

SHARP

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8M-B120

Installation Guidelines

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System Solutions Business Unit
Business Solutions BU
SHARP Corporation

Handling this material

This document is to explain how to design and install large monitors for our business partners. Please do not distribute this document or its contents to other companies, or use it in products of other companies. Please note that value and expressions on this document are subject to change without notice.

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1. Overall precautions

1.1 Overall precautions

Precautions for Usage, Installation

- Do not use the LCD monitor under following conditions ;
 - 1) Usage beyond its capability, feature/function, accuracy/precision
 - 2) Usage that could develop into injury or life-threatening situation under product breakdown
 - 3) Usage that could lead to major monetary damage

We will not take any responsibility if the product was used under above conditions.

<Example>

Control of all types of safety related usage of transportation equipment (air plane, train, car, etc.), aerospace equipment, communication equipment, nuclear control equipment, medical equipment, disaster-prevention/security equipment, all types of safety equipment, etc.

- We will not take any responsibility for any failure, damage, loss, etc. which arise from particular installation (high-ceiling mounting etc.) and/or installation by non-Sharp related parties. Prior to the installation, please examine the potential problems by the installation location and installation method, and only operate within the appropriate environment.

In case of product failure, removal and installation expenses incurred will be the customer's responsibility. Repairing may take a certain time period. For that reason, arranging of a back-up is recommended.

- Installation environment of the LCD monitor differs by individual cases. Please make appropriate installation by referring to this material. If you have any difficulty in making judgment about installation or have any comments/questions about the contents of this material, please ask SHARP sales subsidiaries.

1.2 Precautions for use

Confirmation of before-installation

Please check the following items before the installation is performed.

- Before installation, check if the monitor operates normally and there is anything wrong for the appearance.

If you find any failure after installation, it takes additional time to dismount.

It is possible to check the conditions of the monitor such as color, brightness, cracking, bright or black dot, leak of light, by doing the following steps. (This procedure does not confirm all the functions of this unit.)

You can connect an AC cable and use the remote control with the monitor standing in the lower box.

1. Remove the upper box, then lower the protection cover.
2. After removing the accessory box on the center of rear side monitor, you can connect AC cable by putting your hand between the protection cover and the display.



Power connection

3. Point the remote control at the light receiving part of the center of the unit and perform the following steps:

You can check the panel condition such as color, brightness, cracking, bright /black dot, leak of light.

1. Press "MENU" and select "setup" using [↑][↓][←][→] buttons and confirm with enter.
2. Press [↑][↓][←][→] to select (Information)-Identification and confirm with enter.
3. Select "Test pattern", then the panel status will be displayed.

1.2 Precautions for use

Before using this model, please note that the following items.

Transportation and installation work

- For transportation and installation work, use a crane without using human power.
- Check the eyebolts looseness when unpacking.

Continuous operation time

This product is designed for a maximum daily use of 16 hours. Use the monitor within the time of continuous operation.

1.3 Maintenance check

Items of maintenance check

In order to use the product in safety, daily maintenance and periodic maintenance check are required.

1) Daily maintenance

1 – 1) Cleaning of LCD panel

1 – 2) Monitoring of operating status

2) Periodic maintenance

Check up of installation condition to see if there is any backlash of fixing bracket or looseness of fixing bolts/screws.

Cleaning of LCD panel

- Wipe the surface of LCD panel with a soft cloth like lens cleaner or GAUZE.
- If you wipe it with a coarse cloth or rub it hardly, its surface may be scratched or damaged
- When the LCD panel is covered with dust, please use commercial electrostatics removal brush(dustproofing brush)
- Do not use a dirty cloth, a moist cloth and a chemical cloth to protect the LCD panel.

2. Design considerations

2.1 Precautions for temperature ,clearance space and installation environment

Temperature conditions

- Operating temperature range ※ 1
→32°F (0°C)-104°F (40°C)
- Operating Humidity range ※ 1
→20%-80%RH (No condensation)
- Temperature of LCD surface → Below 140°F(60°C)

Please follow these requirements when setting the monitor. Refer to the measures against temperature and install the monitor in accordance with its requirements.

※1: This range may change by installation conditions.

The thermal influence

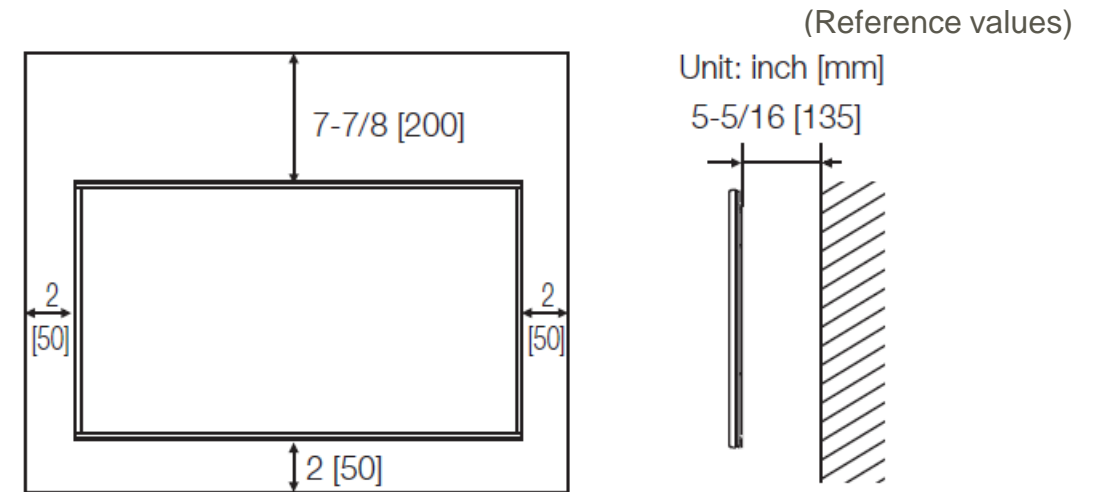
- If the temperature is too high → Electronic component's life time will be shortened or break down.
- If the temperature on LCD surface is too high → Monitors will break down or uniformity issue will occur
- If the temperature is too low → Monitors will break down, will not start up or monitor issue will occur.

Measures against temperature (1)

This monitor should be used at an ambient temperature between 32°F(0 °C) and 104°F (40°C).

Measures against temperature (2)

When installing the monitor, please secure Top/ Bottom/ Left/ Right clearances and use it within the range of ambient temperature the chart below .



* The values in the chart are when it is not in the casing.

If you install with outer casing, requirements are changed by size/location of vent hole, whether there is a fan or not.

The effectiveness of each measure differs depending on the environment. Please choose the best measure for respective environment as follow.

- Using a cooling fan(However please note that the temperature inside the casing is difficult to be lowered when dust is corrected and use the filter and clean it regularly.)
- Improve the ventilation by widening its space
- Using a heat exchanger



Heat prevention unit
(Apiste co.)



Example of fan installation

2.2 Precautions for direct sunlight

This product is for use indoors. Please set this monitor in a place away from to the direct sunlight, wind, or rain. These conditions may cause failure and/or deterioration.

About sunlight

The product must not be exposed to the direct sunlight

Please keep the product away from direct sunlight. Please install it in shaded areas like on a wall facing the north especially when using in an outdoor or semi-outdoor environment.

The effect of direct sunlight

If the product is being used under direct sunlight

- The effect of brightness
 - > Monitor would look much darker than the normal use.
- The effect of ultraviolet rays and infrared rays.
 - > It causes LCD to malfunction.
- The temperature rise may cause a malfunction.

(No matter how much you cool the surroundings, the temperature of the area exposed to sunlight is high.)

- > Monitor will break down or uniformity issue will occur.

Cabinet will also deform.



Example of LCD darkening



Example of LCD darkening

Measures against sunlight

Please take measures against ultraviolet rays ,infrared rays and temperature.

- Set a sun-shade above the monitor
- Utilize the shade of the building
- Place the monitor where there is no direct sunlight
- Change the direction of the monitor to avoid sunlight
- Using some object which can block out the direct sunlight
(You should pay attention to strong winds like hurricanes.)



Utilizing the shade of the building



A shade above the product



Setting the monitor back to the place where there is no direct sunlight

2.3 Precautions for dust

About dust

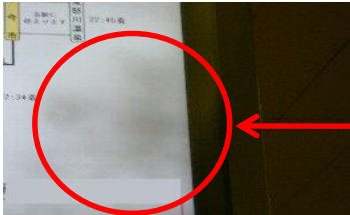
- This product is for use indoors.
- When it is used at outdoor, or at dusty places, such as railway station or close to the traffic, the measures against dust must be considered.

Please observe the following instructions when installing.

The effect of dust

-If the anti-dust measure against dust is not considered ->

The dust will enter into the LCD panel through the gaps and will cause the distorted image (see example below), and will break down in the end.



The dust enters into the LCD panel
and causes the distorted image.

Please don't set up vent, when installing the monitor on to the pole and the wall. The dust causes the above situation by intrusion of dust to inside of the product.

Countermeasure against dust

- Create a completely sealed enclosure.
- The completely sealed enclosure can shut off dust so it is advantageous for installation in locations under the effect of excessive amounts of dust, outdoor, and a salt damage.
- You will need the countermeasures against thermal at the same time, such as using the heat exchanger or the air conditioner etc.

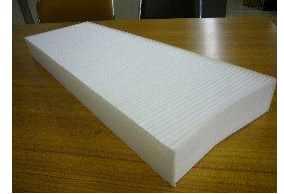
Regular maintenance of the enclosure is required to maintain performance.

Precautions for using anti-dust enclosure

-When using the anti-dust display(enclosure), please remove the dust with filter.

Precautions for using the filter

(1)it is possible to prolong the filter life by using two filter and exchanging the fine screen pre-filter.



(2)it may raise the internal temperature for a monitor when using the filter, because of raising the air resistance.

Please reduce the air resistance by increasing the area of filter, etc.

(3)when circulating air with a fan, it needs attention how to make the enclosure whether exhaling or inhaling air from the fan.

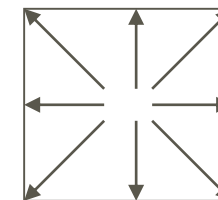
Intake air fan:

The pressure in the enclosure is higher than out of enclosure. Therefore, dust does not break in the housing. It is limited the size of intake vent. And it is difficult to suck in much air(when using in dusty area).

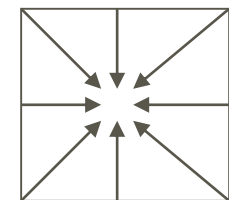
Exhaust air fan:

The pressure in the housing is lower than out of enclosure. Therefore, dust breaks in the housing. It has much size of intake vent. And it is easy to control the temperature(when using in less dusty area and severe temperature requirements).

※to keep the performance, please clean the filter regularly



Air intake fan

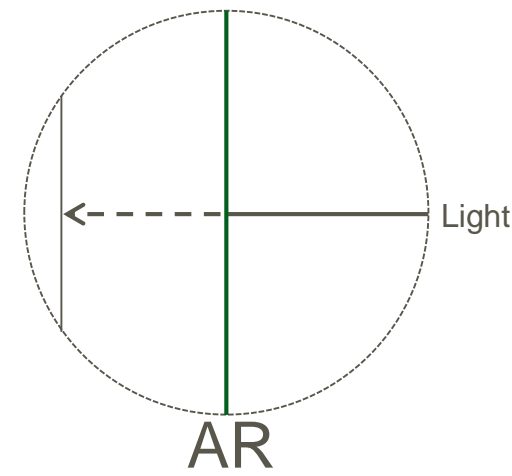
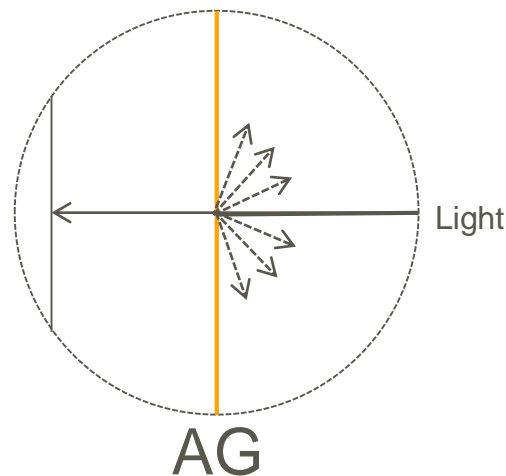
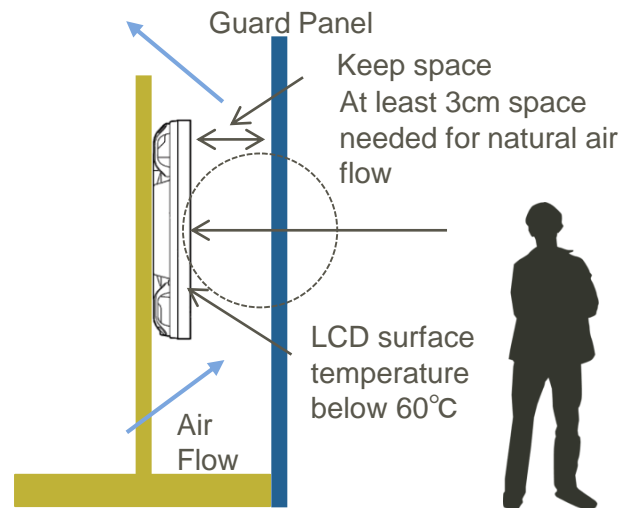


Air exhaust fan

2.4 Reflected glare

Reflected Glare

- With a protection panel, reflected glare may occur and may degrade visibility.
 - Anti glare screen protector is effective to prevent reflected glare.
 - There are two methods of anti glare.
 1. AR coating which reduces reflection and eliminates stray light.
 2. Silica coating (AG coating) which reduces reflection with scattered reflected light. AG coating is lower price than AR coating. However, images easily defocus and view angle is narrow with AG coating. Please select the right protection panel for your purposes .
- Panel surface treatment: Anti-glare treatment (Haze Value 1%)
- Generally, when decreasing glare, image quality comes down. Therefore, please select the suitable protection panel in each installing site.
 - The closer a distance from the protection panel to the LCD panel get more clear image. However, LCD surface temperature rises.
 - Please make sure that the LCD surface temperature is below 140°F(60°C)by keeping a space (at least 3cm) between monitor and protection panel a monitor and a wall to flow the air. The space size may differ depending on installation condition and ambient air temperature. If air flow fan is required, sufficient test is needed.



2.5 Precautions for installation location, dew condensation, water drops and salt damage

About installation location, dew condensation, water drops and salt damage

- This product is for use indoors. Please do not to be exposed to weather and direct sunlight when installing. They cause breakdown and degradation.
- Humidity condition for IDP
 - Range of humidity condition for IDP : From 20% to 80%(no condensation)
- Dew condensation and/or liquid drops will cause the breakdown of the circuit and/or LCD panel. Please install LCD away from condensation and liquid drops.
- About dew condensation

The environment which has high possibility of condensation

 - Place where temperature is generally low but has frequent warm air flow.
(For example : the place in front of the vents of radiators. When the radiator is turn on in a cold winter morning, condensation occurs.)
 - Near the sea, lake, mountain and so on where humidity is high
- The environment which has high possibility of water drops
 - “Semi-outdoor” place where strong winded-rain(typhoon) could potentially reach the monitor. The place which is below the pipes inside the ceiling. (When installing in these places, countermeasures should be taken to avoid water drops to reach the monitors. For example, covering the LCD monitor with box. In such a case, do not install in a place where the wind is blowing.)
- Caution for the wind of the typhoon
 - Please install so that you can remove the influence from the wind.
- Caution for salt damage
 - Please consult with an authorized SHARP servicing dealer with us in advance when installing near the sea where salt damage may occur.
- Caution for sulfide
 - Please don't install near the hot spring and volcano where there may occur the influence from sulfide.
- Caution for organic gas and flammable gas
 - Please don't install the place where there may be organic gas and flammable gas.

2.6 Precautions for Vibration/Expansion/Afterimage

Vibration

This monitor is not designed to set in any places with strong vibrations, such as in motor vehicles.

If the monitor will be used in the place with possibility of even small vibration, such as at railway station's platform, should take some measures such as using a shock absorber .

Expansion

When using acrylic or polycarbonate protection panel, be aware of expansion due to heat or moisture absorption.

Acrylic protection panel can expand about 0.4%
(approx. 6.2 mm for 70")

Install the protection panel with a space so that it won't be distorted due to expansion.

Shadow

When the background is gray and text and shapes are white color, depending on the angle of view of the screen, you may see uneven colors or brightness horizontally or vertically.

If it is displayed in a short time, it can recover by turning off power.

However if it is displayed for a long period, you need to change the image regularly, or it takes time to recover.

Afterimage

• Image burn-in will not occur in LCD display.

However, when a still image is being displayed for a long period, afterimage might occur.

For an temporary afterimage can be removed by displaying Black or white screen. It can be removed by playing videos or turning off the monitor. The longer the same screen is displayed, the harder to remove afterimage. Change the image occasionally.

• The following measures are expected to prevent afterimage.

- Display video as long as possible. (e.g. Display 10 seconds' video after 5 minutes' still image)
- Prevent increase of the contrast difference between background and content. Change the color occasionally.

Temporally display unevenness

Temporary display unevenness may occur when pressure is added to the product during transportation and installation.

It is not defective but it is a display unevenness which can be repaired.

The following works may solve the problem.

- Wipe the surface of entire LCD carefully.
- Tap lightly something like wiping off the spot of unevenness.



After repair



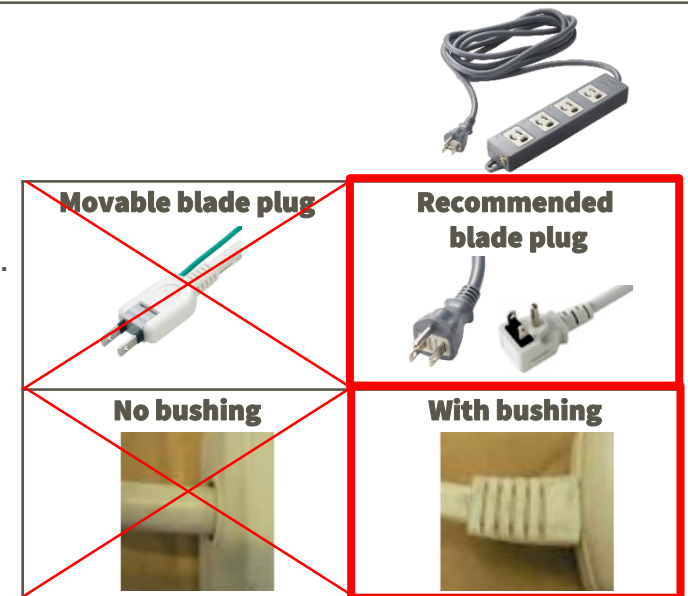
2.7 Precautions for power supply

Power Supply

- This monitor are designed to be used under commercial 100V-240V power supply, but shortage of power supply may occur in wall video installation.
- Arrange plural circuit and level power consumption in each circuit.
- Prepare a spare ground wiring for maintenance to attach an earth strap.

Cautions for using a power strap

- Check the neutral rating of the power strip and make sure that the total current consumption of the connected equipment does not exceed the current value of the power strip.
- It is not recommended to use a power strip of a movable blade plug that moves the plug blade. Prepare a spare ground wiring for maintenance to attach an earth strap. If an excessive load is applied to the plug blade, abnormal heating may occur, even if the current is below the rated current. Please use un-movable blade plug as much as possible.
- If the cord is pulled with an excessive force, the internal core wire may be damaged and abnormal heat may occur, therefore it is recommended that the cord is fixed with a bushing or the like.



2.8 Connecting devices 1

LAN

You can control monitor functions by PC by connecting LAN. (e.g. power on/off function)

We recommend connecting LAN to monitors before installing them in higher place or other places where it is hard to connect cables after installation. They may need in future monitor maintenances.

Please refer to Operation Manual on the page of “Operating the Monitor using a PC(IP control)” .

Media Devices and Peripheral Equipment

When you use media devices (e.g. personal computer, DVD player) or peripheral equipment (e.g. distributor, video switching unit), check the connection operation of the devices beforehand.

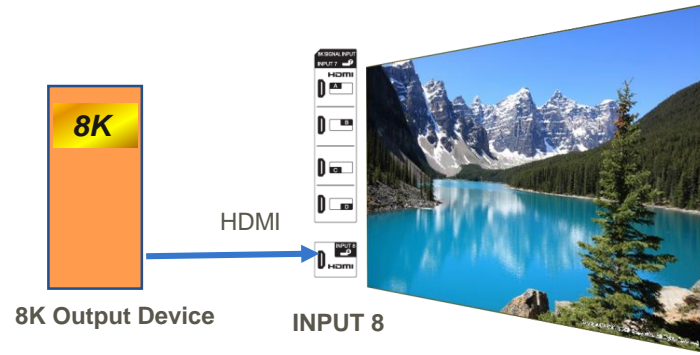
Cable

-When you use light conversion cable to extend the transmission distance, EDID may not be read accurately. Not reading EDID accurately, monitors cannot display correctly. Check the image quality beforehand when using these devices.

2.8 Connecting devices 2

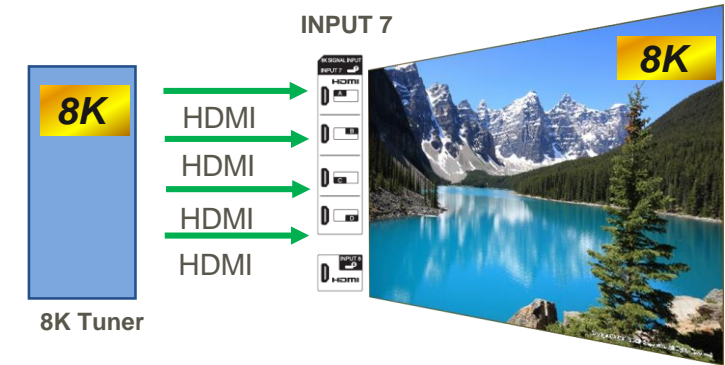
8K HDMI2.1 Cable

When connecting 8K video with one HDMI cable
Connect the HDMI 2.1 cable to the 8K dedicated terminal .



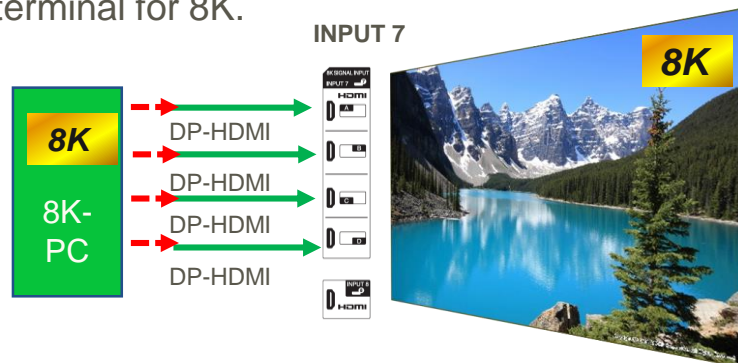
8K HDMI2.0 Cable

When connecting 8K video with four HDMI cables
Connect the HDMI 2.0 cable to the HDMI terminal for 8K.



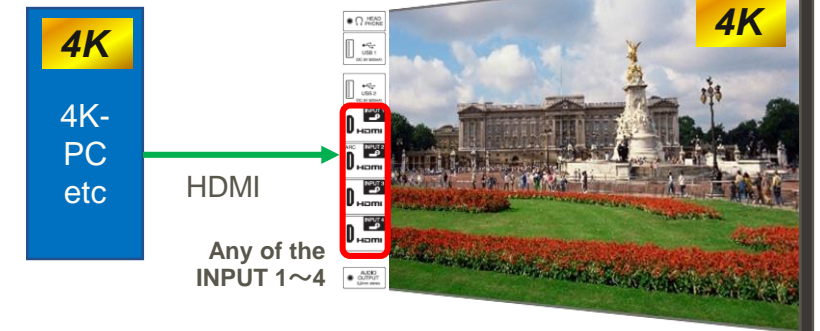
8K DP1.3/1.4 Cable

When connecting 8K video with 4 DP cables
Connect the HDMI 2.0 cable to the DP-HDMI conversion adapter
Connect to the HDMI terminal for 8K.



2K/4K Connect

When connecting 2K/4K video with an HDMI cable
Connect the HDMI 2.0 cable to the HDMI terminal on the side terminal.
Up to 4 units can be connected



2.9 Precautions for space between monitors(Multi-display etc.)

About thermal influence

-In particular, when monitors are installed one above the other, the temperature raise of topside monitor cause of the exhaust heat from downside monitor.

Regarding the countermeasure against temperature, please keep the clearance in P.9.

In fact, when installing multi-display, it is hard to keep the clearance in P.9. Therefore, please keep the temperature requirements to do the countermeasures as below.

- 1) Reduce the surrounding temperature(using an air-conditioner)
- 2)Get down the brightness(when a brightness gets down, a power consumption and heat gets down)
- 3)Keep much clearance between the monitors
- 4)Flow the air forcibly between monitors
It is effective to use the spot cooler or fan in the back(when the monitors are hit by the wind, they are easily attached the dust).

About expansion

The cabinet and frame of the LCD monitor is expanded due to heat.

It is necessary to secure enough space when aligning multiple monitors.

If the space between monitors is small, the weight is loaded to LCD panel by heat expansion.

It is necessary to have the gap when installing large monitor. (It is about 5 mm usually.)

Hiding the gap between the bezels

If the gap between monitors spoils appearance (e. g. back of the monitor can be seen through), please hide it by affixing black tape at the rear.

Note: DO NOT seal the “exhalation fan and intake-nozzle” by black tape.

Please attach the tape in front of connecting cables.

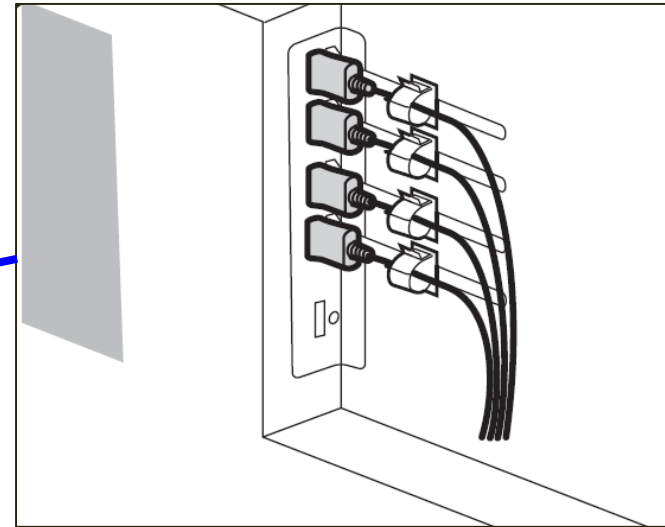
It is necessary to check the tape periodically to make sure that the tape isn't detached from the monitor as time goes by.



2.10 Cable wiring

Cable wiring

To reduce loads on the terminals and prevent breakage, thread the HDMI cables through the cable clamps to secure



2.11 LAN control

LAN control

- Power input control (ON/OFF) can be controlled by IP control command.
- Other IP control commands are based on AQUOS, therefore only some basic functions are available.
"Input switching", "Volume", "Screen adjustment", "Mute", etc.
- Please note that the command arguments and line feed codes have the following differences from the PN series.

Differences from PN series

		PN series	120 "
Format of command argument		Right alignment	Left alignment
		POWR__1(' ' is space)	POWR1__(' ' is space)
Command line feed code		ODH, 0AH	ODH
Corresponding item	Functions on remote control buttons	Yes (OSD Menu operation buttons are excluded. Various functions of OSD)	Power ON/OFF, input switching, Volume, mute, brightness, AV mode, screen size, Change the display mode and layout of input 7
	Various functions of OSD	Yes (Excludes some functions such as OSD position adjustment.)	Contrast, black level, color intensity, Hue, image quality, horizontal position, vertical position, Clock, phase, balance, Surround, adjustment lock
	Monitoring function	Hardware monitoring, temperature monitoring, log confirmation, usage time	No

Power control of distribution application (e-Signage)

- This product is planned to support power ON/OFF control and input switching (INPUT switching) with e-Signage, as in the PN series.

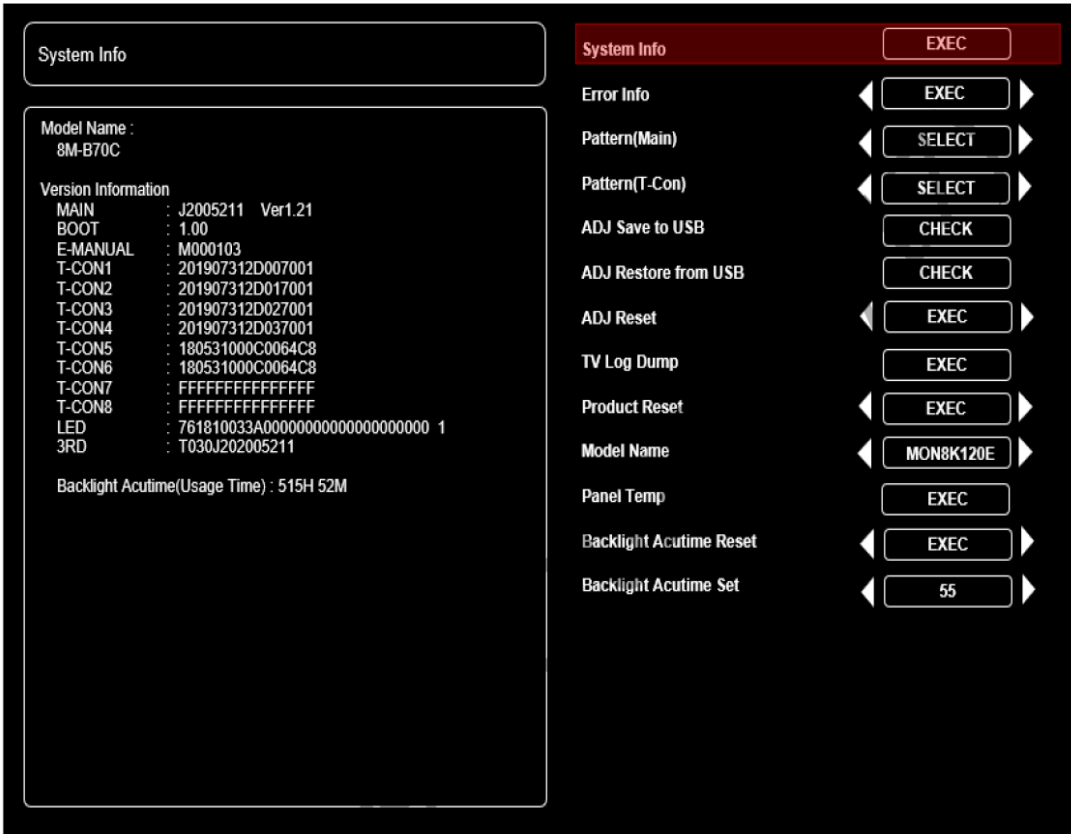
* It is necessary to upgrade the version of the control distribution application (e-Signage).

2.12 Change the model name (only for Asian subsidiaries)

Model name

- The product for Europe and for Asia are shipped from the factory with European model setting.
- European model has some function limitations in order to support ErP regulation.
- So, we would like you to change the setting from for Europe to for Asia by the following procedures.

Service menu



Procedure

1. Move to “Service menu”. (the left image)
2. Select “Model Name”.
3. Change from “MON8K120E” to ”MON8K120” and push “Enter”.
4. Select “Product Reset” and “EXEC” and push “Enter” button by the remote controller.
If you can see the following green screen, the reset is completed.
If red screen appears, the reset is not completed.
You need to execute “Reset” of “Error info” and “Product Reset” again
5. Unplug AC cord.

Screen when the reset is completed

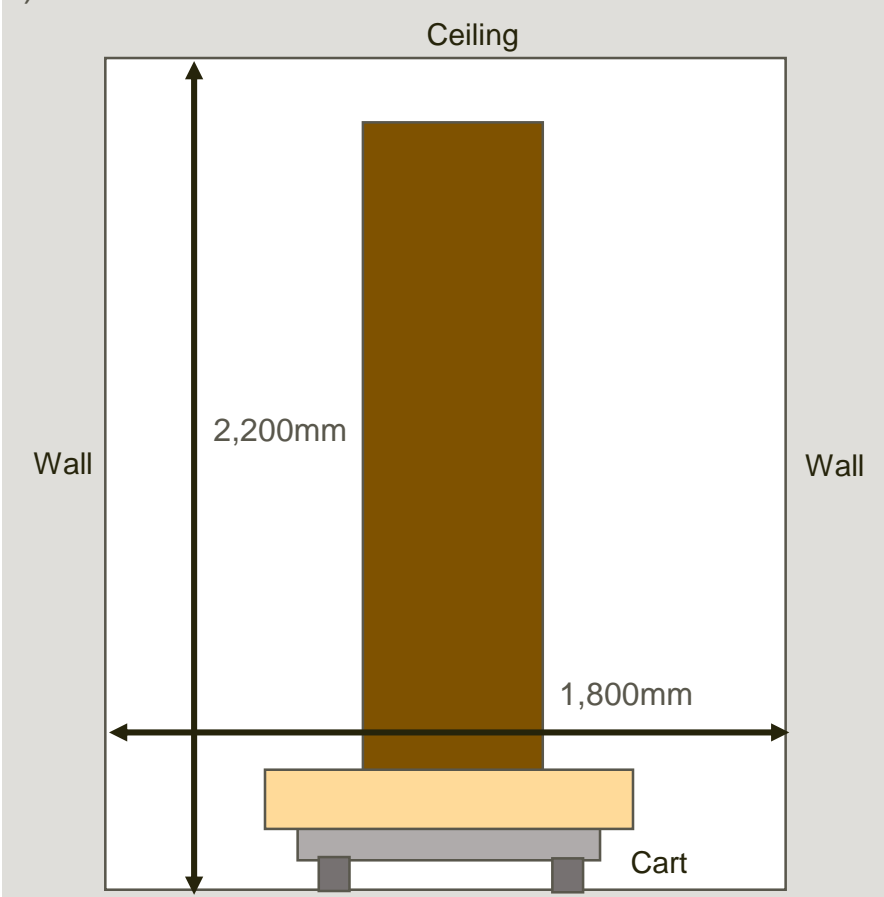


3. Precautions for transportation

3.1 Precautions for transportation of the boxed display

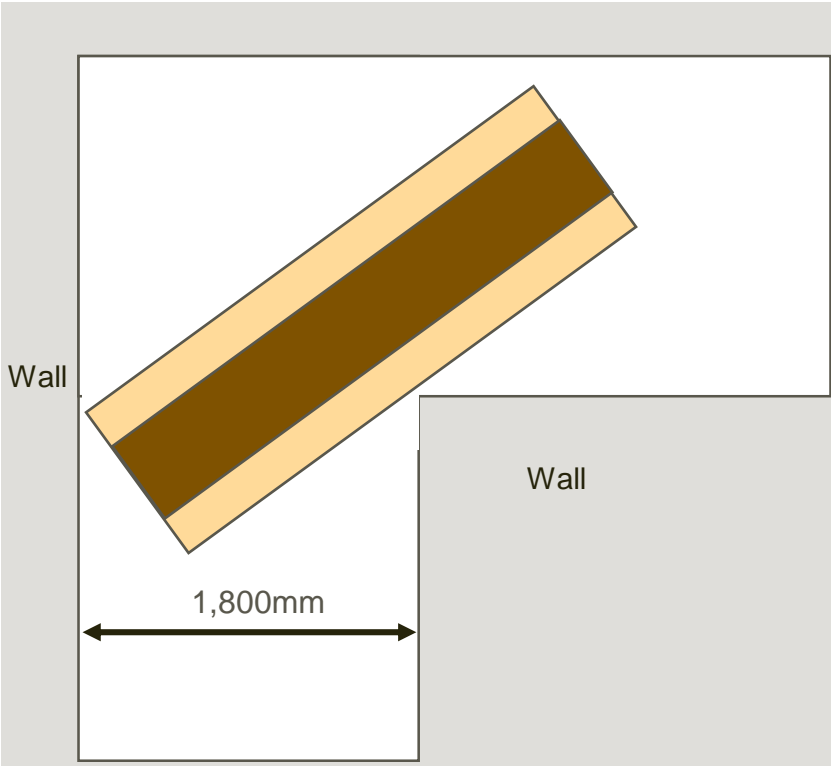
Space for installation

A cart should be used for transportation.
In order to carry the boxed product on a cart, the following space is necessary.
(In case width of a cart is no more than 900mm and height of a cart is no more than 150mm)



	Width	Height
Boxed display	973mm	1,870mm
Cart	900 mm	150mm
Margin	-	Upper 100mm
Carry-in space	> 1,800 mm	> 2,200mm

* Width is calculated from the corner space



3.1 Precautions for transportation of the boxed display

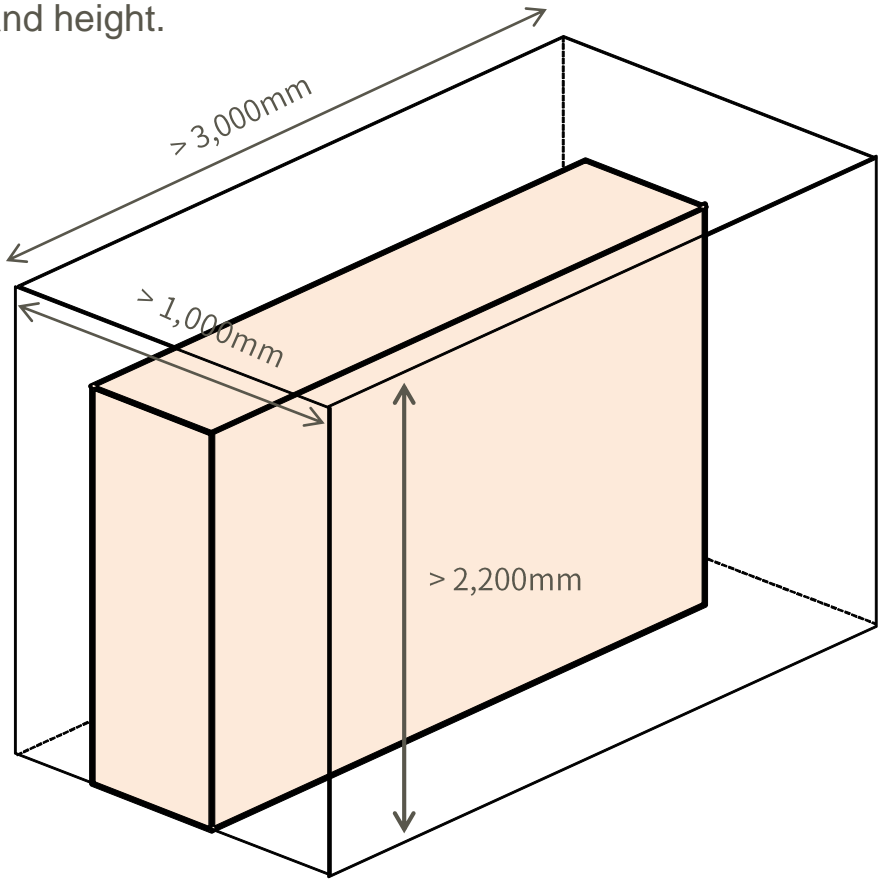
Use of elevator

When using an elevator to transport, the minimum size of the elevator is as below.

※ The transportation in landscape is impossible.

Caution : Please be careful not to hit the package against the elevator door or the wall while carrying the display into the elevator. The size of the doorway must meet the width and height.

	Width	Depth	Height
Boxed display	973mm	2,940mm	1,870mm
Cart	> 900mm	—	> 150mm
Carry-in space	> 1,000mm	> 3,000mm	> 2,200mm



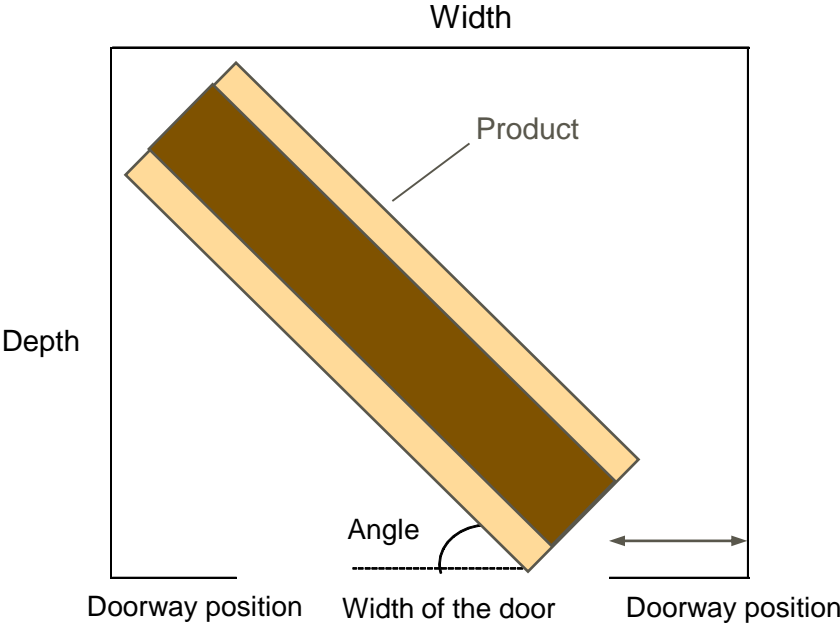
3.1 Precautions for transportation of the boxed display

Use of elevator

An elevator needs the size that can accommodate the product when using an elevator.

Caution: The box or the product should not hit against the door or the wall when using an elevator.

The following list is the angles and required sizes in case that the depth is insufficient and carrying diagonally. Refer to the following list.



Depth : Depth of the elevator (length from front to back)

Width : Width of the elevator

Width of the door : Width of the door

Position of the door : Distance between the side wall to the edge of the door

Angle : Tilting angle of the product when carrying in an elevator

Dimension

	Boxed display		Display with stand		The display only	
	Length	Width	Length	Width	Length	Width
External dimension	2,940	973	2,717	805	2,717	173

Measurement requirement for elevator

Angle	Doorway position	Boxed display		Display with stand		The display only	
		Width	Depth	Width	Depth	Width	Depth
45°	0	2,800	2,800	2,650	2,650	2,100	2,100
	150	2,950	2,800	2,800	2,650	2,250	2,100
	250	3,050	2,800	2,900	2,650	3,350	2,100

※The door should have the same width of the product when the angle is 0 degree. [mm]

4. Precautions for unpacking

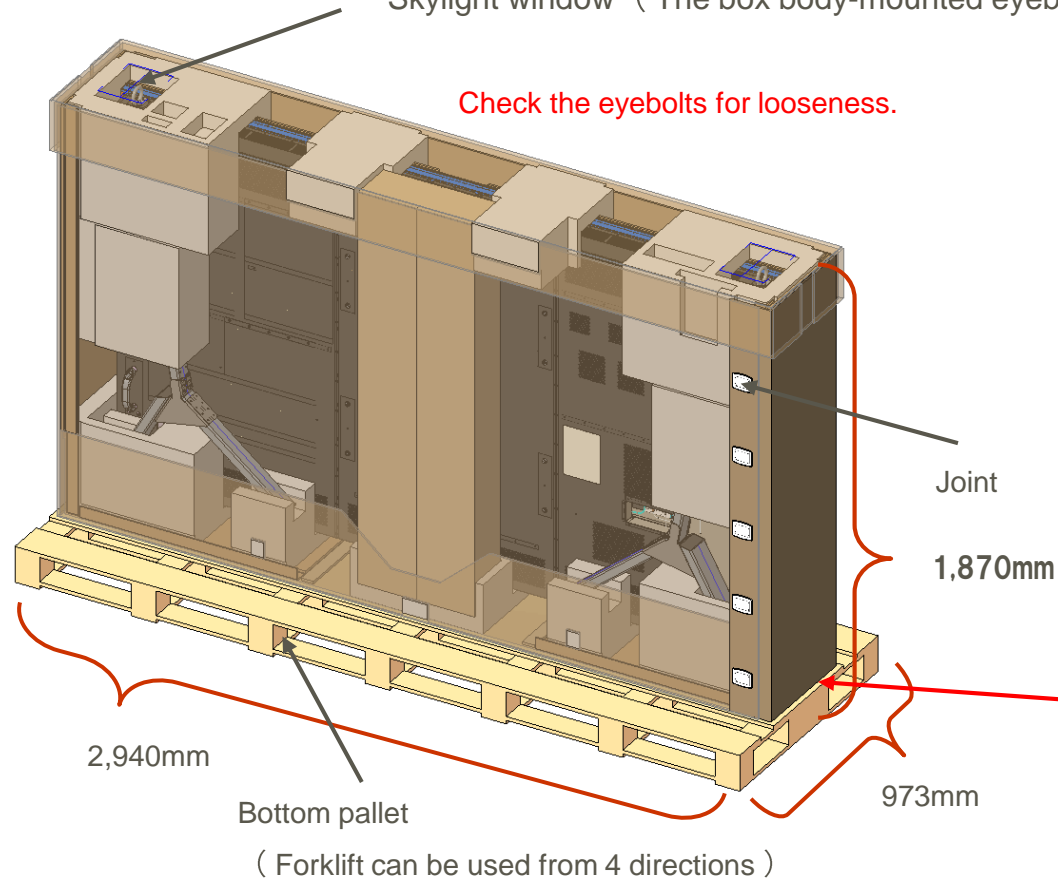
4.1 Precautions for unpacking

Precautions for unpacking

- More than 2 persons are needed to move the boxed display.
- Check the eyebolts on looseness.
- This product cannot stand by itself if the enclosed items (stand or bracket) are taken out. When moving, please make sure that all the items are included.
- **Be sure to check the operation when unpacking.**
- The bottom pallet and packing box are integrated. Cannot be removed.

Skylight window (The box body-mounted eyebolts can be used in the packaged state)

Check the eyebolts for looseness.



Packing dimensions :

Width 2,940mm × Depth 973mm × Height 1,870mm
(Including bottom pallet)

Package weight :

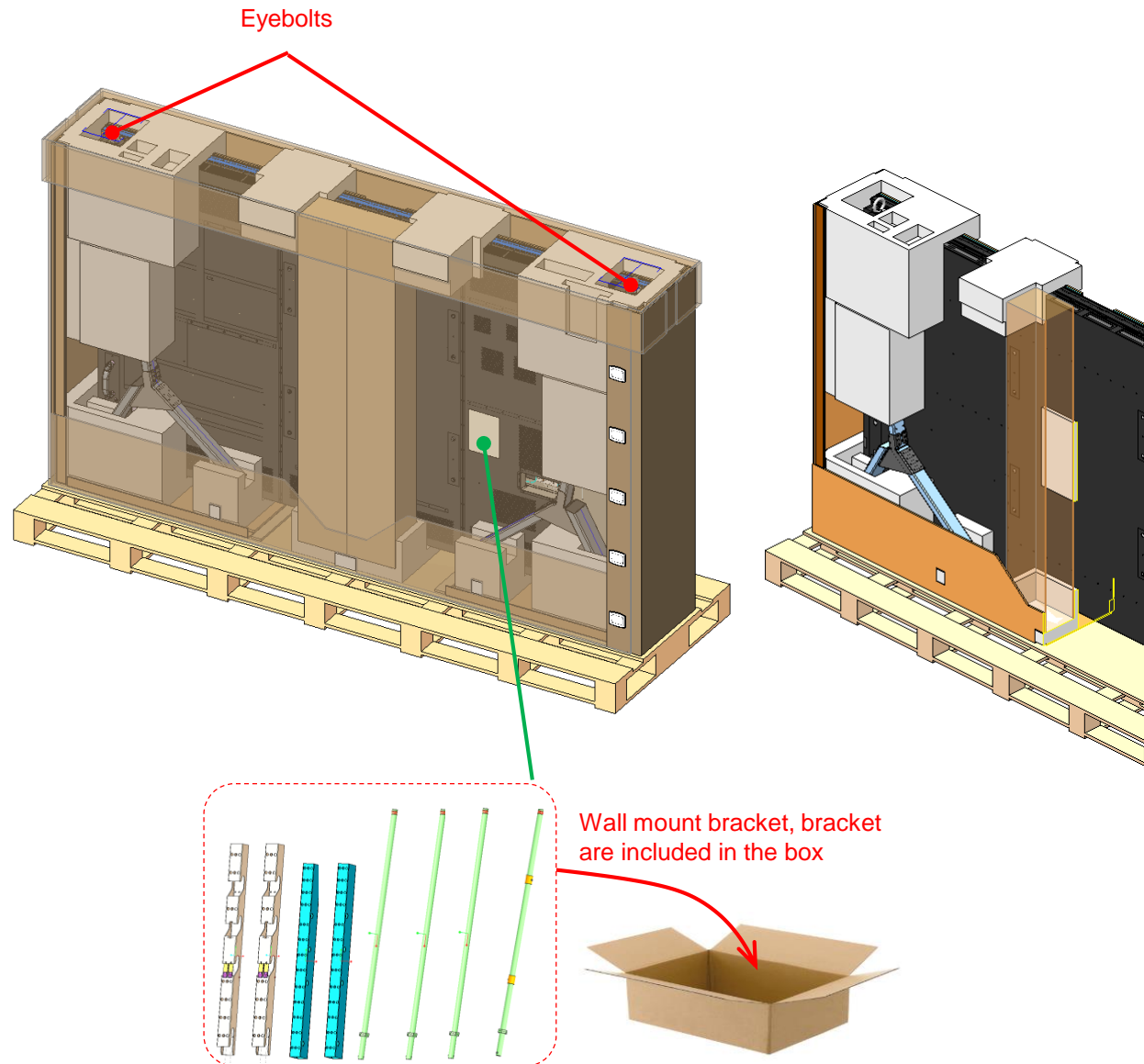
about 379.5kg
(Includes a set of stand and wall hangings)

Material :

Cardboard, expanded polypropylene

The bottom pallet is integrated with the packaging box and cannot be removed.

4.2 Unpacking procedure



Procedure

1. Move to unpacking location
 - Use a bottom pallet to move with a forklift, etc.
 - Open the skylight of the sky sheet.
Suspend and move using the eyebolts attached to the main unit.

***Check if the eyebolts are loose or not.**
2. Cut the polyester band.
3. Take the top sheet.
4. Remove the corner pad and center pad at the top.
5. Remove the resin joint holding the side frame and remove the frame.
6. Remove the enclosed items (wall mount bracket, bracket).

***If you take out the enclosed items, it cannot stand alone.**
7. Use the eyebolts attached to the main unit and lift it off the bottom cardboard of the package.
8. Remove the packaging PP.

4.3 Operation check when unpacking

Operation check when unpacking

- With the display in the lower box, you can connect the AC cable and operate the remote control.

1. Remove the upper box and lower the protective display cover.

2. If you remove the accessory box in the center of the back, you can put your hand between the protective cover and the display and connect the AC cable.



Power connection terminal

3. Bring the remote control sensor near the add hole on the left side of the front, and perform the following steps.

The state of the panel of this machine (color, brightness, cracks, bright spots/black spots, light leakage, You can check whether the panel is floating.

1. Press "MENU" and select "setup" using [↑][↓][←][→] buttons and confirm with enter.

2. Press [↑][↓][←][→] to select (Information)-Identification and confirm with enter.

3. Select "Test pattern", then the pattern will be displayed.

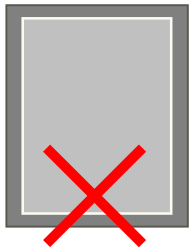


5. Precautions for Installation

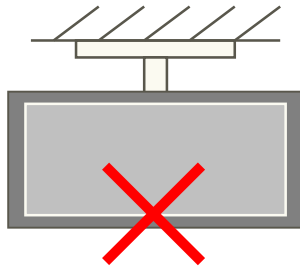
5.1 Precautions for installation

Installation precautions

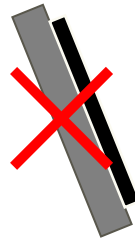
- Depending on the installation location, you may not be able to carry in the item.
- Cannot be installed outdoors.
- Installation is horizontal and uses the dedicated stand (included), or the dedicated wall mounting bracket and bracket (included).
- When using the stand, you can fix it with anchor bolts to prevent falling.
*Please prepare the mounting bracket for the anchor separately.
- When using brackets, please note the following points.
- When hanging on the wall, check the strength of the wall.
- When installing on a wall or H steel, it must be removed during maintenance work.
- It is necessary to lift the main unit for installation and maintenance. Depending on the installation location, we may ask you to install a winch or chain block on the ceiling.
- The following installation and use are not possible.



[Vertical]



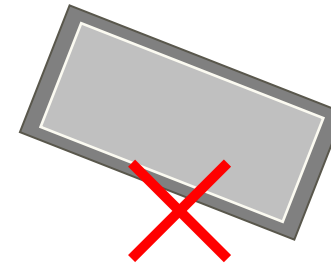
[Ceiling mount]



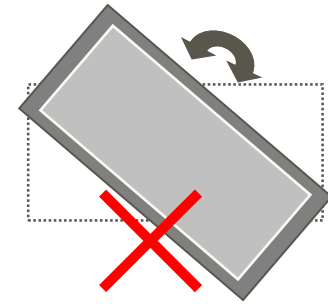
[Tilt]



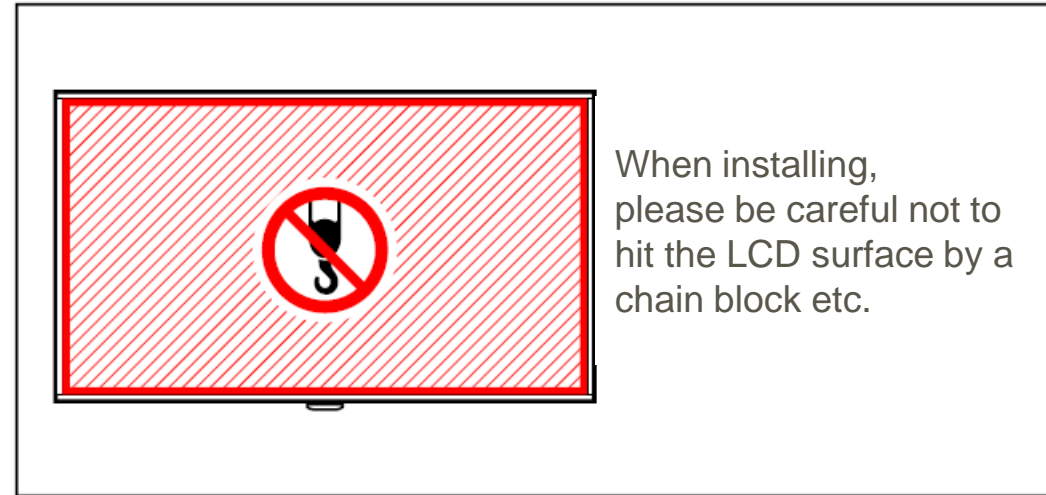
[Horizontal]



[Diagonal]



[Rotation]



5.2. Maintenance space for installation

Installation of stand

When installing the stand, you can perform maintenance such as board replacement and inspection. Therefore, it is recommended to secure a space for maintenance in advance when installing. If maintenance space cannot be secured, additional charges may be incurred for each maintenance.

* About 700 mm working space is required on the back of the display.

Wall hanging and H steel installation

After installing wall-mounted or H-steel, it is not possible to perform maintenance such as board replacement and inspection while installed.

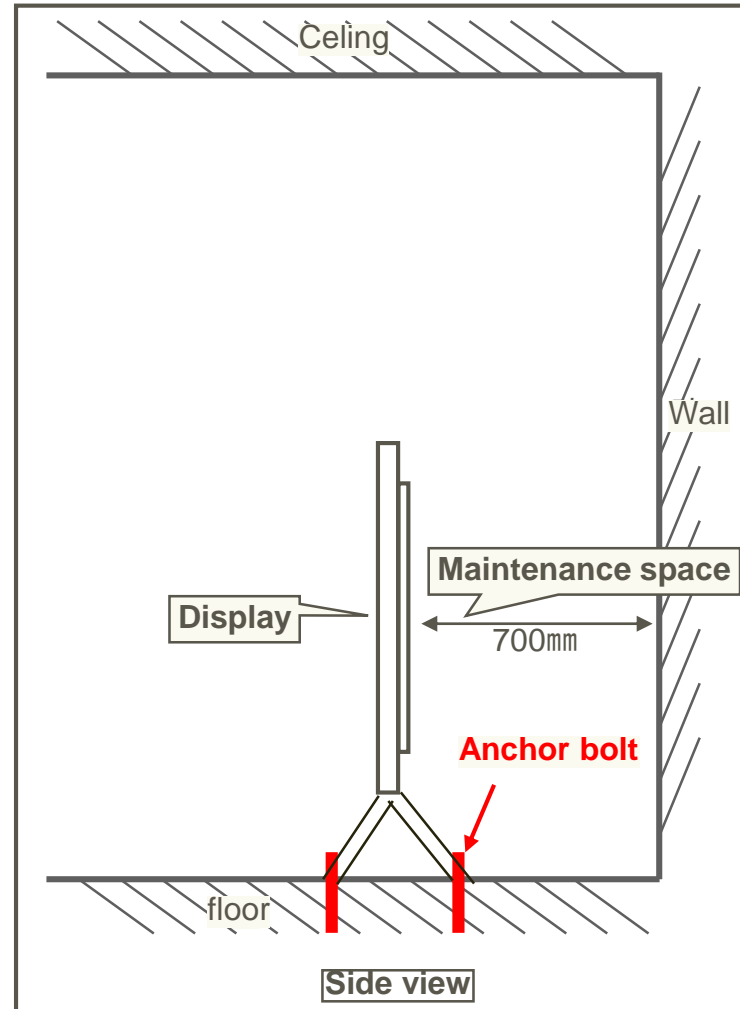
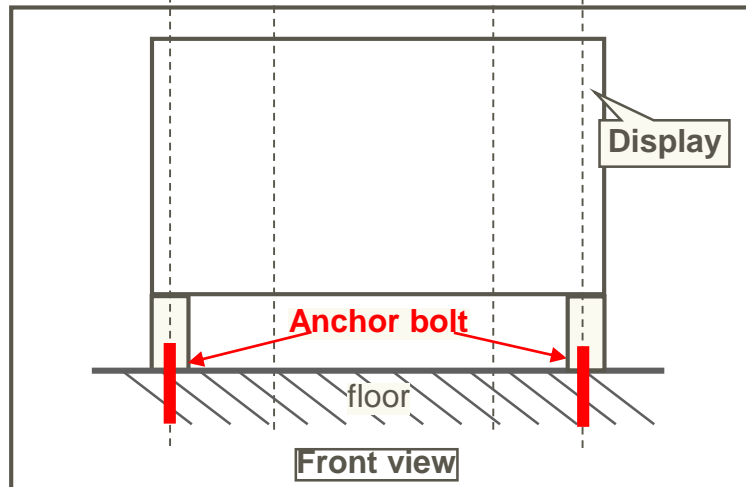
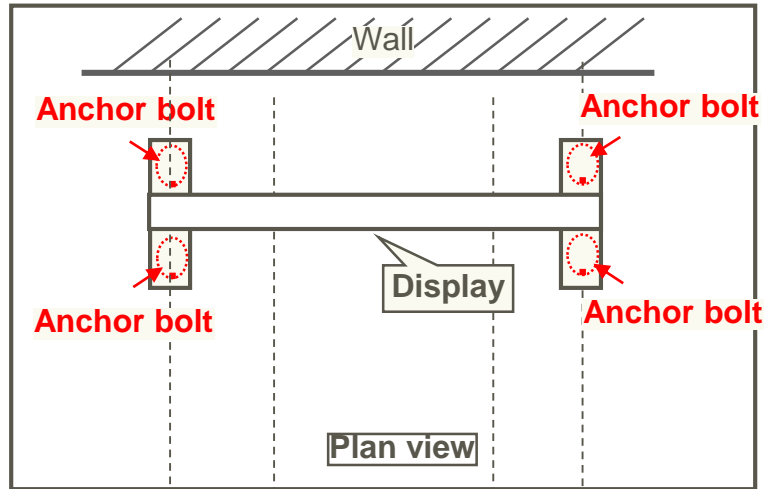
When performing maintenance, it is necessary to remove the display from the wall or H steel and perform maintenance with the stand attached.

Therefore, we recommend that you have a space for maintenance that can be installed in front of the display and a space for maintenance on the back.

If you cannot secure the maintenance space, you may be charged an additional cost for each maintenance.

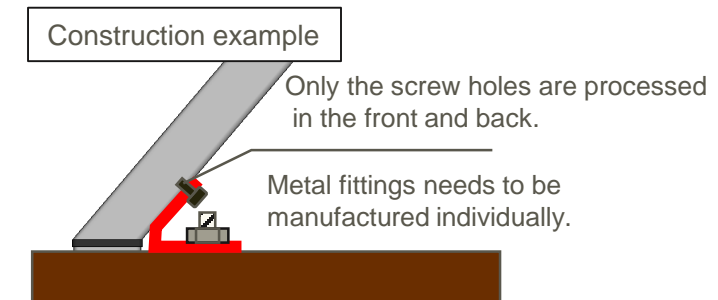
* A space is required in front of the display to install the stand.
Also, a working space of about 700 mm is required on the back.

5.3 Example of Installation (stand installation)

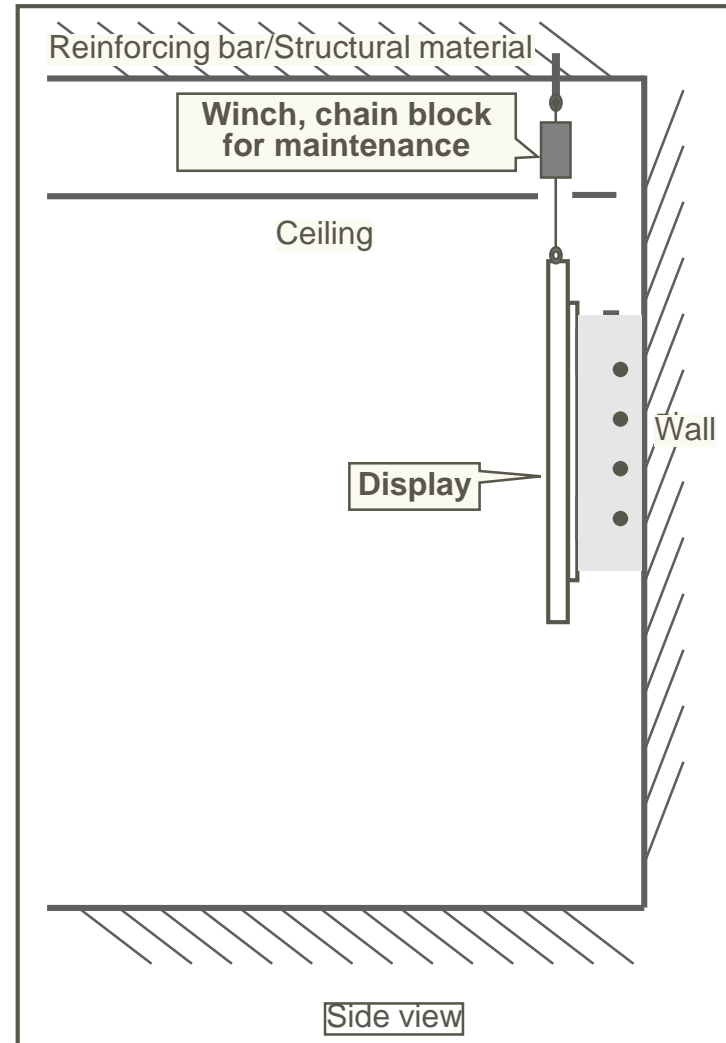
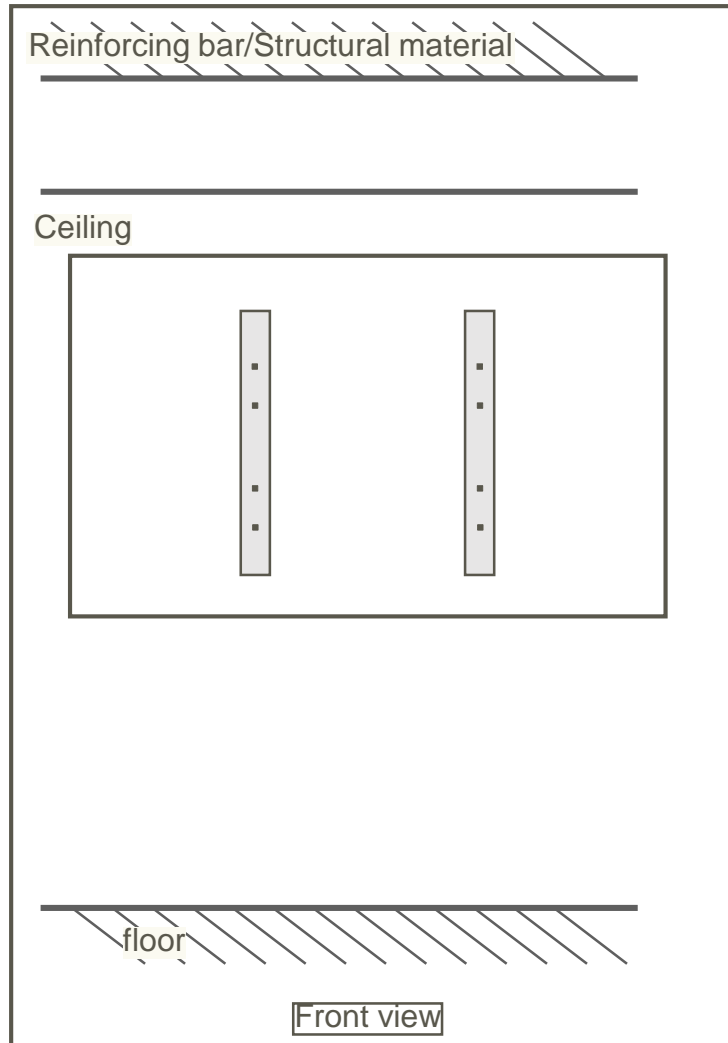


- Anchor can be used to fix the stand.
- It is recommended to secure a space of 700 mm or more on the back of the set for maintenance.

Anchor compatible:
There are screw holes on the front and rear legs

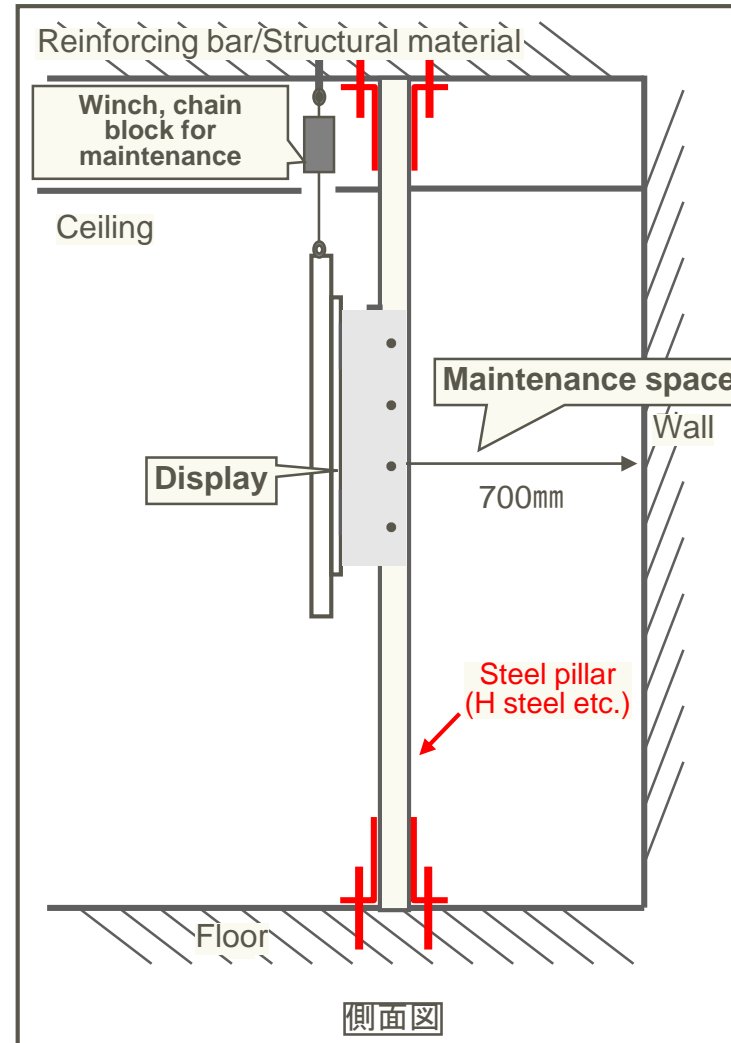
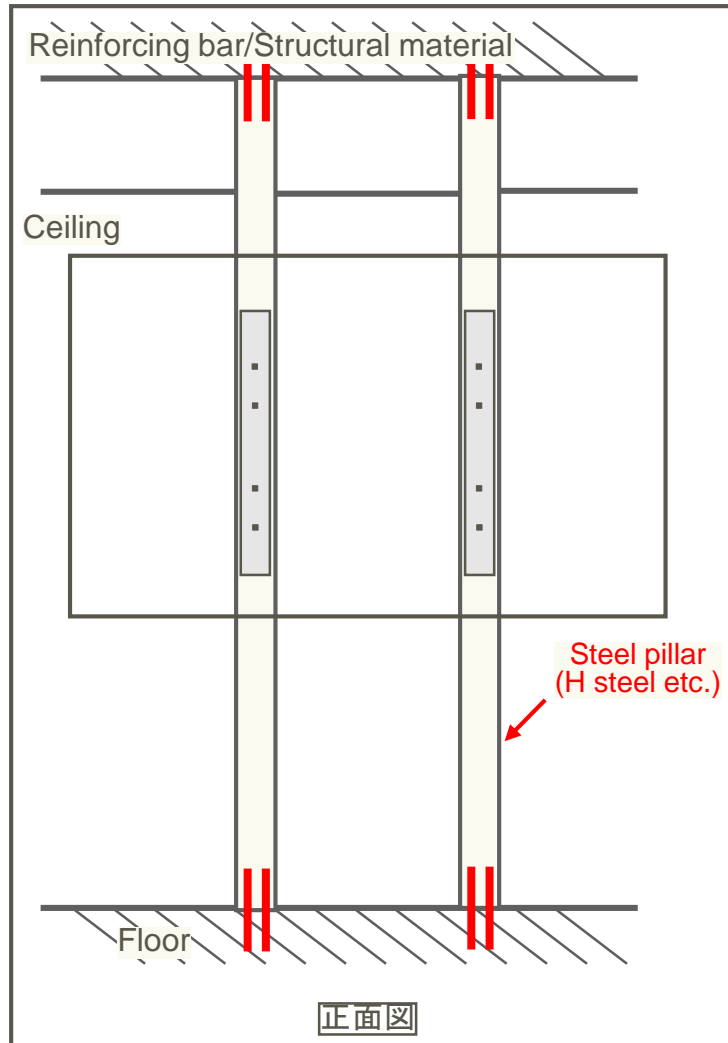


5.3 Example of installation (wall hanging bracket, bracket)



- It is necessary to check the strength of the wall.
- A winch and chain block are required above the installation position for installation and maintenance.
- When performing maintenance, it is necessary to attach the stand and remove it from the H steel.

5.3 Example of installation (H steel installation)

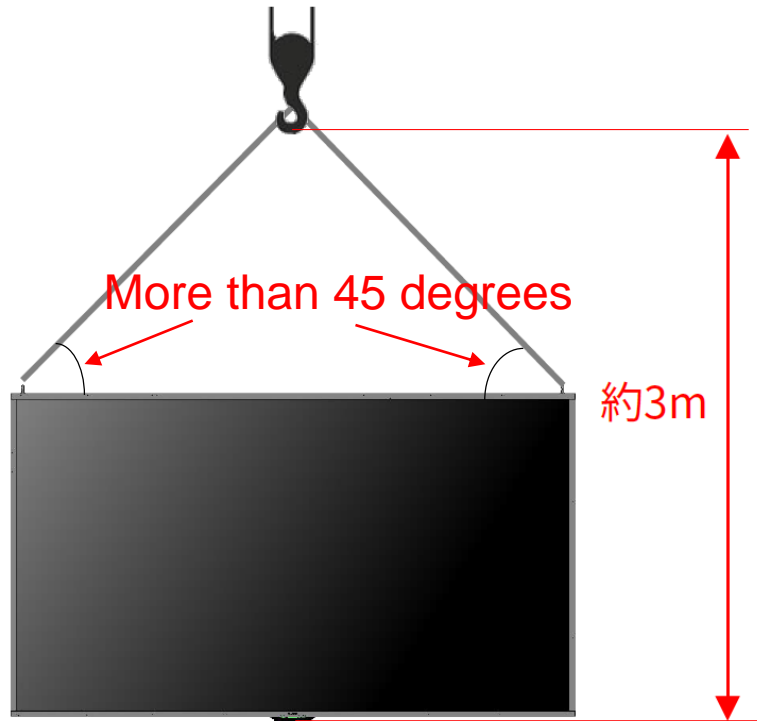


- Use H steel etc. for mounting.
- For maintenance, it is necessary to attach the stand and remove it from the H steel.
- It is recommended to secure a space of 700 mm or more on the back of the set for maintenance.
- A winch and chain block are required above the installation position for installation and maintenance.

5.4 How to use eyebolts

In case of lifting 90 degrees with a single crane

The space from the ceiling needs at least 4-5M.



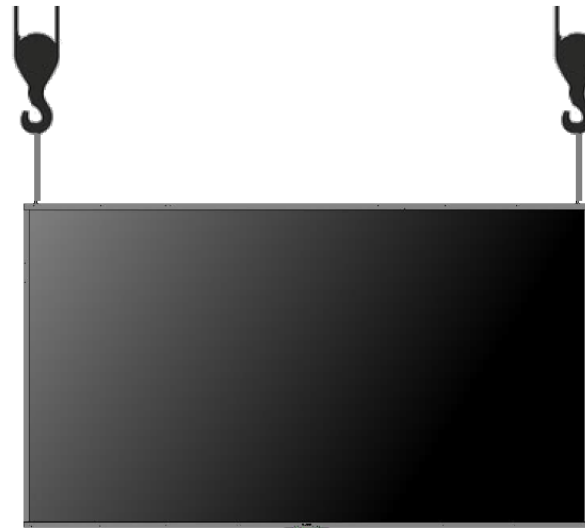
*Not to lift within 45 degrees

In case that ceiling is low

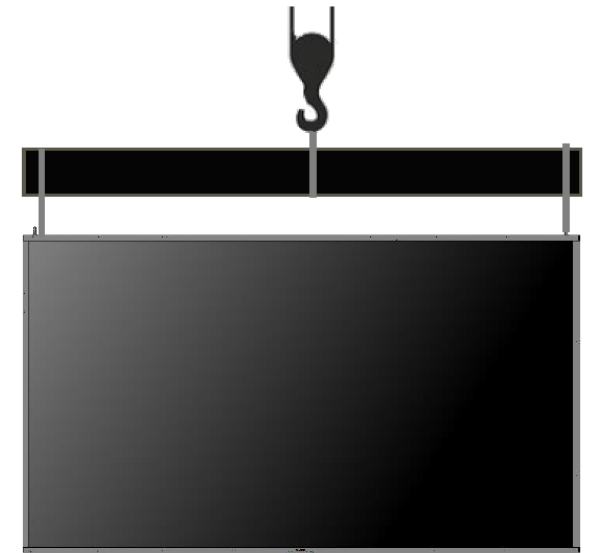
Ceiling height is low

- ① Lift with two cranes.
- ② Lift via a crossbeam.

① Lift with two cranes.



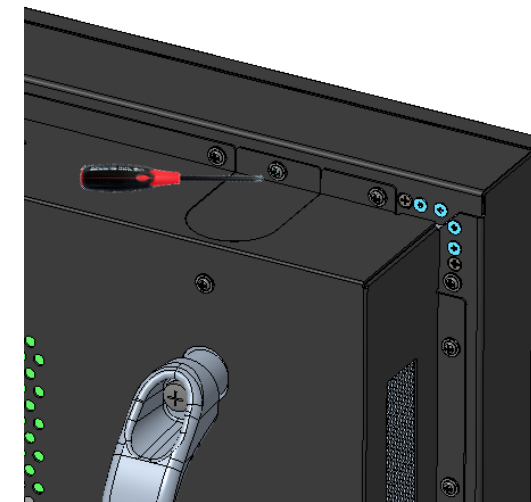
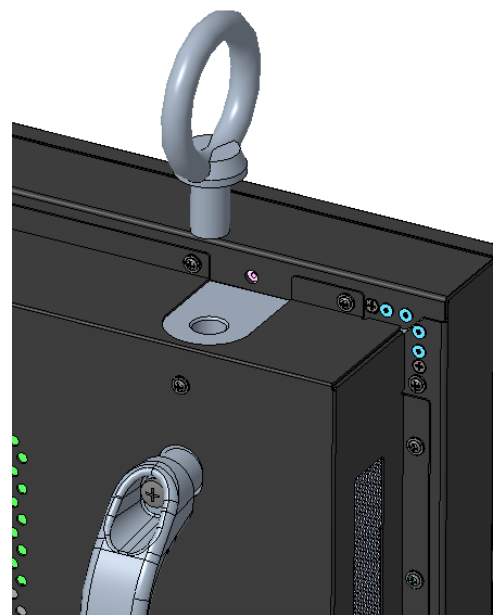
② Lift via a crossbeam.



5.4 How to use eyebolts

Mounting of cover for eyebolts

* It is recommended to use the cover for eyebolts regardless of stand or wall hanging installation.



① Remove the left and right eyebolts.

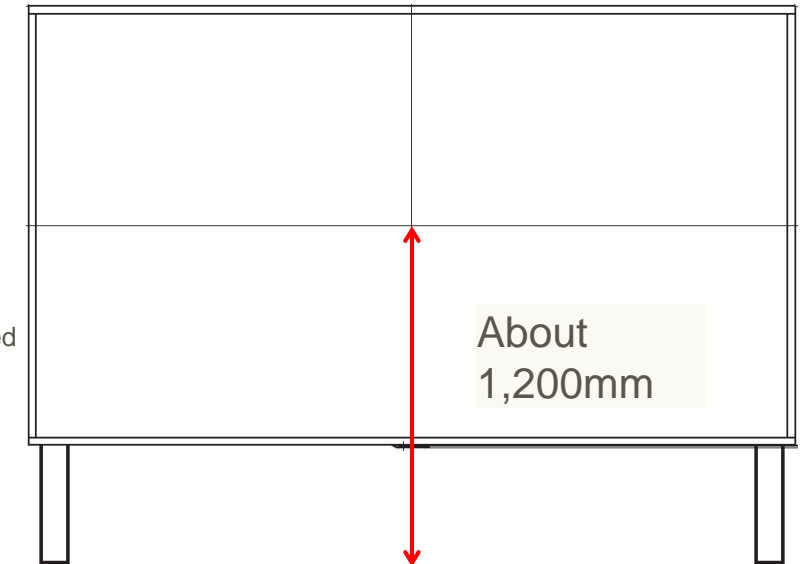
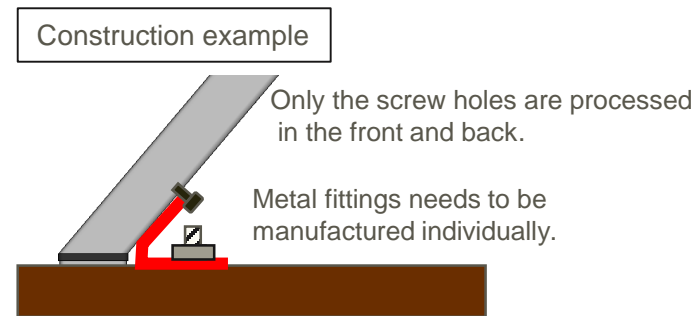
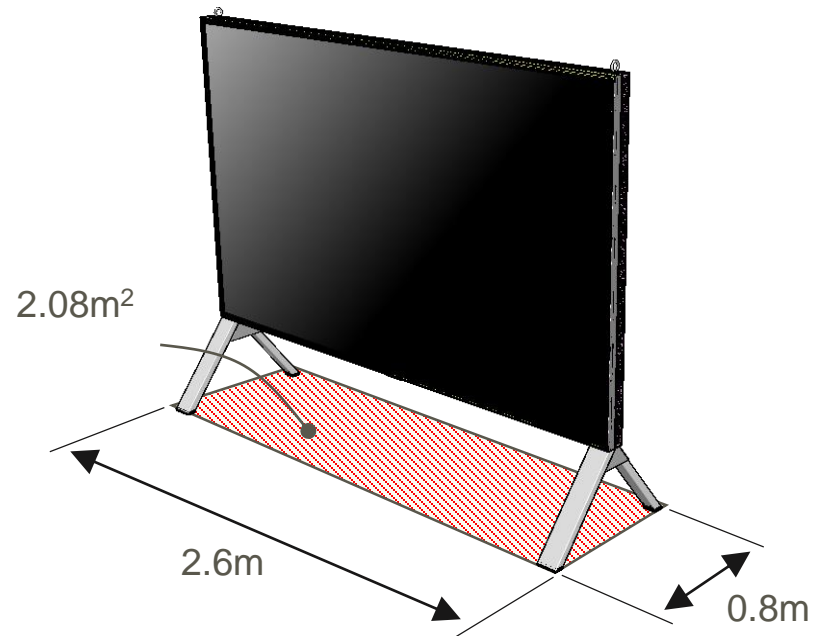
② Attach the cover with the attached screw

*The eyebolts will be needed for repair and maintenance. Therefore please keep it in a safe space.

5.5 Installation of the display stand

Cautions when installing the stand

- Can be installed by using the included stand.
- Height from floor to screen center : about 1,200mm
- Dimension of ground contact area : width about 2,600mm × depth about 800mm



5.5 Precautions when installing the stand (strength of anchor)

The strength required when fixing the anchor is as follows.

Calculation condition

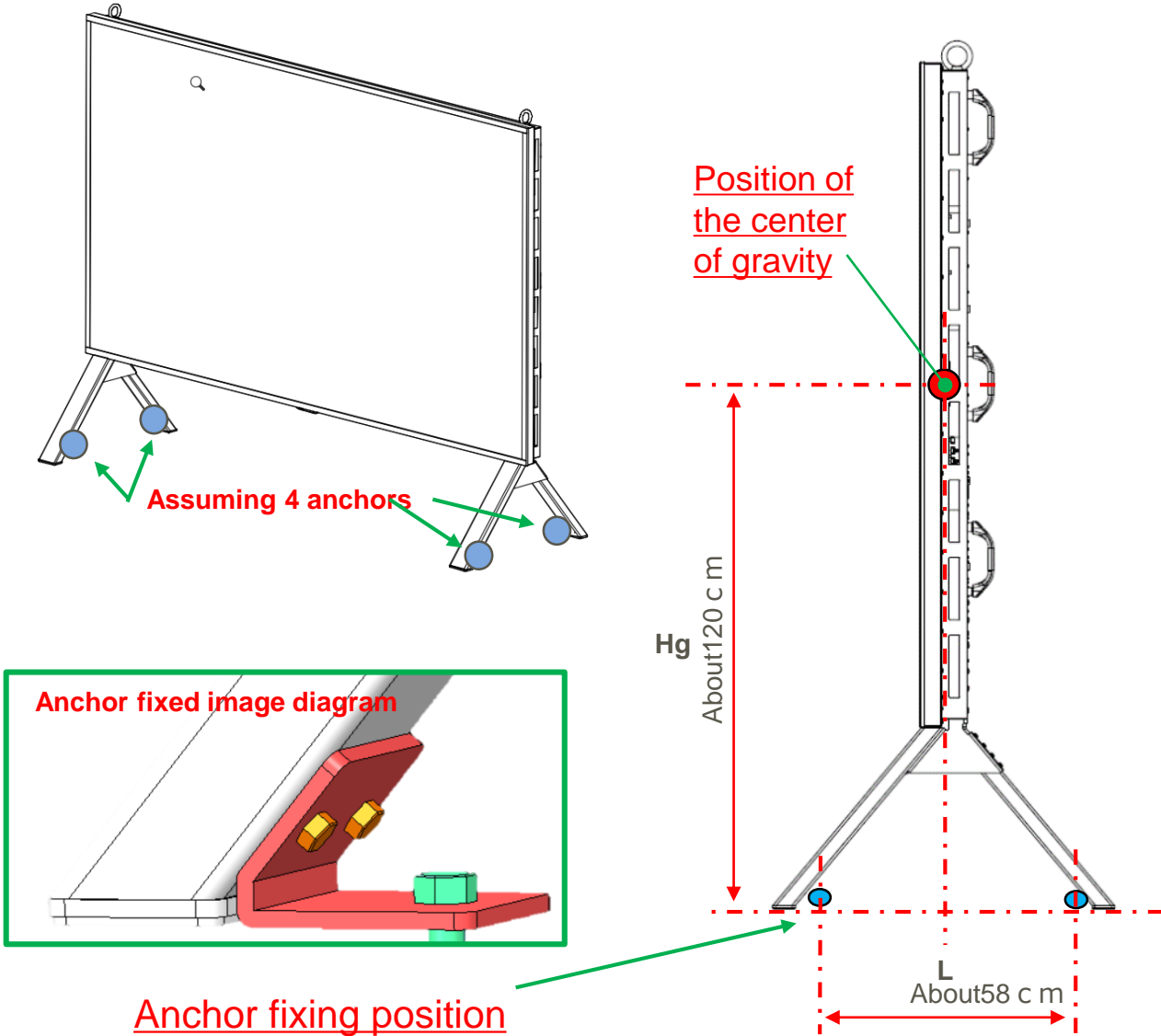
●Equipment mass	W	206 kg
●Anchor bolt		
Total number	n	4 pcs
Total number of pulling side of fall	Nt	2 pcs
Height to the center of gravity of the device	Hg	120 cm
Bolt span seen from the direction of consideration	L	58 cm
Distance from the center of the bolt to the center of gravity of the device	Lg	29 cm
●Horizontal seismic intensity for design	Kh	1 G
●Vertical seismic intensity for design	Kv	0.5 G
●Horizontal seismic force for design	Fh	2018.8 N
●Vertical seismic force for design	Fv	1009.4 N

Calculation results

- ◎Anchor bolt pull-out force (R b) : **1836N** {Fh · Hg-(g · W-Fv) · Lg }/{L · Nt}
- ◎Anchor bolt shear force (Q) : **504.7N** Fh/n

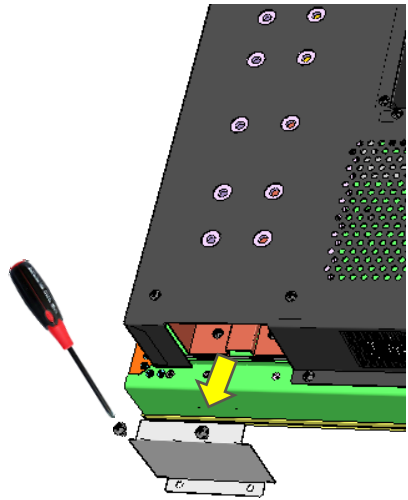
It is assumed that the above force is applied to the anchor bolt. Please select and install bolts in consideration of the safety factor.

※The calculated value is for reference only.

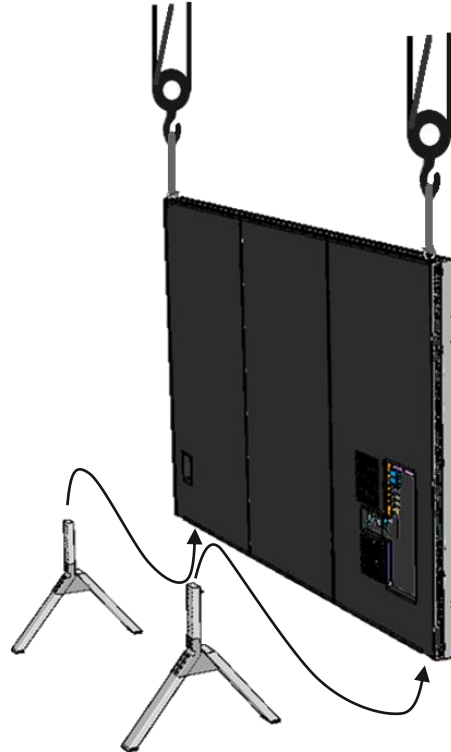


5.5 Installation of the display stand

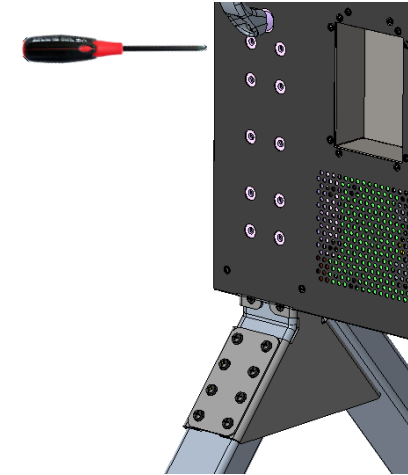
1. Remove the left and right covers for stand mounting.



2. Lift the display with a crane. Insert the display stand.

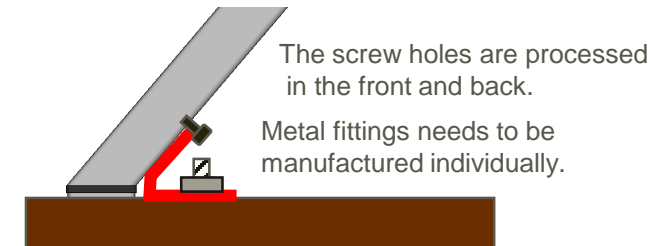


3. Fix the left and right 10 points with the attached screws



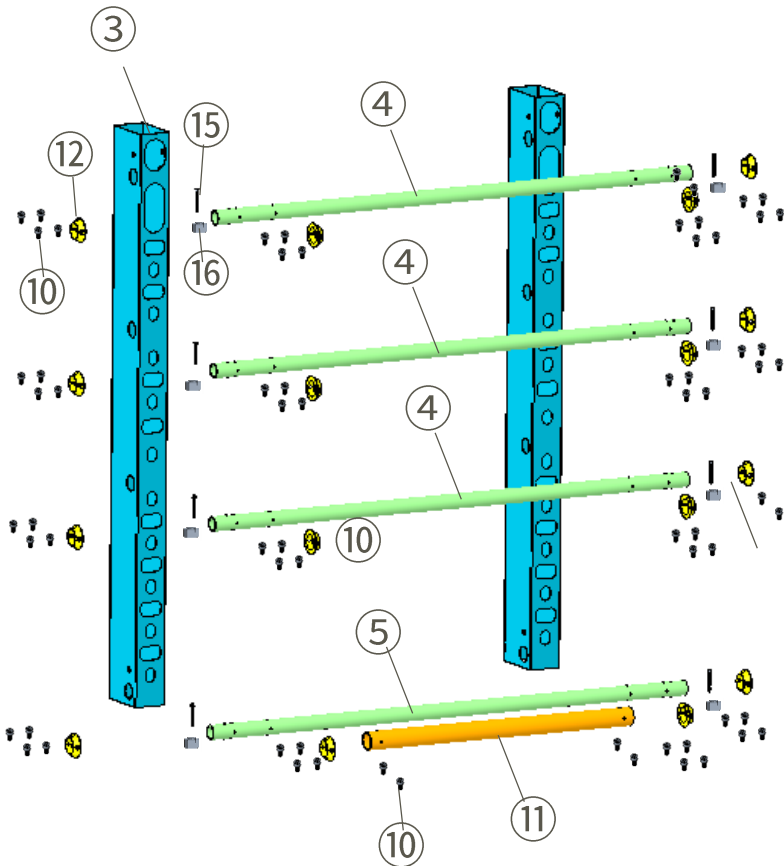
Screw hole processed on the front and rear legs for anchor.

Construction example

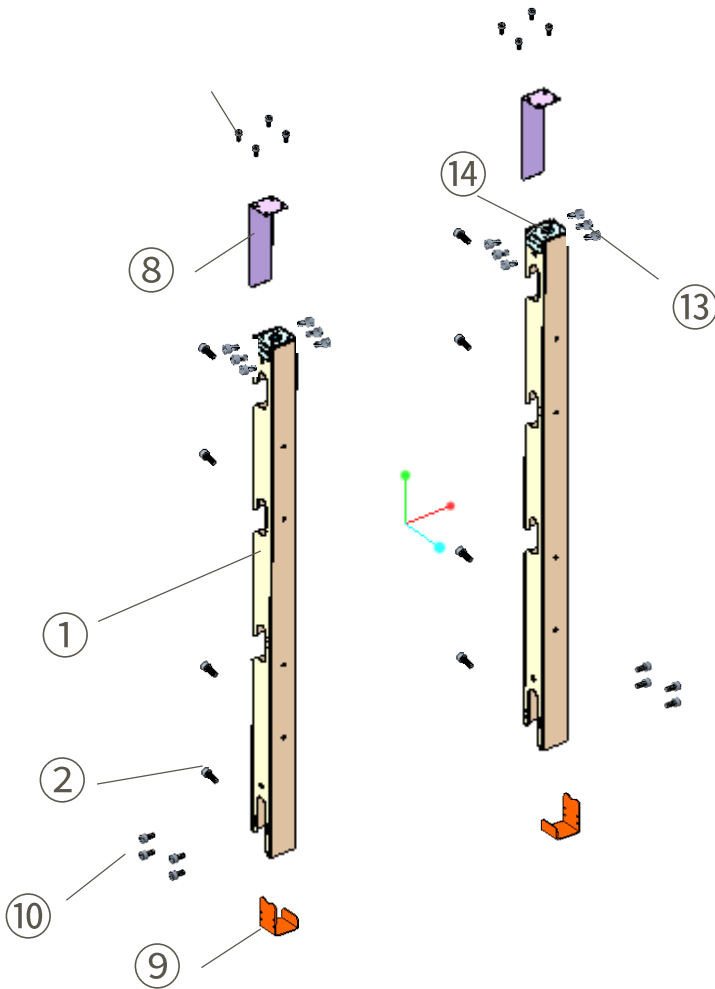


5.6 Parts list of wall hanging bracket and mounting bracket

● Wall mount



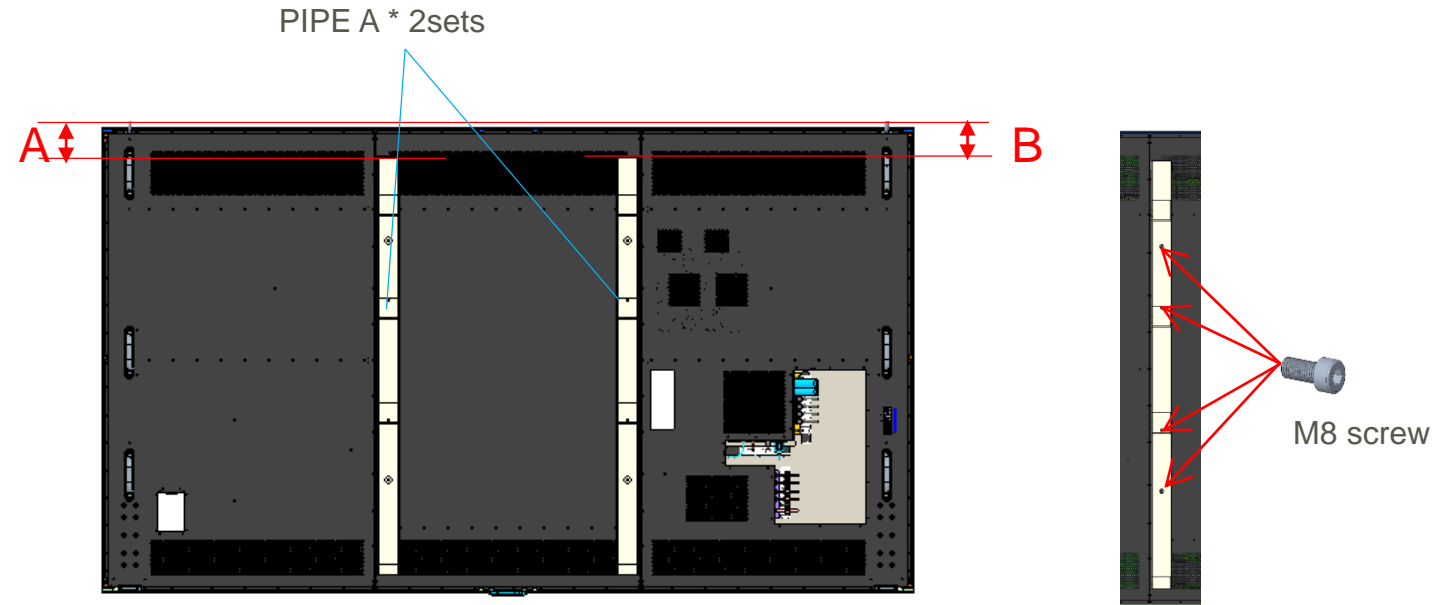
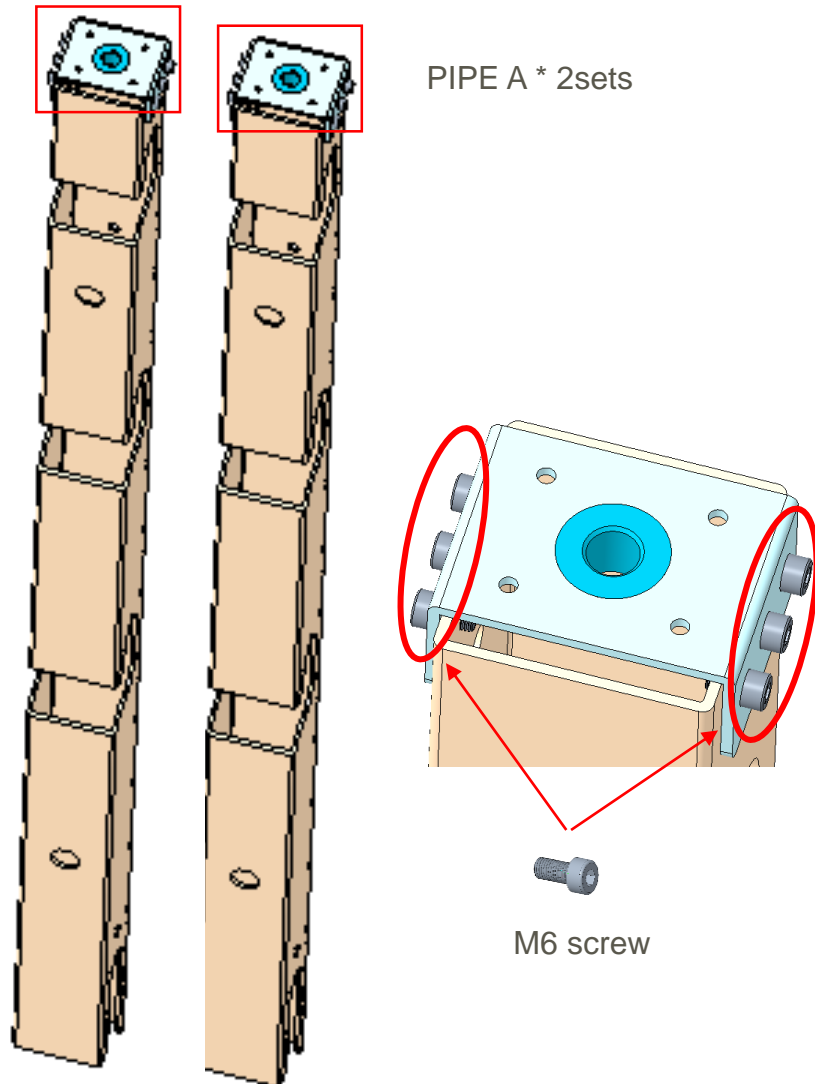
● Mounting bracket



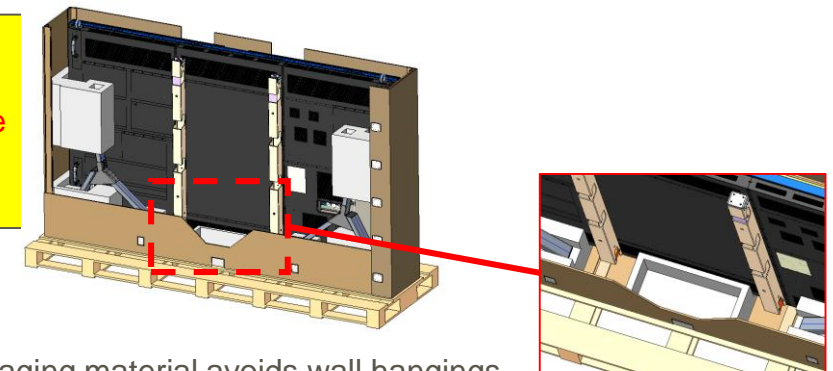
No.	Parts Name	Q'ty
①	PIPE A	2
②	SCREW M8 L=20 (mm)	8
③	PIPE B	2
④	PIPE C	3
⑤	PIPE D	1
⑥	M33 NUT	0
⑦	COTTER PIN	0
⑧	LOCK PLATE-T	2
⑨	LOCK PLATE-B	2
⑩	SCREW M5 L=10 (mm)	84
⑪	PIPE E	1
⑫	STOPPER RING	16
⑬	SCREW M6 L=10 (mm)	12
⑭	TOP PLATE	2
⑮	SCREW M5 L=45 (mm)	8
⑯	M5 NUT	8

5.6 Mounting of bracket

1. Assemble PIPE A & TOP PLATE with M6 screw * 6pcs
2. Fix PIPE A to the display with M8 screw * 8pcs (4pcs * 2sets)



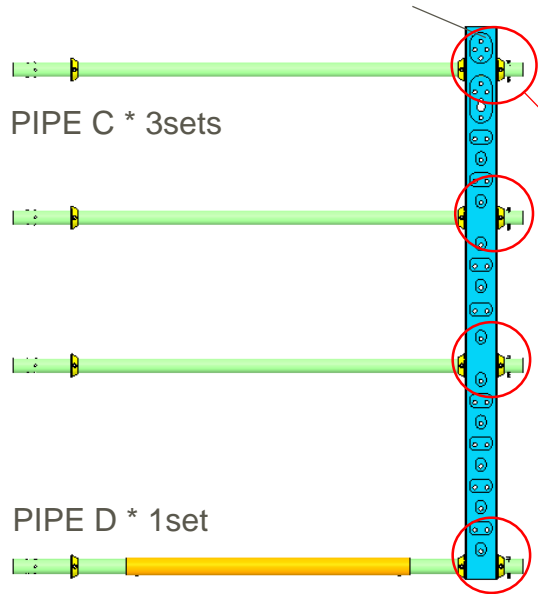
【CAUTION】
Pipe A is fixed vertically.
As shown above, A and B should be
fixed to be the same length.



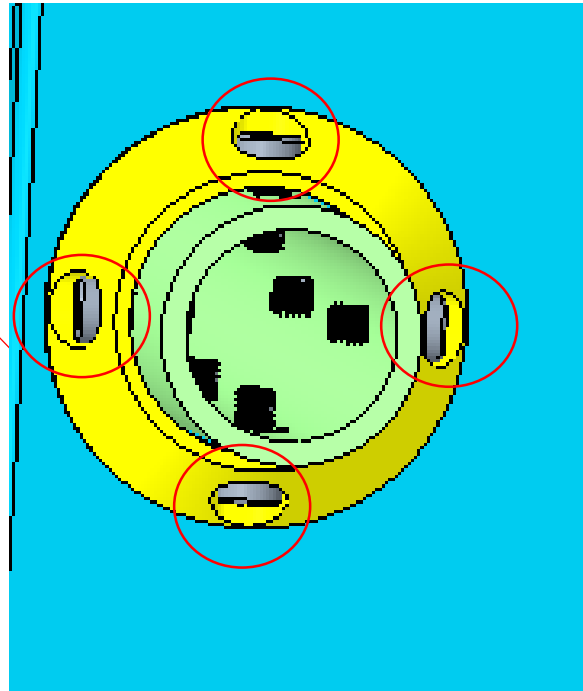
Since the packaging material avoids wall hangings.
Can be assembled with the set in the packing
material.

5.7 Wall hanging bracket (Assembling procedures)

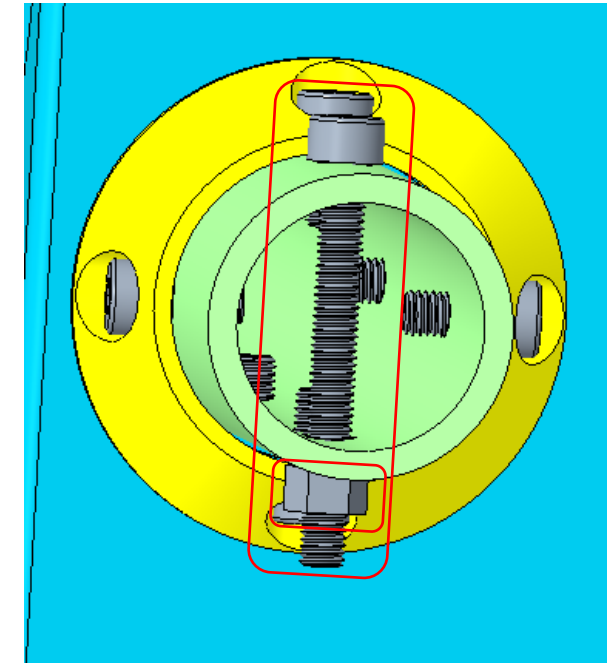
1. Assemble PIPE B & PIPE C/D



2. Assemble STOPPER RING * 4pcs to PIPE C/D with M5 L=10mm screw * 16pcs



3. FIX M5 (L=45mm) screw & M5 NUT to PIPE C/D

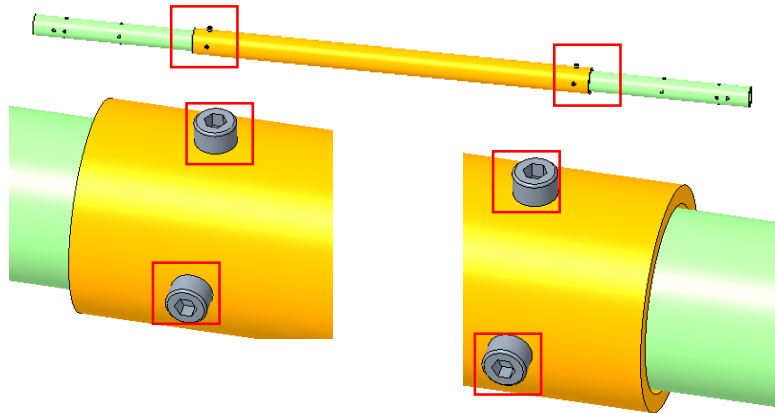


【CAUTION】

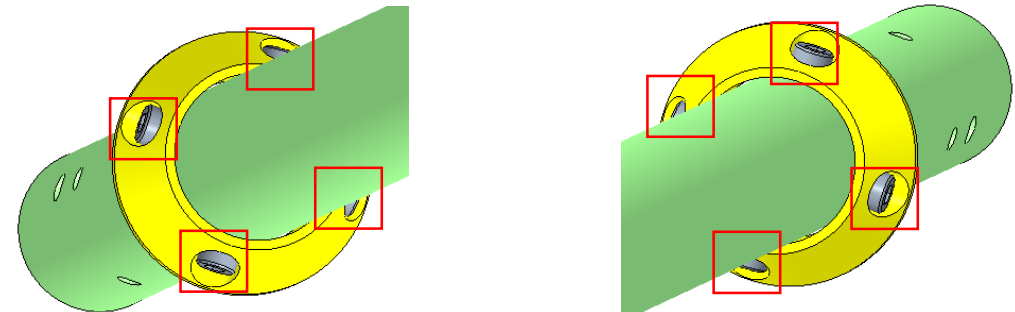
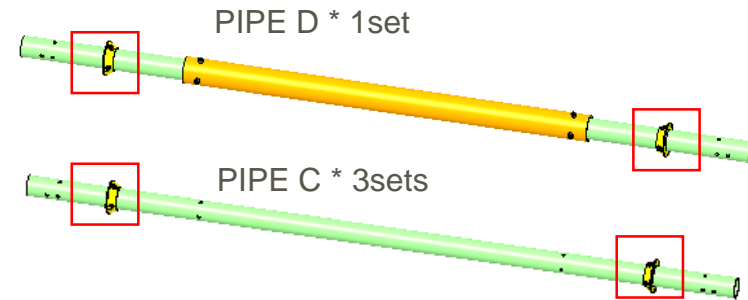
Please assemble PIPE D at bottom side

5.7 Wall hanging bracket (Assembling procedures)

1. Assemble PIPE D & PIPE E with M5 (L=10mm)screw * 4pcs

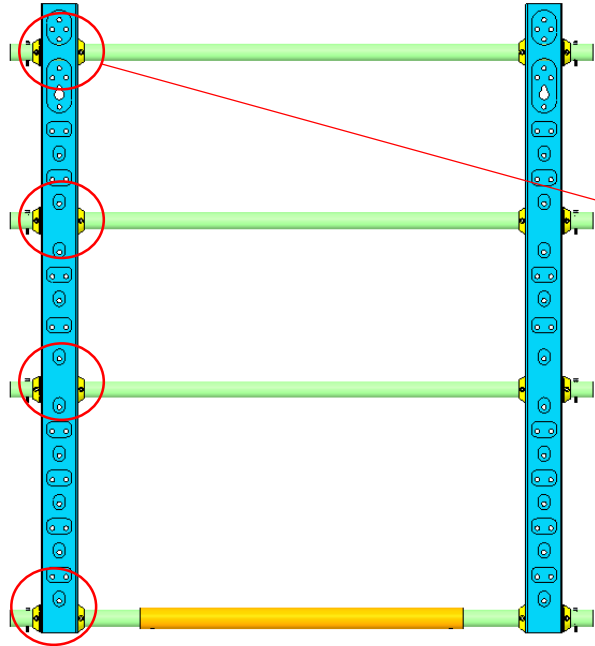


2. Assemble PIPE C/D & STOPPER RING*2pcs with M5(L=10mm) screw *8pcs

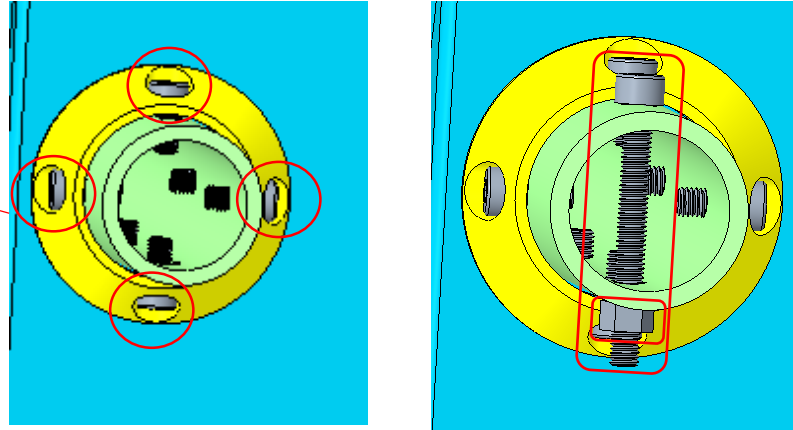


5.7 Wall hanging bracket (Assembling procedures)

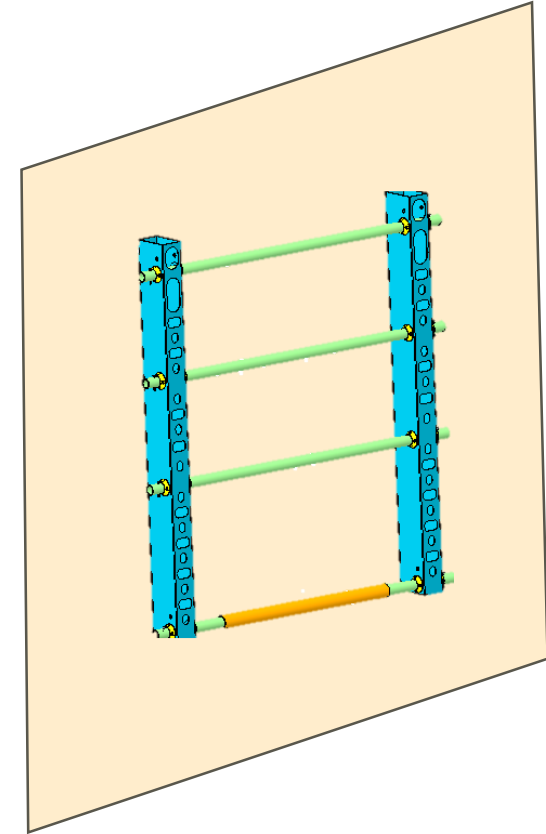
4. Assemble PIPE B & PIPE C/D.
(another side)



5. Repeat 2. & 3. in previous page.
(another side)



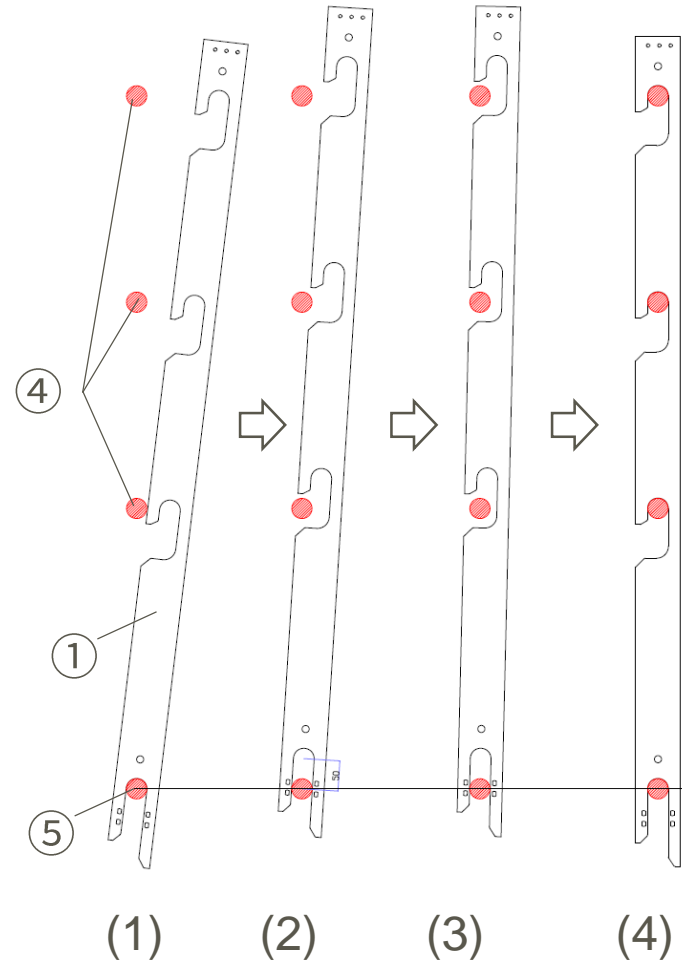
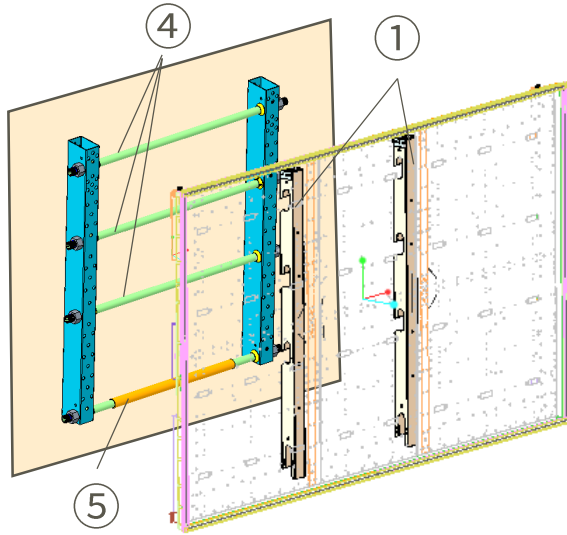
6. Fix wall hanging bracket to wall with screw.



【CAUTION】

- Please fix PIPE C/D to be horizontal.
- Please prepare applicable screw for each wall.

5.7 Wall hanging bracket (Assembling procedures)



1. ① Insert the lower notch of pipe A into ⑤ pipe D
* Caution: Please be careful that the set will tilt forward when installed.
2. ① Rotate pipe A (set) while lifting it slightly.
3. ① Rotate until the upper notch of pipe A is inserted into ④ pipe C.
4. ① Lower the pipe A (set) and hook it on the pipe.

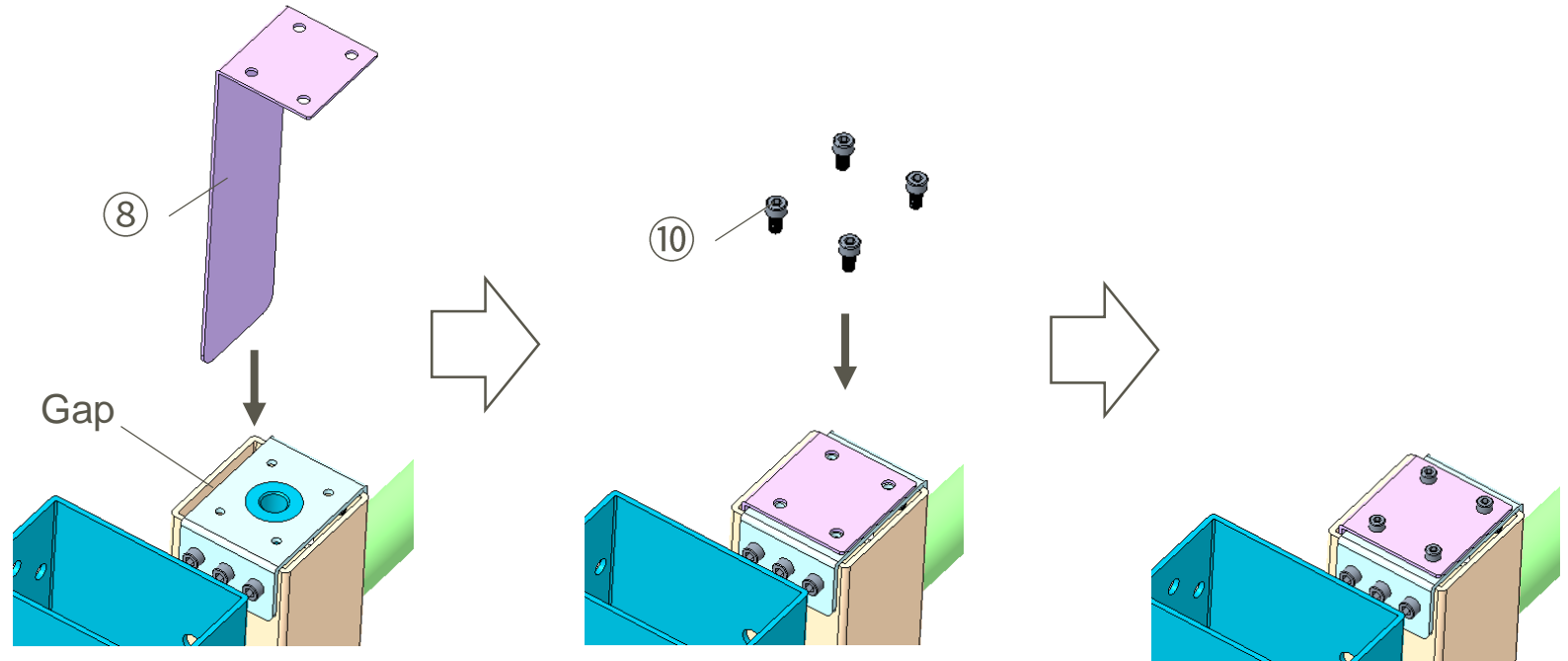
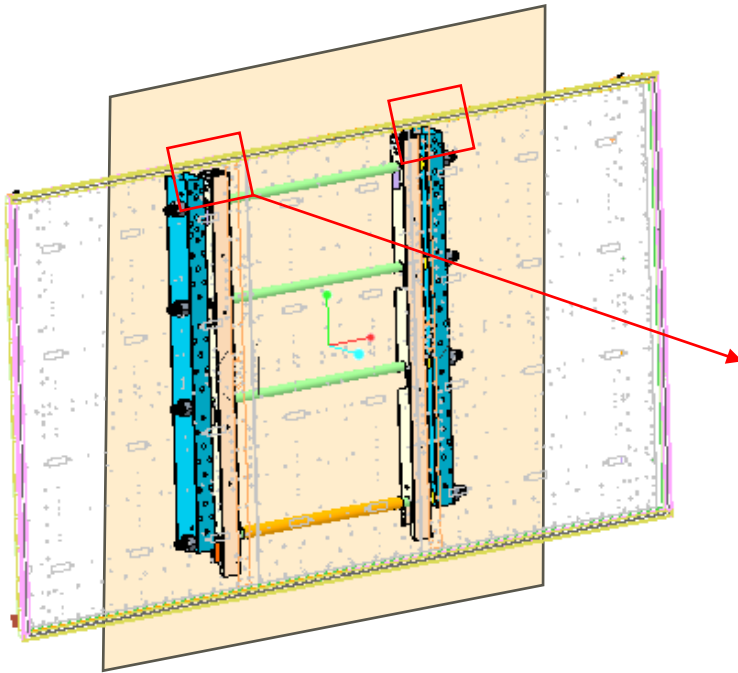
5.7 Wall hanging bracket (Assembling procedures)

Attach the fixing plate-T to the top two places

【CAUTION】

Please assemble LOCK PLATE-T * 2pcs at first.
Next assemble LOCK PLATE-B * 2pcs

LOCK PLATE-T* 2pcs



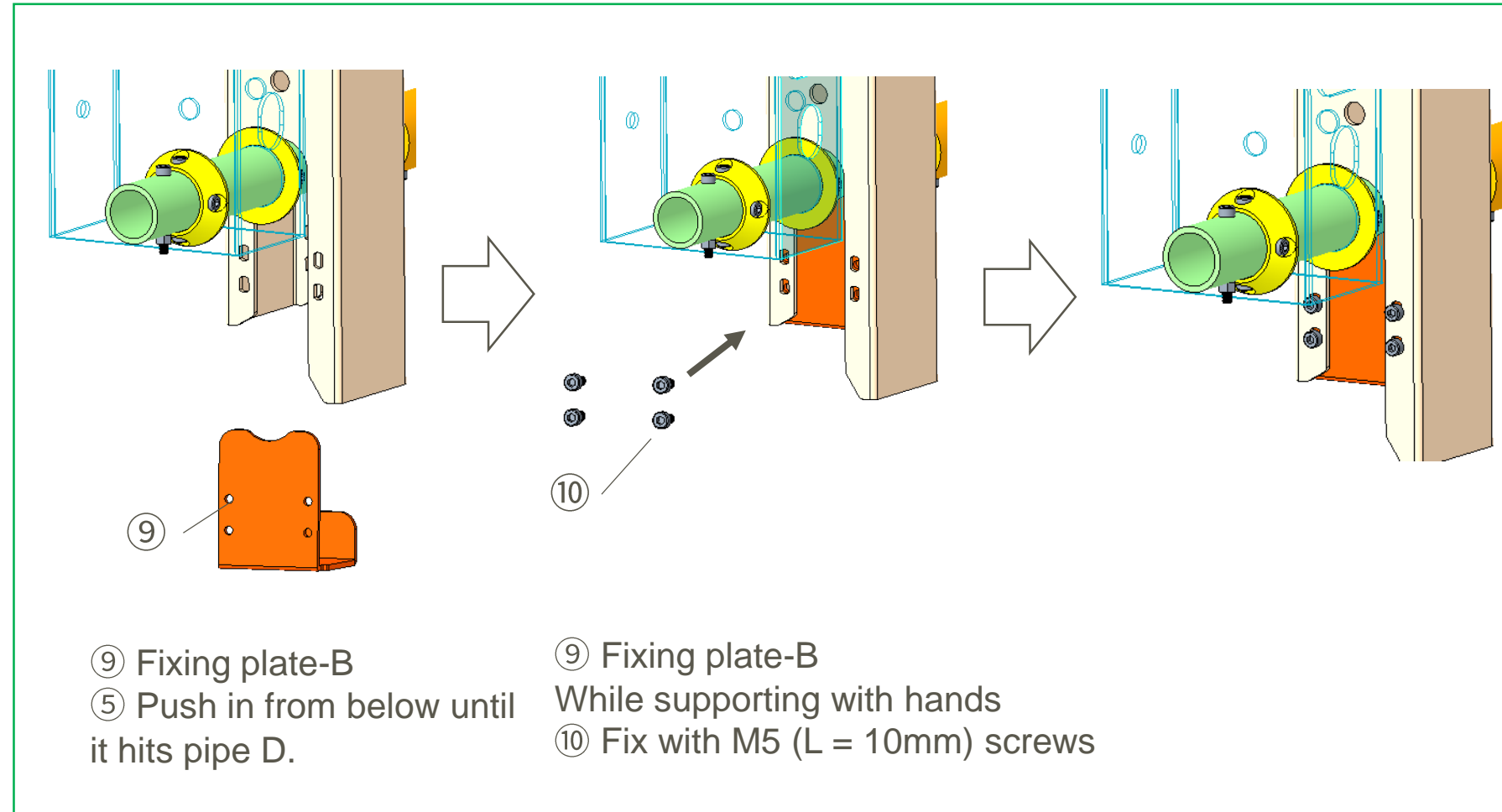
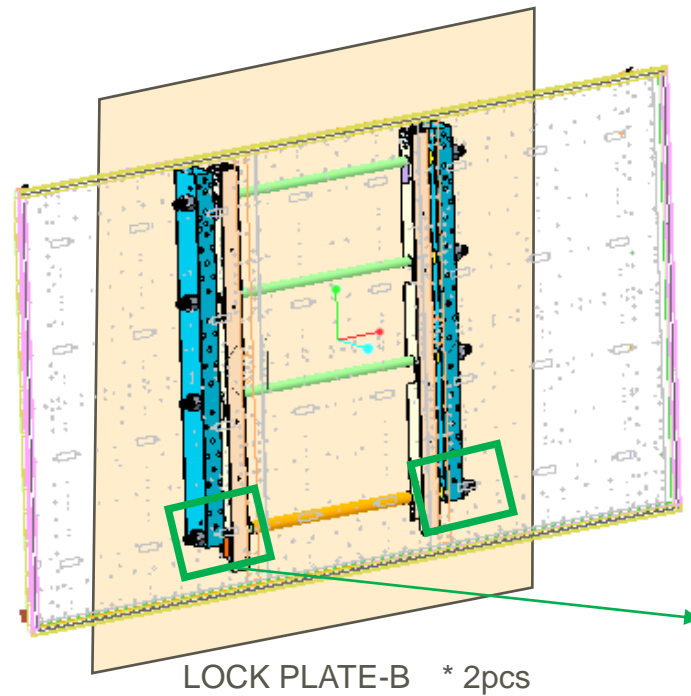
⑧ Insert the fixing plate-T into the above gap

⑧ Fixing plate-T
⑩ Fix with M5 (L = 10mm) screws · · · 4 places

5.7 Wall hanging bracket (Assembling procedures)

【CAUTION】

Please assemble LOCK PLATE-T * 2pcs at first.
Next assemble LOCK PLATE-B * 2pcs



6. Options and recommended equipment

6.1 Operation-verified PC / graphics card

Connection with NVIDIA Quadro RTX 5000



[Evaluation results]

PC that realizes 8K display (Graphic card NVIDIA Quadro RTX 5000 built-in)
There is no problem with the display regarding the connection with,
but there are the following restrictions.

[Restrictions]

Please be aware of the following restrictions when installing and operating.

When operating with integrated screens (* 1)

- ① Use the EDID fixing function of the graphic driver.
- ② Do not turn off only the display while the PC is on.

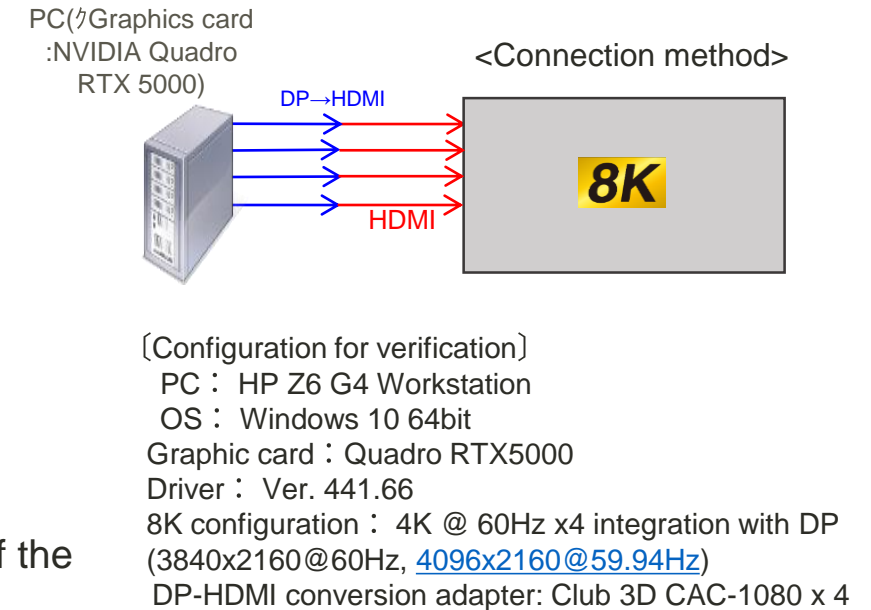
Whenever you turn off the display, shut down your PC first.

Also, when turning on the power of the PC, be sure to turn on the power of the display.

* 1)In case of the function as a graphic driver that displays four screens as one screen

[Remarks]

The screen may turn black when the display is turned off / on. In this case, restart your PC. This symptom may occur even if you use another graphic card or DP-HDMI conversion adapter. Therefore restart the PC in the same way in that case.



SHARP

Be Original.