



Say good-bye to heavy test weights, delays, and weight rental fees with Hardy Instruments C2® Second Generation Calibration. A C2 system includes load points, junction box, cabling and instrumentation, and is designed to make calibration easier than ever before. Upon installation or re-calibration, the instrument automatically searches for C2 certified load points and records their performance characteristics. Entering a reference point is all that's needed to bring your system on line within seconds. On instruments with "THE BUTTON" feature, one touch of a button is enough.

Theoretically, test weights should provide an accurate calibration within the quality of the scale installation. However, calibration conditions are often less than ideal.

Many vessels lack the space needed to place enough test weights on them to get an accurate calibration. Distributing the weights equally on the vessel may also be impossible. Some vessels are mounted in areas offering limited accessibility, while others have weight capacities far in excess of available test weights. The results of these real world issues is an error-prone calibration.



With C2, these considerations are no longer an issue. Each individual load sensor has its performance characteristics stored on an internal memory device. These characteristics are measured on National Institute of Standards and Technology (NIST) traceable test devices and electronically recorded when the sensor is manufactured. The C2 system uses these parameters, the instruments' characteristics and a reference point to calibrate the scale system.

C2 reduces downtime for repairs and time waiting for test weights. It eliminates test weight related injuries and ends material substitution headaches, including contamination and waste disposal issues. C2 is a standard feature on Hardy Instruments weigh modules, and weight and rate controllers.

$$\frac{\sigma A l}{2 E}$$



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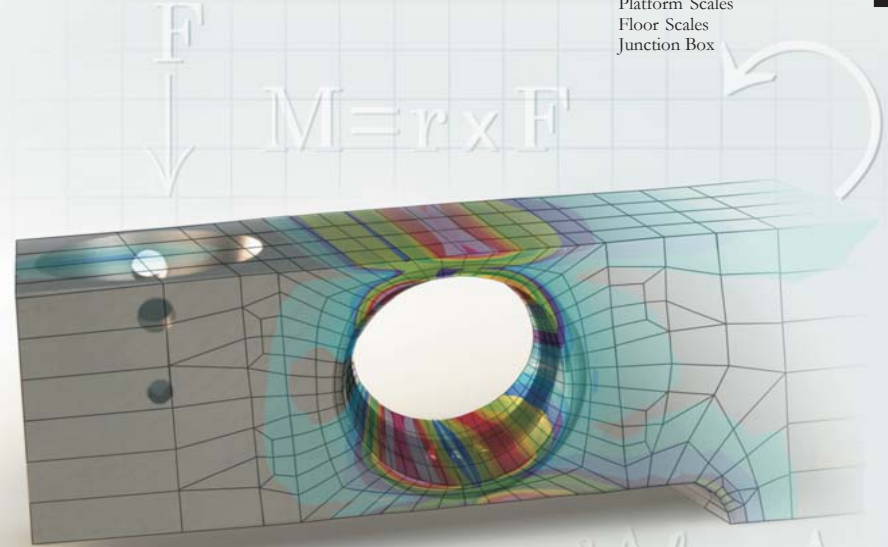


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Selection Guide

- Load Sensors
- Load Points
- Platform Scales
- Floor Scales
- Junction Box



$$V_e = \frac{\sigma^2 A l}{2 E}$$

$$\sigma = e E$$



Anatomy of a Hardy Instruments Load Sensor

Blind Loading Hole

Allows a spherical end loading pin to insure load is applied at the same precise location, eliminating unwanted effects of side and eccentric loads common with threaded hole designs.

Hermetically Sealed & IP68 Rated

A nitrogen filled sensing area sealed by a welded sleeve and cable entry through a glass to metal header blocks moisture and protects circuits from corrosion for long sensor life, even in harsh environments.

Matched MV/V & MV/V/OHM

Each sensor produced is electrically matched to a standard resulting in no corner adjustments (trim pots) or recalibration required in platforms or hopper scales.

Redundant 'O' Ring and Stuffing Gland

Provide additional protection from the environment.



Combined Error Reduced 50%

More consistent weight measurements, lower hysteresis and nonlinearity.

200% Safe Overload Limit

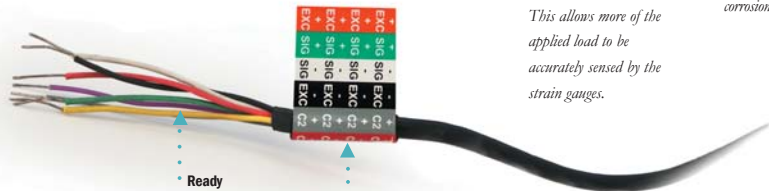
Less susceptibility to shock and pulsed loads.

Cylindrical Sleeve

The gauge area sealing shares much less of the applied load as compared to the conventional cup. This allows more of the applied load to be accurately sensed by the strain gauges.

316 Electro-polished Stainless Steel

Cable fittings and gauge area sleeve are polished for additional protection from corrosion.



Ready To Install Cable

Each sensor is shipped with cables stripped and wires tinned for easy installation.

Color Code Label

Identifies wires for easy installation.

ANY-WEIGH® Floor Scales



C2 SECOND GENERATION CALIBRATION

FEATURES

- Capacities range from 1,000 to 10,000 lbs
- C2® Electronic Calibration
- Top access summing card
- 100% end loading
- ADVANTAGE® Sensors are matched, stainless steel, with true hermetic seal and no cornering
- INTEGRATED TECHNICIAN®

The ANY-WEIGH line floor scales are designed and built for harsh chemical and washdown industrial environments, yet are easy to use and install with the latest advancements in weighing technology. Gone are the manual multi-turn potentiometers for corner adjusting. Just level the deck, attach the included 20-foot cable, calibrate (if a C2® compatible instrument, set your reference), and begin weighing.

Each scale has built-in INTEGRATED TECHNICIAN® circuitry. When coupled with a Hardy controller, the scale provides diagnostic and troubleshooting tools that read individual weights and voltages to aid you in isolating problems and ensure the integrity of your scale system.

All ANY-WEIGH floor scales come with Hardy ADVANTAGE® stainless steel, true hermetically-sealed sensors - sealed at both the gauging area and cable entry for long life. All are matched and calibrated for mV/V and mV/V/ohm. Instead of the typical threaded hole into which the load cell foot is attached, the ANY-WEIGH sensors use a blind hole technique ensuring the load is applied at a precise location, providing an accurate reading, weight after weight.

With a deck height of only three inches and 100% end loading, these floor scales enable easy, any-side access and maneuvering of all types of load handling equipment onto the scale. Each scale features a field-proven, rugged structural rib design with 1/4 inch thick smooth or diamond plate deck that can withstand overloads of up to 150% of its capacity. A durable rubber-based foot for each load sensor is height adjustable from below the platform.

STANDARD SIZES AND CAPACITIES

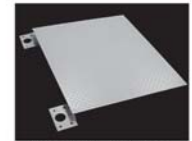
Model	Capacity (lb/kg)	Overall Size (feet/cm)	Ship Weight (lb/kg)
HI AFSU303001-4XX	1000/454	30"x30" / 76x76	200/91
HI AFSU3301-4XX	1000/454	3x3 / 91x91	250/113
HI AFSU3302-4XX	2500/1134	3x3 / 91x91	250/113
HI AFSU4402-4XX	2500/1134	4x4 / 122x122	405/184
HI AFSU4405-4XX	5000/2268	4x4 / 122x122	405/184
HI AFSU4410-4XX	10,000/4536	4x4 / 122x122	405/184
HI AFSU4505-4XX	5000/2268	4x5 / 122x152	500/227
HI AFSU4510-4XX	10,000/4536	4x5 / 122x152	500/227
HI AFSU4605-4XX	5000/2268	4x6 / 122x183	600/272
HI AFSU4610-4XX	10,000/4536	4x6 / 122x183	600/272
HI AFSU5505-4XX	5000/2268	5x5 / 152x152	650/295
HI AFSU5510-4XX	10,000/4536	5x5 / 152x152	650/295
HI AFSU5705-4XX	5000/2268	5x7 / 152x213	900/408
HI AFSU5715-4XX	10,000/4536	5x7 / 152x213	900/408
HI AFSU6810-4XX	10,000/4536	6x8 / 183x244	1150/522

- 4XX STAINLESS HERMETIC LOAD CELLS
- X1X PAINTED PLATFORM TOP
- X3X STAINLESS PLATFORM TOP
- XXS SMOOTH PLATFORM TOP
- XXT TREAD PLATE PLATFORM TOP

ANY-WEIGH ACCESSORIES



Pit Frames - HI APF Series

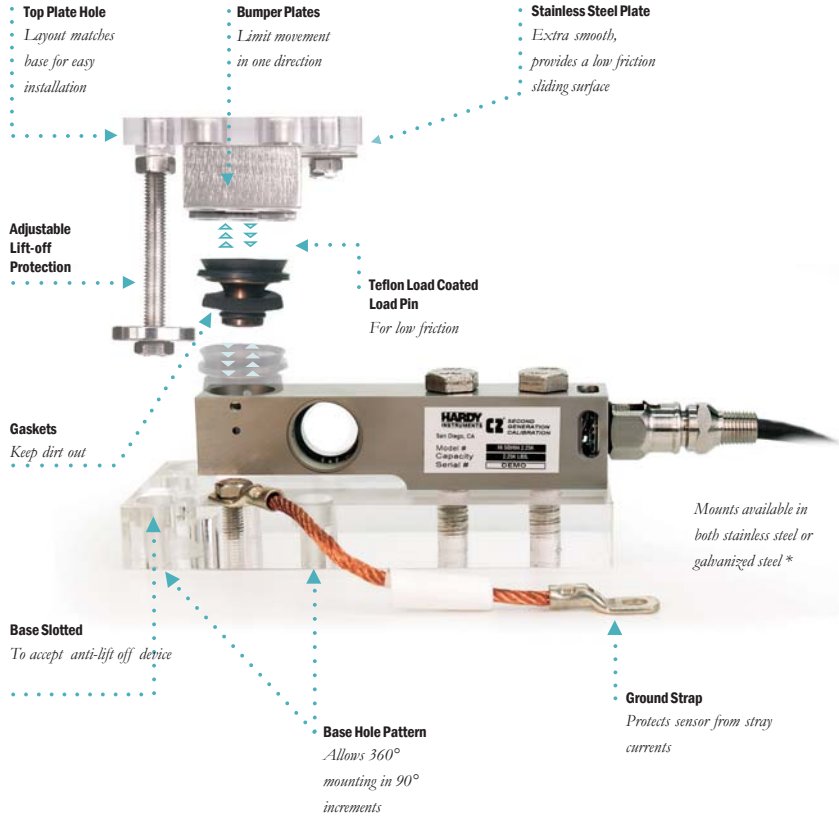


Access Ramps - HI AR Series



Bumper Guards - HI ABG Series

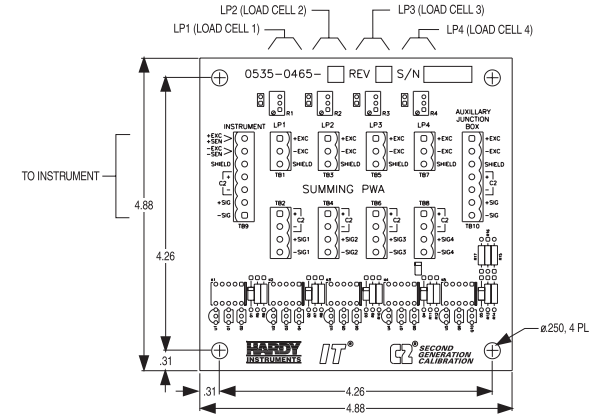
Anatomy of a Hardy Instruments Load Point



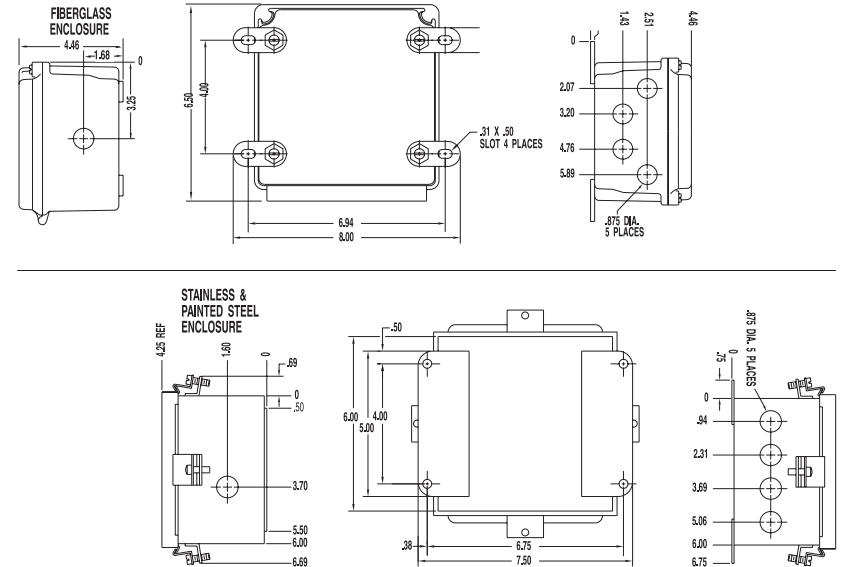
*Shown in clear plastic for illustrative purpose only.

HI LPS SERIES

Junction Box Field Wiring



Junction Box Enclosures



ADVANTAGE™ LINE - Load Points/Sensors

Hardy Instruments' ADVANTAGE™ Line load point assemblies are designed to provide exceptional performance in a safe and predictable manner. The load point consists of a precision, C2® load sensor assembled with matched mounting hardware. Each load point comes with an installation and maintenance manual which is also available for download from our Internet site at www.hardyinst.com.

All Advantage sensors are designed with safe and ultimate loading limits which are the highest in the industry. The safe limit (200% of rated capacity) is that value

above which some degradation of calibration can occur but with no permanent shift in performance. The ultimate limit (300% of rated capacity) is that point at which physical failure may occur. In selecting a load point, it is essential that the gross loadings that are anticipated fall well within the safe limits of the capacity chosen.

All Advantage load sensors are matched and calibrated for mV/V/ohm and mV/V/V. This allows a load sensor to be replaced in a weigh system without the need to re-calibrate the system.

Advantage load sensors are very accurate when the load is applied in the correct manner. Our mounting hardware is designed to direct the load properly to the load sensor while resisting angular effects and reducing moment sensitivity.

Free sliding Advantage mounts permit thermal expansion and contraction and are self checking. With many years of process weighing experience, Hardy Instruments has incorporated mount designs into its load point assemblies to provide you with optimum performance.

ADVANTAGE Load Point Selection Chart

	Single Load Point		3 Point System	
	Capacity	MODEL #	Capacity	MODEL #
REFER TO PAGE 16 FOR SPECIFICATIONS	Low Range lbs. (Kg)		Low Range lbs. (Kg)	
	20 - 44 (9-20)	HI LPB44-4_B,F,S	60 - 132 (27-60)	HI 3B132-4_
	45 - 110 (20-50)	HI LPB110-4_B,F,S	133 - 330 (60-150)	HI 3B330-4_
	111 - 225 (50-102)	HI LPB225-4_B,F,S	331 - 675 (150-306)	HI 3B675-4_
	226 - 450 (103-204)	HI LPB450-4_B,F,S	676 - 1350 (306-612)	HI 3B1.35K-4_
REFER TO PAGE 16 FOR SPECIFICATIONS	Mid Range (metric ton)		Mid Range (metric ton)	
	451 - 1125 (21-51)	HI HLP51125-4_B,F,S	1351 - 3375 (61-153)	HI 3S3375-4_
	1126-2.25K (.51-1.02)	HI HLP52.25K-4_B,F,S	3376 - 6.75K (1.53-3.06)	HI 3S6.75K-4_
	2.251K - 4.5K (1.02-2.04)	HI HLP54.5K-4_B,F,S	6.75K- 13.5K (3.06-6.12)	HI 3S13.5K-4_
	4.51K - 11.25K (2.04-5.1)	HI HLP511.25K-4_B,F,S	13.5K - 33.75K (6.12-15.3)	HI 3S33.75K-4_
	11.25K - 22.5K (5.1-10.2)	HI HLP522.5K-4_B,F,S	33.75K - 67.5K (15.3-30.6)	HI 3S67.5K-4_
REFER TO PAGE 16 FOR SPECIFICATIONS	Short High Range (metric ton)		Short High Range (metric ton)	
	22.6K - 33K (10.2-15)	HI LPR33K-4_C	67.5K - 99K (30-45)	HI 3R99K-4_
	33K - 50K (15-22.7)	HI LPR450K-4_C	99K - 150K (45-68)	HI 3R150K-4_
	High Range (metric ton)		High Range (metric ton)	
50K - 66K (22.7-30)	HI LPRC66K-45C	150K - 198K (68-90)	HI 3R198K-45	
66K - 110K (30-50)	HI LPRC110K-45C	198K - 330K (90-150)	HI 3R330K-45	
110K - 132K (50-60)	HI LPRB132K-45C	330K - 396K (150-180)	HI 3R396K-45	
132K - 200K (60-90)	HI LPRB200K-45C	396K - 600K (180-270)	HI 3R600K-45	
REFER TO PAGE 16 FOR SPECIFICATIONS	Tension (Kg)		Tension (Kg)	
	100 - 225 (45-102)	HI HLP1225-4_C	300 - 675 (136-306)	HI 3T1675-4_
	226 - 450 (102-204)	HI HLP1450-4_C	676 - 1350 (307-612)	HI 3T1.35K-4_
	451 - 1125 (204-510)	HI HLP11125-4_C	1351-3375 (613-1530)	HI 3T3375-4_
	(metric ton)		(metric ton)	
	1126 - 2.25K (.51-1.02)	HI HLP12.25K-4_C	3376K- 6.75K (1.5-3.1)	HI 3T6.75K-4_
2.25K - 4.5K (1.02-2.04)	HI HLP14.5K-4_C	6.75K- 13.5K (3.1-6.1)	HI 3T13.5K-4_	
4.5K - 11.25K (2.04-5.1)	HI HLP111.25K-45C	13.5K - 33.75K (6.1-15.3)	HI 3T33.75K-45	

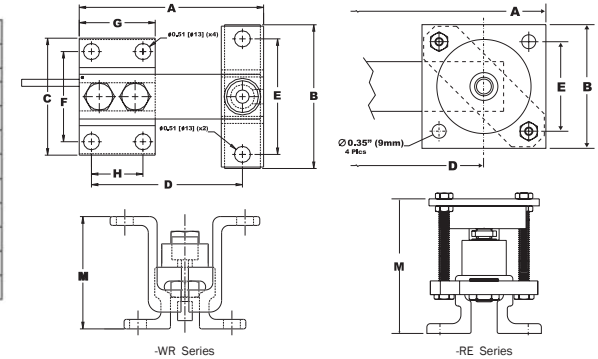
Note: The following numbers placed in _ indicate mounting hardware material: 3 Stainless steel, 5 Galvanized steel.

ADVANTAGE Lite® Load Point Outline

DIMENSIONS - INCHES & [mm]

Inches (mm)	Capacity			
	448, 1.1K & 2.2K Lb. (200, 500 & 1000kg)		4.4K Lb. (2000kg)	
	-WR	-RE	-WR	-RE
A	5.06 (128.6)	6.13 (155.8)	5.06 (128.6)	6.13 (155.8)
B	4.02 (102)	3.19 (81)	4.02 (102)	3.19 (81)
C	3.27 (83)	3.27 (83)	3.27 (83)	3.27 (83)
D	4.22 (107.1)	4.22 (107.1)	4.22 (107.1)	4.22 (107.1)
E	3.23 (82)	2.28 (58)	3.23 (82)	2.28 (58)
F	2.52 (64)	2.52 (64)	2.52 (64)	2.52 (64)
G	2.12 (53.9)	2.12 (53.9)	2.12 (53.9)	2.12 (53.9)
H	1.44 (36.5)	1.44 (36.5)	1.44 (36.5)	1.44 (36.5)
M	3.01 (76.5)	3.37* (85.7)	4.00 (101.6)	4.00 (101.6)

*For -RE 2.2K Lb., use 3.63 (92.3)



ADVANTAGE Lite® Load Sensor Outline

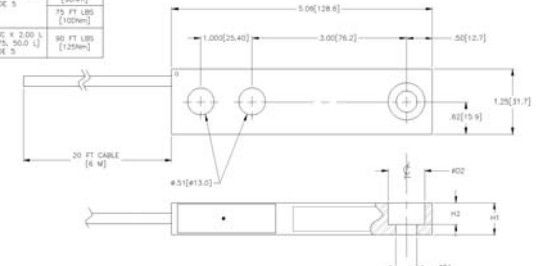
DIMENSIONS - INCHES & [mm]

CAPACITY (LBS [KG])	H1	H2	#D1	#D2	BOLTS*	TORQUE
440 [200]	0.90 (22.7)	0.35 (9.1)	0.405±0.003 (10.28±0.008)	0.712±0.003 (18.08±0.008)	500-13 UNC x 1.75 L1 [M12 x 1.75, 450 L1]	65 FT LBS [90Nm]
1.1k [500]	0.83 (21.1)	0.43 (10.9)	0.405±0.003 (10.28±0.008)	0.712±0.003 (18.08±0.008)	500-13 UNC x 1.75 L1 [M12 x 1.75, 450 L1]	65 FT LBS [90Nm]
2.2k [1000]	0.75 (19.1)	0.34 (8.6)	0.362±0.002 (9.19±0.051)	0.582±0.002 (14.84±0.051)	GRADE 5	75 FT LBS [100Nm]
4.4k [2000]	1.30 (33.0)	0.28 (7.1)	0.686±0.003 (17.48±0.008)	0.909±0.003 (23.08±0.008)	500-13 UNC x 2.00 L1 [M12 x 1.75, 500 L1]	90 FT LBS [125Nm]

*USE 2 EACH TO MOUNT LOAD SENSOR

C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

- EXCITATION + RED
- EXCITATION - BLACK
- SIGNAL + GREEN
- SIGNAL - WHITE
- C2+ GRAY
- C2- VIOLET
- SHIELD YELLOW





C2 SECOND GENERATION CALIBRATION

Hermetic Load Point Assembly Compression

The Hardy Instruments HI HLPB ADVANTAGE™ Series, sliding load point system is designed for use on light to medium capacity vessels.

Each load point consists of mounting hardware and a stainless steel mV/V and mV/V/ohm matched load sensor with true hermetic sealing, C2® Second Generation Calibration capabilities, on-board electronic certs, a ¼ NPT conduit adapter and ten feet of cable. Each pre-assembled, low profile load point system provides lift off protection and consists of three mount types specifically designed to eliminate the effects of unwanted forces to provide exceptional accuracy. The assembly can be positioned 360 degrees in ninety degree steps. A grounding strap and fixed color code wiring label is provided with each load point. The mounting hardware is available in either stainless or galvanized steel. The sensors have an IP rating of IP68 and are NTEP Class III.

The HI HLPB is available in the following standard capacities: 44 lbs, 110 lbs, 225 lbs, 450 lbs, and are replacements for Hardy's HI LPH load point line.

SPECIFICATIONS

Rated Output (FS)	± 0.002mV/V
Non-Linearity	< ± 0.018 %R.O.
Hysteresis	< ± 0.025 % R.O.
Zero Balance	< ± 1.0 % R.O.
Creep @ 5 Min.	< ± 0.010 % R.O.
Temp Effect Output	< ± 0.0014 % R.O/ C.
Temp Effect Sensitivity	< ± 0.0007 % R.O/ C.
Input Resistance	1106 ± 5 ohm
Output Resistance	1000 ± 1 ohm
Insulation Resistance	>5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	200 % Emax
Ultimate Load	300 % Emax
Safe Side Load	100 % Emax

ORDERING INFORMATION

Load Point with Stainless Hardware (-43_) shown, Galvanized Hardware (-45_)
 A vessel with 3 legs will require 1 each fixed (F), bumper (B) & slider (S) assy.
 A vessel with 4 legs will require 1 each fixed (F), bumper (B) & 2 each slider (S) assy.

Capacity	Model #	Model #	Model #	Model #	
lbs.	Kgs	Fixed Assy	Bumper Assy	Slider Assy	Spare Load Sensor
44	20	HI LPB44-43F	HI LPB44-43B	HI LPB44-43S	HI BBH06-44
110	50	HI LPB110-43F	HI LPB110-43B	HI LPB110-43S	HI BBH06-110
225	100	HI LPB225-43F	HI LPB225-43B	HI LPB225-43S	HI BBH06-225
450	200	HI LPB450-43F	HI LPB450-43B	HI LPB450-43S	HI BBH06-450

Load points can be ordered as a system rather than ordering individual components.

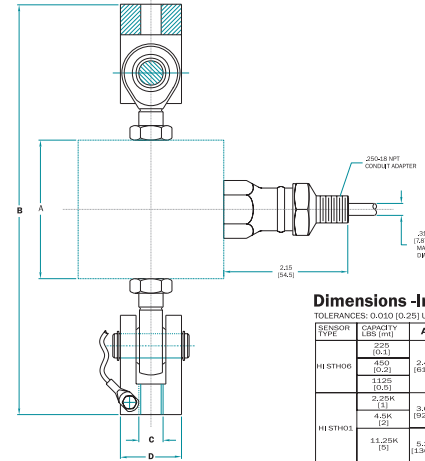
Three Leg Systems

Model #	Capacity	
	lbs	Kgs
HI 3B132-43	132	60
HI 3B330-43	330	150
HI 3B675-43	675	306
HI 3B135K-43	1350	612

Four Leg Systems

Model #	Capacity	
	lbs	Kgs
HI 4B175-43	176	80
HI 4B440-43	440	200
HI 4B900-43	900	408
HI 4B18K-43	1800	816

ADVANTAGE™ Load Point Outline



C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

EXCITATION +	RED
EXCITATION -	BLACK
SIGNAL +	GREEN
SIGNAL -	WHITE
C2 +	GRAY
C2 -	VIOLET
SHIELD	YELLOW

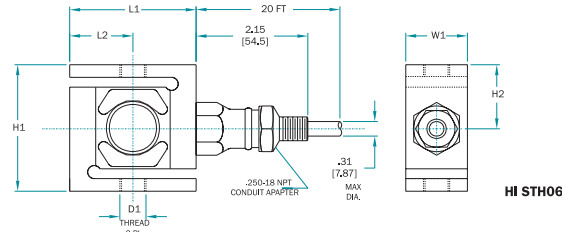
Dimensions -Inches & [mm]

TOLERANCES: 0.010 (0.25) UNLESS OTHERWISE STATED

SENSOR TYPE	CAPACITY LBS (m)	A	B	C	D
HI STH06	225 (101)	2.42 (61.5)	9.13 (232.0)	.500±.13 UNC	1.38 (35.0)
HI STH06	110 (50)	1.125 (28.6)	3.62 (92.0)	.625±.11 UNC	1.77 (45.0)
HI STH01	450 (204)	8.35 (213.0)	14.96 (380.0)	1.000±.8 UNC	2.36 (60.0)

1mil = 1000Kgs

ADVANTAGE™ Load Sensor Outline

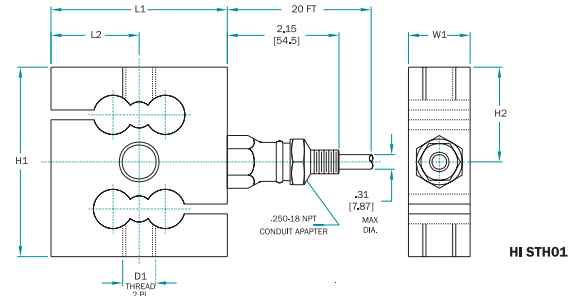


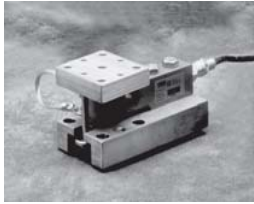
Dimensions -Inches & [mm]

TOLERANCES: 0.015 (0.4) UNLESS OTHERWISE STATED

CAPACITY LBS (m)	H1	H2	L1	L2	W1	D1 THREAD
225, 450, 1125 (101, 501, 501)	2.42 (61.5)	1.21 (30.7)	2.42 (61.5)	1.21 (30.7)	1.18 (30.0)	500-20 UNF
2,25K, 4.5K (1) (2)	3.62 (92.0)	1.81 (46.0)	3.38 (86.0)	1.69 (43.0)	1.18 (30.0)	625-18 UNF
11,25K (5)	5.35 (136.0)	2.86 (73.0)	5.62 (143.0)	2.81 (71.5)	1.69 (43.0)	1-12 UNF

1mil = 1000Kgs





C2 SECOND GENERATION CALIBRATION

Hermetic Load Point Assembly Compression

The Hardy Instruments HI HLPs ADVANTAGE™ Series, sliding load point system is designed for use on medium to high capacity vessels.

Each load point consists of mounting hardware and a stainless steel mV/Vand mV/V/ohm matched load sensor with true hermetic sealing, C2® Second Generation Calibration capabilities, on-board electronic certs, a ¼ NPT conduit adapter and twenty feet of cable. Each pre-assembled, low profile load point system provides lift off protection and consists of three mount types specifically designed to eliminate the effects of unwanted forces to provide exceptional accuracy. The assembly can be positioned 360 degrees in ninety degree steps. A grounding strap and fixed color code wiring label is provided with each load point. The mounting hardware is available in either stainless or galvanized steel. The sensors have an IP rating of IP68 and are NTEP Class III.

The HI HLP is available in the following standard capacities: 1,125 lbs, 2,25K lbs, 4.5K lbs, 11,25K lbs, 22.5K lbs and are replacements for Hardy's HI LPS and low capacity LPD load point line.

SPECIFICATIONS	
Rated Output (F.S.)	2 ±0.002mv/v
Non-Linearity	< ± 0.018 % R.O.
Hysteresis	< ± 0.025 % R.O.
Zero Balance	< ± 1.0 % R.O.
Creeep @ 5 Min.	< ± 0.010 % R.O.
Temp Effect Output	< ± 0.0012 % R.O./C.
Temp Effect Sensitivity	< ± 0.0010 %/C.
Input Resistance	1106 ± 5 ohm
Output Resistance	1000 ± 1 ohm
Insulation Resistance	>5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	200 % Fmax
Ultimate Load	300 % Fmax
Safe Side Load	100 % Fmax

ORDERING INFORMATION

Load Point with Stainless Hardware (-43_) shown, Galvanized Hardware (-45_)
 A vessel with 3 legs will require 1 each fixed (F), bumper (B) & slider (S) assy.
 A vessel with 4 legs will require 1 each fixed (F), bumper (B) & 2 each slider (S) assy.

1 metric ton (mt) = 1,000kg

Capacity	Model #	Model #	Model #	Model #	
lbs	mt	Fixed Assy	Bumper Assy	Slider Assy	Spare Load Sensor
1,125	0.5	HI HLPS1125-43F	HI HLPS1125-43B	HI HLPS1125-43S	HI SBH04-1125
2,25K	1	HI HLP2.25K-43F	HI HLP2.25K-43B	HI HLP2.25K-43S	HI SBH04-2.25K
4.5K	2	HI HLP4.5K-43F	HI HLP4.5K-43B	HI HLP4.5-43S	HI SBH04-4.5K
11,25K	5	HI HLP11.25K-43F	HI HLP11.25K-43B	HI HLP11.25K-43S	HI SBH04-11.25K
22.5K	10	HI HLP22.5K-43F	HI HLP22.5K-43B	HI HLP22.5K-43S	HI SBH04-22.5K

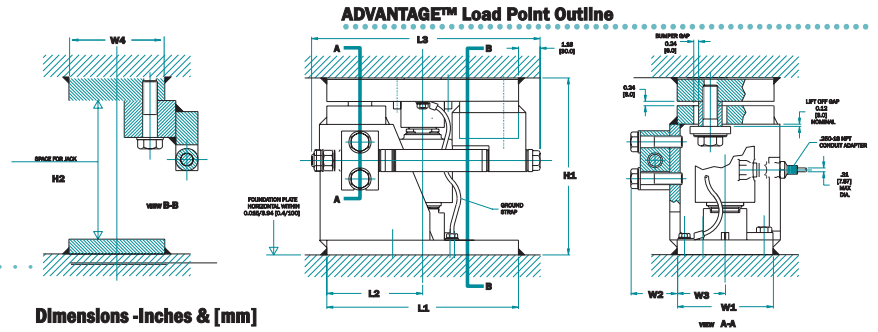
Load points can be ordered as a system rather than ordering individual components.

Three Leg Systems

Model #	Total Capacity	
	lbs	mt
HI 3S3375-43	3,375 K	1.5
HI 3S6.75K-43	6,75 K	3.1
HI 3S13.5K-43	13.5 K	6.1
HI 3S33.75K-43	33.75 K	15.3
HI 3S67.5K-43	67.5 K	30.6

Four Leg Systems

Model #	Total Capacity	
	lbs	mt
HI 4S4.5K-43	4.5 K	2.0
HI 4S9K-43	9 K	4.1
HI 4S18K-43	18 K	8.2
HI 4S45K-43	45 K	20.4
HI 4S90K-43	90 K	40.8

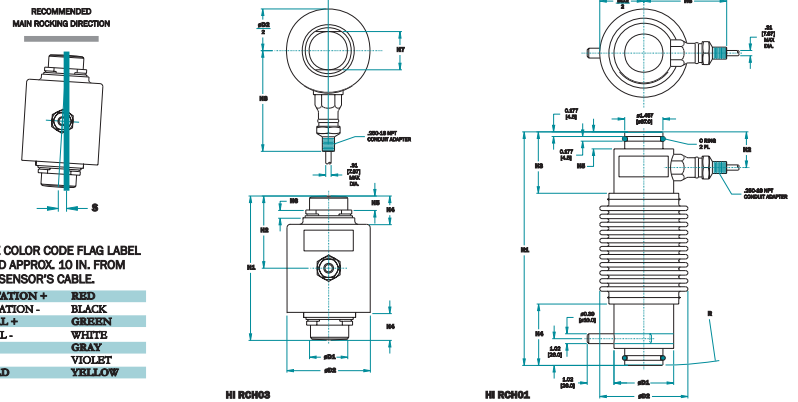


Dimensions -Inches & [mm]

Model	Capacity	L1	L2	L3	H1	H2	W1	W2	W3	W4	weight
HI LPRC06K_45C	69K (30mt)	10.24 (260.0)	5.12 (130.0)	12.2 (310.0)	9.45 (240.0)	7.09 (180.0)	5.12 (130.0)	2.56 (65.0)	2.48 (63.0)	5.12 (130.0)	70.75 lb (32 kg)
HI LPRC110K_45C	110K (50mt)	15.75 (400.0)	7.87 (200.0)	18.8 (478.0)	12.6 (320.0)	7.68 (195.0)	9.84 (250.0)	4.92 (125.0)	2.52 (64.0)	7.87 (200.0)	228 lb (103 kg)
HI LPRB132K_45C	132K(60mt)	15.75 (400.0)	7.87 (200.0)	19.5 (495.0)	14.57 (370.0)	9.65 (245.0)	9.84 (250.0)	4.92 (125.0)	2.52 (64.0)	7.87 (200.0)	254 lb (115 kg)

1mt = 1000kg

ADVANTAGE™ Load Sensor Outline



C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

- EXCITATION + RED
- EXCITATION - BLACK
- SIGNAL + GREEN
- SIGNAL - WHITE
- C2 + GRAY
- C2 - VIOLET
- SHIELD YELLOW

Dimensions -Inches & [mm]

MODEL	CAPACITY LBS (mt)	H1	H2	H3	H4	H5	H6	H7	H8	Ø D1	Ø D2	R	S MAX**	RF**
HI RCH03	66K [30]	6.50 [165.1]	2.75 [69.9]	1.02 [26.0]	1.10 [28.0]	0.85 [21.6]	0.257 [6.53]	1.54 [39.1]	3.98 [101.3]	1.54 [39.1]	3.19 [81.0]	N/A	0.894 [22.8]	7095 LBS [3200kg]
	110K [50]	7.00 [178.0]	3.50 [89.0]	1.26 [32.0]	1.34 [34.0]	0.67 [17.0]	0.335 [8.5]	1.73 [44.0]	4.28 [108.7]	1.73 [44.0]	3.90 [99.0]	N/A	0.630 [16.0]	11,023 LBS [5000kg]
HI RCH04	132K [60]	7.86 [199.0]	1.22 [31.0]	2.01 [51.0]	2.01 [51.0]	0.63 [16.0]	N/A	N/A	3.02 [76.7]	1.97 [50.0]	2.83 [72.0]	10.98 [279.0]	N/A	N/A
	200K [90]	8.86 [225.0]	1.34 [34.0]	2.24 [57.0]	2.24 [57.0]	0.63 [16.0]	N/A	N/A	3.30 [83.8]	2.52 [64.0]	3.35 [85.0]	14.02 [356.0]	N/A	N/A

(*) S MAX = MAXIMUM LATERAL DISPLACEMENT OF LOAD INTRODUCTION. RECOMMENDED GAP 0.158 TO 0.187 (Ø TO 6.0). (**) RF = RESTRAINING FORCE OF S MAX AND S MAX.



C2 SECOND GENERATION CALIBRATION

Hermetic Load Point Assembly Compression

The Hardy Instruments HI LPR A ADVANTAGE® Series, Low Profile, rocker load point systems are designed for use on high capacity vessels.

Each load point consists of mounting hardware and a stainless steel mV/V, mV/V/ohm matched, short rocker type load sensor with true hermetic sealing, C2® Second Generation Calibration capabilities, on-board electronic certs, a 1/4 NPT conduit adapter and thirty feet of cable. Each low profile rocker load point system provides built-in checking, lift-off protection and is specifically designed to eliminate the effects of unwanted forces to provide the highest possible accuracy. A grounding strap, fixed color code wiring label and installation manual are provided with each load point. The mounting hardware is available in either stainless or galvanized steel. The sensors have an IP rating of IP68 and are NTEP Class III.

The HI LPR A short rocker load point assembly is available in the following standard capacities: 16.5K, 33K lbs and 50K lbs. They, along with the HI LPR B & HI LPR C, are replacements for the HI LPD series load point line.

SPECIFICATIONS

Rated Output (F.S.)	2 ± 0.002 mV/V
Non-Linearity	± 0.012 %R.O.
Hysteresis	< ±0.025 %R.O.
Zero balance	< ± 1.0 % R.O.
Creep @ 5 Min.	< ± 0.010 % R.O.
Temp Effect Output	< ± 0.0014 % R.O./C.
Temp Effect Sensitivity	< ± 0.0005 % R.O./C.
Input Resistance	1150 ± 50 ohm
Output Resistance	1000 ± 10 ohm
Insulation Resistance	>5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	200 % Emax
Ultimate Load	300 % Emax
Safe Side Load	100% Emax
mV/V/ohm	0.002 ± 0.1%

ORDERING INFORMATION

Load Point with galvanized Hardware (-45) shown, Optional stainless Hardware (-43_)

1 metric ton (mt) = 1,000kg

Capacity	Model #	Model #
lbs.	mt.	Spare Load Sensor
16.5K	7.5	HI LPR A16.5K-45C
33K	15	HI LPR A33K-45C
50K	23	HI LPR A50K-45C

Load points can be ordered as a system rather than ordering individual components.

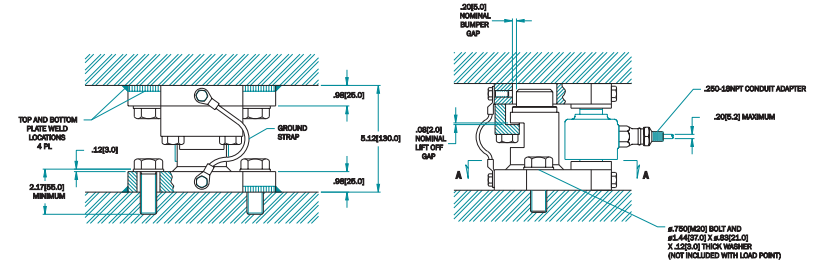
Three Leg Systems

Model #	Total Capacity	
	lbs.	mt.
HI 3R49.5K-45	49.5K	22.5
HI 3R99K-45	99K	45
HI 3R150K-45	150K	69

Four Leg Systems

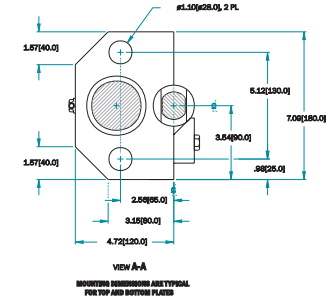
Model #	Total Capacity	
	lbs.	mt.
HI 4R66K-45	66K	30
HI 4R132K-45	132K	60
HI 4R200K-45	200K	91

ADVANTAGE™ Load Point Outline

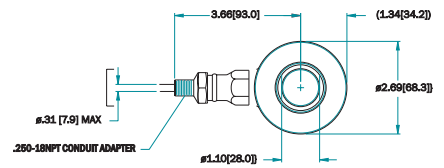


C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

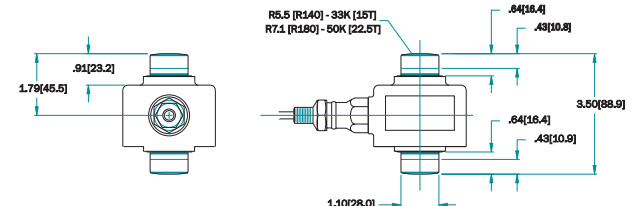
EXCITATION +	RED
EXCITATION -	BLACK
SIGNAL +	GREEN
SIGNAL -	WHITE
C2 +	GRAY
C2 -	VIOLET
SHIELD	YELLOW

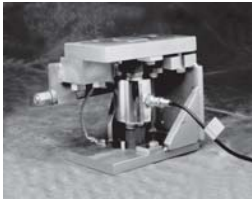


ADVANTAGE™ Load Sensor Outline



HI RCH04 SERIES





C2 SECOND GENERATION CALIBRATION

Hermetic Load Point Assembly Compression

The Hardy Instruments HI LPRC and HI LPRB ADVANTAGE™ Series, rocker load point systems are designed for use on high capacity vessels.

Each load point consists of galvanized steel mounting hardware and a stainless steel mV/V & mV/V/ohm matched load sensor with true hermetic sealing, C2® Second Generation Calibration capabilities, on-board electronic certs, a ¼ NPT conduit adapter and thirty feet of cable. Each rocker low profile load point system provides built-in checking, lift off protection and is specifically designed to eliminate the effects of unwanted forces to provide exceptional accuracy. A grounding strap and fixed color code wiring label are provided with each load point. The load sensors have an IP rating of IP68 and are NTEP Class III.

The HI LPRC is available in the following standard capacities: 66K lbs and 110K lbs, while the HI LPRB is available in 132K lbs and 200K lbs. They both replace the Hardy HI LPD series load point line.

SPECIFICATIONS (ES)	
Rated Output (ES)	2 ± 0.002 mV/V
Non-Linearity	± 0.012 %R.O.
Hysteresis	< ± 0.025 %R.O.
Zero balance	< ± 1.0 % R.O.
Creep @ 5 Min.	< ± 0.01 % R.O.
Temp Effect Output	< ± 0.0014 % R.O./C.
Temp Effect Sensitivity	< ± 0.0010 % R.O./C.
Input Resistance	1106 ± 21 ohm (RCH03)
	400 ± 20 ohm (RCH01)
Output Resistance	1000 ± 1 ohm (RCH03)
	351 ± 1 ohm (RCH01)
Insulation Resistance	> 5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	200 % Emax
Ultimate Load	300 % Emax

ORDERING INFORMATION

Load Point with galvanized Hardware (-45) shown,
Optional stainless Hardware (-43.)

1 metric ton (mt) = 1,000kg

Capacity	Model #	Model #	
lbs.	mt.	Fixed Assy	Spare Load Sensor
66K	30	HI LPRC66K-45C	HI RCH03-66K
110K	50	HI LPRC110K-45C	HI RCH03-110K
132K	60	HI LPRB132K-45C	HI RCH01-132K
200K	90	HI LPRB200K-45C	HI RCH01-200K

Load points can be ordered as a system rather than ordering individual components.

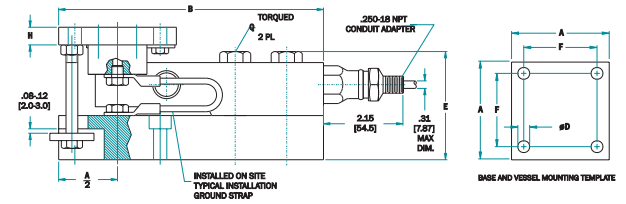
Three Leg Systems

Model #	Total Capacity	
	lbs.	mt.
HI 3R198K-45	198K	90
HI 3R330K-45	330K	150
HI 3R396K-45	396K	180
HI 3R600K-45	600K	270

Four Leg Systems

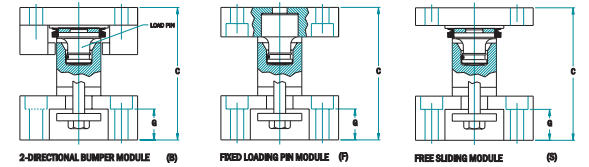
Model #	Total Capacity	
	lbs.	mt.
HI 4R264K-45	264K	120
HI 4R440K-45	440K	200
HI 4R528K-45	528K	240
HI 4R800K-45	800K	360

ADVANTAGE™ Load Point Outline



C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

EXCITATION +	RED
EXCITATION -	BLACK
SIGNAL +	GREEN
SIGNAL -	WHITE
C2 +	GRAY
C2 -	VIOLET
SHIELD	YELLOW



Dimensions -Inches & [mm] TOLERANCES: 0.010 [0.25] UNLESS OTHERWISE STATED

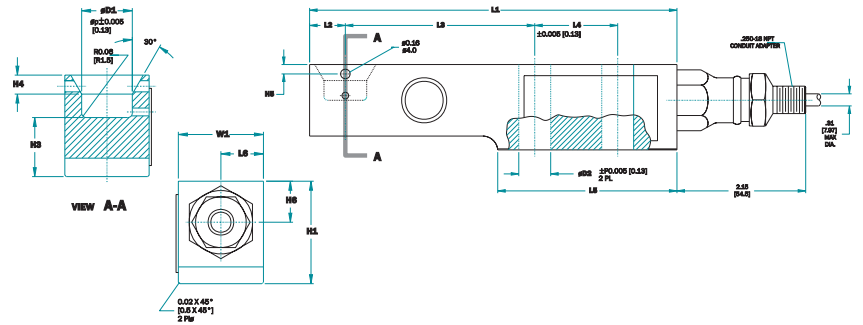
CAPACITY LBS [kg]	A	B	C	ØD	E	F	G	H	Q FT LBS	BOLT	MOUNT SCREW	WEIGHT LBS [kg]
1.125K 2.25K 4.5K [510] [1] [2]	3.15 [80.0]	7.09 [180.0]	3.54 [90.0]	0.354 [9.00]	2.91 [74.0]	2.28 [58.0]	0.827 [21.00]	0.472 [12.00]	65 [70Nm]	.500-20 UNC GRADE 5 [M4.2 8.8]	.312	12 [5.4]
11.25K [5]	3.94 [100.0]	8.85 [220.0]	4.72 [120.0]	0.433 [11.00]	4.02 [102.0]	2.99 [76.0]	1.14 [29.0]	0.591 [15.00]	295 [400Nm]	.750-16 UNC GRADE 5 [M20 8.8]	.375	24 [10.5]
22.5K [10]	4.72 [119.9]	10.83 [276.0]	5.65 [142.0]	0.571 [14.50]	5.63 [143.0]	3.54 [90.0]	1.85 [47.0]	0.787 [20.00]	515 [700Nm]	1.000-8 UNC GRADE 5 [M24 8.8]	.500	58.2 [26.5]

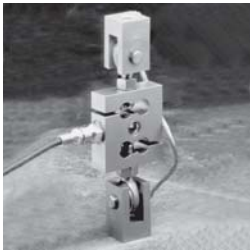
1 metric ton [mt] = 1000kg

ADVANTAGE™ Load Sensor Outline

Dimensions -Inches & [mm] TOLERANCES: 0.010 [0.25] UNLESS OTHERWISE STATED

CAPACITY LBS [kg]	L1	L2	L3	L4	L5	L6	H1	H2	H3	H4	H5	H6	W1	Ø D1	Ø D2
1.125K [5]	8.10 [205.0]	0.89 [22.50]	3.15 [80.0]	3.15 [80.0]	1.99 [50.50]	2.98 [75.00]	0.89 [22.50]	1.43 [36.00]	0.83 [21.00]	0.27 [6.90]	0.58 [14.80]	0.89 [22.50]	1.581 ± 0.009 [39.9 ± 0.23]	Ø 1.31	Ø 0.83 [21.00]
2.25K [10]	7.48 [190.0]	0.83 [21.00]	4.13 [106.0]	1.57 [39.90]	3.86 [98.00]	0.86 [21.80]	1.03 [26.00]	1.12 [28.50]	0.23 [5.80]	0.31 [7.90]	0.89 [22.50]	1.603 ± 0.008 [40.8 ± 0.20]	Ø 1.64	Ø 0.85 [21.50]	
4.5K [20]	9.85 [250.0]	1.19 [30.20]	5.31 [135.0]	1.97 [50.00]	4.72 [120.0]	0.73 [18.50]	2.87 [73.00]	0.80 [20.30]	1.88 [47.80]	0.39 [10.00]	N/A	1.22 [31.00]	1.982 ± 0.006 [50.2 ± 0.15]	Ø 1.81	Ø 0.85 [21.50]





C2 SECOND GENERATION CALIBRATION

Hermetic Load Point Assembly Tension

The Hardy Instruments HI HILPT ADVANTAGE™ Series, tension load point systems are designed for use on low to medium capacity vessels.

Each load point consists of mounting hardware and a stainless steel mV/V and mV/V/ohm matched load sensor with true hermetic sealing, C2® Second Generation Calibration capabilities, on-board electronic certs, a ¼ NPT conduit adapter and twenty feet of cable. Each load point assembly is specifically designed to eliminate the effects of unwanted forces to provide exceptional accuracy. A grounding strap and fixed color code wiring label are provided with each load point. The mounting hardware is available in either stainless or galvanized steel for capacities up to 4.5K pounds and galvanized steel in higher capacities. The load sensors have an IP rating of IP68 and are NTEP Class III.

The HI HLPT is available in the following standard capacities: 225 lbs, 450 lbs, 1,125 lbs, 2,25K lbs, 4.5K lbs and 11.25K lbs. They replace the Hardy's HI LPT series load point line.

SPECIFICATIONS

Rated Output (ES)	2 ±0.002mv/v
Non-Linearity	± 0.018 %R.O.
Hysteresis	< ±0.025 %R.O.
Zero Balance	< ± 1.0 % R.O.
Creep @ 5 Min.	< ± 0.01 % R.O.
Temp Effect Output	< ± 0.0014 % R.O./C.
Temp Effect Sensitivity	< ± 0.0007 % R.O./C.
Input Resistance	1106 ± 5 ohm
Output Resistance	1000 ± 1 ohm
Insulation Resistance	>5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	200 % Emax
Ultimate Load	300 % Emax
Safe Side Load	100 % Emax

ORDERING INFORMATION

Load Point with stainless Hardware (-43C) or galvanized Hardware (-45C)

1 metric ton (mt) = 1,000kg

Capacity	Model #	Model #	
lbs	mt	Fixed Assy	Spare Load Sensor
225	0.1	HI HILPT225-43C	HI STH06-225
450	0.2	HI HILPT450-43C	HI STH06-450
1,125	0.5	HI HILPT1125-43C	HI STH06-1125
2,25K	1	HI HILPT2.25K-43C	HI STH01-2.25K
4.5K	2	HI HILPT4.5K-43C	HI STH01-4.5K
11.25K	5	HI HILPT11.25K-45C	HI STH01-11.25K

Load points can be ordered as a system rather than ordering individual components.

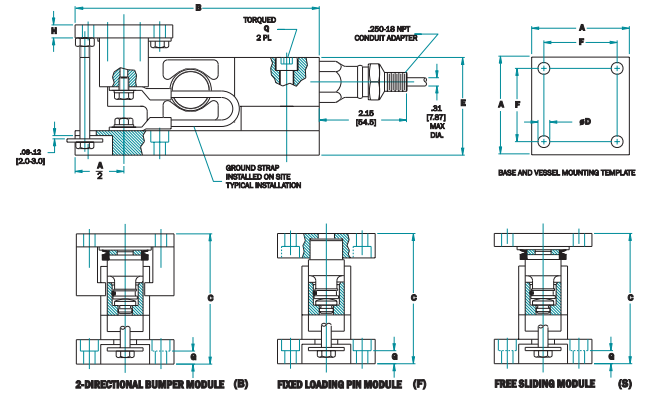
Three Leg Systems

Model #	Total Capacity	
	lbs	mt
HI 3T675-43	675	0.3
HI 3T1.35K-43	1,350	0.6
HI 3T3375-43	3,375	1.5
HI 3T6.75K-43	6,750	3.1
HI 3T13.5K-43	13,500	6.1
HI 3T33.75K-45	33,750	15.3

Four Leg Systems

Model #	Total Capacity	
	lbs	mt
HI 4T900-43	900	0.5
HI 4T1.8K-43	1,800	0.8
HI 4T4.5K-43	4,500	2.0
HI 4T9K-43	9,000	4.1
HI 4T18K-43	18,000	8.2
HI 4T45K-45	45,000	20.4

ADVANTAGE™ Load Point Outline



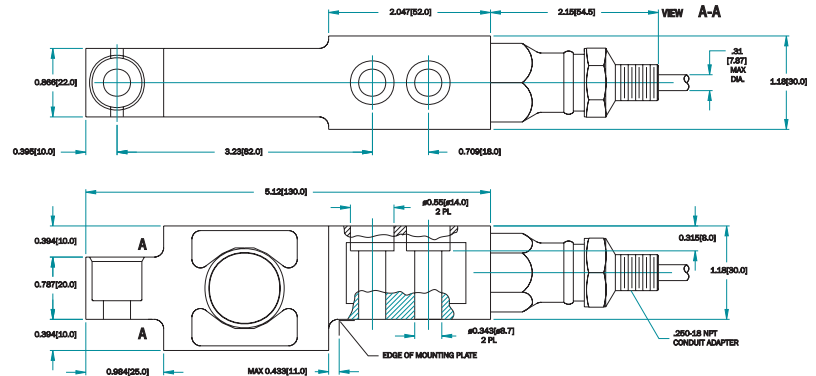
C2 WIRE COLOR CODE FLAG LABEL IS FOUND APPROX. 10 IN. FROM END OF SENSOR'S CABLE.

EXCITATION +	RED
EXCITATION -	BLACK
SIGNAL +	GREEN
SIGNAL -	WHITE
C2 +	GRAY
C2 -	VIOLET
SHIELD	YELLOW

Dimensions -Inches & [mm]

CAPACITY LBS [kgN]	A	B	C	ØD	E	F	G	H	Q	FT LBS	MOUNT SCREW	WEIGHT LBS		
44, [20]	110, [50]	225, [102.5]	450, [204.5]	2.36 [60.0]	5.91 [150.0]	3.15 [80.0]	0.276 [7.00]	2.36 [60.0]	1.73 [44.0]	0.315 [8.00]	0.315 [8.00]	18.5 [25Nm]	.250	6

ADVANTAGE™ Load Sensor Outline



ADVANTAGE Lite®



Load Point Assemblies Compression

The Hardy instruments ADVANTAGE® Lite Series of load point assemblies provides superior performance when compared to common load cells, as well as exceptional value, in meeting your weighing needs.

Each pre-assembled load point consists of rugged stainless steel mounting hardware and a C2 Calibration compatible stainless steel, mV/V and mV/V/ohm matched and sealed load sensor. The wire rope mount is free-floating and self-centering, enabling your vessel to expand and contract while the load is constantly applied to the same point on the sensor. This helps provide consistent and accurate weight signals, and it prevents torques and side forces from being applied to the sensor. The rubber element mount provides stray voltage isolation, minor misalignment correction, thermal expansion and shock absorption. It can be used in applications with conveyors and vessels with or without agitators or mixers. Both load point assemblies are self-checking, eliminating the need for costly external check rods to hold the assembly in place. Both provide lift-off protection. Each load sensor comes with twenty feet of six-conductor cable and a color-coded wiring label to aid in installation. The sensors have an IP rating of IP67. The ADVANTAGE® Lite Series is available in the following standard capacities: 440 lb, 1,100 lb, 2,200lb, and 4,400 lb.

SPECIFICATIONS

Rated Output (FS)	2 ±0.004mV/V
Non-Linearity	<± 0.025 % R.O.
Hysteresis	< ±0.025 % R.O.
Zero Balance	< ± 1.0 % R.O.
Creep @ 5 Min.	<± 0.01% R.O.
Temp Effect Output	< ± 0.002 % R.O./ C
TempEffect Sensitivity	< ± 0.002 % R.O./ C
Input Resistance	1146 ± 4.36% ohm
Output Resistance	1001 ± 1.0% ohm
Insulation Resistance	>5000 Mohm
Excitation	5 - 15 vdc
Safe Load Limit	150 % Fmax
Ultimate Load	>150 % Fmax
mV/V/ohm	0.002 ± 0.1%

Calibrated for mV/V/Ohm and mV/V, which results in "comening" without adjustment, may eliminate the need for re-calibration after field replacement.

ORDERING INFORMATION

Order by model numbers shown below.
Only available with stainless steel hardware

Capacity	Model #	Model #	Model #
lbs.	Kgs	Wire Rope Assembly	Rubber Element Assembly
440	220	HI LPWR 440-33C	HI SB02-440
1100	500	HI LPWR 1.1K-33C	HI SB02-1.1K
2200	1000	HI LPWR 2.2K-33C	HI SB02-2.2K
4400	2000	HI LPWR 4.4K-33C	HI SB02-4.4K
			HI LPRE 440-33C
			HI LPRE 1.1K-33C
			HI LPRE 2.2K-33C
			HI LPRE 4.4K-33C

Load points are ordered only as individual components.

Selection of Load Points

The following steps will quickly isolate which individual load sensors or load point assemblies can satisfy your application.

1. Determine whether the vessel to be weighed will be hung in tension or set on top of the load point assemblies in compression. Count the number of support points.
2. Determine the unloaded weight of the scale structure, vessel and all equipment to be mounted (valves, gates, vibrators, etc.) on (from) the load points. This is called the "Dead Load" (DL).

gates, vibrators, etc.) on (from) the load points. This is called the "Dead Load" (DL).

3. Determine the maximum total weight of the heaviest material to be weighed. This is called the "Live Load" (LL).
4. Calculate each load sensor's required capacity.

$$\text{Load Sensor Capacity Range} = \frac{\text{Dead Load} + \text{Live Load}}{\text{Number of Support Points}}$$

5. Use the following Load Point Selection Chart to determine the load point assembly appropriate for your installation.

4 Point System		MODEL #
Capacity		
Low Range lbs. (Kg)		
80 - 176 (36-80)		HI 4B176-4_
177 - 440 (80-200)		HI 4B440-4_
441 - 900 (200-408)		HI 4B900-4_
901 - 1.8K (408-816)		HI 4B1.8K-4_
Mid Range (metric ton)		
1.8K - 4.5K (0.82-2.04)		HI 4S4.5K-4_
4.5K - 9K (2.04-4.08)		HI 4S9K-4_
9K- 18K (4.08-8.16)		HI 4S18K-4_
18K- 45K (8.16-20.4)		HI 4S45K-4_
45K- 90K (20.4-40.8)		HI 4S90K-4_
Short High Range (metric ton)		
90K - 132K (41-60)		HI 4R132K-4_
132K- 200K (60-90)		HI 4R200K-4_
High Range (metric ton)		
200K- 264K (90-120)		HI 4R264K-45
264K- 440K (120-200)		HI 4R440K-45
440K- 528K (200-240)		HI 4R528K-45
528K - 800K (240-360)		HI 4R800K-45
Tension (Kg)		
400 - 900 (181-408)		HI 4T900-4_
901 - 1800 (409-816)		HI 4T1.8K-4_
1801 - 4500 (817-2035)		HI 4T4.5K-4_
(metric ton)		
4.5K - 9K (2-4.1)		HI 4T9K-4_
9K - 18K (4.1-8.2)		HI 4T18K-4_
18K - 45K (8.2-20.4)		HI 4T45K-45

System Selection

You can also determine the load point system required by calculating the system total load. The system will contain the appropriate load points for your system ordered under one number.

1. Determine whether the vessel to be weighed will be suspended in tension or set on top of the load point assemblies in compression. Count the number of support points.
2. Determine the unloaded weight of the scale structure, vessel and all equipment to be mounted (valves, gates, vibrators, etc.) on (from) the load points. This is called the "Dead Load" (DL).
3. Determine the maximum total weight of the heaviest material to be weighed. This is called the "Live Load" (LL).
4. Calculate the system capacity.

$$\text{System Capacity} = (\text{DL}) + (\text{LL})$$

5. Based on the number of support points, look in either the 3 or 4 point system column of the Load Point Selection Chart (below) and find the range the system capacity falls in. The model number to the right is the load point system you will require. Add a junction box and cable from page 11 of this guide to interface with your instrument requirements, and your system is complete.

Environment

The environment where the load point is to function may be a factor in selection. For example, the Advantage load sensors are designed to operate at temperatures of 175°F to -40°F; for higher temperature, special load sensors are available.

Advantage sensors are hermetically sealed in the gauge area and at the cable entry allowing them to be classified at IP68. This rating provides protection from the entry of dust and the full long-term immersion in water. The sensors and mounts (-43) are made of 17-4 stainless steel, providing a high degree of chemical corrosive resistance to solvents, alkalis and acids. Even the bolts are stainless steel and are rated to meet the sensors capacity. You can select galvanized steel mounting hardware for less rigorous environments (-45 versions).

Refer to:
www.hardyinst.com
for PDF drawings.

Junction Box and Cable



C2 SECOND GENERATION CALIBRATION

INTEGRATED TECHNICIAN
BY DESIGN

Model Numbers Junction Box

MODEL # DESCRIPTION

HI 215IT-SS1 Stainless Steel Standard
HI 215IT-SS2* Stainless with Trim Pots

HI 215IT-PS1 Painted Standard
HI 215IT-PS2* Painted with Trim Pots

HI 215IT-FG1 Fiberglass Standard
HI 215IT-FG2* Fiberglass with Trim Pots
HI 215IT-SC Summing card, no enclosure
HI 215IT-SCT* Summing card w/ trim pots, no enclosure

*Not for use with C2 load points

Model Numbers Cable

MODEL # DESCRIPTION

C2 Cable C2 Certified, 8-Conductor

Load Point Junction Boxes with Integrated Technician

The Hardy Instruments C2® certified Junction Box contains circuitry in a waterproof enclosure which distributes the excitation voltage to up to four load points and transfers each load point's performance characteristics and weight signals to the weight controller. The junction box, without being opened, allows an instrument operator to switch in an internal test circuit to test the stability of the cable from the junction box to the "IT" equipped weighing instrument. In addition, individual load sensors can be isolated for weight and voltage readings all from the weighing instrument's front panel.

The box's unique removable multiple connector design allows for easy isolation and troubleshooting of non-"IT" capable weighing systems. Two junction boxes can be cabled together to handle up to eight load points from a single scale. Available in NEMA 4 rated painted steel, NEMA 4X rated stainless steel or fiberglass, each box comes with two packaged hole plugs and five cable grip fittings suitable for O.D. cable of 1/4 to 3/8 inches. A label is provided on the underside of the top cover to record load point positions. A non-C2 version with trim pots is also available.

Cable

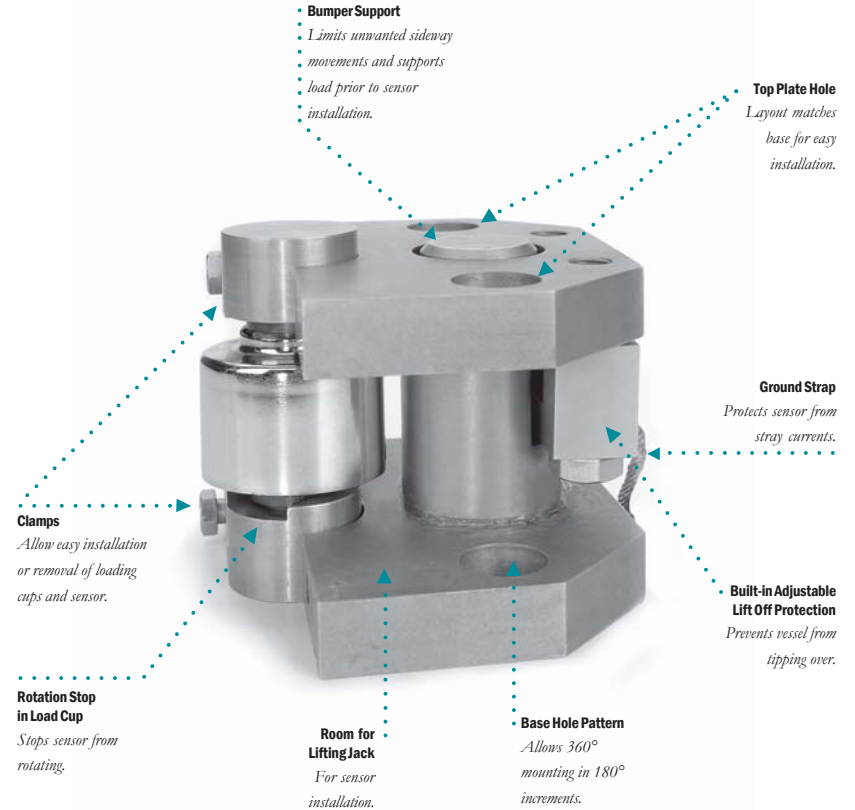
The Hardy Instruments C2® certified load point cable is designed to easily handle the low voltages found in weighing systems, as well as the load point's performance characteristics and switching commands. Eight conductors carry the signals to and from the weight controller and the junction box. Each conductor is 22 AWG stranded copper wire for flexibility. The cable has a braided tinned copper shield and a mylar barrier tape wrap. The outer jacket is vinyl and 0.060" thick.

Recommended wiring for color code cabling between the junction box and instrumentation when using ADVANTAGE™ line and all other load points except for the HI LPH (see below recommendations specific to the HI LPH):

	ADVANTAGE™ line and all previous lines except for the HI LPH	HI LPH recommendations
+ Excitation	Red	Green
+ Sense	Blue	Blue
+ Signal	Green	White
- Signal	White	Red
- Sense	Brown	Brown
- Excitation	Black	Black
+ C2	Gray	Gray
- C2	Violet	Violet

All information and drawings on these pages subject to change without notice • Consult website for latest specifications.

ADVANTAGE™ LINE -Attention to Detail



HI LPRA SERIES

Scales



C2[®] SECOND GENERATION CALIBRATION

UNIVERSAL SCALE SPECIFICATIONS

Rated Output	0.900 ±0.0009mV/V
Combined Error	0.030 %R.O.
Creep @ 30 min	0.030 %R.O.
Zero Balance	5.0 % R.O.
Temp Effect Output	0.0015% R.O./ °F
Temp Effect Sensitivity	0.0008 % R.O./ °F
Comp. Temp. Range	-10 - +40°C
Oper. Temp. Range	-10 - +65°C
Input Resistance	297.5 ± 10% ohm
Output Resistance	250 ± 5% ohm
Excitation	5-15 Volts
Safe Load Limit	300 % Emax
Ultimate Load	400 % Emax
Max. Cornering Err.	0.06% 1/2 full scale load, 1/2 way to corner

DEVICENET OUT SPECIFICATIONS

Resolution	20 bit
Update Rate	10 or 55 per second*
Averages	0-255 selectable
Temp Coefficient	<0.0023%/°C
Input Power	11-25VDC
Type	Generic
I/O Slave Messag.	Polling
Baud Rates	125K, 250K, 500K
Inputs	Gross, Net, Tare
Outputs	Weight: Metric/Engl., Zero & Tare, WAVESSAVER, Calib. Type, Span Weight (Hard Cal), Cal Low Value, Cal High Value, # of Averages

*depending on WAVESSAVER settings

ANALOG OUT SPECIFICATIONS

Loop Power	15-50VDC across scale. A 15V min. would be with 0 ohm load; add 20mV/ohm to the min. loop voltage. A 500 ohm load would require 25V min. loop voltage.
Linearity	0.11% of full scale
Response Time	250 milliseconds
Temp. Range	0 to 60°C
Temp. Coefficient	0.025%/°C

ANY-WEIGH® Bench Scales

The **ANY-WEIGH**® Bench scales provide complete flexibility in size and capacity for use in a wide range of weighing applications. With their rugged construction and stainless steel tops, **ANY-WEIGH** Scales are a great fit for both laboratory and industrial installations.

The **ANY-WEIGH** line of bench scales can be configured with standard interfacing to a weight instrument or with a built-in, direct connection to a PLC or PC.

Universal Scale - HI xxxxSBU-Cx*

Directly attach the scale's 15-foot cable to any weighing instrument or controller. If interfacing with a Hardy Controller, you can take full advantage of WAVESSAVER®, and C2® Electronic Calibration.

DeviceNet Scale - HI xxxxSBD-Cx*

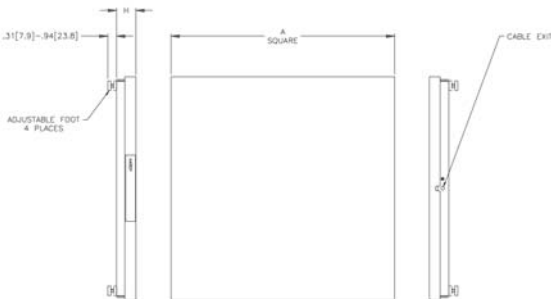
With its built-in DeviceNet interface you can use this scale to provide a weight output to any point on a DeviceNet Network. This version also incorporates both the WAVESSAVER® and C2® technologies, and comes with a six-inch pig-tailed connector.

Analog Scale - HI xxxxSBA-Cx*

Use the Analog Output Scale to provide a 4-20 mA output directly proportional to the weight reading. This version offers a low-cost, effective solution for bringing an analog weight reading directly into a control system, with minimal additional wiring or hardware, and comes with a 15-foot 2-wire shielded cable.

*"x" indicates Size and Capacity

MODEL	SIZE in. (mm)	CAPACITY lb (kg)					
		33 (15)	66 (30)	130 (60)	330 (150)	660 (300)	1300 (600)
HI 1212SBS/D/A	12x12 (298x298)	X	X	X			
HI 2020SBS/D/A	20x20 (500x500)			X	X	X	X
HI 2424SBS/D/A	24x24 (600x600)			X	X	X	X
		HEIGHT (H) in (mm)					
HI 1212SBS/D/A		1.54 (39.1)	1.56 (39.6)	1.62 (41.2)			
HI 2020SBS/D/A				1.65 (41.9)	1.68 (42.7)	1.87 (47.5)	2.05 (52.1)
HI 2424SBS/D/A				1.65 (41.9)	1.68 (42.7)	1.87 (47.5)	2.05 (52.1)



C2[®], Second Generation Calibration

Allows fast, accurate system calibration without test weights.

On-board Certs

The performance characteristics of each sensor are stored in an internal memory so you never lose the original certification data.

Standard 1/4 NPT Conduit Adapter

Allows conduit to be installed right to the load sensor, increasing system reliability.

Potted Cable Enclosure

Proprietary material prevents moisture from contacting header terminals and wicks up cable approximately 6" providing added moisture barrier.

ADVANTAGE® LINE - attention to detail

All load cells look the same on the surface. It's the attention to detail beneath the surface that separates a Hardy Instruments ADVANTAGE Line Load Sensor from the common load cell. You'll find details like a no-cost conduit adapter, redundant sealing for superior protection from moisture, matched parameters for easy sensor installation without corner adjusting, tighter specs for higher accuracy and individual performance certs posted on the web for easy access. It's attention to detail that saves you time and money. And it's Hardy Instruments that focuses on your specific technical and commercial needs.

The pages that follow should outline everything you need to specify your load point weighing requirements. If you need more information, our Maintenance and Installation manuals, as well as links to our local representatives, are available to you on the Internet at www.hardyst.com.

The same attention to detail shown in our Mid Range sensor to the left can be found in Hardy's entire Advantage line.