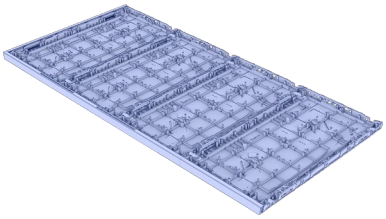
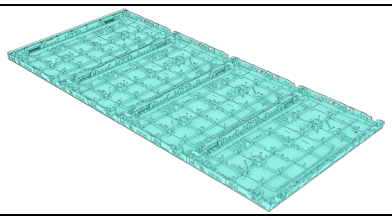
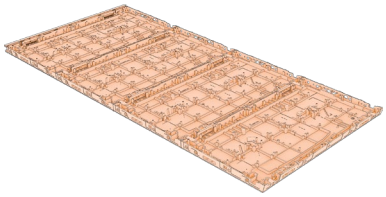
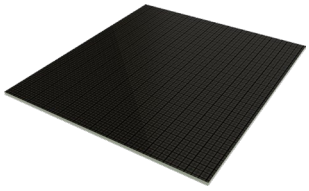
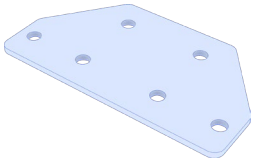
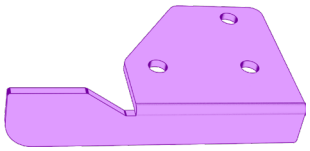
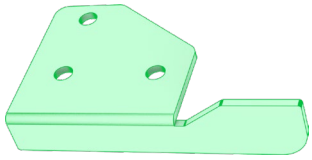
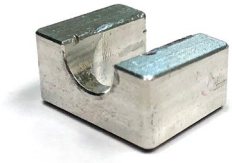
FHDC108 LED Display

Installation Guide

Rev.6

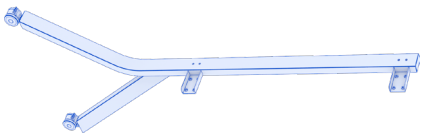
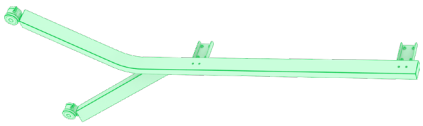
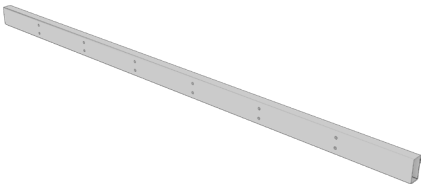
I. LED Display Parts List

Item	Image	Part Name	Quantity	Note.
1		Unit Chassis 1	1 PCS	• The inner sides of the four cabinets that make up Unit Chassis 1 are labeled with numbers 1 to 4.
2		Unit Chassis 2	1 PCS	• The inner sides of the four cabinets that make up Unit Chassis 2 are labeled with numbers 5 to 8.
3		Unit Chassis 3	1 PCS	• The inner sides of the four cabinets that make up Unit Chassis 3 are labeled with numbers9 to 12.
4		Unit Chassis 4	1 PCS	• The inner sides of the four cabinets that make up Unit Chassis 4 are labeled with numbers 13 to 16.
5		Bottom Frames 1	1 Set	• This part is mounted on the left side of the frame module beneath the FHDC108. It must be assembled together with the "Bottom Frames 2" before it can be used.
6		Bottom Frames 2	1 Set	• This part is mounted on the right side of the frame module beneath the FHDC108. It must be assembled together with the "Bottom Frames 1" before it can be used.
7		LED Panel	128 PCS	• The LED panel is a key component in assembling the FHDC108 screen. • Its mounting surface features a POKA-YOKE design to prevent incorrect installation.
8		Wall-mounted bracket connector piece	2 PCS	• This part is used to connect & secure the wall-mount bracket 1 & 2 components, integrating them into a single unit.

9		Stopper Plate-L	1 PCS	• This is the stopper component installed at the left end of the wall mount sliding rail, used to prevent the mounted display from sliding off.
10		Stopper Plate-R	1 PCS	• This is the stopper component installed at the right end of the wall mount sliding rail, used to prevent the mounted display from sliding off.
11		Wall-mounted bracket	4 PCS	• Provides structure for LED display unit to wall or rolling stand.
12		Left-angle FFC cable	1 PCS	• The length is 416mm. • This cable is used to connect the system board of the bottom-side frame to the distribution board of Unit Chassis 3.
13		Right-angle FFC cable	1 PCS	• The length is 273mm. • This cable is used to connect the system board of the bottom-side frame to the distribution board of Unit Chassis 4.
14		FFC cable	3 PCS	• The length is 529mm. • This FFC cable is a signal cable used to connect Unit Chassis 1 & 2, Unit Chassis 2 & 3, and Unit Chassis 4 & 5.
15		Power cord	1 PCS	• This is the power cord used to supply AC power to the FHDC108. • The FHDC108 offers four types of power cords for customers to choose from: US standard, UK standard, EU standard, and Australia standard.
16		Locking block	8 PCS	• This is a fastening component used to assemble the bottom frame to the chassis. • This part is used in combination with the fixing pin of the bottom frame.
17		M8 Expansion Bolt	24 PCS	• This is a Expansion Bolt used to secure the FHDC108 wall-mount bracket to a concrete or brick wall. • This bolt is operated with a 13mm Hex Socket Wrench.

18		M8x35mm screw	24 PCS	• This is the screw used to assemble the FHDC108 wall-mount bracket to the floor stand. • This bolt is operated with a 13mm Hex Socket Wrench.
19		M6x10mm screw	12 PCS	• This screw is used to secure the wall mount bracket components into a single unit.
20		Large pan head M3x8mm	8 PCS	• This screw is fastened onto the fixing pin of the bottom frame to ensure that the locking block installed on it does not come loose.
21		M3x6mm screw with washer	3 PCS	• This screw is used to secure Bottom Frame 1 and Bottom Frame 2 as a single assembled unit.
22		M3x8mm screw with washer	2 PCS	• This screw is intended for mounting the Wi Fi antenna from the option kit within the system control box.
23		M3x25mm screw with washer	4 PCS	• This screw is used to secure the hook plate to the wall mount sliding rail, stabilizing the display and preventing it from shaking.
24		RJ45 to RS232 cable	1 PCS	• Intended for RS232 control.

II. Floor Stand Parts List (Option)

Item	Image	Part Name	Quantity	Note.
1		Left-side vertical column	1 PCS	• Provides the vertical structure to mount the main beams and provides rollers for the stand.
2		Right-side vertical column	1 PCS	• Provides the vertical structure to mount the main beams and provides rollers for the stand.
3		Horizontal bracket	2 PCS	• Provides a horizontal structure between the 2 vertical column assemblies and provides an attachment surface for the mount bars.
4		M8x20mm screw	16 P	• This screw is used to secure the assembly of the floor stand's vertical column and horizontal bracket. • This bolt is operated with a 13mm Hex Socket Wrench.

III. List of Tools and Accessories Used

Item	Image	Part Name	Quantity	Note.
1		Phillips Screwdriver	1 PCS	• Tools for removing and installing Phillips head screws.
2		No. 5 hexagonal wrench	1 PCS	• This tool is used for operating the side hook mechanism inside the unit chassis for assembling or disassembling.
3		13mm Hex Socket Wrench	1 PCS	• This tool is used for fastening or removing the nut of the rivet bolt and the M8 screws used in the entire unit.
4		Magnet Height Adjustment Tool	2 PCS	• Tool for adjusting the height of magnet bolts inside the display chassis that secure the LED panel to the magnetic supports.
5		Front tile puller	1 PCS	• This is a front tile puller specifically used for assembling and disassembling COB LED panels.
6		Front cover maintenance tool	1 PCS	• This is a front cover maintenance tool used for removing the cover plate of the bottom frame.
7		Anti-static Gloves	5 pairs	• Wearing these gloves helps the technicians eliminate static and protect the LED display during the assembly or maintenance of the FHDC108.

Wall-mounted installation

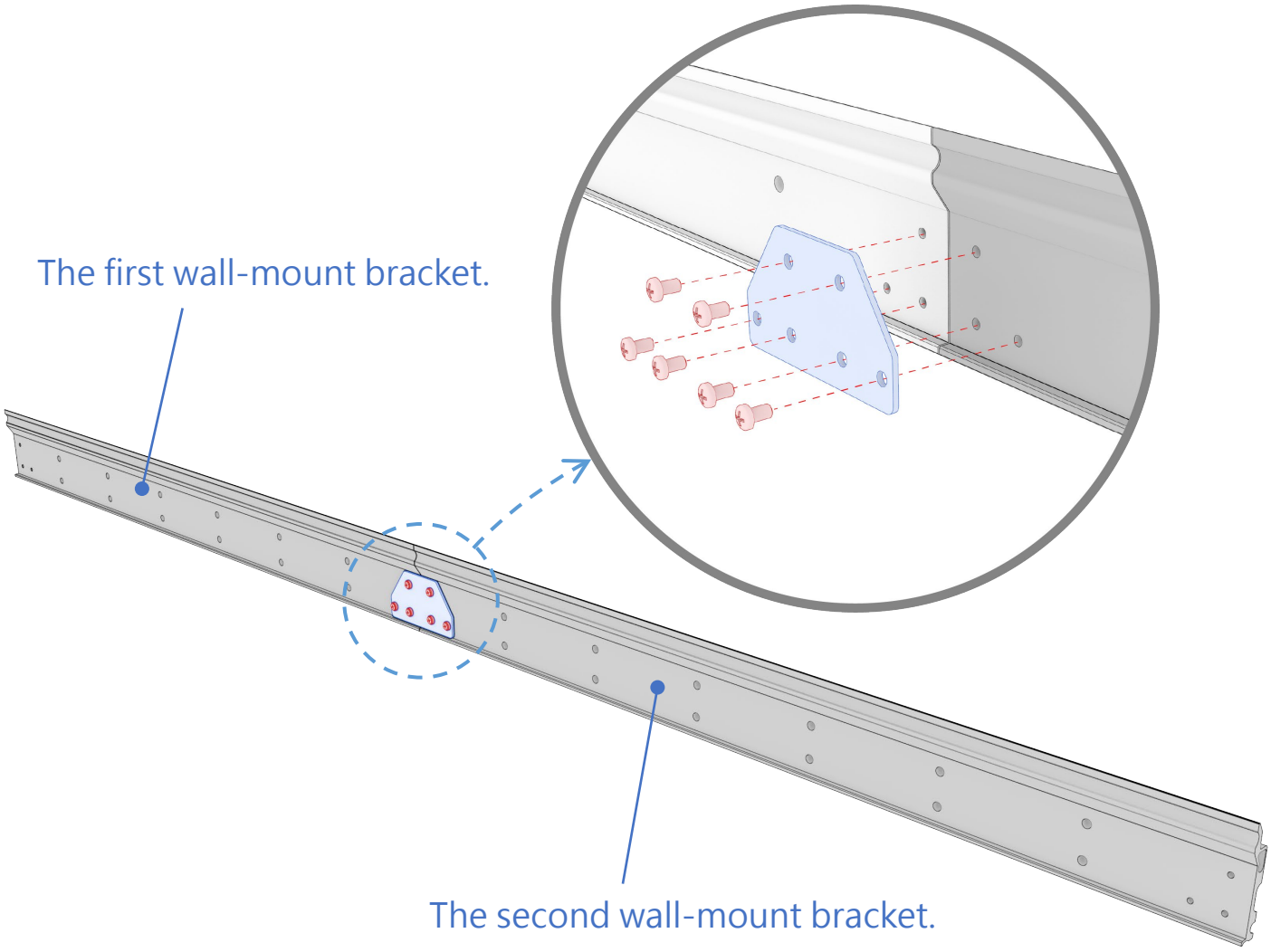
- Wall-mounted FHDC108 installation effect picture

Installation steps：

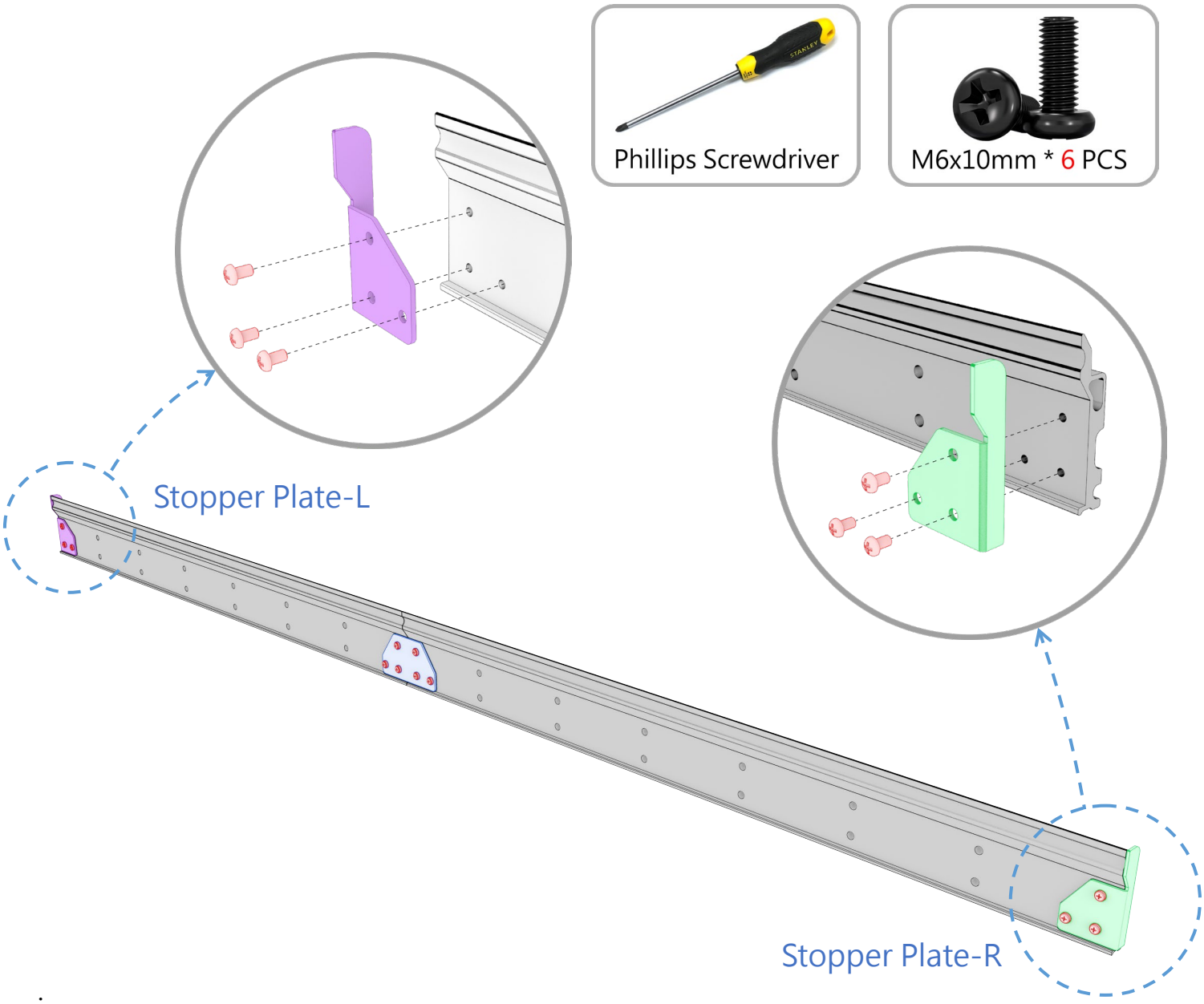
1) According to the on-site environment, combined with the height of the large screen from the ground, determine the drilling positions of the upper and lower wall mounts. To ensure horizontal alignment, a spirit level is required.
2) The upper wall mount and lower wall mount are respectively composed of the first wall-mount bracket and the second wall-mount bracket, connected by connectors. Six M6*10 pan head screws are used to fix the connectors.
3) Install the Stopper Plate-L and Stopper Plate-R at the left and right ends of the upper

wall mount using six M6*10mm pan head screws. These plates prevent the LED display from sliding on the wall mount beyond the safe tolerance.

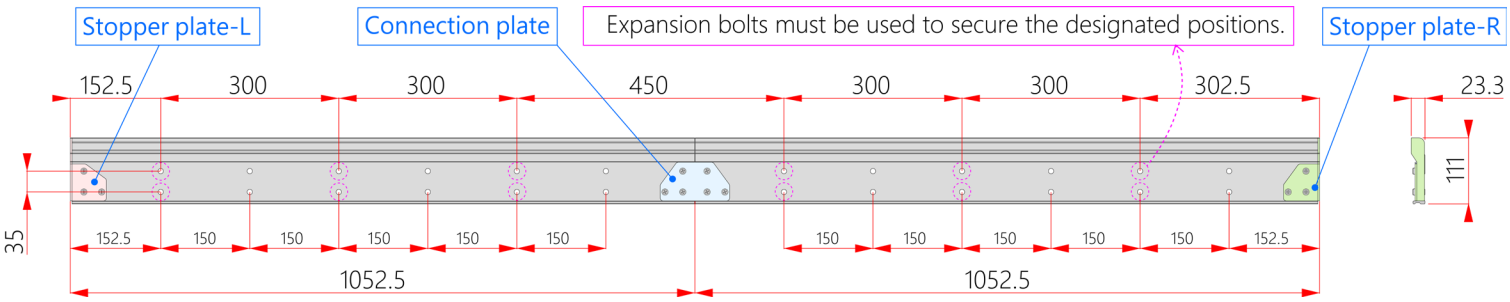
Step 1. Assembly diagram of the upper and lower wall mount bodies



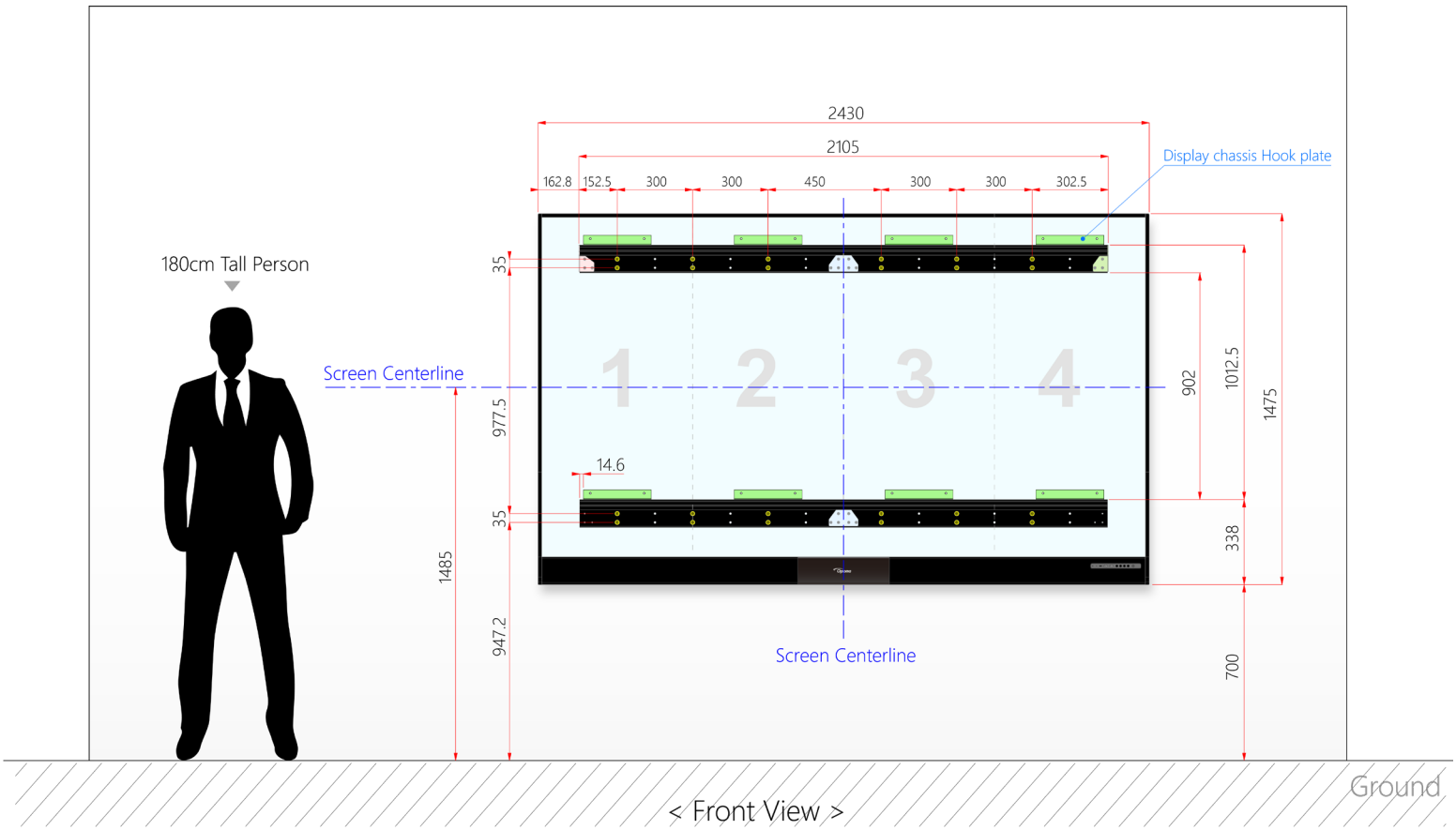
Step 2. Assembly diagram of Stopper Plate-L & Stopper Plate-R parts on the upper wall mount.



.



- The red circles in the figure mark the essential drilling points needed to fix the wall-mount bracket.

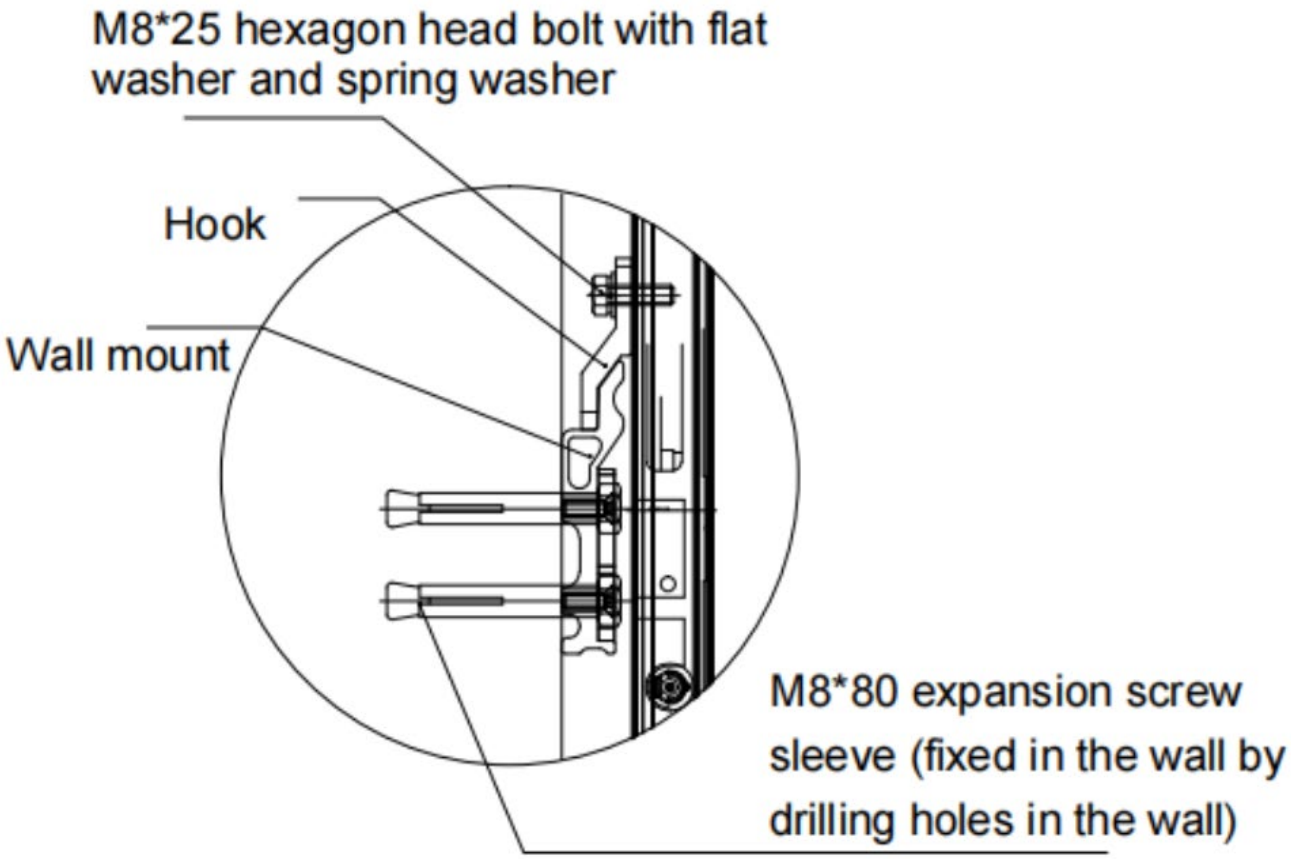


1) Mark the appropriate hole positions on the wall and drill holes at the marked points using a tool, with each hole having a diameter of 10mm.

2) The yellow-circled positions in the diagram indicate the essential mounting holes for installing the FHDC108 wall-mount bracket, with a total of 24 fixation points.

3) Use M8*80 expansion bolt for installation at the corresponding hole position, as shown in the figure below;

1) Side sectional view of the installed wall mount.



2) The front view of the installed wall mounts is as shown in the figure below. The upper hanging bar and lower hanging bar are parallel to the ground and aligned up and down with each other. The distance between them is 1012.5mm.

3) Check if the wall mount is installed properly, by determining : I. if it is level; II. if the distance between the upper and lower wall mounts is correct. You can check and adjust using the following methods :

I. Use a spirit level to measure if the wall mount is level. If it is not level, adjust it by loosening the expansion bolts, gently push it to be level by hand, then tighten the bolts.

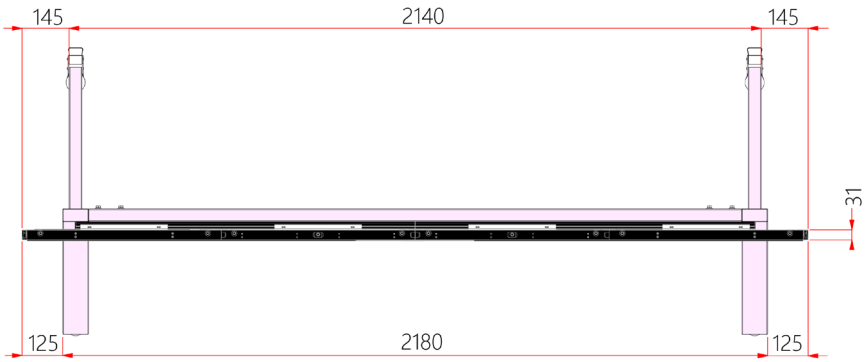
II. Use a tape measure to check if the distance between the upper and lower wall mounts is correct. If it is incorrect, adjust it by loosening the expansion bolts, lightly pushing to adjust the distance by hand, and then tightening the bolts.

4) Install the cabinets according to the installation steps of those for the floor standing installation.

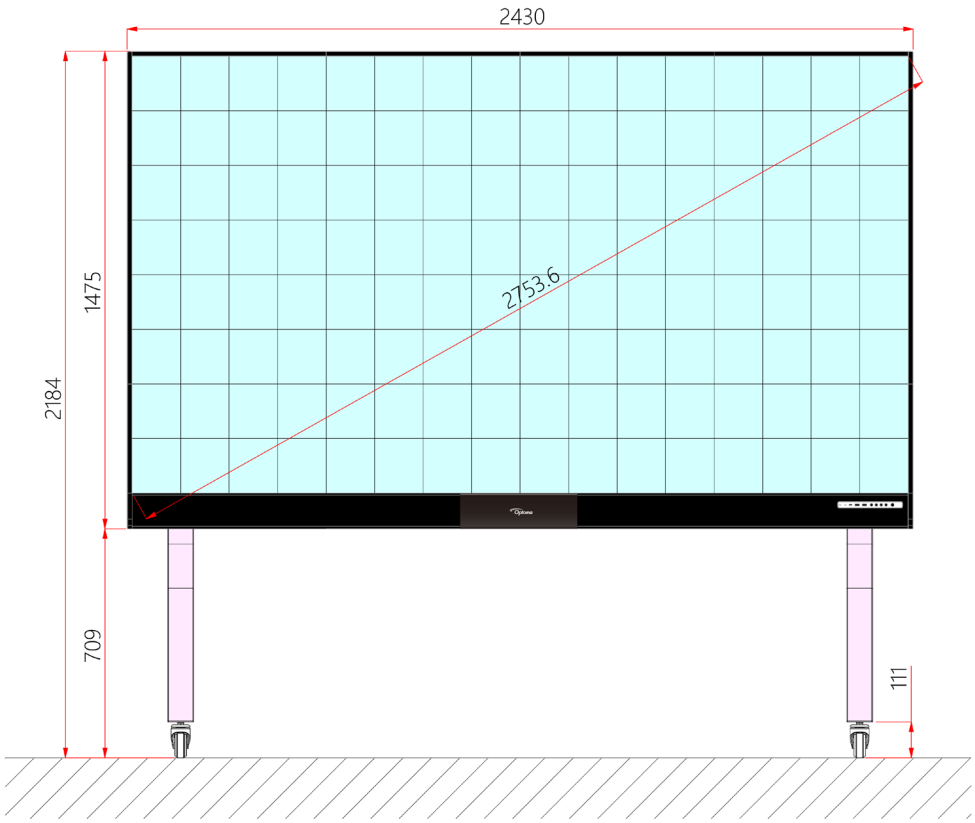
Floor-Standing Installation

- Floor standing installation effect.

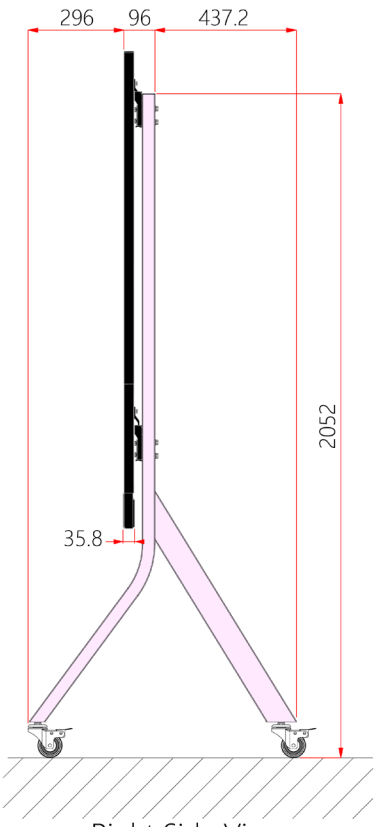
1. Floor-standing FHDC108 Dimension Diagram



<Top View>



<Front View>



<Right Side View>

2. Usage and Operating Precautions

CAUTION

- This Stand is to be used with OPTOMA FHDC108 LED display only. Using this stand with other models may cause instability and injury.

TIPPING HAZARD!

- DO NOT roll the stand over cable, uneven, dirty, soft, or high incline surfaces.
- DO NOT push the front of the display. Always unlock the wheels before moving.

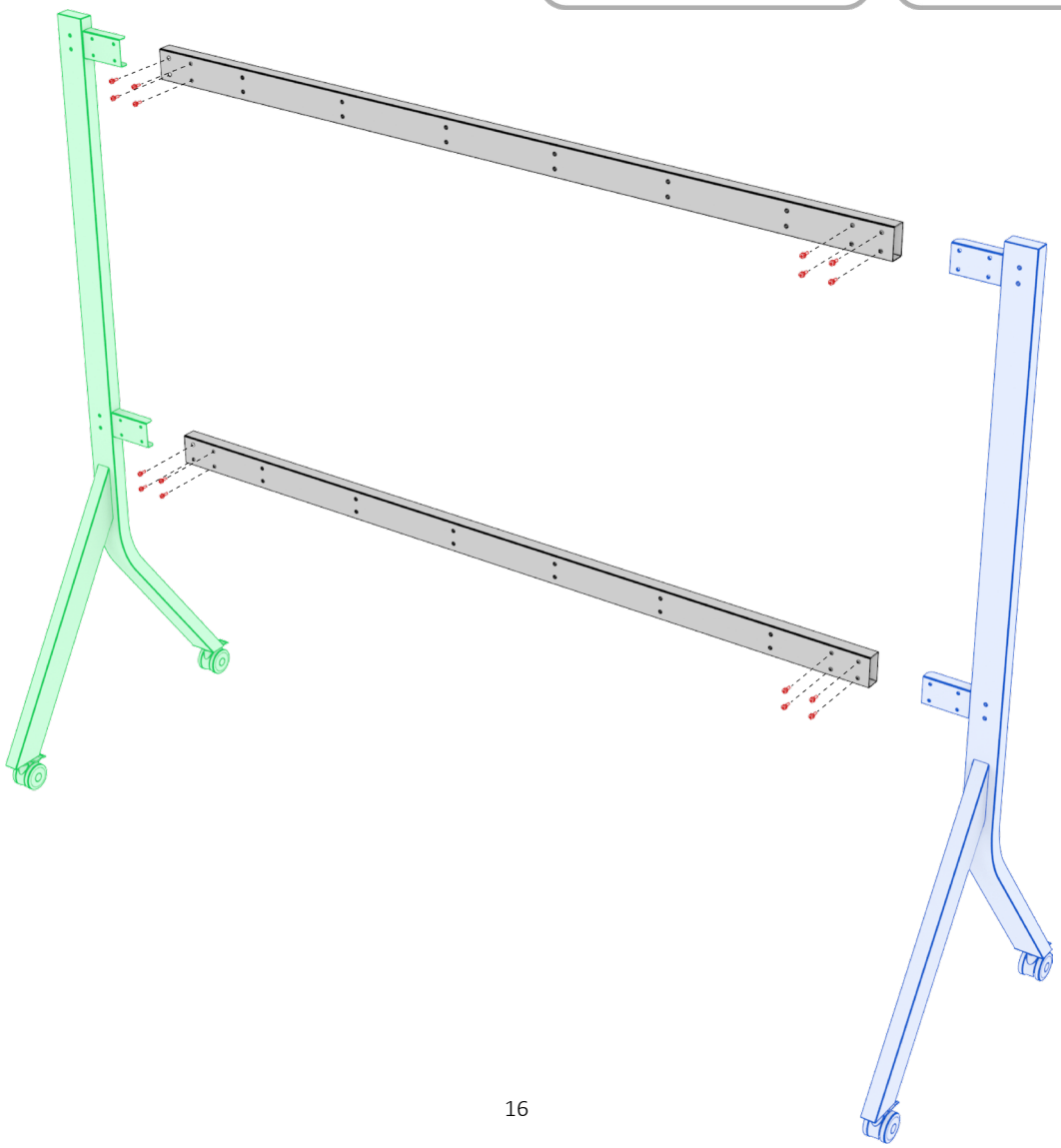
Failure to comply with this caution may result in equipment damage and personal injury.

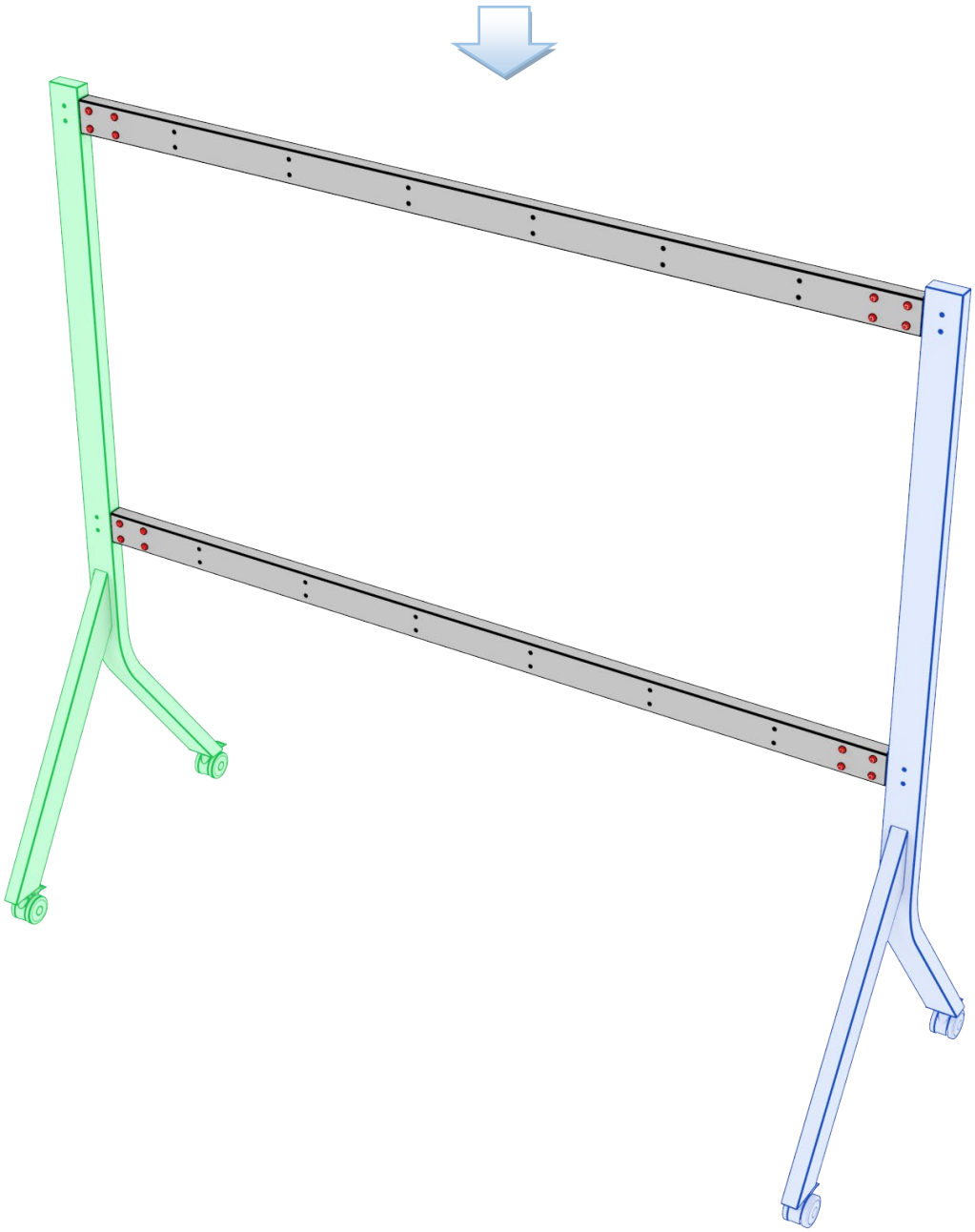
Installation steps：

Step 1： Assemble the floor stand

1) Based on the detailed list of floor stand assembly, find the corresponding components, as shown in the figure below：

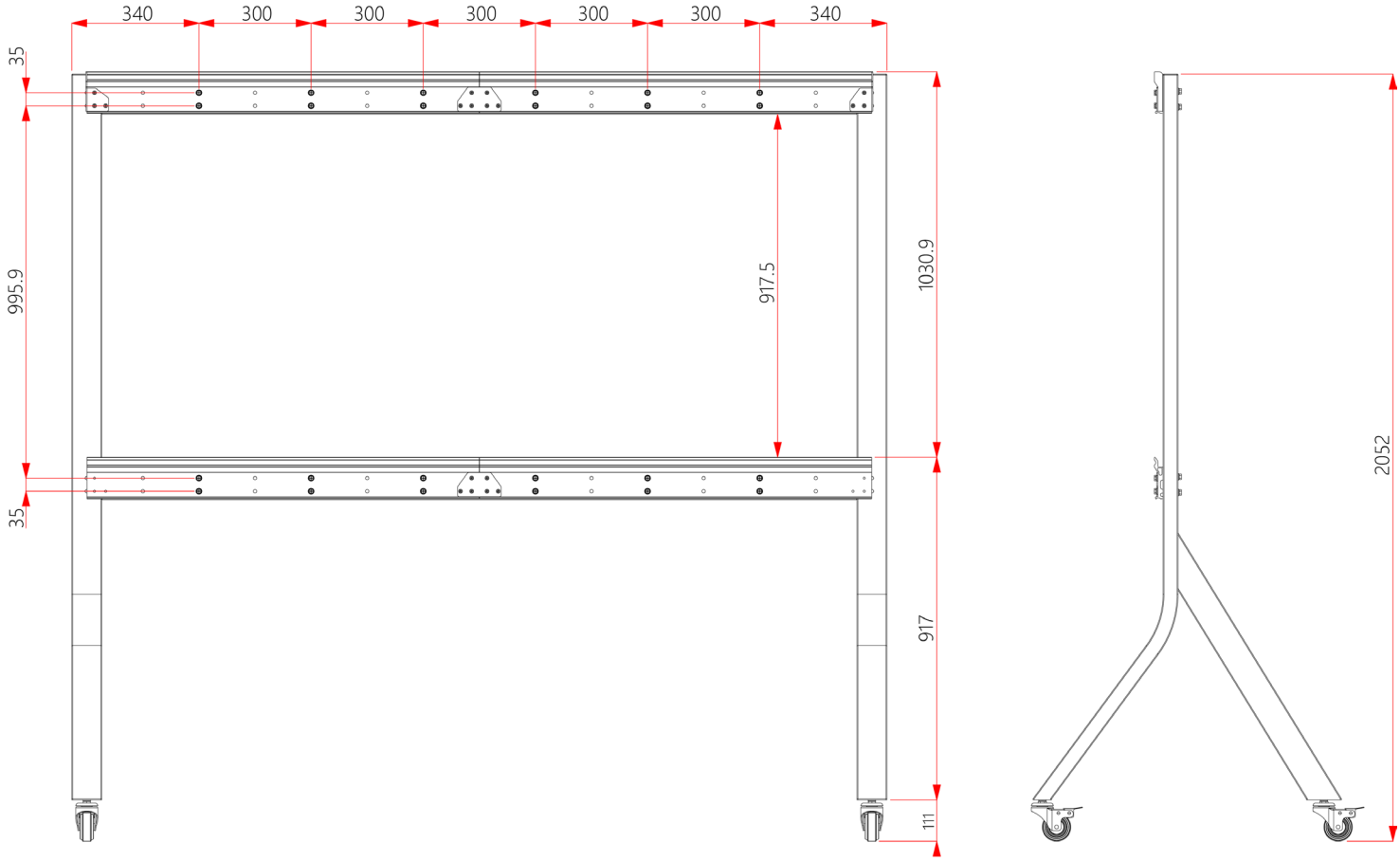
2) Tighten the mounting screws with an appropriate tool to complete the installation of the floor stand assembly, as shown in the figure below：





Step 2： Install the FHDC108 wall mount onto the floor stand

1) The diagram below is an elevation view of the floor stand with the FHDC108 wall mount installed. The marked positions in the pink circles indicate the screw locking points for mounting the wall mount.



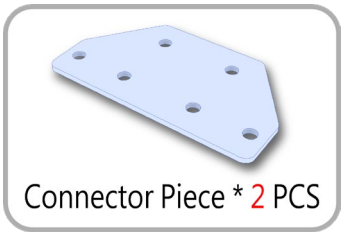
<Front View> <Right Side View>

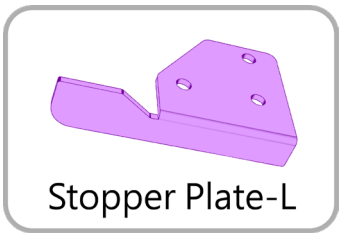
2) The FHDC108 LED display wall-mount bracket assembly is composed of two individual wall-mount bracket components interconnected by a connector piece. A total of two complete wall-mount bracket assemblies are provided.

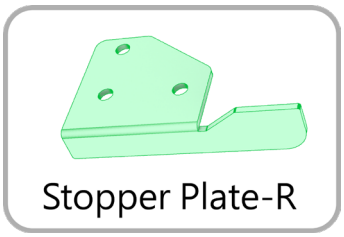
For mounting the wall mount onto the floor stand, the following components and tools need to be prepared in advance：

Components：

- Wall-Mount Bracket 1 * 2 pcs
- Wall-Mount Bracket 2 * 2 pcs
- Wall-Mounted Bracket Connector Piece * 2 pcs
- Stopper Plate-L * 1 pcs
- Stopper Plate-R * 1 pcs







Fasteners：

- M8*35mm screws * 28 pcs
- M6*10mm screws * 18 pcs

Tools：

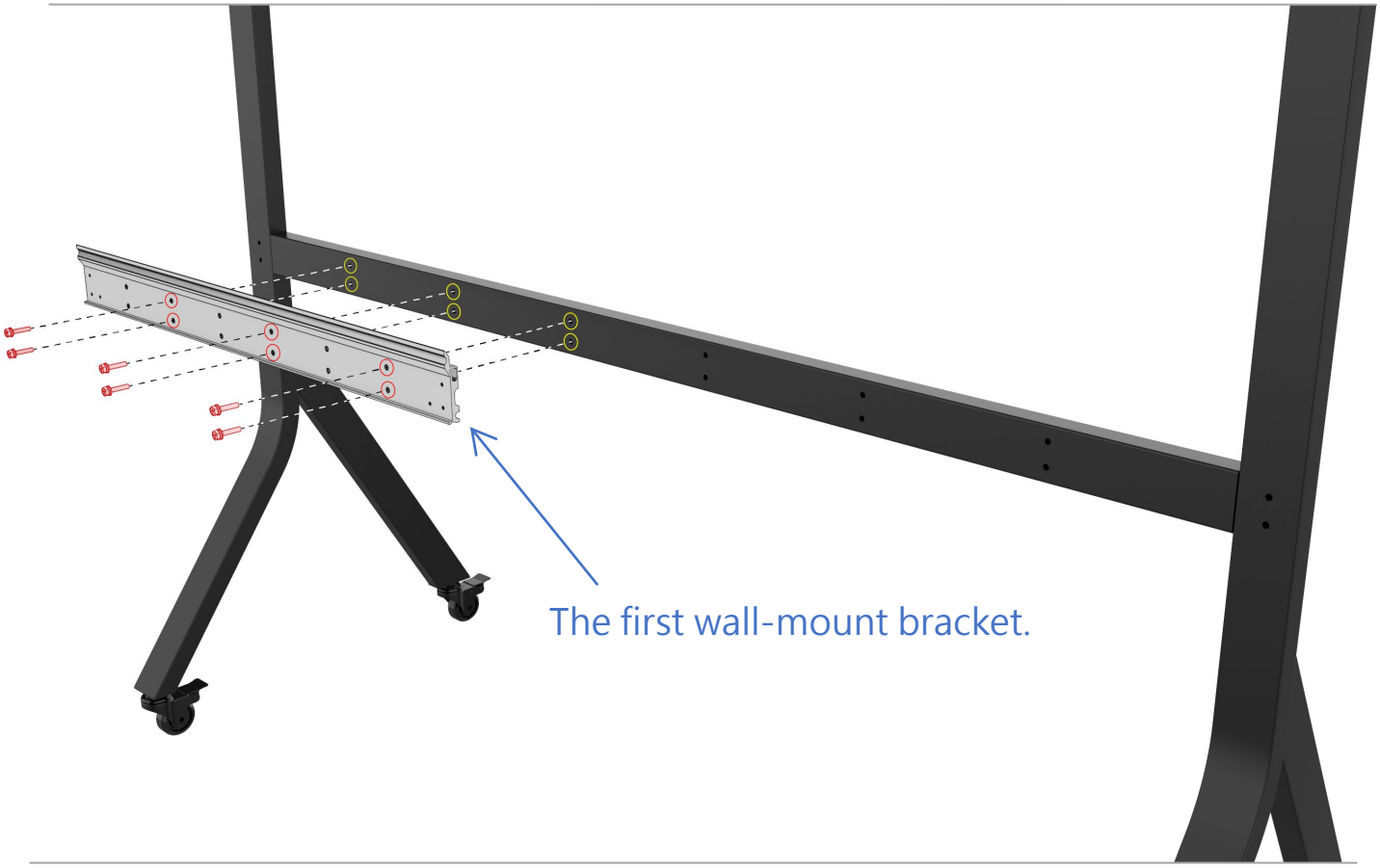
- Phillips Screwdriver
- 13mm Hex Socket Wrench

Below are the OPTOMA recommended instructions for assembling the FHDC108 wall mount onto the floor stand, using the wall mount bracket located on the lower side of the floor stand as an example.

Step 1

Use a 13mm Hex Socket Wrench to fasten six M8*35mm screws at the screw hole positions shown in the diagram, securing the first Wall-Mount Bracket to the floor stand.

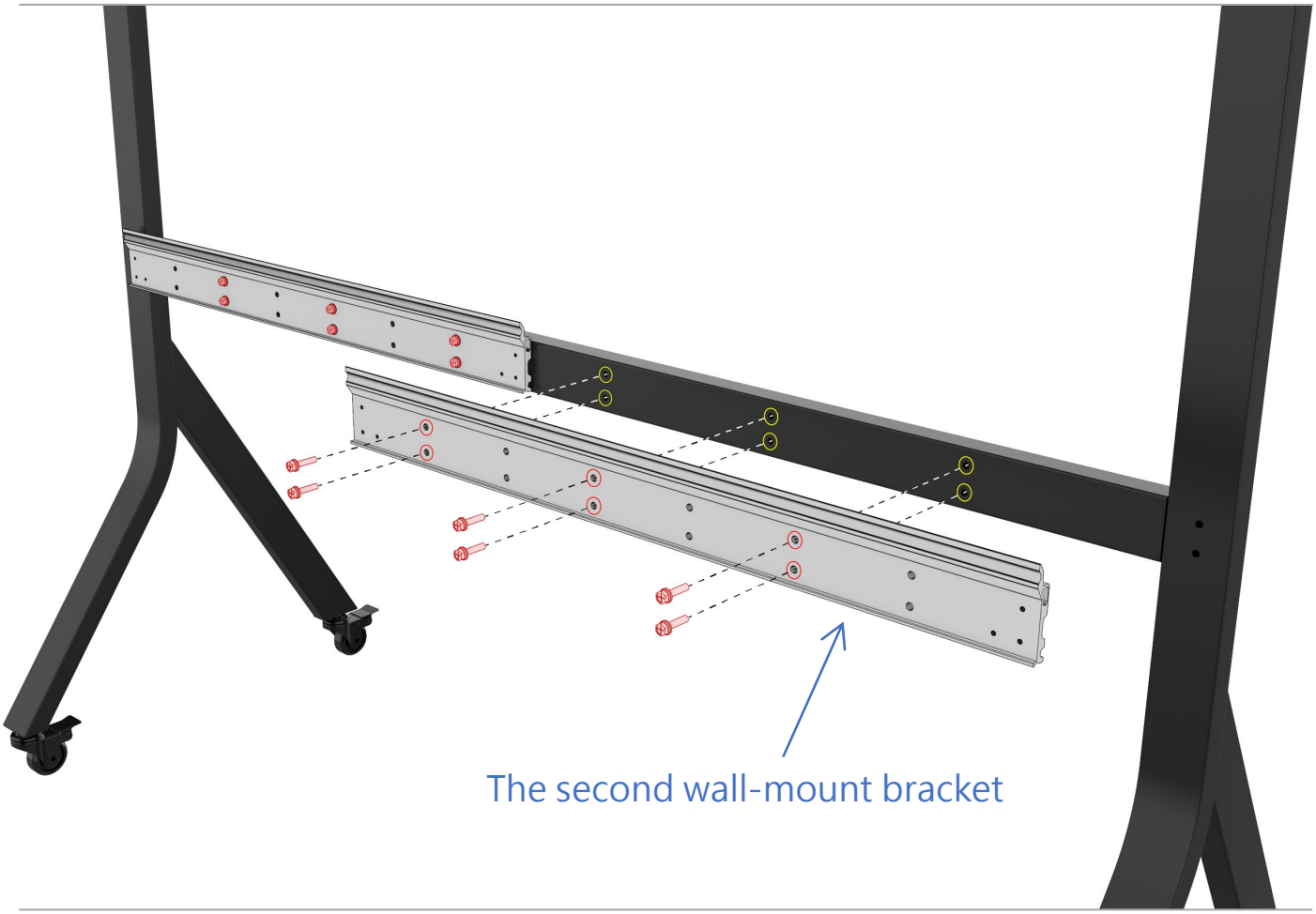
The pink-circled marks in the diagram indicate the screw holes where the screws pass through the first Wall-Mount Bracket, while the yellow-circled marks indicate the screw holes for securing the screws to the floor stand.



Step 2

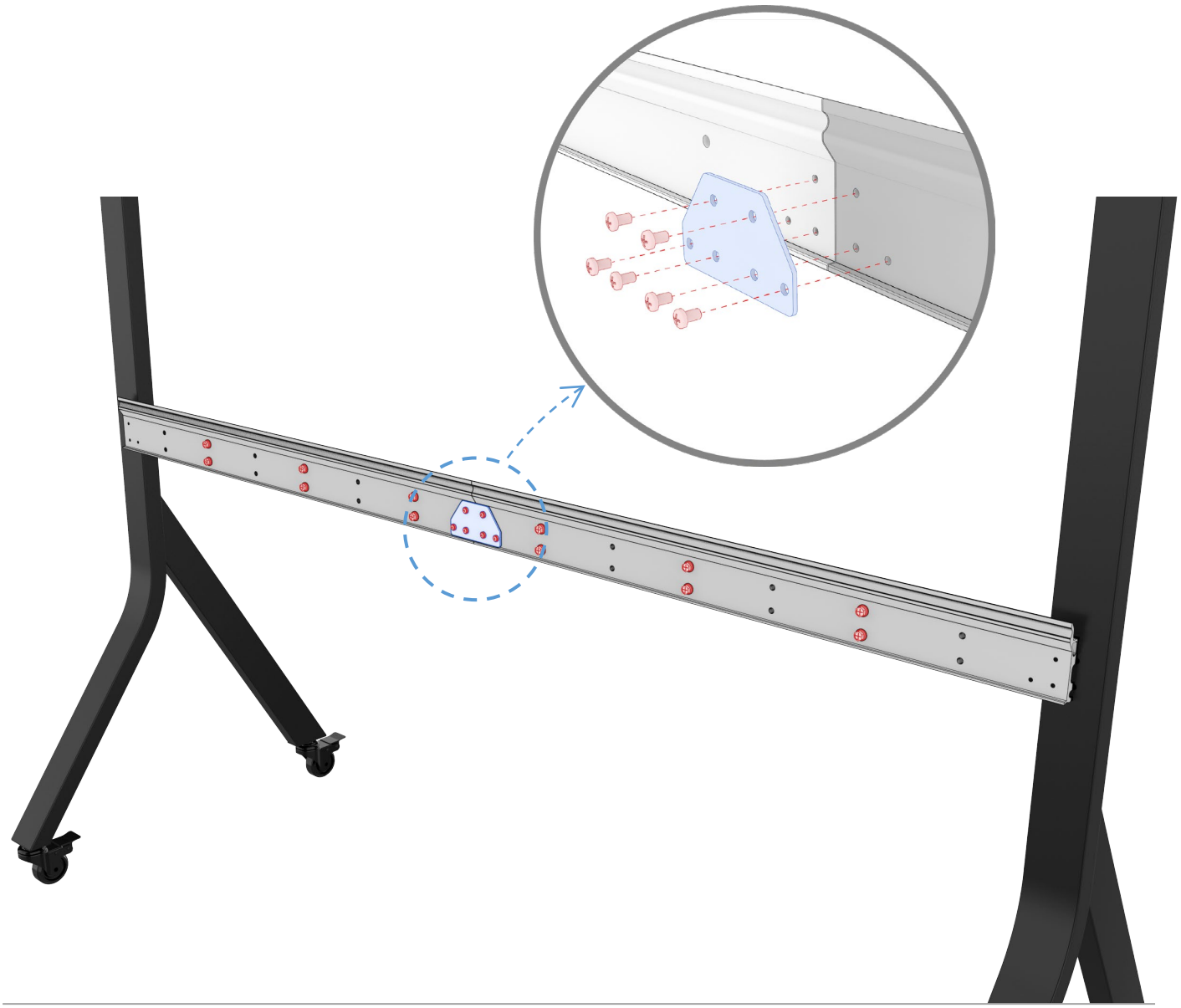
Next, use a 13mm Hex Socket Wrench to fasten six M8*35mm screws at the screw hole positions shown in the diagram, securing the second Wall-Mount Bracket to the floor stand.

Similarly, the pink-circled marks in the diagram indicate the screw holes where the screws pass through the second Wall-Mount Bracket, while the yellow-circled marks indicate the screw holes for securing the screws to the floor stand.



Step 3

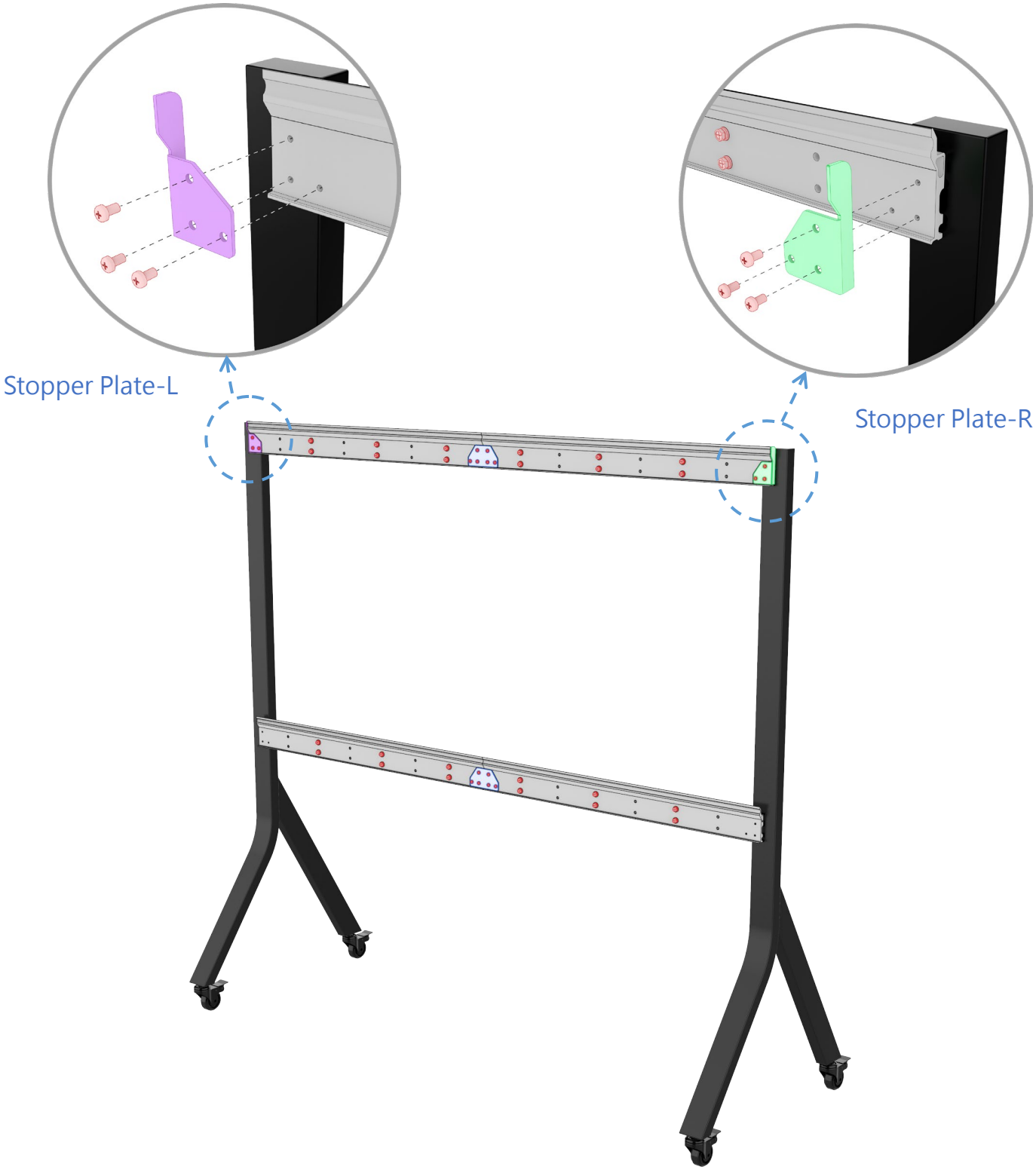
Use a Phillips Screwdriver to fasten six M6*10mm screws at the screw hole positions shown in the diagram, securing the Wall-Mounted Bracket Connector Piece onto the two Wall-Mount Brackets, connecting them into a single unit.



The assembly method for the upper wall mount on the floor stand is the same as described above. The diagram below shows the completed appearance of the FHDC108 floor stand after assembly.

Step 4

Finally, as shown in the figure, use a Phillips screwdriver and six M6x10mm pan head screws to attach the Stopper Plate-L and Stopper Plate-R to both ends of the upper wall mount. Once assembled into one unit, the FHDC108 floor stand is completed.



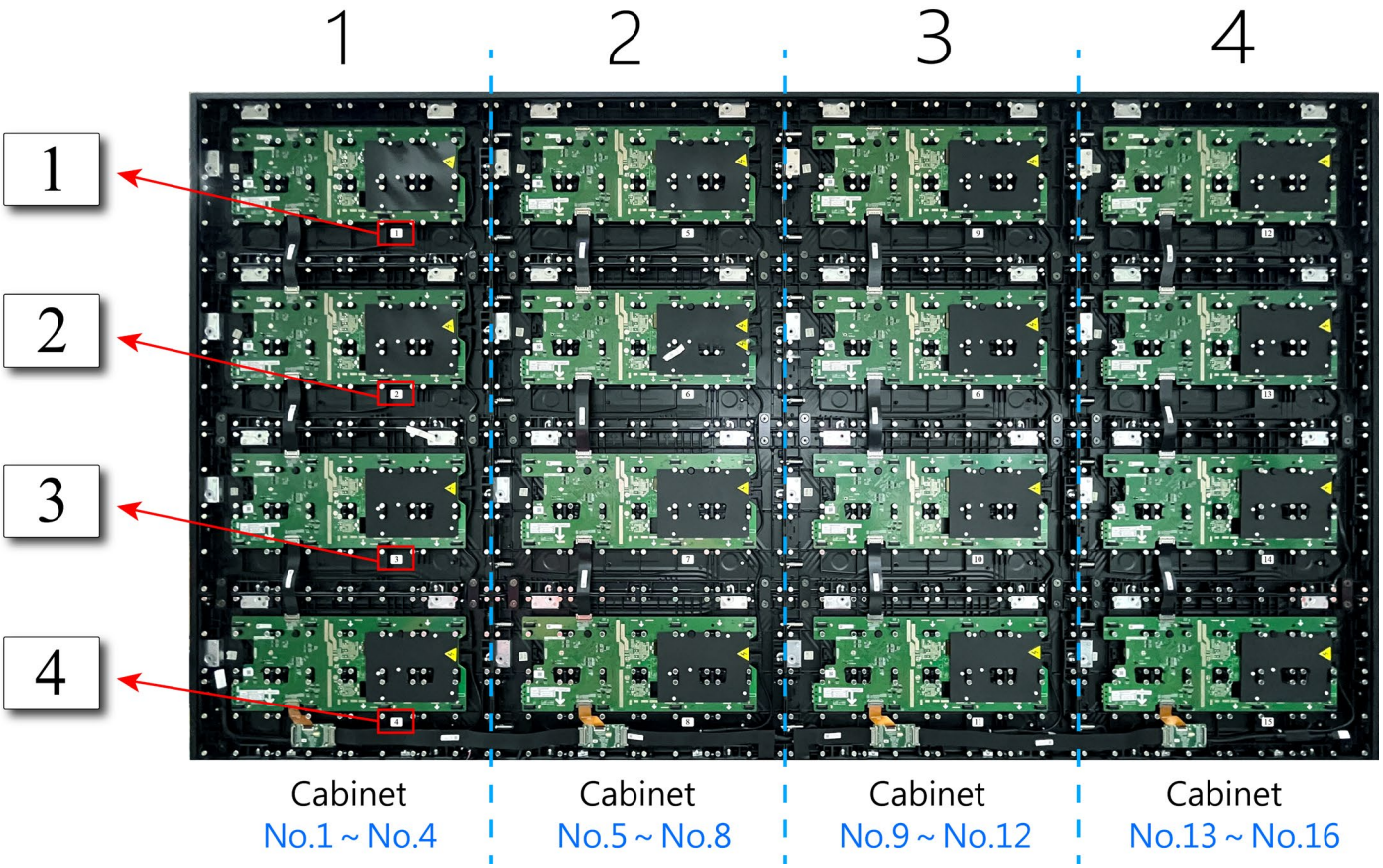
Step 3： Mount the LED display unit chassis onto the floor stand

1) The unit chassis assembled in columns have been pre-installed with back hooks and edging.

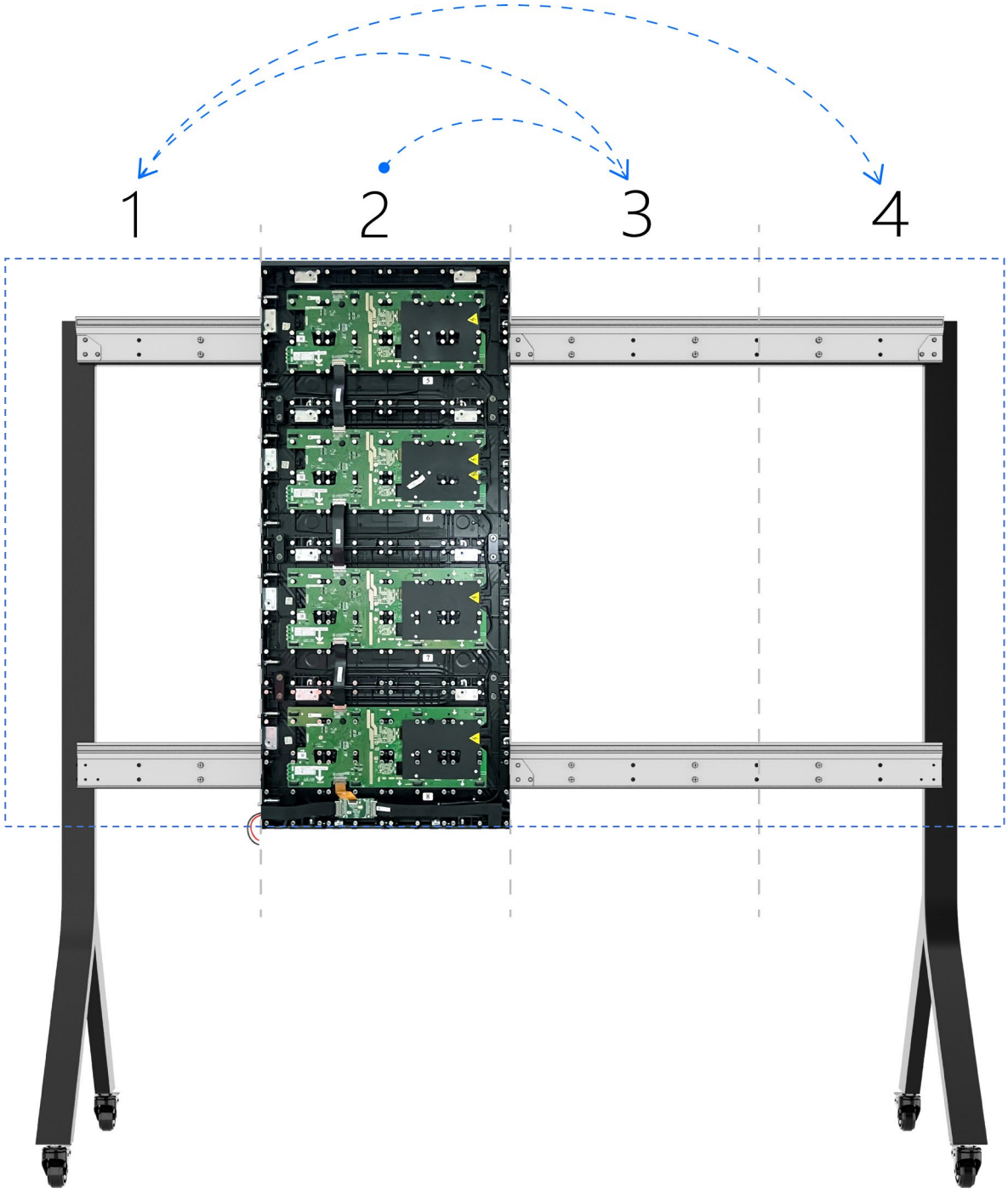
2) The integrated LED display is shipped with the unit chassis arranged in a column according to their numbers, with a total of 4 columns arranged for FHDC108.

3) The method to distinguish the unit chassis numbers of the 4 columns of the FHDQ108 is by identifying the label numbers attached to the inside of each cabinet. As shown in the diagram：

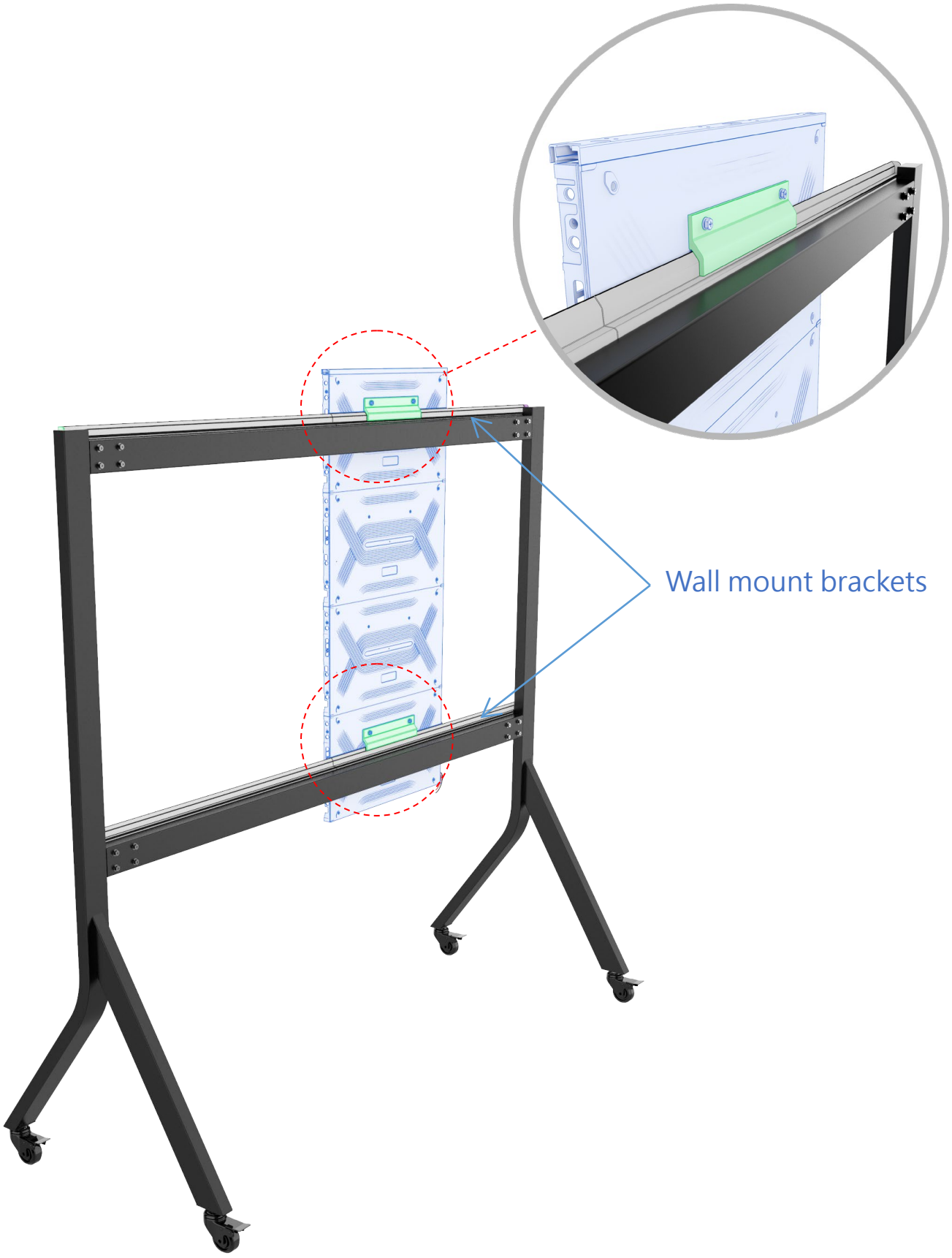
- Cabinet label numbers 1–4 correspond to unit Chassis 1.
- Cabinet label numbers 5–8 correspond to unit Chassis 2.
- Cabinet label numbers 9–12 correspond to unit Chassis 3.
- Cabinet label numbers 13–16 correspond to unit Chassis 4.



4) OPTOMA recommends the assembly sequence for the 5 columns of FHDC108 LED panel units as follows: 2, 3, 1, 4.



- Installation Sequence Diagram for the FHDC108 Four Unit Chassis.



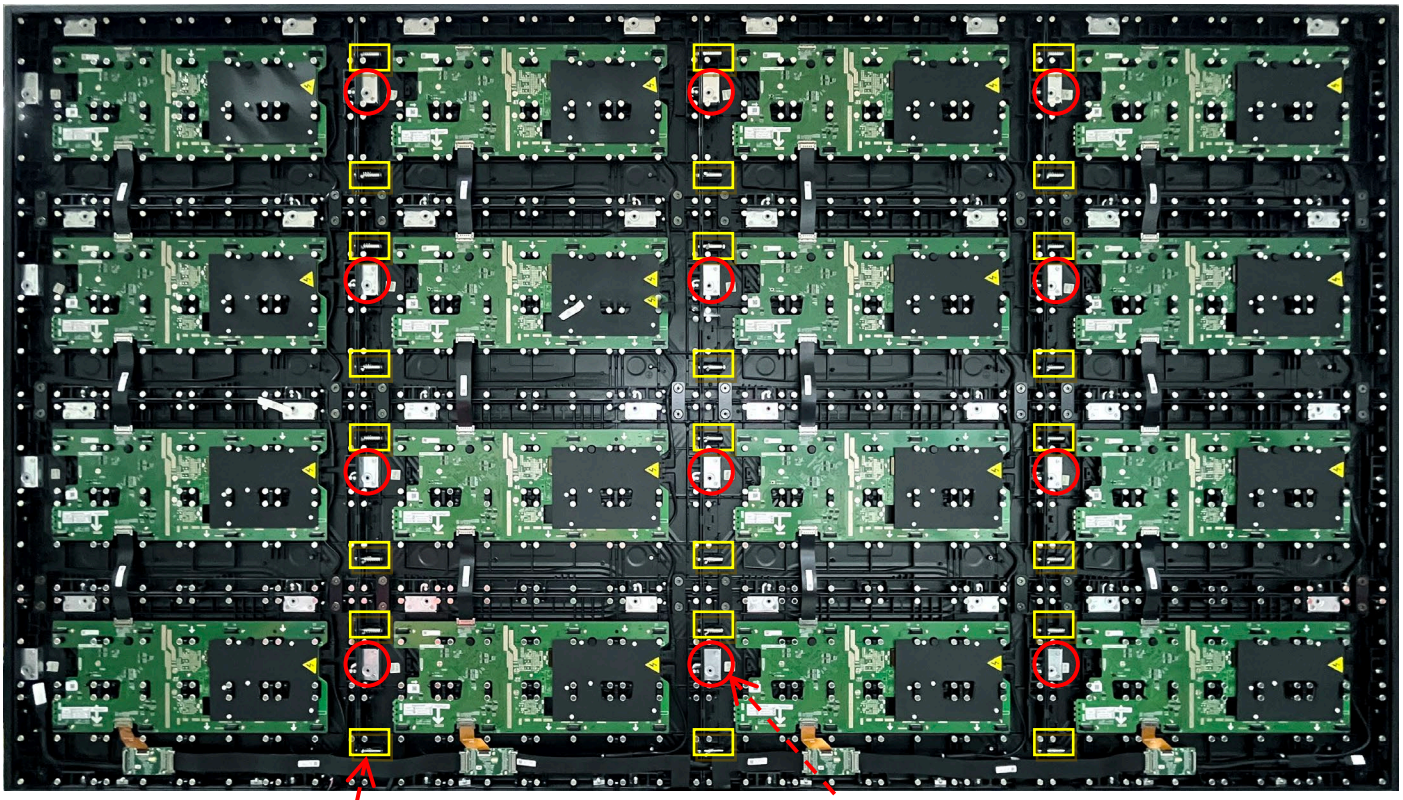
- Each unit chassis is equipped with two hook plates on the rear side, designed to engage with two wall mount brackets, thereby enabling secure installation of the unit chassis.

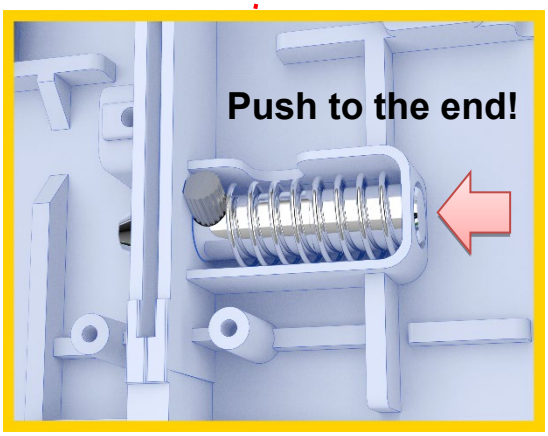
Step 4： Assemble the LED display unit chassis

* Before hanging the unit chassis, make sure the casters of the floor stand are locked, & the wall mount is level.

1) Hang the unit chassis from the middle to the sides, and hang the wall mount on the cabinet on the wall mount on the floor stand;

2) Install the adjacent second column of unit chassis, making the hooks hang on the wall mounts, while the adjacent sides are tightly aligned. Pull out the side spring locating pin, insert the locating pin completely into the corresponding locating hole, and then rotate the side hook lock with a corresponding Allen wrench to completely lock the two columns of unit chassis, as shown in the figure below：





- Location pin * 24 PCS
- Side hook * 12 PCS

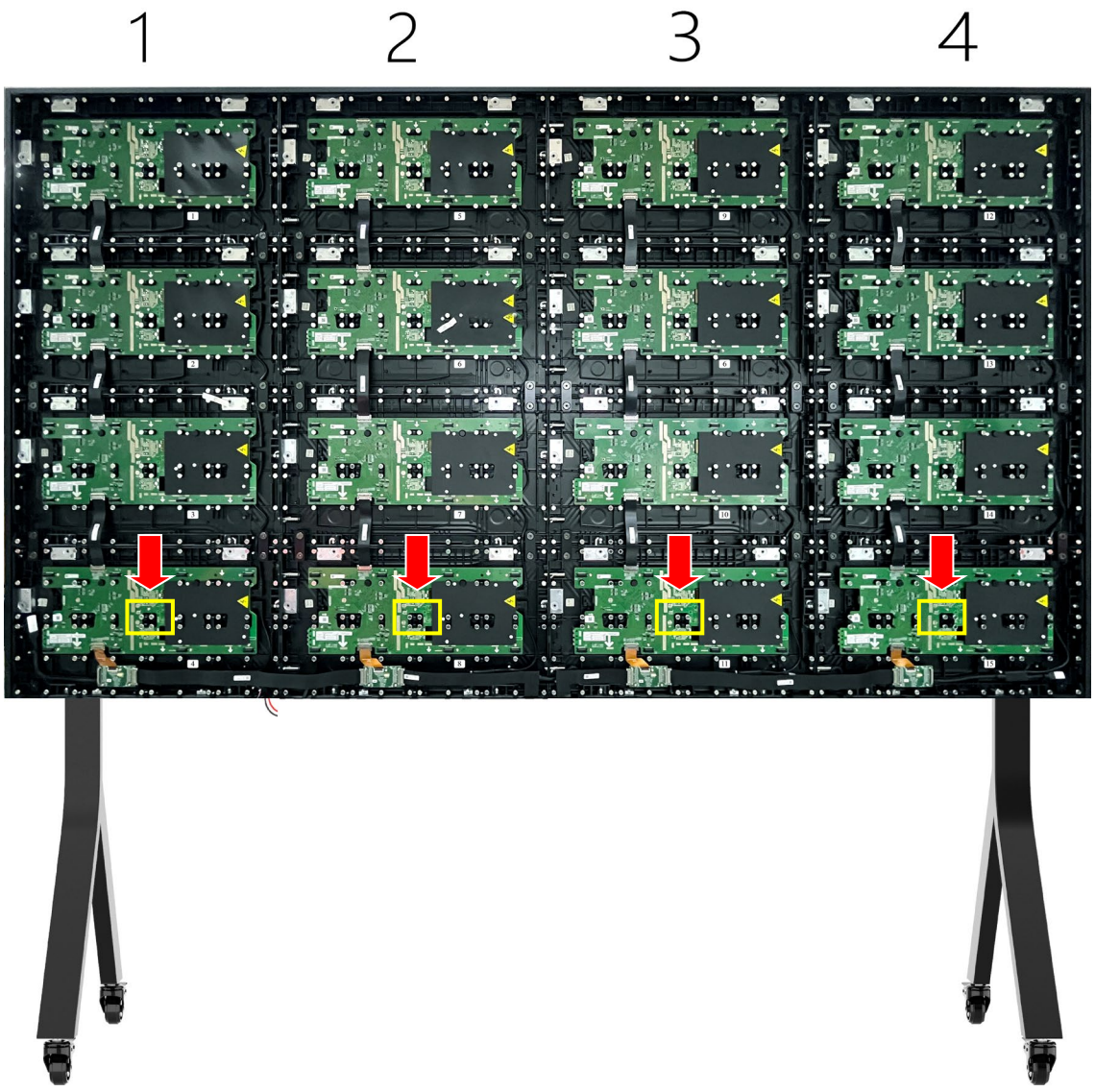
3) Complete the installation of the other columns of unit chassis in order, as shown in the figure below :

Step 5： Stabilize the floor-standing LED display chassis to prevent it from shaking

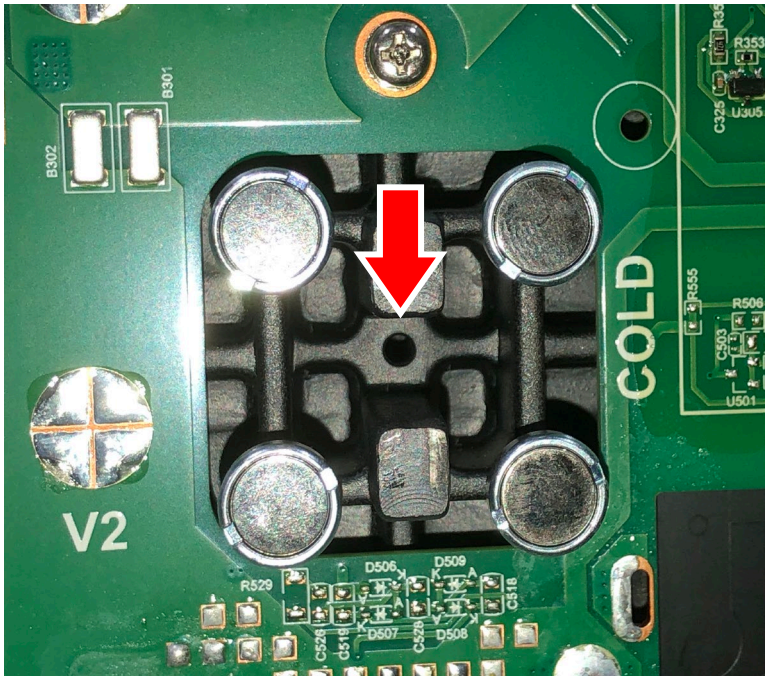
Please use a Phillips screwdriver to insert four M3x25mm screws into the screw holes indicated by the arrow symbols in the diagram. Tighten them to a torque of 4 kg.cm. This will ensure that the hook plate on the back of the unit chassis fits securely against the wall mount rail, helping to prevent the LED display from shaking.


M3x25mm * 4 PCS

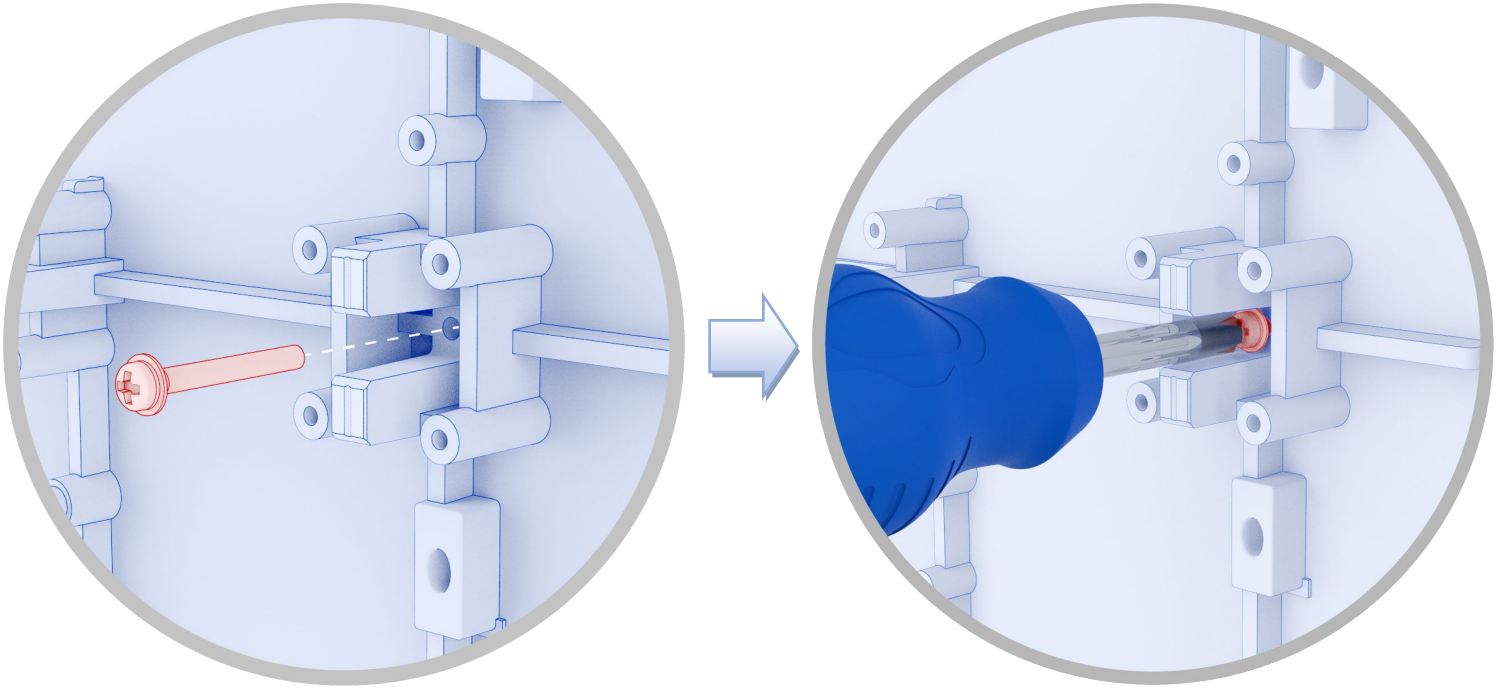

Phillips Screwdriver



- The locations indicated by the arrow symbols show where the four M3x25mm screws should be installed on the floor-standing FHDC108 LED display chassis.



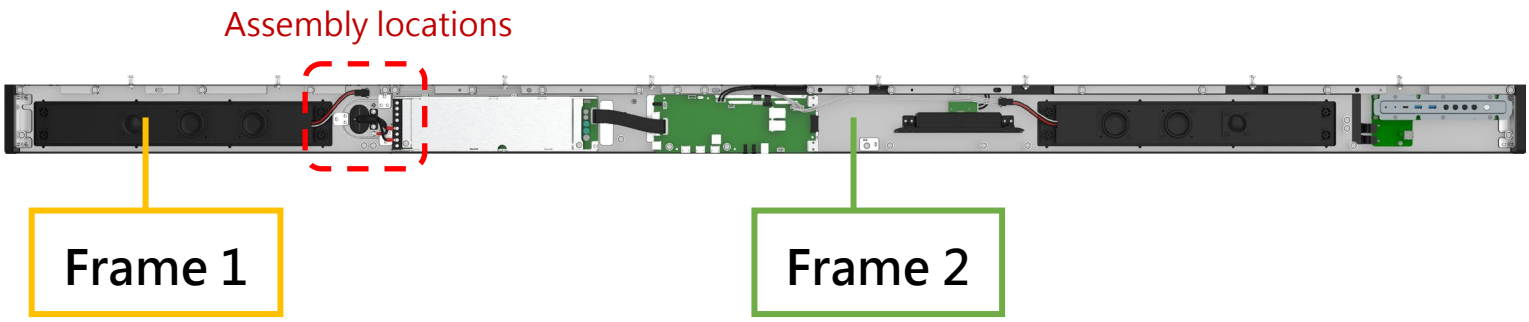
- This is a detailed view of the screw holes on the FHDC108 LED display chassis used for installing the M3x25mm screws.



- As shown in the figure, insert the M3x25mm screws into the screw holes and tighten them to a torque of 4 kg.cm.

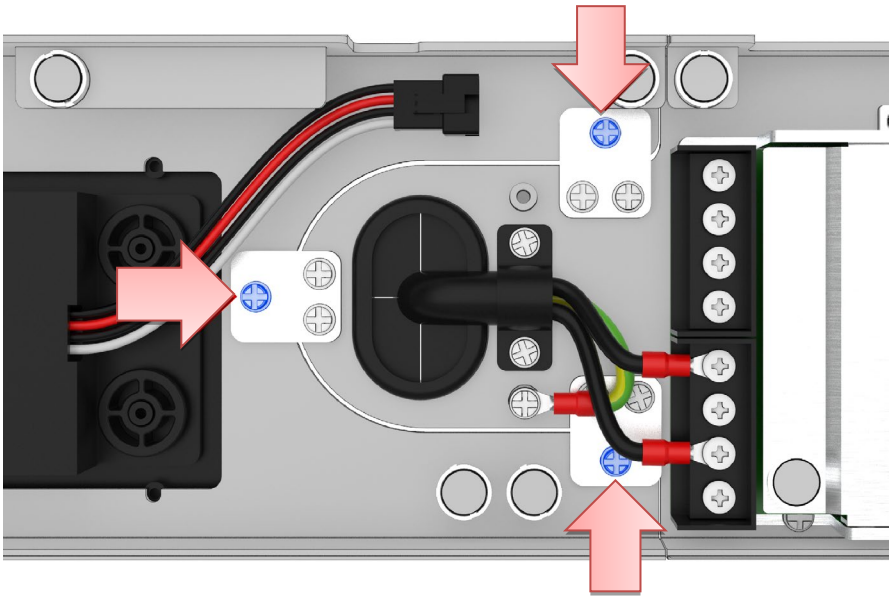
Step 6： Assemble the bottom frame

1) The bottom frame assembly is composed of bottom frames 1 and 2, connected by the built-in connecting plate for the bottom frame, as shown in the figure;

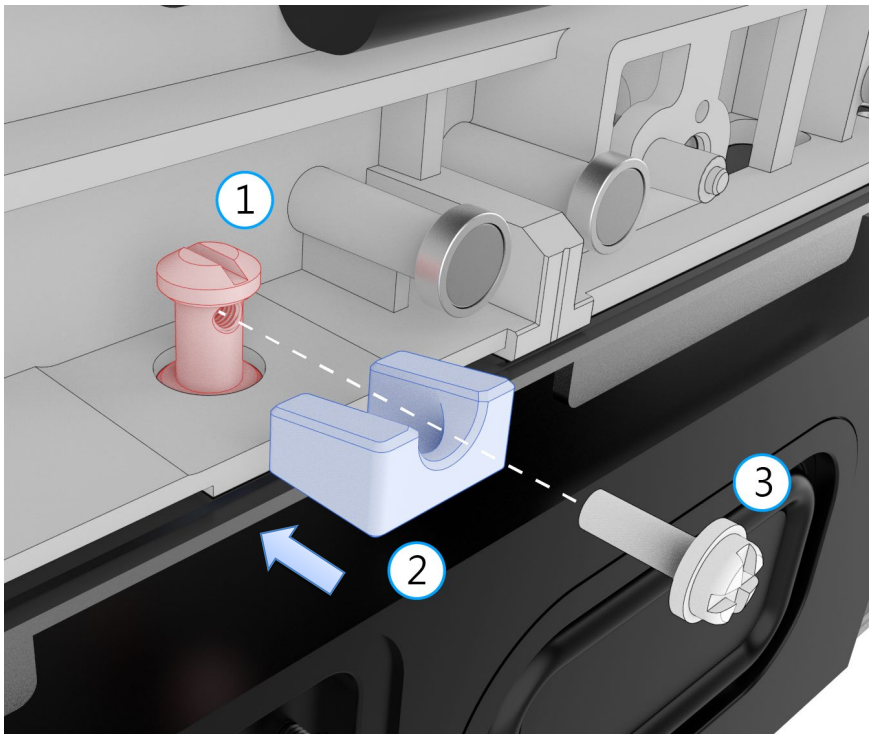


- This is a schematic diagram showing the component positions that make up the FHDC108 bottom frame. The areas marked with red dashed lines indicate the assembly locations.

2) This is a detailed view of the assembly joint between Bottom Frame 1 and Bottom Frame 2. Please refer to the illustration. After aligning and fitting Bottom Frame 1 and Bottom Frame 2 together, fasten three M3×6 mm screws at the locations indicated by the arrows to secure them into a single unit.



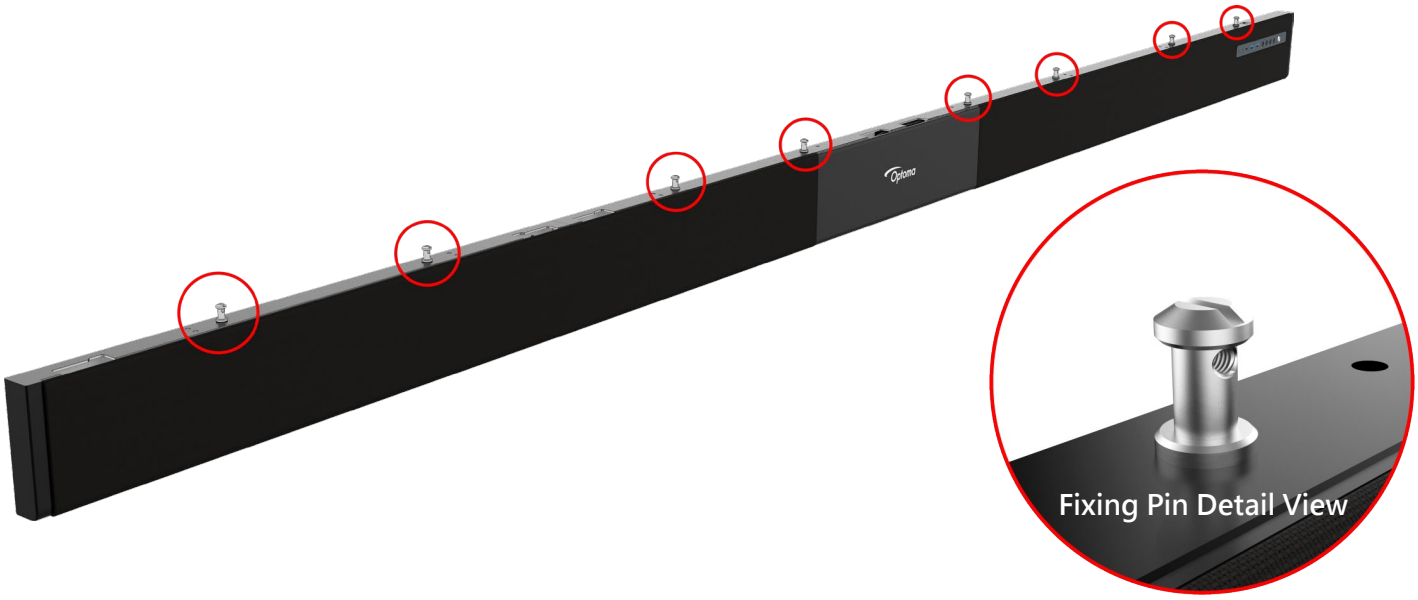
3) The bottom frame is fixed to the cabinet assembly with locking blocks and retaining screws (insert the locking block first and then drive in the screws to fix), as shown in the figure below：




Phillips Screwdriver


M3x6mm * 8 PCS

4) The bottom frame of the FHDC108 LED display has 8 fixing pins that connect with the cabinet. The assembly and fixing method are as described above.

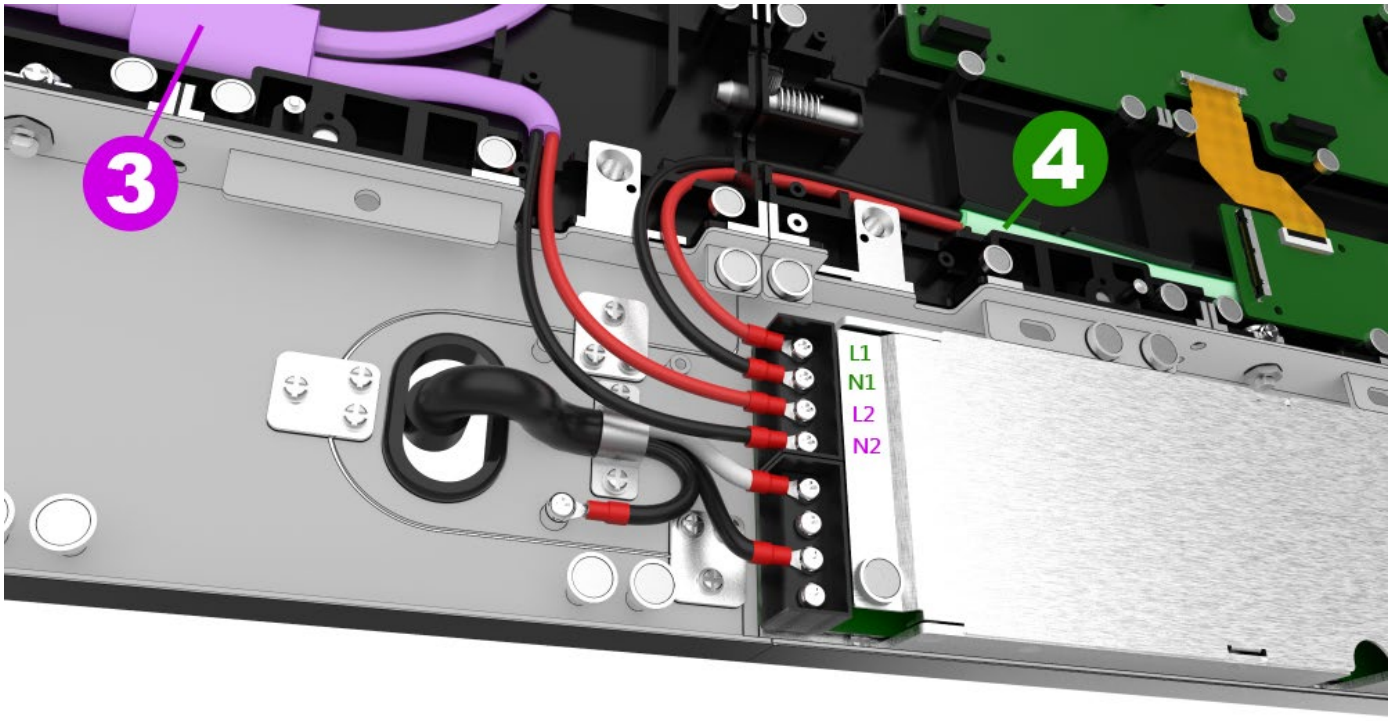


Step 7： Cable routing

Connect the power and signal cables between the unit chassis according to the diagram. Then, connect the signal and power cables to the bottom frame assembly (e.g. FHDC108). As shown in the figure below：

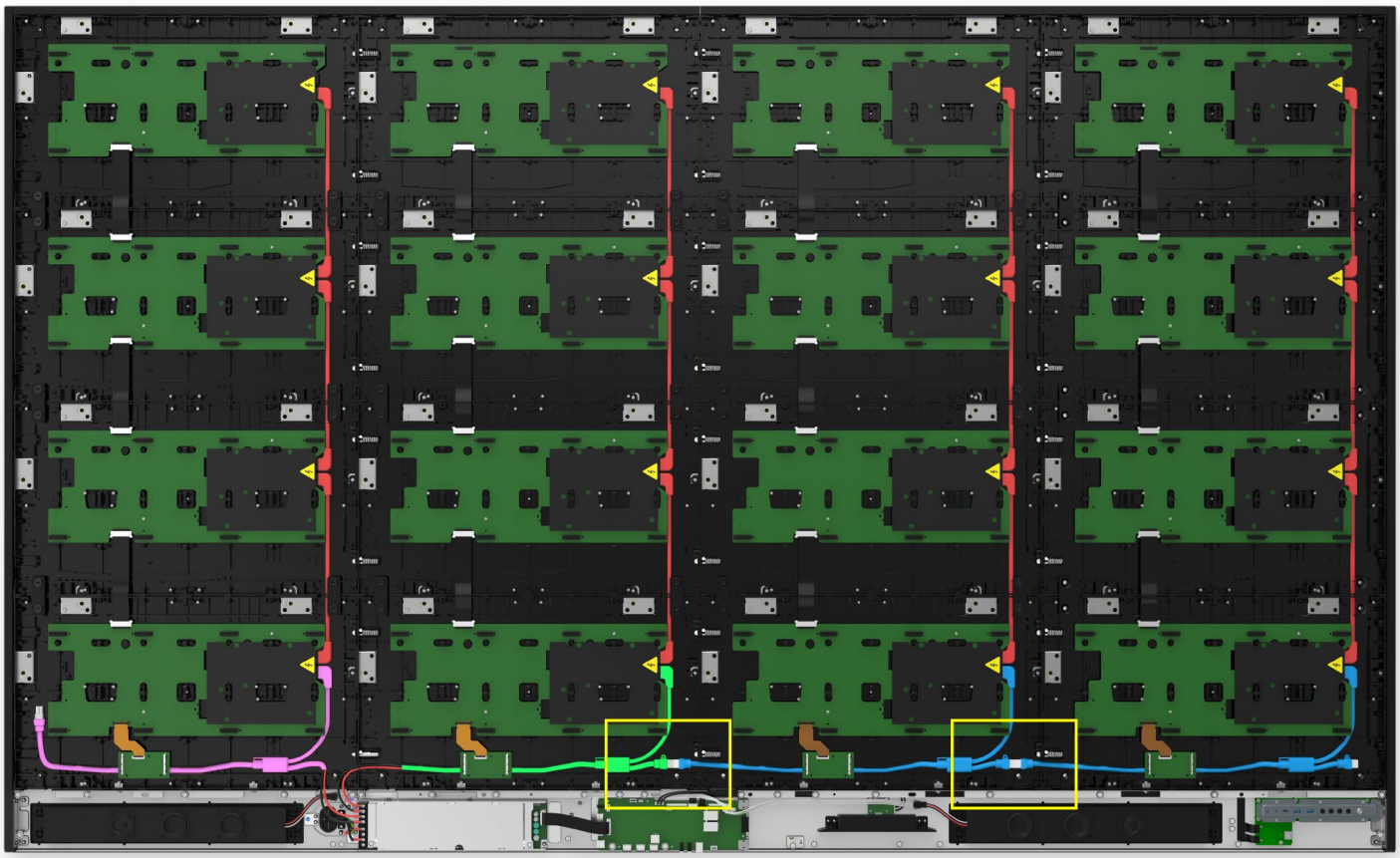
No.	Part Name	Quantity	Remarks
1	Vertical cascading power cable between the cabinets 16.	12	
2	Horizontal cascading cable between the cabinets.	2	
3	Horizontal cascading cable between the cabinets - left cascading.	1	
4	Horizontal cascading cable between the cabinets - right cascading.	1	
5	Input power cable.	1	

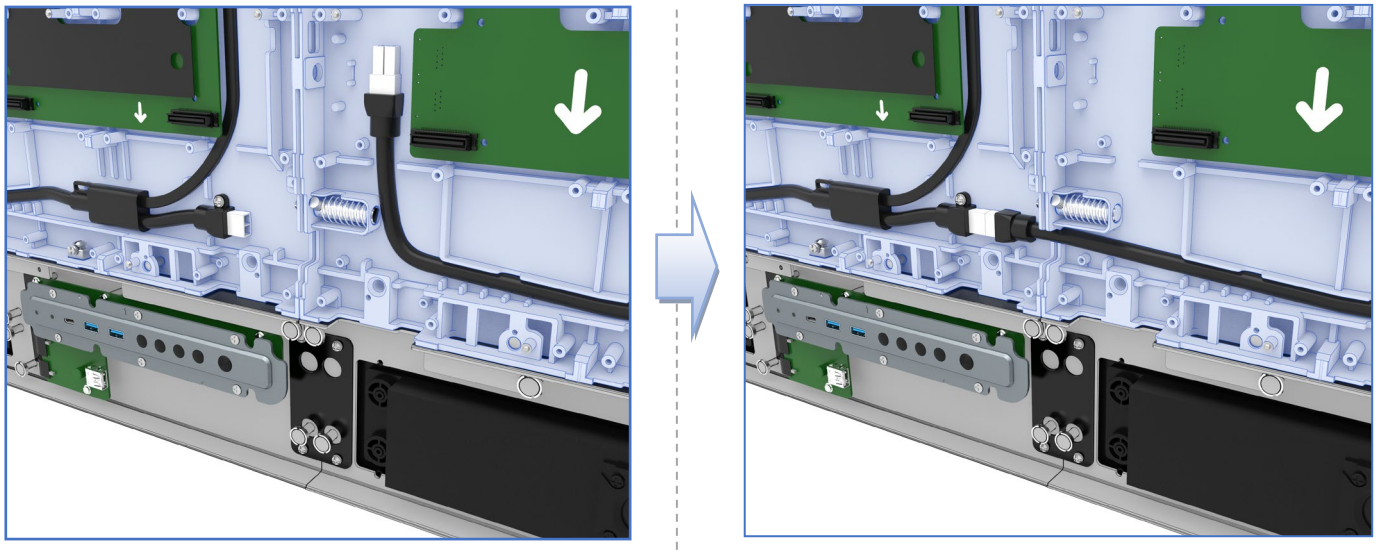
1) First, follow the illustration to connect the ring terminals of the black and red branch wires of power cables No. 3 and No. 4 to the metal terminals of the PSU inside the control system bar.



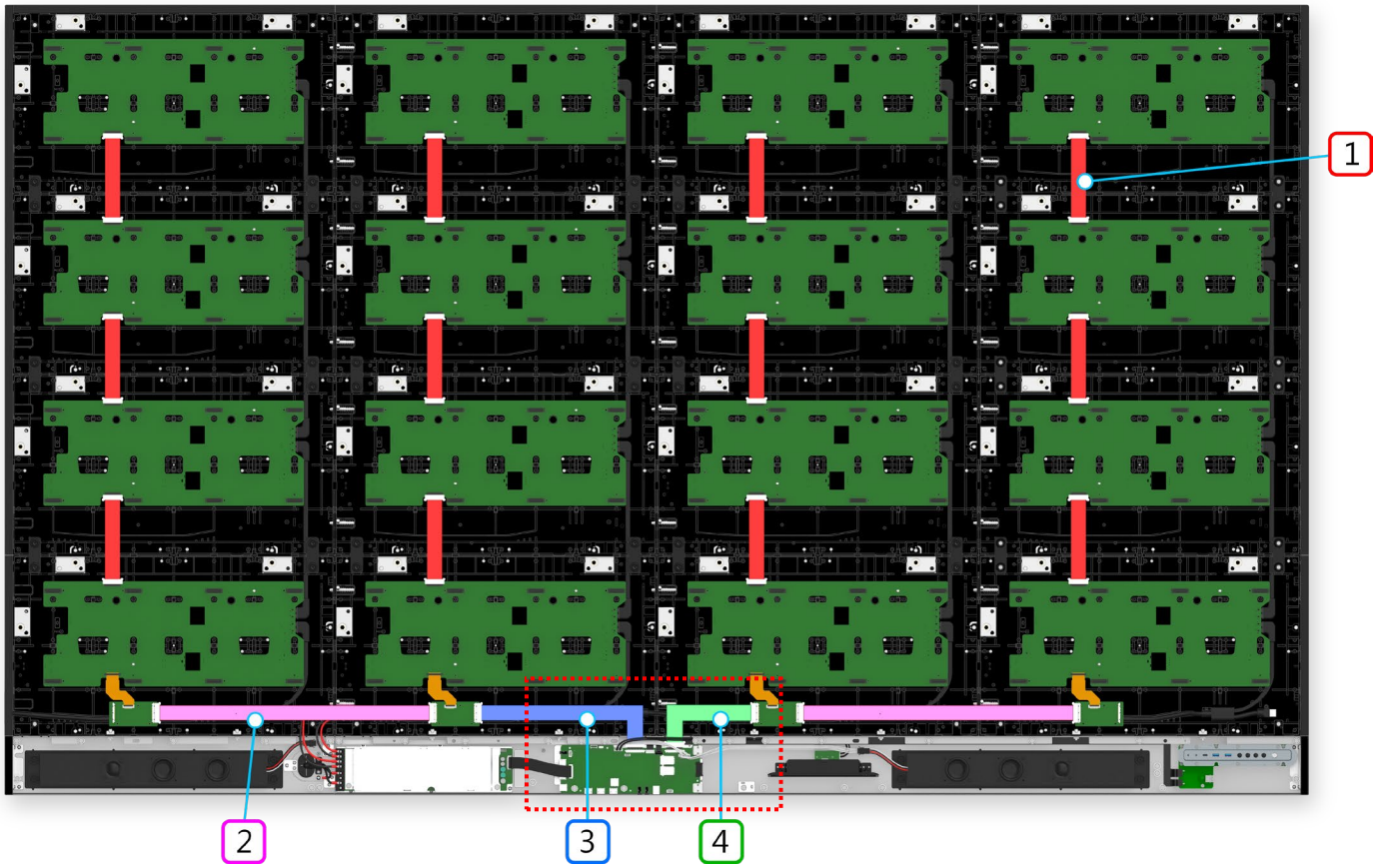
- PSU cable routing. (Detail View)

2) Next, connect the power cables at the positions marked by the yellow boxes; there are two locations in total.



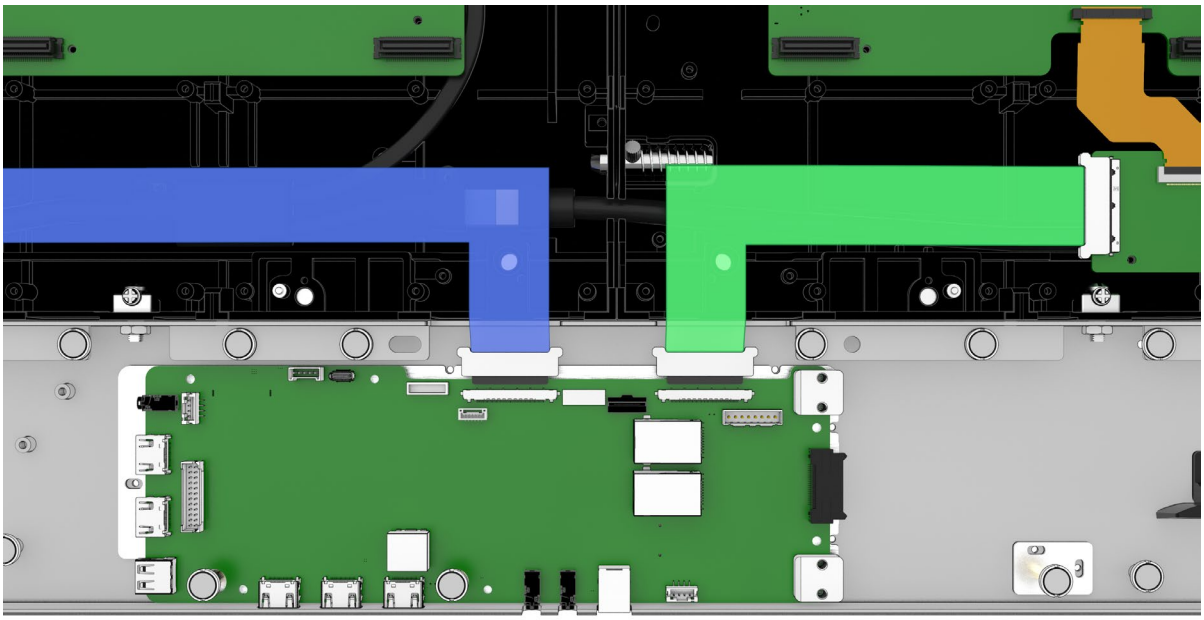


- Detailed view of the power cable daisy-chaining operation.

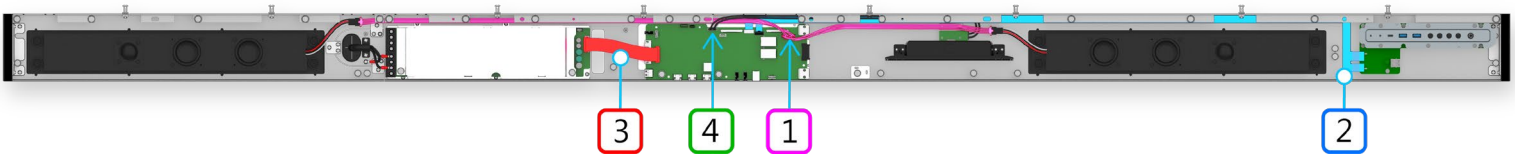


- Signal cable routing.

No.	Part Name	Quantity	Remarks
1	Vertical signal FFC between the cabinets.	12	
2	Horizontal signal FFC between the cabinets	2	
3	Horizontal signal FFC between the cabinets - left cascading.	1	
4	Horizontal signal FFC between the cabinets - right cascading.	1	



- Signal cable routing. (Detail View)



- Bottom Frame cable routing.

No.	Part Name	Quantity	Remarks
1	Speaker branch cable.	1	
2	Keyboard & transmitter card FPC.	1	
3	Transmitter card & power module wire harness.	1	
4	Wi-Fi module & transmitter card patch cord.	1	

Step 8： Install the LED panel

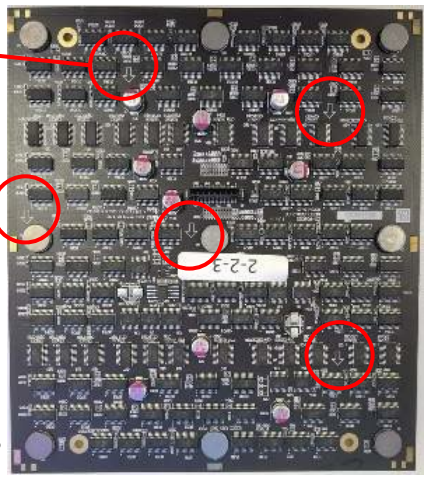
* The installation sequence can be from left to right, from right to left, from bottom to top, or from top to bottom, depending on the on-site installation environment.

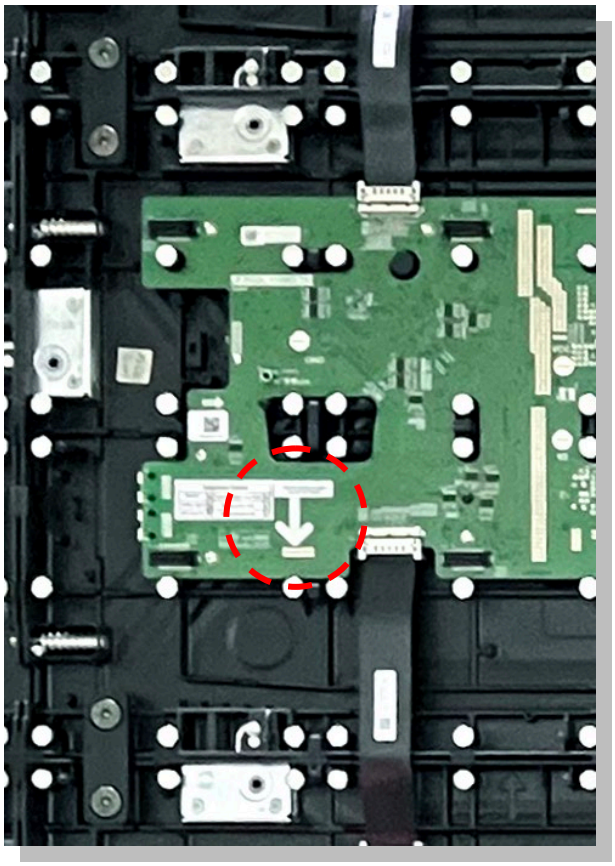
* Fix promptly if flatness is poor during assembly;

1) The connection method of the LED panel is a hard connection, which is connected through the connectors on the bridge board and the module. When installing, be sure to control the force and avoid forcefully inserting. Installation direction is opposite to the direction indicated by the arrow on the LED panel (i.e., LED panel rotated 180° for assembly), as shown in the figure below：

Silk screen arrow on the LED panel

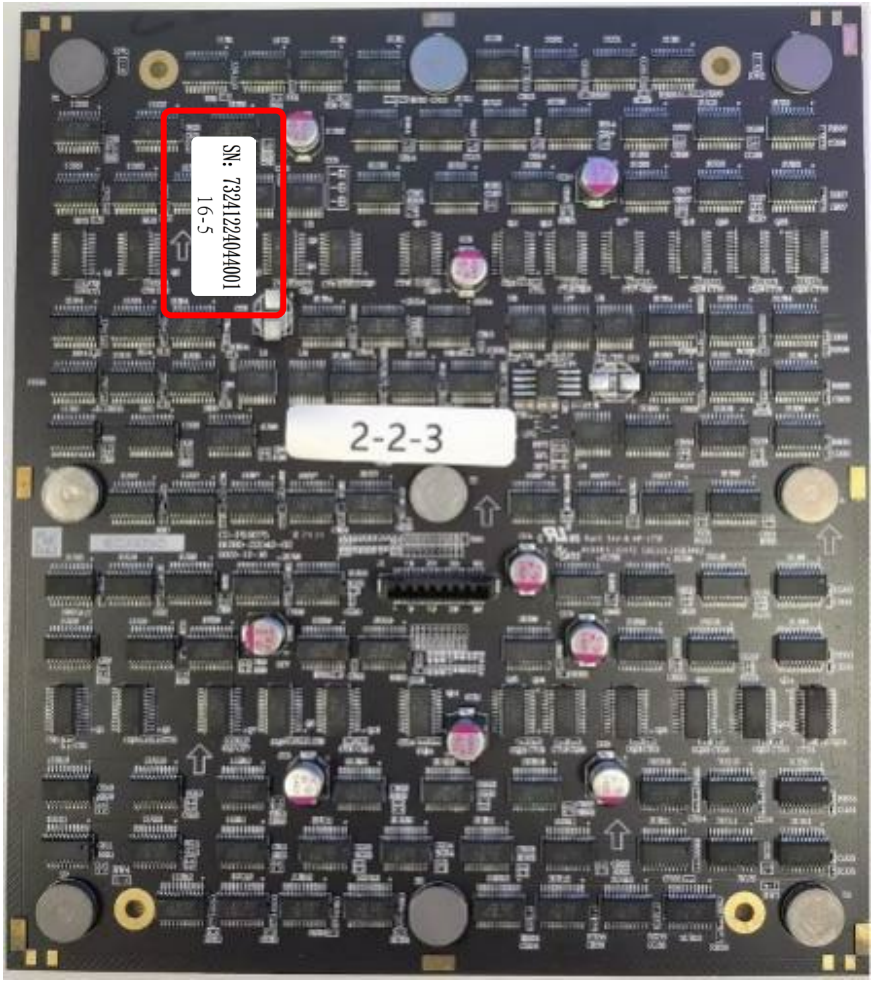
The direction of the arrow is downwards direction.



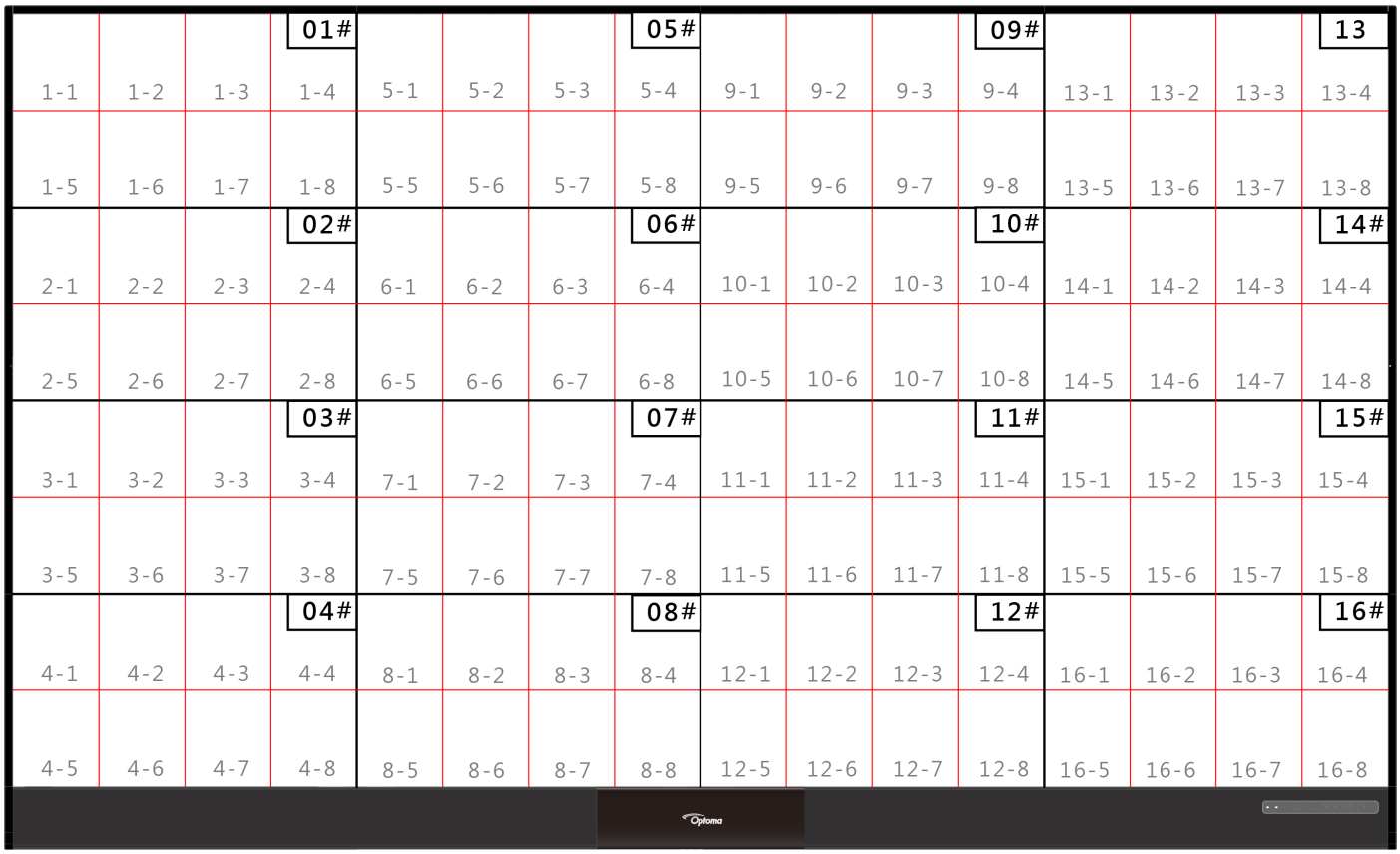


- When installing the LED panel onto the chassis, ensure that the printed arrow symbol on the back side of the LED panel is facing downward. There is also a white printed arrow on the HUB board indicating the correct installation direction for the LED panel.

4) Cabinet and LED panel serial number description, each shipped cabinet has a mark number in the top right corner (inside), this number represents the corresponding position of the cabinet when installed during factory calibration. Each LED panel (back) also has a mark number, such as： 16-5, where 16 represents the installation of this LED panel during factory calibration in cabinet 16, and 5 represents its position in cabinet 16.



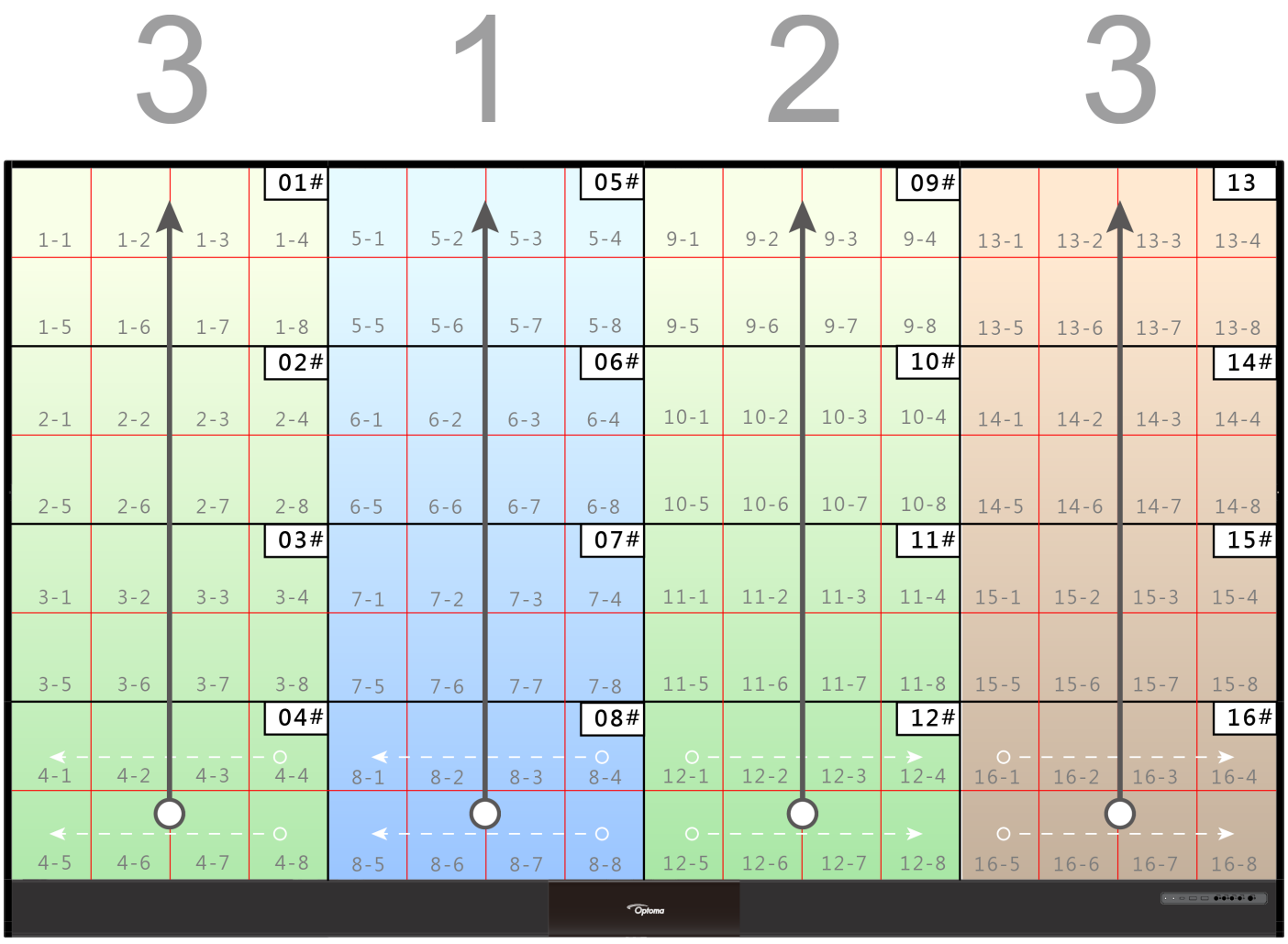
5) The LED panels of the FHDC108 screen have their specific designated installation positions. Construction personnel must check the numbers on the back of the LED panels and install them in the assembly positions indicated in the diagram of the FHDC108 screen.



- The installation location map for FHDC108 LED

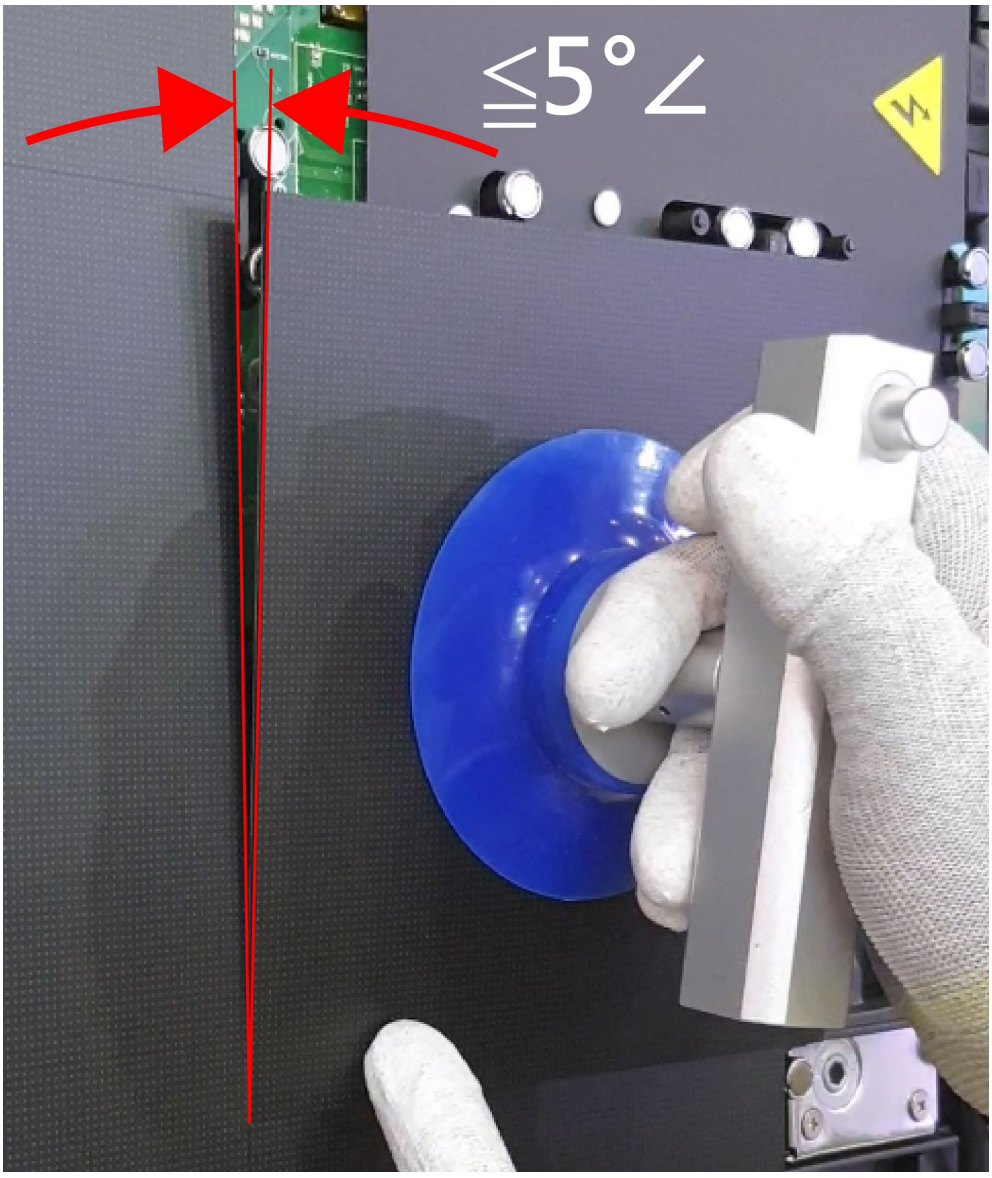
I. The installation sequence of the LED panels impacts both the ease of installing the FHDC108 LED panels and the flatness of the assembled screen. OPTOMA recommends that construction personnel follow the LED panel installation sequence outlined below and complete the installation of the LED panels in each cabinet area accordingly.

Please refer to the color block numbering in the diagram. Follow the order from 1 to 3 to sequentially install the LED panels in each designated area of the FHDC108 screen. The installation of LED panels in each color-blocked area must also follow a specific order. Please install them continuously from bottom to top along the plumb line indicated by the arrows in the diagram. Additionally, follow the direction indicated by the dashed white arrows and install the panels continuously in sequence.



- FHDC108 Installation Directions and Sequence for LED Panels

II. When installing LED panels continuously and adjacently onto the FHDC108 chassis, ensure that the edge of the LED panel being installed gently touches the edge of the adjacent, already-installed panel. Use this contact point as a pivot to magnetically secure and align the LED panel flat against the FHDC108 chassis to complete the installation. During the installation process, avoid creating an angle greater than 5 degrees between the panel and the screen to prevent damage caused by potential collisions between the LED surfaces.



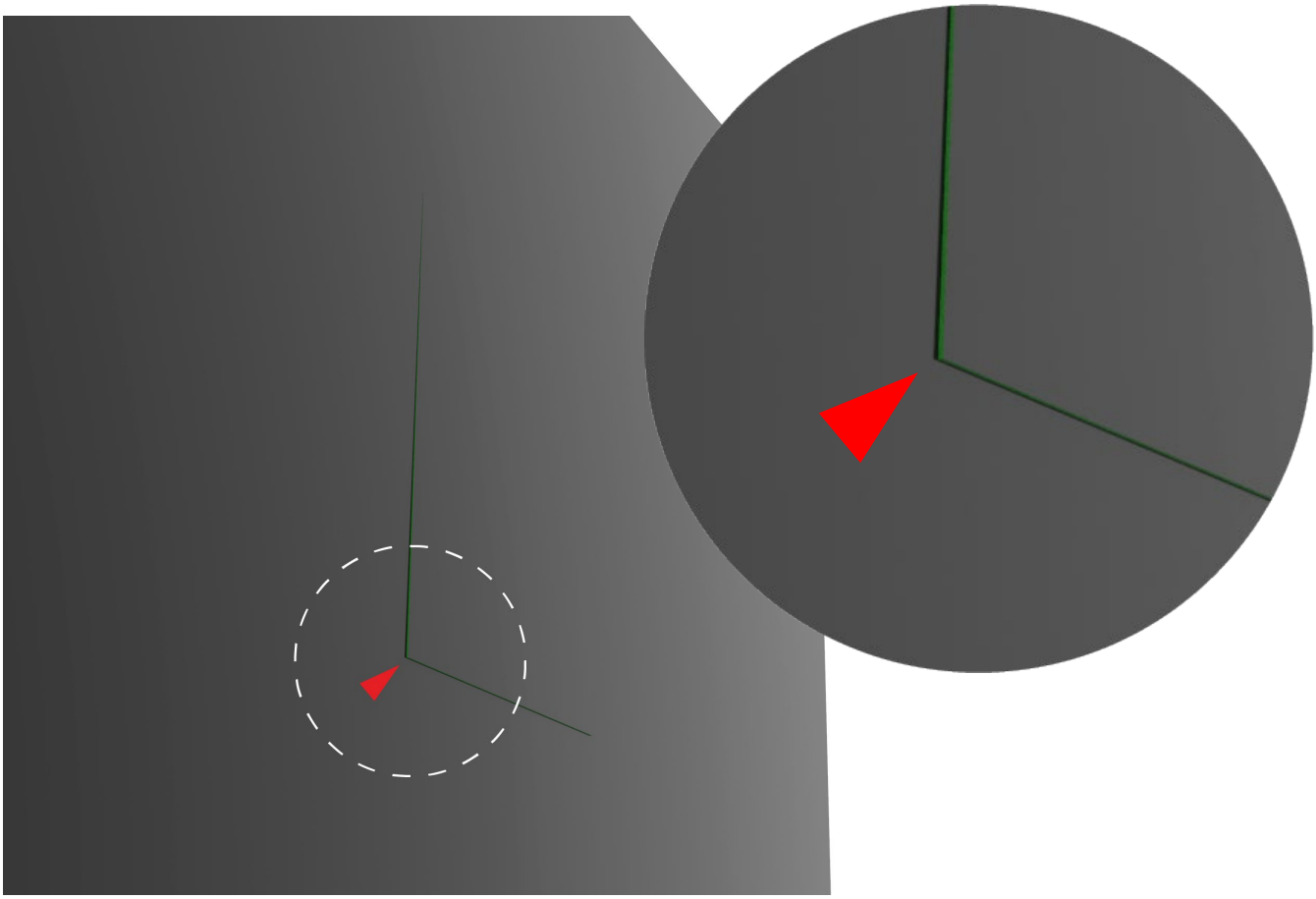
- Illustration of the correct operation for installing LED panels.

III. Method for adjusting the flatness of spliced LED panel installations.

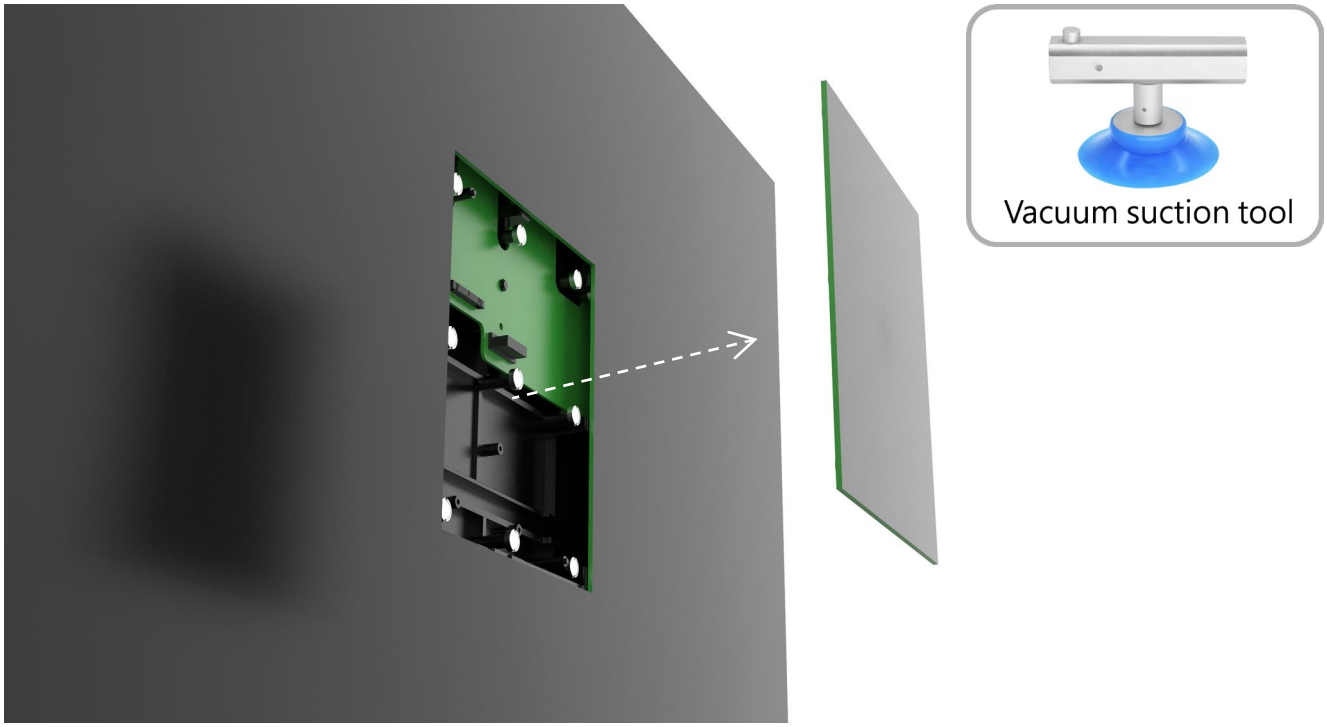
The FHDC108 LED display screen consists of 200 magnetically mounted LED panels forming a flat surface, supported by 1,800 adjustable magnetic bolts capable of height rotation.

If height deviations are observed on the supporting surfaces of spliced LED panels, the user can operate the magnet cup bolt height adjustment tool to adjust the magnetic bolts. Turning the bolt clockwise decreases its height, whereas turning it counterclockwise increases its height.

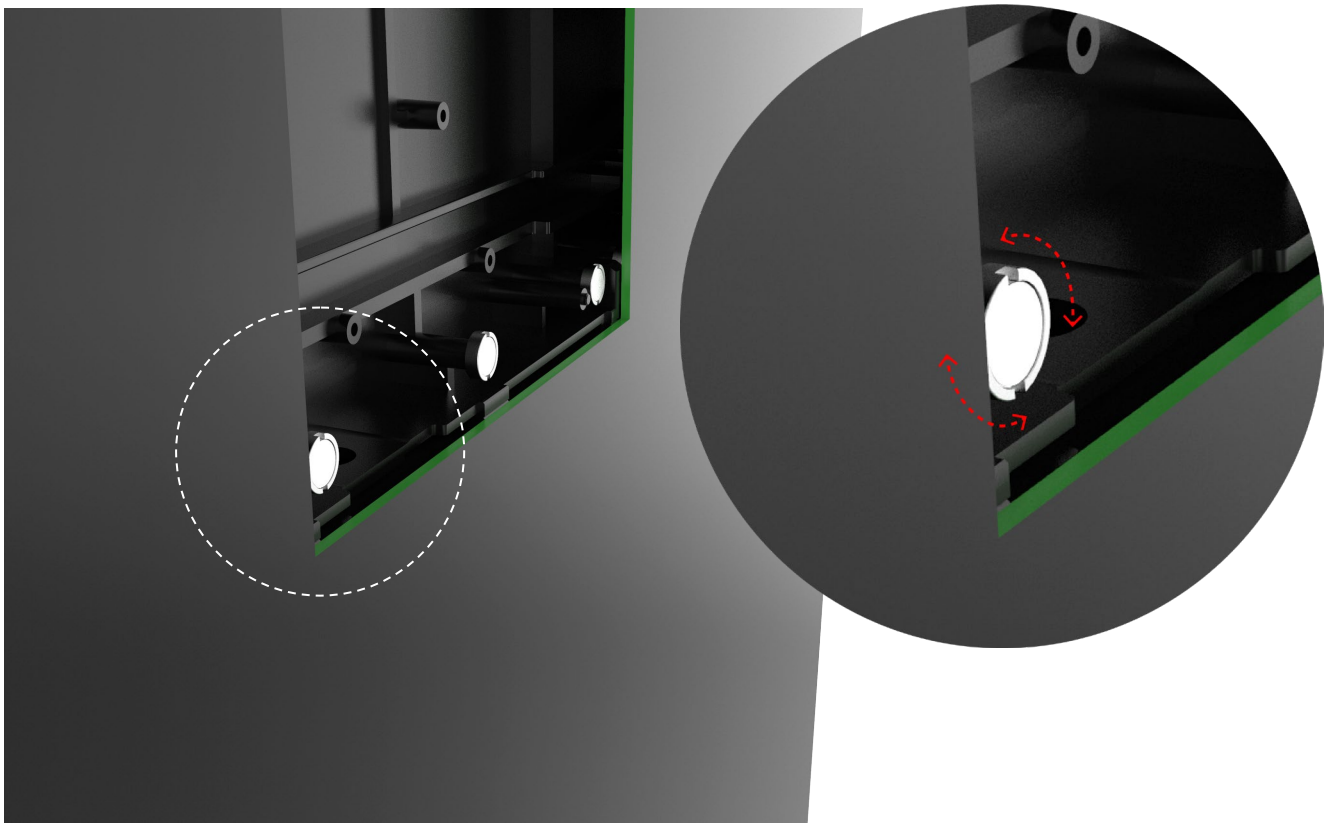
Here is a demonstration of the procedure using a magnetic cup height adjustment tool to correct uneven height defects at the corners of spliced LED panels.



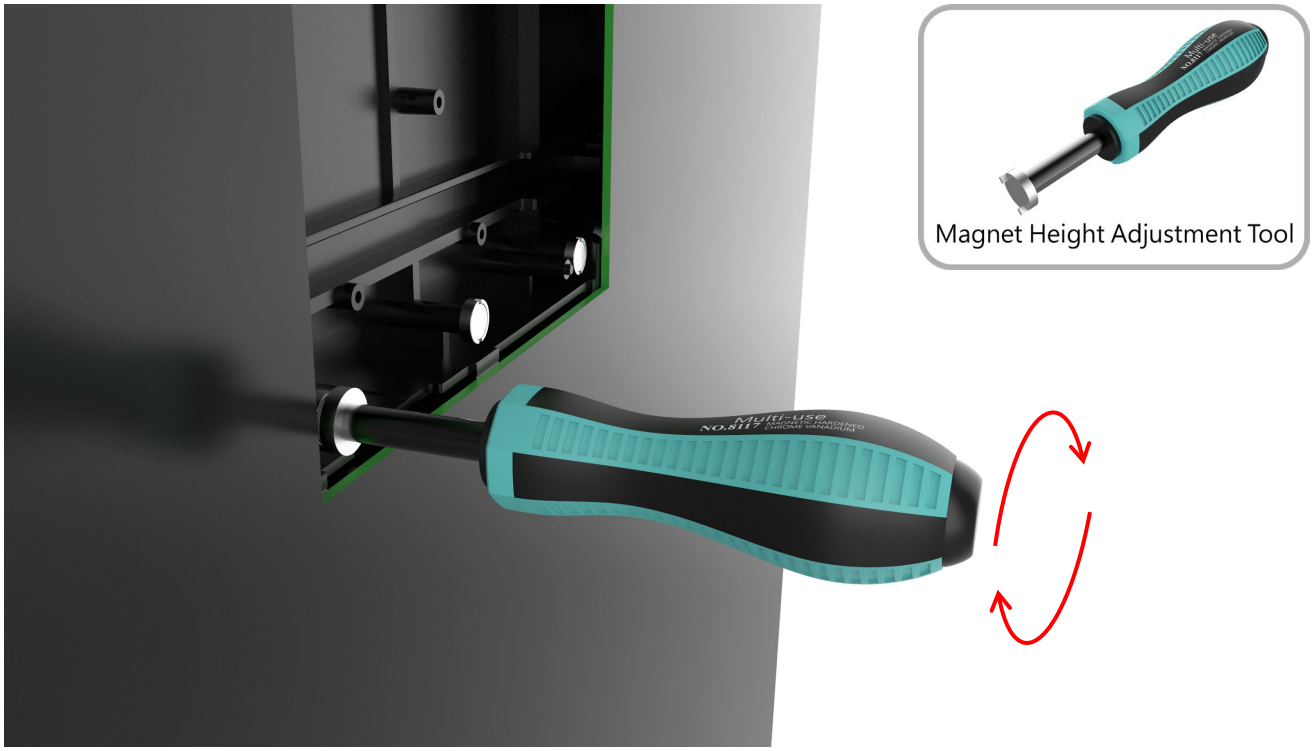
- The arrow in the picture points to the bottom-left corner of the LED panel, where it sticks out from the screen and makes the panel surface look uneven.



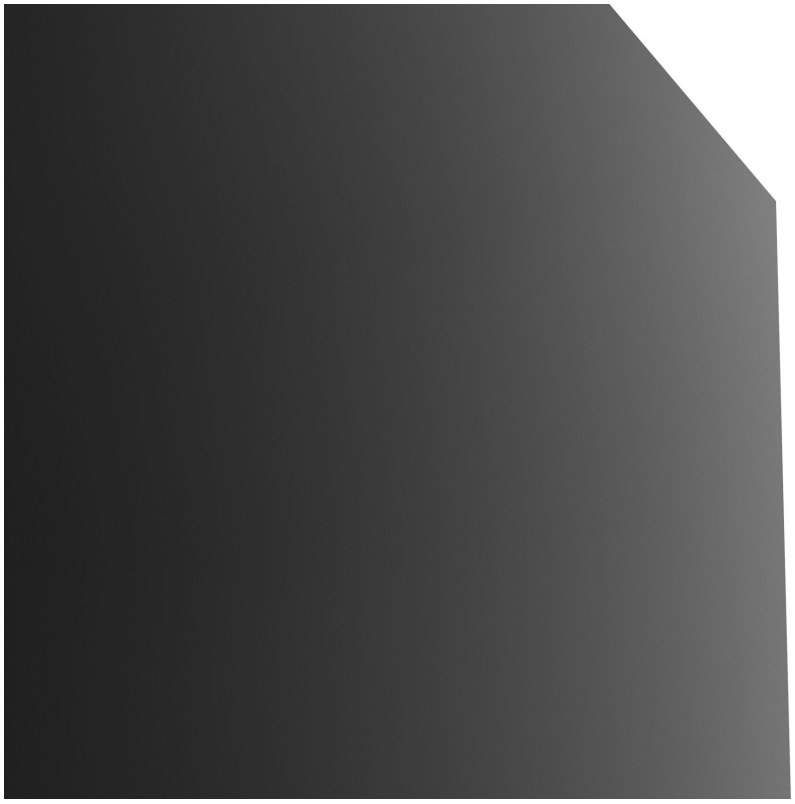
- First, use a vacuum suction tool to remove the uneven LED panel and place it properly.



- After taking off the LED panel, pinch the magnetic cup screw under the uneven spot with your thumb and index finger, and gently twist it left and right to see if it' s loose or raised.



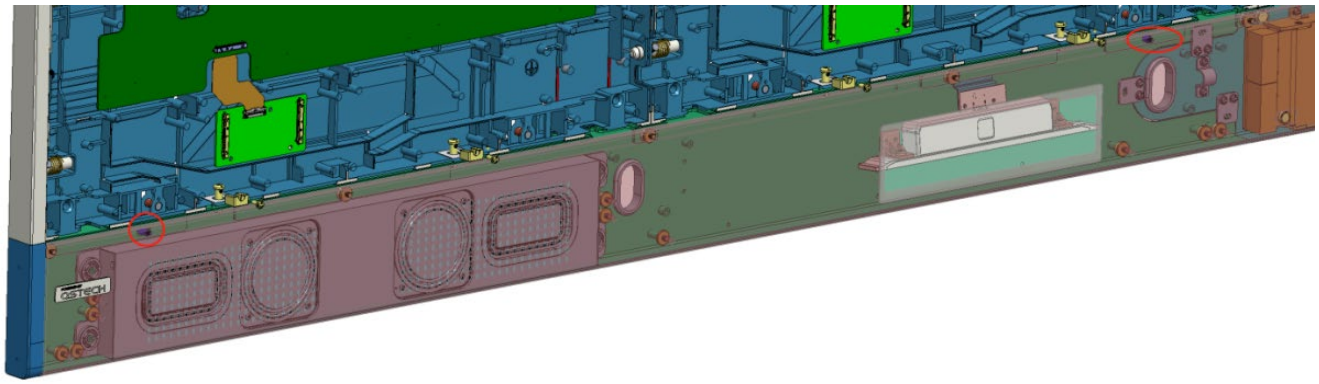
- If the magnetic cup screw at that location is loose and can be rotated, use the magnet height adjustment tool to engage the screw, then tighten it clockwise with a torque of 3 Kg.cm.

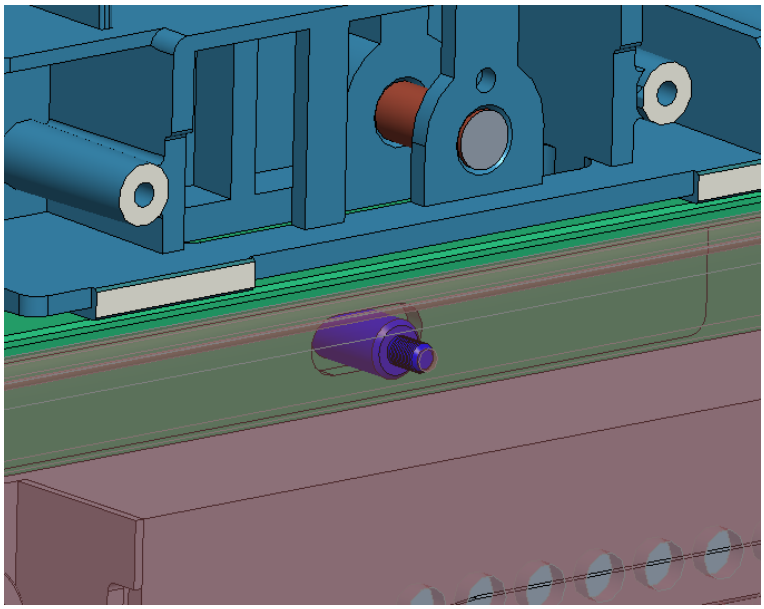


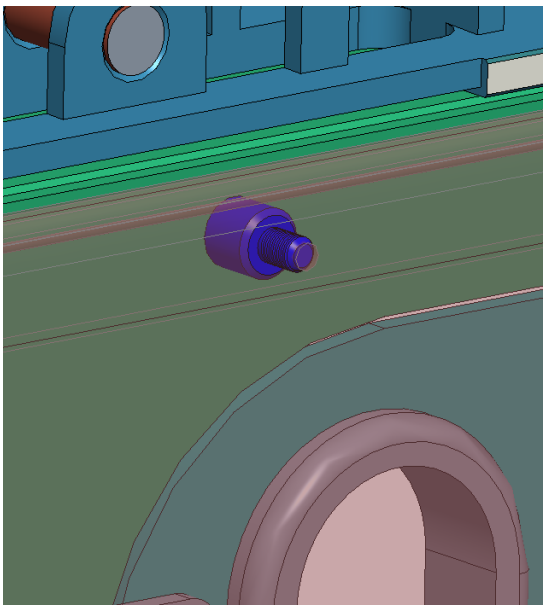
- After confirming that all magnetic cup screws have been tightened, carefully reinstall the previously removed LED panel to its original position, and check again to ensure that the panels are aligned into a flat surface.

Step 8： Install the bottom frame cover plate

1) Install the bottom frame cover plate, according to the installation diagram, install the cover plate from right to left in order. The cover plate has locating pins in its original color. After aligning the pins, the cover plate will be fixed to the bottom frame through magnetic attraction, as shown in the figure below：







Appendix 1

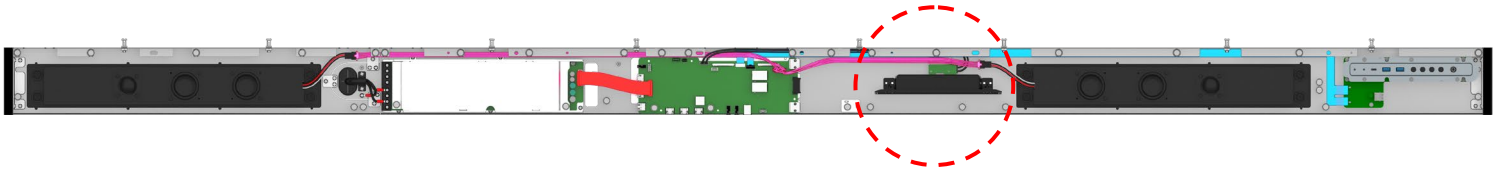
Method for Installing the Wi-Fi Antenna Module

The Wi-Fi Antenna Module is an optional kit for the FHDC108. Below are the installation steps for this component.

- Appearance of the Wi-Fi Antenna for FHDC108

Installation Location

The Wi-Fi antenna installation location is on the left side of the PSU inside the FHDC108 system control box, as indicated by the red circle with a dashed line in the image below.

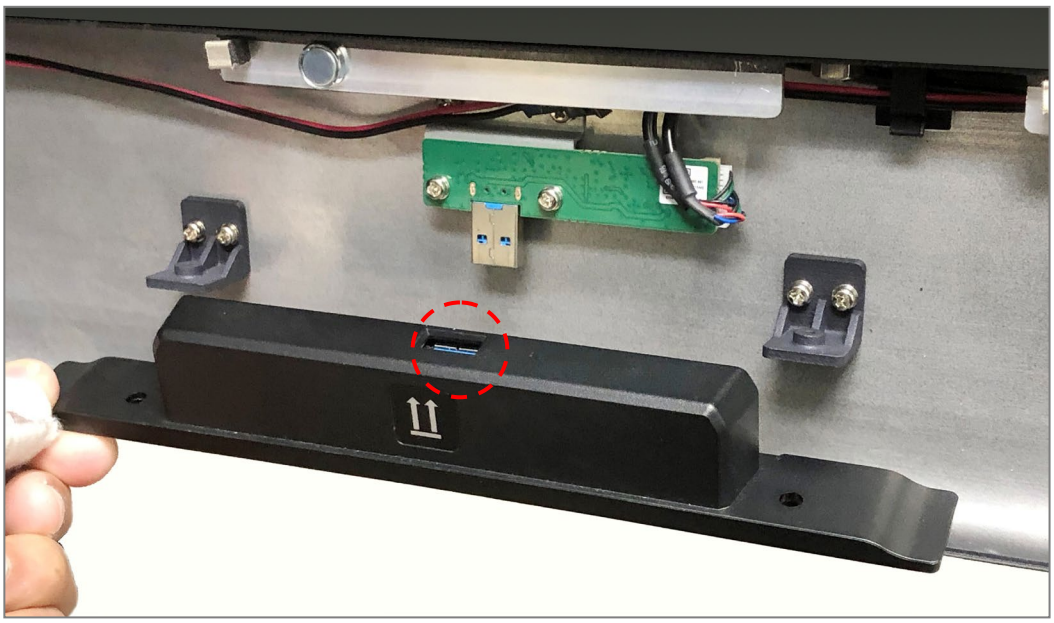


- The installation location of the Wi-Fi antenna within the bottom frame.

Assembly Instructions

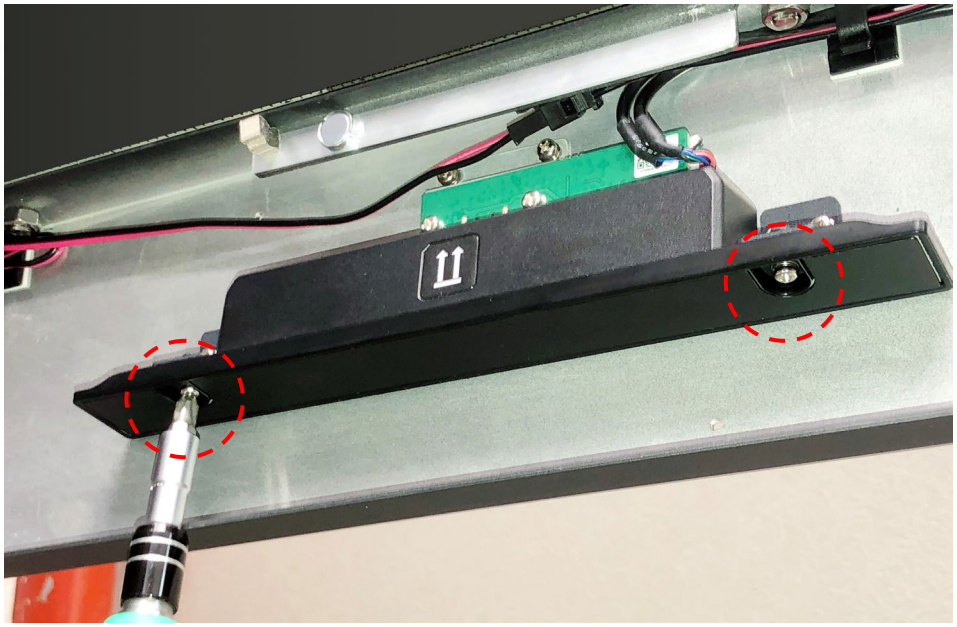
Step 1.

Refer to the diagram below. Connect the USB port of the Wi-Fi antenna to the corresponding USB plug inside the system control box, ensuring it is inserted completely.



Step 2.

Secure the Wi-Fi antenna to the system control box using two M3*8mm screws at the screw holes indicated by the red circles in the diagram below.



Phillips Screwdriver

M3x8mm * 2 PCS

VAC Input Electrical Characteristics

Electrical Characteristics for FHDC108							
At 100V AC Input				At 220V AC Input			
Parameter	**Unit**	**Rating nom.**	**Max.**	**Parameter**	**Unit**	**Rating nom.**	**Max.**
Input current	A	6.00	15.00	Input current	A	2.73	6.82
Input freq.	Hz	50 – 60	65	Input freq.	Hz	50 – 60	65
Power	Watt	600	1500	Power	Watt	600	1500

Circuit Protection

Each section of the screen should be protected by a Circuit Breaker to protect against high fault currents, and a Residual Current Device (RCD) to detect earth leakage currents