

Easy Lift Equipment Co., Inc.

2 Mill Park Court, Newark, Delaware 19713 - Phone: 800-233-1800 / 302-737-7000

EASYLIFT DC POWERED NARROW AISLE DRUM TRANSPORTER WITH ROLL POST OR V-PAN OPERATION & MAINTENANCE INSTRUCTIONS



EASYLIFT SL NARROW AISLE ROLL TRANSPORTER WITH DC POWERED LIFT

INTRODUCTION

Narrow aisle roll transporters utilize a roll post or v-pan for handling a range of roll materials. These units vary in capacity from 100 to 800 pounds. The specification plate affixed to each unit provides the following information: model number, serial number, unit weight, and lifting capacity.

This manual contains information to instruct you on the proper use and maintenance of your EasyLift narrow aisle roll transporter. This manual should be available to all operators that will use the EasyLift. Follow the maintenance procedures carefully to ensure a safe and reliable service life. Do not operate this equipment until you have read and understood these instructions.

COMMISSIONING YOUR ERGONOMIC ROLL TRANSPORTER

1. Remove all packing materials, protective strapping, and wood shipping blocks.
2. Perform a visual inspection for component damage, including checking for hydraulic oil leaks, battery acid leaks, and electrical cord damage.
3. Open the DC cabinet and look for electrical components that may have been damaged or shifted during shipment. Inspect wires for tight connections.
4. Turn the master disconnect switch “ON” and observe the battery discharge indicator. The indicator should light up and display the green bar to the far right indicating a full charge.
5. Check that the lift and lower functions are working properly. Press the corresponding switches located on the top of the electrical cabinet, to ensure proper operation of each function.
6. Test the battery charger function by turning the master disconnect switch to “OFF” (DO NOT CHARGE THE UNIT IN THE “ON” POSITION). Insert a three-prong polarized heavy gauge extension cord rated 12-3 15amp / 125-volt extension cord (NOT PROVIDED) into the 110-volt AC socket located on the side of the DC cabinet. The charger should show a red LED light for each battery on the face of the battery charger and will start charging the batteries automatically. The LED lights signify the condition of each battery. The LED indicators will turn green when the batteries are fully charged. **NOTE: DO NOT OPERATE THE UNIT WHILE CHARGING OR WITH THE EXTENSION CORD PLUGGED IN.**
7. The battery discharge indicator on the side of the DC box (next to the master shut off switch) will be reset when the batteries reach a full charge of 2.35 volts per cell. This will be indicated by the solid green LED lights on the face of the battery charger. **“Reference the Pro Charge Battery Charger section of this manual for proper charging operations”.**

DAILY SAFETY INSPECTION

1. Perform a visual inspection, checking for any evident damage to unit and hydraulic oil leakage from previous use. Check all hydraulic connections and under the machine itself for leaks.
2. Open the DC cabinet and check to ensure the batteries are secure, clean, battery cables are connected and DC cable fuses are intact. Turn the master disconnect switch to the “ON” position. Ensure batteries have sufficient charge for operation. Do not operate the unit when the battery discharge indicator is at 70% depth of discharge or when the 2nd LED from the left is flashing as this could damage the internal components.
3. Check that the lift and lower functions are working properly. Press corresponding switches located on the top of the electrical cabinet, to ensure proper operation of each function.
4. Check to see the step-down foot floor lock is functioning properly and wheels are free of obstruction and functioning properly.

Do not operate your Ergonomic Roll Transporter if the unit does pass any part of the inspection. Tag the unit properly to keep it out of service until the problem has been corrected. Immediately report this condition to your supervisor.

SAFETY PRACTICES

1. Do not lift loads that exceed the unit’s rated capacity.
2. For transport, lift the roll just high enough to achieve necessary floor clearance for travel.
Do not transport or move a roll at heights greater than 6”/15cm above floor height.
3. Do not transport or move a roll while the mast is raised to, or near, its maximum height.
4. Keep hands or feet away from the lifting area in front of the unit as well as the lifting cylinder, roll post, v-pan, mast, and mast chain during operation.
5. Ensure the lift cylinder rod is securely in place before lifting.
6. Do not use the machine on inclined floors having a slope of more than 5 degrees.
7. Never lay the unit down horizontally.

WARNINGS

- WARNING:** Do not lift or suspend loads over people. Stay clear of suspended loads.
- WARNING:** Do not attempt to overload the roll transporter beyond its rated capacity, or raise the roll beyond its maximum lifting height.
- WARNING:** Never move the machine when the load is at its maximum lifting height. Lower the mast so the roll has only the necessary floor clearance.
- WARNING:** Keep hands and feet away from the pinch points such as; mast channel, lifting & rotation chains, roll post, v-pan, and any other moving parts.
- WARNING:** Do not make alterations or modifications to the unit without authorization from Easy Lift Equipment.
- WARNING:** Do not leave unit outside in rain, snow, etc., for extended periods.
- WARNING:** Never leave the unit without securing the unit with the step-down foot floor lock. Failing to do so may allow the unit to move inadvertently and cause property damage or personal injury.
- WARNING:** Never operate the unit on an incline or floor with a slope of more than 5°.
- WARNING:** Never wash the unit down. The unit is designed to be wiped down by hand. Washing down the unit may result in damage to the electrical components.
- WARNING:** Do not operate the unit when the battery discharge indicator is at 70% depth of discharge (indicated by 2nd LED from the left on BDI is flashing) as this could damage the internal components.
- WARNING:** Never perform any maintenance on the equipment unless the power cord is disconnected from the machine.
- WARNING:** Do not operate the unit while charging or with the extension cord plugged in.

EASYLIFT SL NARROW AISLE ROLL TRANSPORTER WITH DC POWERED LIFT OPERATING INSTRUCTIONS

USING A ROLL POST TO PICK AND TRANSPORT ROLLS:

1. Press the “DOWN” switch on the top of the DC cabinet so the roll post is fully lowered. Center the roll post with the center of the rolls core and push the machine forward until the roll post is fully inserted into the rolls core.
2. If using the roll post with rollers, insert the safety pin into the end of the roll post prior to raising the roll off the floor or pallet. The safety pin is designed to hold the roll securely into place on the roll post with rollers during transport. Insert the circle lynch pin to secure the safety pin into place. **Failure to use the roll post with rollers safety pin may allow the roll to slide off the roll post with rollers during transport and cause property damage or personal injury.**
3. Once the roll post is fully inserted and the safety pin is in place (in the case of a roll post with rollers) press the “UP” switch on the top of the DC cabinet to elevate the roll post. Only lift the roll to the minimum height needed for proper floor clearance. At this time, you can transport the roll to its required destination.
4. To lower and set the roll down, press the “DOWN” switch on the top of the DC cabinet. Once the roll has been set down, remove the roll post with rollers safety pin, if applicable, and pull the roll transporter back and out of the rolls core.

USING A V-PAN TO PICK, TRANSPORT AND ROTATE HORIZONTAL ROLLS:

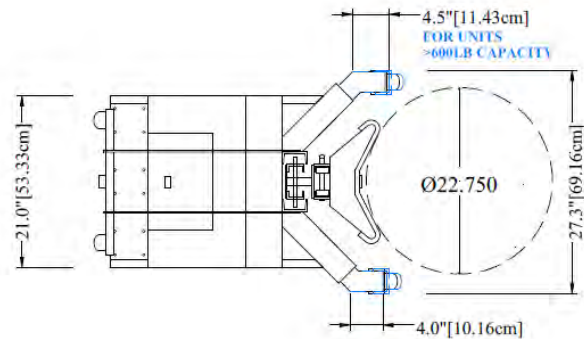
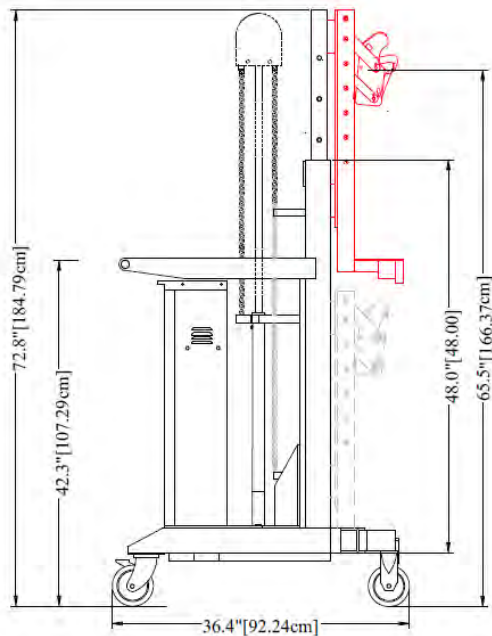
1. V-Pans are capable of handling rolls up to 30” wide by 30” in diameter and weight capacities up to 600 lb. depending on lift height. The stainless-steel rotating v-pan is designed to be low profile and sit flush against a standard 40” x 48” pallet.
2. When picking a roll from a skid, move the roll transporter into place and press the “DOWN” switch on the top of the DC cabinet so the v-pan is fully lowered. V-pans should be at a slightly lower position than the pallet to allow the roll to be manually rolled onto the V-pan. Always engage the step-down foot floor lock prior to walking from behind your EasyLift roll transporter. Ensure that your v-pan has been rotated into the proper orientation. Once properly lowered and rotated, manually push the roll from the skid and onto the v-pan.
3. Once the roll has firmly settled into the v-pan, press the “UP” switch on the top of the DC cabinet to raise the v-pan off the floor. Only lift the v-pan and roll to the minimum height needed for proper floor clearance while transporting.
4. Once the proper destination has been reached, lock the foot floor lock, and manually rotate the v-pan, if needed. The V-Pan gives the operator loading flexibility, as it allows the roll to be loaded onto packaging machinery either parallel or perpendicular.

SCALE EQUIPPED MODELS (GRIP & WEIGH ATTACHMENTS)

If your equipment has a scale system, the indicator has already been calibrated and tested before leaving the factory. It has been disconnected and packaged separately for safe travel. Unpack the indicator from the box and mount to the unit on the provided mounting bracket. Connect the indicator cable to the unit cable by screwing the male and female ends together. Turn on the indicator and ensure it reads zero before engaging a roll. Please refer to the manual of the specific indicator for proper operation instructions.

MAINTENANCE INSTRUCTIONS

1. Before every usage, check that all springs, pins, casters, lift chains and its anchors are in good working order and that the hydraulic cylinder works properly and isn't leaking.
2. The Darcor™ casters equipped on this equipment have precision sealed ball bearings and require no lubrication.
3. For heavy usage, it is recommended to replace all springs, hydraulic oil and sealing components of the hydraulic cylinder once each year.



EASYLIFT NARROW AISLE ROLL TRANSPORTER MAINTENANCE CHECKLIST

			Maintenance Intervals			
			1 Mo	6 Mo	12 Mo	3 Years
Structural Steel:	1.1	Check for cracked welds on frame;		X		
	1.2	Check to verify that specification data plates are affixed to the unit;			X	
	1.3	Grease* mast, rollers and check roller condition.			X	
Clamping Head(s):	2.1	Inspect heads for loose or missing pins, cotter pins, springs, and replace as necessary;	X			
	2.2	Lubricate** clamping mechanisms;	X			
	2.3	Replace all springs;			X	
	2.4	Replace all pins, and links.				X
Wheels:	3.1	Grease* wheel swivel grease fittings;			X	
	3.2	Check wheels for excessive wear and proper alignment.			X	
Hydraulic Cylinder:	4.1	Check cylinder for leaks and proper operation.	X			
Chain:	5.1	Verify proper chain tension and inspect chain for damage.			X	
	5.2	Lubricate*** chain.			X	

The maintenance intervals refer to normal service conditions.

In high volume usage conditions, the intervals must be increased as required.

* For Non-FDA equipment: NAPA Premium Performance Multi-Purpose Wheel Bearing Grease.

* For FDA (gray color) equipment: Super Lube Synthetic Food Grade Grease with Synolon PTFE.

** For both Non-FDA & FDA Equipment: WD-40, Berkebile White Lithium Grease or comparable.

*** For both Non-FDA & FDA ANSI 60 Chain: SAE 40

Hydraulic Fluid:

Non-FDA equipment: Hydraulic Oil AWG32

For FDA equipment: Food Grade 32/46 Hydraulic Synthetic Lubricant

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EASY LIFT EQUIPMENT WARRANTY POLICY FOR MODELS WITH PREFIXES: ED/ER/EL/ELDR/EG & RCR

Easy Lift Equipment (“ELE”) warrants each new product to be free from factory material and workmanship defects, under normal use with proper maintenance, for a period of 12 months. Warranty coverage for this warranty period is provided by authorized dealers and includes parts. Labor is covered for the same periods of 12 months as outlined above. Please call ELE for the authorized repair dealer in your area.

ELE shall be the sole judge of the validity of any claim or defect and may elect to make any replacement or repair of any part thereof that it has agreed to be defective. Wearable Items such as: hoses, bearings, belts, brushes, seals, lift motors, clamp motors, relays, fuses, springs and wheels are wear items not covered under the warranty policy. ELE assumes no responsibility whatsoever to work done, parts replaced, or expenses incurred not specifically authorized by ELE. Normal maintenance or replacement of service items is not covered by this warranty. No warranty claims will be considered for customers with any delinquent outstanding balance. When batteries, battery chargers, scale printers or scale indicators are purchased from ELE with the equipment, the original manufacturer’s warranty applies.

WARRANTY LIMITATION/DISCLAIMERS:

Easy Lift Equipment reserves the right to void warranty coverage if the unit has been overloaded beyond rated capacity; damaged due to: abuse, misuse, neglect, accidents, freight damage, improper usage, improper repair, and/or improper storage; or any modification or repair conducted in a manner not approved by Easy Lift Equipment. Equipment used in freezers, abrasive, corrosive, and/or excessively moist conditions must be properly equipped for the environment to ensure the warranty is not voided. Warranty questions and claims should be directed to our customer service department. ELE customer service representatives will help you assess and resolve the claim or assist you in contacting the local authorized dealer or representative. The warranty described here shall constitute the sole remedy of the authorized dealer and/or the initial purchaser. ELE neither assumes nor authorizes any person to assume for it any other obligation or responsibility in connection with this product warranty. In no event shall ELE be responsible for direct, indirect, special or consequential damages or any other delay or any economic or commercial loss resulting from Easy Lift Equipment’s performance or non-performance under this warranty. This warranty is expressly in lieu of all warranties, obligations or responsibilities of ELE dealers or other authorized source, expressed, implied or statutory.

SUBMITTING CLAIMS:

To make a claim under this policy, please contact Easy Lift Equipment for assistance. We can be reached by calling 800-233-1800 ext. 4 for customer service or by writing to sales@easylifteqpt.com. Do not return defective parts unless a return authorization (RA) has been provided requesting the return. If requested, we will provide shipping information on how the part should be returned and bear the expense for the return shipping, if the part is proven to be defective. A copy of the work order made at the time of the repair and parts claimed under warranty may be requested for ELE’s inspection.

ORDERING PARTS:

Easy Lift Equipment’s parts are distributed through our customer service department and ship the same day as ordered whenever possible. You will be well taken care of whenever parts, adjustments or repairs are needed. **When contacting ELE, please be sure to state the model and serial number for the equipment.** There is no cost for electronic copies of replacement manuals, parts lists and other general information containing part numbers and nomenclature. Most manuals contain parts pricing, but it is not guaranteed to be valid as parts pricing can change at any time without notice. Any customer service representative can provide timely parts quotations upon request. Adherence to above procedure will save time and provide prompt assistance when it counts. You are of course always welcome to bring to us any questions, comments or recommendations pertaining to your Easy Lift Equipment products.

MANUFACTURER CONTACT INFORMATION:

Easy Lift Equipment Co., Inc.
2 Mill Park Ct.
Newark, DE 19713
Email: sales@easylifteqpt.com

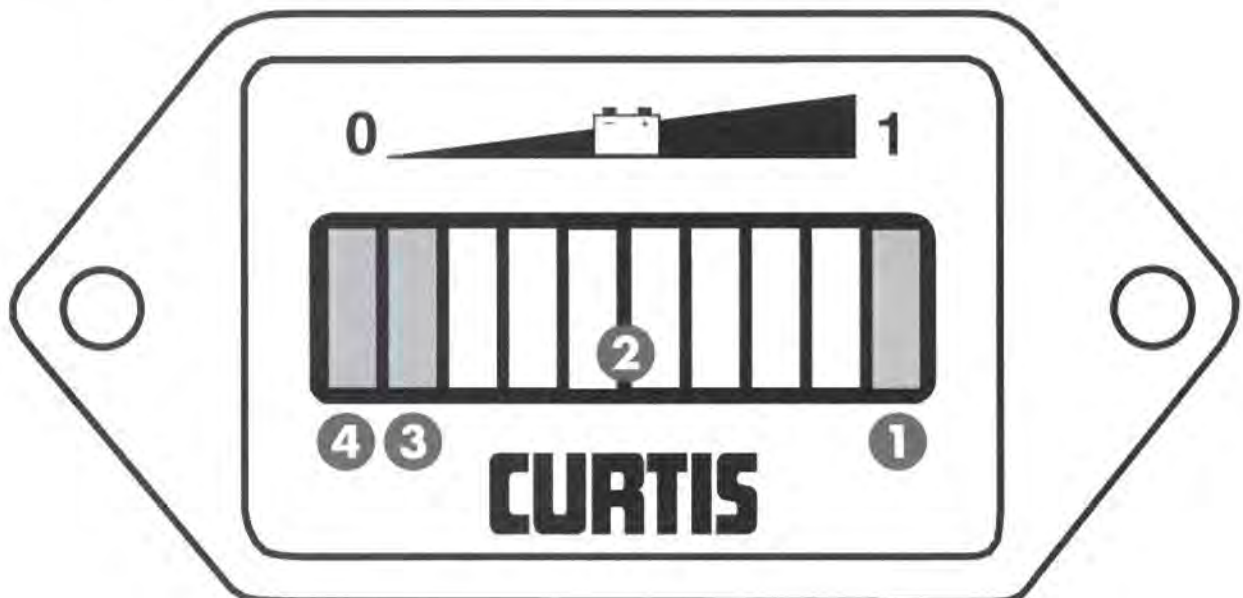
Phone: 800-233-1800: 302-737-7000
Fax: 302-737-7333
Website: www.easylifteqpt.com

OPERATION

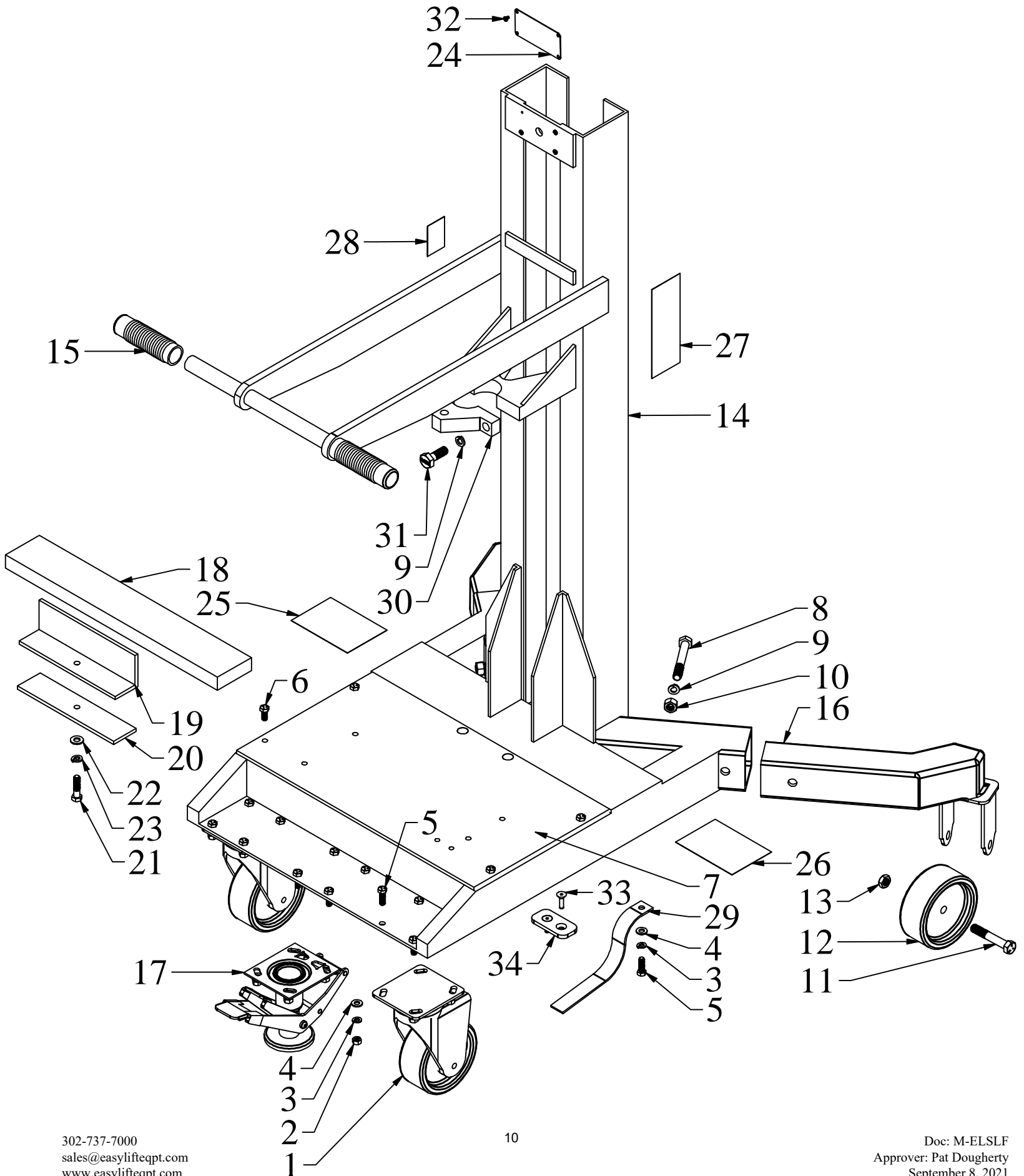


Display

- 1 Only when the battery is properly charged is the right-most LED lit.
- 2 As the battery's state-of-charge decreases, successive LEDs light up, only one on at a time.
- 3 The 2nd-from-left LED flashes, indicating "energy reserve" (70% depth of discharge).
- 4 The 2 left-most LEDs alternately flash, indicating "empty" (80% depth of discharge).



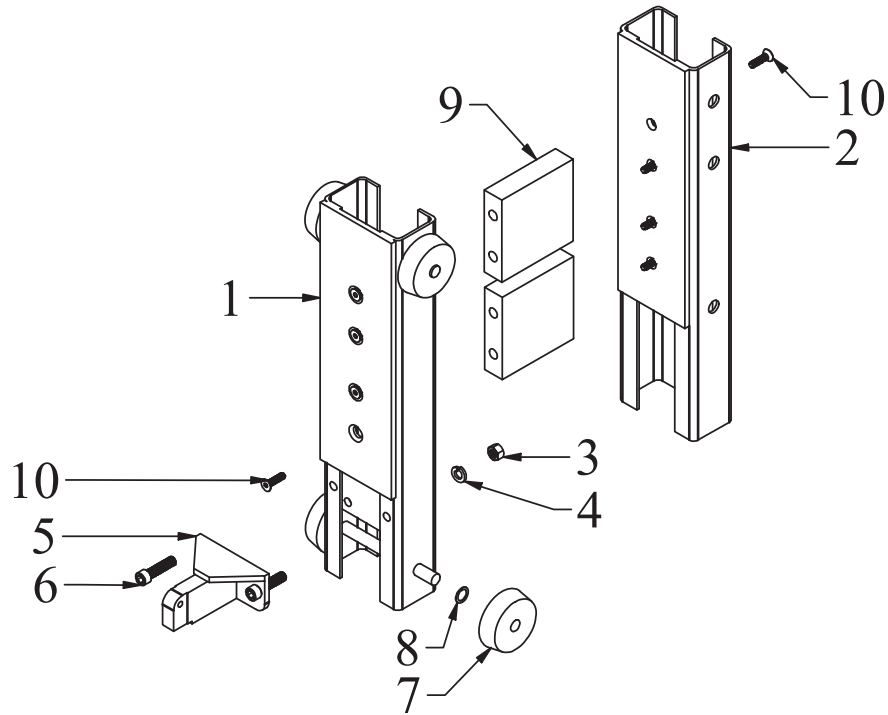
EASYLIFT NARROW AISLE DRUM TRANSPORTER FRAME ASSEMBLY



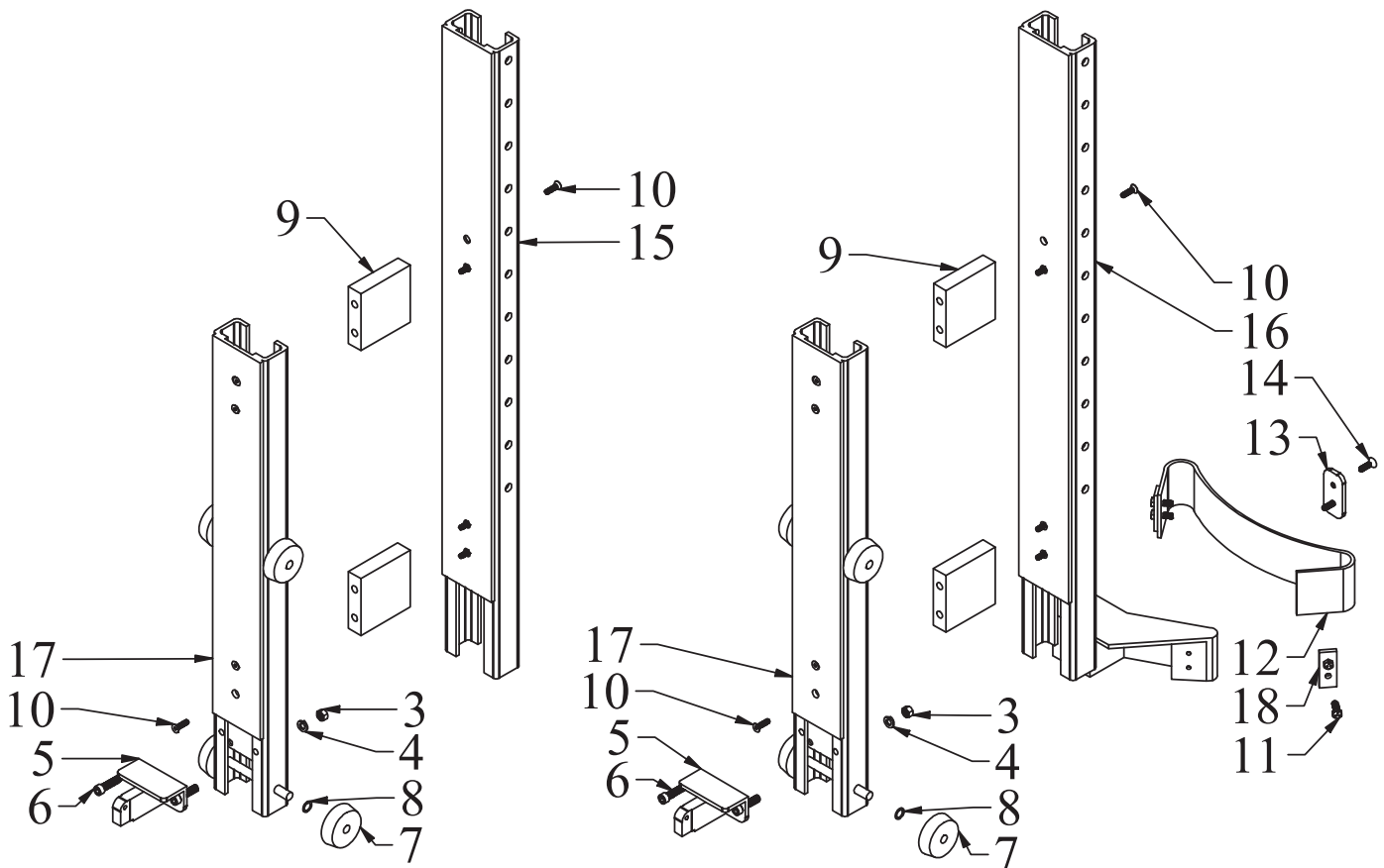
**EASYLIFT NARROW AISLE DRUM TRANSPORTER FRAME
PARTS LIST**

ITEM	PART NO.	DESCRIPTION	QTY
1	31-405-PSE	5" Swivel Caster with PSE Wheel	2
-	W-405-PSE	5" PSE Wheel Only	-
1	31-408B-PSE	8" Swivel Caster with PSE Wheel & Brake	2
-	W-408-PSE	8" PSE Wheel Only	-
2	5/16-18 HN	5/16-18 Finished Hex Nut (zinc)	12
2	5/16-18 HN-SS	5/16-18 Finished Hex Nut (stainless steel)	12
3	5/16 LW	5/16 Lock Washer (zinc)	13
3	5/16 LW-SS	5/16 Lock Washer (stainless steel)	13
4	5/16 FW	5/16 Flat Washer (zinc)	13
4	5/16 FW-SS	5/16 Flat Washer (stainless steel)	13
5	5/16-18 X 1 HHCS	5/16-18 x 1 Hex Head Cap Screw Grade 5 (zinc)	13
5	5/16-18 X 1 HHCS-SS	5/16-18 x 1 Hex Head Cap Screw (stainless steel)	13
6	5/16-18 X 3/4 HHCS	5/16-18 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	4
6	5/16-18 X 3/4 HHCS-SS	5/16-18 x 3/4 Hex Head Cap Screw (stainless steel)	4
7	2580305	SL Ergo Top Plate (DC Style)	1
8	1/2-13 x 3 3/4 HHCS	1/2-13 x 3 3/4 Hex Head Cap Screw Grade 5 (zinc)	2
8	1/2-13 x 3 3/4 HHCS-SS	1/2-13 x 3 3/4 Hex Head Cap Screw (stainless steel)	2
9	1/2 LW	1/2 Lock Washer (zinc)	4
9	1/2 LW-SS	1/2 Lock Washer (stainless steel)	4
10	1/2-13 HN	1/2-13 Finished Hex Nut (zinc)	2
10	1/2-13 HN-SS	1/2-13 Finished Hex Nut (stainless steel)	2
11	1/2-20 x 3 1/4 HHCS	1/2-20 x 3 1/4 Hex Head Cap Screw (zinc)	2
12	W-405-PSE	5" PSE Wheel Only	2
12	W-408-PSE	8" PSE Wheel Only	2
13	1/2-20 THIN NLN	1/2-20 Thin Nylon Locking Nut (Zinc)	2
14	3530119	SL Frame (20" lift, AC/DC powered)	1
14	3530120	SL Frame (40" lift, AC/DC powered)	1
14	3530121	SL Frame (60" lift, AC/DC powered)	1
15	65657	Handle Grips	2
16	3530214	SL Leg Set for 5" Casters at 300lb capacity (2")	1
16	3530217	SL Leg Set for 5" Casters up to 600lb capacity (4")	1
16	3530218	SL Leg Set for 8" Casters up to 600lb capacity (4")	1
16	3530231	SL Leg Set for 5" Casters over 600lb capacity (4.5")	1
16	3530232	SL Leg Set for 8" Casters over 600lb capacity (4.5")	1
17	16LF0580	Step Down Floor Lock (for 5" wheels)	1
17	16LF0880	Step Down Floor Lock (for 8" wheels)	1
18	1" x 3" x 18-3/4" HRFB CW	1" x 3" x 18-3/4" HRFB SL Counter Weight	-
19	3530515	Counter Weight Hold-Down Flat Bar	1
20	3530516	Counter Weight Hold-Down Angle	1
21	3/8-16 x 2 HHCS	3/8-16 x 2 Hex Head Cap Screw (zinc)	1
21	3/8-16 x 2 HHCS-SS	3/8-16 x 2 Hex Head Cap Screw (stainless steel)	1
22	3/8 FW	3/8 Flat Washer (zinc)	1
22	3/8 FW-SS	3/8 Flat Washer (stainless steel)	1
23	3/8 LW	3/8 Lock Washer (zinc)	1
23	3/8 LW-SS	3/8 Lock Washer (stainless steel)	1
24	MCL007031	Specification Plate	1
25	ADART002	Attention Read Operations Manual Decal	1
26	ADART600	600lbs/272kg Capacity Sticker	1
27	ADART016	ELE Address Decal (Vertical)	2
28	ADART009	Warning 5 Degree Decal for ELE & EL	1
29	S-207	Grounding Strap	1
30	35091	Cylinder Clamp Bracket	1
31	1/2-13 x 1 1/2 HHCS	1/2-13 x 1 1/2 Hex Head Cap Screw Grade 5 (zinc)	2
31	1/2-13 x 1 1/2 HHCS-SS	1/2-13 x 1 1/2 Hex Head Cap Screw (stainless steel)	2
32	6 x 1/4 RUDS-SS	6 x 1/4 Round Head U Drive Screw (stainless steel)	4
33	1/4-20 x 1/2 FSHCS-SS	1/4-20 x 1/2 Flat Socket Head Cap Screw (stainless steel)	2
34	2580051	EG1/Ergo UHMW Belt Support	1

V-PAN, ROLL POST 18" & JIB INNER & OUTER MASTS ASSEMBLY



FISHER MASTS ASSEMBLY



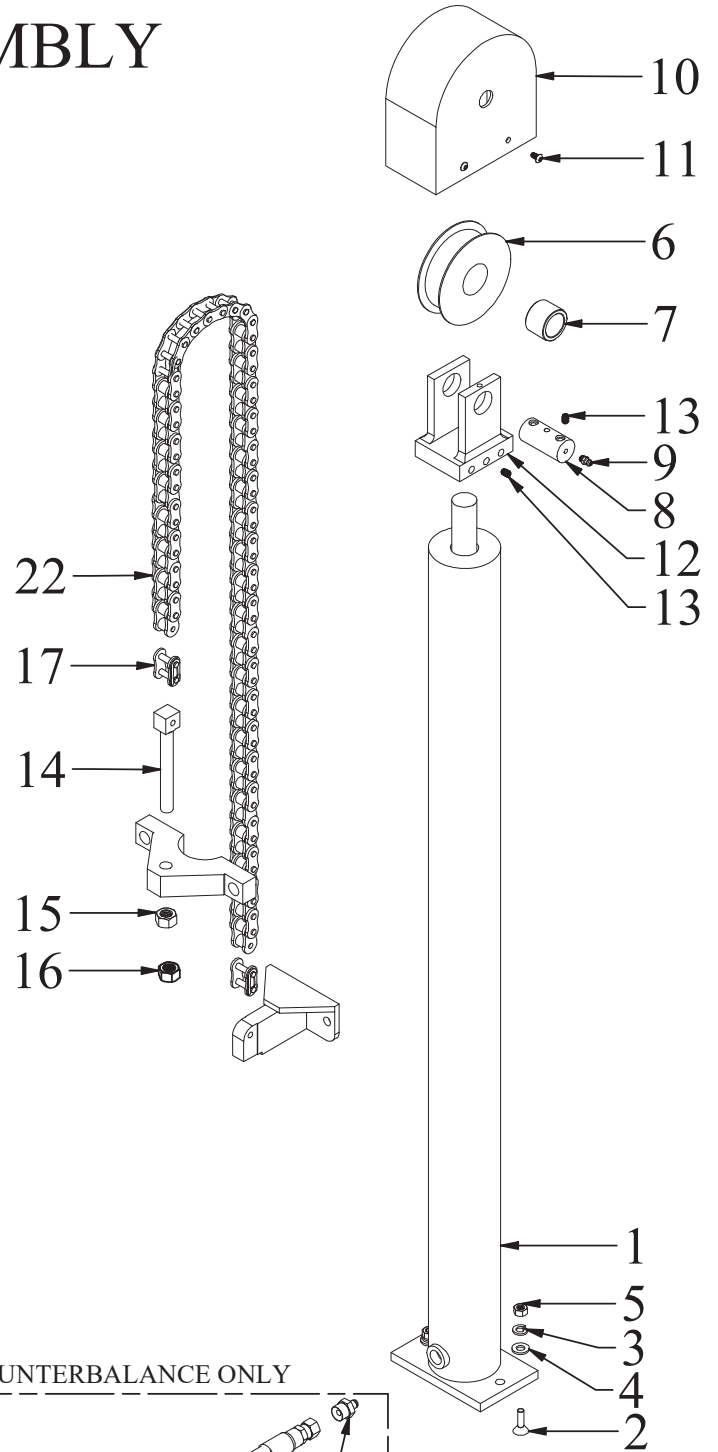
V-PAN, ROLL POST 18" & JIB INNER & OUTER MASTS PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	2580400	18" High Inner Mast	1
2	2580450	18" High Outer Mast without Belt Cradle	1
3	3/8-16 HN	3/8-16 Finished Hex Nut (zinc)	2
3	3/8-16 HN-SS	3/8-16 Finished Hex Nut (stainless steel)	2
4	3/8 LW	3/8 Lock Washer (zinc)	2
4	3/8 LW-SS	3/8 Lock Washer (stainless steel)	2
5	8912HR	High Reach Chain to Mast Bracket	1
6	3/8-16 x 1 1/2 SHCS	3/8-16 x 1 1/2 Socket Head Cap Screw Alloy Plated	2
6	3/8-16 x 1 1/2 SHCS-SS	3/8-16 x 1 1/2 Socket Head Cap Screw (stainless steel)	2
7	4008	Delrin Roller	4
8	90295A187	1/16" Nylon Flat Washer	-
8	95606A170	1/32" Nylon Flat Washer	-
9	LCRB	Load Cell Replacement Block	2
9	HM1000	Load Cell with 4' cable	2
10	1/2-20 x 1 1/4 FSHCS	1/2-20 x 1 1/4 Flat Socket Head Cap Screw (zinc)	8

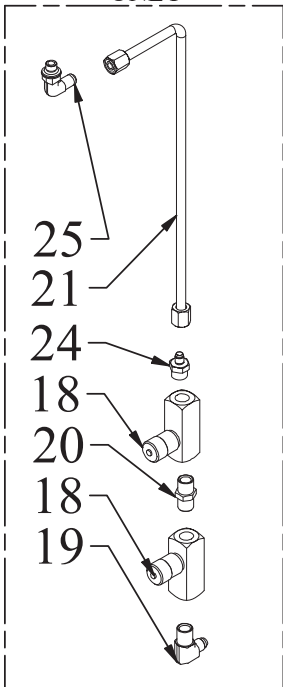
FISHER MASTS PARTS LIST

3	3/8-16 HN	3/8-16 Finished Hex Nut (zinc)	2
3	3/8-16 HN-SS	3/8-16 Finished Hex Nut (stainless steel)	2
4	3/8 LW	3/8 Lock Washer (zinc)	2
4	3/8 LW-SS	3/8 Lock Washer (stainless steel)	2
5	8912HR	High Reach Chain to Mast Bracket	1
6	3/8-16 x 1 1/2 SHCS	3/8-16 x 1 1/2 Socket Head Cap Screw Alloy Plated	2
6	3/8-16 x 1 1/2 SHCS-SS	3/8-16 x 1 1/2 Socket Head Cap Screw (stainless steel)	2
7	4008	Delrin Roller	4
8	90295A187	1/16" Nylon Flat Washer	-
8	95606A170	1/32" Nylon Flat Washer	-
9	LCRB	Load Cell Replacement Block	2
9	HM1000	Load Cell with 4' cable	2
10	1/2-20 x 1 1/4 FSHCS	1/2-20 x 1 1/4 Flat Socket Head Cap Screw (zinc)	8
11	5/16-18 X 1 HHCS	5/16-18 x 1 Hex Head Cap Screw Grade 5 (zinc)	4
11	5/16-18 X 1 HHCS-SS	5/16-18 x 1 Hex Head Cap Screw (stainless steel)	4
12	3516	Rubber Belt	1
13	2580051	EG1/Ergo UHMW Belt Support	1
14	5/16-18 x 1 FSHCS-SS	5/16-18 x 1 Flat Socket Head Cap Screw (stainless steel)	2
15	2580455	44" High Outer Mast without Belt Cradle (Fisher mast)	1
16	2580456	44" High Outer Mast with 3" Belt Cradle (Fisher mast)	1
17	2580401	32" High Inner Mast (Scale)	1
18	2580050	EG1/Ergo Belts Clamp Straps	2

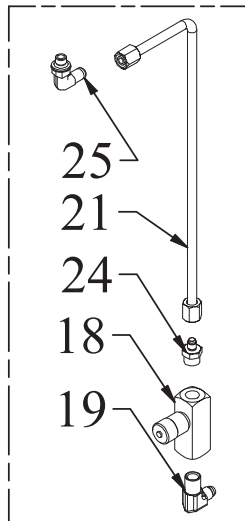
DRUM TRANSPORTER LIFT CHAIN ASSEMBLY



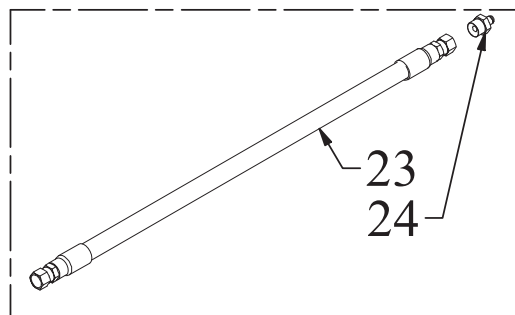
EMPTY DRUM STACKER ONLY



DC POWERED ONLY



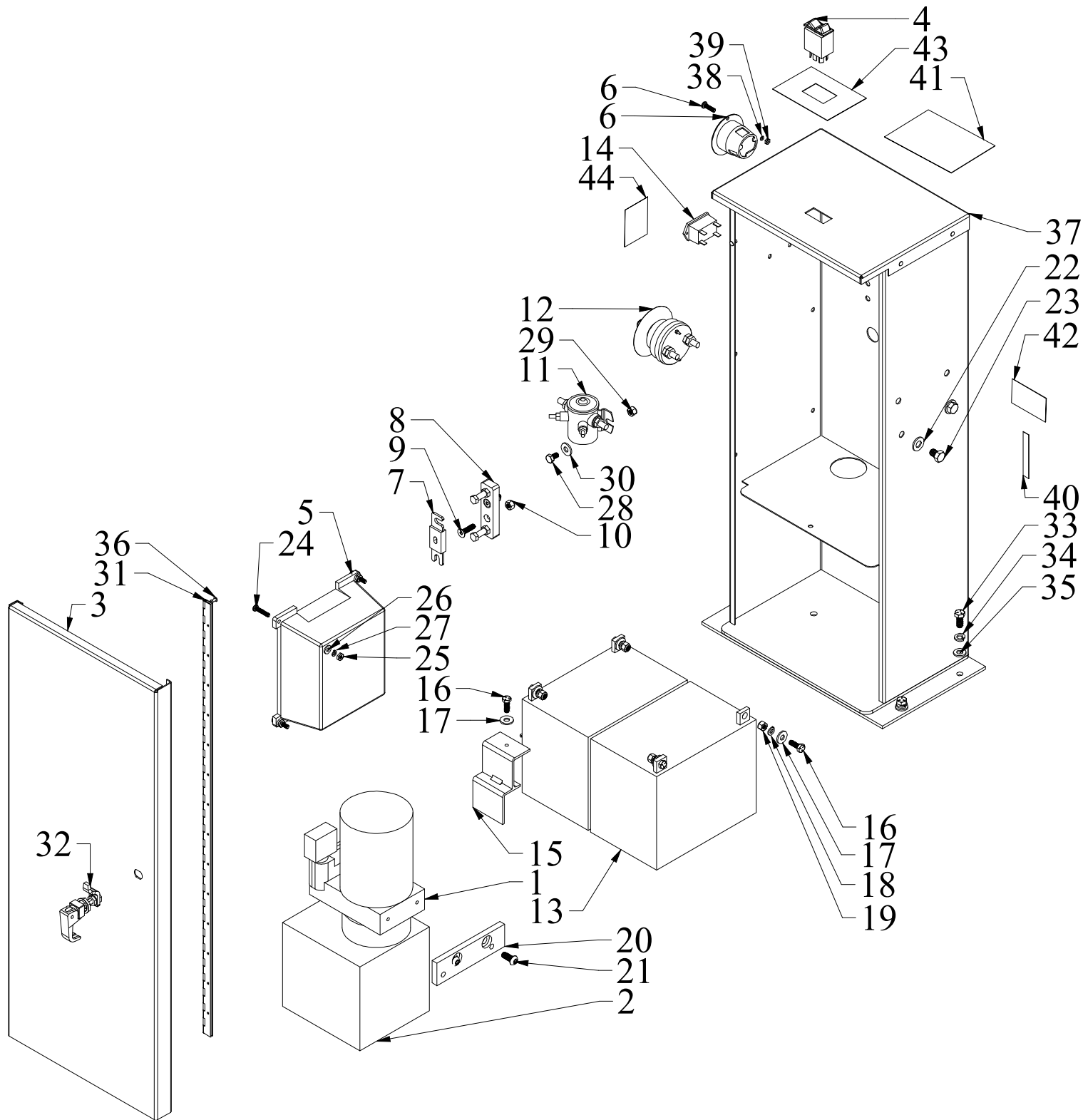
COUNTERBALANCE ONLY



DRUM TRANSPORTER LIFT CHAIN PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	EL1.5-1.0-24BZ	Hydraulic Lift Cylinder	1
1	EL1.5-1.0-28BZ	Hydraulic Lift Cylinder	1
1	EL1.5-1.0-32BZ	Hydraulic Lift Cylinder	1
1	EL1.5-1.0-36BZ	Hydraulic Lift Cylinder	1
1	EL1.5-1.0-40BZ	Hydraulic Lift Cylinder	1
-	EL1.5PISTONKIT	Seal Kit (new piston, seals & wire)	-
2	5/16-18 x 1 1/4 FSHCS-SS	5/16-18 x 1 1/4 Flat Socket Head Cap Screw (stainless steel)	2
3	5/16 LW	5/16 Lock Washer (zinc)	2
3	5/16 LW-SS	5/16 Lock Washer (stainless steel)	2
4	5/16 FW	5/16 Flat Washer (zinc)	2
4	5/16 FW-SS	5/16 Flat Washer (stainless steel)	2
5	5/16-18 HN	5/16-18 Finished Hex Nut (zinc)	2
5	5/16-18 HN-SS	5/16-18 Finished Hex Nut (stainless steel)	2
6	55061	4" Sheave Wheel	1
7	CB-1622-08	Sheave Wheel Bushing	1
8	45061	Sheave Wheel Axle (1" x 2.125")	1
9	1095K41	1/4"-28 Grease Fitting	1
10	3022	4" Sheave Wheel Cover	1
11	10-24 x 3/8 BSC-SS	10-24 x 3/8 Button Socket Cap 18/8 (stainless steel)	4
12	7912-4-1	Sheave Wheel Bracket 4" (1" bore)	1
13	93445A425	1/4"-20 x 3/8" Stainless Steel Knurl-Grip Set Screw	2
14	2022	Chain Adjuster for ANSI 60 Chain	1
15	1/2-13 HN	1/2-13 Finished Hex Nut (zinc)	1
15	1/2-13 HN-SS	1/2-13 Finished Hex Nut (stainless steel)	1
16	1/2-13 NLN	1/2-13 Nylon Locking Nut (zinc)	1
16	1/2-13 NLN-SS	1/2-13 Nylon Locking Nut (Stainless Steel)	1
17	60HMCL	ANSI 60 Link	2
18	F600B	Flow Control 3/8" NPT	1
19	PA80806	90 Male Elbow 3/8T 3/8PT	1
20	PA80702	Hex Nipple	1
21	813-1245-55-55-18.5	18" Steel Line with nuts and sleeves	1
22	RC060RC1-49	Chain-Ansi 60 (49" Long)	1
22	RC060RC1-49PC	FDA Chain-Ansi 60 (49" Long)	1
22	RC060RC1-65	Chain-Ansi 60 for Ergo (65" Long)	1
22	RC060RC1-65PC	FDA Chain-Ansi 60 for Ergo (65" Long)	1
22	RC060RC1-73	Chain-Ansi 60 for Ergo (73" Long)	1
22	RC060RC1-73PC	FDA Chain-Ansi 60 for Ergo (73" Long)	1
23	PAC9803-27-27-20	3/8" Hydraulic Hose Assembly w/ (2) PA93227 Ends, 20" Long	1
24	PA80769	Male Connector	1
25	6C4OMXS	HPI 90 Deg Fitting (Post 2013)	1

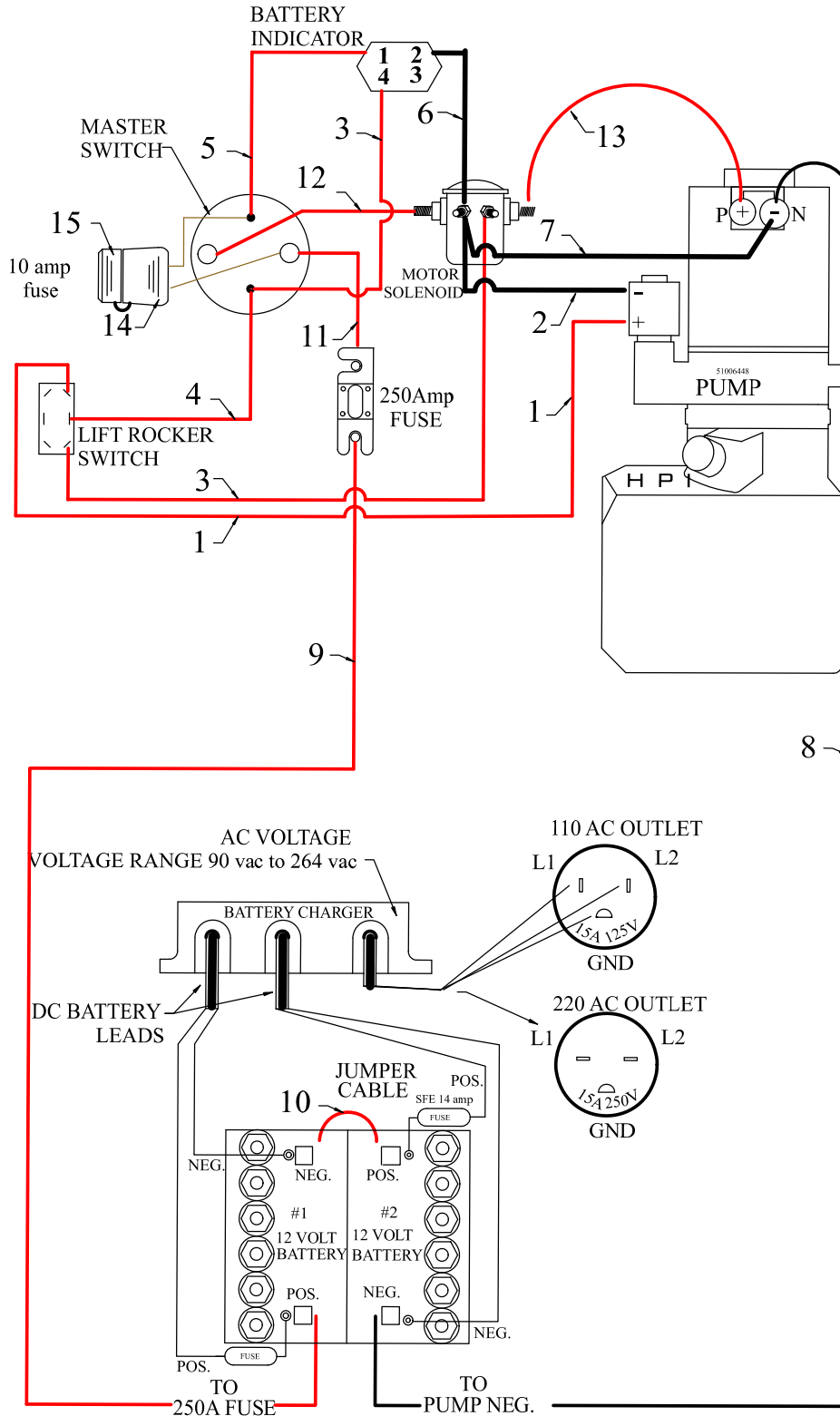
DRUM TRANSPORTER DC CABINET HARDWARE ASSEMBLY



DRUM TRANSPORTER DC CABINET HARDWARE PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	51006448	HPI - Hydraulic Assy. (Gen 3, EL models sold May 2013 to Present)	1
2	51168647	HPI - Hydraulic Reservoir (Gen 3)	1
3	3530233	EL or SL DC Cabinet with Welded Plate	1
3	DM021	DC Cabinet 29 5/8" Tall with 1 Hole Lid w/o Welded Plate	1
4	8555K32X32M	White Rocker Switch	1
5	IS2	12 amp 2 bank 110/220/50-60/1ph CE Charger	1
-	7821055	AGC 30A Fuse (5 pack)	1
6	HBL5278C	115 volt A/C Receptacle (Male)	1
6	HBL5678C	250 volt A/C Receptacle (Male)	1
7	ANL-250	Fuse, 250A, Series ANL, 32VAC/80VDC	1
8	4164	Limiter Fuse Block	1
9	1/4-20 x 1 FSHCS-SS	1/4-20 x 1 Flat Socket Head Cap Screw (stainless steel)	2
10	1/4-20 NLN	1/4-20 Nylon Locking Nut (zinc)	2
10	1/4-20 NLN-SS	1/4-20 Nylon Locking Nut (stainless steel)	2
11	LP390-1077	Motor Solenoid 24 volt/200 amp Continuous Duty	1
12	PA16529	Master Disconnect Switch	1
13	DCM0035L	12v DC 35Ah Deep Cycle Battery	2
14	T101772	24 Volt Battery Discharge Indicator (906T24JWDGN)	1
15	2580045	Battery Bracket	1
16	1/4-20 x 3/4 HHCS	1/4-20 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	5
17	1/4 FW SAE	1/4 Flat Washer SAE (zinc)	5
18	1/4 LW	1/4 Lock Washer (zinc)	4
19	1/4-20 NLN	1/4-20 Nylon Locking Nut (zinc)	4
20	2580055	HPI Pump Mounting Bracket	1
21	M8-1.25 x 20MM BSHCS-A	M8-1.25 x 20mm Button Socket Head Cap Screw Alloy	2
22	3/8 FW SAE-SS	3/8 Flat Washer SAE (stainless steel)	2
23	3/8-16 x 1/2 HHCS-SS	3/8-16 x 1/2 Hex Head Cap Screw (stainless steel)	2
24	10-24 x 1 PMS-SS	10-24 x 1 Phillips Machine Screw (stainless steel)	4
25	10-24 HN-SS	10-24 Finished Hex Nut 18/8 (stainless steel)	4
26	10 FW-SS	#10 Flat Washer 18/8 (stainless steel)	4
27	10 LW-SS	#10 Lock Washer 18/8 (stainless steel)	4
28	1/4-20 x 1/2 HHCS-SS	1/4-20 x 1/2 Hex Head Cap Screw (stainless steel)	2
29	1/4-20 NLN-SS	1/4-20 Nylon Locking Nut (stainless steel)	2
30	1/4 FW-SS	1/4 Flat Washer (stainless steel)	2
31	CS24010628H	Cabinet Hinge	1
32	S 62-10-23	Lift & Turn Latch	1
33	5/16-18 X 3/4 HHCS	5/16-18 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	4
33	5/16-18 X 3/4 HHCS-SS	5/16-18 x 3/4 Hex Head Cap Screw (stainless steel)	4
34	5/16 LW	5/16 Lock Washer (zinc)	4
34	5/16 LW-SS	5/16 Lock Washer (stainless steel)	4
35	5/16 FW SAE	5/16 Flat Washer SAE (zinc)	4
35	5/16 FW SAE-SS	5/16 Flat Washer SAE (stainless steel)	4
36	97447A025	Aluminum Blind Rivet w/Aluminum Mandrel 1/8, .188-.25"	18
37	DM091	DC Cabinet One Hole Lid	1
38	9098	18-8 SST Lock Washers Size #6	2
39	9079	18-8 SST Hex Mach Screw Nuts 6-32	2
	<u>DECAL</u>	<u>DESCRIPTION</u>	
40	ADART021	Flow Control Decal "UP/DOWN"	1
41	ADART028	Attention Operating Equipment While Charging Will Damage Decal	1
42	ADART042	"Attention Read Operations Manual Before Adjusting" Decal	1
43	ADART007	Decal "Lift"	1
44	ADART025	115 Volts AC Warning Decal	1
44	ADART043	220 Volts AC Warning Decal	1
	<u>HYDRAULIC FLUID</u>	<u>DESCRIPTION</u>	
	HYDECAW325	Hydraulic Oil 1 Quart	
	FG32/46	Food Grade 32/46 Hydraulic Synthetic Lubricant	

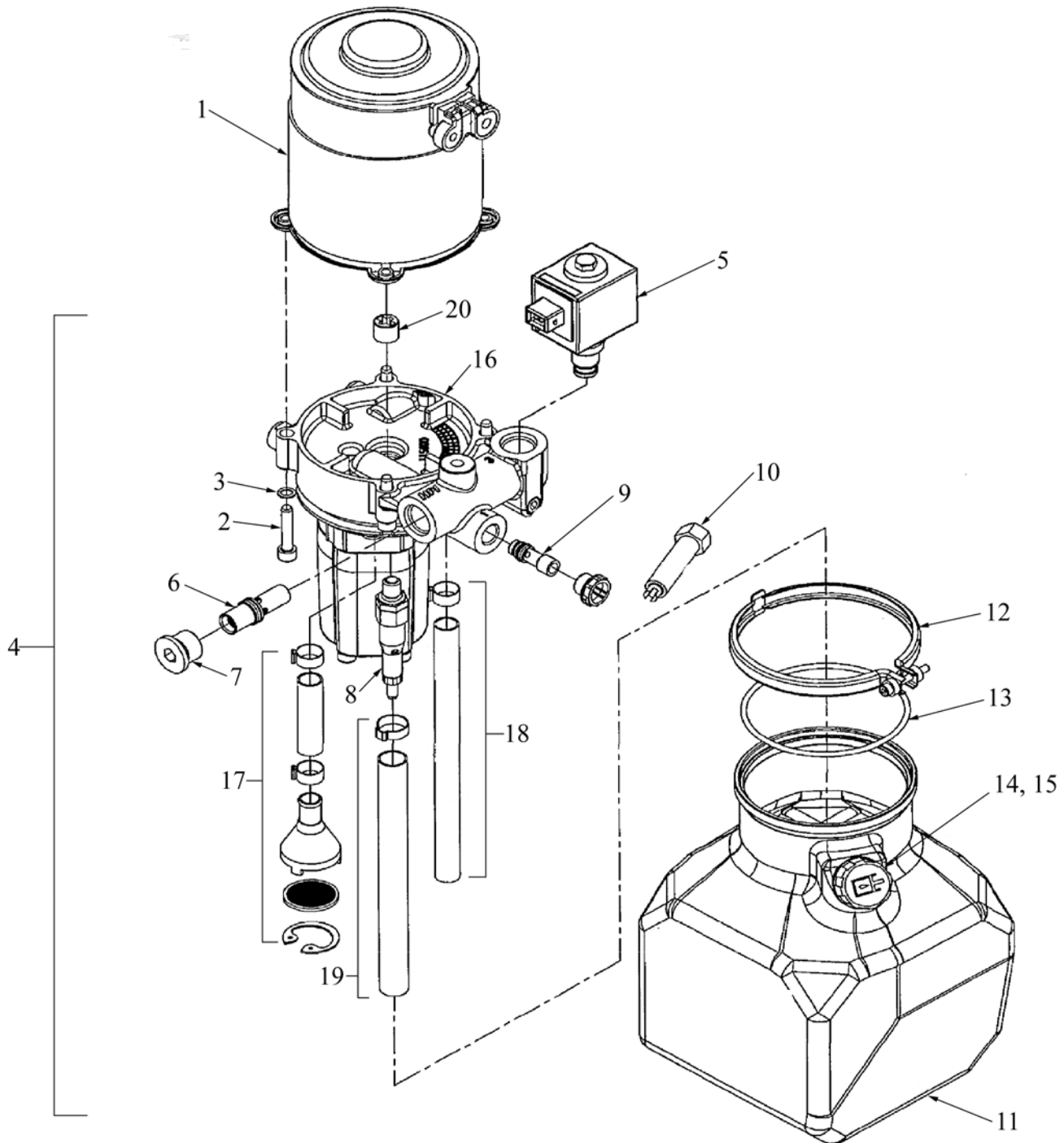
EL DC CABINET WIRING ASSEMBLY



EL DC CABINET WIRING PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	80094UZ-29-9	9" Signal Wire with (1) 16-14 .250 end	1
2	81055UZ-06-4	4" Signal Ground with (1) 16-14 #10 end	1
3	80094UZ-06-29-6	6" Signal Wire with (1) .250 & (1) #10 end	2
4	80094UZ-06-29-8	8" Signal Wire with (1) .250 & (1) #10 end	1
5	80094UZ-06-29-5	5" Signal Wire with (1) .250 & (1) #10 end	1
6	81055UZ-06-29-6	6" Signal Ground with (1) .250 and (1) #10 end	1
7	81055UZ-06-84-5	5" Signal Ground with (1) #5/16 and (1) #10 end	1
8	113765-67-67-22.5	BLACK Battery Cable 22.5" - 4ga with (2) 5/16" Ring Terminal Ends	1
9	113766-67-67-20	RED Battery Cable 20" - 4ga with (2) 5/16" Ring Terminal Ends	1
10	113766-67-67-12	RED Battery Cable 12" - 4ga with (2) 5/16" Ring Terminal Ends	1
11	113766-67-68-9	RED Battery Cable 9" - 4ga (1) 5/16" and (1) 3/8" Ring Terminal Ends	1
12	113766-67-68-6.5	RED Battery Cable 6.5" - 4ga with (1) 5/16" and (1) 3/8" Ring Terminal Ends	1
13	113766-67-67-6.5	RED Battery Cable 6.5" - 4ga with (2) 5/16" Ring Terminal Ends	1
14	210954-94-06	In Line Fuse Holder with (1) #3/8 and (1) #10 ends	1
15	PA82693	Auto Fuse, ATC Type, Red, 10A	1

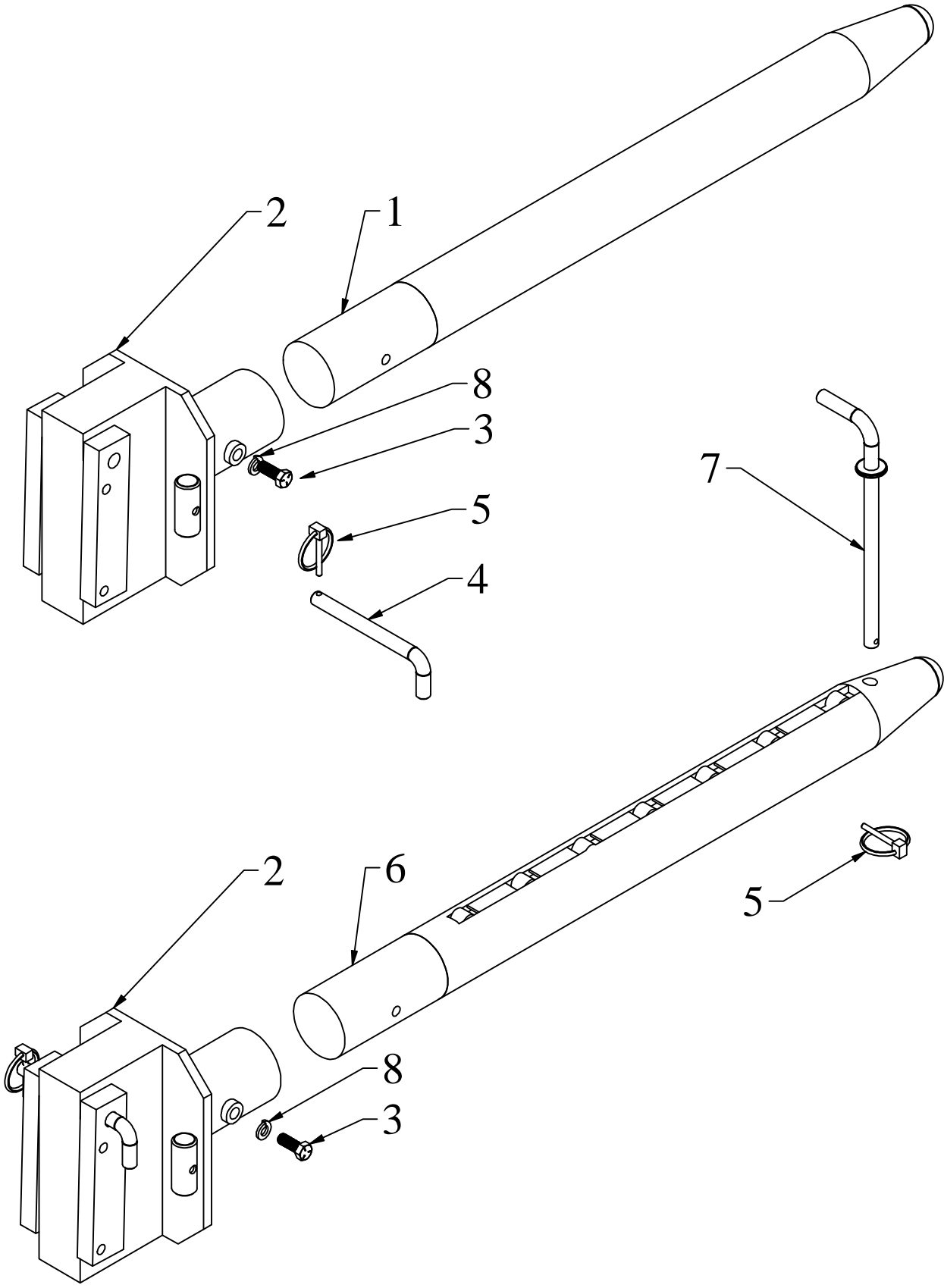
HPI HYDRAULIC PUMP ASSEMBLY



HPI HYDRAULIC PUMP PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
	51006448	HPI - Hydraulic Assy. (Gen 3, EL models sold May 2013 to Present)	
1	51061106	Pump Motor	1
2	51061107	Screw	4
3	51061108	Washer	4
4	51061229	Connecting Block, Hydraulic	1
5	51444062	Valve, Solenoid	1
6	51061114	Valve, Flow Regulating	1
7	51061115	Plug	1
8	51061122	Pressure Limiting Valve	1
9	51180281	Valve, Check	1
10	51061124	Tool	1
11	51168647	HPI - Hydraulic Reservoir (Gen 3)	1
12	51061135	Clamp	1
13	50303861	Seal, O-Ring	1
14	51168653	Bleed Nipple	1
15	27506980	Bleeder Nipple Screw	1
16	51061229	Connecting Block, Hydraulic	1
17	51061142	Filter	1
18	51061144	Pipe	1
19	51061145	Pipe	1
20	50303156	Clutch, Mech	1
	HYDECAW325	Hydraulic Oil 1 Quart	
	FG32/46	Food Grade 32/46 Hydraulic Synthetic Lubricant	

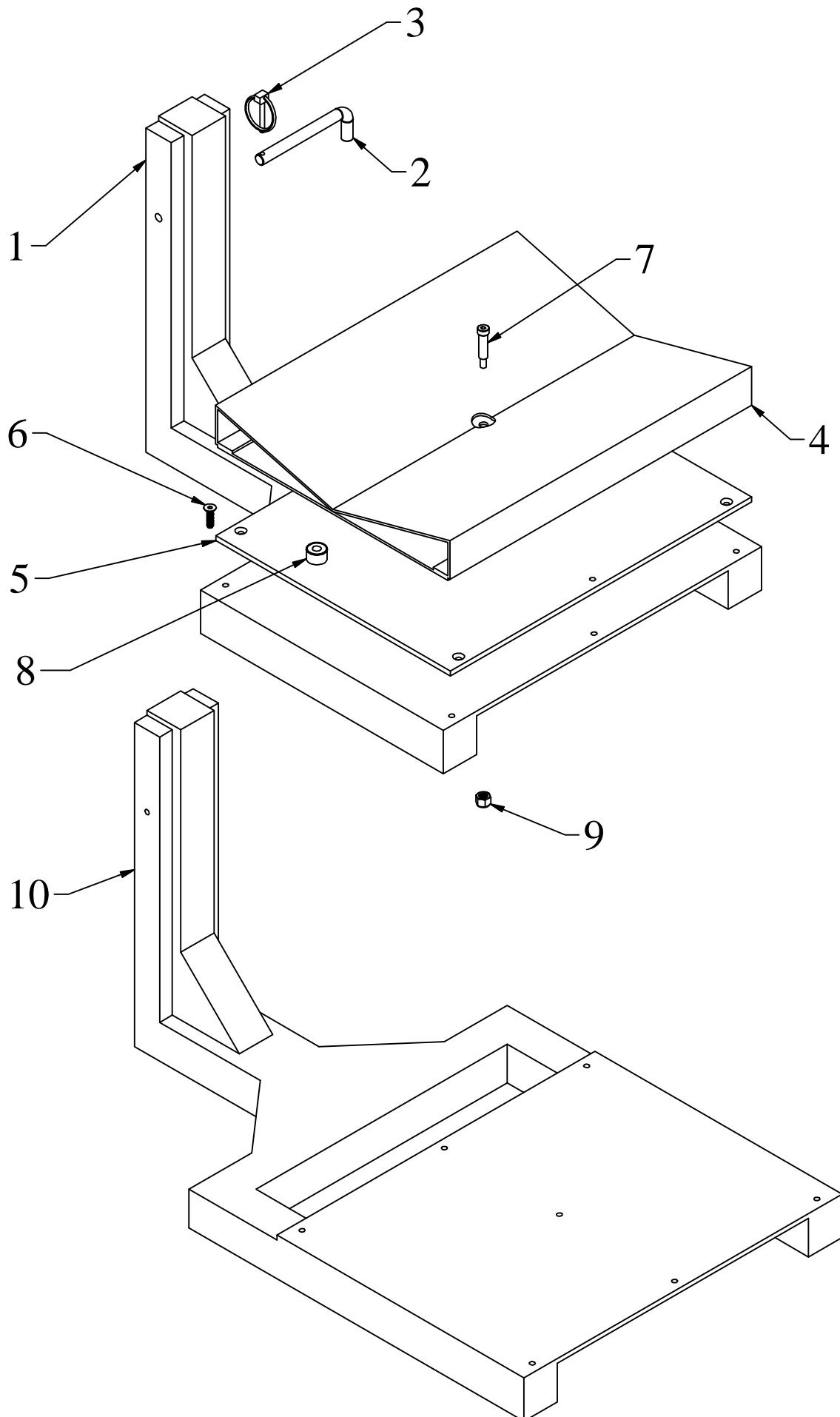
ALUMINUM ROLL POSTS ASSEMBLY



ALUMINUM ROLL POSTS PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	RP24	Aluminum Roll Post 2.5" Diameter x 24" Length (Requires RPMP)	1
1	RP30	Aluminum Roll Post 2.5" Diameter x 30" Length (Requires RPMP)	1
2	3530415	Aluminum Roll Post with Rollers Mounting Plate	1
3	3/8-16 x 1 HHCS-8	3/8-16 x 1 Hex Head Cap Screw Grade 8 (yellow zinc)	2
4	10204-1SS	1/2" x 4-1/2" Adjusting Pin (stainless steel)	1
5	HANG-1	3/16 x 1-1/4 Shank Lynch Pin "Hang 1" (9016)	2
6	RPR24	Aluminum Roll Post with Rollers 2.5" Diameter x 24" Length (20" Usable)	1
6	RPR30	Aluminum Roll Post with Rollers 2.5" Diameter x 30" Length (26" Usable)	1
7	3530414	Roll Post with Rollers Modified Pin	1
8	3/8 LW	3/8 Lock Washer (zinc)	2

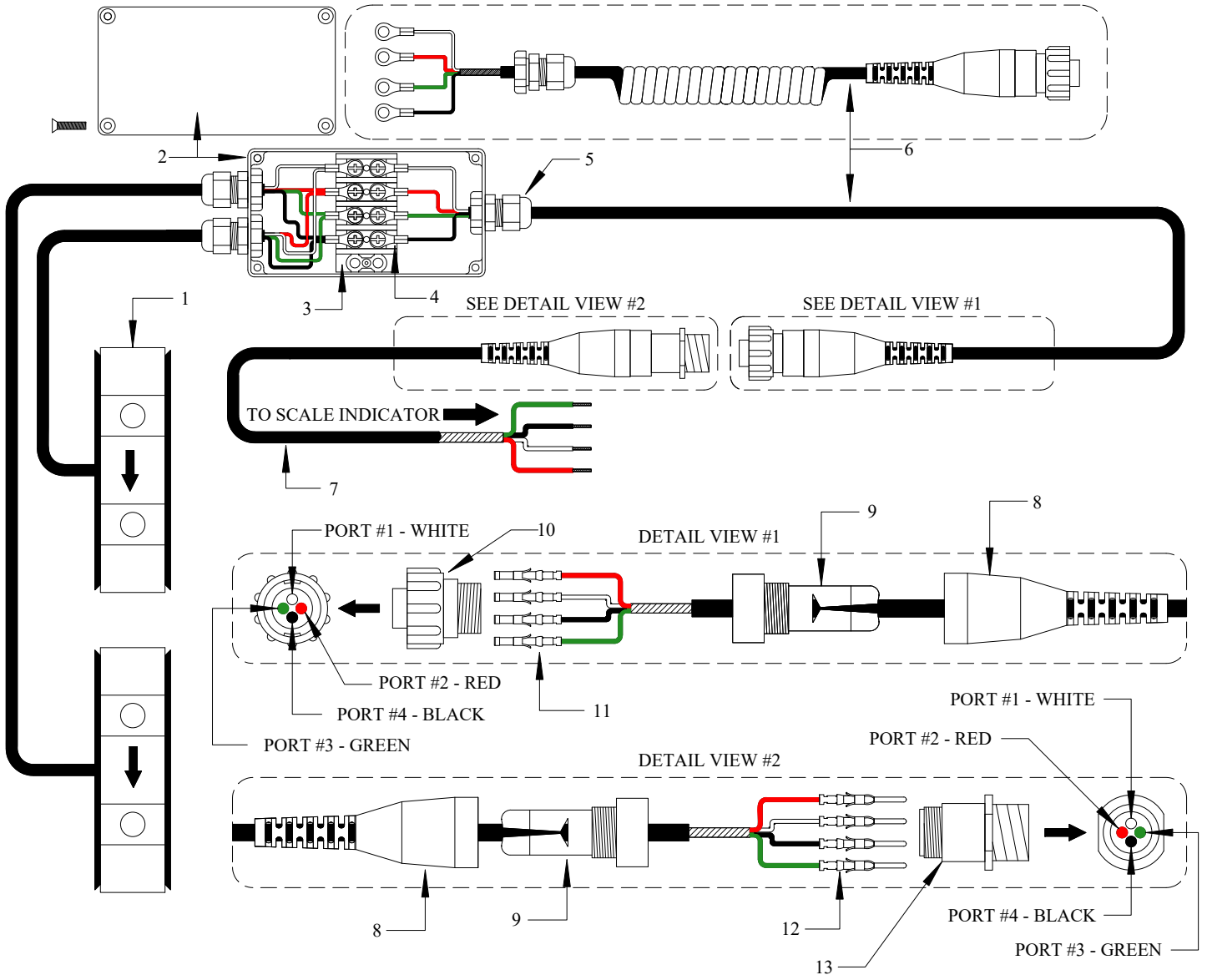
V-PAN ASSEMBLY



**V-PAN ASSEMBLY
PARTS LIST**

<u>ITEM</u>	<u>PART NO.</u>	<u>PRICE EACH</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	3530320	\$ 1,225.00	Aluminum V-Pan Assembly, 19 x 14.5 (New Style) 9" Reach	1
2	10204-1SS	\$ 30.00	1/2" x 4-1/2" Adjusting Pin (stainless steel)	1
3	HANG-1	\$ 0.83	3/16 x 1-1/4 Shank Lynch Pin "Hang 1" (9016)	1
4	3530412	\$ 280.00	14" x 18" Stainless Steel V-Pan	1
5	3530413	\$ 130.00	14" x 18" Section of Moisture-Resistant LDPE Polyethylene Sheet	1
6	1/4-20 x 1 FSHCS-SS	\$ 0.50	1/4-20 x 1 Flat Socket Head Cap Screw (stainless steel)	6
7	3/8 x 1 1/4 SSS	\$ 2.00	3/8 x 1 1/4 Socket Shoulder Screw (steel)	1
8	9540K25	\$ 0.90	Round bumper, rubber 7/8" dia, 17/32" high w/o washer	-
9	3/8-16 THIN NLN	\$ 0.25	3/8-16 THIN Nylon Locking Nut (zinc)	1
9	3/8-16 THIN NLN-SS	\$ 0.25	3/8-16 THIN Nylon Locking Nut (stainless steel)	1
10	3530319	\$ 1,225.00	Aluminum V-Pan Assembly, 19 x 20 (Old Style) 13" Reach	1

SCALE WIRING ASSEMBLY



SCALE WIRING PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	HM1000	Load Cell with 4' cable	2
2	CU-124	Terminal Box Enclosure	1
-	7531A34	Two Sided Tape (6" Length)	1
3	7527K64	Terminal Block (Strip) 7/16", 4 circuits	1
4	3A214	Terminal Eyelet	12
5	ZZHEY3208	Cable Fitting	3
6	3530360	Eagle-Grip Scale Cable Assembly (Female End) - 30" Length	1
6	3530351	Scale Cable Assembly (Female End) - 50" Length (48" Mast)	1
6	3530352	Scale Cable Assembly (Female End) - 54" Length (60" Mast)	1
6	3530353	Scale Cable Assembly (Female End) - 60" Length (72" Mast)	1
6	3530354	Scale Cable Assembly (Female End) - 70" Length (84" Mast)	1
6	3530355	Scale Cable Assembly (Female End) - 80" Length (96" Mast)	1
6	3530356	Scale Cable Assembly (Female End) - 90" Length (108" Mast)	1
6	3530357	Scale Cable Assembly (Female End) - 100" Length (120" Mast)	1
6	3530368	Scale Cable Assembly (Female End) - 110" Length (132" Mast)	1
6	3530369	Scale Cable Assembly (Female End) - 120" Length (144" Mast)	1
6	3530358	Scale Coiled Cable Assembly (Female End)	1
7	3530361	Eagle-Grip/Ergo Scale Cable Assembly (Male End) - 24" Length	1
7	3530350	DH/RH, ED/ER, ELDR Scale Cable Assembly (Male End) - 36" Length	1
7	3530379	DH/RH, ED/ER, ELDR Swivel Scale Cable Assembly (Male End) - 48" Length	1
8	AP2074891	Strain Relief	2
9	AP2074901	Cable Grip	2
10	AP2060601	Connector Plug Size 11-4 (Female)	1
11	AP661054	Terminal Socket	4
12	AP661034	Terminal Pin	4
13	AP2061531	Connector Recp CPC 11-4 (Male)	1

Non-Intrinsically Safe Indicators

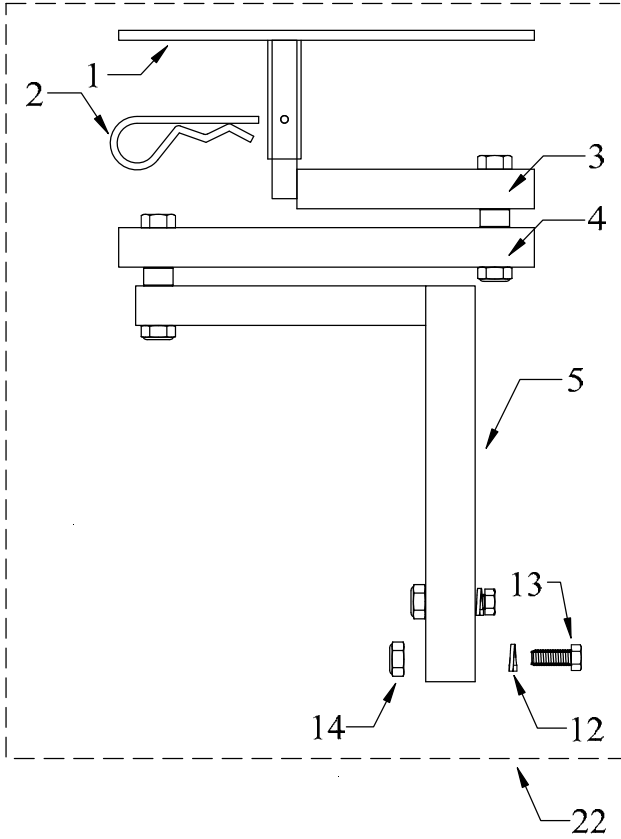
7000XLM	Doran™ 7000XL Non-intrinsically Safe Scale Indicator
SUB0853	Rechargeable Battery, with wire and terminals (2200, 7000, 8000)
2200	Doran™ 2200 Non-intrinsically Safe Scale Indicator (Numeric Keypad)
EXOPT187	Battery Option for Non-Intrinsically Safe 2200 Indicator
164582	Rice Lake 482 Indicator w Internal Battery & Charger
164585	Rice Lake 482 Plus Indicator w Internal Battery & Charger
107708	Rice Lake 720i Indicator

Intrinsically Safe Indicators

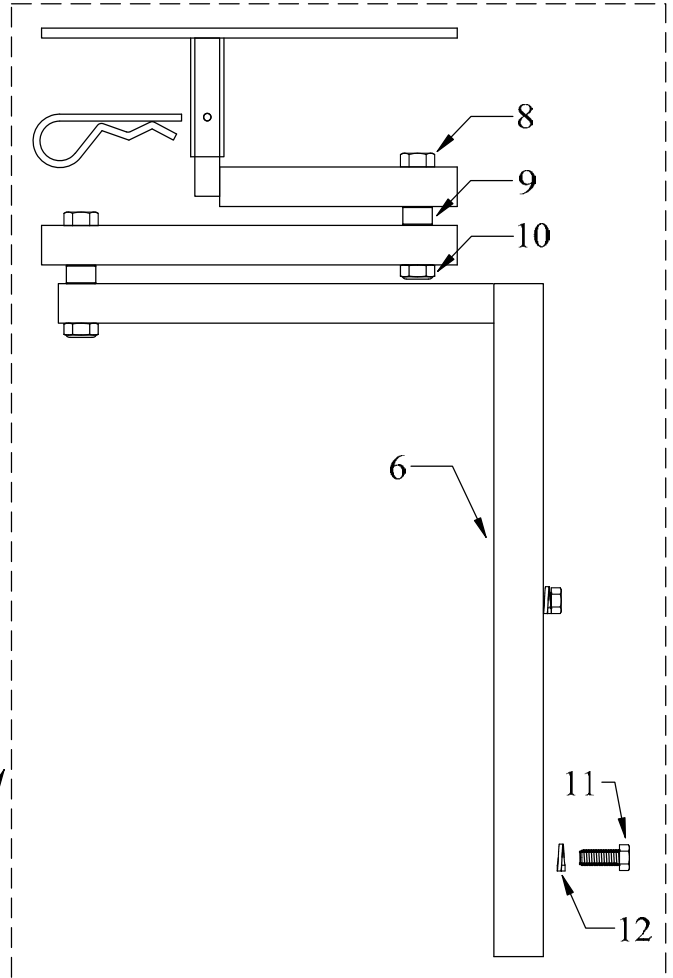
185288	Rice Lake 882IS Indicator w Battery Pack & Safe Area Charger
185291	Rice Lake 882IS PLUS Indicator w Battery Pack & Safe Area Charger
180831	Rice Lake 882IS Battery
194191	Rice Lake 882IS Battery Charger (IS6V2, 100-240 VAC)
72210052	Mettler Toledo IND226x Indicator
72258718	Mettler Toledo IND560x Indicator
64060627	Mettler Toledo EX Indicator Battery (Includes Cable)
64060217	Mettler Toledo Battery Charger (Safe Area, US Plug)

SWIVEL SCALE BRACKET ASSEMBLY

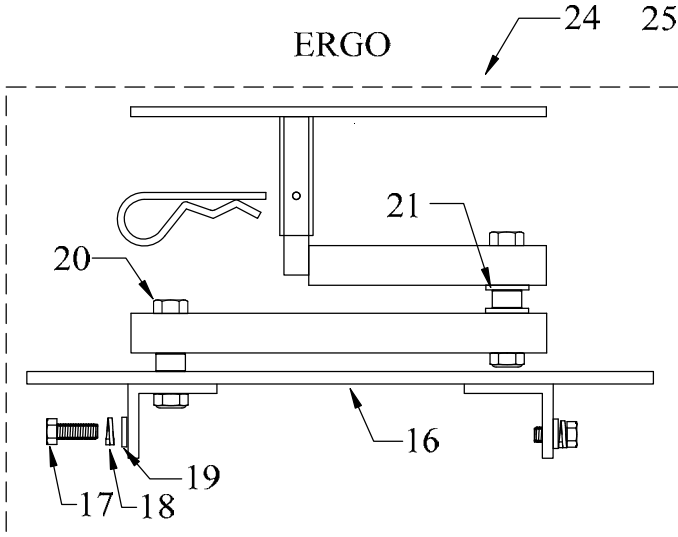
ELDR



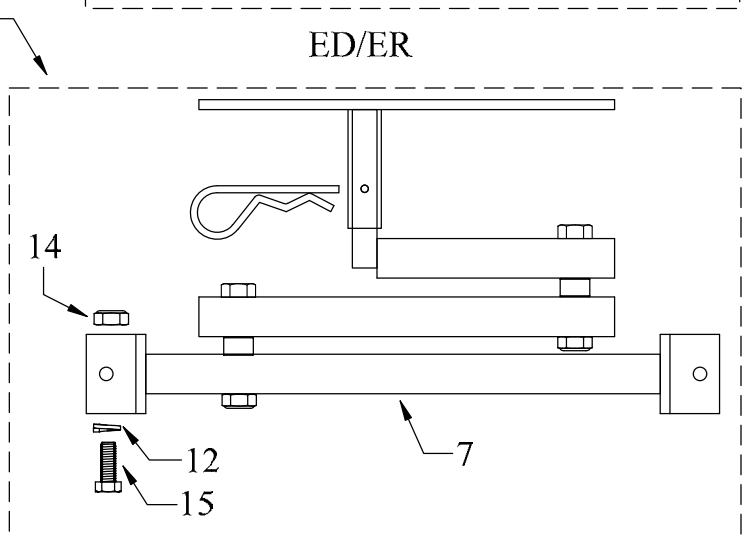
DRUM/ROLL-HAULER



ERGO



ED/ER



SWIVEL SCALE BRACKET PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	3530348	Indicator Mount Bracket With Tube	1
2	98335A094	Zinc-plated steel cotter pin, 7/8"-1 D, 3-3/4 L	1
3	2580309	Scale Swing Bracket Post Bracket	1
4	2580308	Scale Swing Bracket Mid Bracket	1
5	2580310	ELDR Swivel Scale Bracket Frame Mount	1
6	3530349	DH Swivel Scale Bracket Base Mount	1
7	2580307	ED Swivel Scale Bracket Frame Mount	1
8	1/2-13 x 3 HHCS	1/2-13 x 3 Hex Head Cap Screw Grade 5 (zinc)	2
9	10001	Bushing, Housing Yolk Trunion (zinc)	2
10	1/2-13 THIN NLN	1/2-13 Nylon Locking Nut (THIN)	2
11	5/16-18 x 3/4 HHCS	5/16-18 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	2
12	5/16 LW	5/16 Lock Washer (zinc)	2
13	5/16-18 x 1 HHCS	5/16-18 x 1 Hex Head Cap Screw Grade 5 (zinc)	2
14	5/16-18 HN	5/16-18 Finished Hex Nut (zinc)	2
15	5/16-18 x 1 3/4 HHCS	5/16-18 x 1 3/4 Hex Head Cap Screw (zinc)	2
16	2580306	Ergo Scale Mount - 1.5" High	1
16	3530396	Ergo Scale Mount - 6.5" High	1
17	1/4-20 x 3/4 HHCS	1/4-20 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	2
18	1/4 LW	1/4 Lock Washer (zinc)	2
19	1/4 FW SAE	1/4 Flat Washer SAE (zinc)	2
20	1/2-13 x 2 1/2 HHCS	1/2-13 x 2 1/2 Hex Head Cap Screw Grade 5 (zinc)	1
21	1/2 FW	1/2 Flat Washer (zinc)	2
 <u>FULL ASSEMBLY</u>			
22	3530402	ELDR Scale Swing Out Bracket Assembly	1
23	3530403	DH / RH Scale Swing Out Bracket Assembly	1
24	3530404	Ergo Scale Swing Out Bracket 1.5" Assembly	1
24	3530405	Ergo Scale Swing Out Bracket 6.5" Assembly	1
25	3530406	ED / ER Scale Swing Out Bracket Assembly	1

DCM0035L

Technical Specifications

Nominal Voltage	12V	
Nominal Capacity	35Ah (20 Hr Rate to 1.75V/cell)	
Chemistry	Lead Acid -AGM	

Physical Specifications

Length	195mm	7.68in
Width	130mm	5.12in
Height	164mm	6.46in
Height w/Terminal	180mm	7.09in
Weight (+/- 5%)	10.4Kg	22.9lbs
Terminal Type	INSERT TERMINALS	
Case Material	ABS	

Charging Specifications

Charge Voltage	Battery	Per Cell
Float	13.5V~13.8V	2.25V~2.30V
Cycle	14.4V~15.0V	2.40V~2.50V
Max. Charge Current	9.9A	

Capacity Specifications

5 Second Discharge Current	495A	
Self Discharge (to 80% capacity)	3 Months	91%
	6 Months	82%
	12 Months	64%
Internal Resistance	11mΩ(25°C)	

Temperature Specifications

Operating Temperature Capability -40° F (-40° C) to 140° F (60° C)

Recommended parameters for optimal battery life and performance:

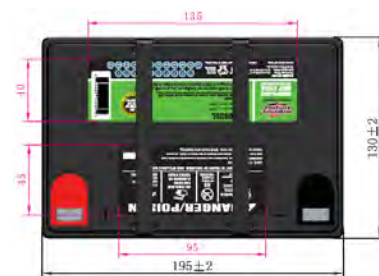
Charging: 32° F to 104° F (0° C to 50° C), Discharging: 5° F to 122° F (-15° to 50° C),

Storage: 50° to 77° F (10° C to 25° C)

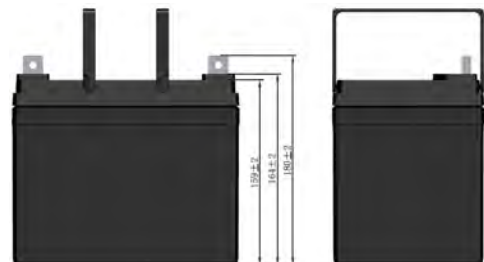


FEATURES:

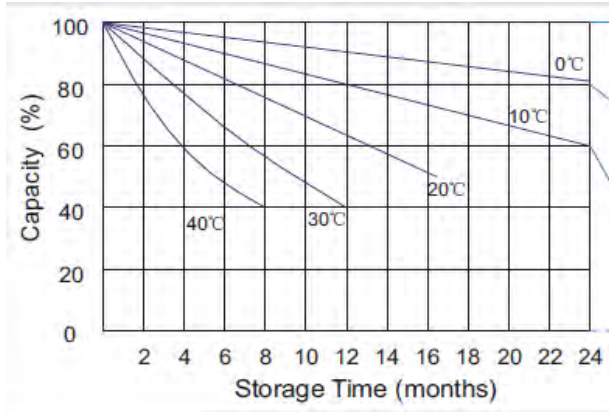
- Long life for deep discharge uses
- Ideal for applications using major capacity prior to recharging
- Depth of discharge should be between 50% & 80% and recharged as soon as possible
- Flexibility of mounting orientation
- VRLA technology to eliminate spills and over-pressurization
- Maintenance-free



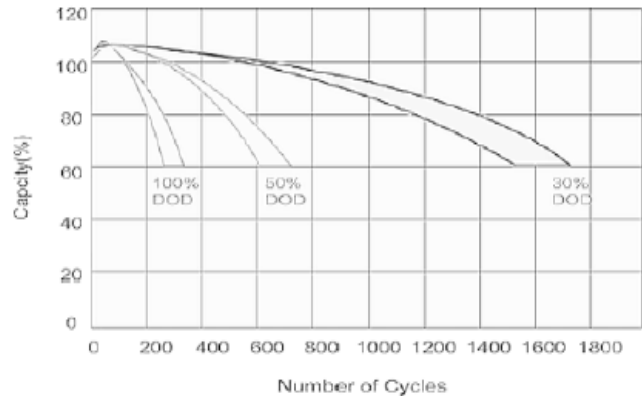
FOR REFERENCE ONLY
HANDLE TRUE TO PHOTO ABOVE



Storage Characteristics



Cycle Life of Deep Cycle



Constant Current Discharge Characteristics: A (25°C)

F.V/Time	5 min	30 min	1 hr	3 hr	5 hr	10 hr	20 hr
1.85V/cell	42.00	26.00	16.50	7.63	5.26	3.12	1.75
1.80V/cell	51.70	28.90	18.50	8.28	5.64	3.30	1.77
1.75V/cell	60.00	31.20	19.30	8.60	5.83	3.33	1.79
1.70V/cell	64.70	32.70	19.09.00	8.83	5.93	3.37	1.82
1.67V/cell	69.90	34.00	20.60	9.08	6.10	3.44	1.84
1.60V/cell	75.60	35.60	21.30	9.27	6.24	3.47	1.85

Constant Power Discharge Characteristics: W (25°C)

F.V/Time	5 min	30 min	1 hr	3 hr	5 hr	10 hr	20 hr
1.85V/cell	78.30	50.00	32.00	14.90	10.30	6.17	3.51
1.80V/cell	95.10	54.90	35.60	16.10	11.00	6.53	3.53
1.75V/cell	109.10	59.00	37.10	16.70	11.40	6.59	3.56
1.70V/cell	116.10	61.60	38.20	17.10	11.60	6.65	3.63
1.67V/cell	124.40	63.70	39.30	17.50	11.90	6.78	3.67
1.60V/cell	132.40	66.10	40.40	17.80	12.10	6.85	3.68



PRO Charging Systems

Installation and Operating Instructions (for chargers shown below)

Industrial SERIES



IS1- One 6 amp output



IS2- Two 6 amp outputs



IS3- Three 6 amp outputs

*For additional information please call our
Technical Support Group 800.742.2740*



081512

PRO CHARGING SYSTEMS, LLC
1551 Heil Quaker Boulevard, LaVergne, TN 37086-3539

**INSTALLATION AND OPERATING INSTRUCTIONS
FOR THE FOLLOWING BATTERY CHARGING SYSTEMS:**

Model #	Description	Total Output	Independently charge 12V batteries in the following systems:
Recreation Series			
IS1	One 6 Amp Bank	6 Amps	12V
IS2	Two 6 Amp Banks	12 Amps	12V, 24V
IS3	Three 6 Amp Banks	18 Amps	12V, 24V or 36V

IMPORTANT NOTICE

Please save and read all safety, operating and installation instructions before installing or applying AC power to your PCS on-board battery charging system. Please contact PCS with any product, installation, or service questions at technical support (800.742.2740).

INTRODUCTION

Pro Charging Systems (PCS) has been manufacturing waterproof, on-board battery charging systems since 1989. Our charging systems are designed and built tough to withstand intense vibration, extreme temperature variations and submersion without damaging the unit. Our systems use temperature compensation in order to fully charge a battery in hot or cold environments and are controlled by microprocessors in order to assure precise control over each totally independent charging bank. All of our chargers have true reverse polarity protection and incorporated a float maintenance mode upon completion of each charge cycle.

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Product Summary.....	Pages 4-5
Installation Instructions.....	Pages 5-6
Trouble Shooting.....	Page 7
Warranty Information.....	Page 8

IMPORTANT SAFETY INSTRUCTIONS

Use of attachments not recommended or sold by PCS may result in a risk of fire, electrical shock, or injury to persons.

To reduce risk of damage to the electrical plug and power cord, always pull by the plug rather than by the power cord when disconnecting charger.

When using an extension cord, make sure:

1. That pins on the extension cord plug are the same number, size and shape as those of the charger's plug;
2. That extension cord meets UL (Underwriters Laboratories, Inc.) acceptance and is in proper operating condition;
3. That wire size is large enough for the ac ampere rating of charger.

Do not operate charger with a damaged cord or plug—replace the cord or plug immediately.

Do not operate charger if it has received a sharp blow, been dropped or otherwise damaged in any way; contact our technical support group for assistance (800.742.2740).

Do not disassemble charger; contact technical support when service or repair is required. Incorrect reassembly may result in risk of electrical shock or fire.

To reduce risk of electrical shock, unplug charger from outlet before attempting any maintenance or cleaning.

WARNING: RISK OF EXPLOSIVE GASES

1. **WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS.** Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that each time before using your charger, you read this manual and follow the instructions exactly.
2. To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and by the manufacturer of any equipment you intend to use in the vicinity of battery. Review all cautionary markings on any product being utilized in or around the charging device.

PERSONAL PRECAUTIONS

Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery.

Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, eyes, or other surfaces.

Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and seek medical attention.

NEVER smoke or allow a spark or flame in the vicinity of a battery or engine.

Be extra cautious to reduce risk of dropping a metal tool onto battery. This might cause a spark or short-circuit a battery, possibly resulting in an explosion.

Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring, or the like, to metal, causing a severe burn.

Use charger for charging a LEAD-ACID (lead acid, sealed lead acid, gel cell, and AGM) battery only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These dry cell batteries may explode, causing personal injury and damage to property.

NEVER charge a frozen battery.

PREPARING TO CHARGE

If it is necessary to remove the battery or batteries to charge, always remove grounded terminal from battery first. Make sure all accessories are off, so as not to cause battery arcing.

Be sure the area around any battery is well ventilated while batteries are being charged. On occasion, “gas fumes” may be present during charging and can be forcefully blown away by using a piece of cardboard or other nonmetallic material as a fan. Proper ventilation is always recommended in the charging area.

Clean all of the battery terminals. Be careful to keep corrosion from coming into contact with eyes.

Add distilled water in each cell (wet cell batteries) until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer’s recharging instructions.

Study all battery manufacturers’ specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

Extension cords should be industrial grade/heavy duty UL approved and grounded. Check extension cord before use for damage, bent prongs and cuts. Replace if damaged.

Always make your extension cord connection on the charger side first. After connecting the extension cord to the charger, proceed to plug the extension cord into a 120VAC GFCI protected (Ground Fault Circuit Interrupt) A/C outlet. The unit will operate with a VAC input range of 90VAC-264VAC.

Always remove the extension cord from the A/C outlet first when charging is completed followed by unplugging the charger.

PRODUCT SUMMARY

General Operation:

Use the following guidelines in this manual to install your fully automatic PCS battery charging system.

Assure that the area around your charger and batteries is properly ventilated. Connect your extension cord with no A/C power present to the battery charger and proceed to plug your extension cord in at a nearby A/C outlet.

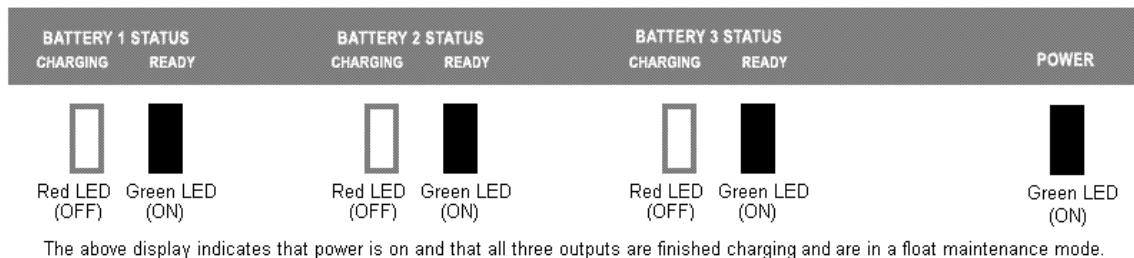
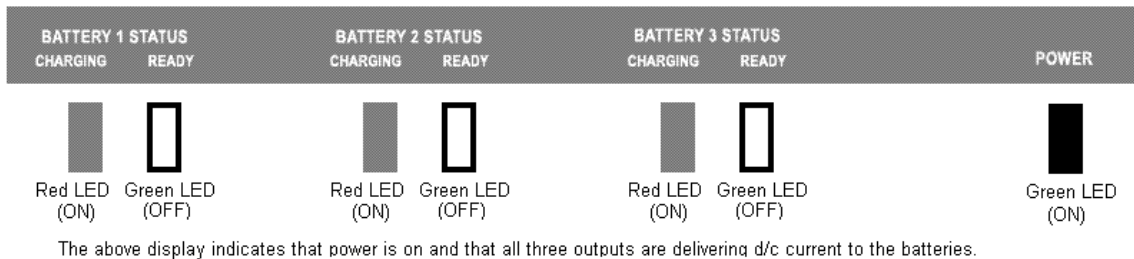
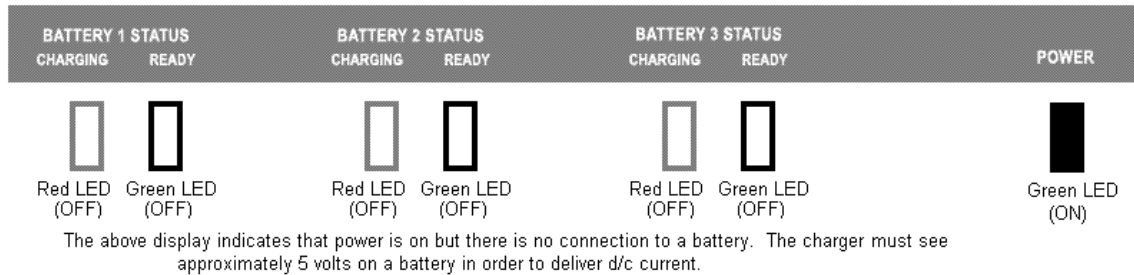
Once you plug in your PCS battery charging system, your batteries will be simultaneously and independently charged to 100%. Unlike systems that utilize one large charger to attempt to charge multiple batteries, your system utilizes a totally independent battery charger for each battery. Each charging bank will remain in a “float” stage once the battery is charged and then monitor and/or maintain the battery indefinitely.

We recommend that you leave your system plugged in. This will reduce sulfation on the lead plates of the batteries and allow your PCS charging system to keep your batteries fully maintained and ready to perform at their best.

Independent Charging Bank Indications

When your battery charging system is activated, each bank provides charging information utilizing 1 red Light Emitting Diode (LED) indicator and one green Light Emitting Diode (LED) indicator. The Red (CHARGING) LED indicates d/c current is flowing to the battery and the Green (READY) LED indicates that the charger has finished it’s bulk and absorption stage and has entered the float maintenance mode. There is also a Green (POWER) LED that illuminates to indicate that power is supplied to the charger when it is plugged in properly to a functioning A/C outlet.

Below is an example of the display on a Three output Industrial Series Charger (IS3):



INSTALLATION INSTRUCTIONS

All PCS battery charging systems are designed to be permanently installed in a well-ventilated area and have no mounting restrictions.

Do not make any electrical connections to the power supply (AC) or to a battery (DC) until the installation process has been completed.

If mounting the charger in a boat, please choose a flat surface as high above the water level as possible. If a compartment wall is chosen, make certain its strength is adequate to support the weight of the charger.

Use the mounting flanges of the charger to mark locations for starter holes. Drill a 1/16 inch hole at each marked location. Then, utilize all stainless steel screws that have been provided and install the charger securely, being cautious not to over tighten the screws. Silicon sealer should be used to secure and waterproof the screw holes.

IMPORTANT NOTICE

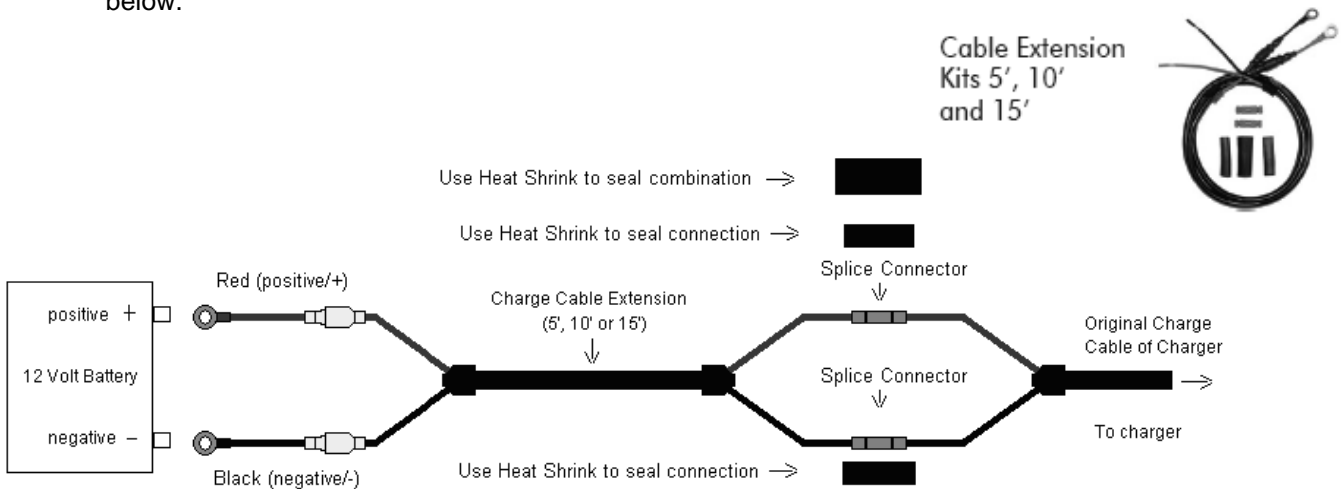
The mounting brackets of the system may contain keyholes that are designed so that screws can be started before putting the charger into place. If applicable, the keyhole locations vary depending on which model you own.

Before making any connections, prepare batteries as follows:

- (a) With caps securely in place, thoroughly clean the case and posts with a solution of baking soda and water. Be careful not to allow any baking soda to get inside the case.

- (b) All posts, terminals, and connectors should be cleaned to a shiny bright finish, using a wire brush or sand paper. This should be done periodically to assure maximum conductivity between the battery and the charger.

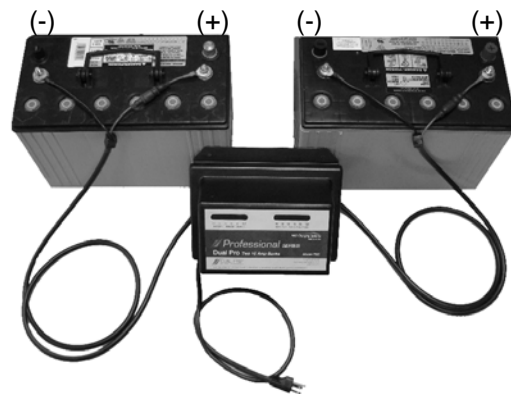
Each charge cable assembly is equipped with a temperature sensor located at the junction of each set of ring terminals. Attempts to shorten the cables could partially disable the charger. Therefore, we recommend that you do not make any adjustments without first consulting our technical support group (800.742.2740). Proper cable extensions may be purchased in 5', 10', and 15' lengths. See picture below.



To connect the charger to the battery (batteries), route your charge cables from the charger to the batteries, being cautious to avoid sharp objects, and use the supplied wire ties to hold them securely and neatly in place.

Securely attach each charge cable independently to one 12V battery by connecting the red (positive/+) lead ring terminal to the positive (+) battery post and the black (negative/-) lead ring terminal to the negative (-) battery post. See picture below:

*The charger pictured is a **Professional Series Dual Pro**, which has two independent 15 amp outputs.*



Connect a heavy duty UL approved extension cord to the power cord of your charger and then plug the extension cord into a nearby 120VAC GFI protected (Ground Fault Circuit Interrupt) outlet. You should now observe a red LED indication on each bank of the charger representing each individual battery being charged. The voltage of each battery will reflect the number of LED indicators illuminated.

When charging is complete, remove the extension cord from the 120VAC outlet first and then unplug the charger.

TROUBLE SHOOTING

PROBLEM: No LED indicators illuminate on the charger.

Solution Sequence: Check the AC power supply from its source through all connecting points up to the charger by using a meter or test light to confirm that current is being delivered to the charger.

PROBLEM: The Green (POWER) LED is illuminated, but the Red (CHARGING) LED and the Green (READY) LED are off.

Solution Sequence: This indicates that the charger does not recognize that it is connected properly to a battery that has at least 2Volts. With the AC power supply cord unplugged, check the ring terminals for correct polarity (Red to positive or +) and (Black to negative or -). Also check for corrosion free secure connections to the batteries. Check in-line fuses in charge cable for any signs of opening or corroded connections. Call the technical support group for further assistance (800.742.2420).

PROBLEM: The RED (CHARGING) LED remains illuminated for more than 16 hours and the Green (READY) LED does not come on.

Solution Sequence: This indicates that the battery is not reaching a sufficient voltage to indicate that the battery is fully charged. Disconnect AC power to the charging system. On multi bank chargers, remove the charge cable assembly of the affected bank from the battery and attach it to another battery in the boat. Take the original charge cable assembly from this battery and attach it to the battery from which you removed the first cable. Plug the charger in and observe the LED indications. If the rapid LED sequence (red to green repeatedly) occurs on a different bank of the charger, this confirms the existence of a battery problem.

On single bank systems, simply try the charger on another battery. If the charger now operates normally (steady red LEDs or changes to green and holds), this indicates a possible problem with the original battery.

If the same bank continues to malfunction, please call our technical support group (800.742.2740).

PROBLEM: The green (READY) LED was illuminated before disconnecting the power from the charger, but upon reconnection, the red (CHARGING) LED appears and remains on.

Solution Sequence: This is normal operating procedure for the system and simply indicates that a re-analysis of the battery status has been initiated and after a series of steps, the green LED will illuminate.

LIMITED WARRANTY

Pro Charging Systems, LLC (PCS) makes this Limited Warranty only to the original retail purchaser.

PCS warrants this battery charger for 18 months from the date of retail purchase against defective materials and/or workmanship. If such defects should occur, this unit will either be repaired or replaced at the discretion of the manufacturer. It is the responsibility of the original purchaser to return the charger along with proof of purchase, transportation, and/or any mailing or handling charges prepaid to the manufacturer or its authorized representative.

This limited warranty is void if the product is misused, improperly maintained, handled carelessly or incorrectly operated. Additionally, this warranty is void if the charger is disassembled, the charger's charge cables are cut, the power cord is cut off, the charger is altered without authorization from PCS, the serial number is removed, or repair is attempted by anyone other than an authorized representative.

PCS makes no other warranty other than this limited warranty and expressly excludes any implied warranty, including warranty for any incidental or consequential damages.

This is the only expressed limited 18 month warranty authorized by PCS and does not authorize anyone to assume or make any other obligation towards the product other than this three year Limited Warranty. Some states do not allow limitation of incidental or consequential damages.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Please call Pro Charging Systems, LLC (800.742.2740) for full warranty information and/or service.

Below are some of our other options in chargers and battery accessories. Call our technical support group for more detailed information or visit our web site www.dualpro.com.

Professional SERIES

Uni Pro
One 15 Amp
Bank



Dual Pro
Two 15 Amp
Banks



Tri Pro
Three 15 Amp
Banks



Quad Pro
Four 15 Amp
Banks



Sportsman SERIES

Uni Pro
One 10 Amp
Bank



Dual Pro
Two 10 Amp
Banks



Tri Pro
Three 10 Amp
Banks



Quad Pro
Four 10 Amp
Banks



Eagle Performance SERIES

Available in 12 to 48 Volts
and 9 to 25 Amps



Charge On The Run SERIES

12 Volt, Available in 1, 2 or 3
Banks



Go Charge

Maintainer/Charger
Available in 1.25 Amp and
2 Amp Units



For more information and products:

www.dualpro.com

Technical Support: 800.742.2740

Accessories

Cable Extension
Kits 5', 10'
and 15'



Remote Battery Status
Indicators 2 and 3 Banks

