

LIFT-OUT FLOOD BARRIER

Installation Instructions/Operation and Maintenance Manual

Models:

- LO-510
- LO-510FM



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Contact Information

Mail	Local Phone	Website	Hours of Operation
PS Flood Barriers 1150 South 48th Street Grand Forks, ND 58201	701.746.4519	psfloodbarriers.com	8 A.M. to 5 P.M. CT Monday – Friday
	Toll Free Phone	Email	
	877.446.1519	4psinfo@psindustries.com	

IMPORTANT! Read entire Instruction and Operations Manual to become familiar with the product.

NOTICE This product is a flood protection product. The effectiveness of the product is directly related to the proper installation and operation of this product. Failure to properly maintain this product **will** affect performance.

Publication Notice

This manual has been compiled and published covering the latest product descriptions and specifications.

The contents of this manual and the specifications of this product are subject to change without notice.

PS Flood Barriers reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

PS Flood Barriers and/or its respective suppliers may make improvements and/or changes in the product(s)/ service(s) offered and/or the program(s) at any time without notice.

Retain this manual for future reference.

If you would like to download a copy of this manual, please go to psfloodbarriers.com

Safety Precautions

The following icons are used throughout this Manual.

- ▲ DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
- ▲ WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
- ▲ CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderated injury.
- NOTICE** Indicates manufacturer's statement of additional information.
- IMPORTANT!** Indicates a required action.
- CRITICAL** Indicates a vital component to product performance.

Product Information

NOTICE Unauthorized modification of or to the Product voids this Limited Warranty. Authorized modifications, received in writing from PS INDUSTRIES INCORPORATED, as long as the modification is accomplished in strict accordance with PS INDUSTRIES INCORPORATED's instructions, does not void warranty. To request product modifications contact PS INDUSTRIES INCORPORATED, 1150 S. 48th Street, Grand Forks, ND 58201, phone 877-446-1519, email: 4psinfo@psindustries.com

I. General Information

This manual contains information regarding operation and maintenance of custom water-resistant Lift-Out Flood Barrier assemblies.

II. Operation Guidelines

The following procedures and information are supplied for the operation of the PS Flood Barriers' LO-510 Lift-Out Flood Barrier assemblies. Operation in a manner other than intended could result in damage or less than acceptable performance at time of need, for which the manufacturer will not be held responsible.

▲ CAUTION Always plan for potential leakage and condensation that can occur during flooding conditions.

▲ WARNING The Lift-Out Flood Barrier components MAY BE heavy, consult Approved for Construction drawings and included documents for weights and use appropriate lifting procedures and equipment.

III. Safety Precautions

- A. Ensure opening is clear of all obstructions or debris through operation.
- C. Do not force panels or components if they do not operate freely.
- D. Protect all gaskets and hardware. Always consult original Approved for Construction drawings for all installation dimensions, details, hardware and specifications.

▲ CAUTION When operating Lift-Out Flood Barrier keep clear of pinch points at the latching mechanism, hinge locations, and out of the travel of the hatch panel at all times.

IV. Pre-flooding or Potential Flooding Conditions

- A. Conduct Inspection and Maintenance activities as described in this Operation and Maintenance Manual, at a minimum, annually and seasonally if seasonal flood conditions exist, prior to the flood season. This may require the replacement of gaskets, sealants, anchors, and accounting for all of the latching devices.
- B. Ensure LO-510, Lift-Out Flood Barrier system is operational prior to flood waters reaching the opening.

▲ WARNING THIS IS A FLOOD PROTECTION BARRIER; NEVER UNLATCH OR DISASSEMBLE DURING ANY FLOOD CONDITIONS AS WATER LEAKAGE WILL OCCUR AND YOU MAY NOT BE ABLE TO RESEAL THE BARRIER.

NOTICE PS Flood Barriers recommends a flood preparedness plan be developed and implemented. An annual training drill for activation prior to potential flooding conditions is recommended.

Product Information

V. Flooding Conditions

- A. Ensure LO-510, Lift-Out Flood Barrier is not opened at any time when flooding conditions are present.
- B. If feasible, inspect LO-510, Lift-Out Flood Barrier for leakage or condensation accumulation during flooding.

VI. Post-flooding Conditions

- A. At minimum, conduct Inspection and Maintenance activities as described in the Operations and Maintenance Manual.

VII. Additional Information

- A. Model LO-510 is specifically designed Lift-Out Flood Barrier capable of providing flood protection and can handle flooding conditions. The LO-510 is manufactured to meet the opening dimensions and Water Protective Height (WPH) of each customers' specific site requirements. **DUE TO THE CUSTOM NATURE OF EACH LO-510 THEY DO NOT ALL LOOK THE SAME NOR LATCH OR OPERATE EXACTLY THE SAME. REFER TO THIS DOCUMENT AND APPROVED FOR CONSTRUCTION DRAWINGS FOR YOUR SPECIFIC INSTALLATION AND OPERATION.**

NOTICE Please keep these instructions and Approved for Construction Drawings for later reference and read them before attempting any maintenance or deployment of the product.

- B. No additional allowances have been included for hydrodynamic loads, debris impact loads or wave loads, unless specifically detailed in additional documentation provided.
- C. All water pressure, impact, and operating loads are transferred to the building structure. Building structure design and capacity to accept loads from flood barriers, as well as, evaluation of loads to structure is by others, not PS Flood Barriers..
- D. If the water height exceeds the level of any door penetrations or water protective design height, leakage will occur.
- E. This product is equipped with compressible seals, which are not dependent on inflation devices.

Lift-Out Flood Barrier Installation

VIII. Lift-Out Flood Barrier Installation

NOTICE Operation in a manner other than intended could result in damage or less than acceptable performance at time of need for which the manufacturer will not be held responsible.

NOTE: Conduct Inspection and Maintenance activities as described in this Operation and Maintenance Manual, at a minimum, annually and seasonally if seasonal flood conditions exist, prior to the flood season. This may require the replacement of gaskets, sealants, anchors, and accounting for all of the latching devices.

STEP 1. Remove all dust and debris from sill, embedded channels, and jambs.

STEP 2. Using lift points at top of barrier, hoist, and locate barrier panel into position, holding gaskets against jambs, and lower panel completely to ground.

STEP 3. Insure barrier panel is centered in opening and bottom gasket is in proper position and compressed by the weight of the barrier panel.

STEP 4. Position jamb retainer clamps on threaded compression rods, and tighten to compress jamb gaskets.

STEP 5. Visually inspect all gaskets for proper positioning and compression. If not in good position and compression, unlatch barrier panel, and adjust accordingly.

NOTICE PS Flood Barriers recommends completing installation steps fully, testing, and completing a Training Drill for activation prior to storage of Flood Barrier System.

Product Description

IX. Lift-Out Flood Barrier Product Description

NOTICE Operation in a manner other than intended could result in damage or less than acceptable performance at time of need for which the manufacturer will not be held responsible.

NOTE: Inspect all components of Lift-Out Flood Barrier before deployment, making sure to properly clean and remove contaminants. Contact PS Flood Barriers at 877-446-1519 for purchase of replacement components, if necessary.

- 1. Flood Barrier Panel:** To be fabricated as a welded structural frame, and sheeted one or both sides with flat sheeting welding in place. Flood Barrier panel to be designed for specified maximum water height above Finished Floor Elevation (FFE). All loads transferred to adjacent structure.
- 2. Flood Barrier Frame:** To be PS Flood Barriers' design, for field installation on existing structure and/or embedded within structure. Frame members to be fabricated from structural or extruded shapes and formed members. Field grouting is required.
- 3. Gaskets:** To be factory mounted to the flood barrier or panel. Gaskets to be compressible rubber type, field replaceable.
- 4. Flood Barrier Panel and Frame Finish:**
 - A. One (1) shop coat of manufacturer's standard shop primer (S-W Kemflash Primer E61-R-26), and two (2) coats of Standard Industrial Enamel (S-W Industrial and Marine Coatings B54 Series) applied in accordance with manufacturer recommendations and instructions. (Note: Touch up of finish will be required as scratches will occur during shipment, handling, and installation).
 - B. Aluminum or Stainless Steel, Mill Finish, welds ground not polished.
- 5. Latching Hardware:** To be spin-down knob type. Appropriate number of latches for the size, type, and design.
- 6. Installation Hardware:** PS Flood Barriers includes all sealants, water-stop, anchors and hardware necessary for installation, hinging, latching, and retaining flood doors as designed.

CRITICAL Anchors are engineered for load design and shall not be changed without factory authorization.

- 7. Labeling:** Each flood panel and frame will be individually identified for matched installation. PS Flood Barriers provides Warning Placards.
- 8. Warranty:** PS Flood Barriers warrants this product and components to be free from manufacturing defects for a period of one (1) year from date of shipment.

The following information is available upon request:

- 1. Structural Calculations:** A copy of PS Flood Barriers' design calculations by a qualified engineer, to verify the flood barrier's ability to withstand the design loading, is available upon request.

The following optional services is available upon request:

- 1. Stamped Structural Calculations:** Upon signed finalization and approval of dimensions, mounting location material and configuration, and load requirements. Registered professional engineer stamped calculations from within the state or territory where the project will be constructed or substantially improved are available at an additional cost.

Inspection and Maintenance

X. Inspection and Maintenance (Minimum Annually)

A. Panel, Frame, and Embedded items:

1. Inspect items for damage and misalignment. Adjust, repair, or replace as needed, to meet original design tolerances.
2. Check all connections, making sure they meet original design standards (refer to Approved for Construction Drawings and Anchor Specifications).

B. Fasteners and mechanical connections:

1. All fasteners must be in place and adjusted to their original design standards. Replace any damaged components (refer to Approved for Construction Drawings and Anchor Specifications).

C. Sealants and Waterstops:

1. Inspect all sealants used on frame and connections to insure their effectiveness.
2. Replace any cracked, loose, or otherwise non-performing sealants.
3. Use only factory approved/supplied products.
 - a. Factory approved sealant/waterstops: Sika; Sikaflex-227, Quellpaste Typ E

D. Gasketing:

1. Inspect all gaskets for damage, continuous adhesion to the attached surface, and proper positioning and compression.
2. Visually inspect all gaskets for proper positioning and compression.
3. Replace or repair if damage or deterioration to gaskets has occurred.
4. Use only factory approved materials (refer to Approved for Construction Drawings).

CRITICAL Gaskets are a critical component of the Flood Barrier protective performance and must meet minimum compression tolerances in the latched position.

E. Latching:

1. Operate all latching hardware to ensure smooth, uninhibited movement of all mechanical components.
2. Place flood barrier and check latches for proper engagement. If gaskets are not properly positioned and properly compressed, unlatch barrier panel and adjust latching accordingly.

F. Finishes:

1. Inspect and clean finishes annually.
2. Touch-up repair finishes, or refinish as necessary to protect the structural integrity of the Flood Barrier.

G. Labels and Placards:

1. Inspect all labels and placards.
2. Replace any labels and placards which are unreadable/missing.

I. Housekeeping:

1. Clean sill and jambs of any debris and keep the area clean throughout flood barrier opening.

Inspection and Maintenance Log CRITICAL Periodic Inspection and Maintenance Required. Inspect at minimum annually.

Date Purchased: _____

Product: _____

Model Number: _____

Serial Number: _____

Opening Identifier/ Number: _____

Location: _____

DATE INSPECTED	INSPECTED BY <i>(Print & Sign)</i>	INSPECTION ITEMS NOTED	CORRECTIVE ACTION	CORRECTED BY <i>(Print & Sign)</i>

PS FLOOD BARRIER WARRANTY REGISTRATION FORM

PS Flood Barriers™ Product Warranty Registration: For PS Flood Barriers™ Products, the Limited Warranty will only be valid if the Owner completes, and returns, this PS Flood Barrier Warranty Registration Form within thirty (30) days of Product installation.

To request additional copies of the Warranty Registration Form, contact PS INDUSTRIES INCORPORATED, 1150 S. 48th Street, Grand Forks, ND 58201, phone 877-446-1519, email: 4psinfo@psindustries.com. For a fillable form, download a copy from www.psfloodbarriers.com/download-center/

The following information is required:

Owner Name: _____ Product Name: _____

Company: _____ Model: _____

Address: _____ Serial Number: _____

State/Province: _____ Date Installed: _____

Zip/Postal Code: _____

Country: _____

Although testing of flood barriers is not required, PS INDUSTRIES INCORPORATED recommends testing flood barriers after installation to verify the suitability of the installation and ensure proper adjustment of flood barrier for optimum performance.

The following information and signatures are required to ensure warranty coverage of installed product.

- Was the flood barrier field tested after installation? Yes No
- If tested, which type(s) of testing was conducted?
 - Hose Test per PS Flood Barriers testing procedure.
 - Hydrostatic Test per PS Flood Barriers testing procedure.
 - Other Testing Method (*describe below*):

Owner or Installer Name (Please print.)

Test Witness Name (Please print.)

Signature

Signature

Date

Date

Return form to:

PS Flood Barriers
Attention: Warranty
1150 S. 48th Street
Grand Forks, ND 58201

Fax: 701-746-8340
E-mail: 4psinfo@psindustries.com

(Make additional copies as necessary)



877.446.1519

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