

Easy Lift Equipment Co., Inc.

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

EASYLIFT DC POWERED KEG TRANSPORTER OPERATION & MAINTENANCE INSTRUCTIONS



EASY LIFT EQUIPMENT

EASYLIFT DC POWERED KEG TRANSPORTER

OPERATION & MAINTENANCE INSTRUCTIONS

INTRODUCTION

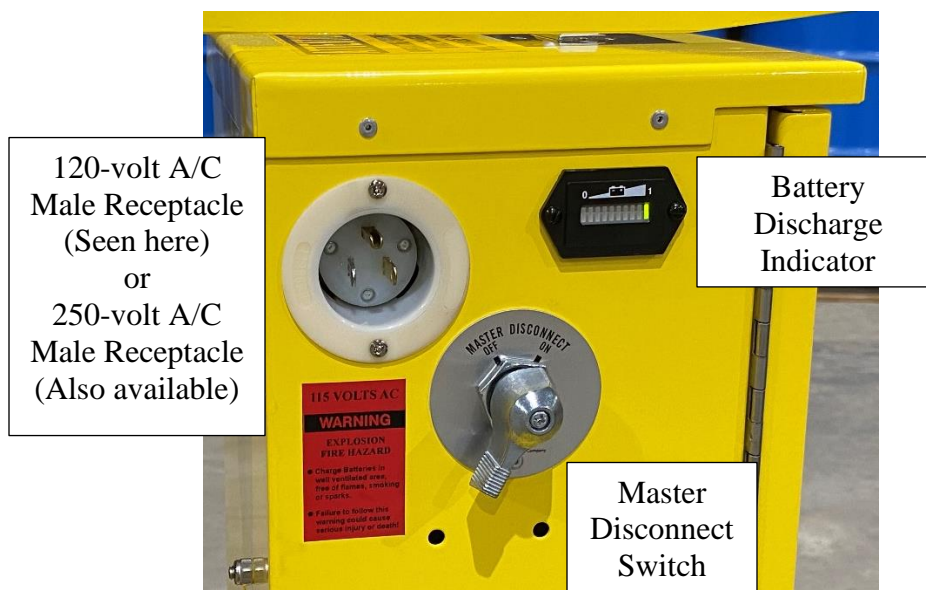
EasyLift DC powered keg transporters are the safe and ergonomic solution for lifting kegs onto shelves as well as double or triple stacking kegs in congested beer coolers. These units can also be used to load and unload kegs from vehicles. An automatic clamping mechanism lifts the keg by engaging one of the handles on the upper side of the keg. The narrow 19" overall width of the keg transporter allows the equipment to maneuver in narrow spaces and congested areas. These models are available in capacities of up to 200lbs (90.7kg). 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 help instruct operators on the proper use and maintenance of your EasyLift DC powered keg transporter. This manual should be made available to all operators who will use this equipment. Properly following the maintenance procedures will help ensure a safe and reliable service life. Do not operate this equipment until you have read and understand these instructions.

COMMISSIONING YOUR KEG TRANSPORTER

1. Perform a visual inspection for potential damage, including checking for hydraulic oil leaks or visual damage to the DC cabinet.
2. Remove all packing materials, protective strapping, and wood shipping blocks. It is recommended to use protective eye gear when cutting any metal strapping. Then, using a company forklift, carefully lift and remove the keg transporter from the shipping pallet or crate.
3. Check that the ergonomic step-down floor lock is functioning properly by depressing the small portion of the step-down pedal to release the floor lock. To engage the floor lock, depress the large portion of the step-down pedal, which will engage contact with the floor and secure the equipment in place. With the floor lock disengaged, check that the caster wheels are free of obstruction and functioning properly.
4. Open the DC cabinet and visually ensure that no electrical components appear to have shifted or been damaged during the shipping process. Carefully inspect wires and in-line fuses to confirm that they're firmly connected.
5. Turn the master disconnect switch to the "ON" position and observe the battery discharge indicator. The indicator should light up, displaying the green bar to the far right, which indicates a full charge.
6. Verify that lift and lower functions are in proper working order by pressing the "Lift" switch, which is located on the top of the DC cabinet, "UP" and "DOWN" to ensure proper operation of each function.

7. Test that the battery charger is functioning properly by turning the master disconnect switch to the “OFF” position (DO NOT CHARGE THE UNIT WHILE THE MASTER DISCONNECT SWITCH IS IN THE “ON” POSITION).
- Keg Transporters with a **120-volt A/C receptacle** require a **three-prong polarized heavy gauge extension cord, rated 12/3 15 Amp/125-volt** (which is **not** provided).
 - Keg Transporters with a **220-volt A/C receptacle** require a **three-prong NEMA 6-15 Receptacle extension cord, rated 15A/250-volt with heavy duty 14 AWG jacket** (which is **not** provided).
 - To charge, insert the appropriate extension cord into the A/C receptacle, which is located on the side of the DC cabinet. **Always make your extension cord connection on the charger side first.**
 - For a standard **120-volt system**: After connecting the extension cord to the charger proceed by plugging the extension cord into a 120VAC GFCI protected (Ground Fault Circuit Interrupt) A/C wall outlet.
 - The same process should be followed for a **220-volt system** as well. Plug in the charger side first, followed by the wall outlet.
 - Once plugged in, the charger (located inside the DC cabinet) should then show a red LED light on the face of the battery chargers, one for each battery, and will start charging the batteries automatically. The LED lights signify the condition of each battery and will turn green once the batteries are fully charged. **NOTE: DO NOT OPERATE THE UNIT WHILE CHARGING OR WITH THE EXTENSION CORD PLUGGED IN, DOING SO COULD CAUSE DAMAGE TO THE EQUIPMENT OR CHARGER.**
 - It is recommended to keep the DC Cabinet door open while charging to allow for air circulation.
8. The battery discharge indicator, on the side of the DC cabinet, will be reset when the batteries reach a full charge of 2.35 volts per cell. The IS2 charger, within the DC cabinet, contains separate LED indicators, for each battery, which turn green once complete to ensure a full charge. **“Reference the IS2 Pro Charge Battery Charger section of this manual for proper charging operations”.**



DAILY SAFETY INSPECTION

1. Perform a visual inspection, checking for any apparent damage to the keg transporter or any hydraulic oil leakage from previous use. Check all hydraulic fittings, components and connections and inspect under the keg transporter for any leaks.
2. Ensure that the step-down floor lock is functioning properly and that the wheels are free of obstructions.
3. Perform a visual inspection, checking for any loose or damaged springs and jaws in the clamping mechanism.
4. Open the DC cabinet and ensure that the batteries are secure and clear of corrosion and that the battery cables are firmly connected. Then, turn the master disconnect switch to the “ON” position. Observe the **IS2 Dual Pro** charger to verify that both battery indicators show a proper charge. Next, securely close the DC cabinet door and observe the battery discharge indicator, on the side of the DC cabinet, to ensure that the keg transporter has a sufficient charge for operation. Do not operate the keg transporter when the battery discharge indicator is at “70% depth of discharge” (indicated by the 2nd-from-left LED on the Battery Discharge Indicator flashing – which indicates “energy reserve”). Doing so could damage the internal components.
5. Verify that the lift and lower functions are working properly by pressing the corresponding “UP” and “DOWN” buttons located on the “Lift” switch on top of the DC cabinet.

Do not operate your EasyLift Keg Transporter if you notice any unsafe condition(s) that may have been caused by an accident or malfunction from previous use. Immediately report any unsafe conditions or issues with the equipment to your supervisor. Tag the keg transporter properly to keep others from using it until the issue has been corrected.

SAFETY PRACTICES

1. Do not lift loads that exceed the keg transporter’s rated capacity.
2. Only lift the keg to the minimum height needed for proper floor clearance while transporting the keg to its destination. Do not transport or move a keg at heights greater than 6” (15cm) above floor level.
3. **Always** keep hands, feet and other objects clear of any pinch points, including mast channel(s), lifting and rotation chains (where applicable), the clamping mechanism(s), lift cylinder and *any* other moving parts. Also keep your hands and feet clear of the lifting area at the front of the unit.
4. Do not use the keg transporter on inclined floors having a slope of more than 5°.
5. Never lay the keg transporter down horizontally.

WARNINGS

- WARNING:** NEVER lift or suspend loads over people. Stay clear of suspended loads.
- WARNING:** Do not attempt to operate the equipment beyond its rated capacity and do not attempt to lift the keg beyond its maximum lifting height.
- WARNING:** Never move the keg transporter when the load is at its maximum lifting height. Lower the mast so the keg has only the necessary floor clearance for transport.
- WARNING:** Keep hands and feet away from pinch points, such as mast channel, lifting & rotation chains (if applicable), clamping mechanism, lift cylinder and any other moving parts.
- WARNING:** Do not make alterations or modifications to the keg transporter without authorization from Easy Lift Equipment.
- WARNING:** Do not leave the keg transporter outside in inclement weather for extended periods. Allowing the keg transporter to get wet may result in damage to the electrical components.
- WARNING:** Never leave the keg transporter unattended without applying the step-down floor lock. Leaving the keg transporter unsecured may allow it to move inadvertently and cause property damage or personal injury.
- WARNING:** Never operate the keg transporter on an inclined floor with a slope of more than 5°.
- WARNING:** Never wash down the keg transporter. Washing down the keg transporter may result in damage to the electrical components. This equipment is designed to be wiped down by hand only.
- WARNING:** Do not operate the keg transporter when the battery discharge indicator is at “70% depth of discharge” (which is indicated by the 2nd-from-left LED on the Battery Discharge Indicator flashing, meaning “energy reserve”). Doing so could damage the internal components.
- WARNING:** NEVER perform any maintenance on the keg transporter unless the battery cables have been fully disconnected from the battery terminals. Failure to do so could result in serious personal injury or damage to the equipment.
- WARNING:** NEVER perform any maintenance on the keg transporter while the charging cable is plugged in. Doing so could result in serious personal injury or damage to the equipment.
- WARNING:** DO NOT operate the unit while charging or with the extension cord plugged in.

EASYLIFT DC POWERED KEG TRANSPORTER OPERATING INSTRUCTIONS

TO ENGAGE, PICK AND TRANSPORT A KEG:

1. To begin, press “DOWN” on the lift switch to ensure that the clamping jaw rests below the hand grip opening of the keg that needs to be clamped and transported. If the clamp does not lower below the hand grip opening of the keg, refer to the instructions below for adjusting the height of the clamping mechanism on the mast. Once the clamping mechanism is appropriately set and lowered, approach the keg head-on and push the equipment forward until the clamping mechanism makes full, solid contact against the side of the keg (which will cause the clamping mechanism to collapse downward). Keep the clamping mechanism pressed tightly against the side of the keg and press “UP” on the lift switch until the clamping jaw engages with the hand grip opening of the keg. It is recommended to apply slight forward pressure while raising the clamp to help ensure a secure grip.
2. Do not attempt to overload the keg transporter beyond its rated capacity or raise the keg beyond its maximum lifting height. Only lift the keg to the minimum height needed for proper floor clearance while transporting the keg to its destination. Do not transport or move a keg at heights greater than 6” (15cm) above floor level. Once properly raised to an appropriate height, you may transport the keg to its required destination.
3. **IMPORTANT:** When traveling with a load over slightly elevated thresholds in doorways or imbalanced dock plates, it is essential to lower the load to the minimum height needed for proper floor clearance prior to proceeding. Keeping the keg raised while doing so could allow the keg transporter to become unbalanced and possibly tip forward, causing property damage or serious personal injury.

TO RELEASE A KEG:

1. Once you have arrived at the required destination, press “DOWN” on the lift switch until the keg contacts the floor, shelving, pallet or other flat surface. Continue pressing “DOWN” so that the clamping jaw lowers below the hand grip opening. Once the clamping mechanism has been appropriately lowered, and is clear of the hand grip opening, manually pull the unit away from the keg.
2. When double stacking kegs it is important to ensure that the upper keg is positioned directly on top of the lower keg. Failure to do so may allow the upper keg to fall and potentially cause damage to the equipment or serious personal injury.

FLOW CONTROL VALVES:

1. This keg transporter is equipped with two adjustable flow control valves, which are designed to increase or decrease the lifting and lowering speed of the keg being lifted and lowered. Both flow control valves have been factory preset to the required specifications prior to shipping. The upper valve controls the lift speed while the lower valve controls the decent speed. For more information regarding the flow control valves please contact Easy Lift Equipment.

ADJUSTING THE CLAMPING MECHANISM FOR VARIOUS HEIGHT KEGS:

STANDARD KEG TRANSPORTER MODELS WITH AN INNER AND OUTER MAST:

1. Remove the circle cotter pin & stainless-steel adjusting pin **while holding the clamping mechanism with your other hand (failure to hold the clamping mechanism while removing the adjustment pin could cause the clamping head to fall and cause injury)**. Raise or lower the clamping mechanism to the desired available position so that the lower clamping jaw rests slightly below the hand grip opening of the keg, with the keg at floor level. Re-insert the adjustment pin & circle cotter pin to secure the clamping mechanism into place. The lowest position available with the standard outer mast design will enable the clamping jaw of the clamping mechanism to rest at 13.5" (34.3cm) in overall height, when the clamp is at rest. This will allow you to pick kegs where the hand grip opening of the keg rests above 13.5" (34.3cm).

MODELS EQUIPPED WITH SCALE SYSTEMS

If your equipment has a scale system, the indicator has already been factory calibrated and tested. The indicator has been disconnected and packaged separately for safe travel. Unpack the indicator from the box and attach it to the mounting bracket. Once securely mounted, connect the corresponding male and female indicator cables. Non-Intrinsically safe scale indicators have internal batteries. Intrinsically safe indicators have external batteries which need to be mounted and have a separate battery cable that needs to be securely connected to the back of the indicator. All scale indicators are provided with a separate set of instructions that are packaged along with the indicator. Please read the scale indicator operations manual for more specific instructions of use.

Turn the indicator "ON" and ensure it reads zero before engaging a keg. Follow the instructions listed above for engaging a keg. If handling filled kegs operators should allow the contents of the keg to settle prior to documenting weights. This will help ensure the most accurate possible measurements. Most scale indicators are set to display the weight in increments of 0.1 lb. (0.05 kg). To speed up the process it is recommended to set the indicator to a lower sensitivity. This can be achieved by programming the indicator to read in 0.5 lb. (0.25 kg) or 1.0 lb. (0.5 kg) increments. Doing so will require less time for the indicator to settle on a specific weight.

MAINTENANCE INSTRUCTIONS

1. Before every usage, check that all springs, pins, casters, lift chains and chain anchors are in good working order and that the hydraulic cylinder works properly and isn't leaking.
2. On a monthly basis, spray light grade oil on moving parts in the clamping mechanism to ensure smooth operation. It is recommended to keep the clamping mechanism lubricated and free from foreign materials which may impede proper operation of jaw and springs. 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 DC POWERED KEG 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 Syncolon PTFE.

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

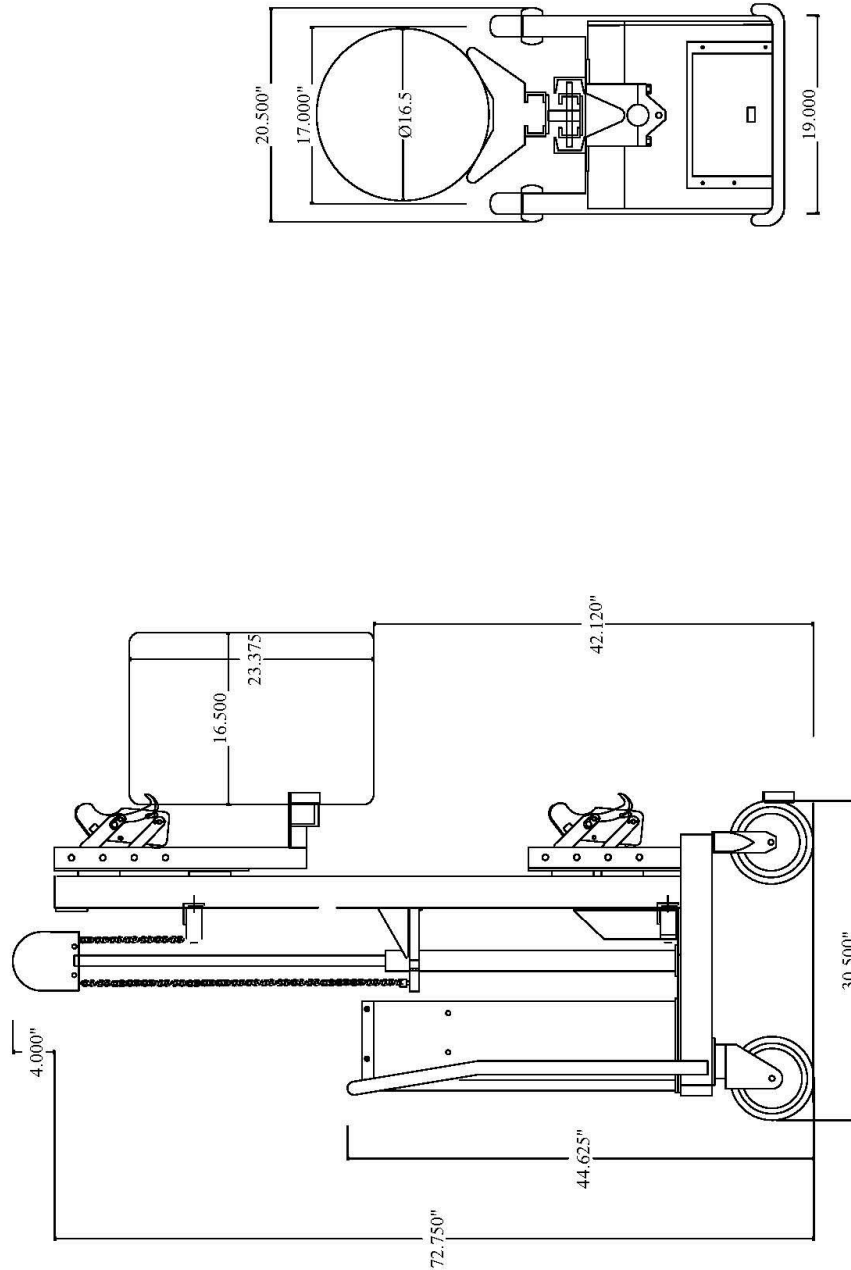
*** For both Non-FDA & FDA ANSI 60 Chain: *See below chart for Manufacturer recommendations*

HKK Chain Number ANSI	Temperature (F)							
	14°F to 32°F	32°F to 104°F	104°F to 122°F	122°F to 140°F	14°F to 32°F	32°F to 104°F	104°F to 122°F	122°F to 140°F
	Lubrication Type A & B				Lubrication Type C			
50	SAE 10	SAE 20	SAE 30	SAE 50	SAE 10	SAE 20	SAE 30	SAE 40
60	20	30	40	50	10	20	30	40

Hydraulic Fluid:

Non-FDA equipment: Hydraulic Oil AWG32

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



CUSTOMER AUTHORIZATION REQUIRED FOR PRODUCTION

Easy Lift Equipment Co., Inc.
 Newark, DE 19713

COMPANY
 Description: MODEL EL20040DC Keg Stacker

spec. drawing 05112012-1
 GWV: 450lb CAP. 2000lb LIFT: 40in. 24vdc QUOTE #

SIGNATURE

PURCHASE ORDER

DATE

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Operator's Daily Checklist

Drum Transporter (DC Powered) with Eagle-Grip® Clamp, V-Pan or Roll Post

Inspections Performed by: _____

Note: This inspection must be made by the equipment operator **daily** at the start of the shift. Check (✓) the appropriate "OK" or "Needs Repair" field.

This Daily Checklist is intended to help verify that the equipment is in proper working order each day.

More thorough Weekly, Monthly and Yearly Maintenance schedules should still be followed.

VISUAL CHECK		DATE: / /		/ /		/ /		/ /		/ /		/ /		/ /	
		OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair
VISUAL CHECK: FRAME & MAST	DATA PLATES & WARNING DECALS - Data Plates & Warning Decals are affixed to the unit and in good condition														
	DAMAGE - Look for bent, dented or broken parts. This includes hydraulic lines, electrical wires, frame welds, wheels, & bolted connections														
	LIFT CHAIN - Visually ensure lift chain is connected and not loose														
	LIFT CYLINDER - Ensure that the hydraulic lift cylinder and all lines are in operable condition														
	DC BOX - Ensure that the DC Box, as well as all controls, are in good condition with no visual damage														
	BATTERY & FUSES - Open the DC Box and visually ensure the battery cables & connections are in good condition & secure. Ensure DC cable fuses are intact														
	LEAKS - Check for any leaking oil, hydraulic fluid or battery acid														
	GUARDS - Verify that all chain guards are in place and in proper condition														
VISUAL CHECK: EG CLAMP	CLAMP DAMAGE - Look for bent, dented or broken clamp components. This includes the clamp housing, the upper and lower clamping jaws, retaining pins, cotter pins, and springs														
	CLAMP PINS - Confirm that all retaining pins and cotter pins are accounted for and secure														
VISUAL CHECK: V-PAN OR ROLL POST	V-PAN/ROLL POST DAMAGE - Look for bent, dented or broken components. This includes all welds and bolted connections of both the V-Pan assembly and the Roll Post and mounting receiver, including all applicable safety pins, retaining pins, latching pins and cotter pins														
	V-PAN/ROLL POST PINS - Confirm that all applicable safety pins, retaining pins and cotter pins are accounted for and secure														
VISUAL: SCALE	SCALE SYSTEM & PRINTER - If applicable, confirm that the scale and printer as well as all wires, and cables are in good condition and properly connected														

Checklist Continued on Next Page

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Operator's Daily Checklist (cont.)

Drum Transporter (DC Powered) with Eagle-Grip® Clamp, V-Pan or Roll Post

OPERATIONAL CHECK		DATE: / /		/ /		/ /		/ /		/ /		/ /		/ /	
		OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair	OK	Needs Repair
OPERATIONAL CHECK: FRAME & MAST	POWER UP - Turn on the Master Disconnect Switch on the DC Box. Ensure Power is supplied to the unit and the Battery Discharge Indicator lights are in proper working order														
	FOOT FLOOR LOCK - Verify that the Foot Floor Lock engages and disengages properly														
	WHEELS AND TRAVEL - Confirm that the unit travels properly. Ensure that the wheels are aligned properly, unobstructed, and not damaged														
	CONTROLS - Verify that both the lift and lower functions on the top of the DC Box are in proper working order														
	MAST - Ensure the clamping head, V-Pan or Roll Post moves smoothly up and down the mast, with no obstruction or unusual noises														
EAGLE-GRIP	EAGLE-GRIP CLAMPING HEAD - Verify that the Eagle-Grip Clamping Head engages and disengages a drum properly. Only lift the "test" drum to the minimum height required while completing this test														
V-PAN OR ROLL POST	V-PAN/ROLL POST FUNCTION - Verify proper function of all V-Pan or Roll Post components, including smooth rotation of the Stainless Steel V-Pan tray (if applicable), as well as proper operation of Roll Post rollers and/or folding capabilities (if applicable)														
SCALE & PRINTER	SCALE SYSTEM & PRINTERS - If applicable, power up the scale and printer. Ensure the scale and printer are in proper working order														

List the details of all required repairs in the comments section below. Then, **tag and decommission the equipment for safety.**

Comments (items needing repair or adjustment):

Caution – If the equipment is found to be in need of repair or in any way unsafe, or contributes to an unsafe condition, the matter shall be reported immediately to the designated supervisor, and the equipment shall not be operated until it has been restored to a safe operating condition. If during operation, the equipment becomes unsafe in any way, the matter shall be reported immediately to the designated supervisor, and the equipment shall not be operated until it has been restored to safe operating condition. Do not make repairs or adjustments unless specifically authorized to do so.

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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

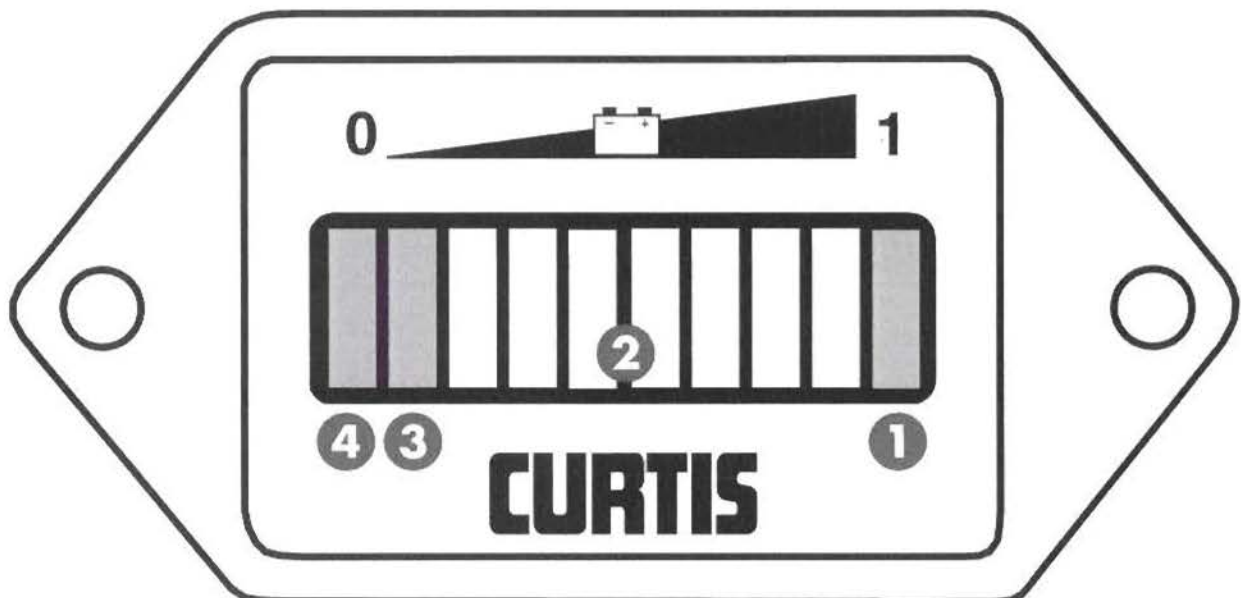
Phone: 800-233-1800: 302-737-7000
Fax: 302-737-7333
Website: www.easylifteqpt.com

OPERATION

Display

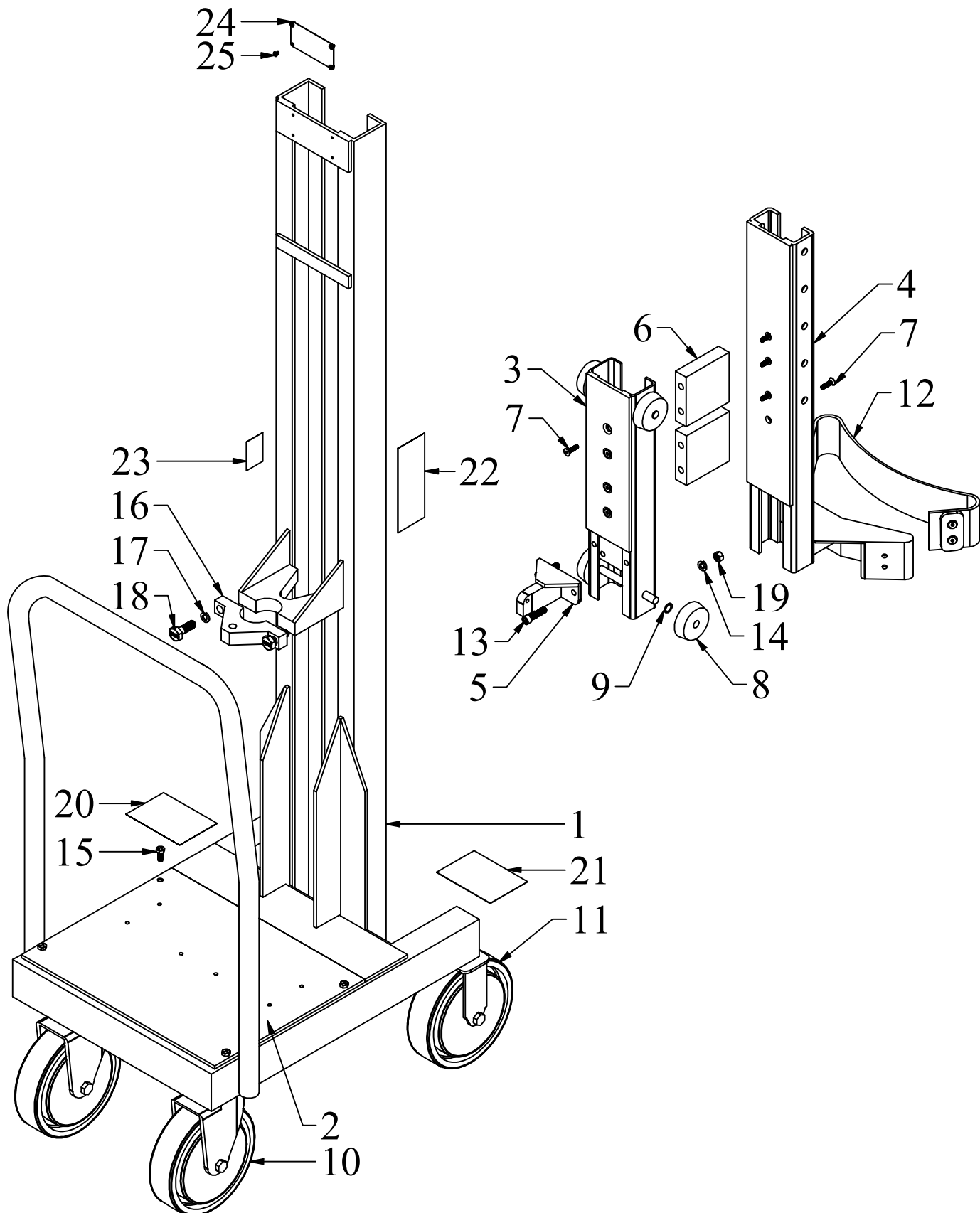


- 1** Only when the battery is properly charged is the right-most LED lit.
- 2** As the battery's state-of-charge decreases, successive LEDs light up, only one on at a time.
- 3** The 2nd-from-left LED flashes, indicating "energy reserve" (70% depth of discharge).
- 4** The 2 left-most LEDs alternately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



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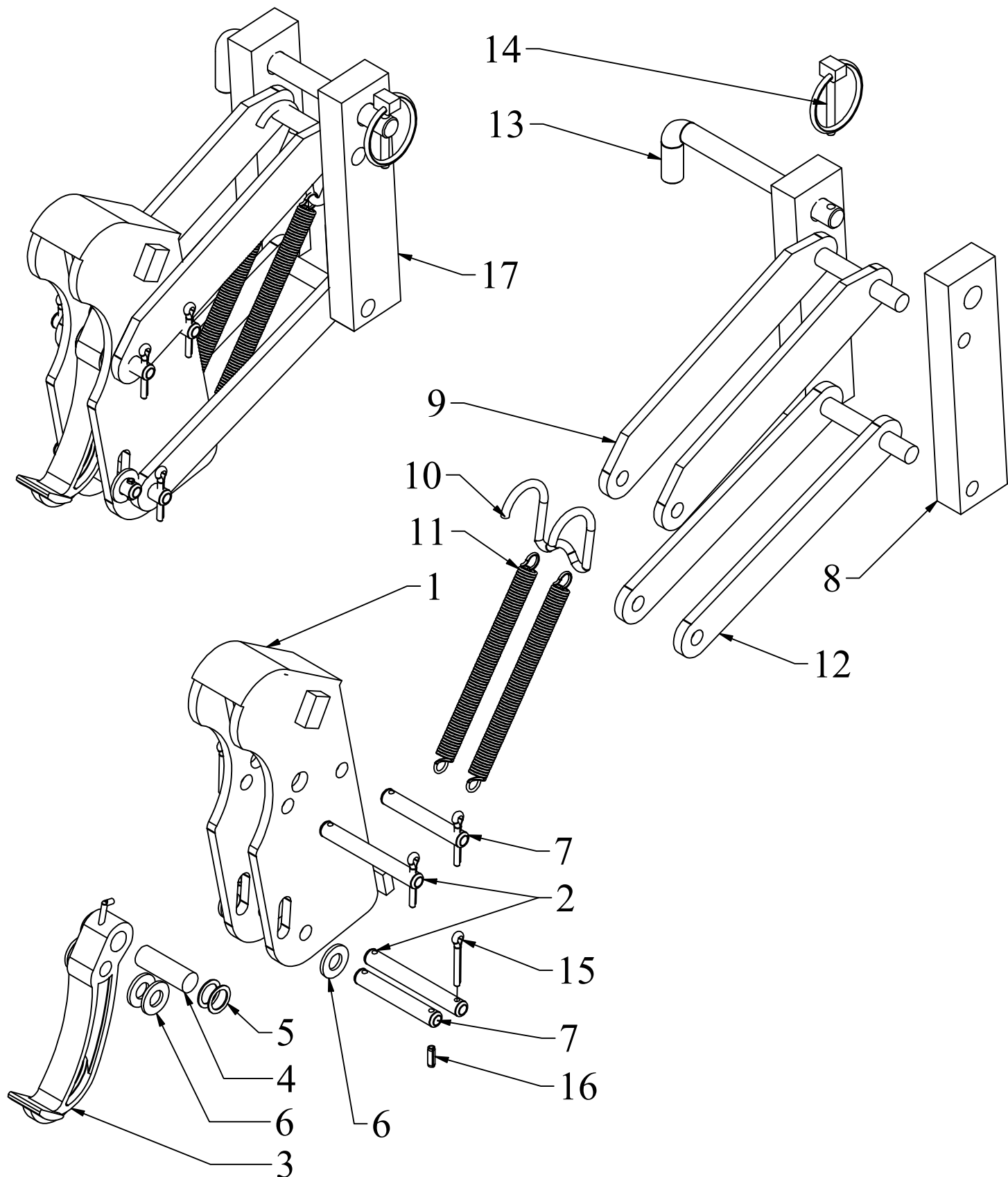
KEG TRANSPORTER FRAME ASSEMBLY



KEG TRANSPORTER FRAME PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	3530129	Keg Transporter Frame (40" lift, DC powered)	1
1	3530130	Keg Transporter Frame (49" lift, DC powered)	1
1	3530131	Keg Transporter Frame (60" lift, DC powered)	1
2	2580020	ELE Top Plate	2
3	2580400	18" High Inner Mast	4
4	2580452	26.5" High Outer Mast with Keg Transporter 3" Belt Cradle	6
5	8912HR	High Reach Chain to Mast Bracket	1
6	LCRB	Load Cell Replacement Block	2
7	1/2-20 x 1 1/4 FSHCS	1/2-20 x 1 1/4 Flat Socket Head Cap Screw (zinc)	8
8	4008	Delrin Roller	4
9	90295A187	1/16" Nylon Flat Washer	-
9	95606A170	1/32" Nylon Flat Washer	-
10	31-408B-PD	8" Brake Caster with PD Wheel	2
-	W-408-PD	8" PD Wheel Only	-
11	31-408R-PD	8" Rigid Caster with PD Wheel	2
-	W-408-PD	8" PD Wheel Only	-
12	5516E	Optional: Belt Cradle Kit (3" wide x 23" long, includes all hardware)	1
-	5516	Rubber Belt Only (3" wide x 23" long, no hardware)	1
13	3/8-16 x 1 1/2 SHCS	3/8-16 x 1 1/2 Socket Head Cap Screw Alloy Plated	2
13	3/8-16 x 1 1/2 SHCS-SS	3/8-16 x 1 1/2 Socket Head Cap Screw (stainless steel)	2
14	3/8 LW	3/8 Lock Washer (zinc)	2
14	3/8 LW-SS	3/8 Lock Washer (stainless steel)	2
15	5/16-18 x 3/4 HHCS	5/16-18 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	4
15	5/16-18 x 3/4 HHCS-SS	5/16-18 x 3/4 Hex Head Cap Screw (stainless steel)	4
16	35091	Cylinder Clamp Bracket	1
17	1/2 LW	1/2 Lock Washer (zinc)	2
17	1/2 LW-SS	1/2 Lock Washer (stainless steel)	2
18	1/2-13 x 1 1/2 HHCS	1/2-13 x 1 1/2 Hex Head Cap Screw Grade 5 (zinc)	2
18	1/2-13 x 1 1/2 HHCS-SS	1/2-13 x 1 1/2 Hex Head Cap Screw (stainless steel)	2
19	3/8-16 HN	3/8-16 Finished Hex Nut (zinc)	2
19	3/8-16 HN-SS	3/8-16 Finished Hex Nut (stainless steel)	2
20	ADART002	Attention Read Operations Manual Decal	1
21	ADART200	200lbs/90kg Capacity Sticker	1
22	ADART016	ELE Address Decal (Vertical)	2
23	ADART009	Warning 5 Degree Decal for ELE & EL	1
24	MCL007031	Specification Plate	1
25	6 x 1/4 RUDS-SS	6 x 1/4 Round Head U Drive Screw (stainless steel)	4

EG1 KEG HANDLING SINGLE CLAMPING MECHANISM ASSEMBLY



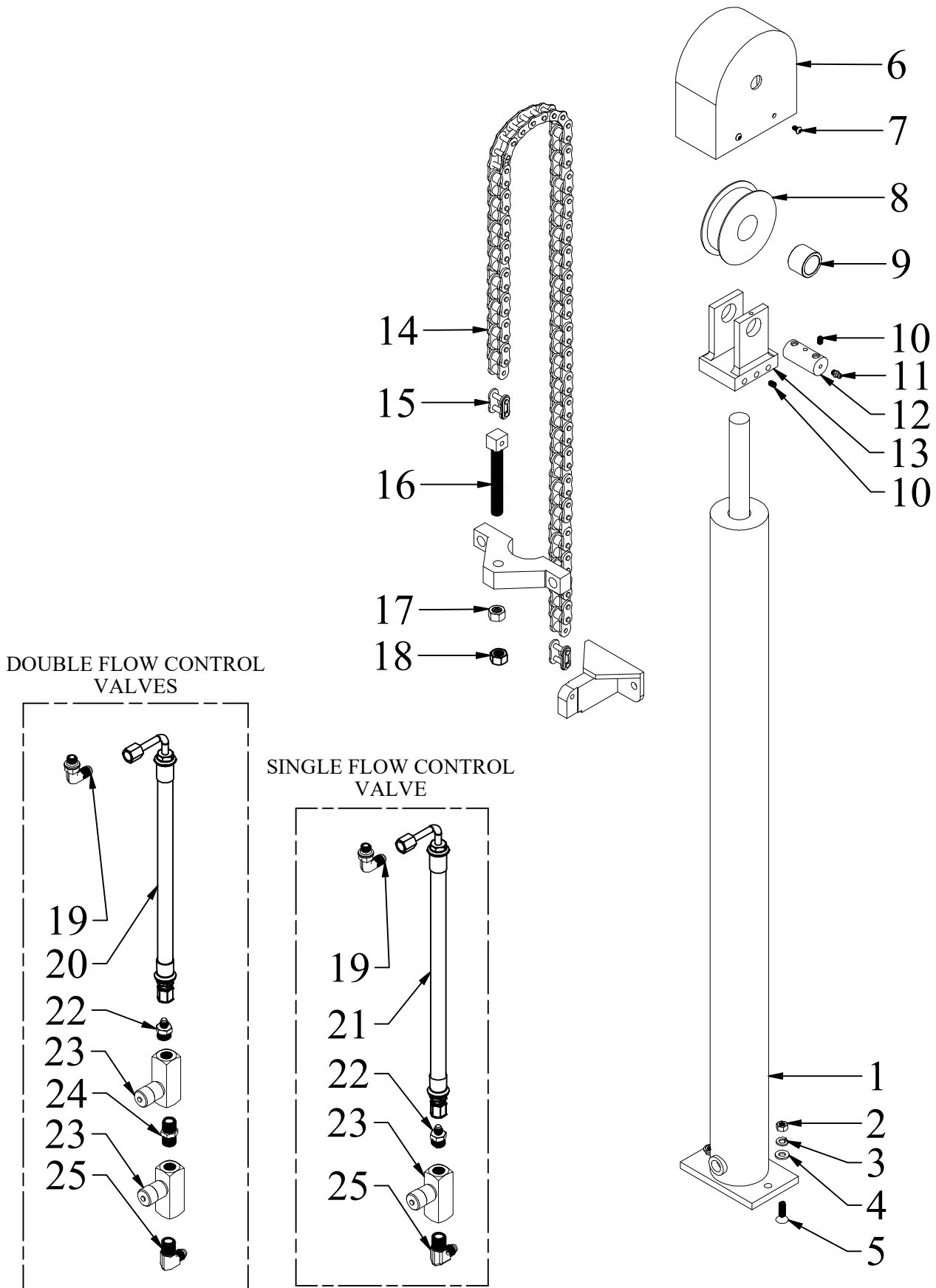
EG1 KEG HANDLING SINGLE CLAMPING MECHANISM PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	6302K	Keg Housing (Black Powder Coating)	1
2	15104-1SS	3/8" x 2.242" Pin, Fibre Guard, Housing to Clevis (stainless steel)	2
3	1007SS	Stainless Steel Upper Clamp Jaw (Non-Sparking)	1
4	10061K	Keg Pin, Jaw to Housing 1/2" x 1-1/2" (zinc)	2
5	95606A170	1/32" Nylon Flat Washer	4
6	1470-6	Custom Washer EG (Stainless Steel)	6
7	16104-1SS	3/8" x 1.770" Pin, Upper Jaw Link (stainless steel)	2
8	8002	Adjustment Slide (FDA Black Powder Coating)	2
9	5912S	Upper Clevis 6" (FDA Black Powder Coating - Double Mast)	1
10	8996-2	Clevis Spring Hook (Stainless Steel)	1
11	8206	Clevis Spring (zinc)	2
12	6912S	Lower Clevis 5 1/2" (FDA Black Powder Coating - Double Mast)	1
13	10204-1SS	1/2" x 4-1/2" Adjusting Pin (stainless steel)	1
14	HANG-1	3/16 x 1-1/4 Shank Lynch Pin "Hang 1" (9016)	1
15	3006-CP	Cotter Pin, 1/8" x 3/4" (zinc)	6
16	5/32 x 1/2 RP-SS	5/32 x 1/2 Roll Pins (stainless steel)	2
-	WLG	12oz White Lithium Grease	1
 <u>FULL ASSEMBLIES</u>			
17	KM9004	EG1 Keg Handling Single Clamping Mechanism (Black Powder Coating)	
17	KM9004SRC	EG1 Keg Handling Single Clamping Mechanism (Spark Resistant Clamp)	

DRUM TRANSPORTER

LIFT CHAIN

ASSEMBLY



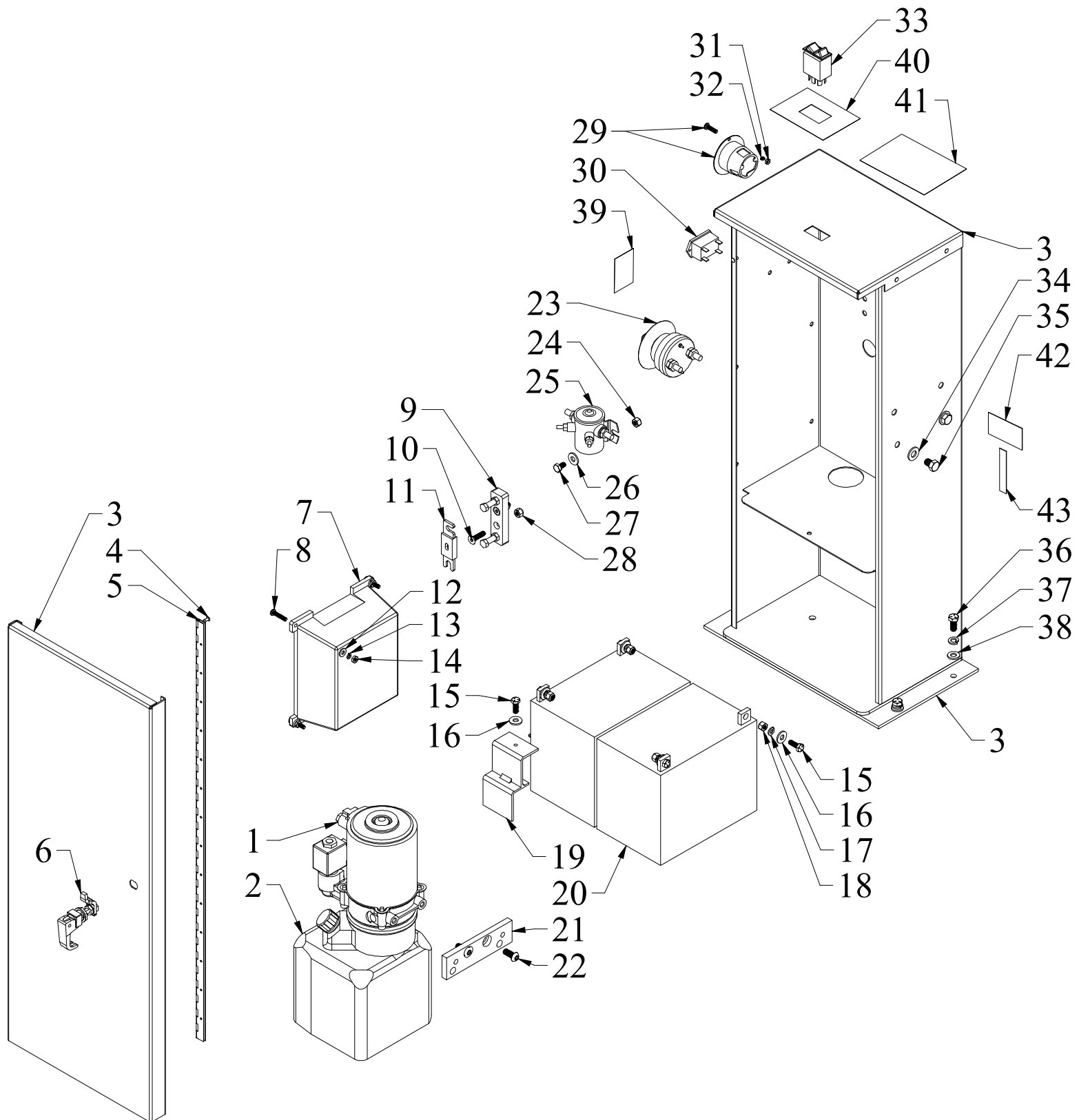
DRUM TRANSPORTER LIFT CHAIN PARTS LIST

<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 HN	5/16-18 Finished Hex Nut (zinc)	2
2	5/16-18 HN-SS	5/16-18 Finished Hex Nut (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 x 1 1/4 FSHCS-SS	5/16-18 x 1 1/4 Flat Socket Head Cap Screw (stainless steel)	2
6	3022	4" Sheave Wheel Cover	1
7	10-24 x 3/8 BSC-SS	10-24 x 3/8 Button Socket Cap 18/8 (stainless steel)	4
8	55061	4" Sheave Wheel	1
9	CB-1622-08	Sheave Wheel Bushing	1
10	93445A425	1/4"-20 x 3/8" Stainless Steel Knurl-Grip Set Screw	2
11	1095K41	1/4"-28 Grease Fitting	1
12	45061	Sheave Wheel Axle (1" x 2.125")	1
13	7912-4-1	Sheave Wheel Bracket 4" (1" bore)	1
14	RC060RC1-49	Chain-Ansi 60 (49" Long)	1
14	RC060RC1-49PC	FDA Chain-Ansi 60 (49" Long)	1
14	RC060RC1-65	Chain-Ansi 60 for Ergo (65" Long)	1
14	RC060RC1-65PC	FDA Chain-Ansi 60 for Ergo (65" Long)	1
14	RC060RC1-73	Chain-Ansi 60 for Ergo (73" Long)	1
14	RC060RC1-73PC	FDA Chain-Ansi 60 for Ergo (73" Long)	1
15	60HMCL	ANSI 60 Link	2
15	ARC060SCL1	FDA ANSI 60 Link	2
16	2022	Chain Adjuster for ANSI 60 Chain	1
17	1/2-13 HN	1/2-13 Finished Hex Nut (zinc)	1
17	1/2-13 HN-SS	1/2-13 Finished Hex Nut (stainless steel)	1
18	1/2-13 NLN	1/2-13 Nylon Locking Nut (zinc)	1
18	1/2-13 NLN-SS	1/2-13 Nylon Locking Nut (Stainless Steel)	1
19	6C4OMXS	* HPI 90 Deg Fitting (Post 2013)	1
19	6-6 C4OMXS	** 90 Male Elbow 3/8 BSPP	1
20	487TC-6-F-I-7.5	7.5" long 3/8" Hydraulic Hose w/ (1) Fml Swvl St. & (1) Fml 90° Long Drop Elbow	1
21	487TC-6-F-I-10.5	10.5" long 3/8" Hydraulic Hose w/ (1) Fml Swvl St. & (1) Fml 90° Long Drop Elbow	1
22	6-6 FTX-S	Male Connector	1
23	F600B	Flow Control 3/8" NPT	2 / 1
24	PA80702	Hex Nipple	1
25	PA80806	90 Male Elbow 3/8T 3/8PT	1

* Fitting for HPI Pump

** Fitting for Rexroth Pump

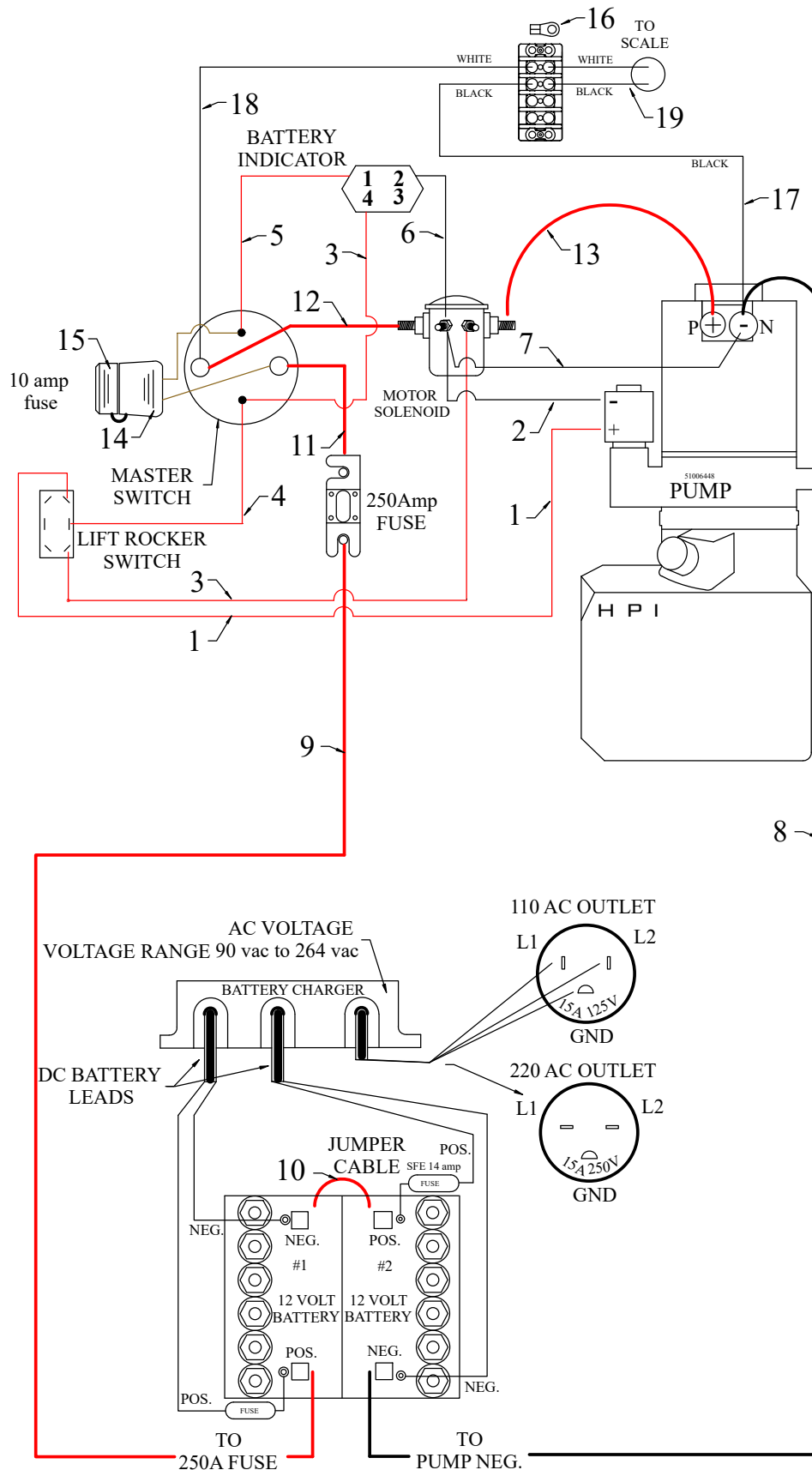
LIFT ONLY DC CABINET WITH HPI PUMP & MASTER DISCONNECT HARDWARE ASSEMBLY



**LIFT ONLY DC CABINET WITH HPI PUMP
& MASTER DISCONNECT 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 w/ Welded Plate & 1 Hole Lid and Door	1
3	DM021-2023	DC Cabinet 29 5/8" Tall w/o Welded Plate with 1 Hole Lid and Door	1
-	DM099	DC Cabinet Door	-
-	DM091	DC Cabinet One Hole Lid	1
4	97447A025	Aluminum Blind Rivet w/Aluminum Mandrel 1/8, .188-.25"	18
5	CS24010628H	Cabinet Hinge	1
6	S 62-10-23	Lift & Turn Latch	1
7	IS2	12 amp 2 bank 110/220/50-60/1ph CE Charger	1
-	7821055	AGC 30A Fuse (5 pack)	1
8	10-24 x 1 PMS-SS	10-24 x 1 Phillips Machine Screw (stainless steel)	4
9	4164	Limiter Fuse Block	1
10	1/4-20 x 1 FSHCS-SS	1/4-20 x 1 Flat Socket Head Cap Screw (stainless steel)	2
11	ANL-250	Fuse, 250A, Series ANL, 32VAC/80VDC	1
12	10 FW-SS	#10 Flat Washer 18/8 (stainless steel)	4
13	10 LW-SS	#10 Lock Washer 18/8 (stainless steel)	4
14	10-24 HN-SS	10-24 Finished Hex Nut 18/8 (stainless steel)	4
15	1/4-20 x 3/4 HHCS	1/4-20 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	5
16	1/4 FW SAE	1/4 Flat Washer SAE (zinc)	5
17	1/4 LW	1/4 Lock Washer (zinc)	4
18	1/4-20 NLN	1/4-20 Nylon Locking Nut (zinc)	4
19	2580045	Battery Bracket	1
20	DCM0035L	12v DC 35Ah Deep Cycle Battery	2
21	MM10001	2022 DC Box Pump Mounting bracket	1
22	M8-1.25 x 20MM BSHCS-A	M8-1.25 x 20mm Button Socket Head Cap Screw Alloy	2
23	PA16529	Master Disconnect Switch	1
24	1/4-20 NLN-SS	1/4-20 Nylon Locking Nut (stainless steel)	2
25	LP390-1077	Motor Solenoid 24 volt/200 amp Continuous Duty	1
26	1/4 FW-SS	1/4 Flat Washer (stainless steel)	2
27	1/4-20 x 1/2 HHCS-SS	1/4-20 x 1/2 Hex Head Cap Screw (stainless steel)	2
28	1/4-20 NLN	1/4-20 Nylon Locking Nut (zinc)	2
28	1/4-20 NLN-SS	1/4-20 Nylon Locking Nut (stainless steel)	2
29	HBL5278C	120 volt A/C Receptacle (Male)	1
29	HBL5678C	220 volt A/C Receptacle (Male)	1
30	T101772	24 Volt Battery Discharge Indicator (906T24JWDGN)	1
31	9079	18-8 SST Hex Mach Screw Nuts 6-32	2
32	9098	18-8 SST Lock Washers Size #6	2
33	8555K32X32M	White Rocker Switch	1
34	3/8 FW SAE-SS	3/8 Flat Washer SAE (stainless steel)	2
35	3/8-16 x 1/2 HHCS-SS	3/8-16 x 1/2 Hex Head Cap Screw (stainless steel)	2
36	5/16-18 X 3/4 HHCS	5/16-18 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	4
36	5/16-18 X 3/4 HHCS-SS	5/16-18 x 3/4 Hex Head Cap Screw (stainless steel)	4
37	5/16 LW	5/16 Lock Washer (zinc)	4
37	5/16 LW-SS	5/16 Lock Washer (stainless steel)	4
38	5/16 FW SAE	5/16 Flat Washer SAE (zinc)	4
38	5/16 FW SAE-SS	5/16 Flat Washer SAE (stainless steel)	4
<u>DECAL</u>		<u>DESCRIPTION</u>	
39	ADART025	115 Volts AC Warning Decal	1
39	ADART043	220 Volts AC Warning Decal	1
40	ADART007	Decal "Lift"	1
41	ADART028	Attention Operating Equipment While Charging Will Damage Decal	1
42	ADART042	"Attention Read Operations Manual Before Adjusting" Decal	1
43	ADART021	Flow Control Decal "UP/DOWN"	1
<u>HYDRAULIC FLUID</u>		<u>DESCRIPTION</u>	
	HYDECAW325	Hydraulic Oil 1 Quart	
	FG32/46	Food Grade 32/46 Hydraulic Synthetic Lubricant	

LIFT ONLY DC CABINET WITH CHARGER WIRING ASSEMBLY



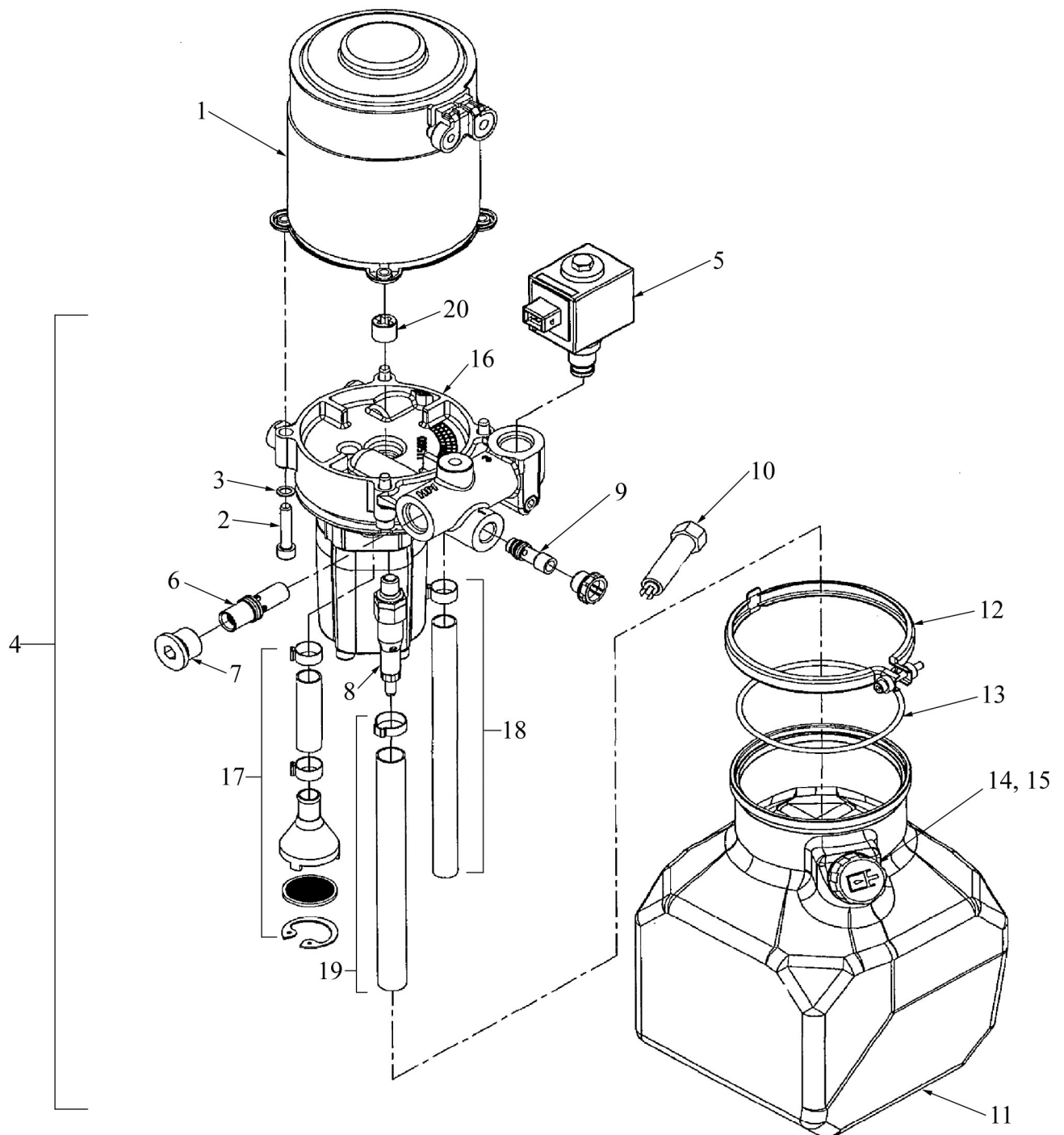
LIFT ONLY DC CABINET WITH CHARGER WIRING PARTS LIST

<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
	<u>SCALE WIRING OPTION</u>	<u>DESCRIPTION</u>	
16	PA80206	NYLON RING TERM 16-14 GA #10, BLU	4
17	80097UZ-84-06-15	15" Black wire with (1) PA85884 & (1) PA80206 ends	1
18	80095-94-06-20	20" White wire with (1) PA80194 & (1) PA80206 ends	1
19	PA12686-36	36" Length of 14 GA 2 Conductor Auto Duplex Wire	1

HPI HYDRAULIC PUMP

51006448 (GEN 3) MAY 2013 TO PRESENT

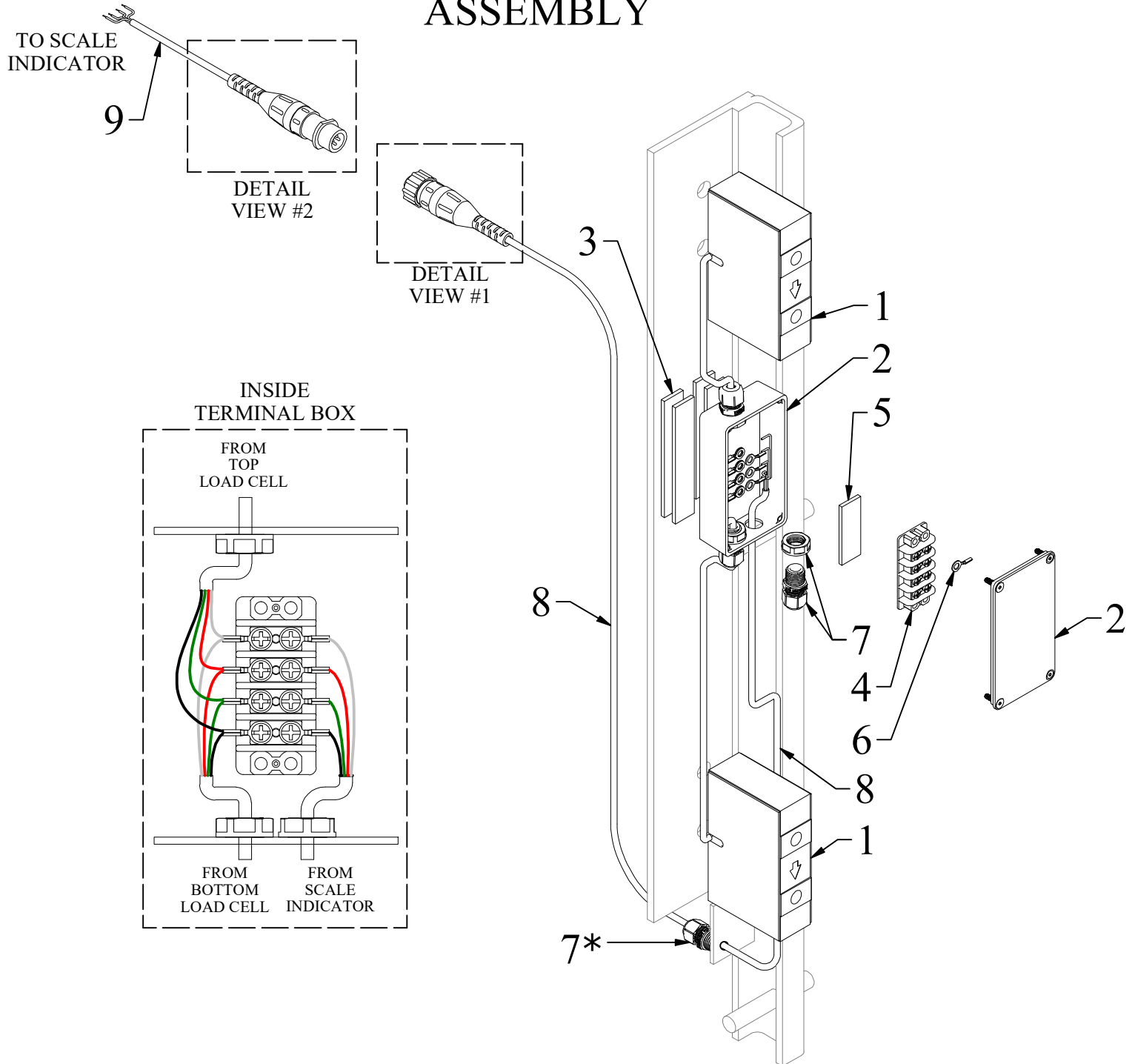
ASSEMBLY



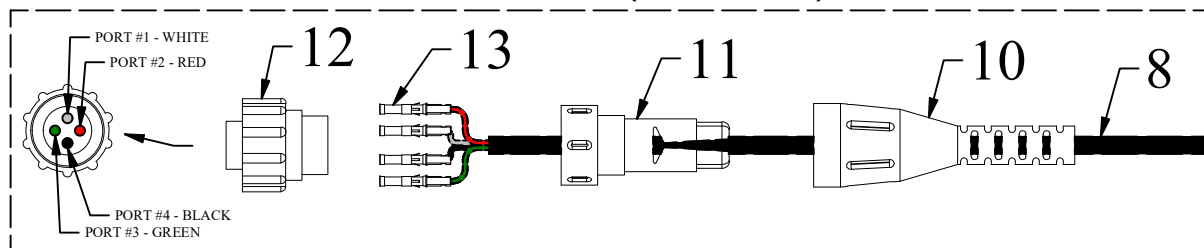
**HPI HYDRAULIC PUMP
51006448 (GEN 3) MAY 2013 TO PRESENT
PARTS LIST**

<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	Hydraulic Connecting Block (Discontinued)	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	Hydraulic Connecting Block (Discontinued)	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	

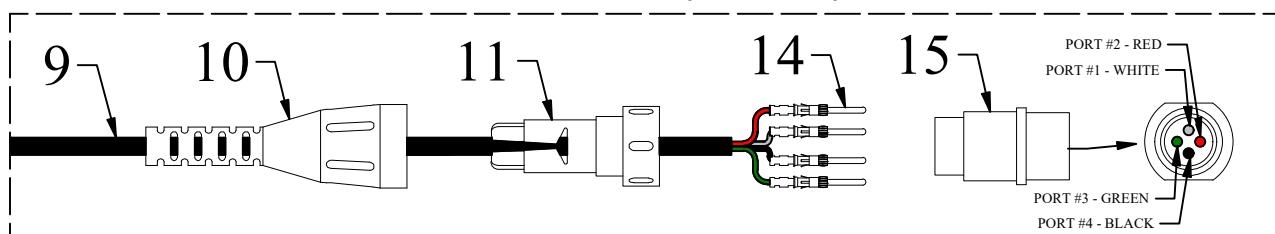
SCALE HARDWARE & WIRING FOR ERGO & EAGLE-GRIP STYLE MASTS ASSEMBLY



DETAIL VIEW #1 (MACHINE SIDE)



DETAIL VIEW #2 (SCALE SIDE)



SCALE HARDWARE & WIRING FOR ERGO AND EAGLE-GRIP MASTS 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
3	75315A34-4	Foam Tape, 2 sided adhesive, 3/4" X .125" x 4" length	4
4	7527K64	Terminal Block (Strip) 7/16", 4 circuits	1
5	75315A34-2	Foam Tape, 2 sided adhesive, 3/4" X .125" x 2" length	1
6	3A214	Terminal Eyelet	12
7	ZZHEY3208	Cable Fitting	4
8	3530359	Ergo Scale Cable Assembly (Female End) - 60" Length	1
8	3530360	Eagle-Grip Scale Cable Assembly (Female End) - 30" Length	1
9	3530361	Eagle-Grip/Ergo Scale Cable Assembly (Male End) - 24" Length	1
10	AP2074891	Strain Relief	2
11	AP2074901	Cable Grip	2
12	AP2060601	Connector Plug Size 11-4 (Female)	1
13	AP661054	Terminal Socket	4
14	AP661034	Terminal Pin	4
15	AP2061531	Connector Recp CPC 11-4 (Male)	1

* Modified Strain Relief

Non-Intrinsically Safe Indicators

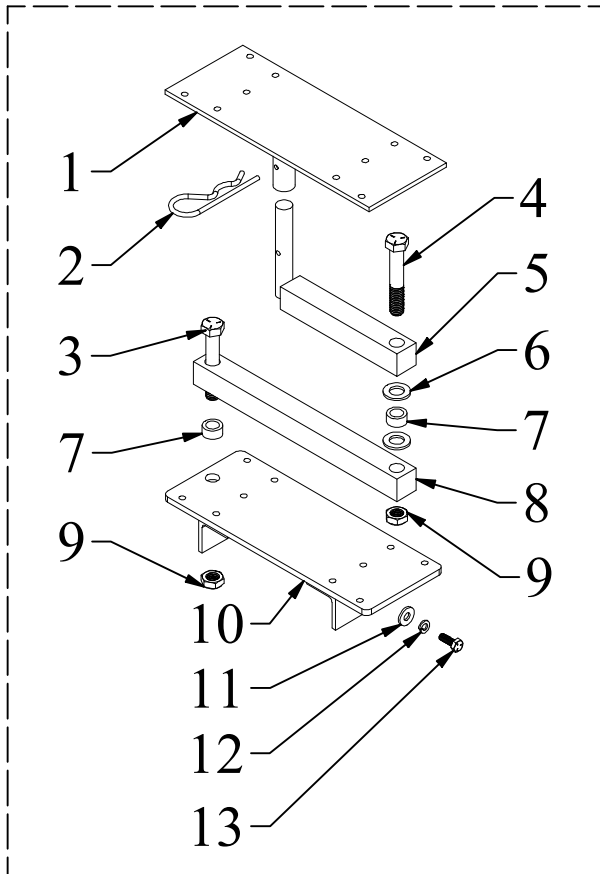
7000XLM	Doran® 7000XL Non-intrinsically Safe Scale Indicator
SUB0853	Rechargeable Battery, with wire and terminals (2200, 7000, 8000)
2200	Doran® 2200 Non-intrinsically Safe Scale Indicator (Numeric Keypad)
EXOPT319	Battery Option for Non-Intrinsically Safe 2200 Indicator
164582	Rice Lake®482 Indicator w Internal Battery & Charger
164585	Rice Lake®482 Plus Indicator w Internal Battery & Charger
107708	Rice Lake®720i Indicator

Intrinsically Safe Indicators

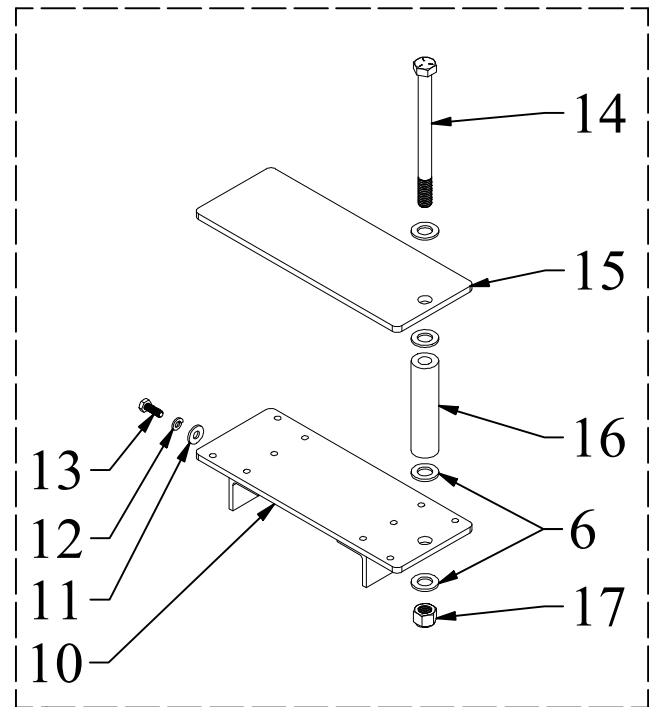
185288	Rice Lake®882IS Indicator w Battery Pack & Safe Area Charger
185291	Rice Lake®882IS PLUS Indicator w Battery Pack & Safe Area Charger
180831	Rice Lake®882IS Battery
194191	Rice Lake®882IS Battery Charger (IS6V2, 100-240 VAC)
72210052	Mettler Toledo IND226x Indicator ONLY
72258718	Mettler Toledo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

EAGLE-GRIP, EL & MFCR SCALE BRACKET ASSEMBLY

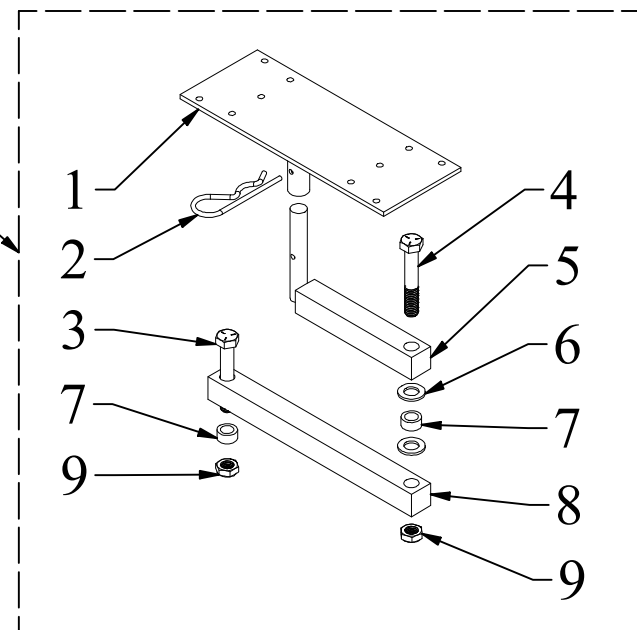
EL & MFCR SWIVEL BRACKET



EL ELEVATED RISER



EAGLE-GRIP SWIVEL BRACKET



18
19
20

EAGLE-GRIP, EL & MFCR 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	2
3	1/2-13 x 2 1/2 HHCS	1/2-13 x 2 1/2 Hex Head Cap Screw Grade 5 (zinc)	2
4	1/2-13 x 3 HHCS	1/2-13 x 3 Hex Head Cap Screw Grade 5 (zinc)	2
5	2580309	Scale Swing Bracket Post Bracket	2
6	1/2 FW	1/2 Flat Washer (zinc)	8
7	10001	Bushing, Housing Yolk Trunion (zinc)	4
8	2580308	Scale Swing Bracket Mid Bracket	2
9	1/2-13 THIN NLN	1/2-13 Nylon Locking Nut (THIN ZINC)	4
10	2580306	Ergo Scale Mount - 1.5" High	2
10	3530396	Ergo Scale Mount - 6.5" High	2
11	1/4 FW SAE	1/4 Flat Washer SAE (zinc)	4
12	1/4 LW	1/4 Lock Washer (zinc)	4
13	1/4-20 x 3/4 HHCS	1/4-20 x 3/4 Hex Head Cap Screw Grade 5 (zinc)	4
14	1/2-13 x 6 HHCS	1/2-13 x 6 Hex Head Cap Screw Grade 5 (zinc)	1
15	3530445	Elevated Scale Plate	1
16	3530446	Elevated Scale Plate Spacer	1
17	1/2-13 NLN	1/2-13 Nylon Locking Nut (zinc)	1
 <u>FULL ASSEMBLY</u>			
18	3530447	Ergo Elevated Scale Plate Assembly	1
19	3530404	Ergo Scale Swing Out Bracket 1.5" Assembly	1
19	3530405	Ergo Scale Swing Out Bracket 6.5" Assembly	1
20	3530469	Eagle-Grip 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	22.9bs
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:

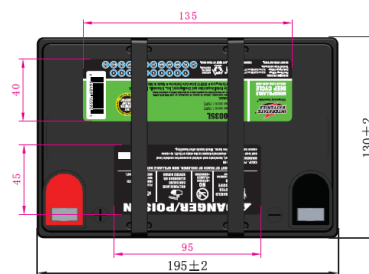
Charging: 32° F to 104° F (0° C to 50° C), Discharging: 5° F to 122° F (-15° to 50° C),

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

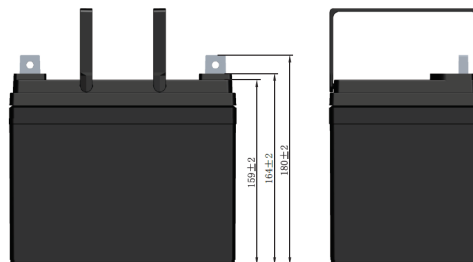


FEATURES:

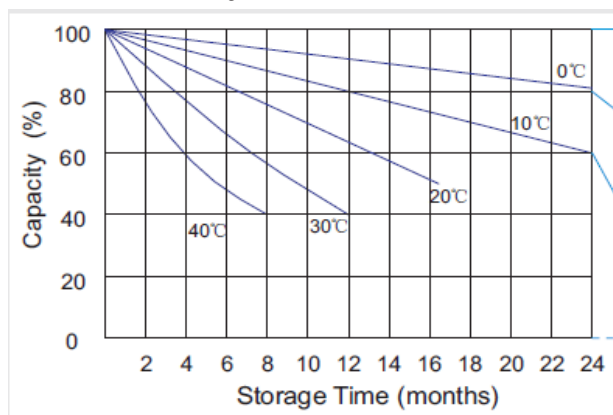
- Long life for deep discharge uses
- Ideal for applications using major capacity prior to recharging
- Depth of discharge should be between 50% & 80% and recharged as soon as possible
- Flexibility of mounting orientation
- VRLA technology to eliminate spills and over-pressurization
- Maintenance-free



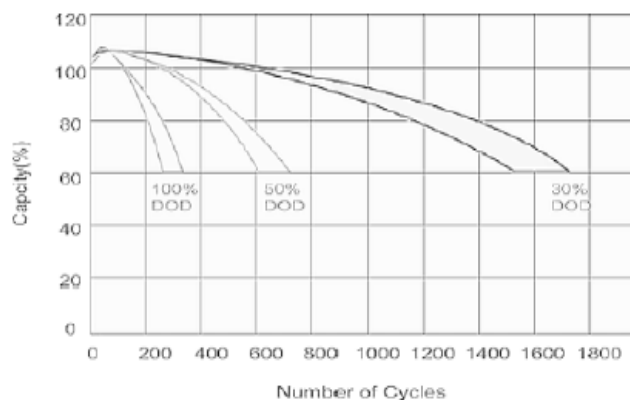
FOR REFERENCE ONLY
HANDLE TRUE TO PHOTO ABOVE



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*



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

INSTALLATION AND OPERATING INSTRUCTIONS FOR THE FOLLOWING BATTERY CHARGING SYSTEMS:

		Total	Independently charge 12V
Model #	Description	Output	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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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.

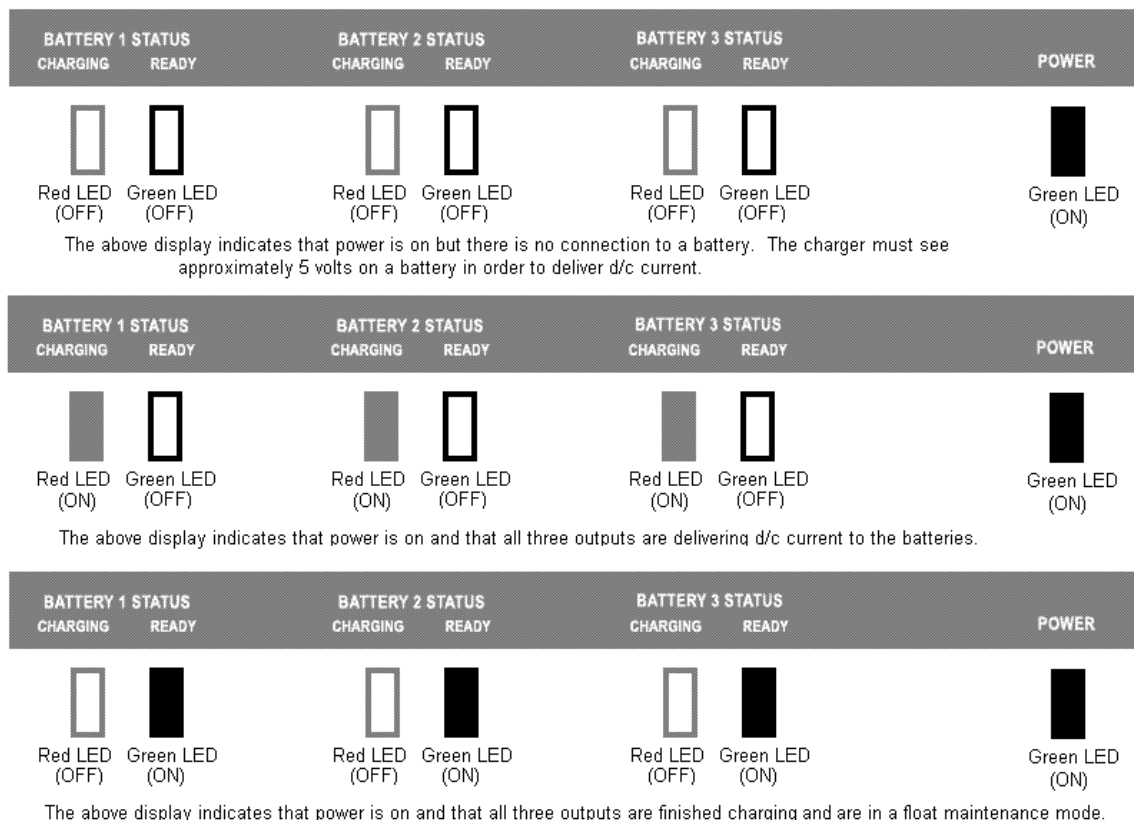
Once you plug in your PCS battery charging system, your batteries will be simultaneously and independently charged to 100%. Unlike systems that utilize one large charger to attempt to charge multiple batteries, your system utilizes a totally independent battery charger for each battery. Each charging 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

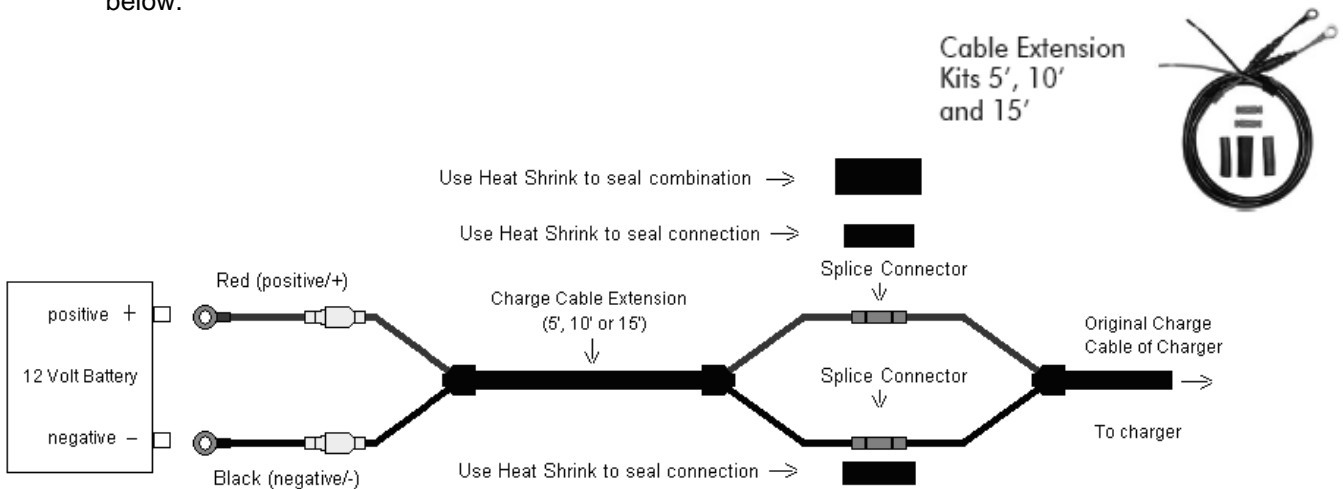
The mounting brackets of the system may contain keyholes that are designed so that screws can be started before putting the charger into place. If applicable, the keyhole locations vary depending on which model you own.

Before making any connections, prepare batteries as follows:

- 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.

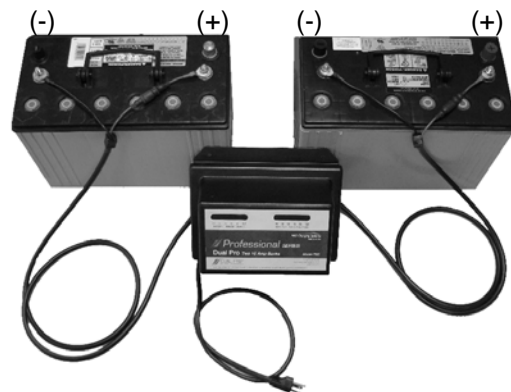
Each charge cable assembly is equipped with a temperature sensor located at the junction of each set of ring terminals. Attempts to shorten the cables could partially disable the charger. Therefore, we recommend that you do not make any adjustments without first consulting our technical support group (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



Accessories

For more information and products:

www.dualpro.com

Technical Support: 800.742.2740

Cable Extension
Kits 5', 10'
and 15'



Remote Battery Status
Indicators 2 and 3 Banks

