

Loading Dock Equipment

OWNER'S
MANUAL

Loading Dock Lift - Series BWL-100

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WARNINGS & SAFETY INSTRUCTIONS

Ensure that all employees understand and follow the following.

- Read and understand the owner's manual before using or servicing the scissor dock.
- The load must be removed and the maintenance props installed, or the platform should be fully lowered before any work is performed on the lift.
- Ensure that all safety and warning labels stay in place and are legible. See the labels page in this manual.
- The scissor dock's frame must be securely anchored in concrete. See the installation instructions.
- Do not use the lift if any damage or unusual noise is observed.
- Always watch the platform and any load on it carefully when the lift is in operation.
- Do not exceed a travel rate of two feet per second when moving across the platform.
- The platform's load ratings must be observed at all times. See the operation instructions.
- Do not perform any modifications to the 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.
- 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.
- Use only replacement parts either supplied or approved 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.

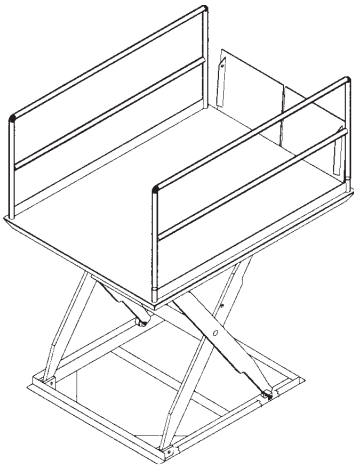
RECEIVING INSTRUCTIONS

Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit 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.



Series BWL-100

PRE-INSTALLATION INSTRUCTIONS

Review these requirements and procedures before installing the lift.

Consult the factory in the event that there are any questions or problems at the time of installation.

- “ The standard model dock scissor lift is suitable for use outdoors in most industrial and commercial locations.

Pre-installation notes:

- All pit and cement work, curb angles, bumper posts, conduit, and electrical installations, as well as the materials for the same, are the responsibility of the installer or building owner.
 - For a pit installation: a minimum 2” conduit installed in the pit floor or wall is recommended for allowing the hose and wire access to the lift, and a drain should be installed.
 - Five minimum 18 AWG wires (or an appropriate hard service cable) are required between the power unit's control enclosure and the lift's frame. These wires, the power unit's disconnect, and the branch circuit overcurrent and short-circuit protection are the responsibility of the installer or building owner.
 - The installation must be made so that it complies with all the regulations applicable to the dock, the lift, and their location. The installer or building owner must verify that the supplied equipment is installed so it will be suited to the environment in which it will be used, and it must be mounted onto, and anchored into, suitable concrete. *An architectural review of the planned installation is recommended.*
 - The installation of the dock lift 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.
-

For installation you will need the following:

- o A lifting boom and rigging, a fork truck with adequate fork length and capacity, or some other appropriate hoisting means to remove the lift from the freight truck when it arrives and to set the lift into place. The models' weights can vary from 2,800 – 6,700 pounds.
 - o 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 lift to the dock approach.
 - o A power supply circuit and disconnect matching the motor voltage and current requirements. Refer to the labels on the control enclosure and to the electrical section in this manual for more information.
-

Caution Notes:

- “ Do not work underneath the platform unless the maintenance props are installed in the frame.
- “ The dock lift must be adequately anchored into the concrete at each corner of its frame.
- “ If the supply voltage installed for the lift is different from that originally specified for the order, the connections of the motor leads and the control transformer's primary wires must be changed. Consult the electrical diagrams in this manual.
- “ Modifications or additions to the lift without prior manufacturer's authorization may void the lift's warranty (see ANSI MH29.1, Safety Requirements for Scissor Lifts, section 12.6). The addition of ancillary equipment to the platform may necessitate that its load capacity be reduced.

INSTALLATION INSTRUCTIONS

1. For pit-mounted units, check that the pit conforms to the pit diagram.
Note: If the unit is to be placed into a pit, the required electrical and hydraulic connections to the dock lift should be made before it is set into place.
2. Mount the power unit in the desired location. The standard 8' hose will allow the power unit to be mounted immediately adjacent to the lift. For mounting in other locations, a longer hose will be required. (Use ½" SAE 100R2 2-wire hydraulic hose with a 3,000 psi working pressure rating.)
3. Using an appropriate wiring method, connect the power supply to the power unit's motor relay. Verify that the motor supply voltage is the same as that shown on the machine dataplate (located on the middle of the right platform side). Also verify that the correct control transformer primary leads are connected to the power supply at the motor relay's terminals.
4. Remove all steel strapping and shipping materials from the lift. Do not remove the lifting tabs.
5. Use rigging to pick up the unit at the two lifting tabs (one on each end of the platform) and move the lift into place.
Note: If the lift is being pit-mounted, guide the hose and the wires or cable into the pit (such as when a pit conduit is present) when lowering it. Use care to avoid damage to the lift's internal electrical and hydraulic components from the underside. Remove the lifting tabs.
6. Connect the ½" hydraulic hose between the power unit and the lift's frame.
Note: First, either flush or blow out the hose and fittings if any contaminants are observed inside them.
7. Install a jumper wire from terminal #3 to terminal #4 in the power unit's control enclosure. Verify that the overload relay setting matches the motor's full-load amperage at the selected supply voltage.
8. Use the pendant control to raise the platform just high enough to allow the table's safety maintenance props to be placed into the frame. Use the manual valve to lower the platform so the leg set rests on the props. (Push down, turn the knob CCW, and release it to open the lowering valve. Push down and turn CW to close it.)
9. Remove the jumper wire between terminal #3 and terminal #4.
10. At both the lift's frame junction box and the power unit's control enclosure, connect the five wires (including the grounding wire) to the limit switch and toe guard circuit wires. See the electrical diagram in this manual.
11. Close and secure the control enclosure door and put the plastic cover over the power unit.
12. Cut and remove the plastic ties that hold the aluminum toe guard strips up during shipping. Verify that all the strips drop down and move freely, and that the switch in the middle of each strip is not actuated.
13. Raise the platform to a height of 60", measured from the bottom of the frame. Adjust the upper limit switch arm (mounted on the non bridge-end of the frame) so that the motor turns off at that height.
14. Bleed the cylinders following the air bleed procedure at the bottom of the "Power Unit Operation" page. Afterward, remove the maintenance props and lower the platform using the pendant control. Hold the "DOWN" pushbutton for several seconds after the platform is lowered so that any air in the hose will be able to more easily migrate to the reservoir.
15. While lowered, check the platform for proper lowered height, or that it is flush with the ground if pit mounted.
16. Raise the lift, install the maintenance props, and lower the leg set onto them once again.
17. Anchor the frame to the floor through each of the two 13/16" holes located near each frame corner.
18. Shim and/or grout under the full length of the frame sides.
19. Remove the maintenance props and operate the lift through several full up/down cycles. Verify that the upper travel limit switch (mounted in the frame) and the toe guard switches (around the perimeter of the platform) function properly.
20. Check the hydraulic oil level. It should be filled to within 3" of the top of the reservoir. 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.
21. Clean up any debris or spilled oil, and verify that all of the warning and safety labels are intact.

ROUTINE MAINTENANCE & SAFETY CHECKS

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

(A) Before each use inspect for the following:

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

(B) Inspect monthly for:

- 1.) The oil level. Oil should be 1½" to 2" below the reservoir's fill hole with the lift fully lowered.
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 rings 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.
- 7.) Proper functioning of any hand- or foot-operated mechanisms.
- 8.) Damage or deformity of the bridge plates (including the hinge) and the handrails.
- 9.) Unusual noises or movement during operation.
- 10.) All the information, safety, and warning labels being in place and in good condition.
- 11.) 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.

OPERATION INSTRUCTIONS

- Consult ANSI MH29.1, Section 12 for the owner's / user's responsibilities regarding the operation, care, and maintenance of the scissor dock.
- Ensure that all employees involved in the operation of this lift understand and follow these instructions!

§ The standard model scissor dock is suitable for use indoors or outdoors in most industrial and commercial locations. It is intended to be used to raise and lower material handlers such as fork trucks and pallet jacks to allow freight to be loaded and unloaded from semi trailers.

Loading:

The load rating, in pounds, is shown on the machine dataplate located on the bevel of the bridge plate end of the platform. It indicates the net capacity of the scissor dock with a static load that is centered and evenly distributed on the platform.

When not fully lowered, the lift's maximum single axle load is 60% of the rated capacity for side loading, and 75% for end loading. (The hydraulic hose and bridge plates are at the lift's "ends.")

In the fully lowered position, cross-traffic loads must not exceed two times the platform's load rating.

Do not exceed a rate of two feet per second when moving loads across the platform.

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

Warning: Do not exceed the scissor dock's load ratings. Permanent damage to the lift or injury to personnel could result from exceeding the listed capacity.

Operation:

§ Inspect the perimeter pinch point guards' operation daily.

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

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

§ The scissor dock is furnished with a constant-pressure (dead-man style) pushbutton control on a coil cord.

- Pressing the "UP" pushbutton will turn on the power unit to raise the platform. The platform will raise only while the control is pressed. Upon releasing the control, the platform will stop and hold its position.
- Pressing the "DOWN" pushbutton will energize the lowering valve to allow the platform to descend by gravity (the motor does not run). Releasing the control button, or the operation of the pinch point guard, will stop the platform movement and the unit will hold its position.

§ To lower the platform in the event of a malfunction or power outage, remove the power unit cover and locate the colored, knurled knob on the end of the lowering valve. Be certain there are no obstructions or personnel under the lift! Push the knob in, twist the knob counterclockwise 180°, and release it. When the platform has been lowered, push the knob in again, twist the knob clockwise 180°, and release it.

Safety:

Warning: Do not exceed the scissor dock's load ratings as indicated above.

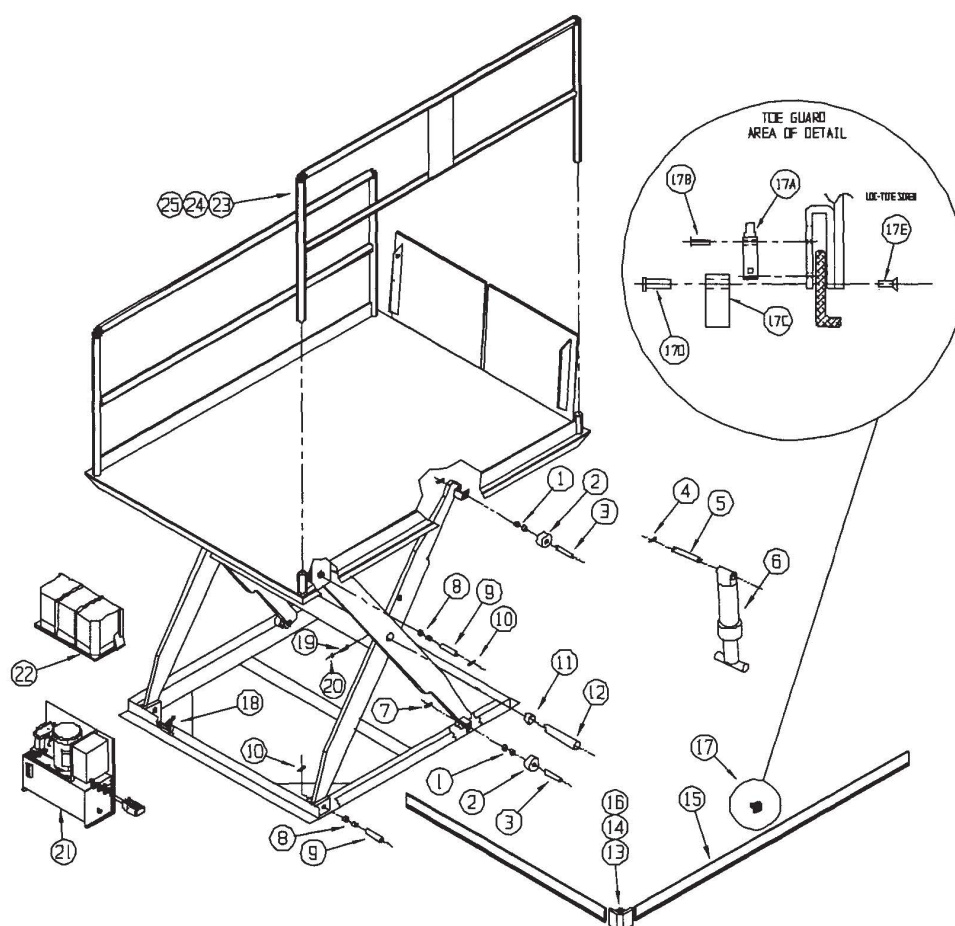
Warning: Keep all personnel clear of the scissor dock when it is in operation.

Caution: Never use the scissor dock 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.

§ Check the operation of the perimeter pinch point guards daily. Do not use the lift if the guard's aluminum bars are bent or if the circuit is not functional.

§ Ensure that all safety and warning labels stay in place and are legible. Refer to the labels page.

EXPLODED PARTS VIEW & BILL OF MATERIALS



Item #:	Description	Part number	Qty.
1	Roller bushing, $1\frac{1}{8} \times 1\frac{3}{16}$	01-111-023	4
2	Roller	05-027-001	4
3	Roller pin, $1\frac{1}{8} \times 4\frac{1}{4}$	05-112-003	4
4	Spring pin, $\frac{3}{16} \times 1\frac{1}{4}$	A/L	4
5	Cylinder pin, $1\frac{1}{8} \times 9\frac{1}{4}$	03-112-001	2,3
6	Cylinder, $3\frac{3}{4} \times 19$	05-021-004	2,3
7	Spring pin, $\frac{3}{16} \times 1\frac{1}{4}$	A/L	4
8	Hinge bushing, $1\frac{1}{8} \times 1\frac{1}{4}$	01-111-022	4
9	Hinge pin, $1\frac{1}{8} \times 3\frac{3}{16}$	05-112-002	4
10	Spring pin, $\frac{3}{16} \times 1\frac{1}{4}$	A/L	4
11	Axle pin bushing, $2 \times 2\frac{1}{2}$	01-111-017	2
12	Axle pin, $2 \times 6\frac{1}{8}$	05-112-001	2
13	Bolt, $\frac{1}{4}-20 \times 3"$	A/L	4
14	Nylock nut, $\frac{1}{4}-20$	A/L	4
15	Toe guard aluminum extrusion	01-015-901	4
16	Rubber toe guard corner	01-015-009	4
17	Toe guard switch (stainless)	01-022-014	4
17A	Toe guard switch (micro)	01-022-022	4
17B	Screw, #4-40 x $\frac{1}{2}$	A/L	8
17C	Toe guard switch actuator	01-015-008	4
17D	Sex bolt, #8-32	01-145-010	4
17E	Screw, #8-32 x $\frac{1}{2}$	A/L	4
18	Upper travel limit switch	01-522-001	1
19	Shoulder bolt, $5/16-18 \times 2\frac{1}{2}$	A/L	2
20	Nut, $5/16-18$	A/L	2
21	Power unit, complete	Consult factory	1
22	Cover for power unit	22-024-003	1
23	Handrail, removable	Consult factory	2
24	Chain, $\frac{1}{4}"$, for bridge	A/L	2
25	Handle for pull chain	WL-50009-A	2

THE POWER UNIT'S OPERATION

The electric / hydraulic scissor dock utilizes an electric motor directly coupled to a gear-type hydraulic pump to produce the needed fluid pressure and flow to allow the cylinders to perform the work of lifting the platform load.

A hydraulic manifold houses the hydraulic control components, and is bolted onto the top of the reservoir.

The power unit's hydraulic components are all rated for 3,000 psi working pressure.

IMPORTANT PARTS OF THE POWER UNIT INCLUDE:

- The electric motor. Motors are available for operation on single- or three-phase AC supplies. All are dual-voltage. (Single-phase is not recommended because of the large current draw and slower speed.)
- The gear pump. Its shaft is coupled directly to the shaft of the electric motor. Due to restrictions on the size of the power supply circuit, the single-phase units have a smaller gear pump.
- The check valve. Its purpose is to prevent the backflow of fluid through the pump. In this way, it allows the platform to be held at a given elevation indefinitely.
- The pressure relief valve. Its job is to open a path for fluid to flow back to the reservoir in the event that the fluid pressure built up by the pump exceeds 3,000 psi. Thus the pump cannot generate more than 3,000 psi.
- The lowering solenoid valve. This is an electrically-operated cartridge valve with a manual operator. It contains a screen to keep contaminants from entering the valve. It also has a knurled knob to open the valve manually to lower the platform in the event of a power outage, damage to toe guards, etc. Push down, turn the knob CCW, and release it to open the lowering valve. Push down and turn CW to close it.
- The pressure-compensated flow control valve. This cartridge valve regulates the fluid flow back to the reservoir when the valve opens. It allows the table to always lower at the same rate regardless of whether there is a load on the platform or not.
- The hydraulic lift cylinders. These are displacement-style cylinders. They have a bleeder valve located at their top end to allow air to be bled from the hydraulic system.
- The safety velocity fuse. This is a device that is installed in the cylinder's hose port. It closes quickly in the event of a catastrophic hose failure to prevent the lift from collapsing down. The platform remains stationary until pressure is reapplied to the cylinder.
- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 at 40°C) such as AW 32 or a non-synthetic transmission fluid is acceptable.
When the platform is to be raised, press the "UP" pushbutton. The motor turns (CW at fan end), and in turning it spins the hydraulic gear pump. Oil is drawn from the reservoir through the suction filter and into the pump. The pump pushes the then-pressurized oil through the check valve and out to the lift cylinders.
When the platform is to be lowered, press the "DOWN" pushbutton. The lowering valve opens, bypassing the check valve and allowing the oil in the cylinders to return to the reservoir. The rate at which the platform lowers is regulated by the pressure-compensated flow control valve.
- In the event that the platform creeps down slowly after releasing the "DOWN" control, it will be necessary to remove the lowering cartridge valve for inspection and cleaning, as follows:
 - Remove any load from the platform.
 - **Warning:** Raise the lift and install the maintenance props. Lower the platform until the lift rests on the props.
 - Remove the nut holding the solenoid coil on the valve stem, then remove the coil, and then unscrew the valve from the manifold.
 - Inspect the valve for contaminants, and the valve's o-rings and back-up washers for cuts, tears, or other damage.
 - With the valve immersed in mineral spirits or kerosene, use a thin tool such as a small screwdriver or a small hex wrench to push the poppet in and out several times from the bottom end of the valve. The valve should move freely, about 1/16" from closed to open position. If it sticks in, the valve stem could be bent and will need to be replaced if it doesn't free up after cleaning. Blow the valve off with a compressed-air gun while again pushing the poppet in and out.
 - Inspect the bottom of the manifold's valve cavity for contaminants.
 - Reinstall the valve into the manifold, tightening the valve with approximately 20 lb-ft of torque.
 - If the platform lowers extremely slowly, or not at all, the cylinders' velocity fuses could be closing. This can be caused by air in the hydraulic cylinders.

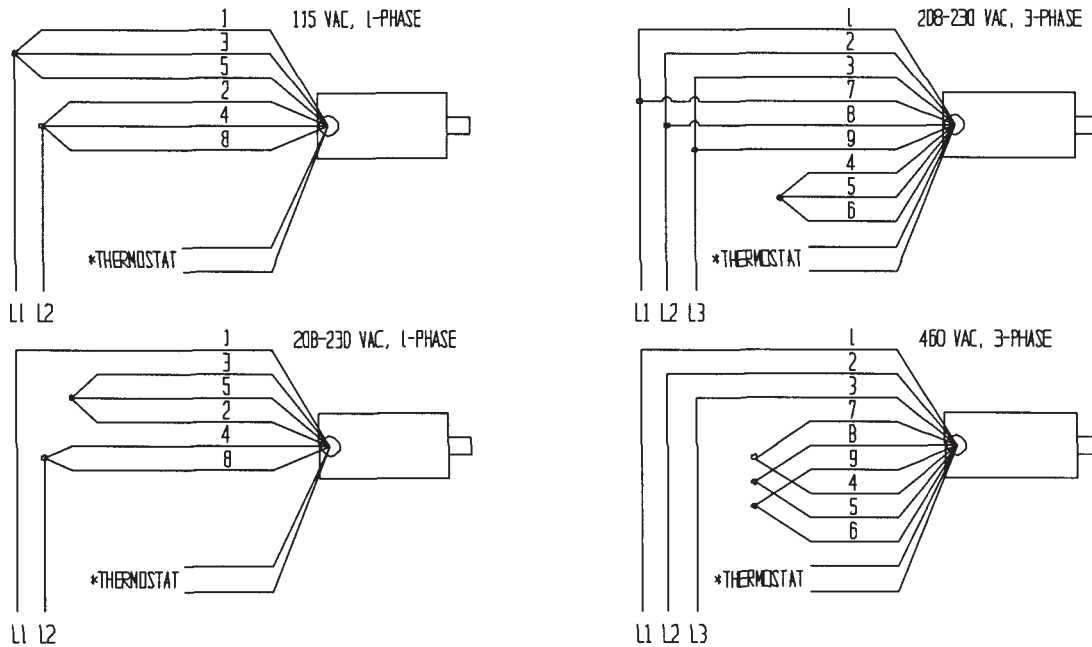
TO BLEED THE AIR FROM THE SYSTEM:

- Remove any load from the platform.
- **Warning:** Raise the lift and install the maintenance props.
- Lower the platform until the lift rests on the props.
- Hold a rag over the cylinders' bleeder valve (it looks like a grease zirk) and open each valve about 1/2 turn with a wrench. Oil and air will sputter from the valve – once no air is observed, close the valve.

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

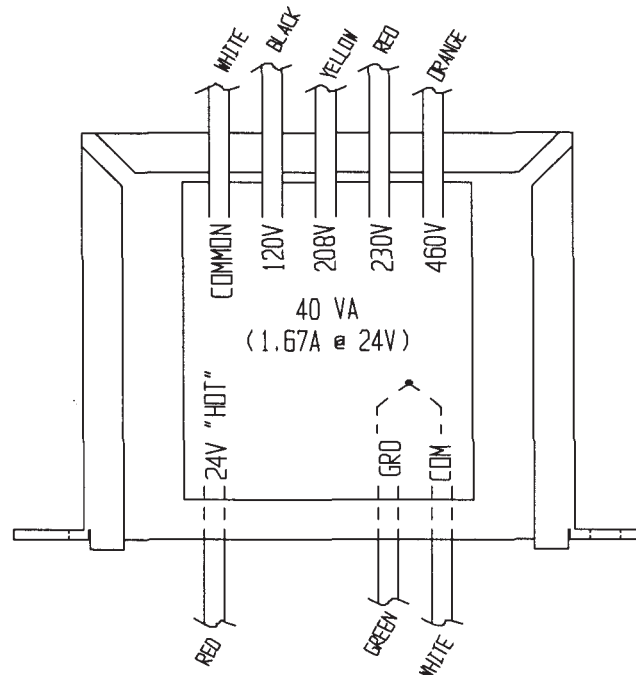


* The two thermostat leads go to: 1) the grounded side of the transformer secondary, and; 2) the motor relay coil, in either order.



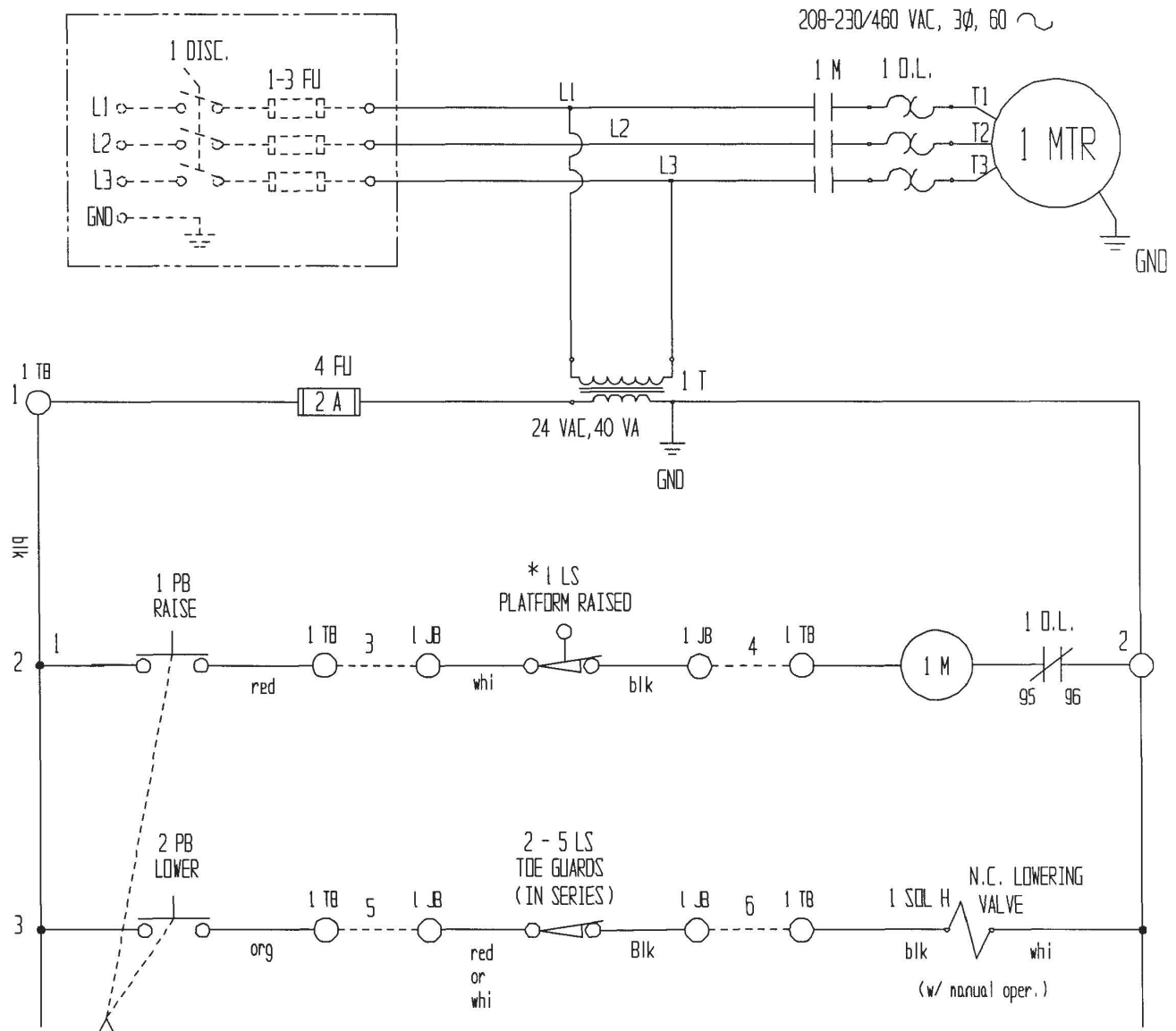
BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!

CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL



ELECTRICAL DIAGRAMS

- Warning: Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work. Fully lower or securely support the platform, and ensure that system pressure and power have been removed, before attempting to work on any of the hydraulic components!
- Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits, along with the hazards that could result from them, should attempt troubleshooting and repair of this equipment.

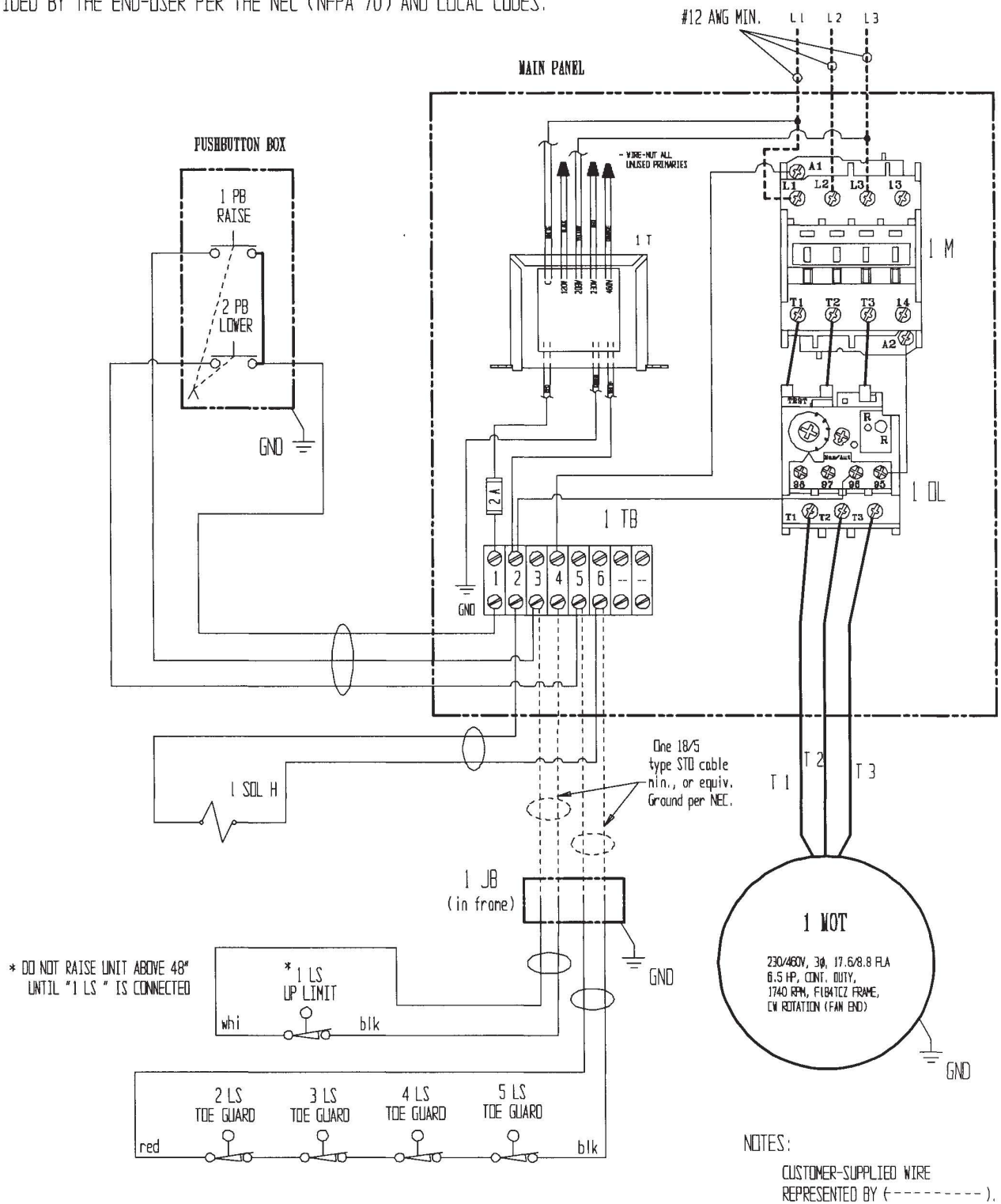


NOTES:

CUSTOMER-SUPPLIED WIRE
REPRESENTED BY (-----).

ELECTRICAL DIAGRAMS

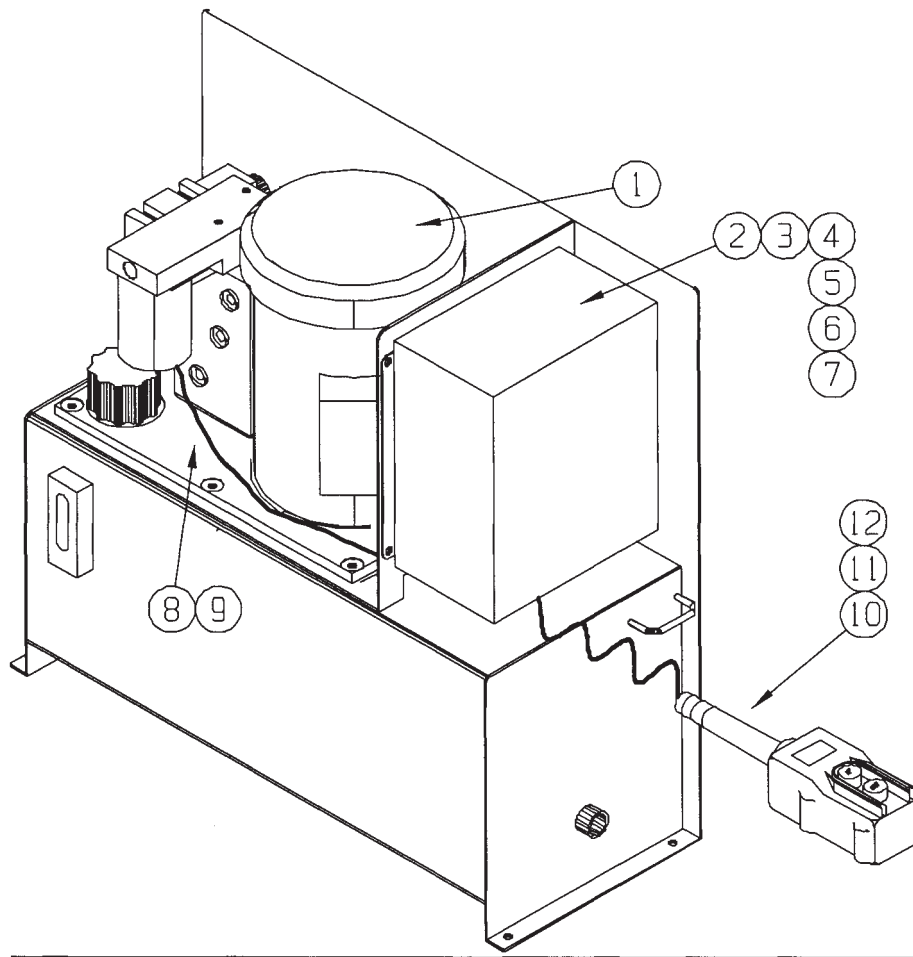
OVERCURRENT & SHORT-CIRCUIT PROTECTION, AND DISCONNECT ARE TO BE PROVIDED BY THE END-USER PER THE NEC (NFPA 70) AND LOCAL CODES.



BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!

CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL

POWER UNIT EXPLODED PARTS VIEW & BILL OF MATERIALS

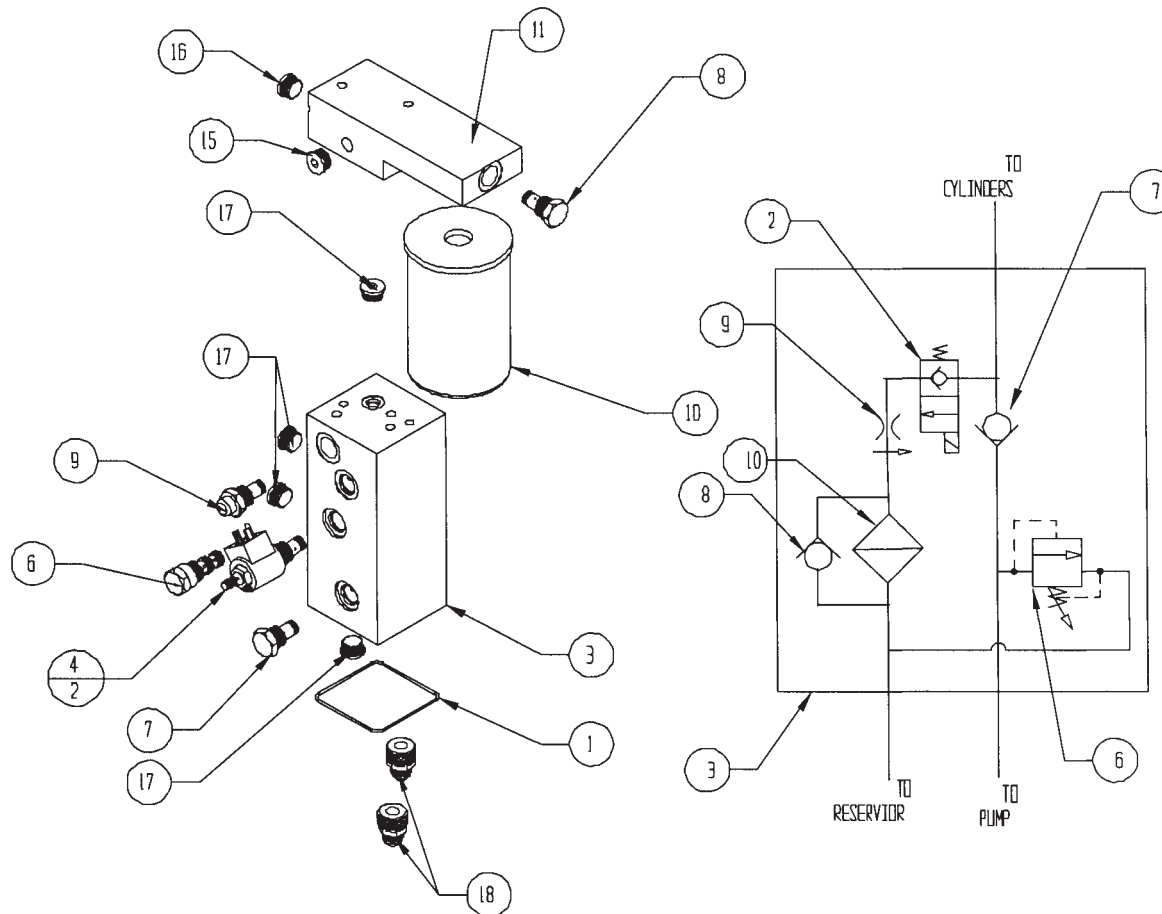


ELECTRICAL BILL OF MATERIALS --BWL-100

Item #	Description	Part number	Qty.
1	Motor, 3-phase	99-135-012	1
1	Motor, 1-phase	22-135-006	1
2	Contactor, 3-phase	LC1-D1810-24V	1
2	Contactor, 1-phase	LC1-D3210-24V	1
3	Overload relay, 3-phase, 460V, 8.5-12.5A	LR2-D1316	1
3	Overload relay, 1- or 3-phase, 208-230V, 17-24A	LR2-D1322	1
3	Overload relay, 1-phase, 115V, 30-40A	RHS80/2R	1
4	Control transformer	01-129-001	1
5	Fuse, 2A, 1/4 x 1 1/4	AGC2	1
6	Terminal block	30 03 50 9	8
7	Control enclosure	AB1086STE	1
8	Solenoid coil	99-034-008	1
9	Solenoid connector cord	01-033-017	1
10	2-button handheld control, on coil cord	01-522-021	1
11	Coil cord only, 18/3, 48"-240"	01-033-013	1
12	2-button handheld control only	01-022-015	1
13	Junction box, 2 x 2 x 4 (on lift's frame)	A-402DSC	1
14	Coil cord, 18/2, 18"-90" (on lift's frame)	01-033-009	1

HYDRAULIC LOGIC MANIFOLD, DIAGRAM & BOM

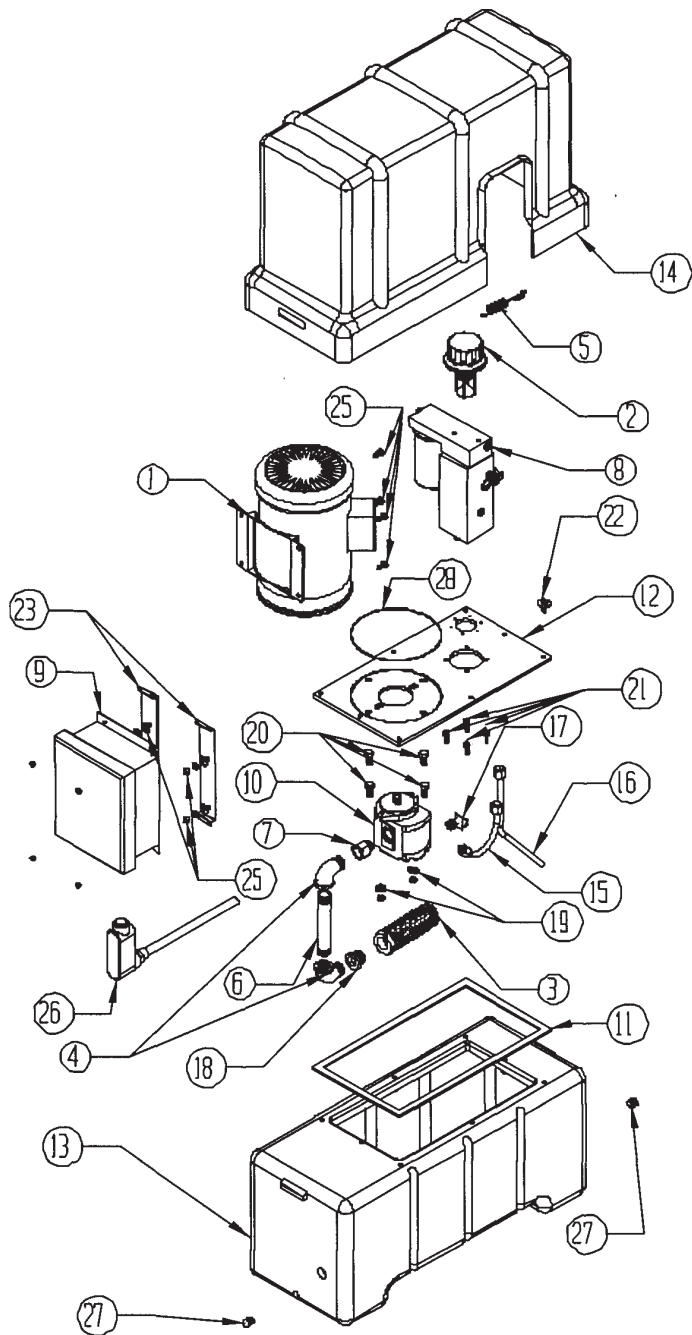
- **Warning:** Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work. Fully lower or secure the platform, and ensure that all system pressure and power have been removed, before attempting to work on the electrical or hydraulic systems.
- Raise the lift and install the maintenance props before beginning any inspections or work on the unit.
- Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment
- **Caution:** 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 of 150 SUS at 100°F (ISO 32 @ 40°C), or non-synthetic transmission



HYDRAULIC MANIFOLD BILL OF MATERIALS -- BWL-100

Item #	Description	Part number	Qty.
1	O-ring	2-154	1
2	Valve, cart., NC, w/ man oper	99-153-016	1
3	Manifold WL-100	05-127-006	1
4	Coil, w/ DIN connector	99-034-008	1
5	O-ring	2-111	2
6	Valve, pressure relief	99-153-006	1
7	Valve, check	99-153-011	1
8	Valve, check, side in/nose out	99-153-012	1
9	Valve, flow control, 3.5 GPM	99-153-026	1
10	Hyd. spin-on filter	SPE-15-10	1
11	Manifold, filter body	22-127-002	1
12	O-ring	568-116-BN70	1
13	HHCS #2, Z-plated	11063	2
14	Lock washer, Z-plated	33620	2
15	External Hex pipe plug	5406-P-06	1
16	MORB hollow hex plug	6408-H-06-O	1
17	MORB hollow hex plug	6408-H-04-O	4
18	MJ-MORB straight	6400-08-08-O	2

HYDRAULIC POWER UNIT



POWER UNIT BILL OF MATERIALS --BWL-100

Item #	Description	Part number	Qty.
1	Motor, 3-phase	99-135-012	1
1	Motor, 1-phase	22-135-006	1
2	Oil filler/breather	AB-1164-S	1
3	Inlet strainer	PS-08	1
4	Pipe, NPT street elbow	¾ ST EL	2
5	Spring	12121JY	1
6	Pipe nipple	3/4X7NIP	1
7	MORB - FP straight	6405-12-12-O	1
8	Manifold, assembly	05-627-006	1
9	Panel, control	05-529-001	1
10	Pump, gear, spline shaft	P208RU07AA	1
11	Gasket material	LP-113	4'
12	Plate, pump adaptor, alum.	22-031-010	1
13	Reservoir, plastic	22-023-003	1
14	Reservoir, cover	22-024-003	1
15	Hyd. steel tubing	05-623-012	1
16	Hyd. steel tubing	22-623-001	1
17	MJ-MAORB 45°	68-2-08-10-NOW	1
18	NPT pipe reducer	3/4X1BUSH	1
19	HHCS #2, Z-plated	11107	2
	USS flat washer, Z-plated	33008	2
	Lock washer #2, Z-plated	33008	2
	Hex nut, Z-plated	36106	2
20	HHCS #2, Z-plated	11207	4
	Lock washer #2, Z-plated	33625	4
21	HHCS #2, Z-plated	11055	4
	Lock washer #2, Z-plated	33620	4
22	HHCS #2, Z-plated	11055	8
	Lock washer #2, Z-plated	33620	8
	USS flat washer, Z-plated	33006	8
23	Bracket, control panel	22-016-016	2
24	HHCS #2, Z-plated	11005	4
	Lock washer #2, Z-plated	33618	4
	Hex nut, Z-plated	36102	4
25	HHCS #2, Z-plated	11005	4
	Lock washer #2, Z-plated	33618	4
	Hex nut, Z-plated	36102	4
	USS flat washer, Z-plated	33004	8
26	Heater (230V)	ET2L-252	1
	Heater (460V)	ET3L-504	1
27	Pipe plug	5406-P-06	2
28	O-ring	568-011-BN70	1

TROUBLESHOOTING GUIDE - BWL-100

- § **WARNING:** Care should be taken to identify all potential hazards and comply with all applicable safety procedures before beginning troubleshooting or repairs.
- § **CAUTION:** Before performing any troubleshooting or repairs, the load must be removed from the platform. Then either raise the platform and install the maintenance props, or fully lower the platform to the floor.
- § Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits, along with the hazards that could result from them, should attempt troubleshooting and repair of this equipment.
- Consult the factory for any problems not addressed in this manual.

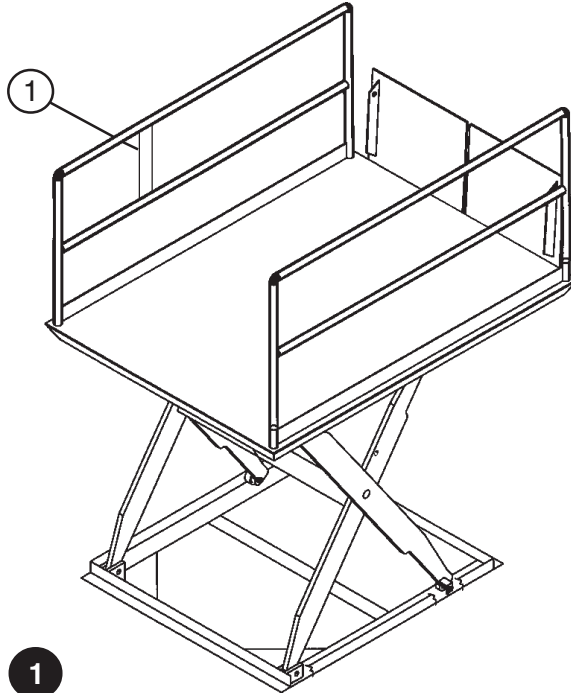
<u>Problem:</u>	<u>Possible cause(s):</u>	<u>Action:</u>
Power unit doesn't run when "UP" button is pressed.	Transformer fuse is blown. No supply voltage. Upper-travel limit switch or wiring is not connected; switch is engaged, or bad. Overload relay is tripped. Control transformer failed. Motor relay coil failed.	Test with meter; replace if bad. Test with meter. Check fuses, breakers, and overloads to determine the cause. Check connections to switch. Inspect, test switch. Replace if bad. Press reset button on overload relay. Check for 24 VAC; replace if bad. Test with meter; replace if bad.
Motor runs, platform doesn't move. Power unit not noisy.	Motor rotation is wrong. Pump is failing to build pressure. Lowering valve's manual operator is open.	Verify motor runs CW at the fan end. Consult factory. The manual operator should be pushed down and rotated clockwise.
Motor hums or pump squeals, but the platform does not move, or the platform moves only slowly.	See last paragraph, above. Excess voltage drop to motor; due to power wire size too small, wire run too long, or incoming voltage too low. Motor is "single-phasing." Pressure relief opening at full pressure. Contamination holding open the lowering valve or the check valve. Lowering valve's manual operator is open.	Same as above. Check power installation for adequacy. Check incoming voltage <i>while motor is running</i> . Correct problem found. Determine cause of loss of voltage on one phase; correct. Check for structural damage or binding of the scissor legs, etc. Check for platform overload condition. Remove and inspect. Clean per instructions in "Power Unit Operation." The manual operator should be pushed down and rotated clockwise.
Platform raises, then drifts down.	See last two paragraphs, above.	Same as above.
Spongy or jerky platform movement.	Excessive air in the hydraulic cylinders.	Bleed air per the procedure described in "Power Unit Operation."
Platform won't lower.	Toe guard switch or wiring is not connected; switch is engaged, or bad. Solenoid coil is bad. Physical blockage of the structure. Solenoid valve is plugged.	Check for a toe guard extrusion or rubber corner that is stuck; adjust if necessary. Inspect, test switches and wiring with meter; replace if bad. Check with multimeter on diode-check function. (Reading for ohms will not provide an accurate test of the coil.) Inspect for foreign material or objects that might block the leg set or its rollers. Remove and inspect. Clean per instructions in "Power Unit Operation."
Platform lowers too slowly.	Pinched hose. Velocity fuse locking (platform only slowly creeps down). Flow control valve sticking.	Check pressure hose for kinks. Same as for jerky platform movement. Remove and inspect. Clean per instructions in "Power Unit Operation."
Platform lowers too quickly.	See last paragraph, above.	Same as above.

CAUTION: 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 at 32°C) or a non-synthetic transmission fluid.

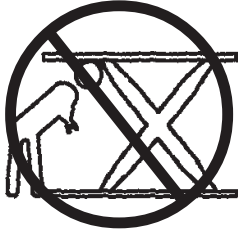

SAFETY LABEL IDENTIFICATION

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 the manufacturer for replacement labels.



*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.

 DANGER	
	TO MAXIMIZE SAFETY READ OWNER'S MANUAL BEFORE OPERATING OR REPAIRING THIS EQUIPMENT.
	NEVER WORK UNDER LOADED DECK. ALWAYS PLACE MAINTENANCE BARS IN LOCKED POSITION AS SHOWN IN THE OWNERS MANUAL BEFORE WORKING UNDER THE DECK.
	KEEP CLEAR OF MOVING SCISSOR LEG MECHANISM. DO NOT PULL HANDS, FEET OR OBJECTS UNDER DECK.
	ALL LOADS MUST BE CENTERED ON DECK.
	SCISSOR DOCK & POWER UNIT MUST BE WIRED & GROUNDED ACCORDING TO LOCAL & NATIONAL ELECTRICAL CODES.
	DO NOT EXCEED CAPACITY RATINGS BELOW.
	UNIFORMLY LOADED LIFT CAPACITY <input type="text"/>
	AXLE CAPACITY OVER SIDES <input type="text"/>
	AXLE CAPACITY OVER ENDS <input type="text"/>
MODEL NO. <input type="text"/> SERIAL NO. <input type="text"/>	
OPERATION: DEPRESS "UP" BUTTON TO RAISE DECK. RELEASE BUTTON TO STOP DECK. DEPRESS "DOWN" BUTTON TO LOWER DECK. RELEASE BUTTON TO STOP DECK.	
OIL RECOMMENDATION: USE ISO AW-32 HYDRAULIC OIL OR EQUIVALENT FOR TEMPERATURE RANGE OF 0° TO 120°.	

BEACON
Beacon Industries, Inc.
12300 Old Tesson Rd, St. Louis, MO 63128-2247
Ph: 314-487-7600 Fax: 314-487-0100

BWL-100 Series Loading Dock Lift 1 Year Limited Warranty

The equipment is warranted to be free from defects in materials and workmanship under normal use and service for a period of one (1) year from the date of shipment if used within the rated capacity. Rated capacity is classified as evenly distributed load. Axle side loads and Axle end loads are rated 50% of evenly distributed rated load. This includes a one-year structural warranty and component manufacturers' warranties.

Hydraulic parts warranty includes:

- Power unit - 12 months from date of shipment
- Hydraulic cylinders - 12 months from date of shipment
- Hoses and fittings - 12 months from date of shipment

All warranty claims must be approved in writing by the factory prior to any work being done.

Warranty does not cover labor, scheduled service requirements, adjustments or consequential damages.

Warranty shall not apply to unauthorized repair, alterations, freight damage, negligence, accidents, abuse, misuse or correctness of fit.

Standard equipment can only be returned if approved in writing by the factory with a return authorization number. All returns are subject to a minimum 20 percent restocking charge plus applicable freight charges. Details are listed on the return authorization form.

Custom built (non-standard) equipment requires a signed approval drawing prior to fabrication. Approval drawing changes must be made in writing and must be acknowledged and accepted by the factory. Custom built equipment is non-returnable. Warranty is not valid for equipment on past-due invoices. Warranty is valid after full payment is made.

The Original purchaser must have the BWL Series maintained and serviced as prescribed in the Owners Manual. The original purchaser must present to Beacon with a maintenance schedule to show that the BWL Series has been maintained and serviced on a monthly basis in accordance with the Beacon's Owner's Manual. The Monthly Preventative Maintenance Schedule Log must be kept to keep Warranty active. The validated maintenance schedule must be submitted whenever a claim is made under this Warranty.

The provisions of this warranty shall be construed and enforced in accordance with the Uniform Commercial Code and laws enacted in the State of Missouri.