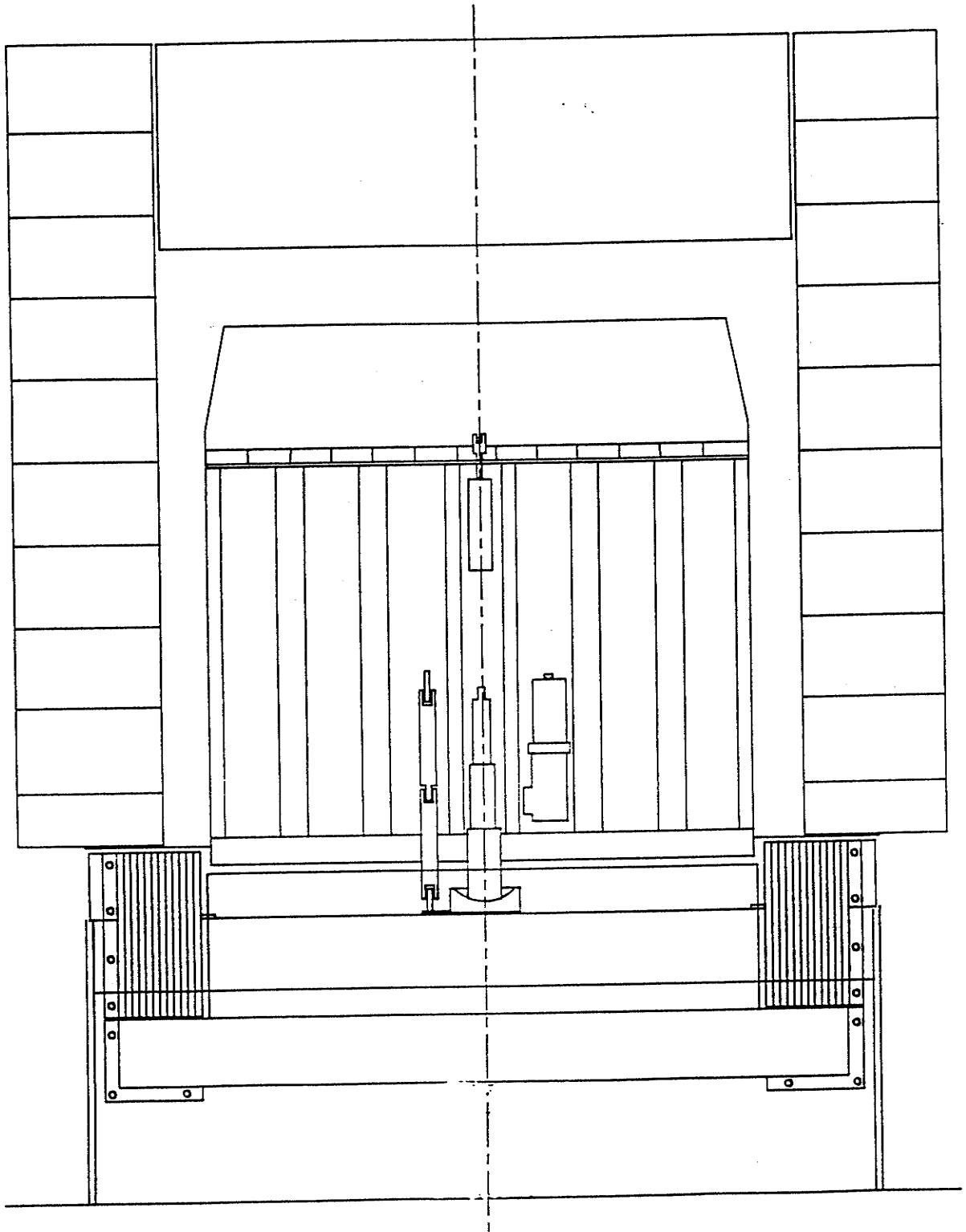


VERTICAL STORING OWNER'S MANUAL



POWERAMP[®]

A DIVISION OF SYSTEMS INC. GERMANTOWN, WI

W194 N11481 McCORMICK DRIVE • P.O. BOX 309 • GERMANTOWN, WI 53022

PHONE 414-255-1510

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INSTALLATION INSTRUCTIONS
for
POWERAMP-VS VERTICAL STORING DOCK LEVELERS

ELECTRICAL REQUIREMENTS

Standard POWERAMP-VS vertical storing dock levelers are designed for use on one of the following power supply systems: 115 volt, single phase; 208-230 volt, single phase; 208-230 volt, three phase; 460 volt, three phase. Optional 575 volt, three phase is available. All standard units are designed for 60 Hertz operation. Optional 50/60 Hertz is available.

Table 1 below identifies the power requirement for your specific installation. Voltage, phase and frequency are also identified on the nameplate of the remote mounted control box. Check to make sure that the requirements as indicated in Table 1 and on the control box nameplate are the correct requirements for your specific installation.

ELECTRICAL CONNECTIONS

Standard POWERAMP-VS vertical storing dock levelers are factory prewired, ready for simple electrical connections from the leveler to the pit outlet box and from field wiring (supplied by others) to the remote mounted control box.

Table 1 below identifies the electrical drawings for your specific installation. These drawings are shipped with the dock leveler.

HYDRAULIC REQUIREMENTS

Standard POWERAMP-VS vertical storing dock levelers are shipped with a full reservoir of oil. Information concerning oil replenishment is detailed in the Maintenance Instructions section of this manual.

HYDRAULIC CONNECTIONS

Standard POWERAMP-VS vertical storing dock levelers are factory preconnected so that no hydraulic connections are required to be made in the field.

Table 1 below identifies the hydraulic drawings for your specific installation. These drawings are shipped with the dock leveler.

TABLE 1

1. Electrical Schematic _____
 _____ Volts _____ Phase
2. Field Wiring Diagram _____
3. Electric Control Box
 Drawing _____
4. Hydraulic Component
 Drawing _____
5. Hydraulic Schematic _____

INSTALLATION PROCEDURE

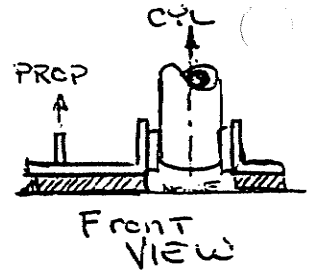
- WARNING -

Have qualified personnel perform installation.

1. Always move vertical storing units (VS) deck side up.
2. Always move vertical storing unit from above deck with chains. Do not fork beneath unit.
3. Remove skid boards and bolts.
4. Position vertical storing unit in pit assuring that deck is level with floor. Pit depth is specified at approximately 10". Deck to rear angle depth is 9-1/4".
5. Place temporary shimming under rear angle (approx 3/4") and weld two outside hinge blocks to 10" curb steel.
6. Place temporary shimming (approx 1/4") under front channel.
7. Remove shipping band.
8. Raise platform.

- NOTE -

Whenever working under unit, place 5/16 bolt x 2-1/4" (min) long in hole provided in locking linkage.



9. Place shimming (approx 3/4") under telescoping hoist cylinder trunnion and storage prop trunnion. Note: Pivoting of the hoist cylinder requires that NO shimming be placed directly under the cylinder.
10. Weld rear hinge blocks to 10" curb steel. Lower platform occasionally to assure deck plate is level with floor.
11. Assure cylinder is perpendicular to platform, which will prevent wearing of cylinder seals and assure smooth operation. Assure trunnion is level. This can be done by removing the hose from the hoist cylinder and pivoting the hoist cylinder in the trunnion plate. Note that as the rod end of the hoist cylinder approaches the dock leveler, it should fall between the trunnion ears on the leveler and not hit them. Should the hoist cylinder not fall between the trunnion ears leveling of the base is required before welding.
12. Weld hoist cylinder trunnion in position. Center line of cylinder to be 12" from rear pit wall.
13. After trunnion is secure, remove 2 bolts holding front channel weldment to hoist cylinder trunnion, remove 2 bolts holding spacer angle weldment to hoist cylinder trunnion, and remove 6 bolts holding rear angle to rear hinge blocks. One rear angle, one front channel weldment, and two spacer weldments should no longer be needed and should be disposed of properly. TORCHING MAY BE NECESSARY in closed pit construction pits.
14. Weld 1/2 x 1/2 platform length bar between floor and platform. Note: Gap to be reduced by 1/2".
15. For hydraulic and electrical hookups, the following drawings are provided:

Electrical Schematic
Electrical Field Wire
Control Box Assembly
Hydraulic Schematic
Hydraulic Component
Hydraulic Field Connections
(Powerhold and Centrapower only)

OPERATING INSTRUCTIONS
for
POWERAMP-VS VERTICAL STORING DOCK LEVELERS
- WARNING -

Do not operate the leveler until the truck is parked squarely against the dock bumpers and truck wheels are securely chocked.

Do not operate the leveler while any personnel or equipment are standing on or in front of the leveler.

Do not drive any equipment on the leveler until all motion has stopped and the lip rests securely on the bed of the truck.

Always make sure that the leveler is in the upright, stored position (securely locked in the storage prop) after loading/unloading operations are complete. Never leave dock unattended unless leveler is securely in the upright stored position.

Never allow untrained personnel to operate leveler.

Should the leveler malfunction, keep all personnel and equipment away from leveler, and call your authorized Poweramp service representative immediately.

DEFINITION OF OPERATING RANGE

The operating range of the dock leveler is determined by the position of the mercury switch in the junction box under the leveler platform. The operating range is defined as approximately 12 inches above dock level to full below dock level. All measurements are made vertically from the leveler deck at the lip hinges to dock (not shelf) level.

ABOVE AND BELOW DOCK OPERATION

1. Set "ON-OFF" toggle switch to "ON" position.
2. If lip is extended, continue with step 3. If lip is not extended, simultaneously depress and hold "RAISE" and "LIP" push buttons until lip is fully extended.

- NOTE -

Suggested store position is with lip extended.

3. Depress and hold "LOWER" push button until leveler is in the operating range or until the lip contacts the bed of the truck. Make sure lip is in full contact with truck bed.

TROUBLESHOOTING GUIDE
for
POWERAMP-VS Vertical Storing Dock Levelers

Refer to appropriate electrical and hydraulic drawings and schematics for location and identification of components and assemblies.

-NOTE-

All of the problems listed below could be caused by zero (0) or low input voltage to the control box or by pinched hydraulic lines. The following procedures should be performed before beginning detailed troubleshooting.

- *Check toggle switch.
- *Check voltage input to control box.
- *Check fuses in control box.
- *Check transformer secondary (three phase applications only).
- *Check hydraulic lines.

Those solutions identified with an asterisk (*) have detailed troubleshooting procedures at the end of the problem-cause-solution list.

<u>PROBLEM</u>	<u>POSSIBLE CAUSE(S)</u>	<u>SOLUTION(S)</u>
Leveler raises very slowly.	-Hydraulic fluid low -Pump by-pass set too low	-Add hydraulic fluid. -Increase by-pass pressure.* See maintenance instructions.
=====		
Leveler locks in position while descending.	-Platform down speed set too fast	-Decrease down speed.*
=====		
LOWER button pressed: Leveler will not lower from upright stored position.	-Mechanical obstruction preventing prop from unlocking -No power to solenoid "C" -No power to solenoid "A" -Solenoid "A" spool stuck closed -Solenoid "B" spool stuck	-Remove obstruction. -Check supply lines for disconnection.* -Check supply lines for disconnection.* -Check spool and hydraulic block for contamination.* -Check spool and hydraulic block for contamination.*

PROBLEM

POSSIBLE CAUSE(S)

SOLUTION(S)

Leveler outside the operating range/
LOWER button pressed:
Leveler will not lower from upright nonstored position.

- No power to solenoid "A"
- Solenoid "A" spool stuck closed
- Solenoid "B" stuck

- Check supply lines for disconnection.*
- Check spool and hydraulic block for contamination.*
- Check spool and hydraulic block for contamination.*

=====

Leveler outside the operating range/
LOWER button released:
Leveler will not stop descending.

- Solenoid "A" has power
- Solenoid "A" spool stuck open

- Check float switch.*
- Check spool and hydraulic block for contamination.*

=====

Leveler inside the operating range/
LOWER button released:
Leveler will stop descending.

- No power to solenoid "A"

- Check float switch.*

=====

Leveler inside the operating range/
RAISE button pressed:
Leveler will not raise.

- Motor does not run
- Solenoid "A" spool stuck open

- Check branch circuit fuses/circuit breaker.
- Check voltage at motor terminals.
- Check overload relay.
- Check spool and hydraulic block for contamination.*

=====

Leveler inside the operating range/
RAISE button pressed then released: Leveler will raise then stop (not lower).

- No power to solenoid "A"

- Check float switch.*

=====

<u>PROBLEM</u>	<u>POSSIBLE CAUSE(S)</u>	<u>SOLUTION(S)</u>
Leveler outside the operating range/ RAISE and LIP buttons pressed: Leveler does not raise.	-Motor does not run -Motor runs in reverse	-Check branch circuit fuses/circuit breaker. -Check voltage at motor terminals. -Check overload relay. -Check motor leads at motor junction box. -Check float switch.* -Check spool and hydraulic block for contamination.*

=====

Leveler outside the operating range/ RAISE and LIP buttons pressed: Lip will not extend	-No power to solenoid "B" -Solenoid "B" spool stuck	-Check float switch.* -Check spool and hydraulic block for contamination.*
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=====

Leveler outside the operating range/ RAISE and LIP buttons pressed: Lip will not lower.	-No power to solenoid "A" -Solenoid "A" spool stuck closed	-Check supply lines for disconnection.* -Check spool and hydraulic block for contamination.*
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=====

Leveler outside the operating range/ LOWER and LIP buttons pressed: Lip will not lower.	-No power to solenoid "B" -Solenoid "B" spool stuck	-Check float switch.* -Check spool and hydraulic block for contamination.*
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=====

Leveler inside the operating range. RAISE and LIP buttons pressed: Lip extends or lowers.	-Solenoid "B" has power	-Check float switch.*
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=====

DETAILED TROUBLESHOOTING PROCEDURES (Solutions Indicated with an *)

1. Increase by-pass pressure.
 - a. Locate the pressure relief valve on the pump.

- b. Remove acorn nut and washer in back of nut.
 - c. Loosen jam nut.
 - d. Use screwdriver to tighten valve one-half (1/2) turn clockwise.
 - e. Tighten jam nut.
 - f. Check speed. If leveler still raises too slowly, repeat above. If leveler raises too rapidly, repeat above but loosen valve by turning counterclockwise.
2. Decrease down-speed.
 - a. Locate the needle valve on the hydraulic block assembly.
 - b. Loosen jam nut.
 - c. Use screwdriver to tighten valve one-half (1/2) turn clockwise.
 - d. Tighten jam nut.
 - e. Check speed. If leveler still descends too fast, repeat above. If leveler descends too slowly, repeat above but loosen valve by turning counterclockwise.
3. Check supply lines for disconnection.
 - a. Locate the appropriate solenoid.
 - b. A solenoid with power will act as a magnet and will attract metal.
4. Check spool and hydraulic block for contamination.
 - a. Locate the appropriate solenoid in the hydraulic block assembly.
 - b. LIGHTLY tap on solenoid with tool.
 - c. Check for normal operation. If problem still exists, continue with step 4d.
 - d. Remove solenoid coil.
 - e. Loosen solenoid spool-do not remove spool from hydraulic block assembly.
 - f. LIGHTLY tighten spool into hydraulic block assembly.
 - g. Place solenoid coil back on spool.
 - h. Check for normal operation. If problem still exists, continue with step 4i.
 - i. Remove solenoid coil.
 - j. Remove solenoid spool from hydraulic block assembly.
 - k. Inspect solenoid spool and hydraulic block for contaminants.
 - l. If contamination found, remove contaminants and place solenoid spool and coil back into the hydraulic block assembly. Check for normal operation. If problem still exists, continue with step 4m.
 - m. Replace solenoid spool.
5. Check float switch.
 - a. Locate the float switch.
 - b. Check to make sure the float switch is not faulty.
 - c. By trial and test method, adjust angle of float switch to obtain normal dock leveler operation: When the leveler is within the operating range (See operating instructions, Definition of Operating Range), the float switch should be closed; when the leveler is outside the operating range, the float switch should be open.

OTHER DRAWINGS FOR REFERENCE

- CONTROL ASSEMBLY DRAWING FOR FACTORY WIRING DETAILS INSIDE ASSEMBLY
- PLATFORM WIRING DIAGRAM FOR FACTORY WIRING DETAILS AT DOCK LEVELER.
- INTERCONNECTION DIAGRAM FOR FIELD CONNECTIONS.
- LADDER DIAGRAM

NOTES:

A. USE THE ELECTRICAL DATA IN THE TABLES BELOW FOR SIZING THE DISCONNECT(S) AND OVERCURRENT DEVICE.

1 PHASE MOTOR NAMEPLATE DATA *			
1-1/2 HP	115 V	17 FLA	CODE J 3450 RPM U48Y FRAME 1.0 SF INT DUTY

* MOTOR LOCATED AT THE DOCK LEVELER

115 V CONTROL CIRCUIT DATA	
MAX STEADY STATE CURRENT =	5.5 AMPS.

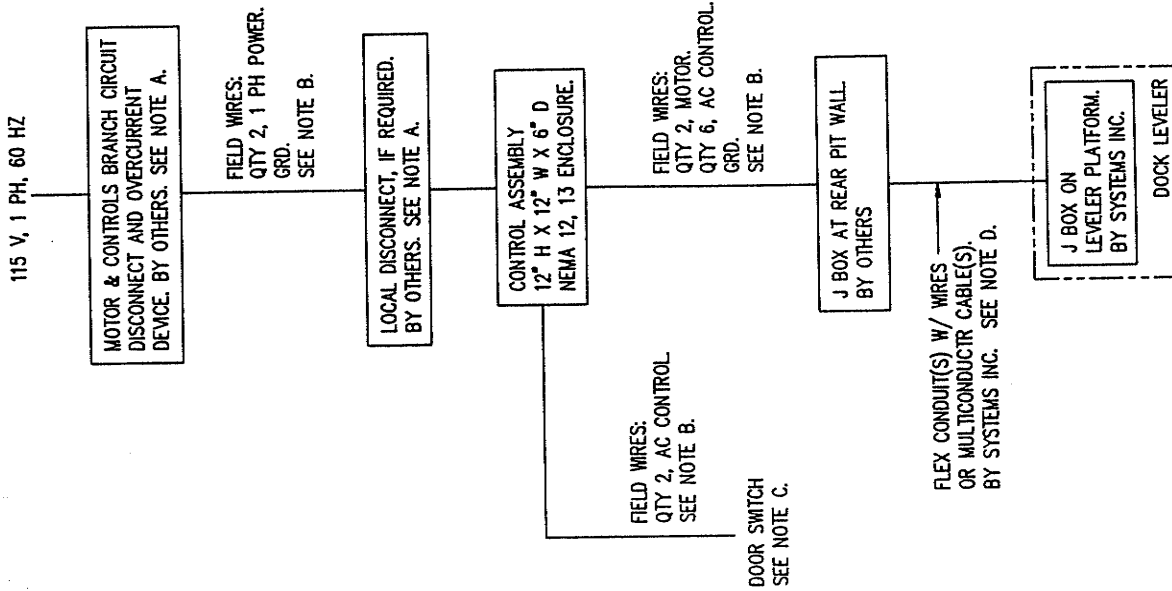
B. RECOMMEND FIELD WIRE SIZES

WIRE CATEGORY	MIN. COPPER WIRE SIZE
1 PH POWER MOTOR	SEE 1 PH POWER TABLE 10 AWG
AC CONTROL	14 AWG

1 PH POWER TABLE. MIN COPPER WIRE SIZE.			
BRANCH CIRCUIT LENGTH			
0 - 25 FT	50 FT	75 FT	100 FT
10 AWG	8 AWG	6 AWG	4 AWG
			4 AWG

C. OVERHEAD DOOR LIMIT SWITCH, IF USED. SWITCH BY OTHERS. SWITCH TO BE WIRED SO THAT THE DOCK LEVELER CAN ONLY OPERATE WHEN THE DOOR IS FULLY RAISED.. SEE INTERCONNECTION DRAWING FOR MORE INFO.

D. 1 OR 2 FLEX CONDUIT(S) W/ WIRES, OR 1 OR 2 MULTICONDUCTOR CABLE(S).



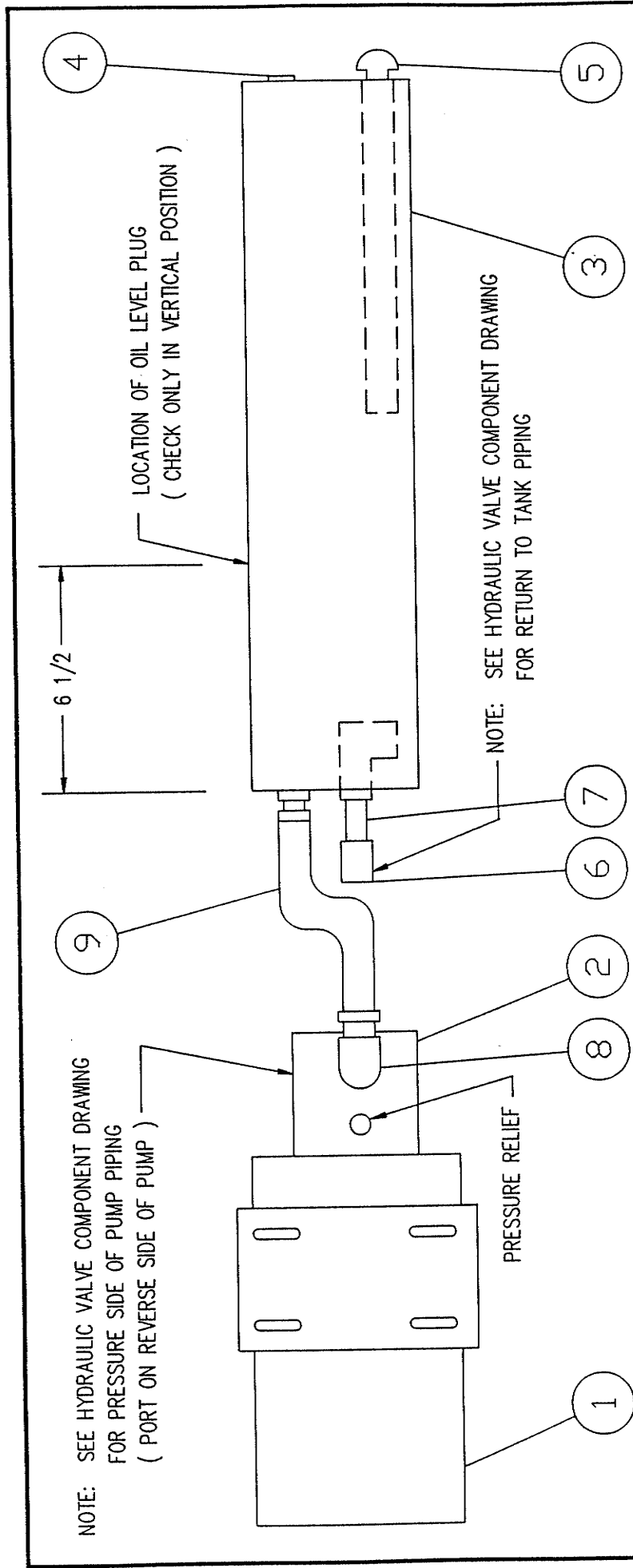
NOTE:
1. ALL WIRES AND CONDUIT, UNLESS OTHERWISE INDICATED, BY OTHERS.
2. ALL ELECTRICAL CONNECTIONS BY OTHERS.

POWERAMP®
DIVISION OF SYSTEMS INC., GERMANTOWN, WI

FIELD WIRING, VERTICAL
DOCK LEVELER W/
DEADMAN, & AUTO PROP.

115 VOLTS | 1 PHASE | 60 HERTZ

DATE 9/13/93 | DRAWING NO. 9-CO-0BD-A-F
DRAWN BY SHW



ITEM	QUAN	PART NO.	PART NAME	DESCRIPTION
1	1	3411-0008	MOTOR	LESSON 1 PH 3450 RPM
2	1	9301-00914	PUMP 1 3/4 GPM	MTE-S205RL-3460
3	1	9304-0004	RESERVOIR WELDMENT - VS	B SIZE
4	2	9571-0005	PLUG	3/8 NPT
5	1	9301-0020	BREATHER CAP	3/8 NPT
6	1	9301-0085	IN-LINE FILTER	ARROW 9053-25
7	1	9301-0074	NIPPLE 2"	3/8 SCH 40 2"
8	1	0521-0017	HOSE ADAPTER	90° 3/8 NPT, JIC
9	1	9904-0037	HOSE ASSEMBLY	9" 3/8NPT/1/2 UN

9304-0006

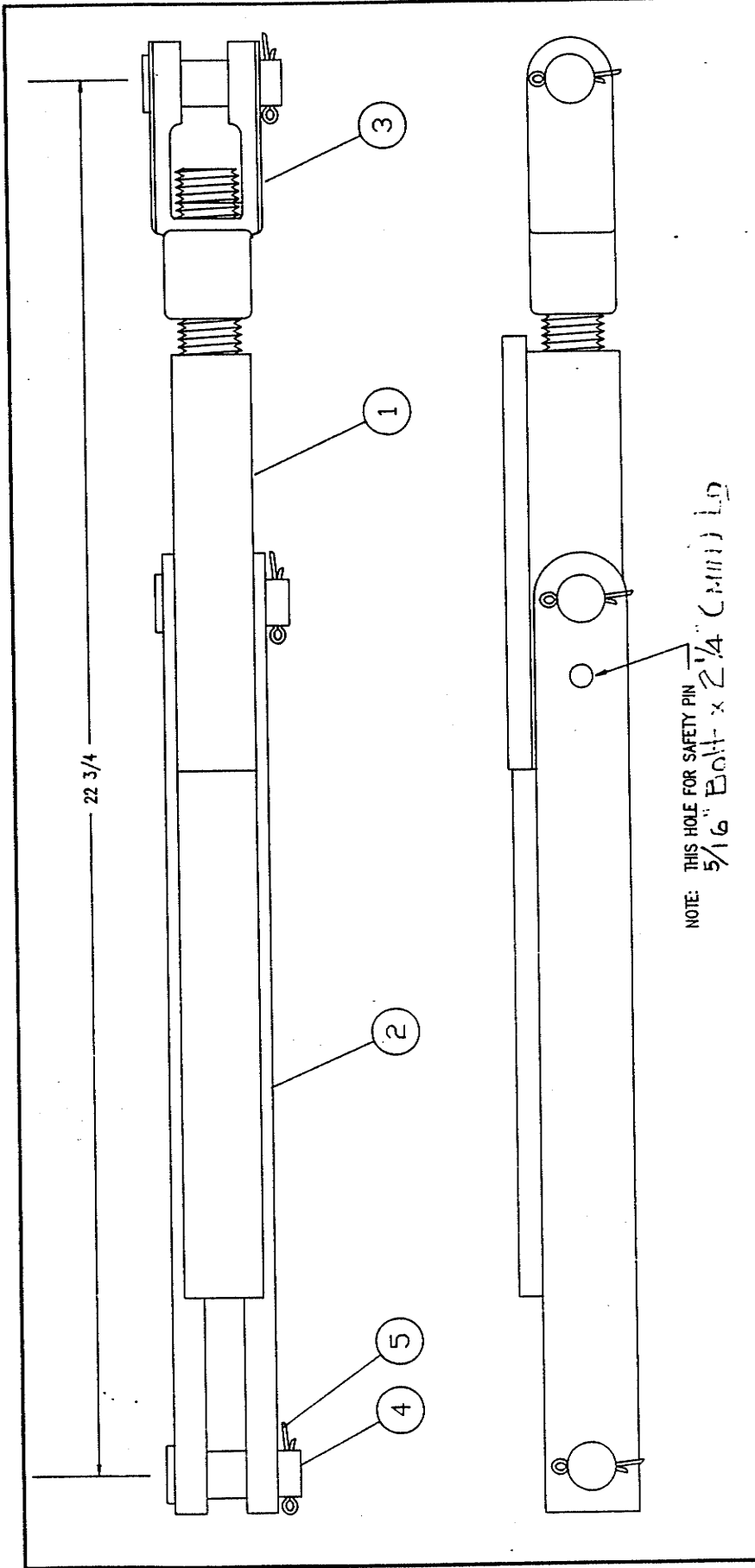
POWERAMP
 DIVISION OF SYSTEMS INC., GERMANTOWN WI

PUMP STATION ASSEMBLY - 1 PHASE
 VERTICAL STORING

MATERIAL _____ DATE MAY 1, 1990

DRN BY RJS
 CHK BY RJS

DWG. NO. 9395-0020
 REV _____



POWERAMP
DIVISION OF SYSTEMS INC., GERMANTOWN VI

STORAGE PROP ASSEMBLY
VERTICAL STORING - ADJUSTABLE

MATERIAL _____ DATE DEC 12, 89

DRN. BY _____ DWG. NO. 9225-0016 REV _____
RHS _____
CHK BY _____

BILL OF MATERIAL

ITEM	QUAN	PART NUMBER	DESCRIPTION	SIZE
1	1	9223-0005	UPPER ARM PROP WELDMENT	B SIZE
2	1	9223-0006	LOWER ARM PROP WELDMENT	B SIZE
3	1	9222-0097	YOKE - UPPER ARM	1 3/8 DIA X 4 1/2
4	3	0522-0005	CLEVIS PIN	3/4 DIA X 2 1/4
5	3	2101-0045	COTTER PIN	1/8 DIA X 1

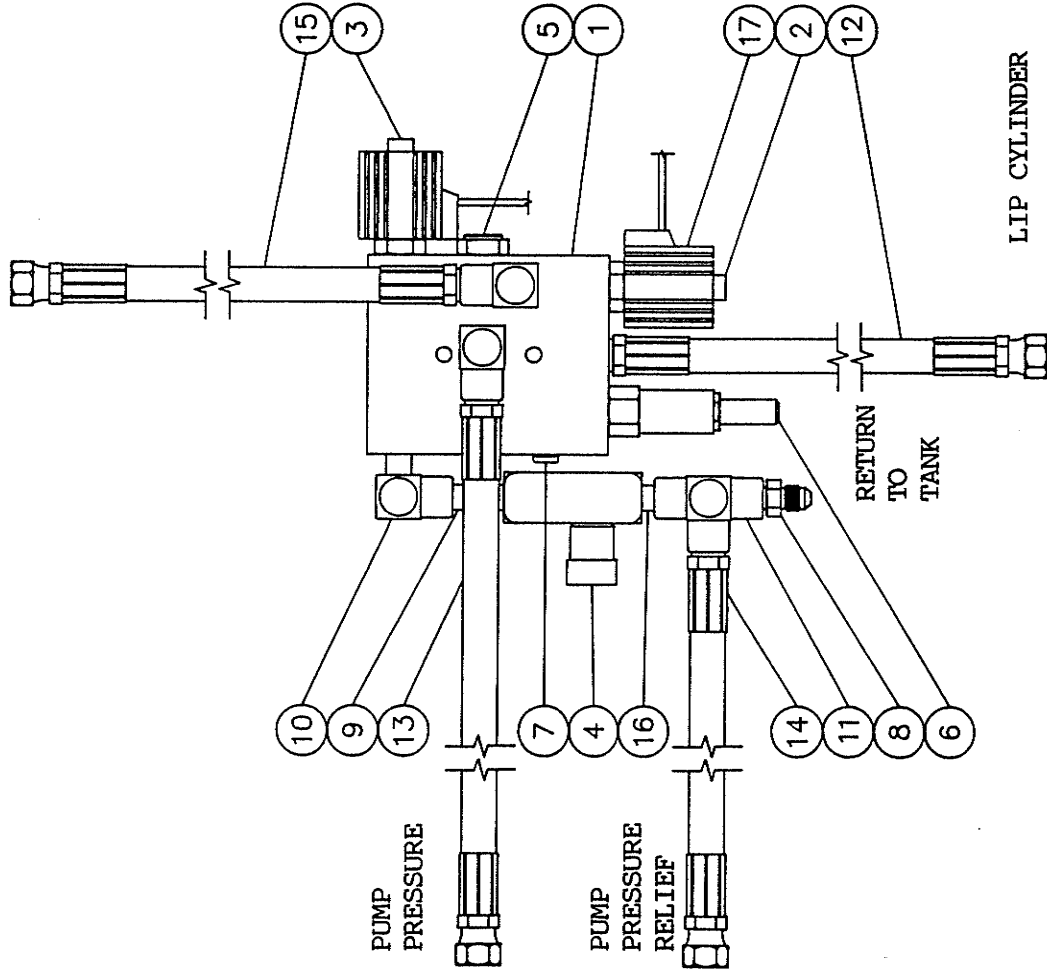
BILL OF MATERIAL

ITEM	QTY	PART NUMBER	DESCRIPTION	SIZE
1	1	8582-0013	HYDRAULIC VALVE BODY - V.S.	B CAD
2	1	8581-0039	3 WAY SPOOL	PARKER DS103
3	1	8583-0041	2 WAY SPOOL N.C. W/CHECK	PARKER DS101C
4	1	8581-0037	FLOW CONTROL VALVE	PARKER F600B
5	1	8581-0037	PRESSURE RELIEF CARTRIDGE	PARKER RD103S16
6	1	8581-0036	CHECK VALVE CARTRIDGE	PARKER CV102P
7	2	9571-0005	PIPE PLUG 3/8	.375 PIPE EDP 18963
8	1	0521-0015	STRAIGHT HOSE ADAPTOR	3/8 NPT TO 1/2 JCM
9	1	0521-0019	PIPE NIPPLE 2" LONG	3/8 NPT
10	3	9301-0007	90° STREET ELBOW	3/8 NPTM TO 3/8 NPTF
11	1	9301-0071	HYDRAULIC TEE	3/8 NPTF
12	1	9904-0014	HOSE ASSEMBLY 35"	3/8 100R1 3/8 NPT TO 1/2 JCF SWIVEL
13	1	9904-0026	HOSE ASSEMBLY 24"	3/8 100R1 3/8 NPT TO 1/2 JCF SWIVEL
14	1	9904-0038	HOSE ASSEMBLY 14"	3/8 100R1 3/8 NPT TO 1/2 JCF SWIVEL
15	1	9904-0003	HOSE ASSEMBLY 28"	3/8 100R1 3/8 NPT TO 1/2 JCF SWIVEL
16	1	9301-0073	PIPE NIPPLE 1"	3/8 NPT
17	1	8581-0085	COIL W/SHRINK TUBE	PARKER/WATERMAN 24' LEADS

NOTE: ITME

NOTE: ITEM 4 IS USED TO SET SPEED WHILE PLATFORM IS LOWERING

HOIST CYLINDER



LIP CYLINDER

POWERAMP®
DIVISION OF SYSTEMS INC., GERMANTOWN, WI

VALVE ASSEMBLY - V.S.
6 X 5 W/DEADMAN

MATERIAL DRAWN BY L.T.K.
ALL TOLERANCES UNLESS SPECIFIED ARE TO BE FRACTIONAL = ±1/32
00 = ±.01
.000 = ±.005
ANGULAR = ±1'

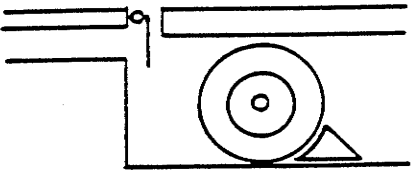
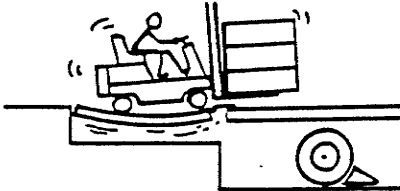

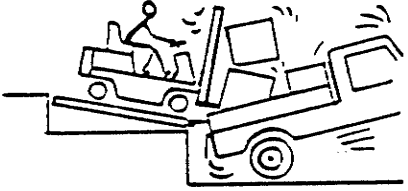
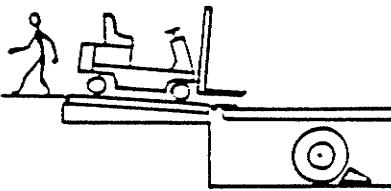
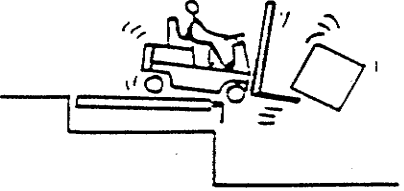
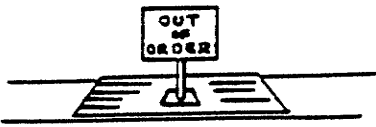
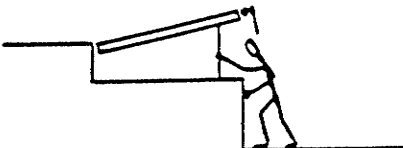
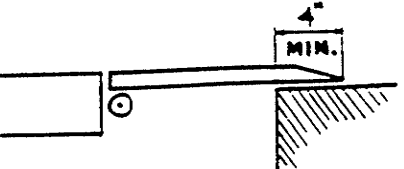
DATE 10/08/93 CHK'D

DRAWING NO.

8585-0072

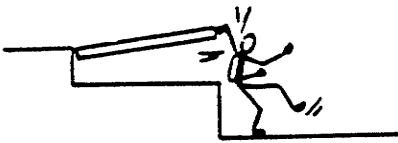
DOCK LEVELER SAFETY PRACTICES

This equipment is designed for industrial use by trained and reasonably prudent workers. Operation or maintenance by untrained persons can lead to unsafe conditions. Therefore, any persons working with or on this equipment should read and understand the OWNER'S MANUAL sections on Operation, Maintenance and Safety.

<p>1 CHOCK</p>  <p>Wheels of truck/trailer must be chocked before any loading or unloading operations begin and chocks must not be removed until operations are complete. This is so important that it is an OSHA requirement.</p>	<p>2 NEVER</p>  <p>A dock leveler should never be used in excess of its stated capacity rating or operating range which is 12" above and 12" below dock level unless otherwise specified.</p>	<p>3 TOO LOW</p>  <p>If truck is too low to be within the leveler's operating range, do not use makeshift devices to raise truck high enough to be serviced by the leveler.</p>
<p>4 WRONG</p>  <p>Never attempt to use a dock leveler on over-the-road equipment not designed for fork truck loading (i.e.) pick-up or city delivery vehicles, vans, etc.</p>	<p>5 NO PARKING</p>  <p>Do not leave fork trucks, equipment or loads parked on the dock leveler. Inadvertent departure of carrier could remove support from lip end of leveler.</p>	<p>6 STOP</p>  <p>POWERAMP dock levelers are equipped with a hydraulic safety stop designed to halt the descent within two (2) inches of travel; however, if separation is at or below dock level, resulting downgrade might allow the load to slide off the end of the leveler.</p>
<p>7 DON'T USE</p>  <p>If this unit experiences such a loss of support or is otherwise structurally damaged, it should be removed from service until it has been inspected (and repaired, if necessary) by the manufacturer's authorized representative or by a competent engineer.</p>	<p>8 CHECK</p>  <p>Periodic inspection of this equipment should be performed to insure that there are no broken or worn parts which could cause injury to personnel or damage to equipment.</p>	<p>9 OVERLAP</p>  <p>Always be sure that lip overlaps onto the trailer by a minimum of four (4) inches.</p>

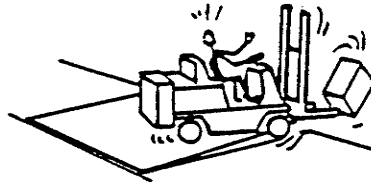
DOCK LEVELER SAFETY PRACTICES

10 CAUTION



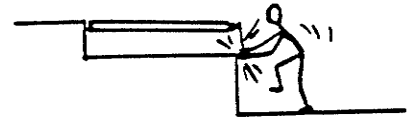
Never raise or lower a dock leveler when a person is standing in front of it or is under it.

11 SIDES



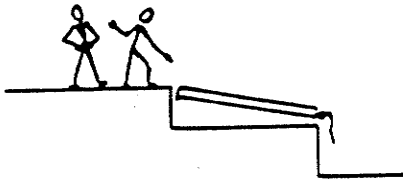
Use caution when operating a fork truck near side edges of leveler because a fall of even a few inches can cause injury.

12 NO HANDS



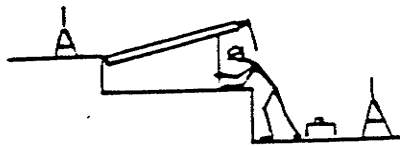
Never use your hands to lift the lip into place. Keep fingers clear of hinge lines and pinch points.

13 BROKEN



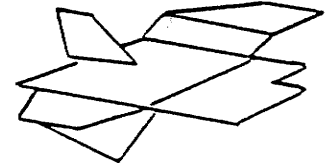
Never use a broken or damaged dock leveler. If equipment is not operating correctly, tell your supervisor.

14 WORKING



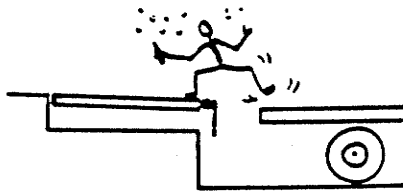
While work on leveler is being performed, always barricade it to any form of traffic, lock out electrical disconnects and use maintenance prop.

15 CHANGES



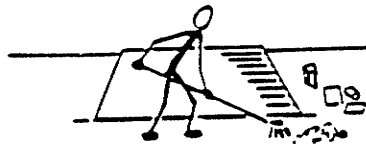
Do not modify or alter any dock leveler without written authorization from the manufacturer.

16 INFLUENCE



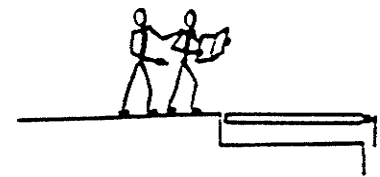
Do not operate equipment while under the influence of drugs, alcohol or any medication.

17 CLEAN



Keep area clear of clutter and spills which invite accidents.

18 LEARN



If you are not thoroughly familiar with the operation of dock levelers, obtain advice from your supervisor or other qualified person. Also, see the American National Standards Institute standard No. ANSI MH14.1-1984 "Loading Dock Levelers and Dockboards" for other safety requirements.

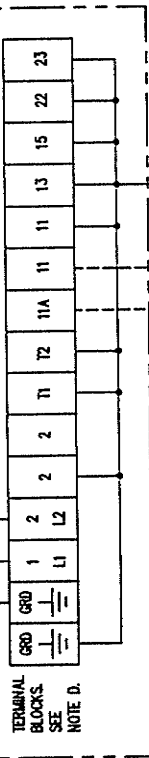
115 V, 1 PH, 60 HZ

MOTOR & CONTROLS BRANCH CIRCUIT
DISCONNECT AND OVERCURRENT
DEVICE BY OTHERS. SEE NOTE C.

FIELD WIRES:
L1, L2 (1 PH POWER),
GRD.
SEE NOTE A.

LOCAL DISCONNECT, IF REQUIRED,
BY OTHERS. SEE NOTE C.

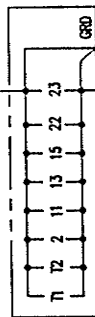
CONTROL ASSY - ONLY
COMPONENTS REQUIRING
FIELD CONNECTIONS ARE
SHOWN.



DOOR SWITCH
SEE NOTE B.

FIELD WIRES:
T1, T2 (MOTOR),
2, 11, 13, 15, 22, 23 (AC CONTROL),
GRD.

J BOX AT REAR PIT
WALL BY OTHERS.



FLEX CONDUIT(S) W/ WIRES
OR MULTICONDUCTOR CABLE(S).
BY SYSTEMS INC. SEE NOTE E.

DOCK LEVEL

J BOX ON LEVELER
PLATFORM BY SYSTEMS
INC.

NOTES:

- A. L1 = WIRE NO. 1 = 115 VAC UNGROUNDED CONDUCTOR
L2 = WIRE NO. 2 = 115 VAC GROUNDED CONDUCTOR
GRD = GROUNDING CONDUCTOR.
- B. OVERHEAD DOOR SWITCH, IF USED, SWITCH BY OTHERS. SWITCH TO BE WIRED SO THAT THE DOCK LEVELER CAN ONLY OPERATE WHEN THE DOOR IS FULLY RAISED. SWITCH CONTACT SHOULD BE CLOSED ONLY WHEN THE DOOR IS FULLY RAISED.
- C. SWITCH USED REMOVE YELLOW WIRE JUMPER AT TERMINAL BLOCKS T1A & T1 INSIDE THE CONTROL ASSY (JUMPER NOT SHOWN ON DRAWING) & ATTACH SWITCH WIRES TO BLOCK T1A & T1. FOR SIZING THE DISCONNECT(S) & OVERCURRENT DEVICE.
- D. BOTTOM OF TERMINAL BLOCKS TO BE USED FOR FIELD CONNECTIONS. TOP CONNECTIONS SHOWN FOR CLARITY.
- E. 1 OR 2 FLEX CONDUIT(S) W/ WIRES, OR 1 OR 2 MULTICONDUCTOR CABLE(S).

NOTE:

- 1. SEE THE FIELD WIRING DRAWING FOR RECOMMENDED WIRE SIZES.
- 2. ALL WIRES AND CONDUIT, UNLESS OTHERWISE INDICATED, BY OTHERS.
- 3. ALL ELECTRICAL CONNECTIONS BY OTHERS.

POWERRAMP®

DIVISION OF SYSTEMS INC., GERMANTOWN, WI

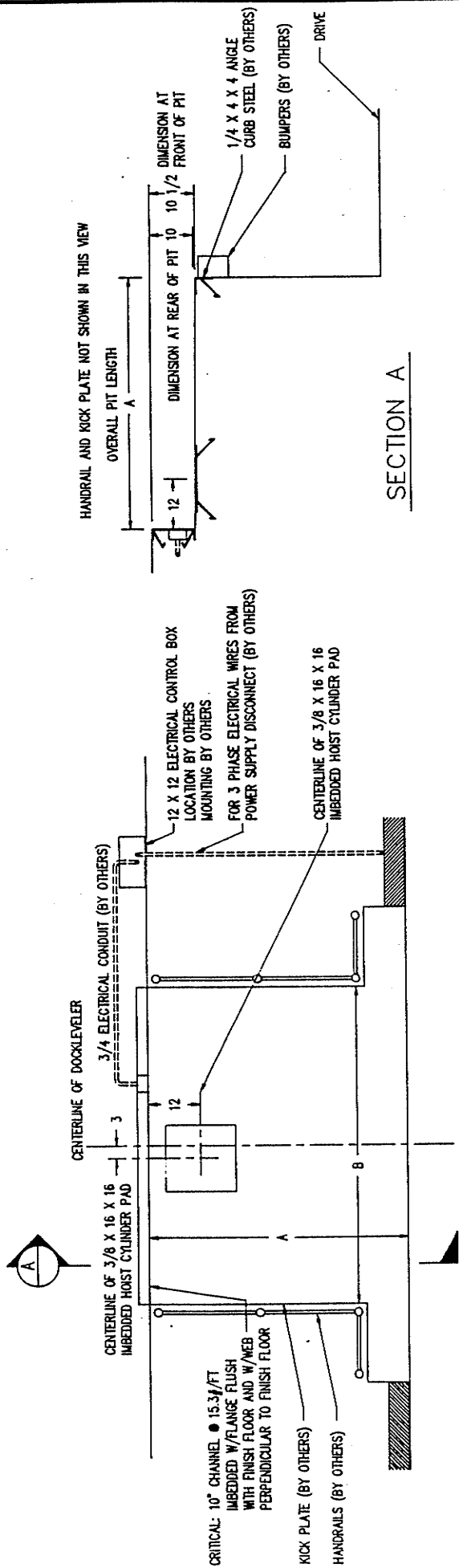
INTERCONNECTION WIRING.
VERTICAL DOCK LEVELER W/
DEADMAN, & AUTO-PROP.

115 VOLTS | 1 PHASE | 60 HERTZ

DATE 9/13/93 | DRAWING NO.

DRAWN BY SHW

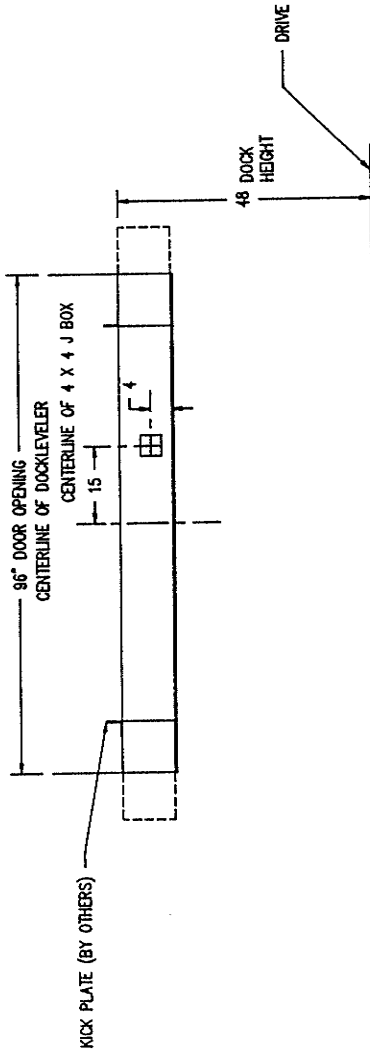
9-CO-0BD-A-C



SECTION A

BOARD	DIMENSION
5" LONG	A = 54 1/2"
6" LONG	A = 60 1/2"
6" WIDE	B = 76"
6 1/2" WIDE	B = 82"
7" WIDE	B = 86 1/2"

PLAN VIEW



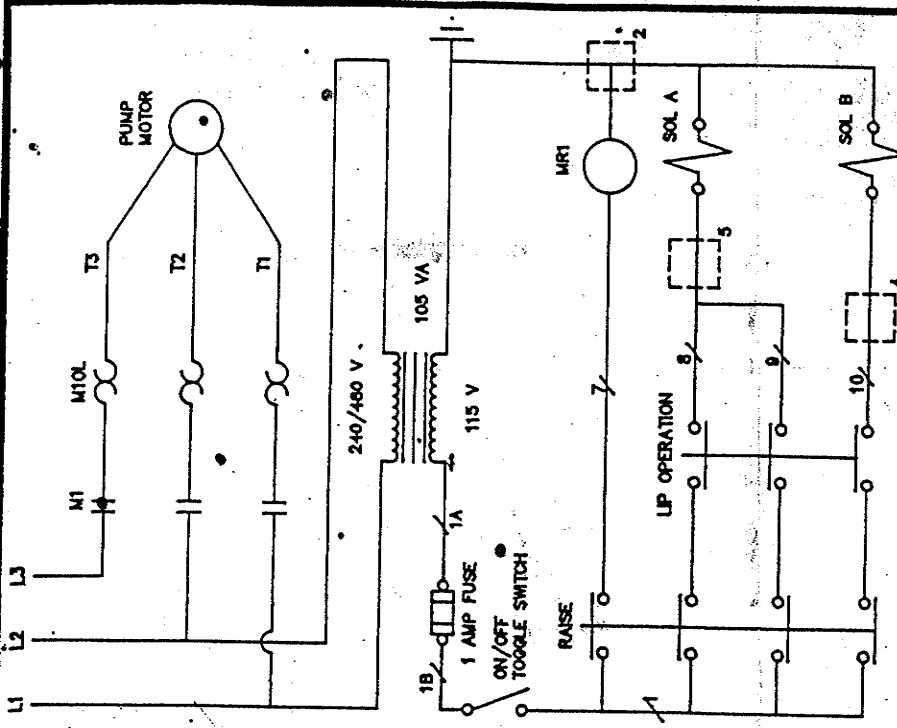
FRONT VIEW

- NOTE:
- HANDRAILS AND KICKBOARD BY OTHERS TO PROVIDE ALTERNATE TOE GUARD PROTECTION AS REQUIRED BY ANSI STANDARD MH 14.1
 - CURB ANGLE RECOMMENDED ON ALL HORIZONTAL AND VERTICAL EDGES

POWERAMP®
DIVISION OF SYSTEMS INC., GERMANTOWN WI

PIT CONSTRUCTION VERTICAL STORING

MATERIAL	DATE 7/24/91	REV
DRN BY	DWG. NO.	VSPIT
GSD		
CHK BY		



POWER 480 VOLTS 3 PH 60HZ

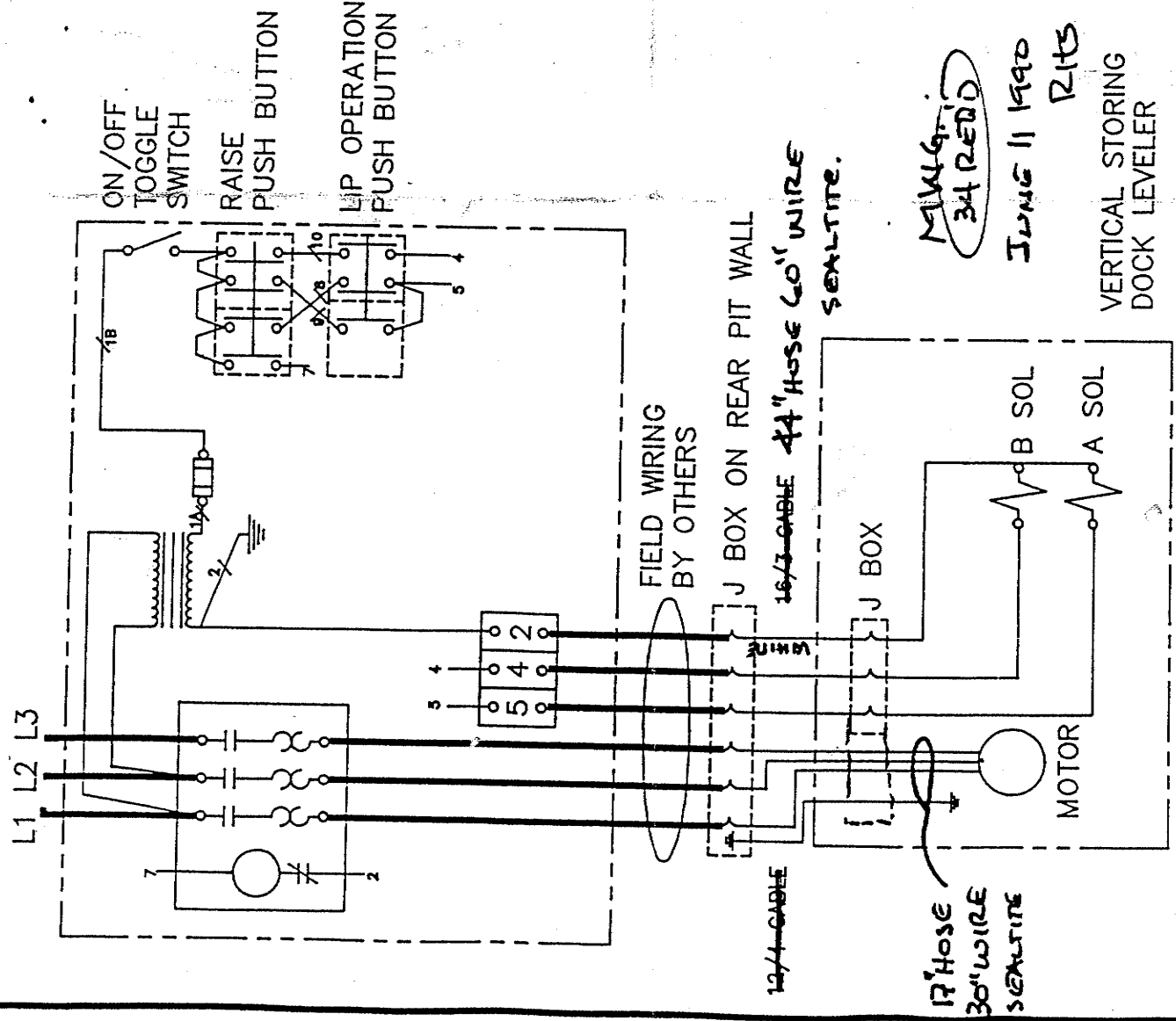
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DIVISION OF SYSTEMS INC., GERMANTOWN WI

ELECTRICAL DIAGRAM 480V 3 Ø
VERTICAL STORING

ORDER NO. 19693 DATE 12-18-89

MOD	DWG. NO.	REV
	VS480	

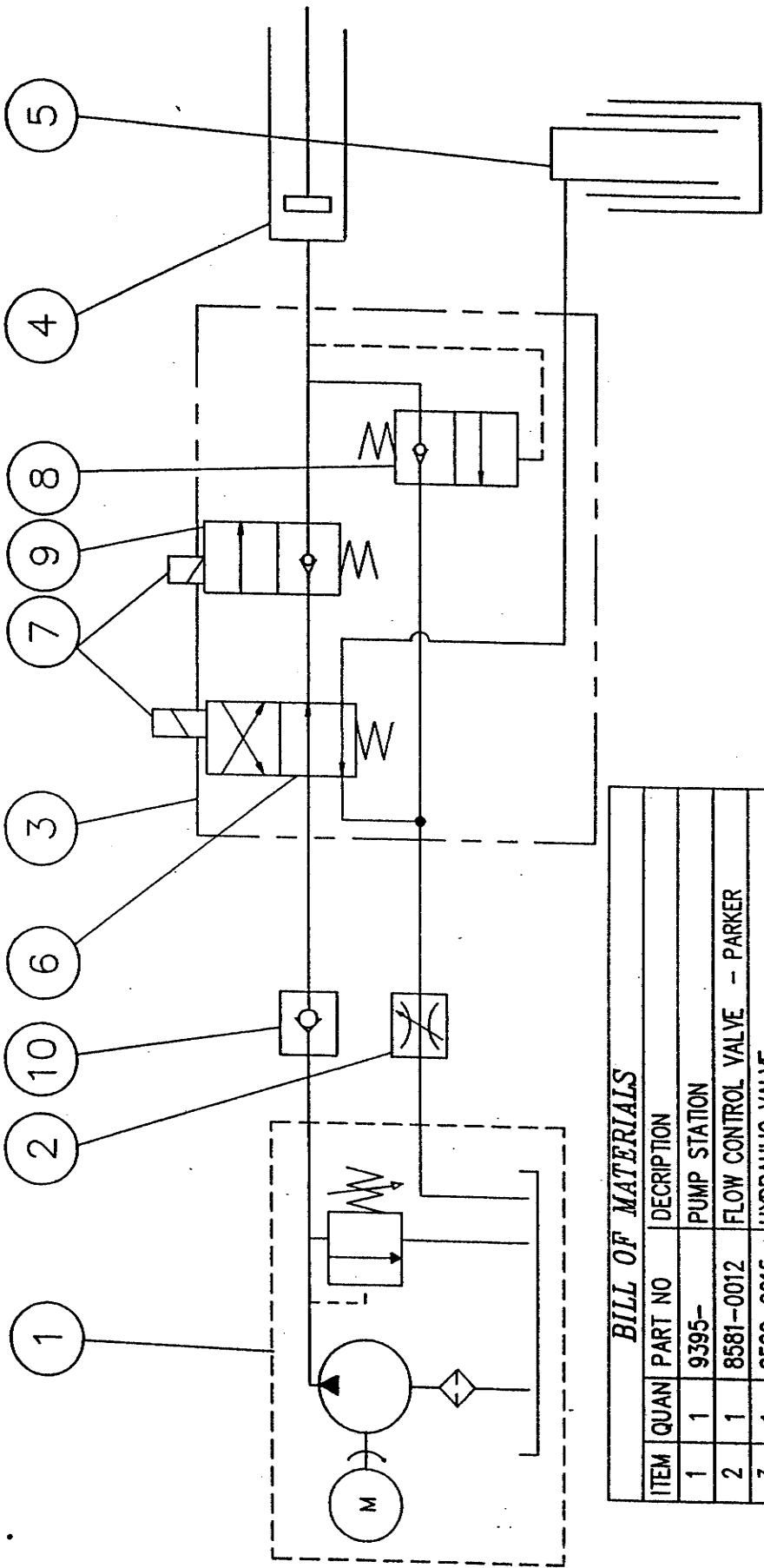


MALG...
34 REDD

JUNE 11 1990
RHS

VERTICAL STORING
DOCK LEVELER

OWNER	LOC.	DIST.
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BILL OF MATERIALS

ITEM	QUAN	PART NO	DESCRIPTION
1	1	9395-	PUMP STATION
2	1	8581-0012	FLOW CONTROL VALVE - PARKER
3	1	8582-0015	HYDRAULIC VALVE
4	1	0525-0038	LIP CYLINDER
5	1	0525-0035	TELESCOPING CYLINDER
6	1	8581-0042	4 WAY SPOOL - PARKER (A)
7	2	8583-0011	SOLENOID COIL ASSY. - PARKER
8	1	8581-0037	PRESSURE RELIEF CARTRIDGE - PARKER
9	1	8581-0041	2 WAY SPOOL NC - PARKER (B)
10	1	8581-0013	CHECK VALVE - PARKER

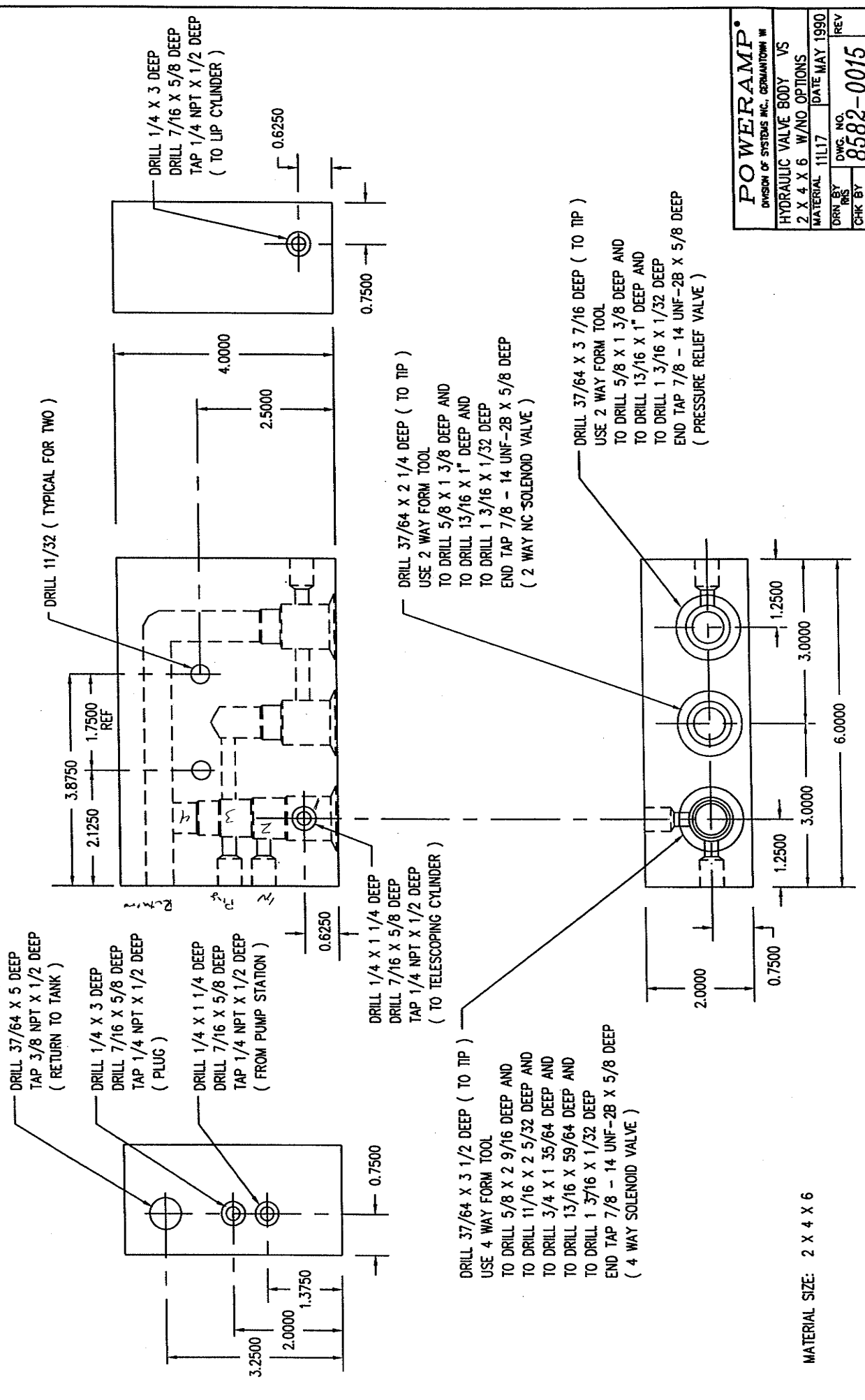
POWERAMP
 DIVISION OF SYSTEMS INC., GERMANTOWN, MD

HYDRAULIC SCHEMATIC
 VERTICAL STORING

MATERIAL _____ DATE 6-25-90
 DRN BY RHS _____
 CHK BY _____

DWG. NO. **HSP-VS**
 REV _____

Ball check in 2nd stage



DRILL 37/64 X 5 DEEP
TAP 3/8 NPT X 1/2 DEEP
(RETURN TO TANK)

DRILL 1/4 X 3 DEEP
DRILL 7/16 X 5/8 DEEP
TAP 1/4 NPT X 1/2 DEEP
(PLUG)

DRILL 1/4 X 1 1/4 DEEP
DRILL 7/16 X 5/8 DEEP
TAP 1/4 NPT X 1/2 DEEP
(FROM PUMP STATION)

DRILL 1/4 X 1 1/4 DEEP
DRILL 7/16 X 5/8 DEEP
TAP 1/4 NPT X 1/2 DEEP
(TO TELESCOPING CYLINDER)

DRILL 37/64 X 3 1/2 DEEP (TO TIP)
USE 4 WAY FORM TOOL
TO DRILL 5/8 X 2 9/16 DEEP AND
TO DRILL 11/16 X 2 5/32 DEEP AND
TO DRILL 3/4 X 1 35/64 DEEP AND
TO DRILL 13/16 X 59/64 DEEP AND
TO DRILL 1 37/16 X 1/32 DEEP
END TAP 7/8 - 14 UNF-28 X 5/8 DEEP
(4 WAY SOLENOID VALVE)

DRILL 37/64 X 2 1/4 DEEP (TO TIP)
USE 2 WAY FORM TOOL
TO DRILL 5/8 X 1 3/8 DEEP AND
TO DRILL 13/16 X 1" DEEP AND
TO DRILL 1 3/16 X 1/32 DEEP
END TAP 7/8 - 14 UNF-28 X 5/8 DEEP
(2 WAY NC SOLENOID VALVE)

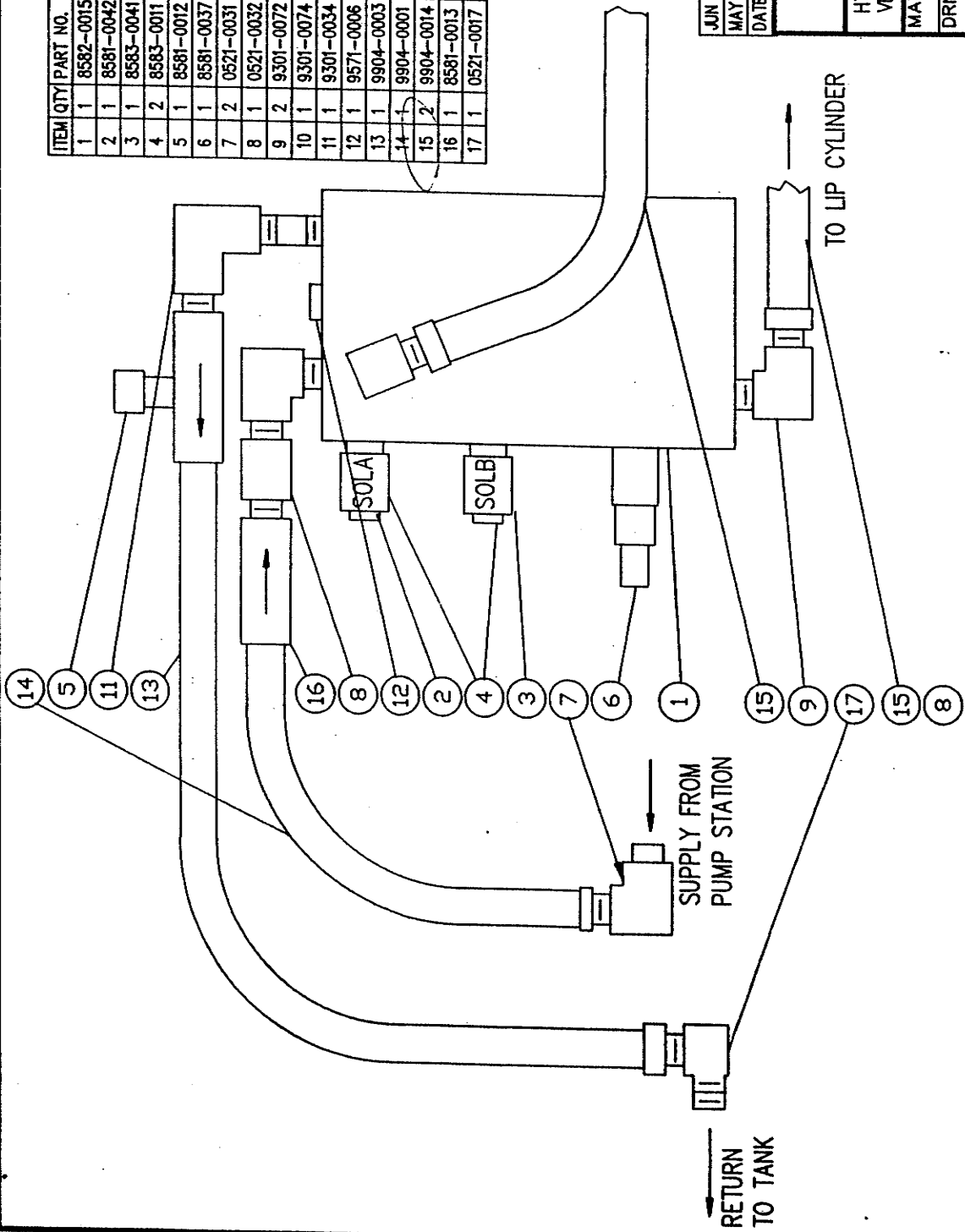
DRILL 37/64 X 3 7/16 DEEP (TO TIP)
USE 2 WAY FORM TOOL
TO DRILL 5/8 X 1 3/8 DEEP AND
TO DRILL 13/16 X 1" DEEP AND
TO DRILL 1 3/16 X 1/32 DEEP
END TAP 7/8 - 14 UNF-28 X 5/8 DEEP
(PRESSURE RELIEF VALVE)

DRILL 11/32 (TYPICAL FOR TWO)

POWERAMP	
DIVISION OF SYSTEMS INC. GERMANTOWN WI	
HYDRAULIC VALVE BODY VS	
2 X 4 X 6 W/NO OPTIONS	
MATERIAL 11L17	DATE MAY 1990
DRN BY MBS	DWG. NO. 8582-0015
CHK BY	REV

MATERIAL SIZE: 2 X 4 X 6

ITEM QTY	PART NO.	DESCRIPTION
1	8582-0015	HYDRAULIC VALVE BODY
2	8581-0042	4 WAY SPOOL
3	8583-0041	2 WAY SPOOL NC W/CHECK
4	8583-0011	SOLENOID COIL ASSY.
5	8581-0012	FLOW CONTROL VALVE F 600B
6	8581-0037	PRESSURE RELIEF CARTRIDGE
7	0521-0031	HOSE ADAPTER 90° 1/4 NPT 1/2 JIC
8	0521-0032	HOSE ADAPTER ST SWIVEL 3/8 NPT 1/2 JIC
9	9301-0072	ST ELBOW 90° 1/4 NPTM 3/8 NPTF
10	9301-0074	NIPPLE 3/8 NPT X 2"
11	9301-0034	ST ELBOW 90° 3/8 NPT
12	9571-0006	PLUG 1/8 NPT
13	9904-0003	HOSE ASSY 3/8 NPT 1/2 JIC X 28
14	9904-0001	HOSE ASSY 3/8 NPT 1/2 JIC X 16
15	9904-0014	HOSE ASSY 3/8 NPT 1/2 JIC X 35
16	8581-0013	CHECK VALVE C600B PARKER
17	0521-0017	HOSE ADAPTOR 90° 3/8 NPT 1/2 JIC



JUN 90	MRJ	90° ST ELBOW/CH. TO ACAD
MAY 90	RHS	ITEM 5 WAS 8581-0014 NEEDLE
DATE	BY	REVISIONS
POWERAMP		
DIVISION OF SYSTEMS INC., GERMANTOWN WI		
HYDRAULIC VALVE ASSEMBLY		
VERTICAL STORING		
MATERIAL	DATE	6-7-90
DRN BY	DWG. NO.	REV
RHS	8585-0026	
CHK BY		

