



September 2020

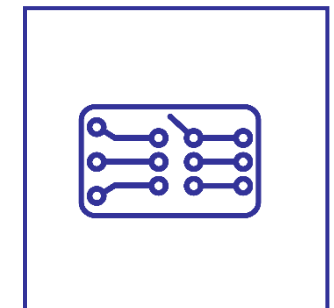
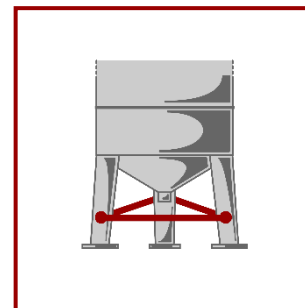
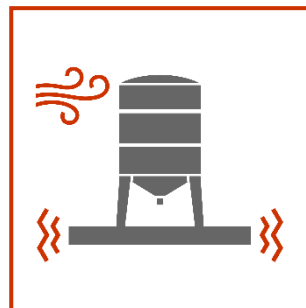
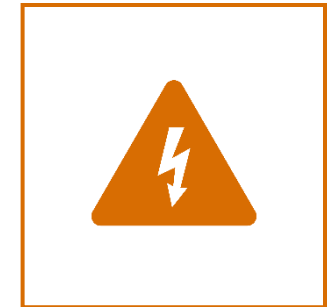
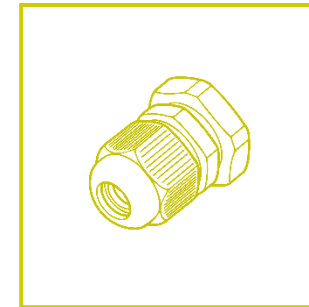
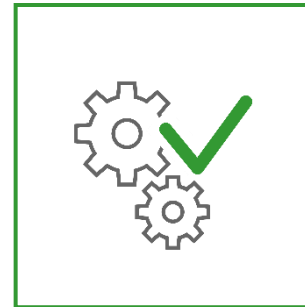
WEBINAR



#LAUMASKNOWHOW

LAUMAS[®]
Innovation in Weighing

GUIDELINES FOR A CORRECT INSTALLATION OF WEIGHING SYSTEMS



VIDEO #1

PLANARITY AND
INDEFORMABILITY OF
THE SUPPORT PLATES



1

The support plates must be **coplanar**

2

Compensate for any **misalignments** with suitable **mounting kits**

3

The support plates must be **rigid e non deformable**

VIDEO #1

COMPLY WITH
MOUNTING SURFACE,
WITH LOAD DIRECTION
AND MAXIMUM LOAD



1

For **shear beam/bending beam/offcenter**: comply with the mounting surface stated on data sheets

2

Comply with the **load direction** that must be oriented toward the same direction of the applied force

3

Oversize the load cells capacity with respect to the maximum load to be applied on the weighing system

4

For weighing systems with **4 supports**: consider that the load will not uniformly distributed and the **85-90%** of the applied load will be distributed on just **3 supports**

VIDEO #1

USEING OFF-CENTER LOAD CELLS



1

Comply with **the loading area** of the load cells, stated on the **data sheets**

VIDEO #2

MECHANICAL CONSTRAINTS



1

The lower are frictions, **the more** a weighing systems will be **precise**

2

When **pipeing** are present be sure to **avoid tensions** due to wrong connections

3

To have less mechanical constraints, it's suggested to use **flexible hoses** and **flexible couplings**

4

If it's not possible to use flexible hoses, the **clamping** must be at a distance greater than or equal to **40 times** the diameter of the pipe

VIDEO #2

CHECK THE CORRECT INSTALLATION



1

Make the zeroing of the weight indicator

2

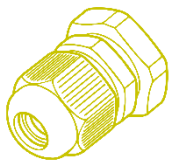
Apply a **weight** on the scale to verify the correct **value**, remove it and check the **zero**, check the **repeatability**

3

In case of weighing systems with **multiple load cells**, repeat the procedure on each load cell. Values have to be **similar** on each load cell and the scale has to come back to **zero** every time

VIDEO #3

LOAD CELLS
CONNECTED IN
PARALLEL



1

Use **junction boxes** with cable glands and suitable terminal board or a **weight transmitter** in a box

2

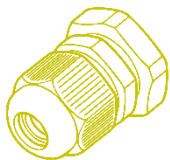
If we use a weight transmitter, we strongly recommend to use a **multichannel transmitter**, it will grant you a **digital equalization** and an **advanced diagnostic** function

VIDEO #3

INSTALLATION

A 6/4-WIRE CABLE

EXTENSION



1

To connect the junction box and the weight indicator/transmitter, it is recommended to use a **6-wire shielded cable** in order to compensate the voltage drops due to the distance

2

In case of installation of a **4-wire cable**, we suggest to use a **minimum section of 1mm²** and preferably to not exceed **300 m** length

3

Ideally the cable should be inserted alone into the **wireway** and lead as far as possible from power cable

VIDEO #4

WELDING



1

Load cells **must not be subjected to electrical discharges**

2

It is recommended to **avoid welding** while the load cells are installed

3

If it can't be avoided, place the **welder ground clamp closer than possible to the required welding point** to prevent sending current through the load cell body

VIDEO #5

CONSTRAINTS AGAINST LATERAL FORCES AND ANTI TILT



1

The purpose of a **mounting kits** is to obtain a **correct installation** of the load cell and the maximum **reliability** and **precision** compatibly with mechanical, electrical and pneumatic connection present in the weighing system

2

In **weighing systems with multiple load cells**, it is recommended to place **constraints** to act against **lateral forces**

3

Perform an adequate **project analysis**.

The **system designer** will have to evaluate if the standard mounting kits are sufficient for the system or to provide **further measure** according to shocks and vibration, wind pressure, seismic classification of the installation area

4

Making **constraints** able to act against **horizontal forces**, allows load **cells to work correctly** and avoiding potentially damaging stresses

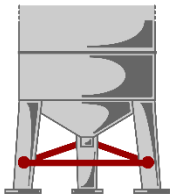
5

The realization of **anti-tilt constraints** is appropriate in weighing systems such as **silos, tanks** or structures placed **outdoor** and potentially subjected to **wind pressure, earthquakes, accidental impacts** with operating vehicles etc.

VIDEO #6

WEIGHING OF:

- SILOS
- TANKS
- STRUCTURES WITH LEGS

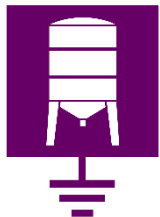


1

It is always necessary to check that the **supports are connected** to each other to avoid deformation due to the weight

VIDEO #7

GROUNDING OF THE WEIGHED STRUCTURE



1

Electrostatic charges are potentially capable of damaging the load cells and must be discharged to the ground without crossing the load cells

2

It is always recommended to connect with a copper wire the upper plate of each load cells with its lower plate. Then connect all the lower plates together to the same grounding system

3

Making a **proper grounding system** prevents damage to the **load cells** and to the **devices** connected to them

4

It is **strictly forbidden** to ensure grounding system **continuity** by using **metal parts** of the weighted structure

VIDEO #8

INSTRUCTIONS FOR THE CORRECT INSTALLATION OF WEIGHT INDICATORS AND TRANSMITTERS



1

The **load cell's cable** must be isolated (wireway without power cable) and **connected directly to the weight indicator without interruptions and terminal boards.**

2

It is recommended **not to install** electronic devices **inside electrical panel** containing **inverters**. However if this can't be avoided, install **special filters** and insert **separation plates** between the inverters

3

In case of **power supply 380 VAC** and a **device at 230VAC**, use an **adequate transformer** and do not use a 380VAC phase and its neutral

4

Prepare and install all the **electrical protections** needed

5

Keep **always** the devices **powered** to prevent **condensation**



Q&A

Questions and Answers from the Webinar

Q Why do we need to use a 380 to 230VAC transformer? Can't we use directly 1 phase and neutral from 380VAC?

A It is always strongly recommended to use a 380 to 230VAC transformer, first of all to protect our weighing system from overvoltages and secondly to have a perfectly made control panel.

Q Which information do we need to know when we have to weigh mixers? Which is the best solution?

A We have to know:

- mechanical dimensions and shape of the structure: e.g. if it is thin and tall, it could be affected by strong vibrations so we would have to choose the suitable mounting kit;
- tare weight and maximum net weight;
- number of legs;
- type of products to be mixed: e.g. stones could cause a lot bumps and vibrations, while liquids usually don't.

For this kind of weighing system, we mainly suggest to use compression load cells, like our CBL and its mounting kit Vxxx. With this solution all the lateral forces, vibrations and bumps will be absorbed by the mounting kit and not by the load cell.





Q&A

Questions and Answers from the Webinar

Q

Is it possible to weld extra cable with a 4 wires cable?

A

Yes, it is possible, but it's not the best solution, because we are talking about mV/V and with a 4 wires cable we don't have the two reference wires that protect against voltage drops. In this case, the best solution, if possible, is to install a weight transmitter close to the load cells.

Q

Talking about grounding system for silo, can we link all legs and then use a unique copper wire?

A

It is always recommended to connect the upper plate of each load cell with its lower plate using a copper wire. Then connect all the lower plates together to the same grounding system. Making a proper grounding system prevents damages to the load cells and to the devices connected to them. Furthermore, it is strictly forbidden to ensure grounding system continuity by using metal parts of the weighted structure.



Q&A

Questions and Answers from the Webinar



How can we choose between shear beam and compression load cells?



The choice between shear beam and compression load cells depends on the capacity of the scale and its mechanical structure. In our opinion, even if compression load cells are a bit more expensive, the advantages compared with shear beam load cell are huge:

- Easier installation
- Not affected by lateral forces
- Fast and easy replacement



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