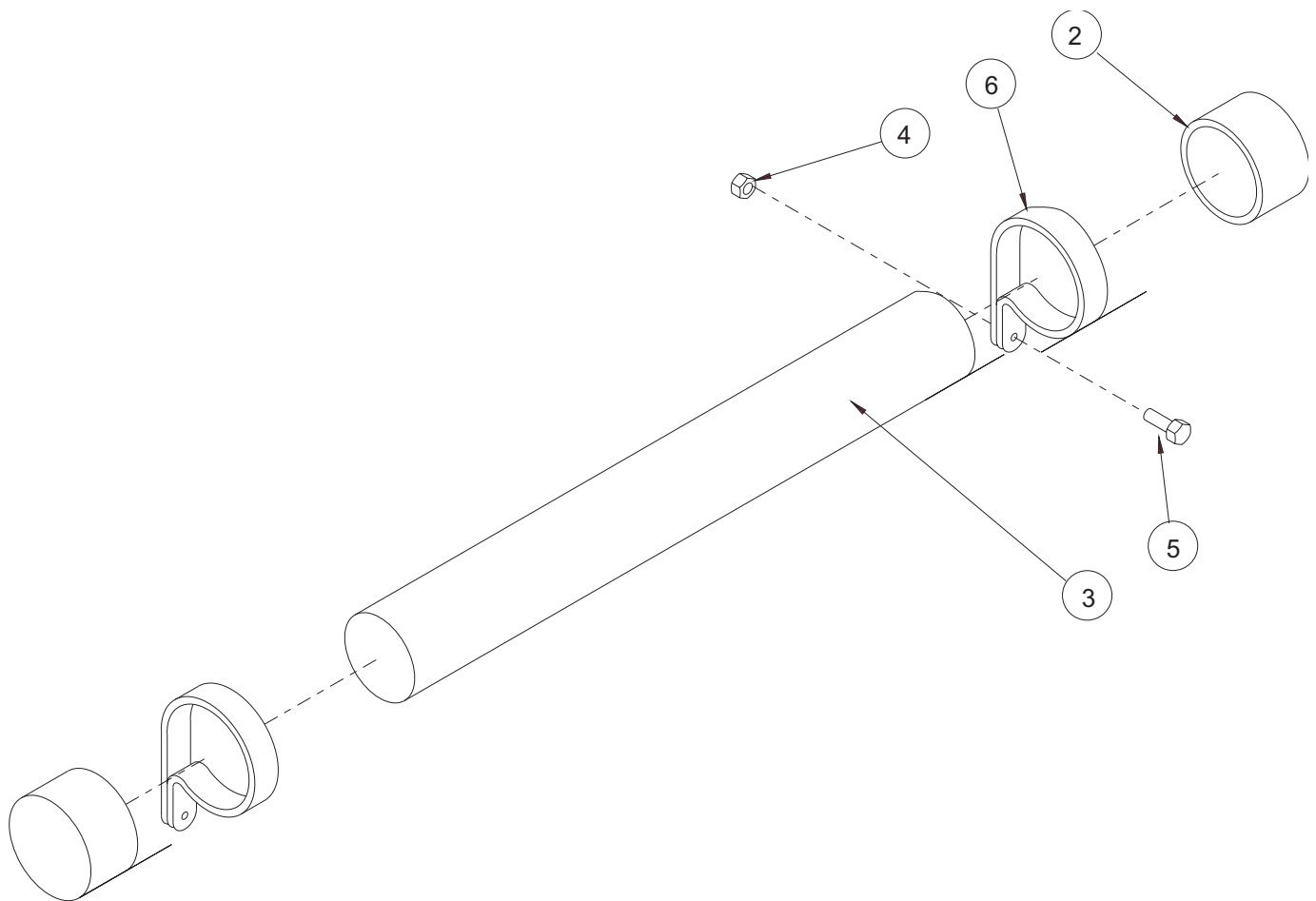
Illustrated Parts Breakdown

Section
6.2

LABEL KIT/INSTALLATION

069305-000/001

ITEM	PART	DESCRIPTION	QTY.
1	003610-000	LABEL, OPERATING INSTRUCTIONS	1
2	065099-000	INSTRUCTION TUBE ASS'Y	1
3	069316-000	USER MANUAL	1
4	005221-000	LABEL, BATTERY FLUID	1
5	005223-003	LABEL, EMERGENCY DOWN	1
6	066552-000	LABEL, WARNING HYDROGEN GAS	1
7	060577-001	ANSI MANUAL	1
8	064444-000	LABEL, USA	1
9	026551-004	RIVET, POP 1/8, 126-, 187 GRIP	20
10	062218-001	LABEL, INSERT OUTRIGGER	2
11	066554-002	LABEL, WARNING USE	1
12	061683-008	LABEL, UPRIGHT	2
13	069330-000	LABEL, UL25 U-DRIVE	1
14	061205-000	NAME PLATE	1
15	066550-010	LABEL, WARNING BEFORE USING	1
16	066557-011	LABEL, WARNING MAX LOAD 350 LBS	1
17	062217-000	LABEL, HYDRAULIC FLUID	1
18	066553-002	LABEL, WARNING PINCH POINT	2
19	066551-005	LABEL, WARNING CENTER BUBBLE	1
20	069338-000	LABEL, CONTROL SWITCH	1
21	060830-000	SAFETY WALK	1
22	061220-010	LABEL, ANSI	1
23	069335-000	LABEL, CONTROLS UPPER	1
24			
25	062821-002	LABEL, WARNING TIPPING HAZARD	1
26			
27	062725-002	LABEL, WARNING LOADER	1
28	062575-001	LABEL, WARNING DO NOT LOWER	1
29	000942-000	ORBIT LEVEL	1
30	069366-000	LABEL, 24 VOLT BATTERY PACK	1
31	069364-000	LABEL, PINS INS.	8

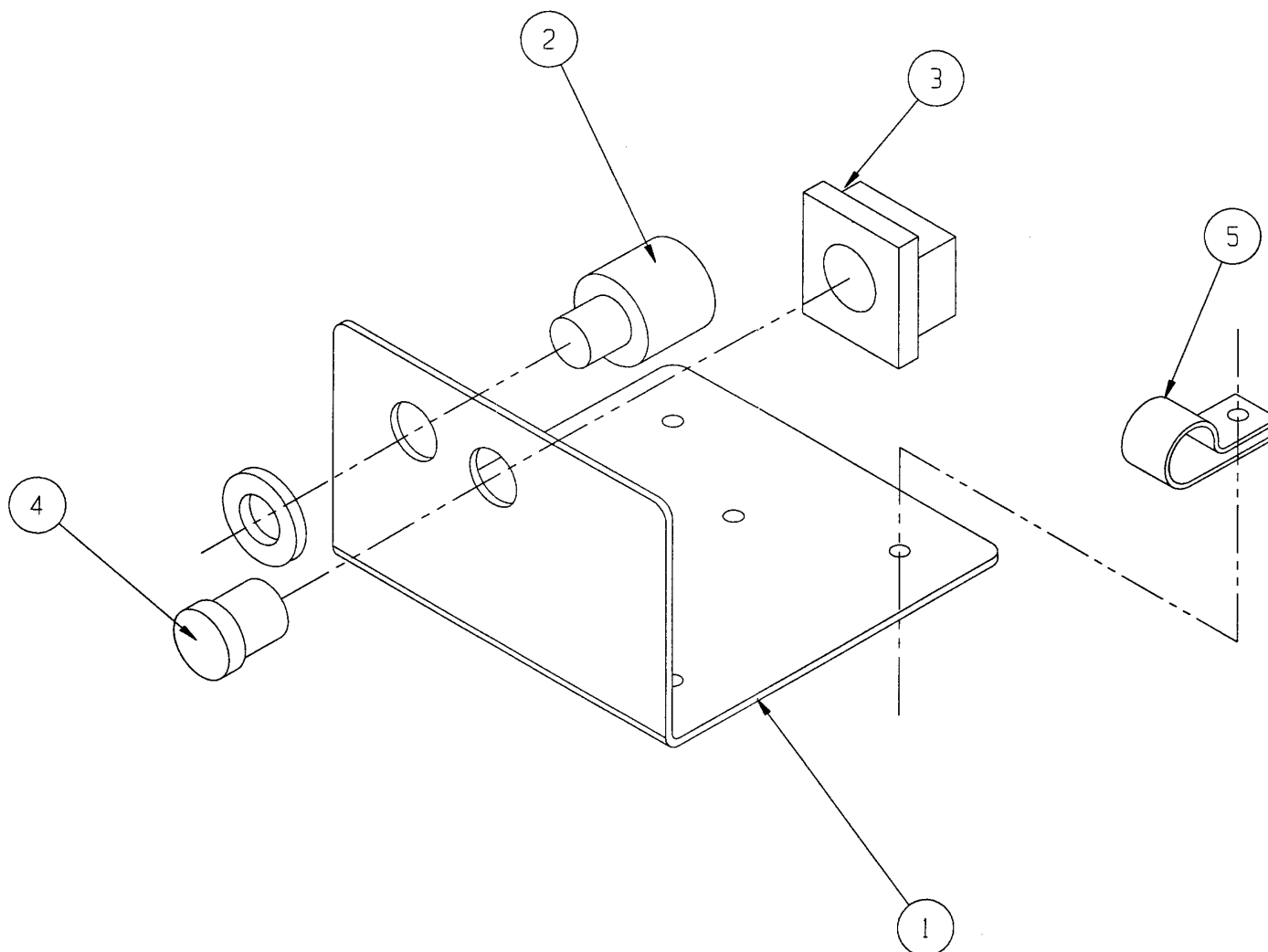
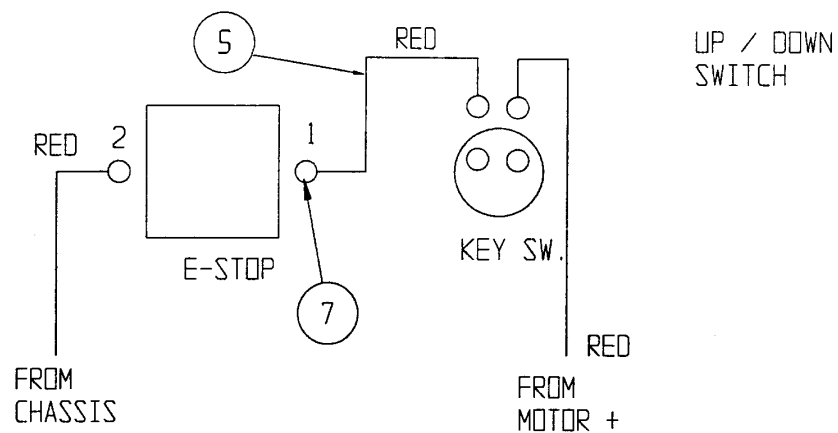


DECAL-OPERATION TUBE ASSY.

065099-000-00

ITEM	PART	DESCRIPTION	QTY.
1			
2	003612-000	CAP	2
3	003613-002	TUBE 1 1/2 00 X .062 W CLR X 11 15/16	1
4	011248-004	LOCKNUT 1/4-20 UNC HEX	2
5	011252-006	SCREW 1/4-20 UNC HHC X 3/4	2
6	020398-012	CLAMP	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

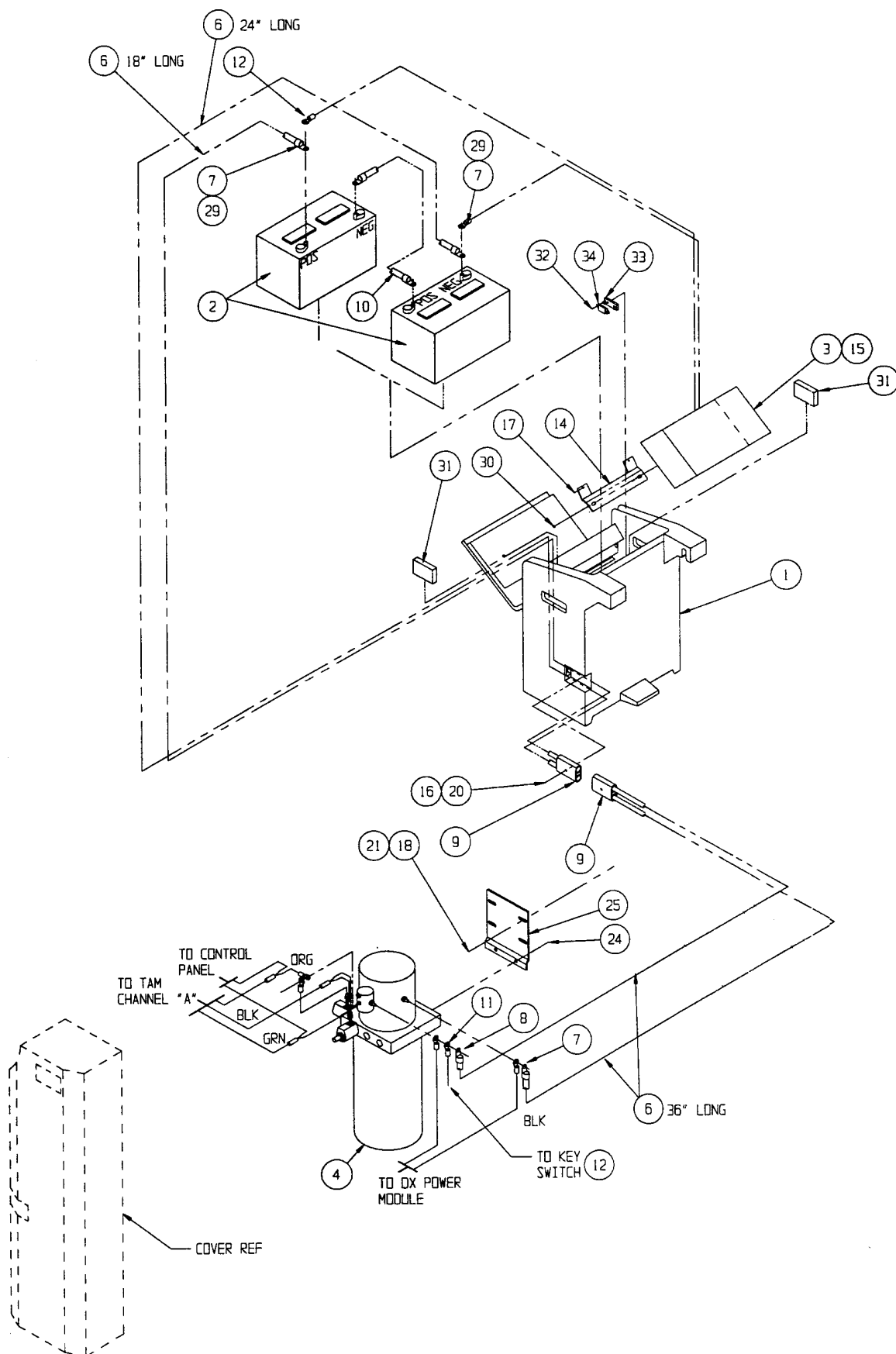
Section
6.2

CONTROL BOX ASSY DC

069302-000

ITEM	PART	DESCRIPTION	QTY.
1	069329-000	CONTROL PANEL	1
2	005440-000	KEY SWITCH	1
3	067028-000	CONTACT BLOCK	1
4	062799-008	SWITCH PUCH	1
5	013919-003	CLAMP HOSE	1
6	029454-099	WIRE 16 AWG RED FT	1
7	029601-013	CONN RING #10 14-16	3

Illustrated Parts Breakdown



Illustrated Parts Breakdown

Section
6.2

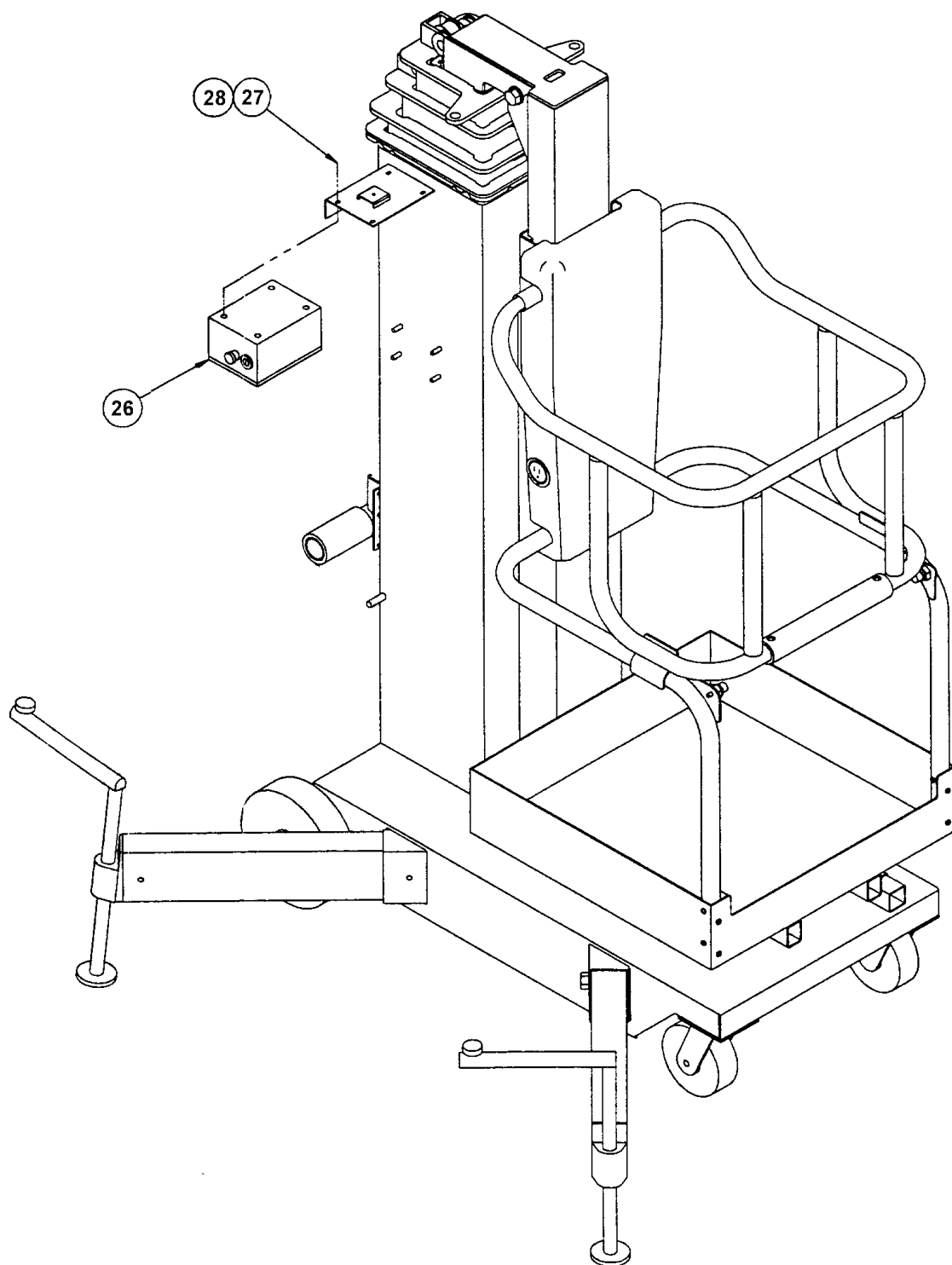
POWER OPTION, DC

069303-000

ITEM	PART	DESCRIPTION	QTY.
1	068214-001	BATTERY BOX	1
2	062299-005	BATTERY	2
3	062906-001	CHARGER	1
4	069356-000	POWER UNIT	1
*	062161-004	BREATHER	1
*	069356-011	1.5 GALLON TANK	1
*	069356-012	TANK O-RING	1
*	069356-013	LIFT VALVE	1
*	069356-014	DOWN VALVE	1
*	069356-015	24 VDC START SOLENOID	1
*	062161-007	24 VDC MOTOR	1
*	068115-013	OIL SEAL	1
6	029431-099	CABLE, #2 AWG WELDING FT	10
7	029602-025	RING TERM #2 - 5/16 DIA	3
8	029602-026	RING TERM #2 - 3/8 DIA	1
9	029902-000	CONN 175 AMP	2
10	064195-001	BATTERY CABLE ASSY X 12	1
11	029601-015	CONN RING 3/8 16-14	1
12	029454-099	WIRE 16 AWG RED FT	2
13	029620-002	CONN BUT 16-14	1
14	062905-000	CHARGER MOUNT BRACKET	1
15	011252-008	SCREW HHC 1/4-20 X 1	2
16	011252-012	SCREW HHC 1/4-20 X 1 1/2	2
17	062786-004	SCREW SELF TAP 10-30 X 1/2	4
18	011240-005	WASHER 5/16 FLAT	4
20	011248-004	NUT 1/4-20 ESNA	2
21	011248-005	NUT 5/16-18 ESNA	4
24	011254-004	SCREW HHC 3/8-16 UNC X 1/2	2
25	069328-000	FOOT BRACKET	1
26	069302-000	CONTROL PANEL ASSY	1
27	011240-004	WASHER 1/4 FLAT	4
28	011252-004	SCREW HHC 1/4-20 X 1/2	4
29	010154-000	COVER BATTERY	2
30	014252-004	NUTSERT 1/4-20	2
31	069365-001	SPACER FOAM	2
32	011248-002	NUT HEX ESNA 8-32	2
33	010149-000	FUSE BLOCK	1
34	010148-002	FUSE 100 AMP	1

* Not Shown

Illustrated Parts Breakdown



Illustrated Parts Breakdown

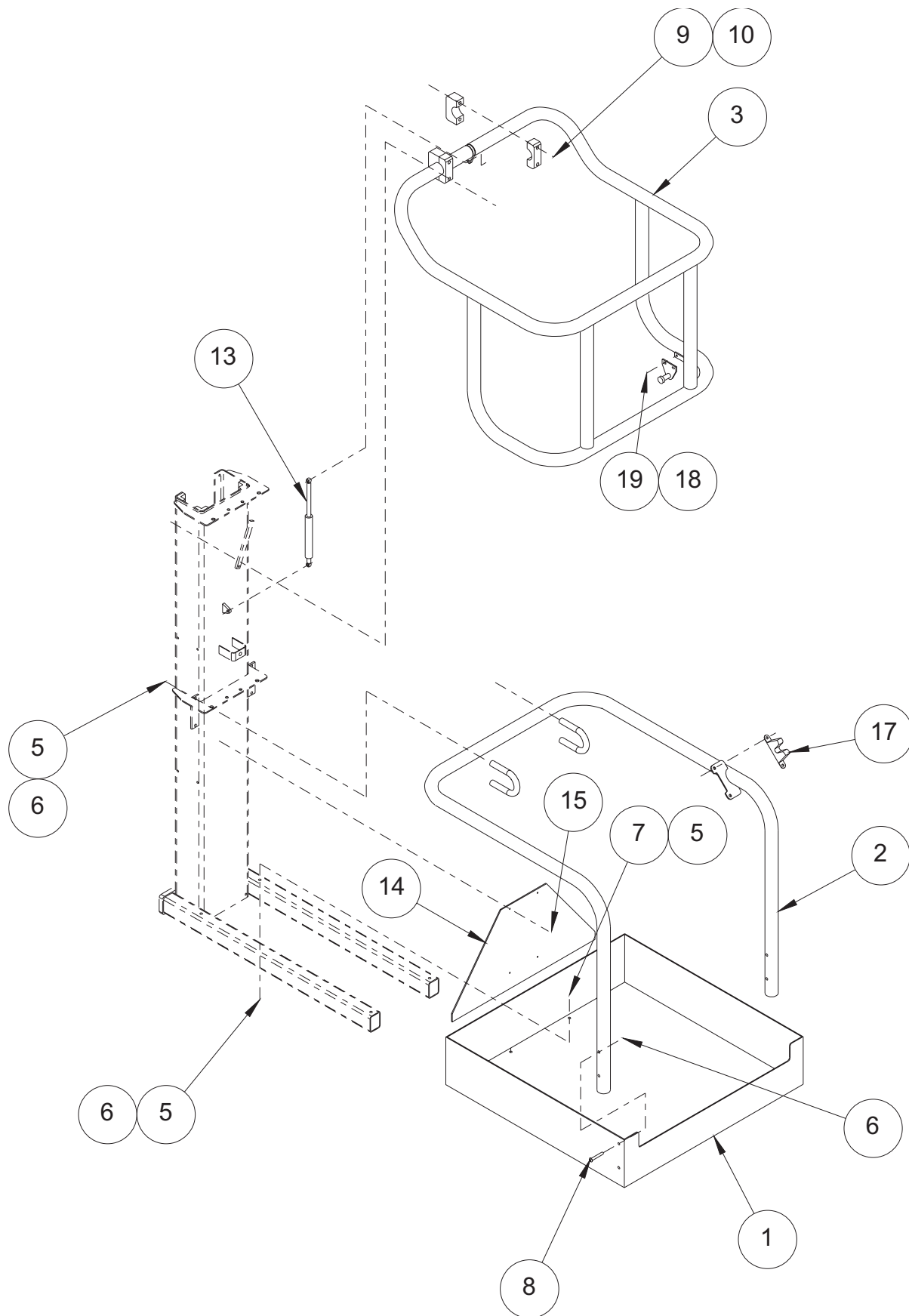
Section
6.2

POWER OPTION, DC

069303-000

ITEM	PART	DESCRIPTION	QTY.
1	068214-001	BATTERY BOX	1
2	062299-005	BATTERY	2
3	062906-001	CHARGER	1
4	069356-000	POWER UNIT	1
5			
6	029431-099	CABLE, #2 AWG WELDING FT	10
7	029602-025	RING TERM #2 - 5/16 DIA	3
8	029602-026	RING TERM #2 - 3/8 DIA	1
9	029902-000	CONN 175 AMP	2
10	064195-001	BATTERY CABLE ASSY X 12	1
11	029601-015	CONN RING 3/8 16-14	1
12	029454-099	WIRE 16 AWG RED FT	2
13	029620-002	CONN BUT 16-14	1
14	062905-000	CHARGER MOUNT BRACKET	1
15	011252-008	SCREW HHC 1/4-20 X 1	2
16	011252-012	SCREW HHC 1/4-20 X 1 1/2	2
17	062786-004	SCREW SELF TAP 10-30 X 1/2	4
18	011240-005	WASHER 5/16 FLAT	4
19			
20	011248-004	NUT 1/4-20 ESNA	2
21	011248-005	NUT 5/16-18 ESNA	4
22			
23			
24	011254-004	SCREW HHC 3/8-16 UNC X 1/2	2
25	069328-000	FOOT BRACKET	1
26	069302-000	CONTROL PANEL ASSY	1
27	011240-004	WASHER 1/4 FLAT	4
28	011252-004	SCREW HHC 1/4-20 X 1/2	4
29	010154-000	COVER BATTERY	2
30	014252-004	NUTSERT 1/4-20	2
31	069365-001	SPACER FOAM	2
32	011248-002	NUT HEX ESNA 8-32	2
33	010149-000	FUSE BLOCK	1
34	010148-002	FUSE 100 AMP	1

Illustrated Parts Breakdown



Illustrated Parts Breakdown

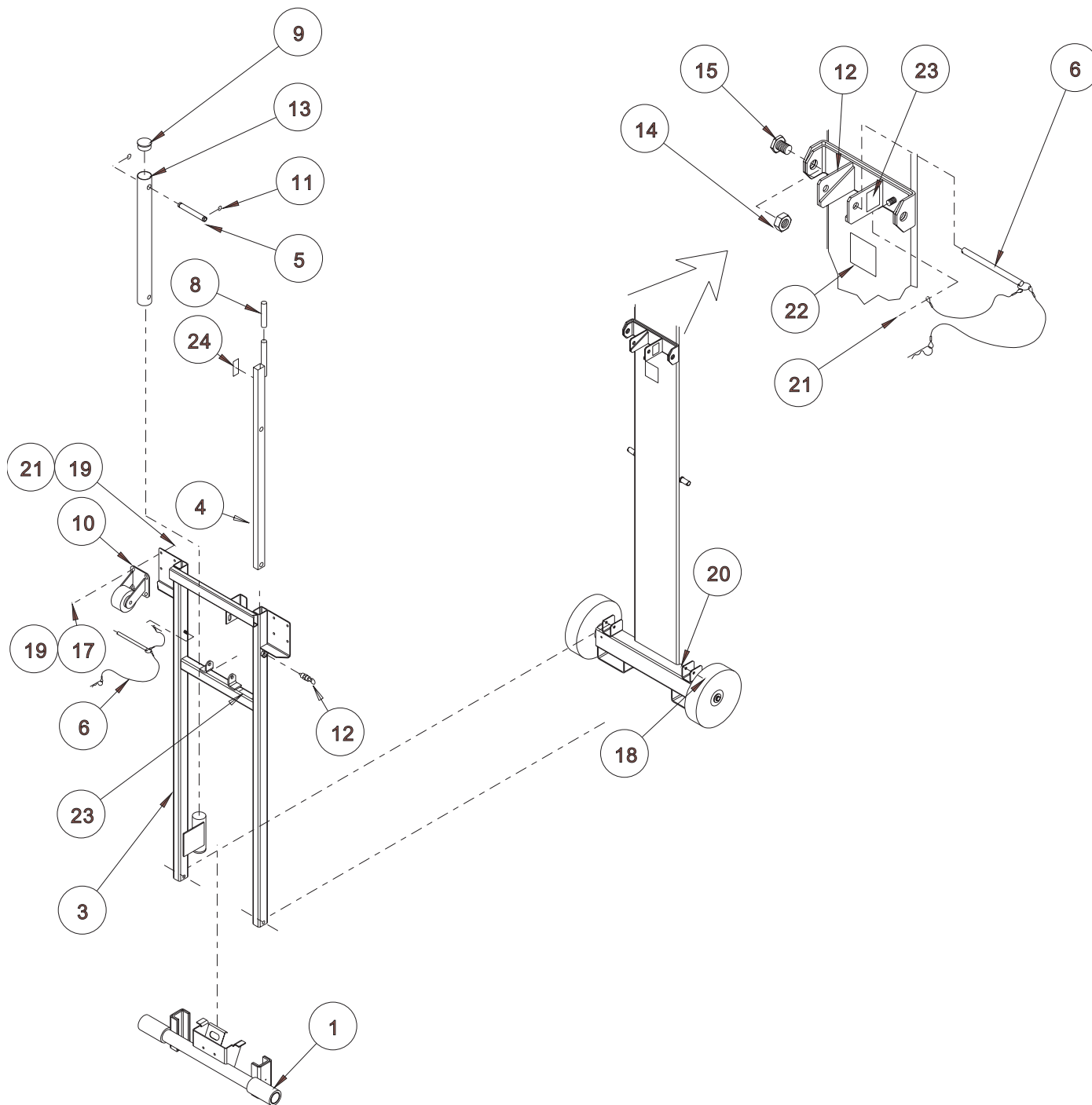
Section
6.2

NARROW CAGE OPTION

068242-001

ITEM	PART	DESCRIPTION	QTY.
1	068149-003	CAGE PAN (NARROW)	1
2	068150-003	MIDRAIL WELDMENT (NARROW)	1
3	068171-003	UPPER GUARDRAIL WELDMENT (NARROW)	1
4	014924-008	U-BOLT	2
5	011240-004	WASHER 1/4" STD.	14
6	011248-004	LOCKNUT, ESNA 1/4-20 UNC	14
7	011252-022	SCREW, HHC 1/4-20 UNC X 2 3/4	4
8	011252-014	SCREW, HHC 1/4-20 UNC X 1 3/4	4
9	011240-005	WASHER, 5/16 STD.	8
10	011264-022	SCREW, HHC 5/16-18 UNC X 2 3/4	4
11	068096-000	RAIL BEARING, TOP	4
12			
13	063650-012	GAS SPRING	1
14	068276-001	SHEAR GUARD	1
15	026551-007	RIVET 1/8 X .251- .312 GRIP	4
16	068277-010	STRIKER BOLT	1
17	068277-000	LATCH	1
18	011709-004	SCREW MACH RD HD 10-24 X 1/2	2
19	011240-003	WASHER #10 STD FLAT	2
20	011821-005	SCREW BUTT HD 1/4-20UNC X 5/8	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

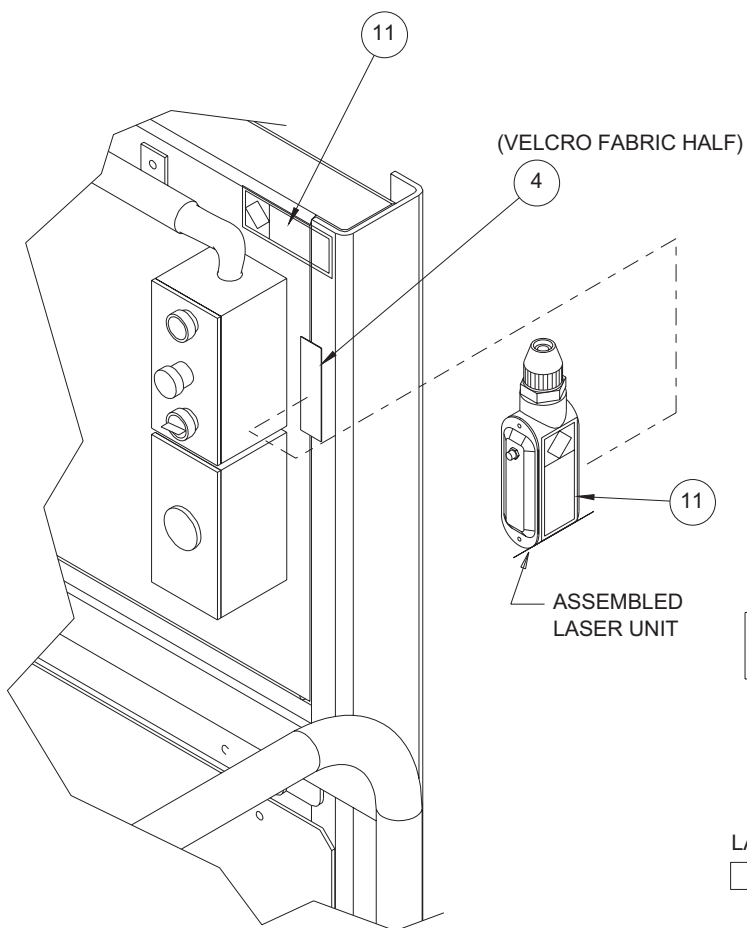
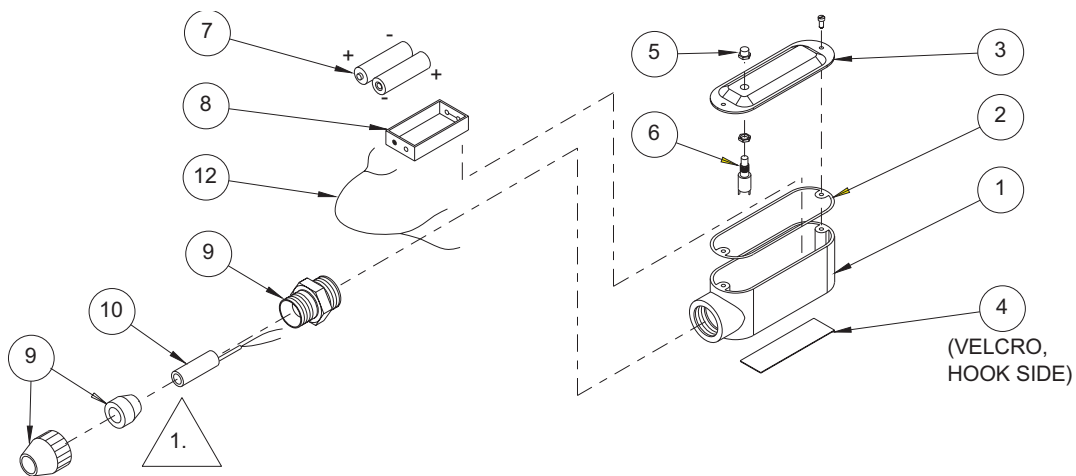
Section
6.2

OPTION: TILT BACK ASSEMBLY

068200-003

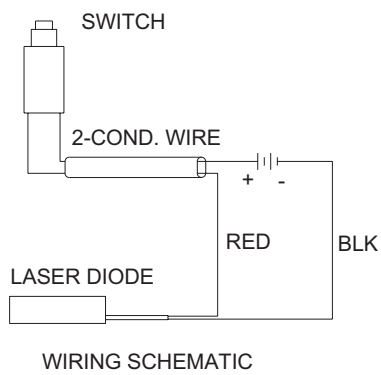
ITEM	PART	DESCRIPTION	QTY.
1	068180-000	LOADER BAR ASSY	1
2			
3	068201-002	TILT BACK WELDMENT 25	1
4	062844-000	TILT BAR WELDMENT	1
5	062846-001	TUBE CYLINDER MOUNT	1
6	062891-001	LANYARD ASSY	2
7	003570-000	PIN RETAINING	1
8	062843-001	GRIP	1
9	063926-004	CAPLUG	1
10	062784-004	CASTER	2
11	011764-012	RING RETAINING	2
12	068264-000	BRACKET WELDMENT	1
13	068265-000	STRUT	1
14	011248-012	NUT HEX ESNA 3/4-10	2
15	011258-008	SCREW HHC 3/4-10 X 1	2
16			
17	011253-008	SCREW HHC 5/16-18 X 1	8
18	011256-022	SCREW HHC 1/2-13 2 3/4	2
19	011240-005	WASHER 5/16 FLAT	16
20	011238-008	NUT HEX ESNA 1/2-13	2
21	011248-005	NUT HEX ESNA 5/16-18	10
22	062466-002	LABEL BEFOR TILTING	1
23	062814-000	LABEL INSERT PIN	2
24	062876-000	LABEL LEVER	1
25	068012-000	LABEL OPERATING INST.	1

Illustrated Parts Breakdown



NOTES:

1. FIT RUBBER COLLAR OF ITEM (9) FLUSH WITH END OF LASER DIODE ITEM (10)
2. SOLDER WIRES & COVER WITH ELECTRICAL TAPE.



Illustrated Parts Breakdown

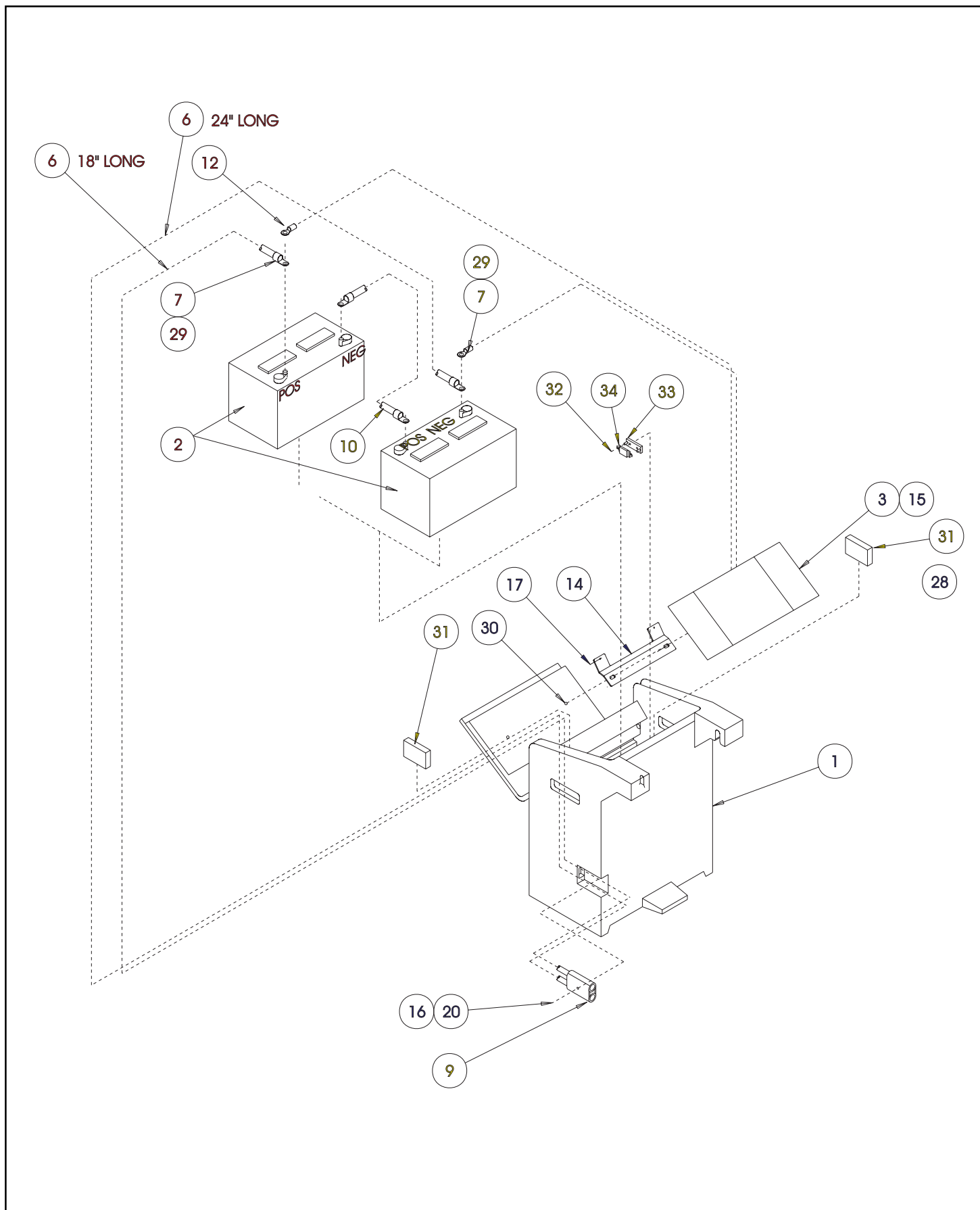
Section
6.2

LASER OPTION

067044-000

ITEM	PART	DESCRIPTION	QTY.
1	067152-000	BODY, CONDUIT DEAD END 3/4"	1
2	067153-000	GASKET	1
3	067154-000	COVER, DEAD END	1
4	067158-000	VELCRO FT	.29
5	067157-000	BOOT, SWITCH	1
6	067156-000	SWITCH, MOMENTARY (MINI)	1
7	067160-000	BATTERY, AA DRY CELL 1 .5VDC	2
8	067155-000	BATTERY HOLDER, AA DRY CELL	1
9	029925-006	STRAIN RELIEF, 3/4"	1
10	067151-000	LASER DIDDE 3mw 670NM (RED)	1
11	067159-000	LABEL, DANGER LASER RADIATION	2
12	029441-099	WIRE, 18GA 2 COND. FT	.5

Illustrated Parts Breakdown



SPARE POWER PACK

068100-003

ITEM	PART	DESCRIPTION	QTY.
1	068214-001	BATTERY BOX	1
2	062299-005	BATTERY	2
6	029431-099	CABLE, #2 AWG WELDING	FT 4
7	029602-025	RING TERM #2 - 5/16 DIA	2
8	029602-026	RING TERM #2 - 3/8 DIA	1
9	029902-000	CONN 175 AMP	1
12	029454-099	WIRE 16 AWG RED	FT 2
13	029620-002	CONN BUTT 16-14	1
14	062905-000	CHARGER MOUNT BRACKET	1
15	011252-008	SCREW HHC 1/4-20 X 1	2
16	011252-012	SCREW HHC 1/4-20 X 1 1/2	2
17	062786-004	SCREW SELF TAP 10-30 X 1/2	4
20	011248-004	NUT 1/4-20 ESNA	2
21	011248-005	NUT 5/16-18 ESNA	4
29	010154-000	COVER BATTERY	2
30	014252-004	NUTSERT 1/4-20	2
31	069365-001	SPACER FOAM	2
32	011248-002	NUT HEX ESNA 8-32	2
33	010149-000	FUSE BLOCK	1
34	010148-002	FUSE 100 AMP	1

Notes:

UpRight

Call Toll Free in U.S.A.

1-800-926-LIFT

For Parts:

1-888-UR-PARTS

UpRight, Inc.

1775 Park Street

Selma, California 93662

TEL: 559/891-5200

FAX: 559/896-9012

PARTSFAX: 559/896-9244

P/N 069317-000

069317-0009812.05-K

UpRight

Call Toll Free in U.S.A.

1-800-926-LIFT

For Parts:

1-888-UR-PARTS

UpRight, Inc.

1775 Park Street

Selma, California 93662

TEL: 559/891-5200

FAX: 559/896-9012

PARTSFAX: 559/896-9244

P/N 069317-000

069317-0009812.05-K