



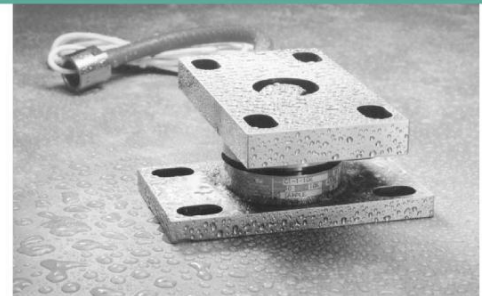
# Technical Specifications

## Load Disc II Compression Load Cell

For in-process applications that require a stainless steel load cell that is easy to keep clean. Vessel is locked in-place to protect the product and operators from vessel movement or seismic events.

The Load Disc II™ weight transducer has the lowest profile for its load ranges in the industry. Utilizing the proven KM semiconductor strain gage technology, the Load Disc II continuously measures the weight of material for in-process and bulk storage vessels. Its sealed, stainless steel construction – fully potted in NEMA-6P enclosure with watertight cable system and cable entry – makes the Load Disc II transducer ideal for use in high-pressure wash down, corrosive or submerged environments. It is particularly suitable for use on mixing and blending vessels, surge hoppers, and vessels with agitators. Standard load ranges are from 150 to 100,000 pounds (68 to 45,360 kg) per vessel support with system performance accuracies of 0.1% and 0.2%.

Low-profile design for low clearance installations also keeps the vessel's center of gravity low and stable. Vessel tipping, walking or overturning while agitating is eliminated. Installation and setup is simplified with less hardware. No external vessel hold-downs are necessary, even in areas of high wind or seismic activity. There are no moving parts that can wear out or require replacement. The high output of the semiconductor sensor provides immunity to industrial electrical noise and allows longer load cell to signal processor runs.



## Features & Benefits

### Single Footprint & Low Profile Height Range

For 150 to 25K and 35K to 100K pound rated output, a single system design and installation keeps the vessel locked down and secure from tipping, even in Zone 4 seismic areas.

### Minimal Deflection

Only 0.004 inch at rated output minimizes piping & plumbing influences for reliable results.

### NEMA-6P Stainless Steel Submersion Rating

Incorporates NEMA-4 & -4X in a stainless steel hermetically sealed package for protection in high pressure, caustic wash downs.

### High Output Rugged Design

Greater electrical noise immunity provides long term reliability under a wide range of operating conditions with cable runs to 2000 feet.

### FM Approved

For use in hazardous areas with or without barriers.



KM Systems Mexico



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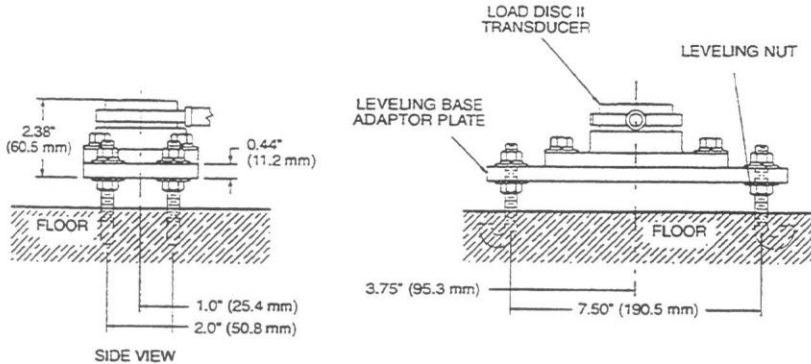
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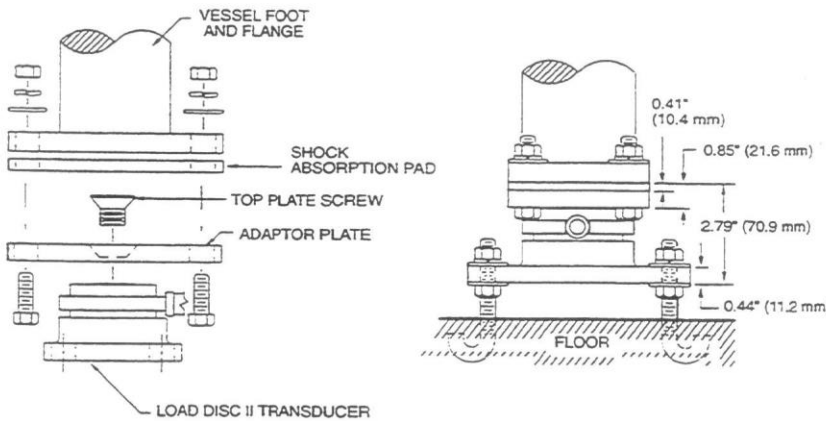
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# Sample Installation Arrangements

Using Leveling Base Adapter Plate hardware provides height adjustment of the Load Disc II transducer by turning leveling nuts instead of shimming. If there is ever a need for removing a Load Disc II transducer from under a vessel leg, this hardware allows you to slide the transducer out from under the leg as opposed to raising the vessel legs to clear the installation



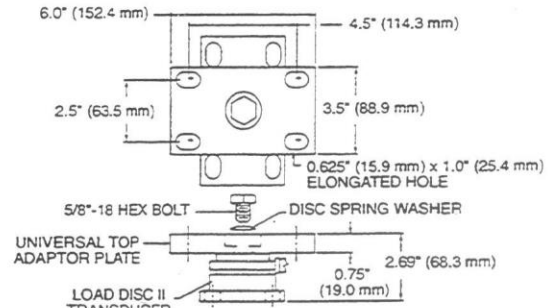
**150-25K lb Load Disc II Transducer with LB1 Leveling Base Adapter Plate**



**Load Disc II Transducer with TP1 Top Adaptor Plate and Shock Absorption Pad**

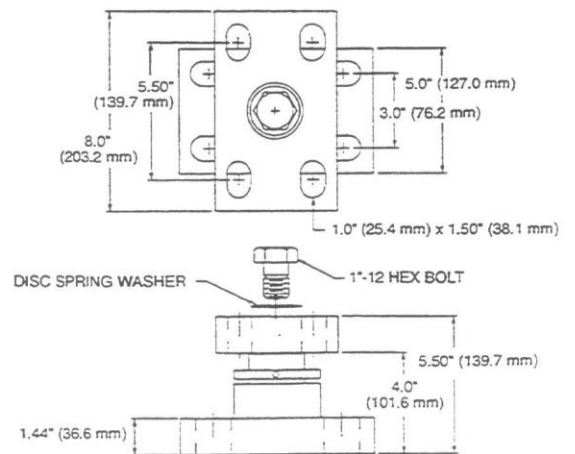
A top adaptor plate with shock absorption pad should be used where severe impact loading is present.

The Universal Top Adapter plate has four holes to allow bolting to a vessel leg that has a flat plate or gusset. The Load Disc II transducer can be bolted to the floor through the base plate holes. This hardware is used for standard applications. The top plate is free to turn 360° and also accommodates up to 5° tilt in the floor or vessel legs. The plate can also move 1/16" laterally in any direction.



**Load Disc II Transducer with UA1 Universal Top Adaptor Plate 150-25K Lbs.**

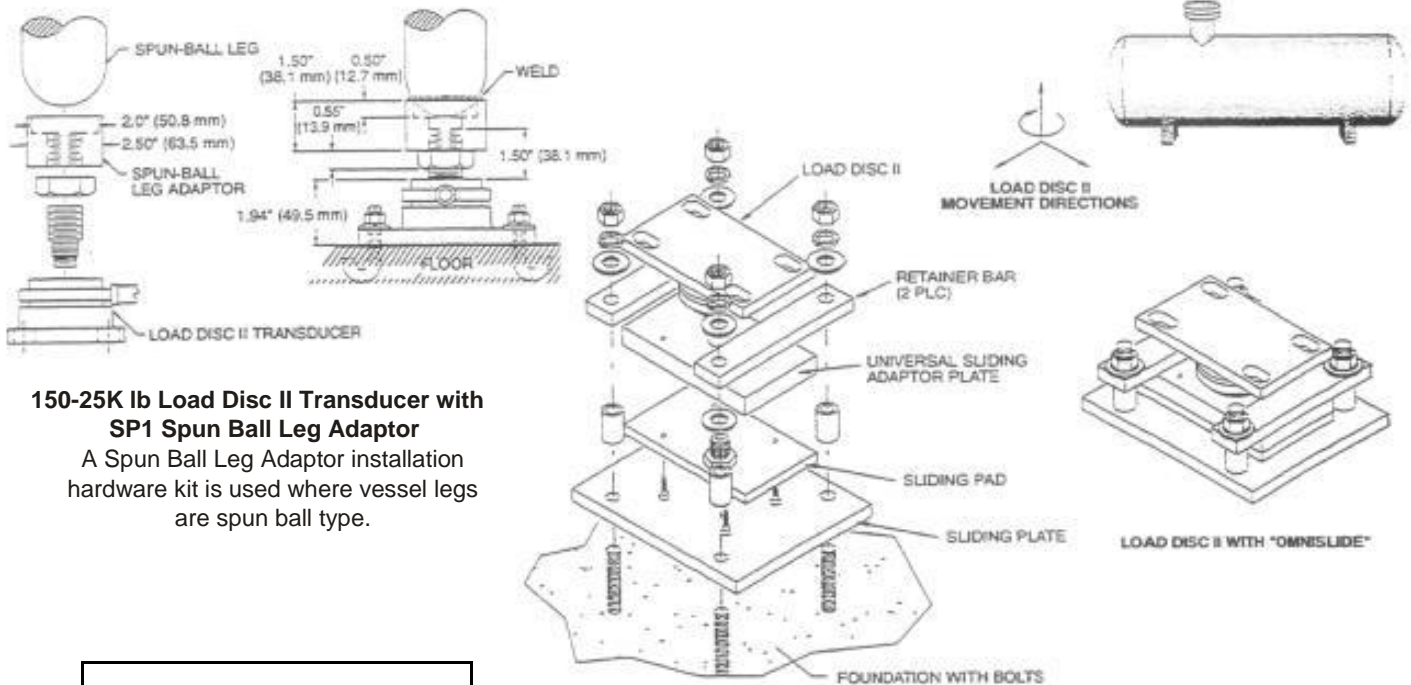
A universal top adapter plate should be used in general applications and where the floor has a slope (up to 5 degrees) and/or the vessel leg flanges are not even. This installation hardware kit will also allow for minor vessel leg movement (up to 1/16" in any direction) caused by vessel thermal expansion due to sun radiation and outdoor temperature variation between summer and winter seasons.



**Load Disc II Transducer with UA2 Universal Top Adaptor Plate 35K-100K Lbs.**

**Protection from Thermal Expansion and Contraction of Vessel**

An Omnislide installation hardware kit, while securing the vessel legs to the floor, will allow the vessel legs to move in any direction (sideways, rotation and 0.06" lift) due to vessel thermal expansion and contraction without any degradation in transducer sensitivity or accuracy. Typical applications are chemical reactors and horizontal tanks.



**150-25K lb Load Disc II Transducer with SP1 Spun Ball Leg Adaptor**

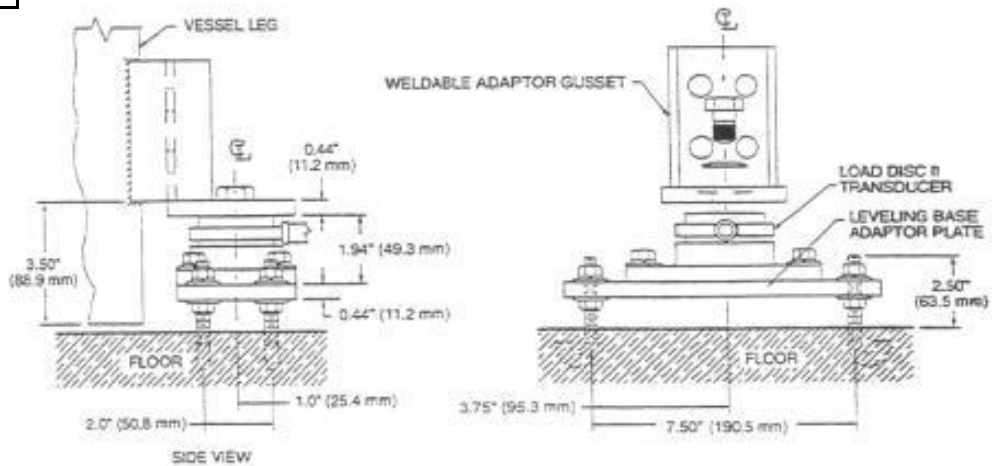
A Spun Ball Leg Adaptor installation hardware kit is used where vessel legs are spun ball type.

**CONSULT FACTORY FOR DETAILED LISTING AND DRAWINGS OF ALL INSTALLATION ARRANGEMENTS**

**Load Disc II with OS1 Omnislide Hardware Configuration**

**Low Overhead Room**

Weldable Adaptor Gusset hardware kit is used when the vessel cannot be raised enough to accommodate the height of the Load Disc II transducer (low overhead room) or when a crane or hydraulic jack is not available for raising the vessel.



**150-25K lb Load Disc II Transducer with WG1 Weldable Adapter Gusset and LB1 Leveling Base Adapter Plate**

# Specifications

## Mechanical

### Compression:

150 to 25,000 lbs. Rated Load: 4 x rated load 35,000 to 100,000 lbs. Rated Load: 2.5 x rated load

**Tension:** 1.0 x rated load

**Shear:** 0.5 x rated load

**Functional Integrity:** 2.0 x rated load

**Maintain Rated Accuracy:** 1.5 x rated load

## Input

**Excitation Voltage - Standard:** 12 VDC

**Excitation Voltage - Maximum:** 30 VDC

**Current Draw:** 4 mA at 0° F (-17.8° C) to 2.7 mA at 100° F (38° C) @ 12 VDC excitation

**Impedance:** 7.5K ohms, +/-1%

## Output

### Nonlinearity/Hysteresis Combined:

0.2% Performance: 0.2% standardized output

0.1% Performance: 0.1% standardized output

Consult factory for batching accuracy; typically 0.05% to 0.01% full scale

**Return to Zero:** 0.05% standardized output

### Rated Output (@ 12 VDC Excitation):

Temperature Range - Standard/Mid: 360 mV +/- 5 mV (30 mV/V)

Temperature Range - High: 240 mV +/- 3 mV (20 mV/V)

### Temperature Effects - Sensitivity Shift:

+/- 0.015%/° F, 0° ≤ T ≤ 100° F

### Temperature Effects - Zero Shift:

Standard/Mid-Temperature Ranges: 0.008%/° F (0.015%/° C)

High Temperature Range: 0.012%/° F (0.022%/° C)

## Environmental

**Temperature Range - Standard:** 0° to 100° F (-17.8° to 37.8° C)

**Temperature Range - Mid:** 50° to 150° F (10° to 66° C); up to 300° F during CIP/SIP

**Temperature Range - High:** 150° to 250° F (66° to 121° C); up to 300° F during CIP/SIP

**Humidity:** 100%

## Physical

**Body:** 17-4 PH 900 heat-treated stainless steel; all welds full penetration weldment in accordance with Uniform Building Code (UBC) criteria per specification AWS B2.1.009-90

**Signal Cable Armor:** 12 in (305 mm) sanitary food-grade tubing

**Conduit Fitting:** 304 stainless steel 1/2-inch female NPT

**Signal Cable:** 3-conductor, 22 gage unshielded, 10 ft (3 m) long, with tinned pigtail termination

**Rating:** NEMA-6P (includes NEMA-4, NEMA-4X and NEMA-6); hermetically sealed for high-pressure caustic washdown and prolonged submergence in water (watertight conduit provided by customer)

### Shipping Weight:

150 to 25,000 lbs. rated load: 8.5 lbs. (3.9 kg)

35,000 to 100,000 lbs. rated load: 17 lbs

**Approvals:** Factory Mutual (FM) approved for hazardous locations when installed per KM specifications; intrinsically safe, Class I, II and III, Division 1, Groups C, D, E, F and G; non-incendive, Class I, Division 2, Groups A, B, C and D; suitable for Class II, Division 2, Groups F and G, and suitable for Class III, Divisions 1 and 2

Ordering Information			
Model Number		Rated Load	
		lbs	kg
C1-1	C1-2	1,000	454
C1-1	C1-2	2,000	907
C1-1	C1-2	3,000	1,361
C1-1	C1-2	5,000	2,268
C1-1	C1-2	7,500	3,402
C1-1	C1-2	10,000	4,536
C1-1	C1-2	15,000	6,804
C1-1	C1-2	20,000	9,072
C1-1	C1-2	25,000	11,340
C1-1	C1-2	35,000	15,876
C1-1	C1-2	50,000	22,680
C1-1	C1-2	75,000	34,020
C1-1	C1-2	100,000	45,360

Ordering Information		
Model Number	Rated Load	
	lbs	kg
C1-SB	150	68
C1-SB	250	113
C1-SB	500	227



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