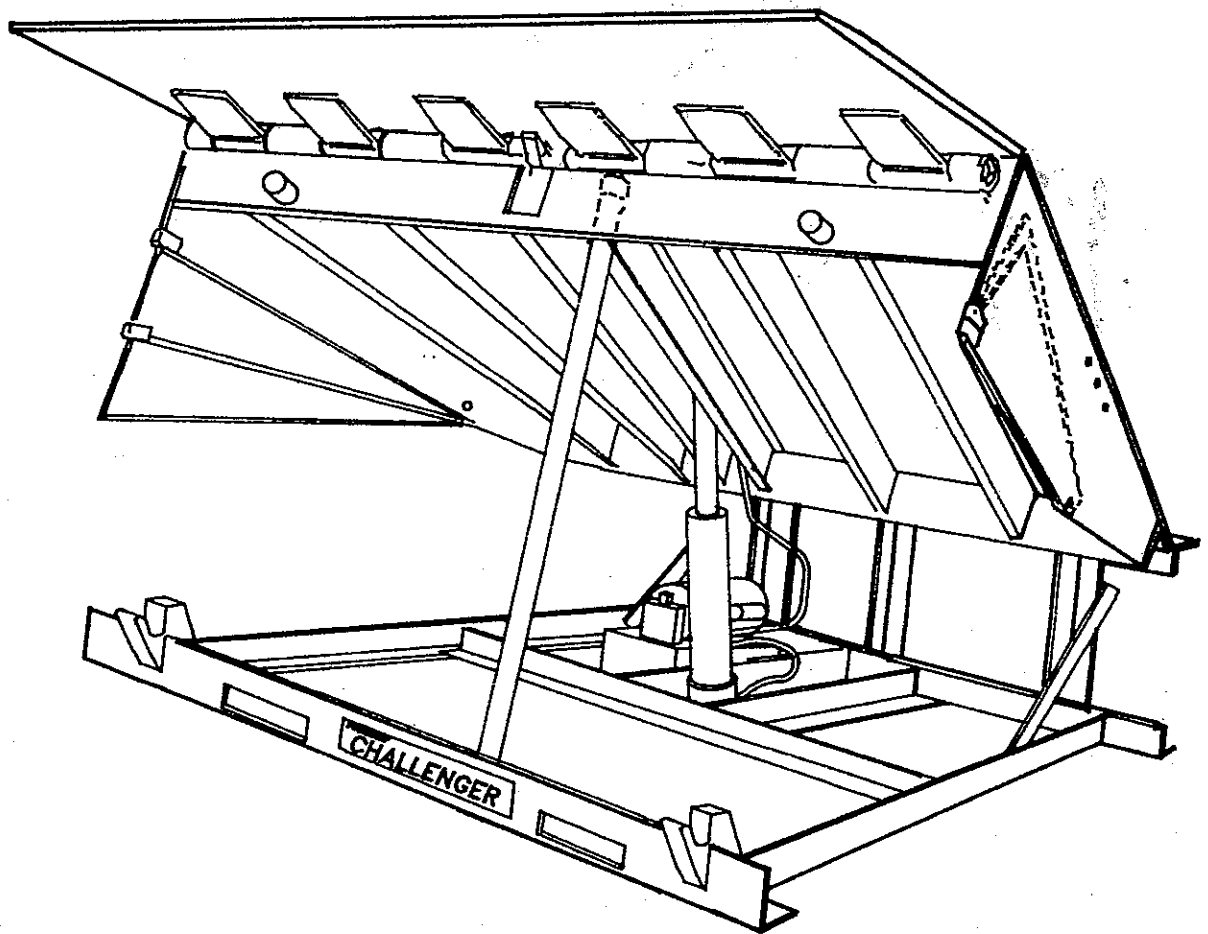


POWERAMP[®]

CHALLENGER SERIES HYDRAULIC DOCK LEVELER OWNER'S MANUAL



POWERAMP[®]

W194 N11481 McCormick Dr.
P.O. Box 309
Germantown, Wisconsin 53022
(414) 255-1510
FAX (414) 255-4199
Manufacturing facilities in the Netherlands
with sales offices throughout Europe.
#123192

CHALLENGER

CONGRATULATIONS ON YOUR CHOICE OF POWERAMP, DOCK LEVELER

Your manual covers the standard Challenger Series Hydraulic Dock Leveler.

Designed by Poweramp to be a marvel of simplicity and efficiency, your dock leveler, when properly installed (see Pages 3-4) should provide many years of trouble-free performance with an absolute minimum of maintenance. Its revolutionary electro-hydraulic system efficiently controls and operates every function. To obtain maximum performance and longest possible use, a simple program of preventative maintenance is recommended. (See Page 7).

INDEX

CHALLENGER SERIES	
HYDRAULIC DOCK LEVELER	
LIMITED WARRANTY	2
OPERATING INSTRUCTIONS	3 - 4
SAFETY PRACTICES	5 - 6
PREPARING FOR DOCK LEVELER	7
PREVENTIVE MAINTENANCE	7
TROUBLESHOOTING	
ELECTRICAL	9
HYDRAULIC	10

LIMITED WARRANTY

Systems Inc. Guarantees the materials, components and workmanship in your Challenger dock leveler to be of the best quality and to be free from defects in material and workmanship for a period of five (5) years from date of shipment. Any defective material, components or parts will be exchanged at our factory with replacement parts, shipped to you prepaid, if found to be defective from other than improper installation, operating contrary to instructions or beyond rated load capacity, abuse, careless or negligent use, or failure to maintain the unit as recommended by company maintenance schedules and guides.

In addition, components below are guaranteed as follows: On Challenger for five (5) years from date of installation.

- A. The Fluid Logic control assembly.
- B. All hydraulic cylinders and pressure lines.
- C. The Powerpack.

Your dock leveler is designed to operate normally in an ambient temperature range of -30°F to +125°F (-35°C to +52°C).

There are no warranties, either express or implied, including any implied warranties or merchantability or fitness for a particular purpose which shall extend beyond the warranty periods above indicated. No responsibility is assumed for any incidental or consequential damages except for those allowed under existing state law. This limited warranty is valid only if unit is unaltered or unmodified from its original condition as installed or as delivered at or from the factory.

The company reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used herein.



The important safeguards and instructions appearing in this manual are not meant to cover all possible conditions and situations that may occur. It must be understood that common sense, caution and carefulness are factors which cannot be built into this, or any other, product. These factors must be supplied by the person/s caring for and operating the unit.



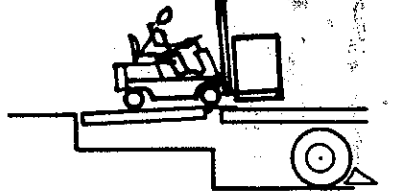
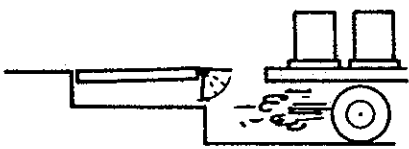
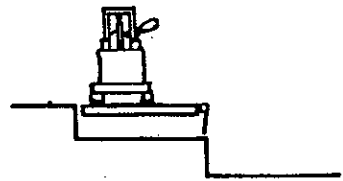
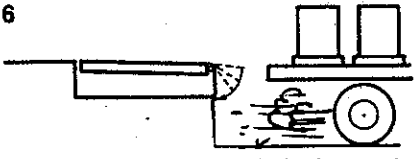
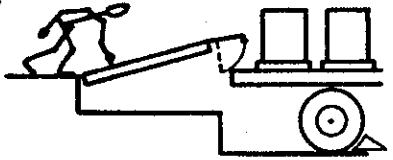
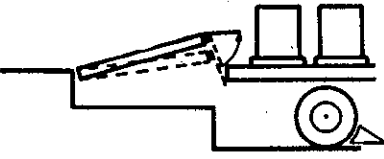

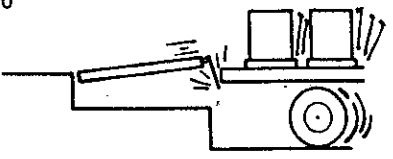
OPERATING INSTRUCTIONS

The Challenger Series Dock Leveler is operated by wall mounted remote control which contains "ON-OFF" switch.

When operating by remote electrical control box, simply press "RAISE" push-button – dock leveler will rise so that lower edge of lip clears truck – lip will then automatically extend. Releasing push-button lets dock leveler drift down to truck bed with extended lip resting on truck platform.

NOTE: TRAILERS MUST ALWAYS BE CHOCKED WHEN LOADING OR UNLOADING.

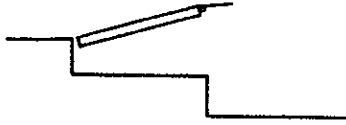
OPERATING PROCEDURES:

<p>1</p>  <p>Truck backs into position with leveler at rest, flush with top of dock in normal cross-traffic position. Operator pushes remote control button and leveler raises.</p>	<p>2</p>  <p>Lip extends automatically . . . operator is done . . . as Fluid Logic system takes over . . . leveler drifts to truck bed.</p>	<p>3</p>  <p>Load or unload with POWERAMP'S full-float lip maintaining positive contact with the truck bed at all times.</p>
<p>4</p>  <p>When working above dock level, with loading or unloading completed, truck pulls away and lip moves into pendant position.</p>	<p>5</p>  <p>Dock leveler automatically returns to self-storing, cross-traffic position flush with dock level.</p>	<p>6</p>  <p>If POWERAMP is below dock when truck pulls away (a) lip drops to vertical position, (b) leveler drifts to full below dock (c) if equipped with auto return to dock, leveler automatically returns to dock level and stores in cross-traffic position.</p>
<p>7</p>  <p>If equipped with lip-out, it is not necessary to raise leveler to full height to extend lip. Lower edge of lip must only clear truck platform before extending.</p>	<p>8</p>  <p>If lip is extended before clearing truck platform . . . lip will stop raising . . . leveler will continue to raise until the lip clears the truck. Then the lip will raise with no damage.</p>	<p>9</p>  <p>To remove end loads when truck is above dock, simply remove load before operating leveler. Then operate board and proceed.</p>
		<p>10</p>  <p>If leveler is being operated while truck is backing and truck or load hits extended lip . . . lip will automatically fold with no damage.</p>

CHALLENGER

OPERATING INSTRUCTIONS

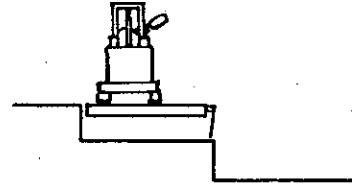
11



If THE CHALLENGER is operated with no truck in position

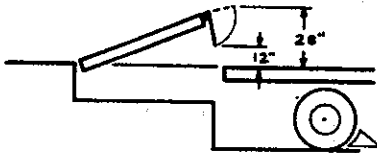


...the Fluid Logic system takes over and "senses" the absence of a truck. Leveler will drift to full below dock and lip will fold smoothly.



Leveler will then return to dock level and self-store, if equipped with option of auto return to dock. To activate Challenger without auto return option requires button activation.

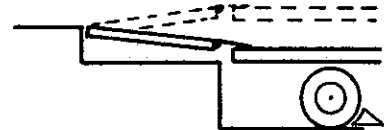
12



Leveler will service truck 12" above dock... (This height defined as - when lower edge of the folded lip starts to extend).

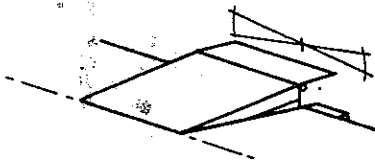


...or 12" below dock.



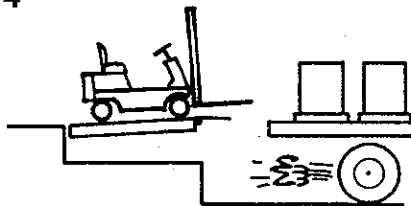
Leveler will automatically float through full above and below dock range, compensating for truck spring deflection.

13



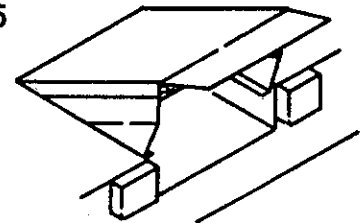
Lip will maintain full contact and follow canted truck bed up to 4° on weither side. Hinged edge of CHALLENGER remains flush with dock level thus eliminating toe and traffic hazards.

14



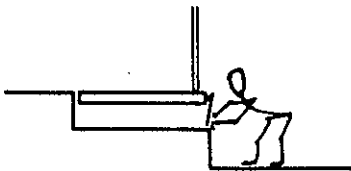
If operator has left fork truck on CHALLENGER and truck pulls away, leveler will lock and remain locked until load is removed. An outstanding Fluid Logic safety feature! After load is removed, it is only necessary to momentarily actuate leveler for resumption of normal operation.

15



Dock leveler features both working range, and full range toe guard protection.

16



CHALLENGER'S Fluid Logic control system offers maximum security when the dock is unattended. The lip and below dock operating mechanism cannot be manually activated from outside the building.

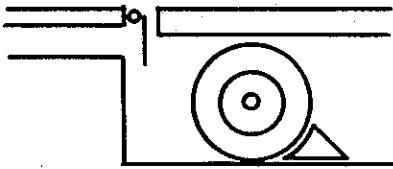
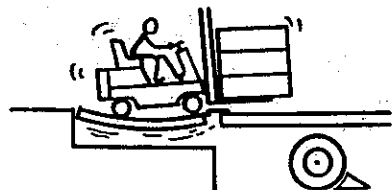

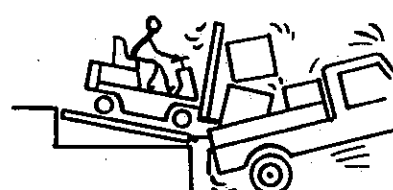
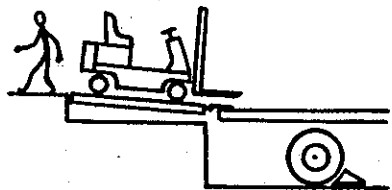


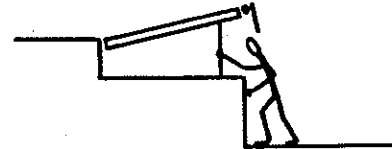
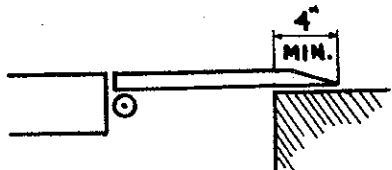
ELECTRICAL

Unit has been factory pre-wired, ready for simple electrical connections into pit outlet box and remote-mounted control. Remote control button and leveler operating switch are connected in parallel, allowing unit to be operated from remote-mounted control box.

Check nameplate for correct voltage and phase.

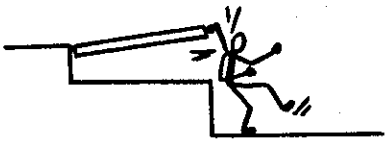
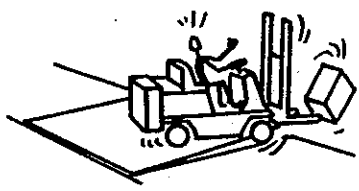

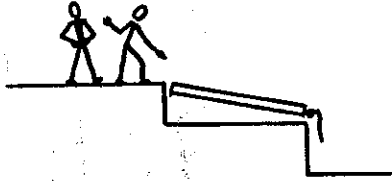
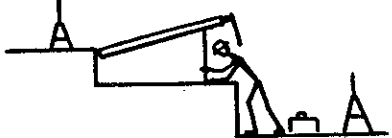
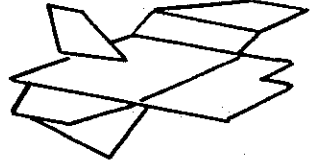


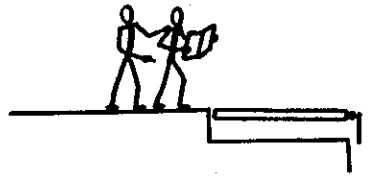
DOCK LEVELER SAFETY PRACTICES

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>CHALLENGER dock levelers are equipped with a hydraulic safety stop designed to halt the descent with three (3) 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

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>10 CAUTION</p>  <p>Never raise or lower a dock leveler when a person is standing in front of it or is under it.</p>	<p>11 SIDES</p>  <p>Use caution when operating a fork truck near side edges of leveler because a fall of even a few inches can cause injury.</p>	<p>12 NO HANDS</p>  <p>Never use your hands to lift the lip into place. Keep fingers clear of hinge lines and pinch points.</p>
<p>13 BROKEN</p>  <p>Never use a broken or damaged dock leveler. If equipment is not operating correctly, tell your supervisor.</p>	<p>14 WORKING</p>  <p>While work on leveler is being performed, always barricade it to any form of traffic, lock out electrical disconnects and use maintenance prop.</p>	<p>15 CHANGES</p>  <p>Do not modify or alter any dock leveler without written authorization from the manufacturer.</p>
<p>16 INFLUENCE</p>  <p>Do not operate equipment while under the influence of drugs, alcohol or any medication.</p>	<p>17 CLEAN</p>  <p>Keep area clear of clutter and spills which invite accidents.</p>	<p>18 LEARN</p>  <p>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.</p>

Additional or replacement copies of the Owner's Manual, Maintenance Procedures, Operating Instructions and other pertinent data may be obtained from:

POWERAMP®

P.O. Box 309
Germantown, Wisconsin 53022

PREPARING FOR SERVICE UNDER DOCK LEVELER

CAUTION - when propping up dock leveler, **STAND CLEAR OF LIP** because it moves to vertical position when dock leveler makes contact with prop.

Always barricade the leveler off from any form of traffic when maintenance is required.

Always use maintenance prop when working under the leveler.

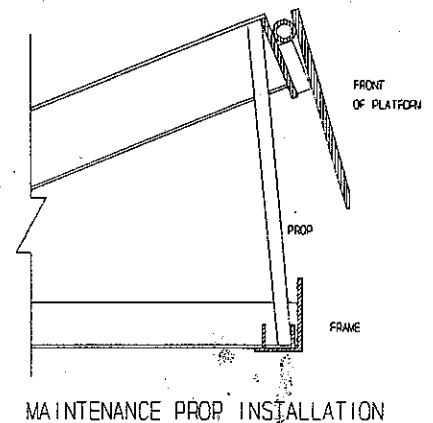
Always follow all procedures and warnings in the operating instructions.

Have qualified personnel perform maintenance.

INSTRUCTIONS - raise platform until it comes to full "UP" position with lip fully extended. Position maintenance prop until it comes to position behind the front hinge plate with the lower end in cup welded to inside of front frame angle. See diagram. **KEEPING CLEAR OF LIP**, let platform drift down onto prop.

CAUTION - before working under leveler, **DISCONNECT ELECTRIC POWER TO UNIT** in addition to turning selector/power switch off. Begin work.

When finished, check under leveler to be sure personnel and materials are clear of leveler. To disengage maintenance prop, reconnect electric power to unit and turn selector/power switch on. Raise platform until prop can be lowered. Return leveler to cross-traffic position.



PREVENTATIVE MAINTENANCE

EACH MONTH

1. Dock leveler should be operated through its full cycle several times each week to maintain lubrication.
2. Using a good grade of lubricating oil, place a few drops on rear hinge pins and lip hinge.
3. Using WD-40 penetrating oil, or the equivalent, lubricate the lip lifter and pin assembly.

EVERY TWO MONTHS

4. Check hydraulic fluid level. Prop leveler in full up position. **PUT SELECTOR/POWER SWITCH IN "OFF" POSITION.** Remove breather from tank. Oil should be approximately two (2) inches from top of tank.

HYDRAULIC FLUID - to assure normal operating in an ambient temperature range of -30° to +125° F these fluids are recommended:

Aero Shell Fluid #4 Code #60421 by Shell Oil Co.

Mobile Aero HFA Mil-H5606A by Mobil Oil Co.

Texaco Type BB

Filmite No 530

Exxon "UnivisJ13"

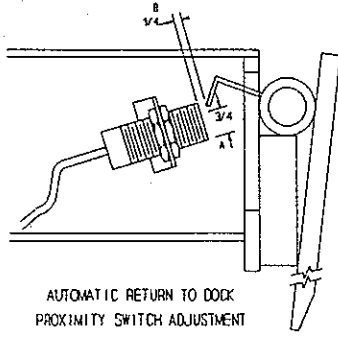
Note: Hydraulic fluids with equivalent specifications may be used.

5. Check retainer ring at top of cylinder for proper seating.

CHALLENGER

TROUBLE SHOOTING THE ELECTRICAL SYSTEM

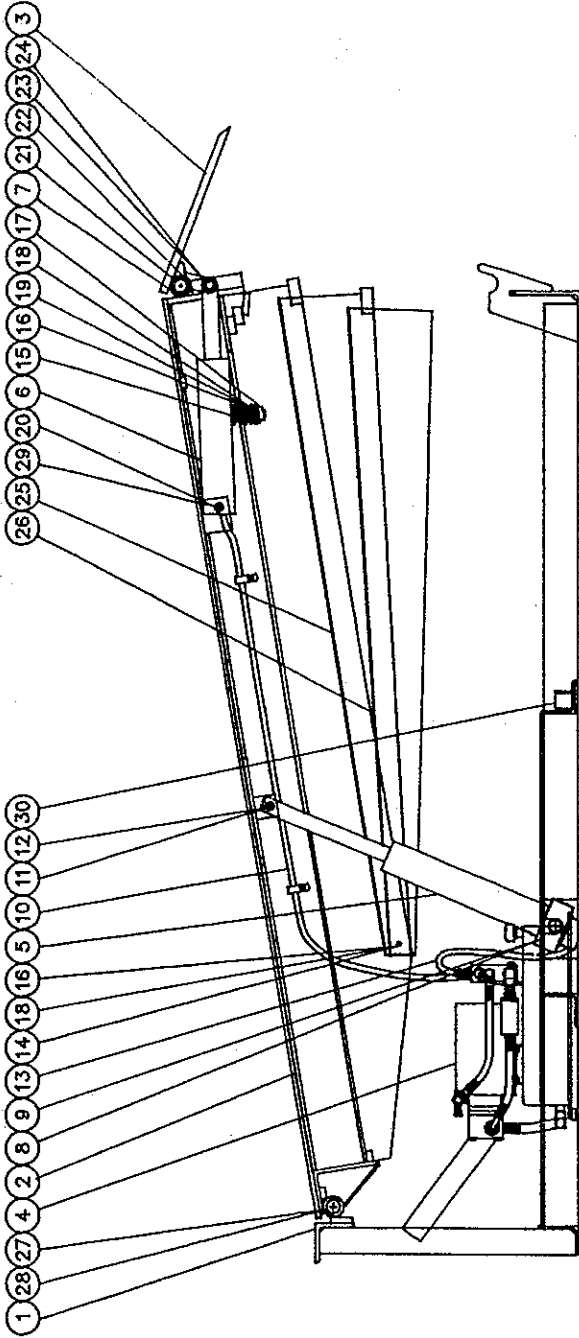
Designed by Poweramp to be as dependable as possible, your dock leveler should seldom, if ever, need repairs. This is especially true if you practice the preventive maintenance program outlined on Page 5. However, no piece of equipment is perfect, so we have listed a few possible operational malfunctions which might conceivably occur, possible causes and probable remedies.

TROUBLE	POSSIBLE CAUSE	PROBABLE REMEDY
1. With push-button pressed, pump motor does not run; leveler does not raise.	1. No power.	1. Check voltage input at dock leveler control.
	1a. Blown fuses or overload open.	1a. Check fuses, replace if necessary with correct type. Reset overload.
2. Leveler will not raise, single phase motor.	2. Line voltage too low.	2. Check for low voltage. Increase wire size to correct voltage drop.
	2a. Defective capacitor.	2a. Disconnect capacitor from motor. Test. Replace if necessary.
	2b. Open centrifugal switch at zero RPM.	2b. Repair or replace centrifugal switch.
3. Leveler will not raise, three phase motor running or humming.	3. Phase reversed, motor running.	3. Reverse any two legs at disconnect box.
	3a. Motor single-phasing (motor humming).	3a. Check fuses, wiring and overload reset.
4. Leveler will not automatically return to cross-traffic position (if so equipped).	4. No power to starter coil.	4. Check on-off toggle switch.
	4a. Proximity switch out of adjustment.	4a. Adjust per diagram below.
5. Lip does not raise high enough to store.	 <p>AUTOMATIC RETURN TO DOCK PROXIMITY SWITCH ADJUSTMENT</p>	5. Bend tab downward slightly to decrease 3/4" dimension "A".
6. Unit continues to raise.		6. Bend tab upward to increase 3/4" dimension "A". NOTE: If tab is bent for adjustment, work lip by hand to be sure that tab "C" is not gouging switch which would happen if gap "B" were closed completely.

TROUBLE SHOOTING THE HYDRAULIC SYSTEM

Your POWERAMP should seldom, if ever, need repairs. However, since no machine is perfect, here are a few malfunctions which might conceivably occur, possible causes and probable remedies.

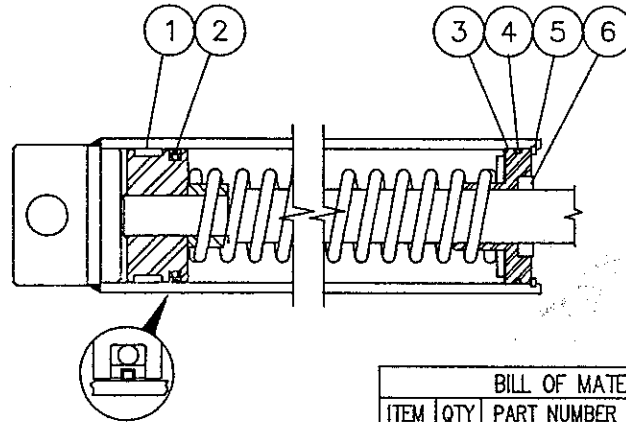
TROUBLE	POSSIBLE CAUSE	PROBABLE REMEDY
1. Dock leveler will not raise.	1a. Load on platform.	1a. Remove load. Unit is designed to raise no more than its own weight as a safety feature.
	1b. Filter element plugged.	1b. Unscrew filter casing (page 12, item 19) and clean or replace filter element.
2. Dock leveler raises very slowly.	2a. Low hydraulic fluid.	2a. Add hydraulic fluid as needed See page 12, item 7.
	2b. Pump by-pass set too low.	2b. Increase by-pass pressure. Page 12 Remove acorn nuts and washer back of nut. Back up jam nut and, with screwdriver, turn adjustment clockwise.
3. While leveler is descending, it locks into "safety". Lip drops to vertical position.	3. Platform down-speed is too fast.	3. Slow speed as follows. Loosen jam nut on adjusting screw of speed control valve (page 12, item 17). Turn screw (clockwise) approximately 1 turn.
4. Platform reaches full height, but lip does not automatically extend.	4a. Low hydraulic fluid.	4a. See item 2 above.
	4b. Lip operating sequence valve is set too high.	4b. Prop platform per instructions on page 7. Locate lip operating sequence valve on pump package (page 12), loosen jam nut, turn adjusting screw counter clockwise one turn and re-lock jam nut, check lip operation and repeat above if needed.
5. Lip extends prior to or at same time as platform.	5. Lip operating sequence valve is set to low.	5. See 4b above, turning screw clockwise to increase setting.



BILL OF MATERIAL

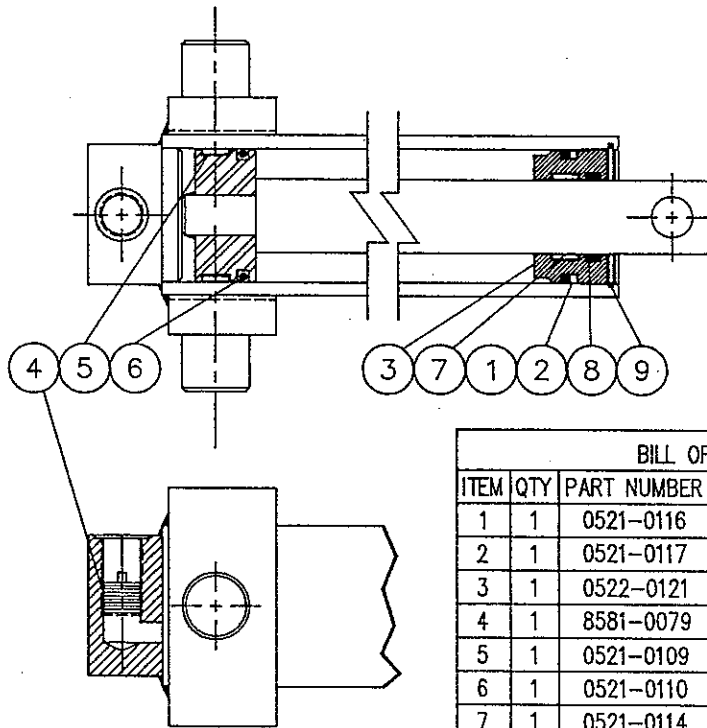
ITEM	QTY.	PART NUMBER	DESCRIPTION	ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	8435-	FRAME WELDMENT	17	1	9455-0001	LIP CYLINDER HOLD DOWN
2	1	9515-	PLATFORM WELDMENT	18	4	2101-0040	LOCK NUT
3	1	0525-	LIP WELDMENT	19	2	2101-0089	HHCS
4	1	9395-0035	POWERPACK 1 PHASE	20	1	9202-0005	PIN - LIP CYLINDER
	1	9395-0040	POWERPACK 3 PHASE		1	9202-0003	PIN - LIP HINGE 6" W
5	1	0525-0049	HOIST CYL. FOR 24' & 23 1/2' DEEP PIT	21	1	9202-0014	PIN - LIP HINGE 6.5" W
	1	0525-0057	HOIST CYL FOR 19 1/2' DEEP PIT		1	9202-0006	PIN - LIP HINGE 7" W
6	1	0525-0050	LIP CYLINDER - STD	22	2	2101-0046	COTTER PIN
	1	0525-0051	LIP CYLINDER - LONG	23	1	0522-0005	CLEVIS PIN
7	1	0522-0006	LIP LIFTER	24	1	2101-0045	COTTER PIN
8	2	7942-0001	MOUNTING PLATE - HOIST CYLINDER		2	0014-0016/17	UPPER TOEGUARD FOR RHS & LHS 6' LG.
9	4	2101-0011	HHCS		2	0014-0018/19	UPPER TOEGUARD FOR RHS & LHS 8' LG.
	1	9904-0060	HYD. HOSE ASSY. 3/8 100RI - LIP CYL. 6' LG.		2	0014-0020/21	UPPER TOEGUARD FOR RHS & LHS 10' LG.
10	1	9904-0061	HYD. HOSE ASSY. 3/8 100RI - LIP CYL. 8' LG.		2	0012-0047/48	LOWER TOEGUARD FOR RHS & LHS 6' LG.
	1	9904-0062	HYD. HOSE ASSY. 3/8 100RI - LIP CYL. 10' LG.		2	0012-0043/44	LOWER TOEGUARD FOR RHS & LHS 8' LG.
11	1	9202-0005	PIN - HOIST CYLINDER		2	0012-0057/58	LOWER TOEGUARD FOR RHS & LHS 10' LG.
12	2	2101-0050	CLIP HAIRPIN	27	3	9202-0002	REAR HINGE PIN
13	1	9904-0059	HYD. HOSE ASSY. 3/8 100RI - HOIST CYL. 6' & 10' LG.	28	6	2101-0047	COTTER PIN
	1	9904-0058	HYD. HOSE ASSY. 3/8 100RI - HOIST CYL. 8' LG.	29	2	2101-0049	CLIP HAIRPIN
14	2	2101-0017	PIN - TOE GUARD		1	9224-0013	MAIN PROP-6' LG. (23 1/2" & 24" PIT)
15	1	0522-0002	SPRING - LIP CYLINDER	30	1	9224-0031	MAIN PROP-8, 10' LG. (23 1/2" & 24" PIT)
16	1	2101-0060	FLAT WASHER		1	9224-0030	MAIN PROP-6, 8, 10' LG. (19 1/2" PIT)

HYDRAULIC CYLINDERS



LIP CYLINDER
SEAL KIT

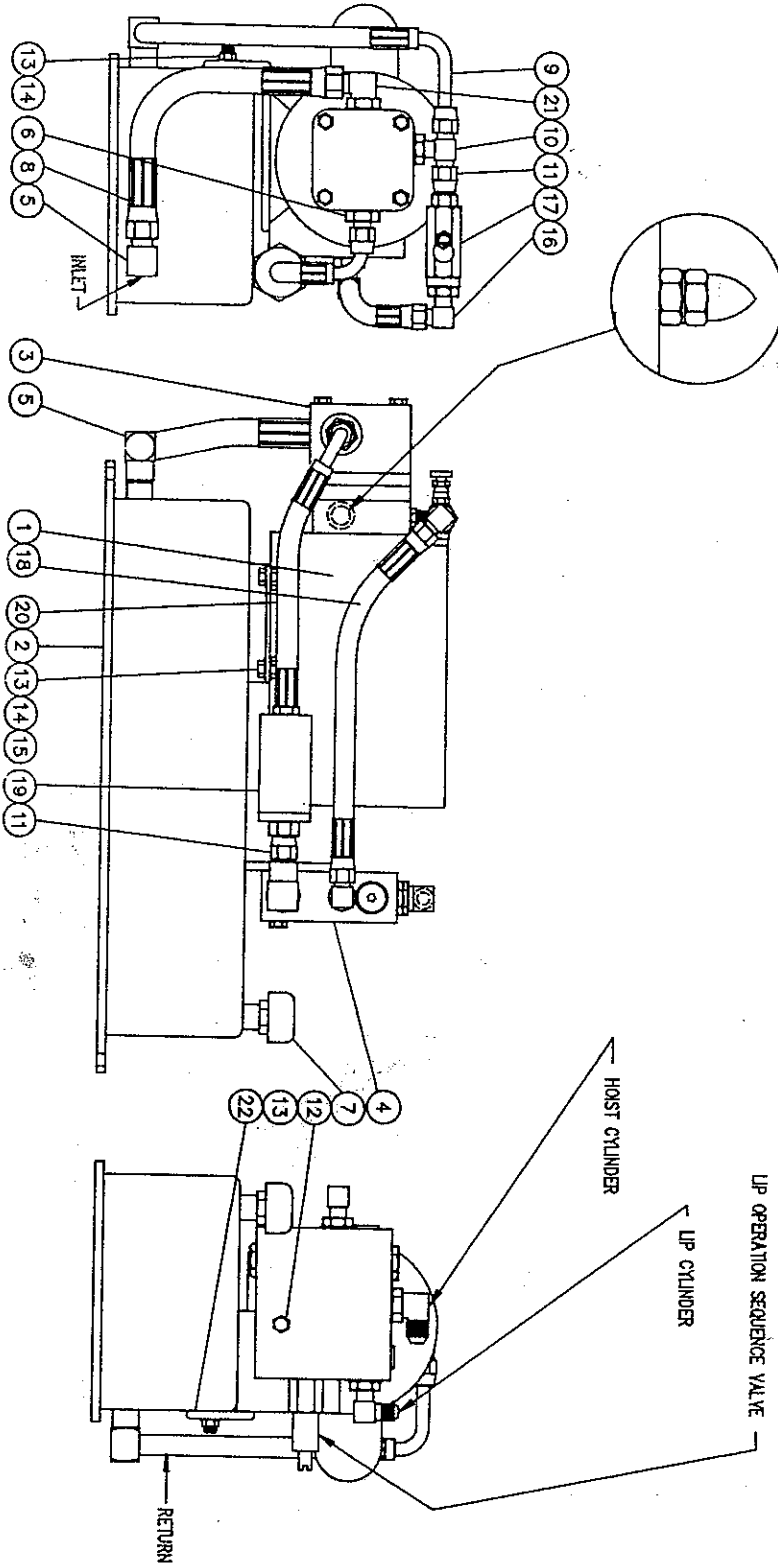
BILL OF MATERIAL			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	0521-0109	WEAR RING
2	1	0521-0110	PISTON SEAL
3	1	0522-0087	CYLINDER HEAD
4	1	0521-0003	"O RING"
5	1	0521-0004	RETAINING RING
6	1	0521-0002	SEAL-ROD



HOIST CYLINDER
SEAL KIT AND
VELOCITY FUSE

BILL OF MATERIAL			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	0521-0116	O-RING
2	1	0521-0117	RING - BACKUP
3	1	0522-0121	GLAND
4	1	8581-0079	VELOCITY FUSE
5	1	0521-0109	WEAR RING - PISTON
6	1	0521-0110	SEAL - PISTON
7	1	0521-0114	WEAR RING - ROD,
8	1	0521-0115	SEAL - ROD
9	1	0521-0026	RETAINING RING

HYDRAULIC CYLINDERS

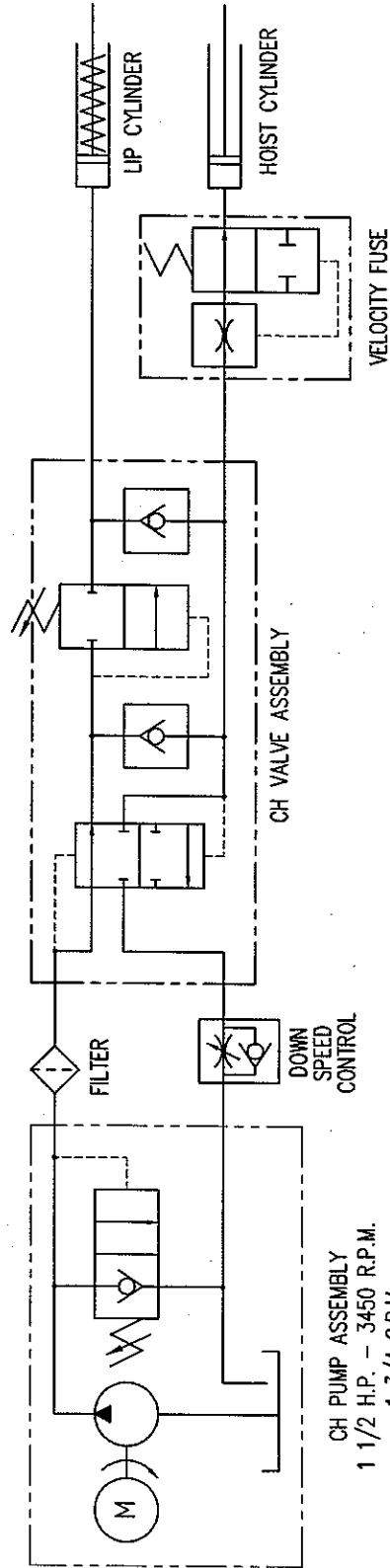


PUMP PRESSURE RELIEF
UNDER ACOORN/JAM NUTS
ON BACK OF PUMP BODY

9901-
0065

BILL OF MATERIAL

ITEM	QTY.	PART NUMBER	DESCRIPTION	ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	3411-0008	MOTOR 115 VOLT 1PH	12	1	2101-0013	BOLT
		9411-0002	MOTOR 220/440 VOLT 3PH	13	7	2101-0039	LOCK NUT
2	1	8903-0015	RESERVOIR	14	6	2101-0060	FLAT WASHER
3	1	9901-0094	PUMP WHEELER	15	4	2101-0011	BOLT
4	1	8895-0058	VALVE ASSEMBLY	16	1	8301-0113	90° HOSE ADAPTOR
5	2	0881-0017	90° HOSE ADAPTOR	17	1	8395-0091	FLOW CONTROL
6	1	8901-0110	STRAIGHT THREAD CONNECTOR	18	1	8904-0057	HOSE ASSEMBLY 12' LONG
7	1	8901-0020	BREATHER CAP	19	1	8901-0121	FILTER
8	1	9904-0067	HOSE ASSEMBLY	20	1	9904-0066	90° HOSE ADAPTOR
9	1	9904-0085	90° HOSE ASSEMBLY 23' LONG	21	1	8901-0018	90° HOSE ADAPTOR
10	1	8901-0192	TEE FITTING	22	1	9902-0048	MOTOR MOUNTING ANGLE 1PH
11	2	8901-0123	HOSE ADAPTOR			9902-0047	MOTOR MOUNTING ANGLE 3PH



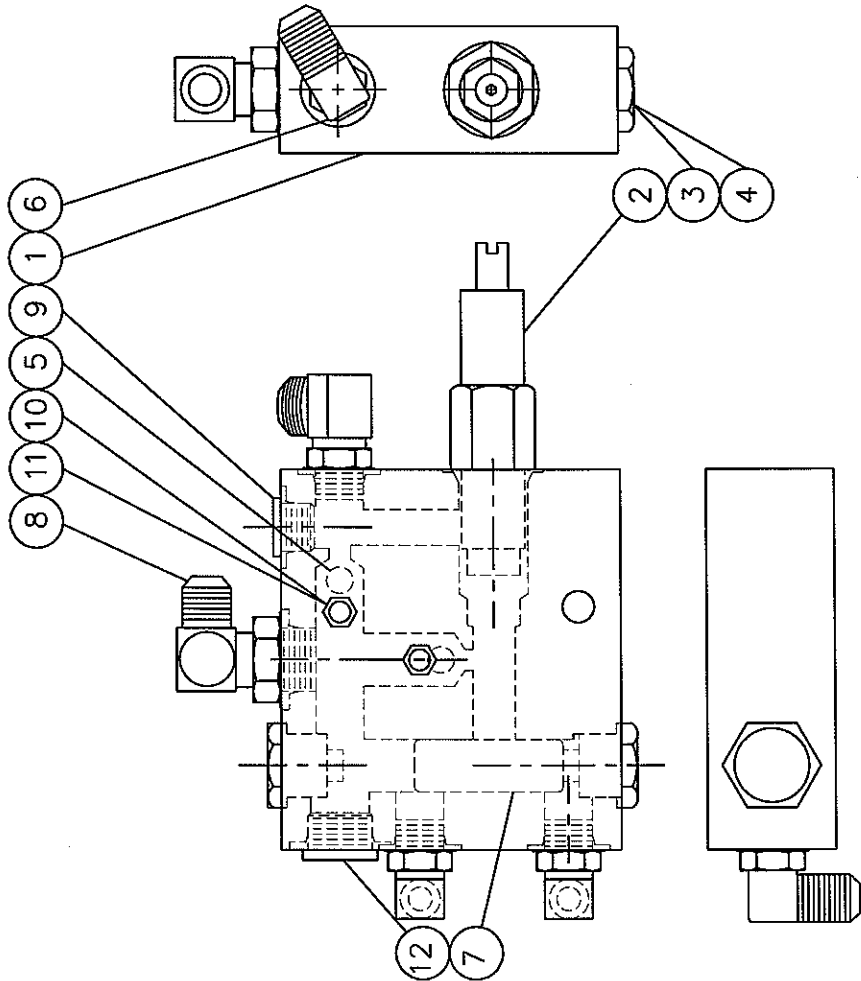
HYDRAULIC SCHEMATIC
CH SERIES DOCKLEVELERS

POWERAMP®	
DIVISION OF SYSTEMS INC., GERMANTOWN, WI	
HYDRAULIC SCHEMATIC CH SERIES DOCK LEVELERS	
REVISION	DATE 1/19/95 CHK'D
MATERIAL	DRAWING NO.
DRAWN BY KMG	A1-802-000

BILL OF MATERIAL

ITEM	QTY	PART NUMBER	DESCRIPTION	SIZE
1	1	8582-0030	VALVE BODY	1 1/2 X 4 1/2 X 4
2	1	8581-0080	PRESSURE RELIEF	PARKER RA101S10
3	2	9572-0002	PLUG	1 OD X 1
4	2	9572-0003	GASKET	3/4 DIA.
5	2	9571-0002	CHECK BALL	3/8
6	3	9301-0113	90° ELBOW	#6 JIC-#6 STRGHT THRD 0-RING
7	1	9571-0001	SPOOL	5/8 DIA X 1 3/4
8	1	9301-0114	90° ELBOW	#6 JIC-#8 STRGHT THRD 0-RING
9	1	9301-0105	HOLLOW HEX PLUG	9/16-18 STRGHT THRD 0-RING
10	1	9571-0004	THREAD SEAL	1/4 DIA.
11	2	2101-0007	CAPSCREW	1/4-20 X 1
12	1	9301-0106	HOLLOW HEX PLUG	3/4-16 STRGHT THRD 0-RING

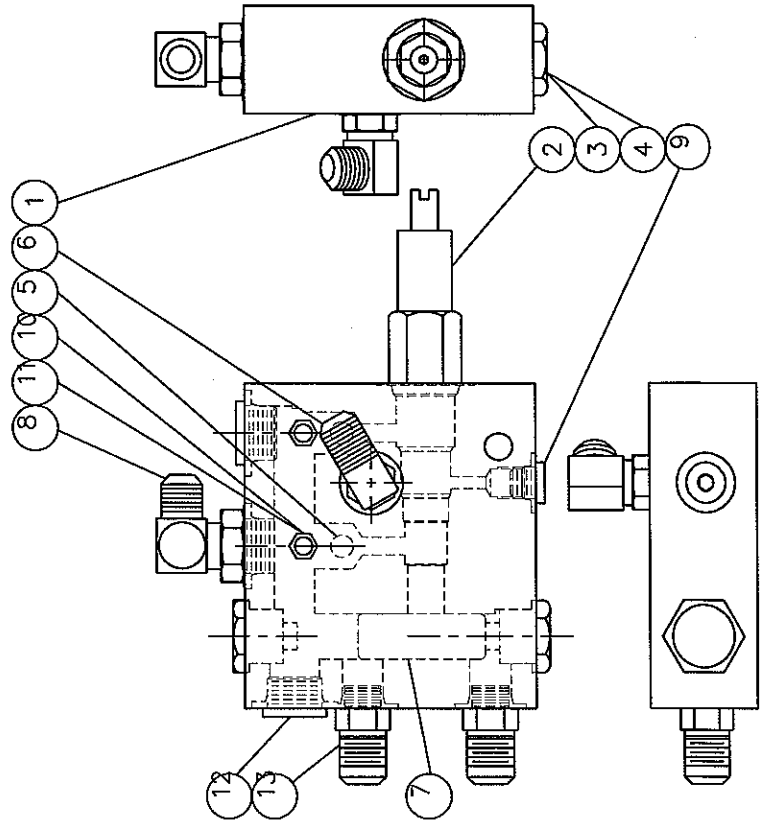
NOTE: FOR CH HOOK BOARDS SEE SMS 00033. ITEM# 6 QTY. CHANGES TO 2, NEW ITEM ADDED & THE ORIENTATION OF ITEM# 6 & ITEM# 8 CHANGES.



B 93-031	9/9/93	CH I/T	II-	WAS 2101-0084	- 7/8" LG CAPSCREW
A 93-011	3/2/93	CH I/T	B	SIZE - WAS #6 JIC-#8 STRT THD 0-RING	
REV	ECN	DATE	CHANGE		
POWERAMP®					
DIVISION OF SYSTEMS INC., GERMANTOWN, WI					
VALVE ASSEMBLY CH SERIES LEVELERS					
MATERIAL			DRAWN BY CL		
ALL TOLERANCES UNLESS SPECIFIED ARE TO BE:			DATE 3-2-92	CHK'D	
FRACTIONAL = ±1/32			DRAWING NO.		
.00 = ±.01			8585-0058		
.000 = ±.005					
ANGULAR = ±1°					

BILL OF MATERIAL

ITEM	QTY	PART NUMBER	DESCRIPTION	SIZE
1	1	8582-0051	VALVE BODY	1 1/2 X 4 1/2 X 4
2	1	8581-0104	PRESSURE RELIEF	DELTA DF-PWI-00-1500
3	2	9572-0002	PLUG	1 OD X 1
4	2	9572-0003	GASKET	3/4 DIA.
5	2	9571-0002	CHECK BALL	3/8
6	1	9301-0113	90° ELBOW	#6 JIC-#6 STRGHT THRD O-RING
7	1	9571-0001	SPOOL	5/8 DIA X 1 3/4
8	1	9301-0114	90° ELBOW	#6 JIC-#8 STRGHT THRD O-RING
9	1	9301-0104	HOLLOW HEX PLUG	7/16-20 STRGHT THRD O-RING
10	2	9571-0004	THREAD SEAL	1/4 DIA.
11	2	2101-0007	CAPSCREW	1/4-20 X 1
12	2	9301-0106	HOLLOW HEX PLUG	3/4-16 STRGHT THRD O-RING
13	2	9301-0111	STRGHT THRD CON	#8 JIC TO #6 STRGHT THRD O-RING



A 95-0125/18/95 CH. NUMBER 1 WAS 8582-0030
REV. ECN DATE CHANGE

POWERAMP®
DIVISION OF SYSTEMS INC., GERMANTOWN, WI

VALVE ASSEMBLY
CH - CP SERIES

MATERIAL DRAWN BY KG

ALL TOLERANCES UNLESS SPECIFIED ARE TO BE:
DATE 5/18/95 CHK'D

DRAWING NO. 8585-0082

FRACTIONAL = ±1/32
.00 = ±.01
.000 = ±.005
ANGULAR = ±1°

