



DEFENDER 2500 Series Floor Scale Instruction Manual



Version History

Date	Version	Description
2024/4/11	A	Initial release

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EN

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1 INTRODUCTION

This manual contains installation, operation and maintenance instructions for the DEFENDER 2500 Series Floor Scale.

2 SAFETY PRECAUTIONS



Please follow these safety precautions:

- Never operate in hazardous areas.
- The foundation at the installation site must be capable of safely supporting the weight of the floor scale plus the weight of the maximum load.
- Ensure that vibrations due to machines near the installation site are kept to a minimum. This applies also when the floor scale is integrated into conveying systems.

3 INSTALLATION



**CAUTION: THE FLOOR SCALE IS VERY HEAVY.
ALWAYS USE AN APPROPRIATE HOIST TO LIFT IT FROM THE PACKAGING
OR TO MOVE IT INTO THE REQUIRED POSITION.**

Unpacking

1. Remove the outer packaging materials from the top and sides of the floor scale.
2. Install the two included eye bolts into holes in top of platform.
(See Figure 1.)
3. Lift the floor scale from the packaging material, see caution notice.

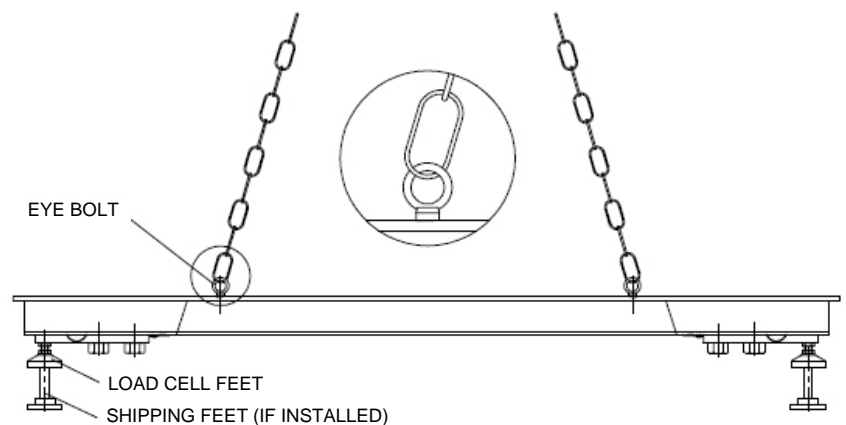


Figure 1. Hoisting Method.

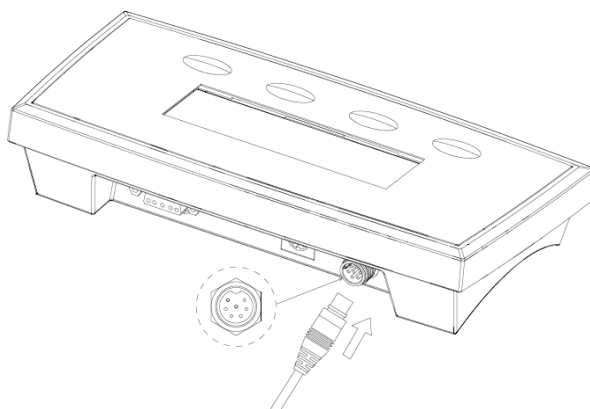
Positioning

Ensure the surface is flat in the area where the scale will be positioned, especially in the region of the load cell feet. Small differences in height can be compensated by adjusting the load cell feet.

1. If an Indicator is included with the floor scale, ensure that it is kept with the floor scale during positioning as there may be an attached connecting cable.
2. With the floor scale positioned over the final work area, remove the 4 shipping feet (if installed).
3. Install the 4 load cell feet (if not already installed).
4. Lower the scale on to the final work area.
5. Check that the floor scale is level; check that the 4 feet are in contact with the floor; make adjustments by rotating the nuts on the load cell feet. Use an external level.
6. Ensure that the floor scale's output cable does not become trapped or crushed during lifting or positioning.

Connecting an Indicator

Align the tab on the inside of the loadcell connector socket on the indicator to the slot on the loadcell cable connector end. Insert the cable connector end into the indicator as shown below and then fasten it by rotating the locking collar.



Caution: Pay attention on PINs when connect to the indicator, otherwise connector may be broken. Ensure that the cable is protected against possible damage when routed to the indicator.

If the Indicator is not attached or if the Indicator is purchased separately follow the steps listed below to make the proper connections.

1. Route the Floor Scale cable to the position where the Indicator will be mounted.
2. Consult the installation instructions of the Indicator to properly attach the cable connections inside the Indicator,
3. The Signal names of the Floor Scale wires are shown in Table 1, Floor Scale Wiring Color Code.

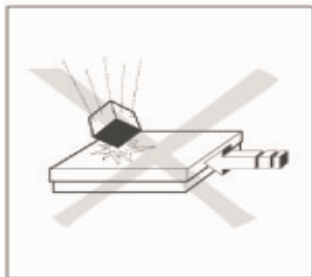
Caution: Ensure that the cable is protected against possible damage when routed to the Indicator.

TABLE 1. FLOOR SCALE WIRING COLOR CODE

Indicator Signal Name	Floor Scale Wire Color
EXC+ (IN+)	Green
SEN+	Yellow
SIG+ (OUT+)	White
SIG- (OUT-)	Red
SEN-	Blue
EXC- (IN-)	Black
Shield (GND)	Yellow/Green

4 OPERATION

For setup, calibration and proper operation, refer to the instruction manual supplied with the indicator. Refer to the specifications section of the floor scale for capacity, and readability information.



For continued best operating performance:

- Avoid falling loads, shocks and hard lateral impacts
- When weighing, all items should be centrally located on the floor scale and not over hanging the sides or the ramps.
- Verify the calibration of the floor scale system at regular intervals.

Operating Limits

Although the floor scales have extremely rugged construction, certain load limits must not be exceeded. Depending on the type of loading, the maximum safe static load, i.e. the maximum admissible loading, is shown in Table 2.

TABLE 2. MAX ADMISSIBLE LOADING

Model	Maximum Central Load ¹ (80% Surface Area)	Maximum side Load ² (30% Surface Area)	One Side corner load ³ (10% Surface Area)	
i-DF1500D1S	2500 kg	1500 kg	1000 kg	
i-DF1500D1R	2500 kg	1500 kg	1000 kg	
i-DF1500D1L	2500 kg	1500 kg	1000 kg	
i-DF3000D1L	3800 kg	1800 kg	1200 kg	
i-DF1500D1LX	2500 kg	1500 kg	1000 kg	
i-DF3000D1LX	3800 kg	1800 kg	1200 kg	
i-DF1500D1X	2500 kg	1500 kg	1000 kg	
i-DF3000D1X	3800 kg	1800 kg	1200 kg	

5 MAINTENANCE

Daily Checks

- Check that the rocker feet are properly seated in the holes of each load cell.
- Check that the 4 feet are in contact with the floor.
- Check that the scale is free from debris, especially under the edges of the scale.
- Check that there is no damage to the connecting cable.

Cleaning



Risk of Electrical Shock

Disconnect the power source before cleaning the scale with any liquids.

Maintenance of the floor scale is limited to regular cleaning.



- Wipe surfaces with a damp cloth.
- Use only common household cleaning agents.
- Never use water spray or high pressure cleaners.

When using optional Ramps or Foot Plates:



- Keep the air gap at the edge of the Floor Scale free of debris.

6 TECHNICAL DATA

Specifications

TABLE 3. FLOOR SCALE SPECIFICATIONS

Floor Scale Models	i-DF1500D1S	i-DF1500D1R	i-DF1500D1L i-DF3000D1L	i-DF1500D1LX i-DF3000D1LX	i-DF1500D1X i-DF3000D1X
Dimensions (mm)	800 x 800 x 110	1,000 x 1,000 x 110	1,200 x 1,200 x 110	1,200 x 1,500 x 110	1,500 x 1,500 x 110
Capacity (kg)	1500	1500	1500 / 3000	1500 / 3000	1500 / 3000
Operating tempera-ture/ Humidity	-10° to 40° / 0% to 95% Relative Humidity, Non-condensing				
Emin (kg)	0.5	0.5	0.5 / 1	0.5 / 1	0.5 / 1
Material	Painted carbon steel, black painted, treaded surface, fixed top plate 5 mm thick				
Platform net wt (kg)	65	85	114	145	175
Feet	4 x swivel design, screw-in, carbon steel with rubber bottom cap, adjustable height				
Load Cell Model / Material	4 x OIML C3, IP67 alloy steel, shear beam				
Load Cell Capacity Emax (kg)	1,000		1,000 / 2,000		
Load Cell Safe Overload Limit	150% of Emax				
Load Cell Output Impedance	350 Ω ± 1 Ω				
Load Cell Excitation Voltage	5V ~ 15V, DC/AC				
Junction Box	Top access, IP65, Stainless steel, with 5m long cable				

7 DRAWINGS

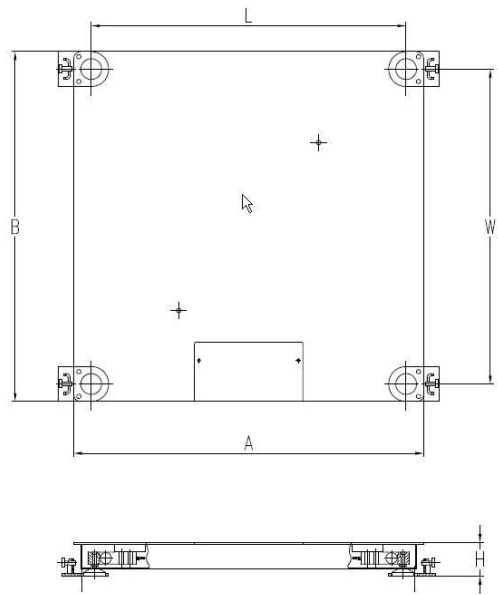


Figure 2. Floor Scale Dimensions, (Shown with optional Foot Plates)

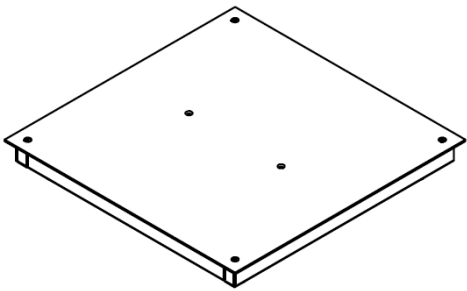


Figure 3. S&R size platform structure

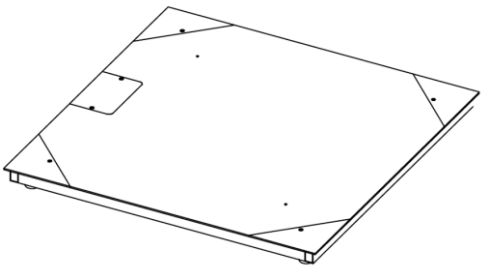


Figure 4. Other size platform structure

TABLE 4. FLOOR SCALE DIMENSIONS

MODELS	DIMENSIONS(mm)				
	FLOOR SCALE PLATFORM			FOOT CENTERS	
	A	B	H	L	W
i-DF1500D1S	800	800	110	620	620
i-DF1500D1R	1000	1000	110	820	820
i-DF1500D1L	1200	1200	110	1020	1020
i-DF3000D1L					
i-DF1500D1LX	1500	1200	110	1320	1020
i-DF3000D1LX					
i-DF1500D1X	1500	1500	110	1320	1320
i-DF3000D1X					

8 ACCESSORIES

TABLE 5. LIST OF ACCESSORIES

ITEM	PART NUMBER
Foot Plate Kit, Painted steel	72225239
Ramp 800mm Painted	30944102
Ramp 1000mm Painted	30944103
Ramp 1200mm Painted	30944104
Ramp 1500mm Painted	30944105
Pit Frame Kit, Painted steel, 0.8m	83033708
Pit Frame Kit, Painted steel, 1.0m	83033709
Pit Frame Kit, Painted steel, 1.2m	83033710
Pit Frame Kit, Painted steel, 1.5m	83033711
Pit Frame Kit, Painted steel, 1.2m x 1.5m	83033714

DEFENDER 2500 SERIES FLOOR SCALE,

Installation of Optional Foot Plates and Ramps

Plates are required for certifiable installations. Installation of each Ramp also requires the installation of one set of Foot Plates. Foot Plates are available separately and are included with the Ramp accessory kit. Refer to Figure 3 for mounting of the Foot Plates and Ramps. Installation of Floor Plates and Ramps must be done before final placement of the Floor Scale.

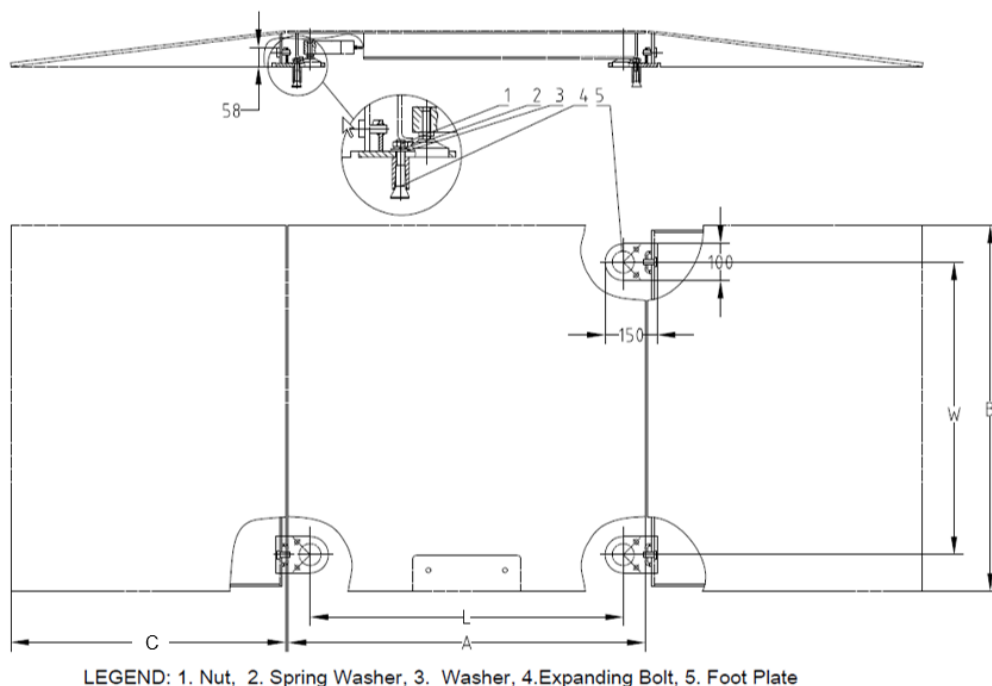


Figure 5. Optional Foot Plate and Ramp Installation

- Notes:**
1. Expanding bolts require 12.5mm diameter holes drilled 60mm deep into the floor surface.
 2. Foot Plate center to center dimensions W and L are shown in Table 6.
 3. The Floor Scale must be positioned so the load cell feet rest within the large holes of the Foot Plates.
 4. Ensure that a free air gap exists between the sides of the Floor Scale and the edges of the Ramps.

TABLE 6. DIMENSIONS FOR FLOOR PLATE AND RAMP INSTALLATION

MODELS	DIMENSIONS (mm)			
	RAMP		FOOT PLATE CENTERS	
	C	B	L	W
i-DF1500D1S	750	800	620	620
i-DF1500D1R	750	1000	820	820
i-DF1500D1L	750	1200	1020	1020
i-DF3000D1L				
i-DF1500D1LX	750	1200	1320	1020
i-DF3000D1LX				
i-DF1500D1X	750	1500	1320	1320
i-DF3000D1X				

DEFENDER 2500 SERIES FLOOR SCALE,
Installation and Dimensions of Pit Frame

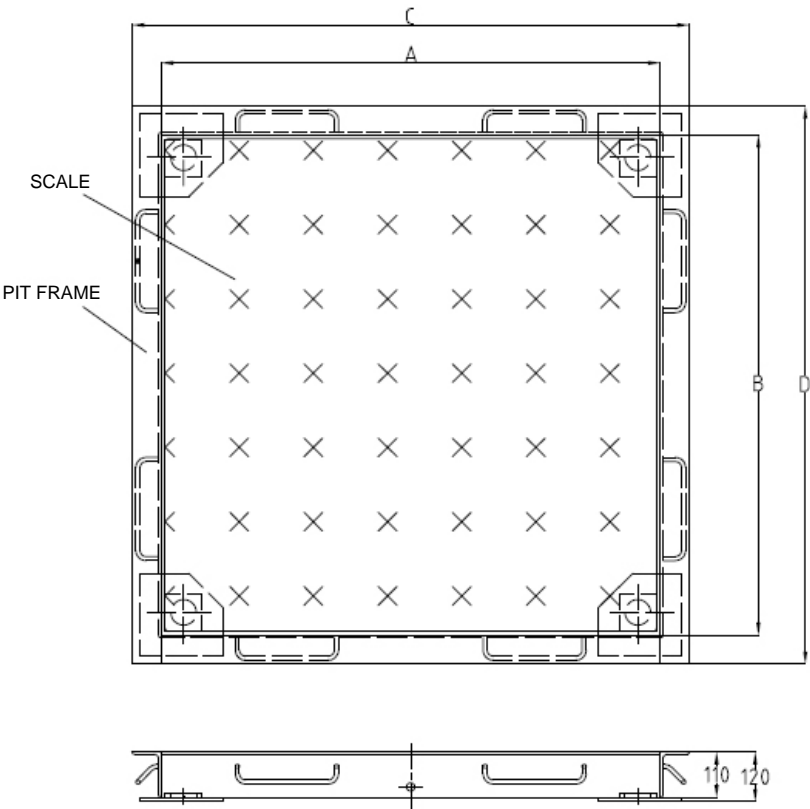


Figure 6. Pit Frame Installation

TABLE 7. DIMENSIONS OF PIT FRAME

SCALE MODEL	MATCHED PIT FRAME MODEL	DIMENSIONS (mm)			
		A	B	C	D
i-DF1500D1S	Pit Frame 0.8m	830	830	970	970
i-DF1500D1R	Pit Frame 1.0m	1030	1030	1170	1170
i-DF1500D1L	Pit Frame 1.2m	1230	1230	1370	1370
i-DF3000D1L					
i-DF1500D1LX	Pit Frame 1.2m x 1.5m	1230	1530	1370	1670
i-DF3000D1LX					
i-DF1500D1X	Pit Frame 1.5m	1530	1530	1670	1670
i-DF3000D1X					

9 Compliance



This product conforms to the EMC directive 2004/108/EC and the Low Voltage Directive 2006/95/EC. The complete declaration of Conformity is available from Ohaus Corporation.

Disposal

In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.



Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

For disposal instructions in Europe, refer to www.ohaus.com.

Thank you for your contribution to environmental protection.

ISO 9001 Registration

In 1994, Ohaus Corporation, USA, was awarded a certificate of registration to ISO 9001 by Bureau Veritas Quality International (BVQI), confirming that the Ohaus quality management system is compliant with the ISO 9001 standard's requirements. On May 15, 2003, Ohaus Corporation, USA, was re-registered to the ISO 9001:2000 standard.

Warranty

Ohaus products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period Ohaus will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to Ohaus.

This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than Ohaus. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by Ohaus Corporation. Ohaus Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact Ohaus or your local Ohaus dealer for further details.