Installation manual

LCD 5521 V4

OVD/KVD/IVD/HVD

R591734

R591734, Current Version

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The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Revision sheet

To:

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From: _____

Date: _____

Please correct the following points in this documentation (**R591734**):

page	wrong	correct

Contents

1 Preliminary Remarks

1.1 Styles and symbols

The typographic styles and the symbols used in this document have the following meaning:

Bold	Labels, menus and buttons are printed in **Bold** font.
Condensed	Links to both other chapters of this manual and to sites in the Internet are printed condensed. In the on-line version of this manual all hyperlinks appear teal.
`Courier`	Names of files and parts from programs are printed in the `Courier` font.
`Courier bold`	Inputs you are supposed to do from the keyboard are printed in **`Courier bold`** font.

	**If you do not heed instructions indicated by this symbol there is a risk of damage to the equipment!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de dommage de l'équipement !**
	**If you do not heed instructions indicated by this symbol there is a risk of electrical shock and danger to personal health!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de décharge électrique et sera source de danger pour la santé du personnel !**
	**If you do not heed instructions indicated by this symbol there is a risk of damage to parts, which are sensitive towared electrostatic charge!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de dommage de pièces sensibles à la charge électrostatique !**
	**If you do not heed instructions indicated by this symbol there is a risk to get harmed by sharp objects!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de blessure dû à des objets tranchants !**
	**If you do not heed instructions indicated by this symbol there is a risk that parts may explode!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque d'explosion de pièces !**
	**If you do not heed instructions indicated by this symbol there is a risk that hot parts impact persons or objects!**	**Le non-respect des instructions symbolisées par ce pictogramme entraînera un risque de contact de personnes ou d'objets avec des pièces chaudes !**
	**The sheet icon indicates additional notes.**	**Cette icône représentant une feuille indique des remarques supplémentaires.**
	**Next to this icon you find further information.**	**Cette icône est suivie d'informations plus détaillées.**
	**This hand marks tips.**	**Cette icône attire l'attention sur des conseils.**
	**Next to this icon you find important notes.**	**Cette icône est suivie de remarques importantes.**

1.2 Safety information

This section describes safety precautions which must be observed when installing a product from Barco.

Safety standards

The displays are built in accordance with the requirements of the international safety standards EN 60950-1 and IEC 60950-1. The displays conforms to UL std. UL 60950-1 and is certified to CSA std. C22.2 No. 60950-1 and Chine Compulsory Certifcation CCC. All these safety standards are the information technology equipment standards, including electrical business equipment.

These safety standards impose important requirements on the use of safety critical components, materials and isolation, in order to protect the user or operator against the risk of electric shock and energy hazard, and having access to live parts.

Safety standards also impose requirements to the internal and external temperature variations, radiation levels, mechanical stability and strength, enclosure construction and protection against risk of fire.

Simulated single fault condition testing ensures the safety of the equipment to the user even when the equipment's normal operation fails.

Electromagnetic Interference

The displays complies with the following EMC standards:

Electromagnetic compatibility - emission:	EN 55022 (2010)
	EN 61000-3-2 (2006) + A1 (2009) + A2 (2009)
	EN 61000-3-3 (2008)
Electromagnetic compatibility - immunity:	EN 55024 (2010)

	**Make sure to use cables with shielding of type S-FTP or S-STP when connecting the display to the network!**	**Assurez vous d'utiliser des câbles avec un blindage de type S-FTP ou S-STP lors de la connexion de l'écran au réseau!**

EN55022/CISPR22 Class B ITE (Information Technology Equipment)

The devices are products of class B ITE. ITE means Information Technology Equipment. ITE is subdivided into two categories denoted class B ITE (products intended primarily for use in domestic environment) and class A ITE (all other ITE which satisfies the class A ITE limits but not the class B ITE limits).

FCC Compliance statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However there is no guarantee that interferences will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's (or your) authority to operate the equipment. Only peripherals (digital input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this display. Operation with non-certified peripherals is likely to result in interference to radio and TV reception. Only shielded signal cables may be used with this System.

Attention: Des changements ou modifications non expressément approuvés par la partie responsable de la conformité pourraient annuler l'autorité de l'utilisateur ou la votre pour utiliser l'équipement. Seuls les périphériques (entrée numérique / périphériques de sortie, terminaux, imprimantes, etc) certifiés comme étant conformes aux limites de la classe B peuvent être connectés à cet écran. L'utilisation de périphériques non conformes peut provoquer des interférences dans la réception radio et télévision. Seuls des câbles blindés peuvent être utilisés avec ce système

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

Les règlements sont appliqués que pour les produits avec l'étiquette d'identification indiquant les besoins spécifiques.

General safety instructions

- All the safety and operating instructions should be read before using this unit.
- The operating instructions manual should be retained for future reference.
- All warnings on the device and in the documentation manuals should be adhered to.
- All instructions for operating and use of this equipment must be followed precisely.
- All local installation codes should be adhered to.

Installation and preliminary adjustments should be performed by qualified Barco personnel or authorized Barco service dealers.

Installation et réglages préliminaires devraient être effectués par du personnel qualifié de Barco ou les revendeurs autorisés par Barco

1.2.1 Safety on installation

Check the power rating on your outlet before connecting the devices to the AC inlet. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.

Vérifiez la puissance sur la prise avant de brancher les appareils sur la prise secteur. Contactez votre gestionnaire des installations ou un électricien qualifié si vous n'êtes pas sûr du type d'alimentation fourni dans votre bâtiment

The devices are designed to operate with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug into any other type of power system.

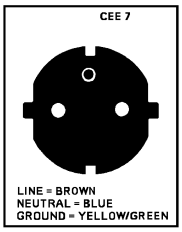
Les dispositifs sont conçus pour fonctionner avec les systèmes d'alimentation monophasés avec conducteur neutre à la terre. Pour réduire le risque de choc électrique, ne branchez pas sur un autre type de système d'alimentation.

1.2.1.1 Connecting the device with the AC inlet

When connecting the device with the AC inlet, make sure that the power cords you use follow the specifications mentioned below:

Mains lead (AC Power cord) with CEE 7 plug:

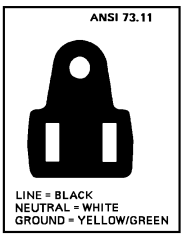
The wires of the mains lead are colored in accordance with the following code:



yellow + green	Earth (Ground)
blue	Neutral
brown	Line (Live)

Power cord with NEMA 5-15 plug:

The wires of the power cord are colored in accordance with the following code.



Green or Green/Yellow:	Earth (Ground)
White or Blue:	Neutral
Black or Brown:	Line (Live)

- The cord set must be UL-approved and CSA-certified.
- The minimum specification for the flexible cord is No. 18 AWG Type SVT or SJT, 3-conductor.
- The cord set must have a rated current capacity of at least 10A.
- The attachment plug must be an Earth-grounding type with a NEMA 5-15P (10 A, 125 V) configuration.

Power cord with GB 2099 plug:

The wires of the power cord are colored in accordance with the following code.

yellow + green	Earth (Ground)
blue	Neutral
brown	Line (Live)

- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- Do not touch the power cord with wet hands. If the cord pin is wet or covered with dust, dry the power plug completely or wipe dust off.
- Fix the power cable completely.
- Do not unplug the power cord while the product is in use.
- As long as this unit is connected to the AC wall outlet, it is not disconnected from the AC power source even if the unit is turned off.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord does not exceed the extension cord ampere rating. Also make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.
- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- Never spill liquid of any kind on the product. Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified service personnel before resuming operations.
- Lightning - For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the display due to lightning and AC power-line surges.

Do not place flammable or combustible materials near the display!

Ne placez pas de matériaux inflammables ou combustibles près de l'écran!

Transportation

- Any transportation of the unopened unit in its packaging should be done by two persons.
- In transportation or storage of products in original packing, NEVER stack more than the number stated on the carton box. This warning is also indicated on the side of the card box.
- For transportation or storage, observe the warnings and instructions on the side of the card box.

Nearby equipment

If air conditioning ducts or lamps, etc. are located near the installation site, the attendant dust, extreme temperatures, humidity, and condensation may become sources of trouble. Please take sufficient steps to avoid this.

Installation places

Do not install the unit where it may be easily touched or leaned against. Avoid locations subject to high vibrations or severe impacts. Do not install the unit where it is exposed to humidity, oil, smoke or excessive dust. Mount the display in a well ventilated area away from sources of ignition and out of direct sun light. Never expose this product to rain or excessive moisture.

If you install the product in a place where there is an abundance of fine dust, chemical substances are used, the temperature is very high or low, the humidity is very high, or the product is likely to remain turned on for a long period of time this might cause serious damage to the product's picture quality, life cycle and appearance.

Install the unit on a neat and dry place.

Install the unit on a flat and stable place.

Operating the product

Take a rest from time to time to protect your vision.

Take a regular break when working with the product for a long time.

Keep the proper distance from the product. Your vision may be impaired if you look at the product too closely.

Using headsets (earphones) for a long time or listening loudly can cause damage to your hearing.

LED inside! **Class 1M laser (LEDs) radiation when open.** **Do not open while operating!**	**LED à l'intérieur!** **Rayonnement Laser de classe 1M (LEDs) lorsqu'il est ouvert.** **Ne pas ouvrir pendant le fonctionnement!**

Mechanical stress

Please be careful not to apply strong mechanical stress (shock, drop) to the LCD module. Such stress may cause break of screen glass or may be the cause for failure.

Pressure to screen surface

Please be careful not to apply strong pressure to the screen surface. Such pressure may cause scratches at the surface or may be the cause of failure.

Protection against scratch

Please be careful not to hit, press or rub the screen surface with hard material like tools. In addition, please do not put heavy or hard material on the screen surface, and do not stack displays. Polarizer at the front surface can be easily scratched.

Temperature dependence of the display

Response speed (optical response) of the LCD display is dependent on temperature. Under low temperature, response speed is slower. Also brightness and chromaticity change slightly depend on temperature.

Image retention

Displaying the same pattern for a long time may cause image sticking, vertical dark lines or other forms of image artifacts. This is a common phenomenon of all LCD displays. It disappears after some time if the pattern is changed, or the display is switched off. However, image retention is not subject of warranty.
For more information contact Barco for a white paper on this topic.

Lighting conditions

Consider existing lightning and sunlight angles when creating the installation layout. Extremely bright lightning can reduce the visibility and the quality of the displayed image.

In extremely bright surroundings, adjusting screen intensity may not result in perceptibly brighter images. Keep in mind that extreme intensity settings can reduce system service life.

Barco products are designed and manufactured to meet the most stringent safety regulations. Exposing flammable or combustible materials into close proximity of this device could result in the spontaneous ignition of that material, resulting in a fire. For this reason, it is absolutely necessary to leave an "exclusion zone" around all external surfaces of the display whereby no flammable or combustible materials are present. The exclusion zone must be not less than 10 cm (4"). Do not cover the display with any material while it is in operation.

Keep flammable and combustible materials away from the display at all times. Mount the display in a well ventilated area away from sources of ignition and out of direct sun light. Never expose this product to rain or excessive moisture. In the event of fire, use sand, CO_2, or dry powder fire extinguishers; never use water on an electrical fire.

Always have service performed on this product by authorized Barco service personnel. Always insist on genuine Barco replacement parts. Never use non-Barco replacement parts as they may degrade the safety of this device.

Use only the power cord which fulfill the specifications as listed in1.2.1.1 Connecting the device with the AC inlet. Slots and openings in the cabinet and the sides are provided for ventilation; to ensure reliable operation of the device and to protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation or enclosure unless proper ventilation is provided.

1.2.2 Safety on servicing

Do not attempt to service this device yourself, as opening or removing covers may expose you to dangerous voltage potential and risk of electric shock! Refer all display service to a qualified Barco service center.

Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

Call for service in the following conditions:

- When the power cord or plug is damaged or frayed.
- If liquid has been spilled into the device.
- If the product has been exposed to rain or water.
- If the product does not operate normally when the operating instructions are followed.
- If the product has been dropped or the cabinet has been damaged;
- If the product exhibits a distinct change in performance, indicating a need for service.

Replacement parts

When replacement parts are required, be sure the service technician has used original Barco replacement parts or authorized replacement parts which have the same characteristics as the Barco original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.

Safety check

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

Protection

Please do not disassemble or modify the LCD module to avoid the possibility of electric shock, damage of electronic components, scratch at display surface and invasion of foreign particles. In addition, such activity may result in fire accident due to burning of electronic component.

The LCD module disassembled or modified by customer is out of warranty.	**Le module LCD démonté ou modifié par le client n'est plus sous garantie**

Please be careful in handling of display with broken glass. When the display glass breaks, please pay attention not to injure your fingers. The display surface has the plastic film attached, which prevents dispersion of glass pieces; however touching broken edge will injure your fingers.

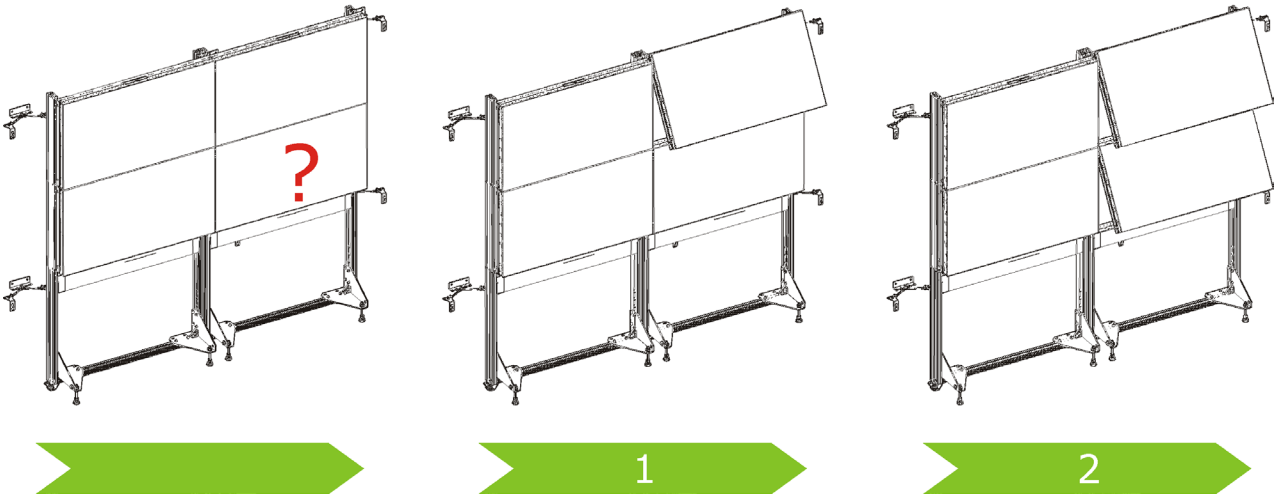
Please do not touch the fluid flown out of broken display glass. If the fluid should stick to hand or clothes, wipe off with soap or alcohol immediately and then wash it with water.

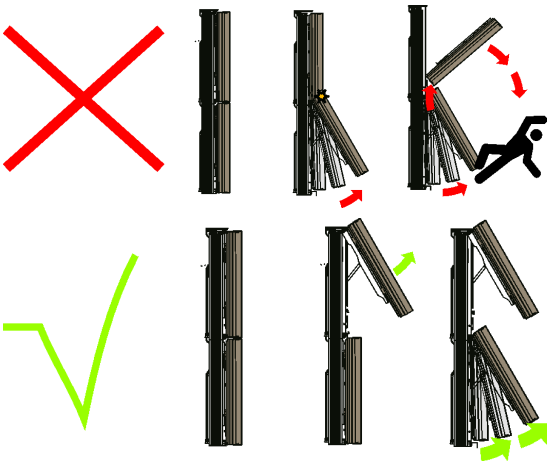
If the fluid should get in your eyes, wash your eyes immediately with pure water for more than 15 minutes and then consult the doctor.	**Si le liquide entre en contact avec vos yeux, lavez-vous immédiatement les yeux avec de l'eau pure pendant plus de 15 minutes, puis consulter le médecin.**

1.2.3 Safety instruction on opening systems built into a structure

When doing maintenance work or changing cables on a display built into a structure you have to open all displays ABOVE the one you want to work on.

Lors de travaux de maintenance ou pour changement de câbles sur un écran intégré dans une structure, vous devez ouvrir tous les écrans au-dessus de celui que vous voulez travailler.





When a display which is built into a structure has to be de-mounted, first de-mount all displays above the one you have to de-install and then close the interfaces: This gives you free access to the display you want to remove and eliminates the risk of damaging the display hanging above when moving the system up!

Quand un écran qui est intégré dans une structure doit être démonté, au préalable démontez tous les écrans au-dessus de celui que vous devez désinstaller puis fermez les interfaces: Cela vous donne libre accès à l'écran que vous souhaitez enlever et élimine le risque d'endommager l'écran suspendu au-dessus lors du déplacement vertical du système!

When opening a display which is built into a structure, simultaneously press on the left and right bottom sides of the displays (there are the latches behind).

In case the interface frame does not open you very probably have a mixed situation of latches; one is opened, one closed. Then only press on the left OR on the right ot make the position of the latches the same.

Lors de l'ouverture d'un écran qui est intégré dans une structure, appuyez simultanément sur les côtés inférieurs droit et gauche de l'écran (il existe des loquets derrière).
Dans le cas où le cadre de l'interface ne s'ouvre pas, très probablement vous faites face à une situation mixte de loquets; un ouvert, un fermé. Alors pressez sur celui de gauche ou de droite, ou mettez les loquets dans la même position.

1.2.4 Safety on shipping

Original shipping package

Save the original shipping packing material; they will come in handy if you ever have to ship one of your installed modules. For maximum protection, repack your set as it was originally packed at the factory.

Keep the packing anti-moisture material or vinyl packing out of the reach of children. Anti-moisture material is harmful if swallowed. If swallowed by mistake force the patient to vomit and visit the nearest hospital.

Vinyl packing can cause suffocation. Keep it out of the reach of children.

1.2.5 Precautions

For your own protection, observe the following safety precautions!

- Observe all warnings and instructions printed on the devices!
- Check that the voltage and frequency of your power supply match those printed on the device label with the rated electrical values!
- Servicing not explicitly mentioned in this manual should never be carried out by unauthorized personnel!
- Some parts of the body are hot during operation. Please be careful.
- In case of moving long-distance, wrap the unit with blanket to avoid damages. Be careful not to bump the unit.
- Do not spray

Unused for long periods of time

For added protection for this video product during a lightning storm, or when it is left unattended an unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the LCD module due to lightning and AC power-line surges

1.2.6 Unpacking of devices

Note advices on the packaging for unpacking!

1.2.7 Modification of devices

Mechanical or electrical modifications others than described in this manual must not be made to the devices. Barco is not liable for damages resulting from modified devices.

Only authorized personnel should carry out other maintenance work not explicitly mentioned in this user's manual!

Never open the case of the display without first disconnecting the device from the AC inlet. Measurements and tests with an opened device may be carried out only in the factory or by specially trained personnel, due to the dangers of electrical shock.

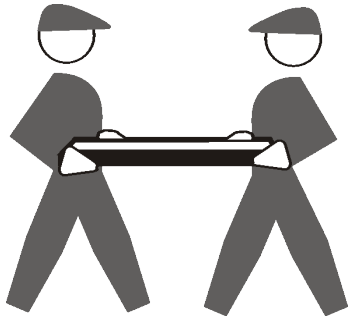
Seul le personnel autorisé devrait effectuer d'autres travaux d'entretien qui ne sont pas explicitement mentionnées dans le manuel de l'utilisateur!
Ne jamais ouvrir le boîtier de l'écran sans avoir d'abord débrancher l'appareil de la prise secteur. Mesures et essais avec un dispositif ouvert peuvent être effectués que dans l'usine ou par un personnel spécialement formé, en raison des dangers de décharge électrique.

1.2.8 Cleaning

- Disconnect the device from the AC inlet.
- Spray water onto a soft cloth 2 to 4 times, and use it to clean the front frame.
  Scrub gently to prevent scratching.
  Wipe in one direction only! Too much moisture may cause staining.
- Do not use benzene, paint thinner or alcohol!

1.2.9 Moving the product

- Make sure to switch off the product.
- Make sure to unplug all cables from the product.
- 2 people carry each edge. Screen showing upwards.

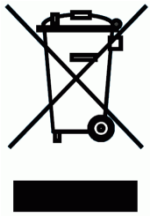


1.2.10 Disposal or handing over to a new owner

- It is recommended to initialize the unit by resetting it to factory's default.
- Do not mix with other general waste.
- Do not dispose the LCD display in waste treated by a waste treatment center.

1.2.1 Environmental information: disposal information

This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.
For more information about recycling of this product, please contact your local city office or your municipal waste disposal service. For details, please visit the Barco website at:
http://www.barco.com/en/AboutBarco/weee



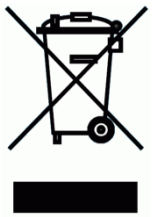
Disposal of batteries

This product contains batteries covered by the European Directive which must be collected and disposed of separately from municipal waste.
If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.
By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.

Turkey RoHS compliance

Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur

[Republic of Turkey: In conformity with the WEEE Regulation]



1.2.2 Exemptions

- This display is not liable for any damage caused by natural disaster (such as earthquake, thunder, etc.), fires, acts by third parties, accidents, owner's intentional misuse and fault, or uses in other improper conditions.
- This display is not liable for incidental damages (such as profit loss or interruption in business, modification or erasure of record data, etc.) caused by use or inability to use of this product.
- This display is not liable for any damage caused by neglect of the instructions described in the owner's manual.
- This display is not liable for any damage caused by misuse or malfunction through simultaneous use of this product and the connected equipment or software.
- This display is not liable for any damage caused by neglect of the instructions described about the installation stand in the owner's manual.
- This display is not liable for any damage caused by improper installation.

2 Mechanical setup

2.1 Tools needed for installation

- Torx key size 30
- Wrench key size 13, 15, 24
- Hexagon key size 5, size 4
- Hammer
- Tape, level
- Drilling machine, drill M10, M12, (M6)
- Level (1m)
- Nylon construction line of 25m (wall mount only)
- Tape rule 5m (wall mount only)

The system needs to be fixed to the wall and to the floor. The anchors for this fixations are not included in the delivery!

The anchors have to be selected according the actual material of the wall /the floor.

X: number of system in horizontal direction (columns)

Y: number of systems in vertical direction (rows)

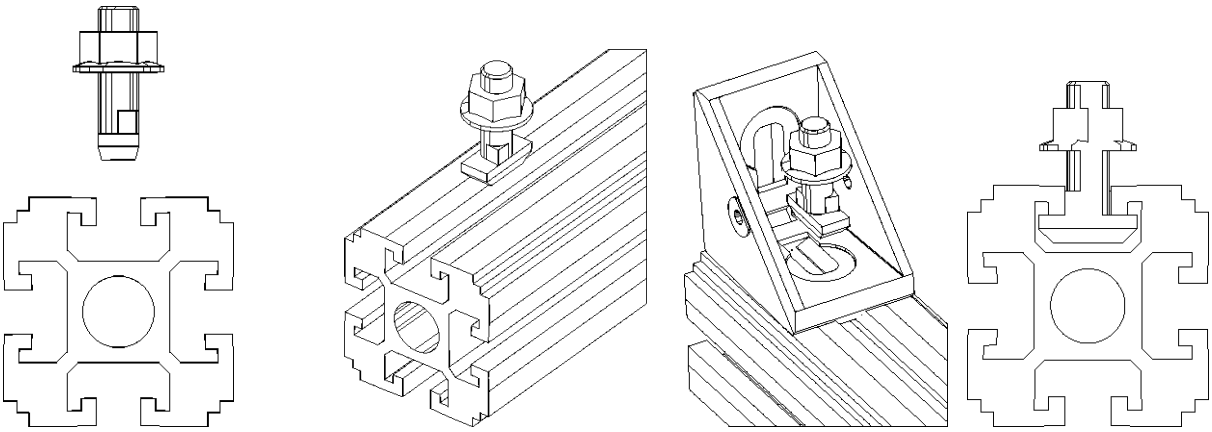
Required anchors for wall mount: X*Y*3 + X*4 (Size M8)

Required anchors for wall fixation: 2* (1 + roundup(Y/3)) * (X+1) (wall fixation brackets)

Required anchors for floor fixation: 2* (2*X) (floor fixation brackets)

Size: M10 (or M12) (wall fixation brackets, floor fixation brackets)

The structure is based on aluminum profiles which are mounted using alu corner brackets and hammer bolts. The hammer bolts are pre-assembled with a nut. This preassembly is inserted (hammer bolt head parallel to the groove of the profile) and then rotated by 90 degrees. Subsequently the nut is fixed.



The following table shows the required torque for fixing the screws. When tightening screws, please stick to these values!

Component	Size	ItemNo /description	Torque	Comment
Torx Screw (Metric)	M6 x 7	B362666 SCR D7985TXM 6 X 7 STBK	min 3Nm; max 6Nm	screwed in Nut B358674 PF X ACC NUT SPGM6 B32-60
Hammer bolt	M8X25, M8x20	B361304,B362864	15Nm	For powder coated aluminum covers
Hammer bolt	M8X25, M8x20	B361304,B362864	25Nm	For aluminum brackets
Headless screw	M8X10		0.5 Nm	Headless screws on T-bar connectors

3 Scope of delivery

The mechanics comprises three main components: the pedestal, the front access mount, and the display.

3.1 Front access mount

The front access mount module is the mechanics to house the display. Due to a sophisticated mechanism the unit can be opened on the front to enable cabling and dip switch setting without the need to go behind the structure.

It is available for installations with pedestals and for wall mount solutions.

3.2 Display

The monitor has an aspect ratio of 16:9 and HD resolution (1920x1080). It features the following interfaces:

OPS	OPS Open pluggable specification channel with HDCP 1.4
DVI 1, DVI 2	DVI single link input with HDCP 1.4, up to 165 MHz)
HDMI	HDMI 1.4a with HDCP 1.4, up to 300 MHz
DP	DisplayPort input with HDCP 1.3, up to 300MHz
DP	DisplayPort output with HDCP 1.4
S/PDIF	Audio output interface according Sony/Philips Digital Interface specification
LAN 1, LAN 2	1 GB Ethernet input, video streaming supported.
USB	USB interface USB 2.0

3.3 Pedestal

There are four standard pedestals, resulting in a lower screen edge of 875mm (R871674), 1000mm (R879302) and 1200mm (R871675), and 1500mm (R871676).

For all (standard) pedestals the components and the setup follow the same principle. In the manual, installation is shown for the standard pedestal unit 1000mm.

3.4 Wall mount

The Barco wall mount R876789 is the preferred solution for perfectly aligned large display walls.

With third party wall mounts, the specified bezels of the displays may not be achieved!

4 Adjustment of the mechanics for the display

The front access mount and the pedestal are fit for KVD / IVD/ HVD displays. Whereas KVD and IVD have the same dimensions, the HVD displays are 2mm smaller, both in width and in height:

Dimensions KVD/IVD/OVD:	1213.4 x 684.2 x 98.3 | 47.77″ x 26.94″ x 3.87″
Dimensions HVD:	1211.4 x 682.2 x 102 | 47.69″ x 26.85″ x 4.015″

Thus the pedestal as well as the front access mount module need first to be adjusted to the display which needs to be installed.

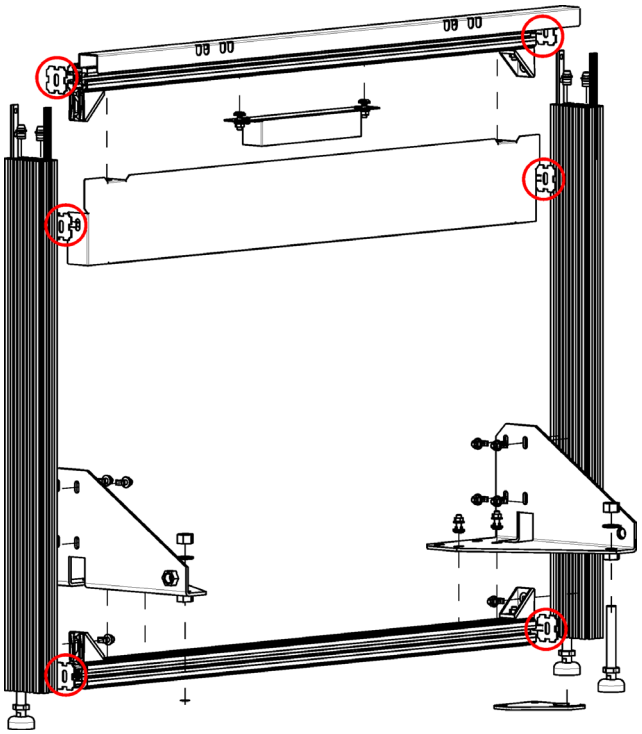
4.1 Pedestal

The adjustment in width is done via spacers.

To change the horizontal dimensions, spacers are mounted to the left and to the right sight of a horizontal profile.

Since the difference in width between KVD and HVD is 2mm, at the left and at the right side a spacer of 1mm needs to be inserted – that's why you have to unfold and break the part.

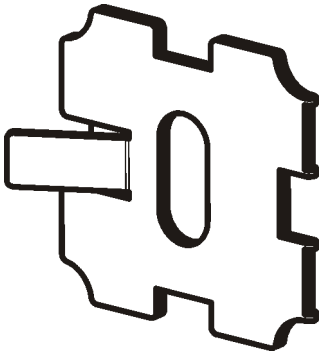
In case of OVD, KVD and IVD, these spacers are mounted on the left and right side of the horizontal profiles and of the cable hub:



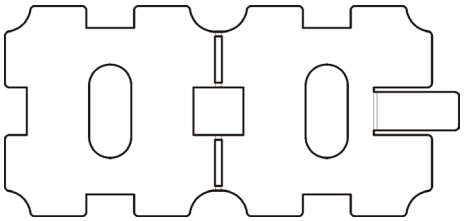
In case of KVD and IVD: the support needs to be setup using these spacers!

In case of HVD: the support is setup without these spacers!

The spacer comes as a folded part with a total depth of 2mm and looks like this:



In case you need a spacer of 1 mm, you have to unfold this part and bend it sometimes to and fro to split it and to halve the depth:



For installation, only the part with the “nose” is required. Scrap the part without nose.

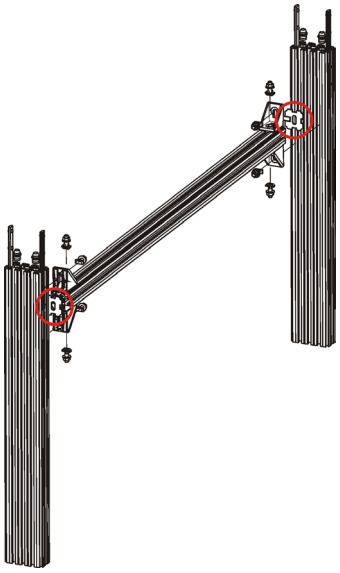
4.2 Front access mount module

The adjustment in width is done via spacers (same as with pedestals)

The front access mount module comes with the spacers installed.

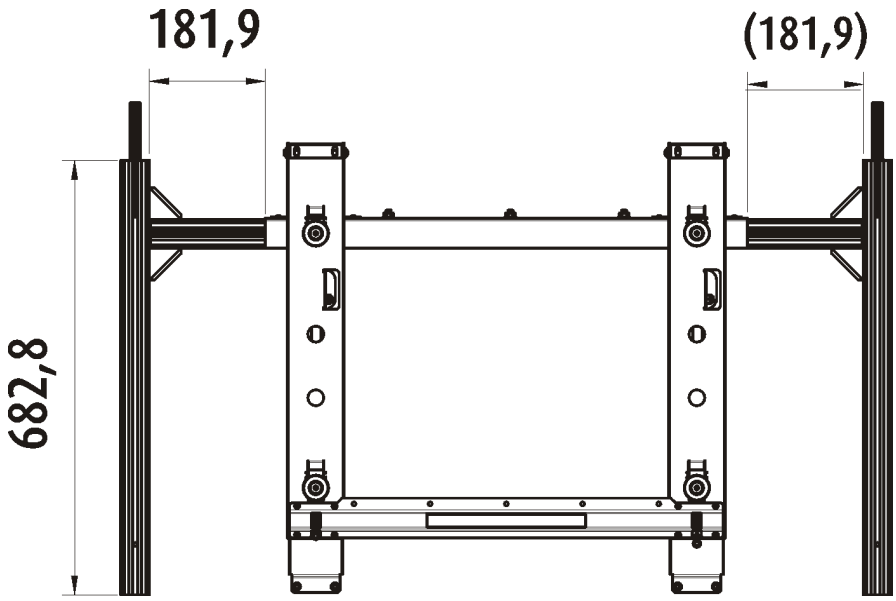
In case of OVD, KVD and IVD: mount the front access mount module as delivered

In case of HVD: prior installation, remove the spacers, see chapter 5!



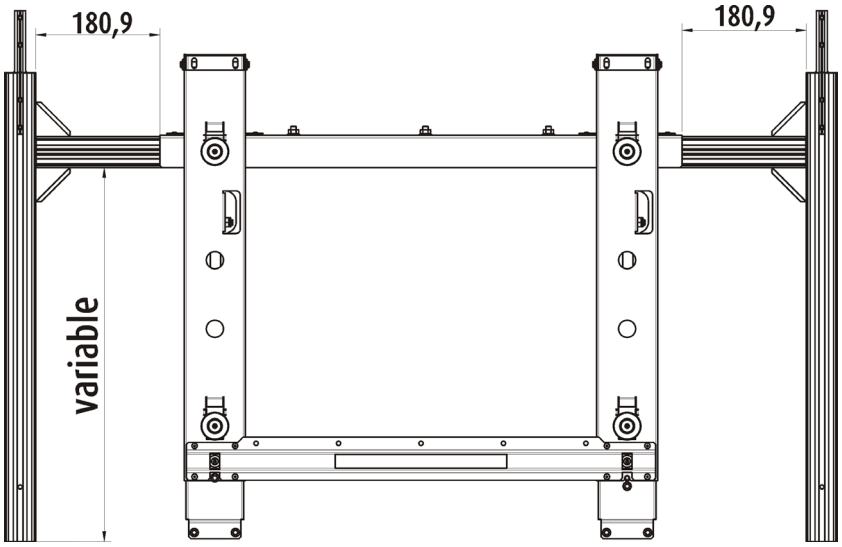
This is the profile for the front access mount. Please note the position of the spacers!

This profile is completed by the NSL-5521 CNN SUP V4 to R879308 which looks like this:



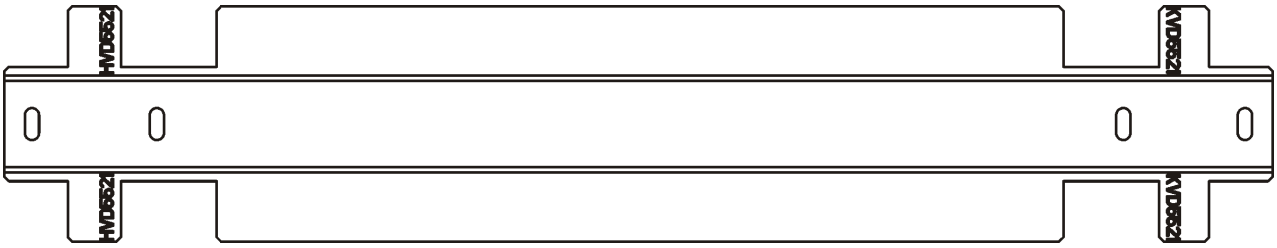
This is the condition of delivery. In case of KVD and IVD displays, no adjustment in width of the horizontal profile (no removal of spacers) is required.

In case of HVD displays, remove the spacers to reduce the horizontal width by 2 mm.



Next to the adjustment in width, adjustment in height needs to be checked / done.

The horizontal profile with the NSL-5521 CNN SUP V4 needs to be positioned according the height of the displays. Therefore a jig is included in the delivery.



The jig has two imprints, HVD5521 and KVD5521 (KVD5521 also applies for IVD5521, OVD5521).

For OVD/KVD/IVD displays, the condition of delivery should meet the needs also in vertical alignment. However it is advised to apply the jig to check the distance of the horizontal profile (and to adjust, if required).

Since the jig is used to define / check the distance of the horizontal profile of the current row to the horizontal profile of the row below (or the horizontal profile of the pedestal), the vertical alignment cannot be done upfront but is part of the installation procedure for every module.

5 Mechanical setup of display wall with pedestals

5.1 Overview

The front mount system for displays comprises 3 parts: the pedestal (standard heights: 875mm, 1000mm, 1200mm, 1500mm), the front access mount module and the display.

The pedestals are setup with/without spacer depending on the display.

WRT width: The front access mount module is used as is (in case of KVD/IVD) or the spacers are removed (HVD).

The front access mount module is mounted onto the pedestal.

Check/adjust the distance between the top horizontal profile of the pedestal and the horizontal profile of the display module.

The display is mounted to the front access mount module.

For stability reasons the system has to be fixed to the floor (via the floor brackets) and to the wall (short / long wall fixation).

Every column of the system has to be grounded!

This is the installation sequence:

Make a grid on the wall of the room where to fix the display wall.

Drill the holes into the wall.

Apply the required anchors.

Mount the fixation brackets (wall side)

Setup of all pedestals.

All pedestals are connected (either linear or curved).

The first row is mounted onto the pedestals

In case of more rows: mount the second (and third) row.

Attach the wall fixation brackets to the system (pedestal, third (or second) row).

If applicable, mount the following rows

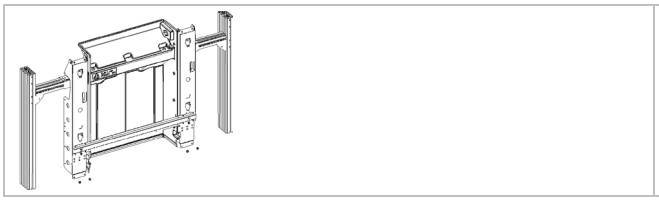
Every third row has to be fixed to the wall.

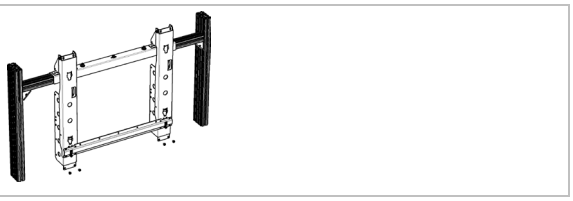
When all rows have been mounted and fixed according the rules mentioned above, the displays are mounted.

The structure is made of aluminum profiles, with a cross section of 90x45 or 45x45, respectively. Profiles are connected using alu corner brackets and "long nippled" hammer bolts B361304, M8x25.

> There are two flavors of front access mounts, with air channel (legacy NSL-5521, left) and without air channel (OVD/IVD/KVD/HVD, right).

Most of the drawings show the system with air channel (but be aware that KVD/IVD/HVD/OVD DO NOT have front access mount with air channels!) The installation steps refer to both, systems with and systems without air channel.

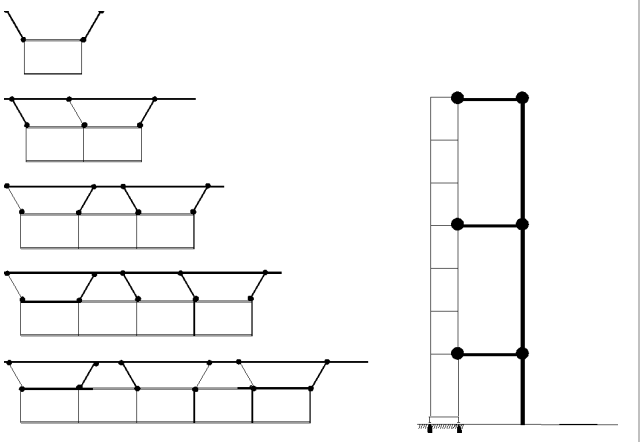




5.2 Preparation

5.2.1 Wall fixation

The systems need to be fixed to the wall.



Pedestal 01

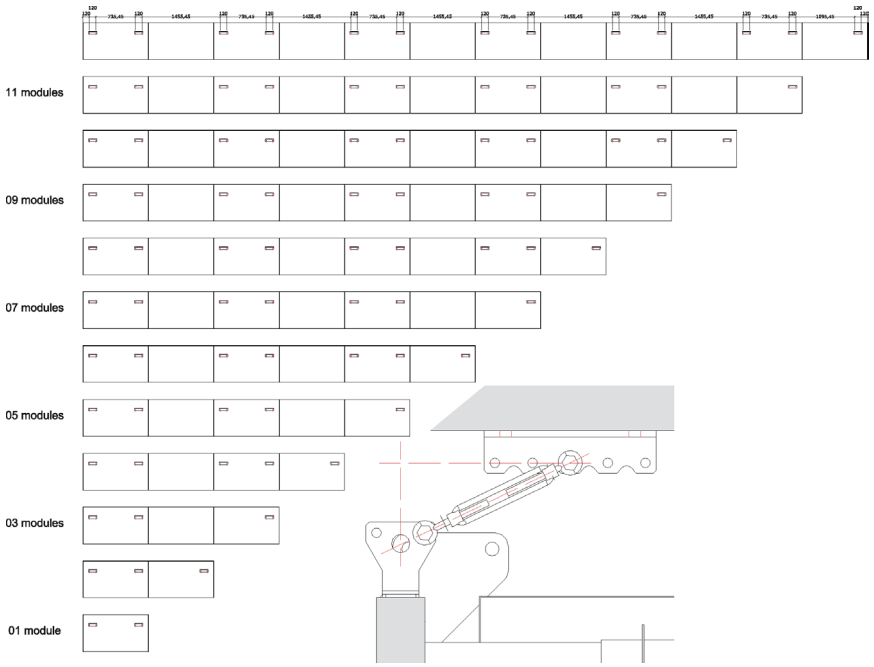
This is the rule:

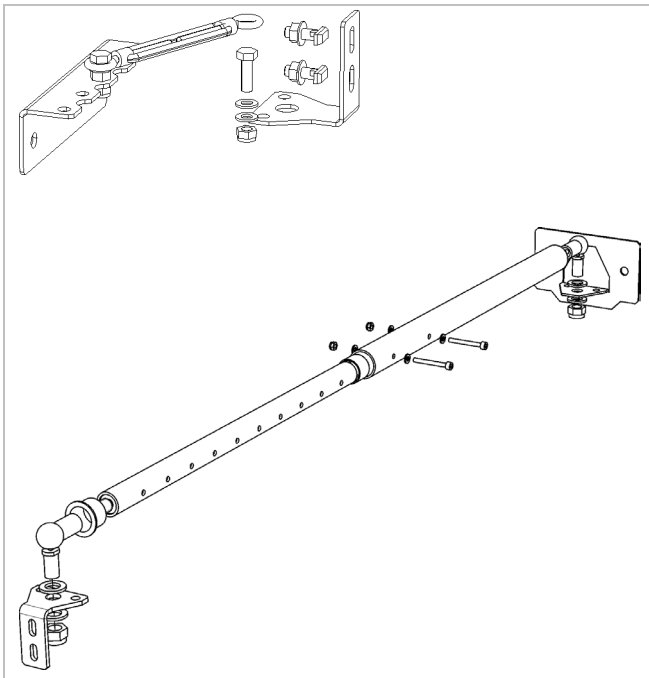
Every column needs to be fixed to the wall.

The first wall fixation is at the height of the pedestal top.

Then every third row is fixed to the wall.

If mounted with an angle to the wall always the following wall fixation has to be mounted with the corresponding negative angle. Thus shearing forces are compensated.





Pedestal 02

There are two type of wall fixation, a short one using a turnbuckle and a long one using a telescope bar.

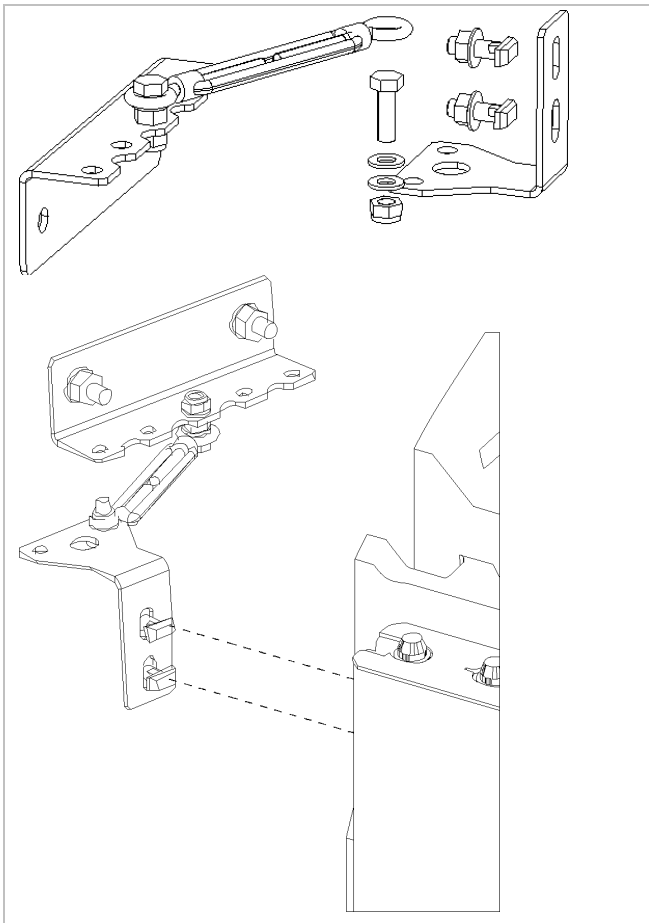
The short wall fixation R868448 comprises a wall fixation bracket, an interface bracket to the structure and a turnbuckle screw.

The turnbuckle screw can be set between 150mm and 315mm. It needs to be mounted to the wall with an angle.

The long wall fixation instead of the turn-buckle comprises a long telescope bar which allows setting a (perpendicular) distance between 554mm and 1106mm. Use an appropriate angle to realize the actual distance.

If required, drill additional holes to lock the telescope bar arrangement!

Fixation material to the wall is not included in the delivery. It has to be M10 and selected according the material of the wall to withstand the forces.

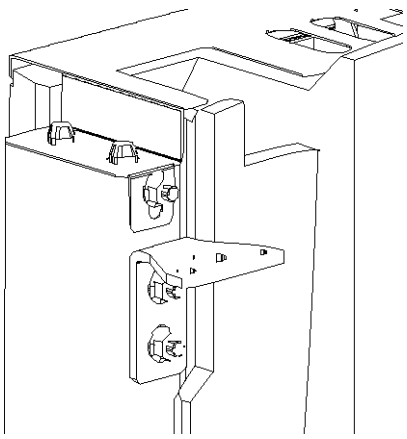


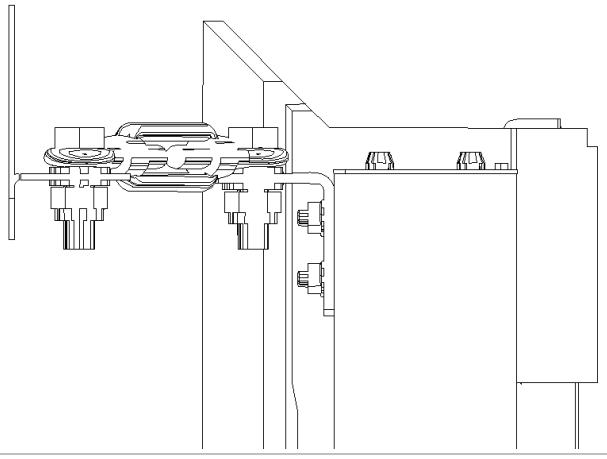
Pedestal 03

First the wall fixation brackets are attached to the wall, cf. Mounting the wall fixation brackets for video walls with (kind of standard) supports

Subsequently the interface bracket to the structure is mounted. It is fixed using two hammer bolts.

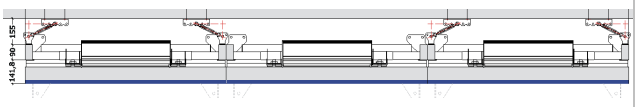
It can be fixed at the back side of the vertical profile or, if it can be reached, also on the side of the vertical profile.





Pedestal 04

When making the connection to the wall it is recommended to keep the turn-buckle as horizontal as possible, i.e. the eyes are plane: this ensures the quality of connection.



Pedestal 05

Top view on wall fixation.

Please mind the fixation angles: make as much opposite pairs as possible.

(If possible (depends from the overall distance to the wall and the set length of the outer turn-buckles) make the mid wall fixation perpendicular to the wall.)

5.2.2 Mounting the wall fixation brackets for video walls with (kind of standard) supports

Since the system is installed nearby the wall at minimum distance it gets very difficult to fix the brackets to the wall after the video wall has been setup.

Therefore it is recommended to first drill the holes to the wall and to mount the wall fixation brackets before setting up the video wall.

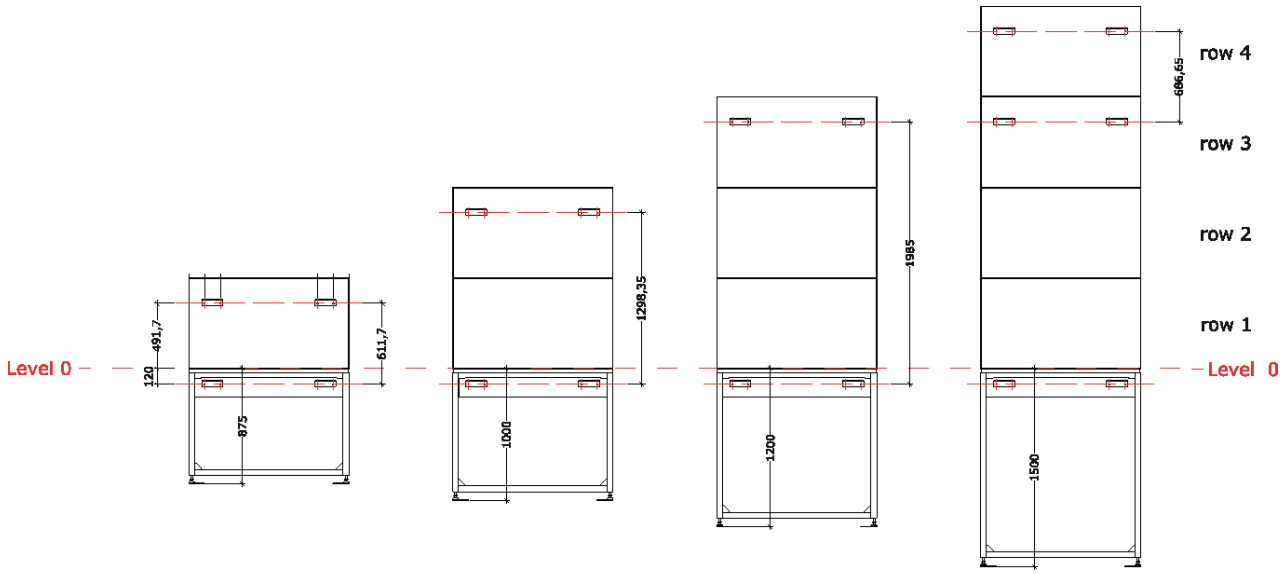
Fixation material to the wall is not included in the delivery. It has to be M10 and selected according the material of the wall to withstand the forces.

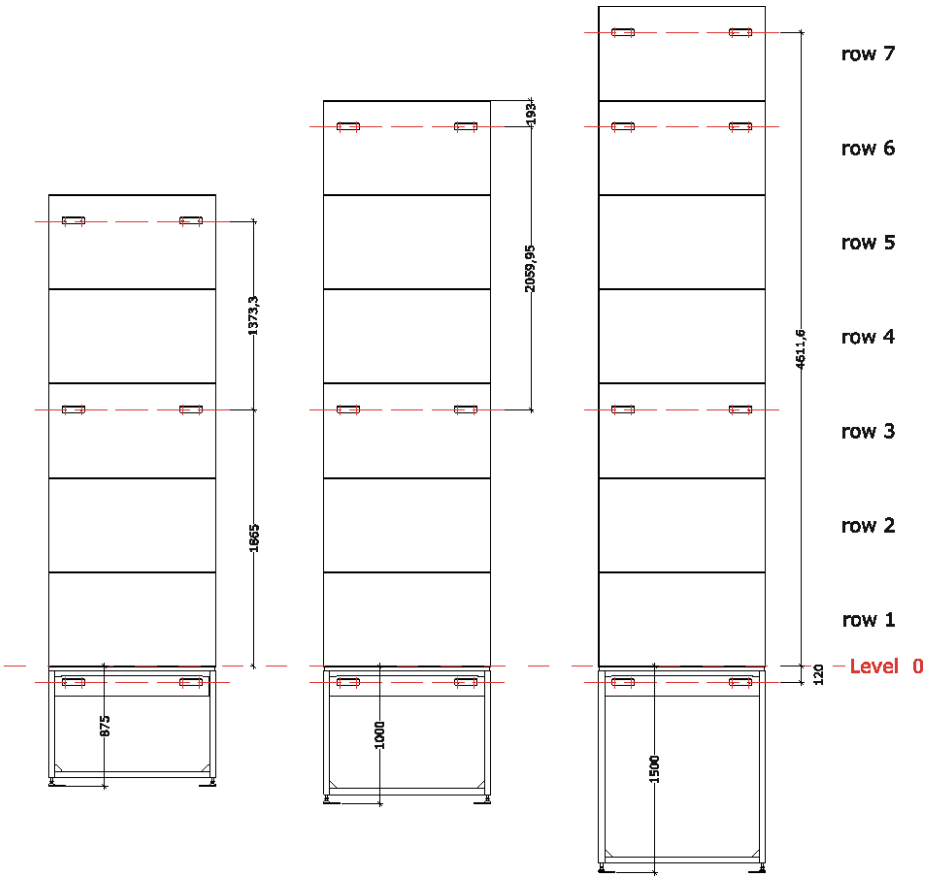
Walls of re-enforced concrete of quality C20/25 or higher with a thickness of at least 16cm are required. For wall fixation, the edge distance as to be 200mm or higher!

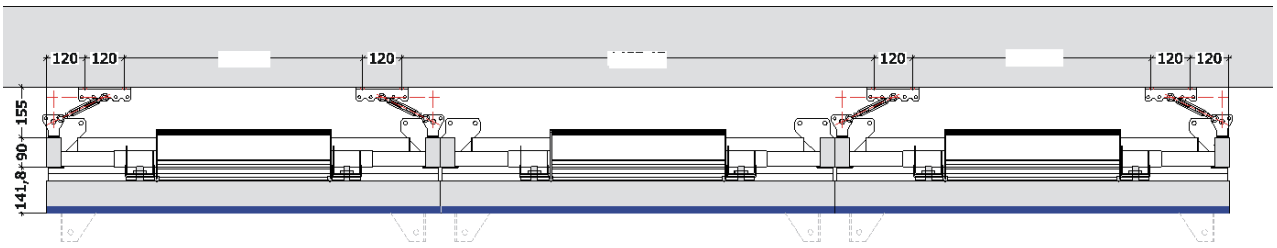
In any case fixation needs to be done on multiple levels: first on the support plane (screen height), and then on the top of every third row (rows<=3) or on the top of the last row(rows<3).

The figures in the table refer to KVD and IVD displays.

Number of rows	Level -1 (measured from level 0)	Level 0 (top of pedestal, screen height)	Level 2 (measured from level 0)	Level 3 (measured from level 0)	Level 4 (measured from level 0)
1	-120		491.7		
2	-120		1178.35		
3	-120		1865		
4	-120		1865	2551.65	
5	-120		1865	3238.3	
6	-120		1865	3924.95	
7	-120		1865	3924.95	4611.6


row 4
row 3
row 2
row 1
Level 0
Level 0
606,65
1985
1298,35
491,7
611,7
120
875
1000
1200
1500


row 7
row 6
row 5
row 4
row 3
row 2
row 1
Level 0
193
2059,95
4611,6
1373,3
1865
120
875
1000
1500

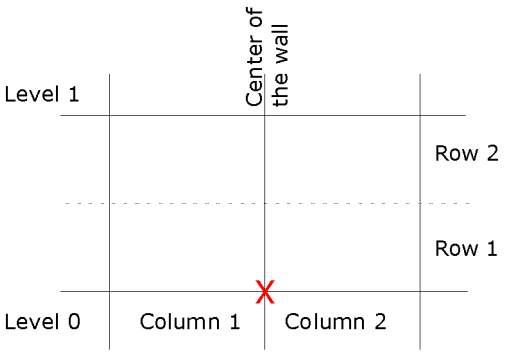

120
120
120
120
120
120
155
90
141,8

Pedestal 06

Select the appropriate chemical anchor for wall fixation.

The anchor needs to resist the pull out force of 0.5kN.

Anchors of type M10 are required.



Pedestal 07

Make the fixation grid on the wall.

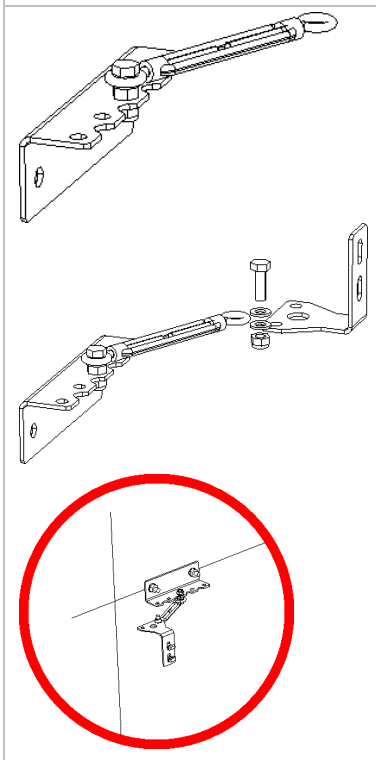
You might want to use tape to make the grid.

Start with a line for level1, i.e. support plane (screen height). Make sure that the line is perfectly straight and levelled!

Subsequently add a line for the additional levels of the setup, see table above.

Also mark the total width of the columns.

As reference, use the center of level 0, (center of the base line).



Pedestal 08

After pre-drilling, proceed with drilling the holes according the selected chemical anchor.

When all holes are drilled, mount the wall fixation brackets.

The wall fixation bracket comprises the part mounted to the wall and the parts mounted to the video wall structure.

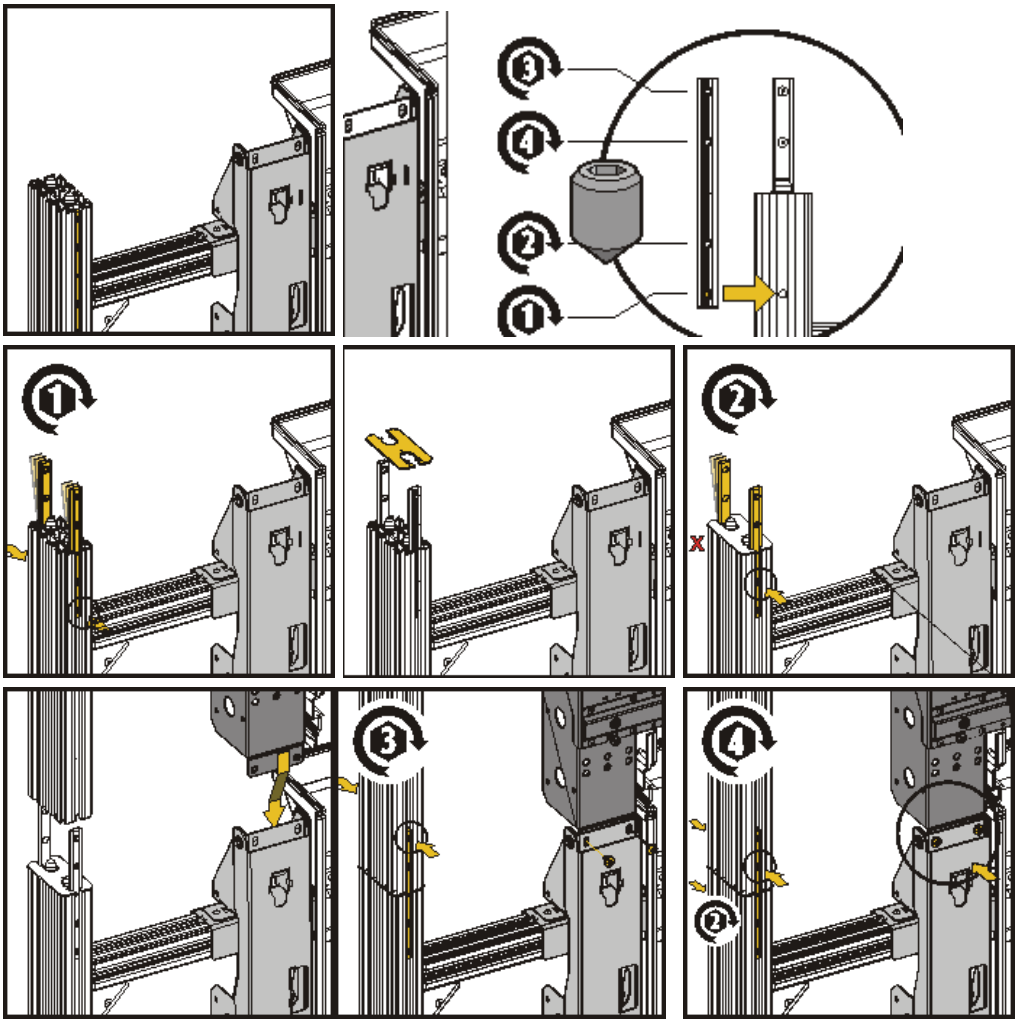
The part mounted to the wall comes pre-assembled and needs to be fixed to the wall by means of two chemical anchors, M10.

It is recommended to also fix the bracket later mounted to the video wall to the wall fixation. Use the screw M8, the self locking nut and washers

Pedestal 09

When all wall fixation brackets have been mounted, start with setup and installation of the pedestal.

5.3 Connection concept



The pictures show the connection concept implemented in the KVD5521video wall.

In vertical direction, all connections are made via T-bar connectors which come inserted into the profile.

The T-bar connector features 4 headless screws which we will number 1, 2, 4, 3, starting at the bottom. It comes with the bottom screw (1) and top screw (3) fixed.

These screws need to be loosened to shift up the T-bar connector.

When it had been shifted up it is fixed again by the bottom screw (1) – and only by the bottom screw. The screw is not fully tightened so that the T-bar connector can still "rattle".

Before placing another system on top, the connection plates need to be inserted. There are two types of connection plates: single (to be placed on the outer left/right profile, and double (to be placed on horizontally adjacent profiles).

When the connection plates are in place the screw (2) gets fixed, but *only at the front* of the video wall.

Subsequently the next system is placed on top of the current one.

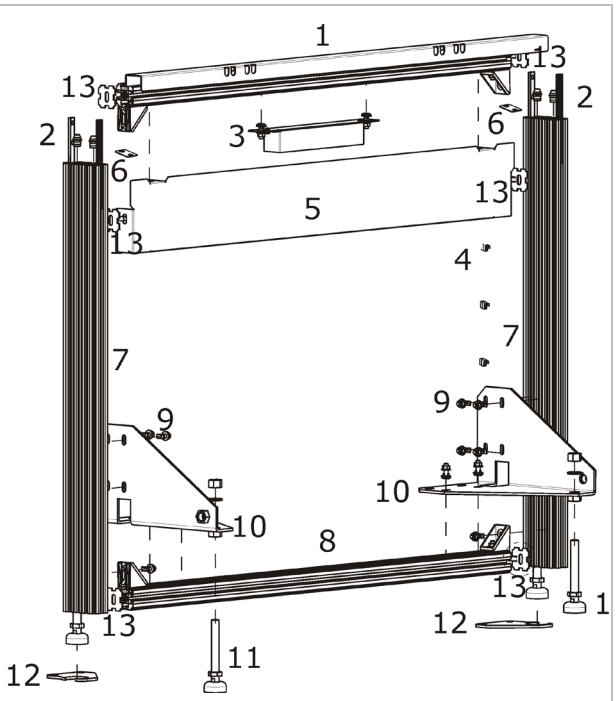
The screw (3) gets fixed, on the front and on the rear side of the video wall.

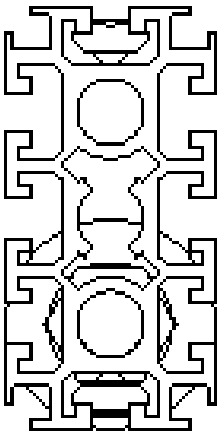
Subsequently the screw (4) gets fixed (front and rear side) as well as the screw (2) on the rear side.

5.4 Installation of the pedestal

The following table shows the components of the pedestal 1200mm, R876787. Except for the length of the vertical profiles (R869377), the components of all pedestals are (almost) identical.

Article no.	Description	Quantity	picture
R879297	NSL-5521 PED TOP V4	1	1
R867141	FRMC NSL1 PF Y 906.6	2	7
R879296	NSL-5521 PED PF X V4	1	8
B361304	SCR ASS D188K M8X25 STZN	20	9
R867120	FRMC NSL1 FEET SUP	2	10
B356318	FOOT REG D45 H145 M16STST	2	11
B360780	WSHR D433 D17 D28 SS	2	
G235531	NUT D934 M16 STZN	2	
R869262	FRM NSL1 FLOOR BRKT	2	12
R867885	FRMC NSL1 TRIPOD	4	2
R879299	NSL-5521 CABLE HUB V4	1	5
R870780	FRM NSL1 TOP CNN HOLDER	2	6
R858766	FRMC NSL1 PWR STRIP SUP	1	3
R819000	FRM ATL67C4 CBL TIE HLR	3	4
A577351	CBLA TIE B L400 W5	10	
R879298	NSL-5521 PF PIN CNN HOR V4	6	13
B593021	BOXKIT NSL-5521 PED	1	
R591702	LBL GENERIC 148X105 PCK	1	
R764734	GROUNDING KIT OVERVIEW C	1	

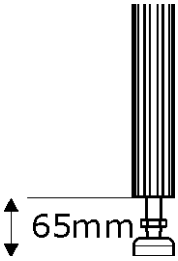




Pedestal 10

The vertical profiles have a cross section of 90x45.

In the following the part where the foot is inserted will be called "rear part".



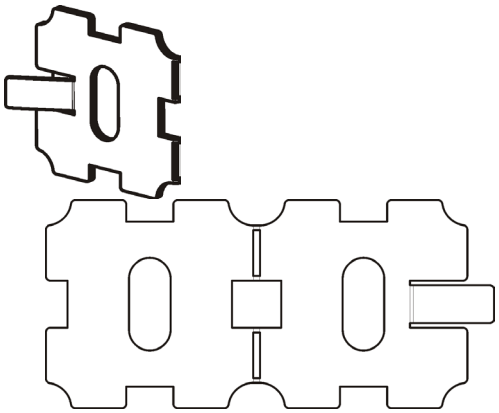
Pedestal 11

The vertical profile comes with the foot already installed.

The foot is mounted on the "rear" part of the profile.

Check the length of the foot:

It should be 65mm.

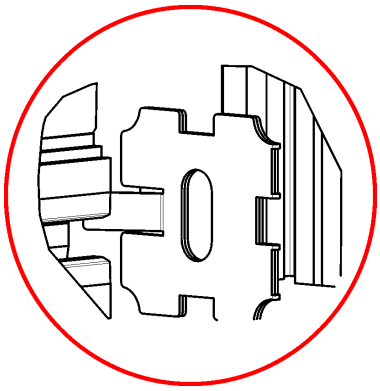


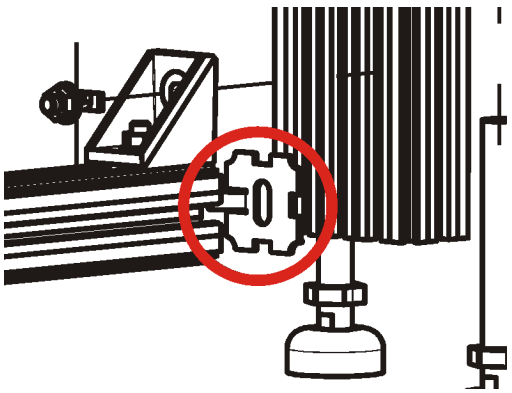
Pedestal 12

KVD/IVD/OVD:

In total 6 spacers à 1mm are required. Unfold the spacers, bend them to and fro, and halve them.

Scrap the part without nose.

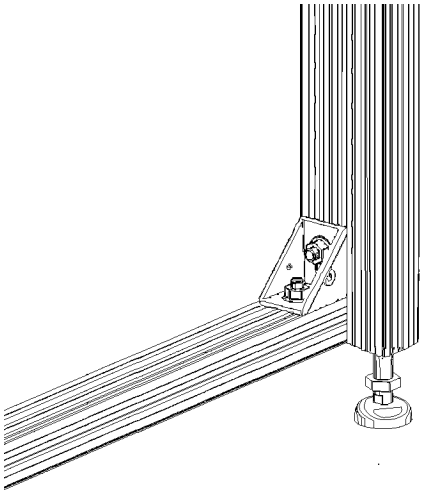




Pedestal 13

KVD/IVD/OVD:

On the left and on the right, apply the spacer to the horizontal profile. The nose needs to slide into the groove.



Pedestal 14

The horizontal profile R879296 (45x45) comes with the aluminum corner bracket already mounted at each end.

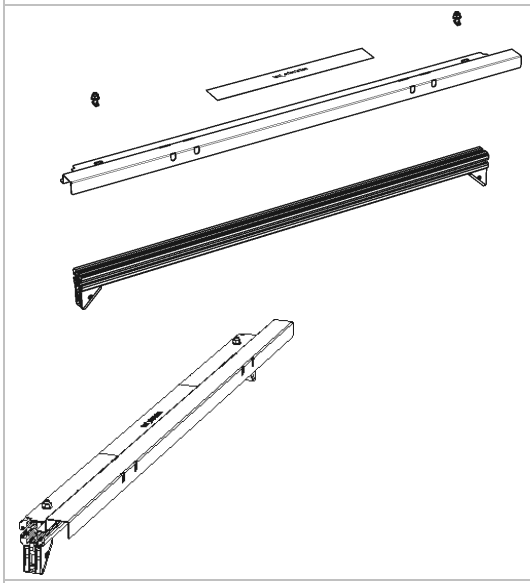
The horizontal profile is connected on the "front" part of the profile.

Position the horizontal profile on the "front" part of the left vertical profile and fix the already mounted aluminum corner of the horizontal profile also to the left vertical profile with one hammer bolt B361304.

Proceed accordingly with the right vertical profile.

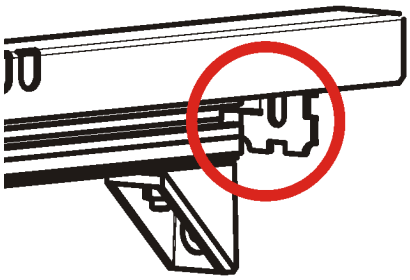
Make sure that the profiles are properly aligned and that there is a smooth surface on the joint.

"Rear" and "front" are meant with respect to the final video wall: front is the side to the operator/viewer.



Pedestal 15

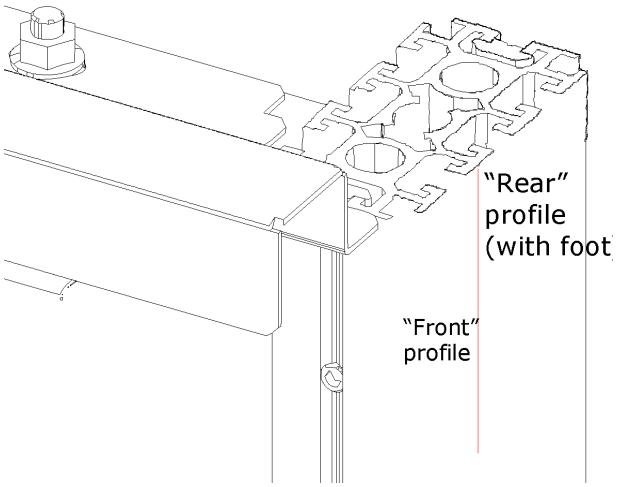
The top of the pedestal comes already preassembled with the top horizontal profile.



Pedestal 16

In case of OVD, KVD and IVD displays:

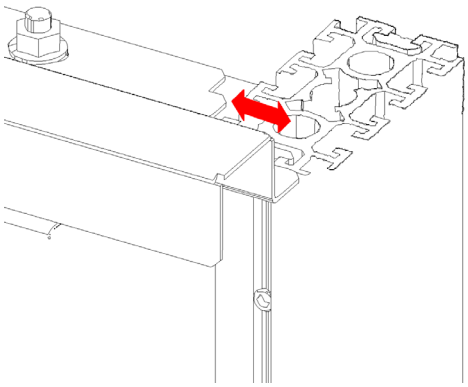
On the left and on the right, apply the spacer!



Pedestal 17

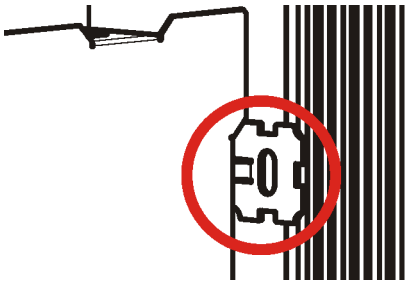
Install the top of the pedestal.

Fix the alu corner of the top horizontal profile (part of the top of the pedestal) to the left/right "front" vertical profile using 2x one hammer bolt



Pedestal 18

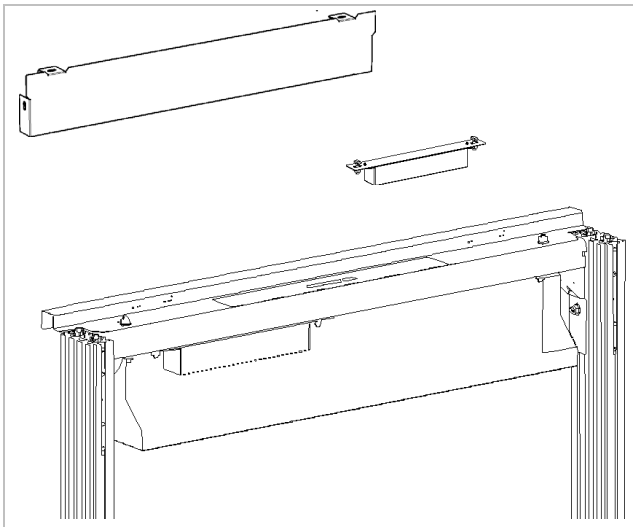
Align the profiles!



Pedestal 19

In case of OVD, KVD and IVD:

On the left and on the right of the cable hub, apply the spacer!

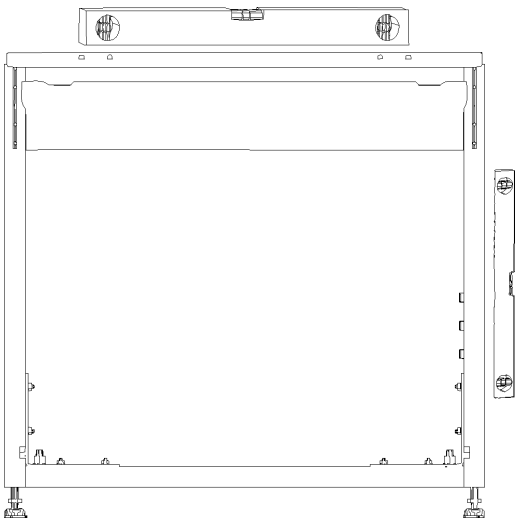


Pedestal 20

Install the cable hub R879299. It is mounted to the pedestal top via two hammer bolts, and to each of the vertical profiles with 1 hammer bolt.

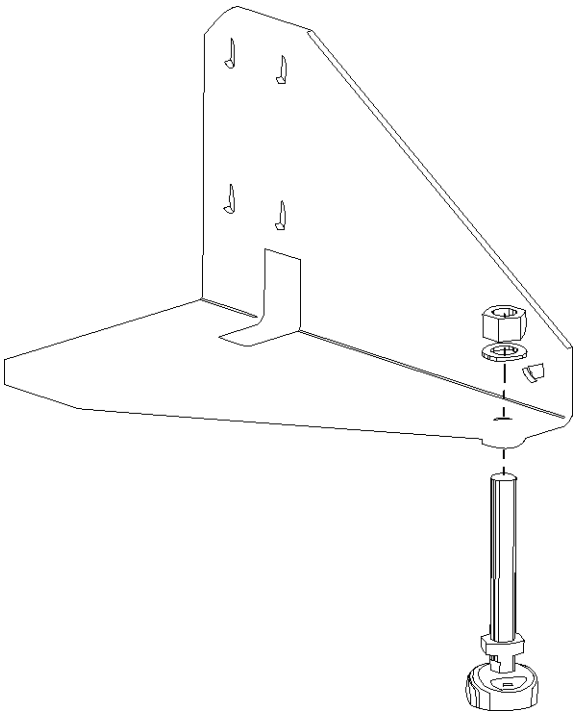
Make sure that the "tray" shows to the rear!

Subsequently mount the power strip using two hammer bolts.



Pedestal 21

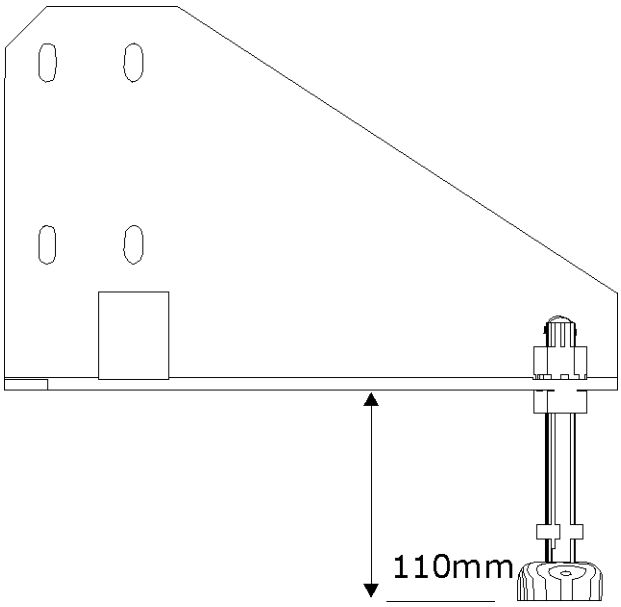
Level the pedestal.



Pedestal 22

Start with mounting the feet to the feet support brackets R867120.

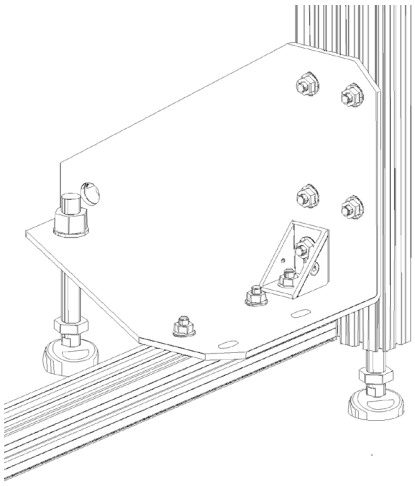
On the bottom of the feet support bracket there is a welded nut to screw in the foot.



Pedestal 23

Screw in the foot for nominal height (= feet height of "rear" foot + profile cross section = 65mm + 45mm) = 110mm

Fix each foot with a washer and a nut (B360780, G235531)

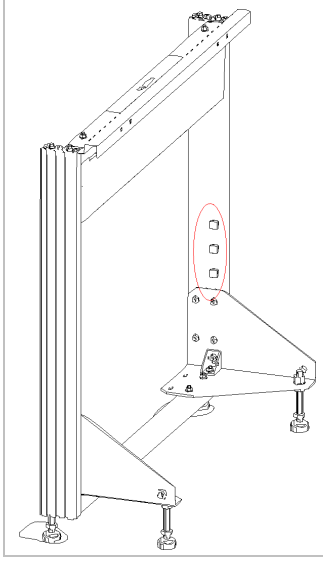


Pedestal 24

The feet support bracket as a cut out for the alu corner bracket which connects the horizontal and the vertical profiles.

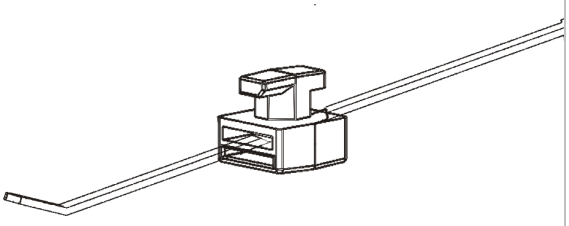
Place the feet support bracket using this cut out. Fix the feet support bracket to left/right vertical profile using 2x two hammer bolts.

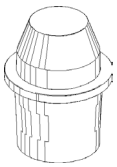
Fix the feet support bracket to the left/right vertical profile using two hammer bolts.



Pedestal 25

Also attach the cable tie holders to the rear profile (below the power strip)

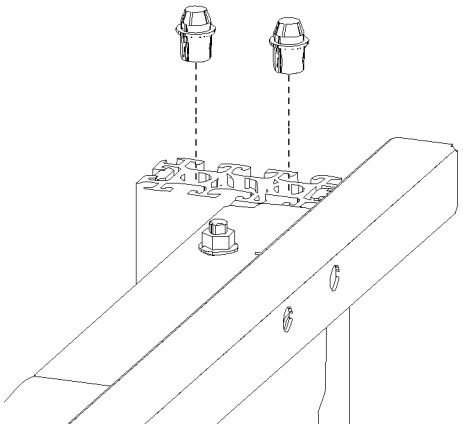




Pedestal 26

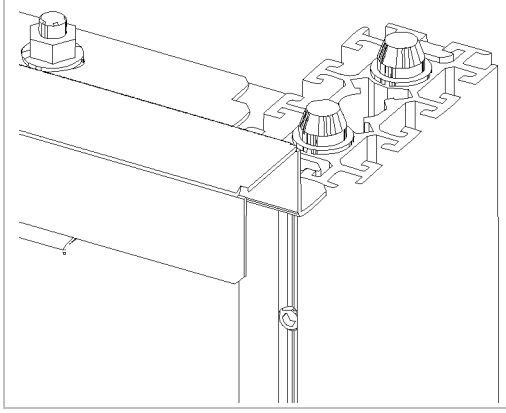
When the pedestal has been assembled, two centering pins R867885 have to be inserted into the left and right vertical profile.

These centering pins ensure that the final structure will be perfectly aligned.



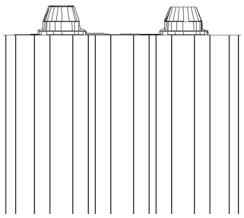
Pedestal 27

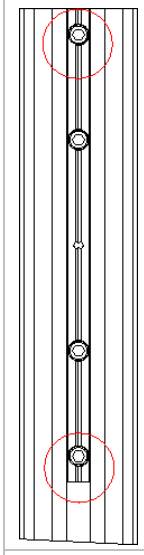
Hammer in the pins.



Pedestal 28

Make sure to align the pins with the top of the profile!

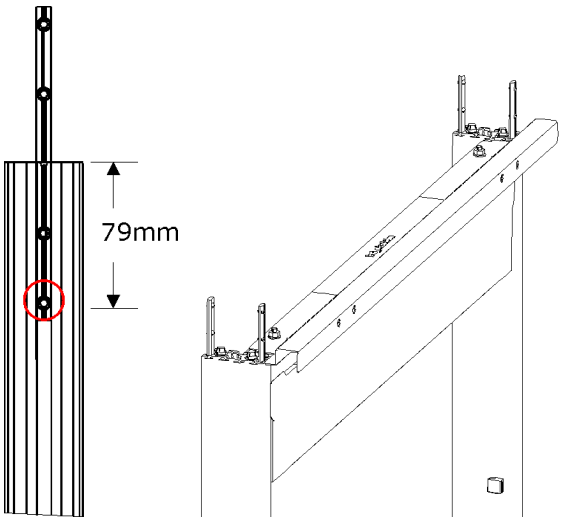




Pedestal 29

The vertical profiles come with T-bar connectors attached.

These T-bar connectors are fixed with the top and the bottom screw.

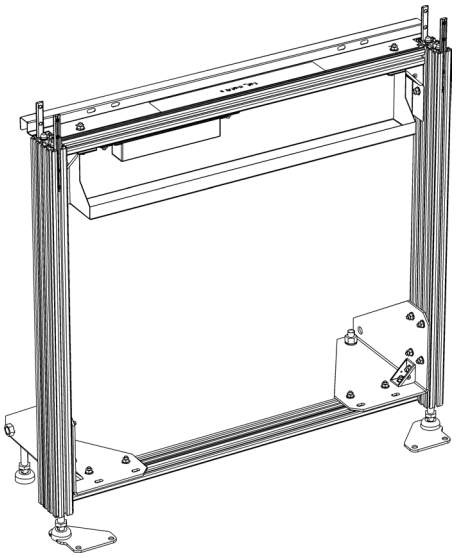


Pedestal 30

Loosen the headless screws and shift the T-bars up until the bottom screw of the T-bar connector matches the hole in the profile.

Fix the bottom screw of the T-bar connector to the hole in the profile!

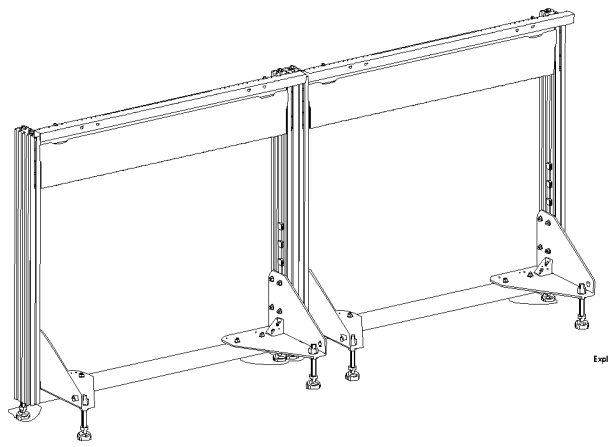
Please refer also to the connection concept, cf. Connection concept



Pedestal 31

When the first pedestal has been mounted and prepared like described in the previous steps,

also prepare all other pedestals of the configuration like this!



Pedestal 32

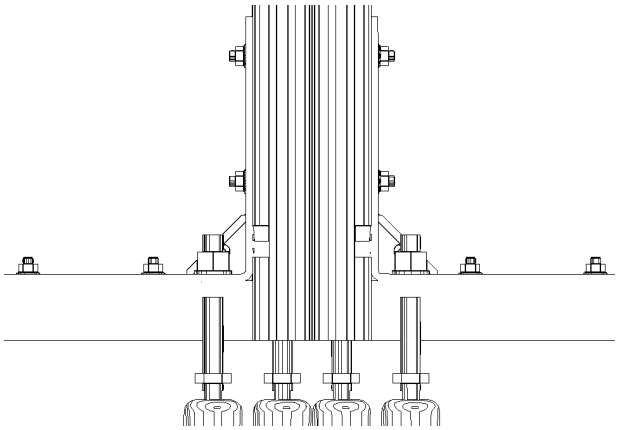
When all pedestals have been assembled, place them next to each other.

Choose one of them as the master: This will be the reference to align all other supports.

It is recommended to set the center system as master!

Carefully level all pedestals with reference to the master! This effort takes time, but it defines the final quality of the full setup!

Make sure that all hammer bolts are tightened!



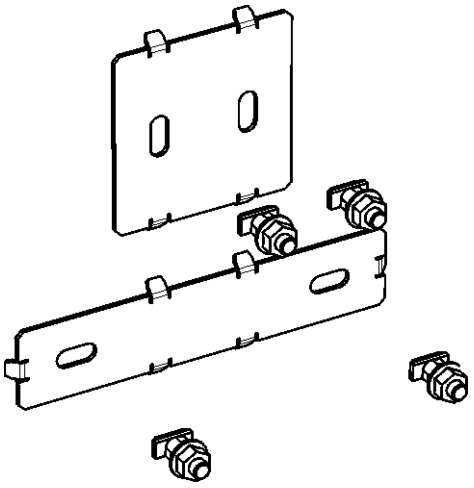
Pedestal 33

Make sure that the profiles are well aligned, also in height! In case of a curved setup it is mandatory to align them before mounting the connection brackets.

But also with a linear configuration it is recommended to have the profiles aligned in height.

If required, adjust the height be screwing the feet in/out.

Do not touch the master system!



Pedestal 34

Proceed with connecting the pedestals:

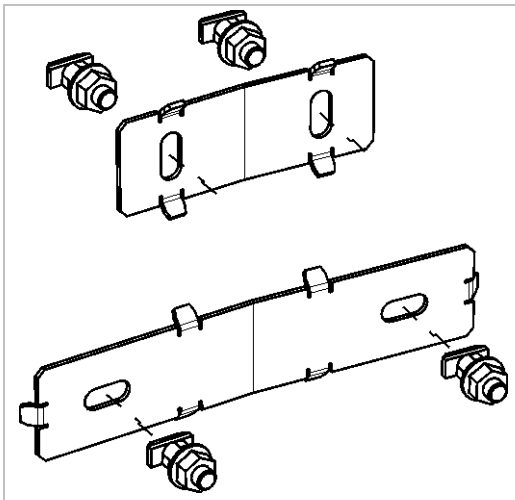
R868444: linear connection

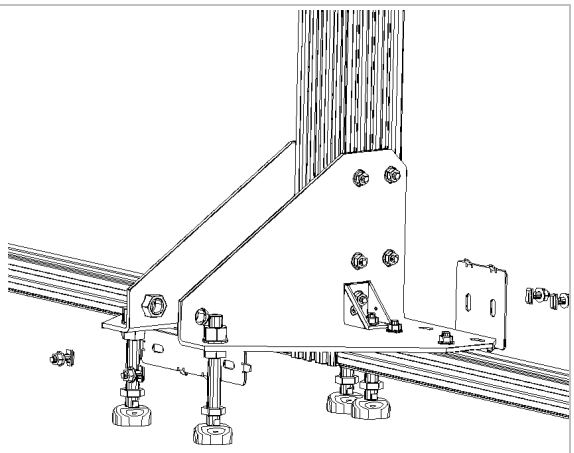
R868445: curved 3 degree

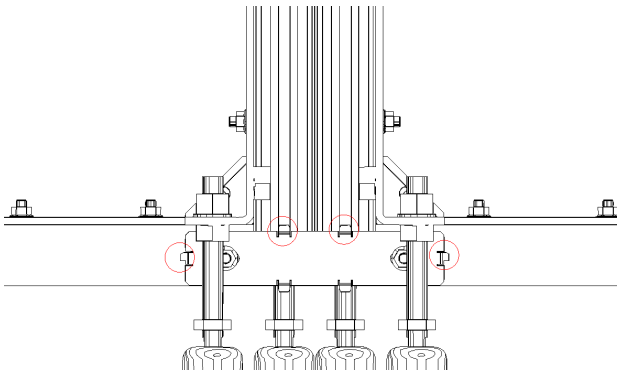
R868446: curved 5 degree

R868447: curved 8 degree

The connection kits comprise a front and a rear part.



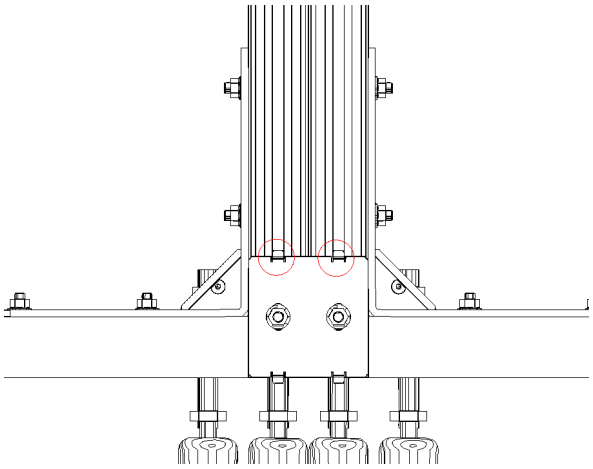




Pedestal 35

Start with mounting the front connection part. Use two hammer bolts to fix it. Make sure that it is properly aligned (smooth surface on the bottom of the profile).

Make sure that the "noses" dig into the grooves of the profile!



Pedestal 36

Fix the rear connection part using two hammer bolts.

Make sure that it is properly aligned!

Make sure that the "noses" dig into the grooves of the profile.

Pedestal 37

Make sure that all hammer bolts are properly tightened! (Torque about 15 Nm for powder coated aluminum, 25Nm for alu corner brackets.)

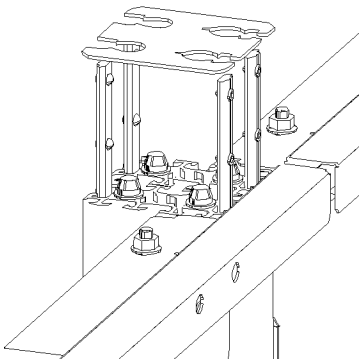
Pedestal 38

When the bottom connection has been made on all pedestals, the top connection plates have to be installed.

Installation of the top connection plates will be needed also on all rows.

For installation of the top connection plates it is mandatory that the pedestals are accurately leveled!

Pedestal 39



R869697: connection part, 3 degrees

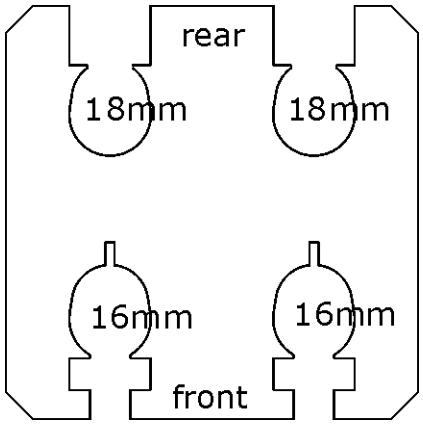
R869698: connection part, 5 degrees

R869699: connection part, 8 degrees

R869695: linear connection part

R869696: side part

Pedestal 40



Installation of the connection parts is done best when standing in front of the structure.

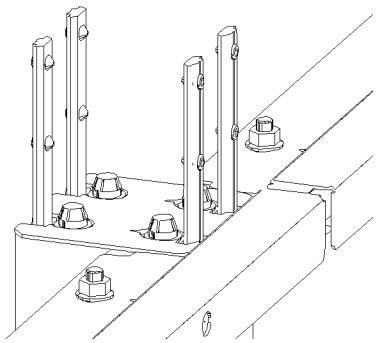
Place the connection part over the centering pins; start with sliding the rear part (bigger diameter) over the rear centering pins.

Subsequently slide the front part over the front centering pins.

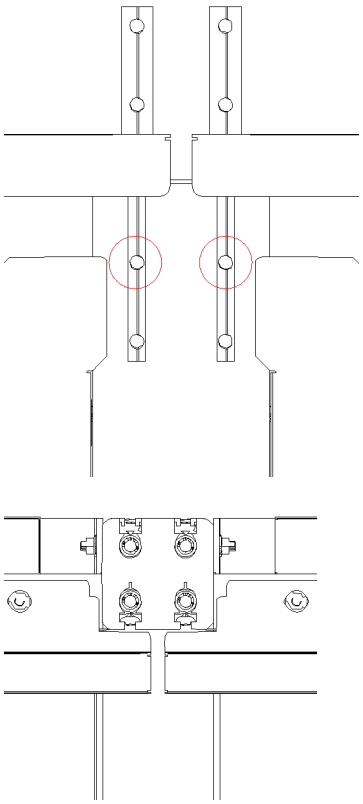
To ease installation, the T-bar connectors still need some play.

S

Pedestal 41



To ease installation, the T-bar connectors still need some play.



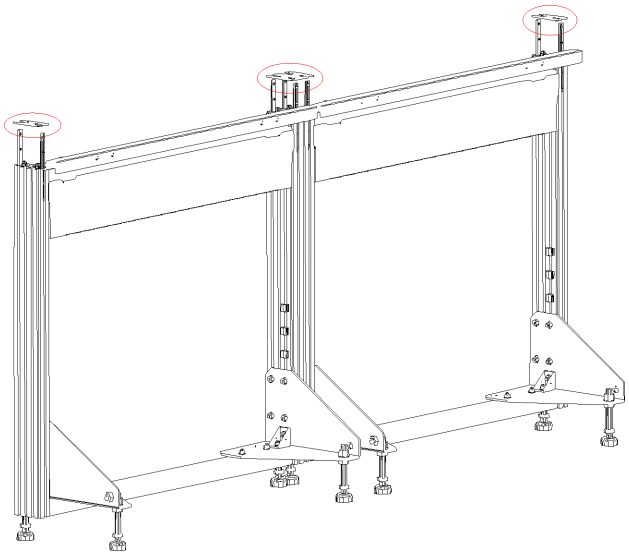
Pedestal 42

Hold the connection part in place by pushing it against the surface of the profile while gently fixing the second screw from the bottom (torque approx. 0.5Nm). Only fix the second screw on the front side, please refer also to the Connection concept.

When fixing the screw the plate moves forward and starts clamping the pins with the smaller diameter.

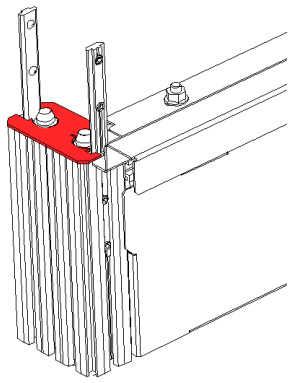
The position of the connection part is thus fixed.

Please note: the T-bar connectors still need to be able to move a little!



Pedestal 43

Proceed with mounting the connection plates on all supports.



Pedestal 44

Also mount the single connection plates on the outer profiles!

Pedestal 45

To ensure a good installation we need to verify the curvature after setting up the supports

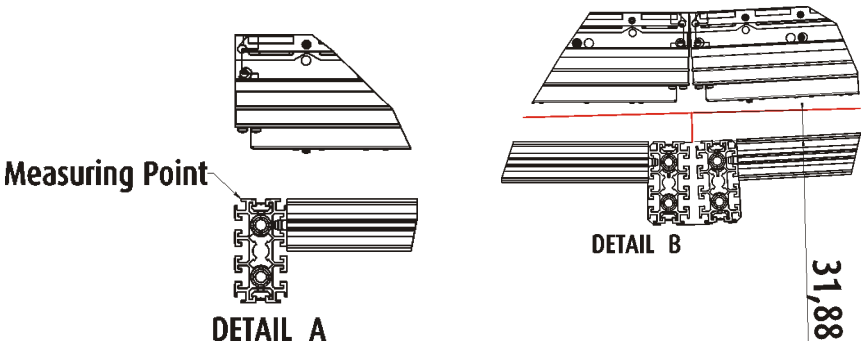
In the following you find the rules for measurement for a setup of 3degrees, 5degrees, and 8degress.

Make sure that the setup matches the distances!

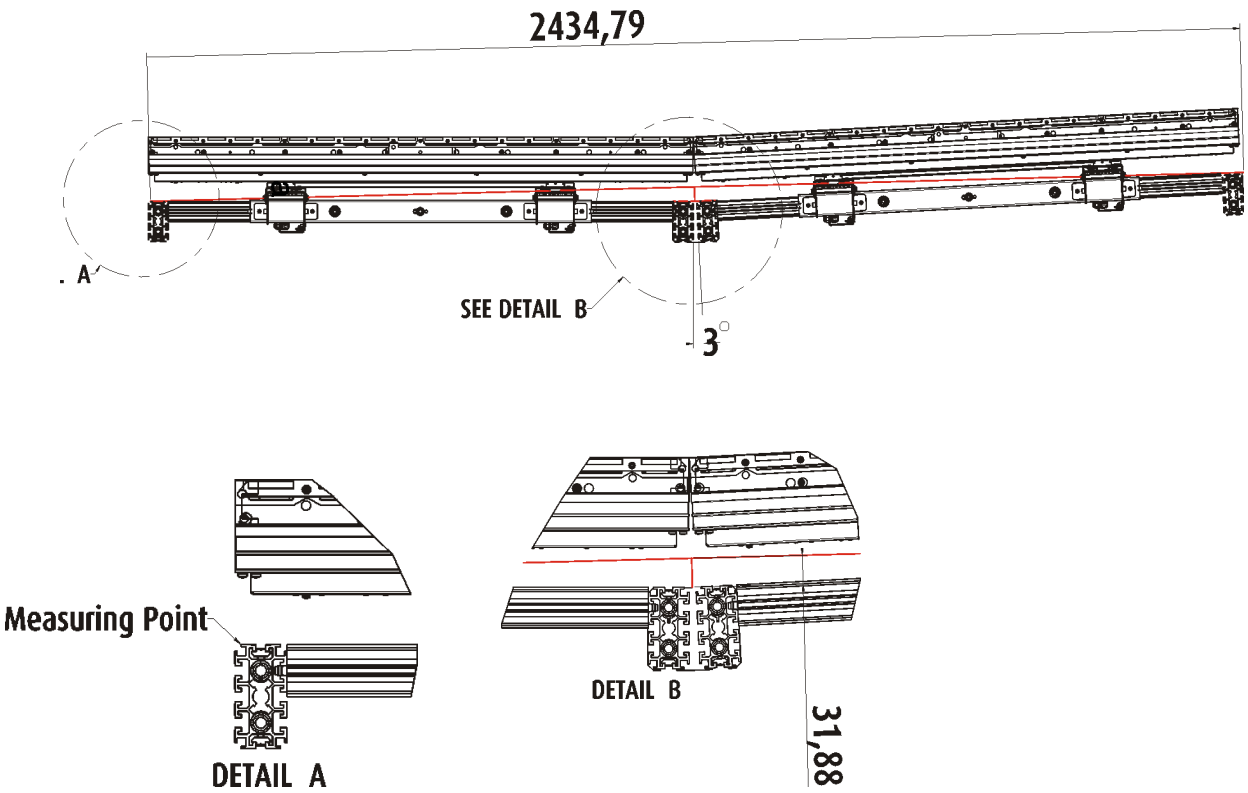
Pedestal 46

Measuring points:

Outer edge of a single connection part (see detail A) or the respective edge of a double connection part (see detail B)

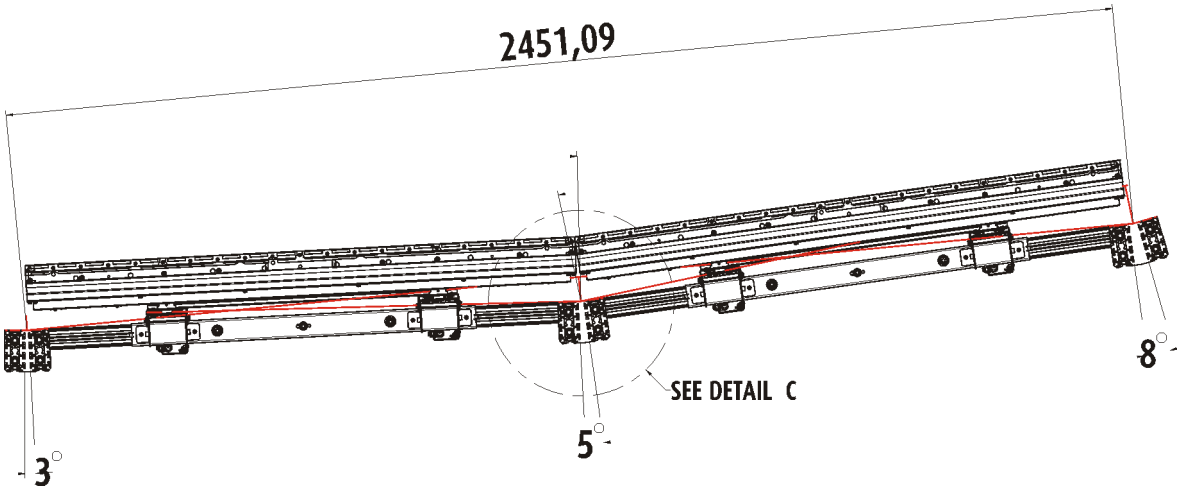


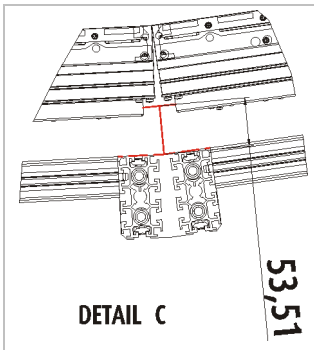
3degrees:



If you use a measuring cord between the outer profiles of two systems the distance of the measuring cord at the junction of the system is 31.3mm

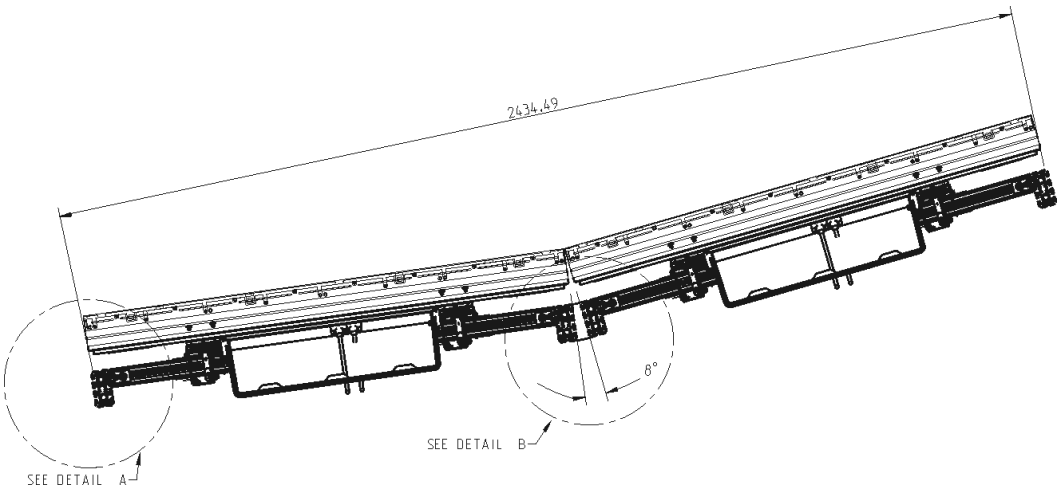
5degrees:

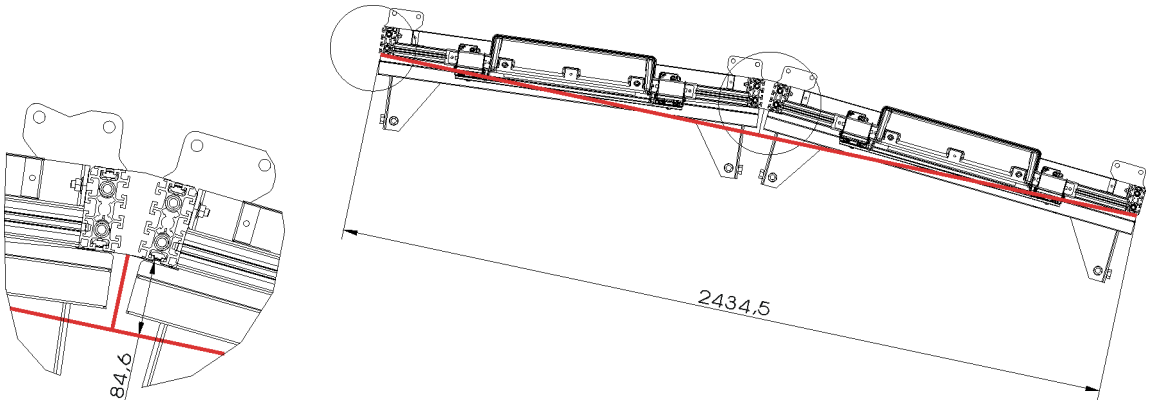




If you use a measuring cord between the outer profiles of two systems the distance of the measuring cord at the junction of the system is 52.6mm.

8degrees:



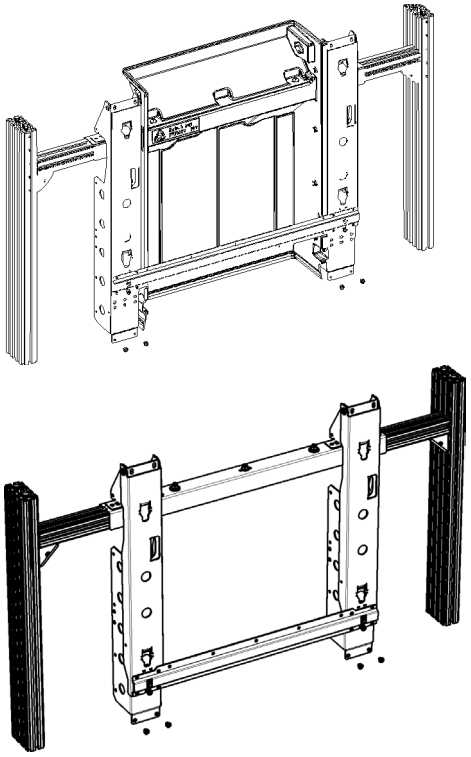


If you use a measuring cord between the outer profiles of two systems the distance of the measuring cord at the junction of the system is 84.6.

Pedestal 47

Fix the supports to the wall fixation brackets already attached to the wall during the preparation phase.

5.4.1 Preparation of front access mount module (non-top row)

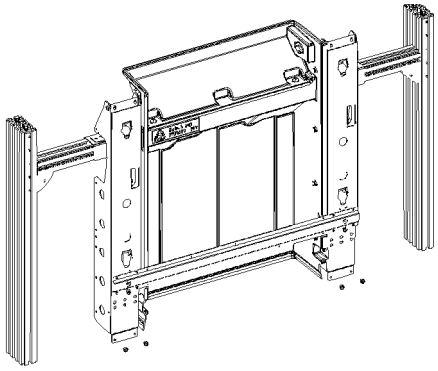


Pedestal 48

The upper system features an air channel (NSL-5521)

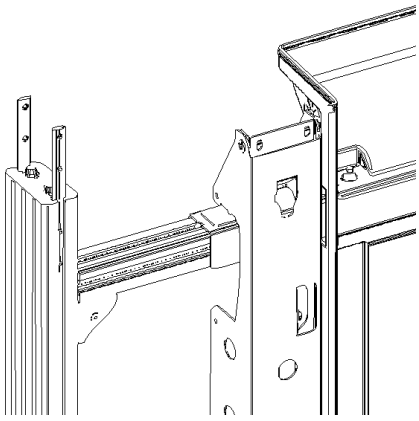
The lower system does not feature an air channel (OVD5521, KVD5521, IVD5521, HVD5521).

The following pictures and steps apply for OVD/KVD/IVD/HVD although some of the pictures show the NSL-5521 system with air channel.



Pedestal 49

In case there is only one row, you may skip this chapter.



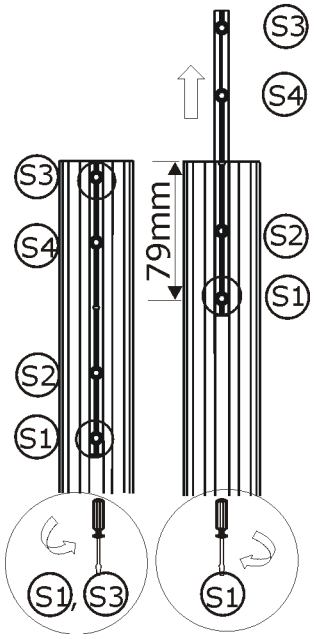
Pedestal 50

Unscrew the headless screws S1, S3.

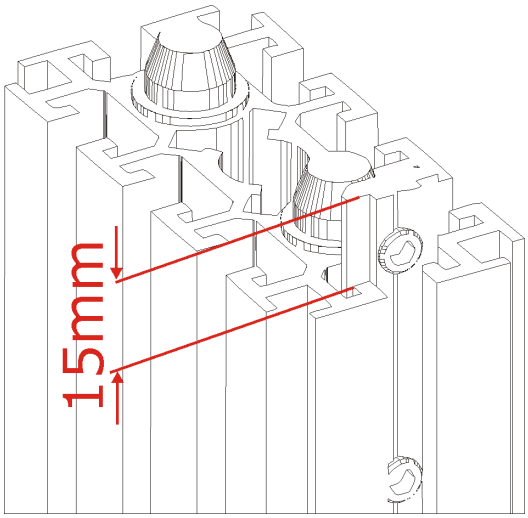
Move up the T-bar connectors (the bottom of the T-bar connectors have a distance of 79mm from the top of the profile).

Fix the T-bar connector to the vertical profile with screw S1 (bottom screw , mounted to the hole of the profile).

Make sure not to fix it too tight. It should be able to rattle (fixed in height but with some play in the slot).



5.4.2 Preparation of front access mount module, top row



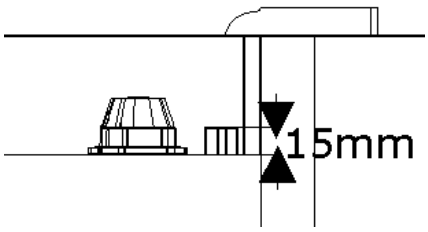
Pedestal 51

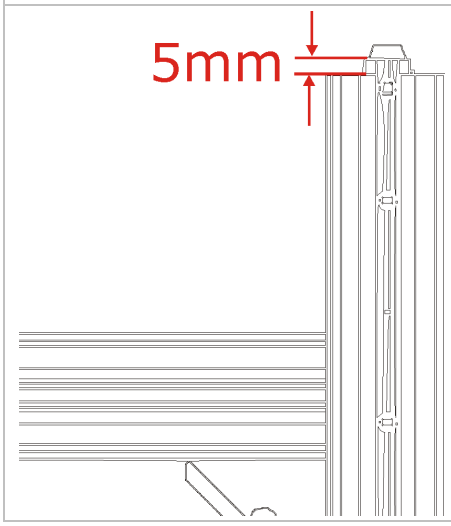
Prepare the front access mount modules of the last rows:

Front T-bar connectors:

Shift the T-bar connectors slightly up until it has an offset to the top of the profile of about 15mm.

Only fix the bottom screw of the T-bar connector.





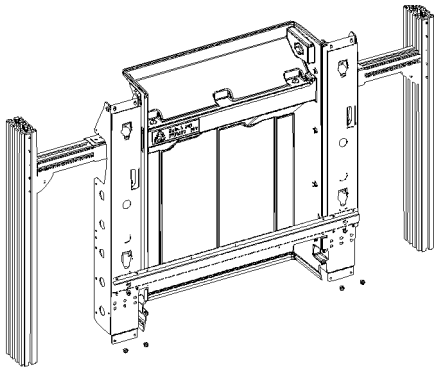
Pedestal 52

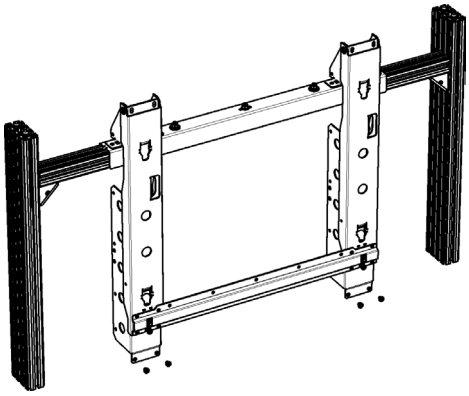
Rear T-bar connectors:

Shift the T-bar connectors slightly up until it has an offset to the top of the profile of about 5mm.

Fix the screws..

5.4.3 Installation of the front access module, first row



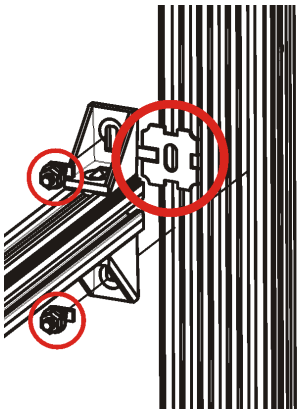


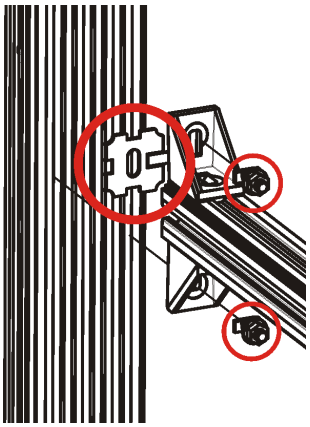
Pedestal 53

The upper system features an air channel (NSL-5521)

The lower system does not feature an air channel (OVD5521, KVD5521, IVD5521, HVD5521).

The following pictures and steps apply for KVD5521although some of the pictures show the NSL-5521 system with air channel.





Pedestal 54

In case of HVD:

Remove the left (or right) spacers

NEVER remove the horizontal profile completely from the vertical profiles.

Proceed like this:

Start with the left (or right) side.

Open the screws which fix the horizontal profile to the vertical profile (2x B361304 SCR ASS D188K M8X25 STZN).

While the right (or left) side of the horizontal profile is still fixed to the vertical profile, push the horizontal profile back to remove the spacer.

Subsequently restore the position of the horizontal profile.

Use 2x B361304 SCR ASS D188K M8X25 STZN and fix the horizontal profile to the left (or right) vertical profile.

LEVEL the horizontal profile to maintain the reference distance!

Subsequently remove the right (or left) spacer.

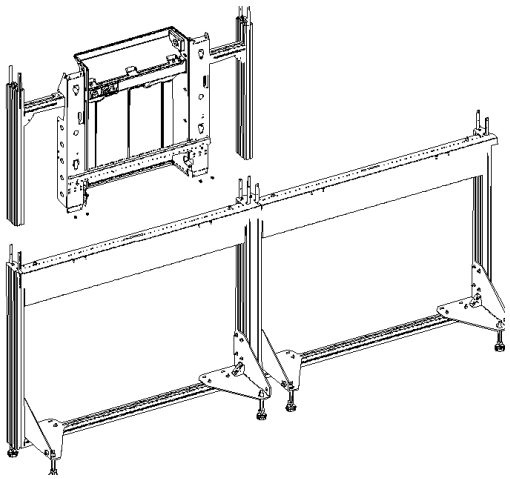
Perform these steps also on the right (or left) side to remove the spacer on the right (or left).

Make sure that you keep and maintain the position of the horizontal profile!

Pedestal 55

Please note:
Due to the difference in height between KVD/IVD panels and HVD panels, the lower edge of the display in case of HVD panels is 1mm higher than the nominal height, e.g. 876mm for 875mm pedestals. This is within the tolerances.

Pedestal 56



With all displays:

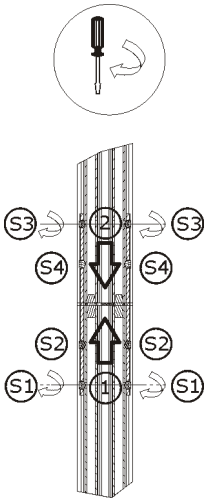
position the front access mount module on the pedestal.

To ease assembly place the module as parallel to the pedestal as possible.

The T-bar connectors of the pedestal slide into the vertical profiles of the front access mount module.

The "ears" of the front access mount module slide into the cutouts of the pedestal's top.

Pedestal 57



Fix the first front access mount module to the support like this:

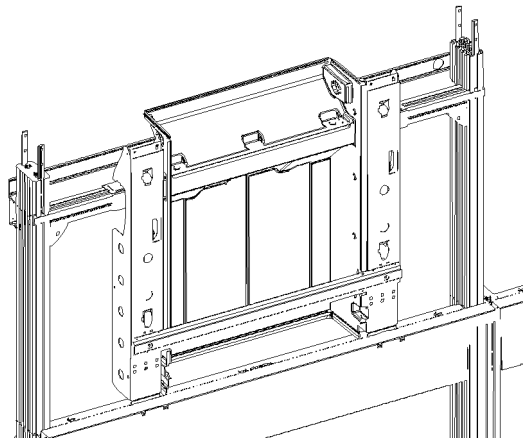
Tighten the top screw (S3) of all 4 T-bar connectors.

Then tighten the screw (S4) of all 4 T-bar connectors.

Finally tighten the screw (S2) of the rear T-bar connectors.

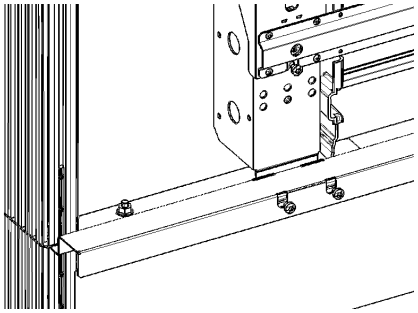
Please note:

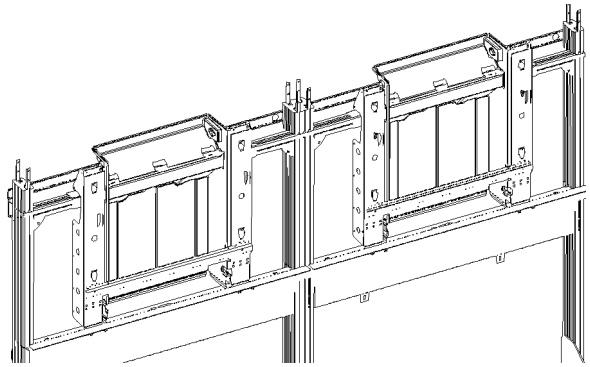
Fixing the top and the bottom screw presses the vertical profiles of the front access mount module and the pedestal together and ensure a zero gap.



Pedestal 58

Subsequently fix the ears of the front access mount module to the horizontal profile of the top of the pedestal, using 2x two M6x7 screws B362666.





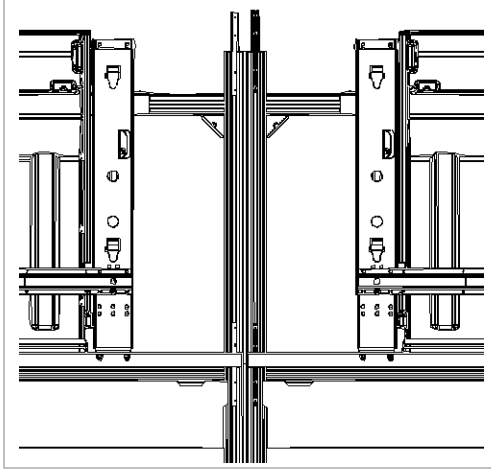
Pedestal 59

Proceed accordingly with the next front access mount modules.

If required (HVD panels), remove the spacers, see above.

Shift the T-bar connectors up like described above, and place the front access mount module as parallel as possible over the pedestal.

Slide it into the T-bar connectors of the pedestal.



Pedestal 60

If you have to fix all T-bar connectors from front, access to the rear T-bar connectors is only possible when shifting up the rear cover.

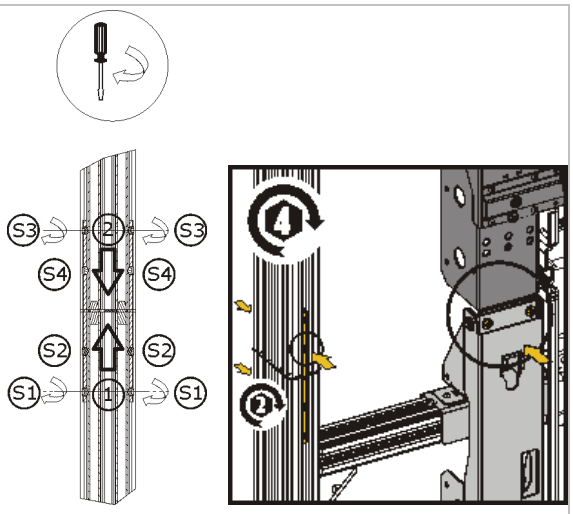
Shift the rear cover upwards to reach the screws at the rear side of the center profile.

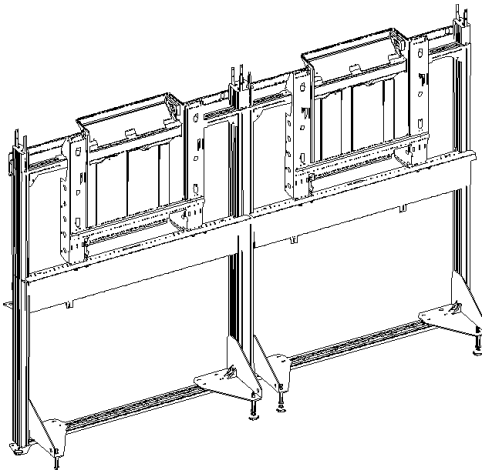
Fix the T-bar connectors of the seconded front access mount module. Mind the correct sequence:

First fix the top screw of all T-bar connectors,

Then fix the bottom screw of all T-bar connectors,

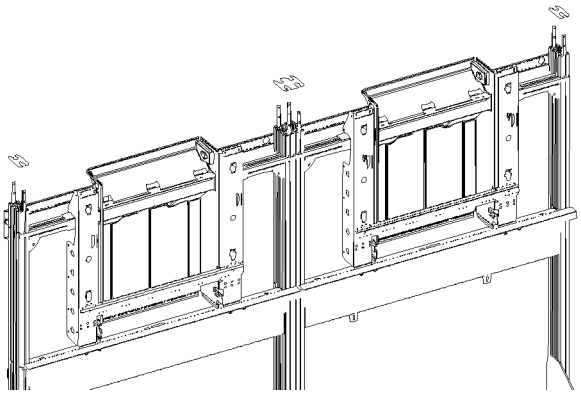
Then all the other screws.

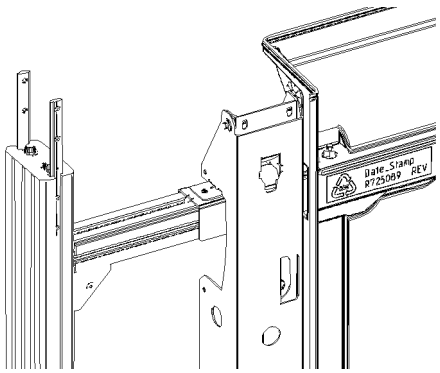




Pedestal 61

Install all front access mount modules of the first row.





Pedestal 62

When all front access mount modules of the first row have been mounted,

place the connection plates.

Proceed as described when installing the connection plates on the pedestals:

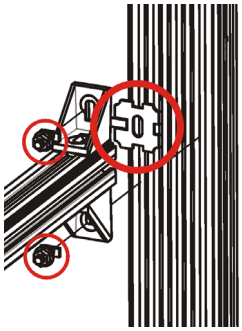
Stand in front of the system.

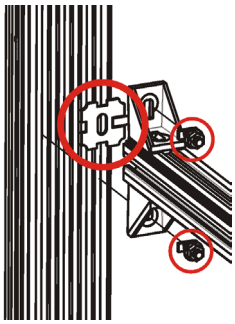
First slide the rear side (bigger diameter) onto the centering pins, then the front size (smaller diameter, T-groove). Hold down the connection plate while carefully fixing the second screw from the bottom of the T-bar connector.

Do not forget to place the single element onto the sides.

For a curved setup you can use a measuring chord to check the alignment:

5.4.4 Installation of the second row





Pedestal 63

In case of HVD:

Remove the left (or right) spacers

NEVER remove the horizontal profile completely from the vertical profiles.

Proceed like this:

Start with the left (or right) side.

Open the screws which fix the horizontal profile to the vertical profile (2x B361304 SCR ASS D188K M8X25 STZN).

While the right (or left) side of the horizontal profile is still fixed to the vertical profile, push the horizontal profile back to remove the spacer.

Subsequently restore the position of the horizontal profile.

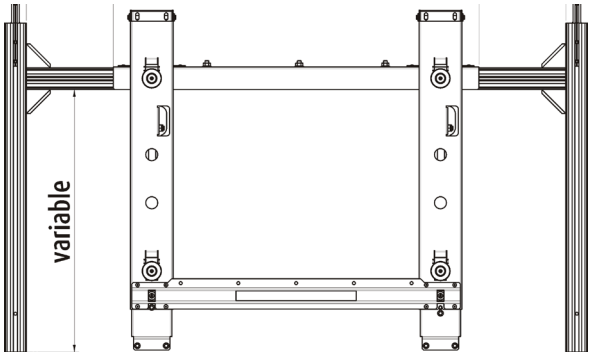
Use 2x B361304 SCR ASS D188K M8X25 STZN and fix the horizontal profile to the left (or right) vertical profile.

LEVEL the horizontal profile to maintain the reference distance!

Subsequently remove the right (or left) spacer.

Perform these steps also on the right (or left) side to remove the spacer on the right (or left).

Make sure that you keep and maintain the position of the horizontal profile!



Pedestal 64

The difference in height of the panels requires to check/adjust the position of the horizontal profile with the front access mount.

Therefore jig R872756 is included in the delivery.

Pedestal 65

The front access mount comes pre-installed for OVD/KVD/IVD. However it is recommended to use the jig and check the distance!

Use the jig R872756.

Apply the jig on the front side of the front access mount module.

In case of OVD/KVD/IVD: make sure that the jig is used showing imprint KVD on top!

Pedestal 66

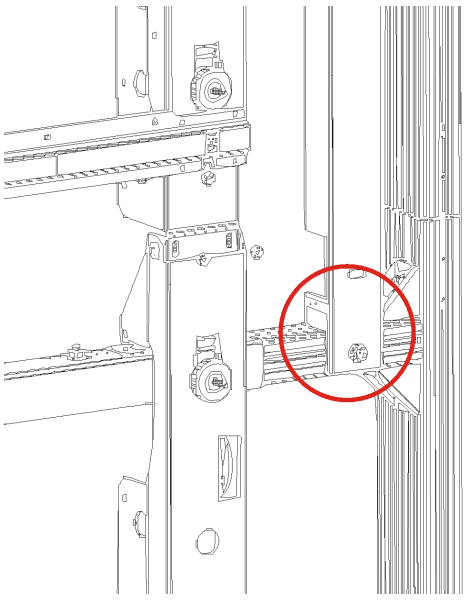
The front access mount comes pre-installed for OVD/KVD/IVD.

For HVD, you need to re-position the horizontal profile.

Use the jig R872756.

Apply the jig on the front side of the front access mount module.

In case of HVD: make sure that the jig is used showing imprint HVD on top!

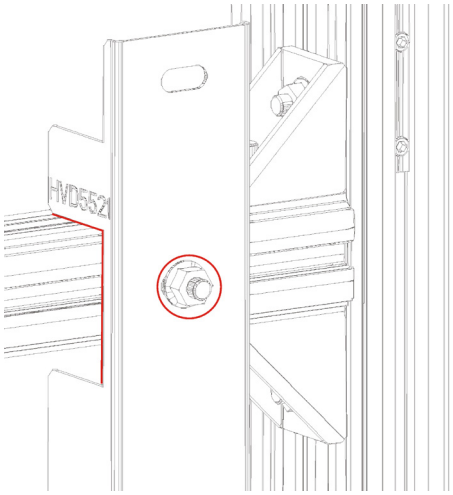


Pedestal 67

Shift the jig to the left and the right side of the horizontal profile.

(Every front access module comes with one jig. Since the jig is only required for rows >=2 you can use also the jig of the front access modules installed in row = 1.)

On the left and on the right, use 1x B361304 SCR ASS D188K M8X25 STZN and fix the jig on the top horizontal profile of the row **below!**

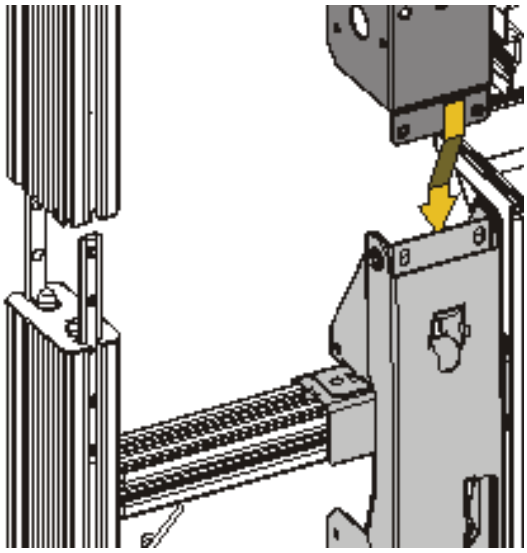


Pedestal 68

On the top horizontal profile of the **current** row, loosen the fixation screws from the vertical profile (about 2-3 turns) (so that the horizontal profile can move)

On the left and on the right, use 1x B361304 SCR ASS D188K M8X25 STZN and fix the jig on the top horizontal profile of the current row.

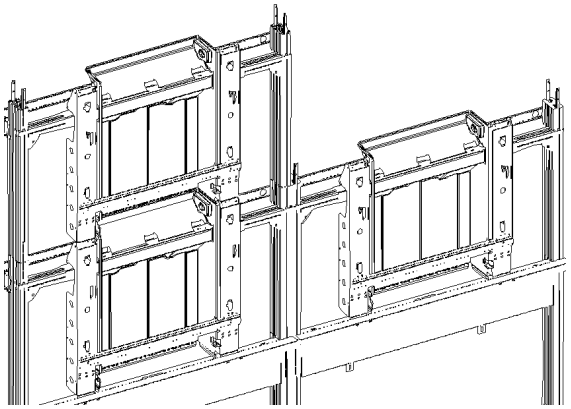
The vertical edge of the cut out flushes with the back of the horizontal profile.



Pedestal 69

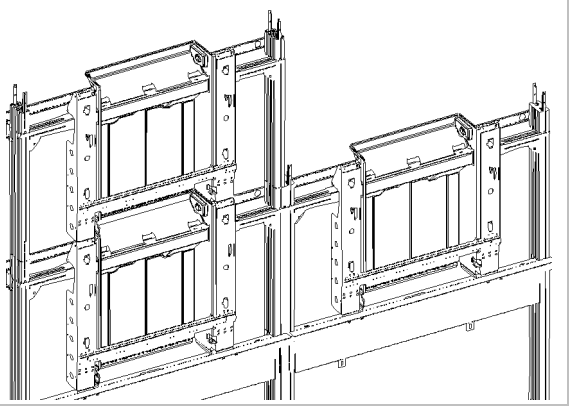
Install the second row accordingly.

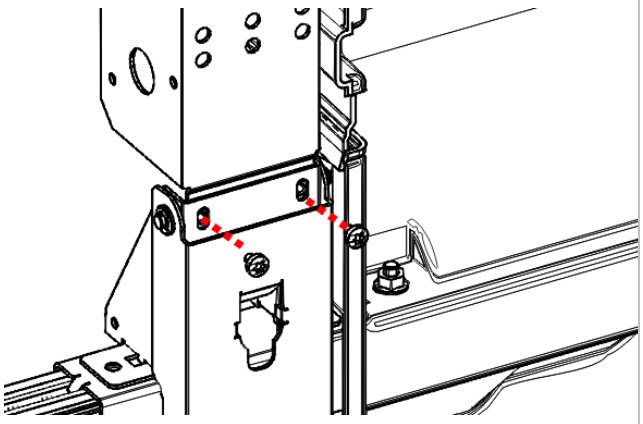
When sliding the following front access mount module onto the previous front access mount module, you have to push the "ears" of the following module back to make them slide into the previous module.



Pedestal 70

When fixing the T-bar connectors, mind to first fix all top screws, then all bottom screws, and then the other screws.

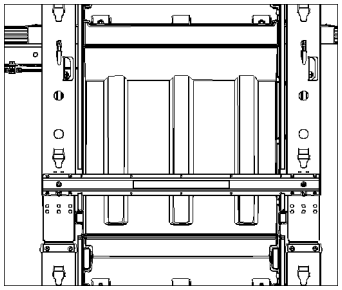


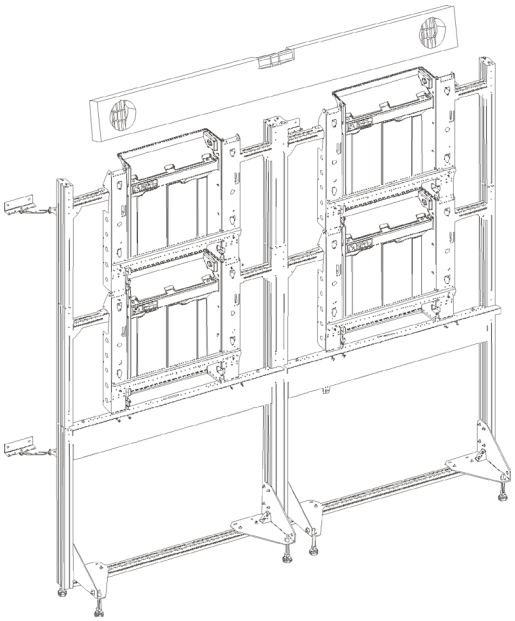


Pedestal 71

When the T-bar connectors are fixed, the front access mechanism of vertical adjacent modules has to be connected.

Fix it with 4 screws M6x7 (B362666).



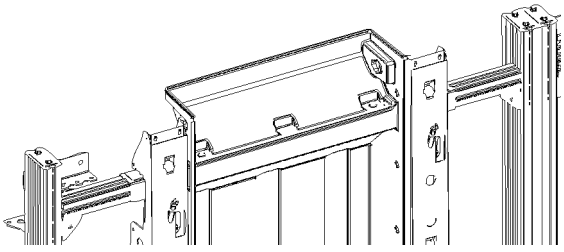


Pedestal 72

When the second row has been installed,

level the system!

This will noticeable facilitate the installation!



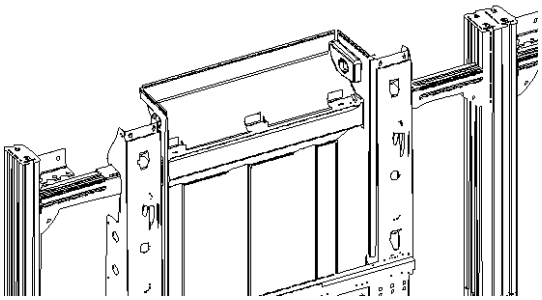
Pedestal 73

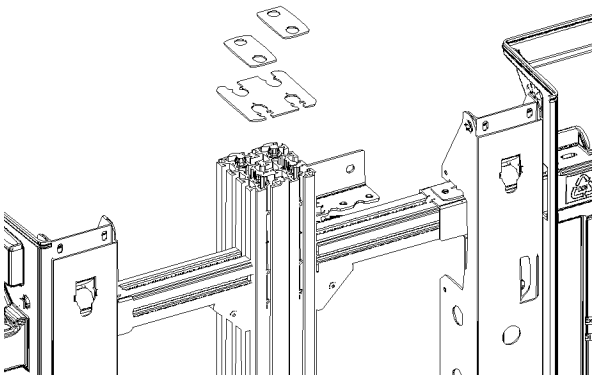
Apply the connection plates as described above. Mind to place also the single elements!

In case of a curved setup, use a chord to check the alignment as described above.

Pedestal 74

If the row needs to be fixed to the wall (see table of fixation levels), fix the modules to the already attached wall fixation brackets.!



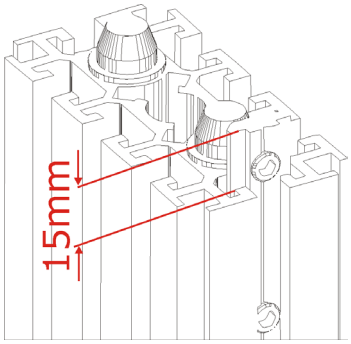


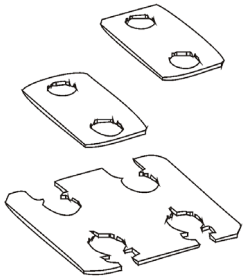
Pedestal 75

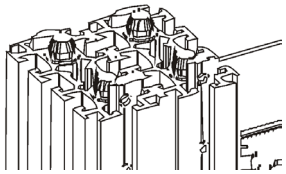
In case of the top row, place the connection holders onto the connection plates.

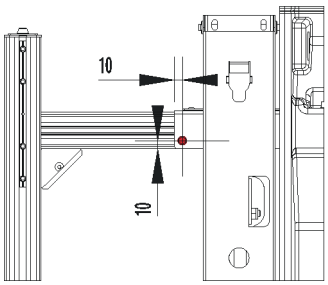
The connection holders ensure that the connection plates stay in place.

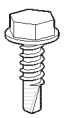
It is due to the connection holders that the T-bar connectors of the top row need to have an offset of 15mm.





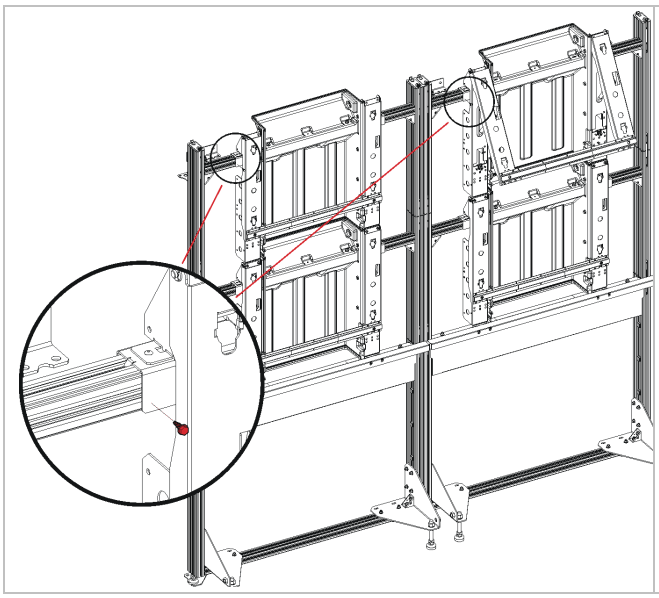




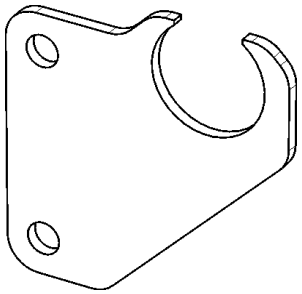


Pedestal 76

For proper grounding, apply the self cutting screw G205790 to every column!



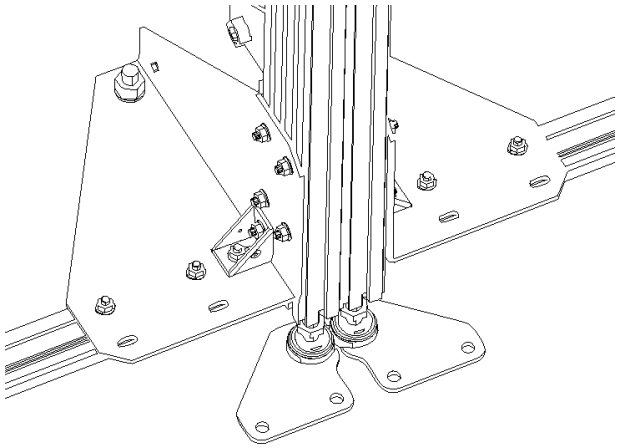
5.5 Floor fixation of the display wall



Pedestal 77

For safety reasons the video wall has to be fixed to the wall.

Before it is fixed to the wall the position on the floor has to be fixed. This is done by means of the floor fixation brackets.



Pedestal 78

Apply the brackets on each foot.

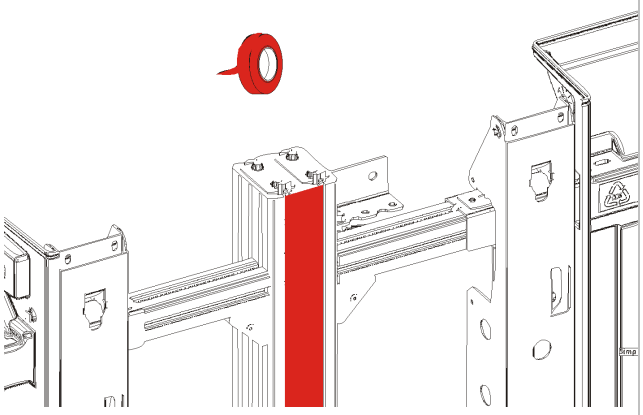
Fix the brackets to the floor by means of a chemical anchor, either M10.

Mind to select the appropriate anchor according the floor material.

Every fixation point has to withstand a pull out force of 0.5kN.

In case of false floor: Make sure that the bracket is fixed to the concrete!

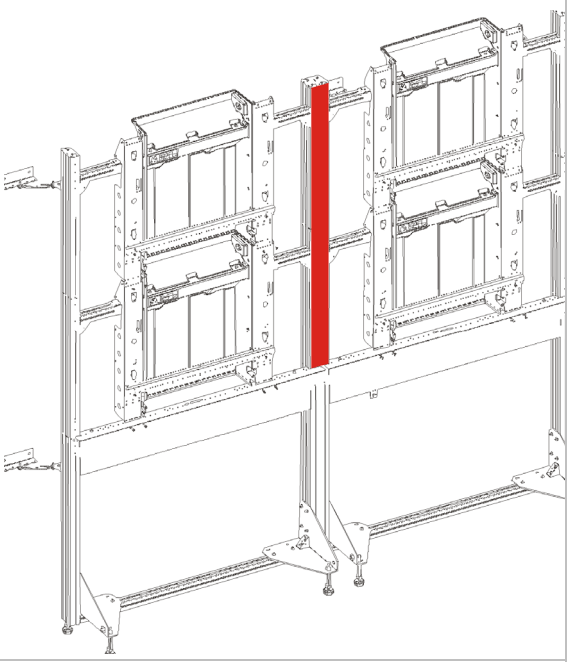
5.6 Finalizing the structure

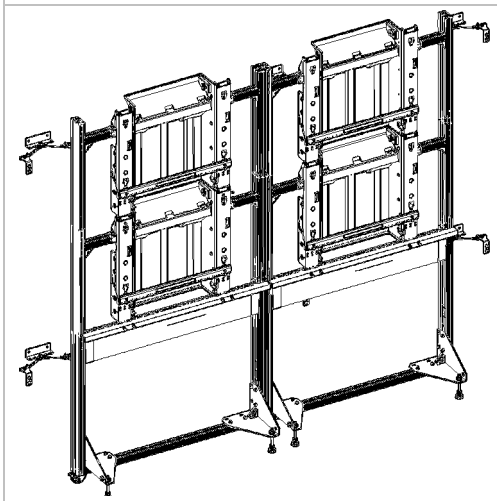


Pedestal 79

When the entire system is set up, gaps between the profiles of the front sides of the front access mount modules have to be covered with black tape.

The black tape prevents light leak from behind the structure.





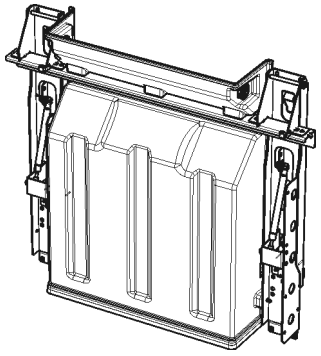
Pedestal 80

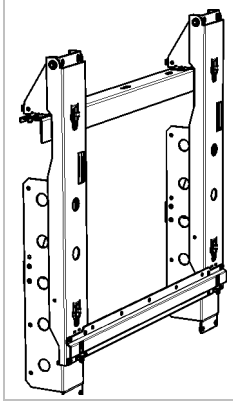
If the entire structure is fixed to the wall according the rules (cf. Pedestal 01) and the floor positioning brackets are applied and fixed to the floor it is possible to remove the front feet.

Pedestal 81

Due to the reduced height (-2mm) of HVD panels the vertical profiles “protrude” some millimetre on the top of the display wall.

6 Mechanical setup of display walls with wall mount solutions



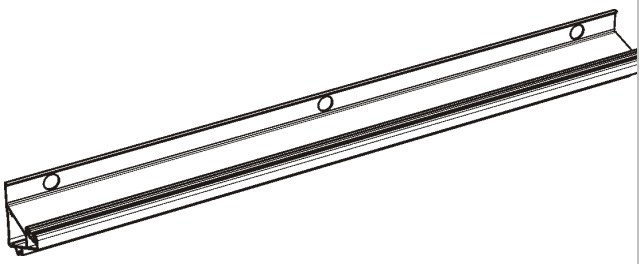


Pedestal 82

The upper system features an air channel (NSL-5521)

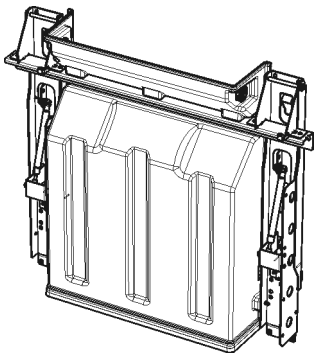
The lower system does not feature an air channel (OVD5521, KVD5521, IVD5521, HVD5521).

The following pictures and steps apply for OVD/KVD/IVD/HVD although some of the pictures show the NSL-5521 system with air channel.



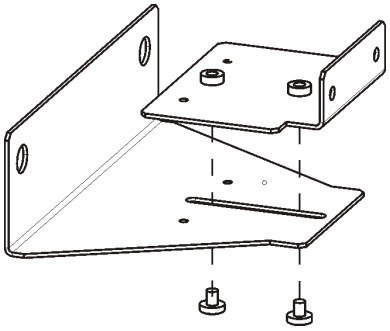
Wall mount 01

The NSL wall mount solution is based on aluminium profiles fixed to the wall



Wall mount 02

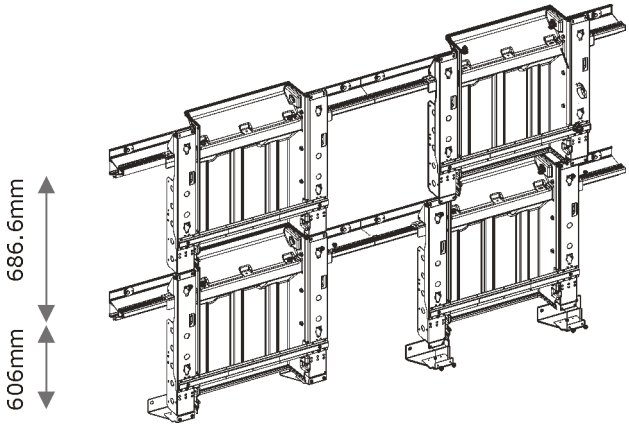
The mechanics to house the panels hangs in these aluminum profiles



Wall mount 03

The bottom row gets additional fixed using a left and a right support bracket per system.

This bracket consists of two plates and thus also provides an alignment facility.



Wall mount 04

The vertical position of the bottom brackets defines the screen height.

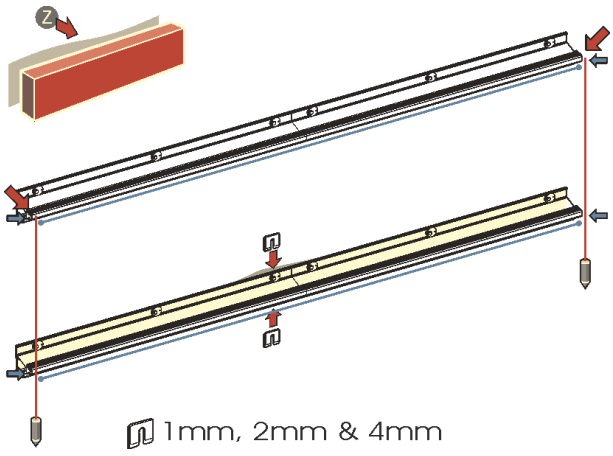
The position of the aluminum profile of the bottom row is 606mm above screen height. (= distance between bottom bracket and first aluminum profile)

The distance between the aluminum profiles of adjacent rows 686.6mm (NSL5521), 684.2mm (OVD/KVD/IVD) or 682.2mm (HVD).

Wall mount 05

HVD displays are two millimetres less in width than OVD/KVD/IVD displays.

Therefore the wall mount profiles protrude some millimetres on the left (or right, or on both sides, depending on your preference and the number of installed displays in a row)



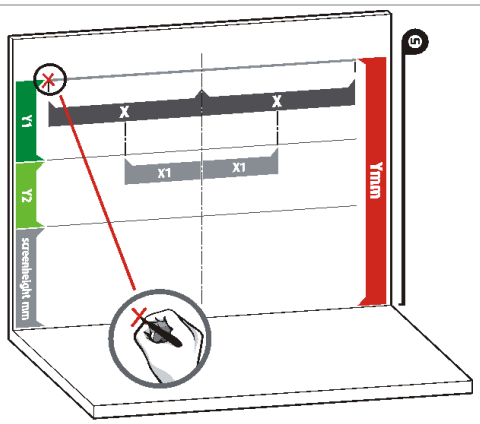
Wall mount 06

It is obvious that such installations require flatness of the wall.

The standard KVD Wall Mount package is equipped to cover differences in the building wall flatness of maximum 7mm.

When bigger differences occur they should be taken care of by the building-, or facility manager.

If not respected they can have an impact on the proper functioning of the product as well as on the overall image quality.



	X	X1	Y1	Y2
OVD/KVD/IVD	1213.3	606.6	684.2	603.6
HVD	1211.3	605.6	682.2	601.6

Wall mount 07

Start with drawing the horizontal lines of the grid for your installation.

The bottom horizontal line defines the screen height.

The entire height of the installation calculates to

OVD/KVD/IVD:

Y = screen height + 603.6mm + (number of rows -1)*684.2

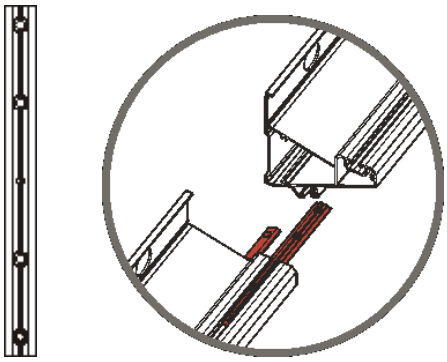
HVD:

Y = screen height + 601.6mm + (number of rows -1)*682.2

Wall mount 08

When the horizontal lines are drawn, apply the top most aluminum profile to mark the exact position of the holes.

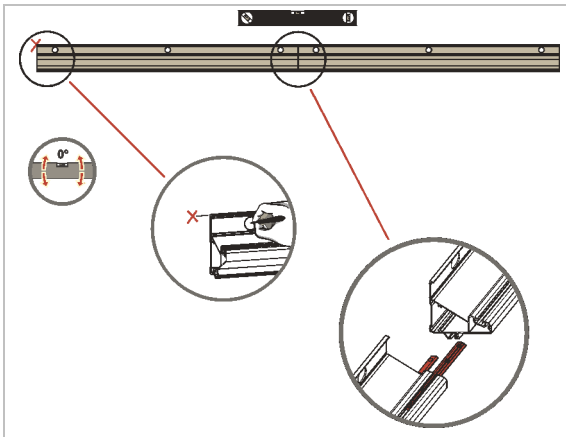
Check for proper alignment!



Wall mount 09

You might also consider to first connect the aluminum profiles using the t-bar connectors.

Insert the t-bar connectors into the profiles and fix them using the headless screws (the screws will cut through the profile)



Wall mount 10

You might also consider to first connecting the aluminum profiles using the t-bar connectors.

Insert the t-bar connectors into the profiles and fix them using the headless screws (the screws will cut through the profile)

Check for proper alignment!

Wall mount 11

In case the number of columns does not allow connecting all profiles in advance,

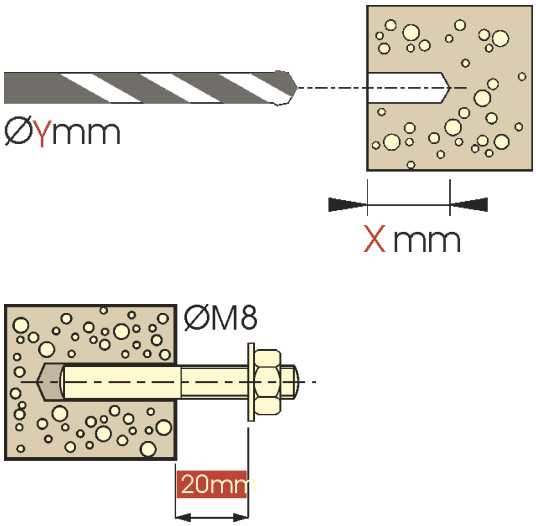
Drill the holes for the first profile.

Fix this profile to the wall.

Mark and drill the holes for the adjacent profile.

Connect the adjacent profile and fix it.

Always check the alignment!



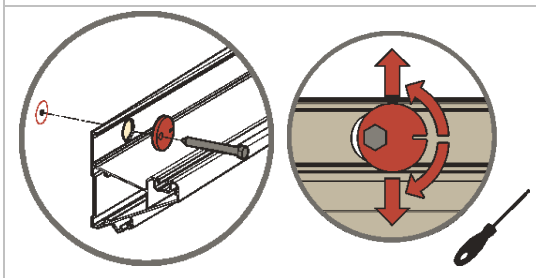
Wall mount 12

Drill the holes

The values X and Y are defined by the type of anchor.

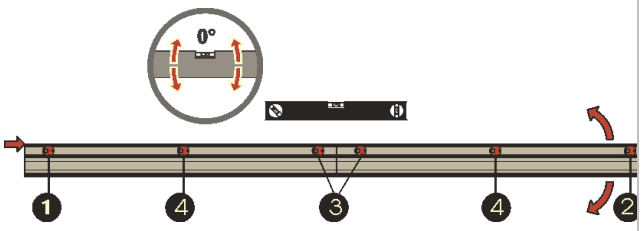
The anchors are not part of the delivery but need to be selected according the type of the building wall and the required pull-out force.

Anchor interface:
diameter M8
clamp range 20mm
pull-out force 1.2kN



Wall mount 13

Fix the profiles using the anchor and the wall mounting plate R872581. The wall mounting plate serves for perfect alignment!

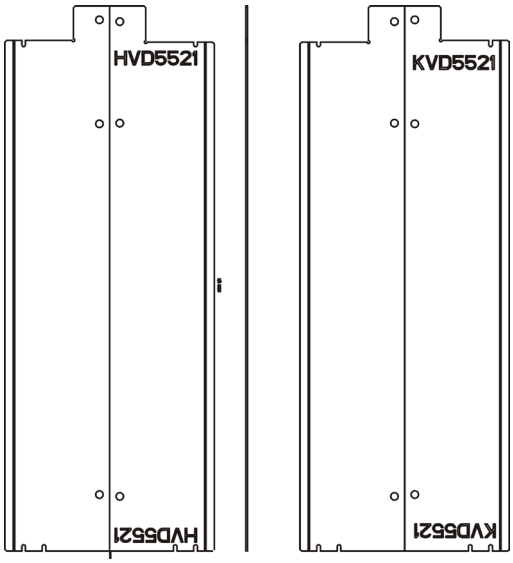


Wall mount 14

The anchors need to be fixed according the sequence indicated in the picture.

In case the profiles are not pre-assembled, do not fix the anchors tightly until the adjacent profile has been attached and fixed, too.

Check the alignment!



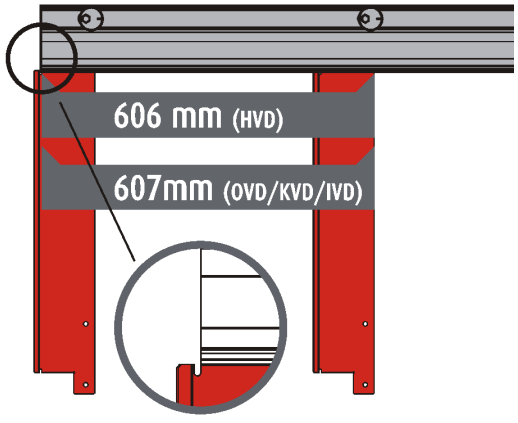
Wall mount 15

When the top most aluminum profile has been fixed and aligned, use the wall mount drill R804159 to find the position of the holes for the row below.

The wall mount drill has two cut-outs on top and bottom for finding the correct horizontal position.

Its hole on bottom defines the position of the drilling hole for the row.

Make sure to use it correctly! Mind the imprints KVD (for OVD/KVD/IVD) and HVD!!



Wall mount 16

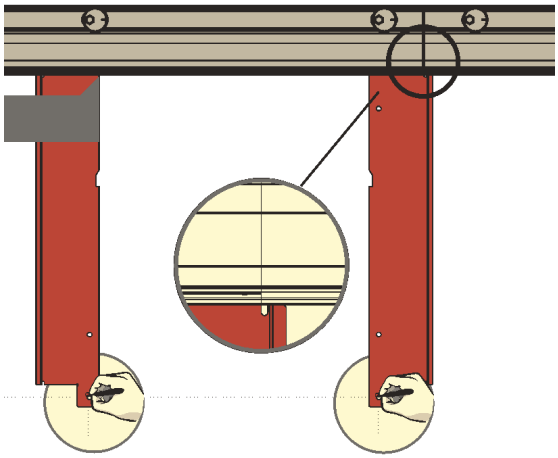
Apply the jig.

The left edge of the aluminum profile is aligned to the "nose".

Mark the left hole for fixation of the lower aluminum profile.

Subsequently shift the jig to the right and apply the jig with a distance of 607mm between the right edge of the jig and the left edge of the profile.

Mark the mid hole for fixation of the lower aluminum profile.



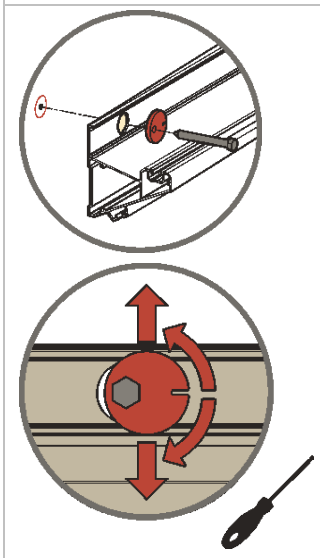
Wall mount 17

To find the position of the right hole for fixation of the lower profile proceed like this:

Rotate the jig vertically.

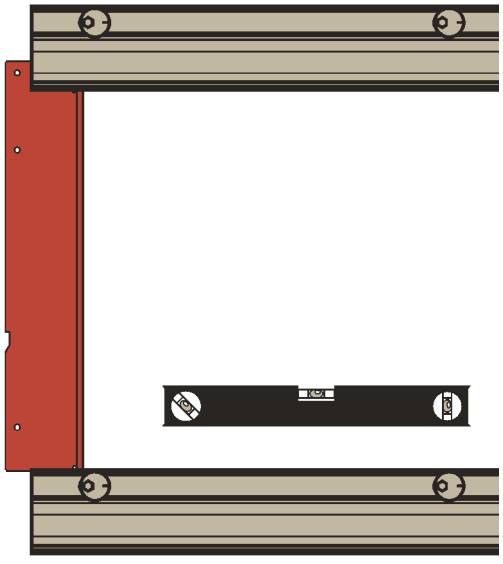
The right edge of the aluminum profile gets aligned to the "nose".

Mark the right hole for fixation of the lower aluminum profile.



Wall mount 18

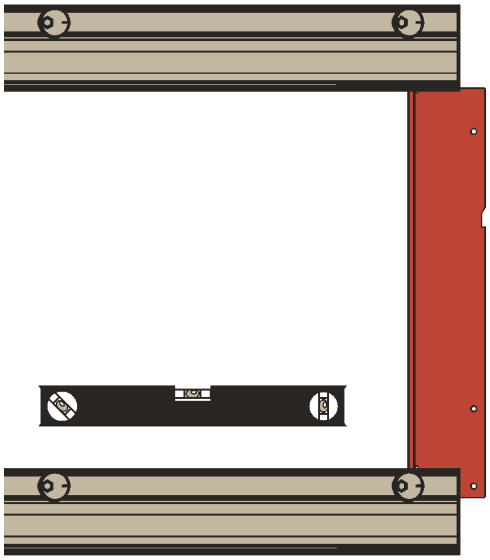
Drill the holes for the lower profile and fix it slightly using anchors and wall mounting plates.



Wall mount 19

Apply the jig on the left (the edge of the upper aluminum profile needs to be in the cut-out of the jig) and check the distance between the aluminum profiles!

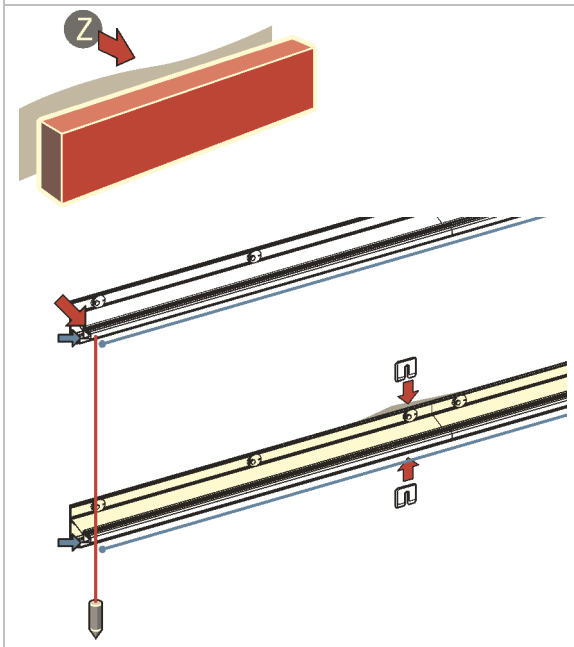
Check the leveling!



Wall mount 20

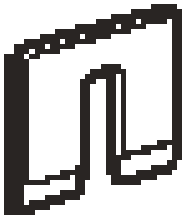
Apply the jig on the right (the edge of the lower aluminum profile needs to be in the cut-out of the jig) and check the distance between the aluminum profiles!

Check the leveling!



Wall mount 21

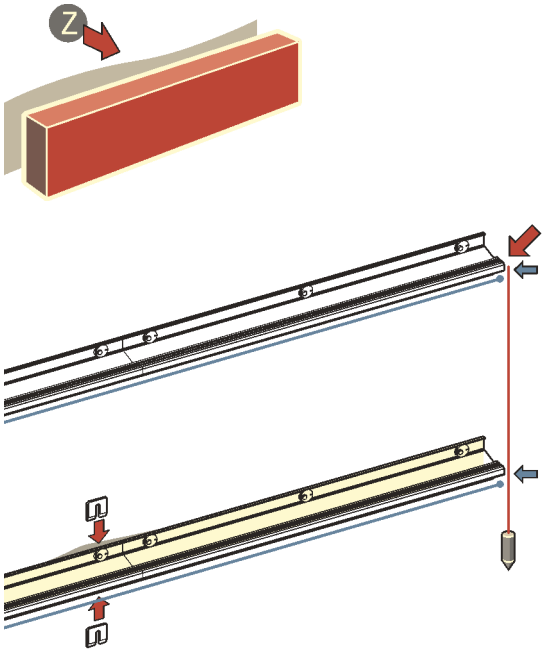
On the left, use a plumb line and check the z alignment (distance to the wall)



Wall mount 22

If required, insert a spacer.

Spacers are available with 1mm, 2mm, and 4mm and allow compensating differences up to 7mm.



Wall mount 23

On the right, use a plumb line and check the z alignment (distance to the wall)

Wall mount 24

Check the distance!

Check the z-alignment.

Check the leveling!

When the alignment is perfect, tighten the anchors one by one.

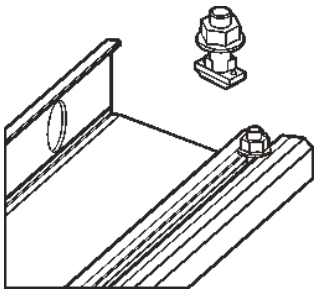
Start with the most left one,

Subsequently fix the most right one

Next fix the second left one

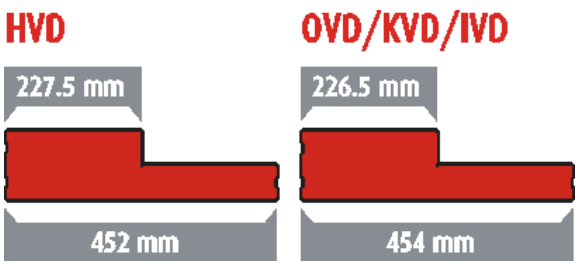
Next the second right one

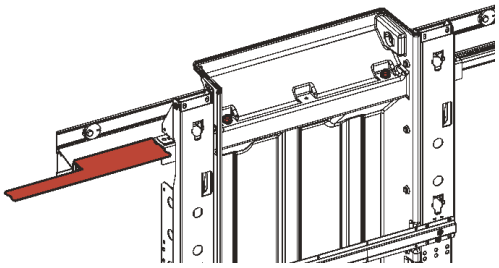
And so on, always alternating left/right.



Wall mount 25

The frames will be fixed via 2 hammer bolts to the aluminum profile

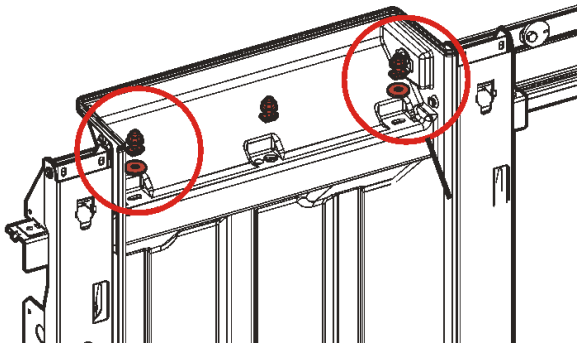




Wall mount 26

Start with the bottom row!

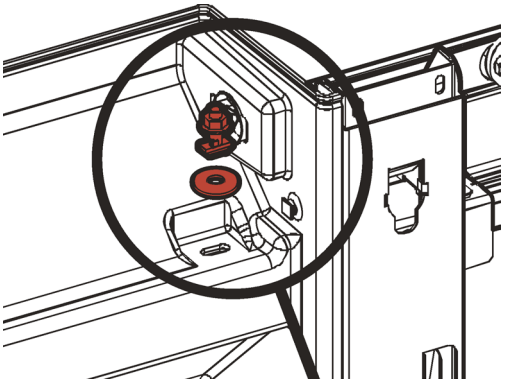
Apply the control jig to find R804158 the position of the most left frame on the aluminum profile.

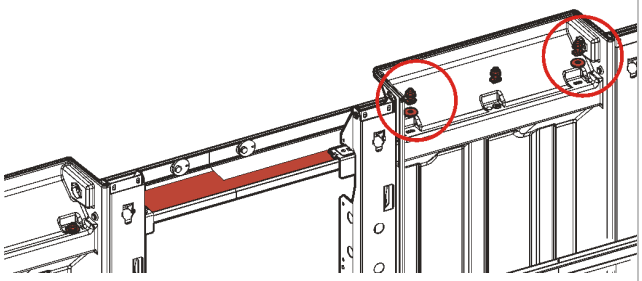


Wall mount 27

Fix the frame with 3 hammer bolts.

Left and right hammer bolt: Make sure to apply a washer for proper grounding!





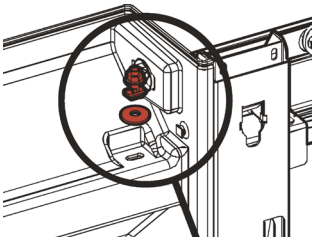
Wall mount 28

Apply the control jig to find the position of the adjacent frame of the same row.

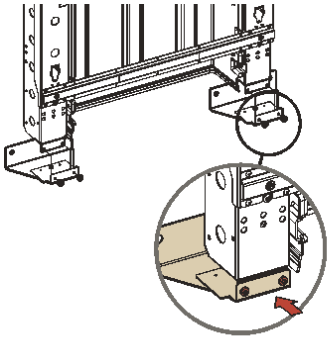
Hang the frame in.

Fix it with 3 hammer bolts

Left and right hammer bolt: Make sure to apply a washer for proper grounding!



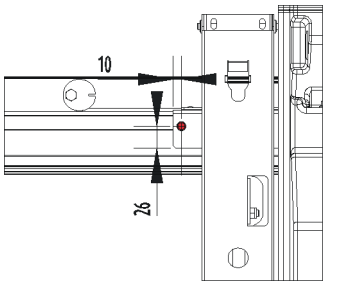
Proceed until all frames of the bottom row are fixed.

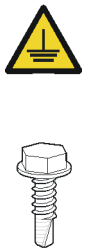


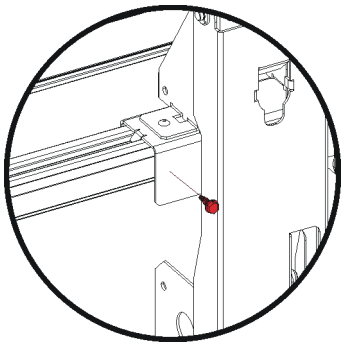
Wall mount 29

Mount the bottom brackets-

Fix each of it with two screws M6x7 B362666.



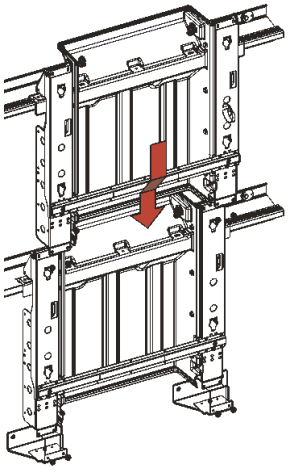


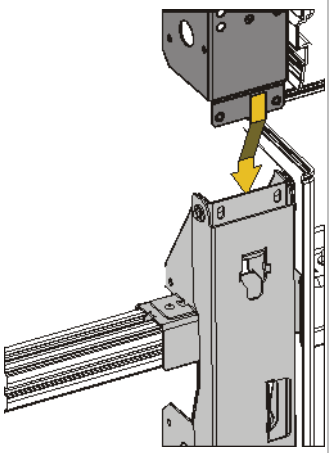


Wall mount 30

Ground the row using a screw M4.8x16, G2059790.

The screw needs to be applied to the most left frame (seen from front).

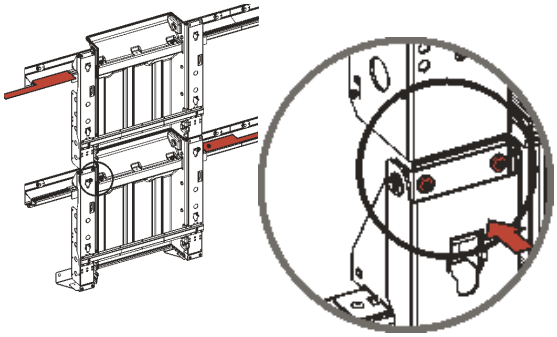




Wall mount 31

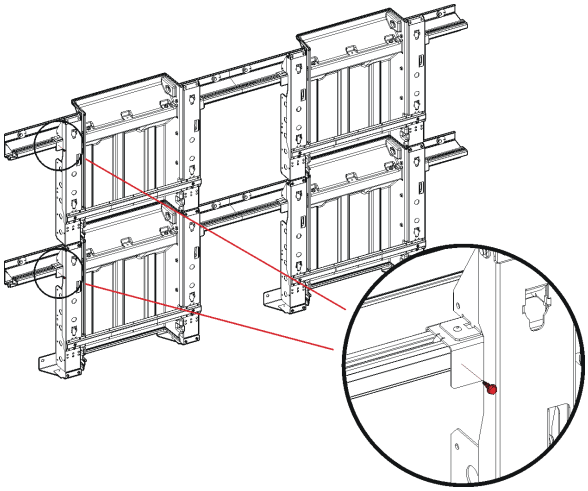
Hang in the frames of the second row.

When sliding the top frame onto the bottom frame, you have to push the "ears" of the top frame back to make them slide into the bottom frame.



Wall mount 32

Fix each frame with 2x 2 screws M6x7 B362666.



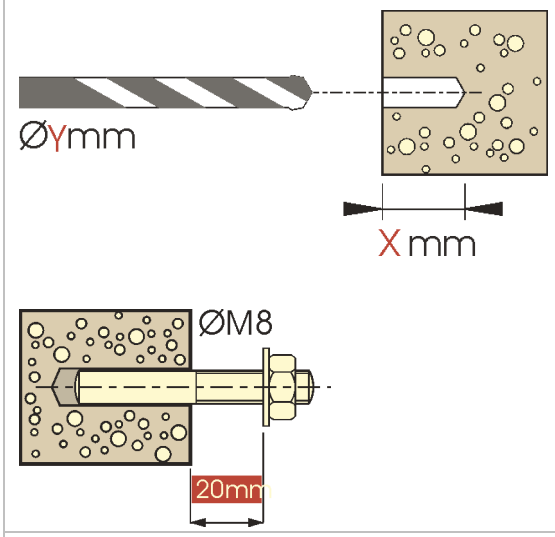
Wall mount 33

Also ground the second row using a screw M4.8x16, G2059790.

The screw needs to be applied to the most left frame (seen from front).

Wall mount 34

Proceed accordingly until all frames are fixed to the aluminum profiles.



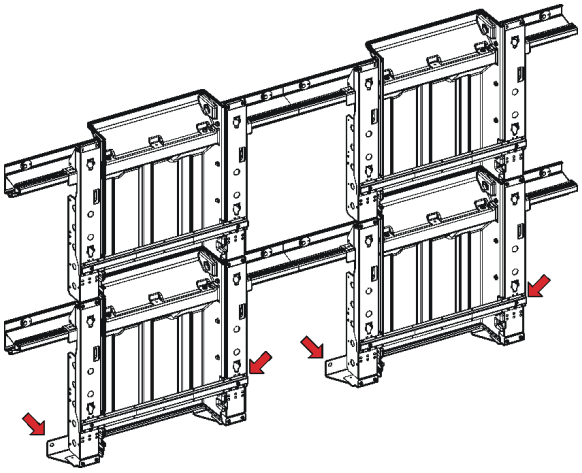
Wall mount 35

Drill the holes for the bottom brackets

The values X and Y are defined by the type of anchor.

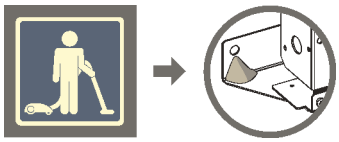
The anchors are not part of the delivery but need to be selected according the type of the building wall and the required pull-out force.

Anchor interface:
diameter M8
clamp range 20mm
pull-out force 1.2kN



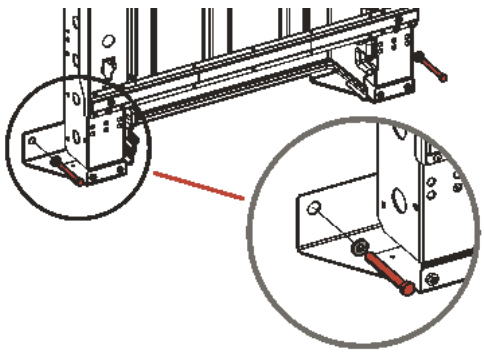
Wall mount 36

Drill the holes.



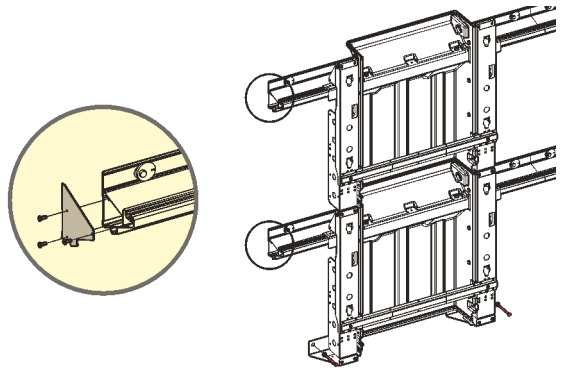
Wall mount 37

Use a vacuum cleaner and remove the drilling dust.



Wall mount 38

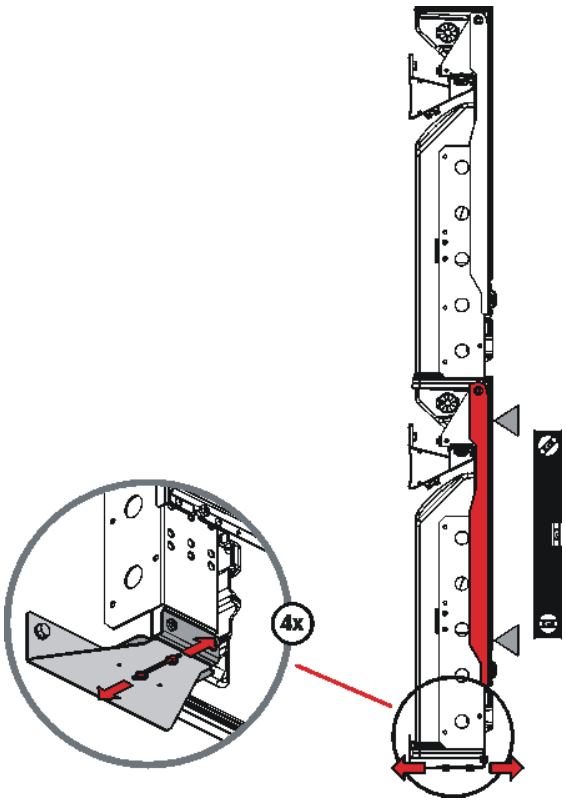
Fix the bottom brackets.



Wall mount 39

Optional:

Apply the caps to the left and right edges of the aluminum profiles.



Wall mount 40

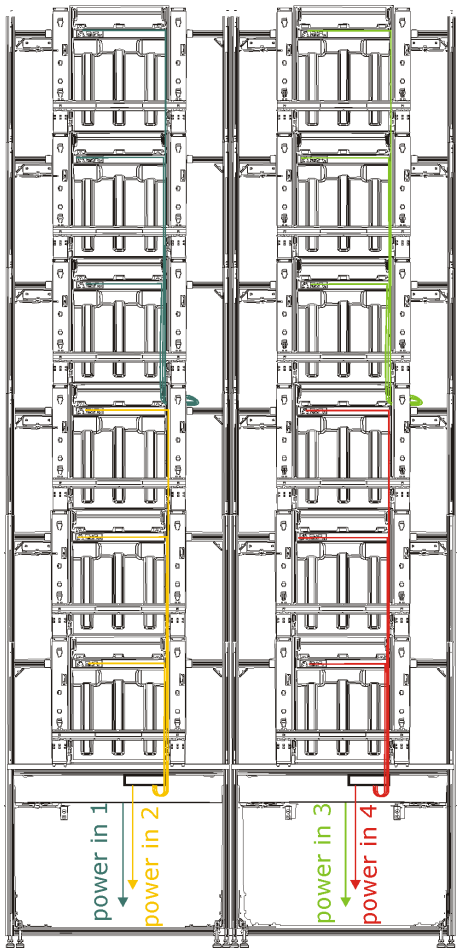
Check the alignment!

If required, shift the frame on the bottom bracket.

7 Cabling

This chapter refers to systems with pedestals and to systems with wall mounts. There is no difference in cabling of these two solutions. The pictures usually show the pedestal setup.

7.1 Cabling



Step 01

The picture shows the principle of power cabling.

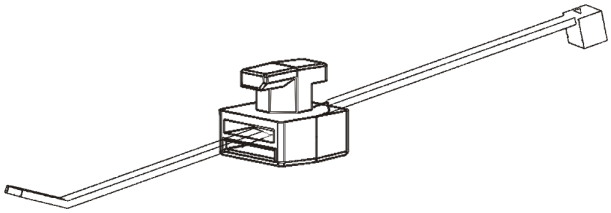
Power cabling is done column wise.

Up to three systems can be connected to one power strip.

Never cascade power strips!

Cabling is done from front!

The cables are guided BEHIND the sheet metal of the gas spring mechanism!

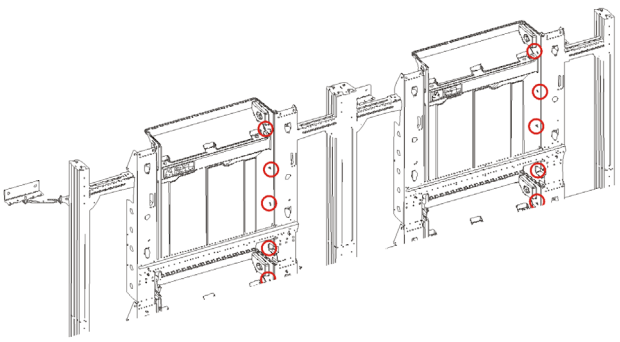


Step 02

Care for a clear layout of the cabling.

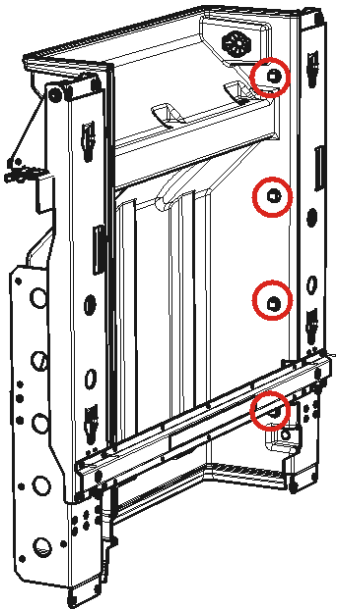
To guide and fix the cables the structure provides cable tie holders.

The cable tie is inserted into the square duct of the cable tie holder, and then the cable tie is bound around the cables and closed.



Step 03

These are the cable tie holders to fix cables within a column.



Step 04

In general there are the following types of cabling:

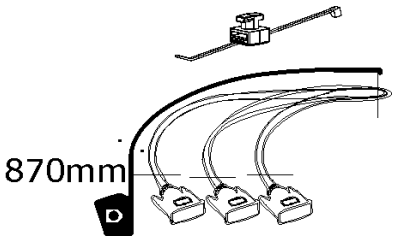
Power cabling

Data cabling

LAN cabling for controlling via BCM.

Power cabling is done per column, from top to bottom (the power strip is mounted on the pedestal)

Which signal cables are needed and how they are connected, depend on specific customer requirements.



Step 05

There is one thing in common: It is mandatory to reserve a length of approx. 870mm (excluding the connector) to have enough cable length available when swinging the monitors to the front.

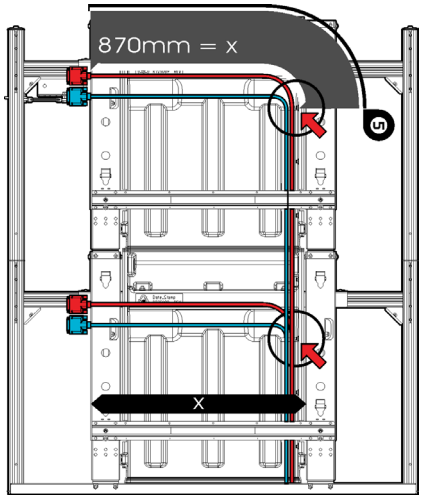
To ensure that the cables are long enough to allow swinging the monitor, proceed as follows:

Bundle all cables.

Measure approx. 870mm (exclude the connector)

Bind this cable tie round the measured position of the cable bundle and close it.

Cabling is done from front!



Make sure to guide the cables BEHIND the sheet metal of the gas spring mechanism!!

(The picture shows a setup with pedestals but the cabling principle is the same for wall mount solutions!)

Step 06

Make sure to guide all cables.

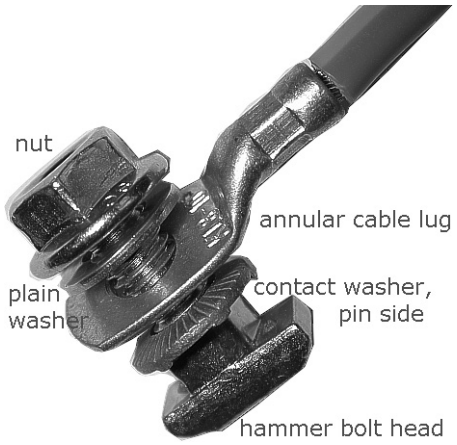
Fix them using the cable tie holders (vertical direction) and the fixation holes (horizontal direction).

Care for a clear layout.

Step 07

For LAN cabling / BCMC please refer to the user manual of Barco Wall Control Manager.

7.2 Grounding



Step 08

Grounding comprises fixation of the grounding cable to every pedestal.

The connection of the grounding cable to the power net has to be done by a qualified electrician, ordered by the customer.

To ground a column, proceed as follows:

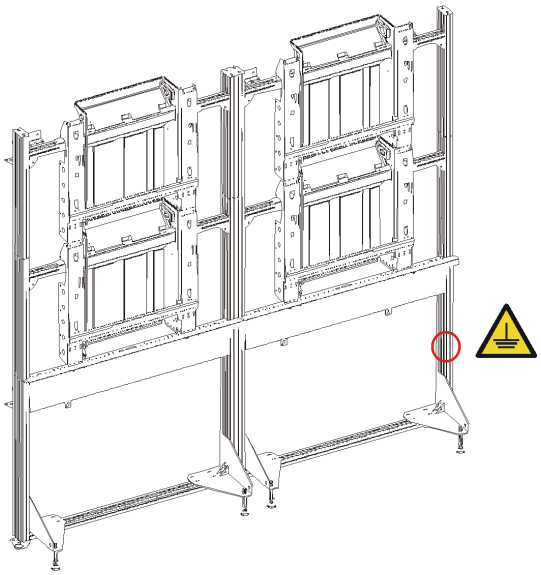
Arrange the fixation material in the correct order.

Unscrew the nut from the hammer bolt.

Insert the contact washer, pin side to hammer bolt head.

Subsequently insert the annular cable lug, then the plain washer.

Loosely attach the nut.

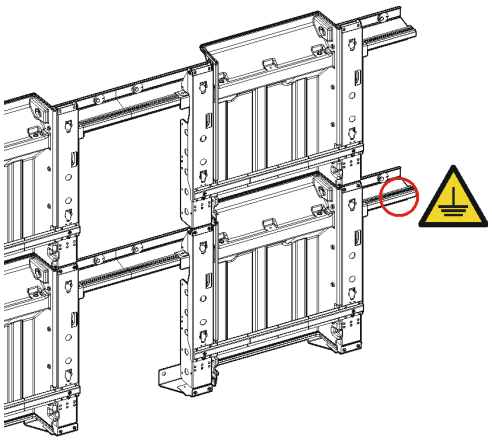


Step 09

Setup with pedestal:

Insert the pre-assembled hammer bolt into the right vertical profile, turn it, and fix it in a distance of approx. 13cm measured from the floor.

Attach the grounding label about 20mm above the connection point.



Step 10

Setup with wallmount:

Insert the pre-assembled hammer bolt into the bottom aluminum profile, turn it, and fix it.

Attach the grounding label about 20mm above the connection point.

8 Installation of the displays

This chapter refers to systems with pedestals and to systems with wall mounts. There is no difference in instalallation of the monitors. The pictures usually show the pedestal setup.

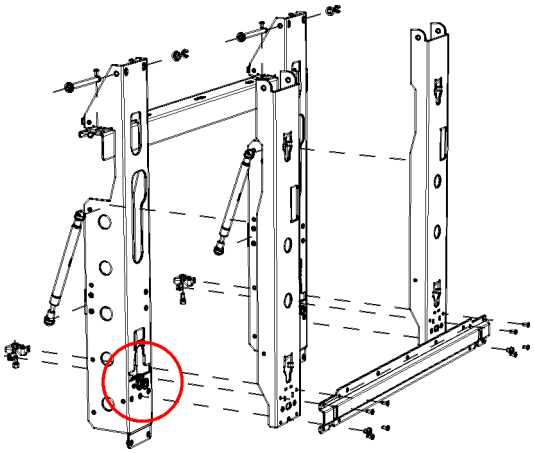
24 hours prior to installation/taking into operation the LCD displays have to acclimatize to the room!

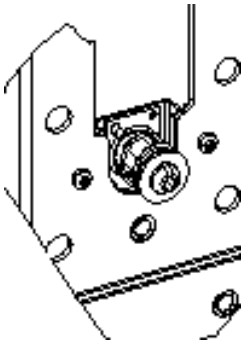
Do NOT open the bag during this time and keep the LCD displays in the card box. Only after this period, lift the LCD displays out of the box.

Step 11

When all cabling is in place the monitors can be mounted.

Before unpacking the monitors, prepare the structure to accommodate the monitors.





Step 12

The front access mount comes completely assembled, the picture at the left just serves giving an "inside view".

The front access mount features an interface frame where the monitors are attached to.

This interface frame is enabled to swing forward to give access to the rear of the monitor (to set dip switches, or to plug/unplug cables).

The mechanism is based on two gas springs, one at the left and one at the right side.

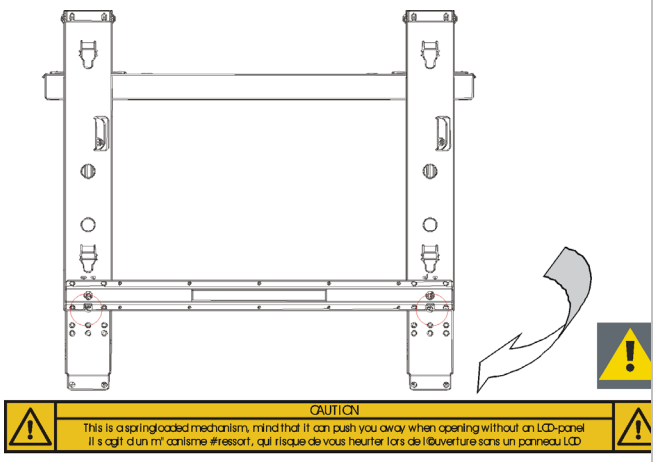
When the gas springs are snapped in, the interface frame is in the back position.

Releasing the gas springs is done by pushing a latch: the interface frame will swing forward.

To bring it back again, push the interface frame firmly back until the latch is in closed position.

The gas spring is quite strong!

Therefore in the following steps make sure that you hold the frame firmly back! Otherwise you risk that the frame hits into your face!

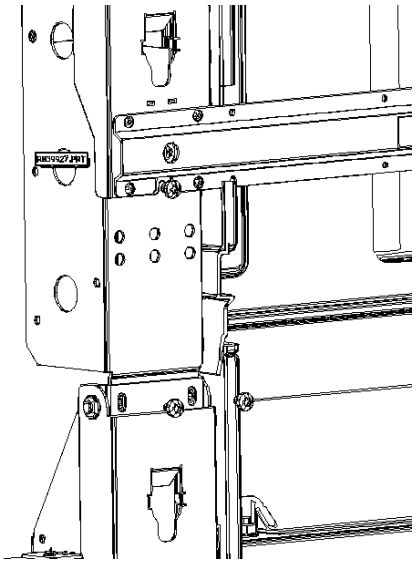


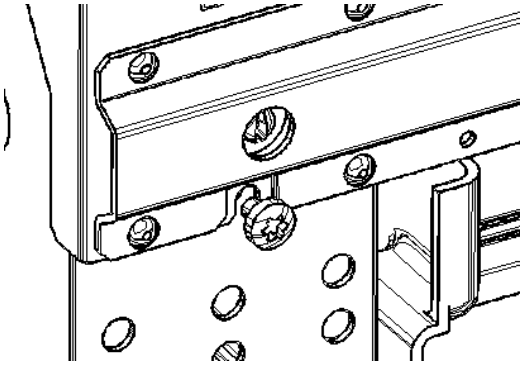
Step 13

For transportation security, the interface frame is locked by means of two transportation lock screws, one at the left and one at the right

Please note:

The latches may be in the open position and thus the interface frame might swing forward in an uncontrolled way!





Step 14

Take care!

Hold the frame into position!

Only remove one transportation lock screw (e.g. the left one).

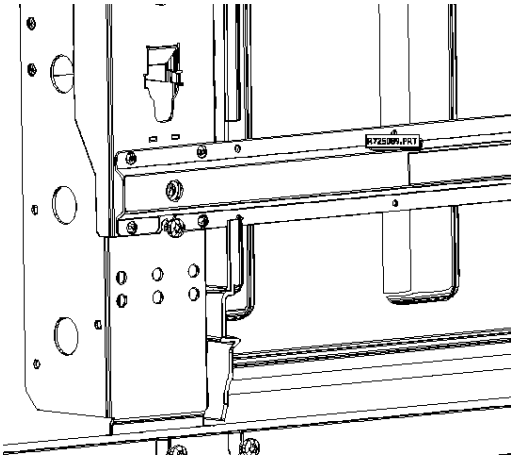
Make sure to close this side!

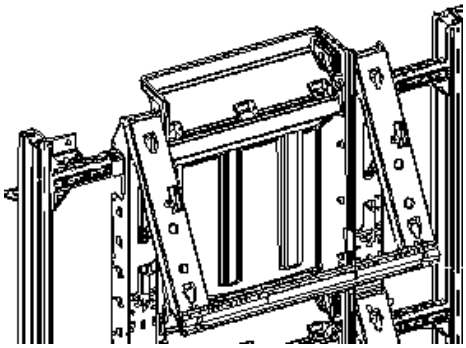
Switch to the next side (e.g. the right one).

Hold the frame into position.

Remove the transportation lock screw.

Make sure to close this side!

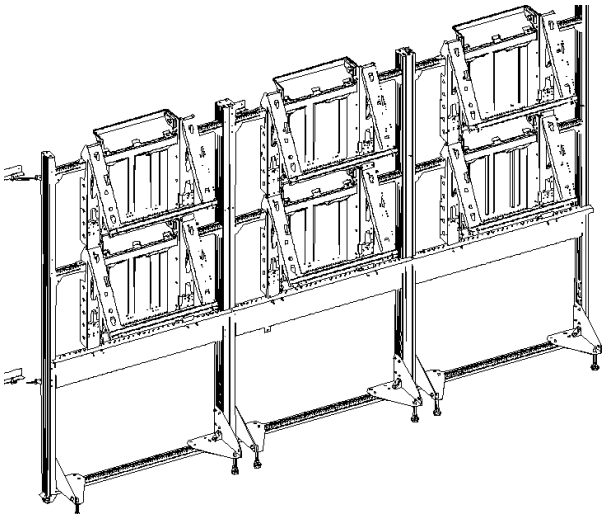




Step 15

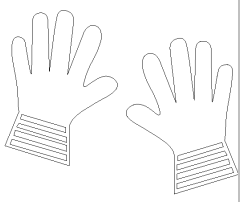
Proceed until the transport screws of all front access mount modules are removed.

Then one by one open the front access mechanism in a controlled way: Simultaneously press the left and the right latch. Don't let the frame snap open! Guide it with both of your hands until it is completely swung out.



Step 16

Make sure that all front access mount modules are opened!



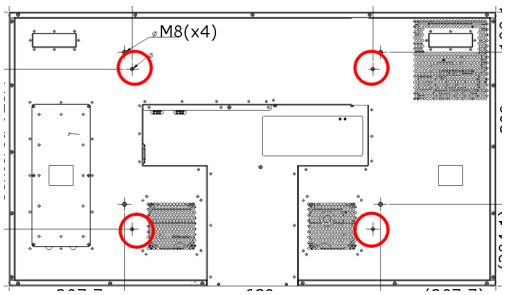
Step 17

Wear gloves!

Step 18

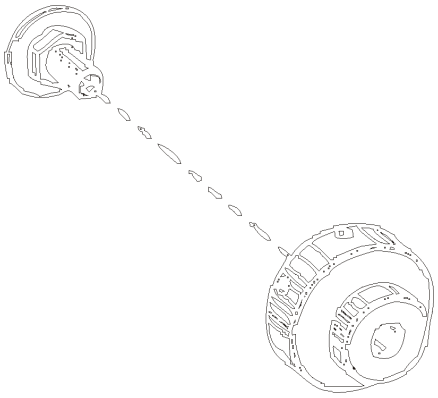
Take care! The monitors are very fragile. E.g. they break when a connector of a cable falls onto them!

Unpack the displays.



Step 19

The back of the panel needs is provided with 4 mounting interfaces to allow connection to the front access mount.

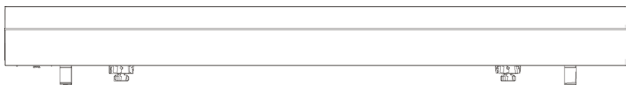


Step 20

The interface is designed for the Z-adjustment of the displays consists out of two major building blocks:

The screw which is mounted to the panel and countered by a nut and washer, this is the fixed part.

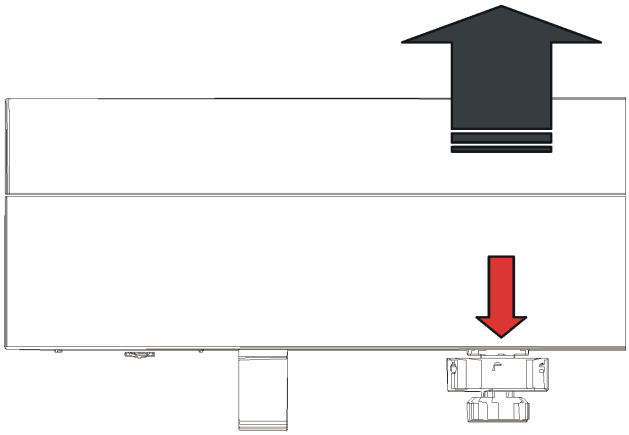
The interface which is screwed on to the fixed part (screw).



Step 21

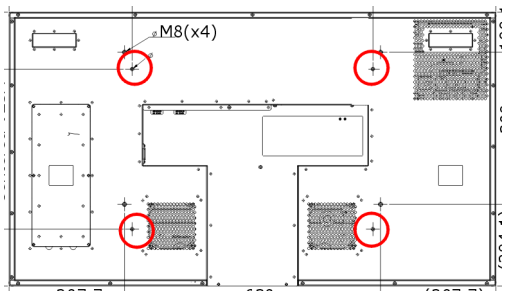
When the interface (screw) is aligned with the back-side of the panel it is in nominal position.

Before mounting the panel, make sure that the screw is in nominal position!



Step 22

Adjustment is only working in one direction, resulting in an adjustment towards the front.

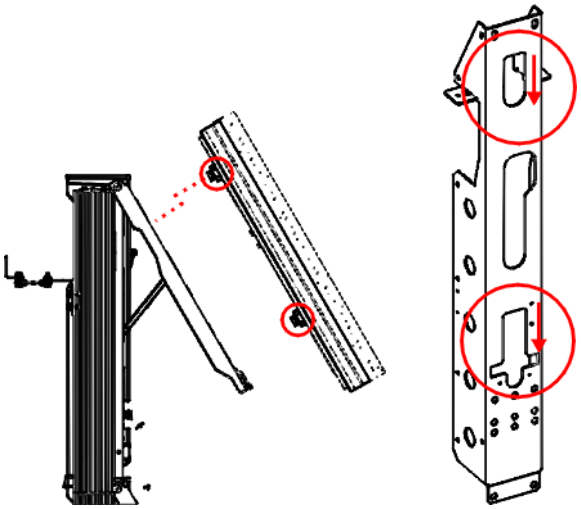


Step 23

To ease the adjustment process it is recommended to restrict the adjustment to the two lower interface points. This approach should give sufficient margin to cover the typical Z-misalignments.

Please note:

The adjustable interface cannot cover the imperfections which are a direct consequence of a bad setup in terms of levelling.



Step 24

When the dip switches are set correctly, hang in the monitors and when you are sure that the z adjustment interfaces are in nominal position, hang in the monitor.

The principle is simple and sophisticated:

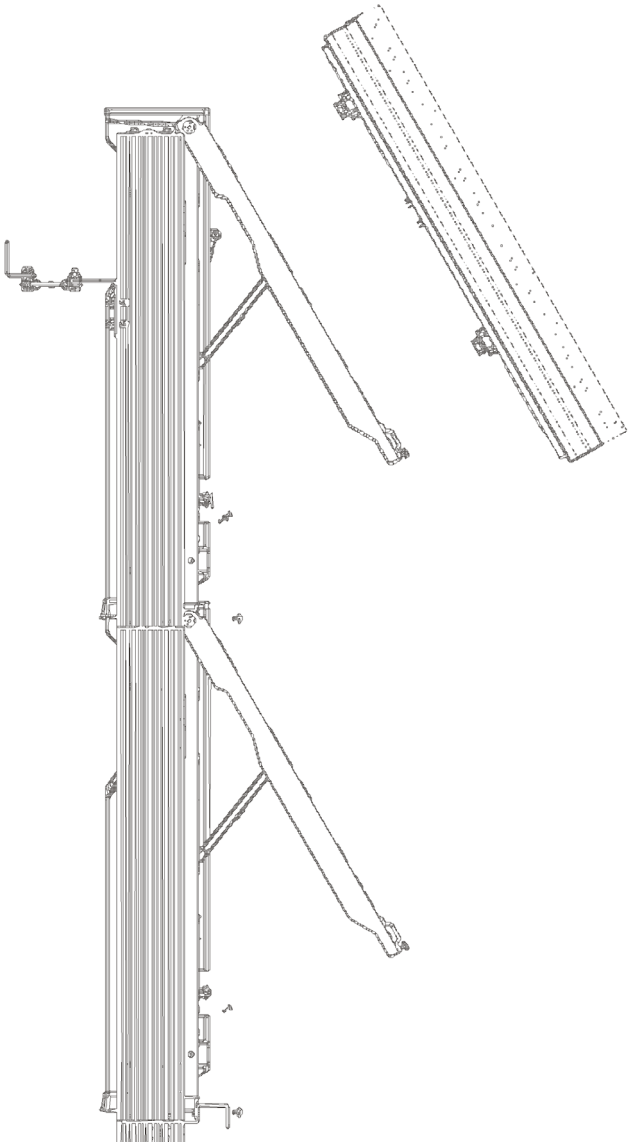
The four interface points of the monitor are just fed into the respective slots of the interface frame.

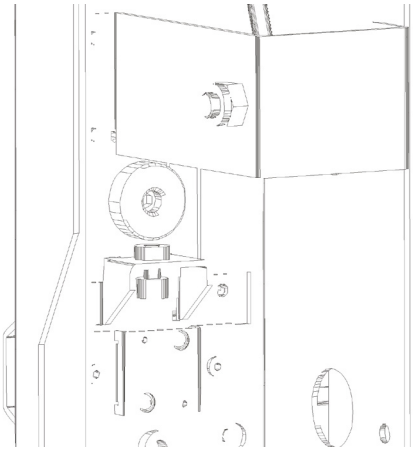
Insert the "knobs" on top of the slots and move them down: the narrow end of the bottom slot together with gravity ensures that the monitors keep safely in place!

No need for any fixation or securing screws.

Step 25

Installation of the monitors is done from top to bottom, column wise.



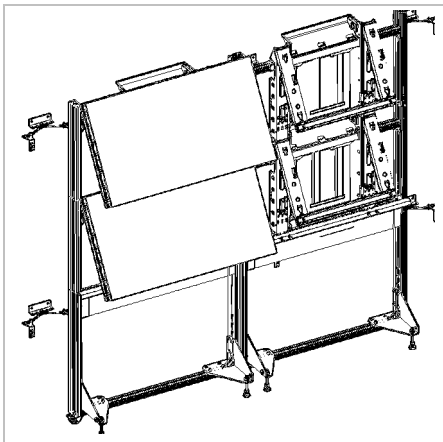


Step 26

The height of the monitor can be adjusted by means of the adjustment screw.

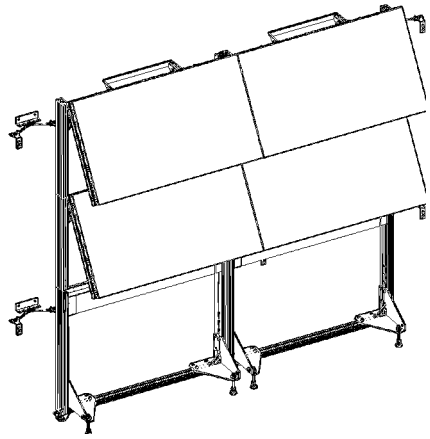
This is an M6 screw: one full rotation equals 1mm.

In nominal position the screw does not touch the interface of the monitor.



Step 27

Also when the monitor is installed, the interface frame is NOT pushed back!



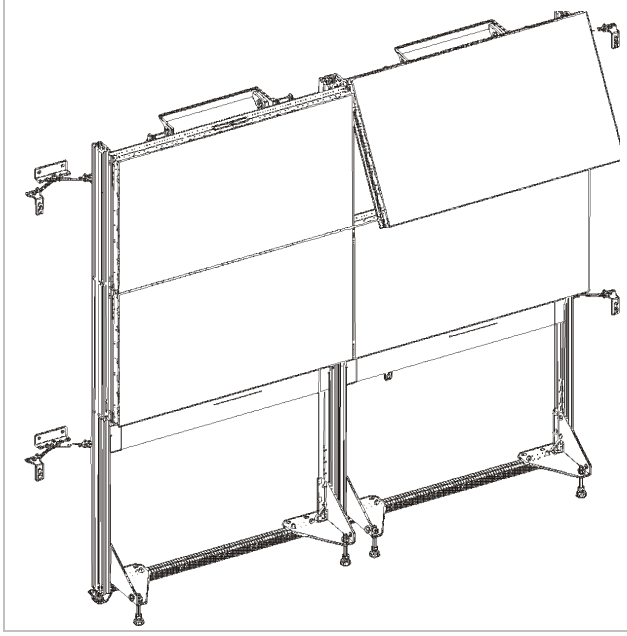
Step 28

Don't miss to plug in all cables.

On the rear of the front access mount module there is a small mirror.

Look at the mirror to see the interfaces and to conveniently plug in the cables.

On the rear of the monitor there is a row of switches. Press the bottom switch to switch on the monitor.

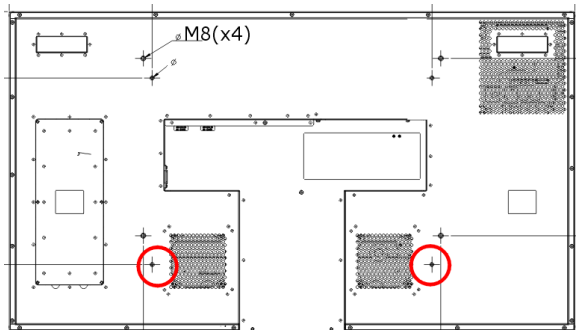


Step 29

Close the panels bottom up!

You can push the panels horizontally to close the gap.

Pushing can be done when the panels are open or closed.



Step 30

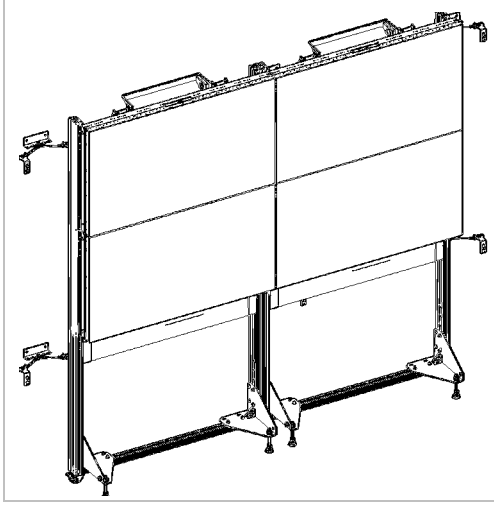
Close one after the other and check adjacent panels with respect to their z alignment ("smooth surface").

If required, open the panel again and adjust it via the (bottom!) interface screws.

One turn of the interface screws equals 1.25 mm.

Close the panel and check the result. If required, repeat the z alignment.

Try to limit the adjustment to the bottom interface points and align with the top of the previous panel.



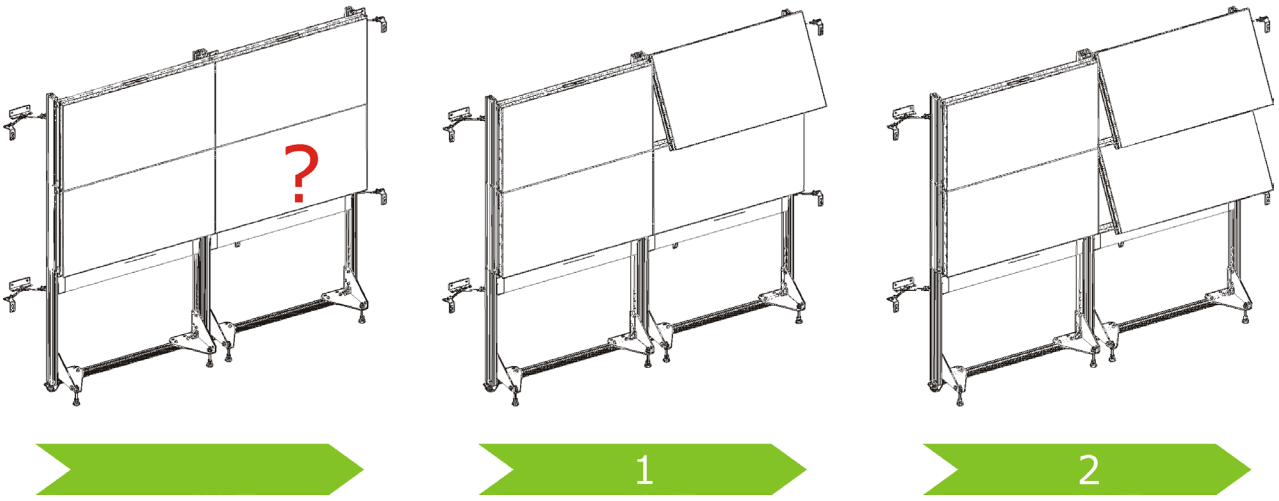
Step 31

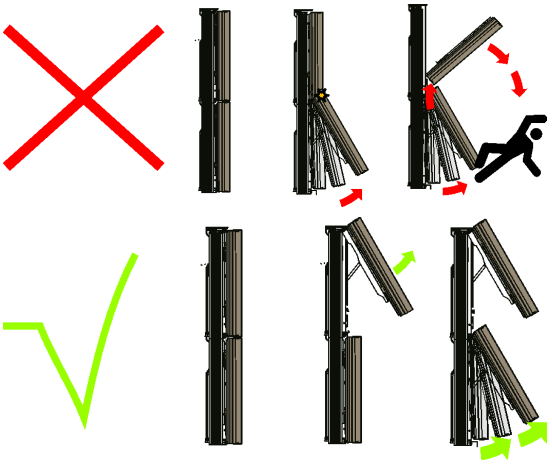
Check the overall alignment of the wall!

Take the wall into operation.

8.1 Safety instruction on opening systems

When doing maintenance work or changing cables on a monitor built into a structure you have to open all monitors ABOVE the one you want to work on.





When a monitor which is built into a structure has to be de-mounted, first de-mount all monitors above the one you have to de-install and then close the interfaces: This gives you free access to the monitor you want to remove and eliminates the risk of damaging the monitor hanging above when moving the system up!

When opening a monitor which is built into a structure, simultaneously press on the left and right bottom sides of the monitors (there are the latches behind).

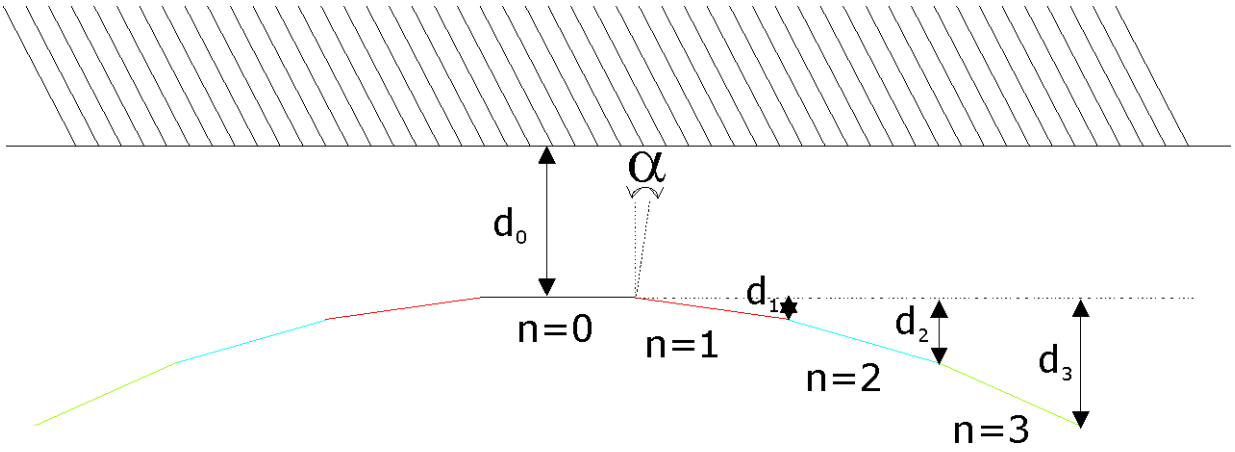
In case the interface frame does not open you very probably have a mixed situation of latches; one is opened, one closed. Then only press on the left OR on the right ot make the position of the latches the same.

9 Distance to the wall

The video wall has to be fixed to the wall. In case of a linear setup, and in case the wall is in parallel to the video wall, every system has the same distance to the wall.

In case of curved setup, the distance to the wall increases with every system.

The following drawing introduces the nomenclature:



d_0 is the distance of the center module from the wall. α is the configuration angle, e.g. 3°, 5°, 8°.

n_1 is the first module next to the center module

n_2 is the seconded module next to the center module; and so on

d_1 is the distance of the outer edge of n1 to the reference plane of n_0.

d_2 is the distance of the outer edge of n2 to the reference plane of n_0; and so on.

The following table lists the distances of the outer edges to the reference plane of n_0 depending on the configuration angle.

Configuration angle	Module #	Distance to reference plane
3°	1	d_1=63.6mm
3°	2	d_2=190.64mm
3°	3	d_3=380.75mm
3°	4	d_4=633.43mm
3°	5	d_5=947.97mm
3°	6	d_6=1323.52mm
3°	7	d_7=1759.04mm
3°	8	d_8=2253.35mm
3°	9	d_9=2805.08mm
3°	10	d_{10}=3412.73mm
5°	1	d_1=105.92mm

Configuration angle	Module #	Distance to reference plane
5°	2	d_2=316.96mm
5°	3	d_3=631.5mm
5°	4	d_4=1047.15mm
5°	5	d_5=1560.76mm
5°	6	d_6=2168.41mm
5°	7	d_7=2865.48mm
5°	8	d_8=3646.66mm
5°	9	d_9=4506.01mm
5°	10	d_{10}=5436.98mm
8°	1	d_1=169.14mm
8°	2	d_2=504.12mm
8°	3	d_3=998.43mm
8°	4	d_4=1642.44mm
8°	5	d_5=2423.62mm
8°	6	d_6=3326.76mm
8°	7	d_7=4334.29mm
8°	8	d_8=5426.59mm
8°	9	d_9=6582.41mm
8°	10	d_{10}=7779.25mm

10 Addresses

10.1 Contact

Feel free to contact us if you have any further questions!

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RPR Kortrijk - BE0473191041

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