

**HIPS SERIES
PLATFORM SCALES**

**OPERATION AND INSTALLATION
MANUAL**



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CAUTION:

UNPACK WITH CARE

WHEN UNPACKING, DO NOT DISCARD THE PACKING CASE OR ANY PACKING MATERIAL, UNTIL THE CONTENTS OF THE PACKING CASE ARE INSPECTED AND CAREFULLY COMPARED WITH THE SHIPPING DOCUMENTS.

IF ANYTHING IS UNSATISFACTORY, PLEASE NOTIFY HARDY INSTRUMENTS IMMEDIATELY BY CALLING, FAXING OR E-MAILING TO:

Customer Support Department
HARDY INSTRUMENTS, INC.
3860 Calle Fortunada
San Diego, California 92123-1825

Phone: (800) 821-5831
(858) 278-2900

FAX: (858) 278-6700

E-mail: support@hardyinst.com
Web Address: www.hardyinst.com

A RETURN AUTHORIZATION NUMBER IS REQUIRED BEFORE RETURNING ANY DAMAGED PRODUCT. CALL THE CUSTOMER SUPPORT DEPARTMENT TO GET THE NUMBER. YOUR COMPANY NAME, ADDRESS, TELEPHONE NUMBER, SERIAL NUMBER OF THE UNIT AND A BRIEF DESCRIPTION OF THE PROBLEM SHOULD BE READY WHEN CALLING.

IN CASE OF DAMAGE DUE TO SHIPPING, NOTIFY THE DELIVERING CARRIER IMMEDIATELY FOR AN INSPECTION.

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Introduction

Congratulations on your purchase of a Hardy Instruments HIPS Series platform scale. The Hardy Platform Scales are designed for table top or floor applications requiring high accuracy and reliability. The covers are all stainless steel for durability. The bases have no bearings, bubble levels, or moving parts that can be damaged or wear out. The active element of the scale is a precision strain gauge load sensor.

Each platform is certified for use in a C2[®] Second Generation Calibration System.

Description

The basic HIPS platform scale consists of four major components:

1. Stainless Steel Platform Cover.
2. Upper Frame Assembly
3. Single Point Load Cell
4. Lower Frame Assembly

The Stainless Steel Platform Cover

The platform cover is a single piece constructed of series 300 Stainless Steel. The cover provides a weighing surface and offers protection to the load cell. Access to the upper frame, load cell and lower frame is gained by lifting up on the cover.

Upper Frame Assembly

The upper frame is bolted directly to the load cell and serves as support for the platform cover. In the HI 1212PS/S and the HI 1318PS/S the upper frame is made of cast aluminum. The HI 1842PS and HI 2424PS upper frame is all stainless steel. They all have rubber load pads and a shock load adjustment.

Single Point Load Cell

The HIPS Series Platform Scales have potted aluminum load cells with a unique humidity resistant protective which assures long term stability even under harsh environment and extreme temperatures. All HIPSS series scales have potted stainless steel load cells. Each cell has a six conductor cable, ten (10) feet

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long with C2[®] on its end. The output of each cell is 2mV/V with 5 to 15 volts DC excitation.

Lower Frame Assembly

The lower frame assembly is also bolted directly to the load cell and serves as support and protection. It comes equipped with four leveling feet, a shock load set screw and corner overload adjustments. The corner overload adjustments have been factory set to bottom out at approximately 75% of the scale capacity. DO NOT change this adjustment. As in the upper frame assembly the HI 1212PS/S and the HI 1318PS/S lower frame is made of cast aluminum. The HI 1824PS and HI 2424PS lower frame is all stainless steel.

Preassembly Precautions

Do not store or operate the scale out of its specified temperature range.

Do not store other equipment on the scale when it is not in use or in storage.

Do not allow a build-up of debris on, around or under the scale.

Do not set the scale in water or allow water to settle around the scale. Provide Proper drainage.

Do not let moisture get on or into any of the electrical interconnections.

Do not allow static or other electrical discharges through the scale.

Do not try to adjust the shock or over load stops.

Do not try to remove the load cell or adjust the allen set screws above or below the load cell.

Unpacking and Assembly

The HIPS Series scales are shipped fully assembled and only require adjustment of the leveling feet. If there is any damage to the shipping container or to the scale save, all the packaging material and file a report with the shipper.

Make sure each corner of the upper frame assembly has a rubber boot or strip and that there is a rubber strip in the center for the HI 1212 and Hi 1318 scales. For the HI 1824 and HI 2424, make sure there are rubber strips in each corner, down the center and at the center of each 24 inch length of the upper frame.

Leveling the Scale

To level the scale, loosen the foot lock nut on the lower frame assembly and turn the foot clockwise to lower the scale corner, or counter clockwise to raise it. Tighten the lock nut when no wobble of the scale is detected.

Electrical Connections

Make sure the cable is not pinched and is clear of the feet, cover, and overload stops. The platform requires a recommended DC or AC excitation voltage of 5 volts with a maximum of 15 volts. Wire the platform load cell cable to an instrument or indicator following the color code label found on the upper frame or as follows:

+ Excitation	Green
+ Sense	Blue
+ Signal	Red
+ C2 Cal	Gray
- Signal	White
- Sense	Brown
- Excitation	Black
- C2 Cal	Violet

WARNING

USE CAUTION WHEN WIRING. MAKE SURE TO DISCONNECT ALL POWER TO THE SCALE. FAILURE TO REMOVE POWER CAN RESULT IN SCALE OR INSTRUMENT DAMAGE, DEGRADATION OF PERFORMANCE OR PERSONAL INJURY

Calibration

To calibrate the platform, make sure the platform is wired correctly to the weighing instrument/indicator. Refer to the weighing instrument/indicator manual for calibration instructions.

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C2 Second Generation Calibration	C2 electronically calibrates a scale system without the need for test weights. If you are using a Hardy Instruments HI 2151/20WC, HI 2151/30WC, HI 2160RC controller or HI 1746-WS, Hardy HI 1771-WS weigh module, all that's required is to enter a reference point. Refer to the instrument or module manual for instructions.	
Test Weight Calibration (Hard Cal)	This is the traditional means of calibration requiring certified class F test weights equal to a minimum of 80% of the rated scale capacity. Additionally three weights between 10% and 100% of the scale capacity should be available to check the mid-range. Several low capacity weights equivalent to one or two instrument divisions are necessary to check the system sensitivity.	
Material Substitution	When certified test weights are not available you can use an accurately weighed material to calibrate the system. In this method, a material is weighed on a secondary, calibrated scale and delivered to the site of the scale to be calibrated. The secondary calibrated scale should be of the same accuracy or greater and have a capacity approximately equal to the scale being calibrated.	
Electrical Specifications	Rated Output	2mV/V +- 10%
NOTE:	<i>All accuracy specifications are maintained when 150% of nominal load is applied for 3mV/V output.</i>	
	Excitation:	
	Recommended Maximum	5-10 Volts AC or DC 15 Volts AC or DC
NOTE:	<i>20 volts maximum on the 1824 & 2424 models.</i>	
	Total Error Maximum Overload	0.02% of rated output
	At the Center	

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Loading Point 200% of the rated capacity

Temperature Range

Safe -30 to +70 Degrees C
Compensated -10 to +50 Degrees C

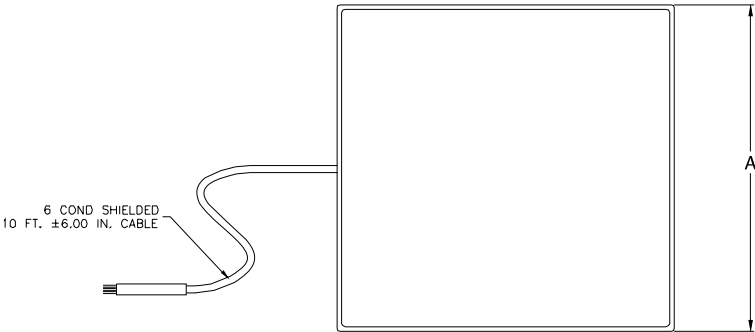
Temperature Effect

On Output 0.0014% of load/°C
On Zero 0.003% of rated output/°C
 0.006% of rated output/°C for the HI 1318PSS-C400

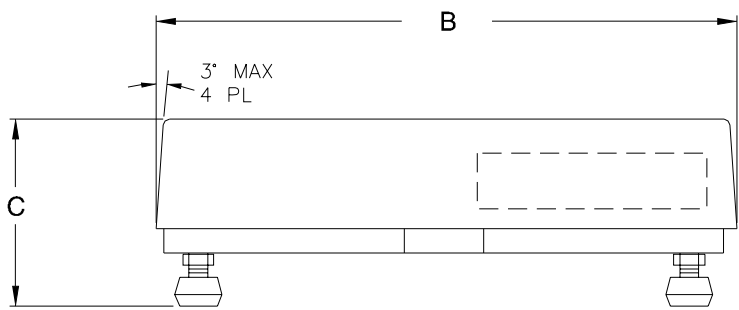
Cable 10 feet, 6 conductor, Polyurethane Jacket, Floating Shield

Mechanical Dimensions

The following dimensions are for reference only

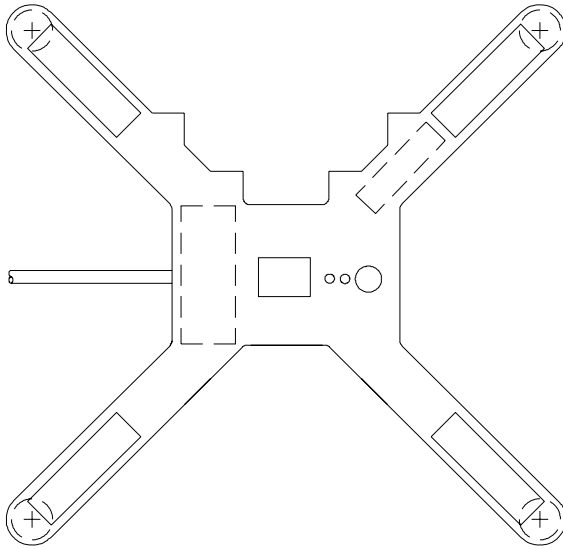


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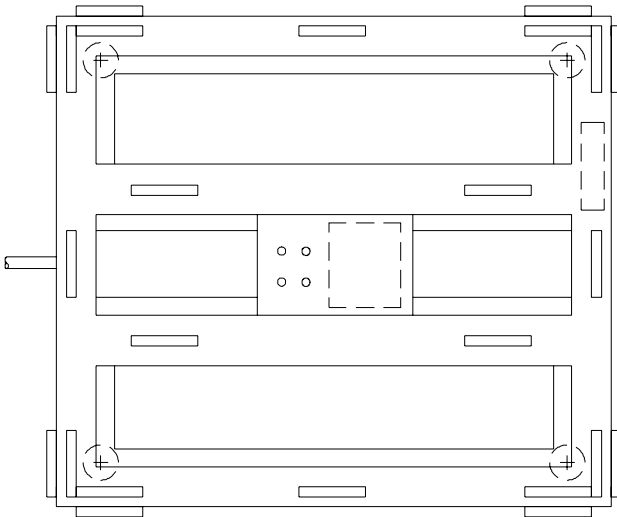


Wire Color	Signal
Gray	+ C2
Violet	- C2
Green	+ EXC
Blue	+ SENSE
Red	+ SIG
Black	- EXC
Brown	- SENSE
White	- SIG

Inches (mm)	HI 1212PS HI 1212PSS	HI 1318PS HI 1318PSS	HI 1824PS	HI 2424PS
A	12 (305)	13.75 (349)	18 (457)	24 (610)
B	12 (305)	18.55 (471)	24 610)	24 (610)
C	3.75 (95)	3.75 (95)	4.5 (114)	4.5 (114)



Base for HI 1212PS/PSS and HI 1318 PS/PSS With cover removed.



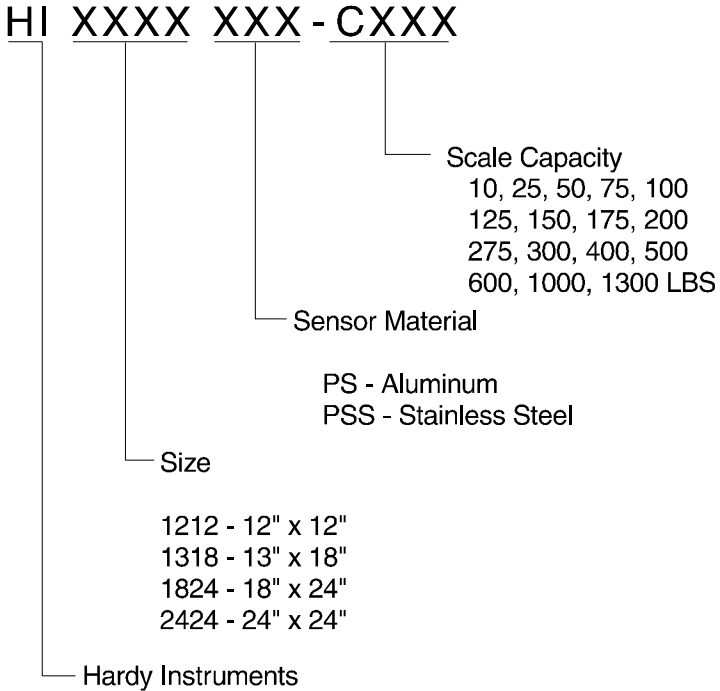
Base for HI 1824PS and HI 2424PS with cover removed.

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Capacities

LBS (KGS)	HI 1212 PS	HI 1212 PSS	HI 1318 PS	HI 1318 PSS	HI 1824 PS	HI 2424 PS
10 (4.5)	X					
25 (12.2)	X	X	X	X		
50 (24)	X	X	X	X		X
75 (35)					X	
100 (45.3)	X	X	X	X		X
125 (60)					X	
150 (68.5)	X	X	X	X		
175 (80)					X	X
200 (93)	X	X	X	X		
275 (127)						X
300 (136)					X	
400 (181.4)				X	X	X
500 (292)					X	X
600 (277)					X	X
1000 (472)					X	X
1300 (602)					X	X

Model Numbers



Troubleshooting

Scale does not respond when weight is applied

- Step 1. Make sure the scale is wired correctly to the instrument and there are no breaks in the wiring.
- Step 2. Lift off the lid and see if there is packing material or debris wedged under the scale.
- Step 3. Check to see that the corner stops are not touching the top frame. On the 1824 or 2424 insure the shock bolt is not touching the lower frame.
- Step 4. Verify that the Instrument is operating correctly.

Scale indication is not linear

- Step 1. Check the instrument for proper calibration.
- Step 2. Lift off the lid and see if there is packing material or debris wedged under the scale.

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- Step 3. Check that the corner stops are not touching the top frame. On the 1824 or 2424 insure the shock bolt is not touching the lower frame.
- Step 4. Make sure all electrical connections are tight with no corrosion and that there has not been an ingress of moisture to the system.

Scale reads backwards

Check for correct wiring to the instrument. The +- signal or excitation wires may be reversed.

Scale reading drifts or is erratic

- Step 1. Make sure all electrical connections are tight with no corrosion and that there has not been an ingress of moisture to the system.
- Step 2. Verify that the instrument is operating properly.
- Step 3. Make sure there are no high voltage wires close to the scale's load sensor.
- Step 4. Check that the scale and instrument are properly grounded.
- Step 5. If high static electricity is present a ground strap should be added from the platform cover to the lower frame assembly and to earth ground.

Service and Repair

For Service and Repairs, contact your local Hardy Representative.

Before returning any product to Hardy Instruments Inc., please contact the Customer Support Department for a return authorization number. Please have the scale model number and serial number and a brief description of the problem ready when you call.

Customer Support Department
Hardy Instruments, Inc.
3860 Calle Fortunada
San Diego, California 92123-1825