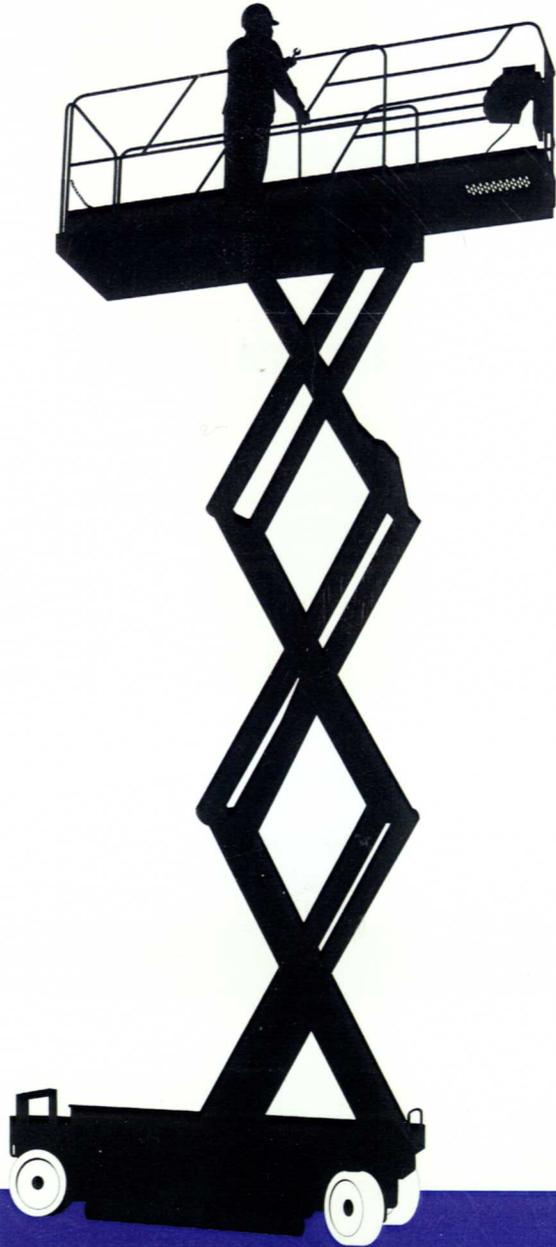


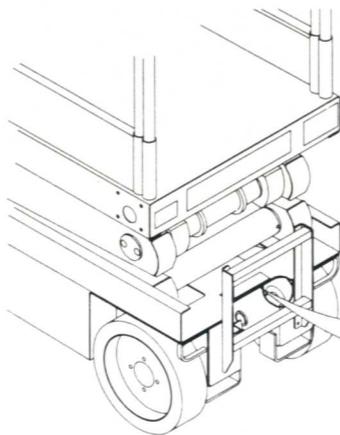
UpRight



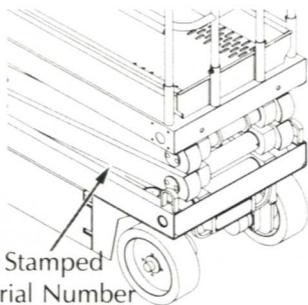
X Series
WORK PLATFORM

**Service &
Parts Manual**

SERVICE & PARTS MANUAL X-Series Aerial Work Platform European Specification Serial Numbers 6013 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 right side scissor guide channel.



Stamped
Serial Number

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"/>	<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

UpRight Ireland, Ltd.

Pottery Road

Dun Laoire

Ireland

TEL: +353-1-202-4100

FAX: +353-1-202-4105

P/N 060571-022

9901-5-D

Forward

Introduction

HOW TO USE THIS MANUAL

This manual is divided into 6 sections. The section number printed at the top corner of each page can 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.

Introduction & Specifications

1.0

General description and machine specifications.

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.

Illustrated Parts Breakdown

6.0

Causes and solutions to typical problems.

Forward

NOTES

Contents

Table of Contents

Section Number	Page No.	Section Number	Page No.
1.0 INTRODUCTION & SPECIFICATIONS		3.5 Setting Hydraulic Pressures	3-7
1.0 Introduction	1-1	Main Relief Valve	3-7
Purpose	1-1	Steering Relief Valve	3-7
Scope	1-1	Counterbalance Valves	3-7
1.1 General Information	1-1	Pump Relief Valves	3-8
Description	1-1	3.6 Switch Adjustments	3-8
Purpose and Limitations	1-1	Tilt Sensor	3-8
1.2 Specifications	1-2	Introduction	3-8
2.0 MACHINE PREPARATION & OPERATION		Adjustment	3-8
2.1 Preparation for Use	2-1	Down Limit Switch	3-9
2.2 Preparation For Shipment	2-1	Optional Proportional Controller	3-9
2.3 Transporting Work Platform	2-2	3.7 Hydraulic Manifold	3-10
2.4 Storage	2-2	Removal	3-10
Preservation	2-2	Disassembly	3-10
Batteries	2-2	Cleaning and Inspection	3-10
2.5 Introduction	3-1	Assembly	3-10
General Functioning	3-1	Installation	3-10
Design Features	3-1	3.8 Hydraulic Pump	3-12
2.6 Safety Rules and Precautions	3-1	Removal	3-12
2.7 Controls and Indicators	3-2	Installation	3-12
Platform/Controller	3-2	3.9 Hydraulic Drive Motors and Hubs	3-12
Chassis	3-2	Removal	3-12
2.8 Pre-Operation Inspection	3-3	Installation	3-12
2.9 Operation	3-5	3.10 Brake Cylinder	3-13
Travel With Platform Lowered	3-5	Removal	3-13
Steering	3-5	Disassembly	3-13
Elevating Platform	3-5	Cleaning and Inspection	3-13
Travel With Platform Elevated	3-5	Assembly	3-13
Lowering Platform	3-6	Installation	3-13
Emergency Lowering	3-6	3.11 Steering Cylinder	3-13
After Use Each Day	3-6	Removal	3-13
Parking Brake Release	3-6	Disassembly	3-13
Fold Down Guardrails	3-6	Cleaning and Inspection	3-13
		Assembly	3-13
		Installation	3-13
3.0 MAINTENANCE		3.12 Lift Cylinder	3-15
3.0 Introduction	3-1	Removal	3-15
Special Tools	3-1	Disassembly	3-15
3.1 Preventative Maintenance	3-1	Cleaning and Inspection	3-15
Preventative Maintenance Table Key	3-2	Reassembly	3-16
Preventative Maintenance Report	3-2	Installation	3-16
3.2 Blocking Elevating Assembly	3-3	3.13 Electric Motor	3-16
Installation	3-3	Troubleshooting	3-16
Removal	3-3	Disassembly	3-16
3.3 Battery Maintenance	3-3	Inspection	3-16
Battery Inspection and Cleaning	3-3	Reassembly	3-17
Battery Charging	3-3	3.14 Torque Specifications	3-17
Battery Cell Equalization	3-5	Hydraulic Components	3-17
3.4 Lubrication	3-5	Fasteners	3-18
Steering Linkage	3-5	Notes	3-19
Hydraulic Oil Tank and Filter	3-5		
Fluid Level	3-5		
Oil and Filter Replacement	3-5		
Reservoir Breather/Cap	3-6		
Adjusting PPE Settings	3-6		

Table of Contents (cont'd.)

Section Number		Page No.
4.0	TROUBLESHOOTING	
4.0	Introduction	4-1
	General Procedure	4-1
	Troubleshooting Table	4-2
	Notes	4-3
5.0	SCHEMATICS	
5.0	Introduction	5-1
	Index	5-1
5.1	Electrical Schematic, X20N,	5-3
5.1	Electrical Schematic, X32N, X20W, X26N	5-5
5.2	Hydraulic Schematic, X20N,	5-7
5.2	Hydraulic Schematic, X20W, X26N	5-9
5.2	Hydraulic Schematic, X32N	5-11
6.0	ILLUSTRATED PARTS BREAKDOWN	
6.0	Introduction	6-1
	Index	6-1
6.2	Illustrated Parts Breakdown	6-2

List of Illustrations

Fig.	Title	Page
1-1	X-Series Work Platform	1-1
2-1	Chassis Module, Right Side	2-1
2-2	Transporting machine	2-2
2-1	Controls and Indicators	2-5
3-1	Blocking the Elevating Assembly	3-3
3-2	Blocking the Elevating Assembly	3-3
3-3	Battery Charger	3-4
3-4	Batteries	3-5
3-5	Hydraulic Oil Tank and Filter	3-6
3-6	Hydraulic Manifold	3-7
3-7	Pump Relief Valves	3-8
3-8	Tilt Sensor Adjustment	3-8
3-9	Down Limit Switch Adjustment	3-9
3-10	Proportional Controller Adjustment	3-9
3-11	Hydraulic Manifold	3-11
3-12	Hydraulic Pump	3-12
3-13	Drive Motor Installation	3-12
3-14	Brake Cylinder Installation	3-13
3-15	Steering Cylinder Installation	3-14
3-16	Lift Cylinder	3-15
3-17	X31N Lift Cylinders	3-15
3-18	Electric Motor Service	3-17
5-1	Electrical Schematic, X20N	5-3
5-2	Electrical Schematic, X20W, X26N, X32N	5-5
5-3	Hydraulic Schematic, X20N, X20W, X26N	5-7
5-4	Hydraulic Manifold, X20N, X20W, X26N	5-7
5-5	Hydraulic Schematic, X32N	5-9
5-6	Hydraulic Manifold, X32N	5-9

List of Tables

Table	Title	Page
1-1	Specifications	1-2
2-1	Controls and Indicators	2-4
3-1	Preventative Maintenance	3-2
3-2	Hydraulic Component Torque	3-18
3-3	Bolt Torque	3-18
4-1	Troubleshooting	4-2
5-1	Electrical Schematic Legend	5-2
5-2	Electrical Schematic Legend	5-4
5-3	Hydraulic Schematic Legend	5-6
5-4	Hydraulic Schematic Legend	5-8
5-4	Hydraulic Schematic Legend	5-10

1.0 Introduction

PURPOSE

This manual provides illustrations and instructions for the operation and maintenance of the X-Series Work Platform manufactured by UpRight, Inc. Selma, California. (See Figure 1-1).

SCOPE

This manual includes both operation and maintenance responsibilities concerning the X-Series Work Platform's readiness. The Maintenance Section covers scheduled maintenance, troubleshooting, repair, adjustment and replacement.

1.1 General Information

DESCRIPTION

The X-Series Work Platform is a self-propelled aerial work platform designed to be used as a means of elevating personnel and equipment and to provide a mobile work platform. They are designed to provide mobility with the platform in a raised or lowered position. Travel with the platform elevated is limited to the low speed range.

PURPOSE AND LIMITATIONS

The objective of the X-Series Work Platform is to provide a quickly deployable, self-propelled, variable height work platform. The elevating function shall only be used when the work platform is on a firm level work area. The work platform is intended to be self-propelled when in relatively close proximity to the work area.

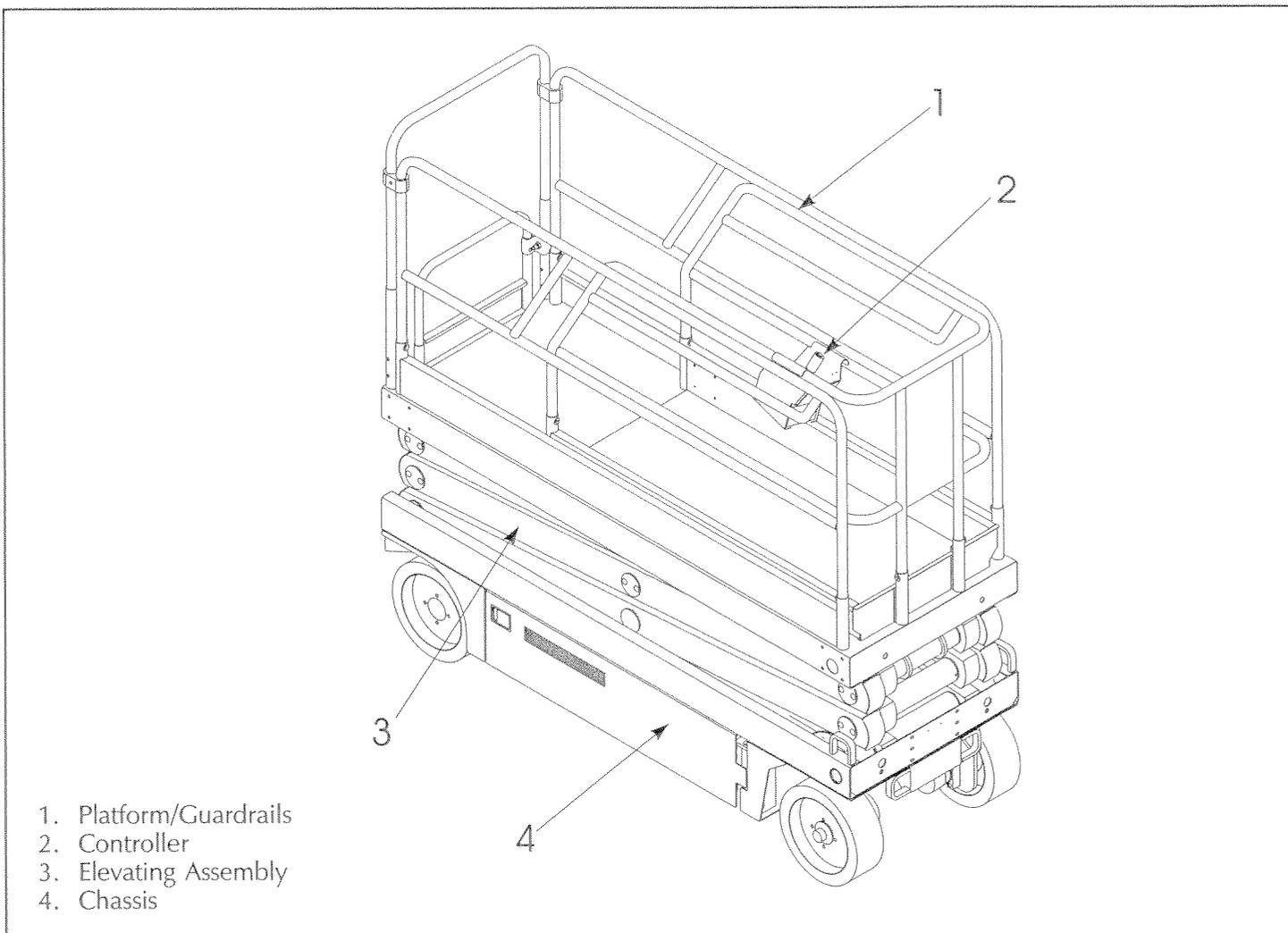


Figure 1-1: X-Series Work Platform

Introduction & Specifications

1.2 Specifications*

Table 1-1: Specifications

ITEM	X20N	X20W	X26N	X32N
Platform Size w/ Extension	0,71 m x 2,21 m [28 in. x 87 in.] Inside Toeboards	1,12 m x 2,21 m [44 in. x 87 in.] Inside Toeboards	1,12 m x 2,21 m [44 in. x 87 in.] Inside Toeboards	1,12 m x 2,21 m [44 in. x 87 in.] Inside Toeboards
Max. Platform Capacity Standard w/ Extension on Extension	340 kg [750 lbs.] 110 kg [250 lbs.]	453 kg [1000 lbs.] 110 kg [250 lbs.]	453 kg [1000 lbs.] 110 kg [250 lbs.]	318 kg [700 lbs.] 110 kg [250 lbs.]
Max. No. of occupants Standard on Extension	3 people 1 person	4 people 1 person	4 people 1 person	3 people 1 person
Height Working Height Max. Platform Height Min. Platform Height	7,9 m [26 ft.] 6,1 m [20 ft.] 0,97 m [38 in.]	7,9 m [26 ft.] 6,1 m [20 ft.] 0,99 m [39 in.]	9,75 m [32 ft.] 7,92 m [26 ft.] 1,09 m [43 in.]	11,28 m [37 ft.] 9,75 m [32 ft.] 1,09 m [43 in.]
Dimensions Weight Overall Width Overall Height Overall Length	1656 kg [3,828 lbs.] 0,83 m [32.5 in.] 1,98 m [78 in.] 2,34 m [92 in.]	1858 kg [4,273 lbs.] 1,22 m [48 in.] 2,0 m [79 in.] 2,34 m [92 in.]	2072 kg [4,747 lbs.] 1,22 m [48 in.] 2,11 m [83 in.] 2,34 m [92 in.]	2463 kg [5,430 lbs.] 1,22 m [48 in.] 2,11 m [83 in.] 2,34 m [92 in.]
Driveable Height	6,1 m [20 ft.]	6,1 m [20 ft.]	7,93 m [26 ft.]	7,93 m [26 ft.]
Surface Speed Platform Lowered Platform Raised	0 to 3.70 km/h [0 to 2.3 mph] 0 to 1.13 km/h [0 to .7 mph]	0 to 3.70 km/h [0 to 2.3 mph] 0 to 1.13 km/h [0 to .7 mph]	0 to 3.70 km/h [0 to 2.3 mph] 0 to 1.13 km/h [0 to .7 mph]	0 to 3.70 km/h [0 to 2.3 mph] 0 to 1.13 km/h [0 to .7 mph]
Energy Source	24 Volt Battery Pack (4-220 Amp Hour, 6 Volt Batteries, min. wt. 28.12 kg each [62 lbs]), 4 HP DC Electric Motor	24 Volt Battery Pack (4-220 Amp Hour, 6 Volt Batteries, min. wt. 28.12 kg each [62 lbs]), 4 HP DC Electric Motor	24 Volt Battery Pack (4-220 Amp Hour, 6 Volt Batteries, min. wt. 28.12 kg each [62 lbs]), 4 HP DC Electric Motor	24 Volt Battery Pack (4-220 Amp Hour, 6 Volt Batteries, min. wt. 28.12 kg each [62 lbs]), 4 HP DC Electric Motor
System Voltage	24 Volt DC	24 Volt DC	24 Volt DC	24 Volt DC
Battery Charger	25 AMP, 60 Hz 110 VAC			
Battery Duty Cycle	25% for 8 Hours			
Hydraulic Tank Capacity	15.2 l [4 US gallons]	15.2 l [4 US gallons]	15.2 l [4 US gallons]	19 l [5 US Gallons]
Maximum Hydraulic System Pressure	165 Bar [2400 psi]	179 Bar [2600 psi]	179 Bar [2600 psi]	138 Bar [2000 psi.]
Lift System	Three stage scissor assembly actuated by one Single Stage Lift Cylinder	Three stage scissor assembly actuated by one Single Stage Lift Cylinder	Four stage scissor assembly actuated by one Single Stage Lift Cylinder	Five stage scissor assembly actuated by two Single Stage Lift Cylinders
Control System	Proportional Control	Proportional Control	Proportional Control	Proportional Control
Drive System	Dual Front Wheel Hydraulic Motors with series or parallel operation	Dual Front Wheel Hydraulic Motors with series or parallel operation	Dual Front Wheel Hydraulic Motors with series or parallel operation	Dual Front Wheel Hydraulic Motors with series or parallel operation
Tires	0,381 m [15 in.] Diameter Solid Rubber, non-marking	0,381 m [15 in.] Diameter Solid Rubber, non-marking	0,381 m [15 in.] Diameter Solid Rubber, non-marking	0,381 m [15 in.] Diameter Solid Rubber, non-marking
Parking Brake	Spring Applied, Hydraulic Release Brake with Manual Release	Spring Applied, Hydraulic Release Brake with Manual Release	Spring Applied, Hydraulic Release Brake with Manual Release	Spring Applied, Hydraulic Release Brake with Manual Release
Turning Radius	254 mm [8 in.] Inside			
Maximum Gradeability	23% [13 degrees]	23% [13 degrees]	22% [12 degrees]	20% [11 degrees]
Wheel Base	1.9 m [74 3/4 in.]			
Guardrails	1,02 m [40 in.]			
Toeboard	152 mm [6 in.] High			

*Specifications subject to change without notice.

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 from the machine.
2. Lift the front of the machine and remove banding and blocks from front wheels.
3. Lower machine.
4. Connect the negative battery lead terminal (Figure 2-1).

2.2 Preparation For Shipment

1. Fully lower the platform.
2. Disconnect the battery negative (-) lead from the battery terminal (Figure 2-1).
3. Band the Platform Assembly to the Chassis.

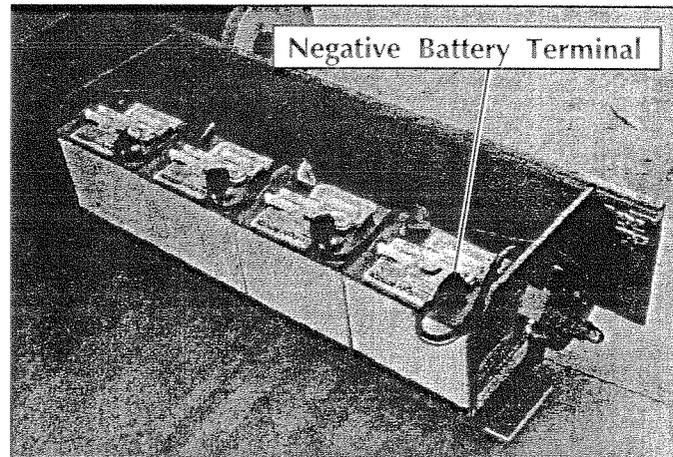


Figure 2-1: Battery Module

2.3 Transporting Work Platform

BY FORKLIFT

NOTE: Forklifting is for transporting only.

▲	CAUTION	▲
See specifications for weight of work platform and be certain that forklift is of adequate capacity to lift platform.		

Forklift from the rear of the machine using the forklift pockets provided (figure 2-3). If necessary, the machine may be forklifted from the side by lifting under the Chassis Modules.

BY CRANE

1. Secure straps to Chassis Lifting Lugs only (Figure 2-2 & 2-3).

BY TRUCK

1. Maneuver the work platform into transport position and chock wheels.
2. Secure the work platform to the transport vehicle with chains or straps of adequate load capacity attached to the chassis tie down lugs (Figure 2-2 & 2-3).

▲	CAUTION	▲
Front tie down lugs are not to be used to lift work platform.		
Overtightening of chains or straps through tie down lugs may result in damage to work platform.		

2.4 Storage

No preparation is required for normal storage. Regular maintenance per Table 3-1 should be performed. If the work platform 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 platform fully lowered. Open the Right Module and remove the reservoir cap, oil should be at the lower line on the dipstick. Add ISO #46 hydraulic oil if necessary.
3. Coat all exposed unpainted metal surfaces with preservative.

BATTERIES

1. Disconnect the Battery ground cable terminal and secure to the chassis.
2. Disconnect the remaining battery leads and secure to the chassis.
3. Remove the batteries and place in alternate service.

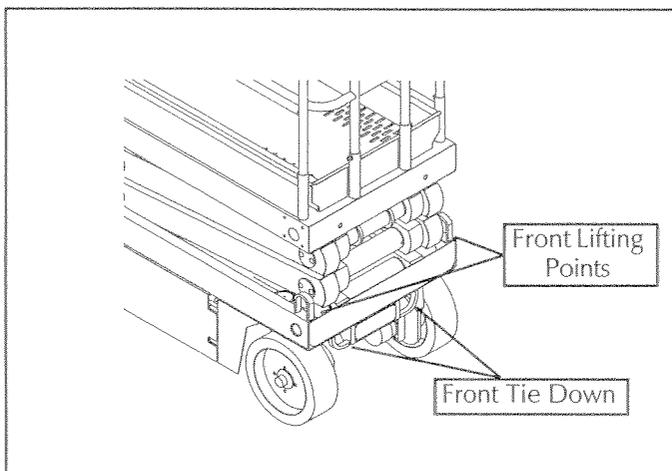


Figure 2-2: Transporting machine

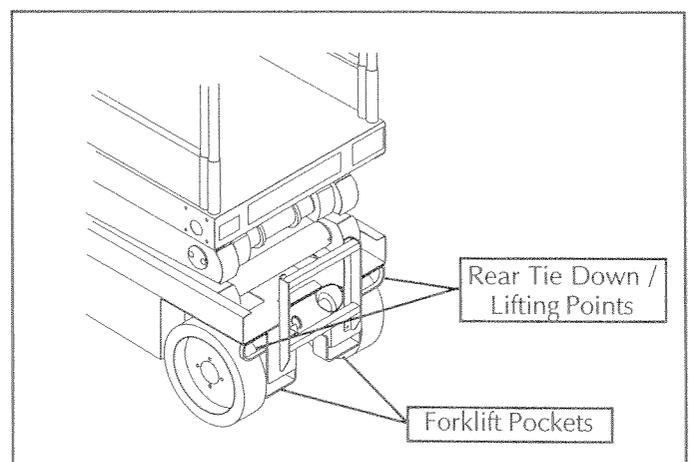


Figure 2-3: Transporting machine

2.5 Introduction

GENERAL FUNCTIONING

The battery powered electric motor directly drives a two section hydraulic pump. The low section supplies oil under pressure to operate steering and low drive/lift, the high section flow provides oil for high drive/lift. The oil flow is directed to the different functions by electrically activated solenoid valves.

DESIGN FEATURES

The X-Series Work Platform has the following features:

- The drive speed is limited to low speed when operating the work platform while the platform is elevated.
- Parking brakes are automatically engaged when the Drive Switch is released and the machine comes to a full stop or if power is lost.
- The Chassis Controls and Controller are equipped with an Emergency Stop Switch for stopping all powered functions.
- The Interlock Lever must be depressed for the Controller to function.
- An alarm is provided to signal when the platform is lowering.
- A Lift Switch is located in the Chassis Control Panel on the right side of the Chassis for lifting and lowering the Platform from ground level.
- Pothole Protection Supports rotate into position under the machine whenever the platform is raised.
- The Tilt Alarm is activated on slopes of 2 degrees side to side and fore and aft when the machine is elevated, cutting power to Lift and Drive functions.
- An Emergency Lowering Valve is provided to lower the Platform in the event electrical power is lost.

2.6 Safety Rules and Precautions

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 X-Series Work Platform:

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

NEVER elevate the platform or drive the machine while elevated unless the machine is on firm level surface.

NEVER sit, stand or climb on guardrail or midrail.

NEVER operate the machine without first surveying the work area for surface hazards such as holes, drop-offs, bumps and debris.

NEVER operate the machine if all guardrails are not properly in place and secured with all fasteners properly torqued.

SECURE chain across entrance and lower the rear guardrail after mounting platform.

NEVER use ladders or scaffolding on the platform.

NEVER attach overhanging loads or increase platform size.

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

DISTRIBUTE all loads evenly on the platform. See the back cover for maximum platform load.

NEVER use damaged equipment. (Contact UpRight for instructions. See toll free number inside front cover.)

NEVER change operating or safety systems.

INSPECT the machine thoroughly for cracked welds, loose hardware, hydraulic leaks, damaged control cable, loose wire connections and wheel bolts.

NEVER climb down elevating assembly with the platform elevated.

NEVER perform service on machine while platform is elevated without blocking elevating assembly.

NEVER recharge batteries 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 manufacturers consent.

2.7 Controls and Indicators

The controls and indicators for operation of the X-Series Work Platform are shown in Figure 2-4. The name and function of each control and indicator are listed in Table 2-1. The index numbers in the figure correspond to the index numbers in the table. **The operator should know the location of each control and indicator and have a thorough knowledge of the function and operation of each before attempting to operate the unit.**

Table 2-1: Controls and Indicators

Platform/Controller

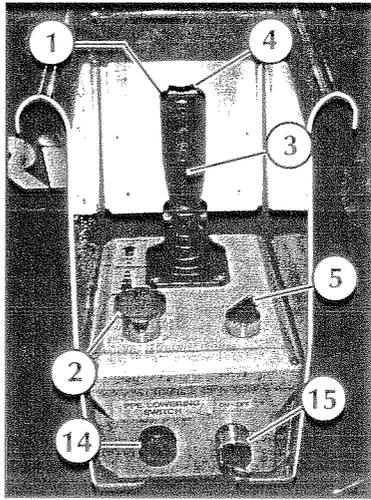
INDEX NO.	NAME	FUNCTION
1	Interlock Lever	Provides power to the Controller only when depressed, preventing inadvertent activation of the Controller.
2	Emergency Stop Switch	Push red button to cut off power to all functions (OFF). Pull up to provide power (ON).
3	Control Lever (Joystick)	Move joystick forward or backward to control Drive Valves or Lift and Down Valves depending on position of Drive/Lift Switch.
4	(Steering Switch)	Push switch right or left to control steering. Steering is not self-centering. Wheels must be returned to straight ahead position by operating Steering Switch.
5	Drive/Lift Switch	Selecting DRIVE allows the work platform to move forward or reverse. For 20W, 26, and 31 models: position Function Switch to HI for traveling on level ground, LOW when extra torque is required for climbing ramps.

Table 2-1: Controls and Indicators (cont'd.)

Chassis

INDEX NO.	NAME	FUNCTION
6	Emergency Stop Switch	Push red button to cut off power to all functions (OFF). Pullout to provide power (ON).
7	Chassis Lift Switch	Toggle switch to UP to lift the work platform and toggle switch to DOWN to lower the work platform.
8	Chassis Key Switch	Turn switch to PLATFORM to provide power to Controller, to CHASSIS to provide power to Chassis Controls and to OFF to prevent unauthorized use of the machine.
9	Emergency Lowering Valve	Pull handle out to lower the Platform. To close, release handle.
10	Brake Release	Turn the nut(s) counterclockwise until the brakes disengage from the tires. The machine will roll when pushed or pulled. To reset the brakes, turn the nut(s) clockwise until the brakes have fully engaged the tires. DO NOT operate the machine with the brakes disengaged.
11	Battery Charger	Charger turns on automatically after a short delay, the ammeter will indicate DC charging current. Charger turns off automatically when batteries are fully charged.
12*	Down Alarm	Sounds an audible signal anytime the platform is lowering during normal operation. If the Emergency Lowering Valve is used the alarm does not sound.
13*	Tilt Alarm	Sounds an audible signal when the platform is elevated and: on a slope of 2° side to side or fore and aft.
14	PPE Override Switch	Lowers Platform
15	Key Switch	Power to Platform Control Box

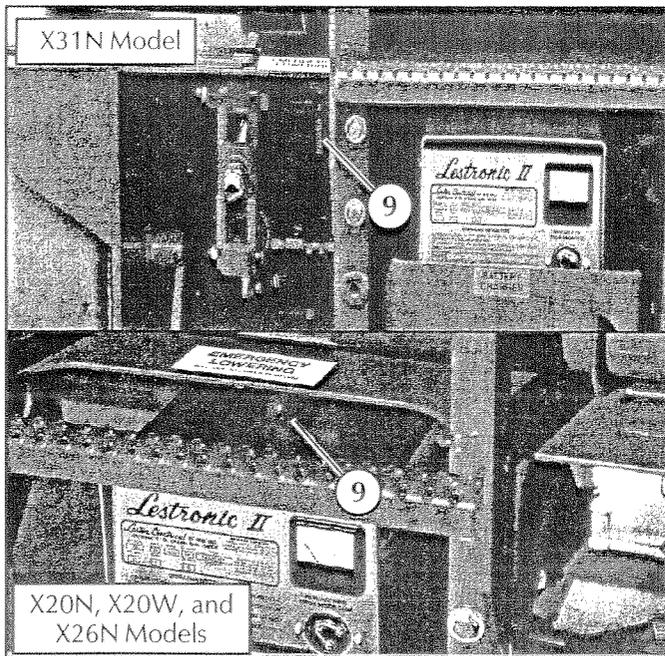
* Not shown in Figure 2-4.



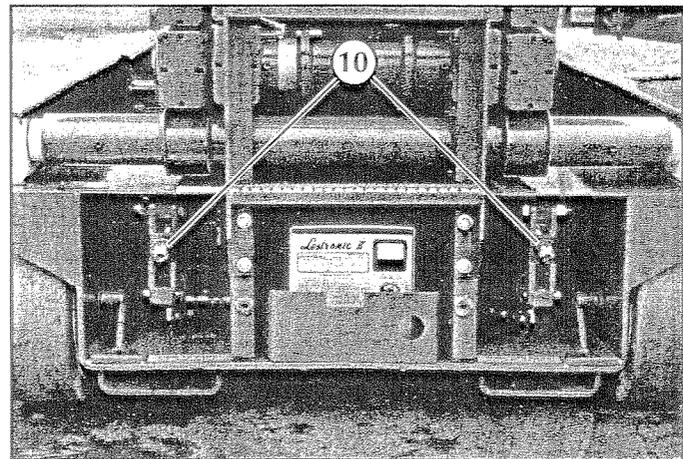
Controller



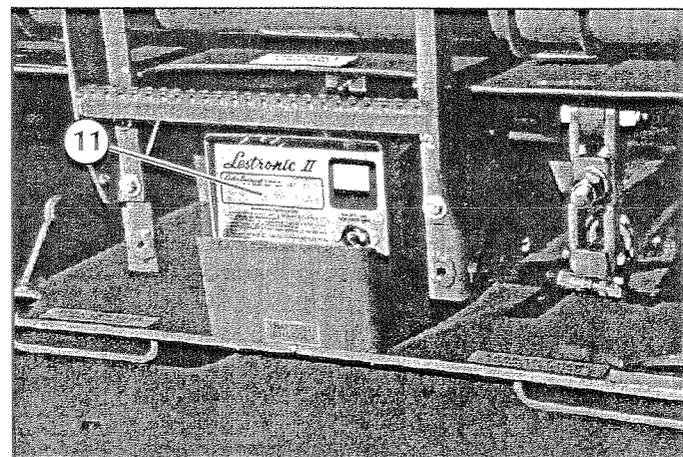
Chassis Module, Left Side



Emergency Lowering Valve Handle



Brake Release (X32N Shown)



Battery Charger

Figure 2-4: Controls and Indicators

2.8 Pre-Operation Inspection

NOTE: Carefully read, understand and follow all safety rules, operating instructions, labels and the Scaffold Industry Association's **MANUAL OF RESPONSIBILITIES**. Perform the following steps each day before use.



WARNING



DO NOT perform service on or in the scissor assembly with the platform elevated unless the platform is properly blocked.

1. Open modules and inspect for damage, oil leaks or missing parts.
2. Check the level of the hydraulic oil with the platform fully lowered. Open the Left Module and remove the reservoir cap, oil should be at the lower line on the dipstick. Add ISO #46 hydraulic oil if necessary.
3. Check that fluid level in the batteries is correct (See Battery Maintenance, Section 3.3).
4. Verify batteries are charged.
5. Check that A.C. extension cord has been disconnected from charger plug.
6. Check that all guardrails are in place, the slide out deck extension is secured with the pin and all fasteners are properly tightened.
7. Carefully inspect the entire work platform for damage such as cracked welds or structural members, loose or missing parts, oil leaks, damaged cables or hoses, loose connections and tire damage.
8. Move machine, if necessary, to unobstructed area to allow for full elevation.
9. Turn Chassis and Platform Emergency Stop Switches ON (Figure 2-4) by pulling the button out.
10. Turn the Chassis Key Switch (Figure 2-4) to **CHASSIS**.
11. Push Chassis Lift Switch (Figure 2-4) to UP position and fully elevate platform.
12. Visually inspect the elevating assembly, lift cylinder, cables and hoses for damage or erratic operation. Check for missing or loose parts.
13. Verify that the Pothole Protection Supports have fully rotated into position under each module.
14. Partially lower the platform by pushing Chassis Lift Switch to **DOWN** and check operation of the audible lowering alarm.
15. Open the Chassis Emergency Lowering Valve (Figure 2-4) to check for proper operation by pulling and holding the handle out. Once the platform is fully lowered, close the valve by releasing the handle.
16. Turn the Chassis Key Switch to **DECK**.
17. Close and latch the module doors.
18. Check that route is clear of persons, obstructions, holes and drop-offs, is level and capable of supporting the wheel loads.
19. Unhook Controller from guardrail. Firmly grasp Controller while performing the following checks from the ground.



WARNING



STAND CLEAR of the work platform while performing the following checks.

Protect control console cable from possible damage while performing checks.

20. Pull Emergency Stop Button out to the ON position.
21. Position Function Switch to **DRIVE**. For 20W, 26, and 32 models, use both **HI** and **LOW** drive when performing step 22.
22. Grasp the Control Lever so the Interlock Lever is depressed (releasing the Interlock Lever cuts power to Controller), slowly position the Control Lever to **FORWARD** then **REVERSE** to check for speed and directional control. The farther you push or pull the Control Lever from center the faster the machine will travel.
23. Push Steering Switch **RIGHT** then **LEFT** to check for steering control.
24. Push the Emergency Stop Switch Button.
25. Rehook Controller at front guardrail.

2.9 Operation

Note: Before operating work platform ensure that pre-operation and safety inspection has been completed, any deficiencies have been corrected and the operator has been thoroughly trained on this machine.

TRAVEL WITH PLATFORM LOWERED

1. Check that route is clear of people, obstructions, holes and drop-offs, is level and capable of supporting wheel loads.
2. Verify Chassis Key Switch is turned to **DECK** and Chassis Emergency Stop Switch is ON, pull button out.
3. After mounting platform lower top rail across entrance and latch the chain. Check that guardrails are properly assembled and in position with the slide out deck extension secured with the pin. Attach Controller to guardrail.
4. Check clearances above, below and to the sides of platform.
5. Pull Controller Emergency Stop Button out to ON position. When button is pushed down Emergency Stop Switch will automatically go to OFF position.
6. Position Function Switch to **DRIVE**. For 20W, 26, and 32 models: position Function Switch to **HI** for traveling on level ground, **LOW** when extra torque is required for climbing ramps.
7. Grasp the Control Lever so the Interlock Lever is depressed (releasing the Interlock Lever cuts power to Controller), slowly push or pull the Control Lever to **FORWARD** or **REVERSE** position to travel in the desired direction. The farther you push or pull the Control Lever from center the faster the machine will travel.

STEERING

1. Position Drive/Lift Switch to **DRIVE**.
2. While holding the Control Lever so that the Interlock Lever is depressed, push the Steering Switch to **RIGHT** or **LEFT** to turn wheels in the desired direction. Observe the tires while maneuvering the work platform to ensure proper direction.

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

ELEVATING PLATFORM

WARNING

LOOK up and around for obstructions before performing the lift function.
DO NOT elevate the platform unless the work platform is on a firm and level surface.
DO NOT operate the work platform within ten feet of any electrical lines. **THIS WORK PLATFORM IS NOT INSULATED.**
NEVER enter the elevating assembly while the platform is elevated without first blocking the elevating assembly.

1. Position Drive/Lift Switch to **LIFT**.
2. While holding the Control Lever so that the Interlock Lever is depressed, push Control Lever forward to **UP**, the farther you push the Control Lever the faster the platform will elevate.
3. If the machine is not level an Alarm will sound and the machine will not lift or drive. **If an Alarm sounds the platform must be lowered and the machine moved to a level location before attempting to re-elevate the platform.**

TRAVEL WITH PLATFORM ELEVATED

WARNING

Travel with platform elevated **ONLY** on firm and level surfaces.

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

1. Check that route is clear of people, obstructions, holes and drop-offs, is level and capable of supporting the wheel loads.
2. Check clearances above, below and to the sides of platform.
3. Position Drive/Lift Switch to **DRIVE**.
4. Grasp the Control Lever so the Interlock Lever is depressed (releasing the Interlock Lever cuts power to Controller), push Control Lever to **FORWARD** or **REVERSE** for desired direction of travel.
5. If the machine is not level an Alarm will sound and the machine will not lift or drive. **If an Alarm sounds the platform must be lowered and the machine moved to a level location before attempting to re-elevate the platform.**

LOWERING PLATFORM

1. Position Drive/Lift Switch to **LIFT**.
2. Grasp the Control Lever so the Interlock Lever is depressed, pull back Control Lever to **DOWN**.
3. The platform will stop when it reaches the PPE cut out height. To lower the platform fully, depress the green "PPE override" button.

NOTE: The PPE Override button will only work after the platform has stopped at the PPE cut out height. The down alarm will always sound except when the Emergency Lowering Valve is used.

EMERGENCY LOWERING

Ask a person on the ground to open the Emergency Lowering Valve (Figure 2-4) to lower the platform.

This valve is opened with the Red handle located at the rear of the machine.

1. Open the Emergency Lowering Valve by pulling on the Red handle.

Note: the Down Alarm will not sound when using the Emergency Lowering Valve.

2. To close, release the Red handle.

AFTER USE EACH DAY

1. Ensure that the platform is fully lowered.
2. Park the machine on level ground, preferably under cover, secure against vandals, children or unauthorized operation.
3. Turn the Key Switch to **OFF** (center position) and remove the key to prevent unauthorized operation.
4. Plug in Battery Charger and verify charger is operating, see *Battery Charging*, Section 3.3.

PARKING BRAKE RELEASE

(Figure 2-4)

Perform the following only when the machine will not operate under its own power and it is necessary to move the machine or when towing the machine up a grade or winching onto a trailer to transport.

Note: X32N models have two identical brake adjustment nuts located on both sides of the ladder.

The Brake Adjustment/Release Nut(s) is (are) located at the rear of the machine to the right (and left) of the ladder.

1. To release the brakes turn the nut(s) counterclockwise until the brakes disengage from the tires.
2. The machine will now roll when pushed or pulled.
3. To reset the brakes, turn the nut(s) clockwise until the brakes have fully engaged the tires. Test the brakes on a 23 % (13 Degree) slope before returning the machine to service.



WARNING



Never operate work platform with the Parking Brakes released. Serious injury or damage could result.

Never tow faster than 1 ft./sec. (.3m/sec.).

FOLD DOWN GUARDRAILS

This procedure applies only to the X32N model for the purpose of passing through a standard double doorway. Guardrails must be returned to proper position before operating the work platform.

Fold Down Procedure

1. Unhook the controller from the side guardrail and place on the platform.
2. Unpin the front and rear upper rails from the side rails and rotate inwards.
3. Starting with the rollout deck rails and then the outer rails, lift up on each guardrail and fold inward.

Erection Procedure

1. Starting with the outer rails and then the rollout deck rails, raise each guardrail and drop it down securing it in the vertical position.
2. Rotate the front and rear upper rails outward and secure them to the opposite side rails using the retaining pins.
3. Hang the controller on the side guardrail.

3.0 Introduction

This section contains instructions for the maintenance of the X-Series Work Platform. Procedures for the operational checkout adjustment, scheduled maintenance, and repair/removal are included.

Referring to *Section 3.0* will aid in understanding the operation and function of the various components and systems of the X-Series Work Platform 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
Inclinometer	10119-000-00
Gauge, 0-3000 psi	14124-030-00
Gauge, 0-6000 psi	14124-060-00
Fitting, Quick Disconnect	63965-002-00

3.1 Preventative Maintenance (Table 3-1)

The complete inspection consists of periodic visual and operational checks, together with all necessary minor 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 
Before performing preventative maintenance familiarize yourself with the operation of the machine.
Always use the elevating assembly brace whenever it is necessary to enter the scissor assembly when the Platform is elevated.

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

Preventative Maintenance Table

Key

Interval

- Daily=each shift or every day
- 50h/30d=every 50 hours or 30 days
- 250h/6m=every 250 hours or 6 months
- 1000h/2y=every 1000 hours or 2 years

- Y**=Yes/Acceptable
- N**=No/Not Acceptable
- R**=Repaired/Acceptable

Preventative Maintenance Report

Date: _____

Owner: _____

Model No: _____ Serial No: _____

Serviced By: _____

Service Interval: _____

NOTE: If the machine is used in an area with great seasonal temperature variations, drain and replace the hydraulic fluid yearly even if machine has not been used for 1000 hours.

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	50h/30d			
	Clean exterior	250h/6m			
	Clean terminals	250h/6m			
Hydraulic Oil *See NOTE	Check oil level	Daily			
	Change filter	250h/6m			
	Clean Reservoir Breather/Cap	250h/6m			
	Drain and replace oil (ISO #46)	1000h/2y			
Hydraulic System	Check for leaks	Daily			
	Check hose connections	50h/30d			
	Check for exterior wear	50h/30d			
Emergency Hydraulic System	Open the emergency lowering valve and check for serviceability	Daily			
Controller	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			
Hydraulic Pump	Check for hose fitting leaks	Daily			
	Wipe clean	50h/30d			
	Check for leaks at mating surfaces	50h/30d			
	Check mounting bolts for proper torque	50h/30d			
Drive Motors	Check for operation and leaks	Daily			
Steering System	Lubricate pivot pins	250h/6m			
	Lubricate king pins	250h/6m			
	Check steering cylinder for leaks	50h/30d			
	Check hardware & fittings for proper torque	250h/6m			
Elevating Assembly	Inspect for structural cracks	Daily			
	Check pivot bearings for wear	50h/30d			
	Check pivot pin mounting bolts for proper torque	50h/30d			
	Check Scissor Arms for bending	250h/6m			
Chassis	Check hoses for pinch or rubbing points	Daily			
	Check welds for cracks	Daily			
	Check tires for damage	Daily			
	Check wheel bolts/nuts for proper torque	Daily			
	Check component mounting for proper torque	250h/6m			
Lift Cylinder	Check cylinder rod for wear	50h/30d			
	Check pivot pin retaining rings	50h/30d			
	Check seals for leaks	50h/30d			
	Check pivot points for wear	50h/30d			
	Check fittings for proper torque	50h/30d			
Entire Unit	Perform pre-operation inspection	Daily			
	Check for and repair collision damage	Daily			
	Lubricate	50h/30d			
	Check fasteners for proper torque	250h/6m			
	Check for corrosion-remove and repaint	250h/6m			
Labels	Check for peeling, missing, or unreadable labels & replace	Daily			

3.2 Blocking Elevating Assembly X20N, X20W, X26N (Figure 3-1)

⚠ DANGER ⚠

Never perform service on the work platform in the Elevating Assembly area while platform is elevated without first blocking the Elevating Assembly.

DO NOT stand in Elevating Assembly area while installing or removing brace.

INSTALLATION

1. Park the work platform on firm level ground.
2. Verify Platform Emergency Stop Switch is ON.
3. Turn Chassis Key Switch to **CHASSIS**.
4. Position Chassis Lift Switch to UP and elevate platform approximately 9.5 Ft. (2.9 m).
5. Rotate Scissors Brace towards the front and allow it to hang vertical over the lower scissor pivot tube.
6. Push Chassis Lift Switch to DOWN position and gradually lower platform until brace rests on lower scissor arm pivot tube.

REMOVAL

1. Push Chassis Lift Switch to UP position and gradually raise platform until the lower end of the Scissors Brace will clear the lower scissor arm pivot tube.
2. Rotate Scissors Brace up and over towards the rear so that it rests on the cylinder mount, stowed position.
3. Push Chassis Lift Switch to DOWN position and completely lower platform.
4. Turn Chassis Key Switch to **DECK**.

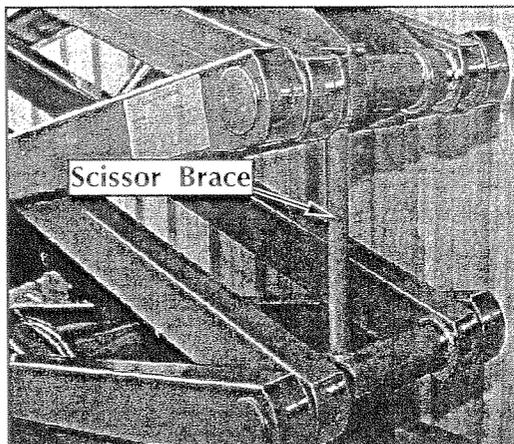


Figure 3-1: Blocking the Elevating Assembly

3.2 Blocking Elevating Assembly X32N (Figure 3-2)

INSTALLATION

1. Park the work platform on firm level ground.
2. Verify both Emergency Stop Switches are ON.
3. Turn Chassis Key Switch to **CHASSIS**.
4. Position Chassis Lift Switch to **UP** and elevate platform approximately nine (9) feet (2.7 m), leaving enough room to freely rotate the Scissors Brace.
5. Pull out on the retaining pin and rotate the Scissors Brace into vertical position.
6. Push Chassis Lift Switch to **DOWN** position and gradually lower platform until the upper and lower pivot pins rest on the Scissors Brace.

REMOVAL

1. Push Chassis Lift Switch to **UP** position and gradually raise platform until the Scissors Brace will clear the pivot pins.
2. Rotate the Scissors Brace counterclockwise until it locks into position parallel with the scissor arm.
3. Push Chassis Lift Switch to **DOWN** position and completely lower platform.

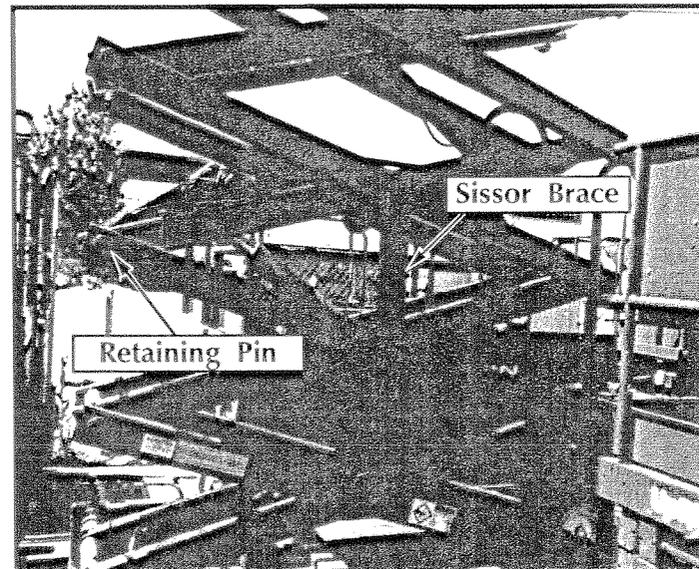


Figure 3-2: Blocking the Elevating Assembly X32N

3.3 Battery Maintenance

Electrical energy for the motor is supplied by four 6 volt batteries wired in series for 24 volts DC. Proper care and maintenance of the batteries and motor will ensure maximum performance from the work platform.

⚠ WARNING ⚠

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

Always wear safety glasses when working with batteries.

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

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 ⚠

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

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 battery and cable contact surfaces to a bright metal finish whenever a cable is removed.

BATTERY CHARGING

(Figure 3-3)

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

⚠ CAUTION ⚠

Charge batteries in a well ventilated area.

Do not charge batteries when the work platform 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.

Never disconnect cables from batteries when charger is operating.

Keep charger dry.

When night air temperatures fall below 65°F (18°C) batteries charged in unheated areas 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. Connect extension cord (12 gauge (1.5 mm²) conductor minimum and 50 ft. (15 m) in length maximum) to the charger outlet plug located rear of mack. Connect other end of extension cord to properly grounded outlet of proper voltage and frequency.

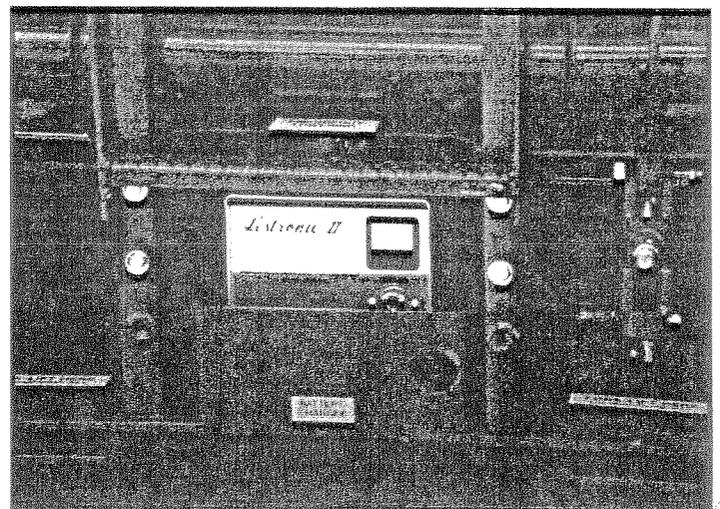


Figure 3-3 : Battery Charger

3. Charger turns on automatically after a short delay, the ampmeter will indicate DC charging current.
4. Charger turns off automatically when batteries are fully charged.

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 1.28. If any corrected readings are below 1.25, the batteries containing such cells 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.

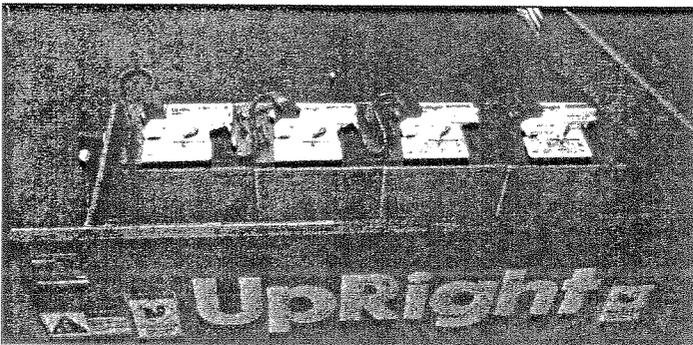


Figure 3-4: Batteries

3.4 Lubrication

STEERING LINKAGE

Apply two to three drops of oil to each linkage bearing. Use a grease gun with multipurpose grease and apply grease to the each zerk fitting at the steering pivots.

HYDRAULIC OIL TANK AND FILTER (Figure 3-3)

Fluid Level

With the platform fully lowered, open the Left Module and remove the reservoir breather/cap, oil should be at the full mark.

Oil and Filter Replacement

1. Operate the work platform for 10-15 minutes to bring the hydraulic oil up to normal operating temperature.



CAUTION



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

2. Provide a suitable container to catch the drained oil. Hydraulic tank has a 7 liter(7.4 quart) capacity.
3. Open Left Module Door.
4. Remove the drain plug and allow all oil to drain. Dispose of hydraulic fluid properly, contact your local oil recycler.
5. Reinstall the drain plug.
6. Unscrew the filter from the Filter Assembly.
7. Apply a thin film of clean hydraulic oil (ISO #46) to the gasket of the replacement filter.
8. Screw the replacement filter onto the filter head until the gasket makes contact then rotate the filter $\frac{3}{4}$ of a turn further.
9. Fill the hydraulic reservoir with ISO #46 hydraulic oil until the oil is up to the full mark on the dipstick.

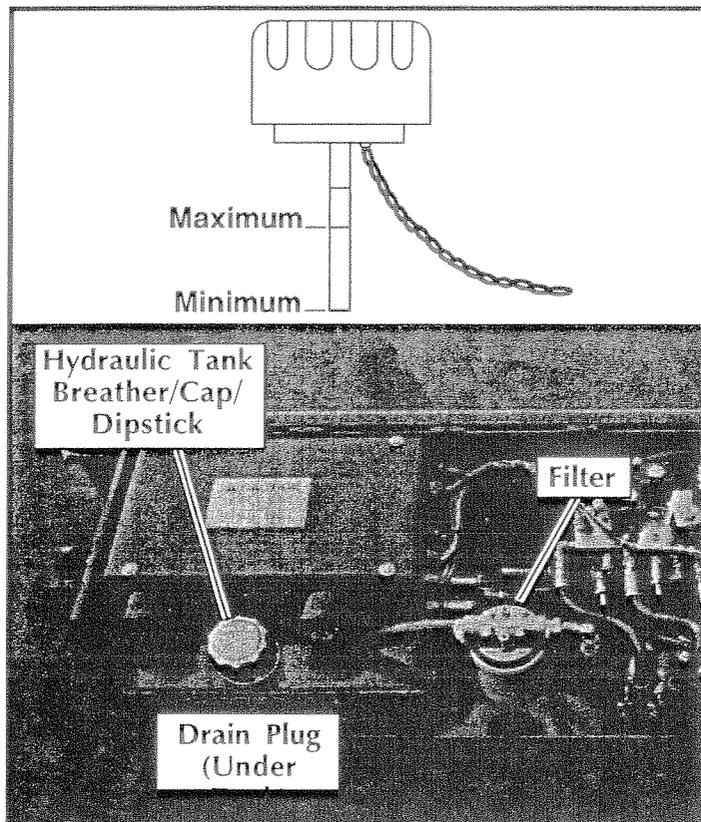


Figure 3-5: Hydraulic Oil Tank and Filter

Reservoir Breather/Cap

Clean breather/cap, when filter is replaced, with cleaning solvent and blow dry with clean dry compressed air.

7. Release the Chassis Lift Switch. Tighten locknut or replace Main Relief Valve cover and torque to 6 Ft/Lbs (8 Nm.).

Adjusting PPE Setting

The machine is designed to stop at a predetermined height (1 m) when the platform is lowered from the platform controls.

The height at which the machine stops is controlled by a mercury switch located in the inside of the elevating assembly.

If the machine does not stop at the prescribed height, adjust the mercury switch until the machine stops at One meter when it is lowered.

To completely lower the machine, push the PPE override switch located on the platform controller.

⚠ WARNING ⚠

If the machine does not stop at the prescribed height when lowered from the platform controls or if the machine fails to completely lower when the PPE override switch is pressed, tag and remove from service until the PPE system has been repaired.

3.5 Setting Hydraulic Pressures (Figure 3-5)

Check the hydraulic pressures whenever the pump, manifold or relief valves have been serviced or replaced.

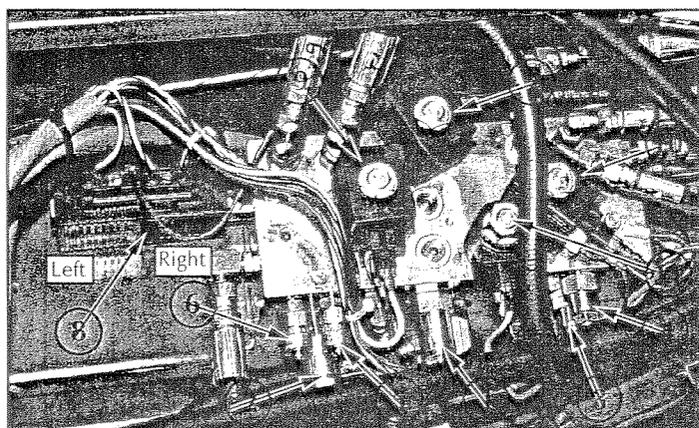
⚠ WARNING ⚠

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

The oil in the hydraulic system is under very high pressure which can easily cause severe cuts. **Obtain medical assistance immediately if cut by hydraulic oil.**

MAIN RELIEF VALVE (Figure 3-5)

1. Operate the hydraulic system 10-15 minutes to warm the oil.
2. Remove high pressure gauge port cap and install the pressure gauge assembly.
3. Loosen locknut or remove cover on the Main Relief Valve and turn adjusting screw counterclockwise two full turns.
4. Place the maximum rated load, see *Table 1-1*, on the platform.
5. Turn the Chassis Key Switch to **CHASSIS**. Position the Chassis Lift Switch to **UP** position and hold it there.
6. Slowly turn the Main Relief Valve adjusting screw clockwise to increase the pressure until the platform just begins to raise. Check the gauge and verify the pressure does not exceed 2400 psi (165 bar). If it does readjust the Main Relief Valve to 2400 psi (165 bar) maximum.



- | | |
|---------------------------|---------------------------|
| 1. Main Relief | 7. Drive/Lift Valve |
| 2. Steering Relief | 8. Steering Valve |
| 3. Fwd. C-Balance Valve | 9. High Speed Valve |
| 4. Rev. C-Balance Valve | 10. Forward/Reverse Valve |
| 5. High Press. Gauge Port | 11. Drive Dump Valve |
| 6. Low Press. Gauge Port | |

Figure 3-6: Hydraulic Manifold

STEERING RELIEF VALVE

1. Operate the work platform for 10-15 minutes to bring the hydraulic oil up to normal operating temperature.
2. Install gauge in low pressure gauge port.
3. Loosen locknut or remove cover on the Steering Relief Valve and turn adjusting screw counterclockwise two full turns.
4. While one person holds the Steering Switch to steer right or left, slowly turn the Steering Relief Valve adjusting screw clockwise to increase the pressure until the gauge reads 1500 psi (103 bar).
5. Tighten locknut or replace Steering Relief Valve cover and torque to 6 Ft/Lbs (8 Nm).
6. Remove gauge and replace cap.

COUNTERBALANCE VALVES (Figure 3-6)

1. Operate the work platform for 10-15 minutes to bring the hydraulic oil up to normal operating temperature.
2. Remove high pressure gauge port cap and install the pressure gauge assembly.
3. Lift work platform and block chassis so front wheels are off the ground.
4. Loosen the locknuts on Counterbalance Valves.
5. With the Chassis Key Switch on **DECK** and the Drive/Lift Switch in **DRIVE** depress the Interlock Lever and slowly pull the Control Lever to **REVERSE** to drive the wheels.
6. Adjust the Forward Counterbalance Valve by turning the adjustment screw until the pressure gauge indicates 325 psi (22.4 bar).
7. Slowly push the Control Lever to **FORWARD** to drive the wheels.
8. Adjust the Reverse Counterbalance Valve by turning the adjustment screw until the pressure gauge indicates 325 psi (22.4 bar).
9. Check the settings by slowly moving the Control Lever **FORWARD**, then **REVERSE** checking the gauge to ensure pressures are properly set. Readjust as needed.
10. Tighten locknuts on valves to 6 Ft/Lbs (8 Nm). Remove blocks and lower work platform to ground.

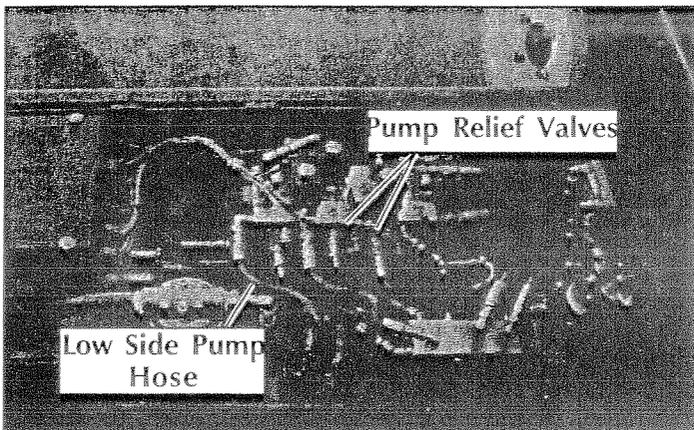


Figure 3-7: Pump Relief Valves
PUMP RELIEF VALVES (Figure 3-7)

1. Operate the work platform for 10-15 minutes to bring the hydraulic oil up to normal operating temperature.
2. Move the machine, if necessary, to a location that will allow the platform to be elevated.
3. Remove the low side pump hose from the valve block and install the 0-6000 pressure gauge assembly on the hose.
4. Turn the adjustment screw, inside the tank side of the valve, counterclockwise two full turns.
5. Use a clean dry container or bucket (one gallon minimum). While pointing the relief valve into the container have another person hold the Chassis Lift Switch to the **UP** position, check the gauge.
6. With the pump off turn the adjusting screw slightly clockwise and repeat step 6 until gauge reads 3400 psi (234 bar) maximum. **Make certain the other person does not push the Chassis Lift Switch while the valve is being adjusted.**

Note: DO NOT continue with this adjustment if more than one gallon (3.8 l) of hydraulic oil has been discharged into the bucket without returning it to the hydraulic reservoir.

7. Remove the low side pump relief valve and exchange it for the high side pump relief valve (the valve that you just adjusted now becomes the high side relief valve).
8. Repeat steps 5, 6, & 7 for this relief valve.
9. Replace the hose and fitting on the relief valve, remove the gauge assembly and reinstall the hose on the valve block and return the hydraulic oil in the container to the hydraulic tank.
10. Operate the machine and verify it is working properly.

3.6 Switch Adjustments

TILT SENSOR (Figure 3-8)

Introduction

The Tilt Sensor has three wires; red-power (24 v in), black-ground, white-output (24 v out). To verify the sensor is working properly there are two LED's under the sensor; green indicates the sensor is on (has power), red indicates the sensor is level and the white wire is 'hot' (24 v out).

Adjustment

1. Place machine on firm level surface $\pm 1/4^\circ$.
2. Use the Inclinator (P/N: 10119-000-00) to ensure front and rear of Chassis is level $\pm 1/4^\circ$.
3. Use the Chassis Controls to raise platform to approximately 9.5 feet (2.9 m).
4. Install the Scissors Brace, see page 3-3.
5. Remove Tilt Sensor Electrical Box cover at front of machine.
6. Adjust the three leveling locknuts until the bubble is centered in the circle on the attached bubble level.
7. Replace the Tilt Sensor Electrical Box cover.
8. Store the Scissors Brace and lower the Platform.

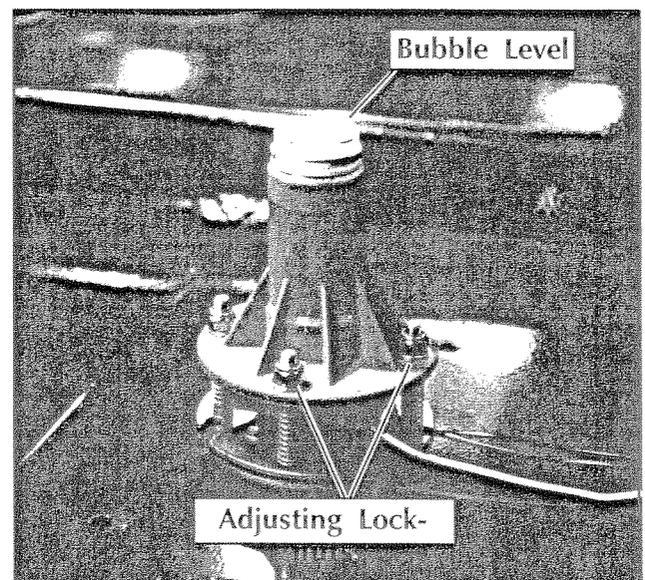


Figure 3-8: Tilt Sensor Adjustment

DOWN LIMIT SWITCH (Figure 3-9)

The Down Limit Switch provides power to the High Speed Circuit when the platform is completely lowered and enables the Tilt Sensor Circuit when the Platform is elevated. The Down Limit switch is located on the chassis Frame at the front of the machine near the lowest pivot tube of the Elevating Assembly. The switched adjustment is to be performed with the platform completely lowered.



WARNING



Always use the Elevating Assembly Brace whenever it is necessary to enter the elevating assembly when the Platform is elevated.

1. The switch (mounted to the chassis frame) is activated by a magnet mounted to the elevating assembly pivot tube with a band clamp). Locate these two components.
2. Disconnect the switch wires at the control module by unplugging the slide terminals.
3. Loosen the band clamps securing the magnet to the pivot tube just enough to allow the magnet to rotate. Rotate the magnet down below the switch.
4. Use a multimeter to check continuity in the switch. The switch contacts should be "open". Slowly rotate the magnet upward closer to the switch until the contacts "close" and tighten the band clamp to secure the magnet in place.
5. Connect the switch leads.

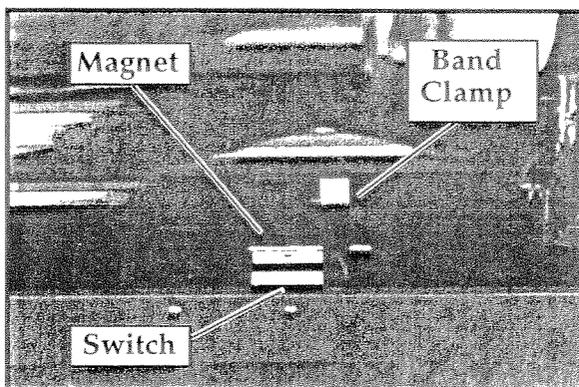


Figure 3-9: Down Limit Switch Adjustment

6. Elevate the platform six inches and verify that the high speed circuit is inoperable. If the high speed circuit is operable, the switch is not properly adjusted and the above procedure must be repeated.

Proportional Controller (Fig. 3-10)

To perform the adjustment the Controller (Control Box) must be opened by removing the screws at the corners of the Controller and rotating the top forward to expose the proportional controller. Remove the potting material from the LO potentiometer adjustment screw if necessary.

Only the LO potentiometer might require adjustment, DO NOT attempt to adjust the other potentiometers as they are preset at the factory.

1. Select Lift with Drive/Lift Switch and elevate platform 6 in. (152 mm). Assure that machine is above Proximity Switch and in low range.
2. Select Drive with Drive/Lift Switch.
3. Push Control Lever fully to forward or Reverse and check that machine speed is 20 ft. (6.1 m) in 18-22 seconds.
4. Adjust 'LO' trim pot if required, turning clockwise increases speed.

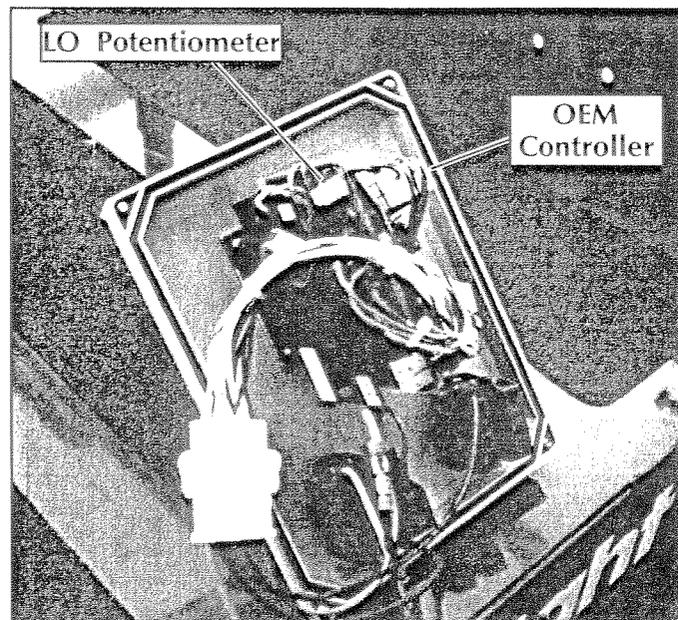


Figure 3-10: Proportional Controller Adjustment

3.7 Hydraulic Manifold (Figure 3-11)

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

REMOVAL

1. Tag and disconnect the solenoid valve leads.
2. Tag, disconnect and plug hydraulic hoses.
3. Remove the bolts that hold the manifold to the module, being careful not to damage the ground wires.
4. Remove manifold block.

DISASSEMBLY

NOTE: Mark all components as they are removed so as not to confuse their location during assembly. Refer to Figure 3-11 often to aid in disassembly and assembly.

1. Remove coils from solenoid valves.
2. Remove solenoid valves, relief valves and counterbalance valves.
3. Remove fittings and plugs.

CLEANING AND INSPECTION

1. Wash the manifold in cleaning solvent to remove built up contaminants and then blow out all passages with clean compressed air.
2. Inspect the manifold for cracks, thread damage and scoring where O-rings seal against internal and external surfaces.
3. Wash and dry each component and check for thread damage, torn or cracked O-rings and proper operation.
4. Replace parts and O-rings found unserviceable.

ASSEMBLY

Note: Lubricate all O-rings before installation to prevent damage to O-rings.

1. Install fittings and plugs.
2. Install counterbalance valves, relief valves and solenoid valves.

Note: Refer to Table 3-2 for the proper torque values when installing any hydraulic component.

3. Install coils on solenoid valves.

INSTALLATION

Note: Refer to Table 3-2 for hydraulic component torque specifications.

1. Attach manifold assembly to module with bolts, make sure all the ground wires are attached with the front right hand bolt.
2. Connect solenoid leads (as previously tagged).
3. Connect hydraulic hoses. Be certain to tighten hoses to manifold.
4. Operate each hydraulic function and check for proper function and leaks.
5. Adjust all relief valves mounted on the Hydraulic Manifold according to instructions in Section 3.5.

Maintenance

1. Valve Block
2. Bottom Plate
3. O-Ring
4. Plug, 9mm Expander
5. Valve, Steering
6. Valve, Lift, High Speed & Reverse
7. Valve, Drive Dump
8. Valve, Main Relief & Valve, Steering Relief
9. Valve, Counterbalance
10. Plug, Cavity
11. Fitting, 90° Elbow
12. Plug, #4
13. Fitting, Straight
14. Fitting, Straight
15. Fitting, 90° Elbow
16. Screw, Flat Hd Soc 10-24 X 5/8
17. Connector, Gauge
18. Fitting, 90° Elbow
20. Fitting, Straight
21. Fitting, 90° Elbow
22. Fitting, 45° Swivel
23. Fitting, 90° Elbow
24. Valve, Proportional
25. Block, Proportional Valve
26. Screw, Soc Hd Cap 10-24 x 2*
27. O-Ring*
28. Pot Hole Valve Block
29. Valve
30. Valve, Check
31. Fitting Straight
32. Fitting Straight
33. Fitting, 90° Elbow
34. Fitting, 90° Elbow
35. Fitting, 90° Elbow
36. Fitting, 45° Elbow

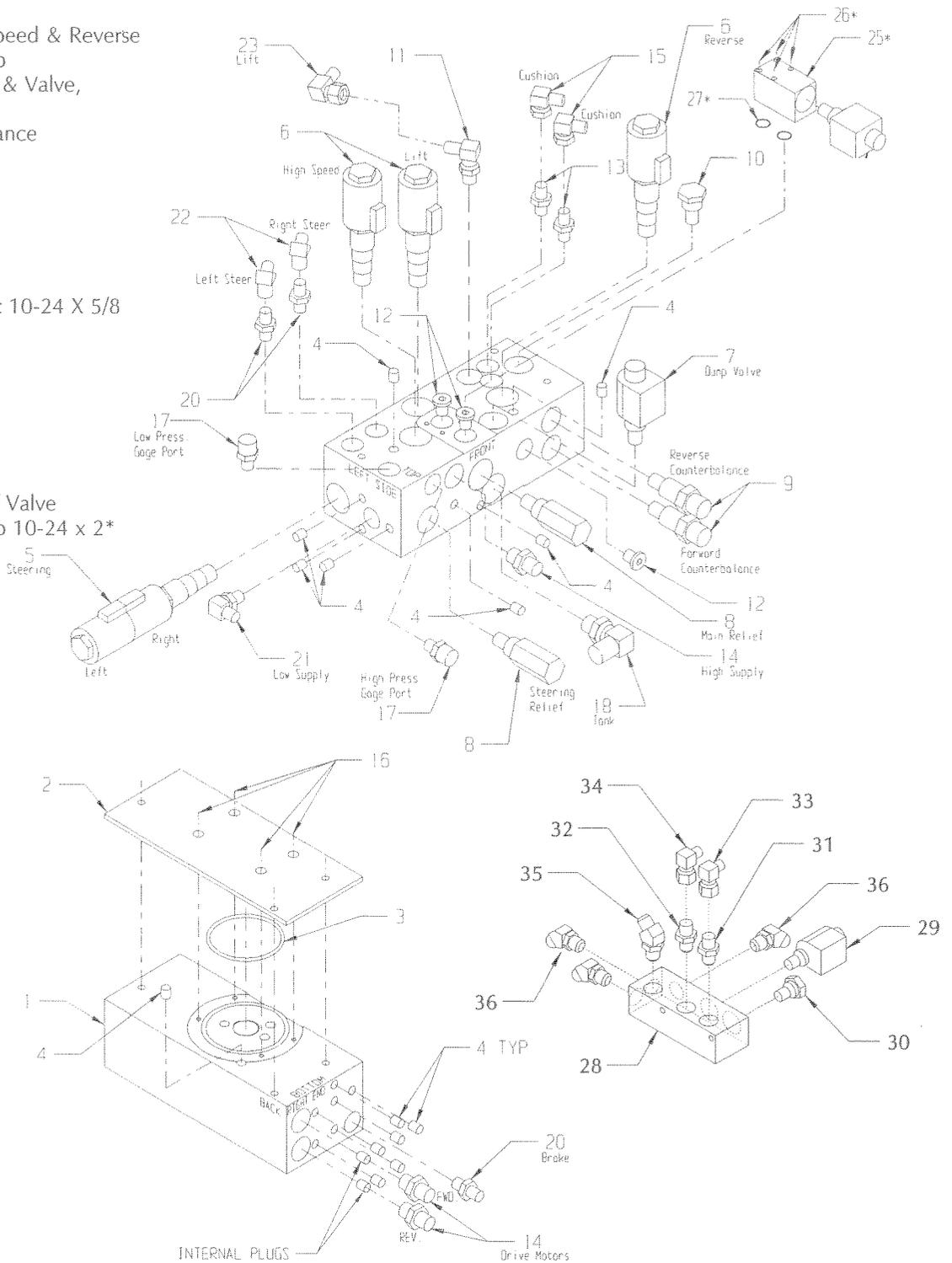


Figure 3-11: Hydraulic Manifold

3.8 Hydraulic Pump (Figure 3-12)

REMOVAL

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

1. Mark, disconnect and plug the hose assemblies.
2. Loosen the capscrews and remove the pump assembly from the motor.

INSTALLATION

1. Lubricate the pump shaft with general purpose grease and attach the pump to the motor with the capscrews.
2. Using a crisscross pattern torque each capscrew a little at a time until all capscrews are torqued to 20 Ft/Lbs (27 Nm).
3. Unplug and reconnect the hydraulic hoses.
4. Check the oil level in the hydraulic tank before operating the work platform.

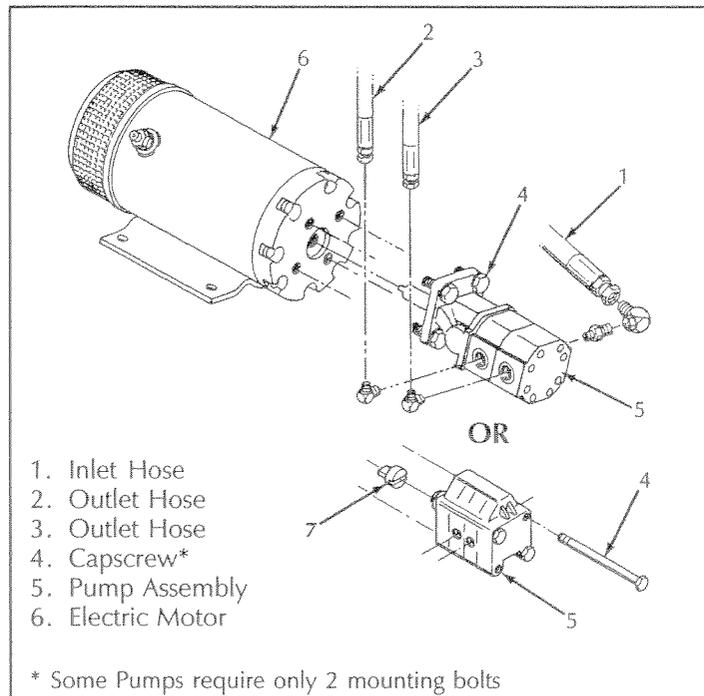


Figure 3-12: Hydraulic Pump

3.9 Hydraulic Drive Motors and Hubs (Figure 3-13)

REMOVAL

1. Use a 1 ton (1000 Kg) capacity jack to raise the front of the machine. Position blocks under the machine to prevent the work platform from falling if the jack fails.
2. Block the rear wheels to prevent the machine from rolling.
3. Remove the wheel bolts and wheel.
4. Remove the cotter pin, slotted nut, hub and shaft key.

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

5. Tag, disconnect and plug the hose assemblies to prevent foreign material from entering.
6. Remove the locknuts, capscrews and drive motor.

INSTALLATION

1. Position the drive motor in the wheel yoke and secure with capscrews and locknuts.
2. Install the shaft key, hub and slotted nut. Torque the slotted nut to 140 to 160 Ft/Lbs (190-217 Nm). Install a new cotter pin, **DO NOT** back-off the nut to install the cotter pin.

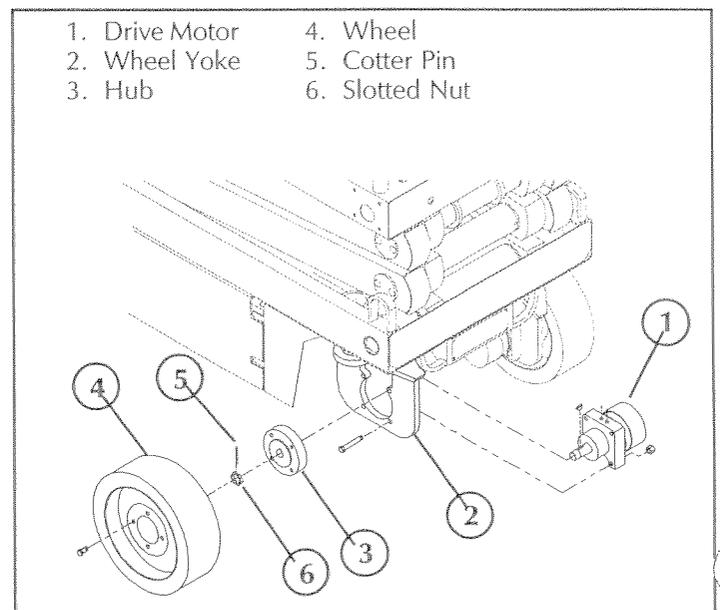


Figure 3-13: Drive Motor Installation

3. Remove the plugs from the hose assemblies and connect to the drive motor.
5. Install the wheel and secure with wheel bolts, torque to 80 Ft/Lbs (108 Nm).
6. Remove blocks, lower the jack and remove. Operate the drive system and check for leaks.

3.10 Brake Cylinder (Figure 3-14)

The brake cylinder is located between the rear wheels at the rear of the chassis.

REMOVAL

1. Block the wheels to prevent the work platform from rolling when the brake is removed.
2. Remove the adjustment locknut and jam nut.
3. Tag and disconnect the hose assemblies and cap the openings to prevent foreign material from entering.
6. Remove the shoulder bolt and locknut that mounts the cylinder rod to the brake tube.
7. Remove the cotter pin and pivot pin from the rear cylinder mount. Remove the cylinder.

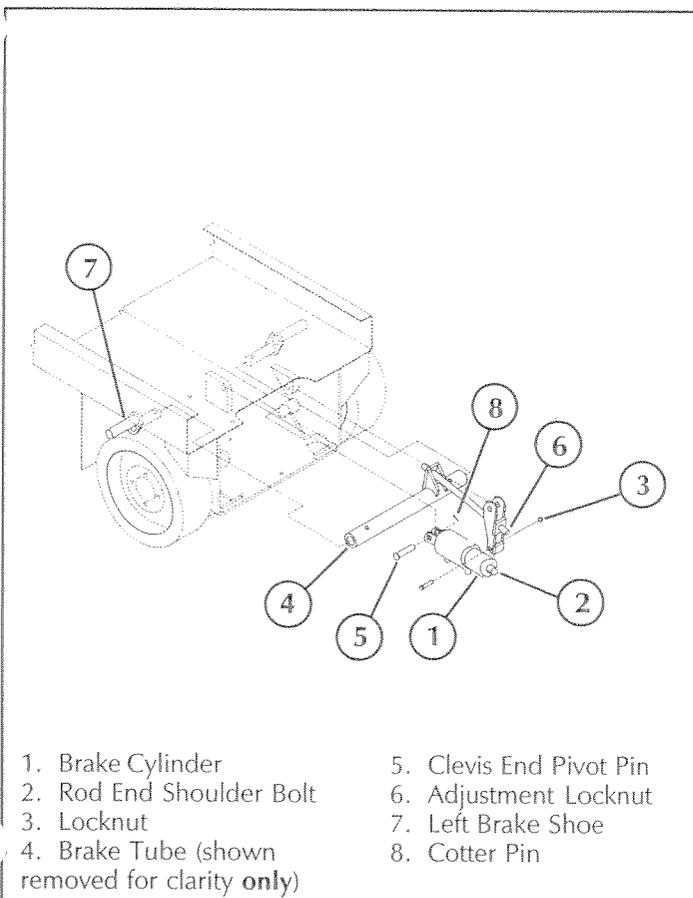


Figure 3-14: Brake Cylinder Installation

DISASSEMBLY

1. Remove the set screw from the outside barrel assembly and unscrew the cylinder.
2. Completely disassemble the cylinder including removing the piston nut and piston.
3. Remove all the seals and o-rings noting their location to aid in reassembly.

CLEANING AND INSPECTION

1. Wash all the metal parts in cleaning solvent and blow dry with filtered compressed air.
2. Inspect all the threaded components for stripped or damaged threads.
3. Check the inside surface of the cylinder barrel for scoring or excessive wear.
4. Check the piston and headcap for scoring or excessive wear.
5. Inspect the surface of the shaft for scoring or excessive wear.

ASSEMBLY

1. Lubricate and install new seals and o-rings.
2. Install the headcap onto the shaft.
3. Install the new internal backup rings and o-rings on the piston.
4. Install the piston on the shaft and secure with the piston nut, torque to 250 Ft/Lbs (339 Nm).
5. Lubricate the piston seal with clean hydraulic fluid and install the shaft assembly in the inner cylinder barrel.
6. Install the spring and screw the cylinder barrels together until tight and the ports are in-line.
7. Install the set screw.

INSTALLATION

1. Install the clevis end pivot pin through the cylinder clevis and cylinder link and secure with a new cotter pin.
2. Install the rod end shoulder bolt through the cylinder rod and brake tube mounting tabs and secure with the locknut.
3. Install the hydraulic hoses.
4. Install the adjustment locknut. Tighten the bolt until the brake shoes fully engage the tires, secure with the locknut.
5. Lower the machine and operate the drive circuit and check that the brake shoes retract and clear the tires when driving and fully engage the tires when stopped. Check for leaks.

3.11 Steering Cylinder (Figure 3-15)

REMOVAL

1. Turn the wheels to the straight position.
2. Elevate the platform and block the elevating assembly with the brace (see page 3-3).
3. Tag and disconnect the hose assemblies from the cylinder fittings and immediately cap the openings to prevent foreign material from entering.
4. Remove the cotter pins from the pivot pins.
5. Remove the pivot pins, straight up through the Chassis, while supporting the cylinder. Remove the cylinder.

DISASSEMBLY

1. Remove the set screw that secures the thread cap on the cylinder barrel.
2. Unscrew the thread cap from the barrel.
3. Withdraw the head cap, piston and shaft assembly from the barrel tube.
4. Remove the piston nut, piston and head cap.
5. Remove the rod wiper, u-cup, o-ring and backup ring from the headcap and discard the seals.
6. Remove the internal backup rings, o-ring, and cast iron piston seals from the piston and discard.

CLEANING AND INSPECTION

1. Wash all the metal parts in cleaning solvent and blow dry with filtered compressed air.
2. Inspect all the threaded components for stripped or damaged threads.
3. Check the inside surface of the cylinder barrel for scoring or excessive wear.
4. Check the piston and headcap for scoring or excessive wear.
5. Inspect the surface of the shaft for scoring or excessive wear.

ASSEMBLY

1. Lubricate and install new rod wiper, u-cup, o-ring and backup ring on the headcap.
2. Install the headcap onto the shaft.
3. Install the new internal backup rings, o-ring and piston seal on the piston.
4. Install the piston on the shaft and secure with the piston nut, torque to 75 Ft/Lbs (102 Nm).
5. Lubricate the piston seal with clean hydraulic fluid and install the shaft assembly in the cylinder barrel.
6. Screw head cap into cylinder barrel until tight and secure with set screw.

INSTALLATION

1. Position the cylinder assembly in the chassis and insert pivot pins and secure with new cotter pins.
2. Connect the hose assemblies to the fittings.
3. Operate the steering circuit several times throughout its entire range of travel to expel trapped air and check for leaks.

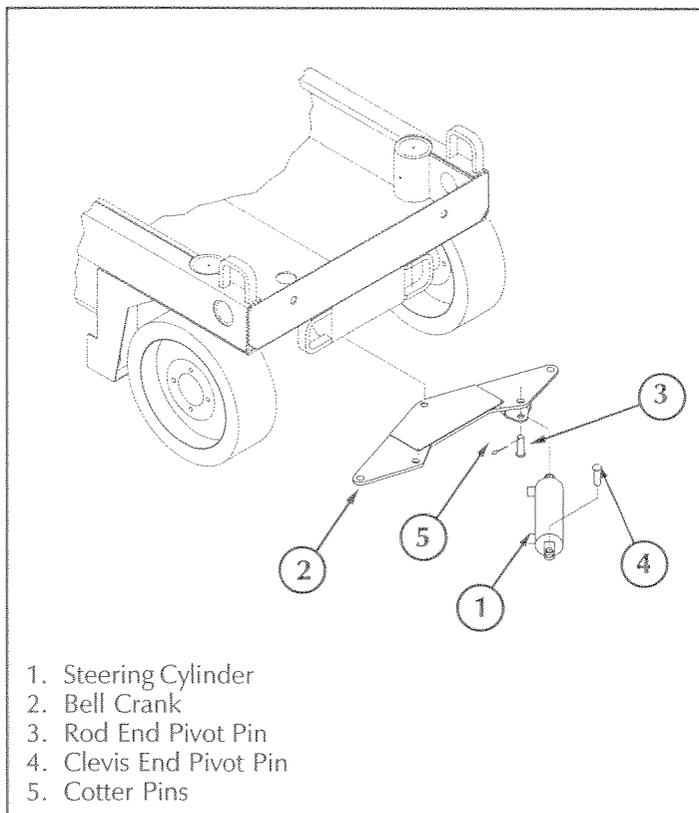


Figure 3-15: Steering Cylinder Installation

3.12 Lift Cylinder (Figure 3-16)

The X20N, X20W and X26N are all equipped with one Lift Cylinder. The X32N has two Lift Cylinders (Figure 4-17). The procedure for removing the lift cylinder(s) is the same for all models.



DANGER



Use a suitable maintenance stand to access the upper Lift Cylinder on the X32N. DO NOT stand on the Elevating Assembly

REMOVAL

1. Elevate platform and install brace (see page 3-3).
2. Provide a suitable container to catch the hydraulic fluid, then disconnect the hydraulic hoses from the cylinder. Immediately plug hoses and fittings to prevent foreign material from entering.
3. Remove Emergency Lowering Valve Cable and Down Valve wires from the Emergency Lowering/Down Valve.
4. Remove retaining rings securing Lift Cylinder Pivot

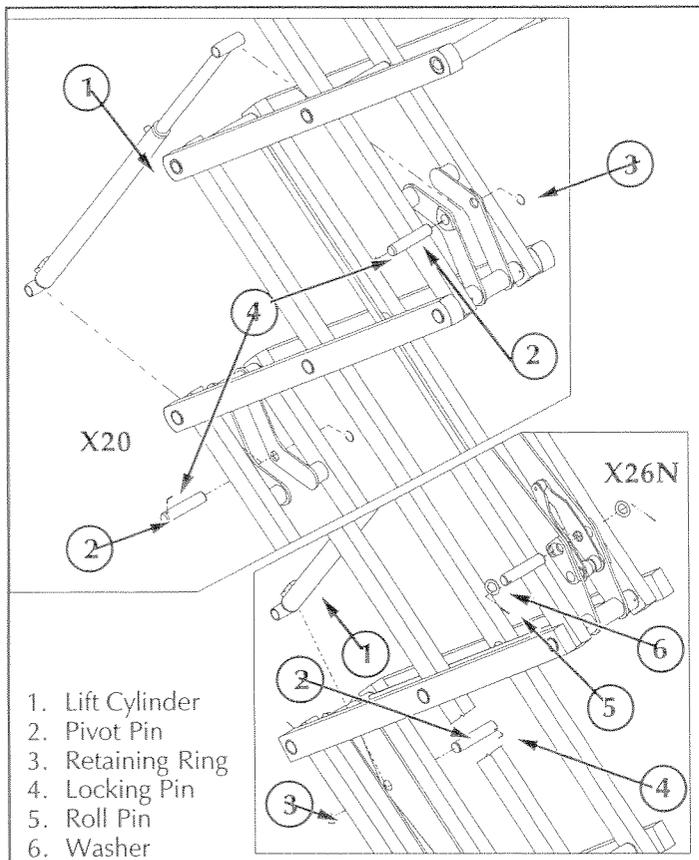


Figure 3-16: Lift Cylinder Installation

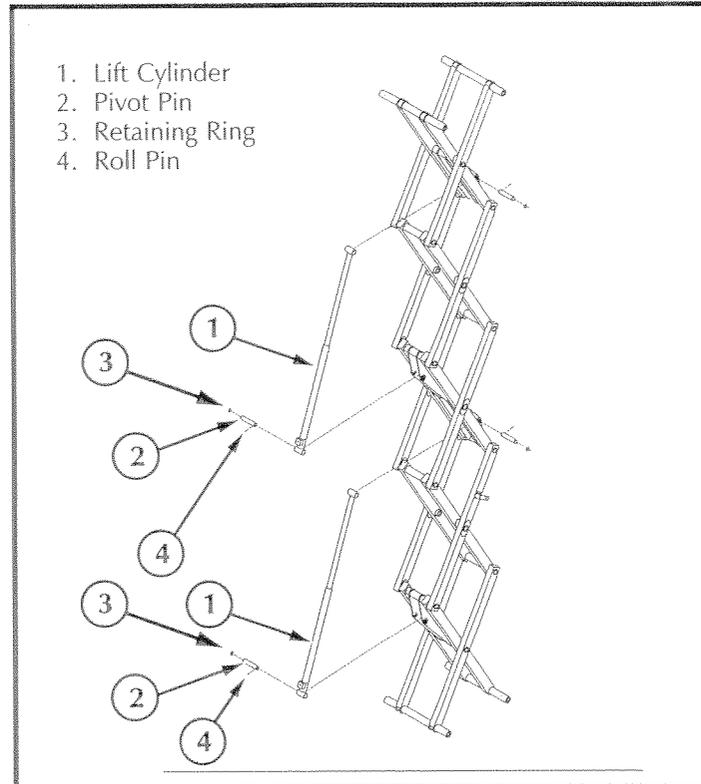


Figure 3-17: X32N Lift Cylinders

5. Pins. On X26N machines remove the left roll pin in the Upper Pivot Pin.
6. Remove lower Pivot Pin by driving pin towards Locking Pin side. Lower cylinder to rest on chassis.
7. Attach a suitable hoisting device and sling to the cylinder and remove upper Pivot Pin.
8. Carefully remove cylinder.

DISASSEMBLY

1. Remove the fittings and Down Valve from the cylinder assembly.
2. Unscrew the headcap and withdraw the rod and piston assembly from the barrel tube.
3. Unscrew the piston from the rod and then remove the head cap from the cylinder rod.
4. Remove all o-rings, seals and wipers from the head cap, piston and rod.

CLEANING AND INSPECTION

1. Clean all metal parts in solvent and blow dry with filtered compressed air.
2. Check all threaded parts for stripped or damaged threads.

3. Check the bearing surfaces inside of the head cap, inside of the cylinder barrel and the rod for signs of scoring or excessive wear.
4. Replace all seals and o-rings.

REASSEMBLY

1. Lubricate and install new o-rings, seals and wipers on the head cap and piston.

NOTE: Multipurpose lubricant should be used.

2. Install the headcap on the cylinder rod from the piston end.
3. Apply Loctite #262 to the threads on the piston and screw the piston on the rod.
4. Lubricate the piston and install the piston and rod assembly in the barrel tube.
6. Thread the head cap into the barrel tube and hand tighten, then turn $\frac{1}{4}$ turn further.
7. Install the Down Valve and fittings.

INSTALLATION

1. Attach a suitable hoisting device and sling to the cylinder. Carefully position cylinder in the Elevating Assembly and install the upper Pivot Pin.
2. On X20 machines make sure the Locking Pin fully engages the pivot and pin and install the retaining ring.
On X26N machines install a new roll pin.
3. Carefully lift the cylinder and align the lower mount and install the Pivot Pin. Make sure Locking Pin is properly installed then install the retaining ring.
4. Connect the Emergency Lowering Valve Cable and Down Valve wires.
5. Unplug hydraulic hoses and attach to the cylinder.
6. Replace hydraulic fluid removed from Lift Cylinder.
7. Test with weight at rated platform load to check system operation. Check for leaks and level of fluid.

3.13 Electric Motor (Figure 3-18)

TROUBLESHOOTING

1. Read the nameplate to become familiar with the motor, especially the rated voltage.
2. Try to turn the shaft by hand. Keep motor leads separated while doing this. If the shaft turns freely go to step 3. If the shaft won't turn, proceed to step 2A.

- 2A. The shaft could be tight for a number of reasons, this check is to determine if the tightness is of a temporary nature only. Obtain power to produce the nameplate voltage. **Do Not Make A Permanent Connection.** First touch the motor leads quickly to the power supply just long enough to observe if the shaft runs. If it does turn, then hold the motor leads on the power supply for a longer time. If the motor sounds normal, go to step 3. If the motor sounds noisy, it should be taken apart as described in the disassembly section.
3. If the motor turned freely, connect an ammeter in the circuit as shown in Figure 3-18A. With rated voltage applied and the shaft running free, the ammeter should read less than 20% of the nameplate full load current. If the motor meets the above conditions then it can be assumed the original problem is external to the motor.

DISASSEMBLY

1. Remove thru bolts.
2. Remove pulley end cover.
3. Pull the armature out of the assembly in one swift motion.
4. Remove commutator end cover.

NOTE: Do not place the stator ring in any mechanical holding device during the disassembly or assembly operation. Permanent distortion or other damage will result.

INSPECTION

Once the motor has been disassembled, go through the following check list steps to determine where the problem lies.

1. Bearings should spin smoothly and easily and have ample lubrication and be free of corrosion.
2. Armature should be checked for grounds and shorted turns. Refinish commutator surface if pitted or excessively worn.
3. Brushes should be checked for wear and to ensure that they are free in the brush holders.

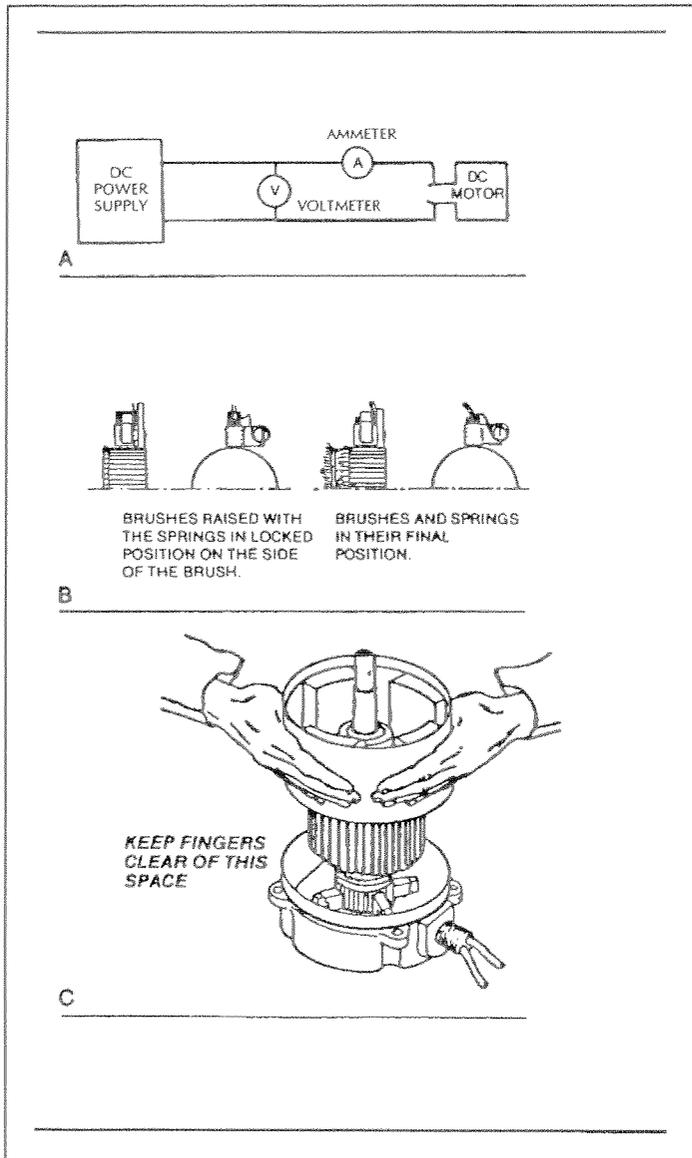


Figure 3-18: Electric Motor Service

NOTE: Observe how brushes are assembled in brush holders and position of brush lead. New brushes must be installed in same manner. Brushes should be removed as follows:

- Remove brush spring clip from its mounting on brush assembly.
 - Lift brush assembly from brush holder.
 - Disconnect brush assembly lead.
 - New brush assembly to be installed by reversing above procedure.
4. Inspect wire harness and all connections for signs of damage due to overheating.
 5. Check stator to see it is securely mounted.

REASSEMBLY

1. Install new brushes and be sure they are free in the holder. Install brush with the lead wires positioned as when received. Raise all brushes to the locked position. (See Figure 3-18B and step 3 in the Inspection section).
2. Place commutator cover on a work bench with brush assembly facing upward.
3. Place the bearing spring into the bearing bore.
4. Take a complete armature assembly, including bearings, and insert commutator end bearing into the bearing bore.

Note: Do not reuse bearings which have been removed from armature shaft. Keep assembly in a vertical position. Use extreme care not to damage armature with bearing pullers. New bearings should be installed by pressing inner race of bearing onto proper position on armature shaft.

5. Set the brushes to final position as shown in Figure 3-18B.
6. Place the complete stator down over the vertical armature, and into position on the commutator cover.
7. The stator assembly must be placed in a definite relationship with the commutator covers in order to obtain a neutral brush setting. There is a match-mark on both items. **These two marks must line up exactly. Rotate until they do.**
8. Assemble the pulley end cover in the proper relationship. Insert mounting bolts and tighten alternately to ensure a good mechanical alignment.
9. Spin the shaft by hand to see if it is free. Be sure motor leads (if used) are not touching together. If the leads are touching, a generator action will give the effect of friction in the motor. A no-load test can now be performed. At rated voltage, observe the no-load current. It should be less than 20% of the nameplate full load current. Anything higher indicates:
 - Brushes are not on neutral setting (check match-marks for exact alignment).
 - Faulty armature.

3.14 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: SAEPART 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	2530	3441	25-30	34-41	430-470	49-53
#10	3540	4754	35-40	47-54	680-750	77-85
#12	8590	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

Table 4-1 provides a logical sequence of tests that are designed to isolate problems with X-Series machines. This table includes a list of probable causes and remedies.

WARNING

When troubleshooting, ensure that the work platform is resting on a firm, level surface.

When performing any service on or in the Elevating Assembly area which requires the platform to be raised, the Elevating Assembly must be blocked.

Disconnect the batteries ground cable when replacing or testing the continuity of any electrical component.

GENERAL PROCEDURE

Troubleshooting should be carried out in two steps, first thoroughly study both hydraulic and electric schematics to determine possible causes. Loose terminal connections and short circuits are always a potential cause when troubleshooting. Secondly, check suspect components electrically, hydraulically and mechanically to determine if they are at fault. Refer to Tables 5-1 and 5-2 for Reference Designations used in Table 4-1.

Troubleshooting

Table 4-1: Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
All functions inoperable, Electric Motor does not start.	<ol style="list-style-type: none"> Open control circuit Circuit Breaker (CB). Blown Electric Motor Fuse (FU1). Faulty Battery Charger. Faulty Battery(ies) (BAT). Faulty Electric Motor (MOT). Faulty Motor Relay (R1). Emergency Stop Switch failed open. Faulty Down Limit Switch (LS1). Faulty Tilt Alarm Relay (R3). Faulty Interlock Switch. Faulty Controller. 	<p>Check control circuit Circuit Breaker. Reset if open (button out).</p> <p>Check 175 amp Electric Motor Fuse. Replace if blown.</p> <p>Check the voltage output of the Battery Charger. If less than 24 VDC, repair or replace.</p> <p>After completely charging Batteries, test each Battery. Replace as required.</p> <p>While operating the steering function, check voltage across the Electric Motor terminals. If 24 VDC is present, replace the Motor.</p> <p>While operating the steering, check voltage across the coil terminals of Motor Relay. If no voltage is present, proceed with step 7. If 20 VDC or more, check continuity across the contact terminals of Motor Relay while still operating the steering function. If there is no continuity, replace the faulty Motor Relay.</p> <p>With the Emergency Stop Switch in the ON position, check continuity across the contacts. If none, replace.</p> <p>Check continuity of switch, replace if faulty.</p> <p>Test relay, replace if faulty.</p> <p>Check continuity of switch, replace if faulty.</p> <p>Check operation, adjust if necessary.</p>
All functions inoperable. Electric motor starts when control is actuated.	<ol style="list-style-type: none"> Hydraulic Reservoir low. Faulty Hydraulic Pump (PMP). Faulty Controller (CONT).** Proportional Valve (V9,SOL8).** 	<p>Check hydraulic fluid level, top off as required.</p> <p>Check pressure and delivery of the Hydraulic Pump. Replace if required.</p> <p>Check operation, adjust if necessary. Replace if required.</p> <p>Check operation, replace if required.</p>
Electric Motor continues to run after controls are returned to the OFF position.	Motor Relay (R1) contacts fused together.	<p>Check operation. Adjust or replace if required.</p> <p>With 0 voltage at the coil terminals of the Motor Relay (R1) check continuity across the contact terminals. If there is continuity, replace the Motor Relay.</p>
Steering inoperable or functions sluggishly.	<ol style="list-style-type: none"> Faulty Steering Switch. Mechanical damage. Steering Valve (V1) stuck. Steering Cylinder (CYL1) piston seal leaking. Steering Relief (RV2). 	<p>Test Steering Switch for continuity. Replace if faulty.</p> <p>Inspect all steering components. Replace damaged parts.</p> <p>Inspect Steering Valve. If spool is sticking, replace.</p> <p>Check Steering Cylinder for leakage from one port to another. Repair as required.</p> <p>Adjust the relief valve, if not adjustable replace.</p>

TROUBLE	PROBABLE CAUSE	REMEDY
Work platform will not steer right.	<ol style="list-style-type: none"> Faulty Steering Switch. Faulty Diode (D1). Faulty Steer Right Solenoid (SOL1). 	<p>Test Steering Switch for continuity. Replace if faulty.</p> <p>Test Diode. Replace if faulty.</p> <p>Test Steer Right Solenoid. If the proper voltage is present and the coil is not magnetized, replace.</p>
Work platform will not steer left.	<ol style="list-style-type: none"> Faulty Steering Switch. Faulty Diode (D2). Faulty Steer Left Solenoid (SOL2). 	<p>Test Steering Switch for continuity. Replace if faulty.</p> <p>Test Diode. Replace if faulty.</p> <p>Test Steer Left Solenoid. If the proper voltage is present and the coil is not magnetized, replace.</p>
Work platform will not drive FORWARD or REVERSE. Lift function operable.	<ol style="list-style-type: none"> Faulty Drive/Lift Selector Switch (S5). Faulty Drive/Lift Relay (R2). Mechanical failure. Worn Drive Motors (MOT1, MOT2). 	<p>Check continuity of Drive/Lift Switch. Replace if faulty.</p> <p>Test Relay (R2). Replace if faulty.</p> <p>Inspect Drive Motor shafts, hubs, and keys.</p> <p>Check hydraulic pressure being delivered to the Drive Motors. If sufficient, replace Drive Motors.</p>
Work Platform will not drive while elevated.	<ol style="list-style-type: none"> Level Sensor (SNSR) out of adjustment or faulty. Faulty Relay. Low Segment of pump faulty. Controller Adjustment** 	<p>Adjust and test the Level Sensor, replace if faulty.</p> <p>Check Relay, replace if faulty.</p> <p>Check Pump, replace if faulty.</p> <p>Adjust and test Controller.</p>
No high speed drive.	<ol style="list-style-type: none"> Faulty Drive/Lift Switch. Faulty Down Limit Switch (LS1). Faulty High Speed Coil/Valve (SOL7/V6)* Faulty Controller Switch (S4)* Faulty Controller (CONT).** Proportional Valve (V9,SOL8).** 	<p>Check continuity of Drive/Lift Switch. Replace if faulty.</p> <p>Check continuity of Down Limit Switch. Replace if faulty.</p> <p>Test coil and valve. If faulty, replace.</p> <p>Check continuity of switch, replace if faulty.</p> <p>Check operation, adjust if necessary. Replace if required.</p> <p>Check operation, replace if required.</p>
No drive FWD but drives in REV. Lift function operable.	<ol style="list-style-type: none"> Faulty Drive/Lift Relay contacts (R2). Faulty Forward/Reverse Valve (V5). Faulty Counterbalance Valves (V2, V3). 	<p>Test Relay (R2). Replace if faulty.</p> <p>Check the Drive/Lift Valve. If the spool is not shifting, replace the valve.</p> <p>Check pressure of Counterbalance Valves. Replace or reset valves as required.</p>
No drive FWD but drives in REV. No lift function.	<ol style="list-style-type: none"> Faulty Drive/Lift Relay contacts (R2) Faulty Up/Forward Controller Switch (S9). 	<p>Test Relay (R2) Replace if faulty.</p> <p>Check operation of Controller switch. Replace if required.</p>
No drive REV but drives in FWD. Lift function operable.	<ol style="list-style-type: none"> Faulty Drive/Lift Relay contacts (R2). Faulty Forward/Reverse Solenoid/Valve (SOL3/V5). Faulty diode (D3). Faulty Counterbalance Valves (V2, V3). 	<p>Test Relay (R2). Replace if faulty.</p> <p>Check the Drive/Lift Valve. If proper voltage is present and coil is not magnetized replace the coil, if the spool is not shifting, replace the valve.</p> <p>Test diode, replace if faulty.</p> <p>Check pressure of Counterbalance Valves. Replace or reset valves as required.</p>
No drive REV but drives in FWD. No down function.	<ol style="list-style-type: none"> Faulty Drive/Lift Relay contacts (R2). Faulty Down/Reverse Controller Switch (S2). 	<p>Test Relay (R2). Replace if faulty.</p> <p>Check operation of Controller switch. Replace if required.</p>

Troubleshooting

Table 4-1: Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
Platform will not elevate or elevates slowly.	<ol style="list-style-type: none"> Emergency Down Valve (V7) open. Platform overloaded. Faulty Down/Reverse Controller Switch (S2).* Faulty High Speed Controller Switch (S4).* Faulty Controller (CONT).** Proportional Valve (V9,SOL8).** Faulty Drive/Lift Valve/Coil (V4/SOL5). Faulty Drive/Lift Selector Switch. Main Relief Valve (RV1) out of adjustment or faulty. Faulty Down Limit Switch (LS1). Faulty Drive/Lift Relay (R2). Faulty Lift Cylinder (CYL3). 	<p>Close Emergency Down Valve, push in on knob. Check adjustment of Cable.</p> <p>Observe maximum load rating (See Table 1-1).</p> <p>Check operation of Controller switch. Replace if required.</p> <p>Check operation of Controller switch. Replace if required.</p> <p>Check operation, adjust if necessary. Replace if required.</p> <p>Check operation, replace if required.</p> <p>Check the Drive/Lift Valve. If proper voltage is present and coil is not magnetized replace the coil, if the spool is not shifting, replace the valve.</p> <p>Test Drive/Lift Switch for continuity.</p> <p>Replace if faulty.</p> <p>Adjust the Main Relief Valve. If not adjustable, replace.</p> <p>Test Down Limit Switch for continuity. replace if faulty.</p> <p>Test relay, replace if faulty.</p> <p>Check and replace seals in Lift Cylinder.</p>
Platform drifts down after being elevated.	<ol style="list-style-type: none"> Emergency Lowering/Down Valve (V7) partly open or faulty. #2 Piston Seal is leaking 	<p>Ensure that the Emergency Lowering Valve is completely closed, push knob in. Replace the valve.</p> <p>Check Piston Seal and replace if faulty.</p>
Platform will not lower. Drive function operable.	<ol style="list-style-type: none"> Faulty Down Valve Coil (SOL6). Down Valve (V7) stuck. Plugged Down Orifice (ORF2). Faulty CR2 	<p>Test Down Valve Coil. If proper voltage is present and coil is not magnetized, replace.</p> <p>Replace the Down Valve.</p> <p>Remove and clean Orifice.</p> <p>Check CR2 and replace if faulty.</p>
Motion Alarm does not sound.	Faulty Down Alarm (ALM1).	Check voltage to Down Alarm . If proper voltage is present, replace the Alarm.
Brakes will not release.	<ol style="list-style-type: none"> Faulty Brake Cylinder (CYL2). Brakes out of adjustment. 	<p>Check and replace seals in Brake Cylinder.</p> <p>Adjust brakes to disengage tires when driving only.</p>
Brake will not lock wheel.	<ol style="list-style-type: none"> Brake Orifice (ORF1) plugged. Faulty Brake Cylinder (CYL2). Brake out of adjustment. 	<p>Remove and clean Orifice.</p> <p>Check and replace seals and spring in Brake Cylinder.</p> <p>Adjust brakes to engage tires when not driving .</p>

* On machines with standard two speed controller.

** On machines with optional proportional controller.

NOTES

A large, empty rectangular box with a thin black border, intended for handwritten notes. The box is currently blank.

5.0 Introduction

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

The diagrams are to be used in conjunction with Table 4-1: 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.

INDEX

Figure	Page
Figure 5-1: Electrical Schematic, X20N,	5-3
Figure 5-2: Electrical Schematic, X20W, X26N, X32N	5-5
Figure 5-3: Hydraulic Schematic, X20N, X20W, X26N	5-7
Figure 5-4: Hydraulic Manifold, X20N, X20W, X26N	5-7
Figure 5-5: Hydraulic Schematic, X32N	5-9
Figure 5-6: Hydraulic Manifold, X32N	5-9

5.1 Electrical Schematic

Table 5-1: Electrical Schematic Legend, X20N - 066769-010

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
ALM1	Alarm, Down	Provides warning sound (60 Hz) when the Platform Down function is activated.	In front of electrical box inside left Chassis Module. Red wire for 60 Hz.
ALM2	Alarm, Platform Tilt/Pothole Protection	Provides warning sound (600 Hz) when Platform is on slopes of 2° side to side and 2° fore and aft, or when the Pothole Protection Supports do not deploy properly.	In front of electrical box inside left Chassis Module. White wire for 600 Hz.
BAT	Batteries (4) 6 volts	To store energy.	Inside right Chassis Module.
CB	Circuit Breaker	Overload protection for the control circuit.	Chassis Control Panel.
D1	Diode	Allows power to R1 through R3 to power motor when steer is selected.	Left Chassis module between A2 and Chassis Lift Switch.
D2	Diode	Allows power to R1 through R3 to power motor when steer is selected.	Left Chassis module between A3 and Chassis Lift Switch.
D3	Diode	Provides power to Motor Start circuit through Controller Power On Switch from Drive/Lift Switch when in DRIVE .	In Controller between Drive/Lift Selector Switch and S1 and S2.
D4	Diode	Prevents feedback into the Chassis Lift Circuit from the Key Switch.	Connected between terminal A12 and the Chassis Lift Switch.
D5	Diode	Prevents feedback into the Controller Circuit from the Chassis Lift Circuit.	Connected between terminal A12 and the Key Switch.
D6	Diode	Provides power to Drive Dump Coil from Reverse Circuit.	On Chassis Terminal Strip between A3 and A4.
D7	Diode	Dampers spike & improves life of Solenoid.	Connected between A7 & ground stud on R1.
D8	Diode	Dampers spike & improves life of Solenoid.	Connected between A7 & ground stud on R1.
FU1	Fuse, 175 AMP	Overload protection for the electric motor.	Inside left Chassis Module on right bulkhead.
LS1	Switch, Down Limit (Tilt/Pothole Interlock Circuit) (High Speed Drive Circuit)	Provides power to Tilt Alarm Relay when Platform is down. Cuts power to High Speed Coil when Platform is elevated.	Left rear corner of Tilt Sensor electrical box: Contacts 1,2,3&4; Contacts 6,7&8.
MOT	Motor, Electric	Provides power to Drive Hydraulic Pump.	Left Chassis Module.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
MTR	Meter, Low Voltage/Hour (Optional)	Shows state of Battery charge and hours machine has been operated.	Chassis Control Panel.
R1	Relay, Motor Start	Connects Batteries to Motor.	Inside Left Chassis Module. Mounted on right bulkhead.
R2	Relay, Drive/Lift	Energized when Drive/Lift Switch is in DRIVE , provides power to Forward or Reverse Coils from Controller or to Up or Down Coils from Controller when not energized.	Right hand relay in Electrical Box, closest to side where cables enter box.
R3	Relay, Tilt Alarm	Energized by Tilt Sensor when level, or Down Limit Switch when Platform is down, provides power to Motor Start Relay or Tilt Alarm when not energized.	Left hand relay in Electrical Box, farthest from side where cables enter box.
R4	Relay, Pothole Protection	Energized in Drive, allows Pothole Protection coils to energize when High Speed Drive is activated.	Inside left Chassis Module, mounted on right bulkhead.
R5	Relay, High Speed Drive	Energized when machine is fully lowered. Allows High Speed Drive & disables Tilt Sensor.	Inside left Chassis Module, mounted on right bulkhead.
S1	Switch, Joystick Power	Supplies power to Motor Start circuit.	Left rear switch when top of Controller is held in assembled position.
S2	Switch, Joystick Down/Reverse	Supplies power to Motor Start circuit or Down/Reverse circuits.	Left front switch when top of Controller is held in assembled position.
S3	Switch, Joystick Up/Forward	Supplies power to Up/Forward circuits.	Right rear switch when top of Controller is held in assembled position.
S4	Switch, Joystick High Speed	Supplies power to High Speed circuit.	Right front switch when top of Controller is held in assembled position.
S5	Switch, Chassis Emergency Stop	Control circuit shut off.	Chassis Control Panel.
S6	Switch, Chassis Selector Key	Provides power to either the Chassis Controls or the Controller.	Chassis Control Panel.
S7	Switch, Controller Emergency Stop Button.	Control circuit shut off.	Platform Controller bottom left.

Table 5-1: (cont'd.)

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
S8	Switch, Interlock	Supplies power to Controller.	Front of joystick.
S9	Switch, Drive/Lift Selector	Supplies power to High Speed circuit, and Drive/Lift Relay and Motor Start circuit when in DRIVE Position.	Controller bottom right.
S10 & S11	Switches, Steering	Supplies power to either Right or Left Steer Valve Solenoids.	Rocker actuator on top of Controller Joystick, switch bodies inside Joystick handle.
S12	Switch, Chassis Lift	Provides power to either UP or Down circuits.	Chassis Control Panel.
SNSR	Sensor, Tilt	Cuts power to Tilt Alarm Relay when Platform is on slopes of 2° side to side and 2° fore and aft to activate Tilt Alarm.	Inside Tilt Sensor Electrical Box.
SOL1	Solenoid, Right Steer (coil)	Shifts Steer Valve to RIGHT turn position.	Coil closest to block on left side of Manifold Block.
SOL2	Solenoid, Left Steer (coil)	Shifts Steer Valve to LEFT turn position.	Coil farthest from block on left side of Manifold Block.
SOL3	Solenoid, Reverse (coil)	Shifts Forward/Reverse Valve to reverse position.	Top of Manifold Block towards right side.
SOL4	Solenoid, Drive Dump (coil)	Closes Drive Dump Valve.	Top center of Manifold Block towards front.
SOL5	Solenoid, Lift (coil)	Shifts Drive/Lift Valve to Lift position.	Top center rear of Manifold Block.
SOL6	Solenoid, Down (coil)	Opens Down Valve.	Base of Lift Cylinder.
SOL7	Solenoid, High Speed (coil)	Shifts High Speed Valve to High Speed position.	Top center left of Manifold Block.
SOL8	Solenoid, PHP Down	Extends Pothole Cylinders	Aux. Manifold block in Control Module.
SOL9 & SOL10	Solenoid, PHP Up	Retracts Pothole Cylinders	On Pothole Protection cylinders.

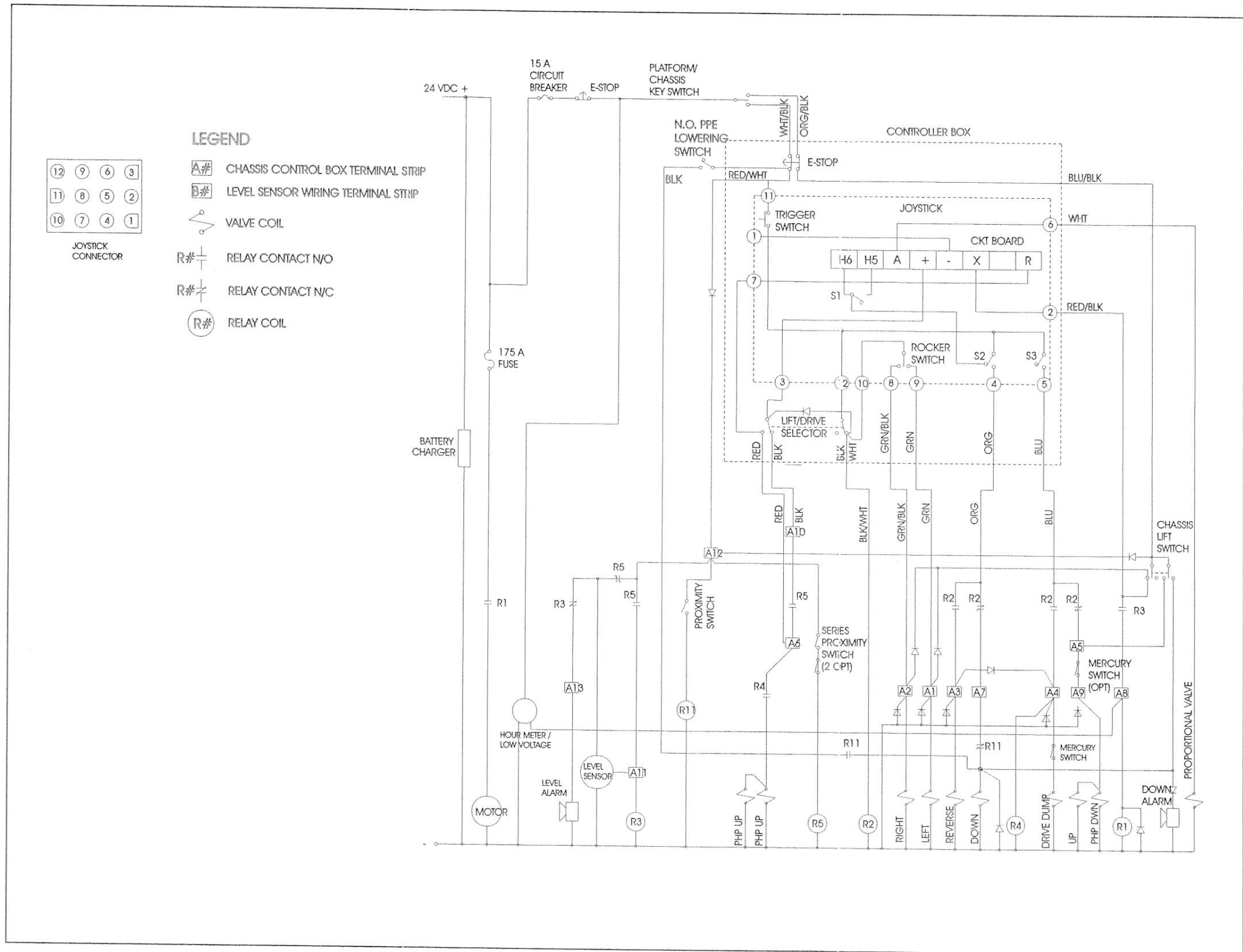


Figure 5-1: Electrical Schematic, X20N

5.2 Electrical Schematic

Table 5-2: Electrical Schematic Legend, X20W, X26N, X32N - 066769-011

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
ALM1	Alarm, Down	Provides warning sound (60 Hz) when the Platform Down function is activated.	In front of electrical box inside left Chassis Module. Red wire for 60 Hz.
ALM2	Alarm, Platform Tilt/Pothole Protection	Provides warning sound (600 Hz) when Platform is on slopes of 2° side to side and 2° fore and aft, or when the Pothole Protection Supports do not deploy properly.	In front of electrical box inside left Chassis Module. White wire for 600 Hz.
BAT	Batteries (4) 6 volts	To store energy.	Inside right Chassis Module.
CB	Circuit Breaker	Overload protection for the control circuit.	Chassis Control Panel.
D1	Diode	Allows power to R1 through R3 to power motor when steer is selected.	Left Chassis module between A2 and Chassis Lift Switch.
D2	Diode	Allows power to R1 through R3 to power motor when steer is selected.	Left Chassis module between A3 and Chassis Lift Switch.
D3	Diode	Provides power to Motor Start circuit through Controller Power On Switch from Drive/Lift Switch when in DRIVE.	In Controller between Drive/Lift Selector Switch and S1 and S2.
D4	Diode	Prevents feedback into the Chassis Lift Circuit from the Key Switch.	Connected between terminal A12 and the Chassis Lift Switch.
D5	Diode	Prevents feedback into the Controller Circuit from the Chassis Lift Circuit.	Connected between terminal A12 and the Key Switch.
D6	Diode	Provides power to Drive Dump Coil from Reverse Circuit.	On Chassis Terminal Strip between A3 and A4.
D7	Diode	Dampers spike & improves life of Solenoid.	Connected between A7 & ground stud on R1.
D8	Diode	Dampers spike & improves life of Solenoid.	Connected between A7 & ground stud on R1.
FU1	Fuse, 175 AMP	Overload protection for the electric motor.	Inside left Chassis Module on right bulkhead.
LS1	Switch, Down Limit (Tilt/Pothole Interlock Circuit) (High Speed Drive Circuit)	Provides power to Tilt Alarm Relay when Platform is down. Cuts power to High Speed Coil when Platform is elevated.	Left rear corner of Tilt Sensor electrical box: Contacts 1,2,3&4; Contacts 6,7&8.
MOT	Motor, Electric	Provides power to Drive Hydraulic Pump.	Left Chassis Module.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
Meter, Low	Shows state of Battery charge and hours machine has been operated.	Chassis Control Panel.	
R1	Relay, Motor Start	Connects Batteries to Motor.	Inside Left Chassis Module. Mounted on right bulkhead.
R2	Relay, Drive/Lift	Energized when Drive/Lift Switch is in DRIVE, provides power to Forward or Reverse Coils from Controller or to Up or Down Coils from Controller when not energized.	Right hand relay in Electrical Box, closest to side where cables enter box.
R3	Relay, Tilt Alarm	Energized by Tilt Sensor when level, or Down Limit Switch when Platform is down, provides power to Motor Start Relay or Tilt Alarm when not energized.	Left hand relay in Electrical Box, farthest from side where cables enter box.
R4	Relay, Pothole Protection	Energized in Drive, allows Pothole Protection coils to energize when High Speed Drive is activated.	Inside left Chassis Module, mounted on right bulkhead.
R5	Relay, High Speed Drive	Energized when machine is fully lowered. Allows High Speed Drive & disables Tilt Sensor.	Inside left Chassis Module, mounted on right bulkhead.
S1	Switch, Joystick Power	Supplies power to Motor Start circuit.	Left rear switch when top of Controller is held in assembled position.
S2	Switch, Joystick Down/Reverse	Supplies power to Motor Start circuit or Down/Reverse circuits.	Left front switch when top of Controller is held in assembled position.
S3	Switch, Joystick Up/Forward	Supplies power to Up/Forward circuits.	Right rear switch when top of Controller is held in assembled position.
S4	Switch, Joystick High Speed	Supplies power to High Speed circuit.	Right front switch when top of Controller is held in assembled position.
S5	Switch, Chassis Emergency Stop	Control circuit shut off.	Chassis Control Panel.
S6	Switch, Chassis Selector Key	Provides power to either the Chassis Controls or the Controller.	Chassis Control Panel.
S7	Switch, Controller Emergency Stop Button.	Control circuit shut off.	Platform Controller bottom left.

Table 5-2: (cont'd.)

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
S8	Switch, Interlock	Supplies power to Controller.	Front of joystick.
S9	Switch, Drive/Lift Selector	Supplies power to High Speed circuit, and Drive/Lift Relay and Motor Start circuit when in DRIVE Position.	Controller bottom right.
S10,11	Switches, Steering	Supplies power to either Right or Left Steer Valve Solenoids.	Rocker actuator on top of Controller Joystick, switch bodies inside Joystick handle.
S12	Switch, Chassis Lift	Provides power to either UP or Down circuits.	Chassis Control Panel.
SNSR	Sensor, Tilt	Cuts power to Tilt Alarm Relay when Platform is on slopes of 2° side to side and 2° fore and aft to activate Tilt Alarm.	Inside Tilt Sensor Electrical Box.
SOL1	Solenoid, Right Steer (coil)	Shifts Steer Valve to RIGHT turn position.	Coil closest to block on left side of Manifold Block.
SOL2	Solenoid, Left Steer (coil)	Shifts Steer Valve to LEFT turn position.	Coil farthest from block on left side of Manifold Block.
SOL3	Solenoid, Reverse (coil)	Shifts Forward/Reverse Valve to reverse position.	Top of Manifold Block towards right side.
SOL4	Solenoid, Drive Dump (coil)	Closes Drive Dump Valve.	Top center of Manifold Block towards front.
SOL5	Solenoid, Lift (coil)	Shifts Drive/Lift Valve to Lift position.	Top center rear of Manifold Block.
SOL6	Solenoid, Down (coil)	Opens Down Valve.	Base of Lift Cylinder.
SOL7	Solenoid, High Speed (coil)	Shifts High Speed Valve to High Speed position.	Top center left of Manifold Block.
SOL8	Solenoid, PHP Down	Extends Pothole Cylinders	Aux. Manifold block in Control Module.
SOL9 & SOL10	Solenoid, PHP Up	Retracts Pothole Cylinders	On Pothole Protection cylinders.
SOL8	Solenoid, PHP Down	Extends Pothole Cylinders	Aux. Manifold block in Control Module.
SOL9 & SOL10	Solenoid, PHP Up	Retracts Pothole Cylinders	On Pothole Protection cylinders.
SOL11 & SOL12	Solenoid, Series Drive	Shifts Series/Parallel Valve from Hi torque Parallel to Hi speed Series.	Center of Chassis between modules.

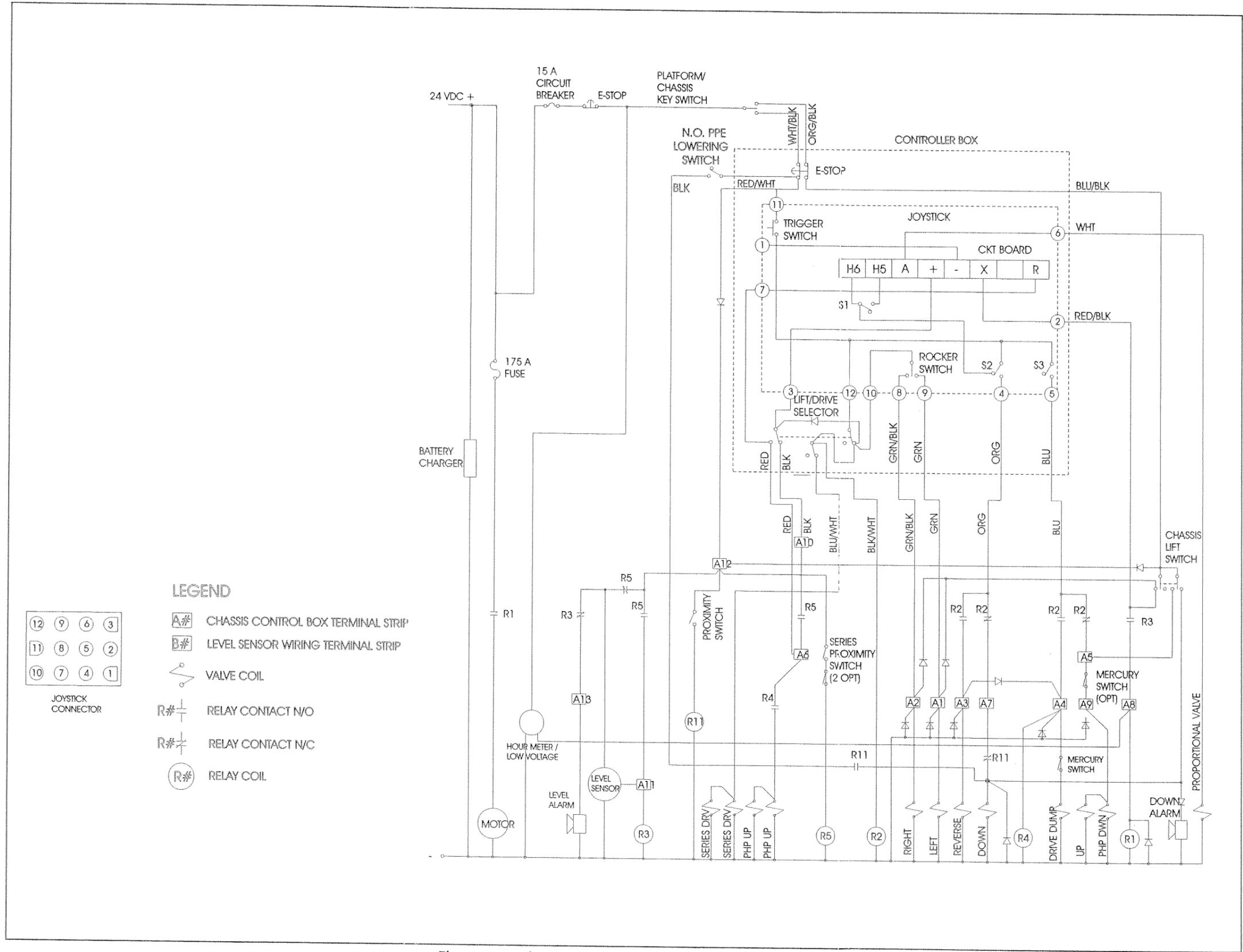


Figure 5-2: Electrical Schematic, X20W, X26N, X32N

5.3 Hydraulic Schematic

Table 5-4: Hydraulic Schematic Legend, X20N

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
CYL1	Cylinder, Steering	Provides force to turn front wheels.	Under Chassis at front of machine.
CYL2	Cylinder, Brake	Stops machine from moving while parked.	Rear of machine between wheels.
CYL3	Cylinder, Lift	Provides force to lift Platform.	Inside the Elevating Assembly.
CYL4	Cylinder, Cushion	Provides smooth starting and stopping when driving.	Mounted to right side of Hydraulic Tank.
CYL5 & CYL6	Cylinder, Pot Hole protection	Provides power to extend & retract Pothole protection tubes.	On one side of Power & Control Modules.
FL1	Filter	Filters oil returning to Tank.	Mounted to Hydraulic Tank.
FL2	Suction Screen	Traps particles in Hydraulic Tank.	Inside Hydraulic Tank at outlet.
MOT1	Drive Motor	Provides tractive effort for work platform.	On left front Steering Spindle.
MOT2	Drive Motor	Provides tractive effort for work platform.	On right front Steering Spindle.
ORF1	Orifice, Brake	Delays the engagement of the Brake Cylinder.	Under rod end fitting of Brake Cylinder.
ORF2	Orifice, Down	Controls the platform rate of descent.	Under fitting on base of Lift Cylinder.
ORF3,4	Orifice, Cushion Cylinder	Controls drive cushion rate.	Inside each end of Drive Cushion Cylinder.
PMP	Duplex Pump	Supplies hydraulic oil flow for all functions.	Inside left Chassis Module, right front.
RV1	Valve, Main Relief	Provides over pressure protection to Pump and limits Platform lifting capacity.	Center front of Manifold Block.
RV2	Valve, Steering Relief	Provides over pressure protection to steering components when steering.	Lower left front of Manifold Block.
RV3	Valve, Lift	Provides over pressure protection to high side of Pump and.	In-line valve mounted on hoses between Pump and tank.
RV4	Valve, Lift	Provides over pressure protection to low side of Pump and.	In-line valve mounted on hoses between Pump and tank.
V1	Valve, Steering	Provides directional control for Steering Cylinder.	Left side of Manifold Block.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
V2	Valve, Reverse Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, lower unit.
V3	Valve, Forward Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, upper unit.
V4	Valve, Drive/Lift	Provides control of oil for Drive or Lift functions.	Top center rear of Manifold Block.
V5	Valve, Forward/Reverse	Provides control of oil for Forward or Reverse drive.	Top of Manifold Block, towards right side.
V6	Valve, High Speed	Controls oil flow into Drive and Lift circuits by dumping oil back to tank.	Top left center of Manifold Block.
V7	Valve, Down and Emergency Lowering	Allows oil to flow out of Lift Cylinder to Tank, manually operated for Emergency Lowering.	Mounted on base of Lift Cylinder.
V8	Valve, Drive Dump	Allows oil to flow to Forward/Reverse Valve for Drive operation. During Lift, drive circuit oil is returned to tank.	Top right center of Manifold Block towards front.
V9	Valve, Pothole Protection	Allows oil pressure to retract Pothole protection cylinders when energized.	Inside Control Module.

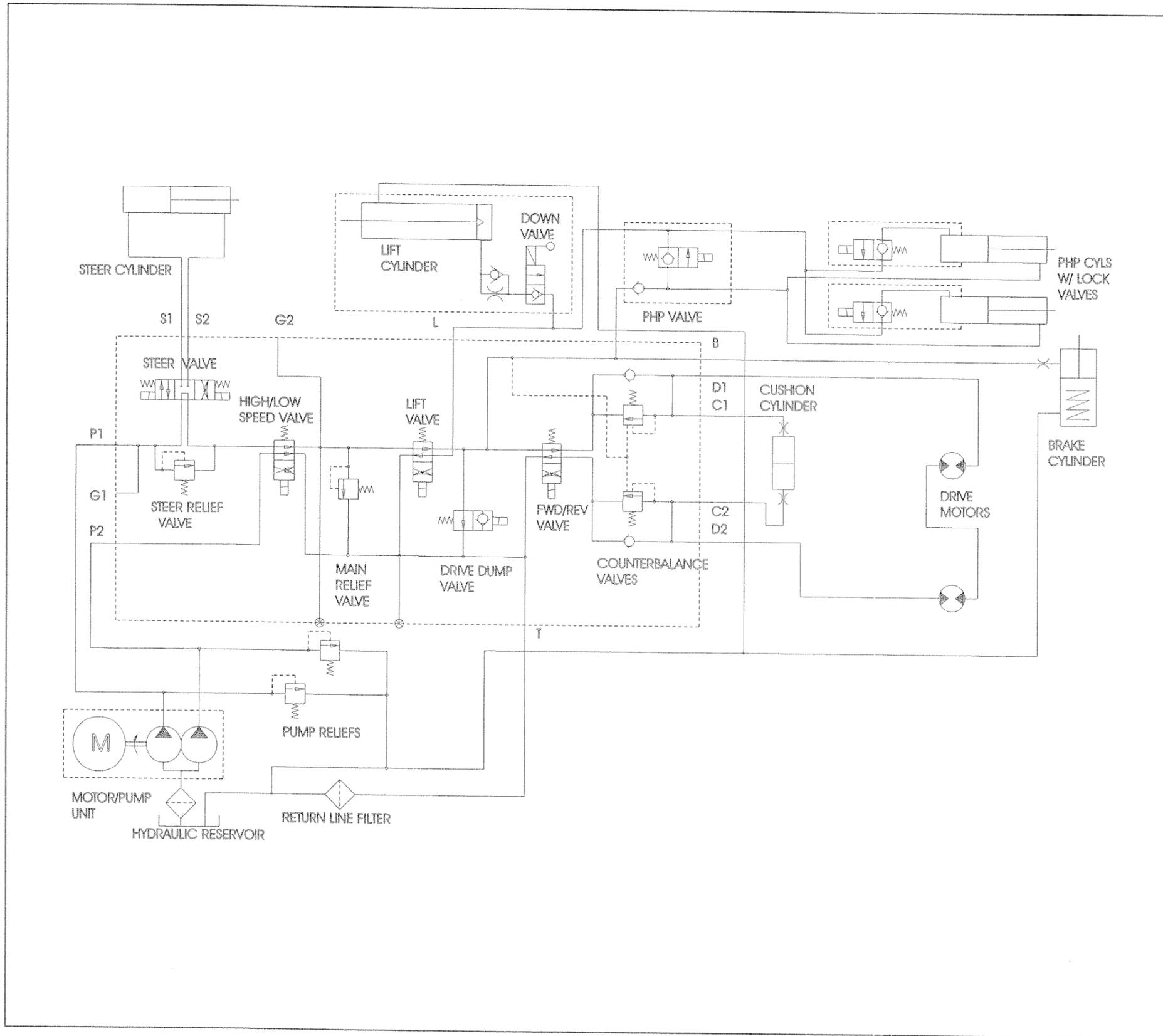


Figure 5-3: Hydraulic Schematic, X20N

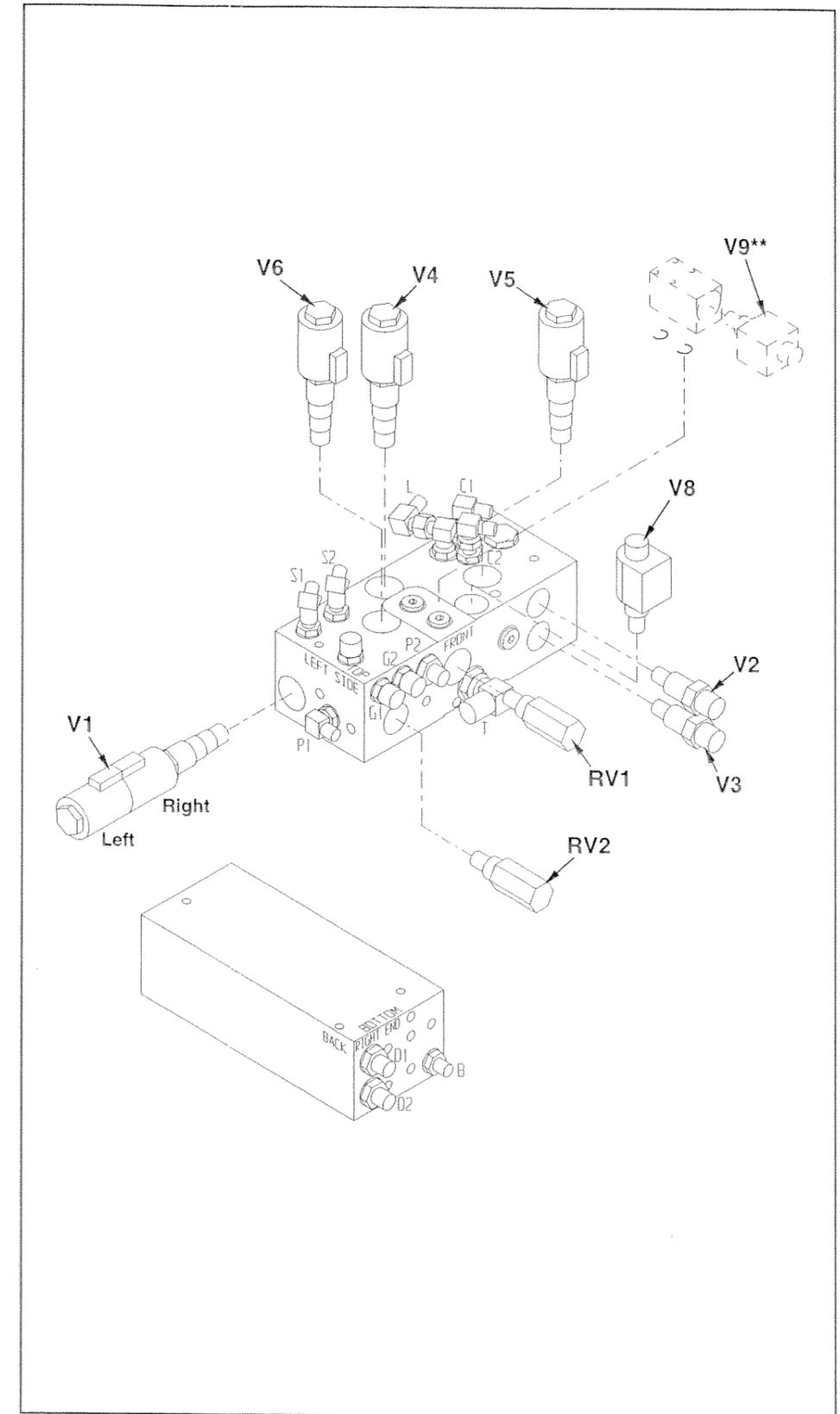


Figure 5-4: Hydraulic Manifold, X20N

5.3 Hydraulic Schematic

Table 5-5: Hydraulic Schematic Legend, X20W, X26N

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
CYL1	Cylinder, Steering	Provides force to turn front wheels.	Under Chassis at front of machine.
CYL2	Cylinder, Brake	Stops machine from moving while parked.	Rear of machine between wheels.
CYL3	Cylinder, Lift	Provides force to lift Platform.	Inside the Elevating Assembly.
CYL4	Cylinder, Cushion	Provides smooth starting and stopping when driving.	Mounted to right side of Hydraulic Tank.
CYL5 & CYL6	Cylinder, Pot Hole protection	Provides power to extend & retract Pothole protection tubes.	On one side of Power & Control Modules.
FL1	Filter	Filters oil returning to Tank.	Mounted to Hydraulic Tank.
FL2	Suction Screen	Traps particles in Hydraulic Tank.	Inside Hydraulic Tank at outlet.
MOT1	Drive Motor	Provides tractive effort for work platform.	On left front Steering Spindle.
MOT2	Drive Motor	Provides tractive effort for work platform.	On right front Steering Spindle.
ORF1	Orifice, Brake	Delays the engagement of the Brake Cylinder.	Under rod end fitting of Brake Cylinder.
ORF2	Orifice, Down	Controls the platform rate of descent.	Under fitting on base of Lift Cylinder.
ORF3,4	Orifice, Cushion Cylinder	Controls drive cushion rate.	Inside each end of Drive Cushion Cylinder.
PMP	Duplex Pump	Supplies hydraulic oil flow for all functions.	Inside left Chassis Module, right front.
RV1	Valve, Main Relief	Provides over pressure protection to Pump and limits Platform lifting capacity.	Center front of Manifold Block.
RV2	Valve, Steering Relief	Provides over pressure protection to steering components when steering.	Lower left front of Manifold Block.
RV3	Valve, Lift	Provides over pressure protection to high side of Pump and.	In-line valve mounted on hoses between Pump and tank.
RV4	Valve, Lift	Provides over pressure protection to low side of Pump and.	In-line valve mounted on hoses between Pump and tank.
V1	Valve, Steering	Provides directional control for Steering Cylinder.	Left side of Manifold Block.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
V2	Valve, Reverse Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, lower unit.
V3	Valve, Forward Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, upper unit.
V4	Valve, Drive/Lift	Provides control of oil for Drive or Lift functions.	Top center rear of Manifold Block.
V5	Valve, Forward/Reverse	Provides control of oil for Forward or Reverse drive.	Top of Manifold Block, towards right side.
V6	Valve, High Speed	Controls oil flow into Drive and Lift circuits by dumping oil back to tank.	Top left center of Manifold Block.
V7	Valve, Down and Emergency Lowering	Allows oil to flow out of Lift Cylinder to Tank, manually operated for Emergency Lowering.	Mounted on base of Lift Cylinder.
V8	Valve, Drive Dump	Allows oil to flow to Forward/Reverse Valve for Drive operation. During Lift, drive circuit oil is returned to tank.	Top right center of Manifold Block towards front.
V9	Valve, Pothole Protection	Allows oil pressure to retract Pothole protection cylinders when energized.	Inside Control Module.

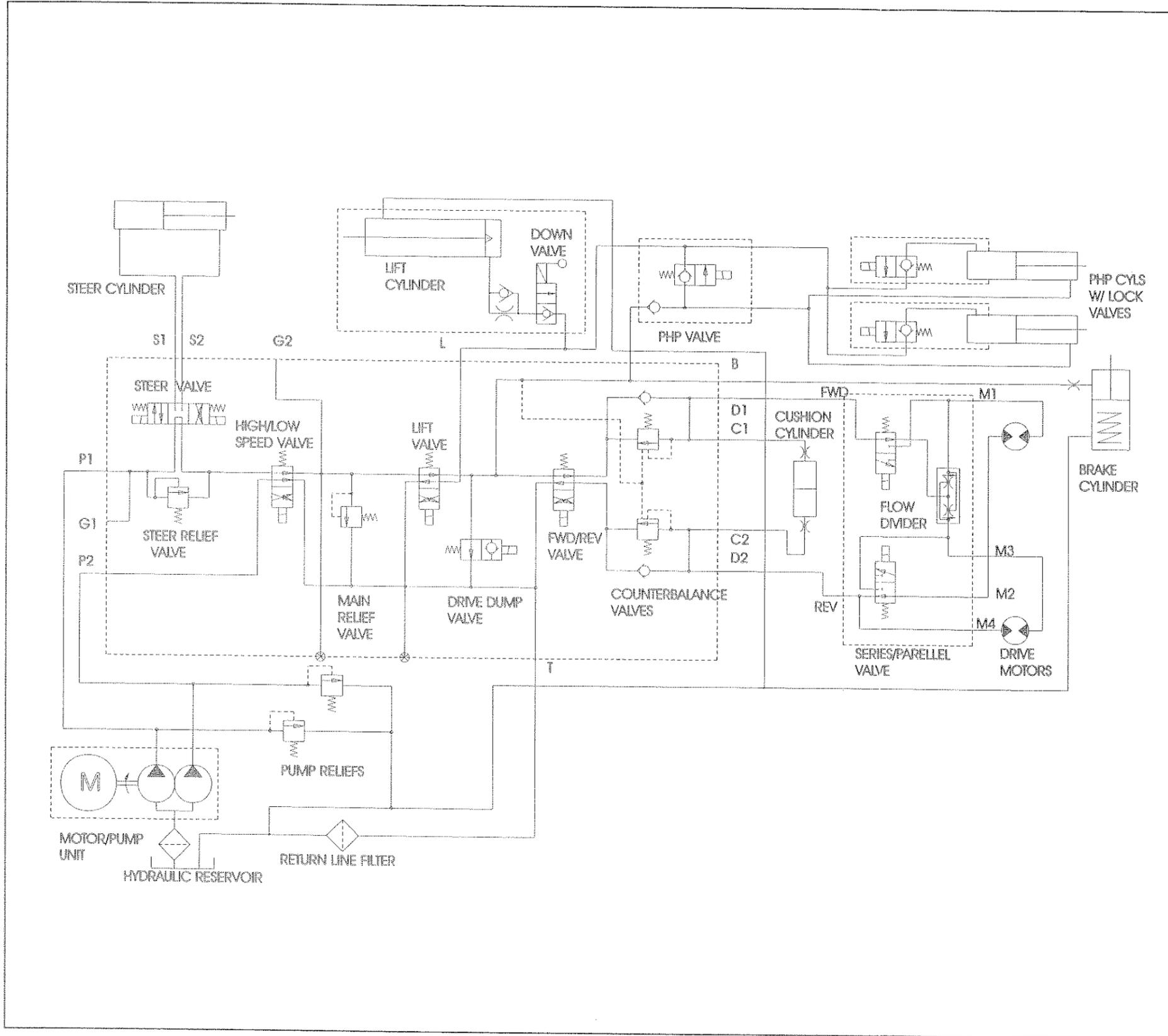


Figure 5-5: Hydraulic Schematic, X20W, X26N

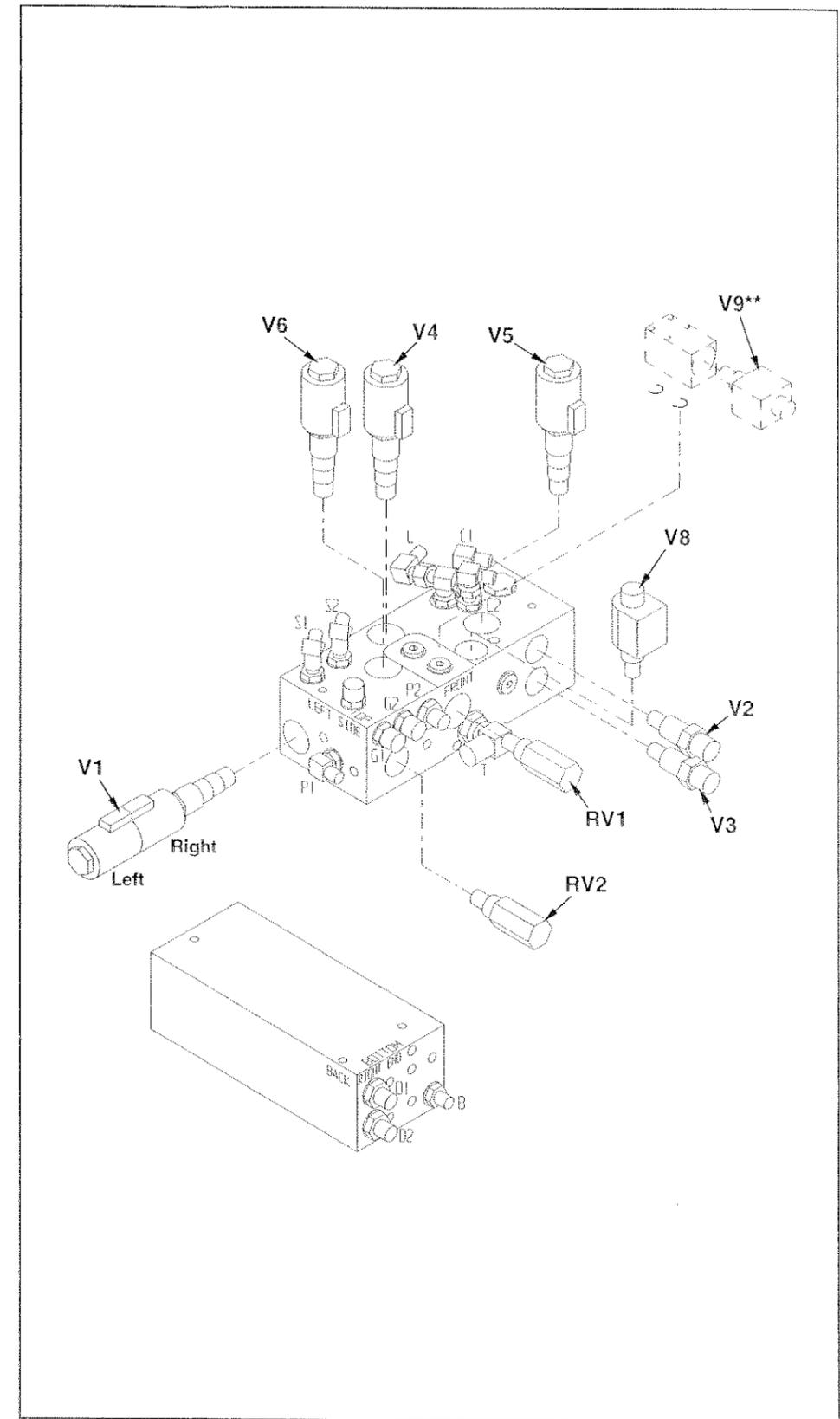


Figure 5-6: Hydraulic Manifold, X32N

5.4 Hydraulic Schematic

Table 5-6 : Hydraulic Schematic Legend, X32N

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
CYL1	Cylinder, Steering	Provides force to turn front wheels.	Under Chassis at front of machine.
CYL2 & CYL3	Cylinder, Brake	Stops machine from moving while parked.	Rear of machine between wheels.
CYL4 & CYL5	Cylinder, Lift	Provides force to lift Platform.	Inside the Elevating Assembly.
CYL6	Cylinder, Cushion	Provides smooth starting and stopping when driving.	Mounted to right side of Hydraulic Tank.
CYL7 & CYL8	Cylinder, Pothole protection	Provides power to extend & retract Pothole protection tubes.	On one side of Power & Control Modules.
FL1	Filter	Filters oil returning to Tank.	Mounted to Hydraulic Tank.
FL2	Suction Screen	Traps particles in Hydraulic Tank.	Inside Hydraulic Tank at outlet.
FD	Flow Diverter		
MOT1	Drive Motor	Provides tractive effort for work platform.	On left front Steering Spindle.
MOT2	Drive Motor	Provides tractive effort for work platform.	On right front Steering Spindle.
ORF1	Orifice, Brake	Delays the engagement of the Brake Cylinder.	Under rod end fitting of Brake Cylinder.
ORF2	Orifice, Down	Controls the platform rate of descent.	Under fitting on base of Lift Cylinder.
ORF3,4	Orifice, Cushion Cylinder	Controls drive cushion rate.	Inside each end of Drive Cushion Cylinder.
PMP	Duplex Pump	Supplies hydraulic oil flow for all functions.	Inside left Chassis Module, right front.
VF1 & VF2	Velocity Fuse	Close to prevent hydraulic fluid flow.	Lift Cylinder Port
RV1	Valve, Main Relief	Provides over pressure protection to Pump and limits Platform lifting capacity.	Center front of Manifold Block.
RV2	Valve, Steering Relief	Provides over pressure protection to steering components when steering.	Lower left front of Manifold Block.
RV3	Valve, Lift	Provides over pressure protection to high side of Pump and.	In-line valve mounted on hoses between Pump and tank.
RV4	Valve, Lift	Provides over pressure protection to low side of Pump and.	In-line valve mounted on hoses between Pump and tank.
V1	Valve, Steering	Provides directional control for Steering Cylinder.	Left side of Manifold Block.

REFERENCE DESIGNATION	NAME	FUNCTION	LOCATION
V2	Valve, Reverse Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, lower unit.
V3	Valve, Forward Counterbalance	Prevents machine from running away on slopes and cushions stops.	Right front of Manifold Block, upper unit.
V4	Valve, Drive/Lift	Provides control of oil for Drive or Lift functions.	Top center rear of Manifold Block.
V5	Valve, Forward/Reverse	Provides control of oil for Forward or Reverse drive.	Top of Manifold Block, towards right side.
V6	Valve, High Speed	Controls oil flow into Drive and Lift circuits by dumping oil back to tank.	Top left center of Manifold Block.
V7	Valve, Down and Emergency Lowering	Allows oil to flow out of Lift Cylinder to Tank, manually operated for Emergency Lowering.	Mounted on base of Lift Cylinder.
V8	Valve, Drive Dump	Allows oil to flow to Forward/Reverse Valve for Drive operation. During Lift, drive circuit oil is returned to tank.	Top right center of Manifold Block towards front.
V9	Valve, Pothole Protection	Allows oil pressure to retract Pothole protection cylinders when energized.	Inside Control Module.
V10	Valve, Down	Allows oil to flow out of Lift Cylinders causing Platform to lower.	Base of Lift Cylinder.
V11 & V12	Valve, Series/Parallel	Allows oil to run in Series or Parallel configuration to drive motors.	Inside center section of Chassis between Modules.
V13	Valve, Shut-off	Emergency Down	Rear of machine left side of ladder bracket.

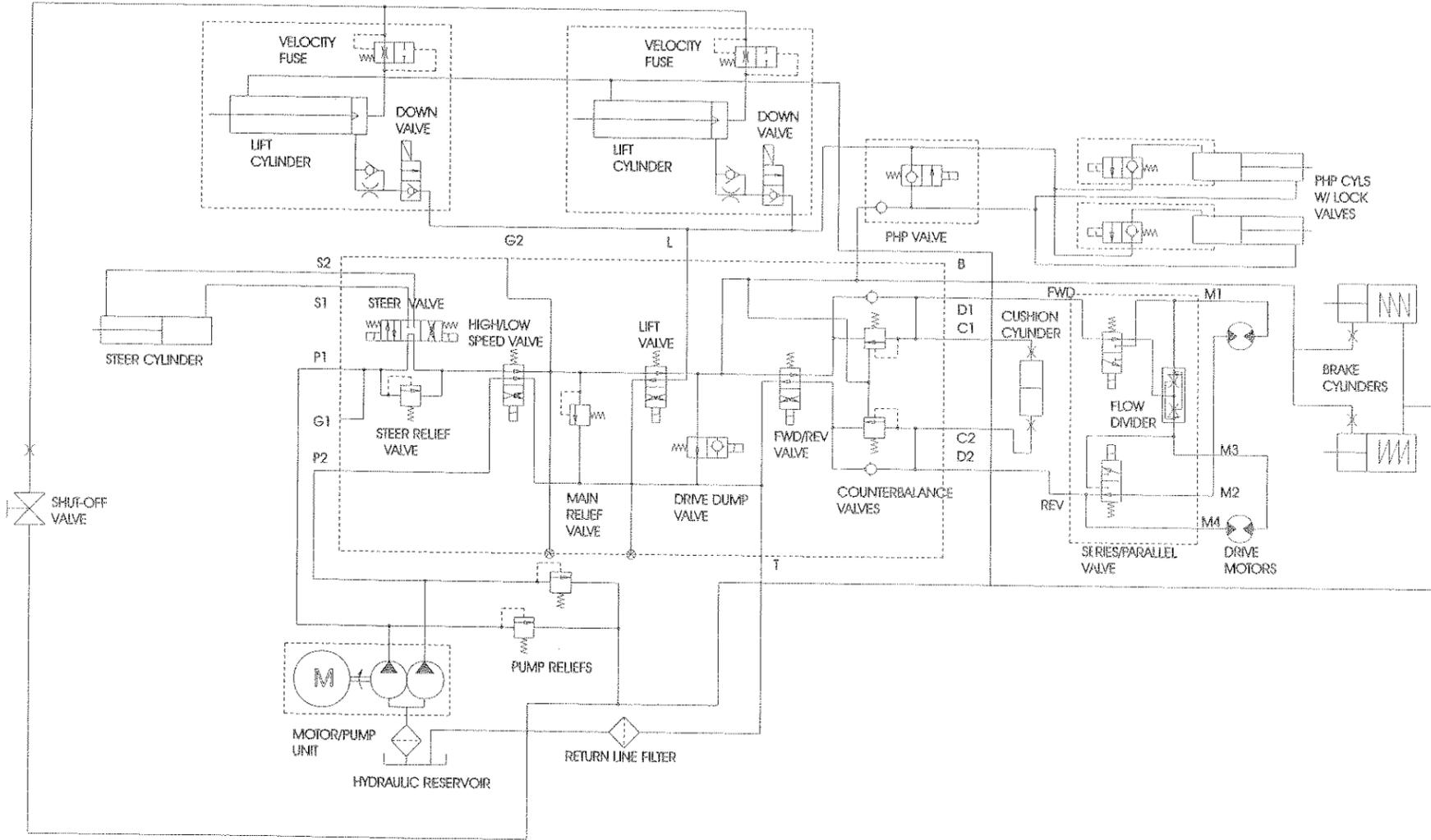


Figure 5-7: Hydraulic Schematic, X32N

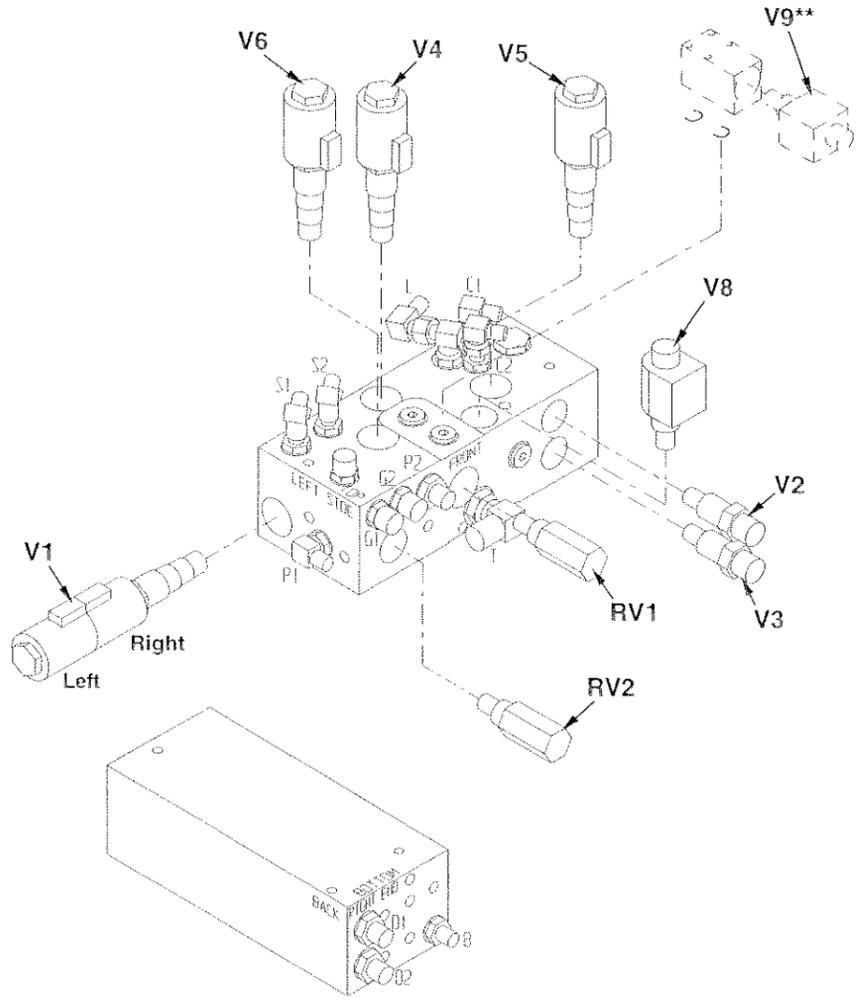


Figure 5-8: Hydraulic Manifold, X32N



Illustrated Parts Breakdown

6.0 Introduction

This section lists and illustrates the replaceable assemblies and parts of the X20N/X20W/X26N/X32N Work Platforms, as manufactured by UpRight, Inc. Each parts list contains the component parts for that assembly intended to show relationship where applicable.

6.1 Index

Assembly	Sheets	Assembly	Sheet
Final Assembly, X20N	6-2	Pothole Cylinder Assembly, X20N/X20W/X26N/X32N	6-61
Final Assembly, X20W	6-6	S/P Valve Assembly, X20W/X26N/X32N	6-62
Final Assembly, X26N	6-10	Hydraulic Reservoir Assembly, X20N/X20W/X26N	6-64
Final Assembly, X32N	6-14	Hydraulic Reservoir Assembly, X32N	6-66
Basic Assembly, X20N	6-18	Hose Assembly, X20N	6-68
Basic Assembly, X20W	6-20	Hose Assembly, X20W/X26N	6-70
Basic Assembly, X26N	6-22	Hose Assembly, X32N	6-72
Basic Assembly, X32N	6-24	Deck Extension Assembly, X20N	6-74
Chassis Assembly, X20N	6-26	Deck Extension Assembly, X20W/X26N	6-76
Chassis Assembly, X20W/X26N	6-30	Deck Extension Assembly, X32N	6-78
Chassis Assembly, X32N	6-34	Guardrail Assembly, X20N	6-80
Scissor Arm Assembly, X20N	6-38	Guardrail Assembly, X20W/X26N	6-82
Scissor Arm Assembly, X20W	6-40	Guardrail Assembly, X32N, W/Deck Ext.	6-84
Scissor Arm Assembly, X26N	6-42	Label Kit, X20N	6-86
Scissor Arm Assembly, X32N	6-44	Label Kit, X20W	6-88
Power Module Assembly, X20N/X20W/X26N/X32N	6-46	Label Kit, X26N	6-90
Control Module Assembly, X20N/X20W/X26N	6-48	Label Kit, X32N,	6-92
Control Module Assembly, X32N	6-50	Flashing Amber Light, Option, X20/X26	6-94
Lower Control Box Assembly, X20N/X20W/X26N/X32N	6-52	Horn, Option, X20N/X20W/X26N/X32N	6-95
Controller Assembly, X20N	6-54	All Motion Alarm, Option, X20N/X20W/X26N/X32N	6-96
Controller Assembly, X20W/X26N/X32N	6-56	Air to Platform, Option, X20N/X20W/X26N/X32N	6-97
Valve Manifold Assembly, X20N/X20W/X26N/X32N	6-58	5 ft. Platform Extension, Option, X20N	6-98
Pothole Valve Assembly, X20N/X20W/X26N/X32N	6-60	Hour/Low Voltage Indicator, Option, X20N/X20W/X26N/X32N	6-101
		Generator, Option, X20N/X26N	6-102
		Removable Controller, Option, X20N/X20W/X26N/X32N	6-104

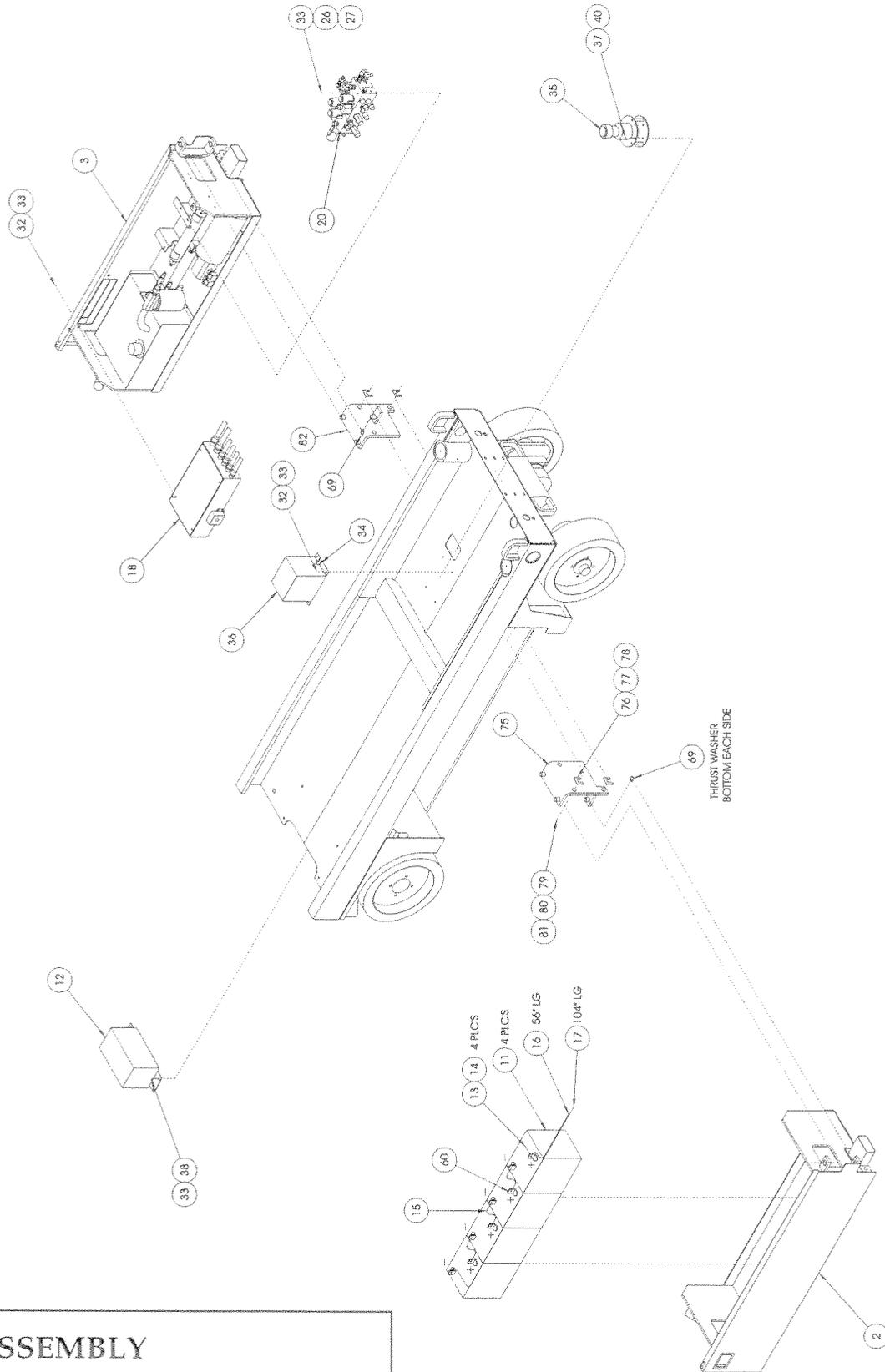
Illustrated Parts Breakdown

FINAL ASSEMBLY
X20N
066000-011

ITEM	PART	DESCRIPTION	QTY.
1	066001-001	BASIC ASSEMBLY	1
2	066008-010	CONTROL MODULE	1
3	066009-010	POWER MODULE	1
4	066005-001	GUARDRAIL INSTALLATION	1
5	011828-008	SCREW 1/4-20 X 1 FLAT HD SOC	2
6	005832-000	WASHER LOCK 1/4	2
7	066010-011	DECAL KIT INSTALLATION	1
8	066012-000	CONTROL CABLE ASSY	1
9	066011-011	HOSE KIT INSTALLATION	1
10	066013-010	CONTROLLER ASSEMBLY	1
11	015796-000	BATTERY 6V 220AMP	4
12	063948-002	CHARGER, 220/110 VAC 25 AMP	1
13	011253-006	SCREW HHC 5/16-18UNC X 3/4	8
14	011248-005	NUT 5/16-18 HEX	8
15	064195-001	CABLE ASS'Y X 12	3
16	064195-056	CABLE ASS'Y X 56 LG	1
17	064195-104	CABLE ASS'Y X 104 LG	1
18	066014-011	ELECTRICAL BOX ASSEMBLY	1
19	011728-004	SCREW SOC HD #10-32 X 1/2	2
20	066017-010	CONTROL VALVE ASSEMBLY	1
21	011941-005	FITTING STRAIGHT 6MB- 6 MJ	5
23	010131-099	CABLE 16GA 12 COND	6
25	026551-005	RIVET. POP	10
26	011252-032	SCREW HHC GR5 1/4-20 X 4	3
27	011240-004	WASHER FLAT 1/4 DIA	3
28	066179-000	VALVE DELTA	1
29	065754-001	CABLE	1
30	066368-000	BRACKET	1
31	063664-008	ORIFICE, HYDRAFORCE #7051070	1
32	011252-006	SCREW HHC 1/4-20 X 3/4	4
33	011248-004	NUT 1/4-20 HEX	6
34	061796-099	GROMMET	FT .25
35	029945-013	LEVEL SENSOR 3°	1
36	066768-000	WELDMENT, TILT ALARM COVER	1

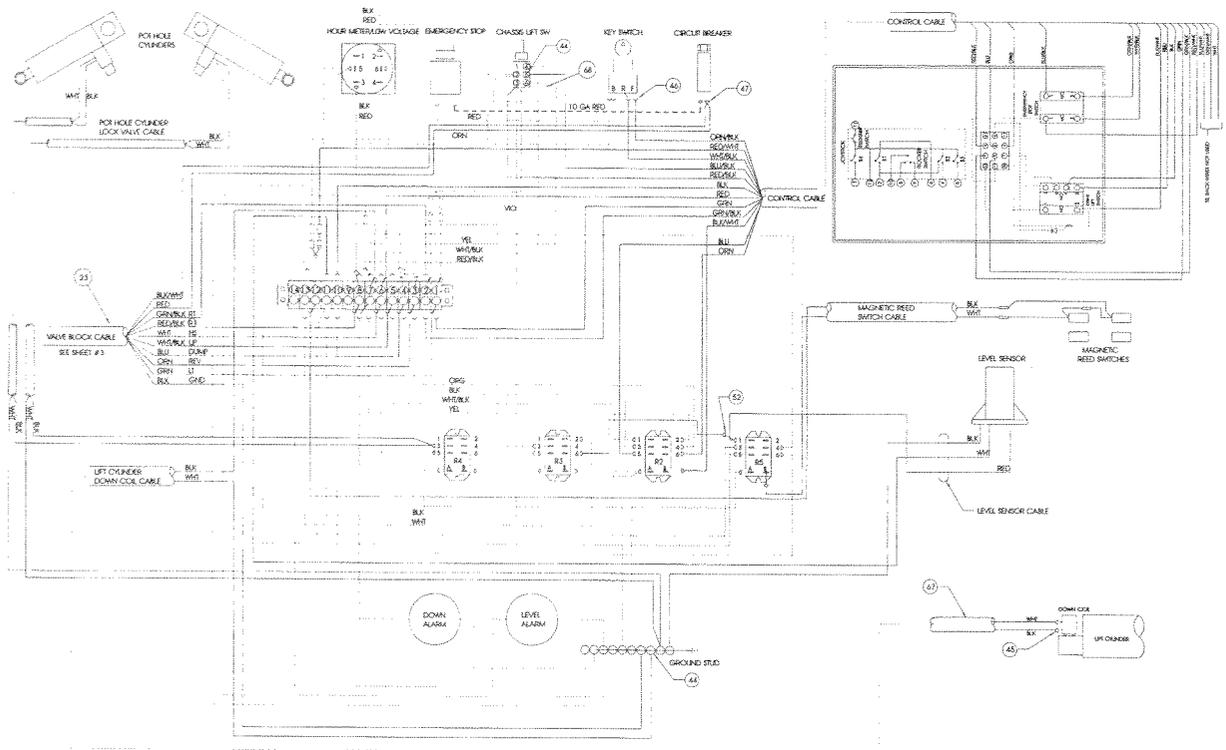
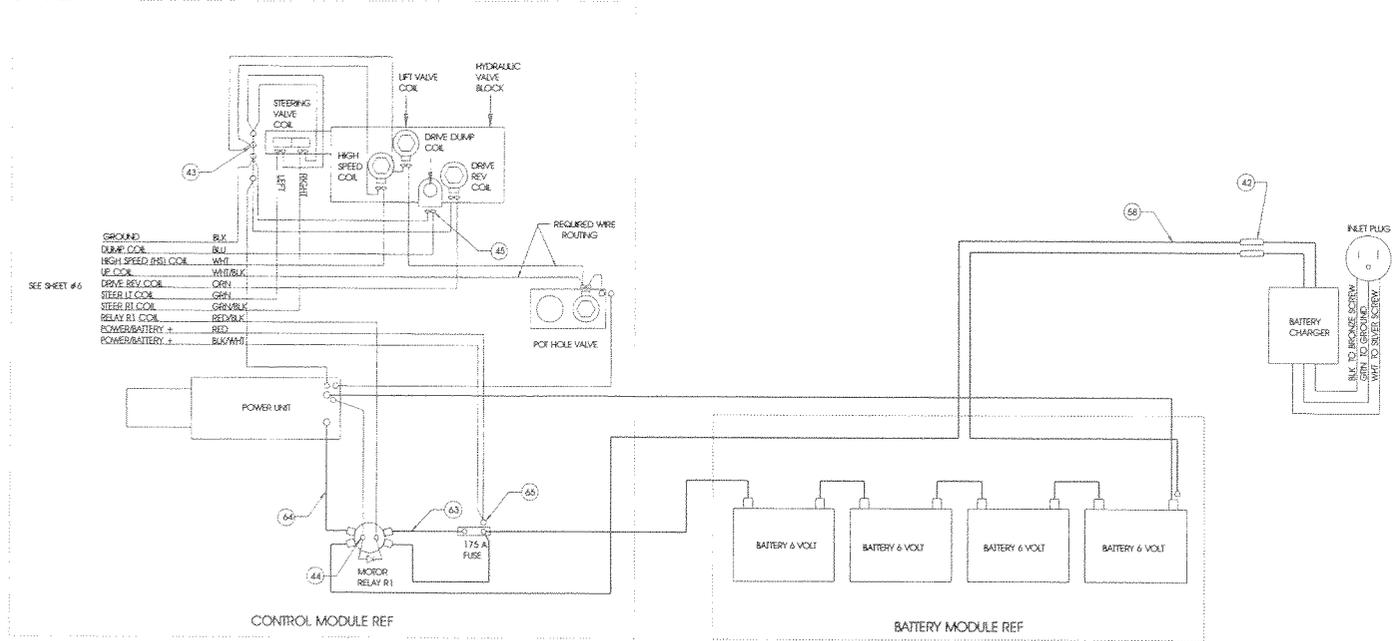
ITEM	PART	DESCRIPTION	QTY.
37	011275-003	SCREW #10-32 X 3/8	6
38	011821-006	SCREW BUTTON HD 1/4-20 X 3/4	2
40	011238-002	WASHER #10 LOCK	8
42	029620-002	CONN BUTT 14-16 GA	2
43	029601-015	CONN RING 14-16 GA 3/8	4
44	029601-013	CONN RING 14-16 GA #10	4
45	029931-003	CONN PUSH 14-16 GA .25	8
46	029610-002	CONN FORK 14-16 GA #8	31
47	029616-005	CONN PUSH 10-12 GA .25	1
48	011252-008	SCREW HHC GR5 1/4-20 UNC X 1	2
49	066006-010	DECK EXTENSION INSTALLATION	1
52	029615-002	CONN F PUSH 14-16GA .187	7
53	011254-008	SCREW HHC 3/8-16 X 1	2
54	011240-005	WASHER 5/16 FLAT	2
58	029481-099	WIRE 10GA BLACK	FT 15
60	010154-000	TERM COVER	8
61	066769-000	ELEC SCH.	REF
62	066781-000	HYD SCH	REF
63	064195-004	CABLE ASSY X 4 LG	1
64	062125-011	CABLE ASSY X 9 LG	1
65	029601-040	CONN RING 16-14 5/16	3
66	029452-099	WIRE 16 AWG BLK	FT 3
67	029496-099	WIRE 16 AWG 2 CONND	FT 50
68	029932-002	TERMINAL JUMPER	1
69	011154-020	THRUST WASHER	2
70	065373-005	SWITCH MAGNET	2
71	066042-001	MOUNT MAGNET	1
72	020541-025	CLAMP	1
73	065373-006	SWITCH	2
74	066043-000	SWITCH MOUNT	1
75	066713-002	WELDMENT, DOOR HINGE	1
76	066762-000	SHIM 20GA	A/R
77	066763-000	SHIM 16GA	A/R

Illustrated Parts Breakdown



FINAL ASSEMBLY
X20N
DRAWING 2 OF 3

Illustrated Parts Breakdown



**FINAL ASSEMBLY
X20N
DRAWING 3 OF 3**

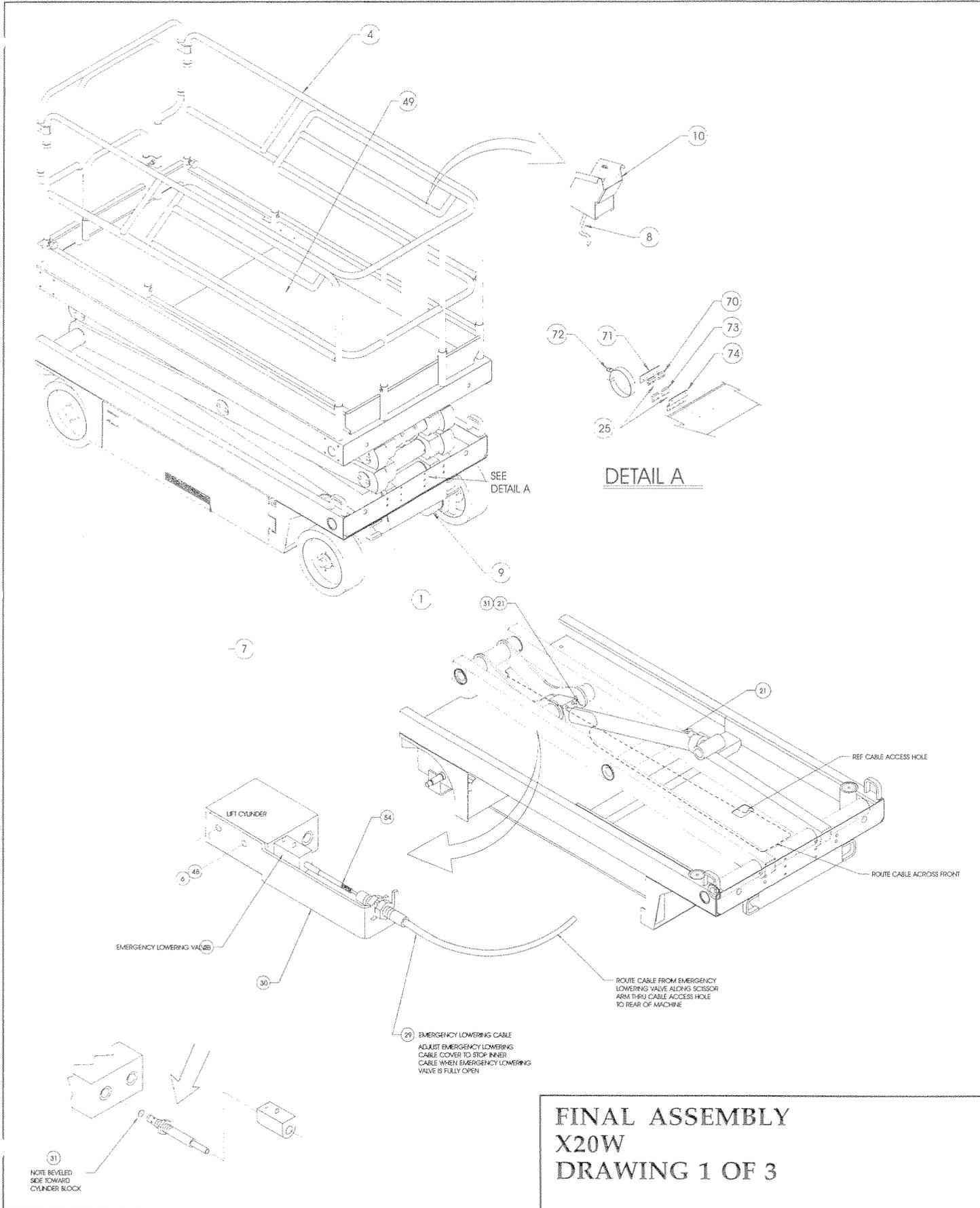
Illustrated Parts Breakdown

FINAL ASSEMBLY
X20W
066050-011

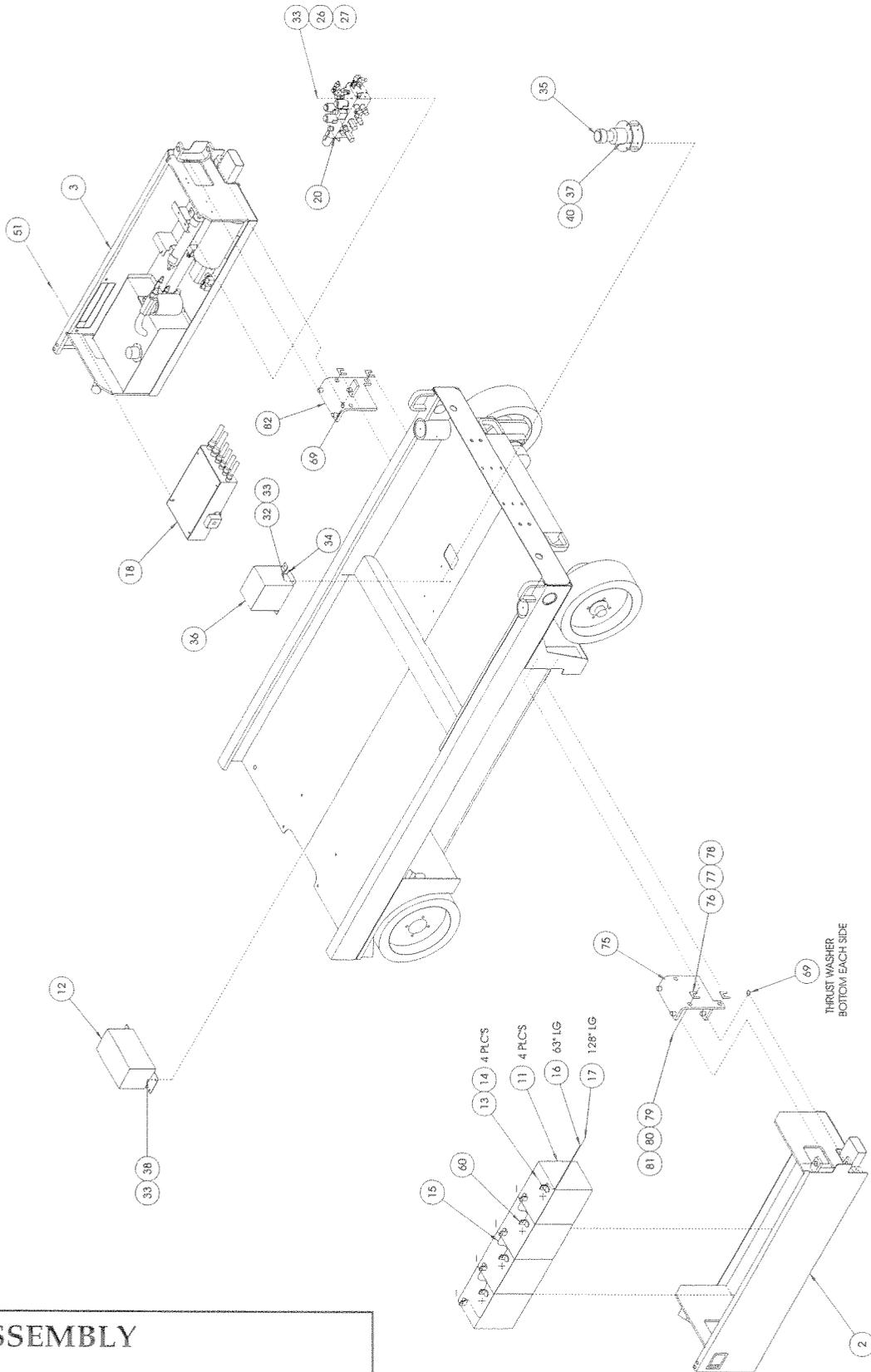
ITEM	PART	DESCRIPTION	QTY.
1	066051-001	BASIC ASSEMBLY	1
2	066008-010	CONTROL MODULE	1
3	066009-010	POWER MODULE	1
4	066055-001	GUARDRAIL INSTALLATION	1
5	011828-008	SCREW 1/4-20 X 1 FLAT HD SOC	2
6	005832-000	WASHER LOCK 1/4	2
7	066060-011	DECAL KIT INSTALLATION	1
8	066012-000	CONTROL CABLE ASSY	1
9	066061-010	HOSE KIT INSTALLATION	1
10	066013-012	CONTROLLER ASSEMBLY	1
11	015796-000	BATTERY 6V 220AMP	4
12	063948-002	CHARGER, 220/110 VAC 25 AMP	1
13	011253-006	SCREW HHC 5/16-18UNC X 3/4	8
14	011248-005	NUT 5/16-18 HEX	8
15	064195-001	CABLE ASS'Y X 12	3
16	064195-063	CABLE ASS'Y X 63 LG	1
17	064195-128	CABLE ASS'Y X 128 LG	1
18	066014-010	ELECTRICAL BOX ASSEMBLY	1
19	011728-004	SCREW SOC HD #10-32 X 1/2	2
20	066017-010	CONTROL VALVE ASSEMBLY	1
21	011941-005	FITTING STRAIGHT 6MB- 6 MJ	5
23	010131-099	CABLE 16GA 12COND	6
25	026551-005	RIVET. POP	10
26	011252-032	SCREW HHC GR5 1/4-20 X 4	3
27	011240-004	WASHER FLAT 1/4 DIA	3
28	066179-000	VALVE DELTA	1
29	065754-001	CABLE	1
30	066368-000	BRACKET	1
31	063664-008	ORIFICE, HYDRAFORCE #7051070	1
32	011252-006	SCREW HHC 1/4-20 X 3/4	4
33	011248-004	NUT 1/4-20 HEX	6
34	061796-099	GROMMET	FT .25
35	029945-013	LEVEL SENSOR 3°	1
36	066768-000	WELDMENT, TILT ALARM COVER	1
37	011275-003	SCREW #10-32 X 3/8	6
38	011821-006	SCREW BUTTON HD 1/4-20 X 3/4	2
40	011238-002	WASHER #10 LOCK	8

ITEM	PART	DESCRIPTION	QTY.
42	029620-002	CONN BUTT 14-16 GA	2
43	029601-015	CONN RING 14-16 GA 3/8	4
44	029601-013	CONN RING 14-16 GA #10	4
45	029931-003	CONN F PUSH 14-16 GA .25	13
46	029610-002	CONN FORK 14-16 GA #8	31
47	029616-005	CONN PUSH 10-12 GA .25	1
48	011252-008	SCREW HHC GR5 1/4-20 UNC X 1	2
49	066056-010	DECK EXTENSION INSTALLATION	1
51	011254-008	SCREW HHC 3/8-16 X 1	2
52	029615-002	CONN F PUSH 14-16GA .187	7
53	029617-002	CONN M PUSH 14-16 GA .25	3
54	011240-005	WASHER 5/16 FLAT	2
58	029481-099	WIRE 10GA BLACK	FT 15
60	010154-000	TERM COVER	8
61	066769-000	ELEC SCH.	REF
62	066781-001	HYD SCH	REF
63	064195-004	CABLE ASSY X 4 LG	1
64	062125-011	CABLE ASSY X 9 LG	1
65	029601-040	CONN RING 16-14 5/16	3
66	029452-099	WIRE 16 AWG BLK	FT 3
67	029496-099	WIRE 16 AWG 2 CONND	FT 50
68	029932-002	TERMINAL JUMPER	1
69	011154-020	THRUST WASHER	2
70	065373-005	SWITCH MAGNET	2
71	066042-001	MOUNT MAGNET	1
72	020541-025	CLAMP	1
73	065373-006	SWITCH	2
74	066043-000	SWITCH MOUNT	1
75	066713-002	WELDMENT, DOOR HINGE	1
76	066762-000	SHIM 20GA	A/R
77	066763-000	SHIM 16GA	A/R
78	066764-000	SHIM 12GA	A/R
79	011250-012	NUT 3/4-10 HEX	4
80	014099-018	SCREW HHC GR5 PLTD 3/4-10 X 2 1/4	4
81	011240-012	WASHER 3/4 FLAT	4
82	066713-001	WELDMENT, DOOR HINGE	1
83	013283-002	CABLE MOUNT	6

Illustrated Parts Breakdown

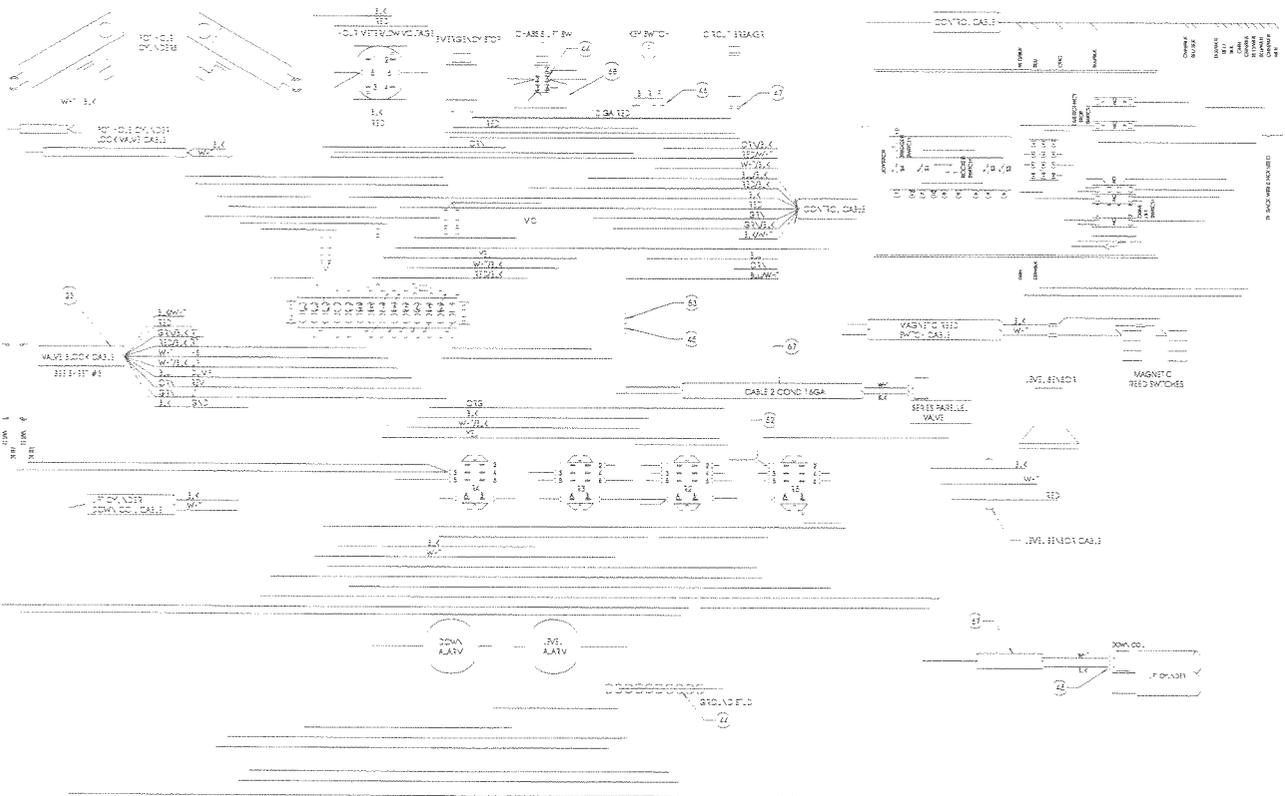
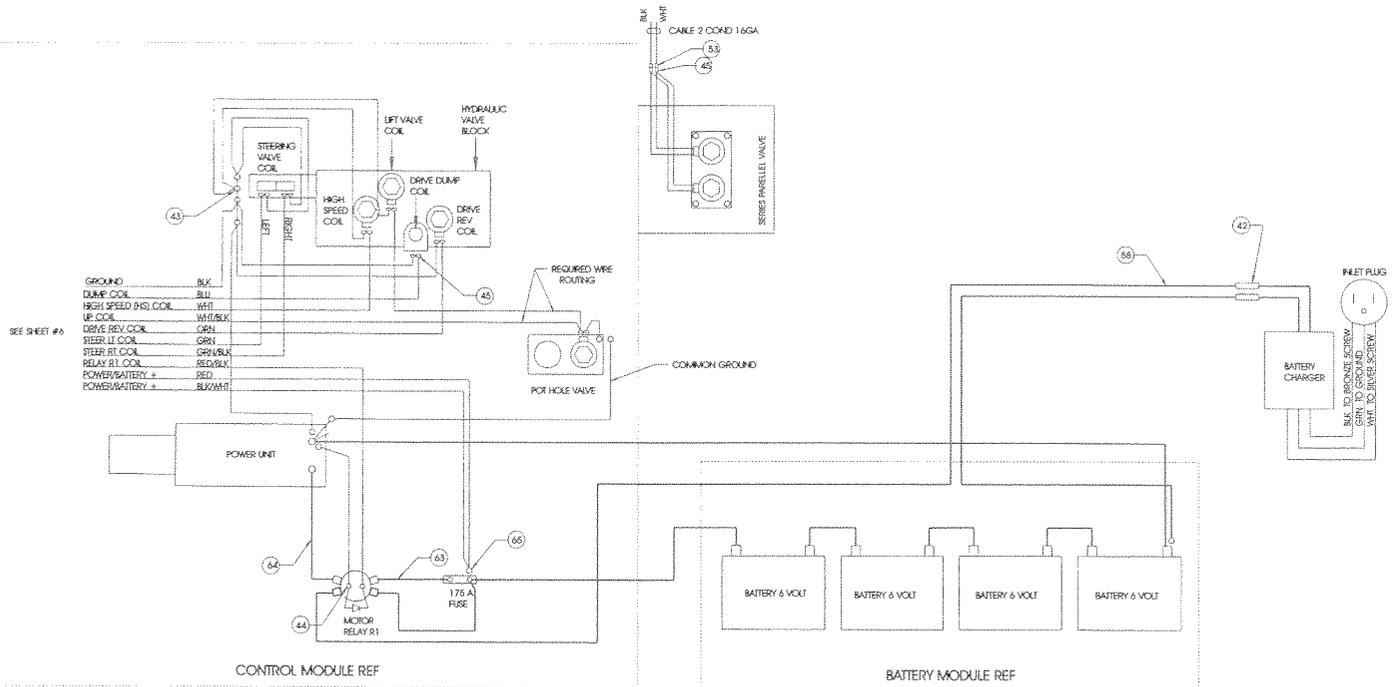


Illustrated Parts Breakdown



FINAL ASSEMBLY
X20W
DRAWING 2 OF 3

Illustrated Parts Breakdown



**FINAL ASSEMBLY
X20W
DRAWING 3 OF 3**

**Section
6.2**

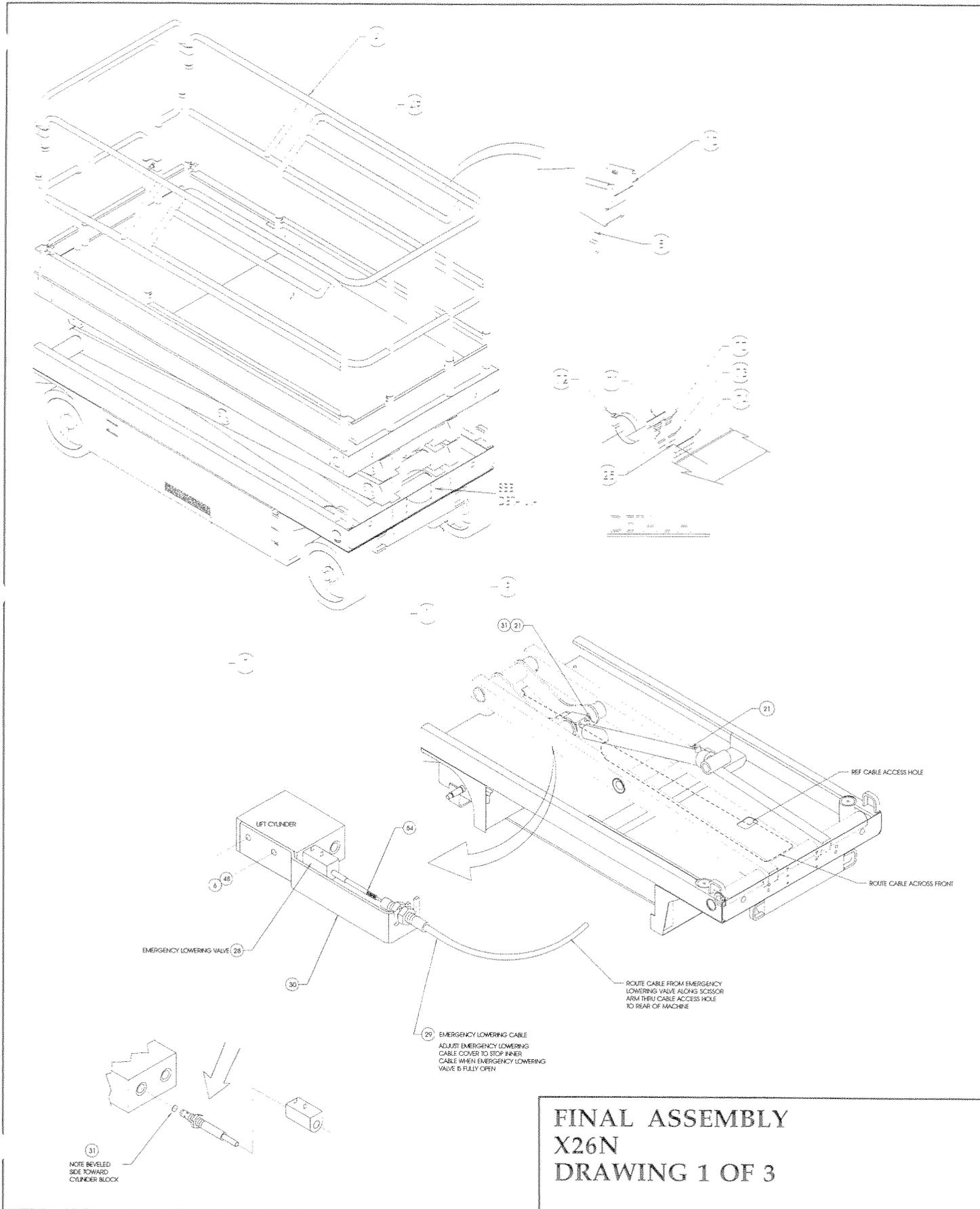
Illustrated Parts Breakdown

**FINAL ASSEMBLY
X26N
066100-011**

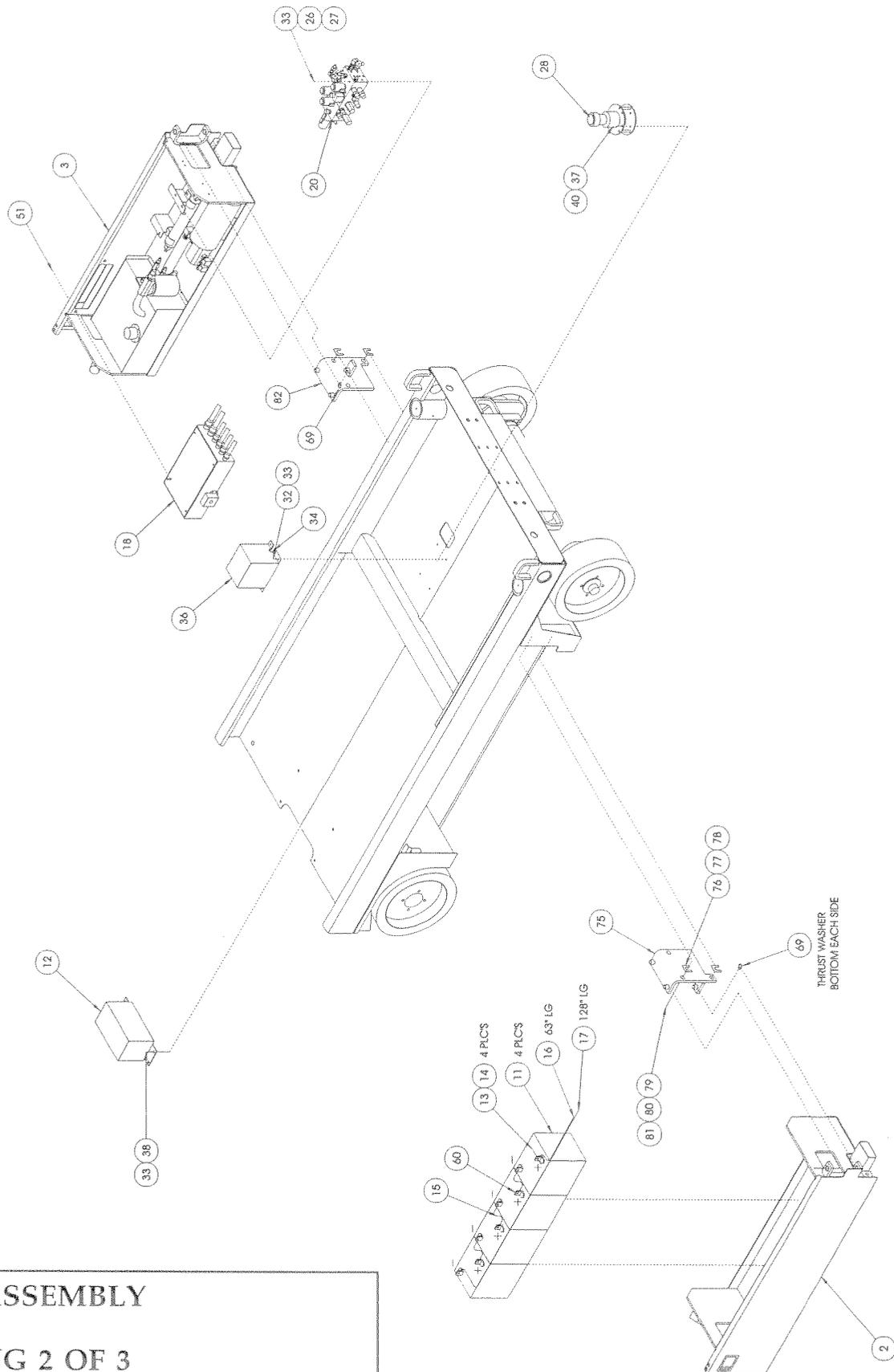
ITEM	PART	DESCRIPTION	QTY.
1	066101-001	BASIC ASSEMBLY	1
2	066008-010	CONTROL MODULE	1
3	066009-010	POWER MODULE	1
4	066055-001	GUARDRAIL INSTALLATION	1
5	011828-008	SCREW 1/4-20 X 1 FLAT HD SOC	2
6	005832-000	WASHER LOCK 1/4	2
7	066110-011	DECAL KIT INSTALLATION	1
8	066012-001	CONTROL CABLE ASSY	1
9	066061-010	HOSE KIT INSTALLATION	1
10	066013-012	CONTROLLER ASSEMBLY	1
11	015796-000	BATTERY 6V 220AMP	4
12	063948-002	CHARGER, 220/110 VAC 25 AMP	1
13	011253-006	SCREW HHC 5/16-18UNC X 3/4	8
14	011248-005	NUT 5/16-18 HEX	8
15	064195-001	CABLE ASS'Y X 12	3
16	064195-063	CABLE ASS'Y X 63 LG	1
17	064195-128	CABLE ASS'Y X 128 LG	1
18	066014-011	ELECTRICAL BOX ASSEMBLY	1
19	011728-004	SCREW SOC HD #10-32 X 1/2	2
20	066017-010	CONTROL VALVE ASSEMBLY	1
21	011941-005	FITTING STRAIGHT 6MB- 6 MJ	5
23	010131-099	CABLE 16GA 12COND	6
25	026551-005	RIVET. POP	10
26	011252-032	SCREW HHC GR5 1/4-20 X 4	3
27	011240-004	WASHER FLAT 1/4 DIA	3
28	066179-000	VALVE DELTA	1
29	065754-001	CABLE	1
30	066368-000	BRACKET	1
31	063664-008	ORIFICE, HYDRAFORCE #7051070	1
32	011252-006	SCREW HHC 1/4-20 X 3/4	4
33	011248-004	NUT 1/4-20 HEX	6
34	061796-099	GROMMET	FT .12
35	029945-013	LEVEL SENSOR 3°	1
36	066768-000	WELDMENT, TILT ALARM COVER	1
37	011275-003	SCREW #10-32 X 3/8	6
38	011821-006	SCREW BUTTON HD 1/4-20 X 3/4	2
40	011238-002	WASHER #10 LOCK	8

ITEM	PART	DESCRIPTION	QTY.
42	029620-002	CONN BUTT 14-16 GA	2
43	029601-015	CONN RING 14-16 GA 3/8	4
44	029601-013	CONN RING 14-16 GA #10	4
45	029931-003	CONN PUSH 14-16 GA .25	13
46	029610-002	CONN FORK 14-16 GA #8	31
47	029616-005	CONN PUSH 10-12 GA .25	1
48	011252-008	SCREW HHC GR5 1/4-20 UNC X 1	2
49	066056-010	DECK EXTENSION INSTALLATION	1
51	011254-008	SCREW HHC 3/8-16 X 1	2
52	029615-002	CONN F PUSH 14-16GA .187	7
53	029617-002	CONN M PUSH 14-16 GA .25	3
54	011240-005	WASHER 5/16 FLAT	2
58	029481-099	WIRE 10GA BLACK	FT 15
60	010154-000	TERM COVER	8
61	066769-001	ELEC SCH.	REF
62	066781-001	HYD SCH	REF
63	064195-005	CABLE ASSY X 5 LG	1
64	062125-011	CABLE ASSY X 9 LG	1
65	029601-040	CONN RING 16-14 5/16	3
66	029452-099	WIRE 16 AWG BLK	FT 3
67	029496-099	WIRE 16 AWG 2 CONND	FT 50
68	029932-009	JUMPER	1
69	011154-020	THRUST WASHER	2
70	065373-005	SWITCH MAGNET	2
71	066042-001	MOUNT MAGNET	1
72	020541-025	CLAMP	1
73	065373-006	SWITCH	2
74	066043-000	SWITCH MOUNT	1
75	066713-002	WELDMENT, DOOR HINGE	1
76	066762-000	SHIM 20GA	A/R
77	066763-000	SHIM 16GA	A/R
78	066764-000	SHIM 12GA	A/R
79	011250-012	NUT 3/4-10 HEX	4
80	014099-018	SCREW HHC GR5 PLTD 3/4-10 X 2 1/4	4
81	011240-012	WASHER 3/4 FLAT	4
82	066713-001	WELDMENT, DOOR HINGE	1
83	013283-002	CABLE MOUNT	6

Illustrated Parts Breakdown

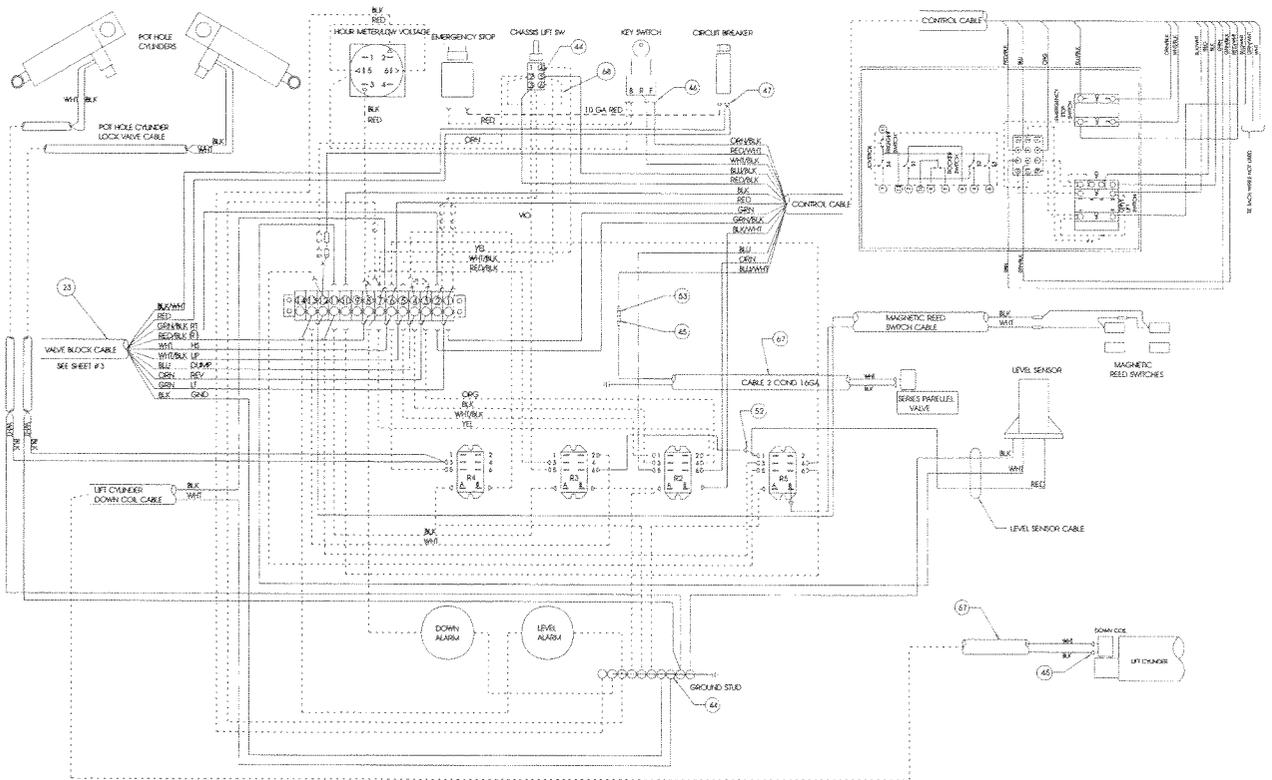
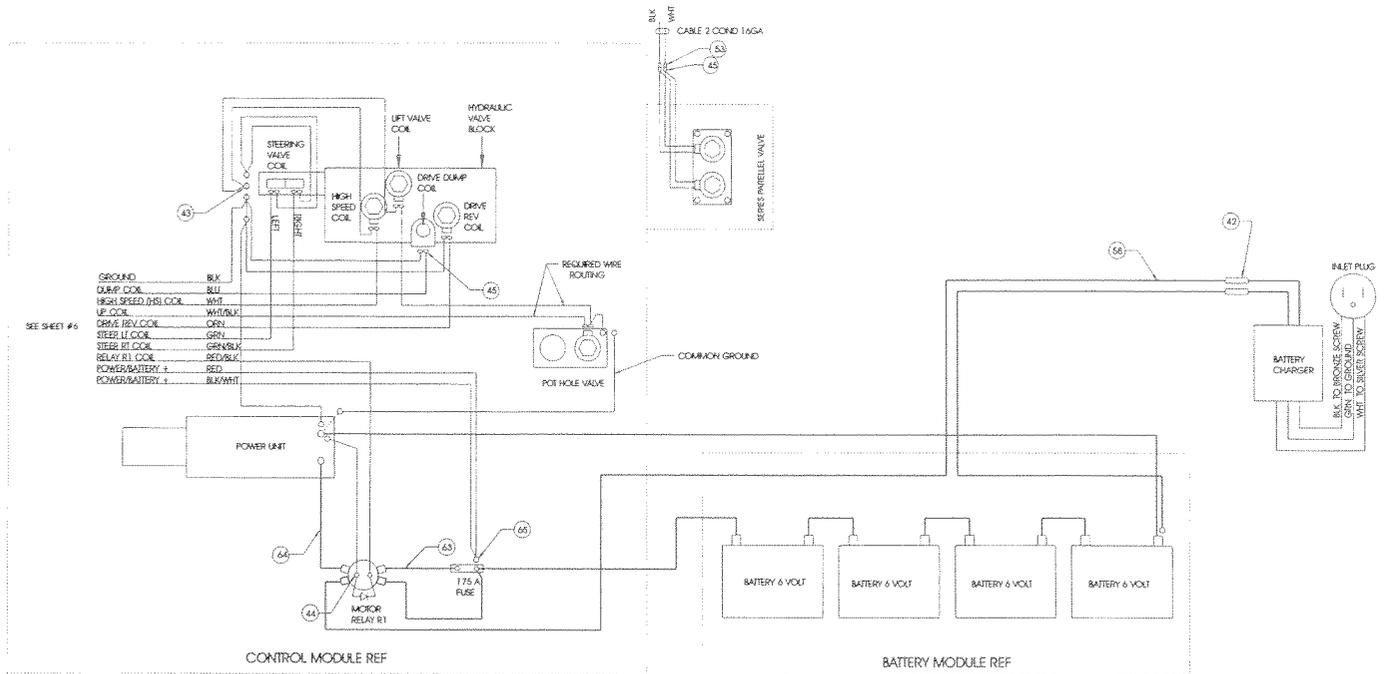


Illustrated Parts Breakdown



FINAL ASSEMBLY
X26N
DRAWING 2 OF 3

Illustrated Parts Breakdown



FINAL ASSEMBLY
X26N
DRAWING 3 OF 3

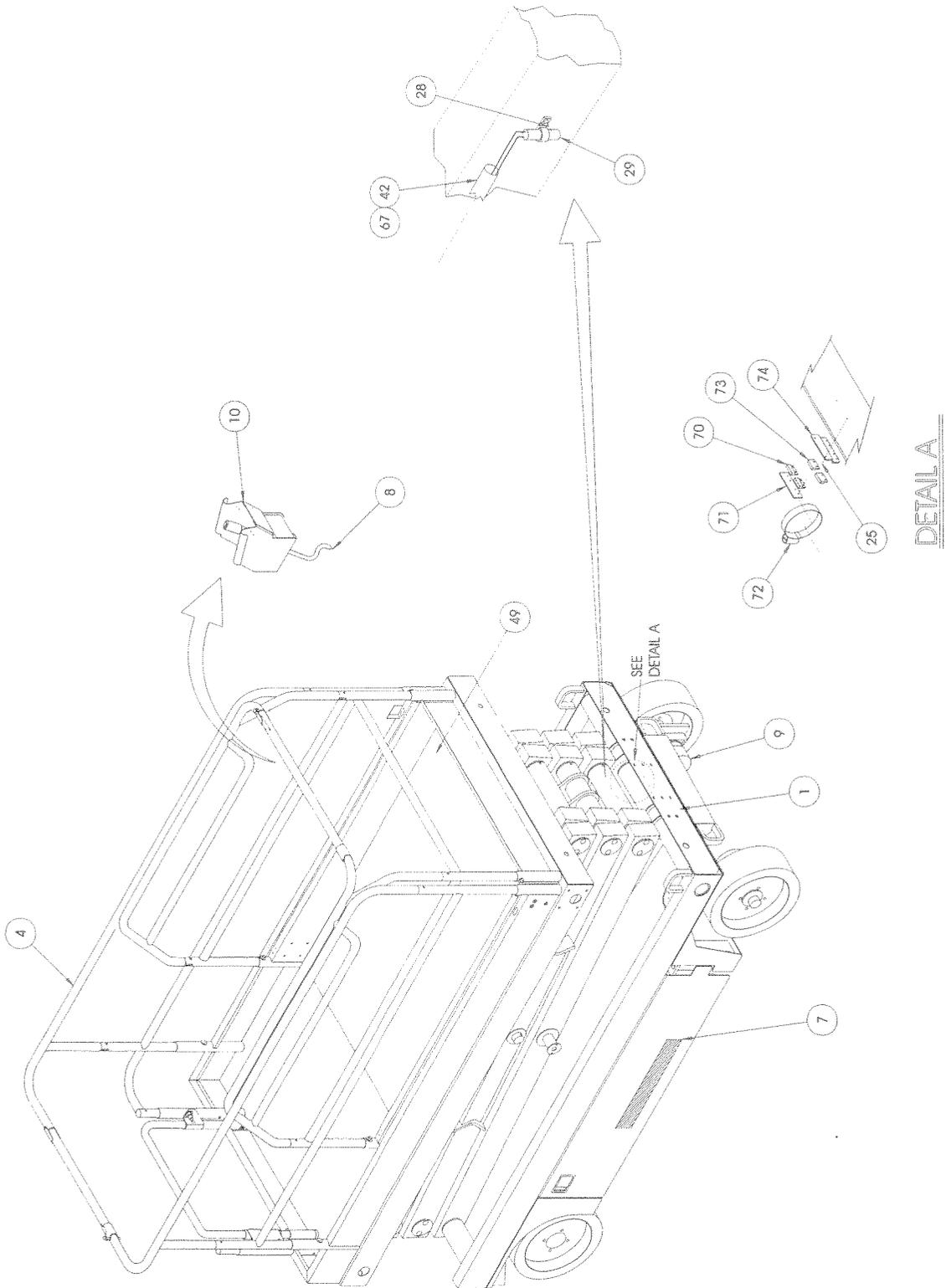
Illustrated Parts Breakdown

FINAL ASSEMBLY
X32N
066850-011

ITEM	PART	DESCRIPTION	QTY.
1	066851-000	BASIC ASSEMBLY	1
2	066008-012	CONTROL MODULE	1
3	066009-010	POWER MODULE	1
4	066855-001	GUARDRAIL INSTALLATION	1
5	011828-008	SCREW 1/4-20 X 1 FLAT HD SOC	2
6	005832-000	WASHER LOCK 1/4	2
7	066860-001	DECAL KIT INSTALLATION	1
8	066012-002	CONTROL CABLE ASSY	1
9	066861-000	HOSE KIT INSTALLATION	1
10	066013-012	CONTROLLER ASSEMBLY	1
11	015796-000	BATTERY 6V 220AMP	4
12	063948-002	CHARGER, 220/110 VAC 25 AMP	1
13	011253-006	SCREW HHC 5/16-18UNC X 3/4	8
14	011248-005	NUT 5/16-18 HEX	8
15	064195-001	CABLE ASS'Y X 12	3
16	064195-063	CABLE ASS'Y X 63 LG	1
17	062125-018	CABLE ASS'Y X 128 LG	1
18	066014-011	ELECTRICAL BOX ASSEMBLY	1
19	011728-004	SCREW SOC HD #10-32 X 1/2	2
20	066017-010	CONTROL VALVE ASSEMBLY	1
23	010131-099	CABLE 16GA 12 COND	6
25	026551-005	RIVET. POP	10
26	011252-032	SCREW HHC GR5 1/4-20 X 4	3
27	011240-004	WASHER FLAT 1/4 DIA	3
28	014418-005	WELD STUD 1/4-20 X 1	1
29	063497-001	MERCURY SWITCH	1
30	013919-013	CLAMP	1
32	011252-006	SCREW HHC 1/4-20 X 3/4	4
33	011248-004	NUT 1/4-20 HEX	6
34	061796-099	GROMMET	FT .25
35	029945-013	LEVEL SENSOR	1
36	066768-000	WELDMENT, TILT ALARM COVER	1
37	011275-003	SCREW #10-32 X 3/8	6
38	011821-006	SCREW BUTTON HD 1/4-20 X 3/4	2
40	011238-002	WASHER #10 LOCK	8
42	029620-002	CONN BUTT 14-16 GA	2
43	029601-015	CONN RING 14-16 GA 3/8	4
44	029601-013	CONN RING 14-16 GA #10	4

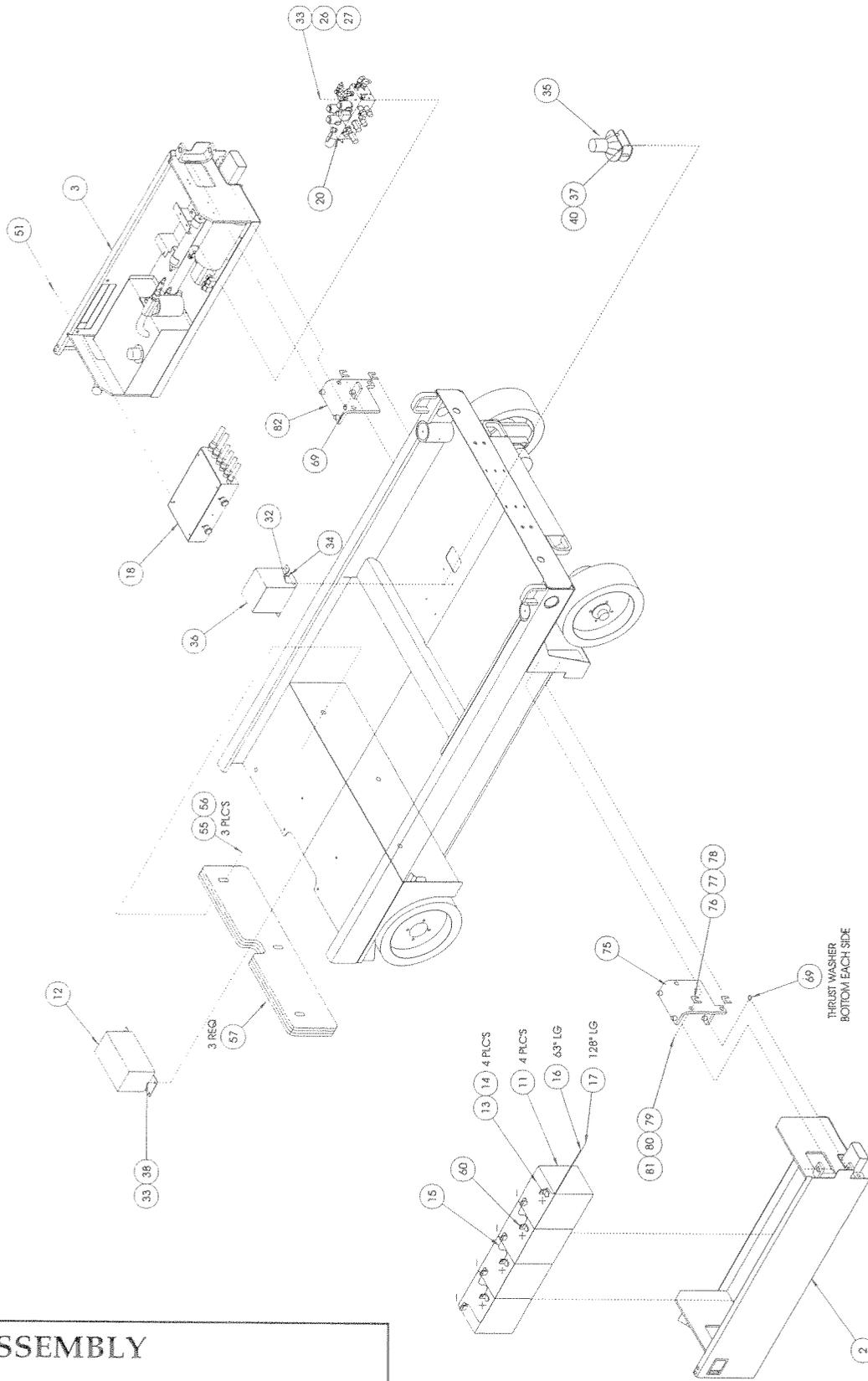
ITEM	PART	DESCRIPTION	QTY.
45	029931-003	CONN F PUSH 14-16 GA .25	13
46	029610-002	CONN FORK 14-16 GA #8	31
47	029616-005	CONN PUSH 10-12 GA .25	1
48	011252-008	SCREW HHC GR5 1/4-20 UNC X 1	2
49	066856-001	DECK EXTENSION INSTALLATION	1
51	011254-008	SCREW HHC 3/8-16 X 1	2
52	029615-002	CONN F PUSH 14-16GA .187	7
53	029617-002	CONN M PUSH 14-16 GA .25	3
54	011240-005	WASHER 5/16 FLAT	2
55	066819-028	SCREW, CARRIAGE 3/4-10 X 3 1/2	3
56	011248-012	NUT, 3/4-10 HEX	3
57	066818-000	COUNTERWEIGHT	3
58	029481-099	WIRE 10GA BLACK	FT 15
60	010154-000	TERM COVER	8
61	066018-008	ELEC SCH.	REF
62	066781-008	HYD SCH	REF
63	064195-004	CABLE ASSY X 4 LG	1
64	062125-011	CABLE ASSY X 9 LG	1
65	029601-040	CONN RING 16-14 5/16	3
66	029452-099	WIRE 16 AWG BLK	FT 3
67	029496-099	WIRE 16 AWG 2 CONND	FT 90
68	029932-002	JUMPER	1
69	011154-020	THRUST WASHER	2
70	065373-005	SWITCH MAGNET	2
71	066042-001	MOUNT MAGNET	1
72	020541-025	CLAMP	1
73	065373-006	SWITCH	2
74	066043-000	SWITCH MOUNT	1
75	066713-002	WELDMENT, DOOR HINGE	1
76	066762-000	SHIM 20GA	A/R
77	066763-000	SHIM 16GA	A/R
78	066764-000	SHIM 12GA	A/R
79	011250-012	NUT 3/4-10 HEX	4
80	014099-018	SCREW HHC GR5 PLTD 3/4-10 X 2 1/4	4
81	011240-012	WASHER 3/4 FLAT	4
82	066713-001	WELDMENT, DOOR HINGE	1
83	011937-003	FITTING, AERO	2
84	020032-003	FITTING, AERO	3

Illustrated Parts Breakdown



FINAL ASSEMBLY
X32N
DRAWING 1 OF 3

Illustrated Parts Breakdown



FINAL ASSEMBLY
X32N
DRAWING 2 OF 3

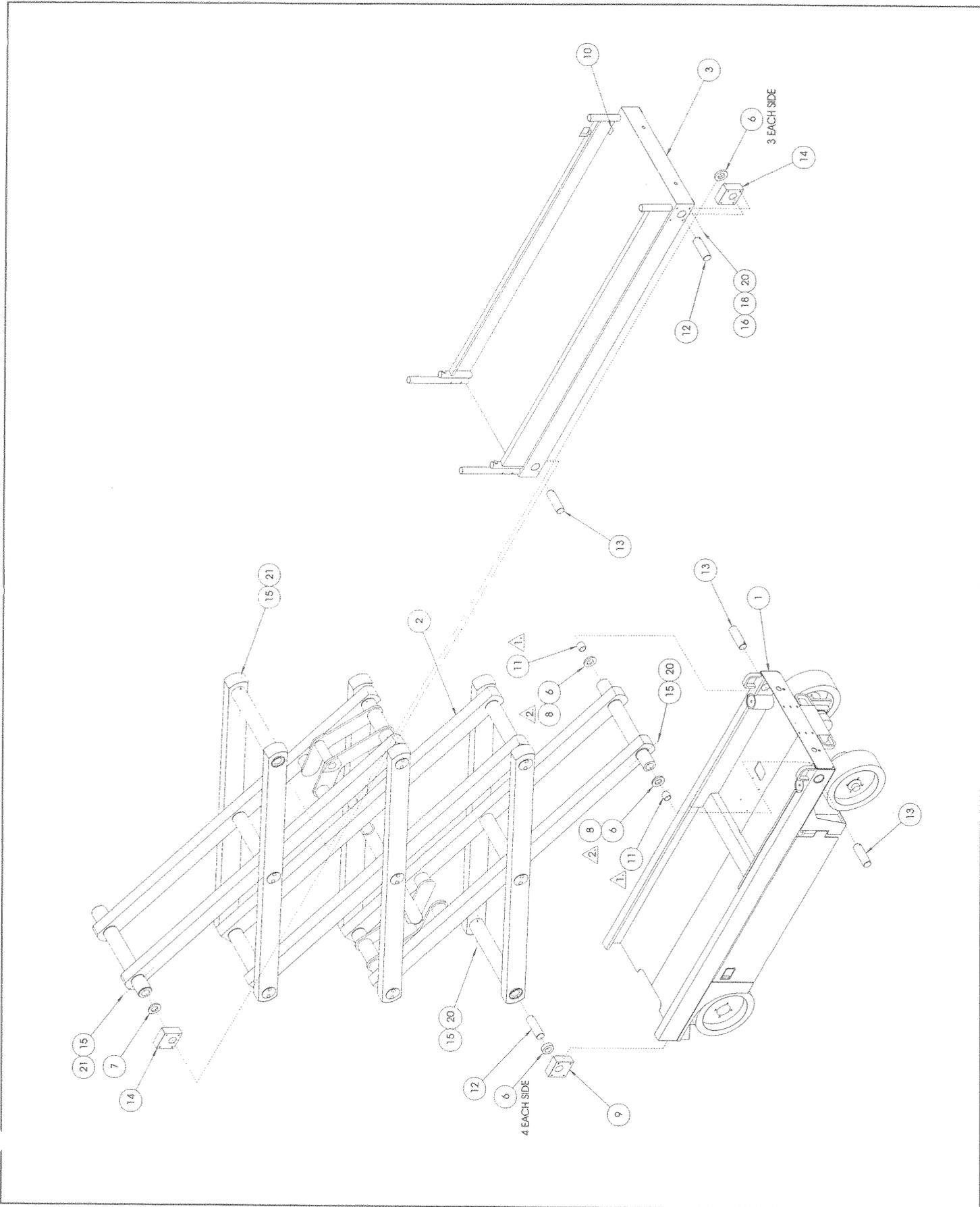
BASIC ASSEMBLY

X20N

066001-001

ITEM	PART	DESCRIPTION	QTY.
1	066002-010	CHASSIS ASSEMBLY	1
2	066003-000	SCISSOR ASSEMBLY	1
3	066250-010	PLATFORM WELDMENT	1
6	066189-000	WEAR PAD 1/4	16
7	066189-001	WEAR PAD 3/8	2
8	066189-004	WEAR PAD 1/8	2
9	066191-001	SLIDE BLOCK (BOTTOM)	2
10	061796-099	GROMMET	.63FT
11	066183-001	BEARING	2
12	066222-001	MOUNTING PIN	4
13	066222-002	MOUNTING PIN	4
14	066191-000	SLIDE BLOCK	4
15	011287-032	SCREW SOC HD 3/8-16 X 4 LG	8
16	011254-024	SCREW HHC 3/8-16 X 3 LG	8
18	011240-006	WASHER 3/8 FLAT	8
20	011248-006	NUT 3/8-16	8
21	011248-005	NUT 5/16-18	8

Illustrated Parts Breakdown

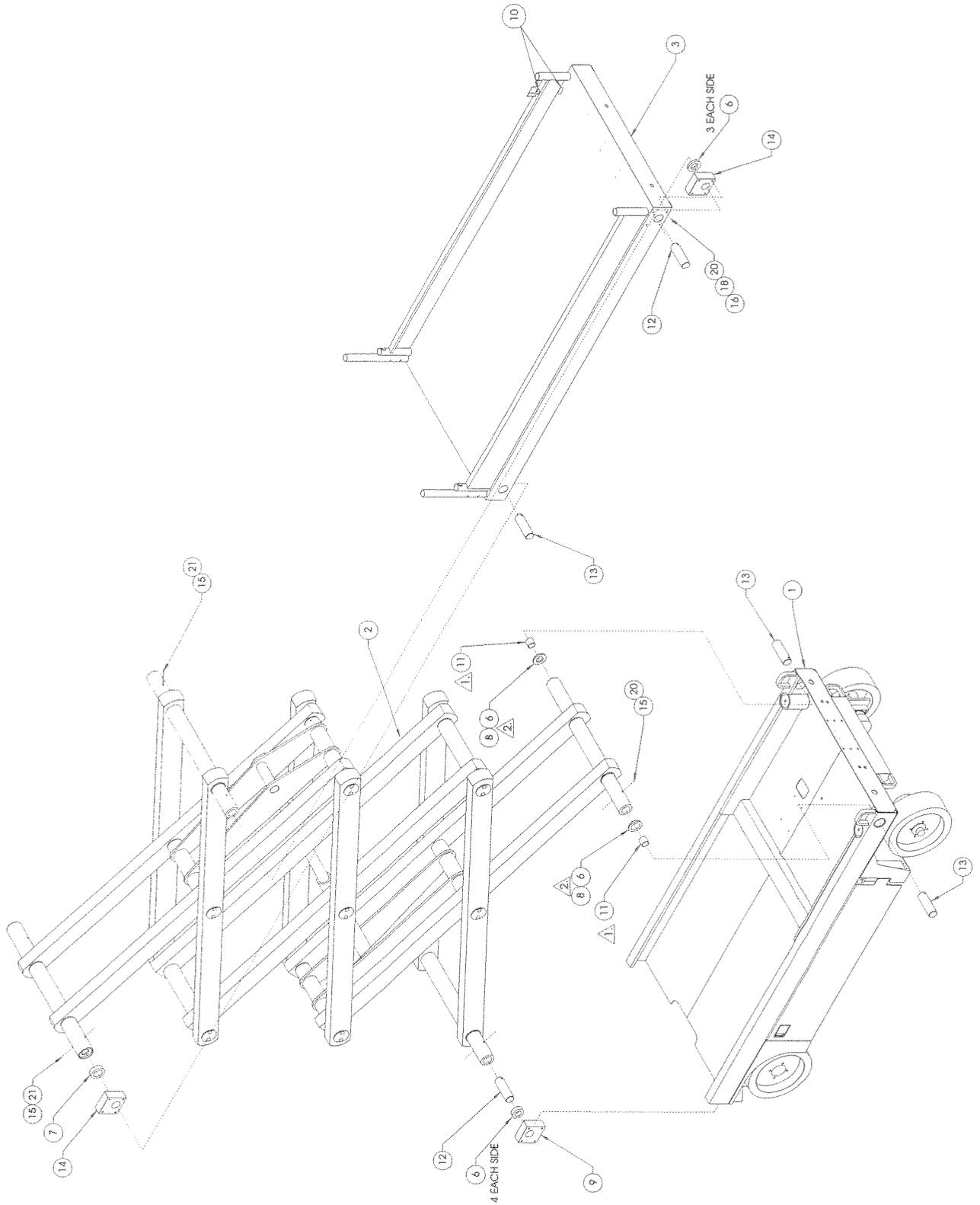


Illustrated Parts Breakdown

BASIC ASSEMBLY
X20W
066051-001

ITEM	PART	DESCRIPTION	QTY.
1	066052-001	CHASSIS ASSEMBLY	1
2	066053-000	SCISSOR ASSEMBLY	1
3	066292-000	PLATFORM WELDMENT	1
4	011248-006	NUT 3/8-16	16
5	011240-006	WASHER 3/8 FLAT	8
6	066189-000	WEAR PAD 1/4	16
7	066189-001	WEAR PAD 3/8	2
8	066189-004	WEAR PAD 1/8	2
9	066191-001	SLIDE BLOCK (BOTTOM)	2
10	061796-099	GROMMET	.63FT
11	066183-001	BEARING	2
12	066222-001	MOUNTING PIN	4
13	066222-002	MOUNTING PIN	4
14	066191-000	SLIDE BLOCK	4
15	015936-023	SCREW SOC. HD CAP 3/8-16 X 4 LG	8
16	011254-032	SCREW HHC 3/8-16 X 4 LG	8 W
18	011240-006	WASHER 3/8 FLAT	8
20	011248-006	NUT 3/8-16	8
21	011248-005	NUT 5/16-18	8

Illustrated Parts Breakdown



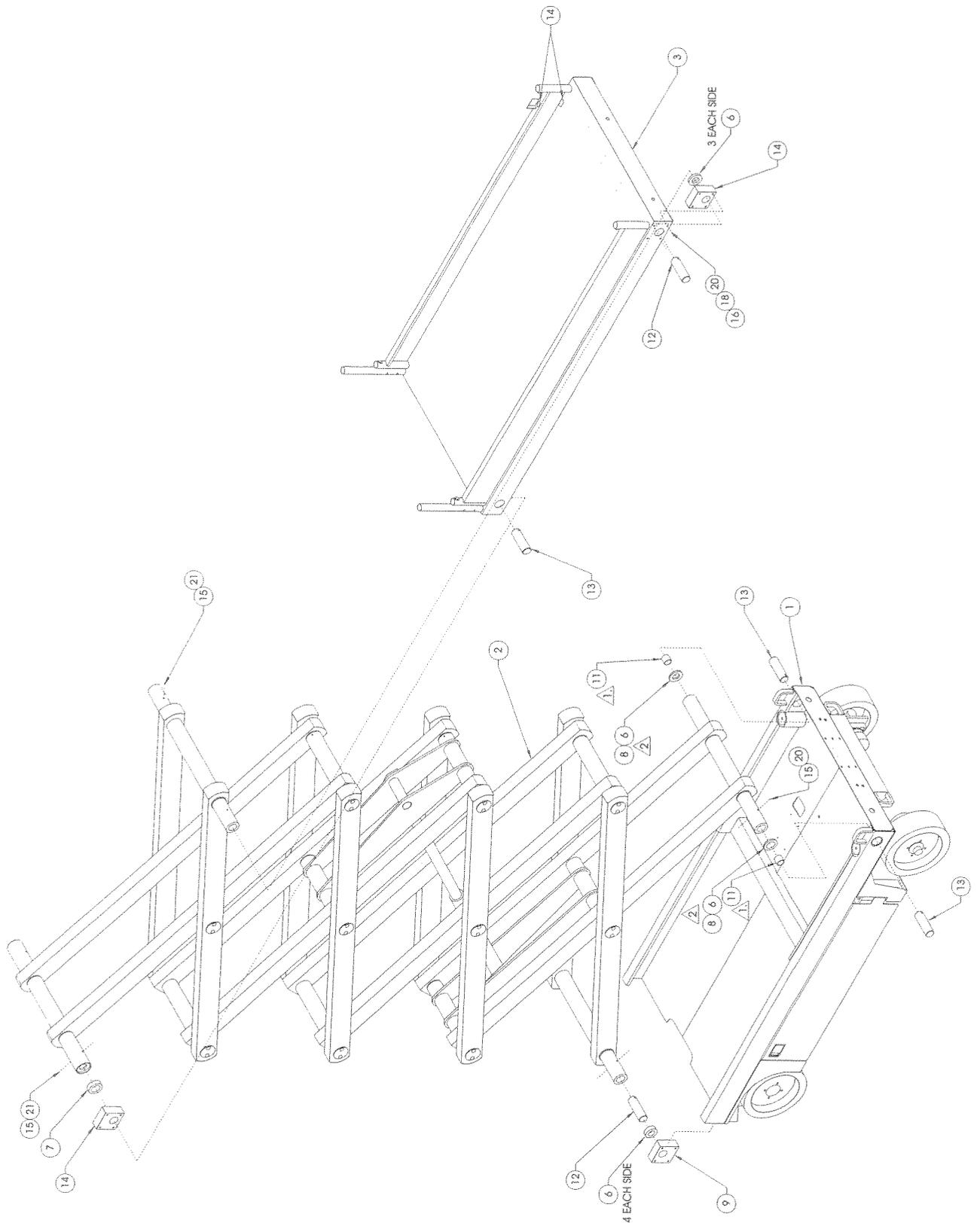
BASIC ASSEMBLY

X26N

066101-001

ITEM	PART	DESCRIPTION	QTY.
1	066052-001	CHASSIS ASSEMBLY	1
2	066103-000	SCISSOR ASSEMBLY	1
3	066292-000	PLATFORM WELDMENT	1
4	011248-006	NUT 3/8-16	16
5	011240-006	WASHER 3/8 FLAT	8
6	066189-000	WEAR PAD 1/4	16
7	066189-001	WEAR PAD 3/8	2
8	066189-004	WEAR PAD 1/8	2
9	066191-001	SLIDE BLOCK (BOTTOM)	2
10	061796-099	GROMMET	.63FT
11	066183-001	BEARING	2
12	066222-001	MOUNTING PIN	4
13	066222-002	MOUNTING PIN	4
14	066191-000	SLIDE BLOCK	4
15	015936-023	SCREW SHOULDER 3/8-16 X 4 LG	8
16	011254-032	SCREW HHC 3/8-16 X 4 LG	8
18	011240-006	WASHER 3/8 FLAT	8
20	011248-006	NUT 3/8-16	8
21	011248-005	NUT 5/16-18	8

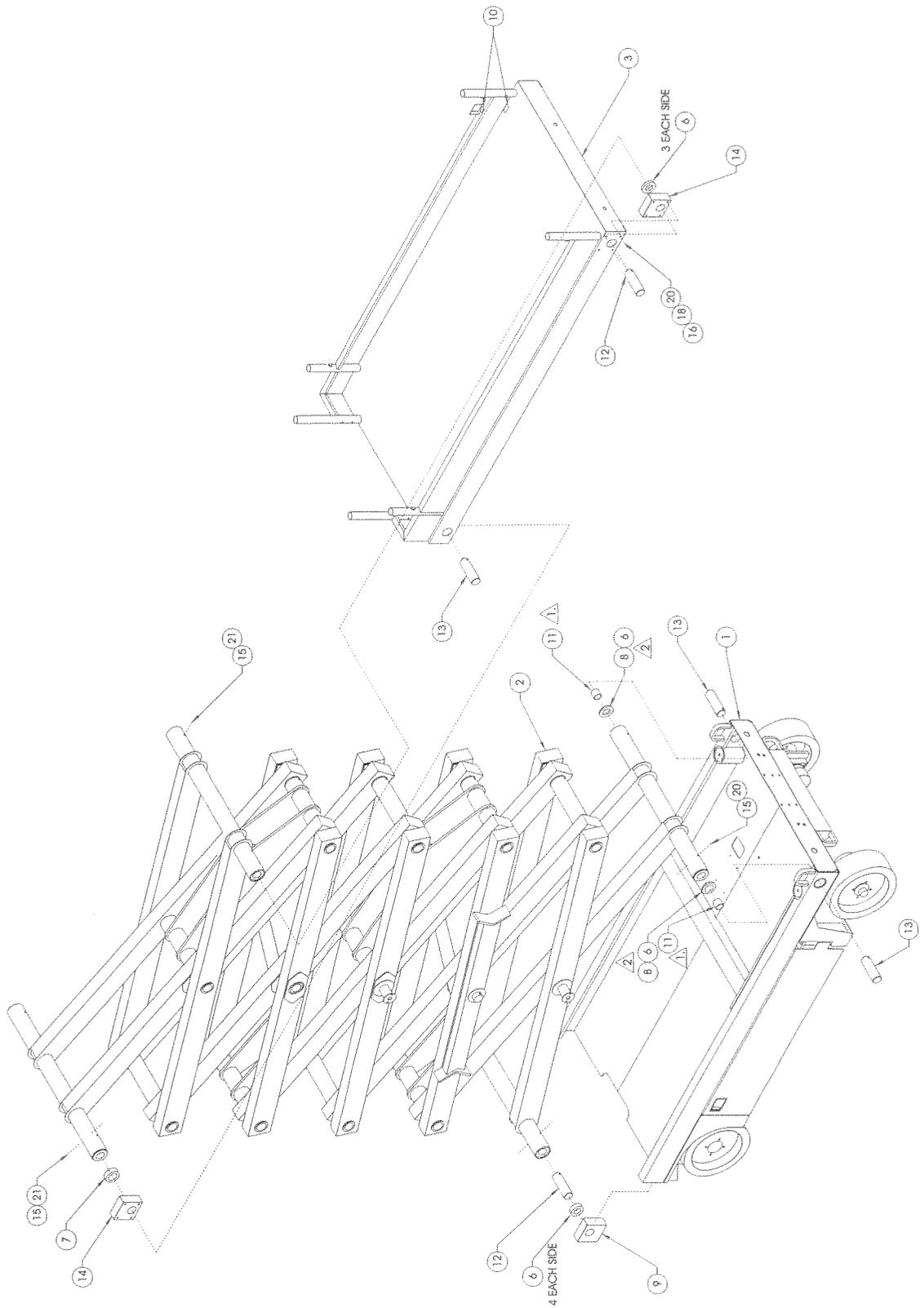
Illustrated Parts Breakdown



BASIC ASSEMBLY
X32N
066851-000

ITEM	PART	DESCRIPTION	QTY.
1	066852-000	CHASSIS ASSEMBLY	1
2	066853-000	SCISSOR ASSEMBLY	1
3	066292-001	PLATFORM WELDMENT	1
6	066189-000	WEAR PAD 1/4	16
7	066189-001	WEAR PAD 3/8	2
8	066189-004	WEAR PAD 1/8	2
9	066191-001	SLIDE BLOCK (BOTTOM)	2
10	061796-099	GROMMET	.63FT
11	066183-001	BEARING	2
12	066222-001	MOUNTING PIN	4
13	066222-002	MOUNTING PIN	4
14	066191-000	SLIDE BLOCK	4
15	015936-023	SCREW SHOULDER 3/8 X 3 1/	8
16	011254-032	SCREW HHC 3/8-16 X 4 LG	8
18	011240-006	WASHER 3/8 FLAT	8
19	065369-006	HOSE GUARD, NYLON	1 FT.
20	011248-006	NUT 3/8-16	8
21	011248-005	NUT 5/16-18	8

Illustrated Parts Breakdown



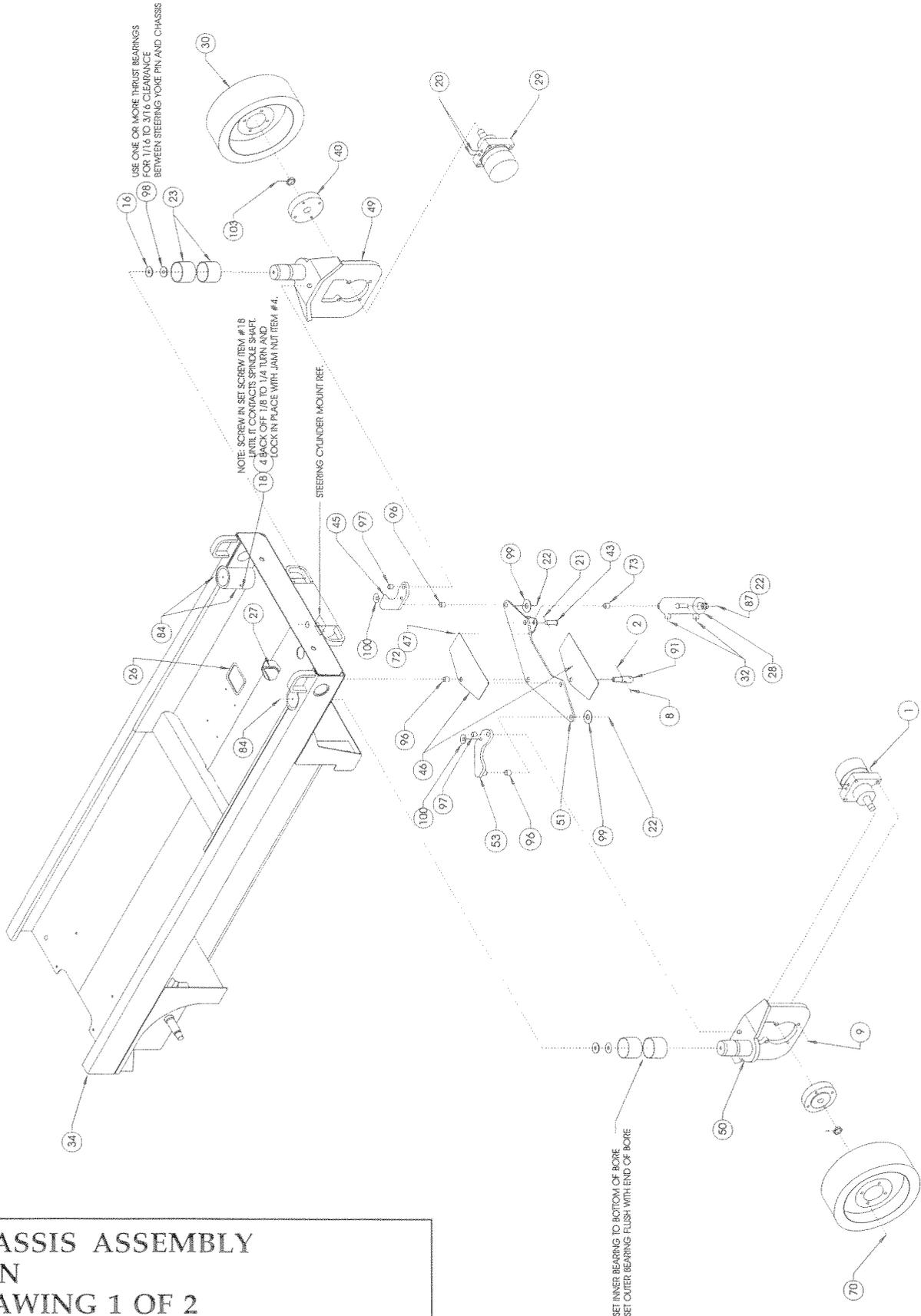
Illustrated Parts Breakdown

CHASSIS ASSEMBLY X20N 066002-010

ITEM	PART	DESCRIPTION	QTY.
1	011248-008	NUT HEX 1/2-13 UNC	8
2	011248-006	NUT HEX 3/8-16 UNC	5
3	011248-012	NUT HEX 3/4-10 UNC	3
4	011273-006	NUT JAM 3/8-16	2
6	011254-008	SCREW HHC GR5 3/8-16 UNC X 1	4
8	011254-016	SCREW HHC GR5 3/8-16 UNC X 2	1
9	011256-024	SCREW HHC GR5 1/2-13 UNC X 3	8
10	011254-012	SCREW HHC GR5 3/8-16 UNC X 1 1/2	4
11	011254-010	SCREW HHC GR5 3/8-16 UNC X 1 1/4	2
12	011258-024	SCREW HHC GR5 3/4-10 UNC X 3	1
13	011240-006	WASHER 3/8 FLAT	4
14	011287-022	SCREW SOCKET HD 3/8-16 X 2 3/4	2
16	011782-008	BEARING #TT 2301-3(STEER)	2
18	011705-016	SCREW SET 3/8-16 X 1	2
20	011934-024	FITTING	4
21	011757-007	PIN COTTER 5/8	1
22	011757-010	PIN COTTER 3/4	4
23	027931-074	BEARING #AA-2803-1 (STEERING)	4
26	061796-099	GROMMET	FT 1.25
27	061692-099	GROMMET	FT 1.38
28	066602-000	STEERING CYLINDER	1
	066602-010	SEAL KIT (STEERING CYLINDER)	-
29	061817-001	MOTOR HYD	2
	061812-010	SEAL KIT (MOTOR)	-
30	061846-001	WHEEL & TIRE	4
31	066604-000	BRAKE CYLINDER	1
	066604-010	SEAL KIT (BRAKE CYLINDER)	-
32	011934-003	FITTING 90 O RING BOSS 6MB 4MJ	4
33	063664-007	ORIFICE	1
34	066717-000	WELDMENT - CHASSIS	1
37	066774-000	WELDMENT - LADDER BRACKET	1
38	066774-001	WELDMENT - LADDER BRACKET	1
40	066325-000	HUB - FRONT	2
42	063559-006	BOLT SHOULDER 3/8 X 2	1
43	011848-009	CLEVIS PIN 5/8 X 2	1
45	066159-001	STEERING LINK WELDMENT L.H.	1
46	066190-000	BEARING - STRIP	2

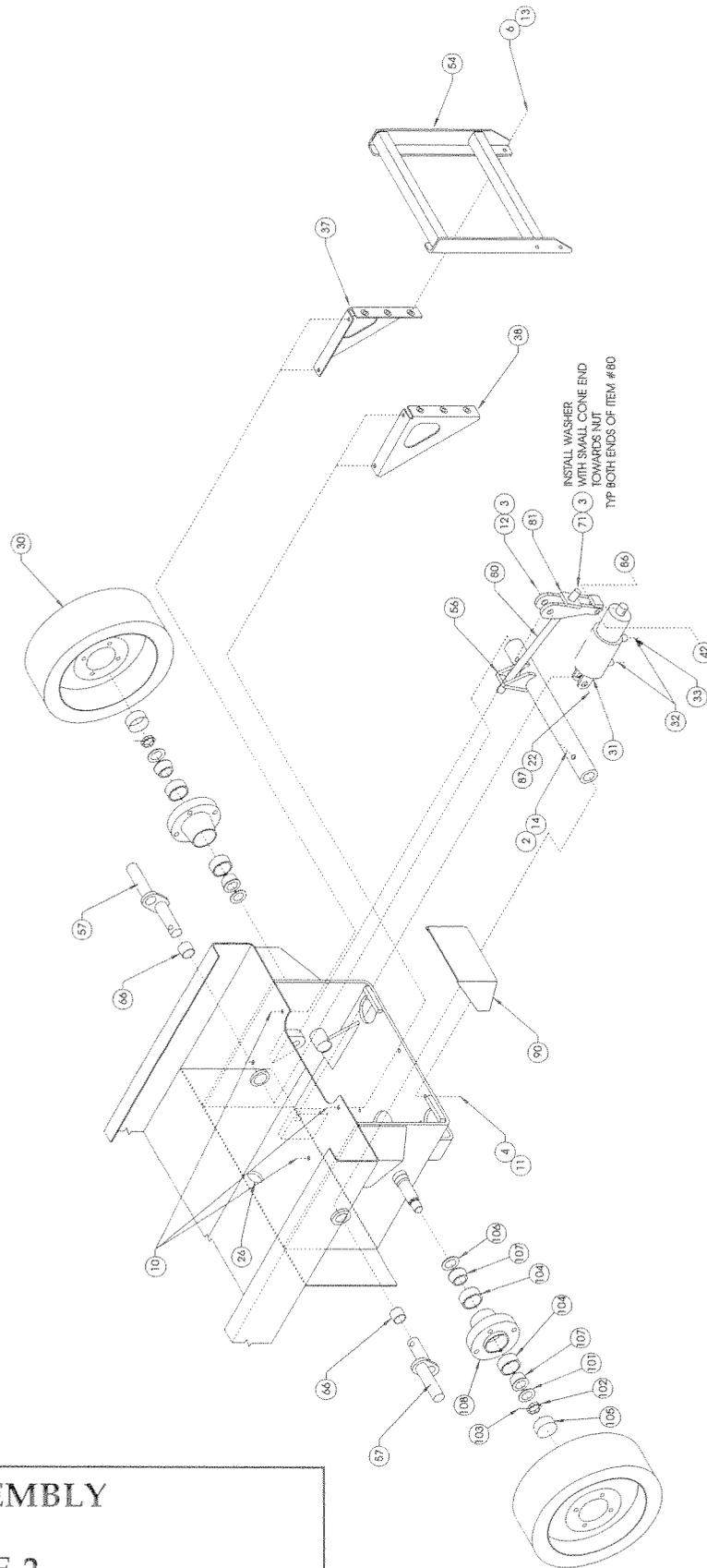
ITEM	PART	DESCRIPTION	QTY.
46	066159-001	BEARING - STRIP	2
47	026553-012	RIVET 3/16 DIA X 1 1/8 GRIP	2
49	066311-001	WELDMENT - STEERING ANGLE LH	1
50	066312-001	WELDMENT - STEERING ANGLE RH	1
51	066313-001	WELDMENT - BELL CRANK	1
53	066158-001	STEERING LINK WELDMENT R.H.	1
54	066307-000	WELDMENT - LADDER	1
56	066304-001	WELDMENT - BRAKE TUBE	1
57	066305-001	WELDMENT - BRAKE	2
66	027931-071	BEARING #AA-1512-7 (BRAKE)	2
70	014122-003	WHEEL BOLT 1/2-20 X 1	16
71	066792-001	WASHER 3/4 BELLVILLE	2
72	002186-000	WASHER 3/16 FLAT	2
73	062642-001	BEARING GARLOCK 10DU12	1
80	016759-015	ROD, BRAKE RELEASE	1
81	066728-000	WELDMENT, BRAKE ADJUSTMENT	1
84	013336-011	FITTING GREASE	4
86	011246-005	NUT HEX ESNA 5/16-18	1
87	011848-041	CLEVIS PIN 3/4 X 2	2
90	066796-000	WELDMENT, CHARGER GUARD	1
91	066737-000	PIN, BELL CRANK	1
96	062642-008	BUSHING GARLOCK 12DU08	3
97	062642-006	BUSHING 12 DU 06	2
98	011782-009	BUSHING TT 2301-4	2
99	014996-012	WASHER SAE 3/4 DIA	2
100	066702-000	SLIDE PAD, STEERING LINK	2
101	011239-016	WASHER 1 DIA FLAT ASTM	2
102	011274-016	NUT 1-14UNF SLOTTED HEX	4
103	011753-012	PIN COTTER 1/8 X 1 1/2	4
104	011776-004	CUP BEARING	4
105	005078-000	CAP DUST	2
106	005104-000	SEAL GREASE	2
107	011775-011	CONE BEARING	4
108	066773-000	HUB ASSY	2

Illustrated Parts Breakdown



CHASSIS ASSEMBLY
X20N
DRAWING 1 OF 2

Illustrated Parts Breakdown



CHASSIS ASSEMBLY
X20N
DRAWING 2 OF 2

Illustrated Parts Breakdown

Section
6.2

NOTES

**Section
6.2**

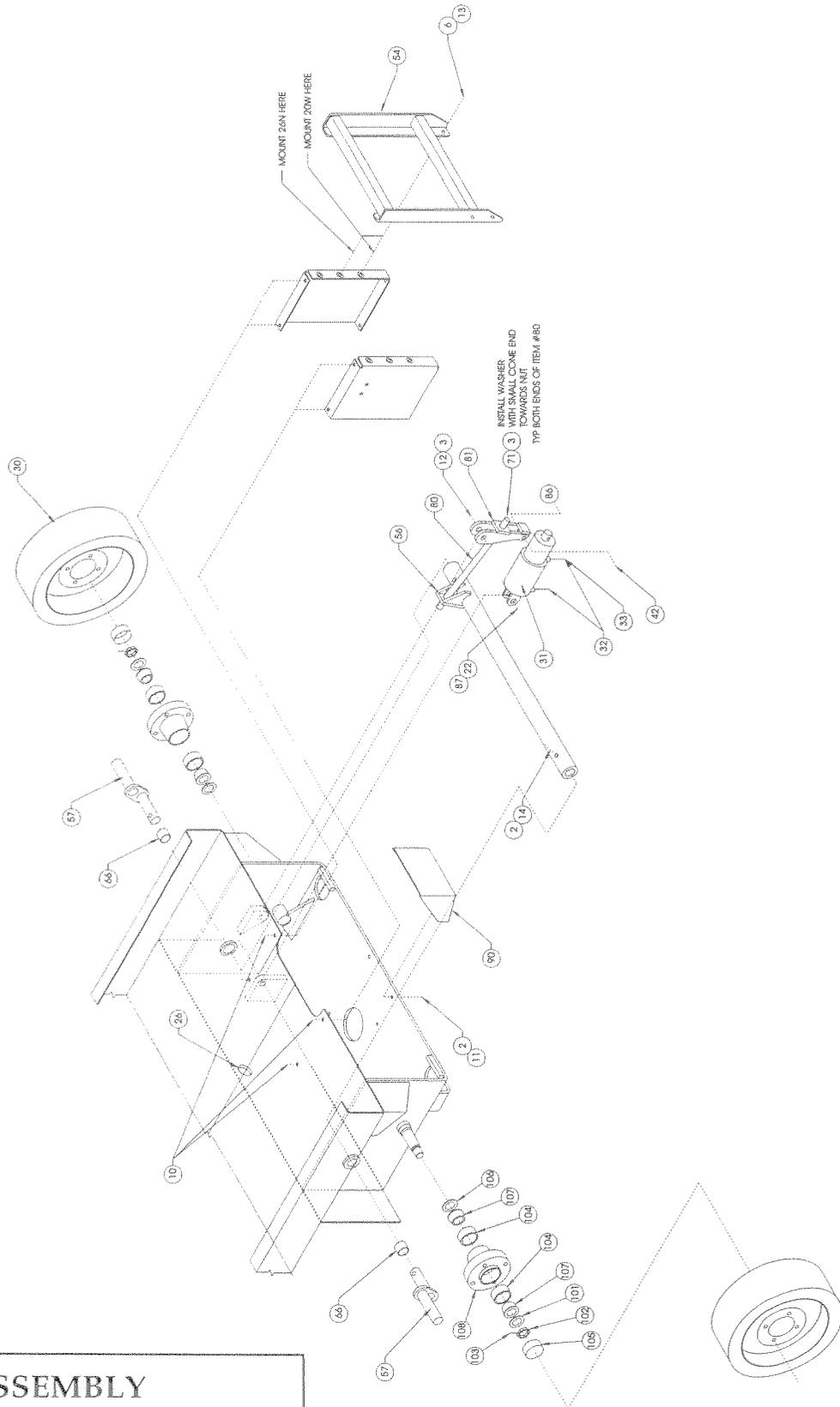
Illustrated Parts Breakdown

CHASSIS ASSEMBLY X20W/X26N 066052-001

ITEM	PART	DESCRIPTION	QTY.
1	011248-008	NUT HEX 1/2-13 UNC	8
2	011248-006	NUT HEX 3/8-16 UNC	5
3	011248-012	NUT HEX 3/4-10 UNC	3
4	011273-006	NUT JAM 3/8-16	2
6	011254-008	SCREW HHC GR5 3/8-16 UNC X 1	4
8	011254-016	SCREW HHC GR5 3/8-16 UNC X 2	1
9	011256-024	SCREW HHC GR5 1/2-13 UNC X 3	8
10	011254-012	SCREW HHC GR5 3/8-16 UNC X 1 1/2	4
11	011254-010	SCREW HHC GR5 3/8-16 UNC X 1 1/4	2
12	011258-024	SCREW HHC GR5 3/4-10 UNC X 3	1
13	011240-006	WASHER 3/8 FLAT	4
14	011287-022	SCREW SOCKET HD 3/8-16 X 2 3/4	2
16	011782-008	BEARING #TT 2301-3(STEER)	2
18	011705-016	SCREW SET 3/8-16 X 1	2
20	011934-024	FITTING	4
21	011757-007	PIN COTTER 5/8	1
22	011757-010	PIN COTTER 3/4	4
23	027931-074	BEARING #AA-2803-1 (STEERING)	4
24	062642-012	BEARING GARLOCK 12DU12	1
26	061796-099	GROMMET	FT 1.25
27	061692-099	GROMMET	FT 1.38
28	066793-000	STEERING CYLINDER	1
	066793-010	SEAL KIT (STEERING CYLINDER)	-
29	061817-001	MOTOR HYD	2
	061817-010	SEAL KIT (MOTOR)	-
30	061846-001	WHEEL & TIRE	4
31	066604-000	BRAKE CYLINDER	1
	066604-010	SEAL KIT BRAKE CYLINDER	-
32	011934-003	FITTING 90 O RING BOSS 6MB 4MJ	4
33	063664-007	ORIFICE	1
34	066750-000	WELDMENT - WIDE CHASSIS	1
37	066774-010	WELDMENT - LADDER BRACKET	1
38	066774-011	WELDMENT - LADDER BRACKET	1
40	066325-000	HUB - FRONT	2
42	063559-006	BOLT SHOULDER 3/8 X 2	1

43	011848-009	CLEVIS PIN 5/8 X 2	1
45	066152-001	STEERING LINK WELDMENT L.H.	1
46	066190-011	BEARING - STRIP	2
ITEM	PART	DESCRIPTION	QTY.
47	026553-012	RIVET 3/16 DIA X 1 1/8 GRIP	2
49	066311-001	WELDMENT - STEERING ANGLE LH	1
50	066312-001	WELDMENT - STEERING ANGLE RH	1
51	066069-002	WELDMENT - BELL CRANK	1
53	066151-001	STEERING LINK WELDMENT R.H.	1
54	066307-000	WELDMENT - LADDER	1
56	066073-001	WELDMENT - BRAKE TUBE	1
57	066305-001	WELDMENT - BRAKE	2
59	011252-028	SCREW HHC 1/4-20 X 3 1/2	2
60	066808-000	VALVE ASSY SERIES PARALLEL	1
66	027931-071	BEARING #AA-1512-7 (BRAKE)	2
70	014122-003	WHEEL BOLT 1/2-20 X 1	16
71	066792-001	WASHER 3/4 BELLVILLE	2
72	002186-000	WASHER 3/16 FLAT	
73	062642-001	BEARING GARLOCK 10DU12	1
80	016759-015	ROD, BRAKE RELEASE	1
81	066728-000	WELDMENT, BRAKE ADJUSTMENT	1
84	013336-011	FITTING GREASE	4
86	011246-005	NUT HEX ESNA 5/16-18	1
87	011848-041	CLEVIS PIN 3/4 X 2	2
90	066796-000	WELDMENT, CHARGER GUARD	1
91	066737-000	PIN, BELL CRANK	1
96	062642-008	BUSHING GARLOCK 12DU08	2
97	062642-006	BUSHING 12 DU 06	2
98	011782-009	BUSHING TT 2301-4	2
99	014996-012	WASHER SAE 3/4 DIA	2
100	066702-000	SLIDE PAD, STEERING LINK	2
101	011239-016	WASHER 1 DIA FLAT ASTM	2
102	011274-016	NUT 1-14UNF SLOTTED HEX	4
103	011753-012	PIN COTTER 1/8 X 1 1/2	4
104	011776-004	CUP BEARING	4
105	005078-000	CAP DUST	2
106	005104-000	SEAL GREASE	2
107	011775-011	CONE BEARING	4
108	066773-000	HUB ASSY	2

Illustrated Parts Breakdown



Illustrated Parts Breakdown

Section
6.2

NOTES

**Section
6.2**

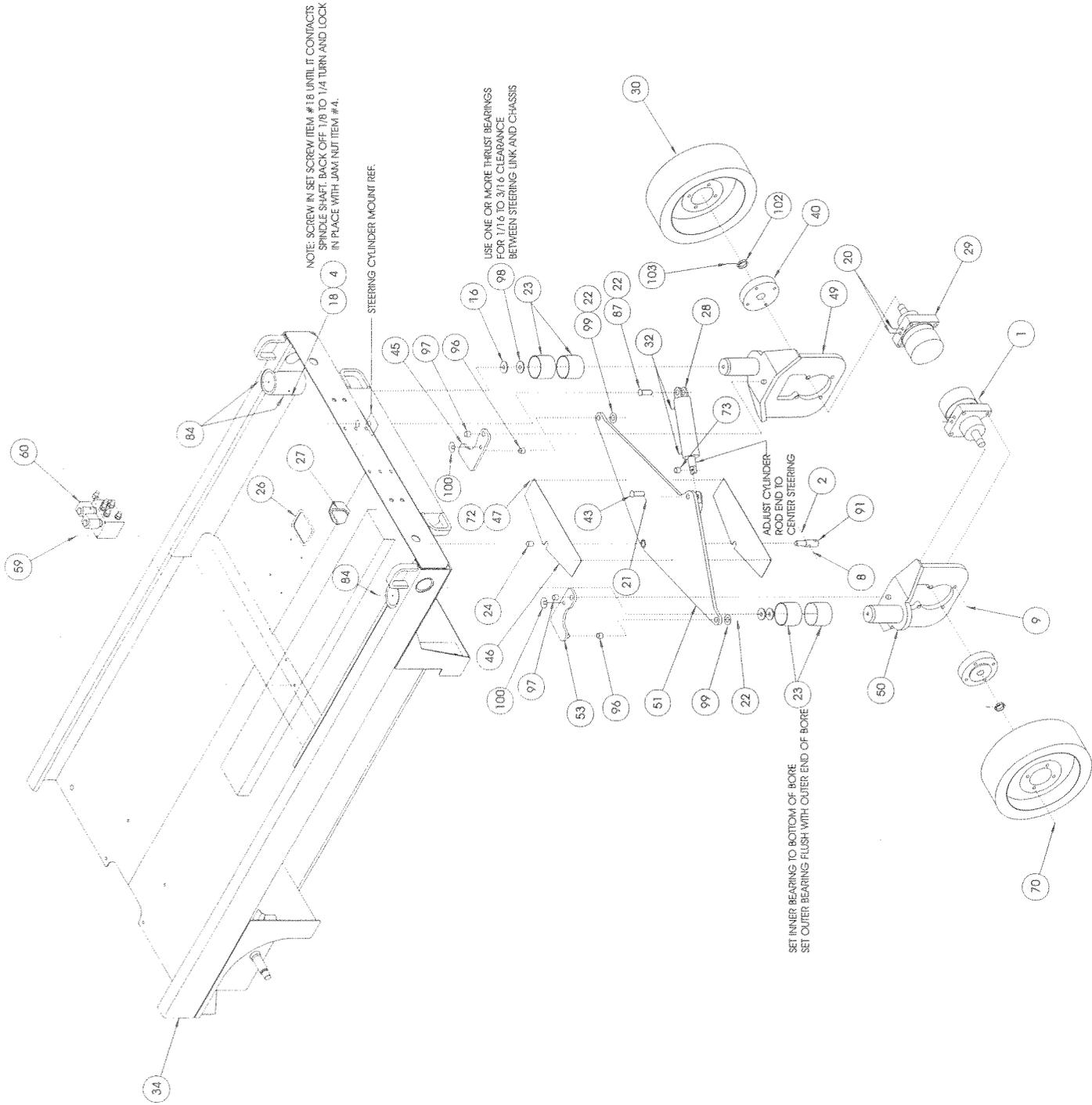
Illustrated Parts Breakdown

**CHASSIS ASSEMBLY
X32N
066852-000**

ITEM	PART	DESCRIPTION	QTY:
1	011248-008	NUT HEX 1/2-13 UNC	8
2	011248-006	NUT HEX 3/8-16 UNC	7
3	011248-012	NUT HEX 3/4-10 UNC	5
4	011273-006	NUT JAM 3/8-16	2
6	011254-008	SCREW HHC GR5 3/8-16 UNC X 1	4
8	011254-016	SCREW HHC GR5 3/8-16 UNC X 2	1
9	011256-024	SCREW HHC GR5 1/2-13 UNC X 3	8
10	011254-012	SCREW HHC GR5 3/8-16 UNC X 1 1/2	8
11	011254-010	SCREW HHC GR5 3/8-16 UNC X 1 1/4	2
12	011258-024	SCREW HHC GR5 3/4-10 UNC X 3	2
13	011240-006	WASHER 3/8 FLAT	4
14	011287-022	SCREW SOCKET HD 3/8-16 X 2 3/4	4
16	011782-008	BEARING #TT 2301-3 (STEER)	2
18	011705-016	BEARING SET 3/8-16 X 1	2
20	011934-024	FITTING	4
21	011757-007	PIN COTTER 5/8	1
22	011757-010	PIN COTTER 3/4	6
23	027931-074	BEARING #AA-2803-1 (STEERING)	4
24	062642-012	BEARING GARLOCK 12DU12	1
26	061796-099	GROMMET	FT 1.25
27	061692-099	GROMMET	FT 3.5
28	066793-000	STEERING CYLINDER	1
	066793-010	SEAL KIT (STEERING CYLINDER)	-
29	061817-001	MOTOR HYD	2
	061817-010	SEAL KIT (MOTOR)	-
30	061846-001	WHEEL & TIRE	4
31	066604-000	BRAKE CYLINDER	2
	066604-010	SEAL KIT (BRAKE CYLINDER)	-
32	011934-003	FITTING 90 O RING BOSS 6MB 4MJ	5
33	063664-007	ORIFICE	2
34	066750-001	WELDMENT - WIDE CHASSIS X31N	1
37	066774-010	WELDMENT - LADDER BRACKET	1
38	066774-011	WELDMENT - LADDER BRACKET	1
40	066325-000	HUB - FRONT	2
42	063559-006	BOLT SHOULDER 3/8 X 2	2
43	011848-009	CLEVIS PIN 5/8 X 2	1
45	066152-001	STEERING LINK WELDMENT L.H.	1
46	066190-011	BEARING - STRIP	2
47	026553-012	RIVET 3/16 DIA X 1 1/8 GRIP	2
49	066312-001	WELDMENT - STEERING ANGLE LH	1
50	066312-001	WELDMENT - STEERING ANGLE RH	1

ITEM	PART	DESCRIPTION	QTY:
51	066069-002	WELDMENT - BELL CRANK	1
53	066151-001	STEERING LINK WELDMENT R.H.	1
54	066307-010	WELDMENT - LADDER	1
56	066073-002	WELDMENT - BRAKE TUBE	1
57	066305-001	WELDMENT - BRAKE	2
59	011252-028	SCREW HHC 1/4-20 X 3 1/2	2
60	066808-000	VALVE ASSY SERIES PARALLEL	1
61	067961-000	DOWN VALVE	1
62	066817-000	MOUNT, DOWN VALVE	1
63	010147-003	FITTING NUT #6	1
64	011252-006	SCREW HHC 1/4-20 X 3/4	2
65	011248-004	NUT 1/4-20 HEX	2
66	027931-071	BEARING #AA-1512-7 (BRAKE)	2
68	020733-002	FITTING TEE 6FJX-6MJ-6MJ	2
70	014122-003	WHEEL BOLT 1/2-20 X 1	16
71	066792-001	WASHER 3/4 BELLVILLE	4
72	002186-000	WASHER 3/16 FLAT	1
73	062642-001	BEARING GARLOCK 10DU12	1
80	016759-015	ROD, BRAKE RELEASE	2
81	066728-000	WELDMENT, BRAKE ADJUSTMENT	2
84	013336-011	FITTING GREASE	4
86	011246-005	NUT HEX ESNA 5/16-18	2
87	011848-041	CLEVIS PIN 3/4 X 2	4
90	066796-000	WELDMENT, CHARGER GUARD	1
91	066737-000	PIN, BELL CRANK	1
96	062642-008	BUSHING GARLOCK 12DU08	2
97	062642-006	BUSHING 12 DU 06	2
98	011782-009	BUSHING TT 2301-4	2
99	014996-012	WASHER SAE 3/4 DIA	2
100	066702-000	SLIDE PAD, STEERING LINK	2
101	011239-016	WASHER 1 DIA FLAT ASTM	2
102	011274-016	NUT 1-14UNF SLOTTED HEX	4
103	011753-012	PIN COTTER 1/8 X 1 1/2	4
104	011776-004	CUP BEARING	4
105	005078-000	CAP DUST	2
106	005104-000	SEAL GREASE	2
107	011775-011	CONE BEARING	4
108	066773-000	HUB ASSY	2

Illustrated Parts Breakdown



CHASSIS ASSEMBLY
X32N
DRAWING 1 OF 2

Illustrated Parts Breakdown

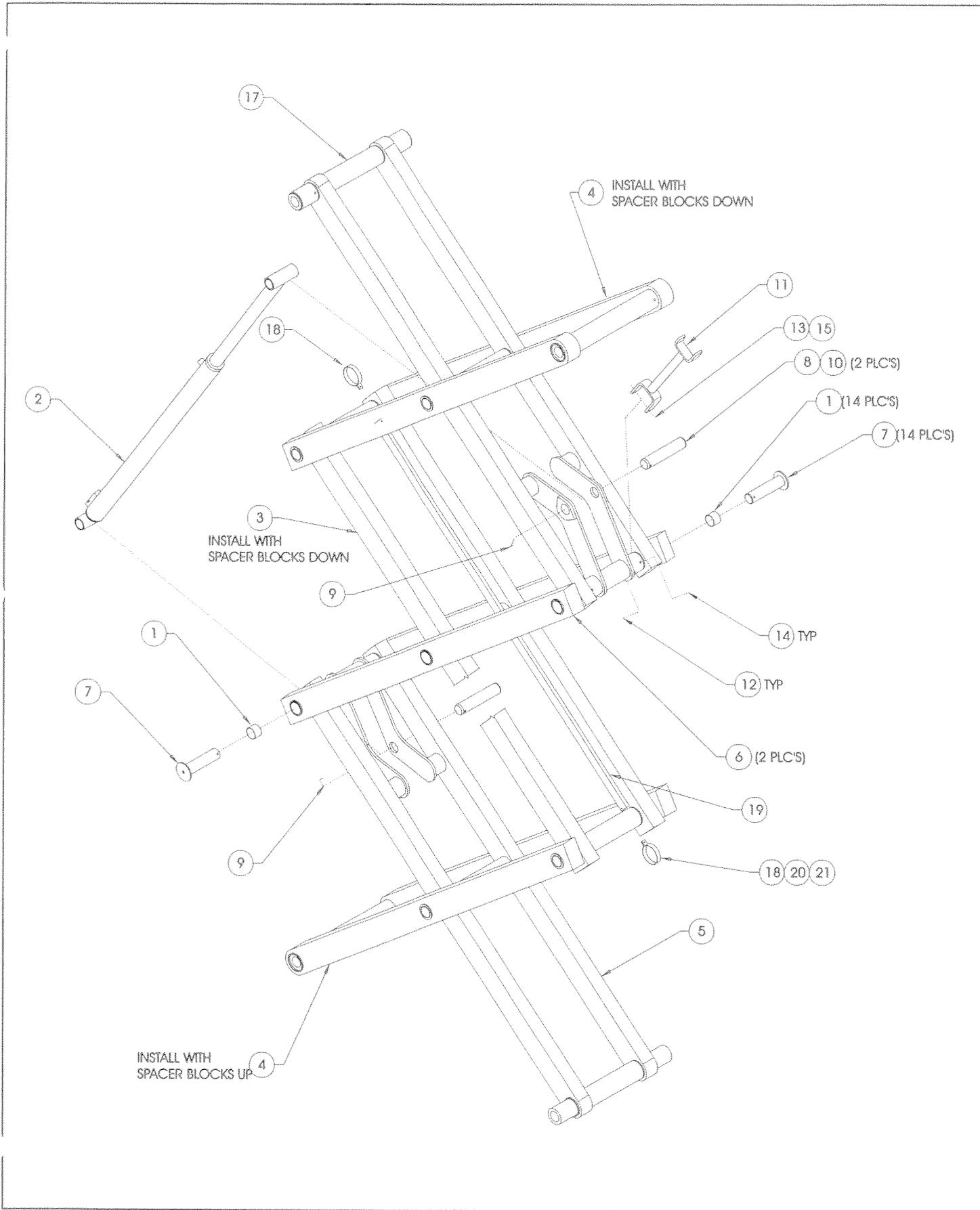
Section
6.2

NOTES

SCISSOR ASSEMBLY
X20N
066003-000

ITEM	PART	DESCRIPTION	QTY.
1	066183-000	BEARING, OILITE #EP3236-24	14
2	066168-000	LIFT CYLINDER	1
	066168-010	SEAL KIT (LIFT CYLINDER)	-
3	066201-000	WELDMENT, MID INNER TUBE	1
4	066202-000	WELDMENT, TOP & BOTTOM OUTER	2
5	066200-001	WELDMENT, BOTTOM INNER 1/4	1
6	066211-000	WELDMENT, MID OUTER	2
7	066210-000	WELDMENT, PIVOT PIN	14
8	066224-000	PIN, LIFT CYLINDER	2
9	066225-000	PIN, SHAFT LOCKING	2
10	011764-032	RET RING TRUARC #5100-200	2
11	066214-000	WELDMENT, SAFETY STAND	1
12	011248-005	NUT HEX 5/16-18	14
13	011248-006	NUT HEX 3/8-16	1
14	015936-023	SCREW SHOULDER 3/8-16 X 3 1/2	14
15	011254-044	SCREW HHC GR5 3/8-16 X 5 1/2	1
17	066203-000	WELDMENT, TOP INNER 3/16	1
18	066199-000	PIPE RING	2
19	066226-000	CHANNEL, CABLE	1
20	011248-004	NUT HEX 1/4-20	2
21	011252-006	SCREW HHC GR5 1/4-20 X 3/4	2

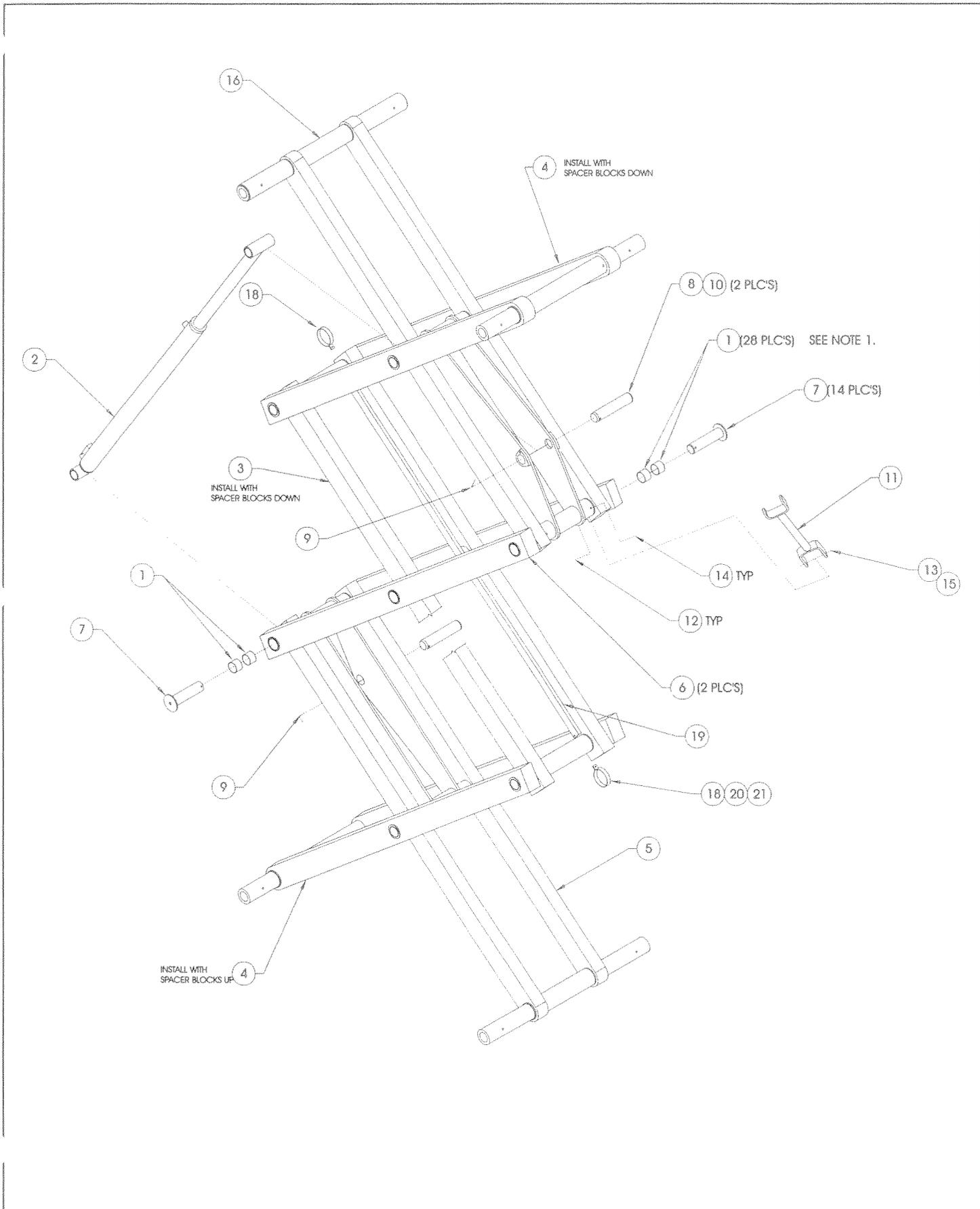
Illustrated Parts Breakdown



SCISSOR ASSEMBLY
X20W
066053-000

ITEM	PART	DESCRIPTION	QTY.
1	066183-000	BEARING, OILITE #EP3236-24	28
2	066601-000	LIFT CYLINDER	1
	066601-010	SEAL KIT (LIFT CYLINDER)	-
3	066201-C00	WELDMENT, MID INNER TUBE 1/8	1
4	066240-000	WELDMENT, TOP & BOTTOM OUTER 1/8	2
5	066238-013	WELDMENT, BOTTOM INNER 3/16	1
6	066211-003	WELDMENT, MID OUTER 1/8	2
7	066210-000	WELDMENT, PIVOT PIN	14
8	066224-000	PIN, LIFT CYLINDER	2
9	066225-000	PIN, SHAFT LOCKING	2
10	011764-032	RET RING TRUARC #5100-200	2
11	066214-000	WELDMENT, SAFETY STAND	1
12	011248-005	NUT HEX 5/16-18	14
13	011248-006	NUT HEX 3/8-16	1
14	015936-023	SCREW SHOULDER 3/8-16 X 3 1/2	14
15	011254-044	SCREW HHC GR5 3/8-16 X 5-1/2	1
16	066238-003	WELDMENT, TOP ARM	1
18	066199-000	PIPE RING	2
19	066226-000	CHANNEL, CABLE	1
20	011248-004	NUT HEX 1/4-20	2
21	011252-006	SCREW HHC GR5 1/4-20 X 3/4	2

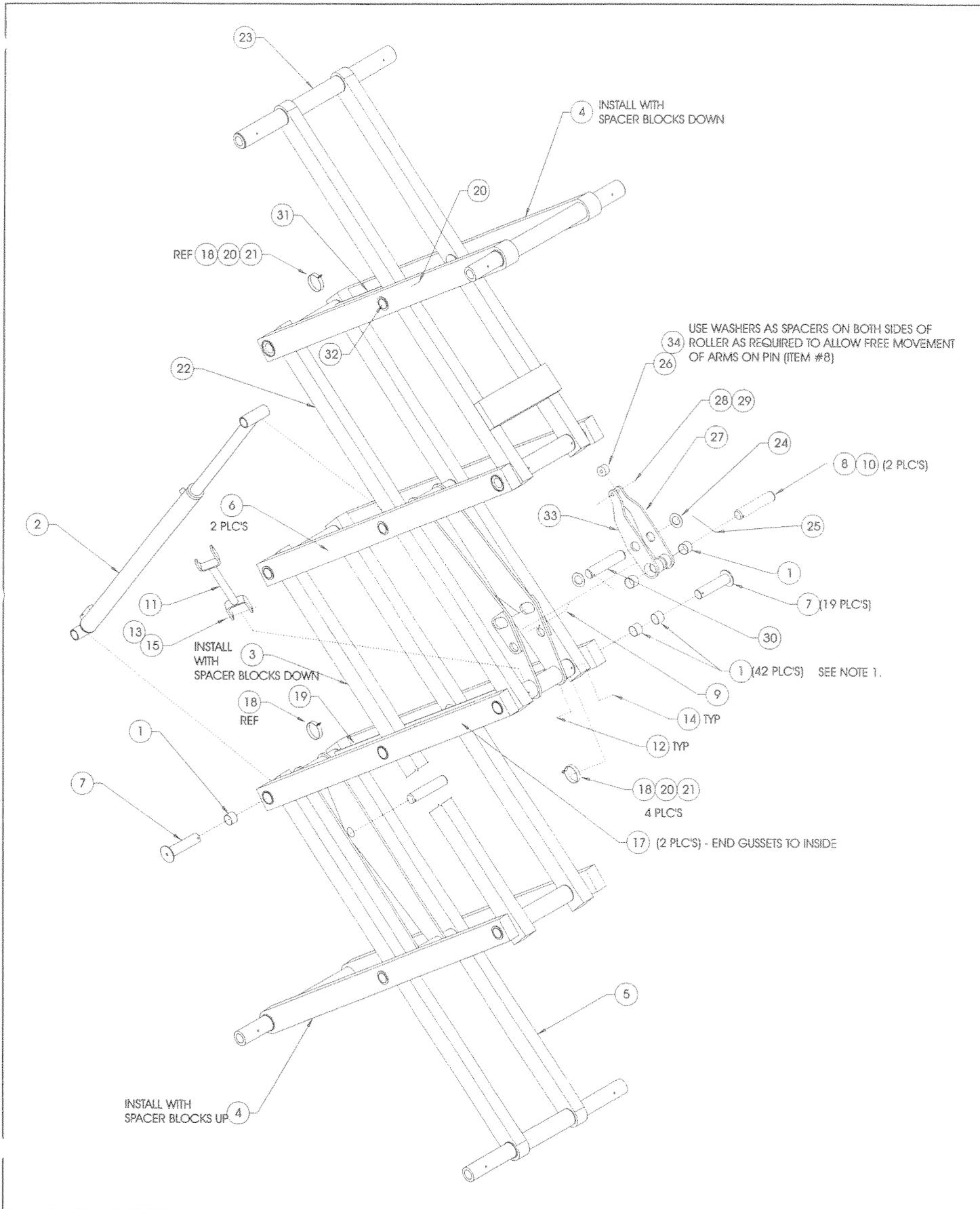
Illustrated Parts Breakdown



SCISSOR ASSEMBLY
X26N
066103-000

ITEM	PART	DESCRIPTION	QTY.
1	066183-000	BEARING, OILITE #EP3236-24	42
2	066601-000	LIFT CYLINDER	1
	066601-010	SEAL KIT (LIFT CYLINDER)	-
3	066201-001	WELDMENT, MID INNER TUBE 1/8	1
4	066240-000	WELDMENT, TOP & BOTTOM OUTER 1/8	2
5	066238-013	WELDMENT, BOTTOM INNER 3/16	1
6	066211-002	WELDMENT, MID OUTER 1/4	2
7	066210-000	WELDMENT, PIVOT PIN	19
8	066224-000	PIN, LIFT CYLINDER	2
9	066225-000	PIN, SHAFT LOCKING	2
10	011764-032	RET RING TRUARC #5100-200	2
11	066214-000	WELDMENT, SAFETY STAND	1
12	011248-005	NUT HEX 5/16-18	20
13	011248-006	NUT HEX 3/8-16	1
14	015936-023	SCREW SHOULDER 3/8-16 X 3 1/2	20
15	011254-044	SCREW HHC GR5 3/8-16 X 5 1/2	1
17	066211-001	WELDMENT, MID OUTER ARM 1/8	2
18	066199-000	PIPE RING	4
19	066226-000	CHANNEL, CABLE	1
20	011248-004	NUT HEX 1/4-20	4
21	011252-008	SCREW HHC GR5 1/4-20 X 1	3
22	066120-000	WELDMENT, MID INNER ARM 3/16	1
23	066121-000	WELDMENT, TOP INNER ARM 1/8	1
24	011239-002	WASHER 2 DIA ASTM	2
25	011740-024	ROLL PIN 1/2 X 3	2
26	065367-001	BEARING TORRINGTON #YCRS32	1
27	066574-001	WELDMENT, TORSION ARM L.H.	1
28	011257-028	SCREW HHC 5/8-11 X 3 1/2	1
29	011246-010	NUT 5/8-11 THIN HEX	1
30	066224-001	PIN, LIFT CYLINDER	1
31	066226-001	CHANNEL, CABLE	1
32	066210-002	WELDMENT, PIVOT PIN	1
33	066574-002	WELDMENT, TORSION ARM R.H.	1
34	011239-010	WASHER, FLAT 5/8 ASTM	4

Illustrated Parts Breakdown



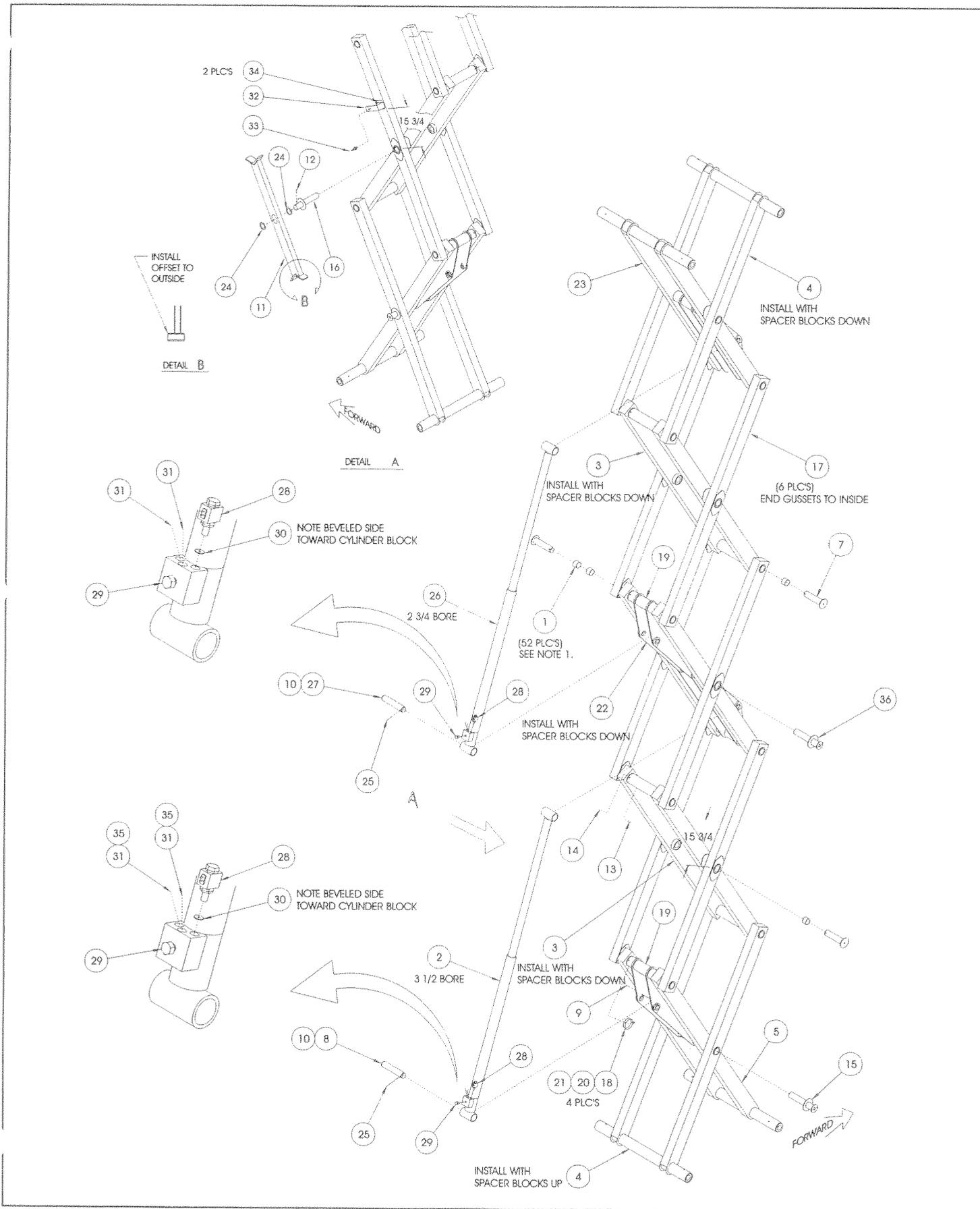
SCISSOR ASSEMBLY

X32N

066853-000

ITEM	PART	DESCRIPTION	QTY.
1	066183-000	BEARING, OILITE #EP3236-24	52
2	066601-000	LIFT CYLINDER	1
	066601-000	SEAL KIT (LIFT CYLINDER)	-
3	066201-001	WELDMENT, MID INNER TUBE 1/8	2
4	066240-000	WELDMENT, TOP & BOTTOM OUTER 1/8	2
5	066238-013	WELDMENT, BOTTOM INNER 3/16	1
7	066210-000	WELDMENT, PIVOT PIN	23
8	066224-000	PIN, LIFT CYLINDER	2
9	066225-000	PIN, SHAFT LOCKING	4
10	011764-032	RET RING TRUARC #5100-200	4
11	067591-000	WELDMENT, SAFETY STAND	1
12	011757-028	COTTER PIN 3/8 DIA X 3-1/2	1
13	011248-005	NUT HEX 5/16-18	26
14	015936-023	SCREW SHOULDER 3/8 X 3 1/2	26
15	066210-010	WELDMENT, PIVOT PIN	1
16	066210-011	WELDMENT, PIVOT PIN	1
17	066211-001	WELDMENT, MID OUTER ARM 1/8	6
18	066199-000	PIPE RING	4
19	066226-000	CHANNEL, CABLE	2
20	011248-004	NUT HEX 1/4-20	4
21	011252-008	SCREW HHC GR5 1/4-20 X 1	4
22	066120-010	WELDMENT, MID INNER ARM 3/16	1
23	066121-010	WELDMENT, TOP INNER ARM 1/8	1
24	011786-017	MACHINERY BUSHING 2" ID X 14GA	2
25	011740-024	ROLL PIN 1/2 X 3	2
26	066168-000	LIFT CYLINDER	1
27	066224-010	PIN LIFT CYLINDER	2
28	063973-001	VALVE SOLENOID	2
29	066811-000	FITTING, VELOCITY FUSE	2
30	063664-008	ORIFICE HYDRFORCE #7051070	2
31	011941-005	FITTING STR 6MB-6MJ	4
32	066814-000	WELDMENT, SCISSOR BRACE	1
33	003570-001	RETAINING RING	1
34	026554-002	RIVET 1/4 POP	2
35	011937-003	FITTING 6FJX-6MJ 90	2
36	066210-012	WELDMENT, PIVOT PIN	1

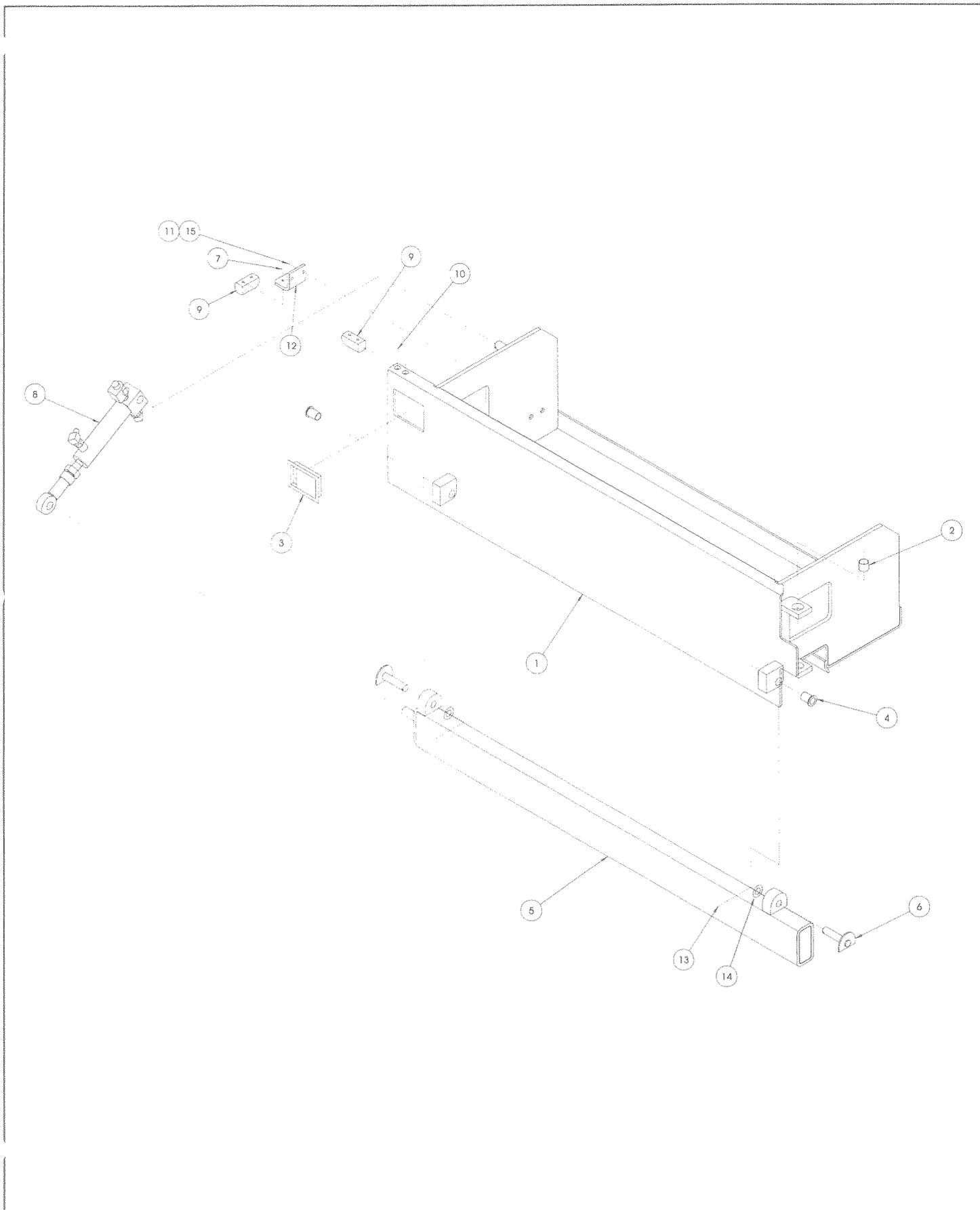
Illustrated Parts Breakdown



**Section
6.2****Illustrated Parts Breakdown****POWER MODULE ASSEMBLY
X20N/X20W/X26N/X32N
066009-010**

ITEM	PART	DESCRIPTION	QTY.
1	066310-010	POWER MODULE WELDMENT	1
2	027931-016	BUSHING OILITE #AA-1049-14	2
3	062791-002	LATCH COVER	1
4	011781-011	BUSHING OILITE #FF-703-1	2
5	066735-000	WELDMENT, POT HOLE TUBE	1
6	066753-000	WELDMENT, PIVOT PIN	2
7	011252-008	SCREW HHC 1/4-20 X 1	2
8	066803-000	CYLINDER ASSEMBLY	1
	066803-010	SEAL KIT (CYLINDER)	-
9	066192-000	BLOCK, COVER	2
10	011828-008	SCREW FLAT HD SOC 1/4-20 X 1	2
11	011248-006	NUT ESNA 3/8-16	2
12	066342-000	ANGLE	1
13	011757-007	PIN COTTER #REU 30	2
14	064350-010	SHIM 5/8ID X 1 OD X .031 STL	2
15	011240-006	WASHER 3/8 STD FLAT	2

Illustrated Parts Breakdown

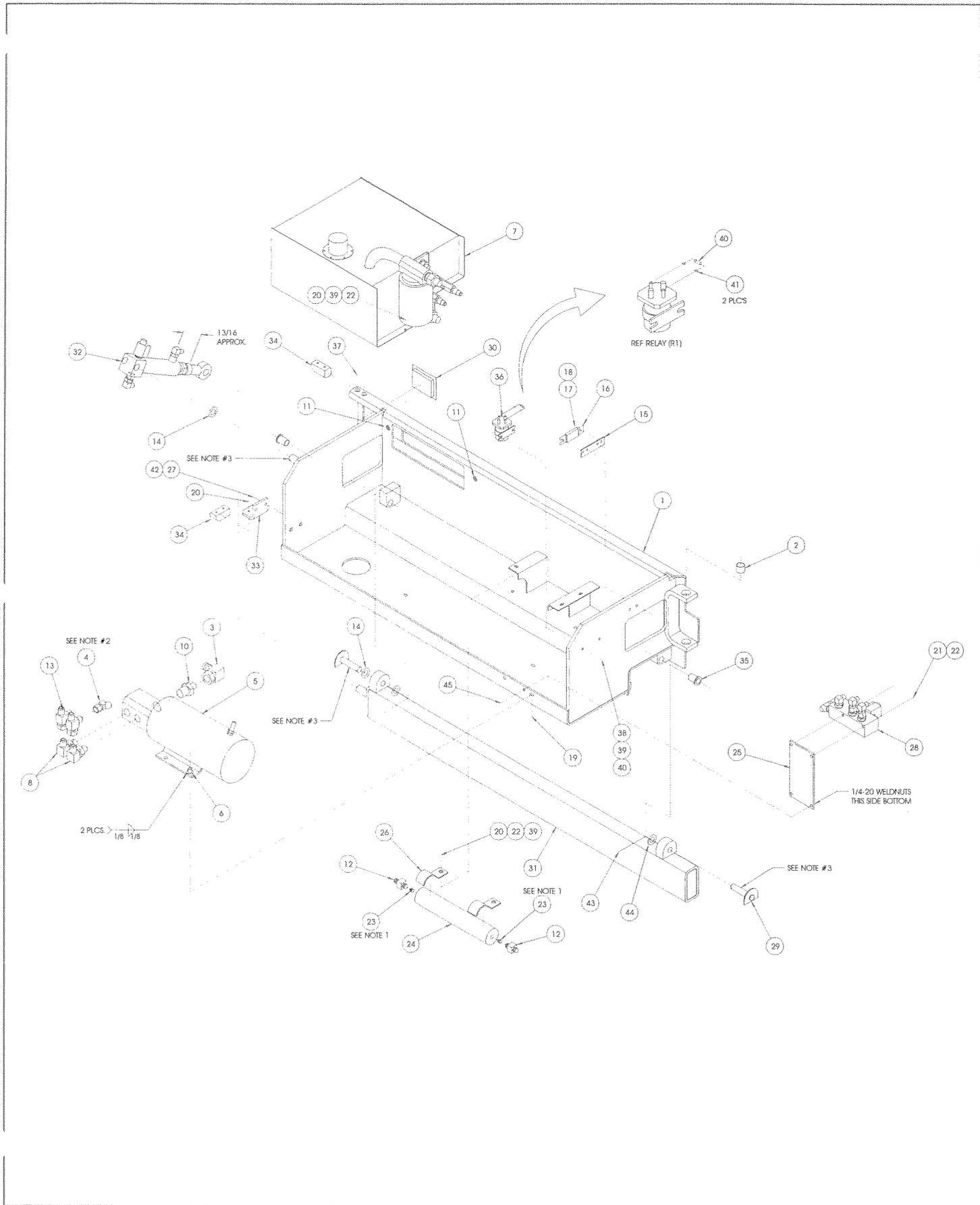


Illustrated Parts Breakdown

CONTROL MODULE ASSEMBLY
X20N/X20W/X26N
066008-010

ITEM	PART	DESCRIPTION	QTY.
1	066309-010	CONTROL MODULE WELDMENT	1
2	027931-016	BUSHING OILITE #AA-1049-14	2
3	011937-007	90° 12FIX-12MJ	1
4	011932-003	FITTING 45° 6FIX-6MJ	1
5	015797-000	POWER UNIT	1
	015797-001	PUMP	-
	015797-003	SEAL KIT (PUMP)	-
	015797-004	MOTOR	-
	015797-005	BRUSH SET	-
	015797-006	SPRING (BRUSH)	-
6	066184-004	WELD NUT 5/16-18	2
7	066780-000	HYDRAULIC RESERVOIR ASSY	1
8	011934-004	FITTING ELBOW 6MBH-6MJ	2
9	020733-002	FITTING TEE 6FIX-6MJ	2
10	011941-012	FITTING STR 8MB-12MJ	1
11	014252-006	NUTSERT 3/8-16	2
12	011941-004	FITTING STR 6MB-4MJ	2
13	011937-003	FITTING 90° 6FIX-6MJ	1
14	014996-012	WASHER 3/4	2
15	010149-000	FUSE BLOCK	1
16	010148-001	FUSE 175 AMP	1
17	013965-010	SCREW HEX HD #10-24 X 1 1/4	2
18	011248-003	NUT HEX #10-24	2
19	011253-008	SCREW HHC GR5 5/16-18 X 1	2
20	011252-008	SCREW HHC GR5 1/4-20 X 1	7
21	011252-022	SCREW HHC GR5 1/4-20 X 2 3/4	2
22	011248-004	NUT, 1/4-20 ESNA	7
23	065556-001	ORIFICE .046	2
24	065396-000	CUSHION CYLINDER	1
25	066806-000	WELDMENT, VALVE MOUNT	1
26	013521-012	CLAMP 1 1/2 CONDUIT	2
27	011248-006	NUT ESNA 3/8-16	2
28	066802-000	VALVE ASSEMBLY	1
29	066735-000	WELDMENT, POT HOLE TUBE	1
30	062791-002	LATCH COVER	1
31	066753-000	WELDMENT, PIVOT PIN	2
32	066803-000	CYLINDER ASSEMBLY	1
33	066342-000	ANGLE	1
34	066192-000	BLOCK, COVER	2
35	011781-011	BUSHING OILITE #FF-703-1	2
36	010122-001	SOLENOID 24V SPDT	1
37	011828-008	SCREW FLAT HD SOC 1/4-20 X 1	2
38	011252-010	SCREW HHC 1/4-20 X 1 1/4	2
39	011240-004	WASHER 1/4 FLAT	7
40	015747-002	DIODE 1 TO 1 1/2 AMP	1
41	029610-002	TERM FORK 14 16 AWG #8	2
42	011240-006	WASHER 3/8 STD FLAT	2
43	011757-007	PIN COTTER #REU 30	2
44	064350-010	SHIM 5/8ID X 1 OD X .031 STL	2
45	011252-006	SCREW HHC 1/4-20 X 3/4	2

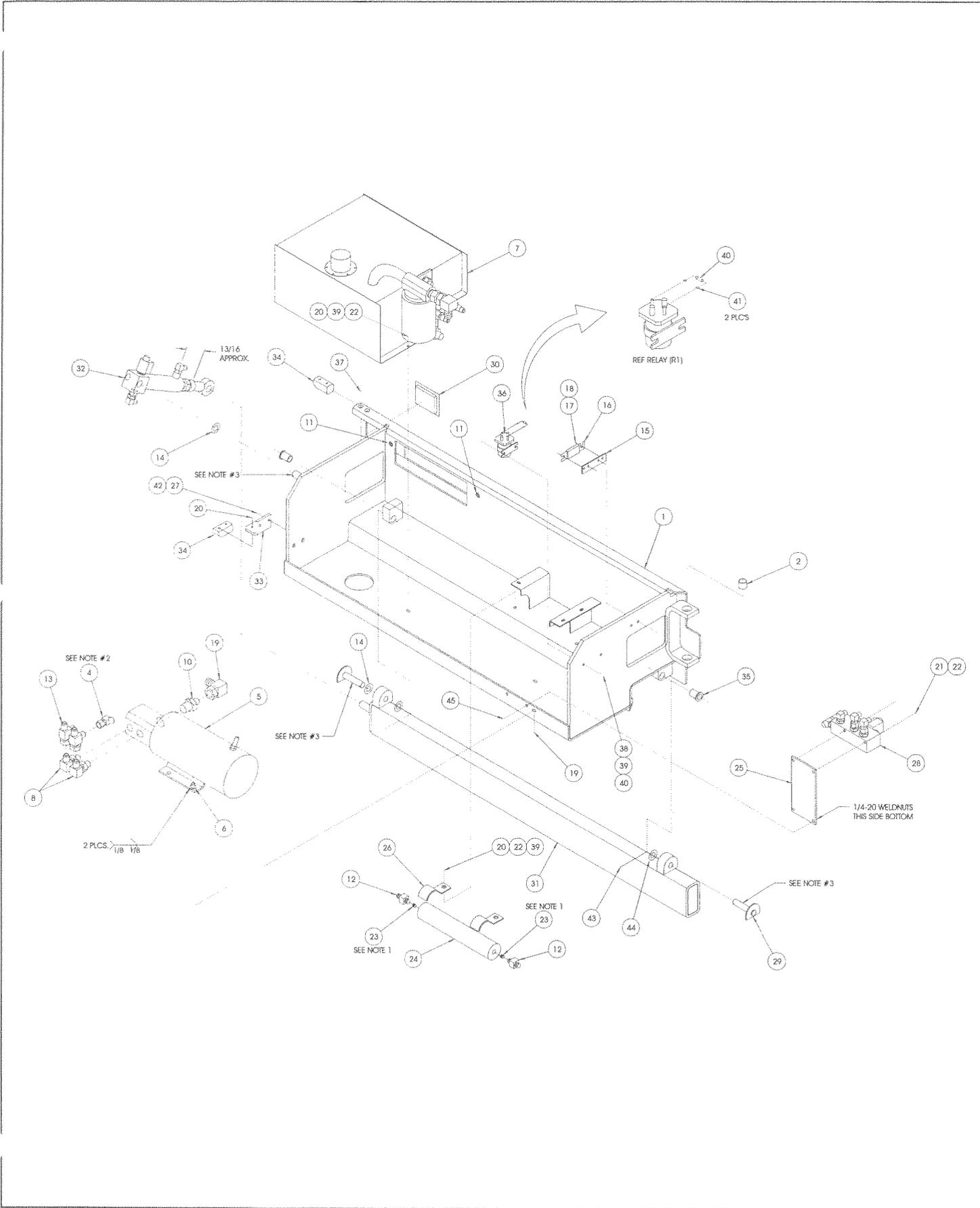
Illustrated Parts Breakdown



CONTROL MODULE ASSEMBLY
X32N
066008-012

ITEM	PART	DESCRIPTION	QTY.
1	066309-010	CONTROL MODULE WELDMENT	1
1	066309-010	CONTROL MODULE WELDMENT	1
2	027931-016	BUSHING OILITE #AA-1049-14	2
4	011932-003	FITTING 45° 6FJX-6MJ	1
5	015797-000	POWER UNIT	1
6	066184-004	WELD NUT 5/16-18	2
7	066780-010	HYDRAULIC RESERVOIR ASSY X32N	1
8	011934-004	FITTING ELBOW 6MBH-6MJ	2
9	020733-002	FITTING TEE 6FJX-6MJ	2
10	011941-012	FITTING STR 8MB-12MJ	1
11	014252-006	NUTSERT 3/8-16	2
12	011941-004	FITTING STR 6MB-4MJ	2
13	011937-003	FITTING 90° 6FJX-6MJ	1
14	014996-012	WASHER 3/4	1
15	010149-000	FUSE BLOCK	1
16	010148-001	FUSE 175 AMP	1
17	013965-010	SCREW HEX HD #10-24 X 1 1/4	2
18	011248-003	NUT HEX #10-24	2
19	011937-007	90° 12FJX-12MJ	1
20	011252-008	SCREW HHC GR5 1/4-20 X 1	7
21	011252-022	SCREW HHC GR5 1/4-20 X 2 3/4	2
22	011248-004	NUT, 1/4-20 ESNA	7
23	065556-001	ORIFICE .046	2
24	065396-000	CUSHION CYLINDER	1
25	066806-000	WELDMENT, VALVE MOUNT	1
26	013521-012	CLAMP 1 1/2 CONDUIT	2
27	011248-006	NUT ESNA 3/8-16	2
28	066802-000	VALVE ASSEMBLY	1
29	066735-000	WELDMENT, POT HOLE TUBE	1
30	062791-002	LATCH COVER	1
31	066753-000	WELDMENT, PIVOT PIN	2
32	066803-000	CYLINDER ASSEMBLY	1
33	066342-000	ANGLE	1
34	066192-000	BLOCK, COVER	2
35	011781-011	BUSHING OILITE #FF-703-1	2
36	010122-001	SOLENOID 24V SPDT	1
37	011828-008	SCREW FLAT HD SOC 1/4-20 X 1	2
38	011252-010	SCREW HHC 1/4-20 X 1 1/4	2
39	011240-004	WASHER 1/4 FLAT	7
40	015747-002	DIODE 1 TO 1 1/2 AMP	1
41	029610-002	TERM FORK 14 16 AWG #8	2
42	011240-006	WASHER 3/8 STD FLAT	2
43	011757-007	PIN COTTER #REU 30	2
44	064350-010	SHIM 5/8ID X 1 OD X .031 STL	2
45	011252-006	SCREW HHC 1/4-20 X 3/4	2

Illustrated Parts Breakdown



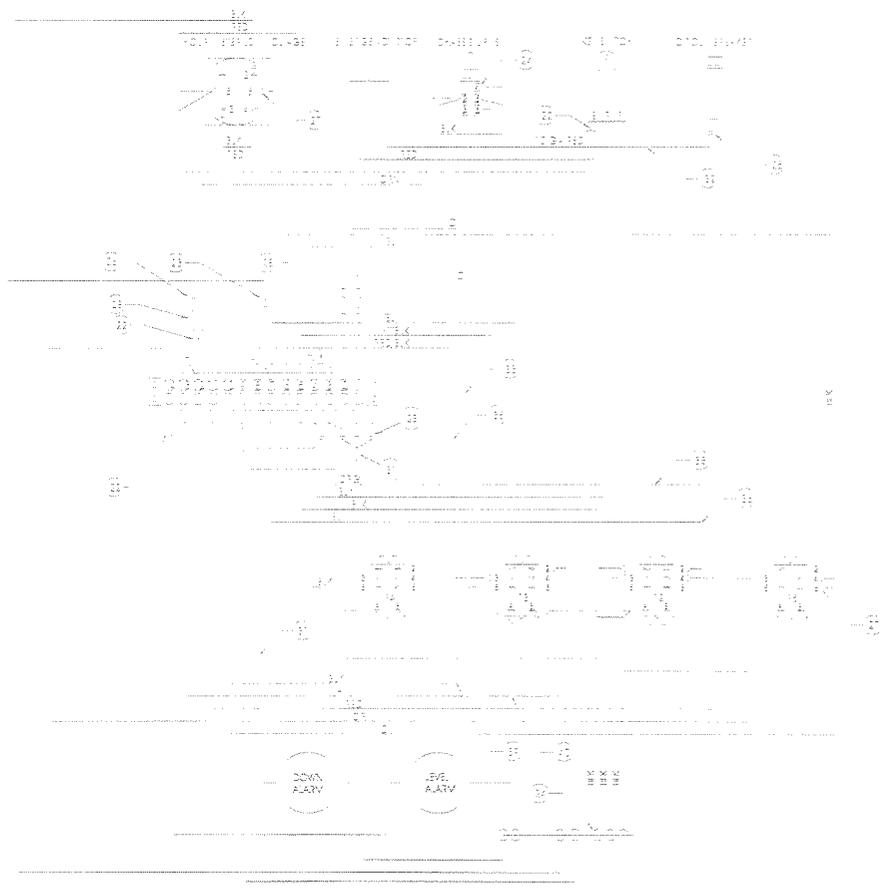
Illustrated Parts Breakdown

LOWER CONTROL BOX ASSEMBLY X20N/X20W/X26N/X32N 066014-010

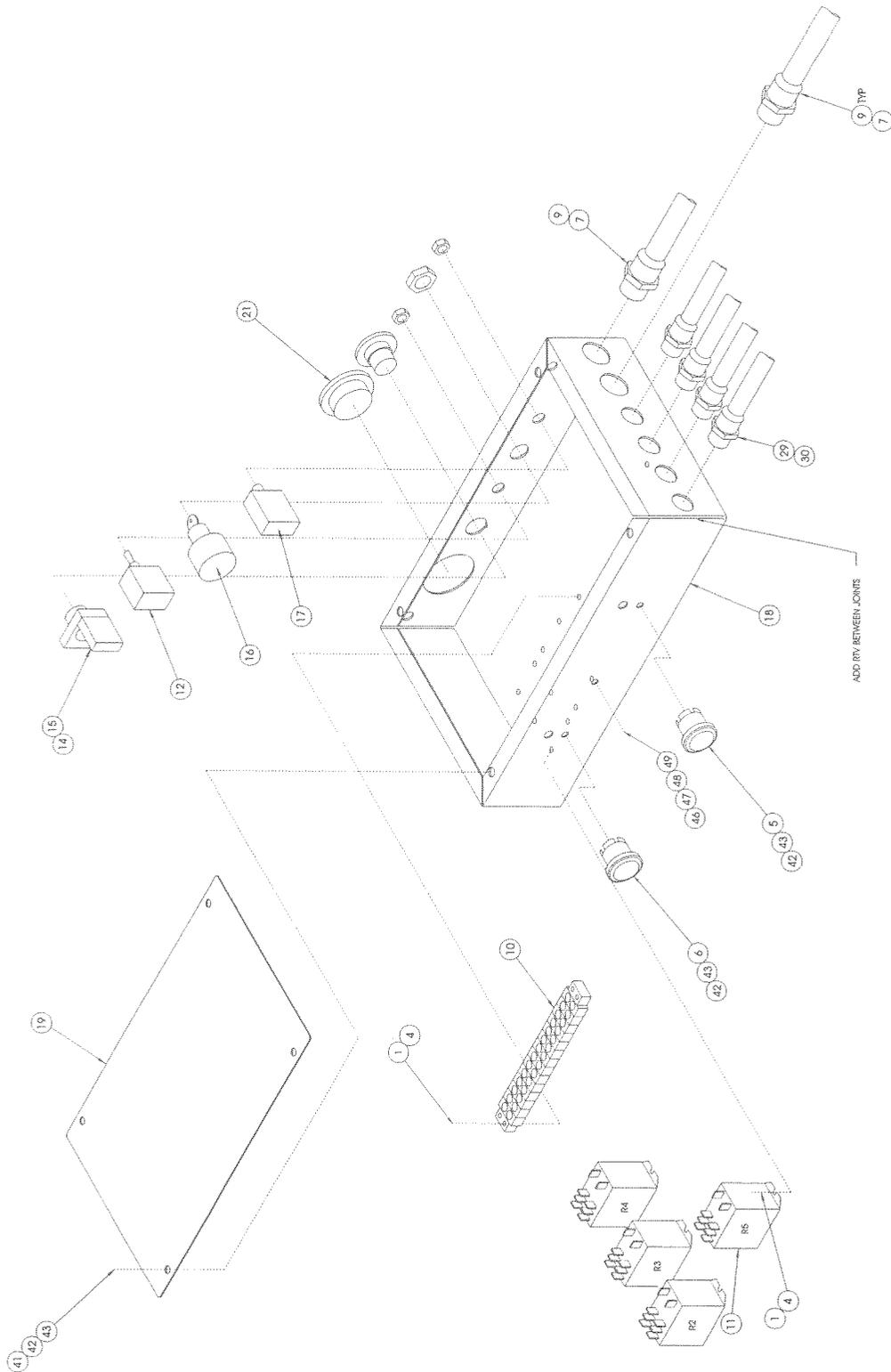
ITEM	PART	DESCRIPTION	QTY.
1	011715-004	SCREW 6-32 UNC MACH RD HD X 1/2	6
3	011826-004	SCREW 10-32 UNC MACH RD HD X 1/2	REF
4	014258-000	NUTSERT 6-32 UNC	10
5	066807-001	HORN / TWO TONE	1
6	066807-003	HORN / MOTION ALARM	1
7	029939-003	LOCK NUT	2
9	029925-010	CONN CABLE	2
10	029928-004	TEREMINAL BLOCK	1
11	063951-002	RELAY 24 VDC	4
12	012798-001	TOGGLE SWITCH	1
14	066805-006	SWITCH PUSH BUTTON	1
15	066805-011	CONTACT BLOCK N.C.	1
16	010155-000	KEYSWITCH	1
17	029868-007	CIRCUIT BRAKER	1
18	066755-000	WELDMENT, LOWER CONTROL BOX	1
19	066756-000	PANEL, COVER	1
21	029959-000	HOUR METER LOW / VOLTAGE	1
22	029610-002	CONN FORK 14-16 GA #8	15
23	015747-002	DIODE 1 TO 1 1/2 AMP	1
24	029601-013	CONN RING 14-16 GA #10	9
25	029931-005	CONN FM PUSH 12-10 .25	1
26	029620-002	CONN BUTT 16-14	3
27	029615-002	CONN PUSH 14-16 GA .187	18

ITEM	PART	DESCRIPTION	QTY.
28	029825-002	DIODE	11
29	029925-000	CONN CABLE	4
30	029939-002	LOCK NUT	4
31	029620-003	CONN BUTT 12-10	4
32	029480-099	WIRE 10 AWG RED	FT 1
33	005487-099	WIRE 16 AWG VIO	FT 1
34	029479-099	WIRE 16 AWG WHT/BLK	FT 1
35	029478-099	WIRE 16 AWG RED/BLK	FT .5
36	029456-099	WIRE 16 AWG YEL FT	1
37	029454-099	WIRE 16 AWG RED FT	1
38	029453-099	WIRE 16 AWG ORG FT	1
39	029452-099	WIRE 16 AWG BLK	FT 1.5
40	029451-099	WIRE 16 AWG WHT	FT .5
41	014252-004	NUTSERT 1/4-20	4
42	011252-004	SCREW HHC 1/4-20 X 1/2 LG	6
43	011240-004	WASHER 1/4 FLAT	6
44	011240-003	WASHER #10 FLAT	4
46	011248-003	NUT #10-24 UNC ESNA	1
47	011250-003	NUT #10-24 UNC HEX	1
48	013949-003	WASHER #10 STAR	1
49	013965-012	SCREW MACH #10-24 X 1 1/2	1

LOWER CONTROL BOX ASSEMBLY X20N/X20W/X26N/X32N DRAWING 1 OF 2



Illustrated Parts Breakdown



LOWER CONTROL
BOX ASSEMBLY
X20N/X20W/X26N/X32N
DRAWING 2 OF 2

Section 6.2

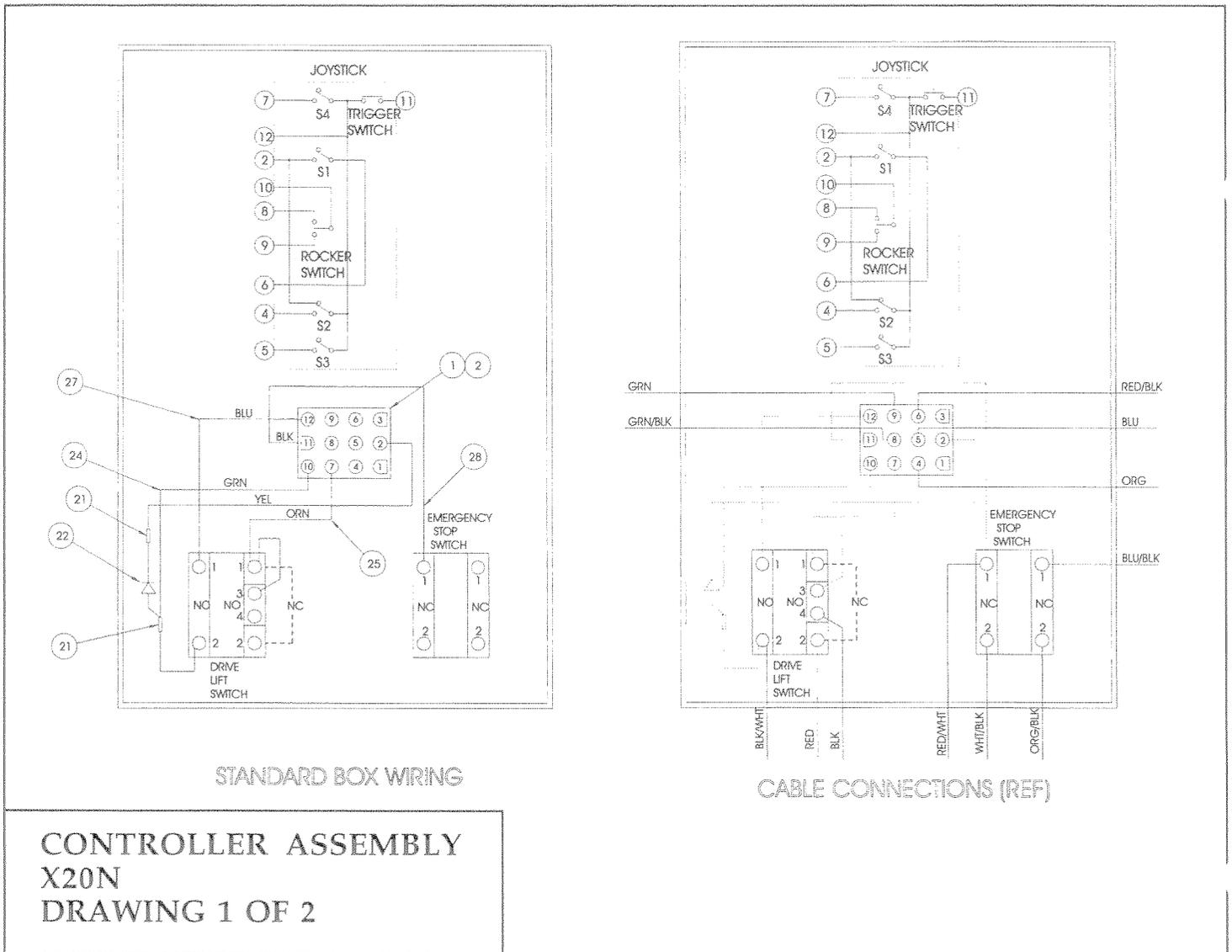
Illustrated Parts Breakdown

CONTROLLER ASSEMBLY X20N 066013-010

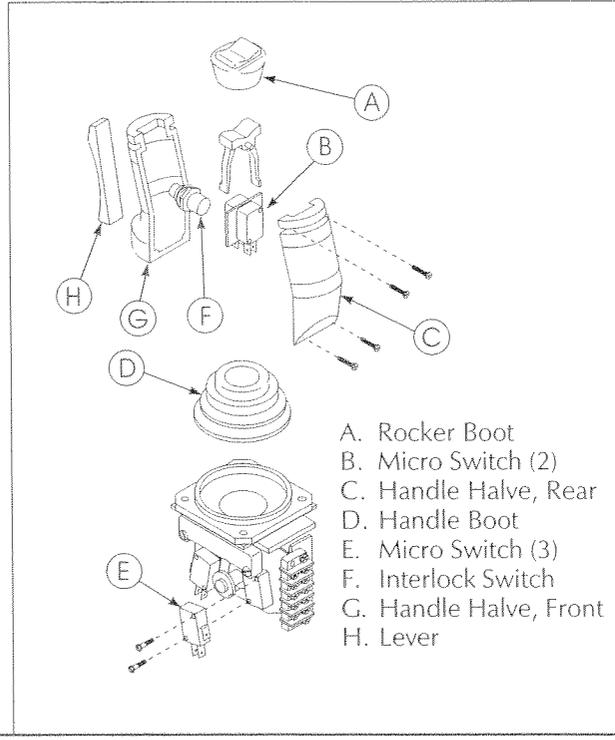
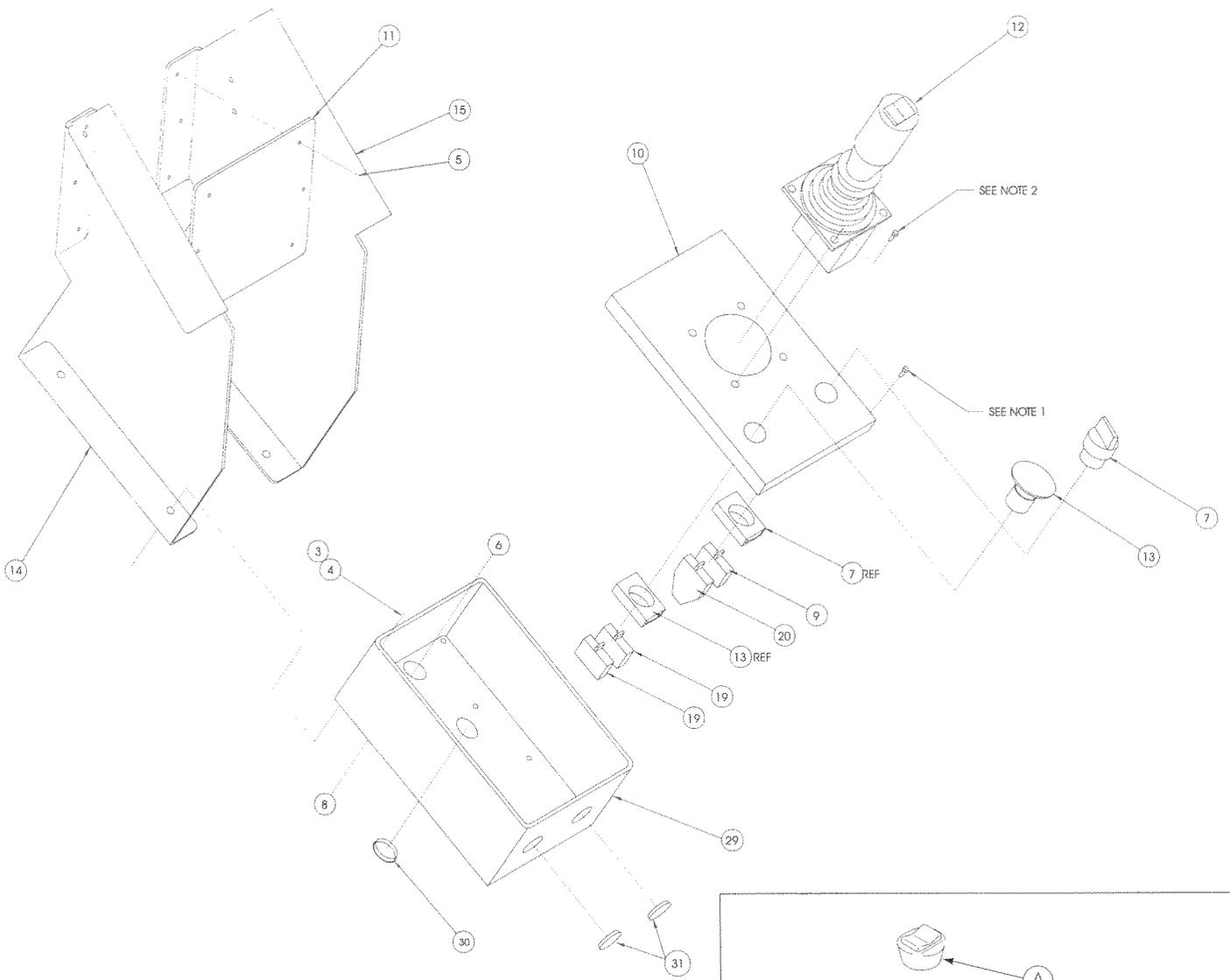
ITEM	PART	DESCRIPTION	QTY.
1	063956-003	CONN. 12 PIN	1
1	063956-003	CONN 12 PIN	1
2	063956-010	CONN PIN MALE	10
3	011252-004	SCREW 1/4-20 UNC HHC X 1/2	4
4	011238-004	WASHER 1/4 LOCK	4
5	026551-007	RIVET 1/8 DIA X 1/4-5/16 GRIP	6
6	029939-003	LOCKNUT 3/4 NPT	1
7	066805-002	SWITCH 2 POSITION SELECTOR	1
8	029925-000	CONN CABLE	1
9	066805-010	CONTACT BLOCK N.O.	1
10	066175-014	ENCLOSURE BOX COVER	1
11	066092-000	PANEL, CONTROLLER	1
12	066785-000	CONTROLLER HANDLE W/12 PIN PICTAIL	1
13	066805-006	PUSH BUTTON	1
14	066094-010	PANEL, CONTROLLER L.H.	1
15	066095-010	PANEL, CONTROLLER R.H.	1

ITEM	PART	DESCRIPTION	QTY.
17	029610-002	CONN FORK 14-16 GA #8	19
18	029615-002	CONN PUSH 14-16 GA #8	7
19	066805-011	CONTACT BLOCK N.C.	2
20	066805-012	CONTACT BLOCK N.O./N.C.	1
21	029620-002	BUTT. CONN. 14-16 GA.	2
22	029825-002	DIODE	1
23	029454-099	WIRE 16 GA. THHN COP RED	FT 2.5
24	029457-099	WIRE 16 GA. THHN COP GREEN	FT 3.5
25	029453-099	WIRE 16 GA. THHN COP ORANGE	FT 1
26	029451-099	WIRE 16 GA. THHN COP WHITE	FT 1
27	029450-099	WIRE 16 GA. THHN COP BLUE	FT 2
28	029452-099	WIRE 16 GA. THHN COP BLACK FT5	
29	066175-013	ENCLOSURE BOX BODY	1
30	064462-007	CAPLUG Ø7/8	1
31	064462-009	CAPLUG Ø1 1/16	2

* Not shown



Illustrated Parts Breakdown



- A. Rocker Boot
- B. Micro Switch (2)
- C. Handle Halve, Rear
- D. Handle Boot
- E. Micro Switch (3)
- F. Interlock Switch
- G. Handle Halve, Front
- H. Lever

**CONTROLLER ASSEMBLY
X20N
DRAWING 2 OF 2**

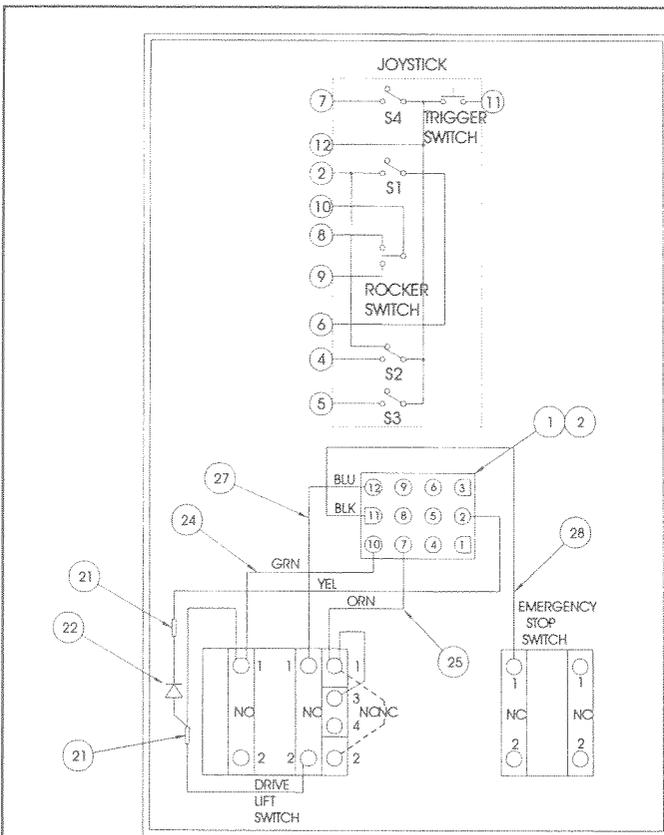
Section
6.2

Illustrated Parts Breakdown

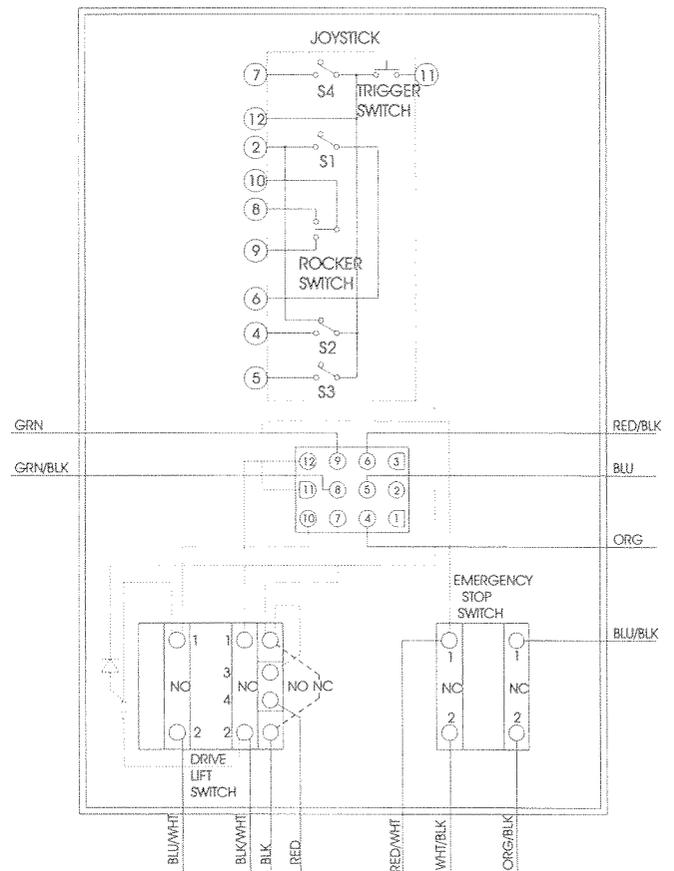
CONTROLLER ASSEMBLY X20W/X26N/X32N 066013-012

ITEM	PART	DESCRIPTION	QTY.
1	063956-003	CONN. 12 PIN	1
1	063956-003	CONN. 12 PIN	1
2	063956-010	CONN PIN MALE	10
3	011252-004	SCREW 1/4-20 UNC HHC X 1/2	4
4	011238-004	WASHER 1/4 LOCK	4
5	026551-007	RIVET 1/8 DIA X 1/4-5/16 GRIP	6
6	068585-000	BLOCK 5 FLANGE	1
7	066805-003	SWITCH 3 POSITION SELECTOR	1
8	029925-000	CONN CABLE	1
9	066805-010	CONTACT BLOCK N.O.	1
10	066175-014	ENCLOSURE BOX COVER	1
11	066092-000	PANEL, CONTROLLER	1
12	066785-000	CONTROLLER HANDLE W/12 PIN PIGTAIL	1
13	066805-006	PUSH BUTTON	1
14	066094-010	PANEL, CONTROLLER L.H.	1
15	066095-010	PANEL, CONTROLLER R.H.	1

ITEM	PART	DESCRIPTION	QTY.
16	029939-003	LOCKNUT 3/4 NPT	1
17	029610-002	CONN FORK 14-16 GA #8	19
18	029615-002	CONN PUSH 14-16 GA #8	7
19	066805-011	CONTACT BLOCK N.C.	3
20	066805-012	CONTACT BLOCK N.O./N.C.	1
21	029620-002	BUTT. CONN. 14-16 GA.	2
22	029825-002	DIODE	1
23	029454-099	WIRE 16 GA. THHN COP RED	FT 2.5
24	029457-099	WIRE 16 GA. THHN COP GREEN	FT 3.5
25	029453-099	WIRE 16 GA. THHN COP ORANGE	FT 1
26	029451-099	WIRE 16 GA. THHN COP WHITE	FT 1
27	029450-099	WIRE 16 GA. THHN COP BLUE	FT 2
28	029452-099	WIRE 16 GA. THHN COP BLACK	FT 5
29	066175-013	ENCLOSURE BOX BODY	1
30	064462-007	CAPLUG Ø7/8 1	
31	064462-009	CAPLUG Ø1 1/16	2



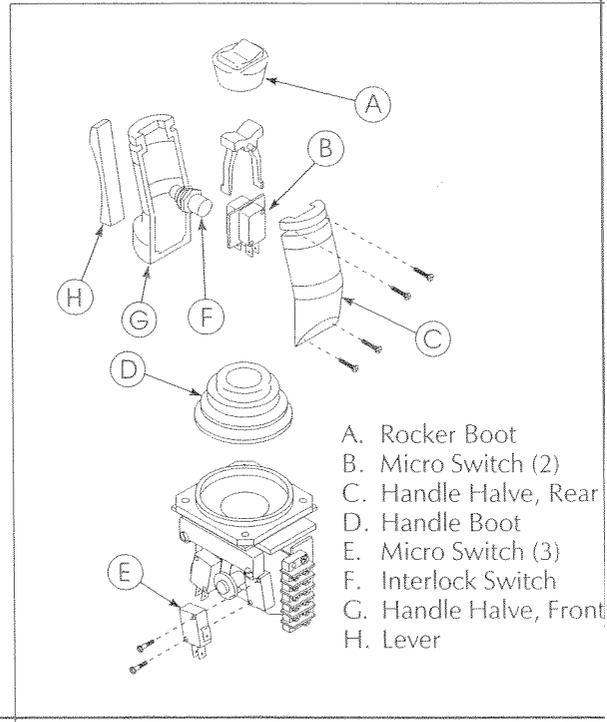
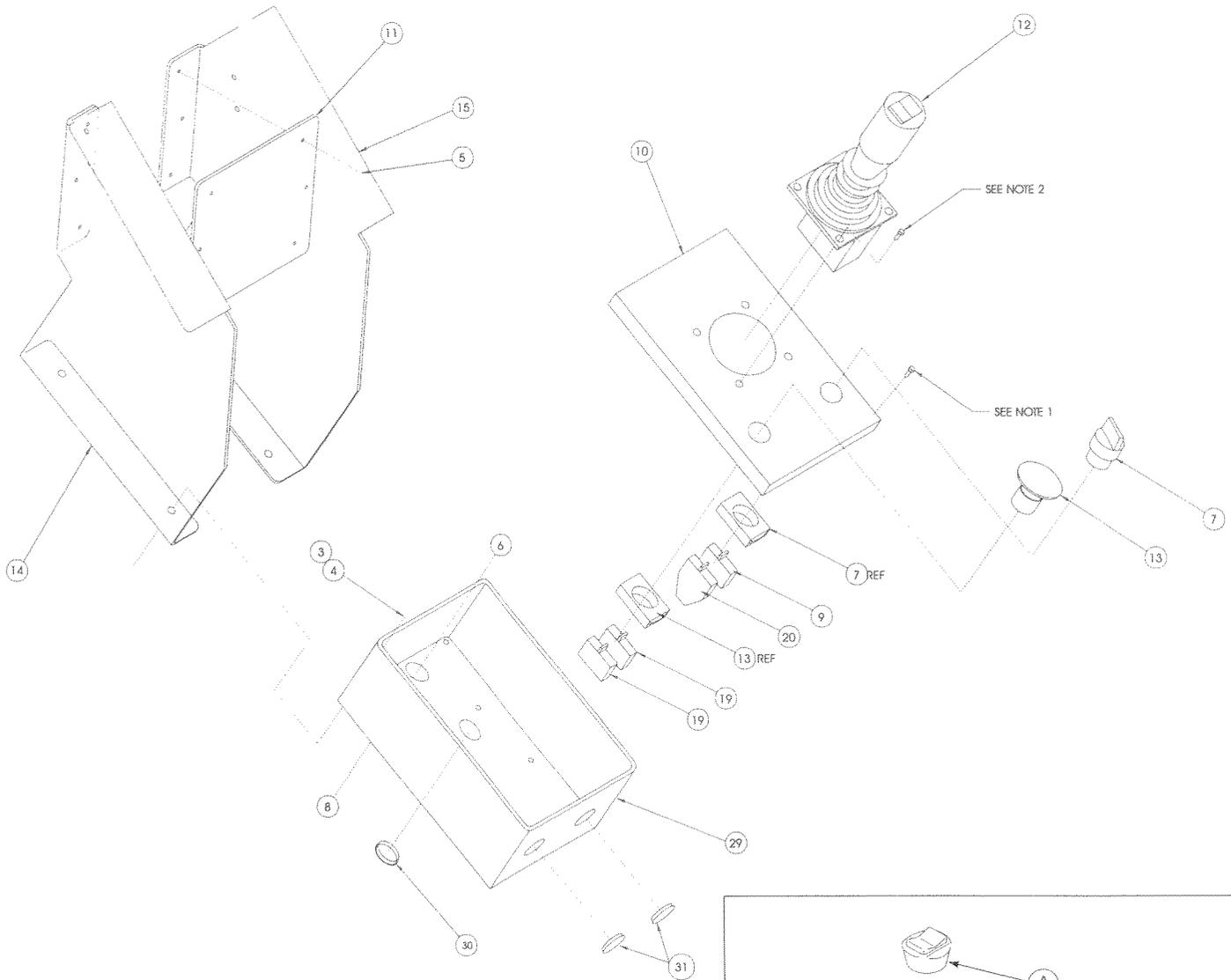
STANDARD BOX WIRING



CABLE CONNECTIONS (REF)

**CONTROLLER ASSEMBLY
X20W/X26N/X32N
DRAWING 1 OF 2**

Illustrated Parts Breakdown

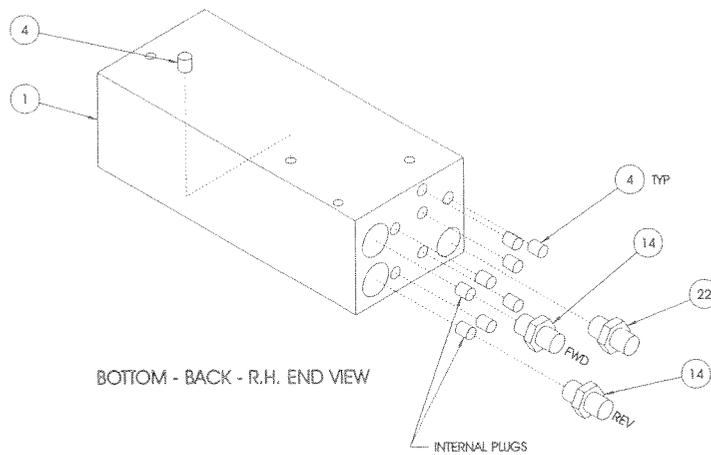
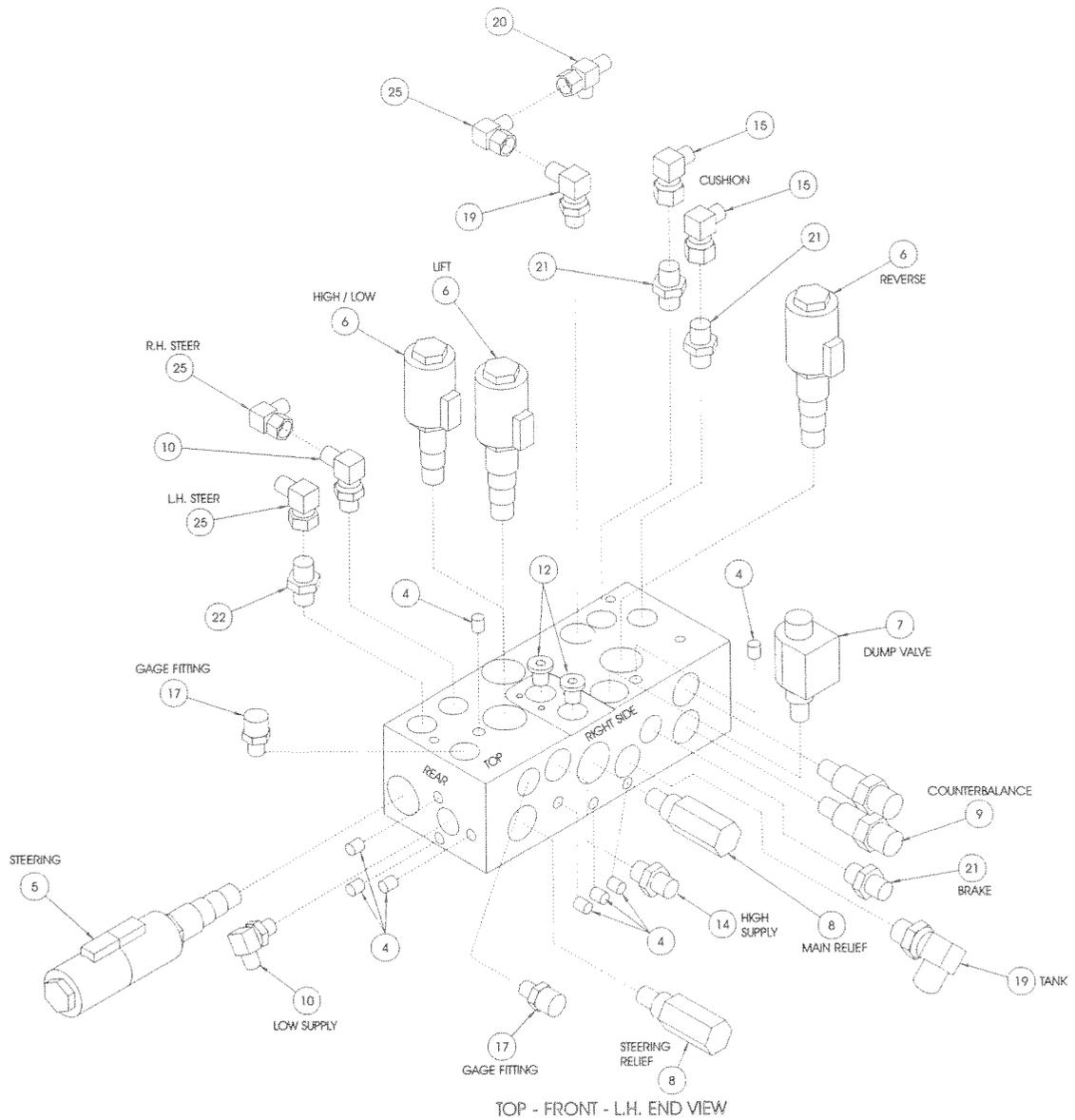


CONTROLLER ASSEMBLY
X20W/X26N/X32N
DRAWING 2 OF 2

VALVE MANIFOLD ASSEMBLY
X20N/X20W/X26N/X32N
066017-010

ITEM	PART	DESCRIPTION	QTY.
1	066099-001	VALVE BLOCK	1
4	063977-001	9MM EXPANDER PLUG	17
5	063923-007	CARTRIDGE VALVE 4 WAY 3 POS TANDEM	1
6	063923-006	CARTRIDGE VALVE 4 WAY 2 POS REV.	3
7	063923-005	CARTRIDGE VALVE 2 WAY	1
8	012877-007	RELIEF VALVE DIRECT ACTING ADJSTBL.	2
9	015900-000	COUNTERBALANCE VALVE	2
10	019934-026	ELBOW 90° 4MB-6MJ	2
12	012004-004	PLUG SAE-4	2
14	011941-005	ADAPTER STR. 6MB-6MJ	2
15	011937-001	ADAPTER 90° 4FJX-4MJ	2
17	063965-001	TEST FITTINGS ISO	2
19	011934-004	ADAPTER 90° 6MB-6MJ	2
20	020733-002	ADAPTER TEE 6FJX-6MJ-6MJ	1
21	011941-001	ADAPTER STR 4MB-4MJ	3
22	011941-002	ADAPTER STR 4MB-6MJ	2
25	011937-003	ADAPTER 90° 6FJX-6MJ	3

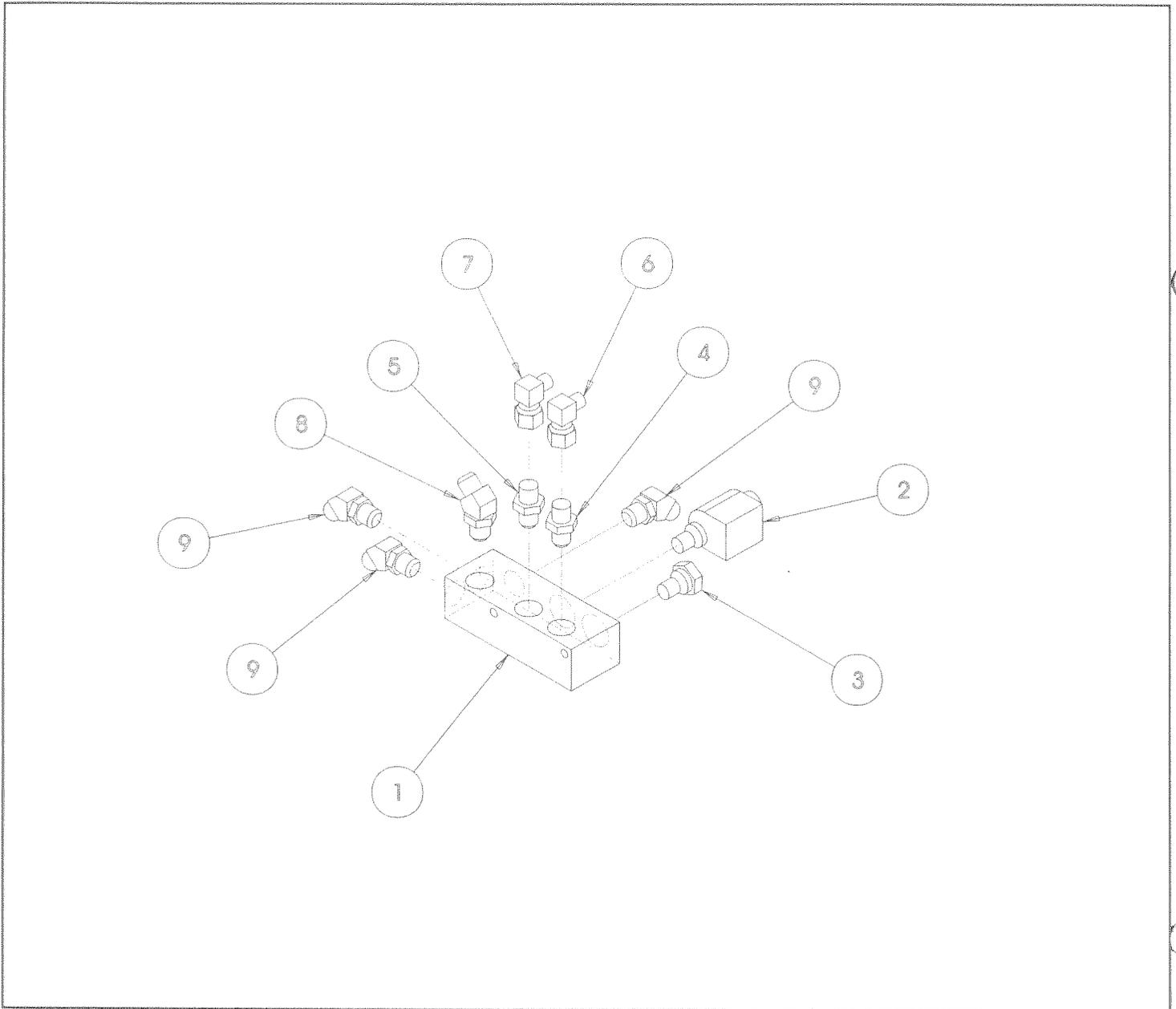
Illustrated Parts Breakdown



Illustrated Parts Breakdown

POTHOLE VALVE ASSEMBLY
X20N/X20W/X26N/X32N
066802-000

ITEM	PART	DESCRIPTION	QTY.
1	066704-001	VALVE BLOCK	1
2	063973-001	VALVE, N.C.	1
3	012822-017	VALVE, CHECK	1
4	011941-001	FITTING, STR 4MB-4MJ	1
5	011941-002	FITTING, STR 4MB-6MJ	1
6	011937-001	FITTING, 90 4FJX-4MJ	1
7	011937-003	FITTING, 90 6FJX-6MJ	1
8	011934-001	FITTING, 90 4MB-4MJ	1
9	011935-001	FITTING, 45 4MB-4MJ	3



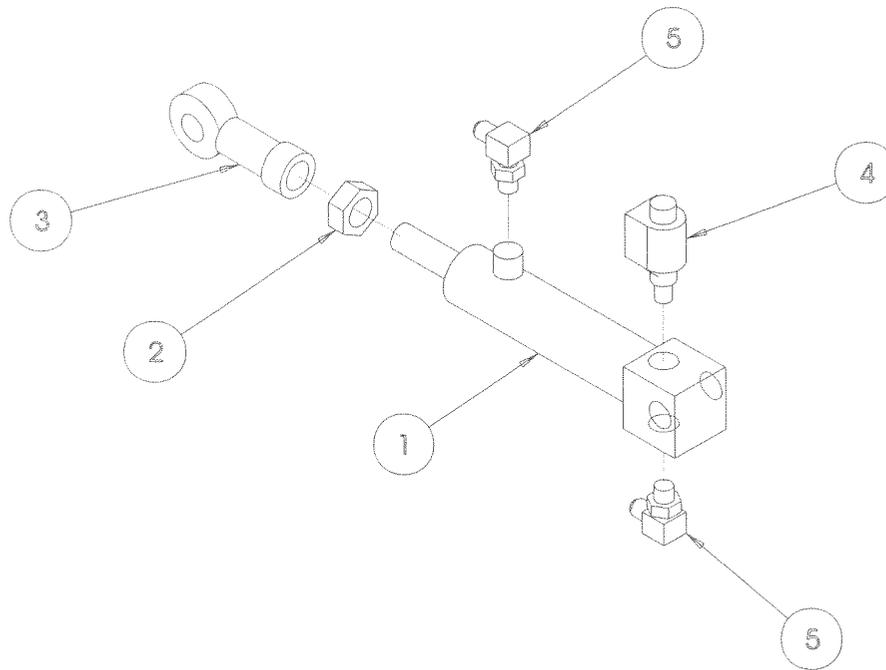
Illustrated Parts Breakdown

POTHOLE CYLINDER ASSEMBLY

X20N/X20W/X26N/X32N

066803-000

ITEM	PART	DESCRIPTION	QTY.
1	066700-001	CYLINDER	1
2	020495-012	NUT, JAM 3/4-16	1
3	066701-000	BEARING, ROD END	1
4	063973-001	VALVE N.C.	1
5	011934-001	FITTING 90° 4MB-4MJ	2

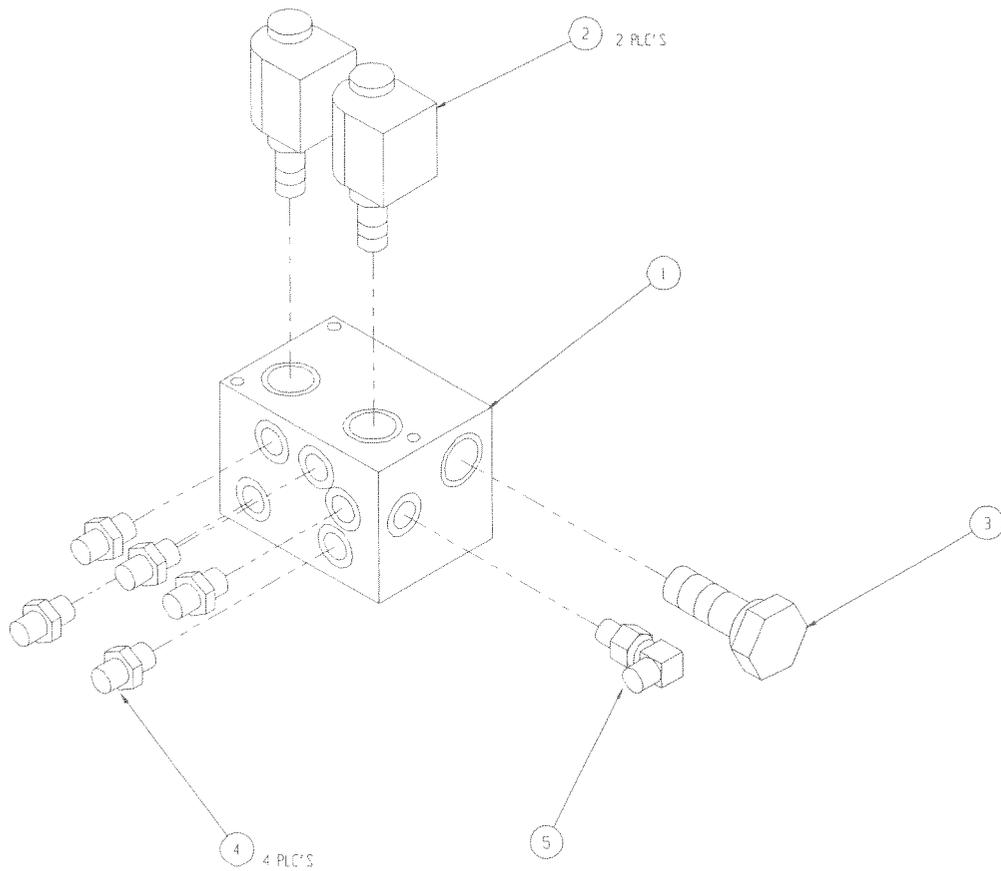


Section
6.2

Illustrated Parts Breakdown

SER./ PAR. VALVE ASSEMBLY
X20W/X26N/X31N2
066808-000

ITEM	PART	DESCRIPTION	QTY.
1	066703-001	VALVE BLOCK - SERIES PARALLEL	1
2	061797-000	VALVE, 3 WAY 2 POSITION	2
3	063924-007	VALVE, FLOW DIVIDER	1
4	011941-005	FITTING, STR 6MB-6MJ	5
5	011934-004	FITTING, 90° 6MB-6MJ	1



Illustrated Parts Breakdown

Section
6.2

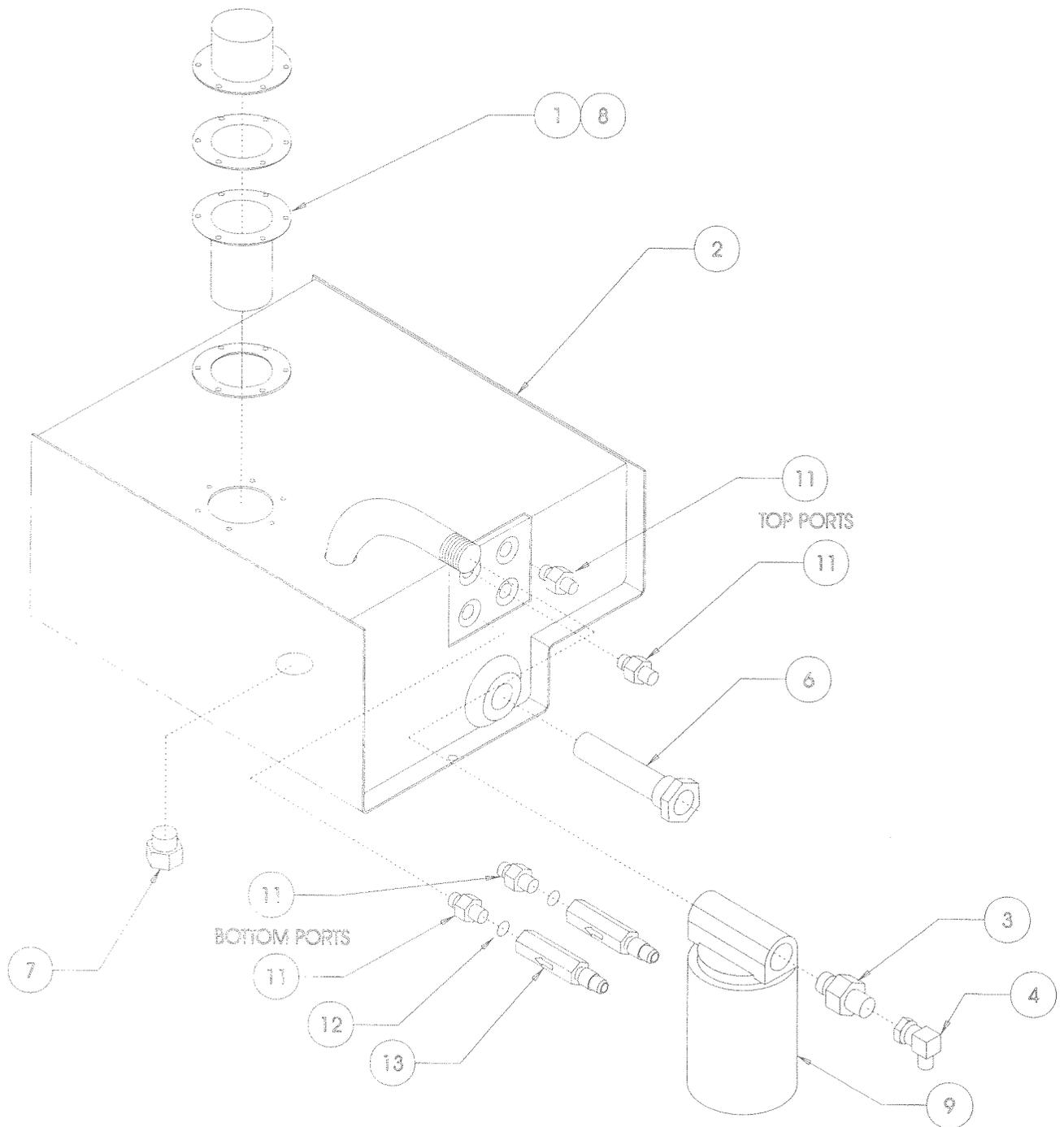
NOTES

Illustrated Parts Breakdown

HYDRAULIC RESERVOIR
ASSEMBLY
X20N/X20W/X26N
066780-000

ITEM	PART	DESCRIPTION	QTY.
1	005963-001	FILLER BREATHER	1
2	066779-000	WELDMENT RESERVOIR	1
3	011939-018	FITTING STR 12MP-6MJ	1
4	011937-003	FITTING 90° 6FJX-6MJ	1
6	061818-000	FITTING SUCTION SCREEN	1
7	021305-006	FITTING PLUG MAGNETIC	1
8	011811-006	SCREW SELF TAP 10-32 X 1/2	6
9	005154-001	FILTER ASSEMBLY	1
	005154-002	REPLACEMENT FILTER	-
11	011941-005	FITTING STR 6MB-6MJ	4
12	011979-006	O-RING #6	2
13	066165-004	RELIEF VALVE	2

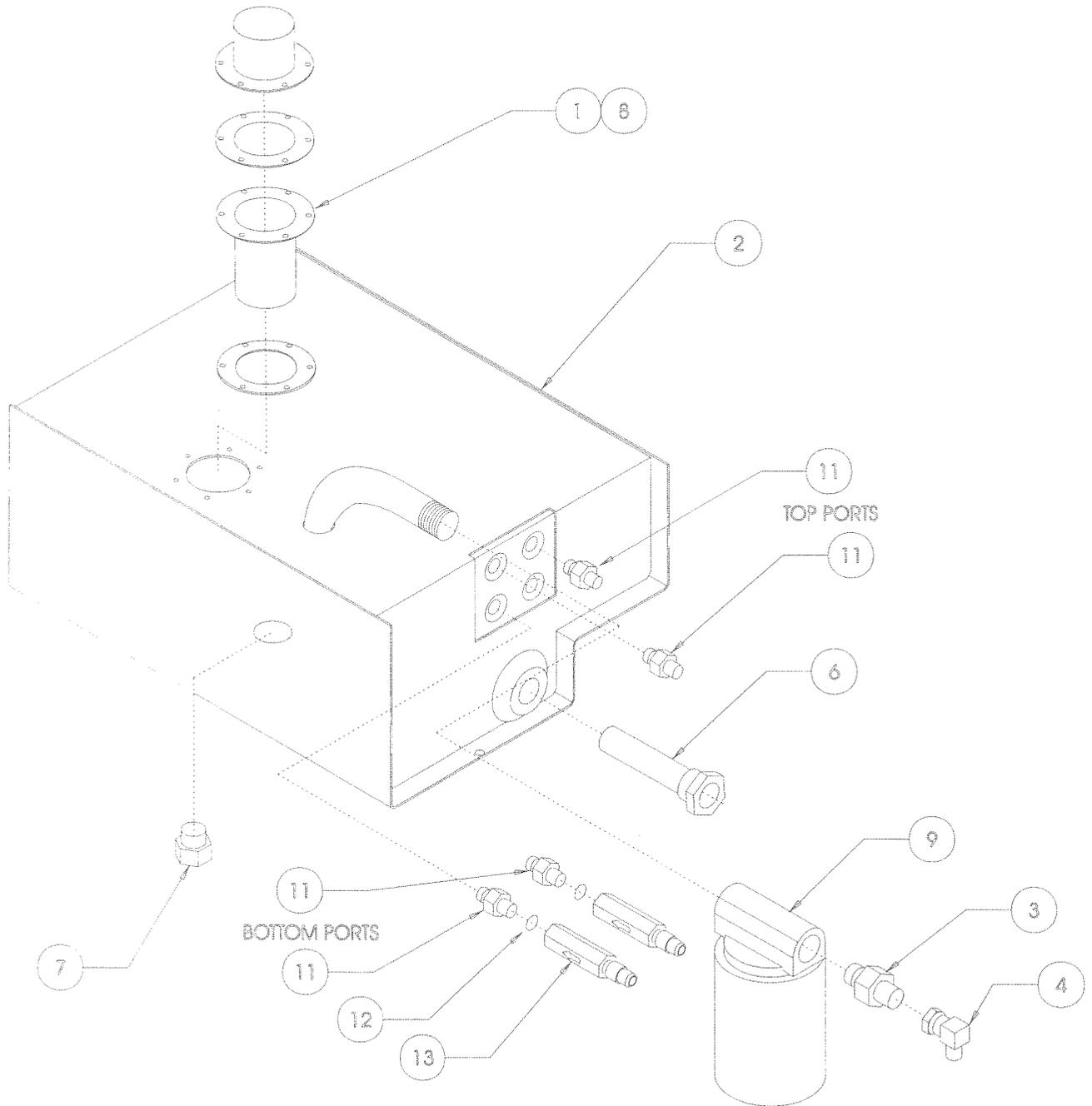
Illustrated Parts Breakdown



HYDRAULIC RESERVOIR
ASSEMBLY
X32N
066780-010

ITEM	PART	DESCRIPTION	QTY.
1	005963-001	FILLER BREATHER	1
1	005963-002	FILLER BREATHER 5PSI	1
2	066779-010	WELDMENT RESERVOIR X32N	1
3	011939-018	FITTING STR 12MP-6MJ	1
4	011937-003	FITTING 90° 6FJX-6MJ	1
6	061818-000	FITTING SUCTION SCREEN	1
7	021305-006	FITTING PLUG MAGNETIC	1
8	011811-006	SCREW SELF TAP 10-32 X 1/2	6
9	005154-001	FILTER	1
11	011941-005	FITTING STR 6MB-6MJ	4
12	011979-006	O-RING #6	2
13	066165-004	RELIEF VALVE	2

Illustrated Parts Breakdown



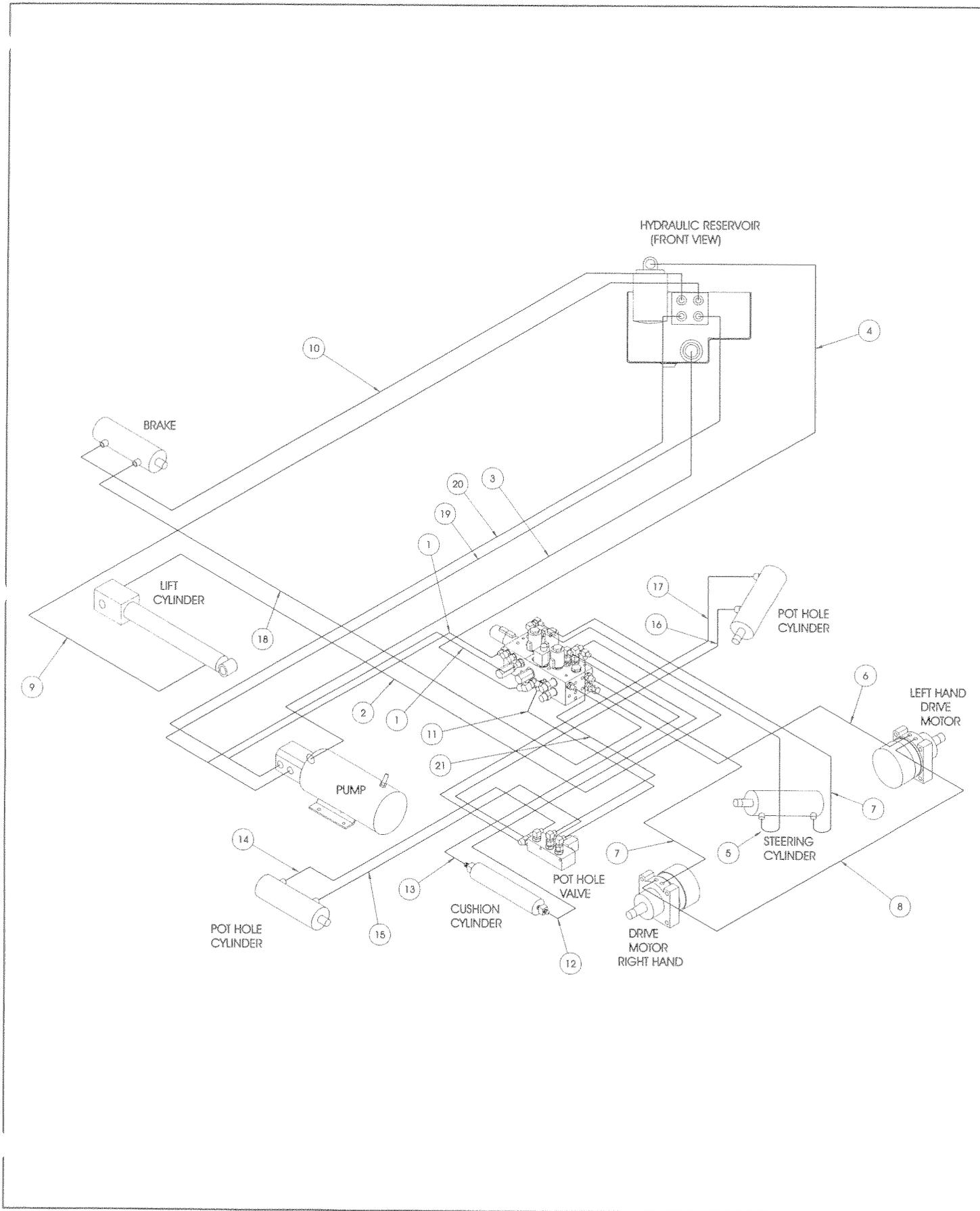
HOSE ASSEMBLY

X20N

066011-010

ITEM	PART	DESCRIPTION	QTY.
1	060861-051	HOSE ASSEMBLY X 13	1
2	060861-097	HOSE ASSEMBLY X 150	1
3	061789-011	HOSE ASSEMBLY X 11	1
4	060861-018	HOSE ASSEMBLY X 18	1
5	060861-011	HOSE ASSEMBLY X 46	1
6	060861-113	HOSE ASSEMBLY X 53	1
7	060861-047	HOSE ASSEMBLY X 54 1/2	2
8	060861-005	HOSE ASSEMBLY X 45	1
9	062192-040	HOSE ASSEMBLY X 191	1
10	060861-106	HOSE ASSEMBLY X 106	1
11	060460-016	HOSE ASSEMBLY X 16	1
12	060460-017	HOSE ASSEMBLY X 18	1
13	060460-018	HOSE ASSEMBLY X 33	1
14	066804-004	HOSE ASSEMBLY X 45	1
15	066804-005	HOSE ASSEMBLY X 57 1/2	1
16	066804-010	HOSE ASSEMBLY X 105	1
17	066804-011	HOSE ASSEMBLY X 111	1
18	060861-110	HOSE ASSEMBLY X 95	1
19	060861-022	HOSE ASSEMBLY X 14	2
20	060861-040	HOSE ASSEMBLY X 11 1/2	1
21	060861-019	HOSE ASSEMBLY X 22	1

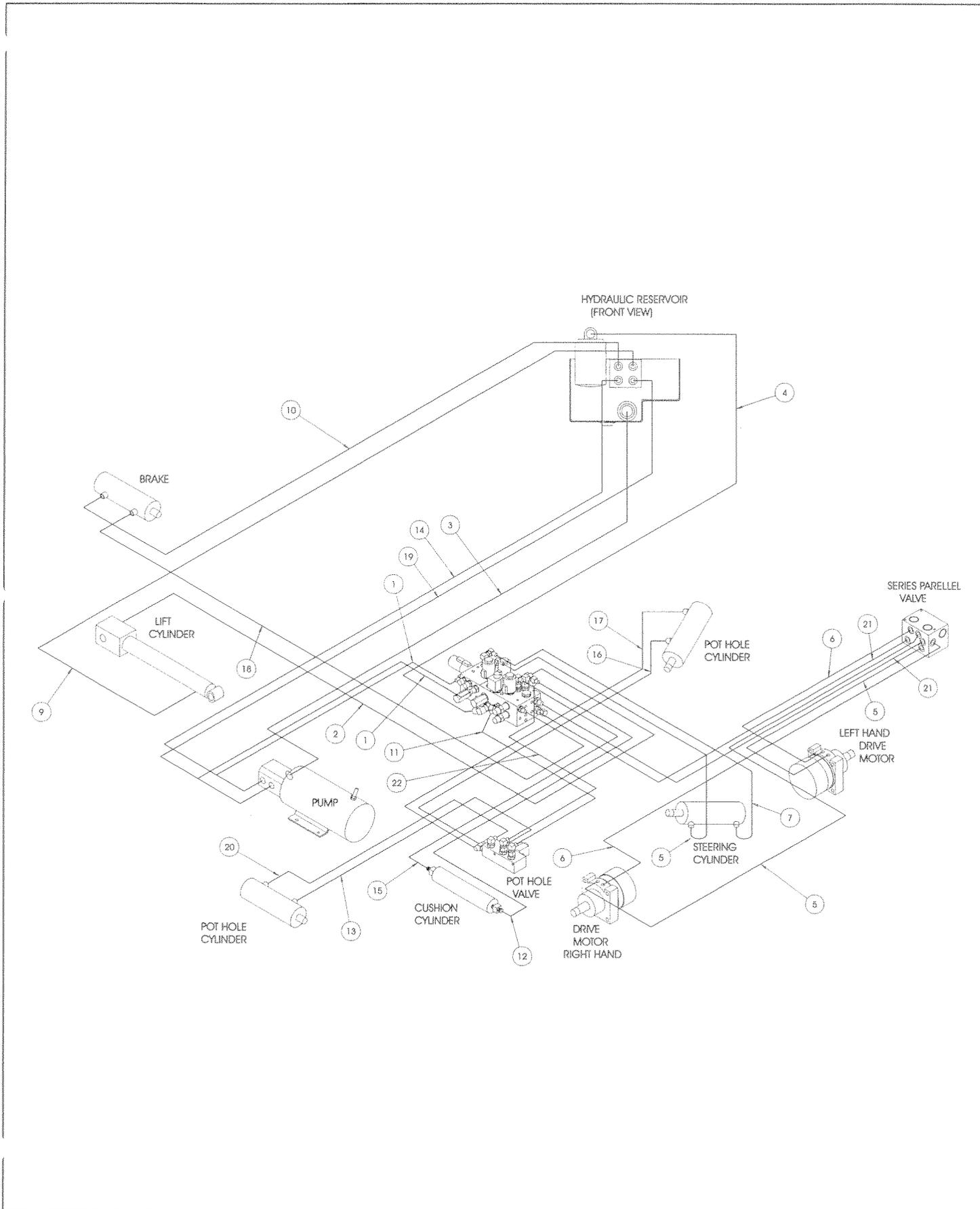
Illustrated Parts Breakdown



HOSE ASSEMBLY
X20W/X26N
066061-010

ITEM	PART	DESCRIPTION	QTY.
1	060861-051	HOSE ASSEMBLY X 13	2
2	060861-098	HOSE ASSEMBLY X 156	1
3	061789-011	HOSE ASSEMBLY X 11	1
4	060861-018	HOSE ASSEMBLY X 18	1
5	060861-070	HOSE ASSEMBLY X 62	3
6	060861-056	HOSE ASSEMBLY X 64	2
7	060861-074	HOSE ASSEMBLY X 58 1/2	1
9	062192-039	HOSE ASSEMBLY X 201	1
10	060861-101	HOSE ASSEMBLY X 127	1
11	060460-016	HOSE ASSEMBLY X 16	1
12	060460-017	HOSE ASSEMBLY X 18	1
13	066804-004	HOSE ASSEMBLY X 45	1
14	060861-040	HOSE ASSEMBLY X 11 1/2	1
15	060460-018	HOSE ASSEMBLY X 33	1
16	066804-015	HOSE ASSEMBLY X 123	1
17	066804-014	HOSE ASSEMBLY X 131	1
18	060861-106	HOSE ASSEMBLY X 106	1
19	060861-022	HOSE ASSEMBLY X 14	1
20	066804-005	HOSE ASSEMBLY X 57 1/2	1
21	060861-082	HOSE ASSEMBLY X 56	2
22	060861-019	HOSE ASSEMBLY X 22	1

Illustrated Parts Breakdown



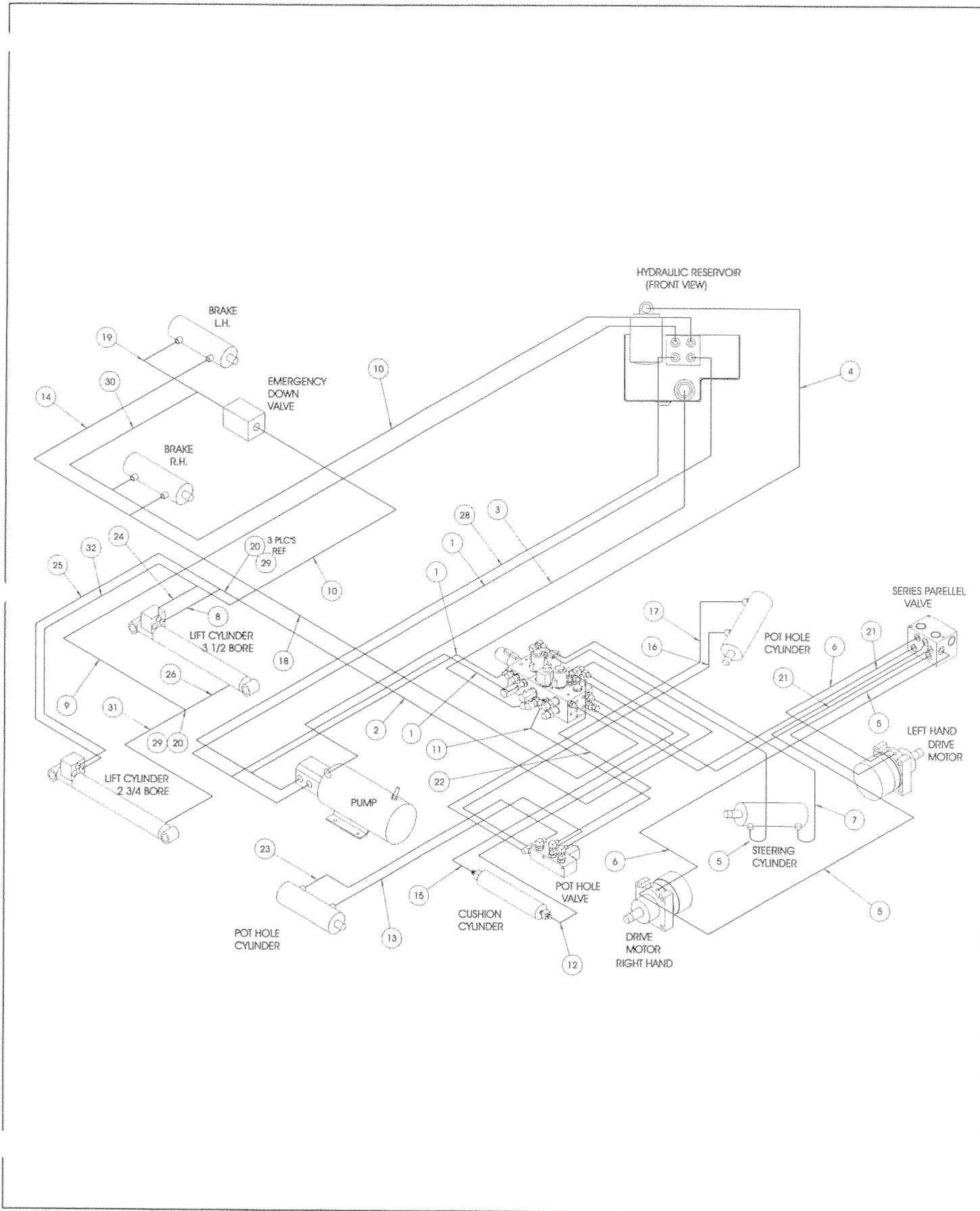
HOSE ASSEMBLY

X32N

066861-000

ITEM	PART	DESCRIPTION	QTY.
1	060861-051	HOSE ASSEMBLY X 13	3
2	066824-001	HOSE ASSEMBLY X 75	1
3	061789-008	HOSE ASSEMBLY X 8 3/4	1
4	060861-018	HOSE ASSEMBLY X 18	2
5	060861-070	HOSE ASSEMBLY X 62	3
6	060861-056	HOSE ASSEMBLY X 64	2
7	060861-074	HOSE ASSEMBLY X 58 1/2	1
8	066823-002	HOSE ASSEMBLY W/90° X 60	1
9	066825-008	HOSE ASSEMBLY X 132	1
10	066825-003	HOSE ASSEMBLY X 127	2
11	060460-016	HOSE ASSEMBLY X 16	1
12	060460-017	HOSE ASSEMBLY X 18	1
13	066804-004	HOSE ASSEMBLY X 45	1
14	060861-109	HOSE ASSEMBLY X 32	1
15	060460-018	HOSE ASSEMBLY X 33	1
16	066804-015	HOSE ASSEMBLY X 123	1
17	066804-014	HOSE ASSEMBLY X 131	1
18	060861-106	HOSE ASSEMBLY X 106	1
19	066825-001	HOSE ASSEMBLY X 14	1
20	020032-003	TEE 6MJ-6MJ-6MJ	REF
21	060861-082	HOSE ASSEMBLY X 56	2
22	060861-019	HOSE ASSEMBLY X 22	1
23	066804-005	HOSE ASSEMBLY X 57 1/2	1
24	066822-001	HOSE ASSEMBLY W/90° X 51	1
25	066824-003	HOSE ASSEMBLY X 245	1
26	066825-007	HOSE ASSEMBLY X 71	1
28	060861-104	HOSE ASSEMBLY X 9 1/2	1
29	011937-003	FITTING 90° 6FJX - 6MJ	REF
30	066825-002	HOSE ASSEMBLY X 32	1
31	066825-004	HOSE ASSEMBLY X 245	1
32	066825-005	HOSE ASSEMBLY X 236	1

Illustrated Parts Breakdown



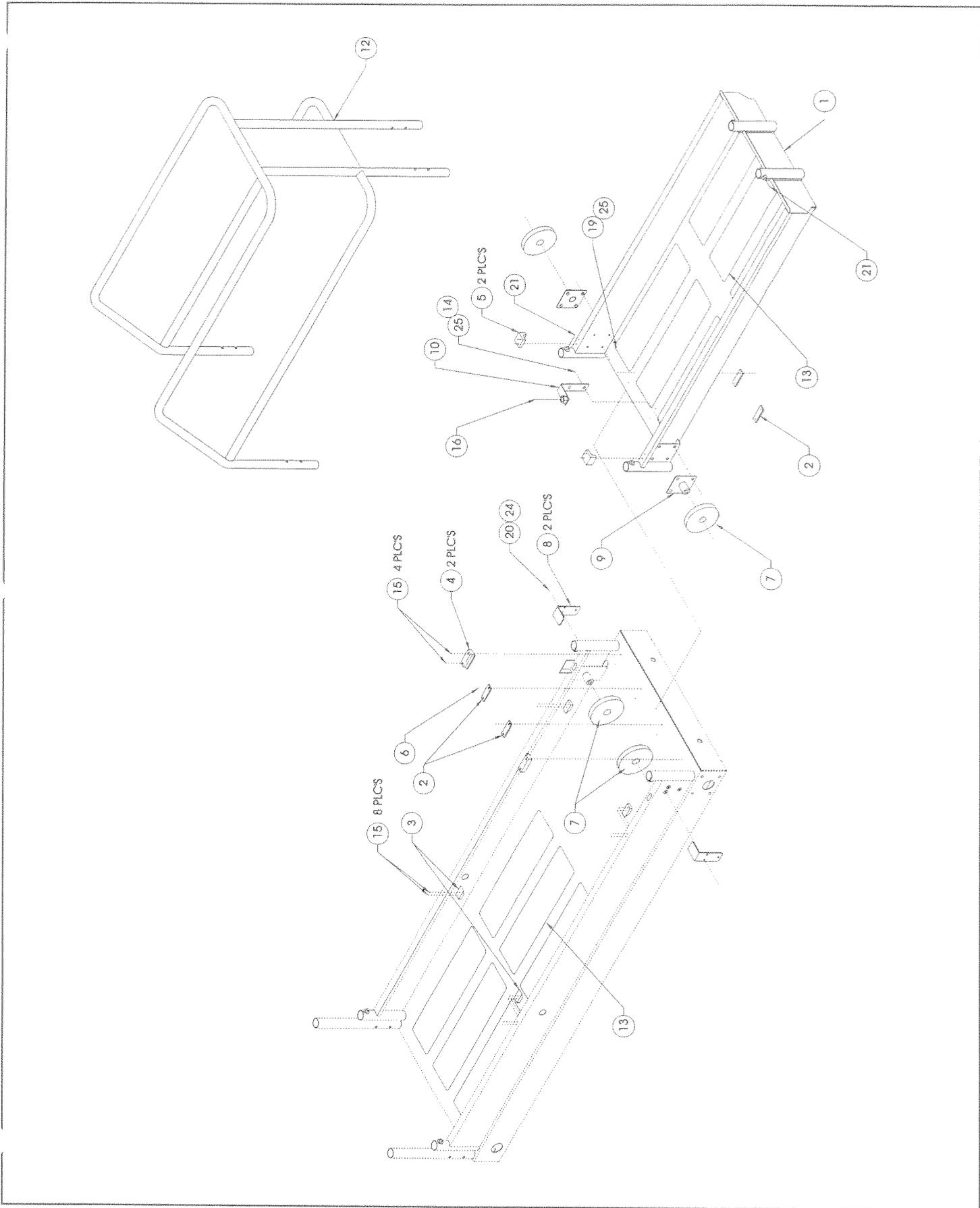
DECK EXTENSION ASSEMBLY

X20N

066006-010

ITEM	PART	DESCRIPTION	QTY.
1	066251-010	WELDMENT DECK EXT.	1
2	066198-000	WEAR PAD	4
3	066193-000	STOP	4
4	066176-000	WEAR PAD	2
5	066170-000	WEAR PAD	2
6	026553-002	RIVET 3/16 DIA X .126-.250 GRIP	8
7	066195-000	PLATFORM ROLLER	4
8	066407-010	BRACKET	2
9	066256-000	WELDMENT ROLLER MOUNT	2
10	066410-000	WELDMENT DECK STOP	1
12	066260-000	WELDMENT EXT. RAIL	1
13	027966-005	SAFTY WALK 6 X 24	12
14	011254-016	SCREW HHC 3/8-16 X 2	2
15	026553-008	RIVET 3/16 DIA X 1/2 GRIP	16
16	003570-000	RETAINING PIN ASSY	1
19	011254-014	SCREW HHC 3/8-16 X 1 3/4	6
20	011252-006	SCREW HHC 1/4-20 X 3/4	6
21	066171-003	SCREW HHC 3/8-16 X 2 1/2	4
24	011240-004	WASHER 1/4 FLAT	6
25	011238-006	WASHER 3/8 LOCK	8

Illustrated Parts Breakdown



Illustrated Parts Breakdown

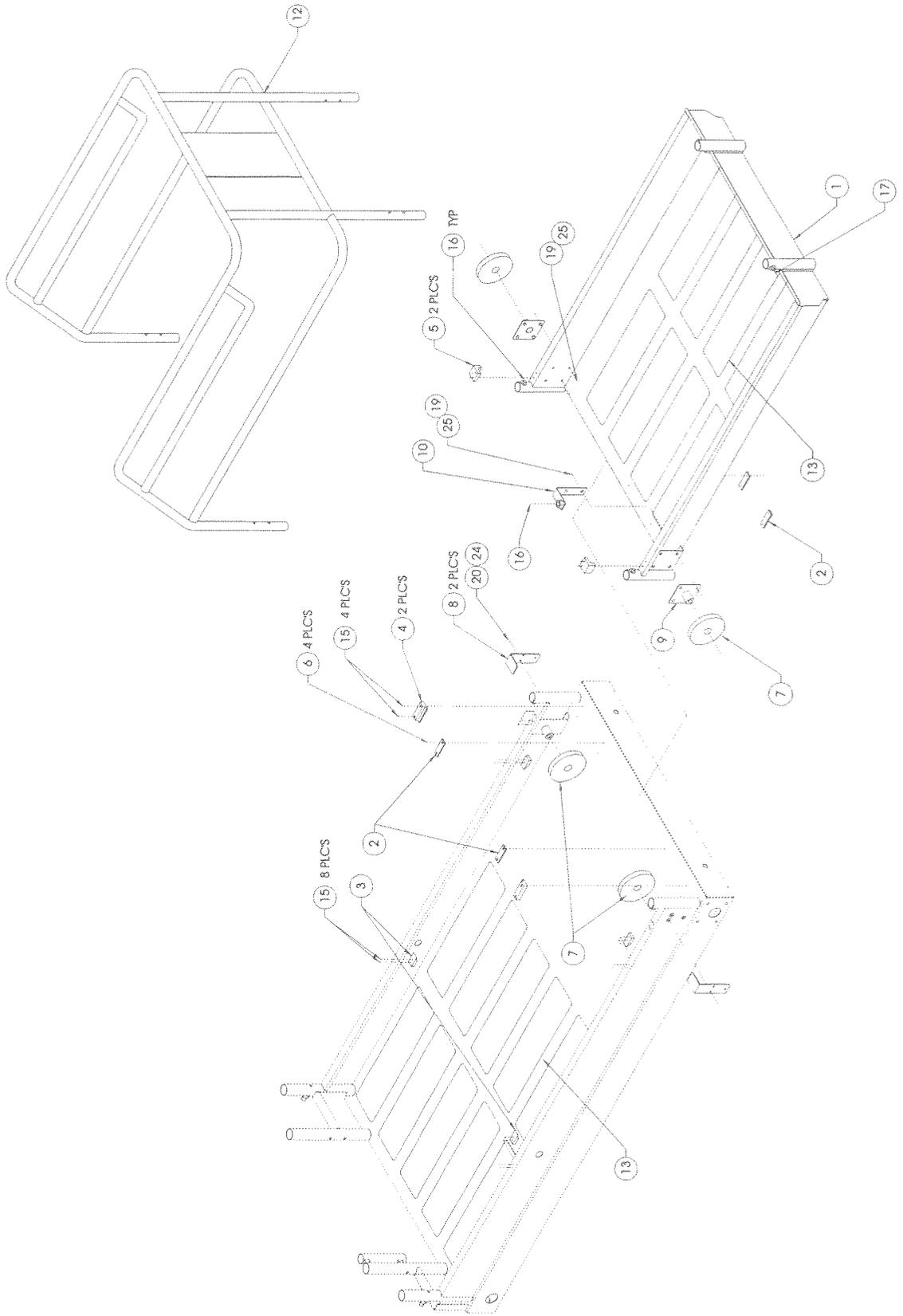
DECK EXTENSION ASSEMBLY

X20W/X26N

066056-010

ITEM	PART	DESCRIPTION	QTY.
1	066294-001	WELDMENT DECK EXT.	1
2	066198-001	WEAR PAD	4
3	066193-000	STOP	4
4	066176-001	WEAR PAD	2
5	066170-001	WEAR PAD	2
6	026553-010	RIVET 3/16 DIA X 5/8 GRIP	4
7	066195-000	PLATFORM ROLLER	4
8	066407-011	BRACKET	2
9	066127-000	WELDMENT ROLLER MOUNT	2
10	066410-000	WELDMENT DECK STOP	1
12	066130-000	WELDMENT EXT. RAIL	1
13	027966-005	SAFTY WALK 6 X 24	18
15	026553-008	RIVET 3/16 DIA X 1/2 GRIP	12
16	003570-000	RETAINING PIN ASSY	5
17	011254-008	SCREW HHC 3/8-16 X 1	4
19	011254-012	SCREW HHC 3/8-16 X 1 1/2	8
20	011252-006	SCREW HHC 1/4-20 X 3/4	6
22	011240-006	WASHER 3/8 FLAT	2
23	011254-006	SCREW HHC 3/8-16 X 3/4	2
24	011240-004	WASHER 1/4 FLAT	6
25	011238-006	WASHER 3/8 LOCK	8

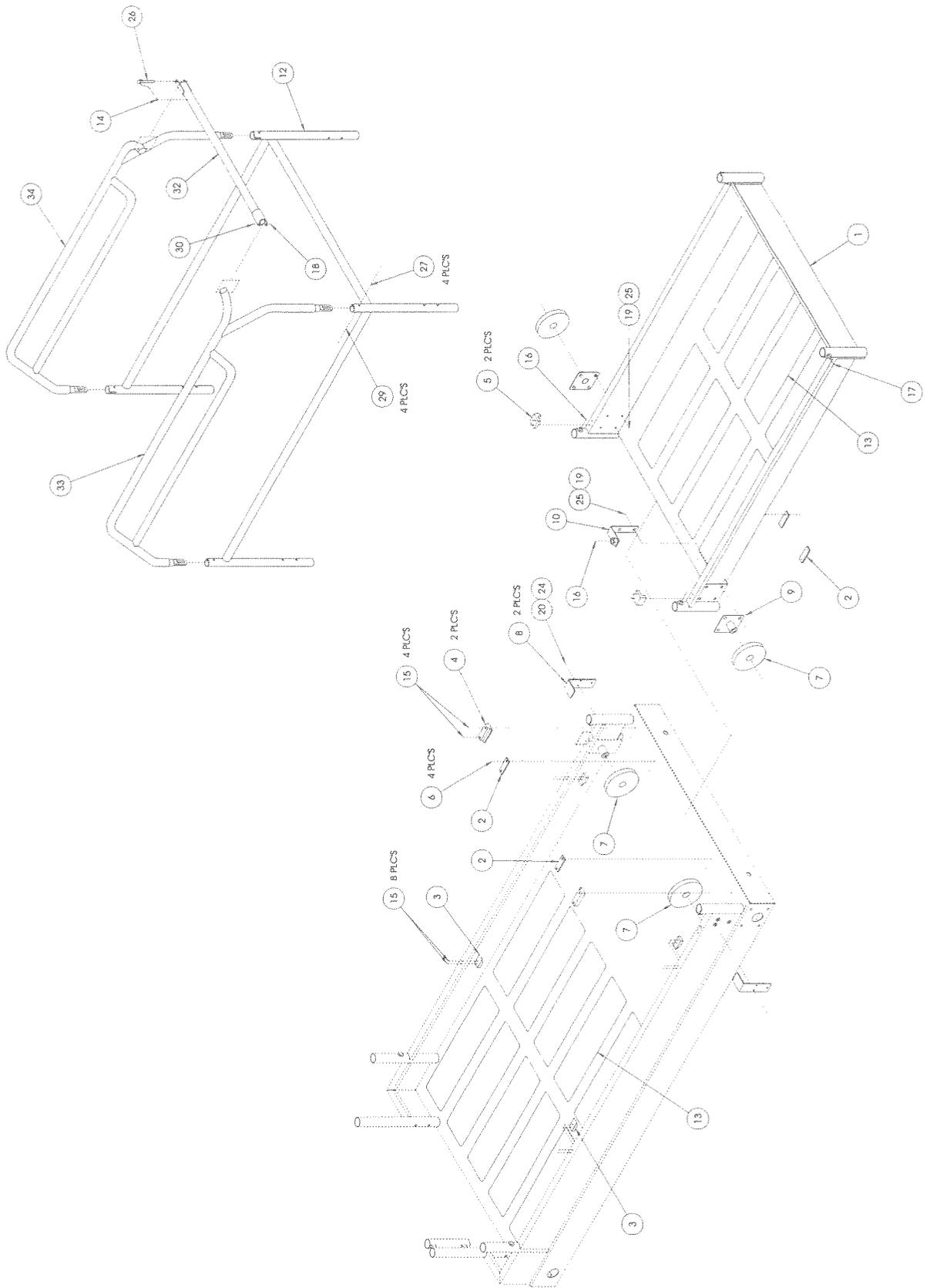
Illustrated Parts Breakdown



DECK EXTENSION ASSEMBLY
X32N
66856-000

ITEM	PART	DESCRIPTION	QTY.
1	066294-002	WELDMENT DECK EXT.	1
2	066198-001	WEAR PAD	4
3	066193-000	STOP	4
4	066176-001	WEAR PAD	2
5	066170-001	WEAR PAD	2
6	026553-010	RIVET 3/16 DIA X 5/8 GRIP	4
7	066195-000	PLATFORM ROLLER	4
8	066407-011	BRACKET	2
9	066127-000	WELDMENT ROLLER MOUNT	2
10	066410-000	WELDMENT DECK STOP	1
12	065802-002	WELDMENT EXT. RAIL	1
13	027966-005	SAFTY WALK 6 X 24	18
14	026553-004	RIVET 3/16 DIA X 3/8 GRIP	1
15	026553-008	RIVET 3/16 DIA X 1/2 GRIP	12
16	003570-000	RETAINING PIN ASSY	5
17	011254-008	SCREW HHC 3/8-16 X 1	4
18	011254-018	SCREW HHC 3/8-16 X 2 1/4	2
19	011254-012	SCREW HHC 3/8-16 X 1 1/2	8
20	011252-006	SCREW HHC 1/4-20 X 3/4	6
22	011240-006	WASHER 3/8 FLAT	2
23	011254-006	SCREW HHC 3/8-16 X 3/4	2
24	011240-004	WASHER 1/4 FLAT	6
25	011238-006	WASHER 3/8 LOCK	8
26	010414-003	LOCKING PIN ASS'Y	1
27	011253-014	SCREW HHC 5/16-18 X 1 3/4	2
29	011248-005	NUT 5/16-18 ESNA	4
30	011248-006	NUT 3/8-16 ESNA	2
32	065805-002	WELDMENT, SWING RAIL	1
33	065803-002	WELDMENT, SIDE EXT R.H.	1
34	065804-002	WELDMENT, SIDE EXT L.H.	1

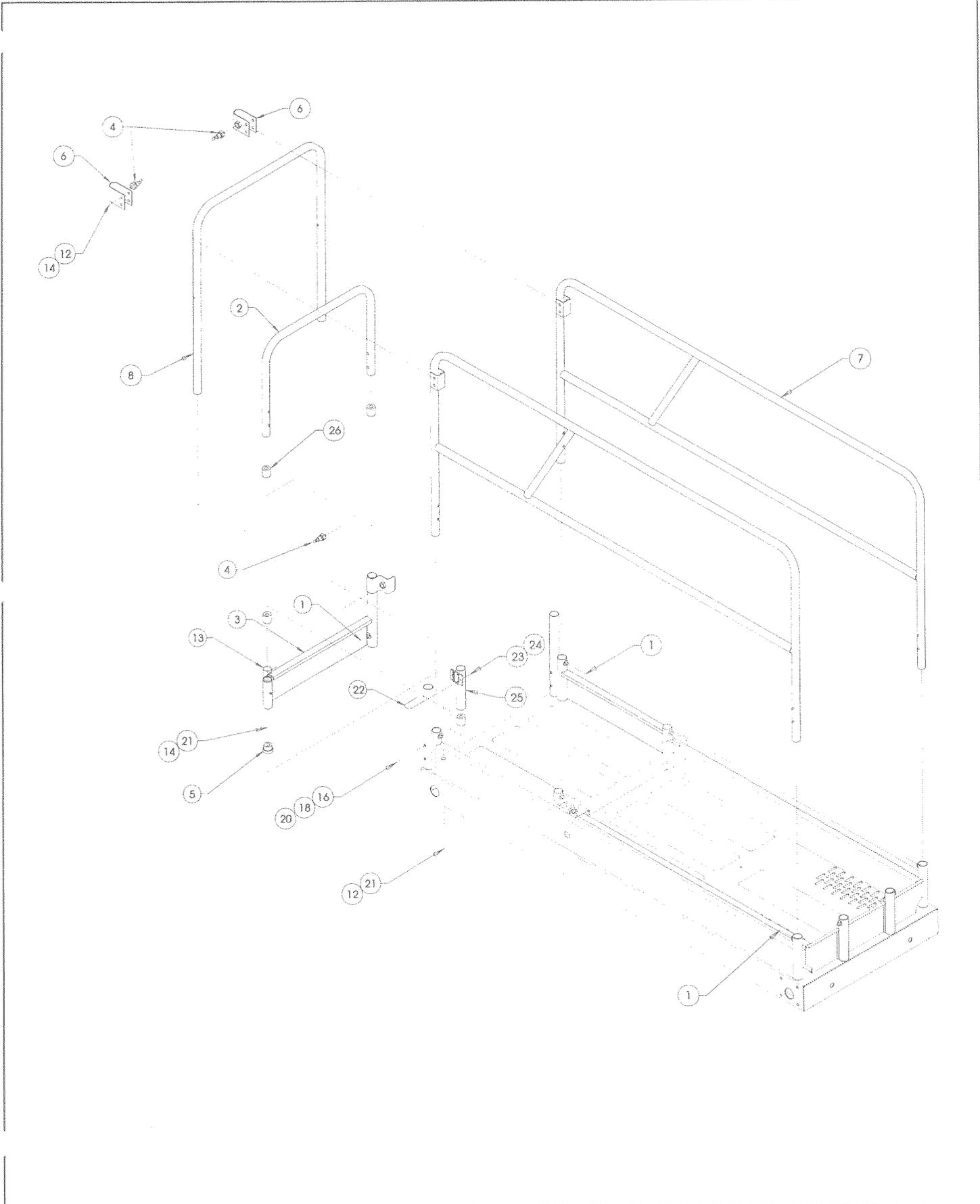
Illustrated Parts Breakdown



GUARDRAIL ASSEMBLY
X20N
66005-001

ITEM	PART	DESCRIPTION	QTY.
1	066171-003	CAP SCREW 3/8-16 X 2 1/2 (FULL THREAD)	6
2	066480-000	GATE	1
3	066497-001	WELDMENT, GATE KICKRAIL	1
4	003570-000	RETAINING PIN ASSY	3
5	066441-000	PIVOT, GATE	1
6	066498-000	WELDMENT, GATE LATCH	2
7	066257-000	WELDMENT SIDE RAIL	2
8	066261-003	WELDMENT, END RAIL	1
12	011248-005	NUT 5/16-18	5
13	066526-000	TORSION SPRING	1
14	011253-016	SCREW 5/16-18 HHC X 2	5
16	011254-020	SCREW 3/8-16 HHC X 2 1/2	2
18	011240-006	WASHER 3/8 FLAT	6
20	011248-006	NUT 3/8-16 HEX	6
21	011240-005	WASHER 5/16 STD FLAT	1
22	027899-000	U BOLT	1
23	011240-004	WASHER 1/4 STD FLAT	2
24	011248-004	LOCKNUT 1/4-20 UNC HEX	2
25	066519-000	WELDMENT, GATE HINGE	1
26	062642-026	BEARING	4

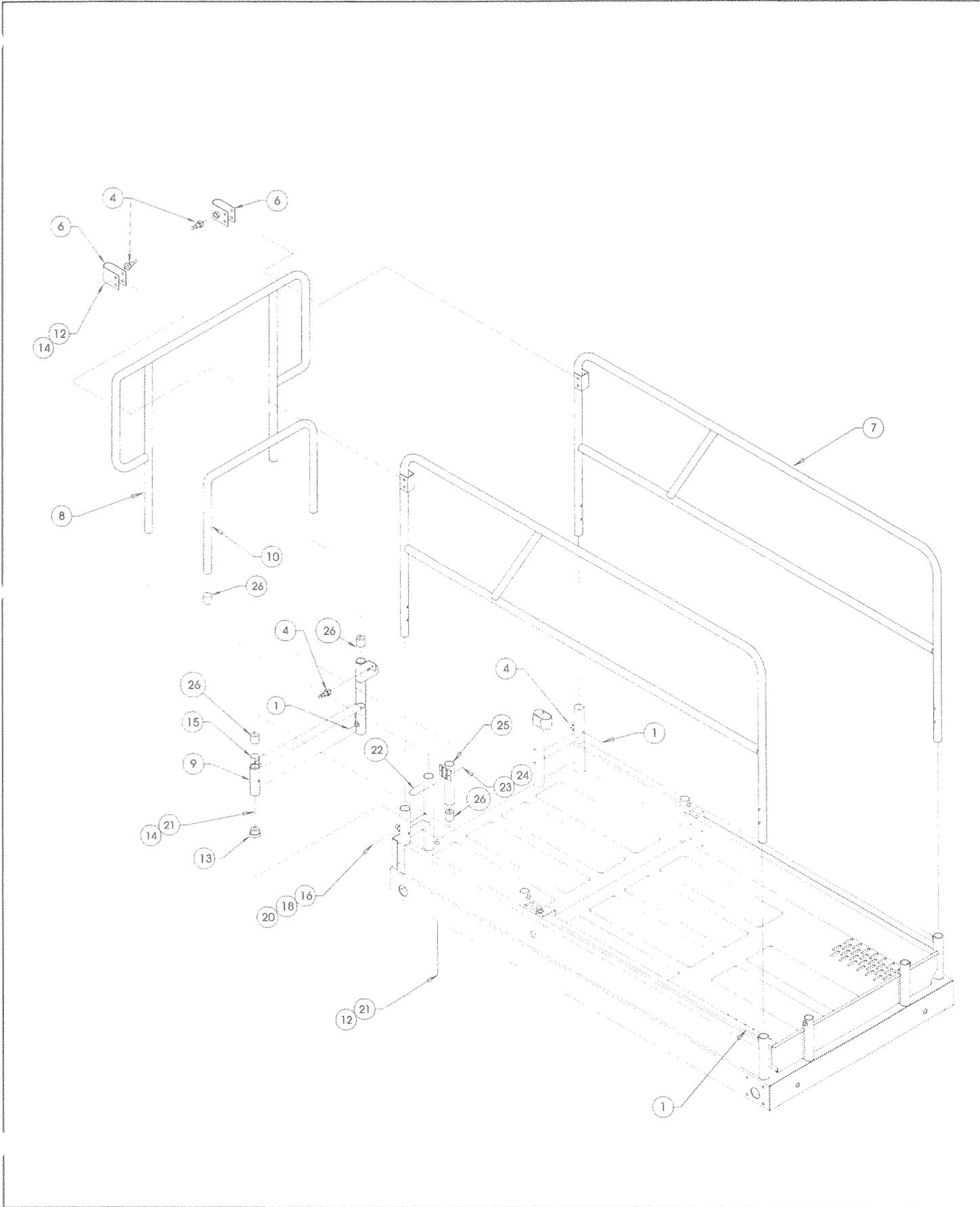
Illustrated Parts Breakdown



GUARDRAIL ASSEMBLY
X20W/X26N
066055-001

ITEM	PART	DESCRIPTION	QTY.
1	011254-008	SCREW HHC 3/8-16UNC X 1	6
4	003570-000	RETAINING PIN ASSY	7
6	066498-000	WELDMENT, GATE LATCH	2
7	066126-000	WELDMENT SIDE RAIL	2
8	066125-001	WELDMENT, END RAIL	1
9	066497-000	GATE KICKRAIL	1
10	066480-000	WELDMENT, GATE	1
12	011248-005	NUT 5/16-18	5
13	066441-000	GATE PIVOT	1
14	011253-016	SCREW 5/16-18 HHC X 2	5
15	066526-000	TORSION SPRING	1
16	011254-020	SCREW 3/8-16 HHC X 2 1/2	2
17	066171-003	CAP SCREW 3/8-16 X 2 1/2 (FULL THD)	6
18	011240-006	WASHER 3/8 FLAT	4
20	011248-006	NUT 3/8-16 HEX	2
21	011240-005	WASHER 5/16 STD FLAT	1
22	027899-000	U BOLT	1
23	011240-004	WASHER 1/4 STD FLAT	2
24	011248-004	LOCKNUT 1/4-20 UNC HEX	2
25	066519-000	WELDMENT, GATE HINGE	1
26	062642-026	BEARING	4

Illustrated Parts Breakdown

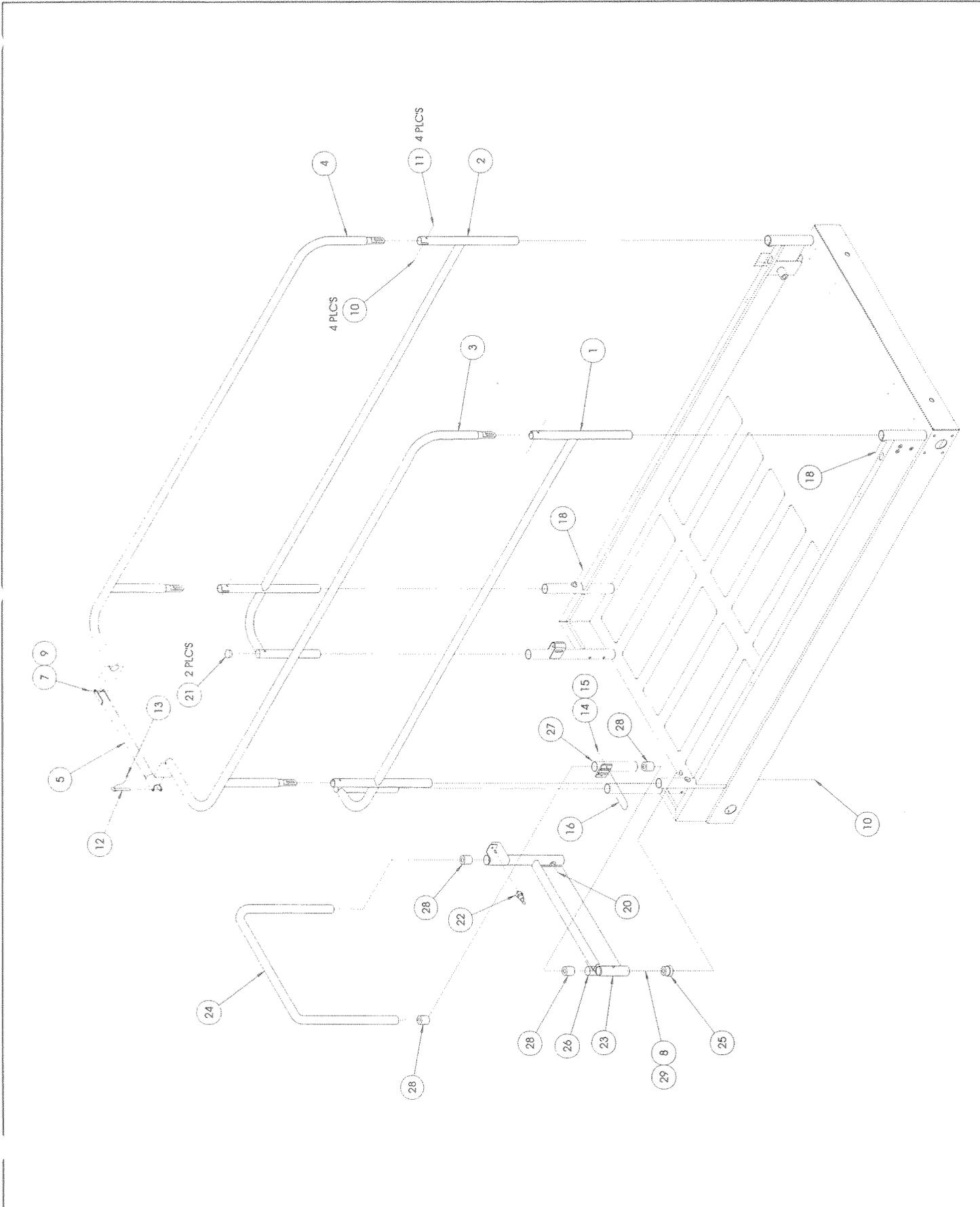


GUARDRAIL ASSEMBLY
X32N W/ DECK EXTENSION

066855-001

ITEM	PART	DESCRIPTION	QTY.
1	065814-003	WELDMENT, LOWER GUARDRAIL R.H.	1
2	065814-002	WELDMENT, LOWER GUARDRAIL L.H.	1
3	065815-002	WELDMENT, UPPER GUARDRAIL R.H.	1
4	065816-002	WELDMENT, UPPER GUARDRAIL L.H.	1
5	065805-003	WELDMENT, TOP SWING ARM	1
7	011248-006	NUT HEX ESNA 3/8-16UNC	13
8	011253-016	SCREW HHC 5/16-18UNC X 2	1
9	011254-018	SCREW HHC 3/8-16UNC X 2 1/4	1
10	011248-005	NUT HEX ESNA 5/16-18UNC	5
11	011253-014	SCREW HHC 5/16-18UNC X 1 3/4	4
12	010414-003	LOCKING PIN ASSY 10 LG	1
13	026553-004	RIVET 3/16 DIA	1
14	011240-004	WASHER 1/4 STD FLAT	2
15	011248-004	LOCKNUT 1/4-20UNC HEX	2
16	027899-000	U BOLT	1
18	003570-000	RETAINING PIN ASSEMBLY	4
20	011254-008	SCREW HHC 3/8-16UNC X 1	6
21	066516-001	PLUG 1 3/16 DIA	2
22	003570-000	RETAINING RING	1
23	066497-000	WELDMENT, GATE KICKRAIL	1
24	066480-000	GATE W/O HOLES	1
25	066441-000	GATE PIVOT	1
26	066526-000	TORSION SPRING	1
27	066519-000	WELDMENT, GATE HINGE	1
28	062642-026	BEARING	4
29	011240-005	WASHER 5/16 STD FLAT	1

Illustrated Parts Breakdown



Illustrated Parts Breakdown

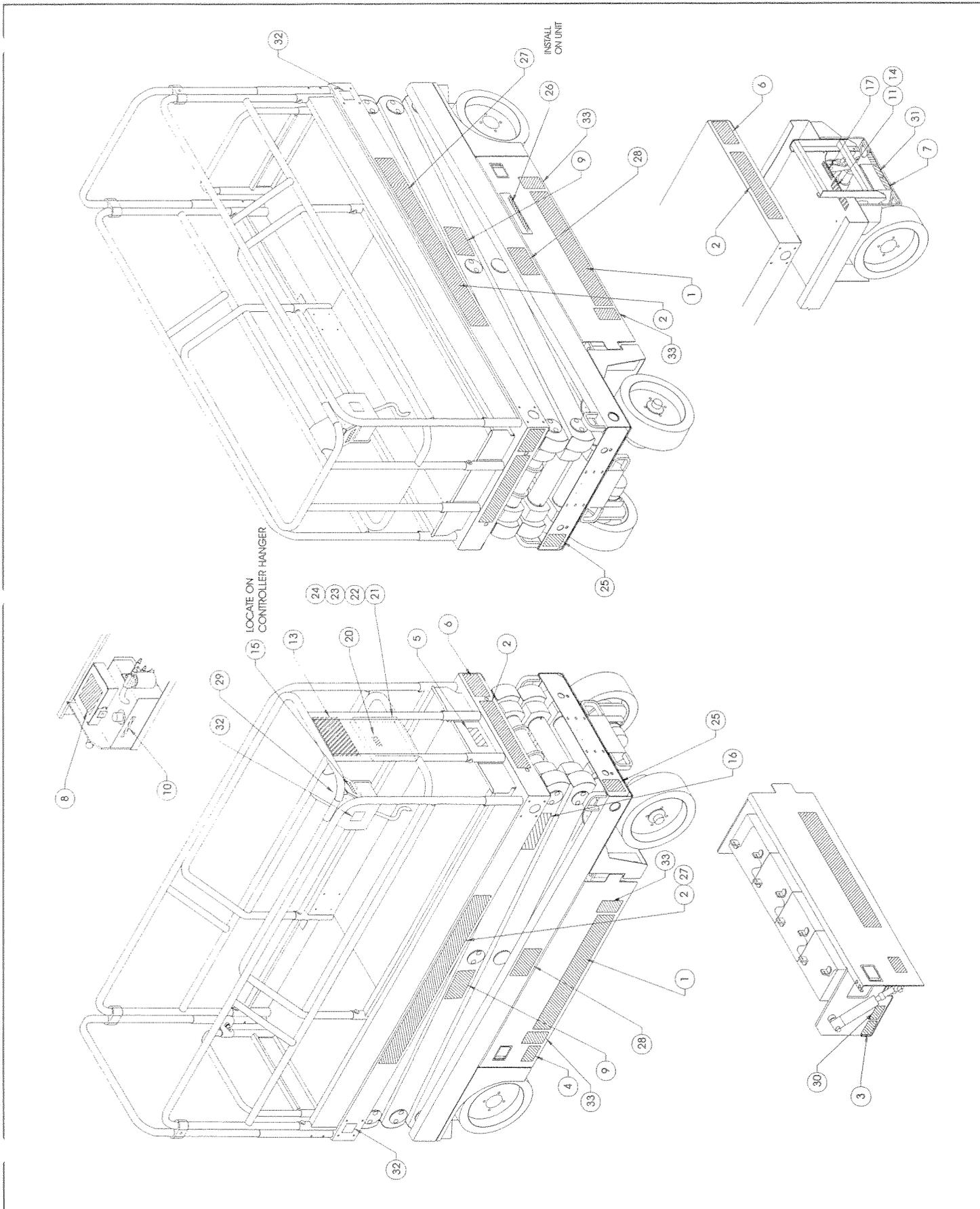
LABEL ASSEMBLY

X20N

066010-011

ITEM	PART	DESCRIPTION	QTY.
1	061683-006	LABEL UPRIGHT	2
2	061683-004	LABEL UPRIGHT	4
3	005221-000	LABEL MANTAIN BATTERY	1
4	066552-000	LABEL HYDR GAS	1
5	066551-000	LABEL MAX LOAD 250 LBS	1
6	066557-000	LABEL MAX LOAD 750 LBS	2
7	14222-003-99	LABEL FORK LIFT HERE	2
8	066555-000	LABEL LIMIT SWITCHES	1
9	066553-000	LABEL WARNING	2
10	060197-000	LABEL HYDRAULIC FLUID	1
11	061205-001	LABEL NAME PLATE	1
13	066550-000	LABEL DANGER	1
14	065368-000	TACK	4
15	066554-000	LABEL READ INSTRUCTIONS	1
16	066561-000	LABEL SAFETY STAND	1
17	066558-000	LABEL EMER LOWER PULL HANDLE	1
18	060572-021	USER MANUAL	1
20	010076-001	LABEL INSTRUCTIONS	1
21	010076-000	MANUAL CASE	1
22	011252-006	SCREW HHC 1/4-20 X 3/4 LG	2
23	011248-004	NUT 1/4-20 HEX	2
24	011240-004	WASHER 1/4 FLAT	2
25	066556-000	LABEL WARNING (COLLISION)	1
26	066559-000	LABEL LOWER CONTROLS	1
27	061684-018	LABEL X 20 N	2
28	061684-016	LABEL X	2
29	066560-011	LABEL CONTROLLER	1
30	062562-001	LABEL - BATTERIES	1
31	066522-000	LABEL - BATTERY CHARGER	1
32	064444-000	LABEL - USA	4
33	066556-001	LABEL - WARNING	4

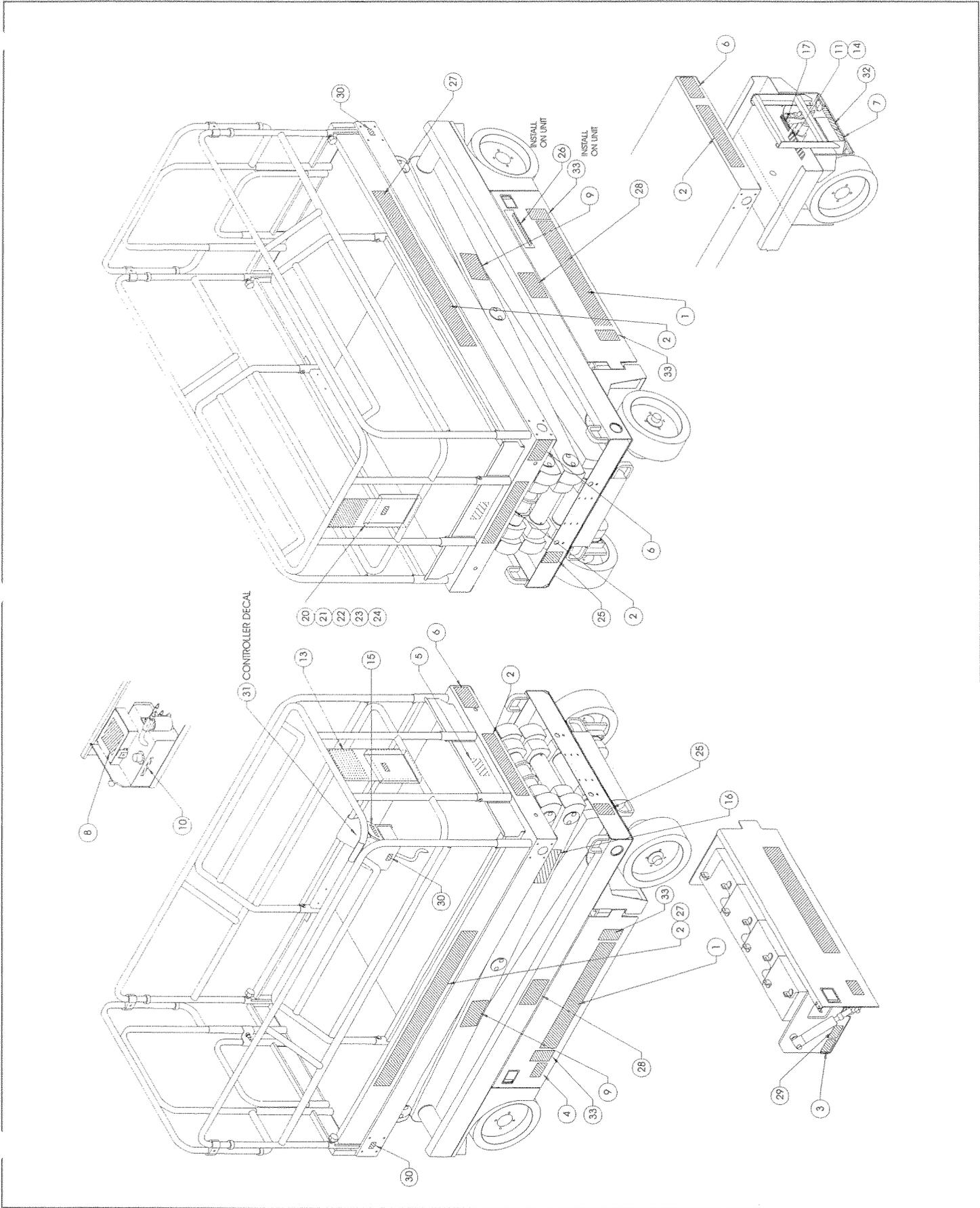
Illustrated Parts Breakdown



LABEL ASSEMBLY
X20W
066060-011

ITEM	PART	DESCRIPTION	QTY.
1	061683-006	LABEL UPRIGHT	2
2	061683-004	LABEL UPRIGHT	4
3	005221-000	LABEL MANTAIN BATTERY	1
4	066552-000	LABEL HYDR GAS	1
5	066551-000	LABEL MAX LOAD 250 LBS	1
6	066566-000	LABEL MAX LOAD 1000 LBS	2
7	14222-003-99	LABEL FORK LIFT HERE	2
8	066555-000	LABEL LIMIT SWITCHES	1
9	066553-000	LABEL WARNING	2
10	060197-000	LABEL HYDRAULIC FLUID	1
11	061205-001	LABEL NAME PLATE	1
13	066550-000	LABEL DANGER	1
14	065368-000	TACK	4
15	066554-000	LABEL READ INSTRUCTIONS	1
16	066561-000	LABEL SAFETY STAND	1
17	066558-000	LABEL EMER LOWER PULL HANDLE	1
18	060572-021	USER MANUAL	1
20	010076-001	LABEL INSTRUCTIONS	1
21	010076-000	MANUAL CASE	1
22	011252-006	SCREW HHC 1/4-20 X 3/4 LG	2
23	011248-004	NUT 1/4-20 HEX	2
24	011240-004	WASHER 1/4 FLAT	2
25	066556-000	LABEL WARNING (COLLISION)	1
26	066559-000	LABEL LOWER CONTROLS	1
27	061684-019	LABEL X 20 W	2
28	061684-016	LABEL X	2
29	062562-001	LABEL DANGER	1
30	064444-000	LABEL USA	4
31	066560-010	LABEL CONTROLLER	1
32	066522-000	LABEL BATTERY CHARGER	1
33	066556-001	LABEL - WARNING	4

Illustrated Parts Breakdown



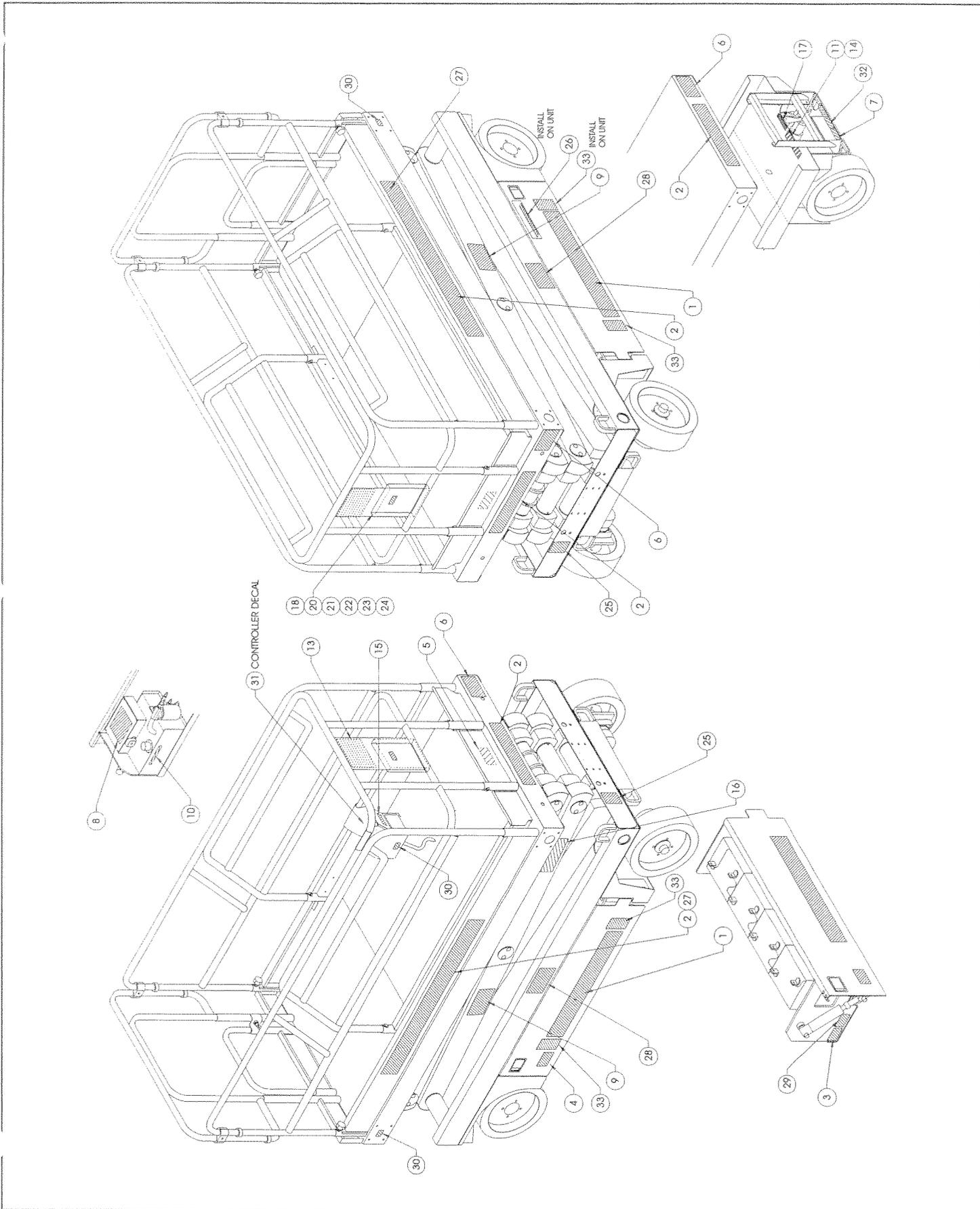
LABEL ASSEMBLY

X26N

066110-011

ITEM	PART	DESCRIPTION	QTY.
1	061683-006	LABEL UPRIGHT	2
2	061683-004	LABEL UPRIGHT	4
3	005221-000	LABEL MANTAIN BATTERY	1
4	066552-000	LABEL HYDR GAS	1
5	066551-000	LABEL MAX LOAD 250 LBS	1
6	066566-000	LABEL MAX LOAD 1000 LBS	2
7	14222-003-99	LABEL FORK LIFT HERE	2
8	066555-000	LABEL LIMIT SWITCHES	1
9	066553-000	LABEL WARNING	2
10	060197-000	LABEL HYDRAULIC FLUID	1
11	061205-000	LABEL NAME PLATE	1
13	066550-000	LABEL DANGER	1
14	065368-000	TACK	4
15	066554-000	LABEL READ INSTRUCTIONS	1
16	066561-000	LABEL SAFETY STAND	1
17	066558-000	LABEL EMER LOWER PULL HANDLE	1
18	060572-021	USER MANUAL	1
20	010076-001	LABEL INSTRUCTIONS	1
21	010076-000	MANUAL CASE	1
22	011252-006	SCREW HHC 1/4-20 X 3/4 LG	2
23	011248-004	NUT 1/4-20 HEX	2
24	011240-004	WASHER 1/4 FLAT	2
25	066556-000	LABEL WARNING (COLLISION)	1
26	066559-000	LABEL LOWER CONTROLS	1
27	061684-020	LABEL X 26 N	2
28	061684-016	LABEL X	2
29	062562-001	LABEL DANGER	1
30	064444-000	LABEL USA	4
31	066560-010	LABEL CONTROLLER	1
32	066522-000	LABEL BATTERY CHARGER	1
33	066556-001	LABEL - WARNING	4

Illustrated Parts Breakdown



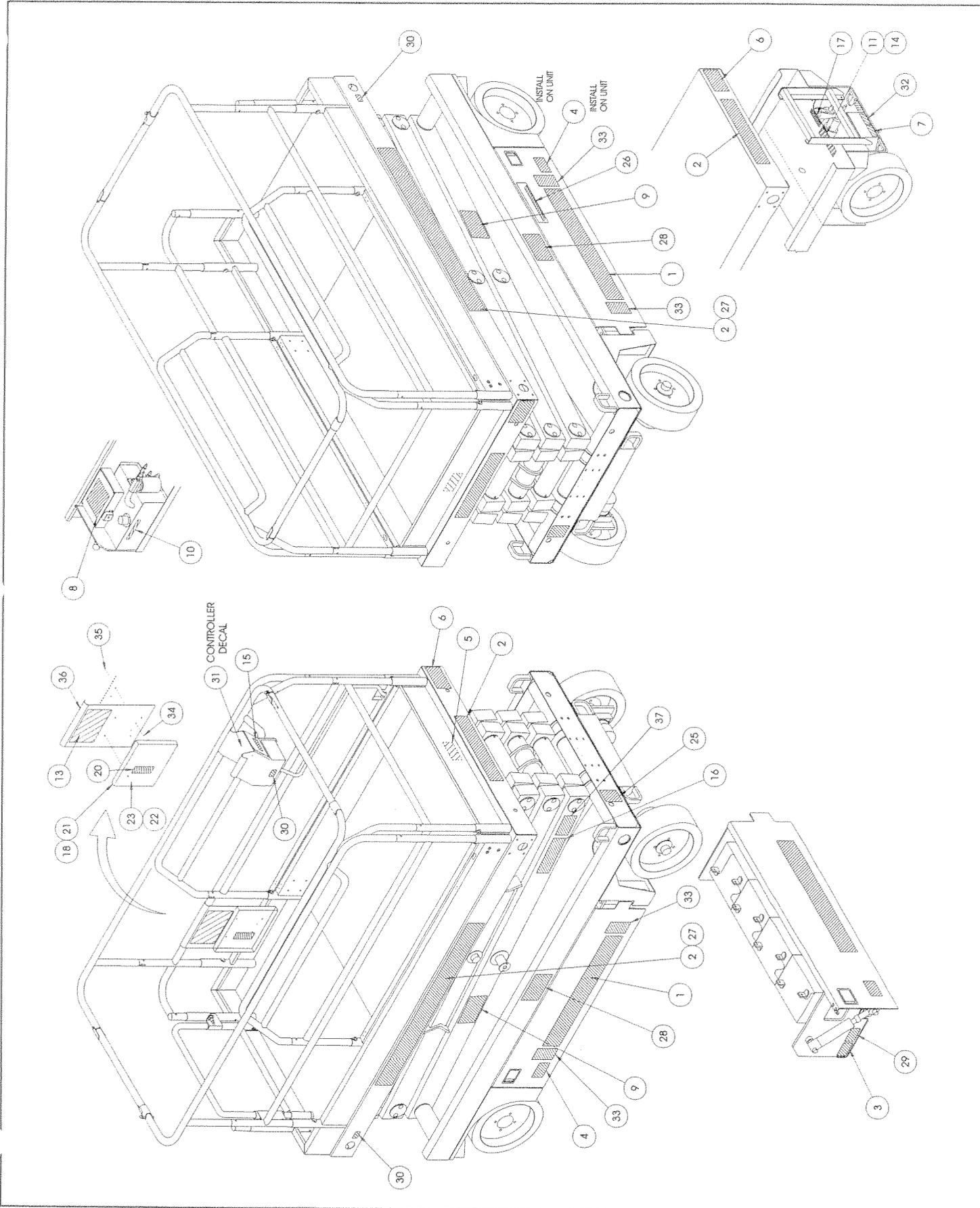
LABEL ASSEMBLY

X32N

066860-001

ITEM	PART	DESCRIPTION	QTY.
1	061683-006	LABEL UPRIGHT	2
2	061683-004	LABEL UPRIGHT	4
3	005221-000	LABEL MANTAIN BATTERY	1
4	066552-000	LABEL HYDR GAS	1
5	066551-000	LABEL MAX LOAD 250 LBS	1
6	066557-000	LABEL MAX LOAD 750 LBS	2
7	14222-003-99	LABEL FORK LIFT HERE	2
8	066555-000	LABEL LIMIT SWITCHES	1
9	066553-000	LABEL WARNING	2
10	060197-000	LABEL HYDRAULIC FLUID	1
11	061205-001	LABEL NAME PLATE	1
13	066550-000	LABEL DANGER	1
14	065368-000	TACK	4
15	066554-000	LABEL READ INSTRUCTIONS	1
16	066561-002	LABEL SAFETY STAND	1
17	005223-003	LABEL EMER LOWER	1
18	060572-021	USER MANUAL	1
20	010076-001	LABEL INSTRUCTIONS	1
21	010076-000	MANUAL CASE	1
22	011252-006	SCREW HHC 1/4-20 X 3/4 LG	2
23	011248-004	NUT 1/4-20 HEX	2
24	011240-004	WASHER 1/4 FLAT	2
25	066556-000	LABEL WARNING (COLLISION)	1
26	066559-000	LABEL LOWER CONTROLS	1
27	061684-026	LABEL X 32N	2
28	061684-016	LABEL X	2
29	062562-001	LABEL DANGER	1
30	064444-000	LABEL USA	4
31	066560-010	LABEL CONTROLLER	1
32	066522-000	LABEL BATTERY CHARGER	1
33	066556-001	LABEL - WARNING	4
34	066097-004	SCREW FLAT HD #10-24UNC X 1/2	2
35	011250-003	NUT #10-24 UNC	2
36	065648-001	MOUNT, LABEL	1
37	066561-003	LABEL CAUTION	1

Illustrated Parts Breakdown

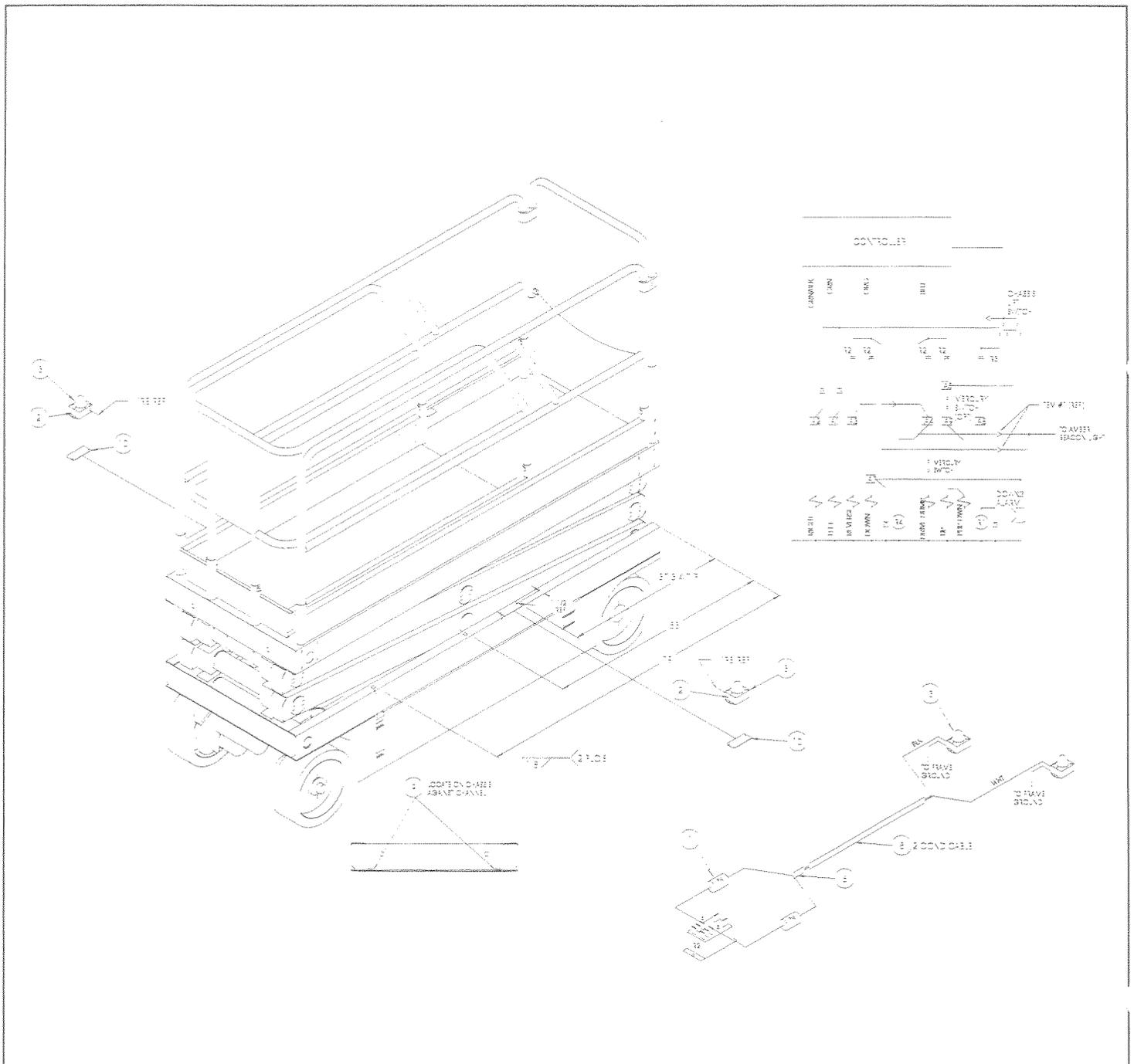


**Section
6.2**

Illustrated Parts Breakdown

FLASHING AMBER LIGHT, OPTION
X20/X26
066611-010

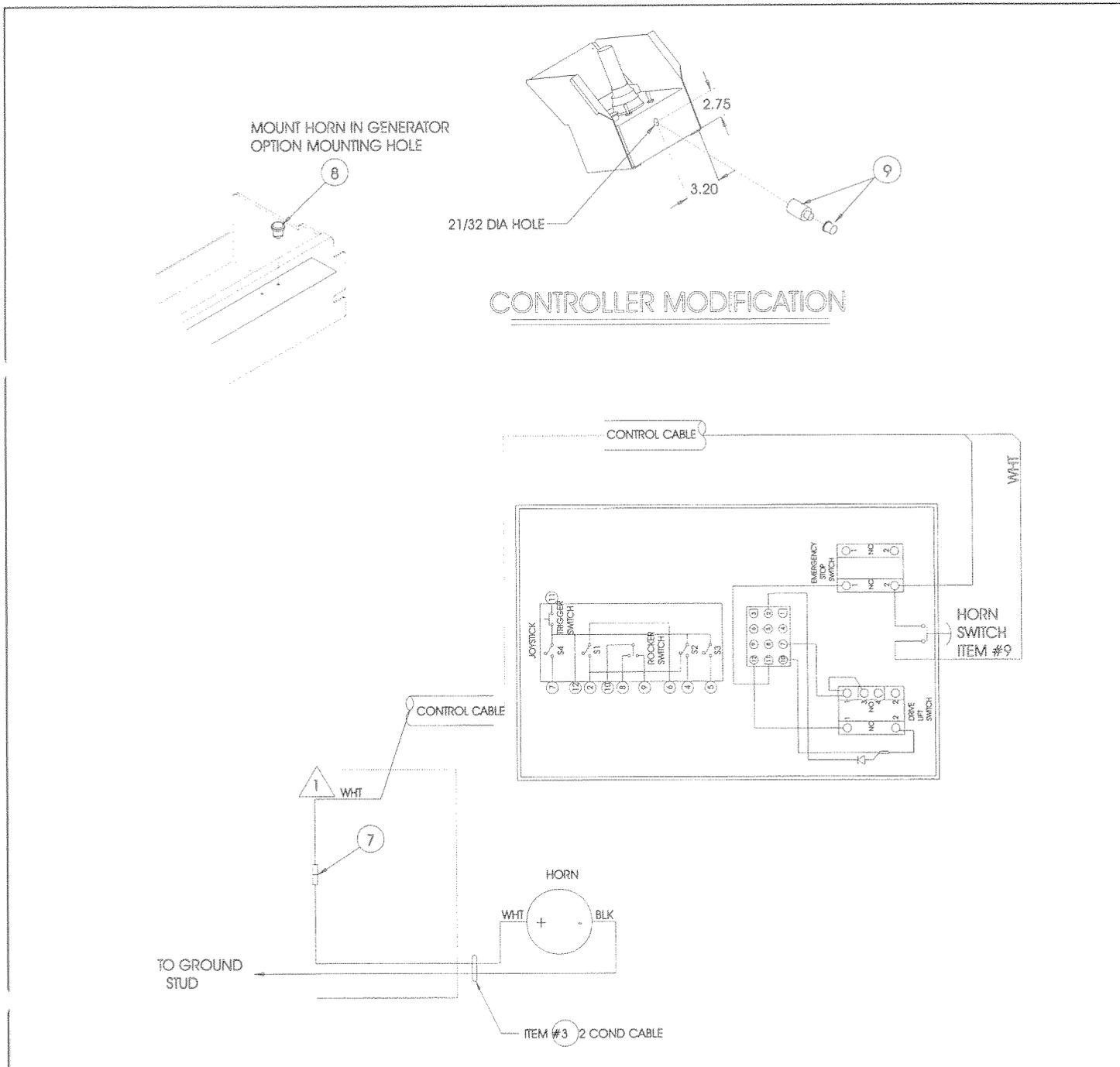
ITEM	PART	DESCRIPTION	QTY.
1	029825-002	DIODE	2
2	011826-004	SCREW MACH RD HD 10-32 UNF X 1/2	4
3	012848-004	LIGHT - FLASHING	2
5	029496-099	WIRE 16 GA 2 COND CABLE	FT 9
6	029620-003	CONN BUTT 12 - 10	1
9	013283-002	CABLE TIE	2
10	066506-000	BRACKET - LIGHT MOUNT	2



Illustrated Parts Breakdown

HORN, OPTION
X20N/X20W/X26N/X32N
066614-010

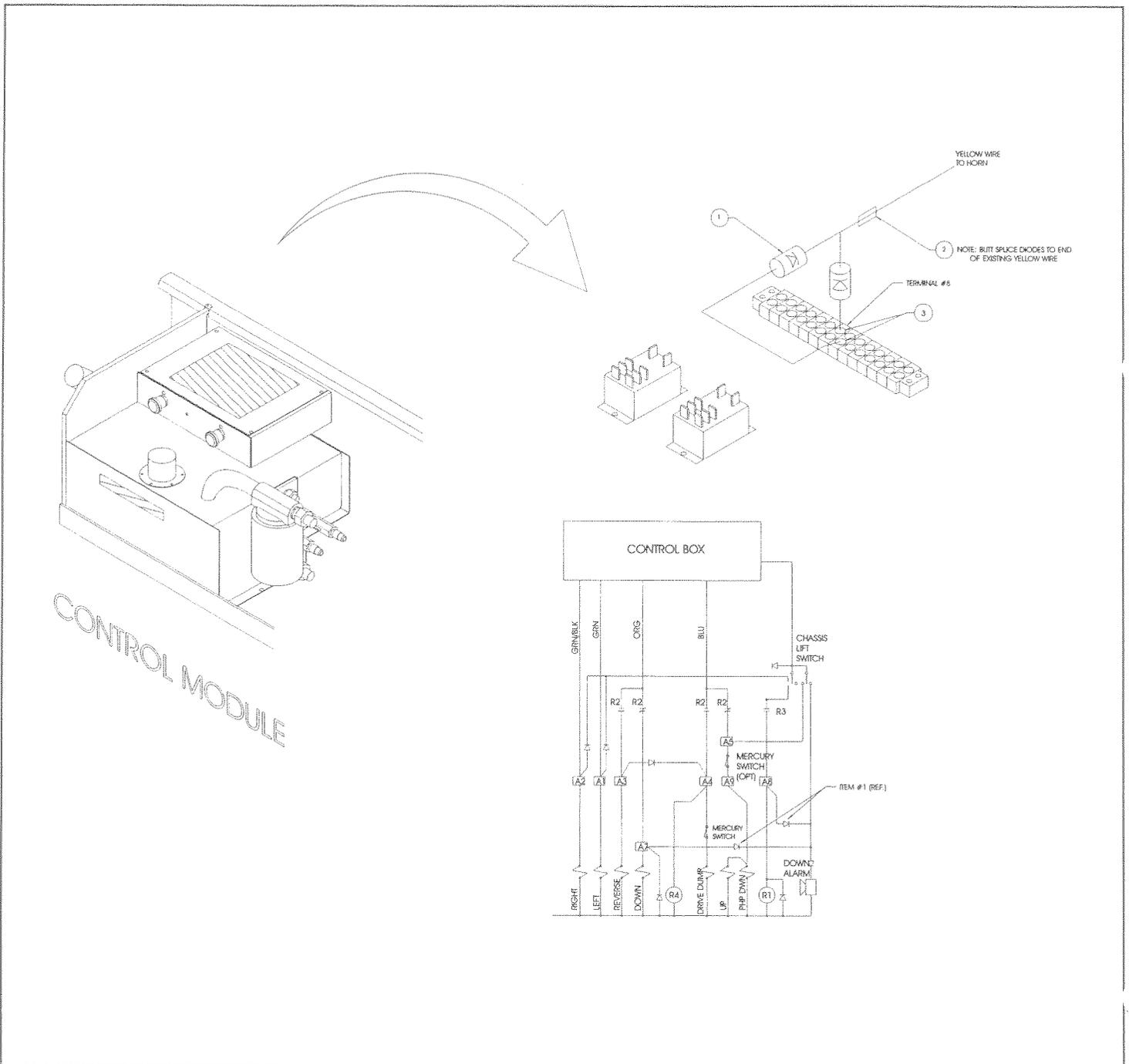
ITEM	PART	DESCRIPTION	QTY.
1	029825-002	DIODE	2
2	011826-004	SCREW MACH RD HD 10-32 UNF X 1/2	4
3	012848-004	LIGHT - FLASHING	2
5	029496-099	WIRE 16 GA 2 COND CABLE	9.00
6	029620-003	CONN BUTT 12 - 10	1
9	013283-002	CABLE TIE	2
10	066506-000	BRACKET - LIGHT MOUNT	2



Illustrated Parts Breakdown

ALL MOTION ALARM, OPTION
X20N/X20W/X26N/X32N
066616-010

ITEM	PART	DESCRIPTION	QTY.
1	029825-002	DIODE	2
2	029620-003	CONN BUTT 12-10	1
3	029610-018	CONN FORK 12-10	2

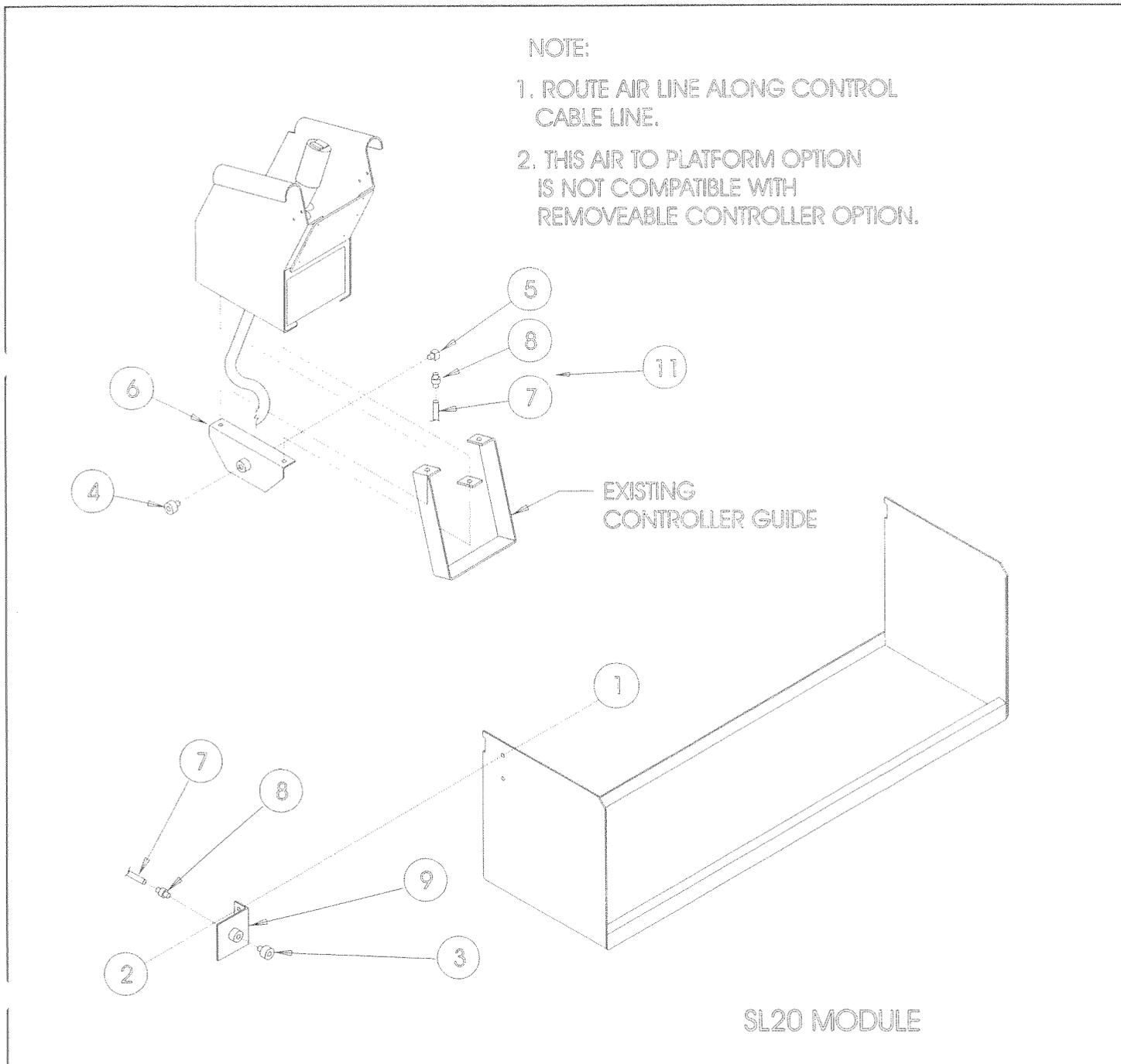


Illustrated Parts Breakdown

AIR TO PLATFORM, OPTION
X20N/X20W/X26N/X32N
066629-001

ITEM	PART	DESCRIPTION	QTY.
1	011249-003	LOCK NUT ESNA HEX #10-32	2
2	011826-008	SCREW RD.HD. MACH #10-32	2
3	012728-000	COUPLING M AIR	1
4	012729-003	COUPLING M AIR	1
5	011917-007	FITTING 90 6MP-6FP	1

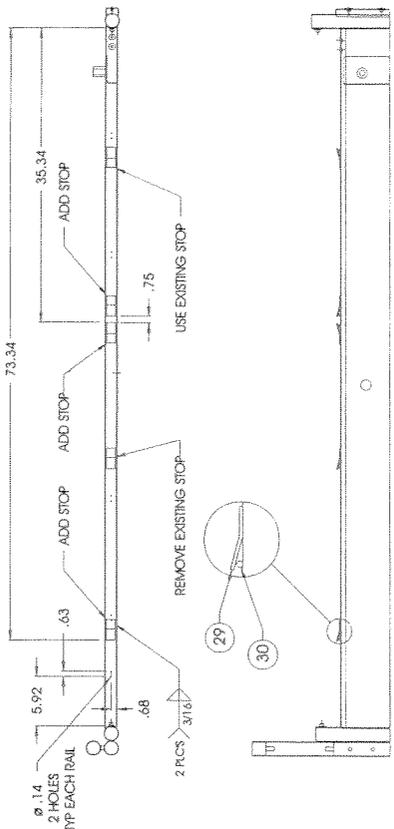
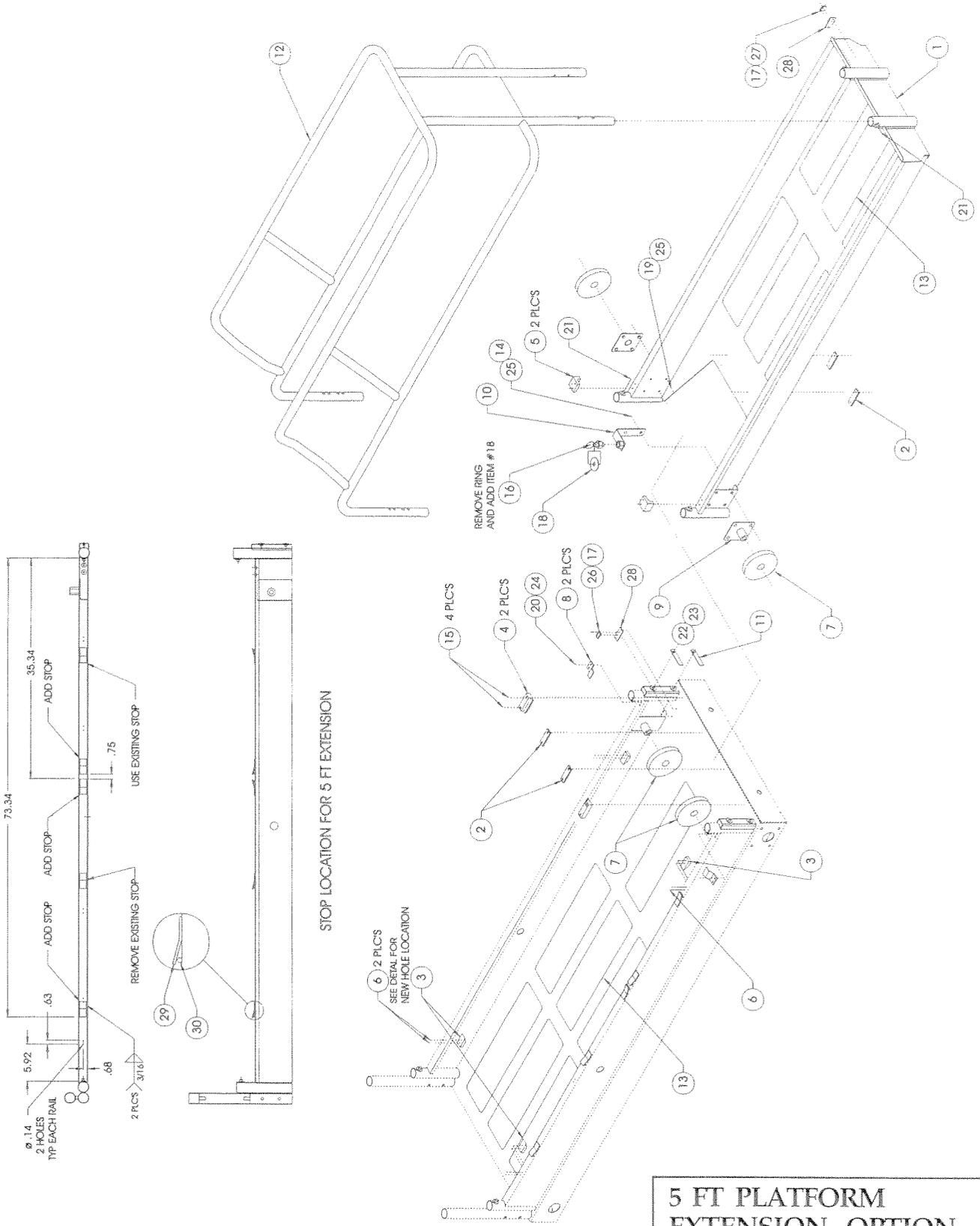
ITEM	PART	DESCRIPTION	QTY.
6	063594-001	BACKET WELDMENT	1
7	015770-099	HOSE 3/8 SYN FLEX 3600-06	50'
8	064274-002	FITTING HOSE	2
9	063191-000	BRACKET	1
11	065682-000	SPACER	1



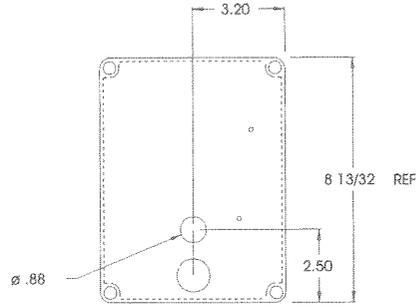
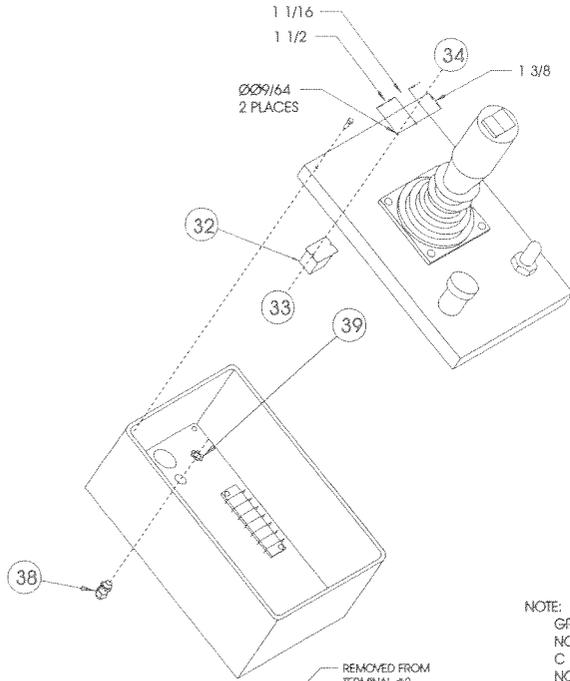
5 FT. PLATFORM EXTENSION,
OPTION X20N
066616-010

ITEM	PART	DESCRIPTION	QTY.
1	029825-002	DIODE	2
1	066040-000	WELDMENT PLATFORM 5 FT EXT.	1
2	066198-000	WEAR PAD	4
3	066193-000	STOP	4
4	066176-000	WEAR PAD	2
5	066170-000	WEAR PAD	2
6	026553-012	RIVET 3/16 DIA X 3/4 GRIP	8
7	066195-000	PLATFORM ROLLER	4
8	066407-000	BRACKET	2
9	066256-000	WELDMENT ROLLER MOUNT	2
10	066410-000	WELDMENT DECK STOP	1
11	066068-000	RETAINING STRAP	2
12	066039-000	WELDMENT 5 FT EXT. RAIL	1
13	027966-005	SAFETY WALK 6 X 24	13
14	011254-018	SCREW HHC 3/8-16 X 2 1/4	2
15	026553-008	RIVET 3/16 DIA X 1/2 GRIP	10
16	003570-000	RETAINING PIN ASSY	1
17	026551-009	RIVET 1/8 DIA X 1/2 GRIP	8
18	015924-020	WASHER 2" FENDER	1
19	011254-016	SCREW HHC 3/8-16 X 2	6
20	011252-006	SCREW HHC 1/4-20 X 3/4	4
21	066171-003	SCREW HHC 3/8-16 X 2 1/2	4
22	011240-006	WASHER 3/8 FLAT	2
23	011254-006	SCREW HHC 3/8-16 X 3/4	2
24	011240-004	WASHER 1/4 FLAT	4
25	011238-006	WASHER 3/8 LOCK	8
26	065373-005	SWITCH SENSOR	1
27	065373-006	SWITCH ACTUATOR	1
28	066030-000	MOUNT, SWITCH	2
29	066408-000	BRACKET STOP	3
30	019501-001	BAR 1/4 DIA HRS X 1	3
31	014914-003	CONN M PUSH 22-18 .25	2
32	063951-002	RELAY	1
33	011248-047	NUT HEX ESNA 6-32 UNC	2
34	011715-004	SCREW 6-32 UNC MACH RD HD X 1/2	2
35	029931-001	CONN FM PUSH 22-18 .25	4
36	029931-003	CONN FM PUSH 14-16 GA .25	2
37	029610-002	CONN FORK 14-16 #8	2
38	029925-000	CONN CABLE	1
39	029939-002	LOCKNUT 1/2 NPT	1
40	029496-099	WIRE 2 COND 16 AWG FT	16
41	066018-052	ELEC SCHEMATIC, PROP, 5FT DECK	REF
42	066018-051	ELEC. SCHEMATIC, 2 SPEED, 5FT DECK	REF

Illustrated Parts Breakdown

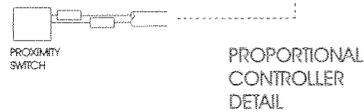
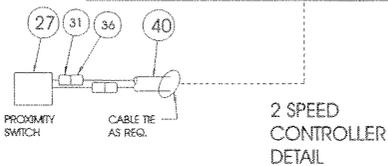
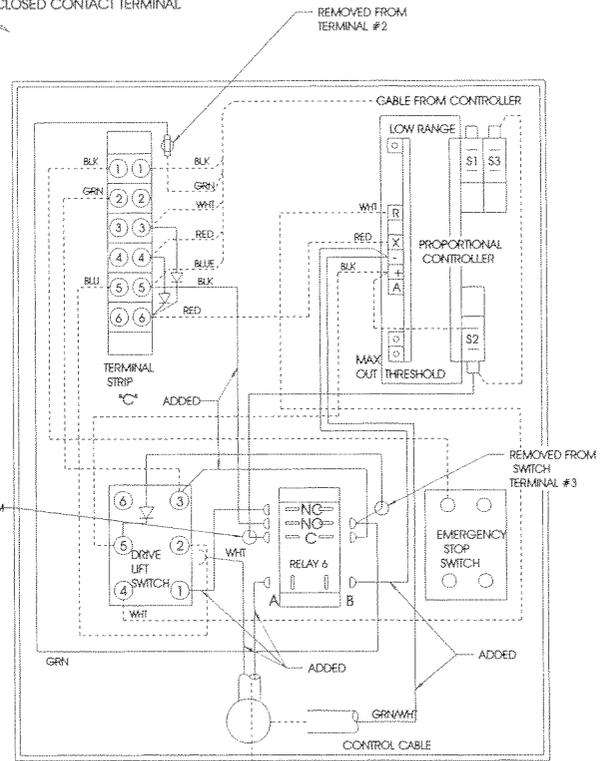
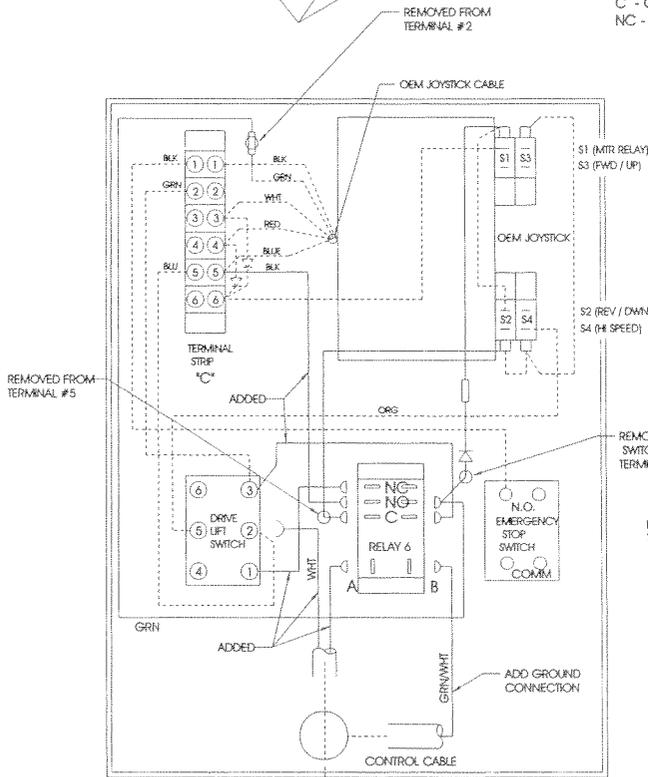


Illustrated Parts Breakdown



(OUTSIDE BOTTOM VIEW)

NOTE: CONNECT CONTROL CABLE GRN/WHT WIRE TO GROUND IN CONTROL MODULE.
 NO - NORMALLY OPEN CONTACT TERMINAL
 C - COMMON TERMINAL
 NC - NORMALLY CLOSED CONTACT TERMINAL



**5 FT PLATFORM
 EXTENSION, OPTION
 X20N
 DRAWING 2 OF 2**

Illustrated Parts Breakdown

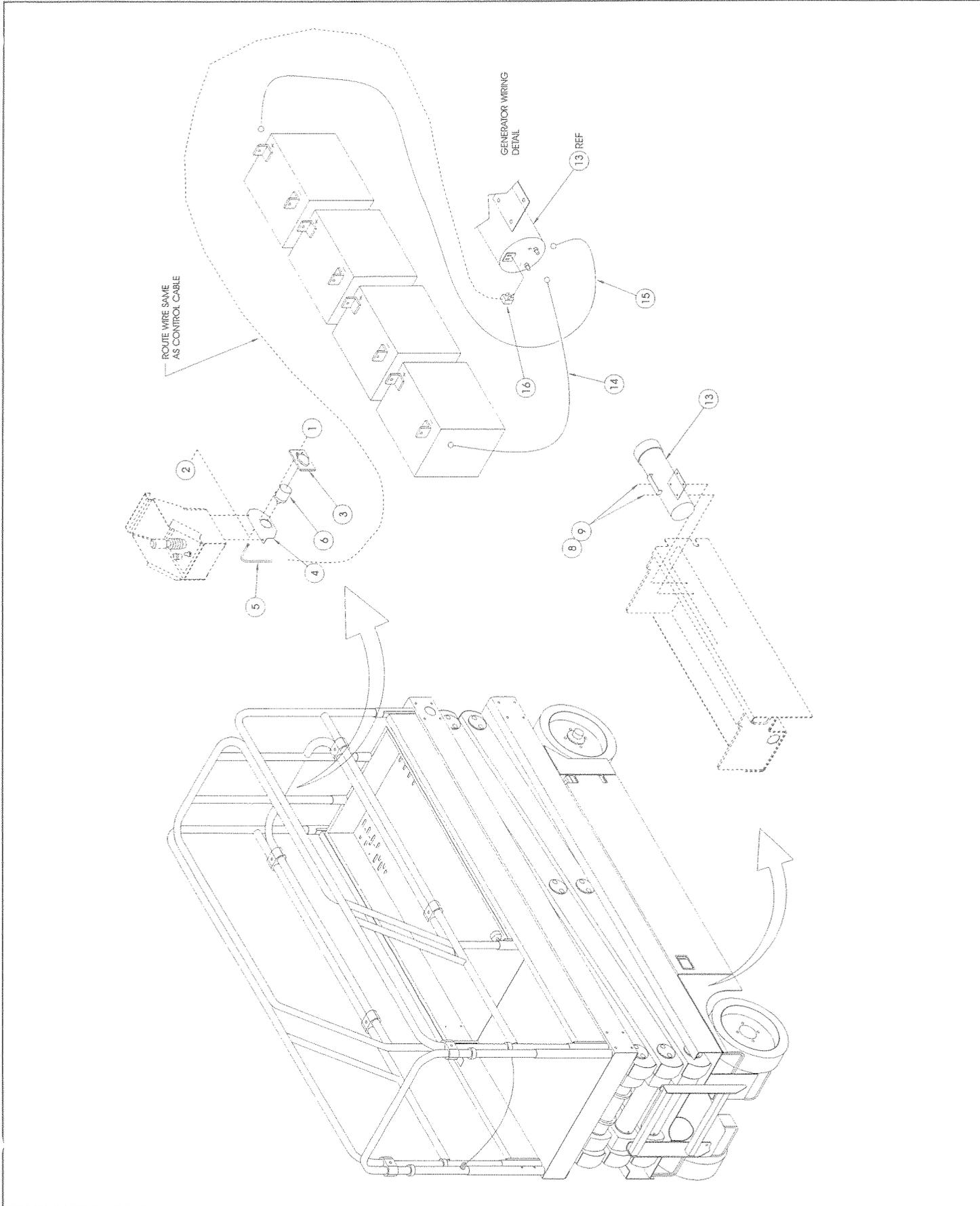
Section
6.2

NOTES:

GENERATOR, OPTION
X20N/X26N
066615-000

ITEM	PART	DESCRIPTION	QTY.
1	011715-006	SCREW, RD. HD. #6-32 X 3/4 LG.	4
2	011248-047	NUT, ESNA #6-32	4
3	008942-001	OUTLET	1
4	066505-000	BRACKET	1
5	029495-099	WIRE, 14GA 3 COND.	50'
6	029961-001	SEAL, INLET PLUG	1
8	011248-004	NUT 1/4-20 UNC	2
9	011252-008	SCREW HHC 1/4-20 X 1	2
13	026461-000	GENERATOR HONEYWELL #DA24A 24V	1
14	064195-044	CABLE ASSY (NEG) 44"	1
15	064195-024	CABLE ASSY (POS) 24"	1
16	029938-000	THREE PRONG PLUG - 90°	1

Illustrated Parts Breakdown

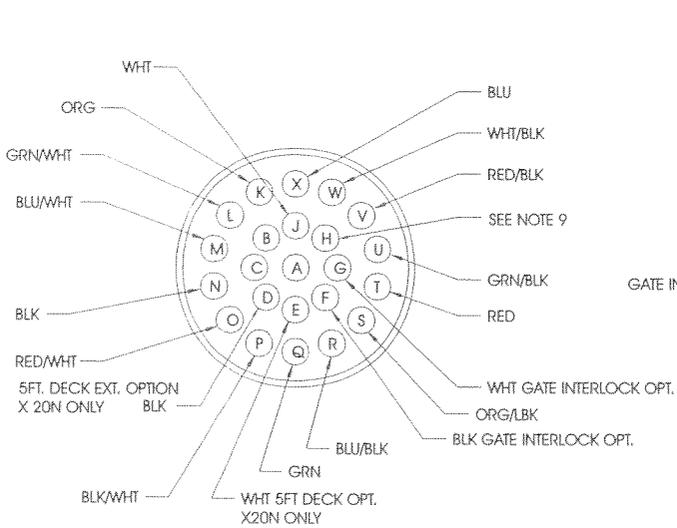


Illustrated Parts Breakdown

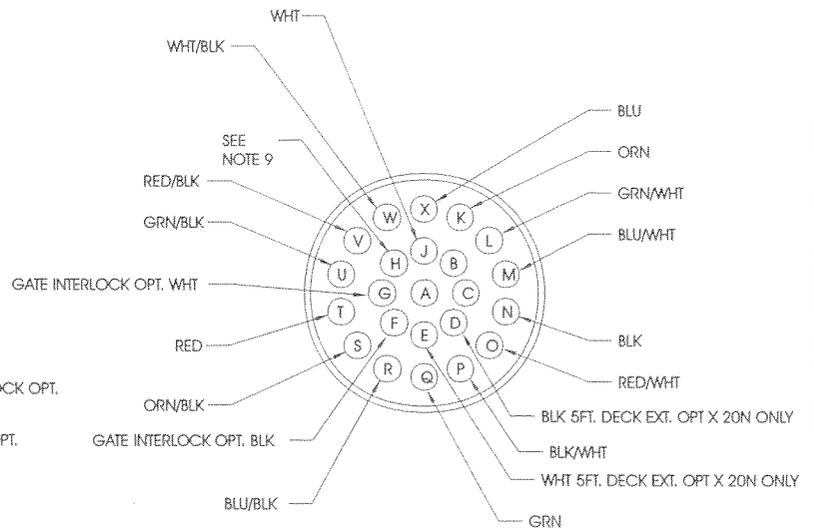
REMOVABLE CONTROLLER OPTION X20N/X20W/X26N/X32N 061898-001

ITEM	PART	DESCRIPTION	QTY.
1	011715-006	SCREW, RD. HD. #6-32 X 3/4 LG.	4
2	011248-047	NUT, ESNA #6-32	4
3	008942-001	OUTLET	1
4	066505-000	BRACKET	1
5	029495-099	WIRE, 14GA 3 COND.	50'
6	029961-001	SEAL, INLET PLUG	1

ITEM	PART	DESCRIPTION	QTY.
8	011248-004	NUT 1/4-20 UNC	2
9	011252-008	SCREW HHC 1/4-20 X 1	2
13	026461-000	GENERATOR HONEYWELL #DA24A 24V	1
14	064195-044	CABLE ASSY (NEG) 44"	1
15	064195-024	CABLE ASSY (POS) 24"	1
16	029938-000	THREE PRONG PLUG - 90°	1



VIEW B-B
MODULE END

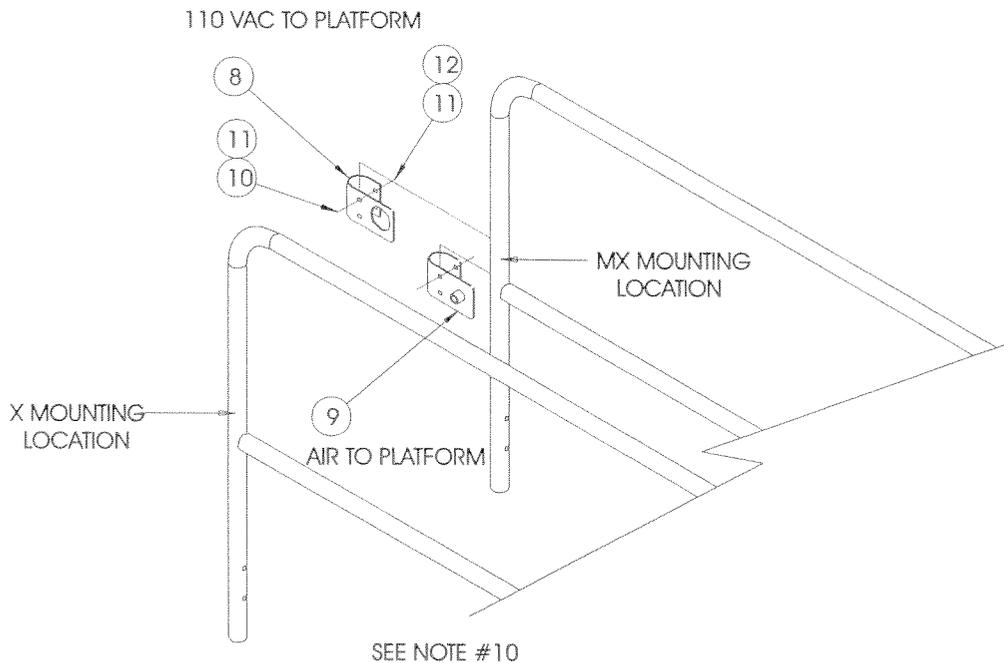
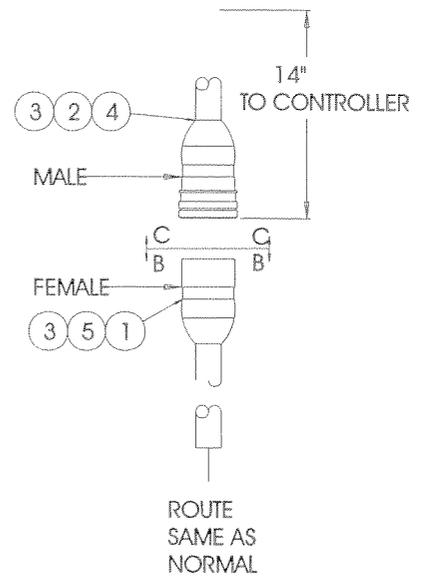


VIEW C-C
CONTROLLER END

**REMOVABLE
CONTROLLER OPTION
X20N/X20W/X26N/X32N
DRAWING 1 OF 2**

Illustrated Parts Breakdown

1. CUT OFF CONTROL CABLE 14 INCHES BELOW STRAIN RELIEF ON CONTROLLER.
2. CUT OUTER CABEL COVER OF LINKAGE CABEL BACK APPROXIMATELY 1-1/2 INCH AND STRIP APPROXIMATELY 1/4 INCH OF EACH END.
3. CRIMP SOCKETS (28800-005) ONTO WIRE ENDS AND INSERT INTO CONNECTOR (28800-016). REF. VIEW B-B.
4. CUT OUTER CABEL COVER OF CONTROLLER END BACK APPROXIMATELY 1-1/2 INCH AND STRIP APPROXIMATELY 1/4 INCH OF EACH END.
5. SLIDE BOOT AND CLAMP ONTO CABLE.
6. CRIMP PINS (28800-004) ONTO WIRE ENDS AND INSERT INTO CONNECTOR (28800-003). REF. VIEW C-C.
7. CLAMP BOOT TO CONNECTOR.
8. CONNECT CONTROLLER AND TEST MACHINE FOR PROPER FUNCTION.
9. USE TERMINAL " H " FOR HORN OPTION OR IF AUX WIRE IS REQUIRED.
10. ITEM #8 THRU 12 REQD ONLY FOR 110 VAC AND/OR AIR TO PLATFORM.



**REMOVABLE
CONTROLLER OPTION
X20N/X20W/X26N/X32N
DRAWING 2 OF 2**





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

UpRight Ireland, Ltd.

Pottery Road

Dun Laoire

Ireland

TEL: +353-1-202-4100

FAX: +353-1-202-4105

P/N 060571-022

9901-5-D