

# **BM-1 SERIES**

## **MECHANICAL DOCK LEVELER**

### **OWNERS MANUAL**

**INSTALLATION • OPERATION  
SERVICE • REPAIR PARTS**



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## SECTION 1

## INSTALLATION INSTRUCTIONS RECEIVING AND HANDLING

### RECEIVING:

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.

Notify . . . of any damage or missing parts.

### HANDLING:

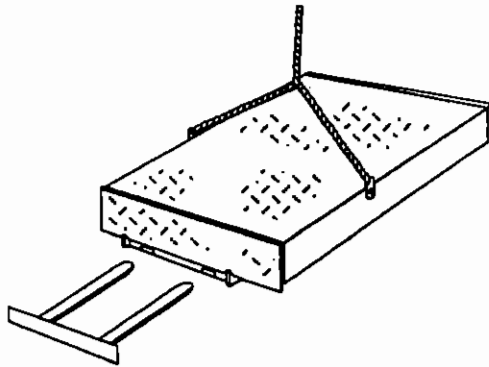


FIGURE A

Move leveler into position by using:

- chain sling inserted into side plate holes. (See Figure A)

**NOTE:**

Two bumpers, and weather seals, if applicable, are strapped under leveler.  
Handle with care to avoid damage to these components.

## SECTION 1

## INSTALLATION INSTRUCTIONS INSTALLATION

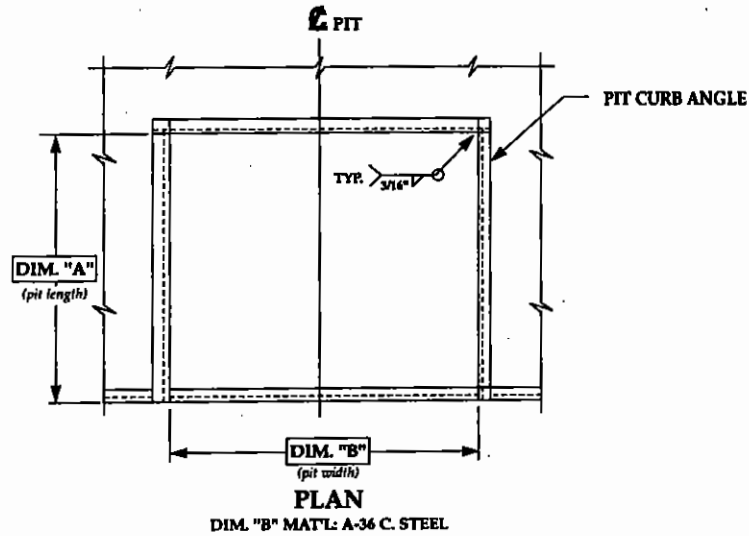
INSTALLATION: (Consists of 3 phases)

Pit preparation

Leveler Preparation

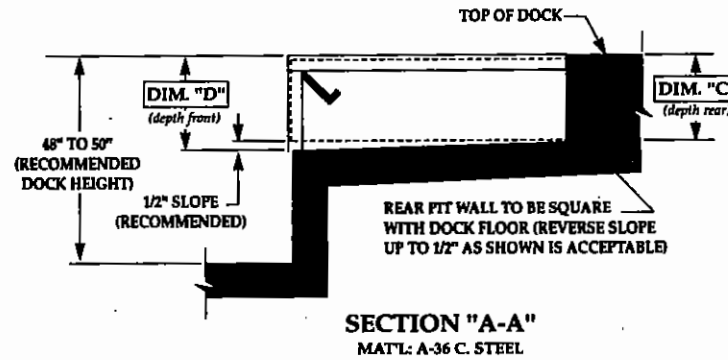
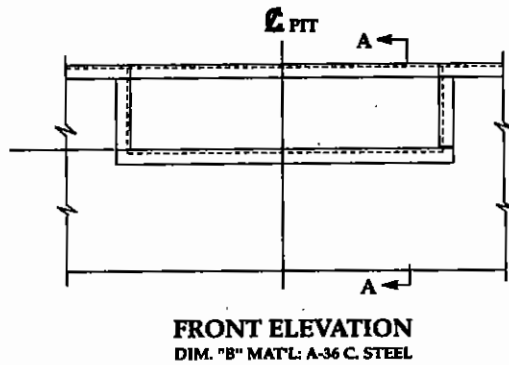
Leveler Installation

**FIGURE B - PLAN VIEW**



**PIT DETAIL**

VARIABLE DIMENSIONS				
MODEL SIZE	"A"	"B"	"C"	"D"
6'W X 6'L	63"	74"	19 1/2"	20"
6'W X 8'L	87"	74"	19 1/2"	20"
7'W X 6'L	63"	85"	19 1/2"	20"
7'W X 8'L	87"	85"	19 1/2"	20"



<b>NOTES</b>	<b>DRAWN:</b>	<b>SCALE:</b>	<b>DATE:</b>	<b>DRAWING NUMBER:</b>
	D.E.A.	AS NOTED	5-15-96	PMI-2010
<b>JOB</b>	<b>TOLERANCES:</b>			
	Inch Dimension = ± 1/16"	Decimal Dimension = ± .005	Angles = ± 1°	

## SECTION 1

## INSTALLATION INSTRUCTIONS PIT PREPARATION

### PIT PREPARATION

1. Examine pit
2. Measure pit dimensions. (See "Variable Dimensions" Figure B, Page 1-2)

Pit walls should be square and plumb. Clean all debris from pit.

Verify that walls are square and plumb.

### PRE-PLACEMENT OF SHIMS:

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

Proper shim thickness will assure that deck of leveler is level with dock floor.

#### NOTE:

Shims are to be placed directly under rear frame uprights, and under lip keepers. (See Figure C, Page 1-3) and (See Plan View, Page 1-2).

## SECTION 1

## INSTALLATION INSTRUCTIONS LEVELER PREPARATION

### LEVELER PREPARATION

1. Position leveler directly in front of pit
2. Cut restraining band on lip.

Remove band completely from leveler..

FIGURE C

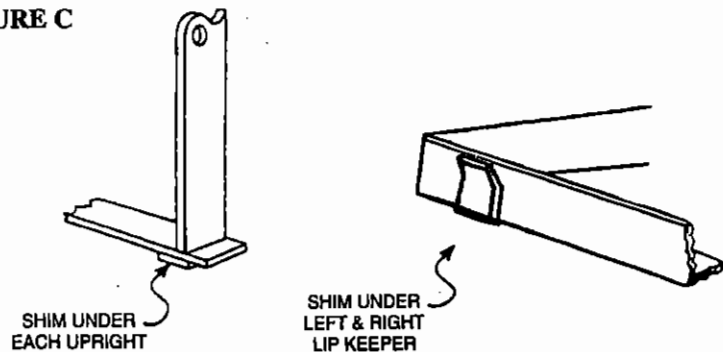
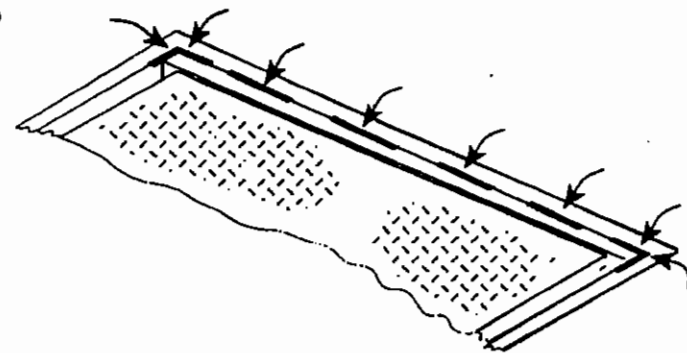


FIGURE D



**SECTION 1****INSTALLATION INSTRUCTIONS  
LEVELER INSTALLATION****LEVELER INSTALLATION:**

- |   |   |
|---|---|
| 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, after restraining band has been cut. | Shims must be placed properly under each rear frame upright, and front lip keepers. (See Figure C, Page 1-3, for close up view and Plan View B, Page 1-2, for shim locations.)<br><br>Skip weld rear of leveler to curb angle (weld center first then ends) and front shims to leveler and curb angle. (See Figure D, Page 1-3) |
| 3. Bring deck section of leveler to fully raised position.  | To operate, pull and hold the ratchet release chain located at rear of leveler.   |
| 4. Place maintenance strut securely under leveler.  | Place strut in tubes located on base & under lip.   |
| 5. Weld all shims securely in place.  | Front shims must be welded securely to frame and steel curb angle.  |
| 6. Store maintenance strut.   | Walk forward onto leveler, returning it to dock level with lip in keepers.  |
| 7. 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.   |
| 8. Complete weld at rear of leveler.  | Weld to cover approximately 50% of the length of the rear angle. Ensure welds are placed directly behind frame uprights and at ends of angle. (See Figure D, Page 1-3)  |

**SECTION 2****OPERATING INSTRUCTIONS  
ABOVE DOCK OPERATION****ABOVE DOCK USE:**

1. Pull firmly and hold the release ring located in rear of deck.	When deck raises and lip extends, release the ring. <b>DO NOT</b> release the ring until the lip is fully extended.
2. Walk forward onto deck to lower unit onto truck bed. (Truck should be secured firmly against bumpers with "Truck Restraint" or wheel chocks.)	With standard locking type lip mechanism, lock will release once lip makes firm contact with truck bed.
3. When truck departs, lip will close to pendant (not stored) position.	This action applies when truck is above dock height.
4. Walk forward onto deck until unit is returned to stored position.	In this position, lip is secure in lip keepers, and ready to receive the next truck.
5. Leveler may be recycled with truck at dock.	Pull the rear release ring in short, rapid pulls allowing deck to raise "2" – 3" above dock with lip down. This allows operator to close the truck and/or building door prior to truck departure.  Walk forward onto leveler, returning it to dock level with lip in keepers.

**SECTION 2****OPERATING INSTRUCTIONS  
BELOW DOCK OPERATION****BELOW DOCK USE: (WITH LIP EXTENDED)**

1. Repeat steps 1 & 2 for above dock use.	
2. As you walk forward on the leveler, pull the safety leg release ring located in the front of deck plate.	This will pull safety legs away from the pads they would normally contact allowing unit to go below dock.  When lip makes firm contact with the truck bed, release the front ring.
3. When truck departs, lip will return to pendant (not stored) position.	Lip will be in front of lip keepers, and deck will remain below floor level.
4. To recycle unit after truck departure, pull release ring in short, rapid pulls.	This action will allow the deck to raise 2" – 3" above dock floor while the lip will remain in a pendant position.
5. Leveler may be recycled with <b>truck at dock</b> .	Follow Step #4 to recycle.
6. Following Step #4, walk forward onto deck until unit is returned to stored position.	Lip should be completely closed and resting in lip keepers which provide overnight security.

**SECTION 2****OPERATING INSTRUCTIONS  
BELOW DOCK OPERATION****BELOW DOCK USE: (LIP RETRACTED FOR END LOADS)**

BELOW DOCK CONTROL OPTION IS RECOMMENDED FOR THIS OPERATION:

1. Pull release ring in short rapid pulls.

Allow deck to raise 2" – 3" above dock floor. (This will raise lip out of lip keepers, without extending lip.)

2. As you walk forward on the leveler, pull the safety leg release ring located in the front of deck plate.

With Below Dock Control option, lip will be pushed out in front of keepers while safety legs are being pulled away from pads.

3. When truck departs, lip will close to pendant (not stored) position.

Lip will be in front of keepers, and deck will remain below dock.

4. To recycle unit after truck departs, pull release ring in short, rapid pulls.

Continue this until unit is 2" – 3" above dock floor.

5. Leveler may be recycled with truck at dock.

Follow Step #4 to recycle.

6. Following Step #4, walk forward onto deck until unit is returned to stored position.

Lip should be completely closed and resting in lip keepers which also provide overnight security.

ALL SERIES LEVELERS ARE TESTED AND ADJUSTED AT THE FACTORY. HOWEVER, MINOR ADJUSTMENTS TO THE MAIN SPRINGS MAY BE REQUIRED ONCE THE UNIT IS INSTALLED. (UNITS WITH WEATHER SEALS NORMALLY REQUIRE MAIN SPRING ADJUSTMENT TO INSURE PROPER LIP EXTENSION.

NOTE: ALWAYS SECURE LEVELER WITH MAINTENANCE STRUT BEFORE SERVICING.

SYMPTOM:	PROBABLE CAUSE:	CORRECTION:
WHEN RELEASE RING IS PULLED, DECK RAISES BUT LIP DOES NOT FULLY EXTEND AND LOCK.	1. Improper main spring adjustment.	Tighten both main spring adjustment nuts one or two rotation clockwise and re-test. Item #7 (1 1/2" socket or wrench)
	2. Lip lock spring is stretched.	Replace spring or lower spring one or two links in snubber chain. Item #22; Assem. #6
	3. Front base angle installation welds broken free.	Re-weld per installation instructions.
	4. Lip lock spring is broken or disconnected.	Replace broken spring and/or reconnect spring to proper chain link with "S" hook. Item #22, Assem. #6
	Leveler may be servicing trucks that are above the factory set service range (8' models - 12", 6' models - 8") causing lip to impact truck during upward movement.	Minor adjustments to service range above dock may be made in the field. Consult the local representative or call the factory for assistance.

**CAUTION:**

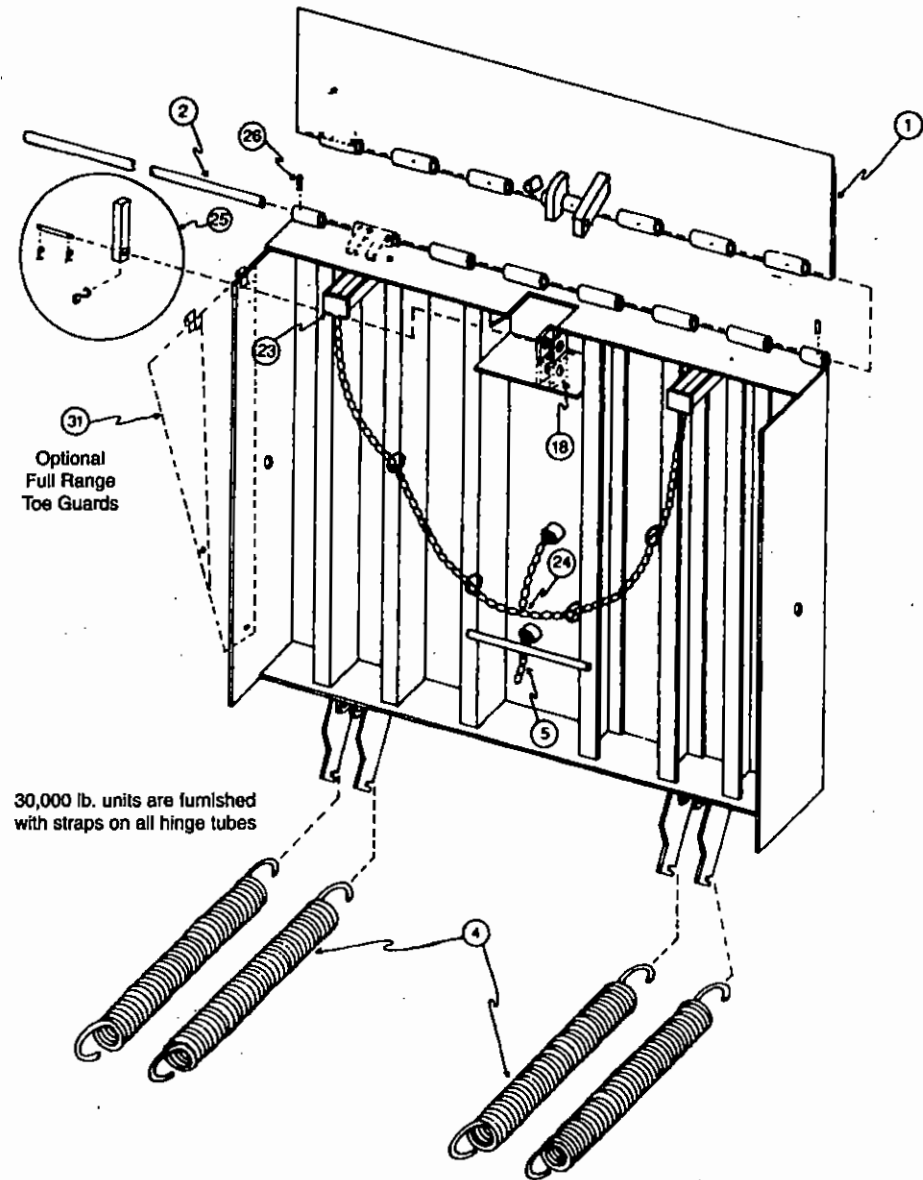
Contact your representative or the factory if a malfunction occurs which is not understood. **DO NOT attempt to correct the situation without proper information and understanding, as this may damage components and void the warranty.**

## PARTS LIST

ITEM	DESCRIPTION
1	LIP PLATE ASSEMBLY 16"
2	HINGE PIN-LIP
4	MAIN SPRING
5	RATCHET PULL CHAIN ASSEMBLY
18	RATCHET MOUNTING ASSEMBLY UPPER
23	SAFETY LEG & MOUNTING ASSEMBLY
24	SAFETY LEG CHAIN ASSEMBLY
25	LIP LOCK ASSEMBLY
26	ROLL PINS

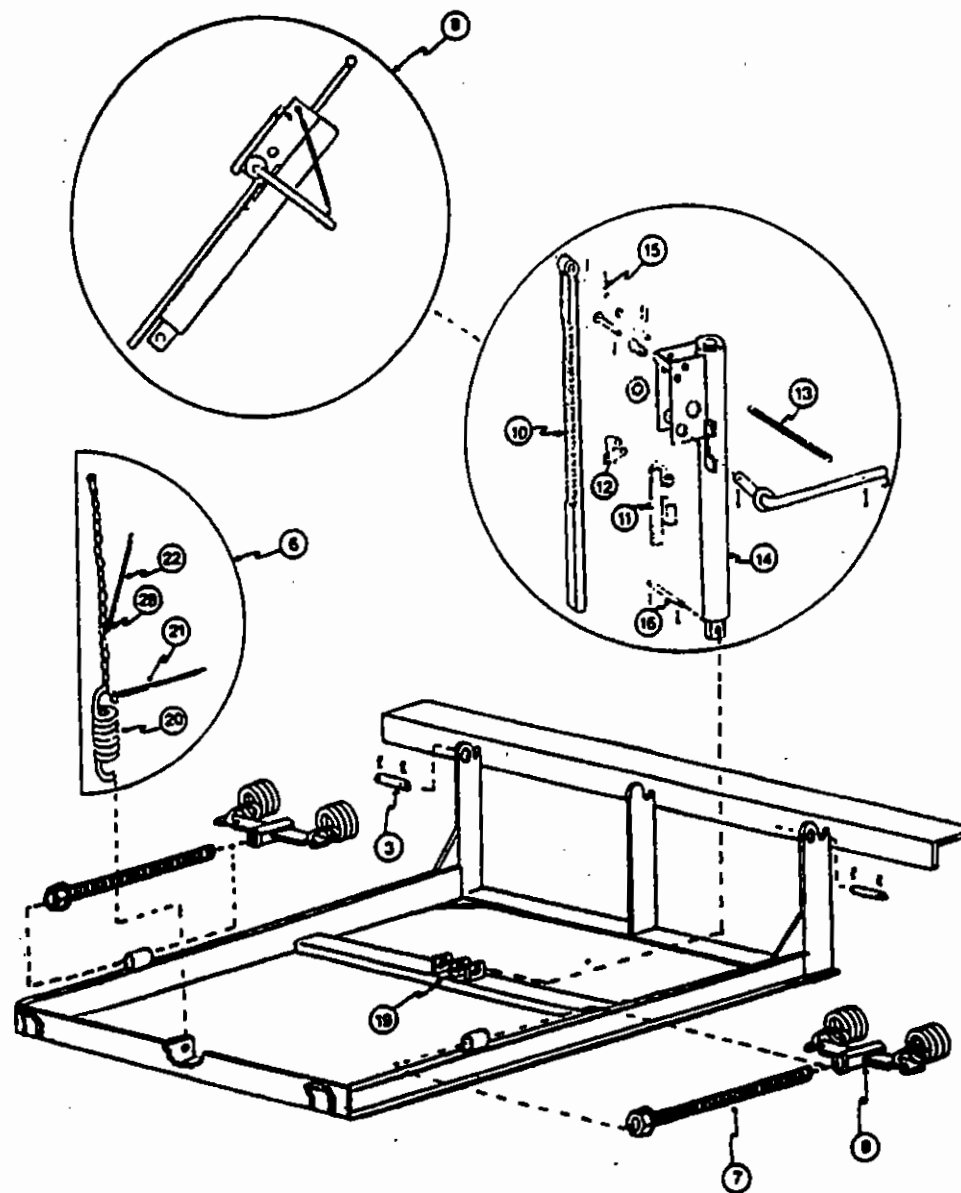
OPTIONAL KITS  
(FIELD INSTALLED)

31	FULL RANGE TOES GUARDS (SET)
	WEATHER SEAL KIT 6'
	WEATHER SEAL KIT 8'



## PARTS LIST

ITEM	DESCRIPTION
3	DECK REAR HINGE KIT (SET)
6	SNUBBER CHAIN ASSEMBLY (For standard 16" lip)
7	ADJUSTING ROD ASSEMBLY
8	WING NUT ASSEMBLY
9	RATCHET ASSEMBLY
10	UPPER BAR
11	PAWL
12	PAWL SPRING
13	RELEASE LEVER SPRING
14	RATCHET HOUSING
15	UPPER PIN KIT
16	LOWER PIN KIT
19	RATCHET MOUNTING ASSEMBLY LOWER
20	SNUBBER SPRING
21	SNUBBER CHAIN TENSION SPRING
22	LIP LOCK SPRING
28	"S" HOOK



#### 4-1 Beacon Industries, Inc. Limited Warranty

Beacon Industries, Inc. warrants that this BM1 Series Dock Leveler will be free from defects in design, materials and workmanship on all structural parts for a period of exactly one (1) year from date of shipment. All claims for breach of this warranty must be made within thirty (30) days after the defect is or can, with reasonable care, be detected and in no event more than one (1) years after shipment. This warranty is extended to the original purchaser of this product and is non transferable.

Beacon warrants that this BM1 Series Dock Leveler will be free from defects in design, materials and workmanship on all mechanical and miscellaneous parts for a period of exactly one (1) year from date of shipment. All claims for breach of this warranty must be made within thirty (30) days after the defect is or can, with reasonable care, be detected and in no event more than one (1) year after shipment.

In order to be entitled to the benefits of this warranty, the unit must have been properly installed, maintained, operated within its capacity, and not otherwise abused. Ninety (90) day periodic maintenance and adjustment is the sole responsibility of the owner.

This warranty is Beacon's exclusive expressed warranty.

**Beacon expressly disclaims all implied warranties including the implied warranties of merchantability and fitness.**

In the event of any defects covered by this warranty, Beacon will remedy such defects by repairing or replacing any defective equipment or parts, bearing all of the costs for parts, from Beacon to site. This shall be the exclusive remedy for all claims whether based on contract, negligence, or strict liability. **Beacon shall not, in any event, be liable for any loss of the use of any equipment or incidental or consequential damages of any kind.**

Maintenance and validation by original purchaser is required to keep Warranty in effect. In order to keep this Warranty in effect, the original purchaser must do two things:

First: The original purchaser must have the BM1 Series Dock Leveler maintained and serviced as prescribed in the Owner's Manual.

Second: The original purchaser must present the seller with a maintenance schedule to show that the BM1 Series Dock Leveler has been maintained and serviced in accordance with the Beacon's Owner's Manual. The validated maintenance schedule must be submitted whenever a claim is made under this Warranty.

Items not covered by Warranty. The seller does not cover:

(i) Defects, damage or deterioration due to normal use, wear and tear or exposure; (ii) normal maintenance services; (iii) the replacement of service items, (iv) damage or defects due to misuse, water damage, improper installation, alteration, negligence or accident; and (v) damage or defects due to the repair of the BM1 Series Dock Leveler by someone other than an authorized dealer or the installation of parts other than genuine Beacon part.

No other warranties made. This Warranty is in lieu of all other express or implied warranties of The Beacon BM1 Series Dock Leveler, the manufacturer and the selling dealer, including any implied warranty of merchantability or fitness for any particular purpose. Neither Beacon Industries, Inc. assumes, or authorizes any person to assume, on its behalf, any other obligation or liability.

Some states do not allow the exclusion on limitation of implied warranties or liability for incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This Warranty and, any and all claims that may arise shall be construed according to the laws of the State of Missouri, USA.