

# OWNER'S MANUAL

## HYDRAULIC DRUM CARRIER/ROTATOR MODEL BHDC-305-60/72/84/96

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### WARNINGS & SAFETY INSTRUCTIONS

#### *Read owner's manual completely before operating unit!*

- Remove drum & disconnect power before working on unit.
- Do not stand below any part of a raised drum carrier, drum, or boom.
- Stand clear of drum while operating the hand crank or chain crank.
- Use only maintenance parts supplied or approved by the manufacturer.
- Do not change pressure relief valve setting.
- Relieve system pressure by depressing DOWN button on controller.
- Never operate carrier/rotator unless you are watching it.
- Never exceed maximum capacity of 800 pounds for FULL drum: or 500 pounds for HALF-FULL drum.
- Load drum at the center of the cradle.
- Consult factory for uneven loading.
- Do not continue to depress UP button if the cradle is not raising.
- Do not use hydraulic oils, brake fluids or jack oils. Use AW-32 or equal.
- Consult factory if adding or performing any modifications to the original equipment.
- Make sure all operator safety labels are in place (p.9).

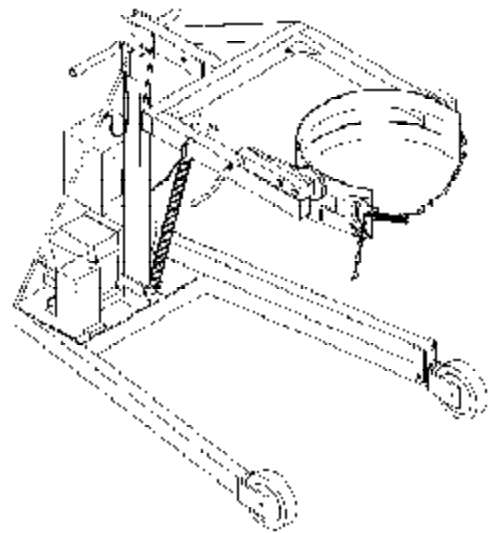
### RECEIVING INSTRUCTIONS

Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit may incur damage during transit. If you see damage when unloading make a note of it on the SHIPPER RECEIVER.

Remove all packing and strapping material, inspect for damage. IF DAMAGE IS EVIDENT, FILE A CLAIM WITH THE CARRIER IMMEDIATELY! Also, check the unit size, type of power unit, etc., to ensure the unit is correct for the intended application.

### MODEL NUMBER AND CAPACITY

The model number, serial number and capacity is inscribed on the nameplate. Please remember to include these numbers in any correspondence with your dealer or the factory.



### HYDRAULIC DRUM CARRIER/ROTATOR BHDC-305 SERIES - D/C POWER

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## LOADING INSTRUCTIONS

The load capacity rating as inscribed on the nameplate of your unit designates the net capacity, assuming the cradle is aligned at the center of the drum. This capacity must never be exceeded, as permanent damage or injury may result.

## OPERATING INSTRUCTIONS

### Drum Carrier/Rotator

Remove Hydraulic Drum Carrier/Rotator, (BHDC-305) from the crate. Check carefully for damage and report any damage immediately. When using the BHDC-350, move drum carrier/rotator cradle near floor level to position around drum. Lower the cradle so it aligns with approximately the center of the drum, then push in. Open carrier cradle full width and hook cradle chain on stud. Lock drum in place by clinching chain with ratchet tightener. Remove control chain from box and place end of loop near operator. Raise cradle and transport drum in VERTICAL position.

Always stay clear of moving parts. The cradle will rise as long as the UP button is depressed. Depressing the DOWN button will lower the cradle.

In the event the unit is overloaded, the relief valve will open because of excessive pressure build up, and oil will bypass into the reservoir.

### BOOM

The HDC-305 may also be used as a hoist using the boom supplied with unit. The boom is stored conveniently on one of the lower straddle legs. Simply remove the 3/4" diameter pin from carriage and position boom on top of carriage, align holes and replace pin and clip. Lifting capacity for boom at hook position is 800 pounds. This capacity and load center must never be exceeded.

#### To Rotate Drum:

Pull on chain, rotating drum to angle required for emptying. For best control of drum rotating angle, pay out one side of the loop while pulling in the other.

After emptying, rotate drum back to vertical position before moving. **When elevation is not required, transport the BHDC-305 in the lowered position.**

## SAFETY INSTRUCTIONS FOR THE OPERATOR

- 1.) The BHDC-305 has a MAXIMUM CAPACITY RATING of 800 pounds FULL, and 500 pounds HALF-FULL, and is intended for lifting, moving, and pouring 55 GALLON steel drums. Do not exceed these ratings as the unsafe condition that may result could cause damage or excessive wear, or make the unit awkward to handle.
- 2.) Always load the unit properly. Load the drum in such a way that the cradle is aligned at the center of the drum.
- 3.) When operating, loading, unloading, or maintaining your drum carrier, always use care and good judgement, have good footing and a firm hold. Keep hands and loose clothing etc., away from all moving parts. Never allow anyone to be below any part of a raised drum carrier, drum, or boom. Please read all instruction THOROUGHLY before attempting to operate your new drum carrier.
- 4.) Do not allow drum to impact on floor, ground, or dumping station etc., or there may be damage.
- 5.) Never use the unit if the cradle is in need of repairs or in the case of a malfunction.
- 6.) Notify your maintenance personnel or supervisor in case you notice anything out of the ordinary, such as binding, odd noises, appearance of oil, etc.
- 7.) Do not continue to depress UP button if the cradle is not raising. The hydraulic pump may be permanently damaged. Relieve system pressure by depressing DOWN button on hand controller.
- 8.) ALWAYS transport drum only in VERTICAL position.

## ORDERING REPLACEMENT OR EXTRA PARTS

Our company takes pride in using the finest available parts for our equipment. We are not responsible for equipment failure resulting from the use of unapproved replacement parts. To order replacement or extra parts for your equipment contact Customer Service at the factory. In any correspondence with the factory please include the **Serial Number** which is inscribed on the nameplate of the piece of equipment. Use only the part numbers provided in this Owner's Manual. When ordering parts for AC power units please indicate the motor phase and voltage that the equipment is operating on.

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## PERIODIC MAINTENANCE INSTRUCTIONS

### (A) Before Each Use Inspect Any and All Safety Devices

- 1.) Check for oil leaks.
- 2.) Inspect for worn or damaged hose.
- 3.) Look for structural deformation of cradle or frame.
- 4.) Listen for unusual noise or binding.
- 5.) Check casters for safe and proper operation.

**Do not use if any of the above conditions are found to be unsafe!**

### (B) Monthly Inspections

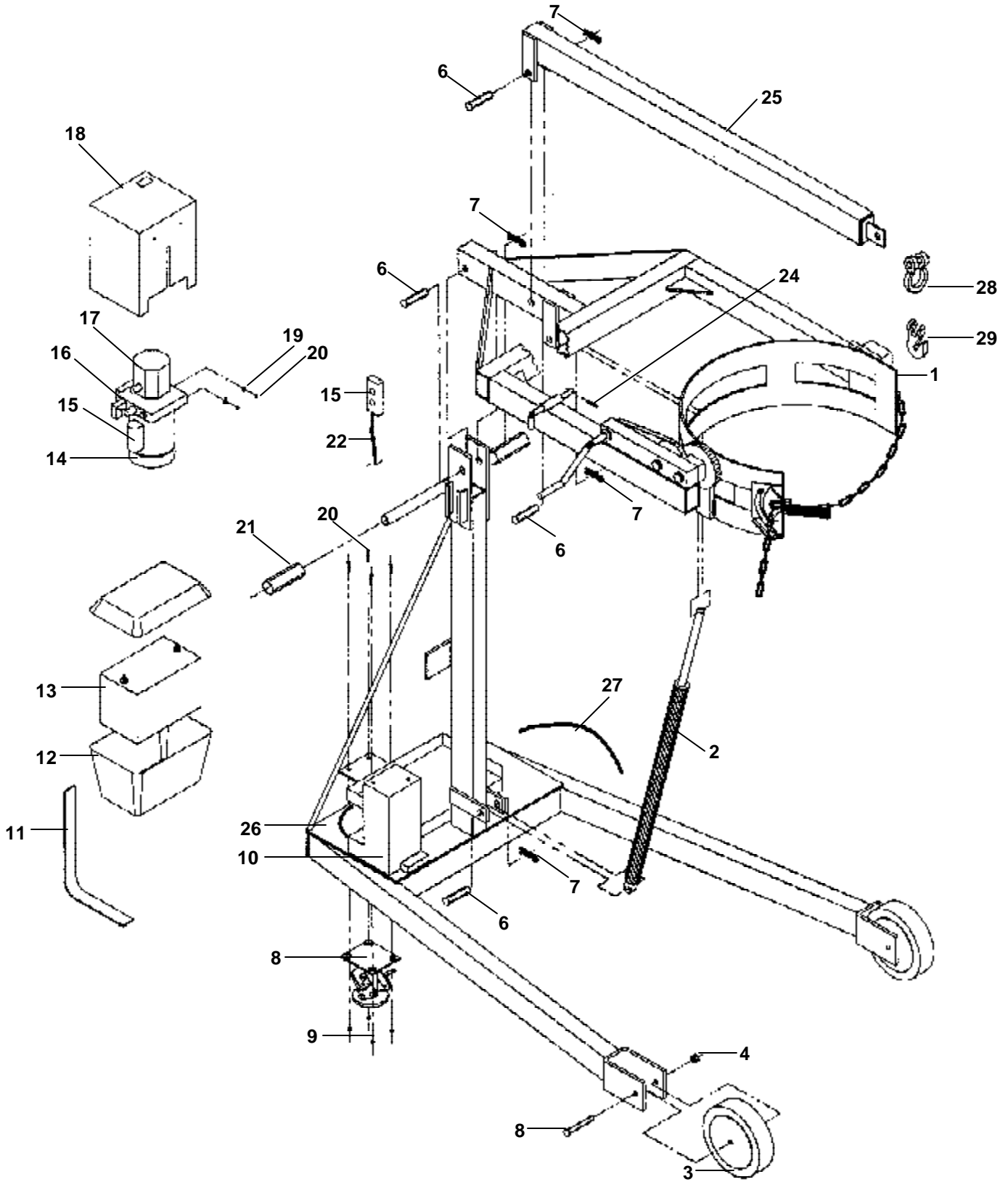
- 1.) Check oil level.
- 2.) Check for oil leaks.
- 3.) Check for worn or damaged hose.
- 4.) Check clevis and pivot points for wear.
- 5.) Periodically inspect all moving parts, framework, and contact areas for sign of wears, fatigue or loosening.  
Tighten, adjust or replace parts as necessary to prevent failure and maintain proper functioning.
- 6.) Oil the cradle hinges and other moving parts periodically. Lubricate the gear-train, ratchet and pawl with a good grade of light weight oil. Service the three grease fittings on the gear block, and the one on the idler bearing block.
- 7.) Listen for unusual noise.
- 8.) Clean off dirt and debris.
- 9.) Make sure all warning labels are in place and in good condition.

### (C) Yearly Inspection

Hydraulic oil should be changed at least once a year, or sooner if the oil darkens or becomes gritty. Flush reservoir before refilling. The presence of water is indicated if the oil turns milky. Recommended oil: AW-32 Hydraulic fluid or equal.

All maintenance work must be performed by qualified personnel with training in the repair of electrical and hydraulic components.

# BHDC-305 SERIES HYDRAULIC DRUM CARRIER/ROTATOR

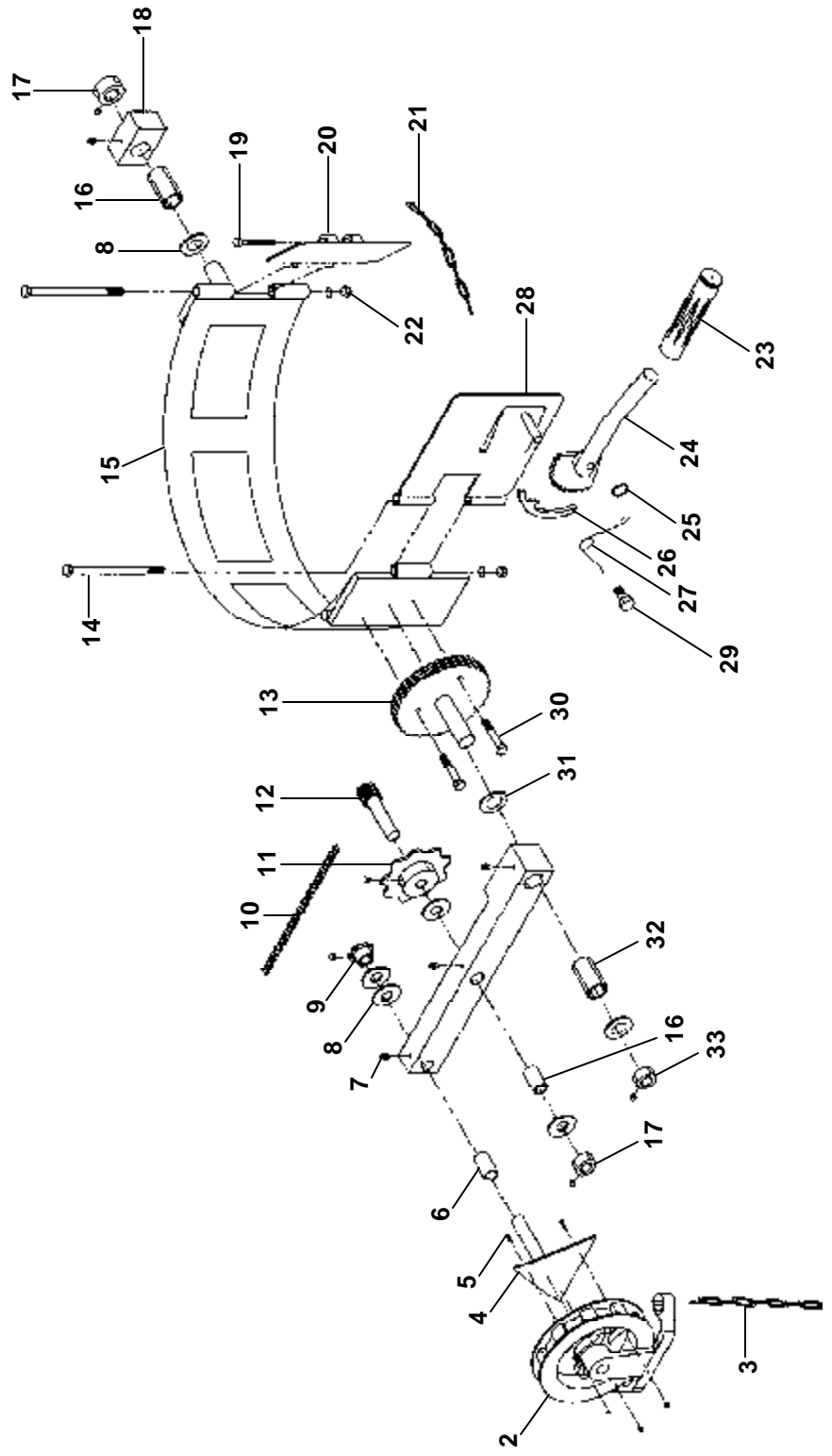


**PARTS IDENTIFICATION**  
**BHDC-305 SERIES HYDRAULIC DRUM CARRIER/ROTATOR**

ITEM NO.	DESCRIPTION	ENGINEER NO.	PART NO.	QTY
1	BHDC cradle ass'y	B09-002-004	BHDC305-CA	1
2	Hydraulic cyl., 1-1/2"dia. x 18" (BHDC-305-60/72/84)	B09-021-004	BHDC305-HC	1
	Hydraulic cyl. 1-1/2" dia. x 18" (BHDC-305-96)	B09-021-004	BHDC305-HC96	2
3	Caster, wheel 8 x 2 Phenolic	B16-132-036	BHDC305-LHN	2
4	Locking hex nut, 1/2"-20 UNF	n/a	n/a	2
5	Bolt, HHCS, 1/2"-20 UNF x 3 1/2"L	n/a	n/a	2
6	Clevis pin, 3/4" dia. x 3 3/8"L	B09-112-006	BHDC305-CP	4
7	Hitch pin clip, # 11 (Fastenal)	B45286	BHDC305-HPC	4
8	Floor brake	B16-132-080	BHDC305-FLB	1
9	Hex nut, 3/8"-16 UNC	n/a	n/a	4
10	Reservoir	B15-023-001	BHDC305-RSVR	1
11	Battery box strap (included with box)	n/a	n/a	
12	Battery box (includes lid)	B15-139-002	BHDC305-BBS	1
13	Battery	B15-139-001	BHDC305-BATT	1
14	12V D/C Motor	B20-135-001	BHDC305-DCMTR	1
15	Motor start switch w/ cartridge valve ass'y (includes 12V coil)	B15-022-004	BHDC305-MSSC	1
16	Motor/pump mounting plate	B01-031-006	BHDC305-M/PMP	1
17	Hydraulic pump	B01-143-002	BHDC305-HP	1
18	Motor/pump cover	B15-024-006	BHDC305-M/PCVR	1
19	3/8" USS plated lock washer	n/a	n/a	2
20	Bolt, HHCS, 3/8"-16 x 1"L	n/a	n/a	6
21	Handle grip	n/a	n/a	2
22	Cord coil	B01-033-014	BHDC305-CC	1
23	UP/DOWN hand pendent control (with cord & molded plug)	B01-522-022	BHDC305-HDCNT	1
24	Spring pin, 3/16" x 1-1/2" Lg. (BHDC-305-60 only)	n/a	n/a	1
25	Boom	B09-514-031	BHDC305-BM	1
26	Reservoir hose	B09-623-001	BHDC305-RH	1
27	Hydraulic hose (BHDC-305-60)	B09-623-002	BHDC305-HH60	1
	Hydraulic hose (BHDC-305-72)	B09-623-003	BHDC305-HH72	1
	Hydraulic hose (BHDC-305-84)	B09-623-004	BHDC305-HH84	1
	Hydraulic hose (BHDC-305-96)	B09-623-005	BHDC305-HH96	1
28	2 Ton Shackle	B08-145-008	BHDC305-2SHKL	1
29	Clevis Grab Hook 7/16	B08-145-009	BHDC305-CGH	1

n/a Not Available

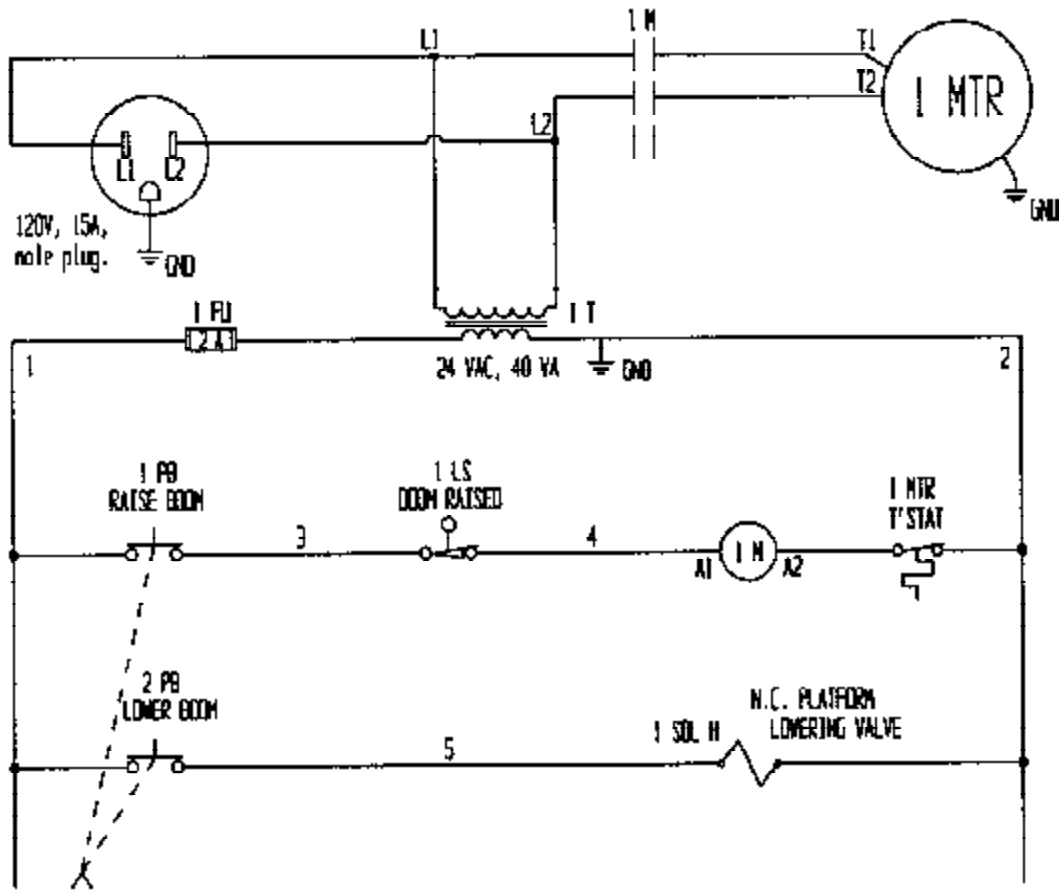
**PARTS DIAGRAM FOR CRADLE ASSEMBLY (DRUM CARRIER/ROTATOR)  
BHDC-305 SERIES**



**PARTS IDENTIFICATION FOR CRADLE ASSEMBLY  
(DRUM CARRIER/ROTATOR)  
BHDC-305 SERIES**

ITEM NUMBER	DESCRIPTION	ENGINEER NUMBER	PART NUMBER	QTY
1	Hand wheel (BHDC-305-60 only)	B09-042-013	B1a-P	1
2	Chain wheel (BHDC-305-72/84/96 only)	09-042-011	B1-P	1
3	#1/0 Babbitt lock link chain (20") (BHDC-305-72/84/96 only)	B09-145-007	B2-P	1
4	Chain wheel shaft w/triangle & bolts [BHDC-305-72/84/96 only]	B09-154-005	B3-P	1
5	Bolt & nut, 5/16-18 x 1" (BHDC-305-72/84/96 only)	B35-P	B35-P	3
6	Bearing, 3/4" ID x 2-1/2"	B01-111-046	BHDC305-BRG	1
7	Grease fitting Alemite (1608B)	B33-P	B33-P	4
8	Washer, 3/4" SAE	B09-113-004	BHDC305-WSR	5
9	Sprocket (12T # 35)	B09-042-004	BHDC305-SPK12T	1
10	Roller chain (# 35-3/8" pitch)	B09-042-006	BHDC305-RC	1
11	Sprocket (36T # 35)	B09-042-003	BHDC305-SPK36T	1
12	Pinion gear (7T) w/key	B09-042-007	BHDC305-PG7T	1
13	Spur gear (72T x 1" ID)	B09-042-008	BHDC305-SP72T	1
14	Hinge pin & nuts	B157-P	B157-P	2
15	Cradle assembly for 55 gal. steel drum (Note: Part 15 includes parts 14, 20, 21, 24, 25, 27, 28, 29)	B09-538-002	BHDC305-CA	1
16	Bearing (Randall SH186)	B01-111-048	B7-P	2
17	Collar (3/4" ID)	B09-145-001	BHDC305-CLR	2
18	Bearing block	B09-113-005	BHDC305-BB	1
19	Chain bolt & nut (3/8"-16 x 2-1/2" HHMS)	B155-P	B155-P	1
20	Chain hinge plate	B09-516-007	BHDC305-CHP	1
21	Binder chain	B09-145-008	B180-P	1
22	Washer & nut	B21-P	B21-P	2
23	Handle grip	B09-025-016	B136-P	1
24	Ratchet	B09-042-010	B165-P	1
25	Snap ring	B166-P	B166-P	1
26	Pawl	B09-042-012	B168-P	1
27	Pawl spring	B169-P	B169-P	1
28	Pawl & ratchet hinge plate	B09-516-006	BHDC305-PRHP	1
29	Pawl shoulder screw and nut	B170-P	B170-P	1
30	Spur gear screws (3/8"-24 SHCS)	B22-P	B22-P	2
31	Spur gear spacer	B09-113-006	BHDC305-SGS	2
32	Bearing, 1" ID x 2-1/2"	B01-111-047	BBHDC305-BRG1	1
33	Collar (1" ID)	B09-145-003	BHDC305-CLR1	1

# ELECTRICAL SCHEMATIC



**BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!**  
 CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL

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## HYDRAULIC OPERATION FOR AC/DE

When the operator wants to raise the unit, he/she depresses the **UP** button. This starts the electric motor which turns the hydraulic pump. Oil from the reservoir is drawn in through the suction filter and into the pump.

The pump delivers pressurized oil through a check valve before it enters the cylinders.

The function of the check valve is to allow the oil to flow in one direction, (towards the cylinders), and prevents the flow of oil back into the pump circuit when the pump stops running. This holds the oil in the cylinders and will maintain any particular barrel elevation for extended periods of time.

If the load is excessive, and the **UP** button is still depressed, excessive pressure will build up in the circuit between the pump and the cylinders. This forces the relief valve to unseat, allowing the pump flow to circulate to the reservoir thereby preventing hydraulic or structural damage.

When the operator desires to lower the unit, he/she depresses the **DOWN** button. This energizes the lowering solenoid valve coil, unseating the poppet valve and allowing oil to return from the cylinders through the pressure-compensated flow control valve, and into the reservoir.

Releasing the **DOWN** button will de-energize the solenoid, closing the valve poppet. This and the check valve prevents the oil from returning to the reservoir and the cylinders will stop retracting. The unit will maintain that particular elevation until the operator chooses to move it once again.

### Cartridge Valves

The lowering valve, as discussed above, is of cartridge construction and is virtually maintenance free. If there is a faulty operation, check Trouble Shooting Section. To clean the cartridge valve, follow this procedure:

- 1.) **WARNING!** Lower the forks completely before removing cartridge valve.
- 2.) Use a sharp object to push the valve stem's poppet in from the bottom to open the valve.
- 3.) Repeat several times while the valve is immersed in kerosene or mineral spirits. Blow dry.
- 4.) Blow compressed air through valve while holding the valve open as described in step 2.
- 5.) Inspect the "o" rings and the teflon washer. If either shows nicks, tears, or cuts, replace.
- 6.) Reinstall. The valve should be tightened to approximately 20 ft. lbs.

### Velocity Fuse

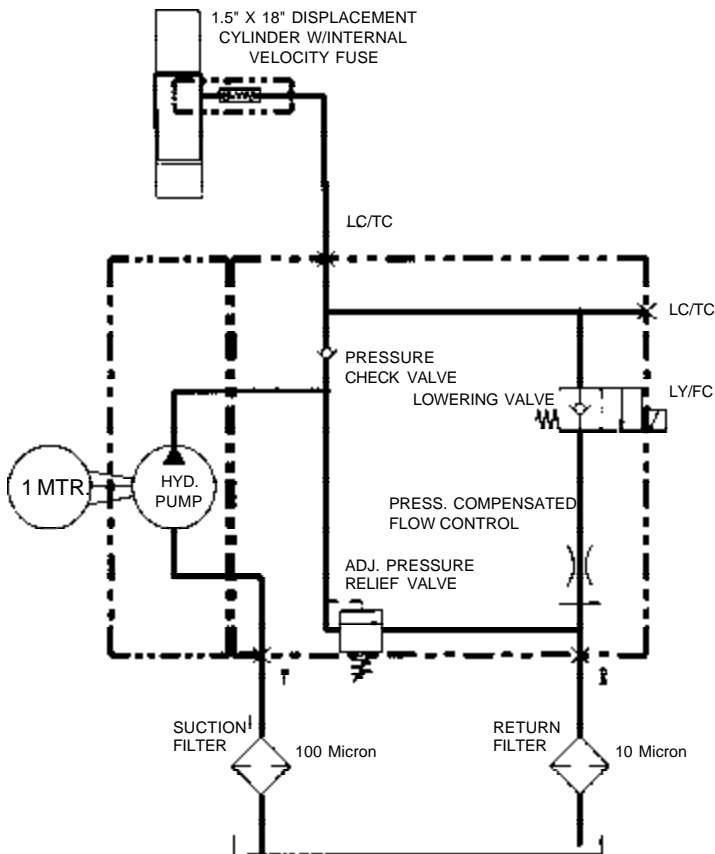
There is a brass velocity fuse with a stainless steel spring in the base of each cylinder (Item 10). In the event of a hydraulic hose or fitting failure, the platform starts to lower at a fast rate. As soon as the descent speed exceeds the preset speed, the Velocity Fuse will shut off the oil flow and the platform will remain nearly stationary until pressure is re-applied after repairs are done. This safety feature reduces the possibility of accidental personal injury or damage to the table or contents. If air is introduced into the system, the velocity fuse can lock up even though no failure has occurred. To reset the velocity fuse just activate the pump by jogging the **UP** button. Remove the load and cycle the unit several times to purge air.

## AIR BLEED PROCEDURE

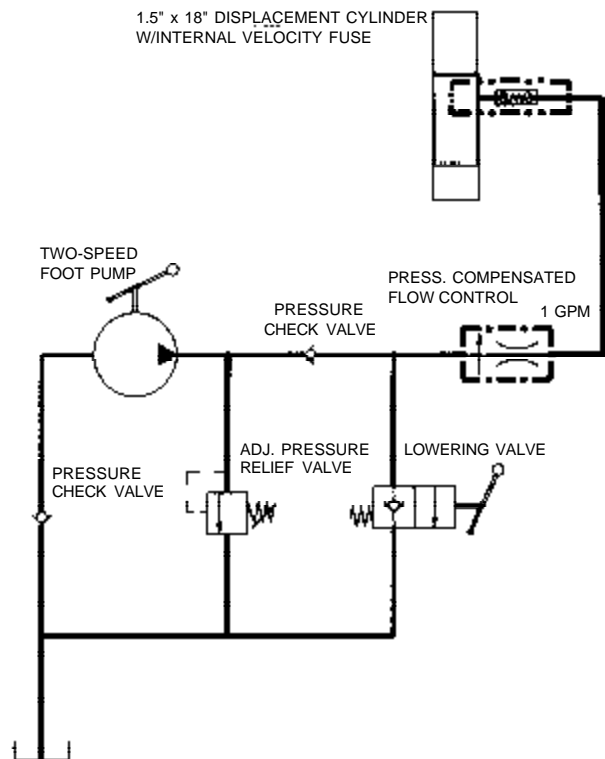
If the forks descend very slowly or will not descend at all, air is likely trapped in the hydraulic circuit and must be bled from the system. If you experience the above, follow these directions.

- 1.) Remove the drum from the cradle.
- 2.) Raise the unit at least several inches with the pump.
- 3.) If available, place a rag over the cylinder bleeder screw.
- 4.) Loosen the hose fitting at the top of the cylinder approximately 1/3 to 1/2 turn to allow trapped air to escape. Sputtering will be observed and heard at the fitting.
- 5.) When the cylinder is free of air only clear hydraulic fluid will be visible at the bleeder screw. Tighten the hose fitting.

## HYDRAULIC SCHEMATIC



**ELECTRIC POWER UNIT  
HYDRAULIC DIAGRAM**



**MANUAL FOOT PUMP  
HYDRAULIC DIAGRAM**

# HYDRAULIC EQUIPMENT

## DC Troubleshooting Quick Reference Guide

(For further information contact the factory)

**WARNING! BEFORE PERFORMING ANY MAINTENANCE WORK ALWAYS UNLOAD AND COMPLETELY LOWER THE LIFT BOOM.**

Observation	Possible Cause	Remedy
1. Unit does not raise, motor does not run.	a. Low battery voltage. (Check light) b. All chassis connections to negative post of battery not made well.	a. Recharge battery b. Check and tighten or clean connections if necessary.
2. Unit does not raise but motor is running or humming.	a. Motor wired backwards. b. Voltage at motor terminals may be too low to run pump at existing load. c. Hose or hydraulic line is leaking. d. Fluid level in reservoir is low. e. Load exceeds capacity requirements. Relief valve is bypassing the fluid back into the reservoir. f. Suction filter is clogged, starving pump. g. Suction line may be leaking air, due to loose fittings. h. Filter/Breather cap on tank may be clogged. i. Down solenoid valve may be energized by faulty wiring or stuck open. j. Hydraulic pump may be inoperative.	a. Positive battery terminal to motor relay, negative connected to chassis. b. Measure voltage at motor terminals or as near as possible, while pump is running under load. Check for loose connections. c. Inspect floor for signs of fluid. Correct as necessary. d. Add fluid. Refer to Owner's Manual for proper fluid levels. e. <b>DO NOT CHANGE RELIEF VALVE SETTING.</b> Instead, reduce the load to rated capacity. f. Remove and clean. g. Inspect all fittings for proper tightness. h. Remove and clean. i. Remove down solenoid valve. Check and clean. (Refer to Hydraulic Section of Owners Manual). j. Disconnect hydraulic line at power unit. Put pressure line in a large container and operate the pump. If no output, check the pump motor coupling which may be defective, and correct as necessary. If pump is worn, consult factory for replacement parts.
3. Unit raises too slowly.	a. Foreign material stuck in down solenoid valve, causing some fluid to bypass back into tank. b. Foreign material clogging suction filter, breather cap, or a pinched hose. c. Low motor voltage. d. Unit overloaded. e. Pump is inoperative.	a. Lower the deck. Remove the down solenoid valve and clean. (Refer to Hydraulic Section of Owners Manual). b. Correct as necessary. (See also, 2(f), (h)). c. See 2 (b) d. See 2 (e) e. See 2 (j)
4. Motor labors, or is excessively hot.	a. Voltage may be low. b. Oil starvation causes pump to bind. High internal heat is developed. If this occurs, pump may be permanently damaged. c. Binding cylinders.	a. See 2 (b) b. See 2 (d), (f), (g), (h), (j) c. Align cylinders correctly.
5. "Spongy" or "Jerky" unit operation.	a. Fluid starvation. b. Air in system.	a. See 2 (d), (f), (g), (j) b. See air bleed procedure.

Observation	Possible Cause	Remedy
6. Unit lowers too slowly when loaded.	<ul style="list-style-type: none"> <li>a. Down solenoid valve filter screen clogged.</li> <li>b. Pinched tube or hose.</li> <li>c. Foreign material in flow control valve.</li> <li>d. Binding cylinders.</li> <li>e. Foreign material in velocity fuse.</li> </ul>	<ul style="list-style-type: none"> <li>a. Remove down solenoid valve and clean filter screen.</li> <li>b. Correct as necessary.</li> <li>c. Remove and clean flow control valve. (Refer to Hydraulic Section of Owner's Manual).</li> <li>d. Align cylinders correctly.</li> <li>e. Remove and clean velocity fuse. (Refer to Hydraulic Section of Owner's Manual).</li> </ul>
7. Unit lowers too quickly.	<ul style="list-style-type: none"> <li>a. Leaking hoses and/or cracked fittings.</li> <li>b. Foreign material stuck in flow control valve. (In this case, unit lowers initially at a normal rate then speeds up as the platform descends).</li> </ul>	<ul style="list-style-type: none"> <li>a. Inspect floor for signs of fluid. Correct as necessary or see 2 (c).</li> <li>b. Remove flow control valve from the valve block and clean. (Refer to Hydraulic Section of Owner's Manual).</li> </ul>
8. Unit raises then lowers slowly.	<ul style="list-style-type: none"> <li>a. Down solenoid valve may be incorrectly wired or is stuck open due to dirt.</li> <li>b. Check valve may be stuck open.</li> <li>c. Check for leaking hoses, fittings, pipes.</li> <li>d. Cylinder packings may be worn or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>a. See 3 (a).</li> <li>b. Remove and clean check valve. (Refer to Hydraulic Section of Owner's Manual).</li> <li>c. See 2 (c).</li> <li>d. Replace packings. (Consult factory for replacement parts).</li> </ul>
9. Unit has raised, but does not lower.	<ul style="list-style-type: none"> <li>a. Incorrect down solenoid valve wiring.</li> <li>b. Down solenoid valve is stuck.</li> <li>c. Faulty down solenoid coil.</li> <li>d. Binding cylinders.</li> <li>e. In case of excessive down speeds or air being present in the hydraulic system, the velocity fuse will become operative and shut off the oil flow from the cylinders, thus the unit will remain stationary.</li> </ul>	<ul style="list-style-type: none"> <li>a. Correct per diagram.</li> <li>b. Lightly tap down the solenoid coil body to seat it properly. (DO NOT hit coil hard as it will permanently damage the internal system. DO NOT remove the down solenoid valve from the block as the unit will come down at a dangerous speed.</li> <li>c. Remove and replace. DO NOT remove the down solenoid valve from the block as the unit will come down at a dangerous speed.</li> <li>d. See 4 (c).</li> <li>e. To unlock, repressurize the hydraulic system.</li> </ul>

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# Operating Instructions for Optional Bench Top Style Battery Charger

(for DC models equipped with our Bench Top Charger)

## WARNING!

Working with or near lead acid batteries is dangerous. Batteries contain sulfuric acid and produce explosive gases. A battery explosion could result in loss of eyesight or serious burns.

Do not smoke or allow a spark or flame near batteries. Charge batteries in locations which are clean, dry, and well ventilated. Do not lay tools or anything metallic on top of any battery. All repairs to a battery must be made by experienced and qualified personnel.

When working with batteries, remove personal items such as rings, bracelets, necklaces, and watches. A battery can produce enough voltage to weld jewelry to metal causing a severe burn.

Always have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

Operating the battery with a low battery voltage can cause premature motor contact failure.

## OPERATING INSTRUCTIONS

Even if you did not purchase an optional battery charger, your new *Drum Carrier/Rotator* has been fitted with a matching plug which will connect directly to the *Bench Top Charger* we offer. Contact your distributor if you wish to purchase a battery charger.

## Do's and Don'ts

**DO NOT** leave charger connected for an indefinite length of time.

**DO NOT** smoke, strike a match or cause a spark in the vicinity of battery during charging.

**DO** make sure all battery connections are tight and clean.

**DO NOT** expose to rain or adverse conditions.

**DO** replace defective cords and wires immediately.

**DO** locate charger at least 24" above floor while charging.

**DO NOT** overcharge battery (*manual* position only)

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# Operating Instructions for Standard On Board Style Battery Charger

(for DC models equipped with our On Board Charger)

## WARNING!

Working with or near lead acid batteries is dangerous. Batteries contain sulfuric acid and produce explosive gases. A battery explosion could result in loss of eyesight or serious burns.

Do not smoke or allow a spark or flame near batteries. Charge batteries in locations which are clean, dry, and well ventilated. Do not lay tools or anything metallic on top of any battery. All repairs to a battery must be made by experienced and qualified personnel.

When working with batteries, remove personal items such as rings, bracelets, necklaces, and watches. A battery can produce enough voltage to weld jewelry to metal causing a severe burn.

Always have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

Operating the battery with a low battery voltage can cause premature motor contact failure.

Our *On Board* charger is equipped with an external ground wire (small green). During installation the charger must be grounded to the equipment which it is connected to. Be sure this wire is always connected to the chassis, frame, or other metallic surface considered to be ground.

## OPERATING INSTRUCTIONS

- 1.) Plug charger into a receptacle known to have approximately 115V and 60 Hz. If an extension cord must be used, keep it short and as large as possible. A small cord will decrease the output of the charger due to the voltage drop in the line. This will increase the charging time.
- 2.) When properly connected, the charge LED will indicate the status of charge current flowing to the battery.
- 3.) With only the red LED lit, the charger is providing full output to the battery.  
With both the red and green LED's lit the charger is "topping off" the battery.  
When only the green LED is on, the unit is providing a "float" or maintenance, charge.
- 4.) Remember to unplug the charger before moving equipment. Failure to do so could cause damage to cords, receptacles and other equipment.

## ADDITIONAL INFORMATION

The *On Board* charger is current limited and will not exceed its rated output, even if loads are placed on the battery while the battery is charging.

The *On Board* chargers fuse will blow if the charger is connected in reverse polarity

## TROUBLESHOOTING

- 1) Make sure battery connections are electrically and mechanically sound.
- 2) Check AC source for power.
- 3) Check fuse. Replace only with a fuse having the same rating as originally supplied.
- 4.) Check battery condition. A highly sulfated battery may take some time before current begins to flow through it.

## DO'S AND DON'TS

**DO NOT** leave charger connected for an indefinite length of time.

**DO NOT** smoke, strike a match or cause a spark in the vicinity of battery during charging.

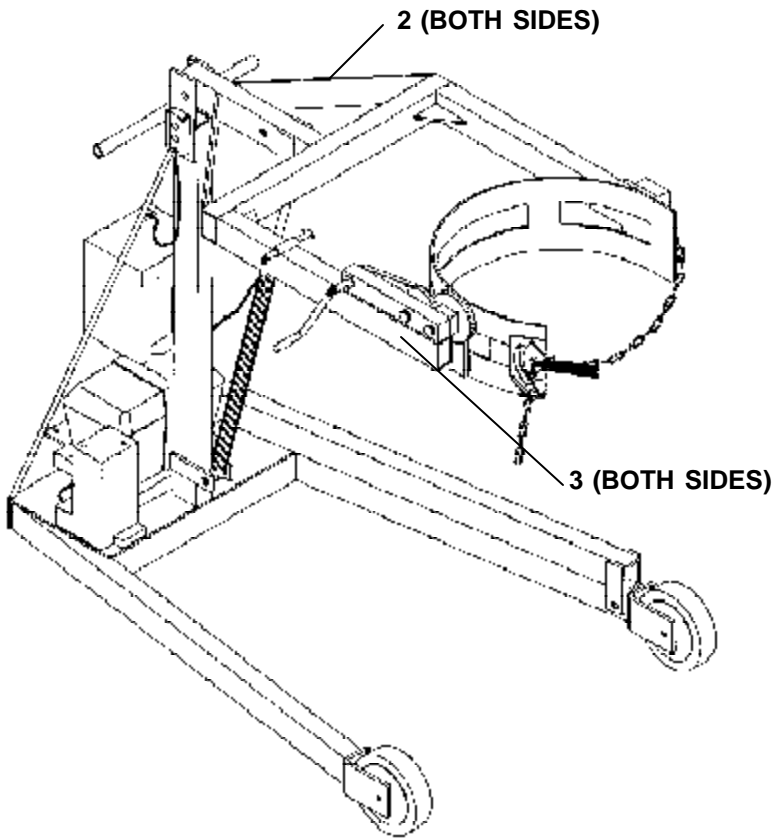
**DO** make sure all battery connections are tight and clean.

**DO NOT** expose to rain or adverse conditions.

**DO** replace defective cords and wires immediately.


# WARNING LABEL IDENTIFICATION

MAKE SURE ALL WARNING LABELS ARE IN PLACE!



\*Product safety signs or labels should be periodically inspected and cleaned by the product users as necessary to maintain good legibility for safe viewing distance . . .  
ANSI 535.4 (10.21)  
Contact manufacturer for replacement labels if needed.

**1**

<b>DANGER</b>
CORROSIVE MATERIAL
<b>PELIGRO</b>
MATERIAL CORROSIVO
<b>DANGER</b>
MATIÈRES CORROSIVES

295

**2**

<b>⚠ WARNING</b>	<b>⚠ AVISO</b>	<b>⚠ AVERTISSEMENT</b>
KEEP CLEAR OF PINCH POINT	MANTENGASE ALEJADO DE PUNTO DE CORTE	SE TENIR À DISTANCE DU POINT DE PINCEMENT
		208

**3**

<b>⚠ CAUTION</b>	<b>⚠ PRECAUCIÓN</b>	<b>⚠ PRUDENCE</b>
DRUM MUST BE IN VERTICAL POSITION WHEN MOVING	EL TAMBOR DEBE DE ESTAR EN LA POSICIÓN VERTICAL CUANDO EN MOVIMIENTO	LE BIDON DOIT ÊTRE EN POSITION VERTICALE LORS D'UN DÉPLACEMENT
		232

# LIMITED WARRANTY

**ONE YEAR LIMITED WARRANTY.** The manufacturer warrants for the original purchaser against defects in materials and workmanship under normal use one year after date of purchase. (Not to exceed 15 months after date of manufacture.) Any part which is determined by the manufacturer to be defective in material or workmanship and returned to the factory, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at our option. Labor costs for warranty repairs and/or modifications are not covered unless done at manufacturer's facilities. Any modifications performed without written approval of the manufacturer may void warranty. This limited warranty gives purchaser specific legal rights which vary from state to state.

**LIMITATION OF LIABILITY.** To the extent allowable under applicable law, the manufacturer's liability for consequential and incidental damages is expressly disclaimed. The manufacturer's liability in any event is limited to, and shall not exceed, the purchase price paid. Misuse or modification may void warranty.

**WARRANTY DISCLAIMER.** Our company has made a diligent effort to illustrate and describe the products shown accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

The provisions of the warranty shall be construed and enforced in accordance with the UNIFORM COMMERCIAL CODE and laws as enacted in the State of Indiana.

**DISPOSITION.** Our company will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within the Limited Warranty. Warranty claims must be made in writing within said year.

## SERVICE RECORD

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____
_____
_____

DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____
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DATE OF SERVICE: ____/____/____
WORK DONE BY: _____
SERVICE PERFORMED: _____
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WORK DONE BY: _____
SERVICE PERFORMED: _____
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