Installation manual

OV-508, OV-513, OV-515

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This manual is divided into 9 chapters:

	main issue	update
chapter 1		
chapter 2		
chapter 3		
chapter 4		
chapter 5		
chapter 6		
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new: The corresponding chapters are new or completely revised.
corr.: Passages of the corresponding chapter were corrected; see modification bars.
add.: Passages of the corresponding chapter were added; see modification bars.

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1 Introduction

This chapter explains the used typographic styles and symbols. Safety information is provided concerning the operation of control room solutions from Barco.

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!

If you do not heed instructions indicated by this symbol there is a risk of electrical shock and danger to personal health!

If you do not heed instructions indicated by this symbol there is a risk of damage to parts, which are sensitive towared electrostatic charge!

If you do not heed instructions indicated by this symbol there is a risk to get harmed by sharp objects!

If you do not heed instructions indicated by this symbol there is a risk that parts may explode!

If you do not heed instructions indicated by this symbol there is a risk that hot parts impact persons or objects!

The sheet icon indicates additional notes.

Next to this icon you find further information.

This arrow marks tips.

Next to this icon you find important notes.

1.2 Safety Instruction

This section describes safety precautions, which must be observed when installing and operating a product from BARCO.

1.2.1 Standards

Safety Regulations

OV-D2 is built in accordance with the requirements of the international safety standard IEC-60950-1, UL60950-1 and CSA C22.2 No. 60950-1-06, which are the safety standards of information technology equipment including electrical business equipment.

The safety standards of information technology equipment 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 limits to the internal and external temperature rises, 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 use even when the equipment's normal operation fails.

1.2.2 General safety instructions

- All the safety and operating instructions should be read before using this unit.
- The operating instruction 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.

1.2.3 Installation

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

1.2.3.1 Power Connection

This product should be operated from an AC power source. Power input is auto ranging from 100V to 240V.

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

All equipment in the system is equipped with a 3-wire grounding plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

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.

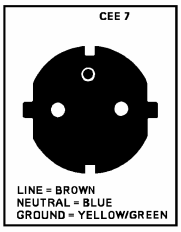
Use only the power cord supplied with your device. While appearing to be similar, other power cords have not been safety tested at the factory and may not be used to power the projector. For a replacement power cord, contact your dealer.

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.

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

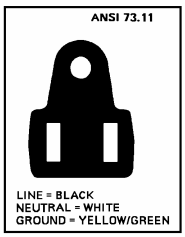
The wires of the mains lead are colored in accordance with the following code:



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.
- Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- 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.
- 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 extra protection for this video product during a lightning storm or when it is lift unattended and unused for a long period of time, unplug it from the wall outlet. This will prevent damage to the unit due to lightning and AC power-line surges.

1.2.4 Placement

Place the device 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

Slots and openings in the cabinet or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

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 device whereby no flammable or combustible materials are present. The exclusion zone must be not less than 10 cm (4").

- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

1.2.5 Operation

Barco products are designed and manufactured to meet the most stringent safety regulations.

During operation, the equipment radiates heat on its external surfaces and from ventilation ducts, which is both normal and safe.

- Do not cover the equipment with any material while the equipment is in operation.
- Do not block the cooling fans or free air movement under and around the device.
- Keep flammable and combustible materials away from the device at all time.

In the event of fire, use sand, CO2, or dry powder fire extinguishers; never use water on an electrical fire.

Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

- Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short cut 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.

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

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

1.2.6 Servicing

Never open the case of a device without first disconnecting the power supply cord! 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.

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 service to a qualified BARCO service center.

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.

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.

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.

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.

1.2.7 Unpacking of Devices

Note advises on the packaging for unpacking!

1.2.8 Modification of Devices

Mechanical or electrical modifications must not be made to the devices. BARCO is not liable for damages resulting from modified devices.

1.2.9 Cleaning instructions screens and mirrors

Wash with a solution of mild soap or detergent and lukewarm water. Use a clean lint-free soft cloth applying only light pressure. Rinse with clean water and dry by blotting with a damp lint-free cloth or chamois.

Always use a clean,new, lint-free cloth for cleaning the screens's front side. Do not clean with the same cloth used for the beaded side. The used cloth ma contain bead particles, which could scratch the screen's front surface

Do not use the following cleaning cleaning agents, since these can scratch or detoriate the screen surface:

Window cleaning sprays, kitchen scouring compounds, sovlents such as acetone, gasoline, benzene, alcohol, carbon tetrachloride or lacquer thinner.

2 Pre-Installation requirements

2.1 Power and grounding

Attention has to be paid to the electrical installation. Earth current loops in the installation must be avoided. The neutral power conductor of the electrical net and the grounding conductor must be separated.

All circuits have to use the same ground level (also indirectly connected equipment). If possible all circuits should come from the same phase.

Each projector has specific power requirements. (see technical specification projectors) Enough circuits have to be available. These circuits have to be fused (16A typical for 220V). The number of projectors starting up concurrently must be limited. One could for instance install an automatic circuit that starts up all the projectors in batches per circuit, leaving 3 second between the different batches. (Not standard delivered)

The projectors should be kept away from strong sources of magnetic fields.

Fused circuits for the graphic generator equipment have to be installed. The number depends on the amount of installed equipment.

Some of the graphic generator equipment functions as a Unix workstation. It must not be powered off without carefully closing all the applications. If these units are switched off during normal operation without this precaution, there is a risk that the file system gets corrupted and it becomes unusable. Therefore it is strongly suggested to provide a non-interruptible Power Supply (UPS) to power these units.

Additional grounding points must be foreseen for the display wall construction, racks and other mechanics. Power outlets for installation purposes are required as well. All connections, power, network should be available and functional before start of the installation.

2.2 Environmental conditions

2.2.1 General conditions

The temperature and the humidity in the control room have to be controlled on the both sides of the wall.

The screens require a temperature between 10 and 40 dgc and humidity between 40 – 80 % RH. The maximum temperature fluctuations have to be limited up to 5dgc per hr.

The projector units operate between 0 and 40 dgc. The thermal dissipation of the projector units has to be taken in consideration. The projector units have built-in temperature detection and will switch off automatically when the temperature limits are exceeded.

The graphical generator equipment operates between 0• and 40 dgc. In case these products are mounted in a rack the max room ambient temperature has to be limited to max 25 dgc or additional forced cooling has to be foreseen in the rack.

The materials and products can be stored between -30 and 65 dgc and humidity below 95 % RH, non-condensing. Screens have to be stored below 40dgc.

24hrs prior to installation the screens have to acclimatize to the control room conditions. They can stay in their protective packaging during this acclimatize period.

The temperature and humidity conditions in the control room must be within specification during installation and maintained afterwards.

The room has to be dust-free during the installation and maintained afterwards. The control room must have an acceptable dust class of 100000 or better. (100000 particles of 0.5µm or larger per cubic feet, comparable with clean desk room).

All construction, reconstruction, decoration activities must be completed before the installation of the system. However the trim around an integrated wall can only be mounted after completion of the wall. All precaution should be taken to avoid any damage during the mounting of the final trim. The purchaser bears the responsibility for any damage or degeneration during this operation.

The air pressure within the control room has to be the same on the both sides of the wall.

2.3 Floor requirements

Sufficient floor space and maintenance area must be available when installing a display wall. (see applicable drawing and Access)

The floor must have sufficient load carrying capability to withstand weight distribution for all feet (see technical specifications mechanical construction). It must not sag by more than 1 mm under the load of the display wall.

No installation (venting ducts, sockets etc.) must be present in the floor in the area of the feet. (Advice: An area of at least 150mm must be kept free around each foot.)

The total construction has to be fixed to the floor. Typical, M10 plugs will be mounted in holes in the floor. If raised floor (false floor) is used, it's advised to put the construction on the concrete floor underneath.

2.4 Luminance

Light falling directly on the screen will negatively influence the resulting contrast level. The design of the lighting should avoid as much as possible light falling directly on to the screen. The real performance of the projectors will be determined by the light condition on the screen. A good contrast ratio is guaranteed with light input directly on the screen not more than 50 lux.

There are no constraints on the luminance on e.g. the operator positions.

Light behind the wall is required for installation and service. During normal operations all lights behind the wall must be switched off. All daylight must be avoided as well.

Bright colors for the ceiling, the walls and floor surrounding the screen have to be avoided. Do not use reflecting materials for the ceiling, the walls and floor surrounding the screen.

Sufficient lighting in the projection room is required during installation.

2.5 Access

The buildings have to be accessible during extended straight time, 6AM – 12PM, 7 days per week.

From the delivery point to the installation site, the doors and passages require a minimum width of 1500mm and height of 2000mm for an installation.

In case the projection-room is located on the ground floor the room need to be accessible with any trolley.

In case the projection-room is located on a floor level an elevator is required.

The elevator needs a minimum entrance and cabin size of 1500 x 1800 x 1200mm (width x height x depth). The support power must be 1000 kg minimum. The elevator must be available during the installation period.

2.6 Installation and room requirements.

In case the display wall is integrated in a wall, the gap between screen and wall must be constructed as detailed in the mechanical drawings (front, top, and side view). Typical 100mm before mounting of the trim.

The installation room must be sufficiently high. Sufficient space (recommended > 200mm) must be provided above the display wall.

A system responsible must be available during the installation for practical arrangements and safety reasons.

Free telephone access needs to be available for local communication.

2.7 Footprint

This footprint can be used to help you set out the wall configuration the room where the wall will be installed.

2.8 Overall dimensions

The installation room must be sufficient high. Sufficient space (recommended >200mm from top of the screen to finished ceiling) must be provided above the display wall. The standard support with adjustable feet results in the lower screen edge to be at a distance of 1200mm. Other heights are available on request with a minimum of 540mm.

2.9 Maintenance Area

Behind the display wall a service area is required. This area has to be at least 6000mm. Please note that there may be laws concerning safety standards in your country which require having a larger service area!

All maintenance and service work is done from the rear of the system.

The display wall can have a linear or a curved arrangement. With a curved design, the individual systems are built up with angled connection plates. The angle between two columns can be 0°, 3°, 5°, and 8°.

2.10 Built-in configuration

When the OV display wall is integrated in a wall, mind the following recommendations: Leave a gap of 100mm around the screen. Make sure to take the distance from the lower screen edge to the floor into account (standard supports feature a height of 875mm, 1000mm, or 1200mm, respectively.)

3 Mechanical setup

3.1 Tools needed for installation

- 1 drilling machine and a drill 4.9mm
- 1 set of screwdrivers (Torx)
- 1 right-angled torx key size 30
- 1 allen key size 5
- 1 allen key size 6
- 1 tape measure (10m)
- 1 tape measure (2m)
- 1 water level

To build up the mechanics of the OV series it is recommended to use a cordless screwdriver: the screws are self tapping and the thread is cut while screwing them in.

If you have to unscrew, and screw in again, take care not to damage the thread! In case you have difficulties in screwing in the screw, turn slightly into the opposite direction until the screw finds its thread. Only then proceed with screwing in.

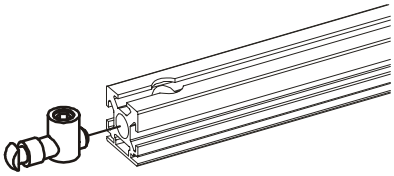
To connect profiles, KANYA connectors are used. The following explanation refers to all KANYA connecting systems.

Insert the cross piece in the bore hole of the profile

Insert the anchor with the spring into the centre hole of the profile

Push the anchor head into the longitudinal slot of the counter profile. Rotate by 90°. Tighten the allen screw.

With the OV-series, both, the anchor and the cross piece are already mounted into the respective profiles.



4 Scope of delivery

The mechanics of the OV series comprises three main components: the pedestal, the display module, and the screen module. The basic mechanics is completed by the trim components and the project specific components. The projection module of course also requires the functional components, e.g. the projection unit, the illumination unit, and the internal cabling.

4.1 Pedestal

For OV-508, OV-513, OV-515 there a three standard pedestals, resulting in a lower screen edge of 875mm, 1000mm, and 1200mm. Pedestals with a customized height are also available.

For all pedestals the components and the setup follow the same principle. In the manual, installation is shown for the standard pedestal unit 875mm.

4.2 Display Module

OV-508 and OV-515 employ the same display module, since they both have a display ratio of 4:3. Due to the different display ratio of the SXGA version (5:4), OV-513 employs a different display module.

However the components and the setup follow the same principle.

4.3 Screen Module and Trim

The OV series is available with different screens to fulfill virtually all requirements wrt brightness and viewing angles. All screens are based on the same principle and are completed by a standard and design trim.

4.4 Projection Unit (PU)

The projection unit is the core of the OV system and designed for easy installation and adjustment. The SXGA system (OV-513) and the SXGA+ system (OV-515) employ the same projection unit; only the required pixels (1280x1024 and 1400x1050, respectively) are addressed.

4.5 Illumination Unit (IU)

The illumination unit is designed as a dual lamp system and employs a 120/132 W lamp. Changing the type of the lamp is done via the web interface or the Barco Control Manager software. No mechanical intervention like setting jumpers is required. The fan module is integrated in the IU.

4.6 Cabling

There are three types of cabling: power cabling, LAN cabling, Data cabling. Power cabling provides the required operating voltages: LAN cabling comprises LAN cables and a switch and is used both, to communicate with one unit as well as for intersystem communication (e.g. adjustment of all projection modules of a display wall to one brightness and one color, respectively). The data cabling connects the projection unit with the controller.

4.7 Project specific kit

Although built as a modular system, there are some components which are only required once per display wall or once per column. These components are configured on a project bases and added to the delivery in a so-called project specific kit.

5 Installation

5.1 OverView

Installation of a display wall starts with installation of all pedestals. When the pedestals are installed and all columns are connected, leveled and aligned, the dark boxes are setup. Subsequently the screens are mounted. Finally the projection unit, the illumination unit are installed. After the cabling is completed, the optical adjustment is done. Finally the trim and shieldings are mounted.

Throughout the manual, "left" and "right" means left and right as seen from front of the display wall.

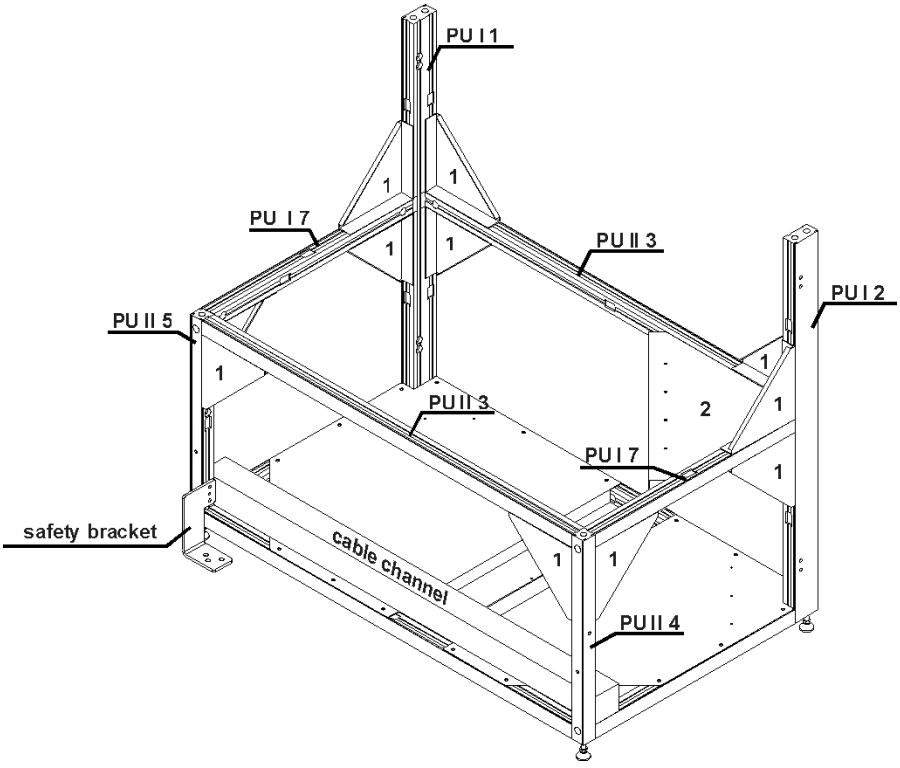
There are several kinds of screws used for setting up OV-D2 systems. The following table shows the required torque for fixing the screws. When tightening screws, please stick to these values!

Component	Size	ItemNo /description	Torque	Comment
Selftapping screw	M6 x 29	B363372 SCR $7500 M 6 x 29 STZN	max. 6Nm	screwed in Aluminium Profiles 30X30 (60X30)
Selftapping screw	M6x16	B363373 SCR $7500 M 6 x 16 STZN	max. 3Nm	screwed in Aluminium Profiles 30X30 (60X30)
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
Kanya Connectors PVS	Kanya-Connectors	B 20-10 PVS-VERB.	20-25Nm	Connection for Aluminium Profiles 30X30 (60X30)

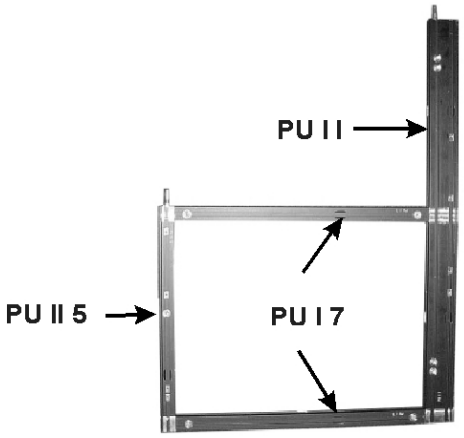
5.2 Installation of the pedestal

The pedestals are available in different heights. The principle of the setup Is the same for all heights.

Quantity	Description	Support 875mm	Support 1000mm	Support 1200mm
2	Front profile (vertical)	PU I 1, PU I 2	PU 4I 1, PU 41 2	PU 3I 1, PU 31 2
2	Rear profile (vertical)	PU II 4, PU II 5	PU 4I 4, PU 4I 5	PU 3I 4, PU 3I 5
2	Front profile (horizontal)	PU II 3	PU 2I 12, PU II 3	PU 2I 12, PU II 3
2	Rear profile (horizontal)	PU II 3	PU II 3	PU II 3
4	Side profile	PU I 7	PU I 7	PU I 7
1	Angle with multi socket installed [2]			
12	Reinforcing angle [1]			
1	Box with screws			
4	Adjustable foot			
4	Profile connector			
1	Cable channel			
2	safety bracket			



Step 01



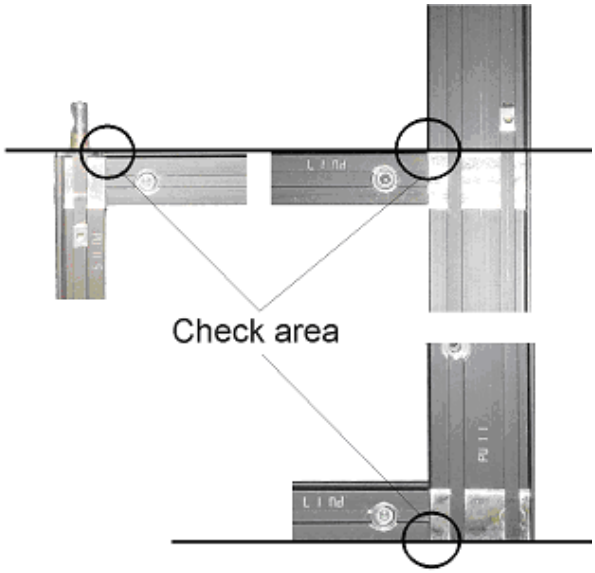
Please note:

Left and right refers to the video wall as seen from front.

Assemble the right side of the pedestal.

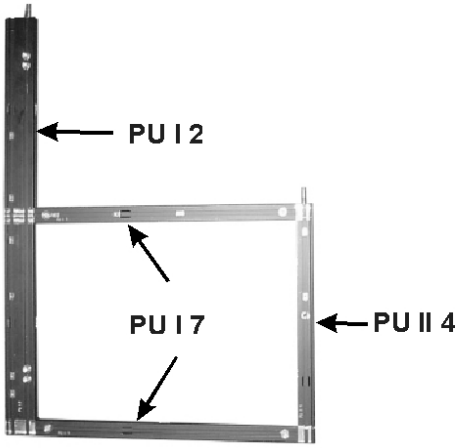
One of the profiles PU I 7 is equipped with 3 more counter nuts than the other. This profile must be installed at the left side of the pedestal! The counter nuts are used to fix the angle with the multi power strip!

Step 02



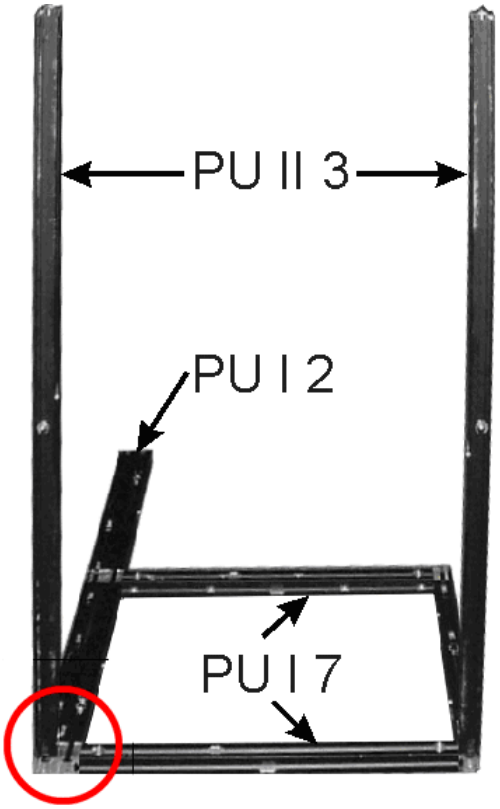
It is very important that the profiles fit exactly together.

Step 03



Assemble the left side of the pedestal.

Make sure to mount the PU I 7 with the additional counter nuts on top!



Step 04

Per column, 4 times PU II 3 is used to connect the left to the right side of the pedestal.

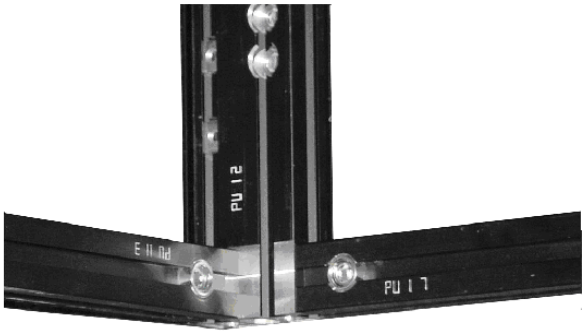
Please note:

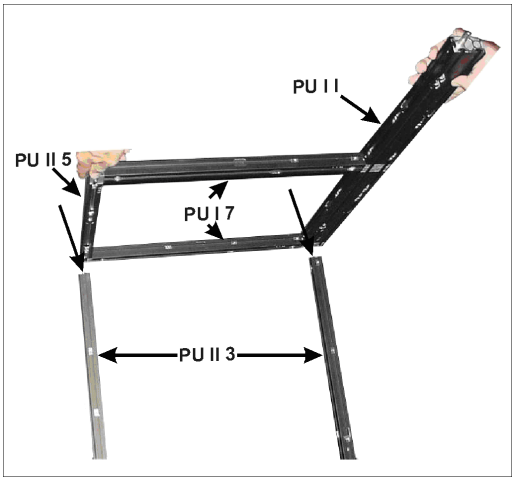
One of these PU II 3 profiles has 3 additaional counter nuts. This profile has to be installed as front top profile! Do not use it for the bottom connection!

It is recommended to put the side wall onto the floor.

Start with installing 2 times PU II 3 to one of the side walls.

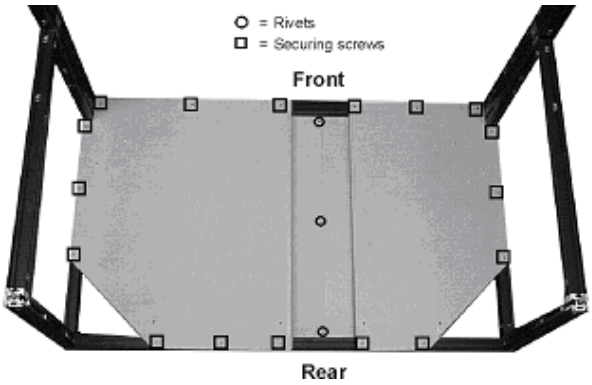
Make sure that the profiles are attached exactly!





Step 05

Install the other side wall to the horizontal bottom profiles.

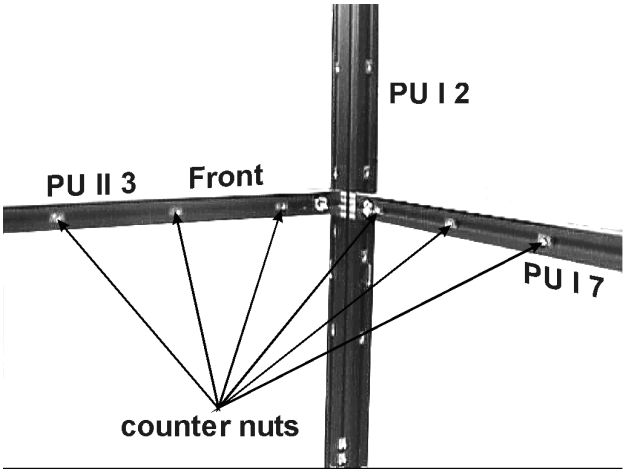


Step 06

Instoll the left and the right bottom plates.

The bottome plates must be fixed by securing screws (indicated by squares) and joined by rivets (indicated by circles).

Step 07



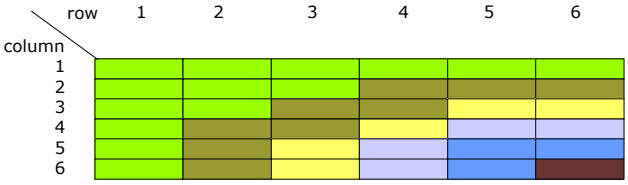
Subsequently install the two top horizontal profiles PU II 3.

One of these profiles has three additional counter nuts. This profile has to be installed at the front!

The counter nuts are used to install the angle with the multi power strip!

5.3 Installation of the LAN interface and power strip

Step 08



The projection units are LAN enabled and thus have to be connected to a LAN switch which is connected to the LAN.

Always 6 projection units are connected to the switch, all switches are cascaded.

Schematic for cabling interfaces for the LAN switch:

Within a row (vertical direction!), each color represents one switch (cabling interface). The column where to install the cabling interface should be selected to minimize distances between the respective projection units and the cabling interface.

Not defined by the schematics: the row where to install the cabling interface. To minimize distances, this should be the mid row of a display wall!

Example 4x3 configuration:

2 cabling interfaces are required,

1x column 2, row 2

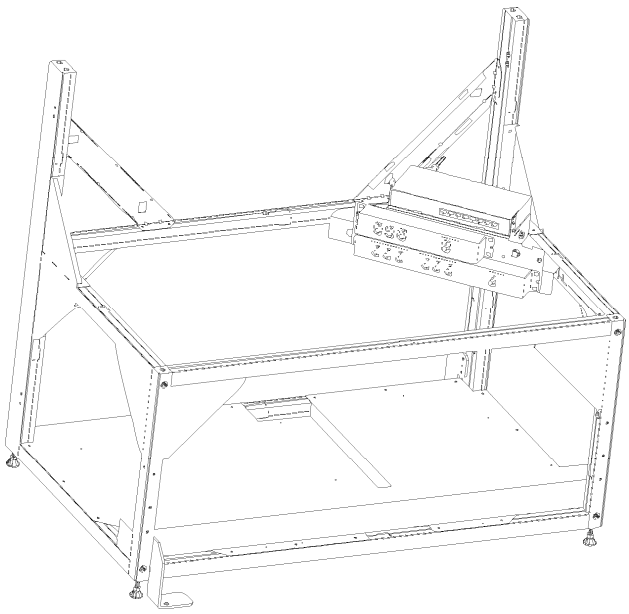
1x column 4, row 2

Preferably the installation is done "per column", e.g. in case the number of rows = 6, every column has to be provided with a switch. This consideration results in the schematic at the left

Look at the schematic at the left to define the columns to be equipped with a cabling interface.

For these columns the angle with the multi power strip has to be modified as explained below.

Step 09



Install the angle for the power strip(s) and the LAN switch.

The power strip includes 6xIEC 320 sockets and is rated for a max. current of 10A.

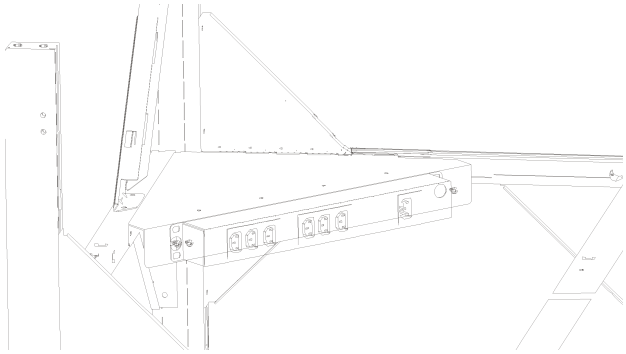
Always take care that the max. rating of the power strip is not exceeded!

In case the installation site is in a 110V country, and in case the display wall is higher than 3 rows, an additional power strip has to be installed.

Of course the two power strips may not be connected in serie!

In 110V countries, at max. 3 darkboxes may be connected to a power strip!

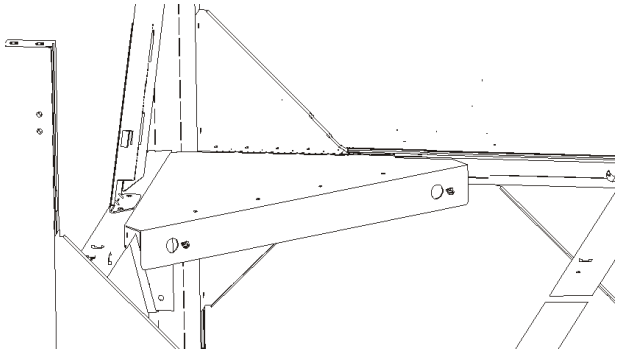
Step 10



In case the column does not require to be equipped with a LAN switch, install the angle with the multi power strip.

Mount the angle bracket to the profiles using the moveable nuts inserted in the profiles.

Step 11

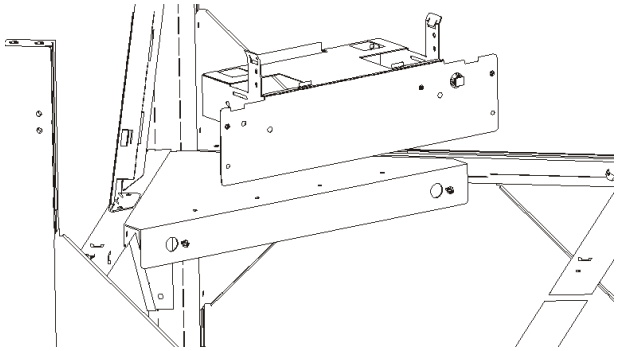


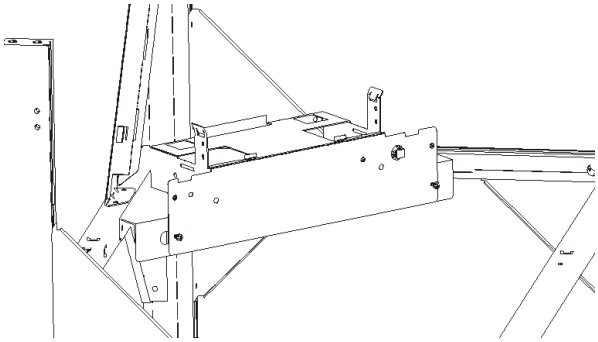
In case the column does require to be equipped with a LAN switch, and the powerstrip is already mounted to the angle, demount it!

Mount the angle bracket to the profiles using the moveable nuts inserted in the profiles.

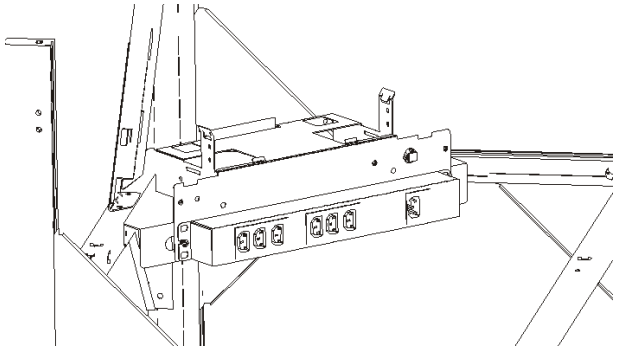
Step 12

Install interface plate to the angle bracket.



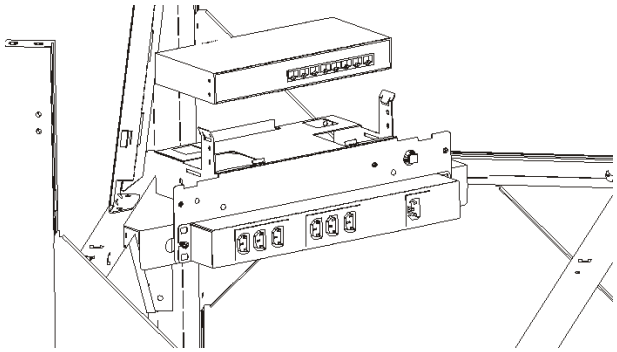


Step 13

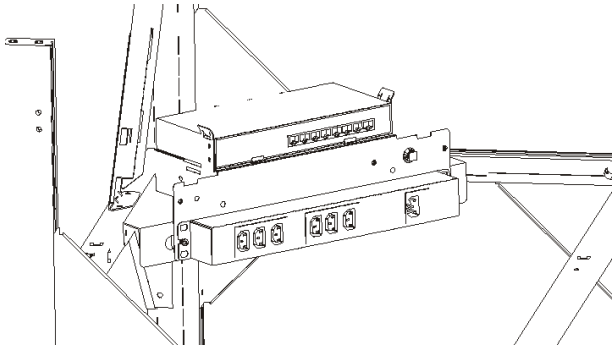


Attach the power strip to the front of the interface plate.

Step 14

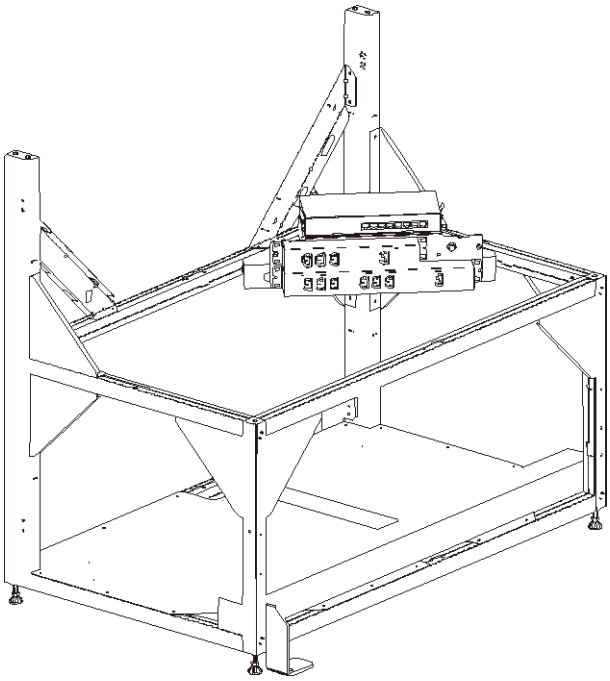


Mount the switch box to the interface plate.

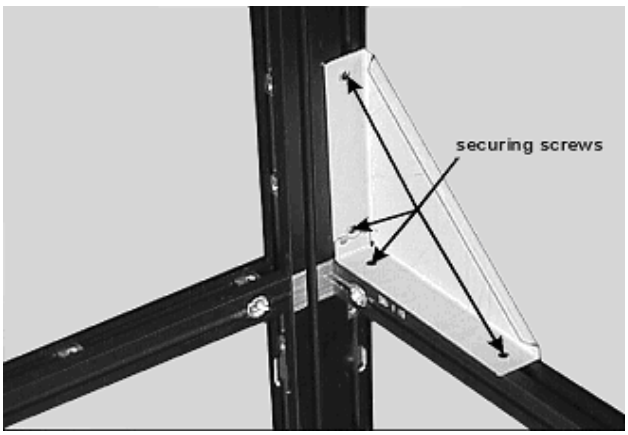


Step 15

In case a second power strip is required, mount it on top of the first power strip.



Step 16



Re-inforce the pedestal by the brackets.

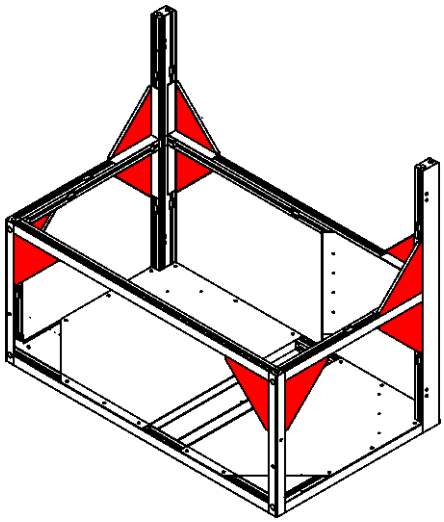
In total 12 brackets have to be installed.

Depending on the height of the pedestal the brackets look differently.

However the installation procedure is the same. Each bracket is fixed by means of 4 screws.

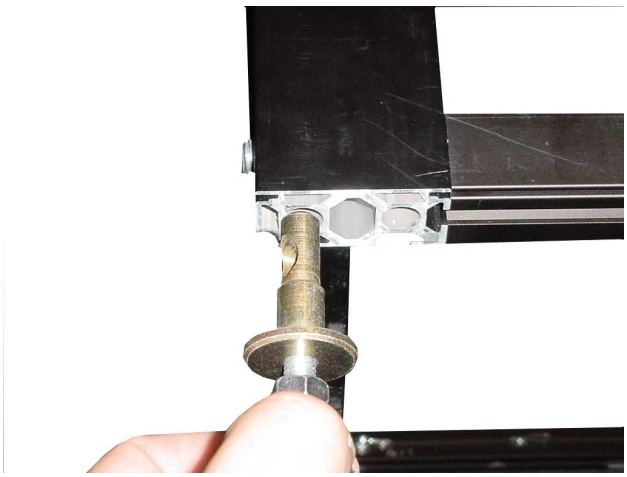
Make sure that the open side of brackets look inside!

Step 17



In total 12 stiffening brackets hve to be mounted, see picture (one is hidden).

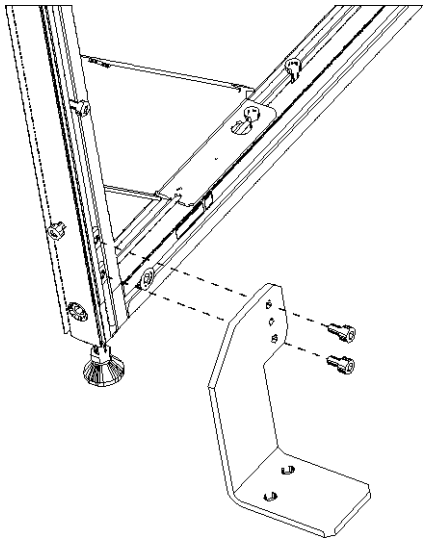
Step 18



Insert the adjustable feet.

The feet allow adjusting the height by ± 5mm.

For the nominal height, screw in the feet until the feet height is 40mm.



Step 19

The pedestal has also to be equipped with the floor fixation bracket.

The right side gets the floor fixation bracket on the rear foot,

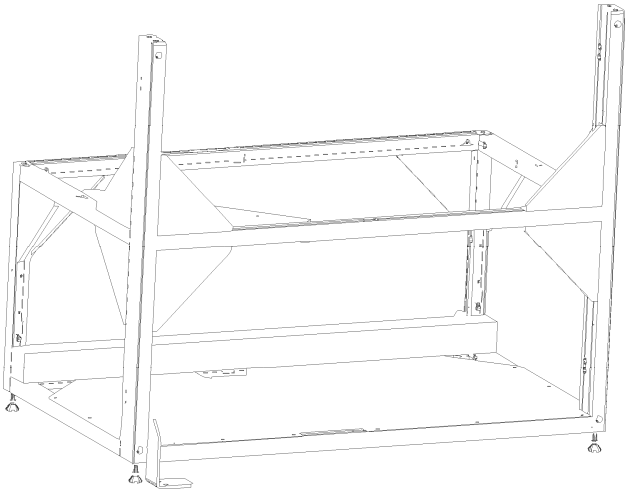
The left side tet the floor fxiation bracket on the front foot.

Every column has to be diagonally fixed to the floor.

Right and left are always used as seen from front of the display wall.

Use 2x screws M6x12 to fix the fixation bracket by means of the moveable nuts inside the vertical profile.

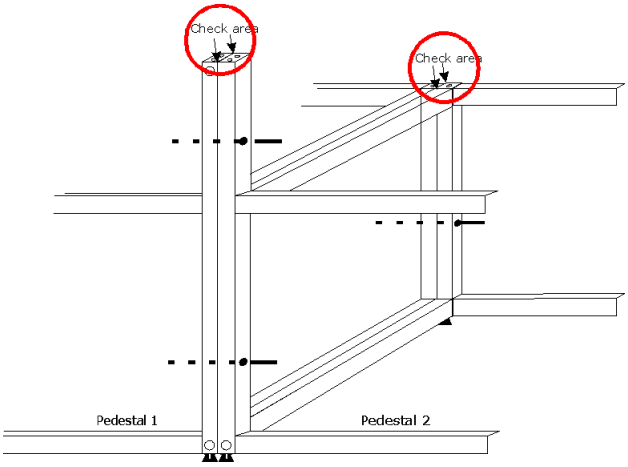
Step 20



Proceed accordingly with the pedestals of all columns.

5.4 Connecting the pedestals

Step 21

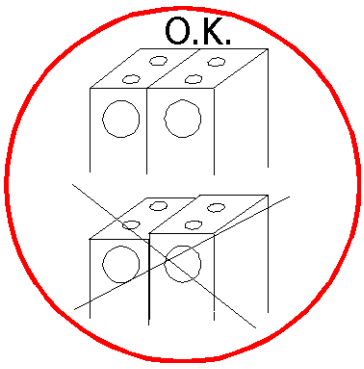


When the pedestals of all columns are setup, connect them!

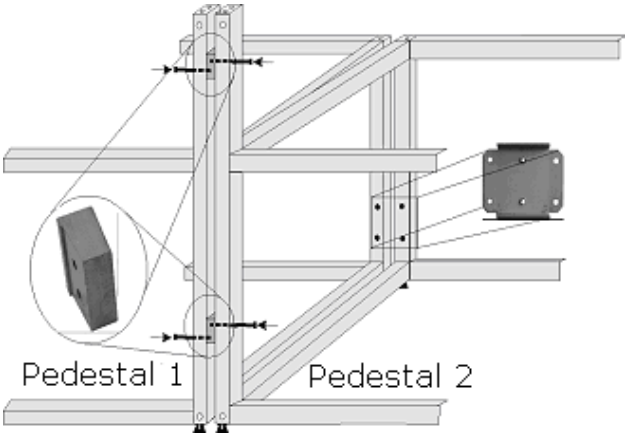
For linear setup, connection is done via 2 screws on the front side and one screw at the rear side.

The screws are of type M6x55 and fixed via nuts and washers.

Make sure that adjacent profiles are exactly adjusted (check area). If required, adjust the feet to meet the same position.



Step 22



In case of a curved setup,

Connect the pedestals by means of the respective connection kit.

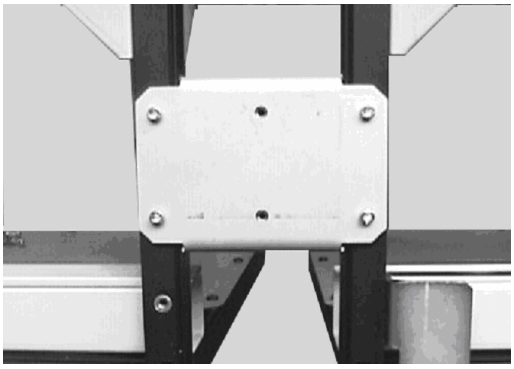
There are two connection kits at the front and one at the rear side.

(In case the height of the pedestal exceeds 1100mm, connection on the rear side is also done by two connection kits).

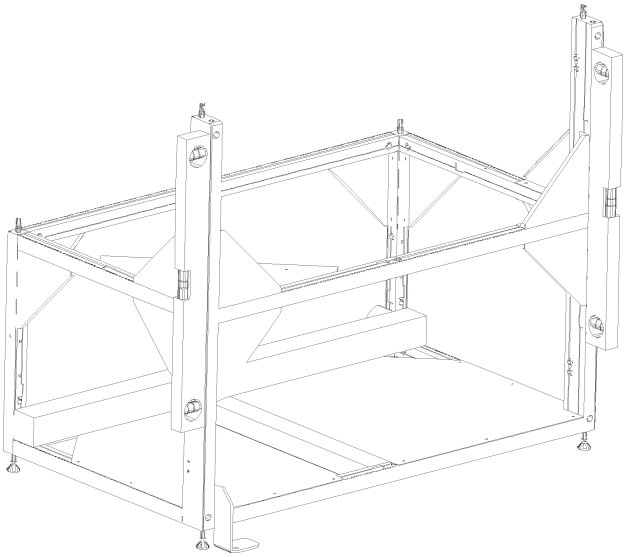
Insert the blocks between adjacent vertical front profiles and fix them from the left and from the right by means of 2 times M6x35 and nuts and washers.

On the rear side,

Fix the sheet metal to the rear vertical profiles by menas of 4 M6x35.

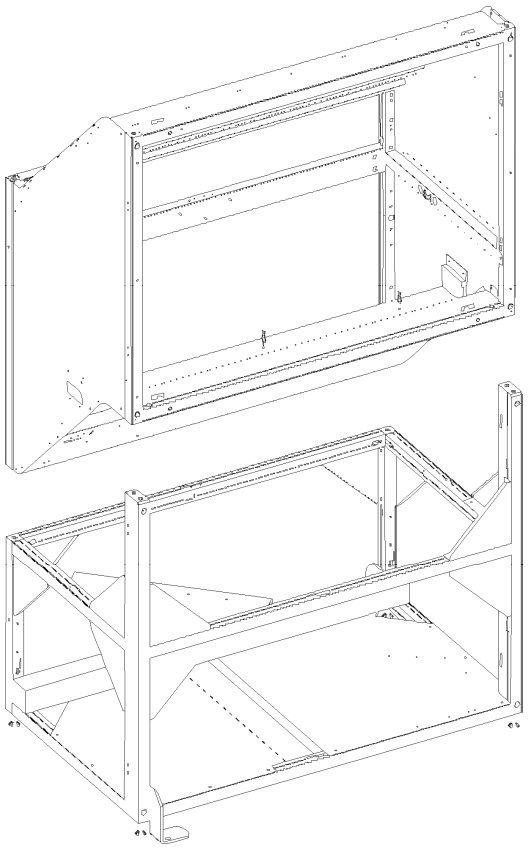


Step 23



Level the pedestals!

5.5 Installation of the darkbox

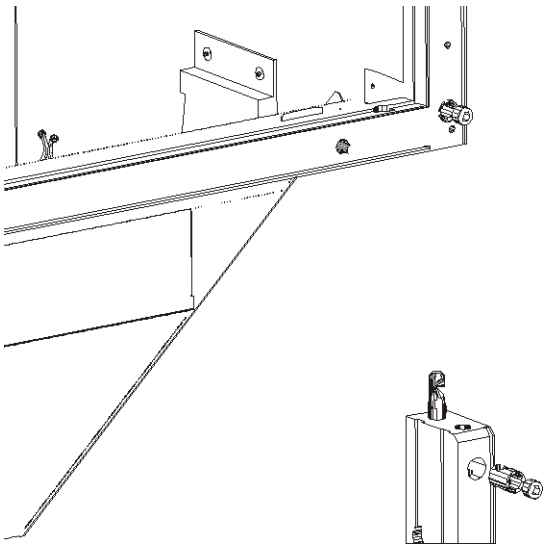


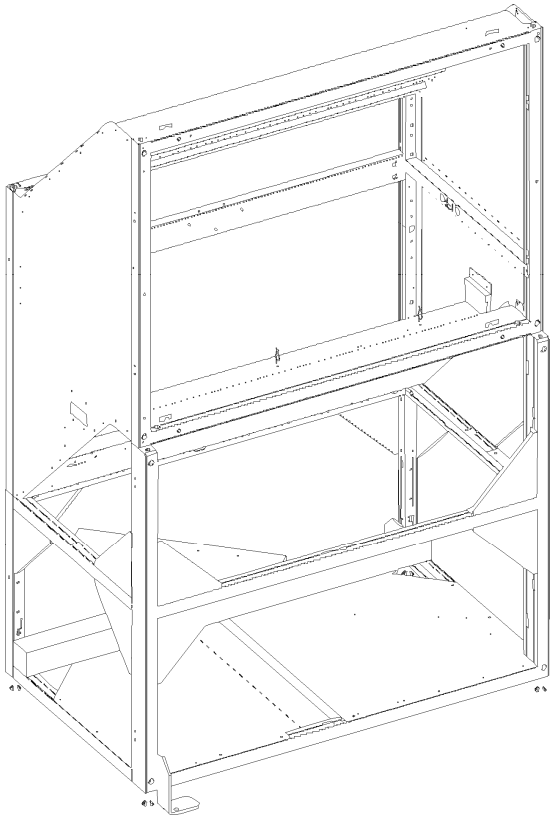
Step 24

When the pedestals of all columns are setup and connected,

Mount the dark box on the pedestal

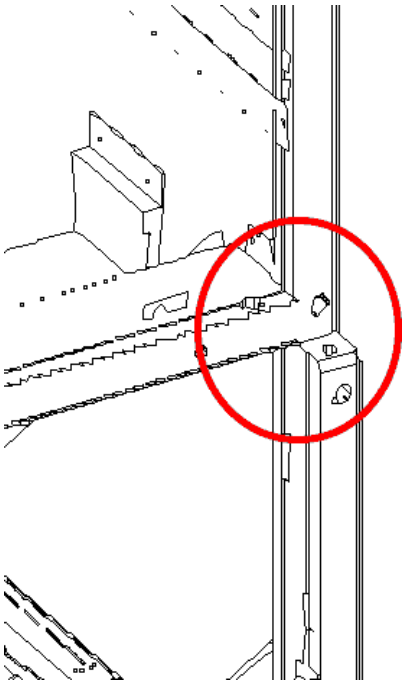
Connection is done via KANYA connectors:





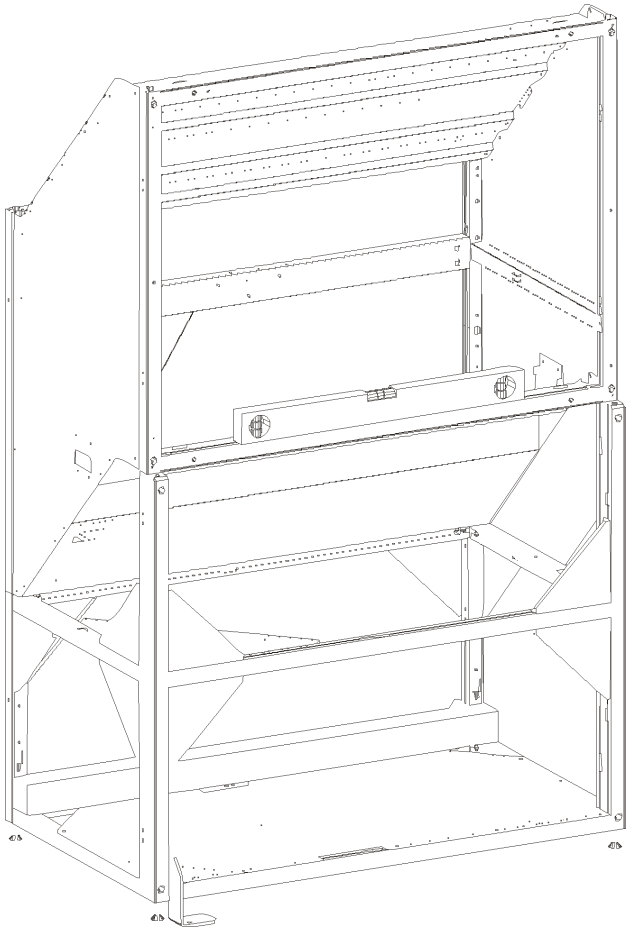
Step 25

Please note how the darkbox is placed: it is not in line with the front side of the vertical profile!



5.6 Connecting the dark boxes of the first row

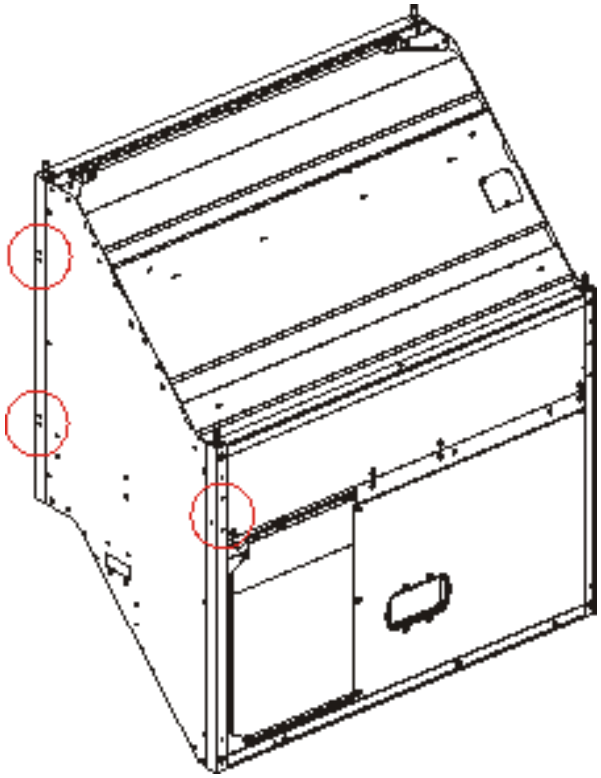
Step 26



When all the darkboxs of the first row of all columns are installed,

Level the system.

Step 27



Subsequently connect the columns.

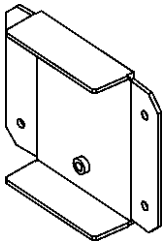
It is always one connection kit on the front side and one connection kit at the rear side.

Linear connection kit: The screws are of type M6x55 and fixed via nuts and washers.

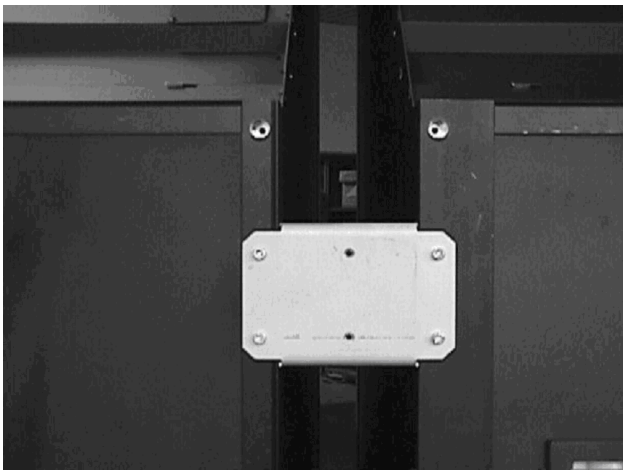
At the front, there is a top and a bottom fixation facility, both providing two holes. Use one of the holes of the top and one of the holes of the bottom fixation facility and apply 2x one screw M6x55 and fix it via nuts and washers.

On the rear side, there is only one hole to connect two darkboxes in a linear setup. Apply the screw and fix it via nuts and washers.

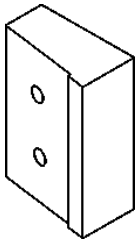
Step 28



In case of a curved setup, apply the rear connection angle using the fixation facilities on the rear profile of the darkbox.

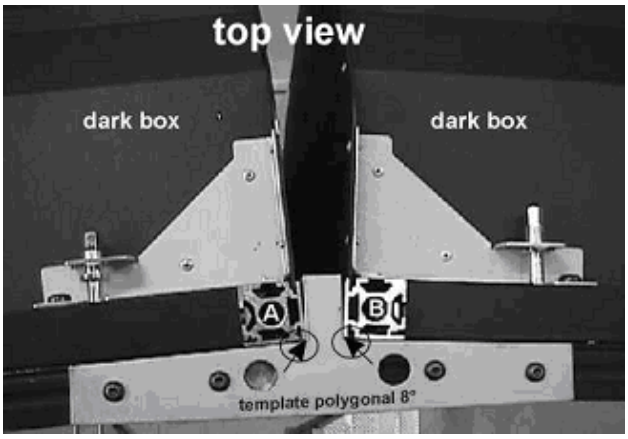


Step 29



In case of a curved setup, apply the front connection angle using the top fixation facilities on the front profiles of adjacent darkboxes.

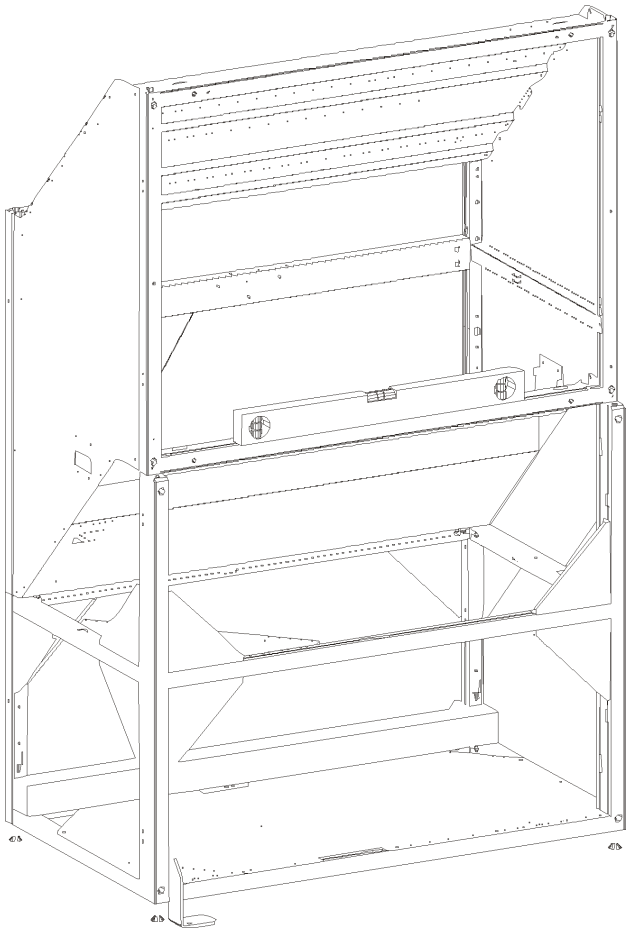
Use the jig to ensure that the dark boxes are aligned correctly!



The profiles labeld A, B and the jig have to fit exactly together!

5.7 Fixation to the floor

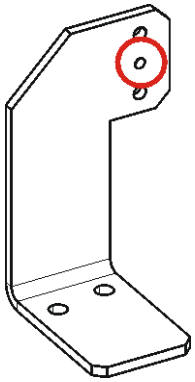
Step 30



When the first row has been setup, connected and leveled, for security reason the system should be fixed to the floor via its fixation bracket (one on the rear side, one on the front side).

It might be necessary to remove the floor fixation bracket in order to drill the holes in the floor.

Step 31



(If necessary, remove the floor fixation bracket, drill the holes, re-mount the floor fixation bracket).

Fix the system to the floor!

Fixation material of the floor bracket to the concrete: 1xZYKON–anchor FZA 14x40 – M10/25 (zinc-plated steel).

In case of false floor: make sure that the anchoring fixation is done on the concrete!

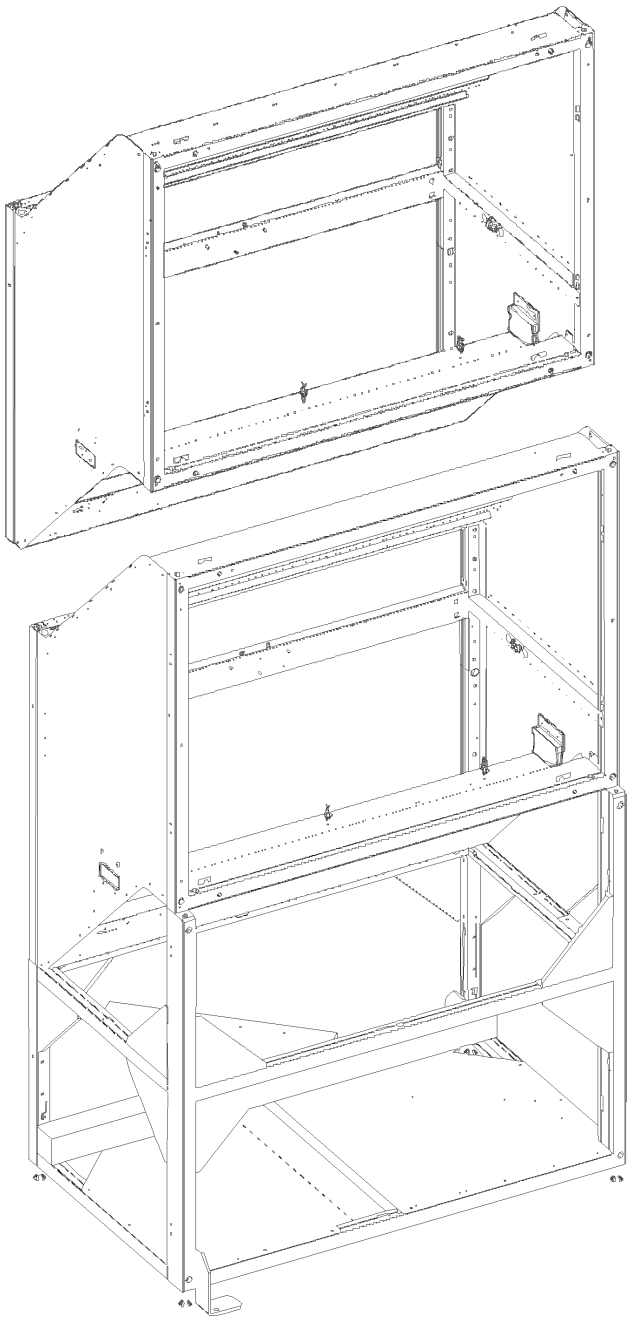
When the fixation is done, the fixation bracket has to be secured by the security pin.

Use a drill bit size 4.9mm to drill a hole in the profile in the position of the security pin.

Force the security pin (size 5x32mm) into the hole.

5.8 Installation of the following rows

Step 32

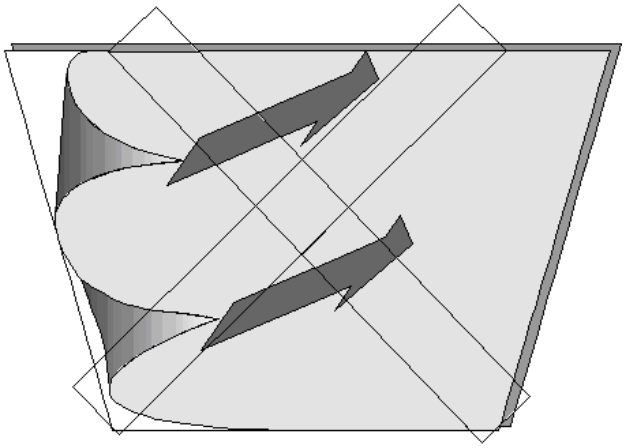


When all darkboxes of the first row are mounted and connected and the system is fixed to the floor,

proceed with the second row.

Always apply the KANYA connectors and nuts as described for the first row.

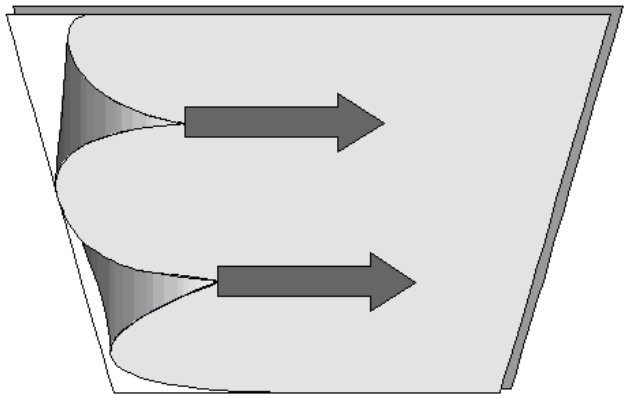
5.9 Installation of the Mirror

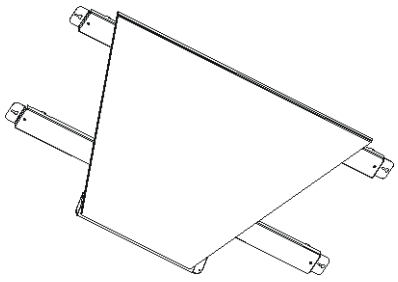


Step 33

Pick up the protective foil of the mirror!

Only pull parallel to the mirror to prevent it from vaulting.

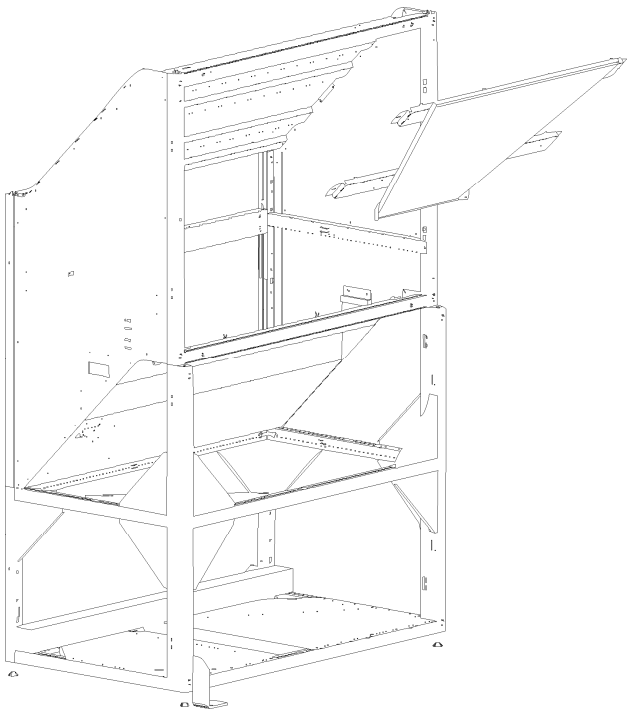




Step 34

The mirror comes with two sheet metals to fix it on the top of the dark box.

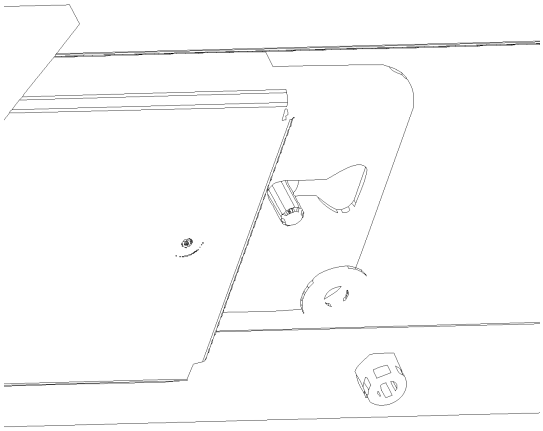
Mount the mirror to the darkbox

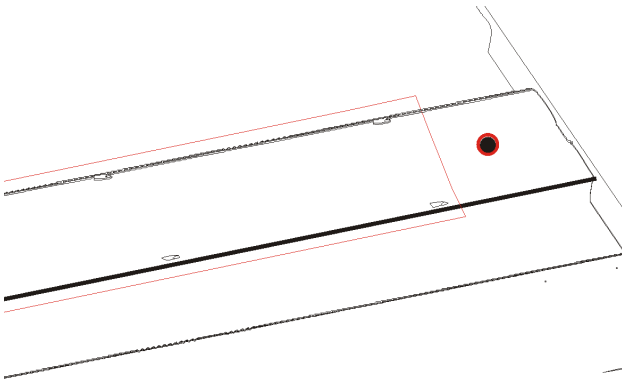


Step 35

The mirror comes with two sheet metals to fix it on the top of the dark box.

Mount the mirror to the darkbox by means of the bolts which have to slide into the key holes of the mirror fixation sheet metals. It is ensured that the "noses" of the mirror fit into the slits in the top of the dark box. Secure the mirror with washer and self-locking nut.





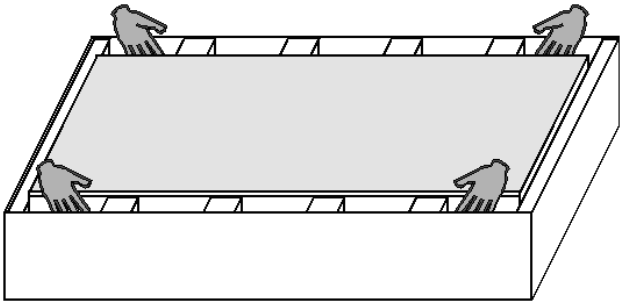
5.10 Installation of the Screen

The screen modules are precision optical components! Do not touch with your bare hands.

Step 36

Remove the covers at the rear of the dark box!

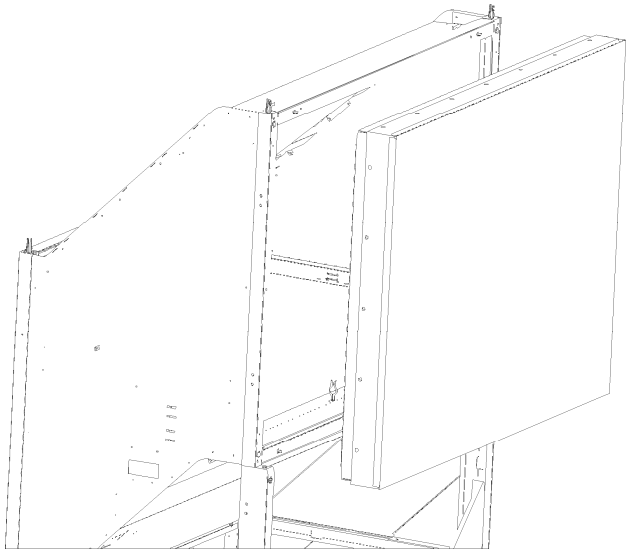
Step 37



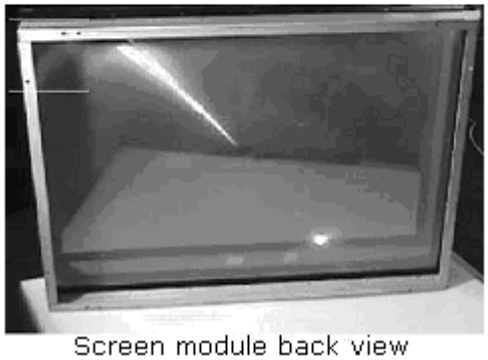
Unpack always with two persons!

Use cotton gloves!

Step 38

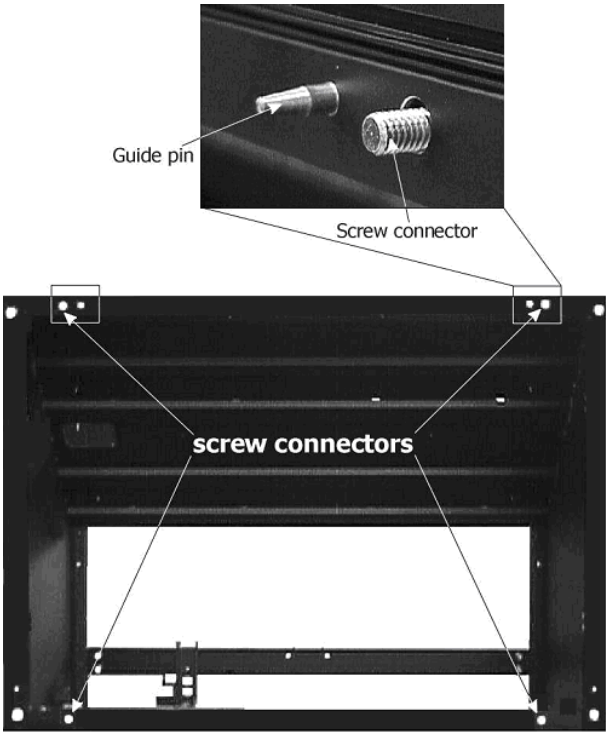


Place the screen module on the guide pins on the front of the dark box. Be careful to ensure that the edges of the screens are not damaged



Screen module back view

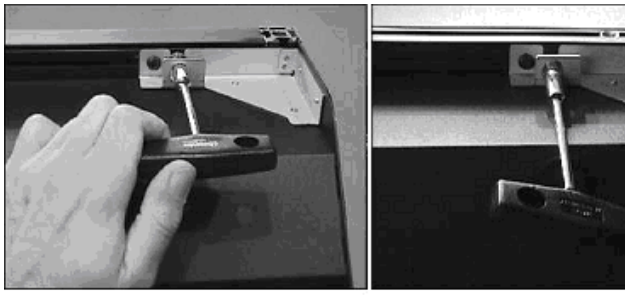
Step 39



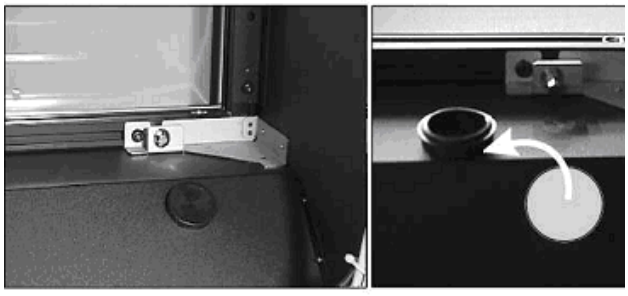
Dark box front view

Screw on the screen module with an hexagon key size 5 mm (torque 1-2 Nm)

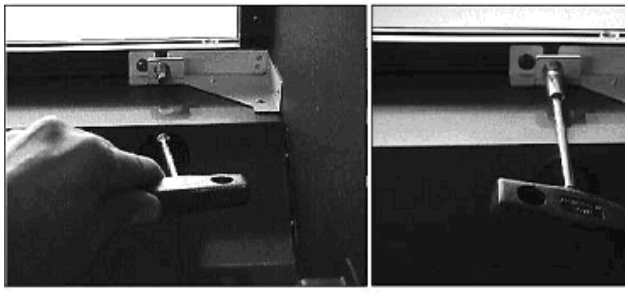
Step 40



Tigtenning screw connector at the top (top module) Tigtenning screw connector at the bo



Screw connector and protective cover remove protective cove



Tigtenning top screw connector (lower module) Tigtenning lower screw connector

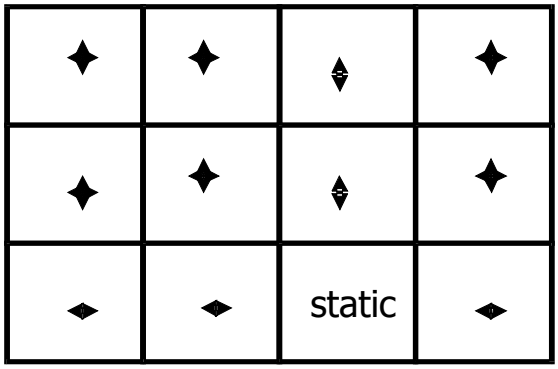
The screen module is held by four screw connectors mounted in the dark box.

Step 41

Align the screen modules and lock the screw connectors.

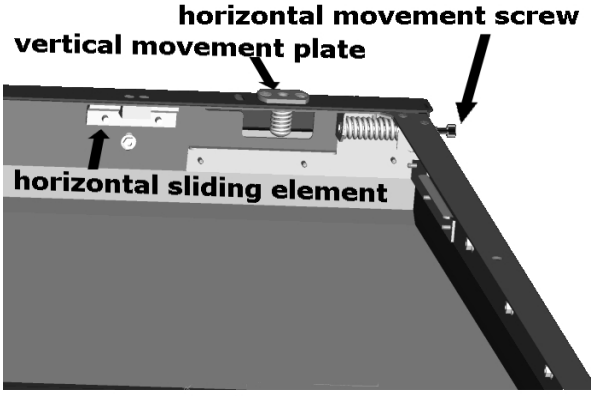
The edges of the screens must be parallel with a gap of 0.4 to 1.2mm (expansion gap)

5.11 Installation of the seamless screen module



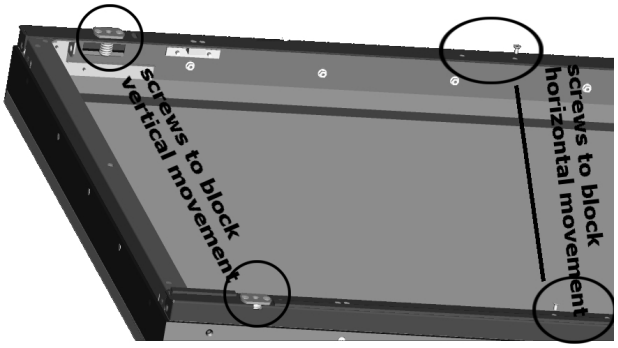
Screen concept:

There are 4 different states of movability of one module depending on the position in the wall. There is one complete static module in the centre of the base row; the other base row modules can move in horizontal direction; and the modules above the static module can move in vertical direction. For all other modules of a display wall, movement in vertical and horizontal direction is possible.



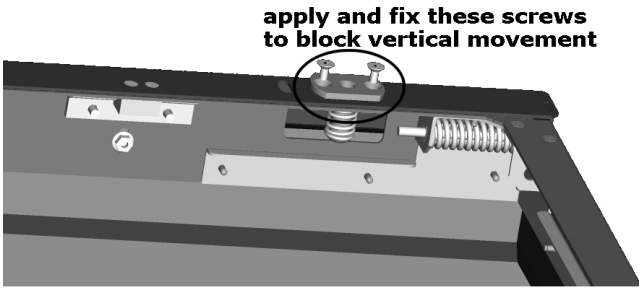
In horizontal direction, movability is realized by horizotal sliding elements.

In vertical direction, movability is realized by vertical movement plates.



When delivered, all screens feature full movability! The screws to block movability in horizontal and/or vertical direction have to be installed according the position of the screen in the display wall.

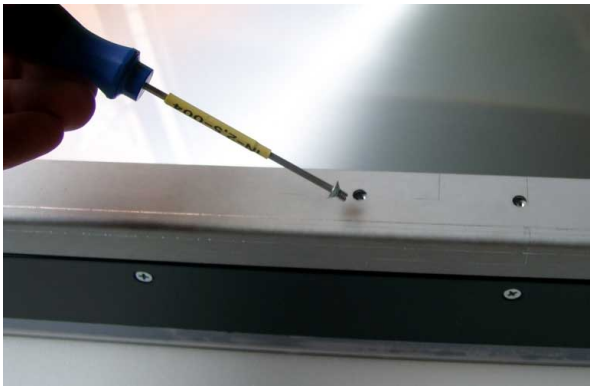
The picture shows the position of the screws.



To block vertical movement, 4x2 screws have to be applied and fixed.

To block horizontal movement, 2x1 screws have to be applied and fixed, one at each side.

Make sure that the two screws are diagonally positioned!



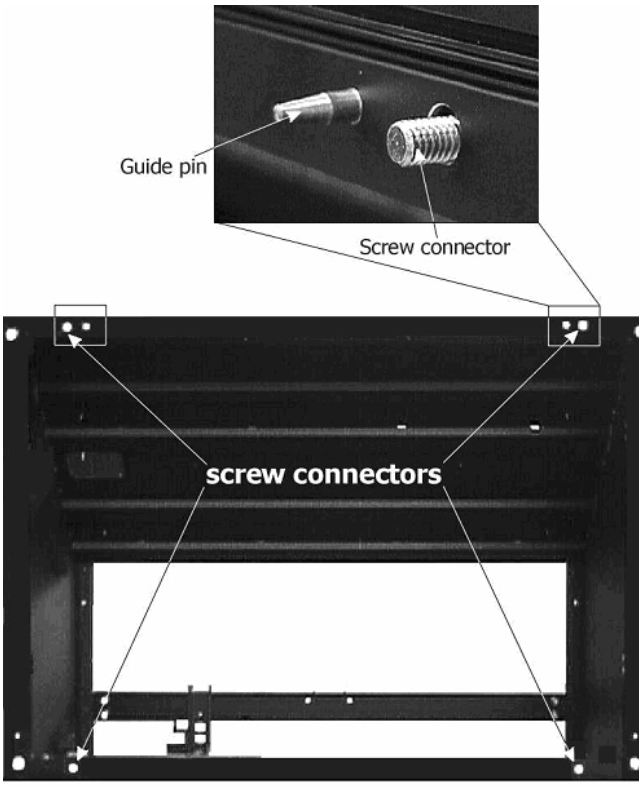
0 screws	0 screws	2 screws	0 screws
0 screws	0 screws	2 screws	0 screws
8 screws	8 screws	static 10 screws	8 screws

All screens are delivered with full movability, i.e. no screws attached.

The number of screws to be applied and fixed depends on the position of the screen in the display wall.

Depending on the position of the screen in the display wall, zero, 8 (4x2), 2 (2x1) or 10 (4x2 + 2x1) screws have to be installed.

Step1



Dark box front view

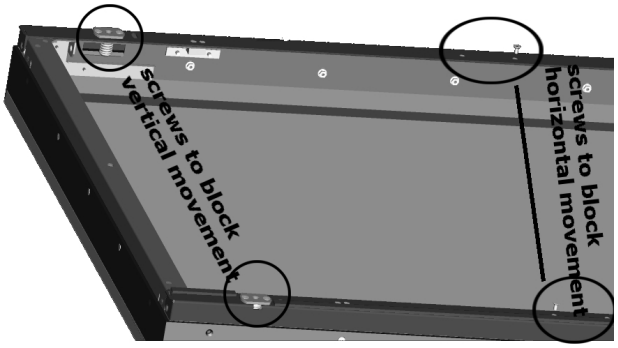
Please note:

Installation of the screens starts on the *bottom* row.

Every darkbox provides the fixation facilities for the screen. The fixation facilities comprise 4 screw connectors (one at each corner), and in addition next to the top screw connectors a guide pin to put on the screeen.

The fixation facilities and their use are the same for the screen modules and the seamless screens.

Step2

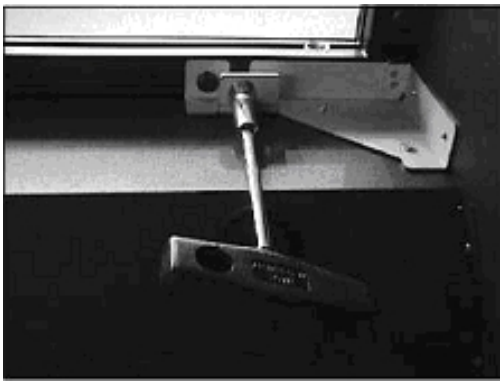


Start installing the static screen:

The static screen is the screen in the mid of the bottom row.

In case of an even number of colums (no "center module") the static screen is the first screen of the right half of the display wall, seen from front.

For the static screen, apply and fix all 10 screws: both, movability in vertical and in horizontal direction has to be locked!



Step3

When all screws have been applied and fixed, place the screen module on the guide pins on the front of the dark box. Be careful to ensure that the edges of the screens are not damaged.

Screw on the screen module with an hexagon key size 5 mm (torque 1-2 NM).

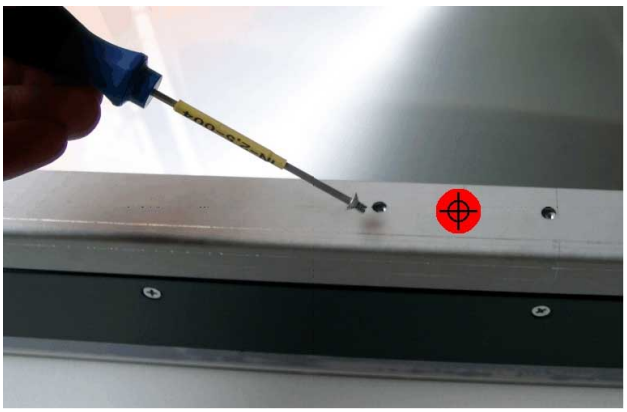
The picture on the right shows tightening one of the screws at the bottom.

Try to fix the screen centered to the darkbox (visual check)

Tighten all 4 screws!

Completely remove the two horizontal movement screws.

Step4

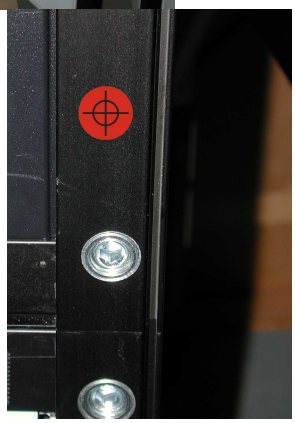


The static screen itself and also the projection module equipped with the static screen has to be labeled!
Wrt screen, put the label between the two facilites to block horizontal mevement.

For the label and the position of the label on the profile see picture on the right!

It is mandatory to stick to the rule mentioned above and also to put on the label.

In case the screens have to be removed (either the display wall has to be de-installed, or either a screen has to be replaced) there is a high risk of crashing all screens if the static screen is not known!



Mark the static screen!

The static screen defines the movability of all screens in a display wall.

Dismounting a screen requires the knowledge of it's movability.

Step5

All other screens of the bottom row are installed following the procedure below:

Apply the 4x2 screws to block the vertical movement.

Step6

Screw in the horizontal movement screws until the screen front is moved approx. 1mm against the vertical frame towards the horizontal movement screw.

Hang the screen on the pins. Make sure that the horizontal movement screws always show towards the border of the display wall – this means that the left neighbor of the static screen is rotated by 180° compared to the right neighbor of the static screen.

Lock the 4 securing screws from behind.

The horizontal movement screws of all screens right to the static screen look in the same direction.

The horizontal movement screws of all screens left from the static screen also look in the same direction, but opposite to the horizontal movement screws of the screens right to the static screen.

Step7

After locking the screen there will be a screen gap to the neighbored screen of around 1mm.

To close this gap, drill out (turn left) the horizontal movement screw.

The screen is now moving and the gap will be closed.

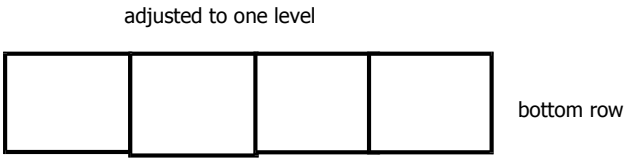
Never drill only one of the horizontal movement screws completely out before turning the seconed!

Make several turns on one screw and than go to the second, turn it, go back to the first ... continue until the gap is closed.

Step8

Completely remove the horizontal movement screws!

Step9

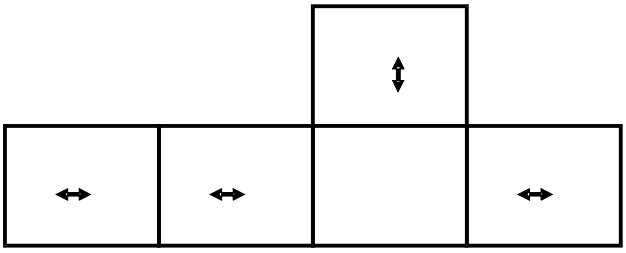


When all screens of the bottom row are installed, level the screens!

Loosen the 4 locking screws to move the screen slightly in vertical direction.

Adjust the vertical position of the screens that the upper border of the front elements make a straight line.

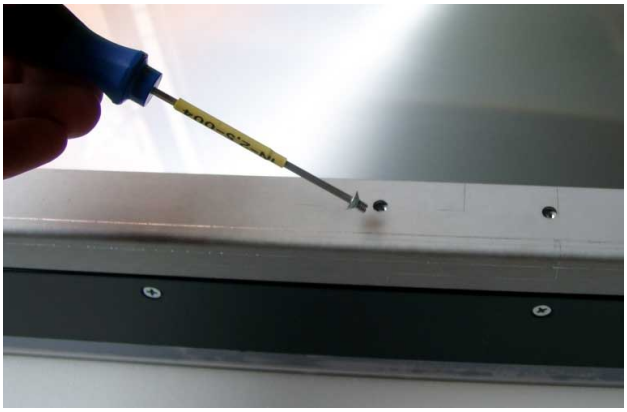
Step10



Install the screens of the second row:

Start with the screen on top of the static screen.

Lock it in horizontal direction by applying 2x1 screw diagonally.

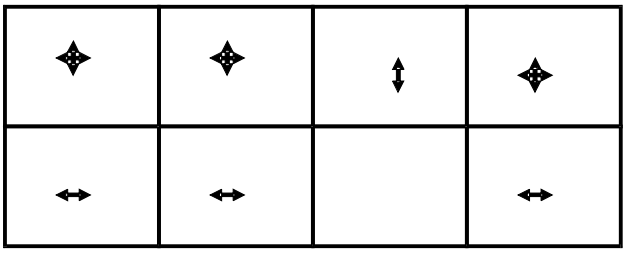


Take care that all 4 vertical movement plates are in their nominal position, i.e. the drillings of the plate flush with the threads of the frame.

Mount the screen that its position is symmetric and that it is touching the screen below.

Completely remove the horizontal movement screws.

Step11



Install the other screens of the second row.

These screens must not be locked in any direction! Therefore no screws have to be applied!

Screw in the horizontal movement screws until the screen front is moved approx. 1mm against the vertical frame towards the horizontal movement screw.

Since these screen feature full movability, no screws have to be applied and fixed.

When the screens are mounted and the gap to the adjacent screen closed by turning the horizontaol movement screws, completely remove these screws!

Step12

The leveling of the upper border of that row and the rows above is determined just by the tolerance of the screen size which is very tight.

So the leveling should be already quite good.

In case there is still a small gap to the adjacent screen, apply the leveling tape B195707, covering the entire width!

Step13

Installation of the screens for all other rows are identical to installing the screens of the second row:

The screen above the static screen has to be locked in horizontal direction, all other screens must not be locked.

Take care that the screens are locked according their position!

Step14

When all screens are mounted, put all horizontal movement screws into the plastic bag (24 screws per bag) and fix these plastic bags in the darkbox of the static screen using the cable ties! In case the screens have to be de-installed, these screws need to be applied again!

Step15

Now the brushes have to be mounted.

The brushes serve as a light shield and close the gap between the screen module and the darkbox. They have to be glued on all edges of the display wall..

They are flexible to allow the movement of the screens.

The brushes are available in two lengths, one matching the horizontal, the other matching the vertical dimension of the screen module.

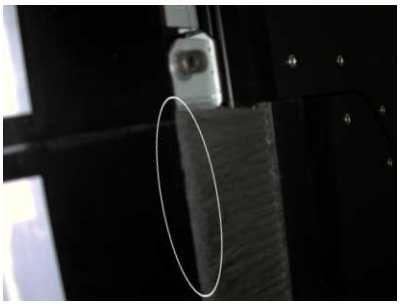
First clean the surface where the brushes have to be fixed with alcohol to remove any grease!

Step16

Start with the vertical brush on the bottom row!

Remove the protective tape.

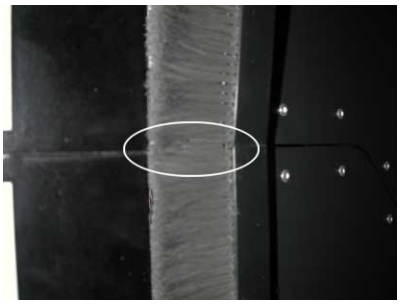
Step17



Position and align the brush to the top edge of the dark box.

Carefully fix the brush to the darkbox. Take care that the bristles are aligned with black metal border of the screen!

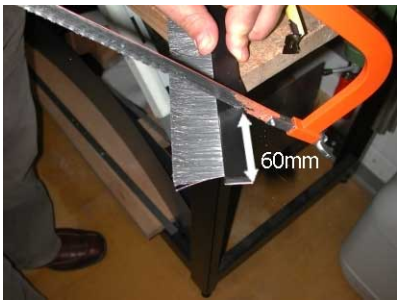
Step18



Proceed accordingly to attach the brush on the next module.

Take care for a neat and proper joint!

Step19



When all the vertical brushes are attached, proceed with the horizontal brushes on the bottom row.

Please note:

Since the brush is in-between the support profiles, it has to be cut by 2x30 = 60mm.

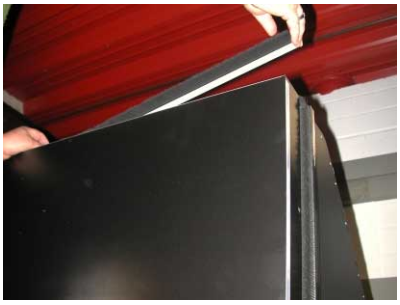
Use a saw to adjust the length!

You have to shorten half of the horizontal brushes!

Step20

Position, align and attach the shortened brush on the bottom of the module in-between the support profiles. Take care that the bristles are aligned with the black metal border of the screen to make sure that there is no light gap!

Step21



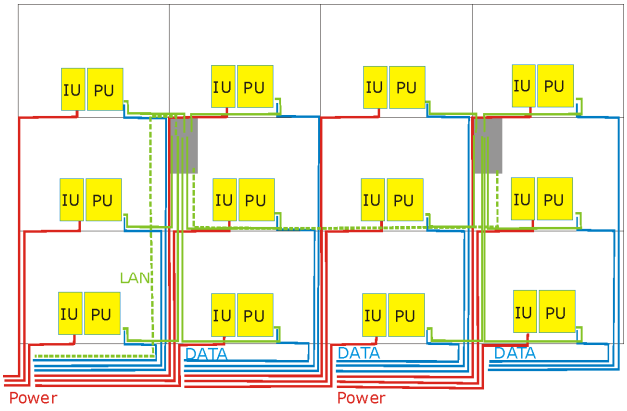
Finally attach the brushes on the top row! Take care for a neat and proper joint to the vertical brushes!

5.12 Precabling

Step 42

Now it is recommended to start with the cabling. Guiding the cables is easier without the core elements (illumination unit, projection unit) installed.

Step 43



Power cabling: always at the right (seen from front): red
Data cabling: always to the left (seen from front): blue
LAN cabling: take care not to guide within the projection path!: green

The schematic at the left shows the layout of the cabling. Guide the cables accordingly.

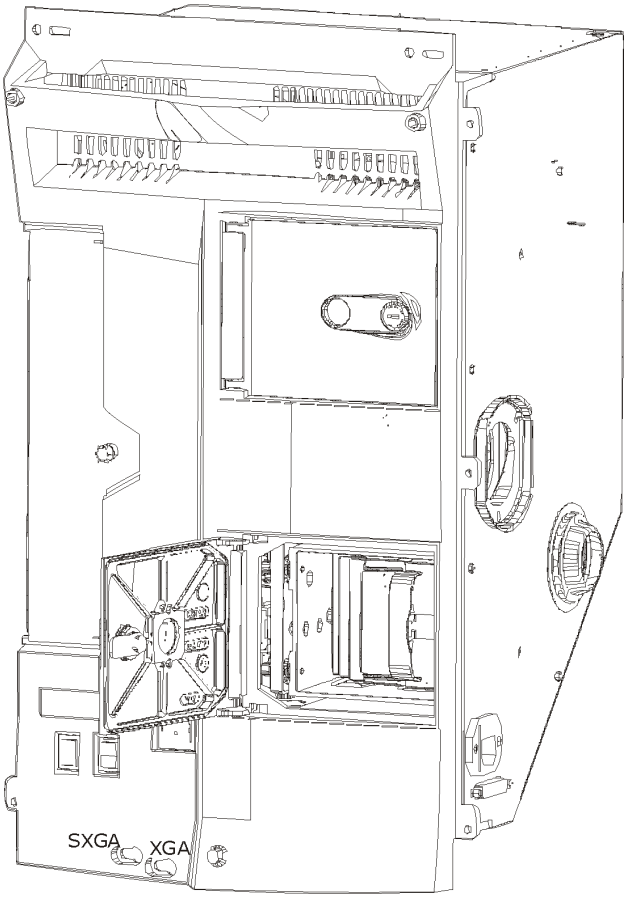
At the bottom of a column, all cables are fixed to the cable hub and guided to the right.

Position the cables.

Fix the cables only loosely – finalizing the cabling and fixing will be done after the installation of the illumination unit and the projection unit, see Step 53.

5.13 Installation of the illumination unit

Step 44



Seen from front, the illumination unit is located at the right side.

The illumination unit houses the two lamps and the filter cartridge as well as control elements and the LCD to display system information.

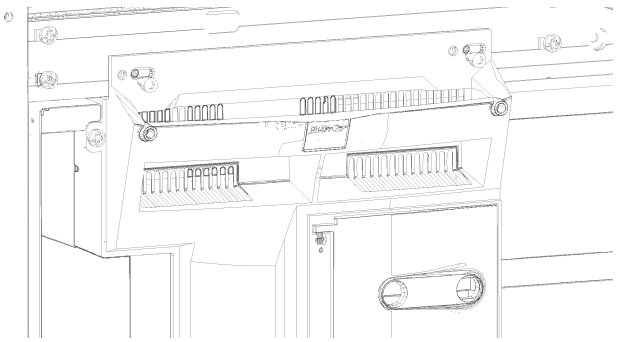
The fixation facilities allow mounting the device into 4:3 systems and into 5:4 systems: Depending on the height of the module, the bottom fixation of the device uses the upper (SXGA systems) or the lower (XGA, SXGA+) keyhole.

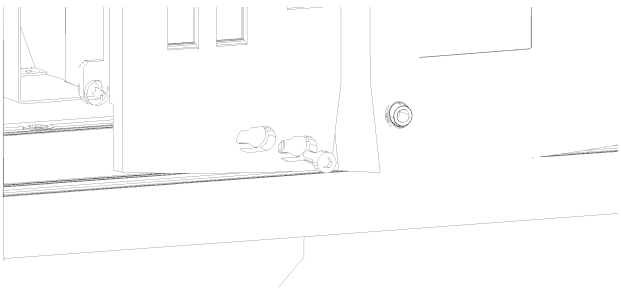
The engine support profile comes already with the pins to hang on the illumination unit and the screws to fix it.

Step 45

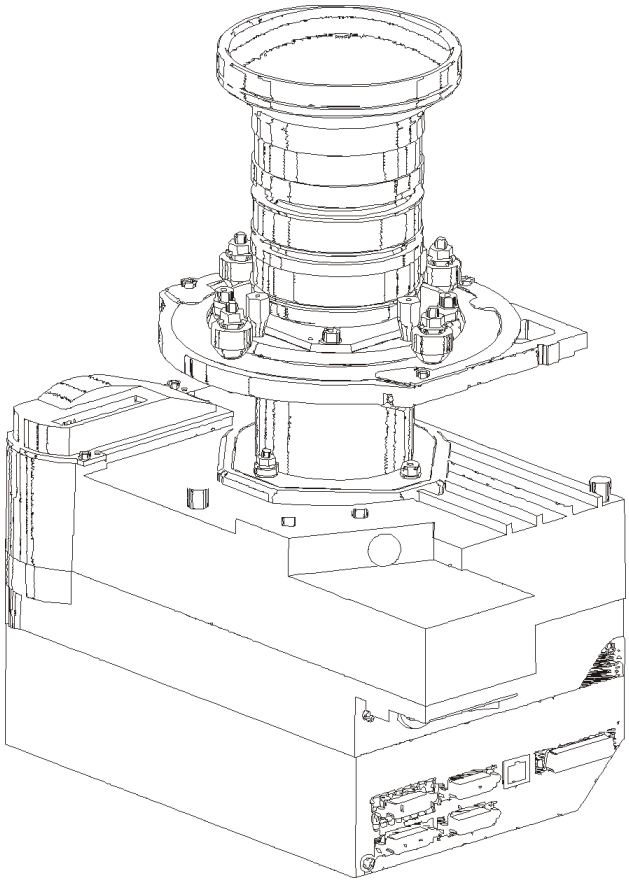
Remove the respective screws from the engine support profile, hang the illumination unit onto the pins and slid the screw of the rear bottom profile into the keyhole.

Tighten the screws.





5.14 Installation of the projection unit



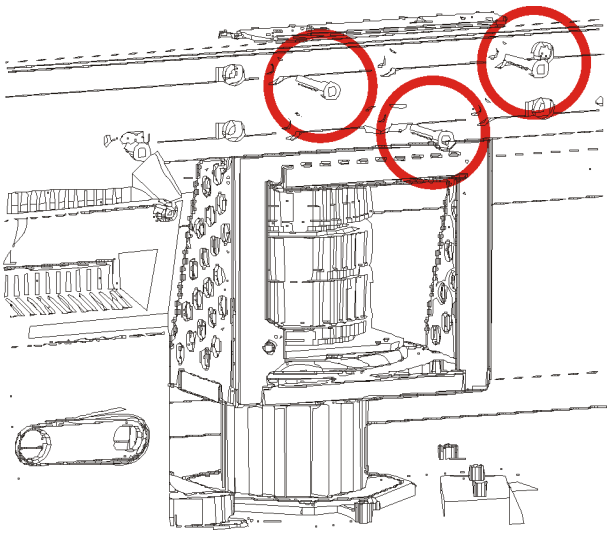
Step 46

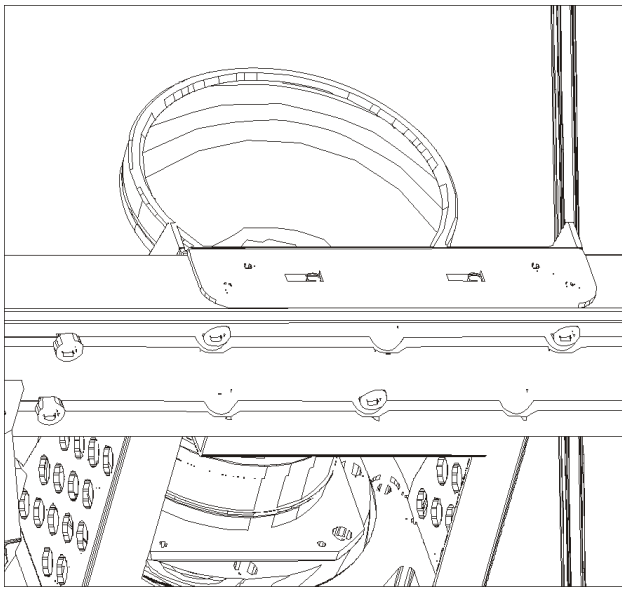
On the engine profile there are also two pins to hang the projection unit on. Subsequently fix the projection unit with 3 screws.

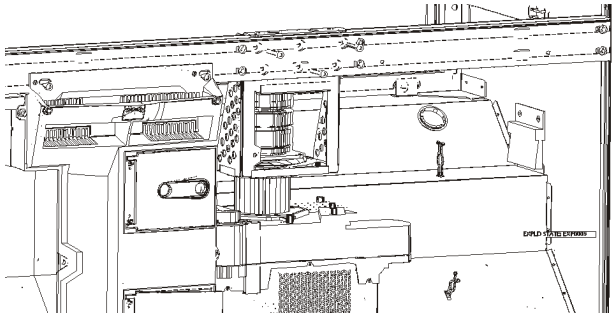
In contrast to the projection unit of the first generation, the fixation facilities are arranged differently: there are two screws on top of the connection bracket of the projection unit, and one centered beneath them.

Hang the projection unit onto the pins so that the distance from the illumination unit is at max.

Later the illumination unit and the projection unit have to be moved towards each other for a close and smooth connection of the air and light inlets!





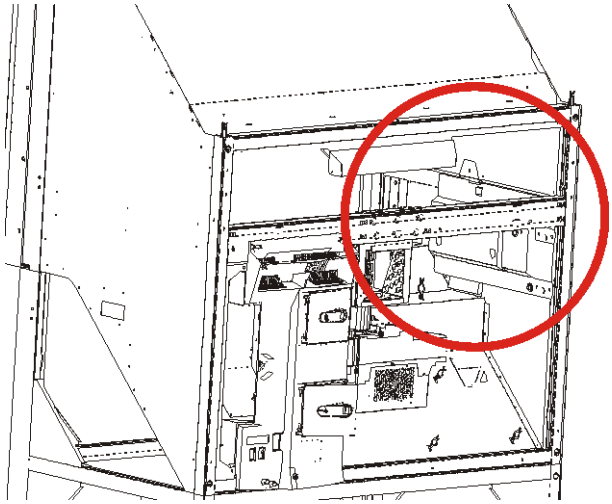


Step 47

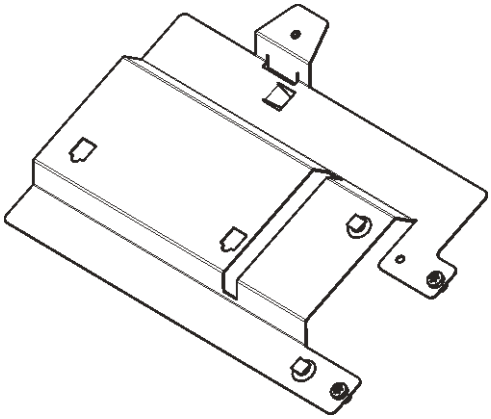
Care for a close connection between illumination unit and projection unit!

When the illumination unit and the projection unit of all projection modules of a display wall are installed, proceed with the cabling.

Step 48

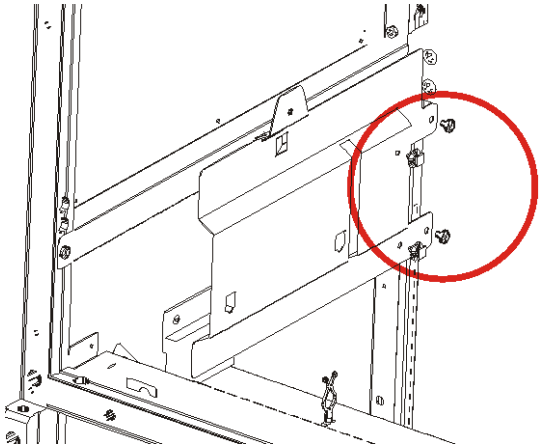


In case the projection module has to be equipped with a Multi Input Module, the support for the Multi Input Module has to be installed on the left side of the dark box.

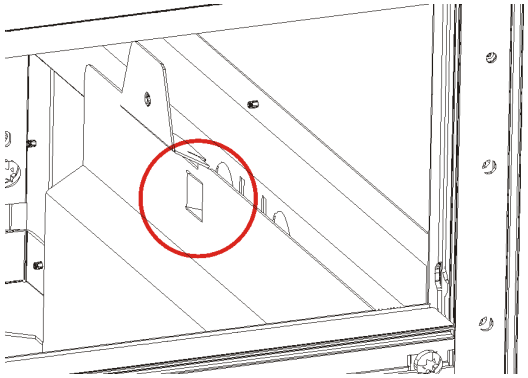


Step 49

Insert two moveable nuts into the rear verticle profile



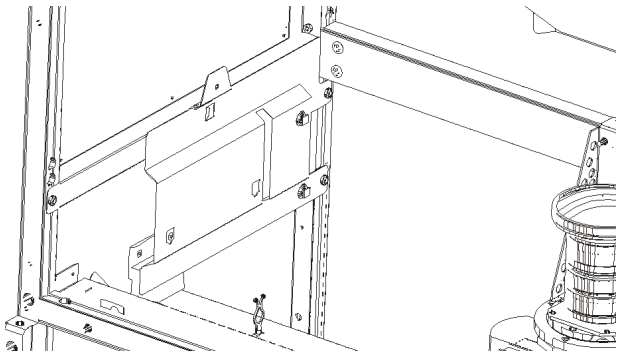
Step 50



The "nose" of the interface plate perfectly fits into the holes of the reinforcement metal on the dark box.

Insert the "nose" of the interface plate into the reinforcement metal of the darkbox.,

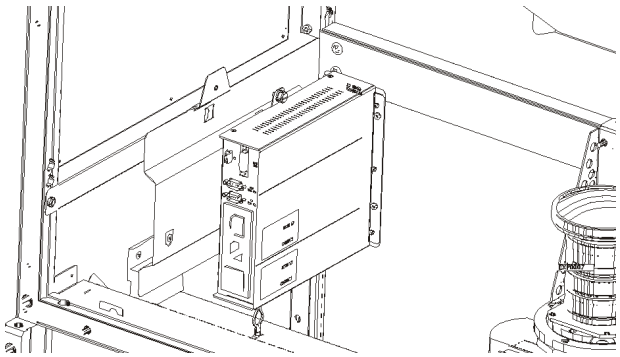
Step 51

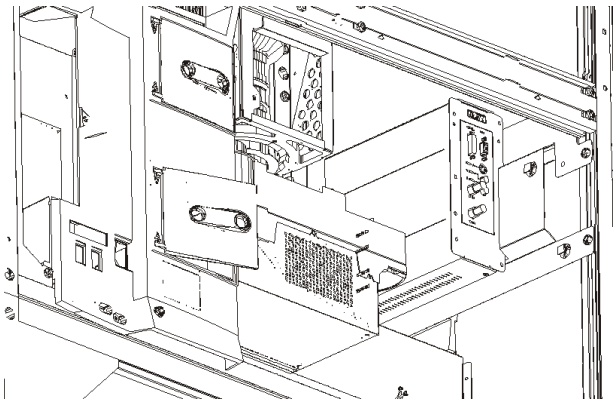


Subsequently fix the interface plate by means of two screws M6x7 and the moveable nuts inserted into the vertical profile in the previous step.

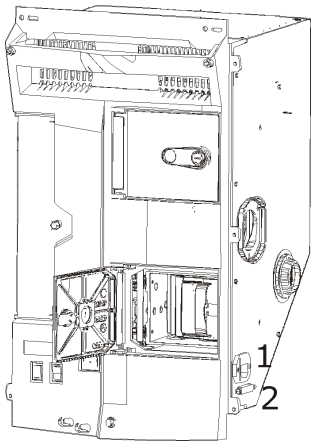
Step 52

Install the Multi Input Module. It is attached to the installed support tray and fixed via the knurrled screw.





5.15 Finalizing the cabling



Step 53

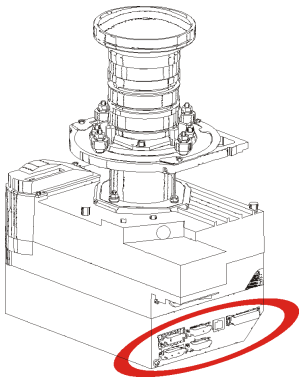
Power:

Plug in the power cord to the IEC320 interface of the illumination unit [1].

In case the display module is equipped with a Multi Input Module:

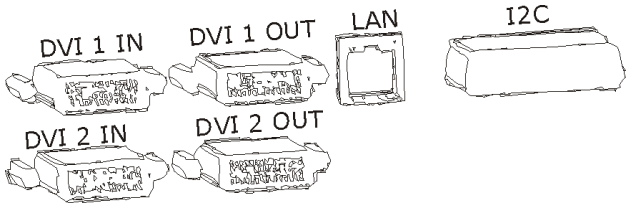
Plug in the power cord to the IEC320 interface of the Multi Input Module.

Use the cable included in the Multi Input Module to connect the IEC320 interface [1] of the illumination unit to the AC out interface of the Multi Input Module.



I2C Communication:

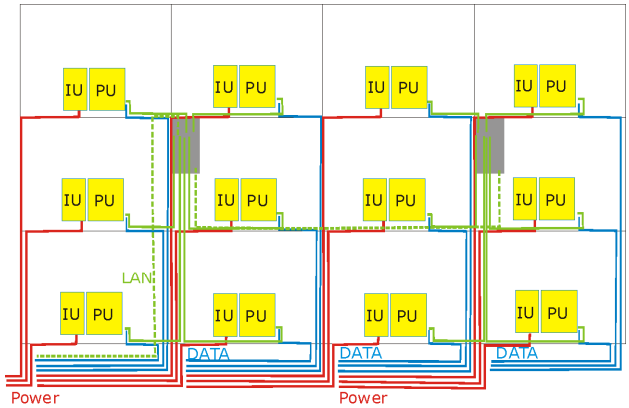
Plug the interconnection cable into the I2C interface [2] of the illumination unit and of the projection unit [I2C].



Digital sources are connected to DVI 1 IN and/or DVI 2 IN. DVI 1 IN is loop-through to DVI 1 OUT, DVI 2 IN is loop-through to DVI 2 OUT.

In case a source has to be displayed on additional projection modules, connect the respective DVI output with one of the DVI inputs of the other projection module

Step 54



LAN Subnet

The projection modules are controlled via a web application. All projection units are connected in a subnet via LAN switches.

One LAN switch serves 6 projection modules. The cable layout depends on the actual configuration.

In case the display wall is 6 modules in height, one column is connected to the switch, otherwise multiple columns are connected to the switch. During installation, the position of the switch has been selected to minimize distances, cf. .Step 08

Power cabling: always at the right (seen from front): red
Data cabling: always to the left (seen from front): blue
LAN cabling: take care not to guide within the projection path!: green

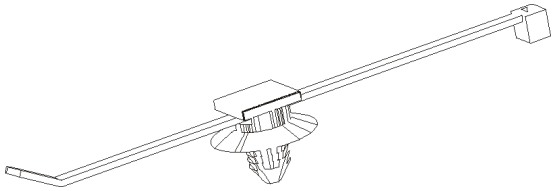
For the LAN cabling, proceed as per column.

Connect all projection units of a column to the LAN switch installed in the same column or in the next column.

Care for a clear layout!

Digital sources are connected to DVI 1 IN and/or DVI 2 IN. DVI 1 IN is loop-through to DVI 1 OUT, DVI 2 IN is loop-through to DVI 2 OUT.

In case a source has to be displayed on additional projection modules, connect the respective DVI output with one of the DVI inputs of the other projection module

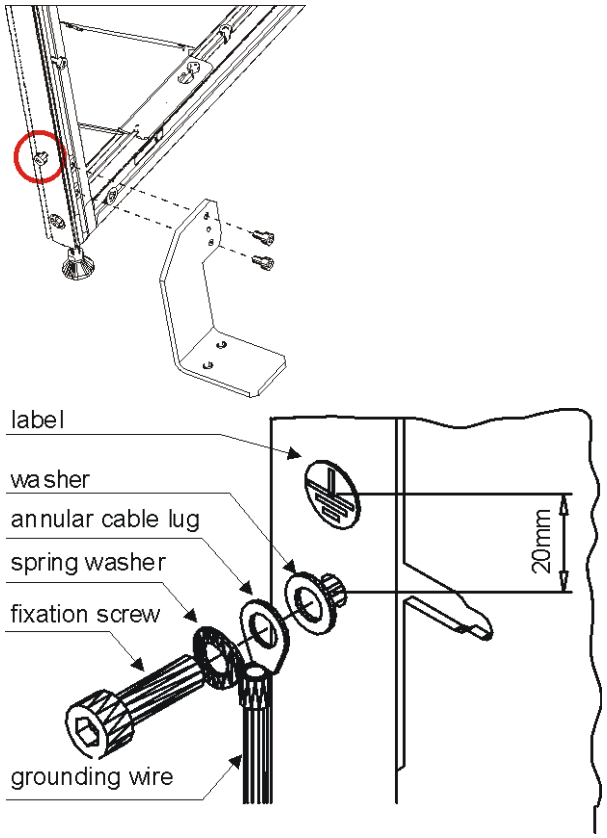


Step 55

The cables have to be fixed to the sidewalls via cable ties. The cable ties are inserted into the square duct of the plastic cable tie holders already mounted to the left and right sidewalls.

5.16 Grounding

Step 56



Every support comes with a grounding kit which consists of a grounding wire (5m), the required fixation material and the label.

The wire is mounted on every second column, to the vertical profile, using the screw provided by the rear vertical profile, just above the foot. Unscrew this screw, apply the washer, the cable lug, the spring washer, and insert the screw again.

(This screw replaces the fixation screw included in the grounding kit).

Finally apply the label!

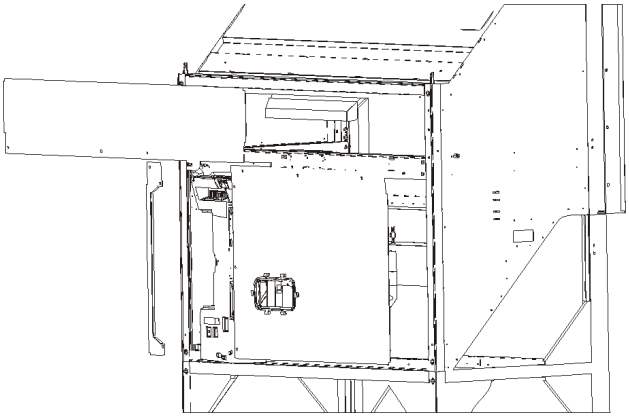
Please note:

Connection of the grounding wire to the power net of the customer has to be done by a qualified electrician!

Barco only provides the connection to the display wall!

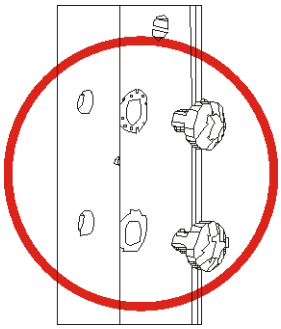
5.17 Covers

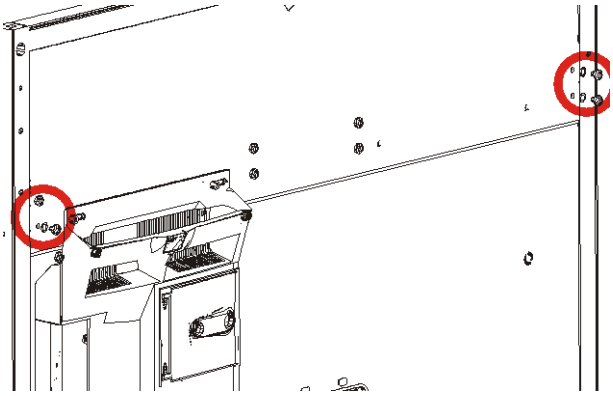
Step 57



The covers are fixed with screws M6x7, springwashers and moveable nuts (in the profiles)

Every cover has to be gounded! To ensure proper connection, the screws to be fixed with spring washers! Tighten the screws with a torque of 3Nm!

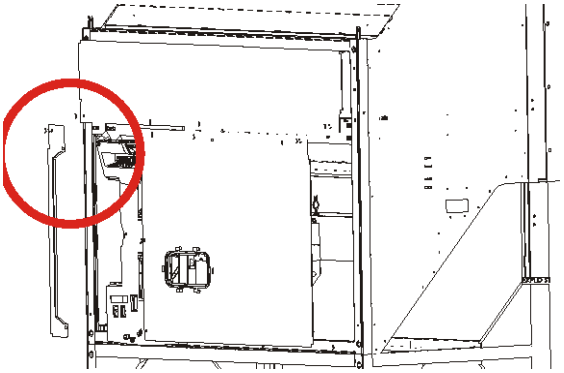


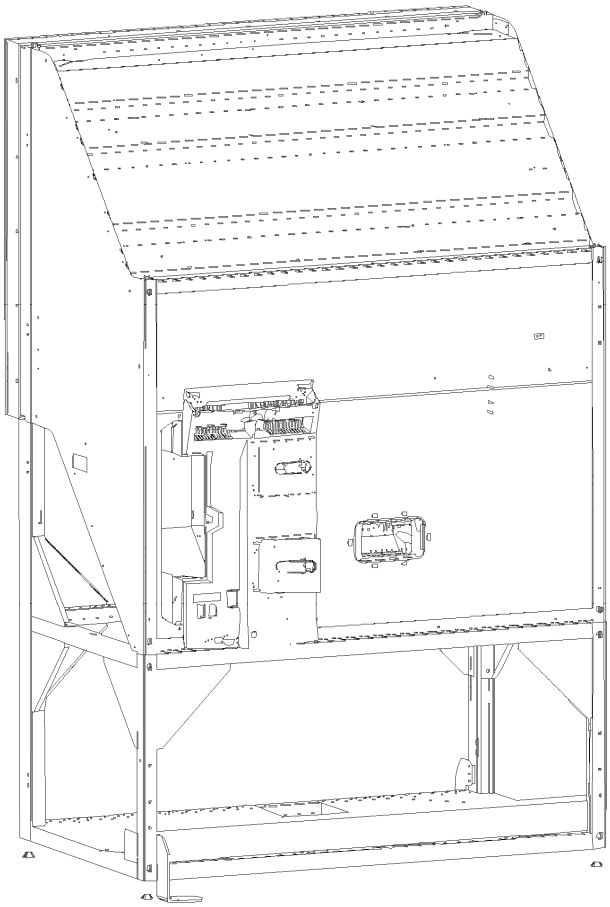


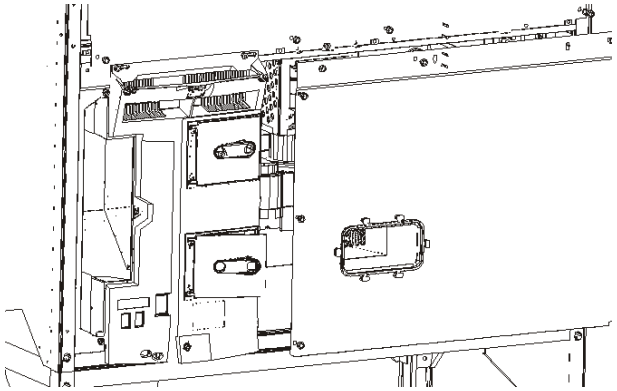
First apply the top cover.

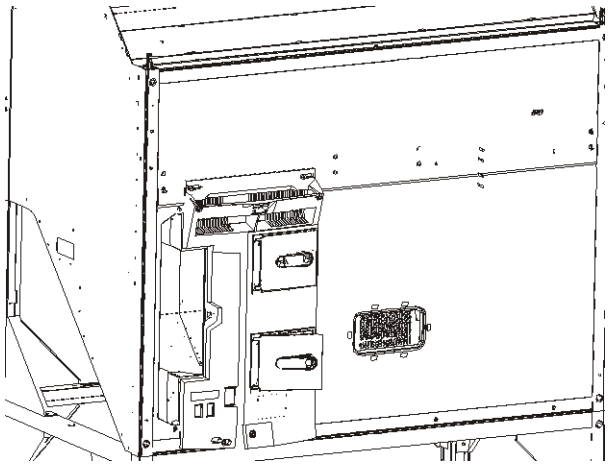
Subsequently fix the small between the vertical profile and the illumination unit.

Finally fix the big rear cover.









5.18 Setting up the network

Step 58

Connect the power strips of the display wall to the wall outlet. DO NOT CASCADE the power strips!!

The projection modules will have to be addressed by a unique IP address. In case this IP address is assigned via a DHCP server, you may switch on all projection systems.

In case the IP address is static, ONLY switch on one projection module!

Proceed with setting up the network as described in the respective chapter in the manual of the web interface.

6 Optical adjustment

6.1 Preparation

Step 59

When all projection modules have been assigned a unique IP address,

Switch on the projection modules

Switch on the lamp.

In case of SXGA and SXGA+ systems: Use the web interface to select the respective resolution, cf. manual of the web interface.

When the lamp has been on for about 5 minutes:

For each projection module, optimize the coupling for the active lamp, then switch to the other lamp, wait approx. 5 minutes, and also perform the optimization of the coupling.

Use the web interface to perform this action, or the Barco Wall Control Manager software. For more information, please refer to the respective manuals.

Use the web interface or the Barco Wall Control Manager to apply a test pattern (grid). For more information, please refer to the respective manuals.

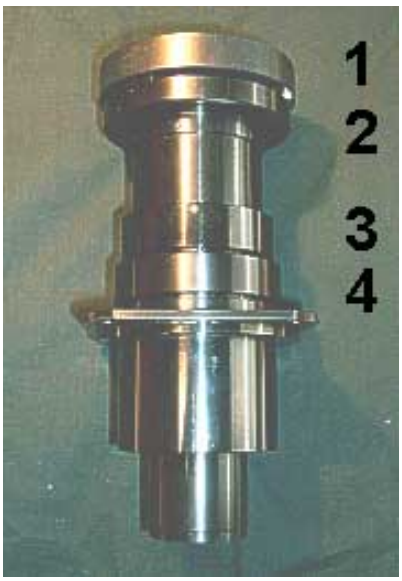
Now you can adjust the lens for an optimized display.

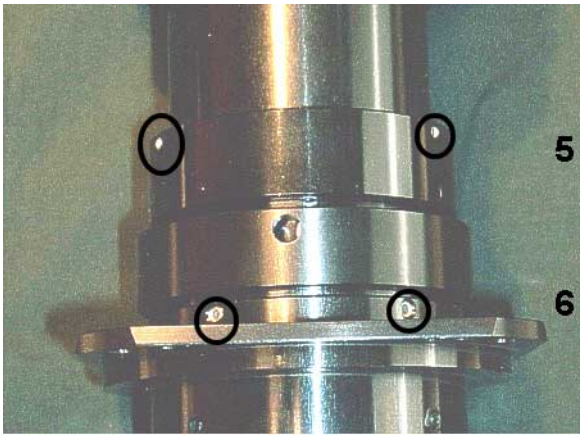
To carry out the following procedures it is recommended to observe the displayed image from the back of the screen thus immediately seeing the effects of the adjustment procedures. To enhance contrast it may be necessary to veil the screens with a dark cover.

Only authorized and specially trained personnel should carry out adjustment!
Keep in mind that electrical power is supplied! Never touch anything different from the parts described below due to the dangers of electrical shock.

After the geometry adjustment has been done the final finetuning might require loosening the screws of the screen a little bit.

6.2 The projection lens for XGA systems





1	Scale for screen size adaptation, turn left for 50" systems, right for 67" systems
2	Fixation screws for screen size adaptation lock, filled with paint
3	Zoom adjustment
4	Focus adjustment
5	3 fixation screws for zoom lock
6	2 fixation screws for focus lock - the focus ring still shows some clearance after locking. This due to the mechanical design of the lens. Anyway, the focus is fixed.

The projection lens allows to zoom and to focus the picture. The adjusted settings can be locked by means of fixation screws.

It is recommended to lock the lens only after the entire adjustment procedure has been done.

After locking the focus adjustment ring and the zoom adjustment ring it might be necessary to correct again x, y shift of the picture.

Even if locked, the focus adjustment ring can be slightly turned. Do not worry! The focus is locked anyway!

6.3 The projection lens for SXGA systems

Figure 6-1
projection lens for SXGA systems

1	Scale for screen size adaptation
2	Focus adjustment
3	Zoom adjustment
4	2 fixation screws for focus lock - the focus ring still shows some clearance after locking. This due to the mechanical design of the lens. Anyway, the focus is fixed.
5	2 fixation screws for zoom lock
6	Fixation screws for screen size adaptation lock, filled with paint

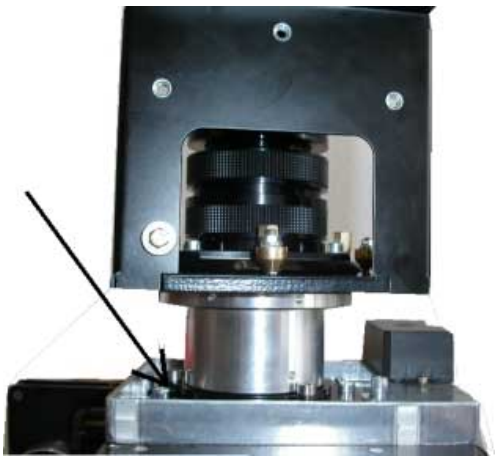
No adjustment should be required wrt screen size adaptation. In production, screen size is set to 50", see picture below.

6.4 Strictly prohibited devices

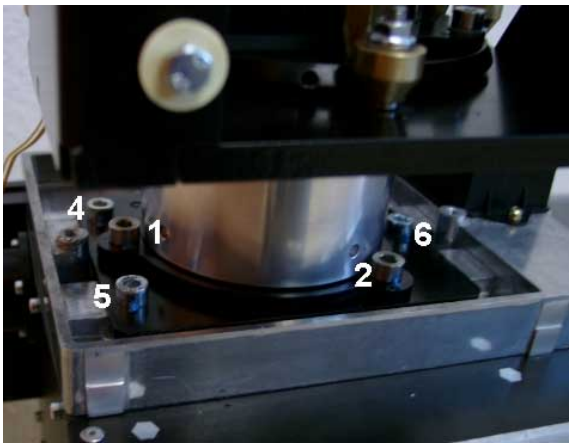
Have a careful look on the following picture and remember:
These screws shall NEVER be touched!!!

The projection lens is mounted on the housing of the projection engine.

All screws mounted on the level indicated by a black arrow are NOT to be touched. These screws are fixation screws for the entire projection lens or screws required for the Scheimpflug adjustment which has already be done in the factory!



For better recognition, these screws are locked with paint. The following picture shows the respective screws in detail:

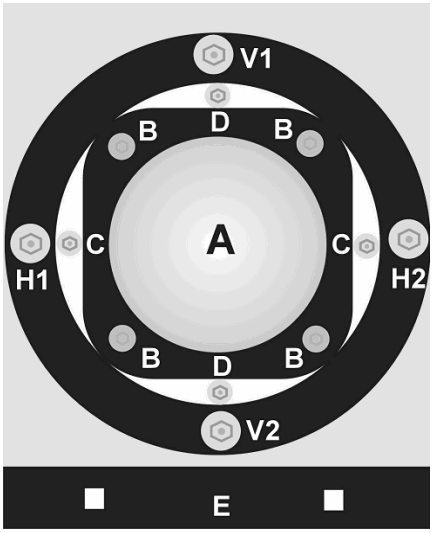


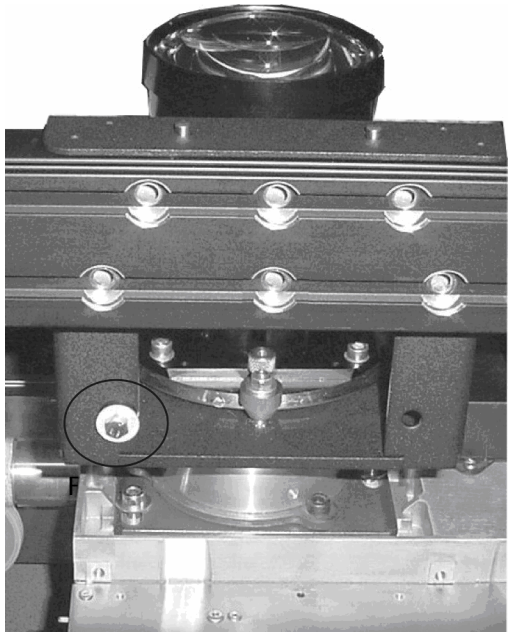
Screws	Function
1, 2 (and 3, not visible)	Scheimpflug adjustment
4, 5, 6	Mounting and fixation screws

6.5 Adjustment devices

Besides the adjustment rings on the projection lens to adjust focus and size, there are adjustment screws to correct distortions.

The following picture gives an overview about the position and the function of the adjustment screws.



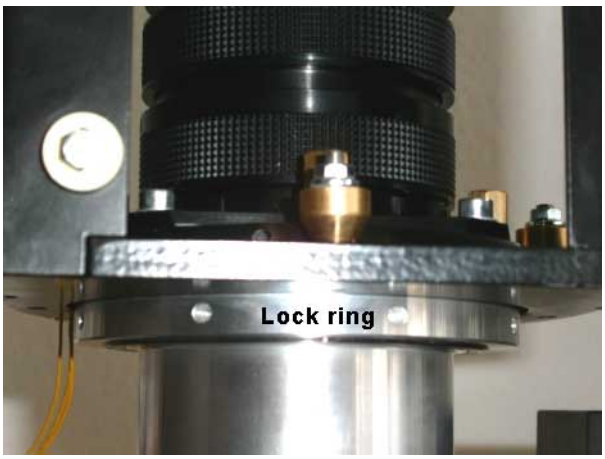


A	Lens	H1, H2	Horizontal trapezoid
B	Lens securing screws	V1, V2	Vertical trapezoid
C	Horizontal lens shift	E	Mounting angle
D	Vertical lens shift	F	Rotation

Table 1

6.6 First steps

The entire projection unit is locked via the lock ring:



- Unlock the system (loosen the lock ring)
- Loosen the screen size adaptation lock screws and the zoom lock screws on the projection lens.
- Loosen slightly the securing screws of the projection lens B.

Without unlocking the system, no adjustment is possible!

The lens unit is a high precision mechanical device!

Handle with care!

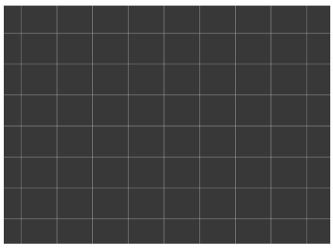
During the adjustment procedure, never apply any force on the lens unit or on parts of the lens units (nuts, screws...)

6.7 Focus adjustment

The sharpness of the outlines of the squares (test pattern) is adjusted by turning the focus adjustment ring.

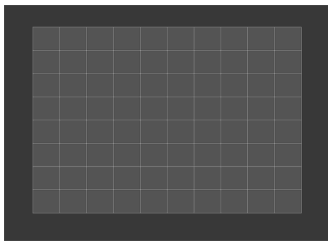
6.8 Picture size

The picture size is adjusted by means of the zoom adjustment ring at the lens



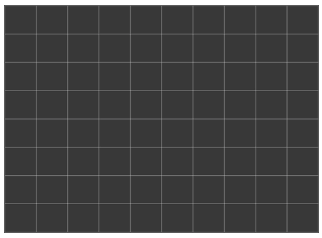
Picture too big

Turn the zoom adjustment ring at the lens counterclockwise to decrease the size of the picture



Picture too small

Turn the zoom adjustment ring at the lens clockwise to increase the size of the picture.



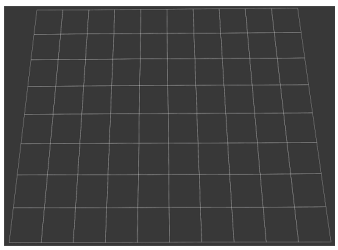
Picture size ok

The grid matches the borders of the screen

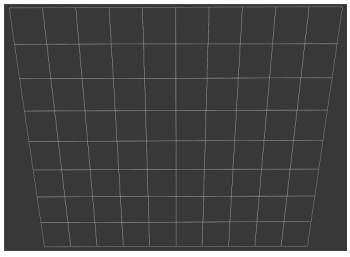
6.9 Vertical Trapezoid

Vertical distortion is adjusted by the screws V1 and V2

Always turn one of the paired adjustment nuts clockwise while simultaneously turning the other one counterclockwise!



Turn the adjustment screw V1 counterclockwise and V2 clockwise until the vertical lines gets parallel to the border of the screen.

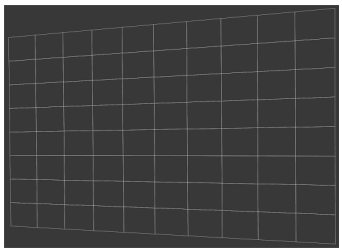


Turn the adjustment screw V1 clockwise and V2 counterclockwise until the vertical lines gets parallel to the border of the screen.

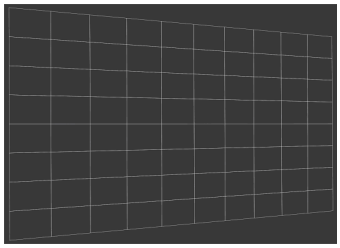
6.10 Horizontal trapezoid

Horizontal distortion is adjusted by the screws H1 and H2

Always turn one of the paired adjustment nuts clockwise while simultaneously turning the other one counterclockwise!



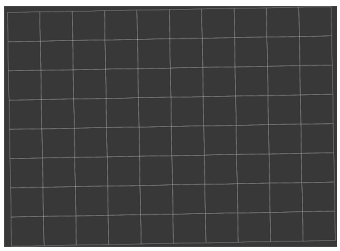
Turn the adjustment screw H1 counterclockwise and H2 clockwise until the vertical lines gets parallel to the border of the screen



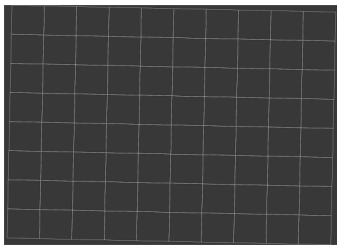
Turn the adjustment screw H1 clockwise and H2 counterclockwise until the vertical lines gets parallel to the border of the screen.

6.11 Rotation

Rotation distortion is adjusted by the screw F



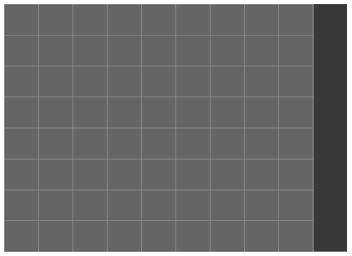
Turn the rotation adjustment screw F clockwise until the horizontal lines gets parallel to the border of the screen.



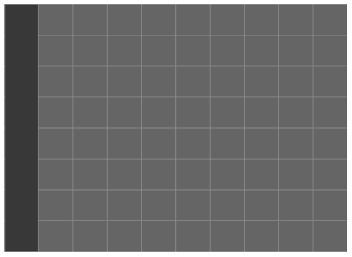
Turn the rotation adjustment screw F] counterclockwise until the horizontal lines get parallel to the border of the screen.

6.12 Horizontal picture shift

Horizontal picture shift is adjusted by the screw C



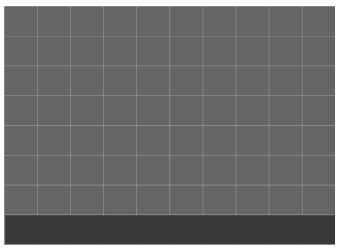
Use the adjustment screws for horizontal lens shift C. Tighten the left and loosen the right screw to move the picture to the right.



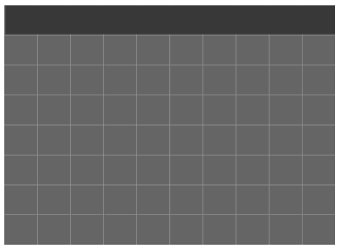
Use the adjustment screws for horizontal lens shift C. Loosen the left and tighten the right screw to move the picture to the right.

6.13 Vertical picture shift

Vertical picture shift is adjusted by the screw D



Use the adjustment screws for vertical lens shift D. Tighten the top and loosen the lower screw to move the picture downwards



Use the adjustment screws for vertical lens shift D. Loosen the top and tighten the lower screw to move the picture upwards

6.14 Locking the Projection Unit

After the adjustment procedures the projection unit must be locked.

- Turn the lock ring counterclockwise until it does not move any more. (don't tighten this ring too strong)
- Lock the zoom and the focus adjustment by means of the fixation screws.
- Tighten carefully the four securing screws of the lens.
- Check if the position of the picture didn't change while locking the projection unit.

7 Wall attachment

7.1 General

The wall fixation comprises some standard parts (brackets, screws) and some project specific parts (profiles).

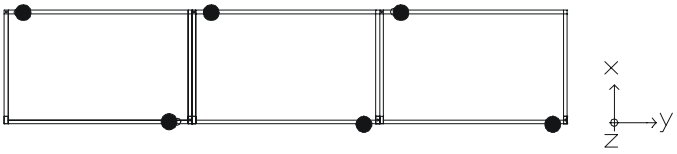
The wall fixation is available in a linear version and in an A-shape version.

7.2 Rules

The display wall has to be fixed to the floor, and in case of (more than) three rows, to the wall, too.

Fixation to the floor only:

In case a system has only to be fixed to the floor, every support is attached on the front side and on the back side. These two anchoring devices are in a diagonal arrangement, see schematics:



Fixation to the floor and to the wall:

In case a system has to be fixed to the wall, too, the lower anchoring devices are only applied on the rear side.

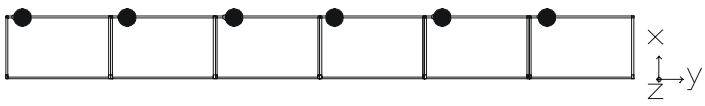
For the upper anchoring devices (wall fixations), the following rules apply for each row which must be attached to the wall:

The fixations are mounted on the inner side of the most left and the most right projection module, too. Within the distance of these fixations, additional fixations are mounted in such a way that the distance between two fixations does not exceed three projection modules, and that the fixations are equally distributed.

The following rows have to be fixed:

Entire height (number of rows)	Fixation attached to row
3 or 4	3
5 or 6	2, 5

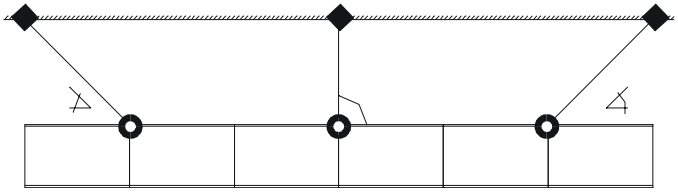
Ground plan



Example:

Since the display wall is attached to the wall, the supports are attached to the floor on the rear side only.

Top view



Wall fixations are attached on the inner side of the most left/right projection module. Since the max. allowed distance between two fixations is 3 modules, one additional fixation is required. This additional fixation is mounted in a way that all fixations have the same distance.

Position of the lower and upper anchoring devices (schematics)

Lower anchor point (e.g. Chemical Anchor Upat UMV 60 M 10 when anchored to concrete)

Upper anchor point with wall (A connection has to be chosen that is designed for a maximal resulting traverse force of F=1.0 kN in the dowel vertical and parallel to the Display Wall)

Upper anchor point Display Wall

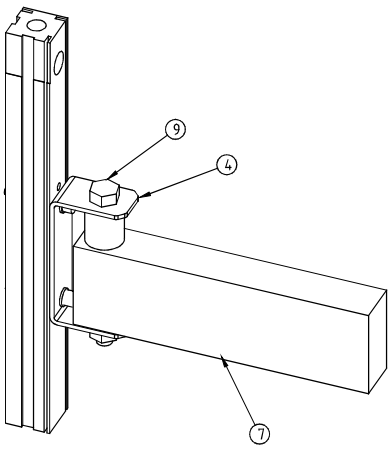
30° - 60°

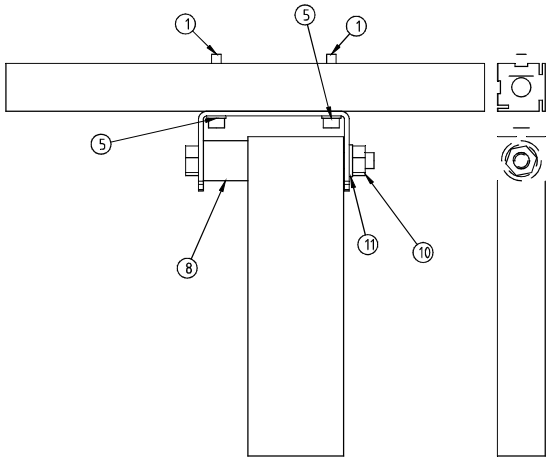
7.3 Linear version

The length of the profile is project specific and defined by the distance between the rear side of the display wall and the wall of the building!

The attachment of the profile on the wall of the building allows to be positioned between 30degrees and 60degrees off the straight connection thus also eliminating unevenness of the wall.

The following pictures show a sketch of the installed wall fixation on the display wall:

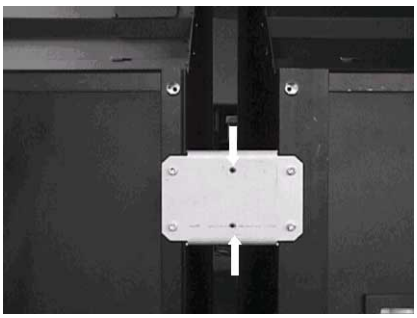




Item no.	quantities	Description
7	1	Profile (length: project specific)
9	1	Screw M10x110
4	1	Fixation bracket display wall side
5	2	Washer U-6-125
1	2	Screw M6x40
8	1	Distance bushing
10	1	Nut M10
11	1	Washer U-10-125

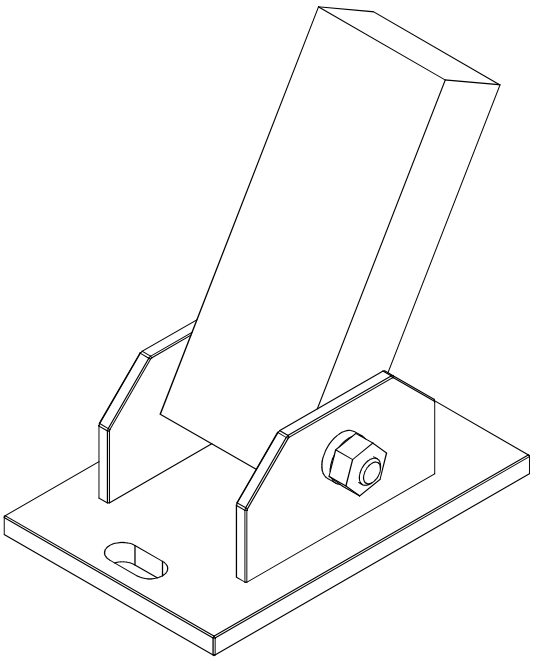
To install the wall fixation at the display wall, proceed as follows:

- Take the fixation bracket [4] and attach it to the profile of the dark box (linear setup of the display wall) using the screws M6x40 [1] and the washers U-6-125 [5]. In case of a polygonal setup, the bracket is attached to the polygonal connection bracket.



- Position the profile [7] and apply the bushing [8] (either on top of the profile as shown in the drawing, or beneath the profile).
- Insert the screw M10 [9].
- Use the washer [11] and nut [10] to fix it.

The following picture shows a sketch about the fixation on the wall of the building:



Attach the wall fixation bracket to the end of the profile by means of M10x85. Use the spring washer and nut to fix it.

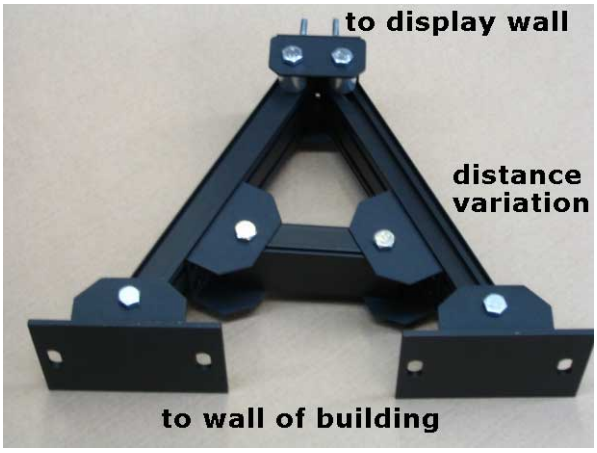
- Position the bracket at the wall of the building, and mark the position to drill the holes.
- Remove the profile from the bracket to be attached to the wall of the building (otherwise drilling and fixation is very difficult!).
- Use two dowels FUR 10 to attach the fixation bracket to the wall of the building.
- Reattach the profile to the bracket now fixed to the wall of the building.

7.4 A-shape version

The length of the profile is project specific and defined by the distance between the rear side of the display wall and the wall of the building!

The attachment of the profile on the wall of the building allows to be positioned between 30degrees and 60degrees off the straight connection thus also eliminating unevenness of the wall.

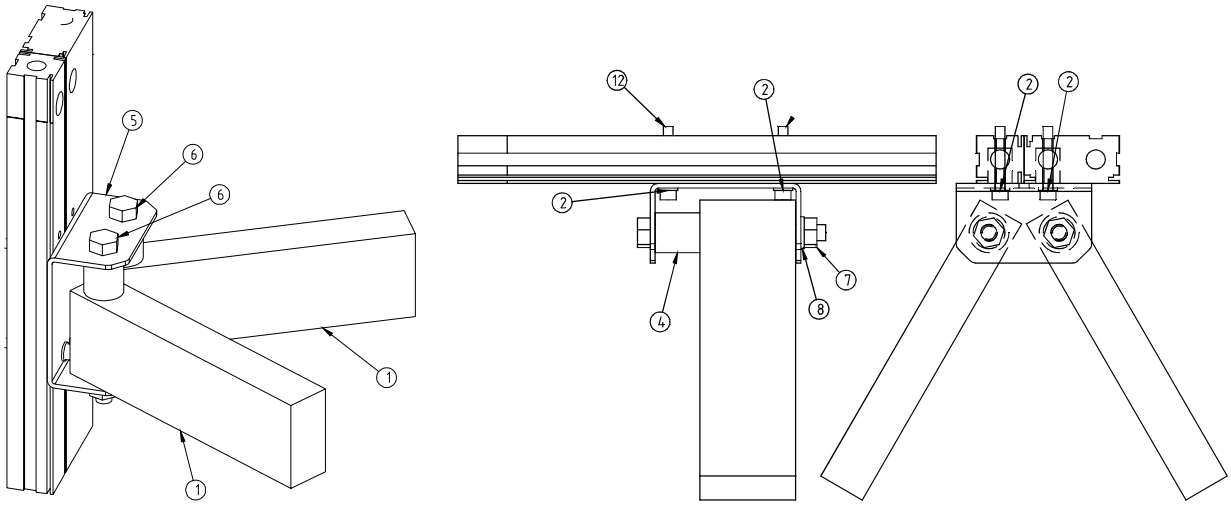
An assembled A-shape version looks like this:



First install the bracket to the dark box, then the legs, subsequently apply the short horizontal profile, then the brackets to be fixed to the wall of the building.

In case of a curved setup, the A-shape version is fixed via the center screws (2 screws only), fixed to the polygonal connection bracket, whereas for a linear setup the left and the right screws are used (4 screws), fixed to the profiles.

The following pictures show a sketch of the installed wall fixation on the display wall:



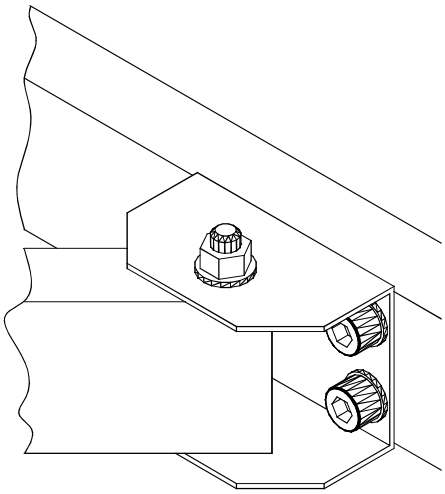
Item no.	quantities	Description
1	2	Profile (length: project specific)
6	2	Screw M10x110
5	1	Fixation bracket display wall side
2	4	Washer U-6-125
12	4	Screw M6x40
4	1	Distance bushing
7	2	Nut M10
8	2	Washer U-10-125

To install the wall fixation at the display wall, proceed as follows:

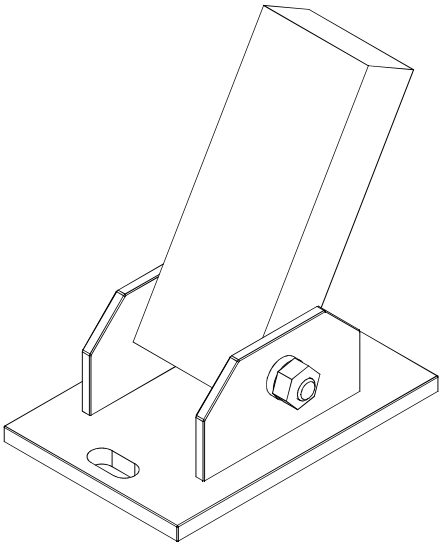
- Take the fixation bracket [5] and attach it to the profiles of the dark box (linear setup!!) using the screws M6x40 [12] and the washers U-6-125 [2] (4 screws). In case of a curved setup, the center of the bracket is fixed to the polygonal connection bracket with 2 screws.
- Position the profiles [1] and apply the bushings [4] (either on top of the profiles as shown in the drawing, or beneath the profiles).
- Insert the screws M10 [6].
- Use the washers [8] and nuts [7] to fix it.

To complete the A-shape,

- apply one of the brackets at each side of the short connection profile by means of M10x85. User the spring washer and nut to fix it.



- Fix the brackets at the legs of the "A": insert 4 Kanya nuts into each of the leg profiles and fix the bracket using screws M6x10 and spring washers. Do only tighten them loosely: by shifting this profile, the angle between the legs is determined and thus the distance to the wall of the building gets varied.
- Attach the wall fixation bracket to the end of the profile by means of M10x85. Use the spring washer and nut to fix it.
- Position the legs at the wall of the building, and mark the position to drill the holes.
- Remove the profile from the bracket to be attached to the wall of the building (otherwise drilling and fixation is very difficult!).
- Use two dowels FUR 10 to attach the fixation bracket to the wall of the building.
- Reattach the leg profiles to the brackets now fixed to the wall of the building.
- Finally really tighten the screws of the brackets at the legs of the "A".



8 Addresses

8.1 Hotline

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

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