RECEIVING:

⚠ WARNING

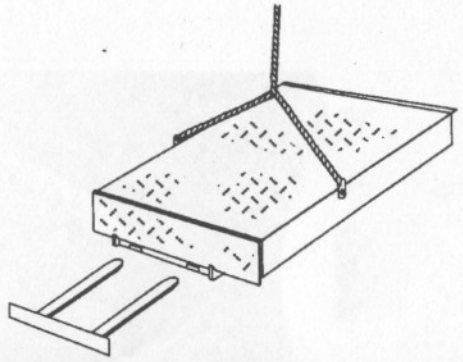
Before installing the dock leveler, read and follow the safety procedures and the operating instructions. Failure to follow the safety procedures could result in serious injury and/or death.

Check for possible damage or missing parts immediately upon receipt of unit. Note any damage on receiving papers.

Prepare any claims against carrier if necessary.

NOTE: Damage noticed after receipt must be reported to carrier within 15 days.

HANDLING:



(Figure A)

Move leveler into position by using:

- chain sling inserted into side plate holes. (See Figure A) or
- fork lift, inserted in front base angle (See Figure A)

NOTE:
Control box, two bumpers, and weather seals, if applicable, are strapped under leveler. Handle with care to avoid damage to these components.

INSTALLATION: (Consists of 3 phases)

Pit preparation

Leveler Preparation

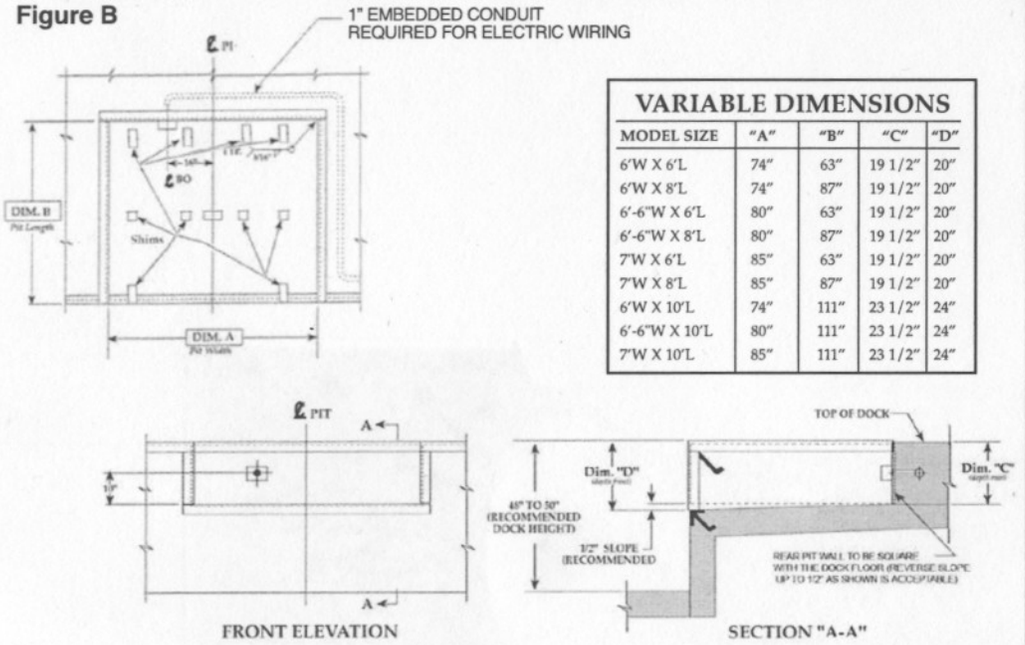
Leveler Installation

⚠ **Caution: Before you start to install the leveler, use proper safety signs and barriers to separate the work area from the remainder of the dock.**

⚠ WARNING **Never allow anyone to stand on or near dock leveler when it is being lifted or placed into the pit. Failure to follow this warning can allow the dock leveler to fall, tip, or swing into people, resulting in serious injury and/or death.**

PIT PREPARATION AND ELECTRICAL INSTALLATION:

Figure B



VARIABLE DIMENSIONS

MODEL SIZE	"A"	"B"	"C"	"D"
6'W X 6'L	74"	63"	19 1/2"	20"
6'W X 8'L	74"	87"	19 1/2"	20"
6'-6"W X 6'L	80"	63"	19 1/2"	20"
6'-6"W X 8'L	80"	87"	19 1/2"	20"
7'W X 6'L	85"	63"	19 1/2"	20"
7'W X 8'L	85"	87"	19 1/2"	20"
6'W X 10'L	74"	111"	23 1/2"	24"
6'-6"W X 10'L	80"	111"	23 1/2"	24"
7'W X 10'L	85"	111"	23 1/2"	24"

Before welding the rear frame, cover the rear weather seal with a piece of sheet metal to prevent setting fire to the weather seals. Failure to do so may result in property damage.

1. Examine pit. Pit walls should be square and plumb. Clean all debris from pit. The floor at the rear and both sides should be level.

2. Measure pit dimensions. (See Figure B for accurate dimensions.)

   Verify that pit walls are:

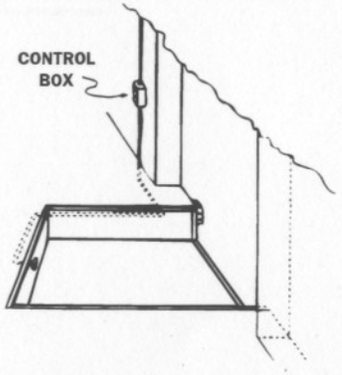
   - Square
   - Plumb

   Place shims in general locations on pit floor before lowering leveler into place in pit.

   [Pit depth at shim locations (minus 19" or minus 23" on 10 ft. units) equals shims thickness.]

   NOTE: Shims are to be placed directly under rear frame uprights, under base of cylinder, and under lip keepers, See Figure B, page 1-3.
   Also Figure D, page 1-3.

Figure C



3. Install control box on wall near pit. (See Figure C)

4. Install wire leads for motor and proximity sensors per wiring diagram. (See Troubleshooting section, pages 3-2 & 3-3.)

   Wire must be installed through conduit. (Conduit to be supplied by customer.) Additional wire leads may be used to supply temporary power to leveler from control box. Wires for motor must be long enough to reach mid section of leveler while in front of opening. this extra may be cut back and discarded after installation. (It is not necessary to hook up proximity sensors for this test.)

LEVELER PREPARATION

⚠ WARNING

Fully support the lip, while working under the leveler. The lip plate could fall causing serious injury and/or death.

⚠ WARNING

Inadequate lifting equipment or practices can cause a load to fall unexpectedly. Make sure the lifting equipment is in good condition. Never allow anyone to stand on or near the dock leveler when it is lifted or placed into the pit. Stand clear of the dock leveler when it is placed into the pit. Failure to follow this warning can allow the dock leveler to fall, tip, or swing into people, causing serious injury and/or death.

CAUTION

Route power cord clear of edges and resting surfaces so that it is not damaged during lifting and placement.

1. Position leveler directly in front of pit.

2. Cut restraining band on lip.

3. Connect temporary wire leads to proper wire grouping at motor.

NOTE: Unit may fail to operate correctly at this point if temporary power does not supply adequate voltage. DO NOT make adjustments to leveler. Provide proper voltage before attempting to operate leveler. (See Electrical Page 3-1)

LEVELER PREPARATION

4. Check motor operation.

If unit does not raise when motor activates, rotation may be wrong. Recheck connections per wiring diagram to correct rotation. **NOTE: Do not attempt to adjust valves until contacting an authorized Dealer or the factory.**

5. Check fluid level in hydraulic reservoir. Check all hydraulic hose connections and fittings.

With leveler in raised position and maintenance strut engaged reservoir should be half full. If necessary, fill to correct level, using Dextron II transmission fluid or aircraft hydraulic fluid

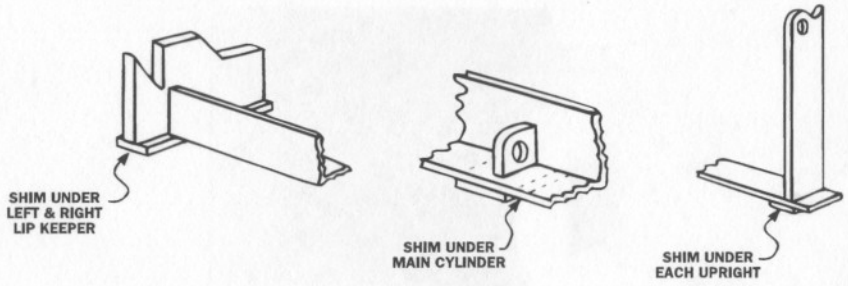


FIGURE D

NOTE: Protect Weather Seals During Welding.

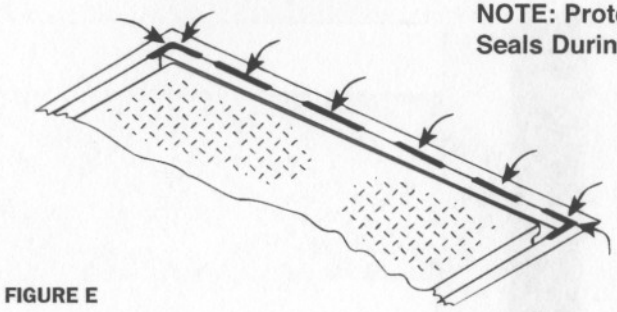


FIGURE E

20" Lip Keeper Installation Instructions

Two separate lip keeper angles are provided with every unit that has a 20" lip. These angles are tack welded to the leveler base frame just behind the lip.

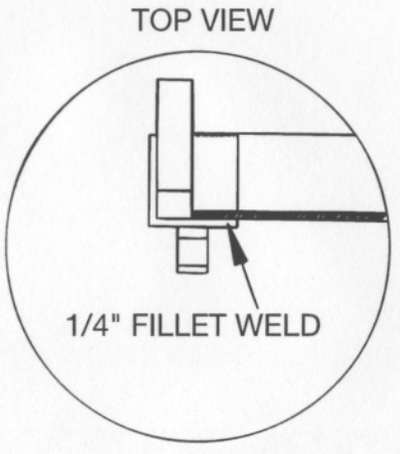
Break each one loose and set the leveler into the pit per the installation instructions in the owner's manual.

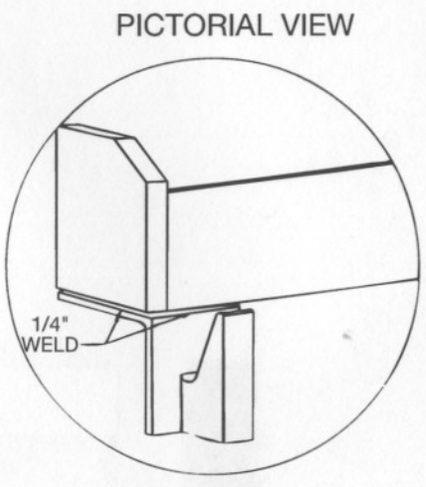
Prior to angle installation or shimming make sure that the unit is snug against the embedded curb angle at the back of the pit.

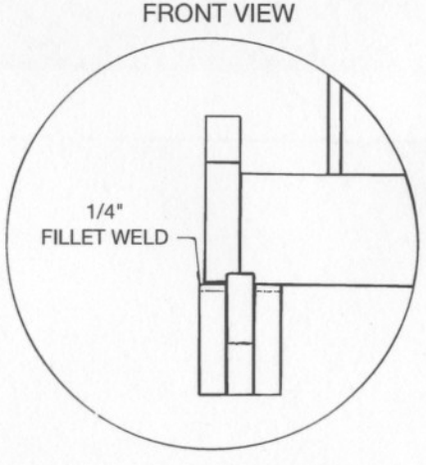
Place the lip keepers under the front base angle on either side of the unit with the top of the angle protruding out past the base 1/4" in the front and on the left for the left hand keeper and on the right for the right hand keeper. This will facilitate welding.

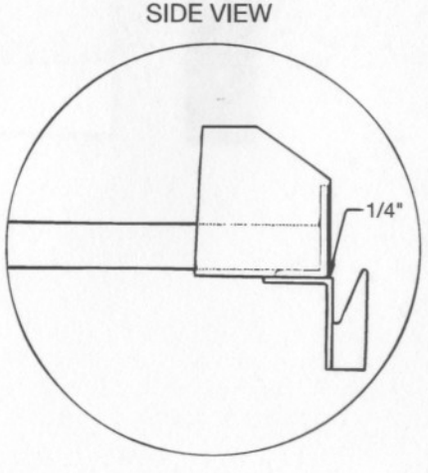
Fully weld the keeper angle to the base angle.

Proceed with shimming per the owner's manual.









LEVELER INSTALLATION:

⚠ WARNING

DO NOT work under the dock leveler, ramp, or lip unless the maintenance strut is in place and cones are on the dock blocking access to the leveler.

⚠ WARNING

Keep fingers, hands, and head away from the lip when it is released. Fingers, hands, or head could be struck by or caught between the lip and other pars of the dock leveler causing serious injury and/or death.

⚠ WARNING

Improper installation of anchoring devices or installation into aged or unsound concrete could result in serious injury and/or death.

CAUTION

Welding with the dock leveler's power connected can damage electrical components. If the dock leveler has previously been electrically connected, turn off power to control box and unplug all dock leveler electrical cords from receptacles in the rear pit wall before welding. Ground welder to dock leveler. Failure to do so can result in product damage.

Be certain that the rear hinge assembly is held tightly against the rear pit curb angle before welding.

CAUTION

If front and rear pit curb angles are not parallel DO NOT attempt to shim dock leveler supports to match pit angles. The front supports and rear frame angle must be parallel for proper operation of the dock leveler. Add or subtract shims as required.

1. Place leveler into pit opening.

Allow one inch (1") equal clearance between leveler sides and pit walls. Rear frame angle of leveler should be tight against and flush with rear curb angle for proper welding.

2. Recheck shim packs to ensure leveler is at proper height, flush with floor level, front and rear.

Shims must be placed properly under each rear frame upright, under cylinder and front lip keepers. (See FIgure D, page 1-5 for close up view and Figure B, page 1-3 for shim locations.)

Skip weld rear of leveler to curb angle (weld center first, then ends) and front shims to leveler and curb angle. (See Figure E, Page 1-3.) Protect rear weather seals from weld splatter if applicable.

LEVELER INSTALLATION:	
3. Bring deck section of leveler to fully raised position.	Use temporary power, or lift slowly with fork lift under lip edge
4. Place maintenance strut securely under deck.	Remove strut from hanger bracket under right hand center of deck, rotate down to vertical position, and place in cup on frame.
5. Weld all shims securely in place.	
6. Connect permanent power source to control box on wall.	
7. Make permanent electrical hook up to motor.	
8. Connect two (2) proximity switches through conduit to wall mounted control box. (See electrical diagram, page 3-2 thru 3-4).	Leveler should now be ready to operate

⚠ WARNING

Hydraulic pressure must be maintained on the ramp to hold it in the raised position until the maintenance strut is in place. **DO NOT WORK UNDER THE DOCKLEVELER RAMP OR LIP UNLESS MAINTENANCE STRUT IS SECURED.**

⚠ WARNING

Keep hands, fingers and head away from the lip when the raise button is released. The lip and dock leveler are free to move downward when hydraulic pressure is removed from cylinders.

ABOVE DOCK USE: 9. Close control box and activate leveler until lip fully extends.	Be sure selector switch on control box is set to Normal mode.
10. Store maintenance strut.	Two person operation. One person holds pressure on OPERATE button while a second person stores the maintenance strut. Do not hold pressure on OPERATE button for more than 10 seconds.
11. Allow leveler to complete cycle, descending to stored position.	Release OPERATE button. Leveler will drift down to below dock, automatically restart, rise several inches above dock while lip is closing, then turn off and store in home position.
11.A Operate leveler through each of its complete cycles to check for proper operation. (See pages 2-1 through 2-4, Normal and Below Dock Operation.)	Cycles include ABOVE DOCK cycle, and BELOW DOCK cycle.
12. Recheck all hydraulic hose connections and fittings.	Make sure all fittings are snug and no leaks are present.
13. Install bumpers on dock face.	Securely bolt bumpers to dock face as close to pit opening as possible. Bumpers should be flush with dock floor or 48" off ground. Raised bumpers should be supported to floor from behind.
14. Complete weld at rear of leveler.	Weld shall cover approximately 50% of the length of the rear angle. Ensure welds are placed directly behind frame uprights: (4 each on 6' wide models, 6 each on 7' wide models) and at ends of angle. (See Figure E, page 1-5) (Protect weather seals during welding).

CAUTION: Contact your representative or the factory if a malfunction occurs which is not understood. DO NOT attempt to correct situation without proper information and understanding, as this may damage components and void the warranty.

⚠ WARNING

ALWAYS secure the vehicle with a vehicle restraint and wheel chocks before operating the dock leveler.

* DO NOT operate leveler with anyone standing on or in front of leveler.
* DO NOT lift the leveler by hand.
* ALWAYS keep fingers, hands, feet, and head clear of all moving parts.

⚠ WARNING

If the lip does not fully extend, do not lift by hand. Restore leveler to dock level and try again. If lip still does not fully extend, the dock leveler requires maintenance or adjustment. Notify your supervisor. DO NOT use the leveler until it has been repaired. Failure to do so could result in serious injury and/or death.

⚠ WARNING

If the lip does not fall to the stored position, the dock leveler requires maintenance or adjustment. Notify you supervisor. DO NOT use dock leveler until it has been repaired. Failure to do so could result in serious injury and/or death.

⚠ WARNING

ALWAYS be certain that the truck wheels are chocked, and that the truck is locked in place by a truck restraining device and the brakes set before loading or unloading. Visually inspect vehicle restraint to make sure it is properly engaged. Trucks pulling away unexpectedly can cause uncontrolled drop of the dock leveler, which can result in serious injury and/or death.

⚠ WARNING

Visually check that the lip is supported by the truck bed or the ramp is supported by both front lip keepers before driving or walking on the ramp.

⚠ WARNING

Before servicing the dock leveler, read and follow the Safety Practice and the operation section of this manual. Be certain, before climbing under the dock leveler, that the MAINTENANCE STRUT is SECURELY IN PLACE.

LIP EXTENDED FOR ABOVE DOCK USE
SELECTOR SWITCH IN NORMAL MODE

1. Press and hold the OPERATE button on the control box.

Release the button when the platform raises and the lip fully extends.

With optional Lip Out button:

1. Press and hold Operate button. When lip edge is above truck floor level, also press Lip Out button. Platform will stop and lip will extend. Release Operate and Lip Out buttons simultaneously.

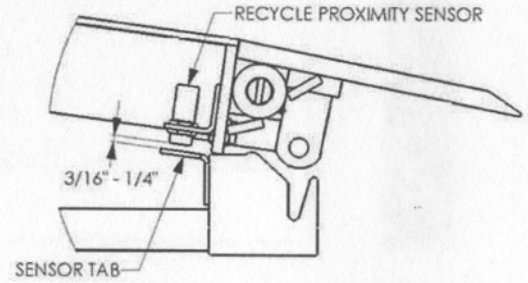
Note: For drawing of optional Lip Out valve, see page 4-6.

2 The platform will descend with lip extended until lip rests on truck bed.

The leveler allows for up and down movement of truck during loading or unloading.

3. When truck departs, the leveler automatically recycles to stored, cross traffic position, employing the recycle proximity sensor, Figure F, and a timer in the control box.

Figure F



Caution: Be sure to maintain clearance between proximity sensor and sensor tab as specifeid in Figure F. Failure to do so could result in damage to the sensor.

RECYCLE PROCEDURE WITH TRUCK AT DOCK:	
1. Press and hold the OPERATE button.	Hold the button until the platform partially raises and lip is fully withdrawn from truck.
2. Release the Operate button.	Leveler will descend to stored, cross traffic position.

LIP EXTENDED ONTO TRUCK FOR UNLOADING BELOW DOCK:	
1. Turn selector switch to Normal mode.	
2. Press and hold the Operate button.	Wait until the platform raises and the lip fully extends. *With optional Lip Out button, simply allow leveler to rise above floor of truck, then also press Lip Out button. Deck will stop and lip will extend.*
3. Release the Operate button *(and optional Lip Out button.)*	
4. Turn the selector switch from Normal to Below Dock mode while leveler is descending.	Leveler will settle to truck floor as low as 12" below dock to service very low trucks without recycling.

⚠ WARNING

ALWAYS secure the truck with a vehicle restraint or wheel chocks before operating the dock leveler. DO NOT operate dock leveler with anyone standing on or in front of leveler. DO NOT drive on dock leveler or lip until it is fully extended and supported by the truck bed. ALWAYS keep hands and feet clear of all moving parts. ALWAYS re-store the leveler to its safe dock level position after servicing the truck.

LIP RETRACTED FOR END LOADS BELOW DOCK:

1. Turn selector button to Below Dock mode.

2. Press and hold the Operate button.

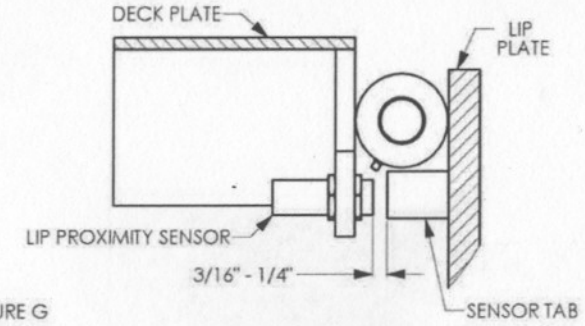


FIGURE G

Hold the button until the platform raises and the lip partially extends.

The motor will automatically shut off when the lip is out of range of the lip tab proximity sensor. (See illustration, opposite.)

The leveler will descend to its fully lowered position with the lip between truck and dock face.

Note: The leveler will not automatically recycle in thsi position. (See recycle procedure.)

Caution: Be sure to maintain clearance between proximity sensor and sensor tab as specified in Figure G. Failure to do so could result in damage to the sensor.

FOR PLACING LIP ON TRUCK TO CONTINUE LOADING OR UNLOADING

1. Turn selector switch to Normal mode.

Leveler will automatically begin to recycle to stored position.

2. As leveler begins to rise, press and hold the Operate button.

Allow the platform to raise and lip to fully extend, then release Operate button.

Leveler will descend until lip rests on truck floor. When truck departs the unit will automatically recycle.

RETURN LEVELER TO STORED POSITION FROM BELOW DOCK:	
1. Turn selector mode to Normal mode.	Leveler will automatically return to stored, cross traffic position. Do not push Operate button.
RECYCLE PROCEDURE FROM BELOW DOCK:	(Unit does not recycle from this (dead) position when truck departs.) If hit while extended, the lip will yield to impact.
1. Turn selector switch to Normal mode.	Leveler will now return to its stored, cross traffic position automatically, before or after truck departs.

AUTOMATIC SAFETY STOP	If lip of leveler should become unsupported while a load of 1,000 pounds or greater is on the platform, the hydraulic system automatically locks the platform in position, supporting the load.
To restore the leveler to normal operation:	1. Remove the load. 2. Press and release the Operate button. Leveler should drift downward and recycle.

⚠ WARNING

ALWAYS secure the truck with a vehicle restraint or wheel chocks before operating the dock leveler. DO NOT operate dock leveler with anyone standing on or in front of leveler. DO NOT drive on dock leveler or lip until it is fully extended and supported by the truck bed. ALWAYS keep hands and feet clear of all moving parts. ALWAYS re-store the leveler to its safe dock level position after servicing the truck.

HYDRAULIC FLUID CONTENT	Levelers are shipped filled with Dextron II automatic transmission fluid. (Optional aircraft hydraulic fluid available for cold climates.)
ELECTRICAL Motor:	1 HP, 15 minute duty cycle
Control Panel:	Wall mounted metal box (12" x 10" x 5 1/4"), Meets N.E.M.A. 12, hinged cover for easy access.
Proximity Sensor Controls:	Automatic Recycle Function, Below Dock Lip Control, 2 each Model 8036A, Square D

MOTOR VOLTAGE (AC)	PHASE	AMP DRAW (RUNNING)	POWER (amperage) REQUIREMENT
115	1	15.0	30
230	1	7.2	20
208-220-240	3	3.6	10
440-460-480	3	1.8	10

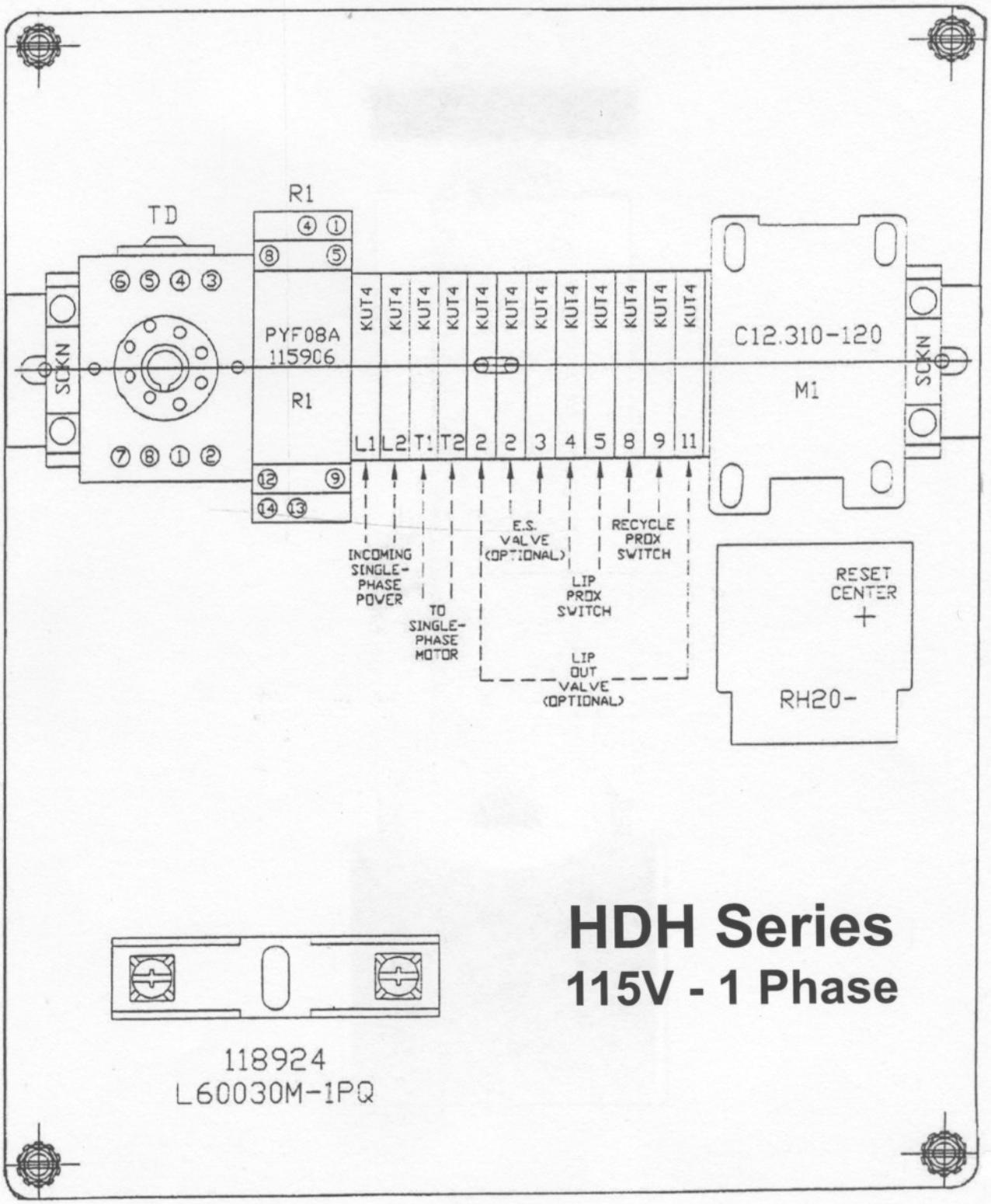
1 HP, 1 ph motor draws 25 amps to start motor.

To avoid voltage drop, Pioneer recommends #10 wire on short runs and #8 wire on long runs.

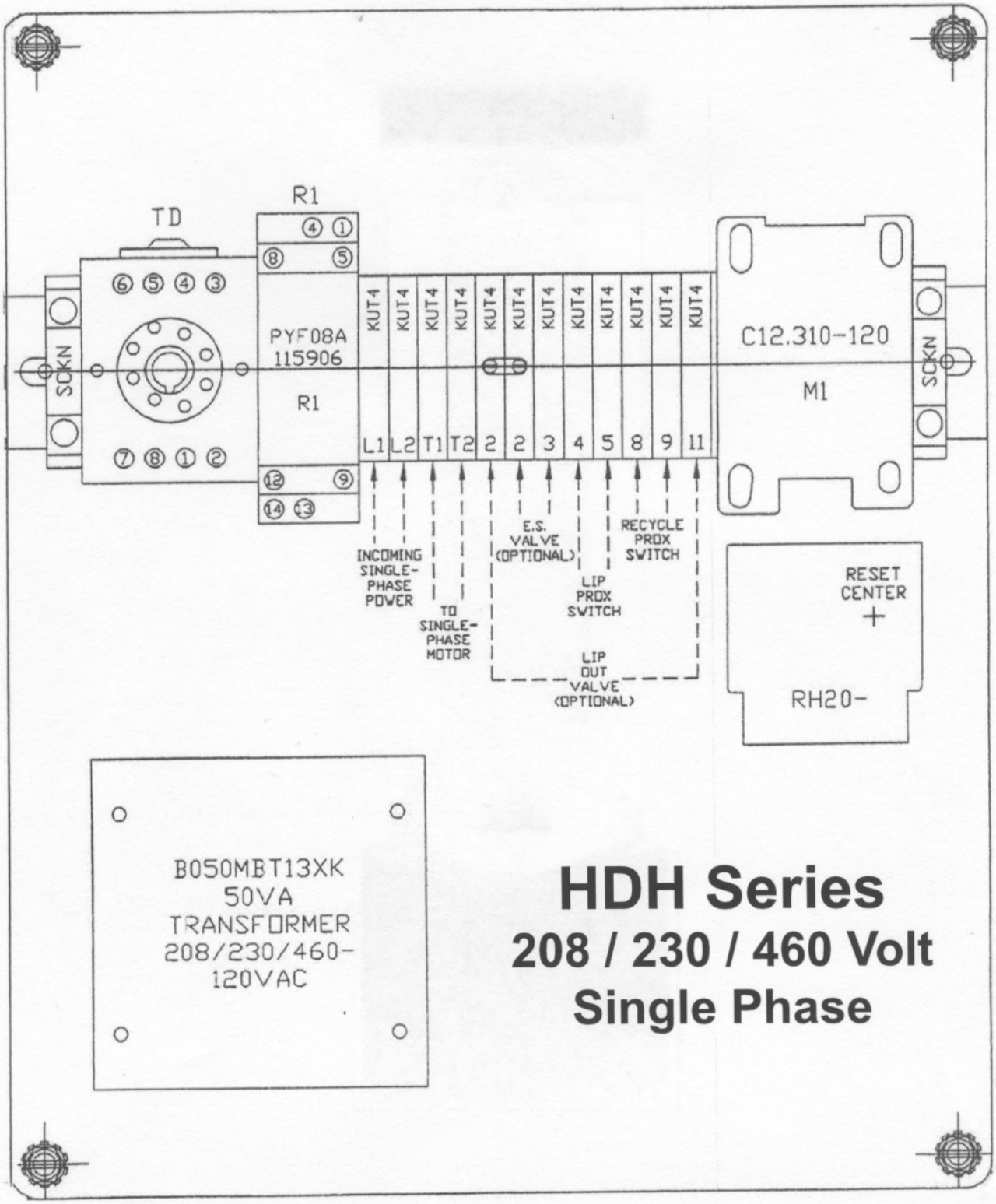
consult code requirements.

CAUTION: A MOTOR CAN BURN OUT FOR ANY OF THE FOLLOWING REASONS:

1. Hook up to incorrect line voltage.
2. Single phasing of polyphase motor caused by a blown fuse or loss of one leg of electrical supply.
3. Low voltage to motor due to insufficient line capacity. This is the most common with 110V, 1 ph operation.



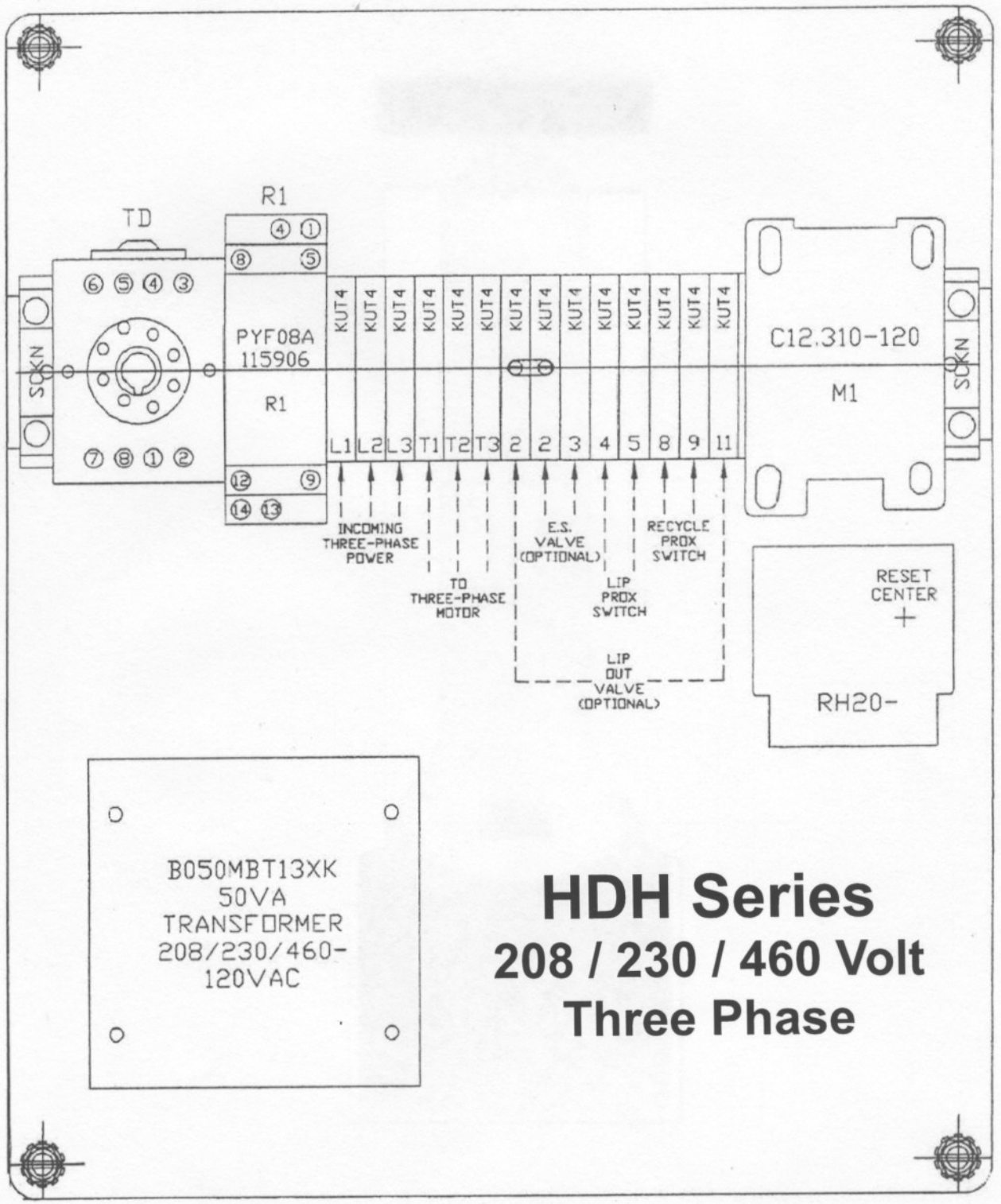
HDH Series
115V - 1 Phase



HDH Series

208 / 230 / 460 Volt

Single Phase



HDH Series
208 / 230 / 460 Volt
Three Phase

Control Valve Function & Adjustment

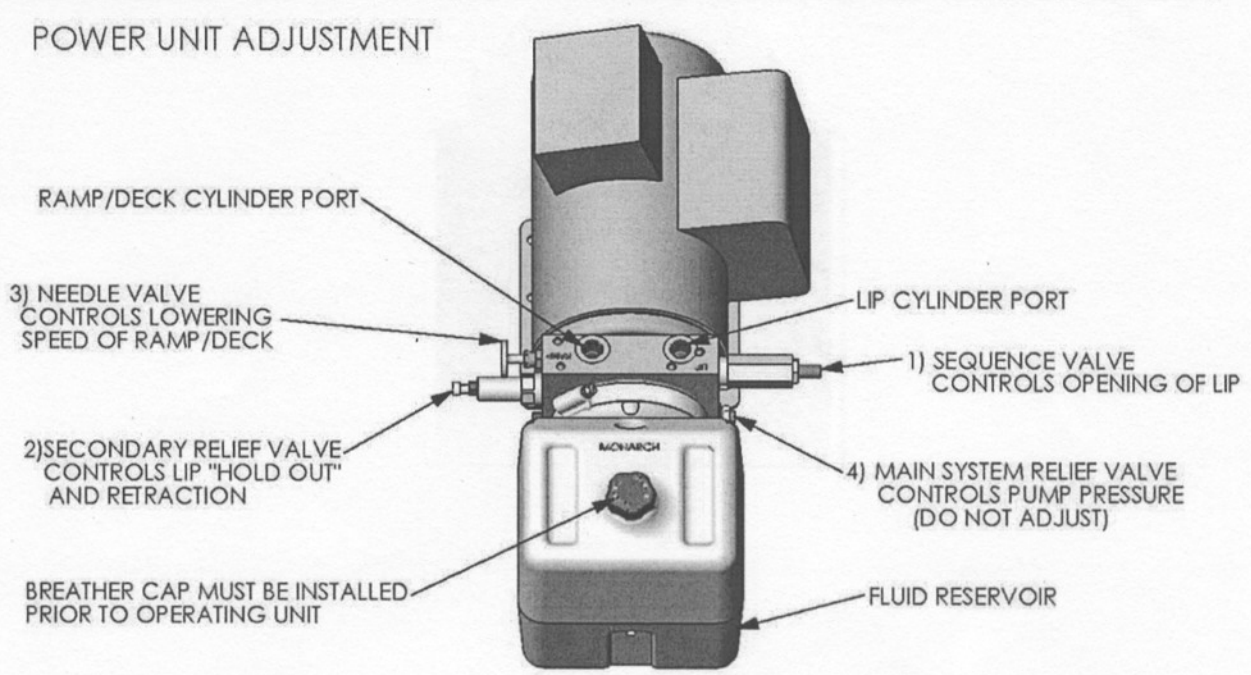
Dock levelers are shipped only after thorough testing and adjustment, and are ready for installation upon receipt. Modifications to the power unit settings should not be required and valves should not be adjusted except to alleviate malfunctions.

1) The Sequence Valve controls the timing of lip out-swing. Turn the adjusting screw "out" (counterclockwise) to cause out-swing to begin sooner. Turning the screw "in" (clockwise) will delay the beginning of lip out-swing.

2) The Secondary Relief Valve controls "hold-out" of the lip. Turning the screw "out" (counterclockwise) will decrease lip hold-out. However, turning the screw out too far will cause the lip to sag. If the lip sags, or tries to close as the ramp floats down to operating position, the screw must be turned "in" (clockwise) a little at a time until the lip remains extended. Turning the screw in too far will create excessive lip hold-out pressure.

3) The Needle Valve controls the lowering speed of the ramp/deck platform. Turning the screw "in"(clockwise) will decrease the rate (speed)of descent. Turning the screw "out" (counterclockwise)will increase the rate of descent. This valve should not be adjusted from the factory setting as a change in the valve setting can adversely affect safe operation of the unit.

4) The Main System Relief Valve regulates pump pressure. Turning the adjusting screw "in" (clockwise) increases pump pressure. Turning the screw "out" (counter-clockwise) will decrease pressure. This valve should not require adjustment in the field. Contact factory before attempting to make pressure adjustment.



⚠ WARNING

Read and follow the safety procedures in this manual before doing any service or repair to the dock leveler. ALWAYS SECURE LEVELER WITH MAINTENANCE STRUT BEFORE CLIMBING INTO THE DOCK LEVELER PIT OR DOING ANY MAINTENANCE OR REPAIR UNDER THE DOCK LEVELER. Failure to do so could result in serious injury and/or death.

SYMPTOM:	PROBABLE CAUSE:	CORRECTION:
RAMP WILL NOT RAISE FROM STORED POSITION: Motor not running in Normal mode when Operate button is pressed.	1. Incorrect or disconnected electrical hook-up.	1. Review wiring diagram and check connections.
	2. Blown fuses or open circuit breaker.	2. Replace bad fuses. Reset circuit breakers. Determine and correct other electrical problems.
	3. Loss of line voltage.	3. Check lines and repair if necessary.
	4. Open overload relays on motor starter in control panel.	4. Allow to cool. Push "RESET" button located in control box.
	5. Burned motor.	5. Determine cause of burn-out. Correct problem. Replace motor. (Contact factory.)

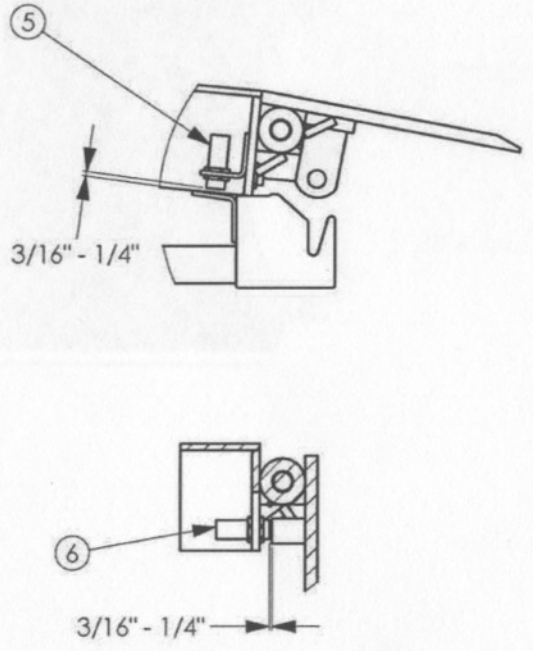
SYMPTOM:	PROBABLE CAUSE:	CORRECTION:
RAMP WILL NOT RAISE FROM STORED POSITION: Motor not running in Below Dock mode when Operate button is pressed.	1. Lip proximity switch out of adjustment.	1. To check proximity adjustment. Place selector switch in Normal mode. Press and hold Operate button until unit is fully raised. Place maintenance strut. Push and release Operate button in short repetitions until lip closes. Refer to Figure G, Proximity sensor gap specification, page 2-4. **Caution: Be sure to maintain clearance between proximity sensor and sensor tab as specified in Figure G. Failure to do so could result in damage to the sensor.**
	2. Lip proximity switch has loose wire.	2. Reconnect wire, if loose. Check junction box under leveler and terminal strip in control box.

**Hydraulic valve adjustments are normal maintenance and are not covered under warranty.*

SYMPTOM:	PROBABLE CAUSE:	CORRECTION:
RAMP WILL NOT RAISE OR LIP WILL NOT EXTEND FULLY: Motor running or humming in normal mode (1 ph motor)	1. Voltage drop, probably due to insufficient line capacity, resulting in blown fuses, tripped circuit breakers or motor hum.	1. Test voltage at motor starter with motor running. Test for amperage drain. (Low voltage/high amperage indicates inadequate feed line for distance of run.) Replace feed line with adequate wire size.
(1 ph motor) (3 ph motor)	2. Wrong rotation. 2. Wrong rotation.	2. See wiring instructions on motor 2. Reverse T1 and T3 at terminal strip. (See Figure H, page 3-4)
(3 ph motor)	3. Motor single-phasing.	3. Check for bad fuse or loss of power in one line due to loose connections or tripped breakers or overloads.
(1 ph or 3 ph motor)	4. Load on ramp.	4. Remove the load. Ramp is not designed to lift more than its own weight.
(1 ph or 3 ph motor)	5. Low fluid.	5. Refill if needed. Check fittings and hoses and tighten if loose.
(1 ph or 3 ph motor)	6. Motor or pump physically damaged.	6. Replace.
RAMP WILL NOT AUTOMATICALLY RETURN FROM BELOW DOCK:	1. Unit is not designed to automatically return when selector is in Below Dock mode.	1. Return switch to Normal position. Unit will now automatically recycle and store at floor level.

SYMPTOM:	PROBABLE CAUSE:	CORRECTION:
RAMP WILL NOT LOWER AFTER BEING FULLY RAISED:	1. Physical obstruction.	1. Check and remove. (Always use maintenance strut for safety.)
	2. Safety stop in hydraulic fittings has locked up.	2. Push and release the Operate button to unlock and allow the unit to descend. If symptom persists, consult factory.
LIP SAGS WHILE UNIT IS DESCENDING TO TRUCK: OR RAMP EXPERIENCES LONG DELAY BEFORE RAISING:	1. Air in hydraulic system.	1. While unit is descending with lip extended, switch selector to Below Dock mode. When unit has reached bottom, push lip down. Now lift and drop the lip four times. Check lip sag by operating in Normal mode. If sag persists, consult factory.
RAMP WILL NOT RETURN AUTOMATICALLY WHEN TRUCK DEPARTS Motor not running, in Normal mode	1. Recycle proximity switch out of adjustment or has loose wire.	1. To store unit: Push and hold the Operate button until the lip closes and deck raises approx. 5" above floor. Release button. Unit will store. To check adjustment, raise unit in Normal mode until lip extends. As unit is descending, switch to Below Dock mode. Unit will fully descend with lip extended. Refer to Figure F, proximity sensor adjustment, page 2-2, or reconnect wire, if loose. **Caution: Be sure to maintain clearance between proximity sensor and sensor tab as specified in Figure F. Failure to do so could result in damage to the sensor.**
Motor humming in Normal mode	2. Timer relay set too low. 3. Insufficient line voltage.	2. Turn dial clockwise and test. 3. See symptom 1 at top of page 4-3. (Motor running or humming in Normal mode.)

ITEM NO.	DESCRIPTION
1	LIP PLATE ASSY, 16"
2	LIP HINGE PIN
3	FULL RANGE TOE GUARDS
4	DECK REAR HINGE KIT
5	PROXIMITY SENSOR, DECK RECYCLE
6	PROXIMITY SENSOR, LIP



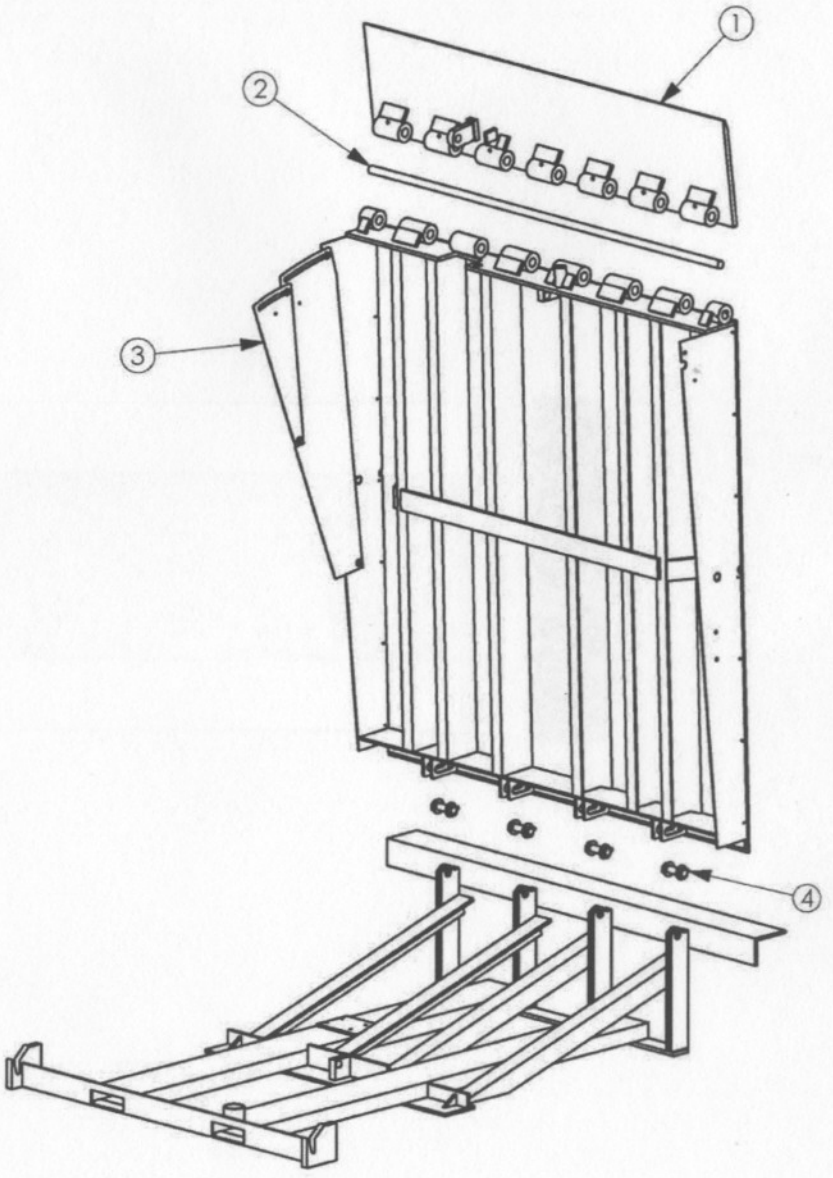
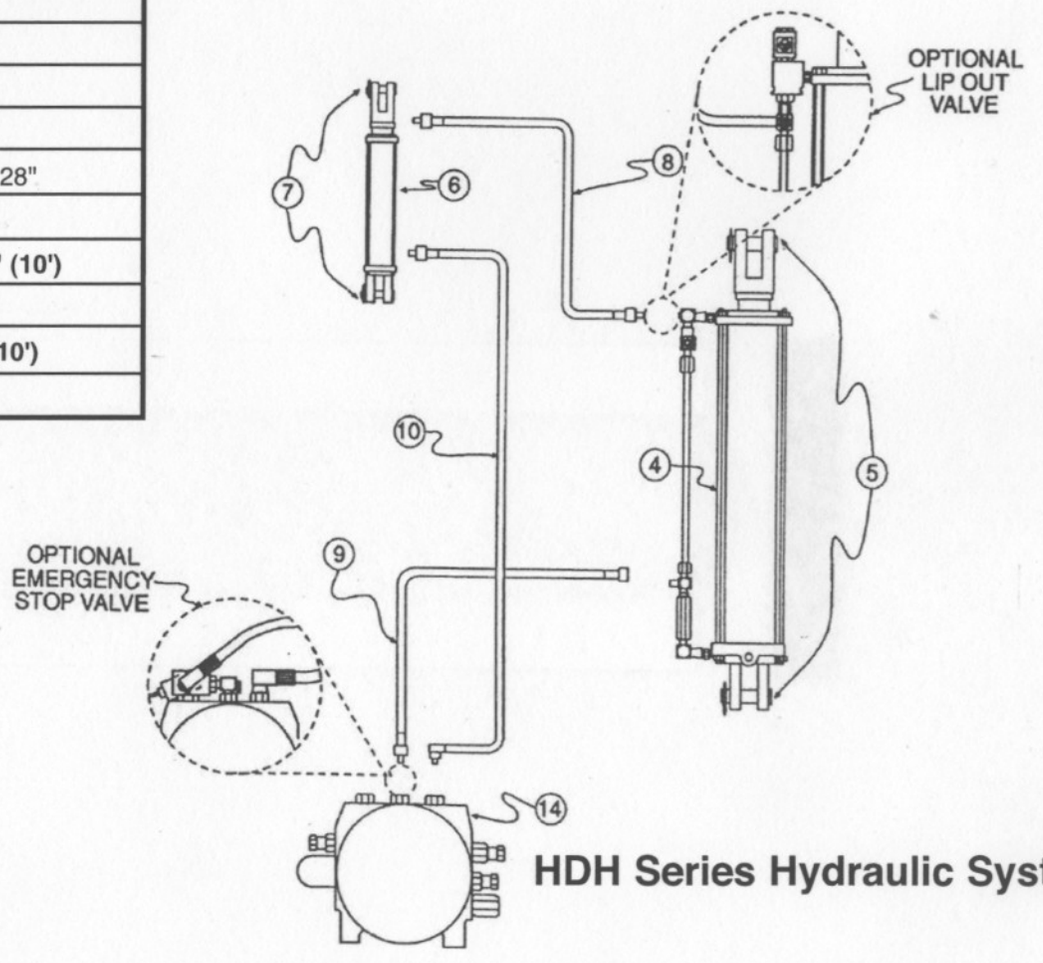


FIGURE I

ITEM	DESCRIPTION
4	Deck Cyl. W. Harness Pins & Clevis Keys
5	Pins & Keys, Deck Cylinder
6	Lip Cylinder W/Pins & Clevis Keys
7	Pins & Keys, Lip Cylinder
8	Hose Assembly, Deck Cylinder to Lip Cylinder 28"
9	Hose Assembly, Pump to Deck Cylinder 31"
	Hose Assembly, Pump to Deck Cylinder 51" (10')
10	Hose Assembly, Pump to Lip Cylinder,43"
	Hose Assembly, Pump to Lip Cylinder 55" (10')
14	Motor & Pump Assembly



HDH Series Hydraulic System

FIGURE J