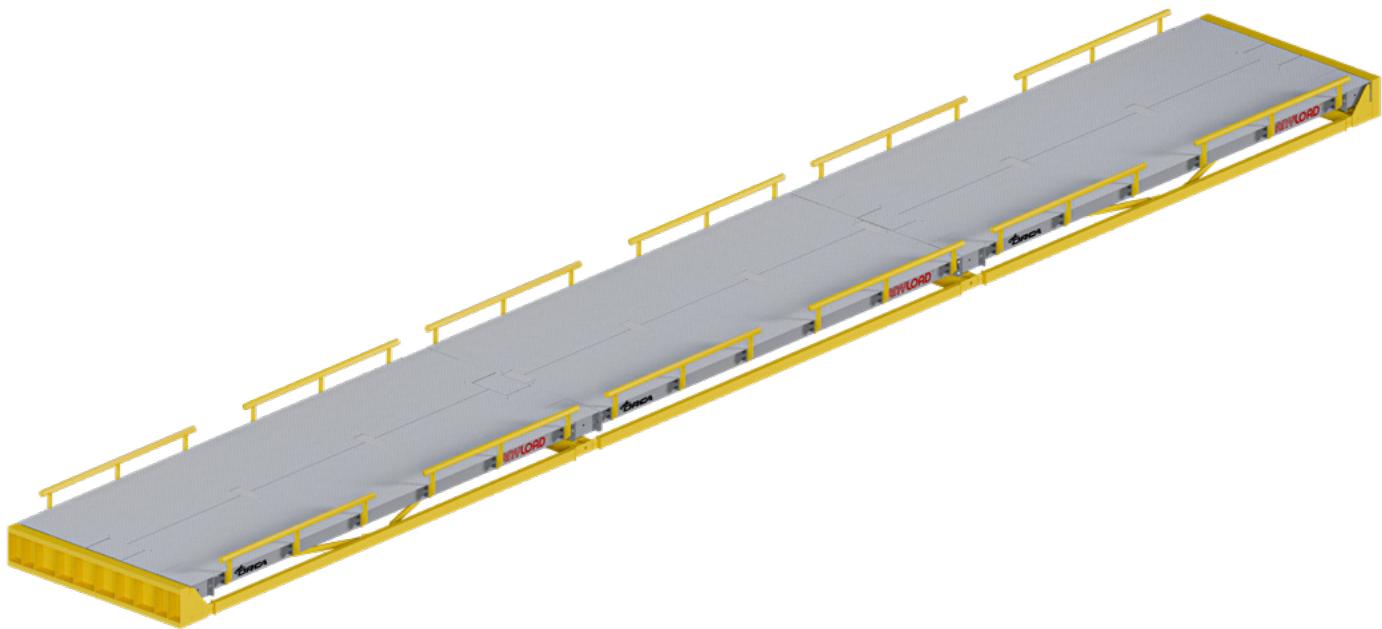


ANYLOAD®

ORCA
Truck Scale
60 - 90ft Installations



1-855-269-5623
www.anyload.com

V2504

INSTALLATION MANUAL

ANYLOAD®

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All information contained in this publication is, to the best of our knowledge, accurate and complete at the time of release. ANYLOAD reserves the right to make changes to the technology, features, specifications, and design of the equipment without prior notice.

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Document Control:

Version	Date	Description
2409	September 15, 2024	First public release version.
2501	June 6, 2025	Revised assembly instructions for H-bracket section mounting.
2502	October 7, 2025	Added instructions for section lifting to service load cells.
2504	December 5, 2025	Split information into Installation and Assembly Manual

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△ Safety Notice △

IMPORTANT: READ BEFORE PROCEEDING

The assembly and installation of truck scales involve complex procedures that require strict adherence to safety standards. This guide provides essential instructions for safely assembling and installing truck scales.

Failure to follow these guidelines may result in serious injury, property damage, or death.

1. Qualified Personnel Only:

The assembly and installation of truck scales should only be performed by trained and authorized personnel. All workers involved must have the necessary technical expertise and understanding of load-bearing structures, electrical systems, and safety protocols.

2. Personal Protective Equipment (PPE):

All personnel must wear appropriate PPE at all times during the assembly and installation process. This includes, but is not limited to, hard hats, safety glasses, gloves, steel-toed boots, and high-visibility clothing.

3. Site Preparation:

Ensure that the installation site is clear of obstructions, level, and properly graded. Verify that all underground utilities have been identified and marked to avoid accidental damage.

4. Heavy Equipment and Lifting:

Use appropriate lifting equipment, such as cranes or forklifts, to handle heavy components. Ensure that all lifting gear is properly rated for the weight of the components being handled. Always follow safe lifting practices to prevent accidents.

5. Load-Bearing Safety:

Truck scales are load-bearing structures. Proper assembly is critical to ensure the scale can safely support the maximum load it is designed to handle. All components must be installed according to the specifications provided in this guide. Any deviation may compromise the structural integrity of the scale.

6. Electrical Safety:

Truck scales often incorporate electrical components for weighing systems. Ensure that all electrical connections are made by a qualified electrician and comply with local electrical codes. Power should be turned off at the source during installation to prevent electrical shock.

7. Weather Conditions:

Avoid assembly and installation during adverse weather conditions such as extreme heat, heavy rain, snow, high winds, or lightning. Wet or icy conditions can create slip hazards and reduce the effectiveness of tools and equipment.

8. Load Testing:

After installation, the truck scale must be load-tested to ensure it operates correctly under load. This testing should be performed according to the procedures outlined in this guide and only by qualified personnel.

9. Regular Inspections and Maintenance:

Once installed, truck scales require regular inspections and maintenance to ensure ongoing safe operation. Follow the maintenance schedule provided in this guide to address any wear and tear or potential issues before they become hazardous.

10. Emergency Procedures:

Ensure that all personnel are familiar with emergency procedures, including the location of first aid kits, fire extinguishers, and emergency contact numbers. In case of an emergency, stop all work immediately and follow established safety protocols.

Disclaimer:

ANYLOAD Weigh & Measure Inc. is not liable for any accidents, injuries, or damages resulting from assembly, installation, or failure to follow the safety guidelines provided in this guide. The responsibility for safe assembly and installation lies with the customer and/or installation personnel.

All information contained in this publication is, to the best of our knowledge, accurate and complete at the time of release. ANYLOAD reserves the right to make changes to the technology, features, specifications, and design of the equipment without prior notice.

For further guidance or clarification, please contact ANYLOAD technical support before proceeding with the installation.

Indicative Marking	Significance
⚠ WARNING ⚠	Warns of a dangerous situation which will result in serious physical injury or death if not avoided.
⚠ CAUTION ⚠	Warns of a dangerous situation which could result in physical injury or death if not avoided.
Notice	Failure to comply with information with this marking may lead to minor injury and/or damage to property if not avoided.
❗ Important	Important information about the product.
ⓘ NOTE	Application notes, tips and other information that may be helpful.
For emphasis (Italics)	Italics are used to emphasize key information.

	⚠ WARNING ⚠ Only allow trained professionals to install or service this equipment. Use caution when conducting checks, tests, and adjustments that require power to be on. Neglecting these safety measures may lead to serious bodily harm.
---	---

	⚠ WARNING ⚠ Disconnect all power to this unit / system, lock out power switches, and wait for at least 30 seconds before installing, servicing, cleaning, or removing the fuse. Neglecting these safety measures may lead to serious bodily harm and or damage to equipment.
---	---

	⚠ CAUTION - DANGER OF BODILY HARM OR PROPERTY DAMAGE <ul style="list-style-type: none"> Use appropriate lifting and jacking equipment to ensure safe and stable lifting. Make sure the equipment is in good working condition and has the necessary load capacity. When a module is being moved, avoid placing any body parts between the module and any other surface. If you must position any body parts beneath a module, ensure the module is securely supported to prevent any movement.
---	--

	⚠ CAUTION - MINIMIZE RISK OF BODILY HARM <ul style="list-style-type: none"> Do not replace more than one load cell at a time. Wear appropriate personal protective equipment (PPE) such as gloves and steel-toed shoes when handling load cells and weighing systems. Keep the scale area as clean and clear of debris or obstructions as possible to minimize the risk of slips, trips, or falls during installation or servicing.
---	---

	⚠ CAUTION - RISK OF COMMUNICATION FAILURES <ul style="list-style-type: none"> Make sure that no stray conductors are left unsecured. Exposed strands of wires can lead to communication failures if they bridge the connection in the terminal block. Keep all electrical components absolutely dry on the inside and as dry as possible on the outside. When handling load cell cables, always exercise care to avoid potential damage. Be mindful of moisture exposure, as it can compromise a cable's integrity and functionality. To prevent pinching, cuts, or abrasions, ensure that the cable is routed safely and securely, away from sharp edges and moving parts.
---	---

1 - Overview

1.1 Scale Body General Installation

1.1.1 Exploded View

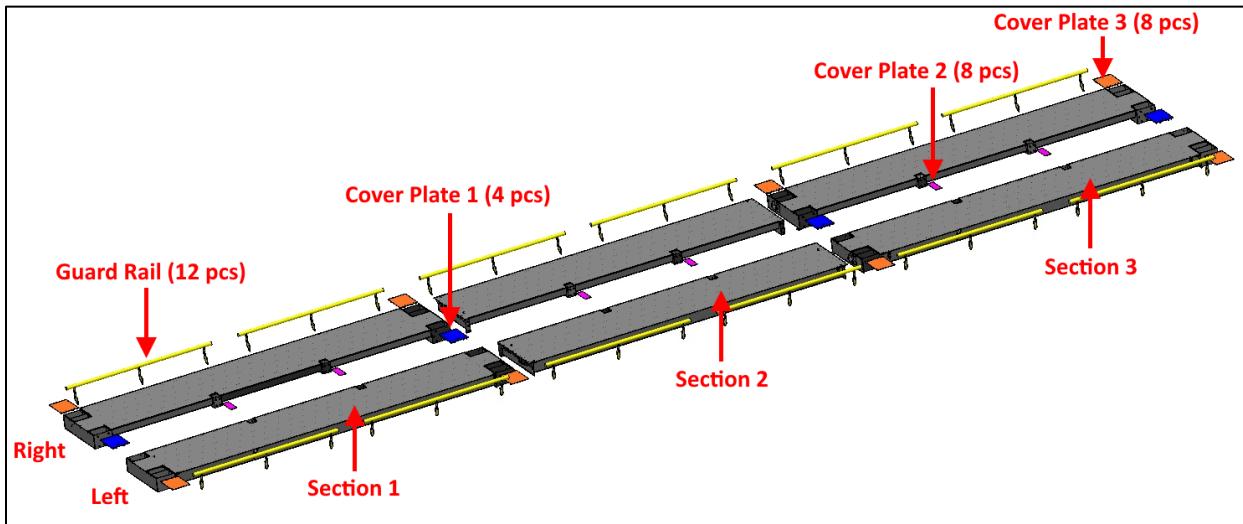


Figure 1: Exploded view of all major truck scale structural components

1.1.1 Assembled View

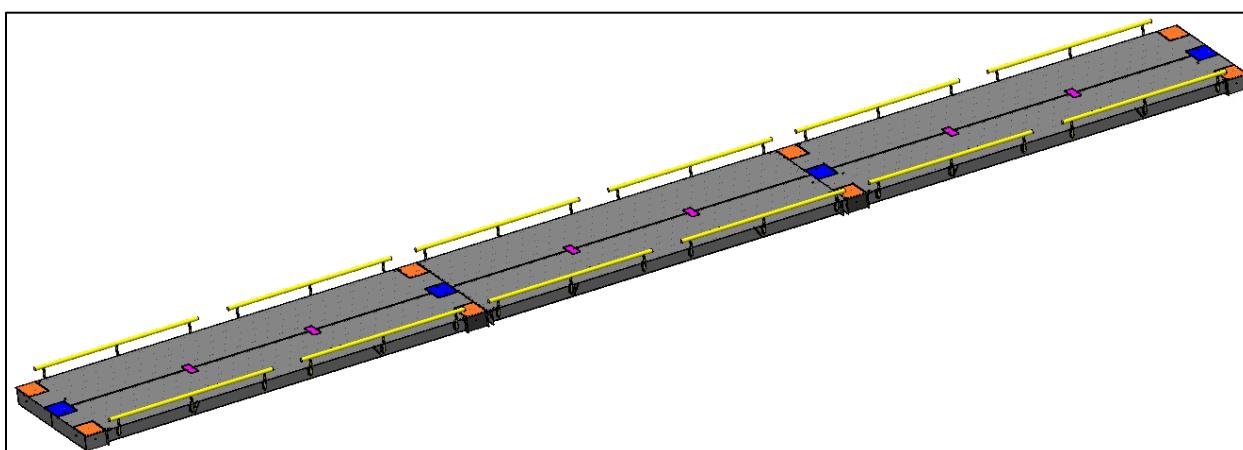


Figure 2: Assembled view of the truck scale structure

1.2 Subframe General Installation (Portable Design Only)

1.2.1 Exploded View

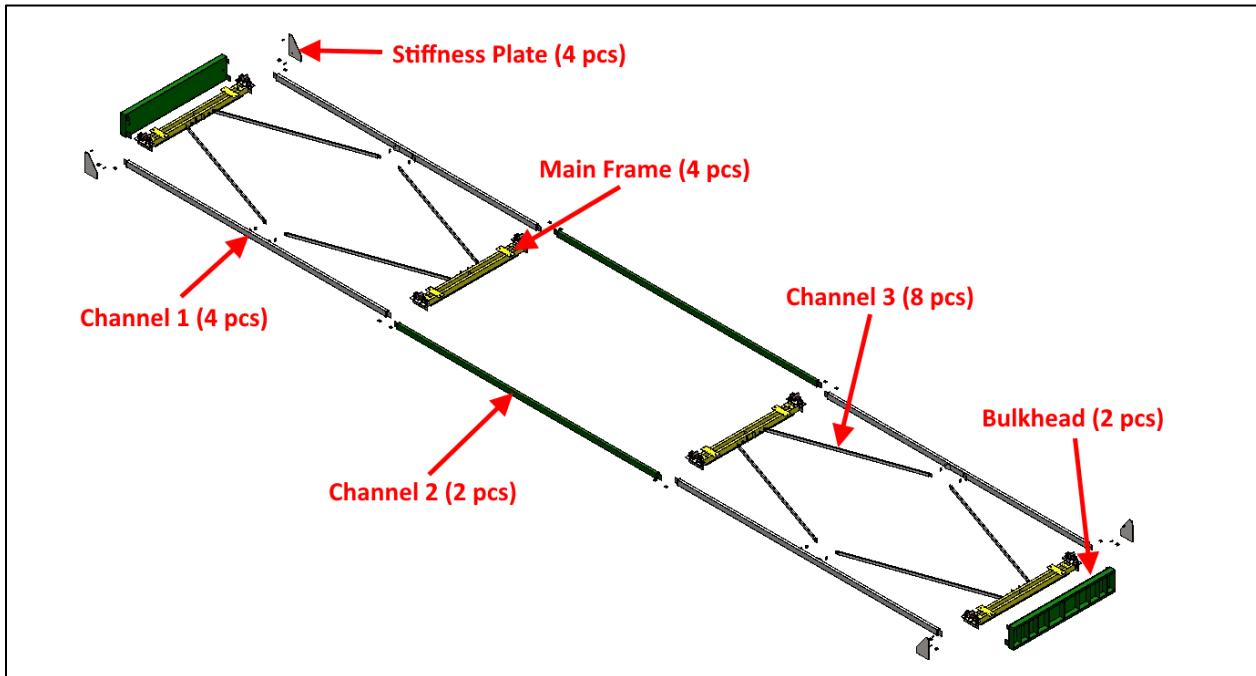


Figure 3: Exploded View of the truck scale subframe

1.2.2 Assembled View

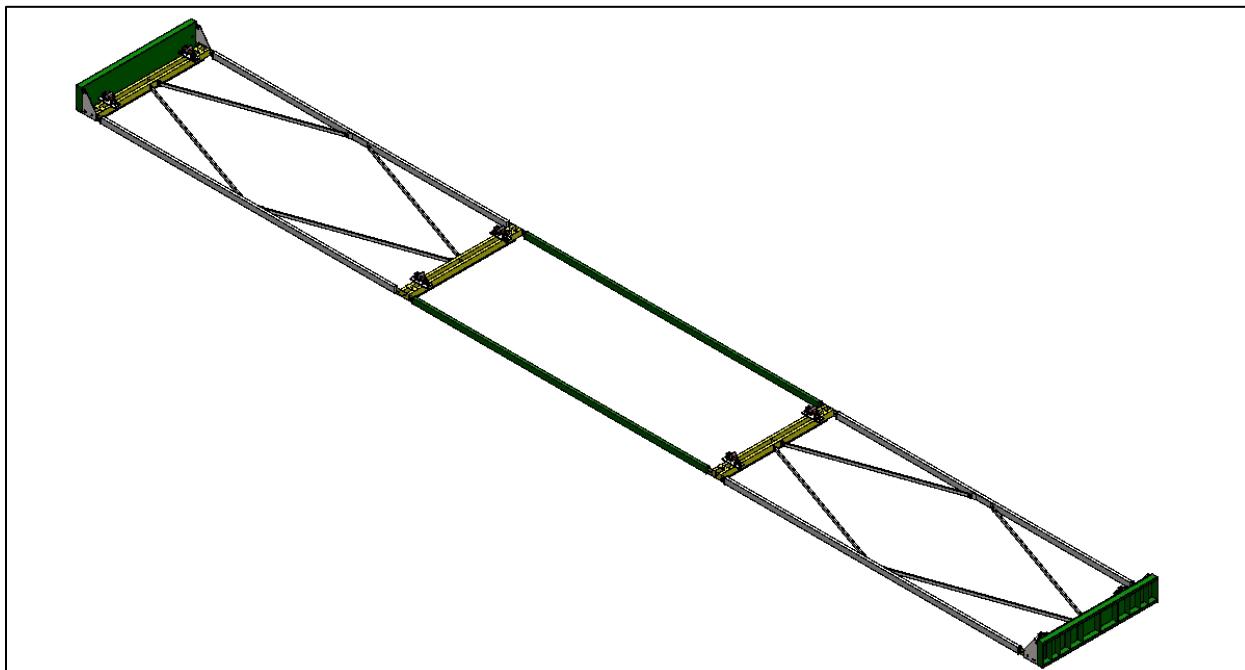
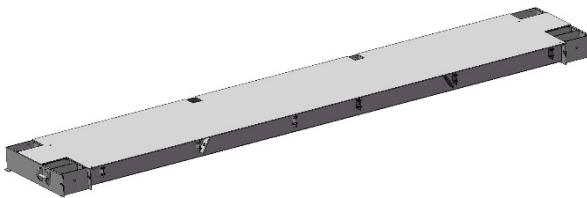


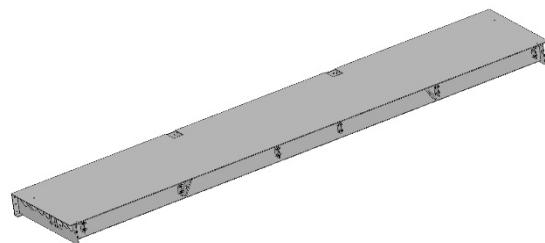
Figure 4: Assembled View of the truck scale subframe

2 - Components

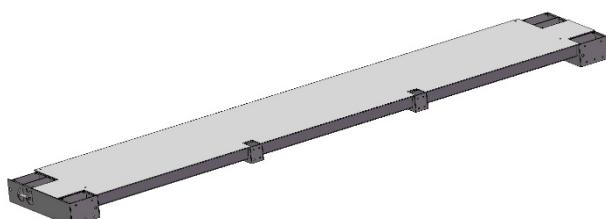
2.1 Scale Body Components



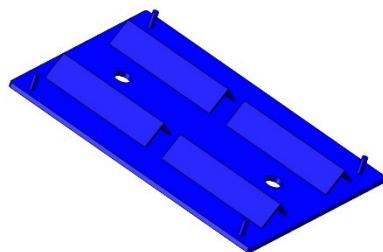
Scale Body1 (2 pcs)



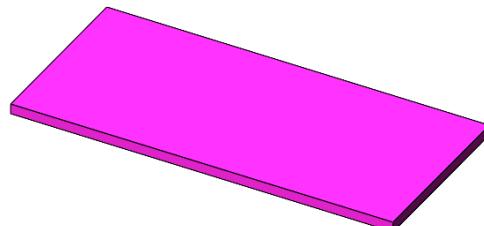
Scale Body 2 (2 pcs)



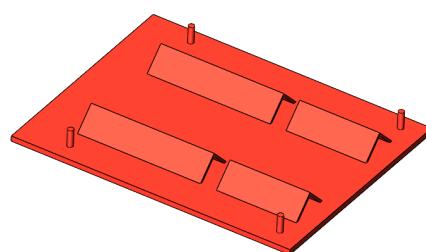
Scale Body 3 (2 pcs)



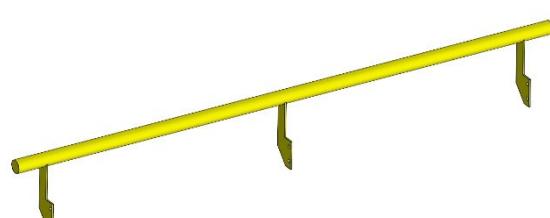
Cover Plate 1 (4 pcs)



Cover Plate 2 (8 pcs)

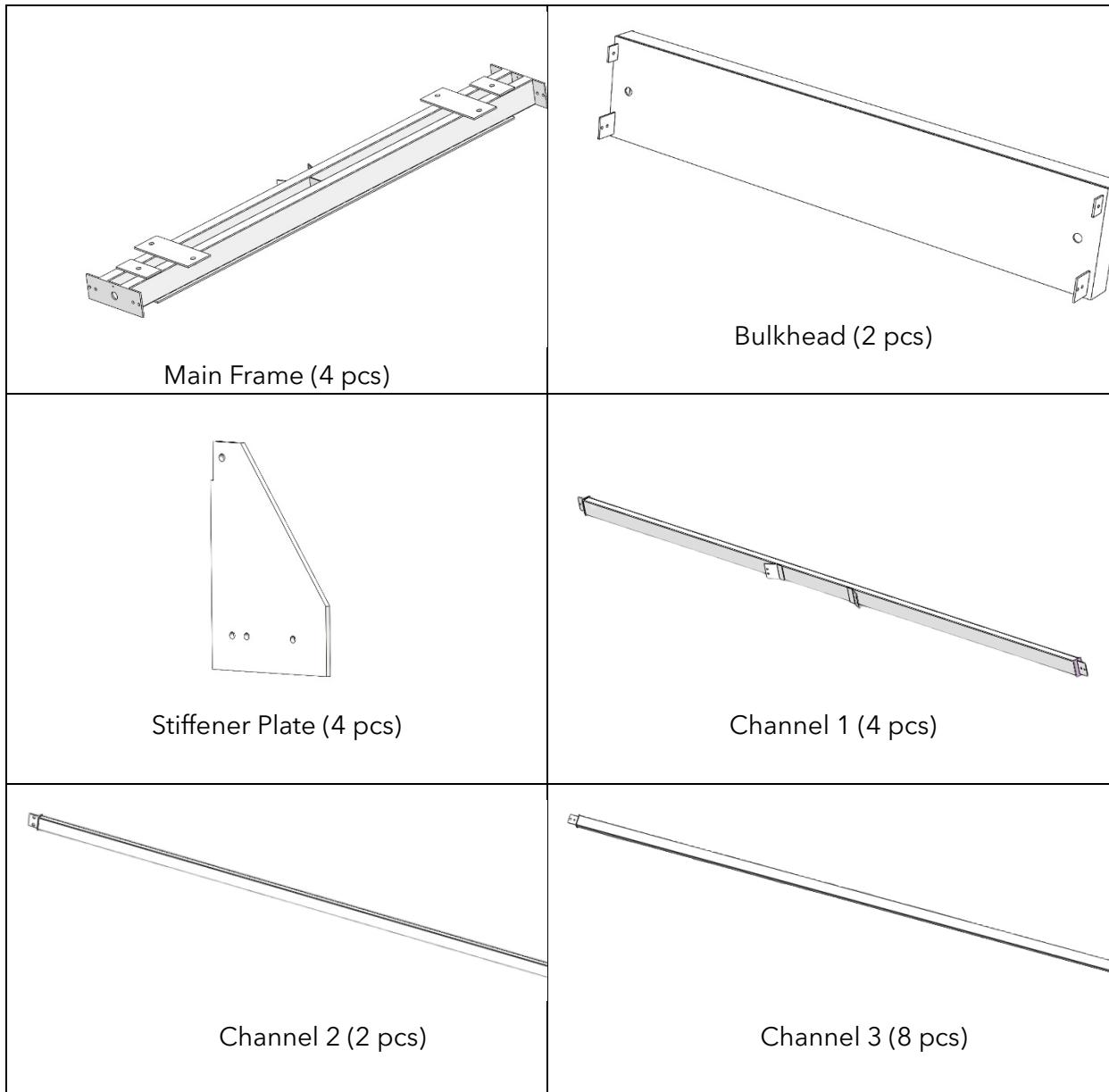


Cover Plate 3 (8 pcs)



Guard Rail (12 pcs)

2.2 Subframe Components (Portable Design Only)



2.3 Load Cell & Weigh Module Components

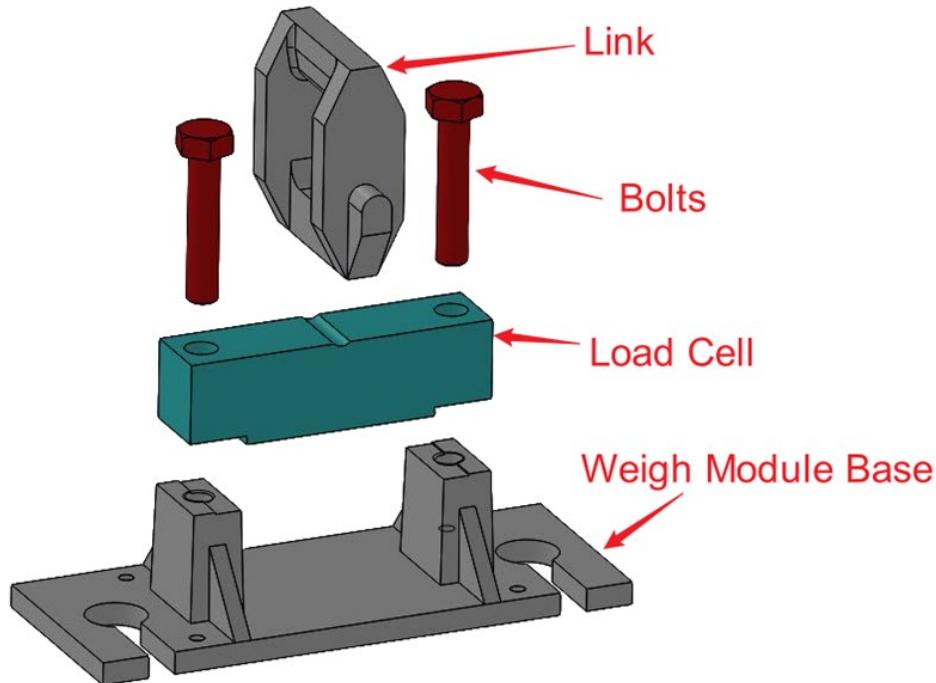


Figure 5: Exploded view of all the components of the load cell and weigh module

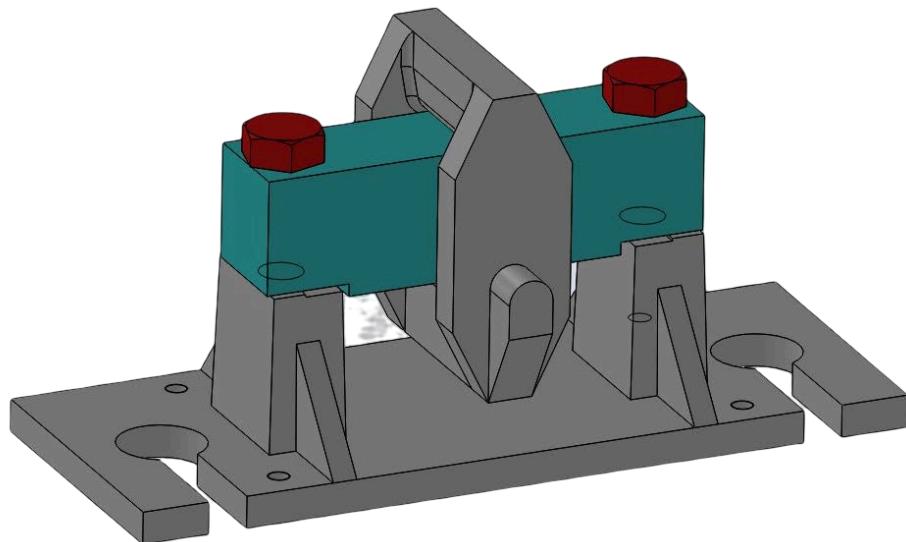


Figure 6: Assembled view of the load cell and weigh module.

Quantity: 8 sets

Notice

DO NOT cut the cable or handle the load cell by its cable. Reducing the cable length alters the resistance, which can result in a distortion of the signal. This distortion may lead to inaccurate measurements and affect the overall performance of the load cell.

2.4 Assembly Hardware

2.4.1 Hardware List

Item	Description	Specification	PCS	Remarks	Torque ¹ , ²
1	Shim A	Thickness 3mm	16	Paint color is gray (Color code is RAL7004)	N/A
2	Shim B	Thickness 6mm	16	Paint color is gray (Color code is RAL7004)	N/A
3	Big Washer	Ø80/Ø26X8mm	16	Paint color is gray (Color code is RAL7004)	N/A
4	Junction Box	J04EP-E-D2	2	Four-channel excitation trim w/ surge protection, fiberglass case	N/A
5	Grounding Strap A	STRIP-7.9-200mm	2	Grounding Junction Box to Truck Scale	N/A
6	Grounding Strap B	STRIP-16-350mm	4	Grounding Truck Scale to Earth	N/A
7	Load Cell Weigh Module Support	Custom ANYLOAD component	16	Support Weigh Module	N/A
8	Ø18 Washer	80/80/10mm	4	Ø18 hole, 80x80mm square, 10mm thick	
9	M6X20 Hexagonal Head Bolt	GB/T5783-2016-M6X20	2	Each bolt with 1 plain washer, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for connecting Grounding Strap A	5Nm
10	M10X25 Hexagonal Head Bolt	GB/T5783-2016-M10X25	4	Each bolt with 1 plain washer, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for connecting Grounding Strap B	16Nm
11	M12X70 Hexagon socket head cap screws	GB/T70.1-2008-M12X70	32	Each screw with 1 plain washer, 1 spring lock washer, zinc-plated, grade 8.8, full thread for Load Cell Mount Support	28Nm
12	M16X70 Hexagonal Head Bolt	GB/T 5783-2016-M16X70	12	(Portable Only) Each bolt with 2 plain washers, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for installing subframe	71Nm
13	M16X50 Hexagonal Head Bolt	GB/T 5783-2016-M16X50	96	(Portable Only) Each bolt with 2 plain washers, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for installing subframe	71Nm
14	M20X60 Hexagonal Head Bolt	GB/T5783-2016-M20X60	79	Each bolt with 2 plain washers, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for joining Guard Rail	137Nm
15	M20X80 Hexagonal Head Bolt	GB/T5783-2016-M20X80	55	Each bolt with 2 plain washers, 1 spring lock washer & 1 nut, zinc-plated, grade 8.8, full thread for joining Scale body	137Nm

¹ Recommended torque value while using calibrated torque wrench.

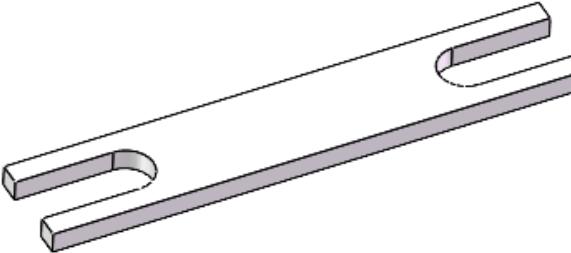
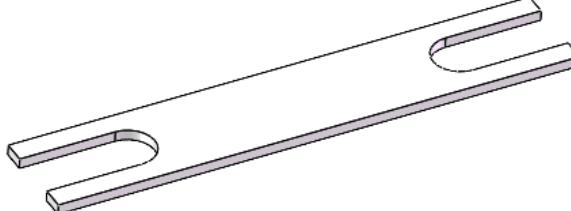
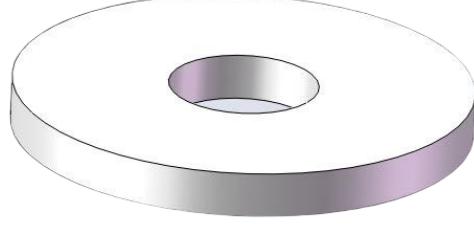
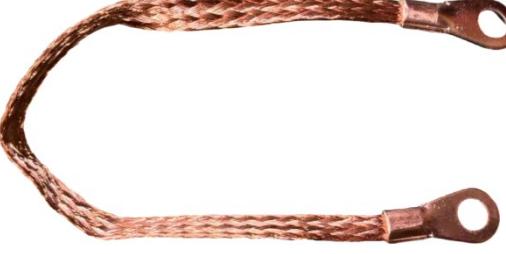
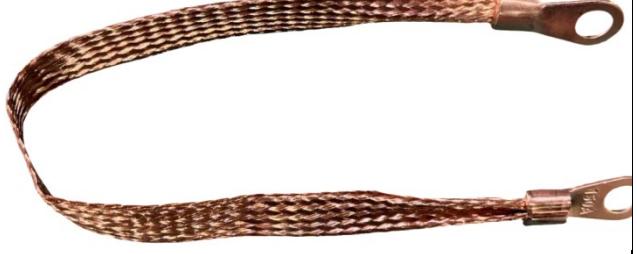
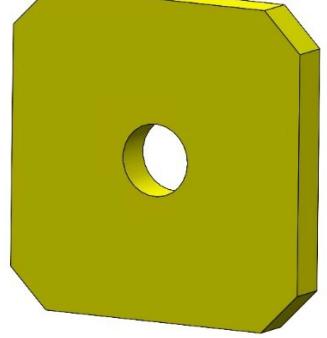
² Conversion: 1 newton meter = 0.7375621493 foot-pound

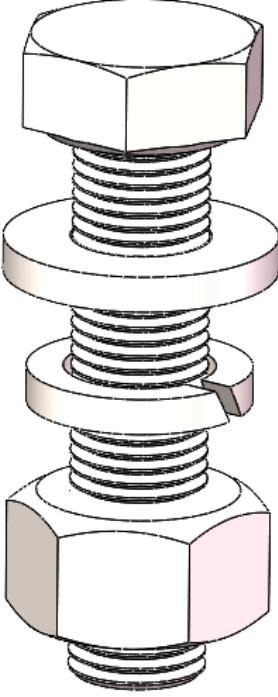
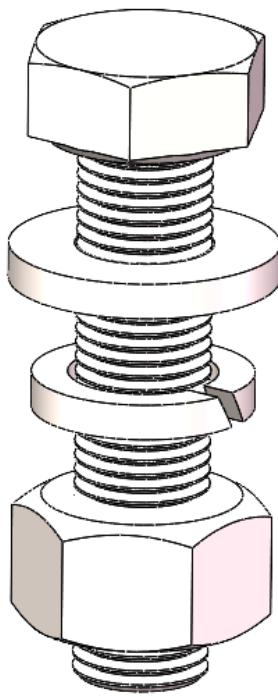
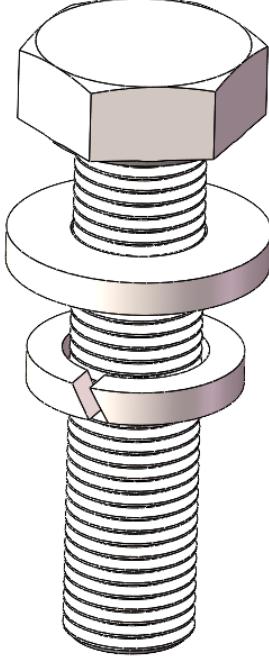
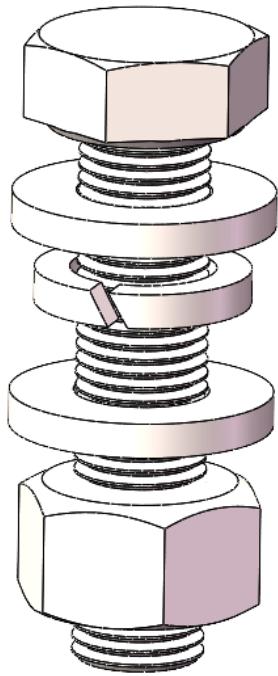
16	M24X70 Hexagonal Head Bolt	GB/T5783- 2016-M24X70	16	For mounting load cell to weigh module	235Nm
17	M24X200 Hexagonal Head Bolt	GB/T5781- 2016- M24X200	8	(Portable Only) Tie down for shipping with 2 plain washer, 1 spring lock washer & 2 nuts, zinc-plated, grade 8.8, full thread	30Nm (Lock Nut)
18	M30X150 Hexagonal Head Bolt	GB/T5783- 2016- M30X150	4	Each bolt with 1 nut, zinc-plated, grade 8.8, full thread for bumper bolt	30Nm (Lock Nut)

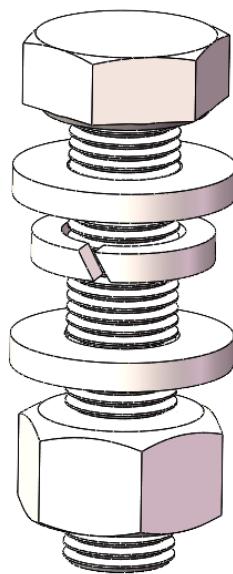
Notice

Quantities of screws, bolts, washers and nuts provided should exceed the listed count to provide for spares and prevent undercounting. If any components are defective or insufficient in quantities, please contact ANYLOAD for replacements.

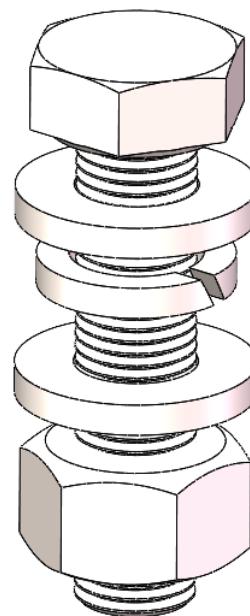
2.4.2 Hardware Details

	
Item 1: Shim A	Item 2: Shim B
	
Item 3: Big Washer	Item 4: Junction Box
	
Item 5: Grounding Strap A	Item 6: Grounding Strap B
	
Item 7:	Item 8:

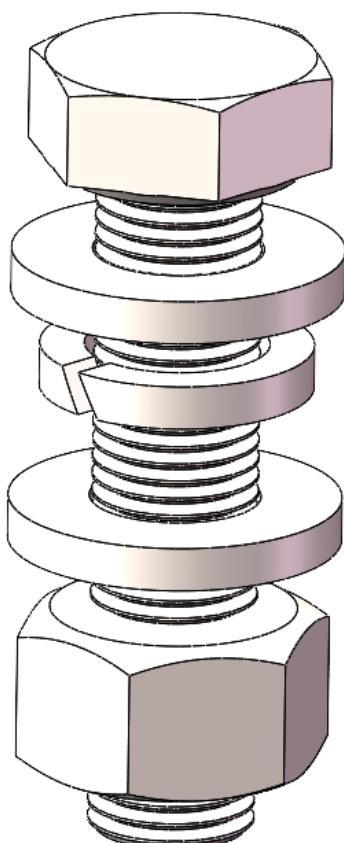
Load Cell Weigh Module Support	$\varnothing 18$ Square Washer (Yellow, RAL1003)
 <p>Item 9: M6X20 Hexagonal Head Bolt & Nut</p>	 <p>Item 10: M10X25 Hexagonal Head Bolt & Nut</p>
 <p>Item 11: M12X70 Hexagon socket head cap screws</p>	 <p>Item 12: M16x70 Hexagonal Head Bolt & Nut</p>



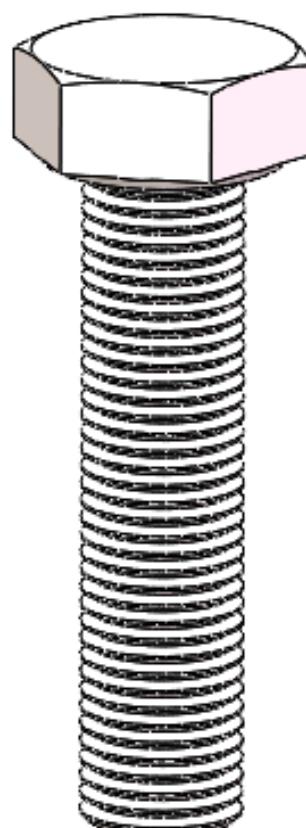
Item 13:
M16X50 Hexagonal Head Bolt & Nut



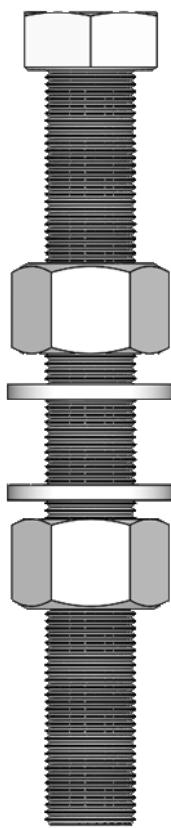
Item 14:
M20X60 Hexagonal Head Bolt & Nut



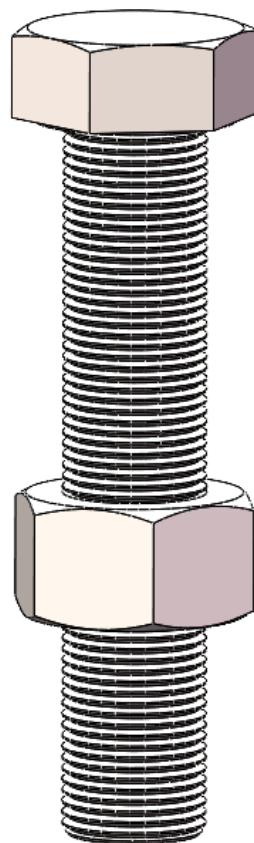
Item 15:
M20X80 Hexagonal Head Bolt & Nut



Item 16:
M24X70 Hexagonal Head Screw



Item 17:
M24X200 Hexagonal Head Bolt & Nut

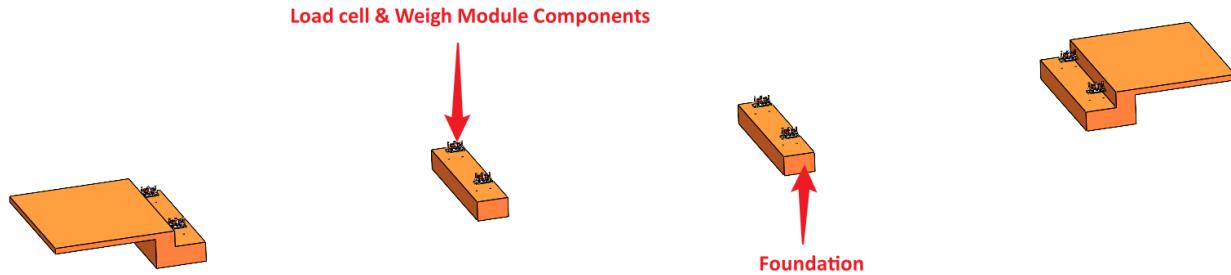


Item 18:
M30X150 Hexagonal Head Bolt & Nut

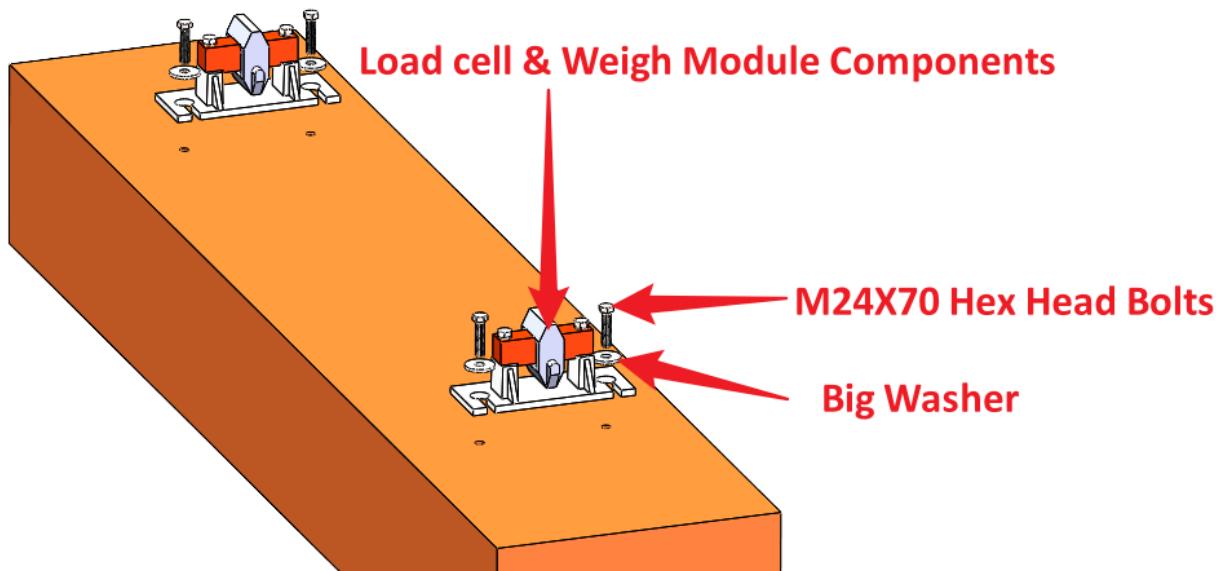
3 - Installation

3.1 Permanent Truck Scale Installation

Install Load cell & Weigh Module Components on the Foundation



Detailed view:

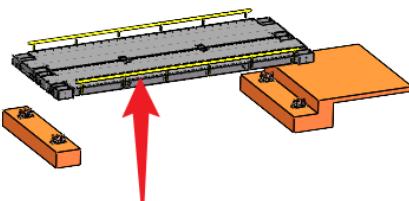
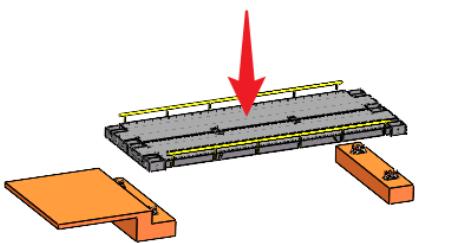


Important:

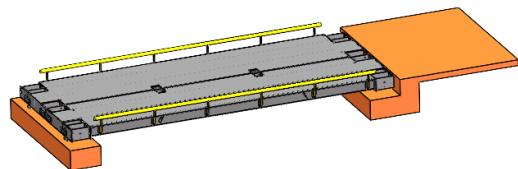
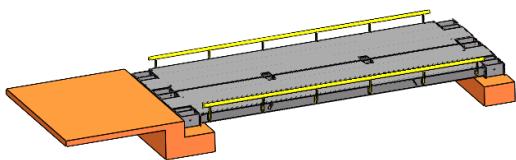
Please contact ANYLOAD to request specific reference or control-level foundation drawings.

Install Scale Sections 1 & 3

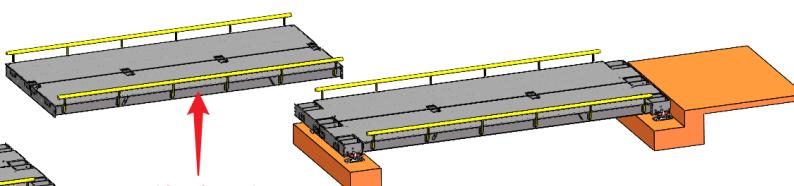
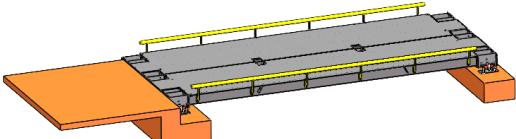
Lift and place **Sections 1** and **3** onto the Foundation.

Left & Right Section**Left & Right Section**

Result:

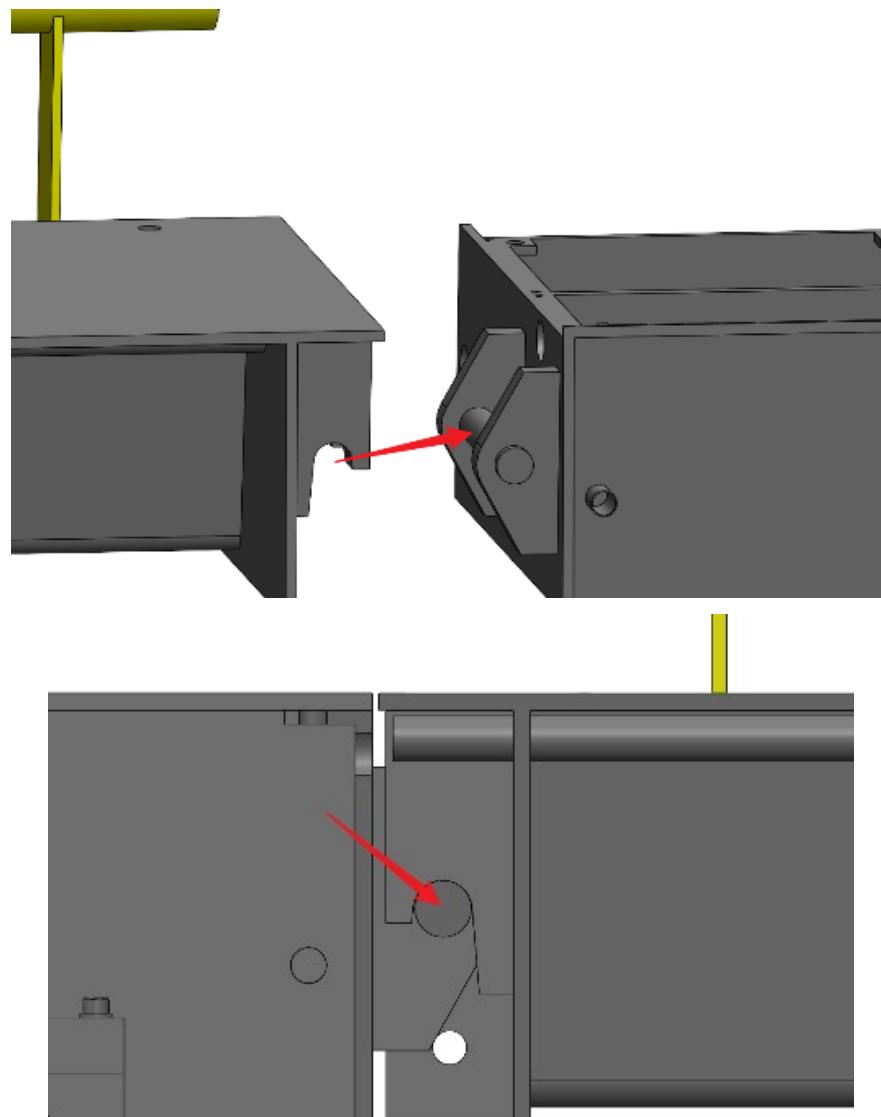
**Install Scale Section 2**

- (1) Lift and place Scale Section **2** between Scale Sections **1** and **3**, taking care to align the H-brackets.

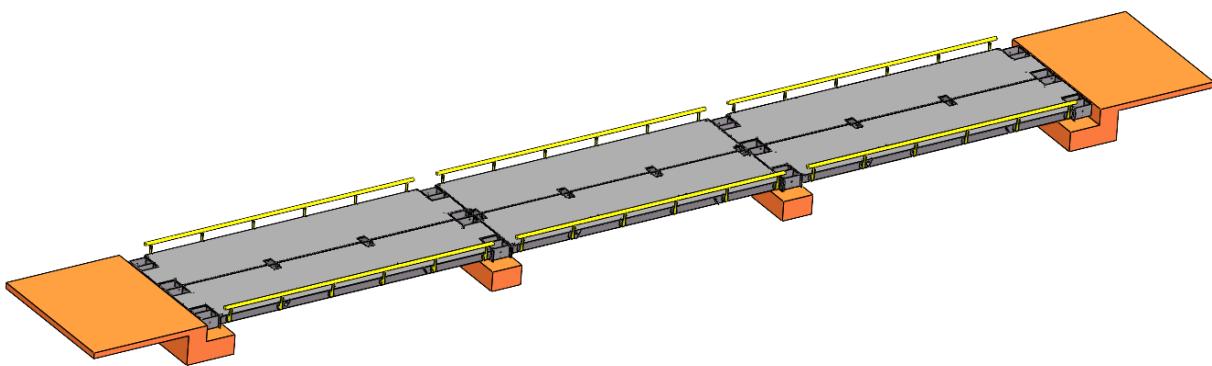
**Mid Scale Section**

Join Scale Section 2 to Sections 1 and 3

Two large H-brackets join section 2 to sections 1 and 3 when lowered correctly on top without any additional hardware.

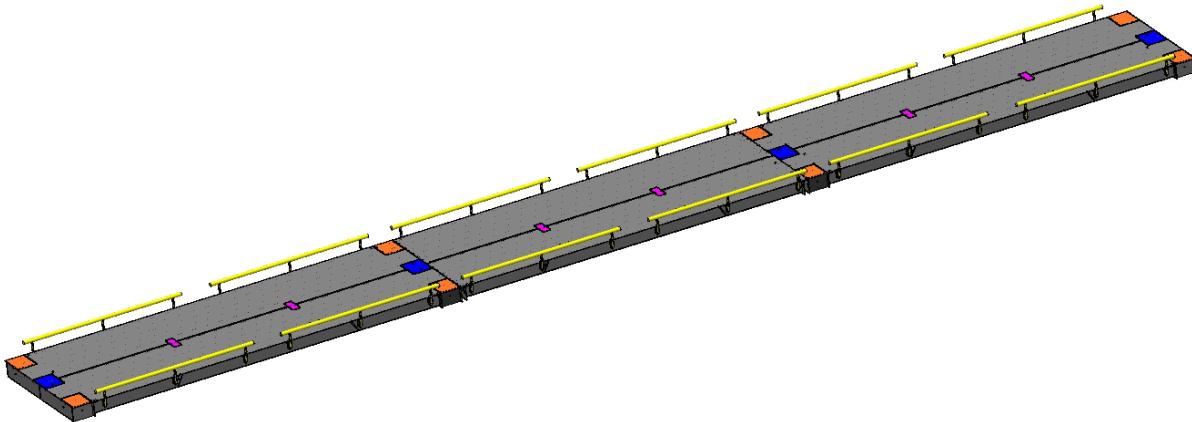


Assembled:



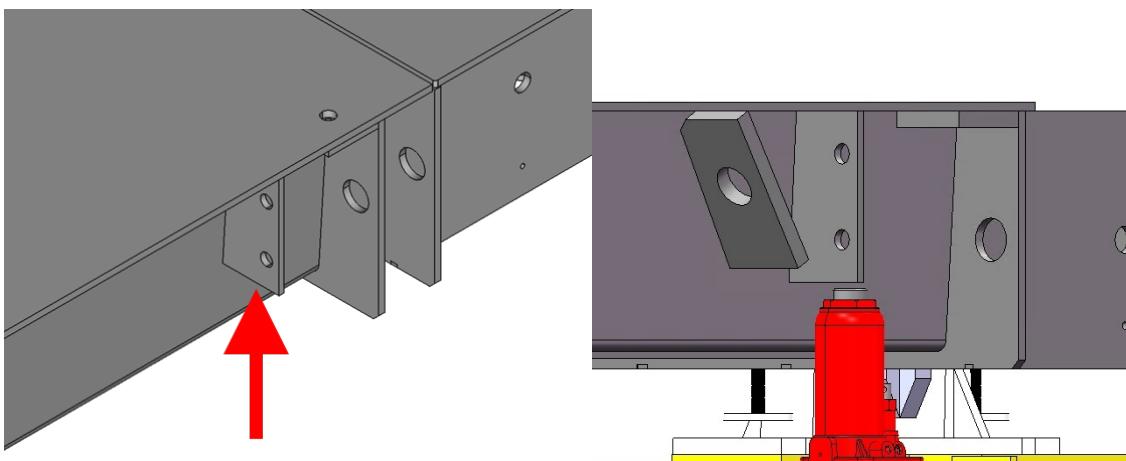
Complete installation

After finishing the cable installation (refer to Section 5 for more details), place **Cover Plate 1, 2, 3** (no bolts needed) over the exposed service pockets to complete the installation.

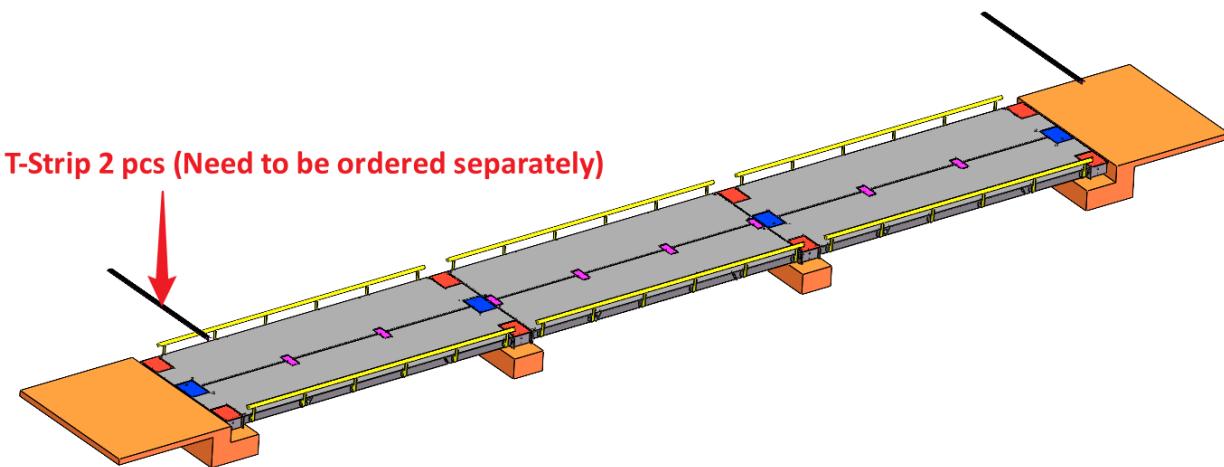


Scale Lifting and Servicing

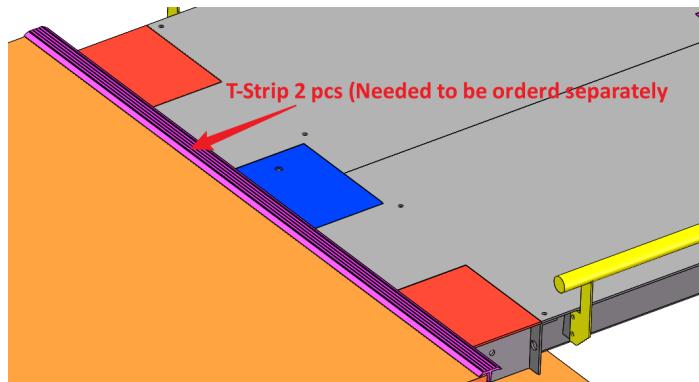
If load cell service is required after the scale installation is complete, the scale can be lifted from the designated support points using a bottle jack or other vertical lifting apparatus. Care must be taken when lifting the scale to not pierce or damage the sealed U-channels as this will completely compromise the scale.



Place rubber T-strips on both ends of the scale between deck and ramp to help prevent debris buildup.



Detailed View:



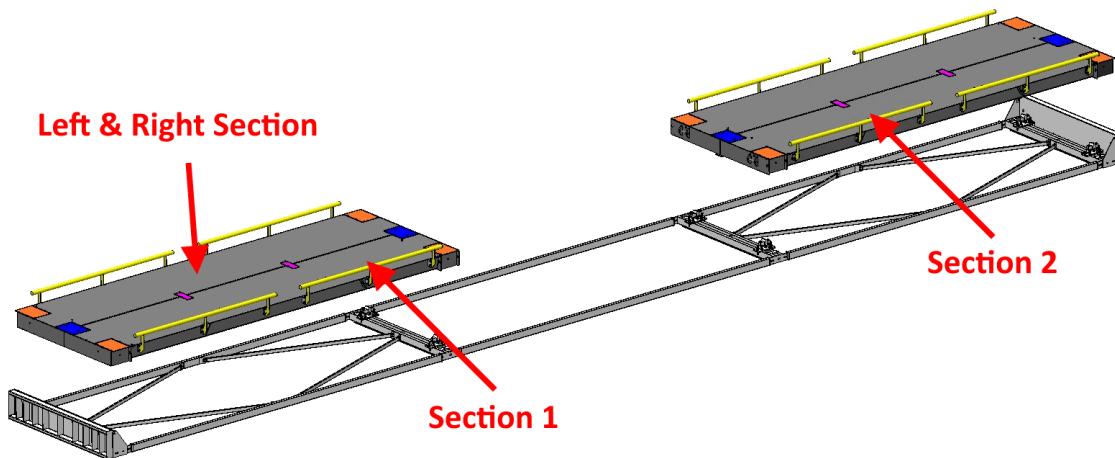
① NOTE:

Consult ANYLOAD for Rubber T-Strip product information.

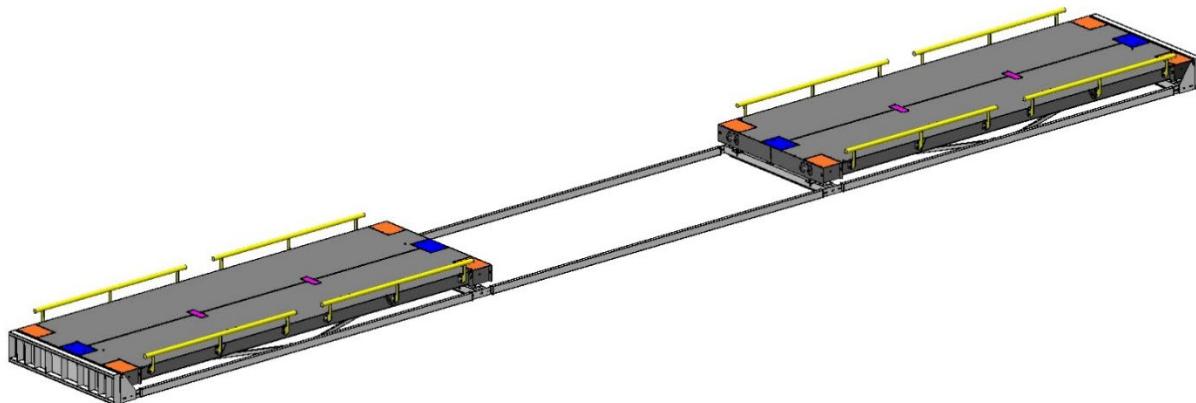
3.1 Portable Truck Scale Installation (w/ Subframe)

Install Scale Sections 1 and 3:

Lift and place Scale Sections **1** and **3** onto the subframe.

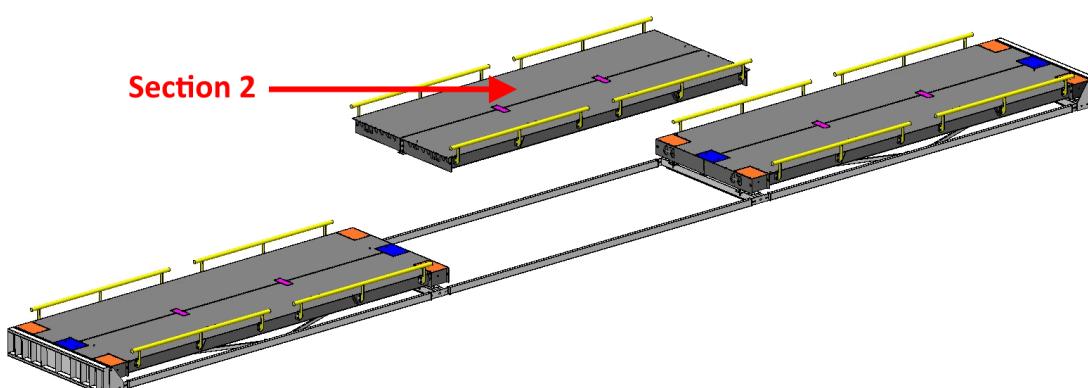


Result:

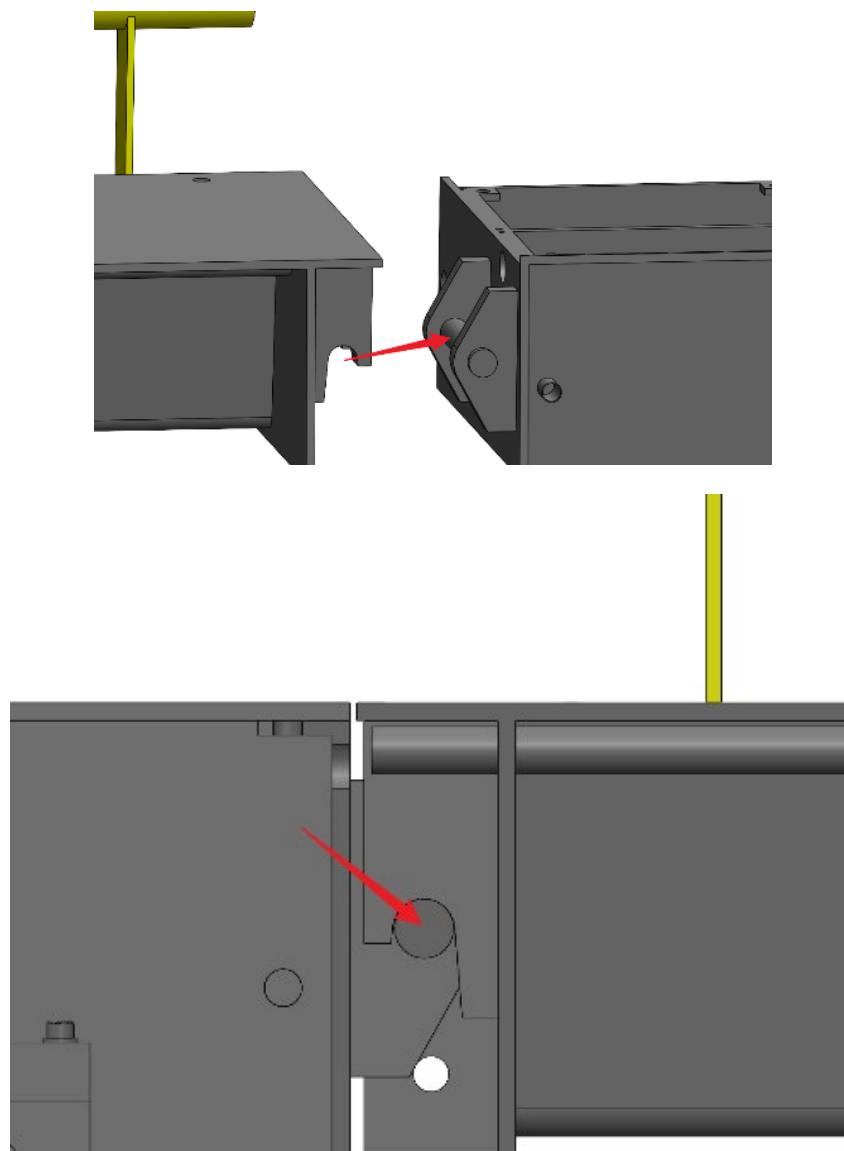


Install Scale Section 2

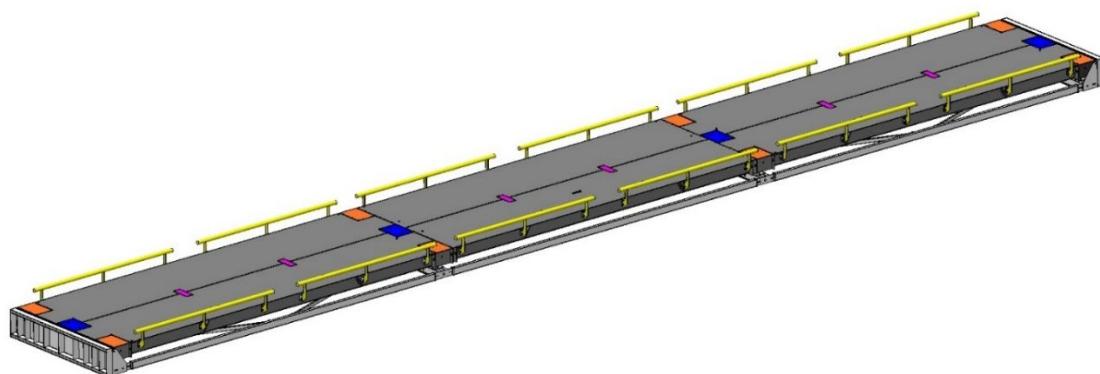
Lift and place Scale Section **2** in between the Scale Sections **1** and **3**



Two large H-brackets join section **2** to sections **1** and **3** when lowered correctly on top without any additional hardware.

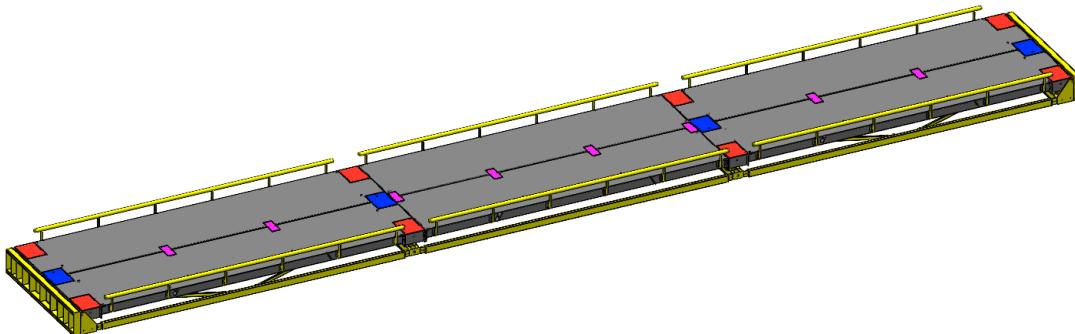


Result:



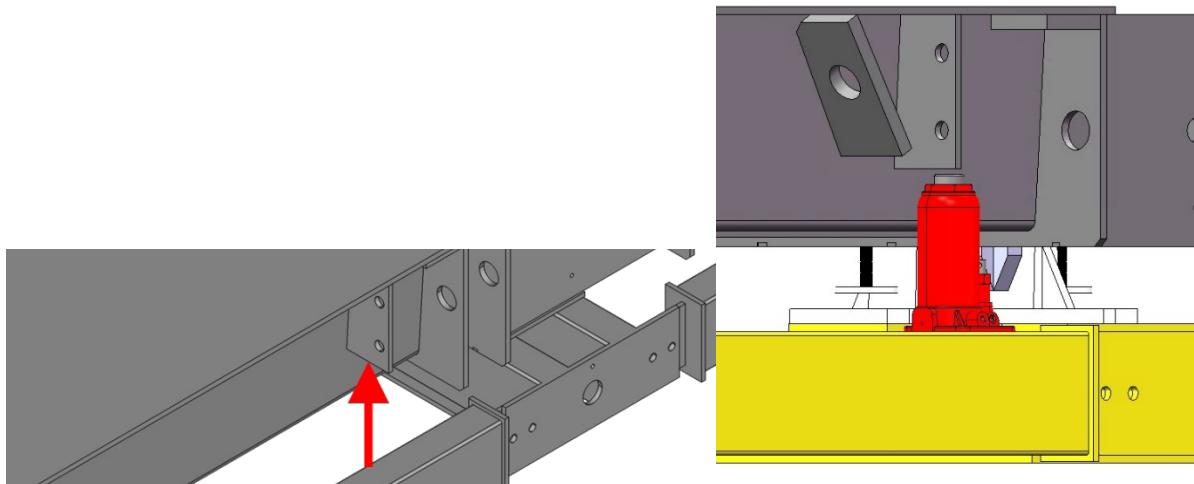
Complete the Mechanical Installation

After completing the cable installation and wiring of the load cells and junction boxes, place the **Cover Plates** (no bolts needed) over the service pockets to complete the installation.

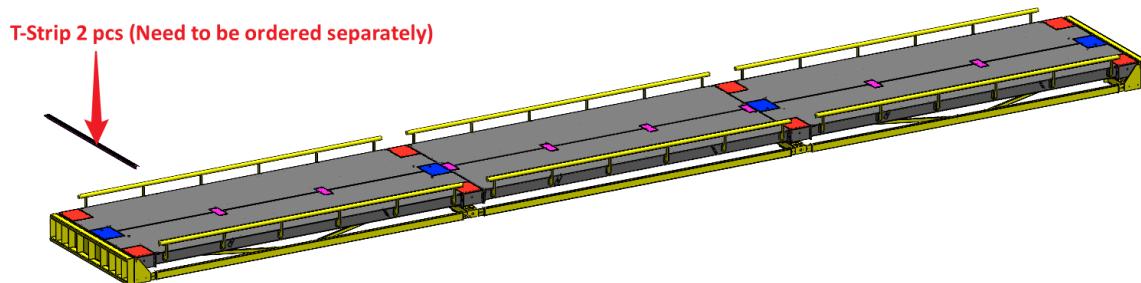


Scale Lifting and Servicing

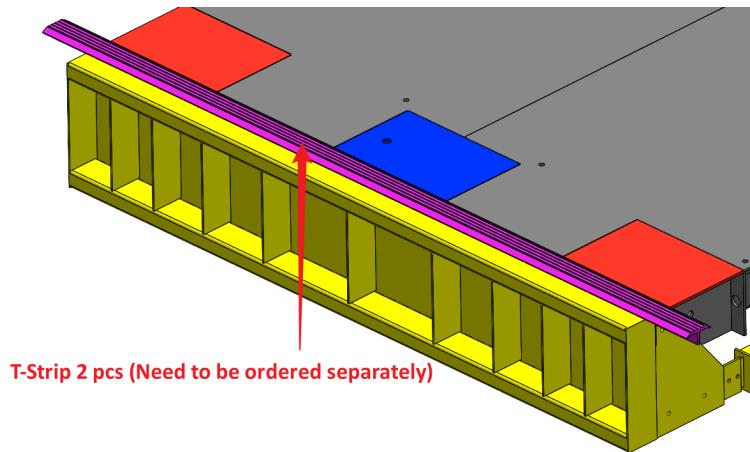
If load cell service is required after the scale installation is complete, the scale can be lifted from the designated support points using a bottle jack or other vertical lifting apparatus. Care must be taken when lifting the scale to not pierce or damage the sealed U-channels as this will completely compromise the scale.



Insert rubber T-Strip between the scale body and end link to keep out any debris



Detailed View:

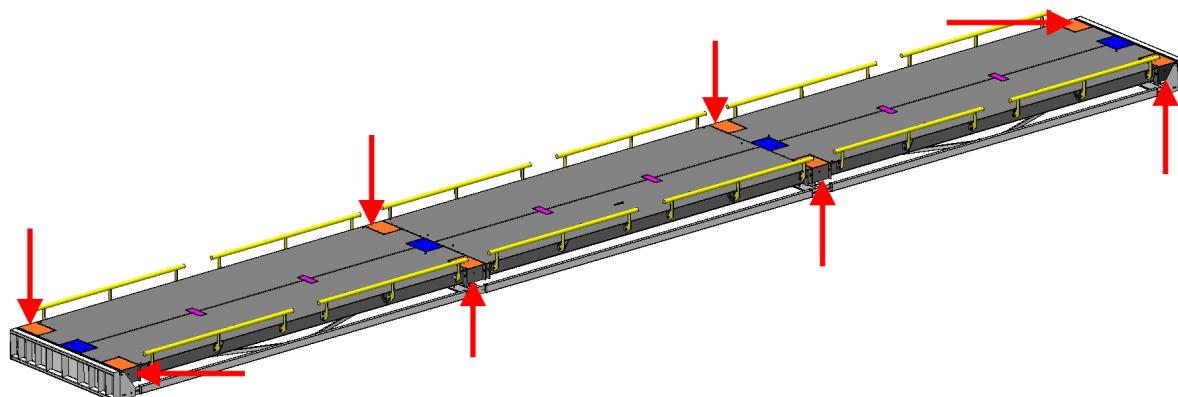


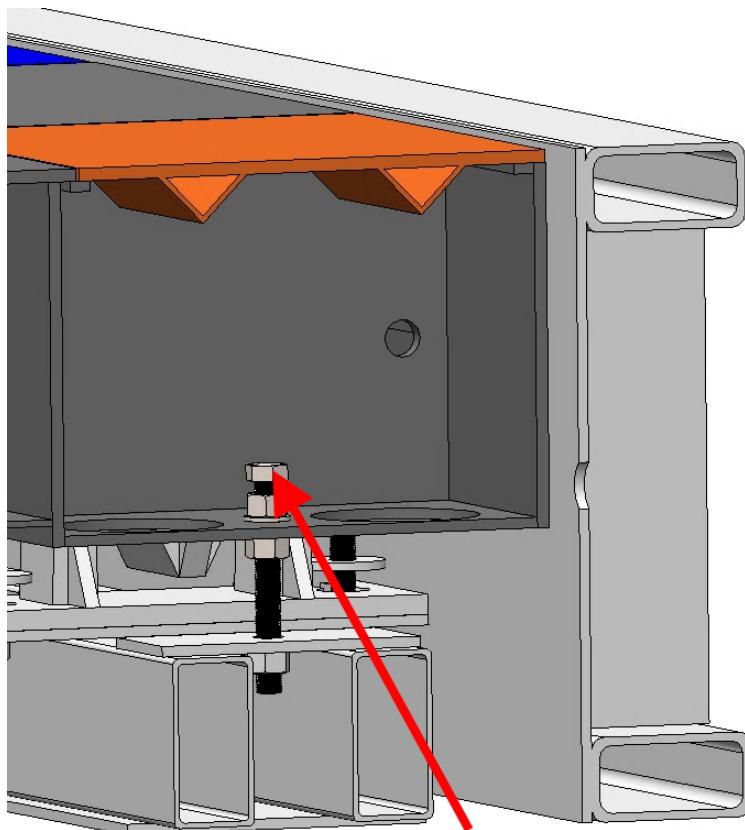
① NOTE:

Consult ANYLOAD for Rubber T-Strip product information.

Portable Truck Scale Shipment

(1) Use M24X200 Hex Head Bolts (8 pcs) to fix the Scale Body with the Subframe.



**⚠ WARNING ⚠**

Do not exceed the rated and especially the breaking capacity of the load cell (refer to the product specifications) to prevent potential damage to the load cells or load application components.

 ⓘ NOTE

If scale is assembled and not leveled perfectly, you can use methods such as grouting / shimming. Both methods refer to inserting material under the gap created due to uneven surface level. Grouting is to create a leveled surface by inserting usually cement or epoxy. Shimming is used when the weigh modules are not at exactly same level. You must insert a plate onto a lower height module to level out the weighed surface.

4 - Load Cell and Junction Box Wiring

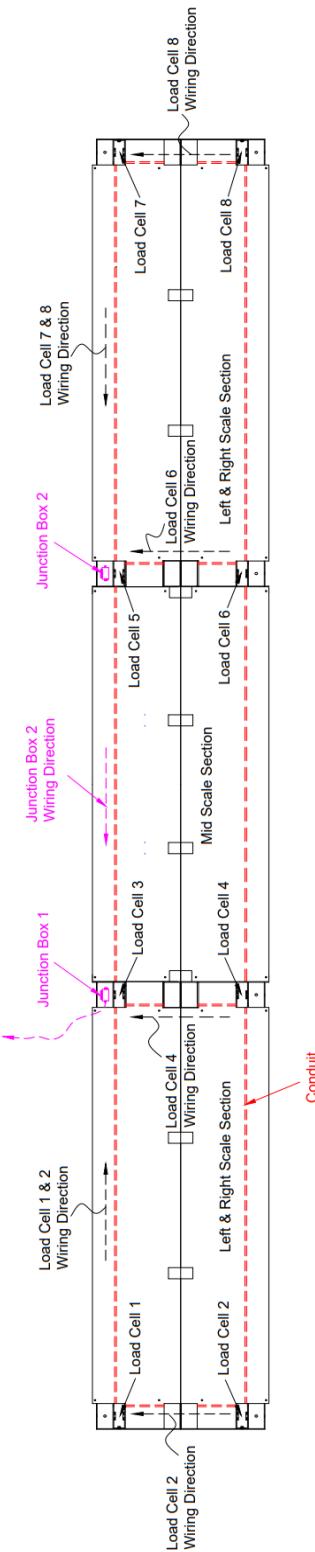
4.1 Load cell Wiring

Truck Scale Wiring Diagram

- The conduit is welded in the truck scale, the load cell cable passes through the conduit.
- The load cell cable must be relaxed and cannot be strained.

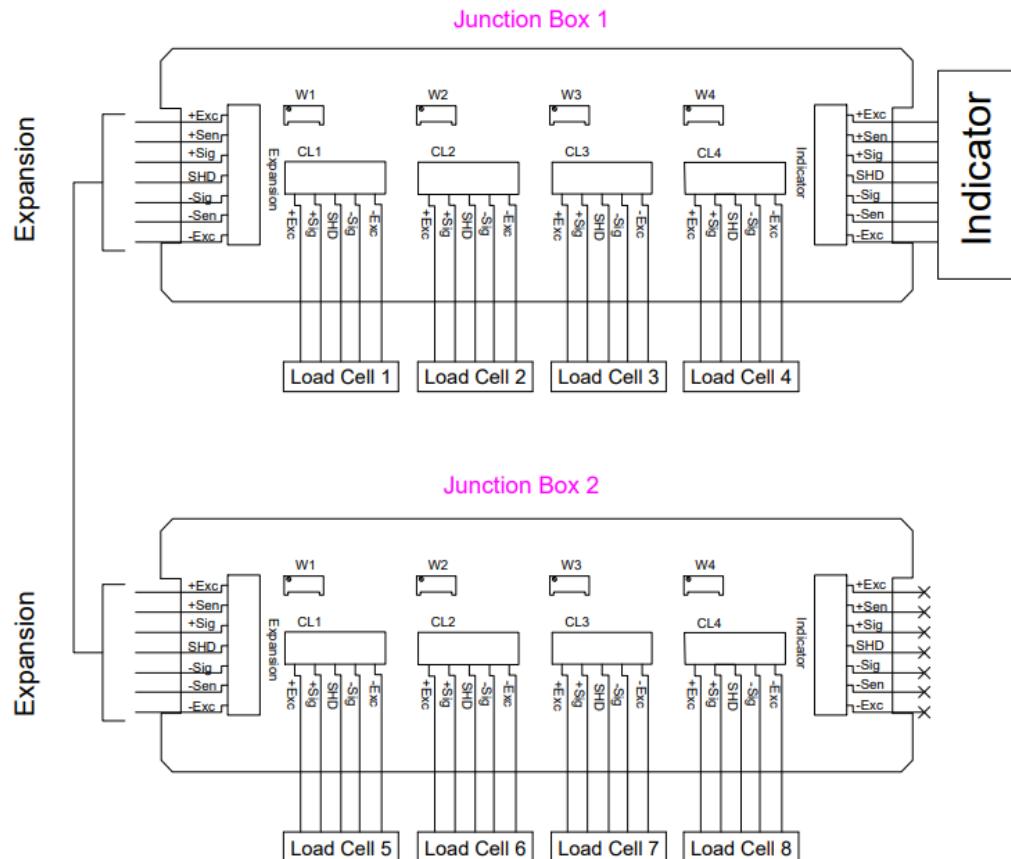
NOTE:

Cable armor supplied by Anyload (P/N: CAHP20-1/2) can help to shield the cable from pinch, abrasion, rodent, and other damage that can compromise load cell performance.



4.2 Junction Box Wiring

Wiring Diagram



The Junction Box (ANYLOAD model J04EP) has an earthing connection. Please connect the earthing connection to the truck scale body with the grounding strap included to protect from electrical transients.



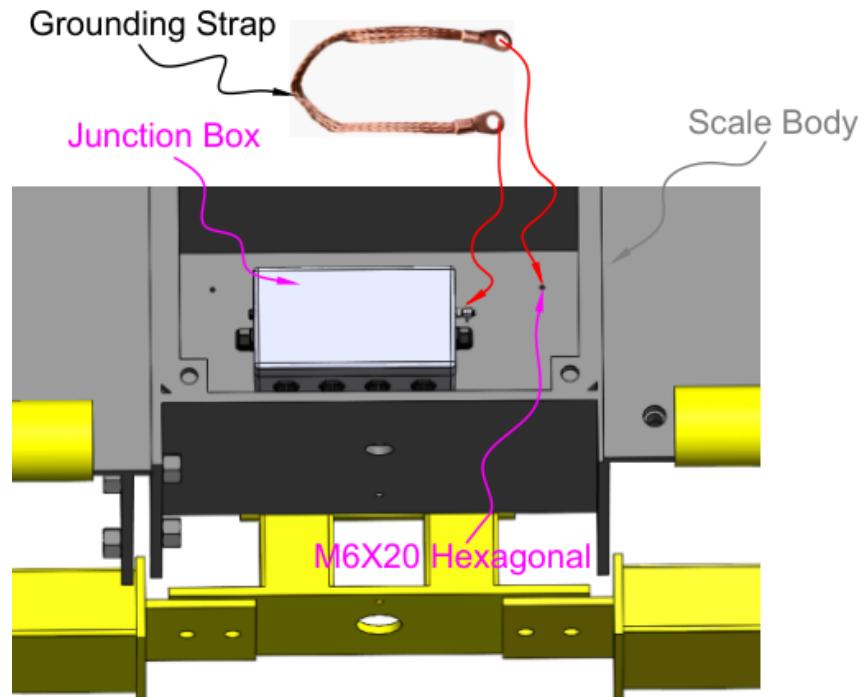
NOTE:

For more information on ANYLOAD junction boxes, visit: anyload.com/product/j04ep-e-j04sp-e-junction-box

4.3 Grounding

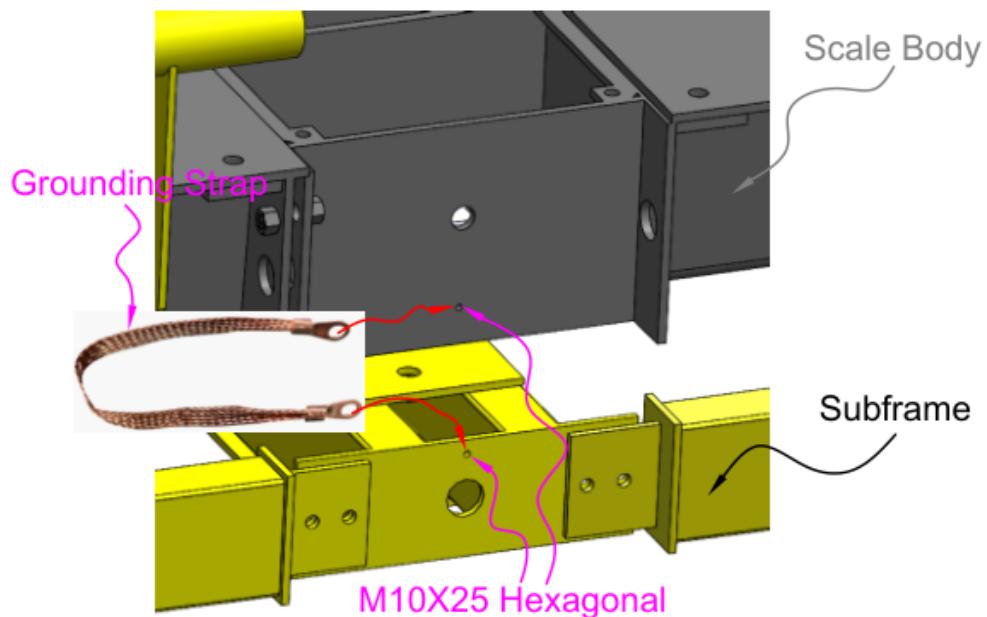
Junction Box Connect to Scale body

Each junction box should be connected to the Scale body with a provided grounding strap.



Scale Body Connect to Subframe

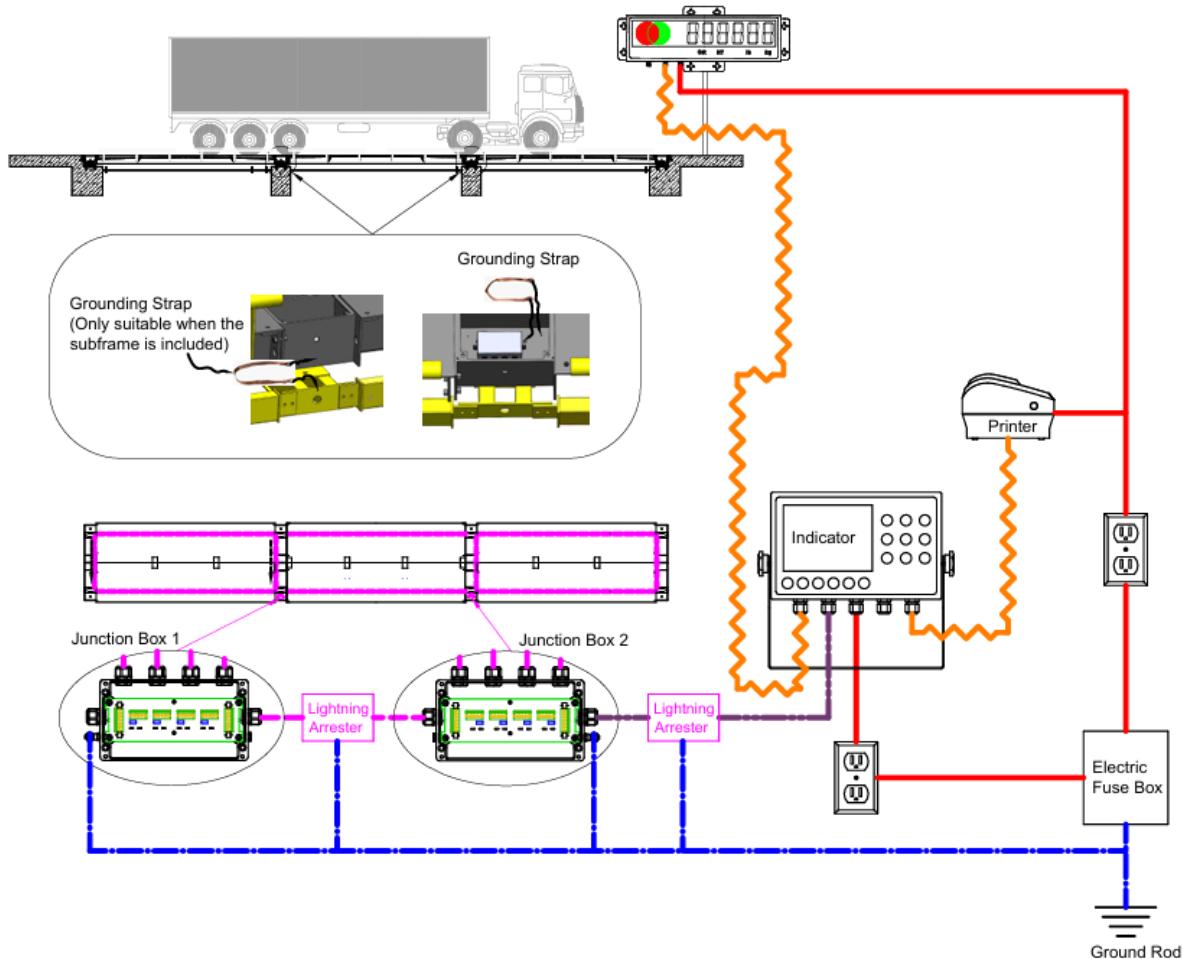
Each scale Section should be connected to the Subframe with a provided grounding strap.



① NOTE:

Load cells with built-in transient protection can provide additional resistance against electrical surges. For more information on ANYLOAD, visit: anyload.com/product/102bh-double-ended-beam-load-cell/

4.4 Wiring Diagram



Different Types Of Lines

- Load Cell Cable
- AC Power Supply
- #10 Copper Ground Wire
- Communication Cable
- Homerun Cable

5 - Component Specifications

5.1 Load Cell

102BH Double Ended Beam Load Cell



Product Webpage:

(www.anyload.com/product/102bh-double-ended-beam-load-cell/)

SPECIFICATIONS TABLE		Insulation Resistance	> 2GΩ (50V DC)
Full Scale Output	3mV/V ± 0.25%	Temperature Effect on Sensitivity	< ± 0.0012% of Cn/k
Zero Balance	± 0.02mV/V	Temperature Effect on Zero Balance	< ± 0.0040% of Cn/k
Non-linearity	< ± 0.023%	Temp. Compensation	-10°C to 50°C/14°F to 122°F
Repeatability	< ± 0.017%	Service Temp. Range	-30°C to 70°C/-20°F to 160°F
Hysteresis Error	< ± 0.023%	Storage Temp. Range	-50°C to 85°C/-58°F to 185°F
Creep in 30 minutes	< ± 0.023%	Safe Overload	150% of full scale
Input Resistance	700Ω ± 10Ω	Breaking Overload	300% of full scale
Output Resistance	700Ω ± 5Ω	Seal Type	Environmentally sealed
Recommended Excitation	10V (15V Maximum)	IP Rating	IP67
Element Material	Alloy Steel, Nickel Plated	Cable Color Code	Exc+ Red Black Sig+ Green White Shield Bare
NTEP 1:10 000 Class III, Multiple Cell 25Klb-125Klb		OIML MAA C3, Y=7 500 certified from 11t-55t 11-021A2	
NMI-9200156-01			

NOTE:

Built-in Surge Protection, stainless steel, and Intrinsically Safe (FM-approved) versions can be provided with any truck scale order upon special request. Lead times may vary slightly.

5.2 Weigh Module (M1)

102BH Double Ended Beam Load Cell

Product Webpage:

(<https://www.anyload.com/product/102bhm1-compression-weigh-module/>)



SPECIFICATIONS TABLE	
Capacities	10Klb-200Klb/5t-35t
Element Material	Alloy Steel, Zinc Plated
NTEP certified load cells from 25Klb-125Klb	
OIML certified load cells from 11t-55t	
CE , RoHS and Ex certified load cells	
Center pivoted with self-aligning suspension link design	
Allows for multi-directional movements	
No check rods required	

① NOTE:

For truck scale application, the module's top plate must be removed and instead be installed onto the platform.

5.3 Junction Box (J04SP)

J04EP-E, J04SP-E Junction Box



Product Webpage:

www.anyload.com/product/j04ep-e-j04sp-e-junction-box/

- Lightning/Over voltage protection
- Preinstalled GORE breather vent
- Conformal coated circuit board
- Expansion port to/for additional J-Box
- IP rating: IP67

Note: Intrinsically Safe (FM-approved) versions are available upon special request.

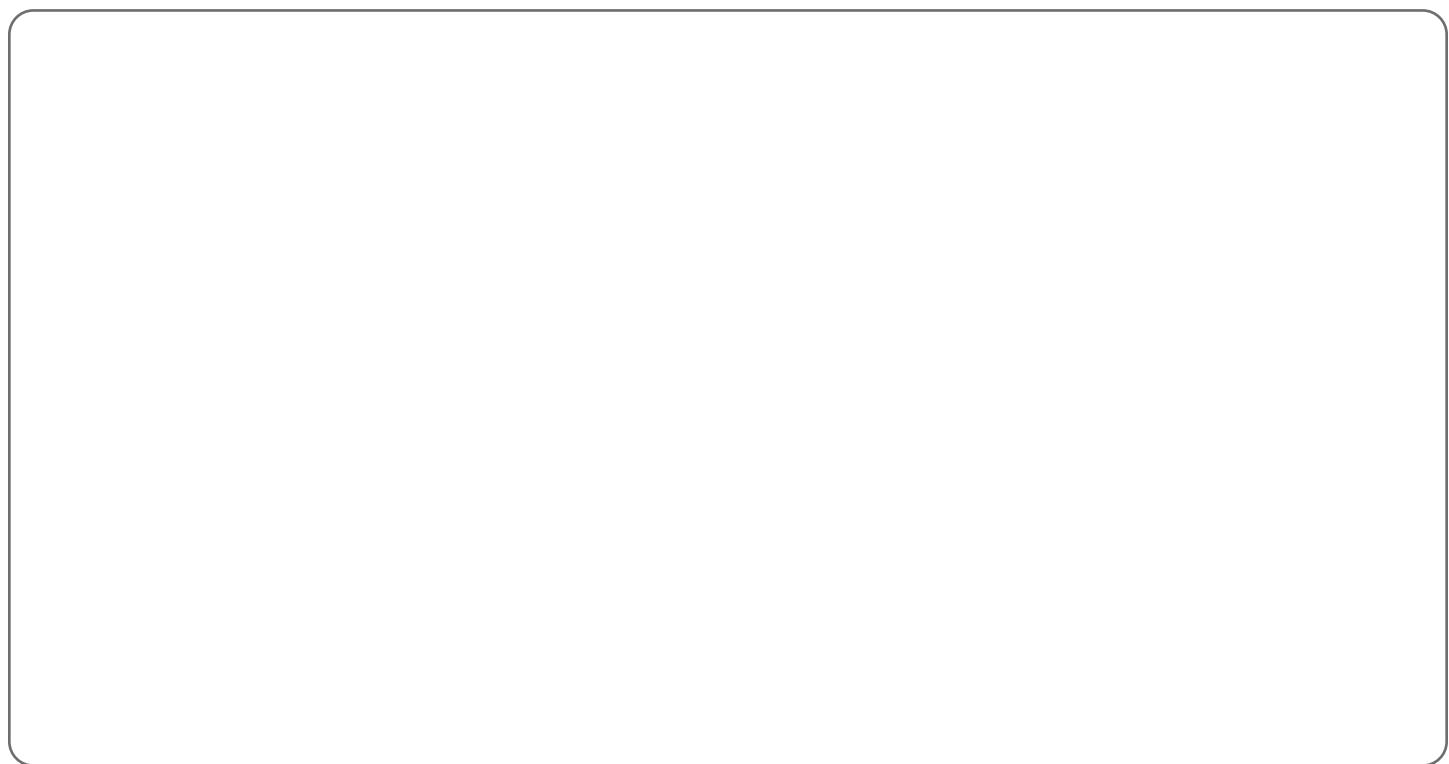
SPECIFICATIONS TABLE	
Number of cells	2-4 single cells
Input Cable Fittings	M20: 6mm-12mm diameter cable
Output Cable Fittings	M20: 6mm-12mm diameter cable
Trimming Options	<u>Excitation</u> trim (J04EP) <u>Signal</u> trim (J04SP)
Enclosure Material	Fiberglass Reinforced Polyester
IP Rating	IP67

TRIMMING RANGE		
Load Cell Resistance	Signal Trim	Excitation Trim
350Ω	3.6% of output	5.4% of output
700Ω	6.3% of output	2.7% of output
1000Ω	8.0% of output	1.9% of output

NOTE:

Please specify when ordering if SIGNAL TRIM junction boxes are preferred. ORCA-series truck scales sold in Canada are equipped with EXCITATION TRIM junction boxes by default, unless otherwise specified by the customer.

Please **Contact Our Authorized Dealer** for Technical Assistance:



Notes:

1-855-269-5623
www.anyload.com

PN-251203-01

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Specifications subject to change without notice.



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45001:2018

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