



PENTALIFT EQUIPMENT CORPORATION

# Ultima Mechanical Dock Levelers

PROVIDING THE ULTIMATE VALUE IN FUNCTION AND STRUCTURE  
AVAILABLE IN A DOCK LEVELER

## Structural Features (45,000 lb Capacity Models)

- High-strength safety checker plate deck assembly, 55,000 psi yield.
- “I” beam deck support 6” structural “I” beams @ 12 lbs per foot.
- Central deck support beam for added support of three wheeled vehicles.
- High-strength safety checker plate lip assembly, 1” rear laminated, c/w 3/8” x 6” reinforcing plate, 55,000 psi yield.
- Full-width, self-cleaning, heavy wall hinge tube, 2-1/2” OD x 1-1/2” ID Lip shaft: 1-3/8” OD.
- 3/8” thick gussets on lip and headboard hinge maximize strength.
- 3/8” thick, 50,000 psi yield, headboard with bridged gaps.
- Full-width rear channel tailboard and one-piece, full-width rear hinge, complete with heavy steel gussets provide box section for superior strength.
- Rear frame assembly features five vertical structural members with eight points of support for full-width rear hinge. Wrap around hooks on pivot point to further increase strength of rear frame.
- Heavy-duty front frame provides full-width cross traffic support and superior building aesthetics. Night lock prevents unauthorized entry when overhead door is locked on top of dock leveler.



MU6845 Model Shown

## Operating Features

- Patented “Easy Float” Hold-down provides easy chain release for walk down (See back page for more details).
- Patent Pending, Positive Lip lock maintains extension of the lip, and then automatically retracts once the truck departs.
- Lip is yieldable if impacted in the extended position.
- Mechanical safety legs limit platform free fall in the event of premature truck departure; includes below level control.
- Computer optimized cam profile reduces “walk down” forces.
- Full-range telescopic toe protection; upper and lower sections feature a “bend relief” to increase strength.
- Safe, easy maintenance; only three adjustment points, conveniently located at the front of the dock leveler eliminate the need to enter the pit. Single spring adjustment point for heavy-duty lift springs.
- Fixed rear hinge remains flush with the rear of the pit to eliminate potential pinch points while allowing 4” of lateral deck compensation.

## Other Capacities of Ultima Dock Levelers

The following models have all the same features of the 45,000 lb capacity model shown on the front page with the exception of the following individual component changes;

### 35,000 lb Capacity Models

- “I” beam deck support 6” structural “I” beams @ 9 lbs per foot.
- High-strength safety checker plate lip assembly, 5/8” thick, 55,000 psi yield.
- Full-width, self-cleaning, heavy wall hinge tube, 2” OD x 1-1/4” ID Lip shaft: 1-1/8” OD.

### 30,000 lb Capacity Models

- “I” beam deck support 6” structural “I” beams @ 9 lbs per foot.
- High-strength safety checker plate lip assembly, 5/8” thick, 55,000 psi yield.
- Full-width, self-cleaning, heavy wall hinge tube, 1-3/4” OD x 1-1/8” ID Lip shaft: 1” OD.

## The “Easy Float” Hold-down Represents a Major Advancement in the Most Important Component of a Mechanical Dock Leveler

The Hold-down assembly in a mechanical dock leveler has two main functions; to hold the leveler in position on the back of the truck/trailer, and to allow the dock leveler to “float” up and down with the suspension of the truck/trailer as it rises and lowers during loading/unloading operations. In some instances this “floating” movement is over 12”. Every time a lift truck drives in or out of the truck/trailer, a tremendous shock load is delivered to conventional ratchet and pawl type Hold-downs. This is why conventional Hold-downs are a continual source of breakdown problems with broken teeth on both the ratchets and pawls. When the Hold-down on a mechanical dock leveler breaks, the entire dock leveler is inoperable. In 1983, Pentalift invented and patented its “Easy Float” Hold-down. Pentalift was the first in the industry to incorporate a brake band and high-strength, nylon strap to eliminate the extreme stresses and impact forces that cause conventional Hold-downs to fail.

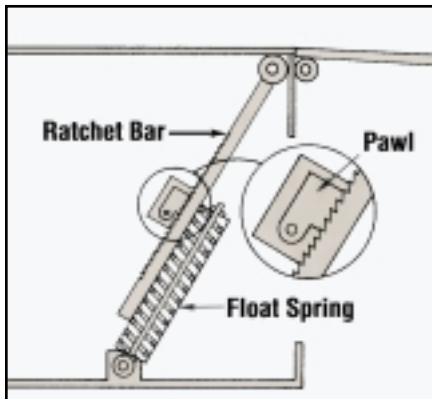


Fig. 1

### The Problem - Ratchet and Pawl Hold-down

A float spring compensates for truck/trailer bed movement. The spring's resistance becomes progressively greater as the deck rises. Once the float spring is fully compressed, the severe upward force results in substantial Hold-down damage. Accumulated over-working weakens the spring, creating “bounce” during rollover. The shock load stresses during float bear directly on the hardened metal ratchet bar and the rigid pawl teeth. (Fig. 1). These damaging conditions, common during normal usage, cause aggravating ratchet and pawl teeth failure. Some designs release the pawl from the ratchet once the float spring has been compressed. The teeth automatically release and reset under spring pressure, causing premature ratchet and pawl failure. The release forces for a ratchet and pawl Hold-down can be up to 100 lb (Fig. 2) when it is compensating for upward deck float; even under best case conditions 20-30 lb of pull force is required.



Fig. 2

### The Solution – “Easy Float” Hold-down

Controlled, automatic compensation of the brake assembly, under a light upwards force (approximately 200 lb), allows Pentalift's dock leveler deck to float gently upwards and maintain positive lip contact with the truck/trailer bed. The brake band design assures that the automatic compensation force will remain constant throughout the entire operating range. The high-strength nylon strap absorbs shock loads because of its semi-elastic properties.

Hold-downs are released manually to allow the deck of the dock leveler to rise for use or to be restored after use when the truck/trailer is still at the dock. Pulling a Hold-down release ring installed in the dock leveler deck does this.

The pull force required to release the Hold-down is always a concern. The “Easy Float” Hold-down only requires a pull force of 8 lb throughout the entire operating range of the dock leveler. Proven benefits of the Pentalift “Easy Float” Hold-down design result in maximum component life, and minimized risk of discomfort and injury to the dock attendant. “Easy Float” Hold-down is shown in (Fig. 3).

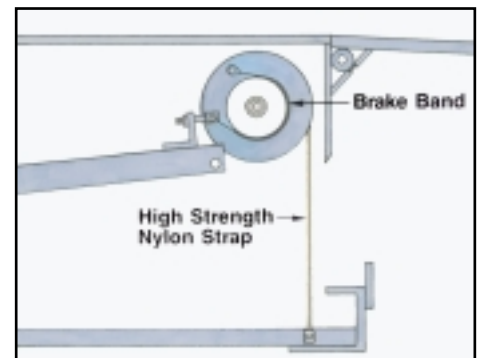


Fig. 3

**Consult a Pentalift Sales Representative for additional or equipment recommendations.**

Note: Some photos may reflect products with optional features. All Pentalift Equipment Corporation products are subject to design improvement through modification without notice.

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