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# OWNER'S MANUAL

## MODELS BEHLT(1-4K) & BPST(1-3K), 43"-55" RAISED HEIGHTS

Serial number \_\_\_\_\_

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### IMPORTANT NOTES, WARNINGS AND SAFETY INSTRUCTIONS

Ensure that all employees understand and follow the following.

- ☞ Failure to read and understand this owner's manual before using or servicing the scissor lift constitutes a misuse of the product. All persons who will install, use, or care for this product must be familiar with this information.
- Non-portable units must be securely anchored to a level concrete surface.
- The scissor lift is intended for use only on level, concrete surfaces.
- The lift's load must be centered and evenly distributed on the platform.
- The platform should be lowered before transporting any loads (**BPST only**).
- The load must be removed and the platform fully lowered before any work is performed on the scissor lift.
- Do not use the scissor lift if any damage or unusual noise is observed.
- Always watch the load carefully when the scissor lift is in operation.
- Ensure that all information/ safety/warning labels remain in place and are legible. See the labels page.
- For battery-powered units, review the Battery Info page.
- Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 cSt @ 40°C), or Dexron transmission fluid.
- Contact the manufacturer for any needed MSDS information.
- ◆ Do not perform any modifications to the scissor lift without the manufacturer's approval. Failure to receive authorization for changes to the equipment could void the warranty.
- ◆ Maintenance and repairs are to be done only by personnel qualified to perform the required work. Consideration will not be given for warranty repair charges without prior written authorization by the manufacturer.

### WHEN ORDERING

#### REPLACEMENT PARTS:

We take pride in using quality parts on the equipment we manufacture. We are not responsible for equipment problems resulting from the use of unapproved replacement parts.

To order replacement or spare parts for this equipment, contact the factory.

In any communication with the factory please be prepared to provide the machine's serial number, which is indicated on the machine dataplate.

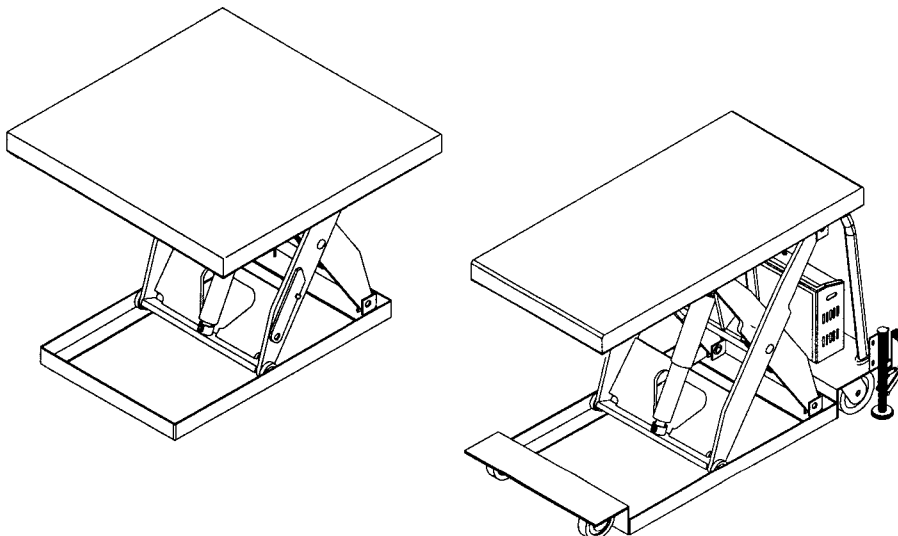
### RECEIVING INSTRUCTIONS

It is possible that this product could incur damage during transit.

Inspect the unit closely when it arrives. *If you see evidence of damage or rough handling to either the packaging or to the product when it is being unloaded, immediately make a note of it on the Bill Of Lading!*

It is important that you remove the product's packaging upon its arrival to ensure that there is no concealed damage or to enable a timely claim with the carrier for freight damage.

Also verify that the product and its specifications are as ordered.



## INSTALLATION INSTRUCTIONS – BEHLT (1-4K)

*Review this entire page before installing the scissor lift.*

*Consult the factory in the event there are any questions or problems at the time of installation, or for information regarding optional features not covered by the owner's manual.*

*The scissor lift must be removed from the shipping wood and securely anchored to a concrete surface before use!*

- Modifications or additions to the scissor lift without prior manufacturer's authorization may void the lift's warranty (see ANSI MH29.1-2003, Safety Requirements for Industrial Scissor Lifts, Section 12.6). The addition of ancillary equipment to the lift may necessitate that its load capacity be reduced.
- The installation must be made so that it complies with all the regulations applicable to the machine and its location. The end-user must verify that the supplied equipment is installed so it will be suited to the environment in which it will be used.
- Installation must be performed by suitably trained personnel with access to the appropriate equipment. The electrical aspects of the installation should be performed by an electrician.

Note: If the unit is to be placed into a pit, you will need to first determine how the required electrical (and possibly hydraulic) connections will be made once the unit is in place.

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For a typical installation of a standard scissor lift you will need the following:

1. A fork truck or hoisting means to unload the scissor lift from the freight truck and set it into place.
2. A smooth, level, and adequately strong concrete surface on which to mount the scissor lift.
3. Concrete anchors, a masonry drill, a masonry bit, hand tools, grout, and steel shims. Consult the building's architect or facility engineer to determine the best size and type of hardware with which to anchor the machine to the floor.
4. An appropriate power supply circuit and electrical disconnect matching the motor voltage and current requirements. Refer to the machine's dataplate, to the labels on the control enclosure, and to the electrical section in this manual for more information. The end-user is responsible for supplying the branch circuit's required ground fault and short-circuit protection. (Motor overload protection is provided by a thermostat built into the motor.)

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To install a standard scissor lift:

1. The scissor lift must be lowered and fully supported under its frame when moved. Move the scissor lift into place with straps or forks that span underneath the entire width or length of the frame. Use care to avoid damage the electrical or hydraulic components inside the scissor lift.
2. Temporarily connect the power supply to the pigtail cord supplied with the scissor lift, and raise the platform so the lift's safety maintenance props can be installed between the legset's frame rollers and the end of the lift's frame. Lower the legset until the rollers rest on the props.
  - If the platform must be raised without first having the proper power supply connected, raise the platform at the end of the table through which the power supply cord enters the frame. Use caution to avoid damage to the perimeter pinch point (toe) guard! Use a hoist with straps or chain rigging, or insert a lift truck's forks, at the hinged end of the platform. *Take care to not damage the hanging aluminum toe guard.* The frame must be held down at the ends of the shipping 4 x 4's on the hinged end of the lift while the platform is raised.
3. Anchor the frame to the floor through the four 9/16" holes located in the frame.
4. Shim and/or grout under the full length of the frame sides.
5. Make permanent connection to the power supply, using an appropriate wiring method.
6. Operate the scissor lift through several full raise and lower cycles. Verify that the upper travel limit switch (mounted near the left-side frame hinge) and the toe guard switches (around the perimeter of the platform) function properly.
7. Check the hydraulic oil level. It should be filled to within 1" to 1½" of the reservoir's fill hole. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 at 40°C) or a non-synthetic automatic transmission fluid.
8. Clean up any debris or spilled oil, and verify that all of the information/safety/warning labels are in good condition.

## OPERATION INSTRUCTIONS - BEHLT (1-4K) & BPST(1-3K)

- Consult ANSI MH29, Section 12 for the owner's/ user's responsibilities regarding the operation, care, and maintenance of this machine.
- Ensure that all employees involved in the operation of this scissor lift understand and follow these instructions!

The standard model scissor lift is suitable for use indoors in most non-classified industrial locations and many commercial locations. It is intended to be used to lift and transport (BPST only) stable, evenly-distributed, non-hazardous materials loads having a size or footprint approximately the same size as the platform.

### Loading:

The load rating, in pounds, is shown on the machine dataplate located on the right corner of the hinged end of the platform. It indicates the net capacity of the scissor lift with a static load that is centered and evenly distributed on the platform.

When not fully lowered, the scissor lift's maximum single axle load is 50% of the rated capacity for side loading, and 75% for end loading. (The hydraulic hose and power cord are at one of the platform's ends.)

**Warning:** Do not exceed the scissor lift's load ratings. Injury to personnel or permanent damage to the lift could result from exceeding the listed capacity.

**Warning:** The platform's rollers are not captured. Therefore, do not overhang any load at the hinged end of the platform - that could cause the roller end of the platform to tip up and dump the load. For applications involving side or end edge loading, consult the factory.

**Note:** The addition of any ancillary equipment to the scissor lift by third parties must be taken into account when determining the maximum working load to be placed on the platform.

### Operation:

Inspect the perimeter pinch point guards' operation daily.

**Warning:** Keep all personnel clear of the machine when it is in operation. Be certain no part of any person or object is under any part of the platform before lowering the unit.

**Caution:** Always carefully watch the area around the platform and any load on the platform when it is in operation.

The standard model BEHLT scissor lift table is furnished with an internally-mounted power unit and a constant-pressure (dead-man style) handheld pushbutton control.

- Pressing the "UP" pushbutton will turn on the power unit to raise the platform. The platform will raise only while the pushbutton is pressed. Upon releasing the pushbutton, the platform will stop and hold its position. When the platform reaches its maximum raised height, an upper travel limit switch will stop the lift from raising further.
- Pressing the "DOWN" pushbutton will energize the lowering valve to allow the platform to descend by gravity (the motor does not run). Again, releasing the pushbutton will stop the platform movement, and the unit will hold its position. In the event of an obstruction under the edge of the platform, the perimeter pinch point guard will raise to engage a switch and thereby de-energize the lowering valve.

**Caution:** Never use the scissor lift if any damage or unusual noise is observed, if it is in need of repairs, or if it seems to be malfunctioning. Notify your supervisor or maintenance personnel if you notice anything out of the ordinary.

Units with external, covered, modular power units also have pushbuttons and a key switch in the power unit cover. The key switch must be turned to the "ON" position for any of the controls to operate.

Standard model BPST's are DC-powered and equipped with a covered, modular power unit having an on-board battery charger, and the 2-button handheld pushbutton control. It's operation is the same as the model BEHLT.

**Warning:** before raising the platform from its lowered position, the floor lock must be positively engaged with the floor. Also, the platform should be fully lowered when a load is being transported. Failure to do so could result in injury to personnel or damage to product or equipment due to the lift and its load becoming unstable during transport.

**Note:** attempting to raise the lift when the battery charge is low will cause the motor relay protection circuit to prevent the motor's operation. Adequate battery voltage is indicated by a green LED on the motor relay. See the next page for more notes regarding operation of battery-powered units.

BPST's equipped with the optional two-speed foot pump are operated by repeatedly stepping on the foot pump treadle to raise the platform, and by stepping on the smaller release pedal on the left corner of the foot pump body to lower the platform. The pump's output (and therefore the lifting rate) can be changed by means of a slider at the top of the foot pump. The low-speed output must be used when the platform is loaded.

Ensure that all information/safety/warning labels stay in place and are legible. Refer to the labels page in this manual.

## **ADDITIONAL INSTRUCTIONS FOR BATTERY-POWERED UNITS**

*Note: If this product has the 24V powered traction-drive option, consult that option's information for more specific details regarding the batteries and battery 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 that 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. Batteries can produce enough energy to weld jewelry to metal, causing a severe burn.
- ! Always have 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.
- ! Do not expose the lift or the charger to rain or adverse conditions.
- ! Replace defective cords or wires immediately.
- ! Check the battery's water level frequently.

### **Battery Charger Operating Instructions**

Never operate the charger with either of the cables coiled. Operating a battery charger with the cord either coiled or wrapped around itself could cause the cord to overheat, melt, and cause a short-circuit or a fire.

Connection: the ribbed wire of the charger's output cord must be connected to the battery's negative (-) terminal. The non-ribbed wire (with words printed on it) must be connected to the battery's positive (+) terminal.

When properly connected, the charger will indicate the status of its output:

Flashing green LED - the charger is not seeing a good connection to the battery.

Solid yellow LED - the charger is providing charging current to the battery.

Solid green LED - the charger is maintaining a fully charged battery.

Plug a 115V, 3-prong extension cord into a standard 115V receptacle. Keep the cord as short as possible.

**Caution:** Remember to unplug the charger before moving the equipment. Failure to do so could cause damage to cords, receptacles, and other equipment.

The battery charger can be left connected to the battery indefinitely without risk of harming the battery.

### **Troubleshooting:**

If the unit does not operate, check all of the wiring connections to make sure they're both mechanically and electrically sound - specifically at the battery, the motor, and at any location a wire is connected to the chassis. Also, make sure the quick-connect plug on the end of the pendant control cord is plugged in correctly (if applicable).

A fully charged lead acid battery in good condition at room temperature should read 12.65 volts. At 11.9 volts it is considered to be fully discharged and in need of charging. When checking battery voltage, wait at least 1/2 hour after the charger has been turned off before checking the battery's voltage.

If the batteries don't seem to be taking a charge, check the charger's 115V supply circuit and the charger's output with a voltmeter. If all check okay, confirm the battery's state of charge using a hydrometer or a voltmeter.

## **ROUTINE MAINTENANCE & SAFETY CHECKS – BEHLT (1-4K) & BPST (1-3K)**

- *Warning: Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work.*
- *Warning: Install the maintenance props before beginning any inspections or work on the unit. See below.*
- *Only qualified individuals trained to understand mechanical devices and their related electrical and hydraulic circuits, and the hazards associated with them, should attempt troubleshooting and repair of this equipment.*

### Maintenance Prop Installation:

Always install the maintenance prop or fully lower the platform before beginning work on the scissor lift table. A maintenance prop is located on the outside of each of the outer legs of the legset.

*To install the safety maintenance props:*

- Raise the platform to its full raised height.
- Rotate each prop forward so that its free end drops down onto the lift table's frame.
- Lower the platform until the maintenance props rest against the end member of the frame.

(A) Inspect daily for:

- 1.) Frayed wires.
- 2.) Oil leaks.
- 3.) Pinched or chafed hoses.
- 4.) Damage to the casters. (Portable units.)
- 5.) Damage or structural deformation to the structural members, the cylinder brackets, etc.
- 6.) Unusual noise or binding, or evidence thereof.
- 7.) Proper functioning of all limit switches, including those on the perimeter pinch point guard (if applicable).

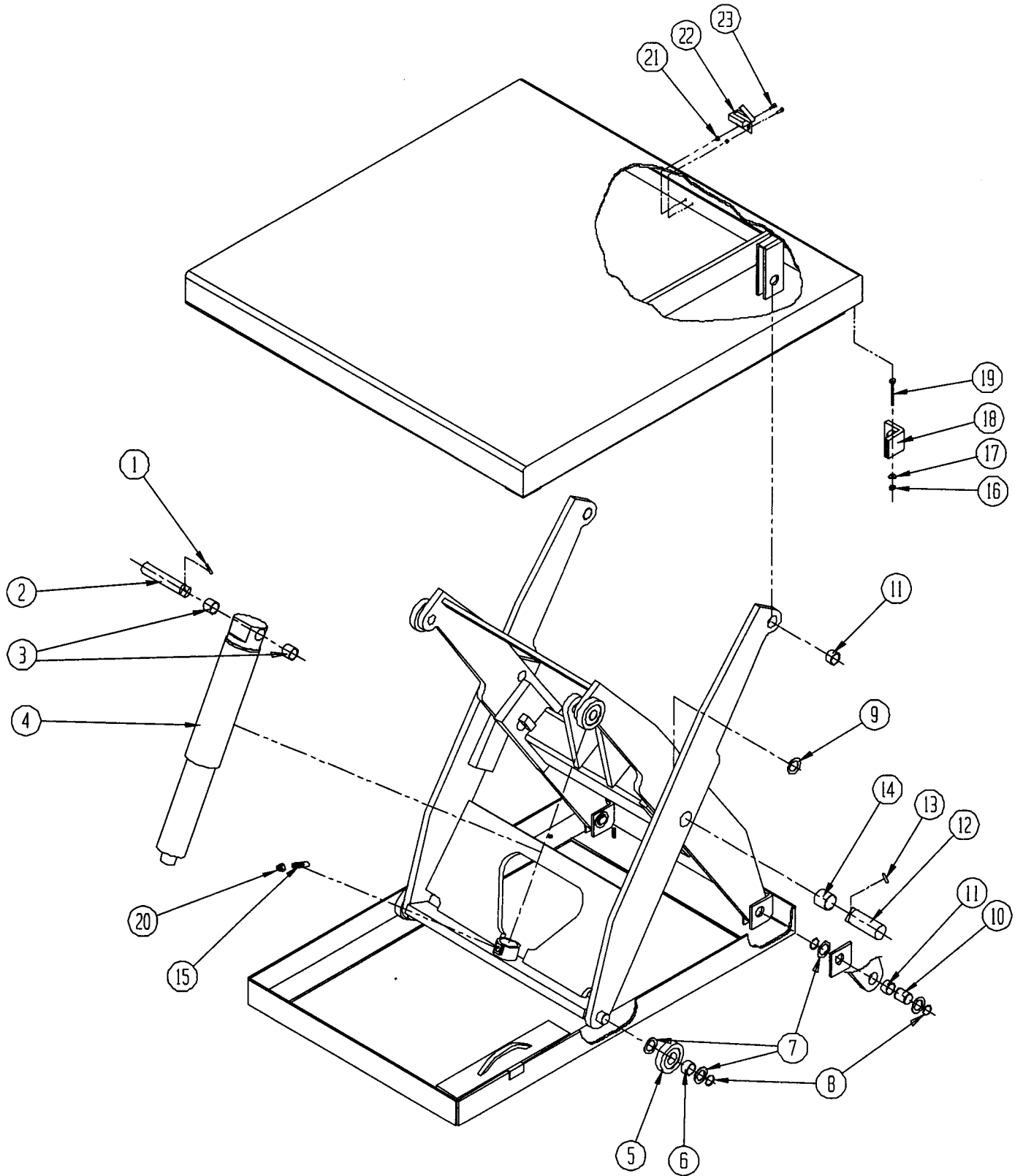
(B) Inspect monthly for:

- 1.) The oil level. Oil should be 1" to 1½" below the reservoir's fill hole with the platform in the fully lowered position. See below for the hydraulic oil specification.
- 2.) Worn or damaged hydraulic hoses and electrical wires.
- 3.) Pivot point wear.
- 4.) Rollers' looseness and wear.
- 5.) Integrity of the retaining hardware on all rollers and on all pivot point pins.
- 6.) The integrity of the frame anchor bolts, and for cracks in the concrete around them. (Non-portable units.)
- 7.) Looseness, wear, or damage to the casters' bearings, mounting hardware, or surface material. (Portable units.)
- 8.) Proper functioning of any hand- or foot-operated mechanisms.
- 9.) Proper water level in the battery (DC units.)
- 10.) Unusual noises or movement during operation.
- 11.) All the information/safety/warning labels being in place and in good condition.
- 12.) The need to clean off dirt and debris.

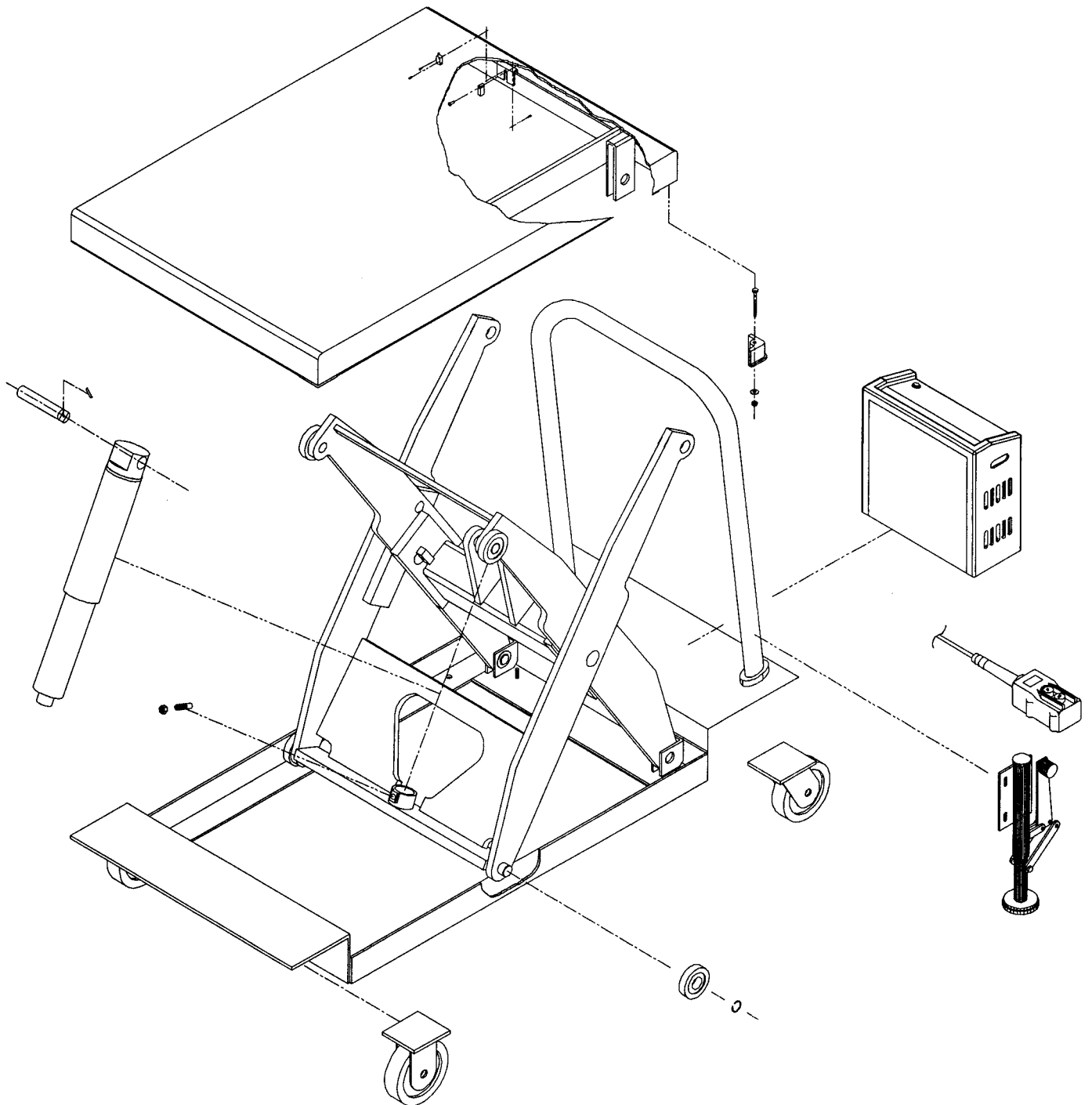
(C) Yearly inspection

The oil should be changed if the oil darkens, becomes gritty, or turns a milky color (indicating the presence of water). Replace with an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 at 40°C). Ex: AW 32 or HO 150 hydraulic oil, or a non-synthetic transmission fluid. You may use a synthetic transmission fluid if you flush the system with the synthetic fluid before filling the reservoir.

**EXPLODED PARTS VIEW -- BEHLT (1-4K)**



**EXPLODED PARTS VIEW -- BPST(1-3K)**



**STRUCTURAL BILL OF MATERIALS -- BEHLT (1-4K) & BPST (1-3K)**

Item #:	Description	Part number	Qty.
1	Pin, spring, $\frac{3}{16}$ " $\varnothing$ x $1\frac{1}{8}$ " long	A/L	1 or 2
2	Pin, pivot, $1\frac{1}{8}$ " $\varnothing$ x 8.65" OAL	24-112-005	1 or 2
3	Bearing, sleeve, $1\frac{1}{8}$ " $\varnothing$ x $\frac{3}{4}$ " long	01-111-002	2 or 4
4	Cylinder, hydraulic, 2" $\varnothing$ x 10" stroke	99-021-903	1
	Cylinder, hydraulic, $2\frac{1}{2}$ " $\varnothing$ x 10" stroke	99-021-906	1 or 2
	Cylinder, hydraulic, 3" $\varnothing$ x 10" stroke	99-021-901	1 or 2
5	Roller, $3\frac{1}{4}$ " $\varnothing$ x $\frac{3}{4}$ " wide	01-027-001	4
6	Bearing, sleeve, $1\frac{1}{8}$ " ID x $\frac{5}{8}$ " long	01-111-001	4
7	Bushing, machinery, .06" thick x $1\frac{1}{8}$ " ID	01-115-001	16
8	Snap ring, external, $1\frac{1}{8}$ " ID	A/L	12
9	Bushing, machinery, .06" thick x $1\frac{1}{2}$ " ID	01-115-003	4
10	Pin, hinge, $1\frac{1}{8}$ " $\varnothing$ x 1.81" OAL	01-112-004	4
11	Bearing, sleeve, $1\frac{1}{8}$ " ID x $\frac{3}{4}$ " long	01-111-002	4
12	Pin, axle, $1\frac{1}{2}$ " $\varnothing$ x 4.53" OAL	01-112-019	2
13	Bolt, shoulder, $\frac{3}{8}$ "-18 UNC x $1\frac{1}{2}$ " long	A/L	2
14	Bushing, sleeve, $1\frac{1}{2}$ " ID x $1\frac{1}{2}$ " long	01-111-003	2
15	Bolt, cylinder retaining, $\frac{1}{2}$ "-13 UNC x 2" OAL	01-118-001	1 or 2
16	Nut, hex, nylock, $\frac{1}{4}$ "-20 UNC	A/L	4
17	Washer, flat, $\frac{1}{4}$ " ID	A/L	4
18	Support, toe guard, corner	01-015-009	4
19	Bolt, hex head, $\frac{1}{4}$ "-20 UNC x $2\frac{1}{2}$ " long	A/L	4
20	Nut, jamb, hex, $\frac{1}{2}$ "-13 UNC	A/L	1 or 2
21	Screw, FSHC, #8-32 UNC x $\frac{1}{2}$ " long	A/L	2
22	Actuator, toe guard	01-015-008	2
23	Bolt, sex, #8-32 UNC x $\frac{3}{8}$ " deep	01-145-010	2
24	Switch, micro, normally-closed	01-022-022	2
25	Screw, BHSC, #4-40 UNC x $\frac{1}{2}$ " long	A/L	4
26	Extrusion, aluminum, perimeter pinch point (length varies)	01-015-912	4

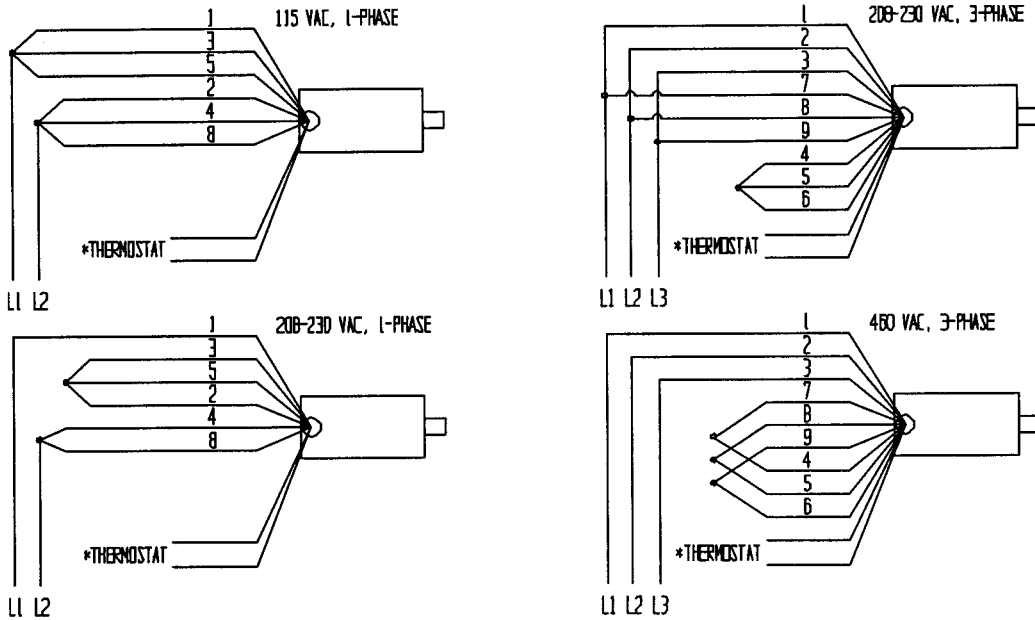
**ONLY ON BPST (1-3K), NOT SHOWN ON STRUCTURAL LIST**

Item #:	Description	Part number	Qty.
1	Caster, phenolic, swivel, 2" wide x 8" $\varnothing$	PH-8/2-S	2
2	Caster, phenolic, rigid, 2" wide x 8" $\varnothing$	PH-8/2-R	2
3	Floor lock, side-mounted	FL-LK-SMR	1
4	Power unit, modular	MPU-(AC or DC)-(voltage)	1
5	Control, pendant, 2-button	See exploded parts list	1

# MOTOR & TRANSFORMER CONNECTION DIAGRAMS

**CAUTION!** If the motor voltage is changed, the wire on the control transformer's primary wire has to be changed to match the new motor voltage also.

MOTOR LEAD CONNECTION DIAGRAM FOR ALL  
.5HP, .75HP AND 3HP SINGLE-PHASE MOTORS AND FOR  
ALL 2HP, 5.5HP, AND 6.5HP THREE-PHASE MOTORS



\* The two thermostat leads go to: 1) the grounded side of the transformer secondary, and; 2) the motor relay coil, in either order.



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

