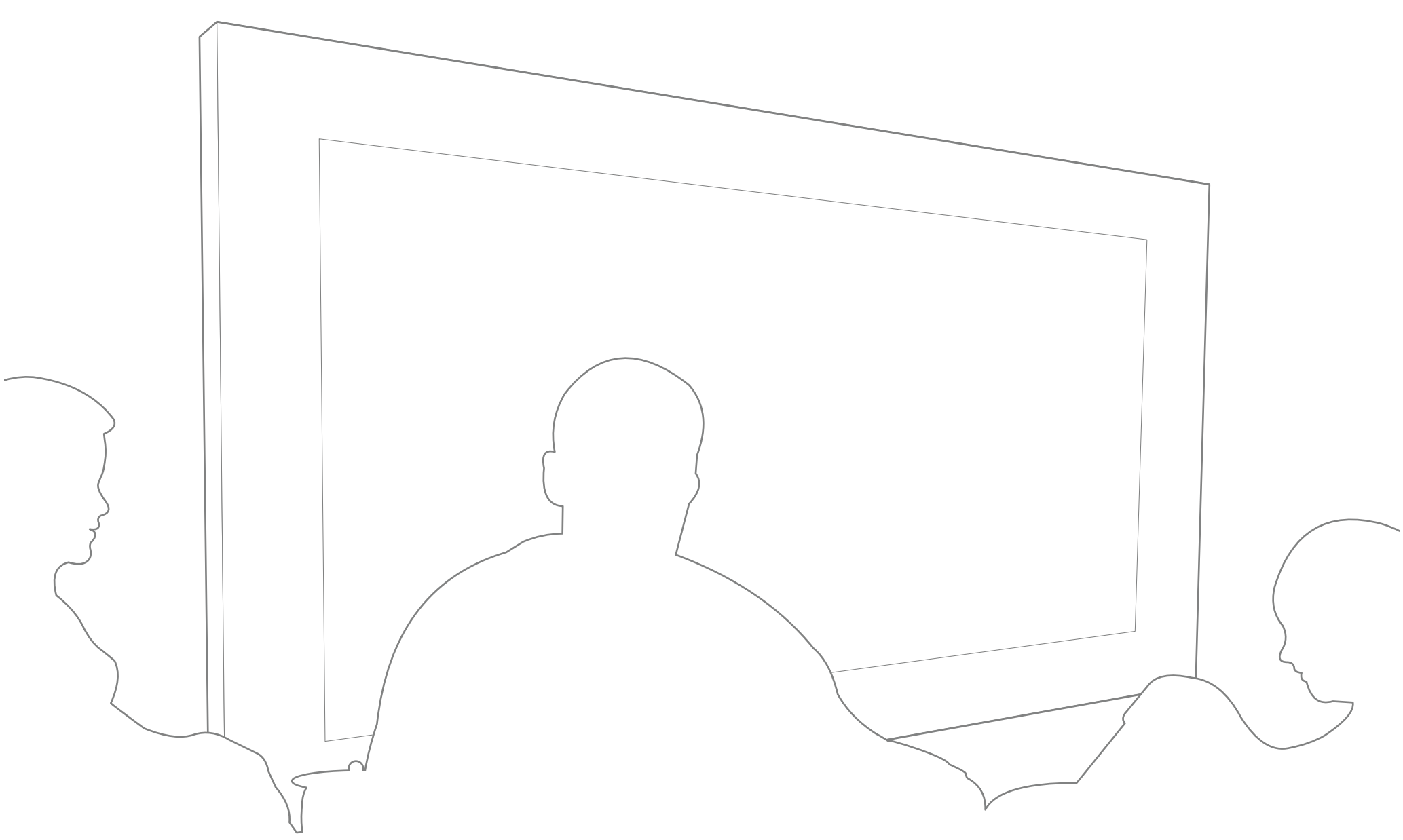
MOTOMASK PRO



# USER'S MANUAL

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MOTOMASK PRO

# BRIEF DESCRIPTION

Thank you for purchasing the multi masking MotoMask PRO screen.
The masking system is retrofittable and can be purchased and installed later on.

## FEATURES

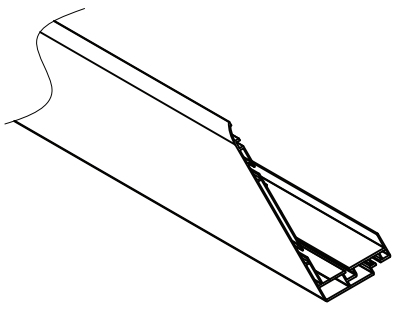
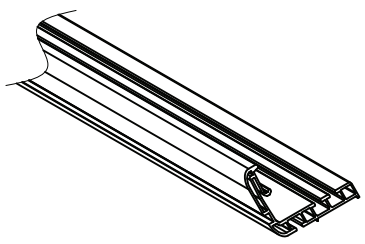
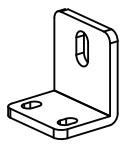
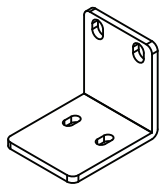
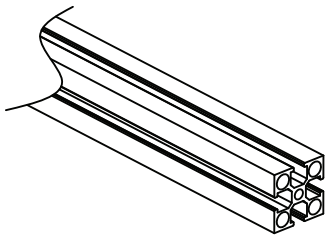
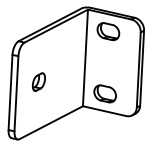
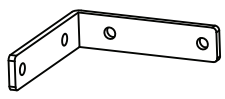
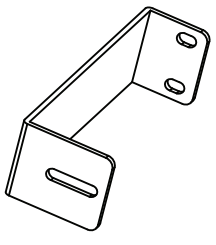
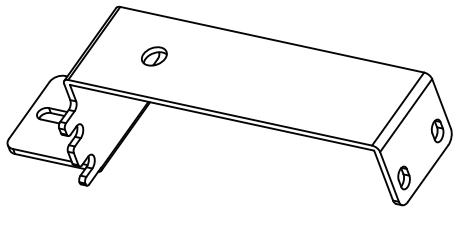
- Separate frame and masking system.
- Built-in wireless RF receiver, as well as RS485 for smart home setups.
- Automatically stops if an obstacle is met to protect the motor.
- The position of the masking can be fine tuned and stored using the remote.
- For the 16:9 version, you can even close the entire masking fabric while not in use.
- Professional grade quality for maximum rigidity even for very large screen XXL sizes.

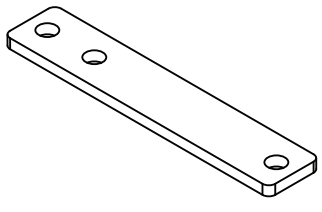
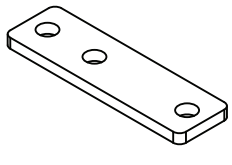
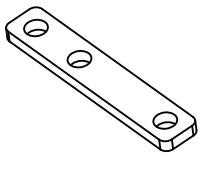
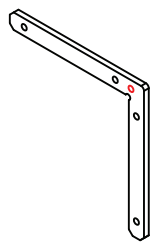
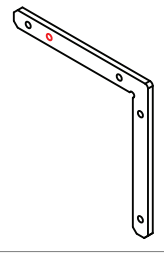
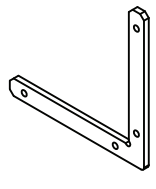
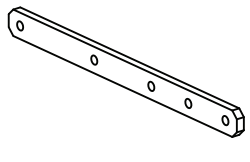
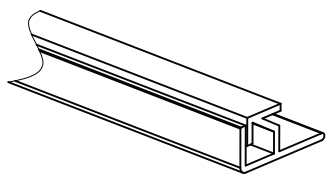
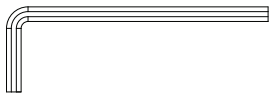
## ATTENTION

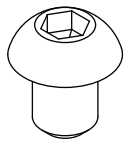
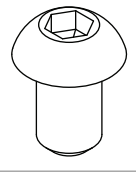
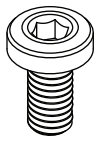
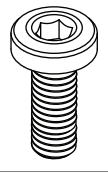
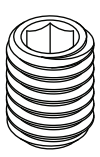
**Please read following instruction before installation of the product:**

- Please handle with care.
- During installation, please choose a sufficiently sized, clean area.
- Lifting and attaching this very heavy screen system to the wall after assembly normally requires 3 or more people.

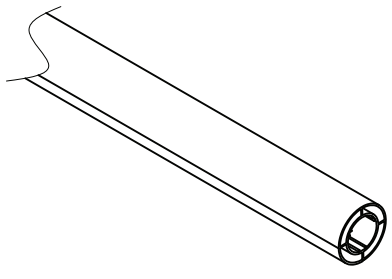
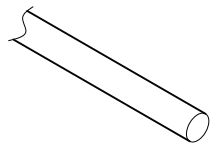
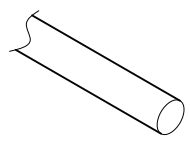
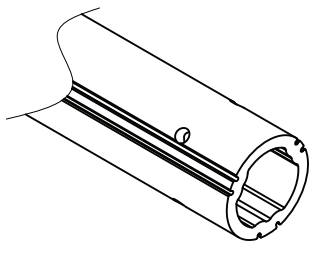
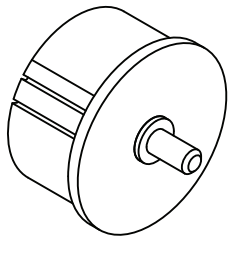
# PARTS OVERVIEW

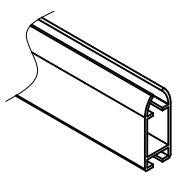
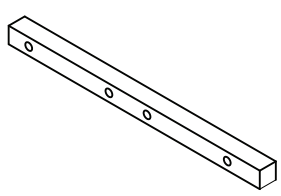
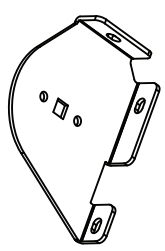
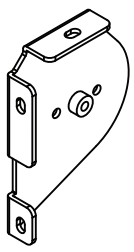
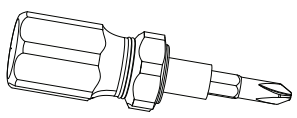
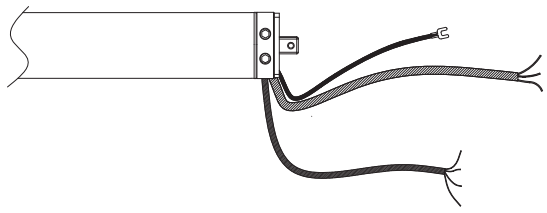
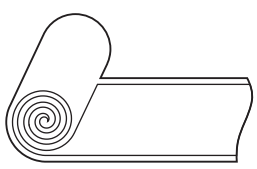
| Item | Drawing | Description |
|---|---|---|
| Outer frame |  | Frames>3m in width are divided. The quantity of sections depends on the size of the frame. |
| Inner frame |  | Frames>3m in width are divided. The quantity of sections depends on the size of the frame. |
| Upper wall mounting bracket |  | Used for mounting the upper section of the frame. Quantity depends on the size of the frame. |
| Lower wall mounting bracket |  | Used for mounting the lower section of the frame. Quantity depends on the size of the frame. |
| Supporting bar |  | Diameter: 30 × 30mm Quantity and length depends on the size of the frame. |
| “L” shape connection part 1 |  | Used for connecting the inner and outer frame. Quantity depends on the size of the frame. |
| L” shape connection part 2 |  | Used for connecting the corners of both inner and outer frame. Quantity: 16 PCS |
| “U” shape connection part 1 |  | Used for connection of the inner and outer frame. Quantity depends on the size of the frame. |
| “U” shape connection part 2 |  | Used for fixing the supporting bar. Quantity depends on the size of the frame. |

| Item | Drawing | Description |
| --- | --- | --- |
| Preinstalled metal 1 |  | Used for fixing the supporting bar connector. (Preinstalled in support bar). Quantity depends on the size of the frame. |
| Preinstalled metal 2 |  | Preinstalled in inner and outer frame. Quantity depends on the size of the frame. |
| Preinstalled metal 3 |  | Used for fixing the supporting bar. Quantity depends on the size of the frame. |
| Corner connector 1 for upper outer frame. |  | Used for connecting the upper corners of the outer frame. Please notice the difference from the other included corner brackets. Quantity: 2PCS |
| Corner connector 2 for upper outer frame. |  | Used for connecting the upper corners of the outer frame. Please notice the difference from the other included corner connectors. Quantity: 2PCS |
| Corner connector 3 for the lower corners of the outer frame. |  | Used for connecting the lower two corners of the outer frame. Please notice the difference from the other included corner connectors. Quantity: 4PCS |
| Connector parts |  | Used for connecting the inner and outer frame >3m wide. Quantity depends on the size of the frame. |
| Grip rail |  | Used to attach the UltraWeave screen fabric. Quantity depends on the size of the frame. |
| 4mm inner hexagon spanner | | Quantity: 4PCS |
| 3mm inner hexagon spanner |  | Quantity: 4PCS |

| Item | Drawing | Description |
| --- | --- | --- |
| M6*8 screws |  | Quantity depends on the size of the frame. |
| M6*10 screws |  | Quantity depends on the size of the frame. |
| M6*12 screws |  | Quantity depends on the size of the frame. |
| M6*20 screws |  | Quantity depends on the size of the frame. |
| M6*8 set screws |  | Used for fixing metal in the frame (most are pre-installed). Quantity depends on the size of the frame. |
| Gloves | | Quantity: 2 |

## MASKING ROLLER PARTS OVERVIEW

| | | |
| --- | --- | --- |
| 70mm diameter roller |  | Masking rollers>3m are divided in two or more parts. Quantity depends on the size of the roller. |
| Glass fiber bar |  | Quantity depends on the size of the roller. |
| Weight steel rod |  | Quantity depends on the size of the roller. |
| Roller connection parts |  | Length: 300mm. Pre-installed in divided rollers. Quantity depends on the size of the roller. |
| Tail plug |  | Please make sure the tail plug is installed on the correct side before securing it into the masking roller. |

| Item | Drawing | Description |
|---|---|---|
| Bottom bar |  | Bottom bars >3m<br>are divided in two or more parts.<br>Quantity depends on the size of the roller. |
| Bottom bar connection parts |  | Length: 120mm<br>Used to connect the bottom bars if divided.<br>Quantity depends on the size<br>of the masking roller. |
| Right masking roller bracket |  | Installed on the (right) motor side.<br>Quantity: 1PCS |
| Left masking roller bracket |  | Installed on the tail (left) side.<br>Quantity: 1PCS |
| Cross - screwdriver |  | Used for the 70mm diameter roller.<br>(Only supplied for divided masking rollers.) |
| M4*6 screws | | Used for the bottom bar.<br>(Only supplied for divided masking rollers.) |
| Tubular motor |  | Motor and integrated control system<br>110V (US) or 220V. |
| Power cable | | EU or US type. |
| Fabric for the masking roller |  | Only supplied separately for the divided masking rollers, pre-installed for the non-divided version (<3m).<br>Quantity: 1PCS |

# MASKING ROLLER ASSEMBLY

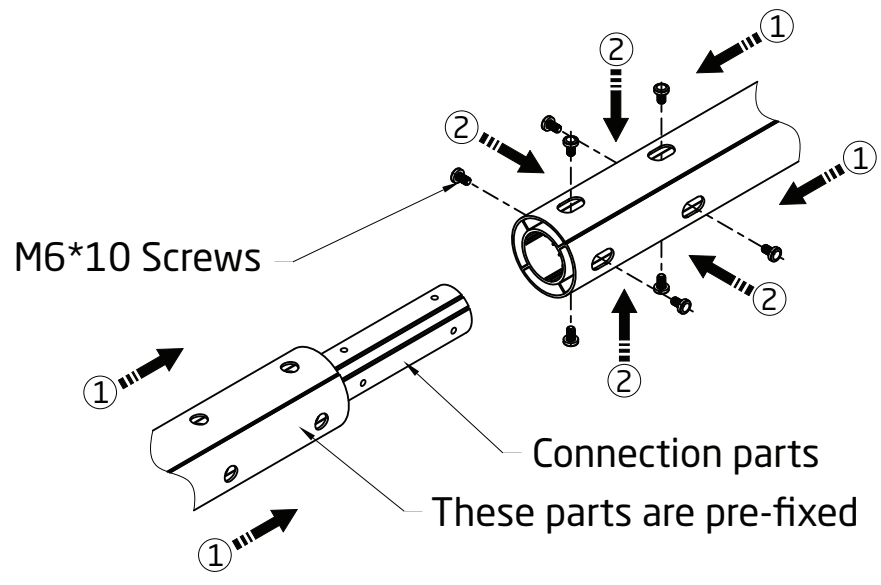
(only applicable for divided rollers, <3m rollers are pre-assembled)

**Required tools for the installation.**

- Fabric for the masking roller (supplied)
- 3M double sided tape (supplied)
- Cross screwdriver (supplied)

**Step 1: Connect the divided roller.**

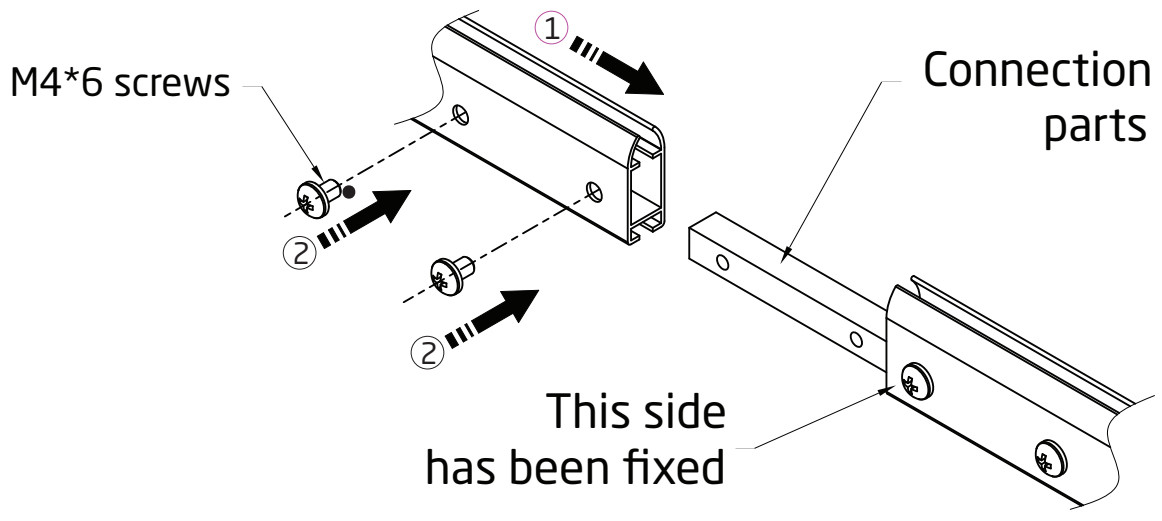
- Most of the parts required for connecting the masking roller is already pre-installed.
- Align the two parts, slide the parts together and then secure them with the included screws. Sliding the two parts together can sometimes be a bit tricky as the spacing is very tight (it has to be to ensure sufficient rigidity). If needed, please use a rubber hammer or a similar device to help sliding the parts together.




Drawing 4-1

**Step 2: Connect the divided bottom bar.**

- The connection parts are already fixed.
- Insert the connecting piece into the other lower bar part and then tighten the screw to complete the connection of the divided bar. (Note: the screw used for securing the bottom bar must be facing the back (i.e. not the audience) of the screen.)

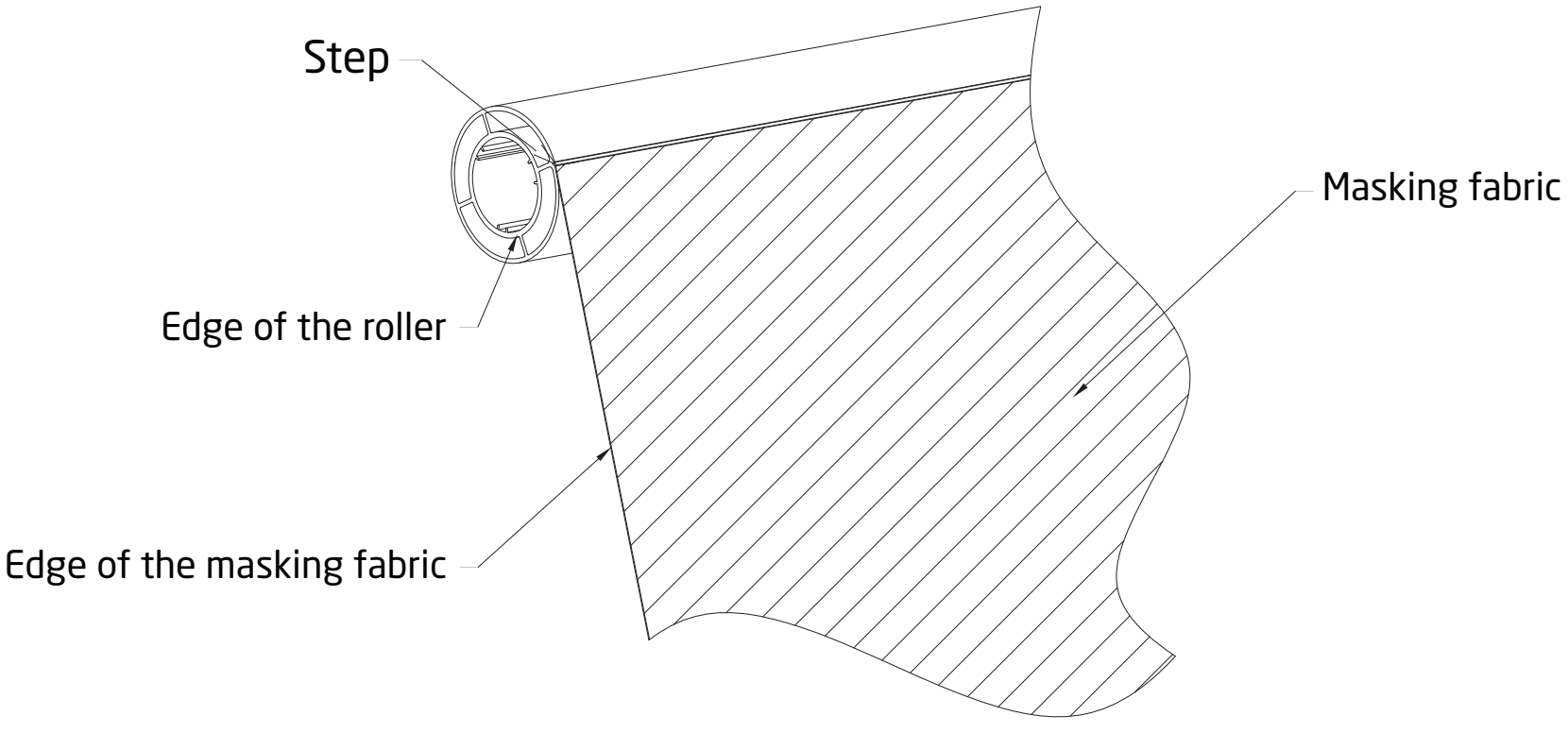



Drawing 4-2

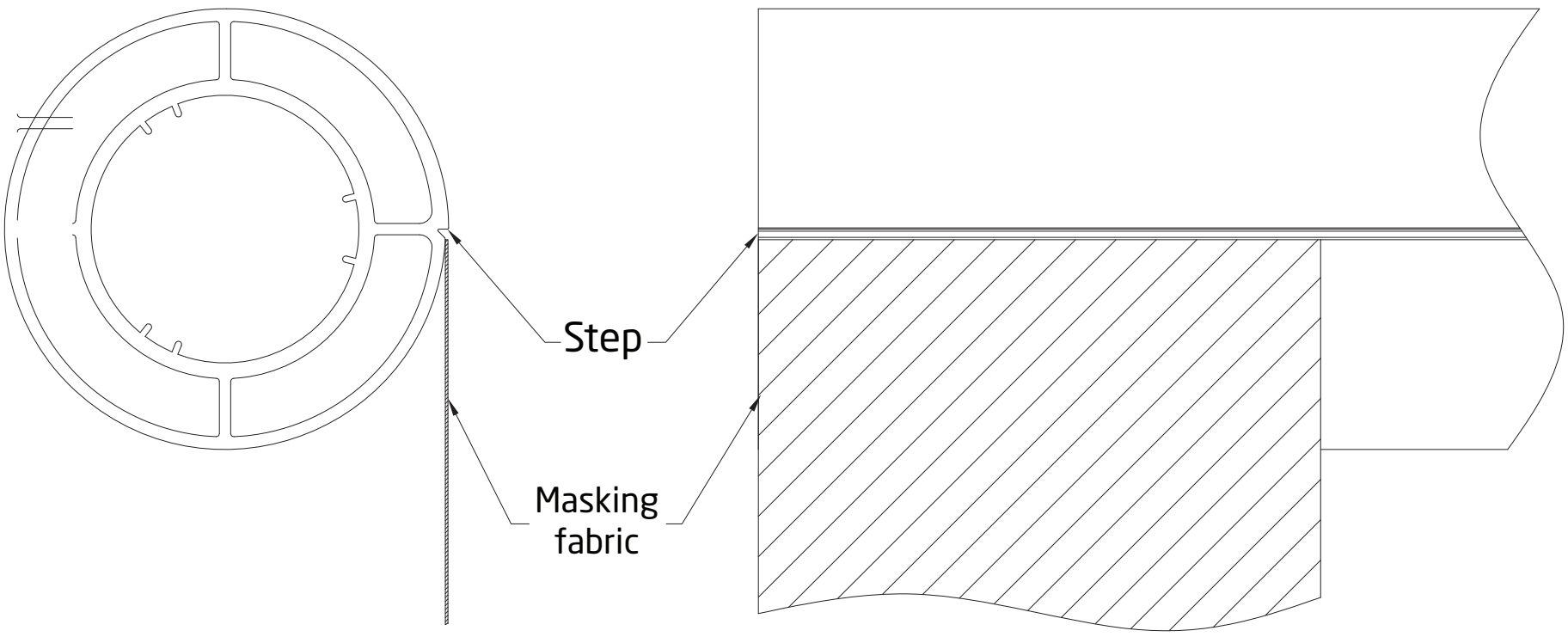
**Step 3: Fixing the masking fabric to the roller.**

1. Please make sure you find a clean and sufficiently sized area to perform the installation.

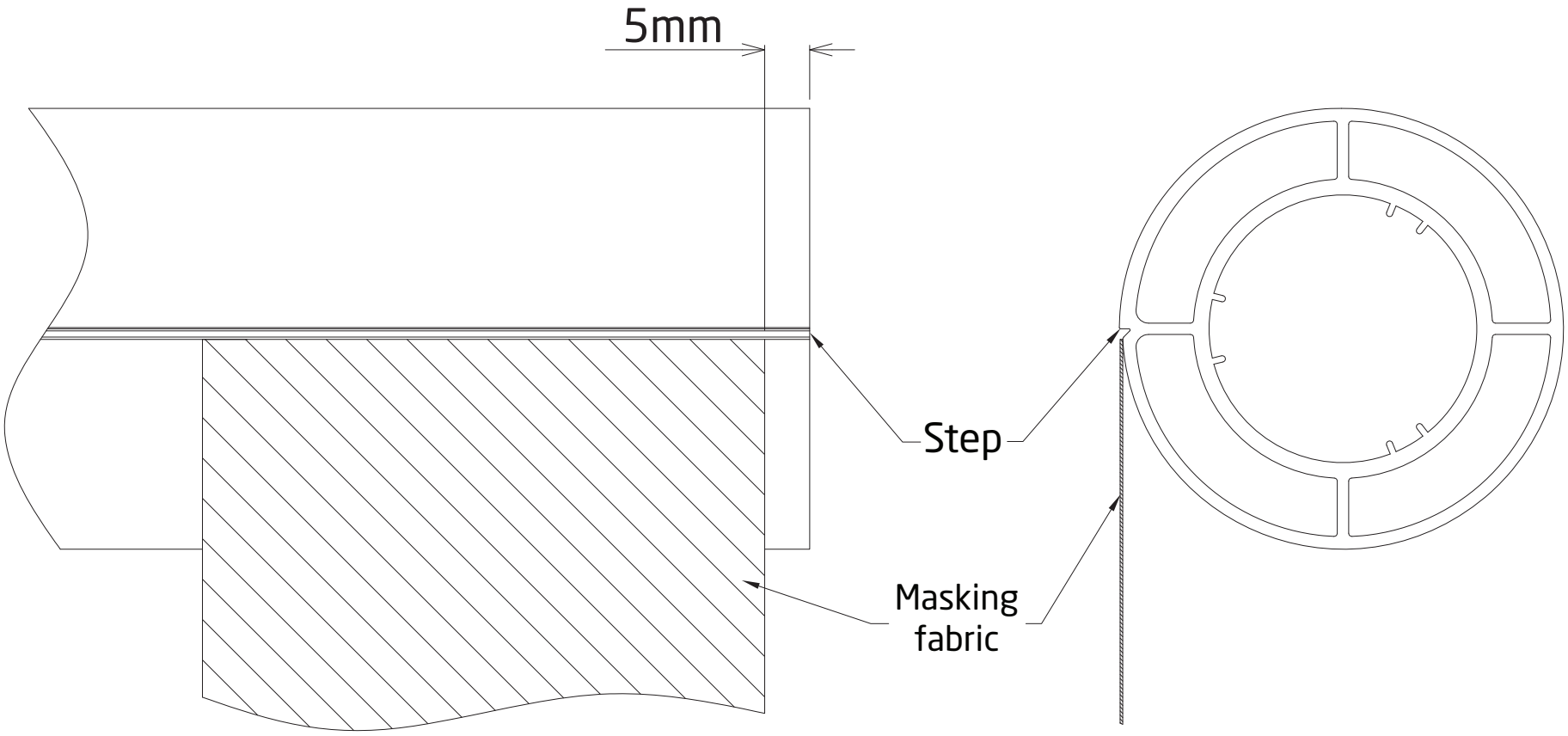
2. Please attach the included 3M double sided tape to the masking roller, just below the small step found in the roller.
3. Place the roller tube with the motor side to the left and tail side to the right. Please note that when installing the masking roller into the frame later on, this direction is opposite (seen from the back of the frame), i.e. the motor is on the right side and tail on the left.
4. Install the fabric flush with the edge at the left side and install it towards the right as per drawing 4-3. There will be an approximate gap of 5mm left on the right (tail) side.
   For the 2.40:1 2-way masking systems, please attach the left side flush, but use a 5mm gap on the right (tail) side as well, as per drawing 4-5.
5. Please note that for the native 16:9 screens (velvet is default for 2.40:1 native screens), an alternative masking fabric made out in velvet is also included. This velvet masking fabric is only able to mask down to 2.40:1 and not close all the way down as the default woven masking fabric due to shorter width available for velvet fabrics, but has the advantage of improved masking performance as it uses the same velvet fabric as the overall frame.




Drawing 4-3

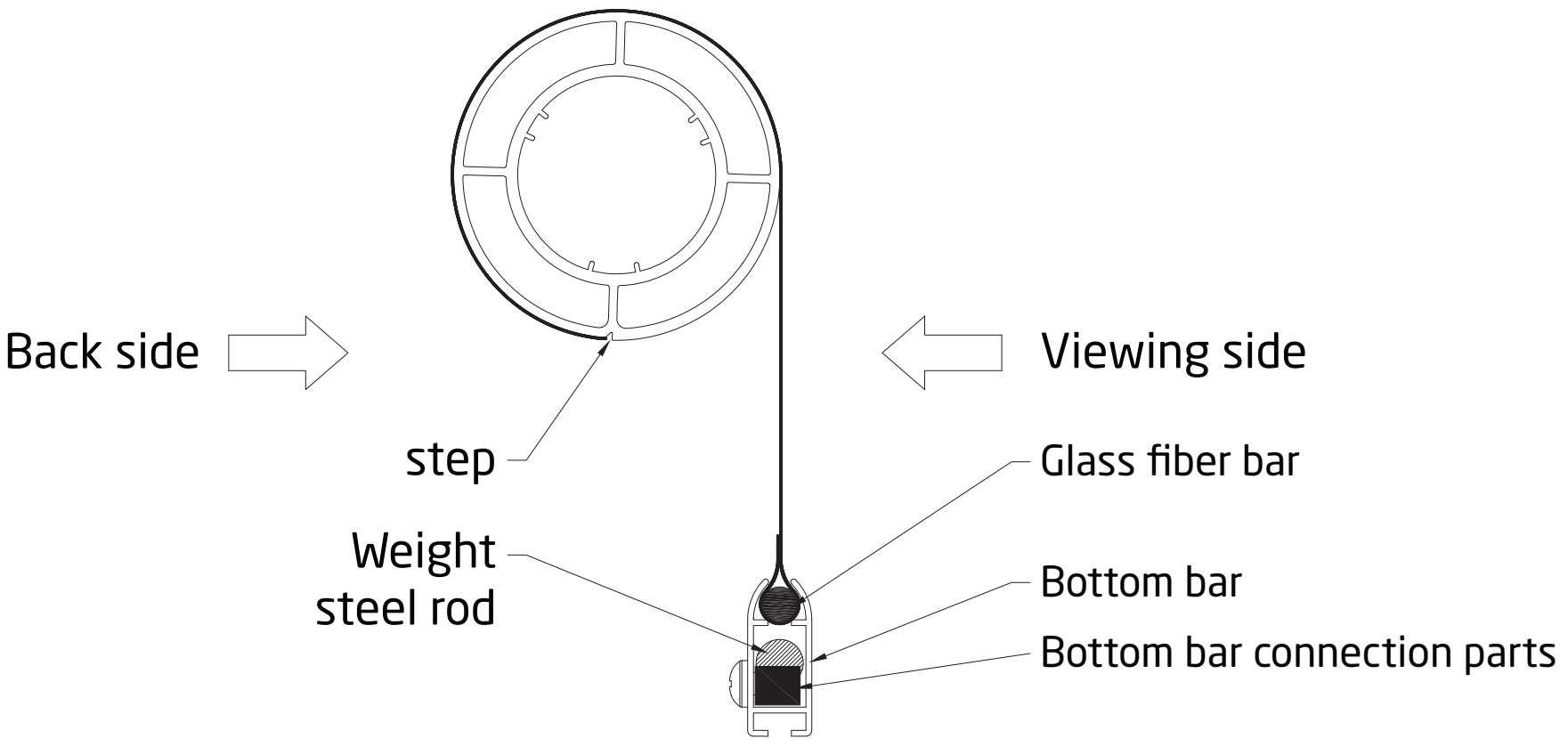



Drawing 4-4



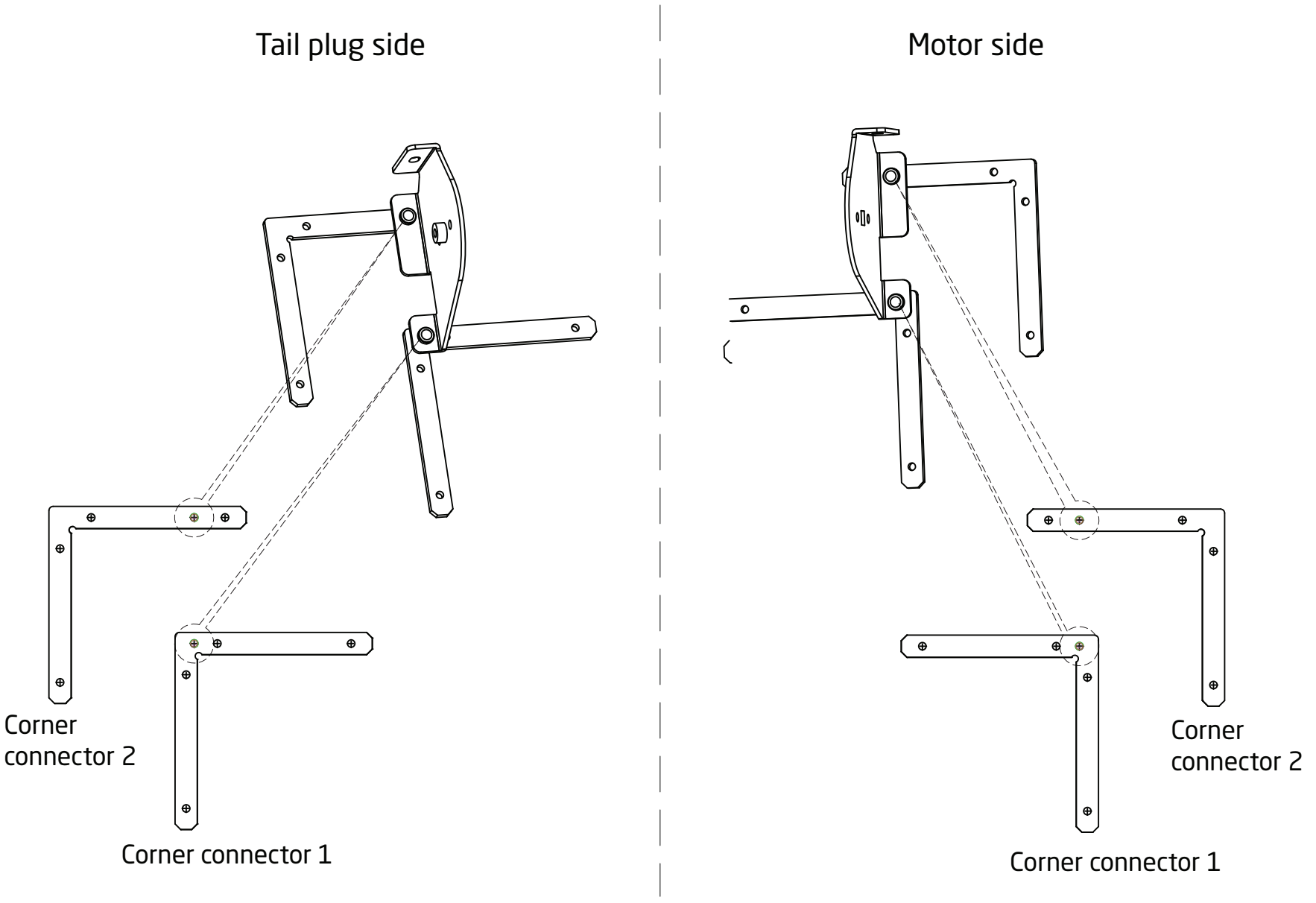

Drawing 4-5

5. Please insert the glass fiber bars into the lower pocket of the masking fabric as per drawing 4-6.
6. Please insert the weight steel rod in the cavity just below as per drawing 4-6. Please note that the connection piece might block the passage, so you might need to lift and navigate a little at this section.




Drawing 4-6

**How to distinguish the placement of corner connection parts and position of the masking roller.**



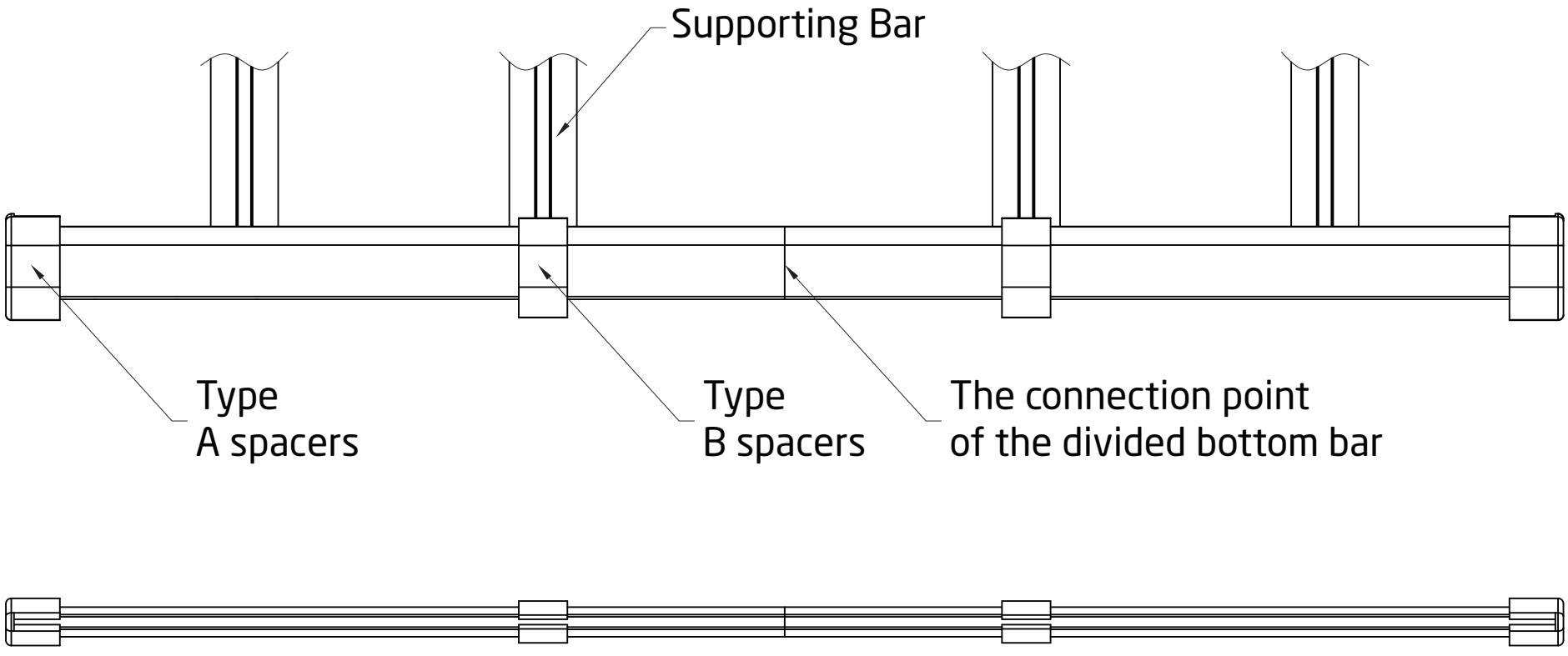

Drawing 4-7 (Viewed from the back of the frame.)

**Step 4: Installing the bottom bar spacers.**

- The type B spacer is only included with large 2.40:1 native frames of 149” or larger, while the type A spacer is included with all sizes and formats.

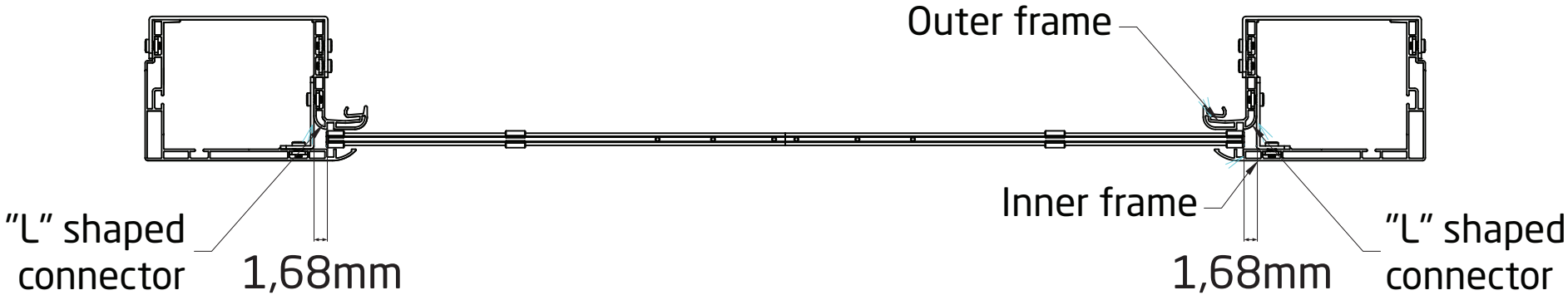
Drawing 4-8

- The type A spacers should be installed at each side of the bottom bar. The spacers make sure the bottom bar glide smoothly in and out of the frame.
- As for the type B spacers, they are only used for the large >149” 2.40:1 native frames to properly glide the masking bar into the lower slot.




Drawing 4-9

**PS! It is important that the masking fabric is positioned exactly in the middle of the frame so that the A-type spacers do not conflict with the "L-shaped" connectors and consequently would not work properly.**

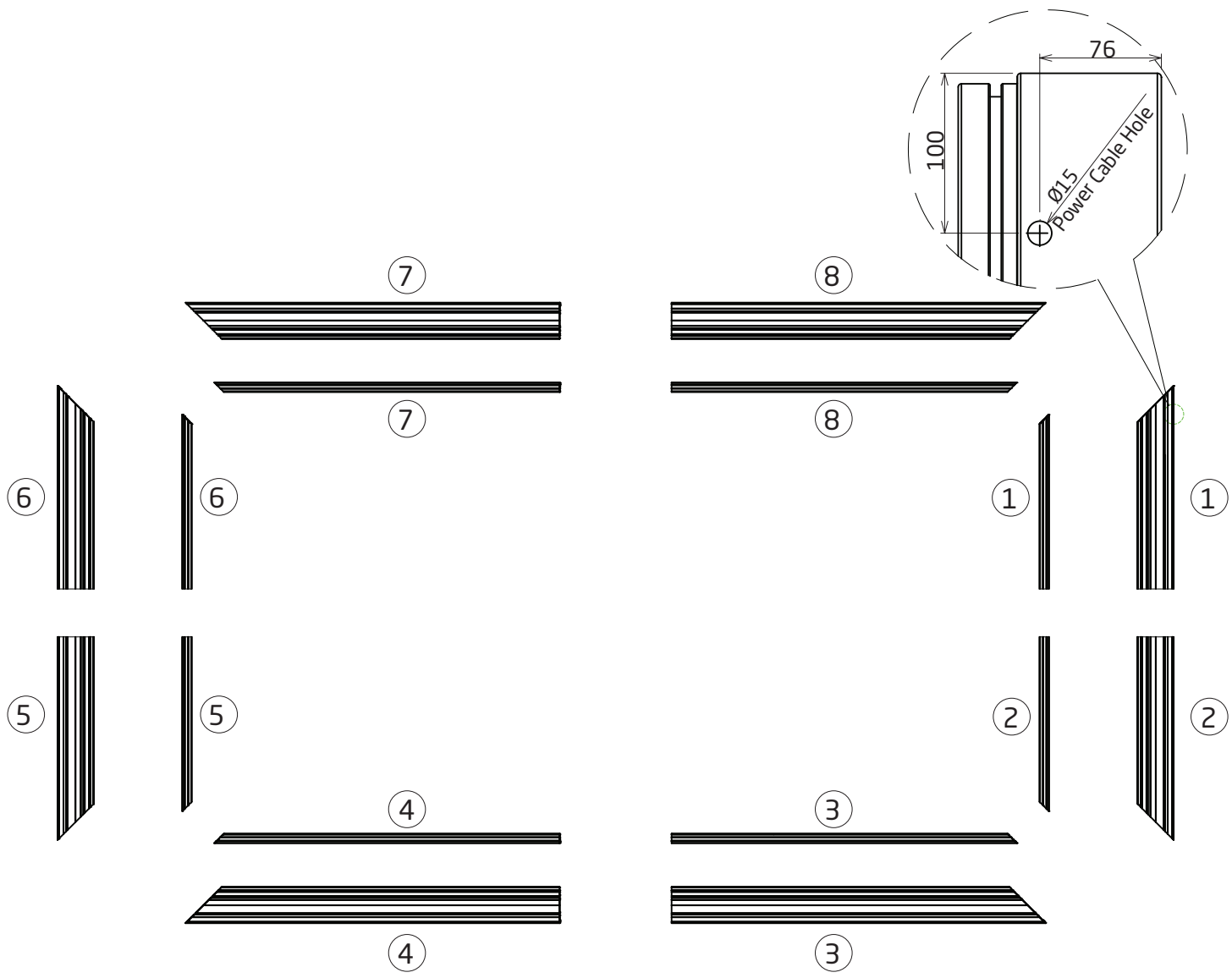



Drawing 4-10

# FRAME ASSEMBLY PROCEDURE

**Step 1: Put the inner and outer frame parts according to the layout in drawing 5-1-1.**
**All parts have corresponding numbers attached to them.**

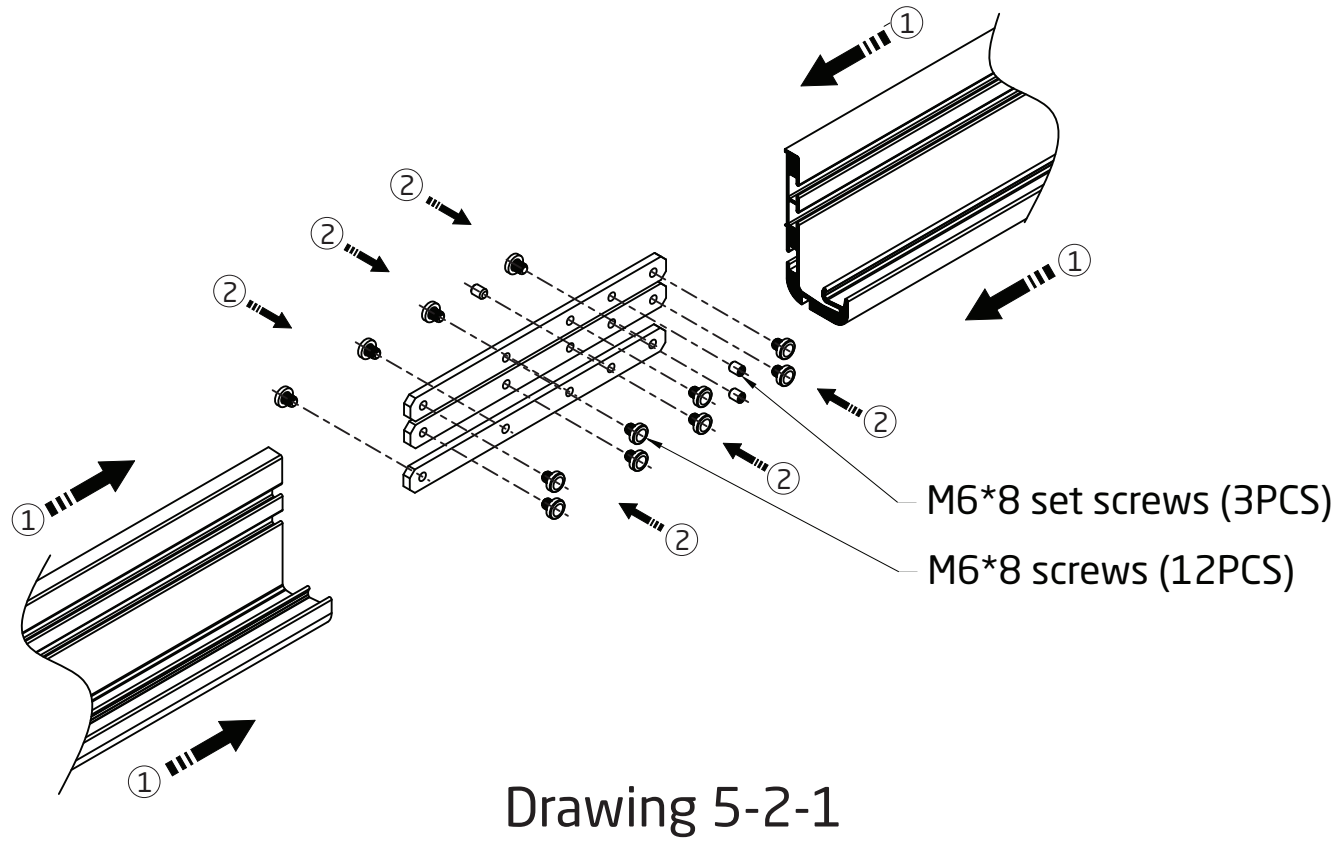
- The frame section parts are labeled as per drawing 5-1-1.
- For smaller frames, the numbers are corresponding to the number of parts that make out the frame, always starting with part 1 from the right short side. For example, for a <3m non-divided frames, the total number of components of both the outer and inner frame is 4 (per frame section), the right short side has #1, the lower long side has #2, the left short side #3 and finally the upper long side #4.



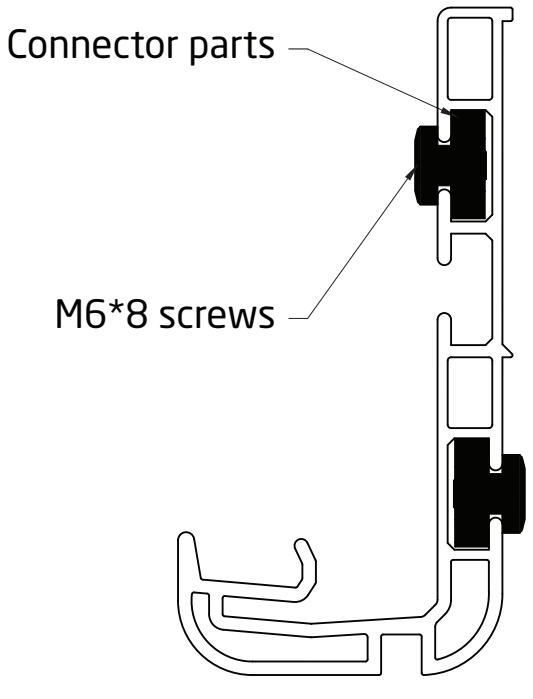

Drawing 5-1-1 (Seen from the back. Note: <3m is not divided,
while only very large frames are divided vertically as well as horizontally.)

**Step 2: Assembling the inner frame.**

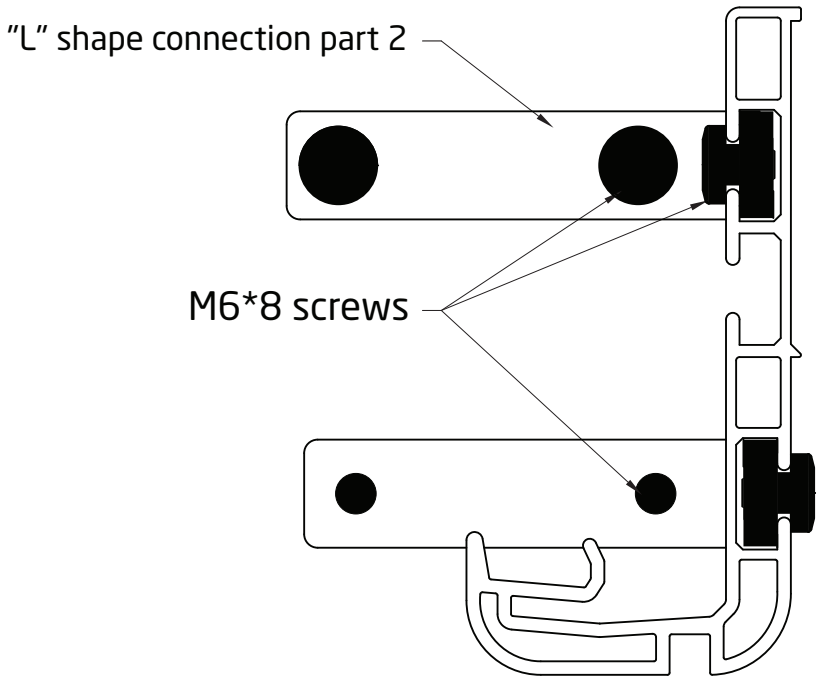
- First install the straight connection part as per drawing 5-2-1.
- Assure the gap is as small as possible. When the split point of the connector part is aligned, please secure by locking the screws.
- Please pay attention to the direction of the screws when securing the connector parts according to drawing 5-2-2.




Drawing 5-2-1

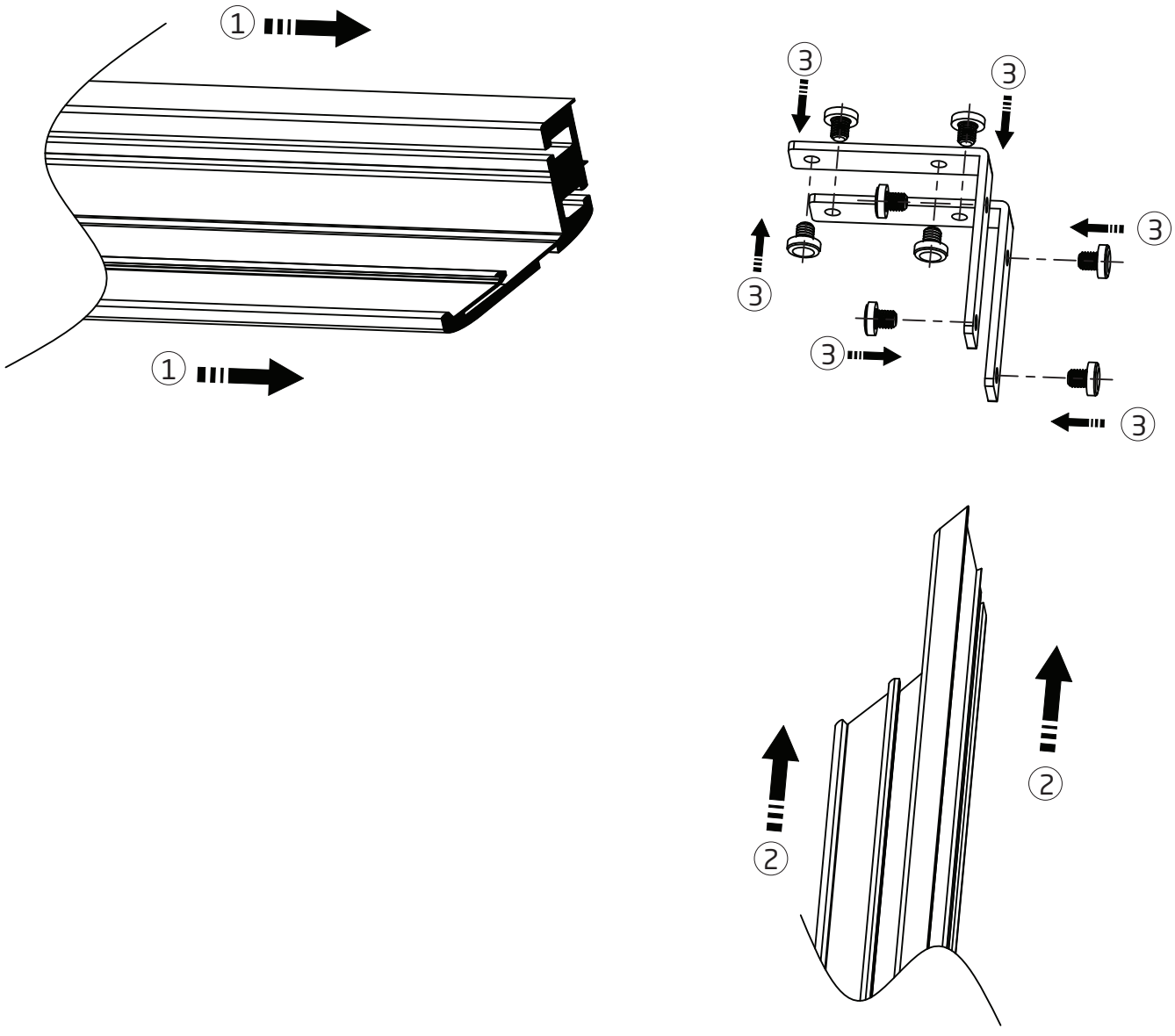



Drawing 5-2-2

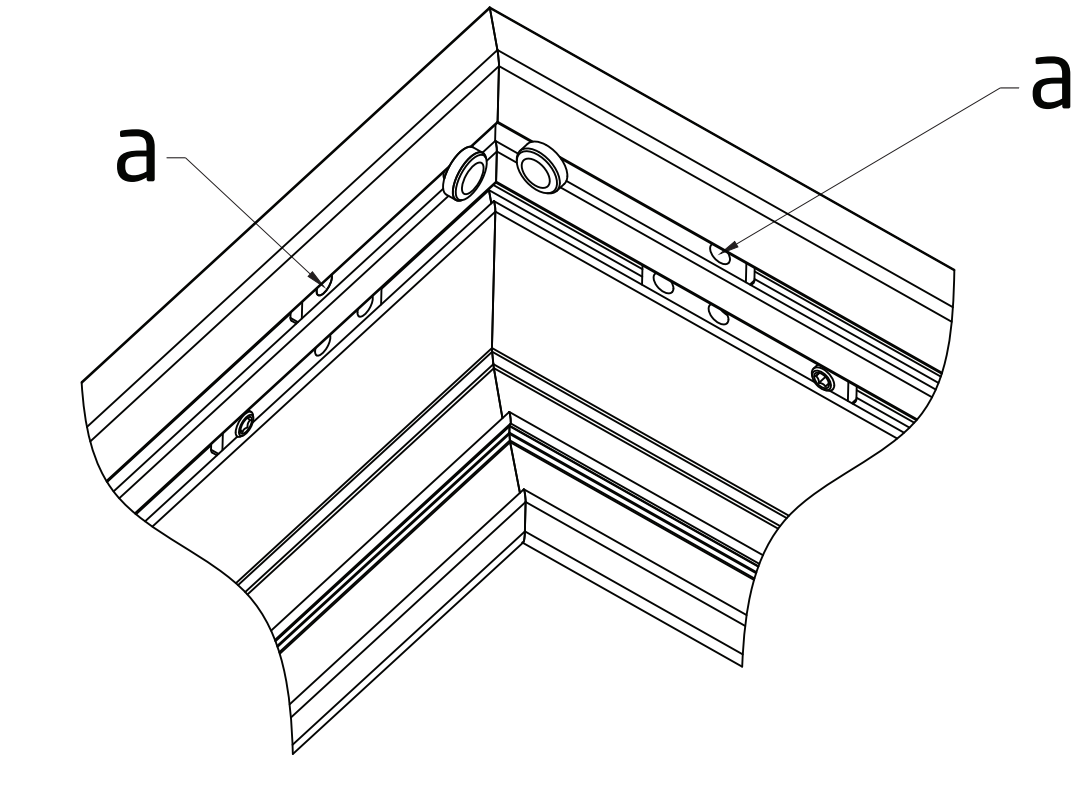



Drawing 5-2-3

- Proceed to install the corner positions of the inner frame following drawing 5-2-4.
- Please note that the "A-position" from figure 5-2-5 is not to be installed as it will be used to install connection parts as per 5-2-6 later on.

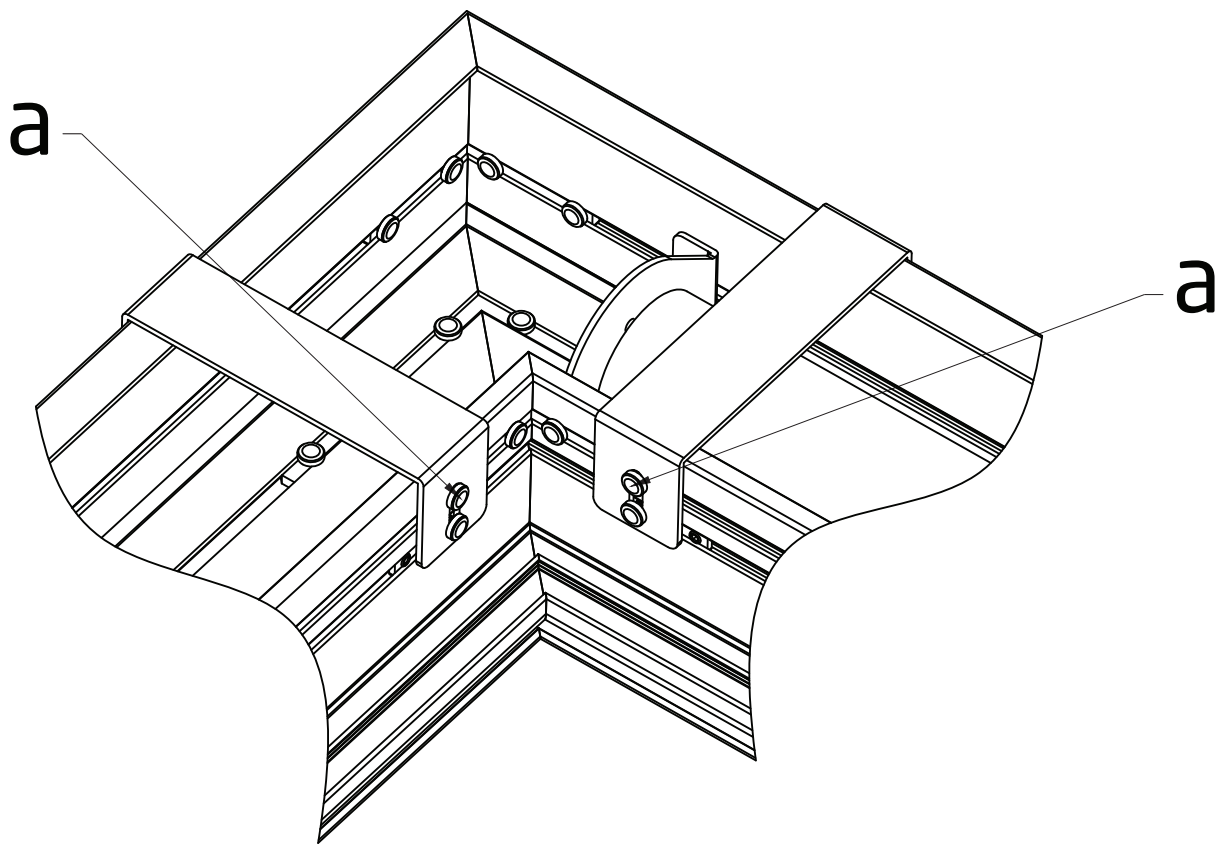



Drawing 5-2-4




5-2-5

Please note: this is just for reference, connecting the inner and outer frame is done later on.



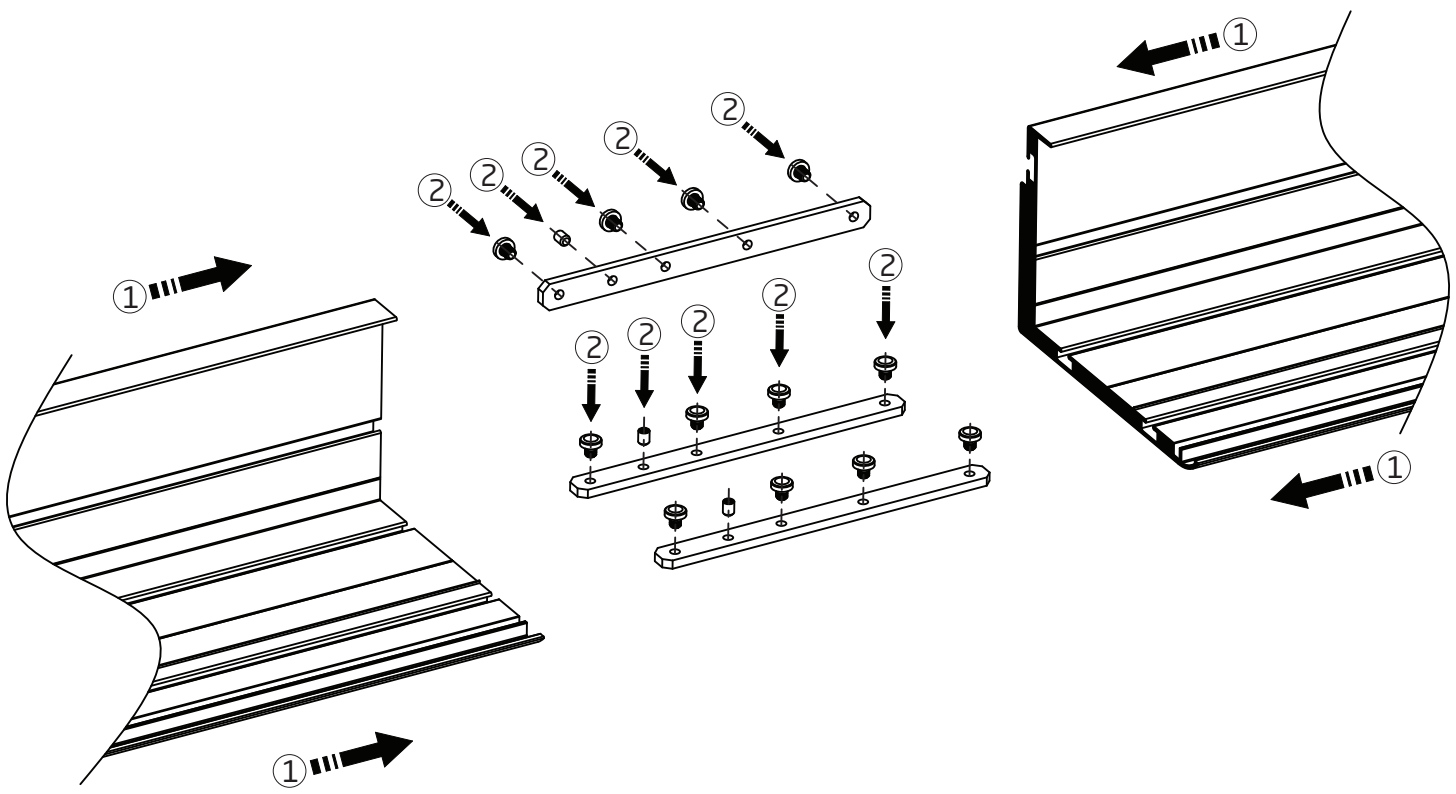

5-2-6

- Assure that the inner frame corners are as tight as possible and then lock the position using the screws.
- Please pay attention to the direction of the "L"-shape connection parts as per drawing 5-2-3.
- Position and secure the other corners.

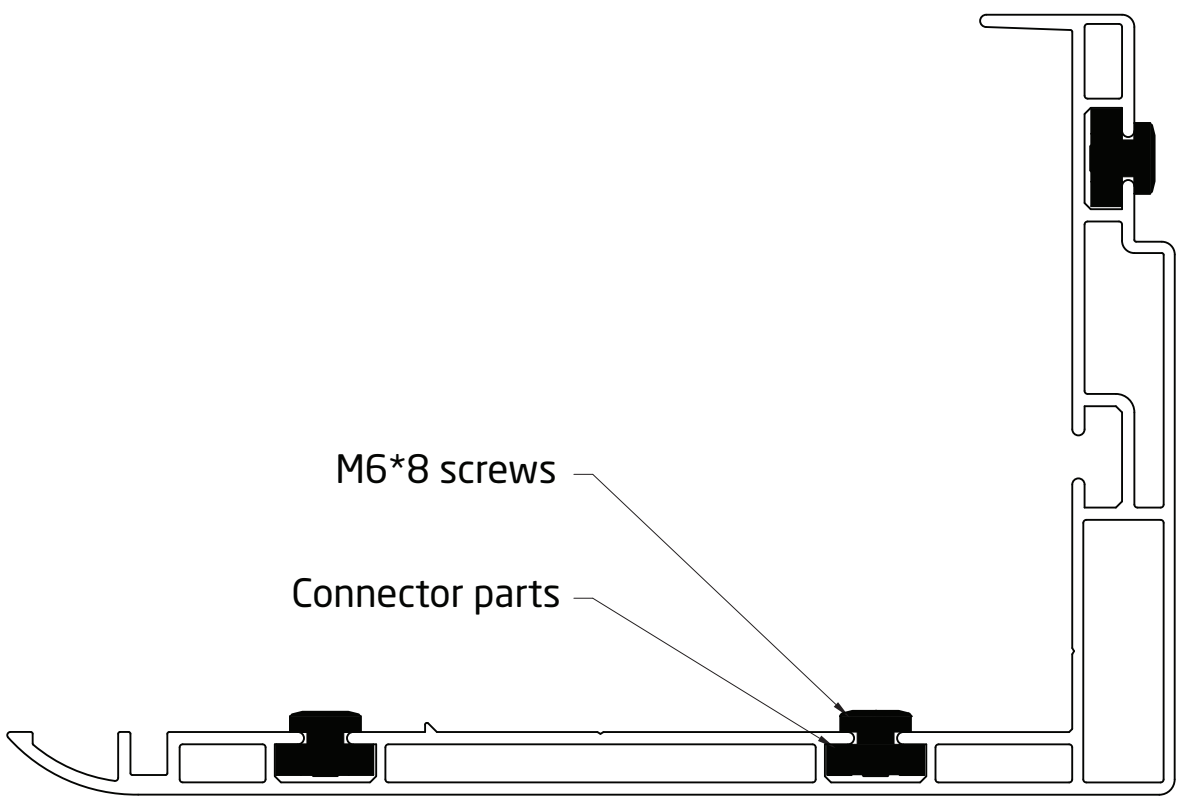
**Step 3: After you have finished assembling the inner frame, please put it aside for later use.**

**Step 4: Assembly of the outer frame.**

- Start by installing the straight connection parts if the frame is divided as per drawing 5-4-1.
- Please make sure the gaps are as small as possible and then lock the position by tightening the screws.
- Please pay attention to the direction of the connector parts as per 5-4-1.
- Install all other straight connections using the same method.



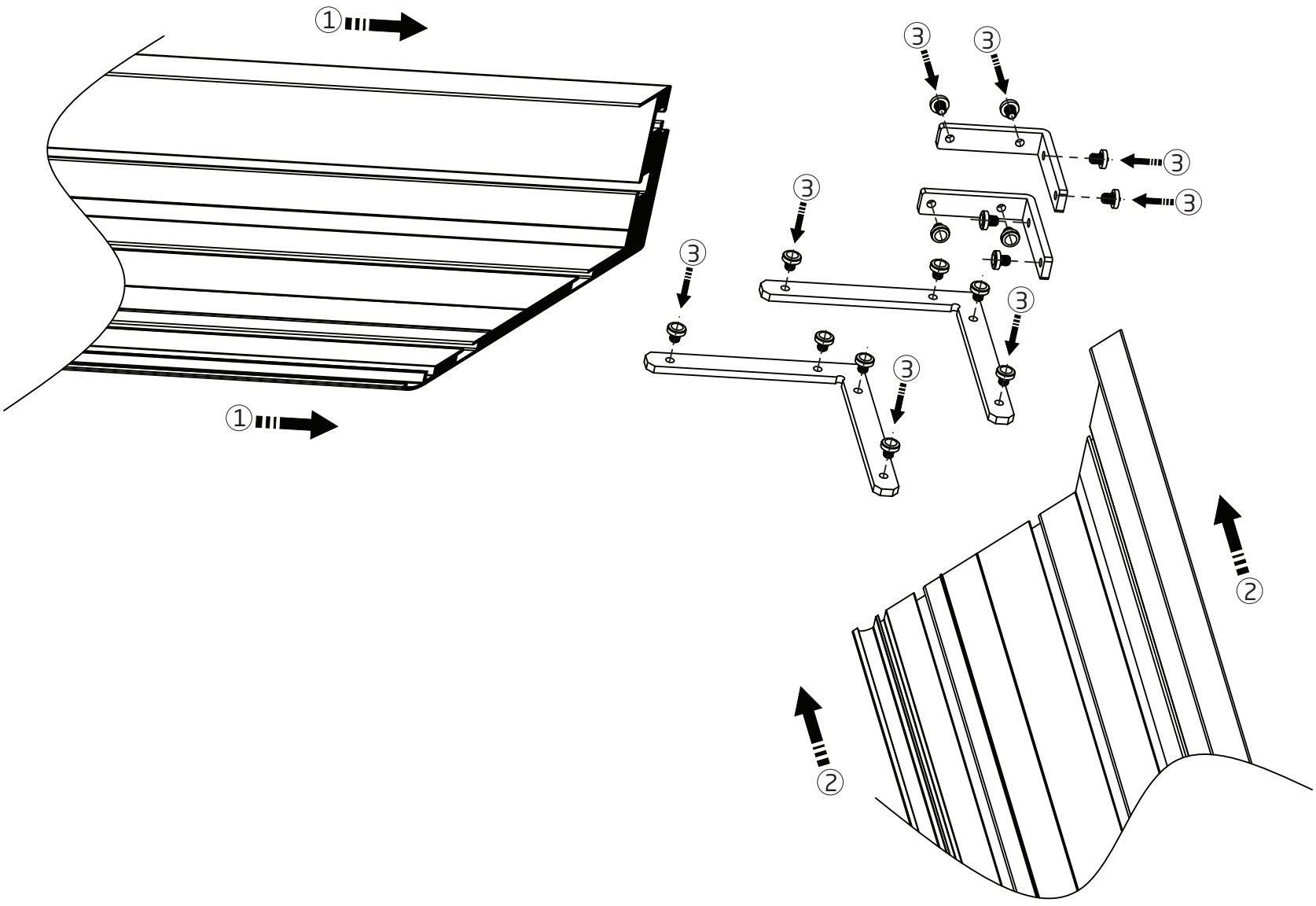

Drawing 5-4-1



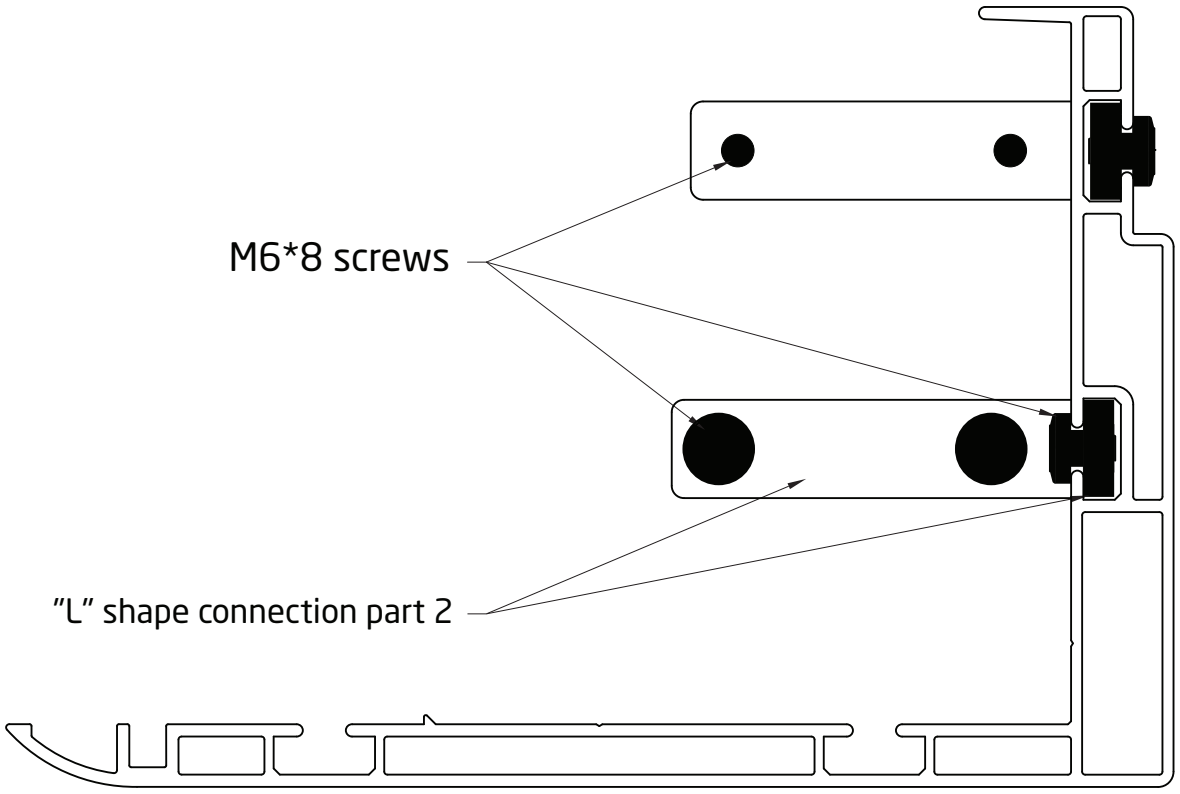

Drawing 5-4-2

- Proceed to install the corner positions of the outer frame as per drawing 5-4-3.
- Please make sure the gap is as small as possible and secure by tightening the screws.
- Please pay attention to the direction of the "L"-shape connection parts as per drawing 5-4-3 and 5-4-4.
- Please connect all corners and pay attention to the direction of the "L"-shaped connection parts as per drawing 5-4-3 and 4-3.

**We recommend you take a second look at 4-3 to make sure this placement is correct as it is required for both later masking roller installation as well as connecting the inner and outer frame.**



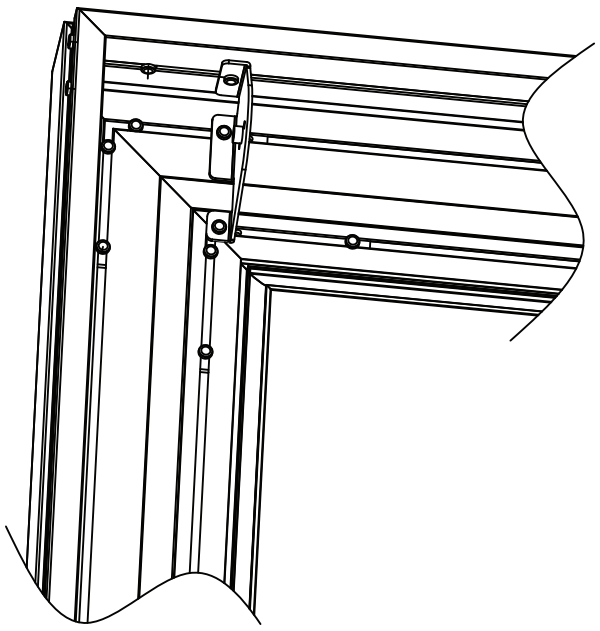

Drawing 5-4-3




Drawing 5-4-4

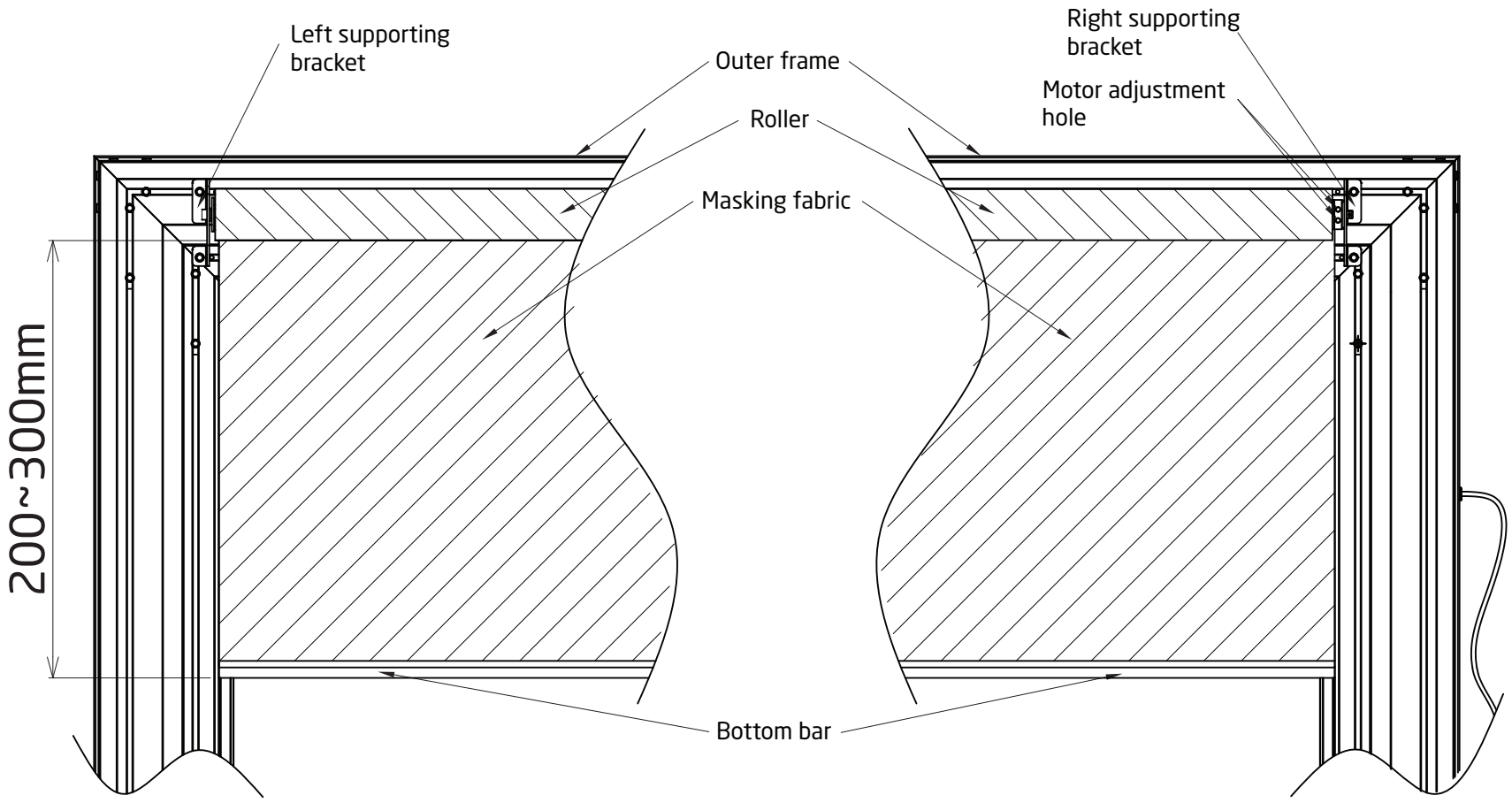
**Step 5: Installation of the masking system (can also be done retrospectively).**

- The left supporting bracket (viewed from behind) should be the one with the round hole in it. The bracket with the square hole is placed on the other side holding the motor. Please await securing the position of the left bracket.



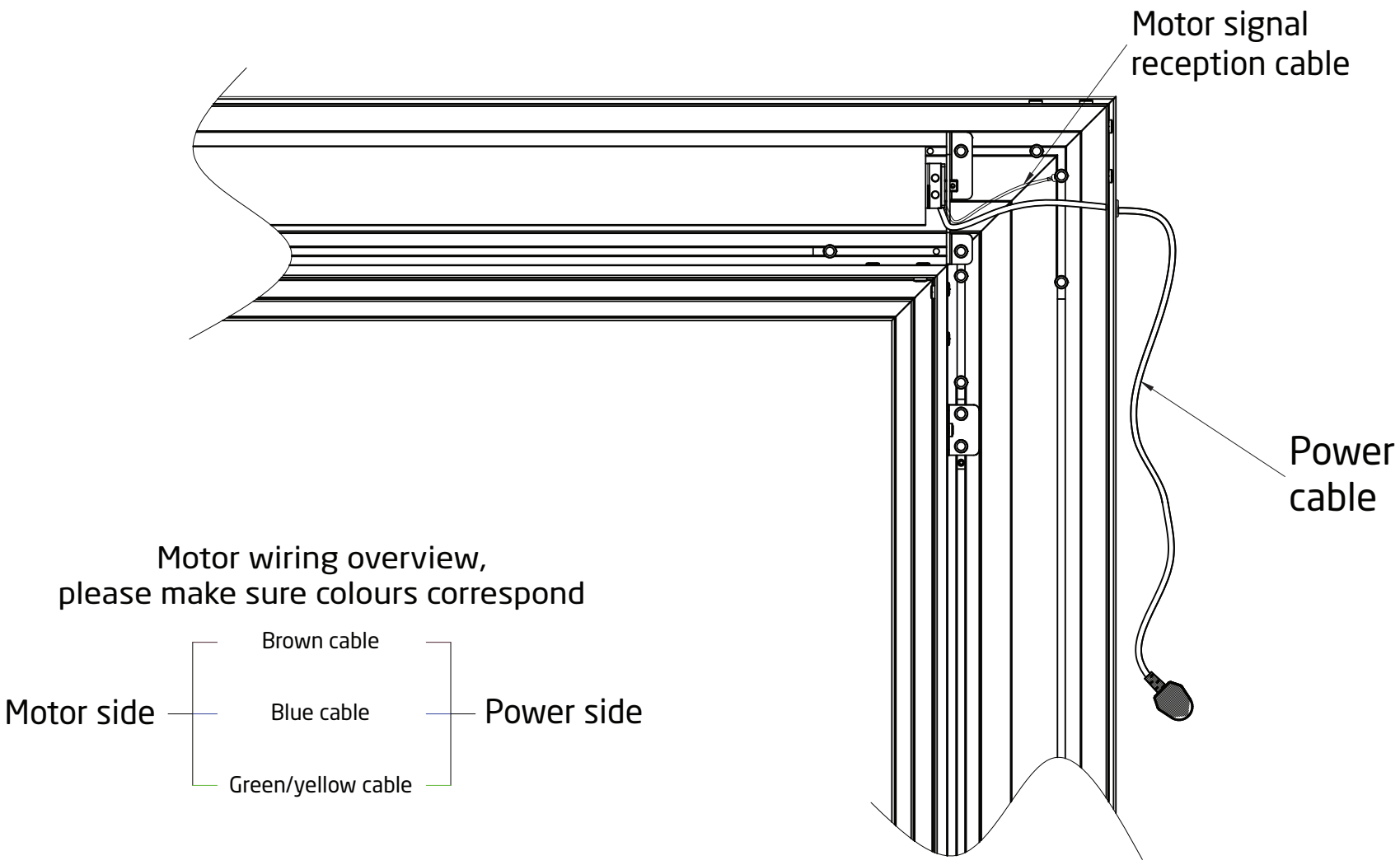
Drawing 5-5-1

- Install the brackets so that the masking roller can be installed mid positioned. Keep the left side bracket (with the round hole) a little loose to allow for the roller to be installed.
- Pull out about 20cm of masking fabric manually.
- Install the masking roller into the bracket, first by securing it on the right (motor) side. Then install into the left (round hole) side and secure the bracket.
- In case you need to adjust the mechanical stop points on the motor, the adjustment holes should be oriented towards the back so that they are accessible. Please note that these mechanical points are set at the factory, so they should normally not require any further adjustments.

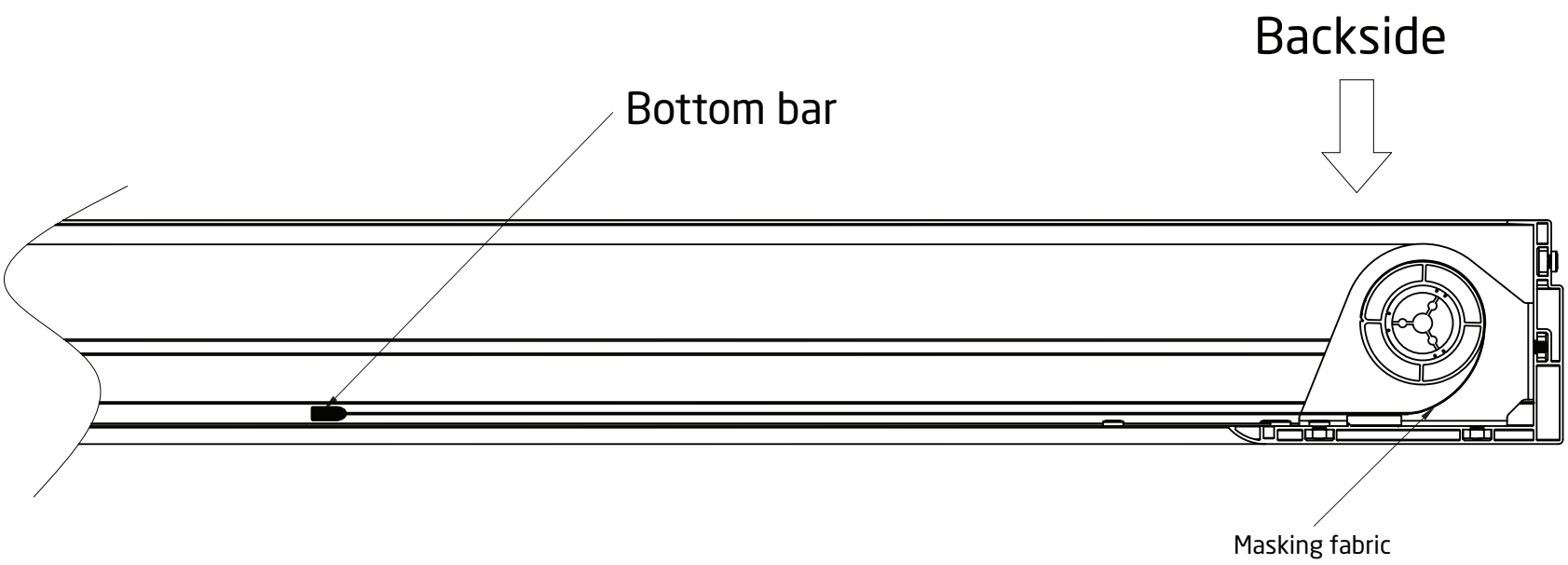



Drawing 5-5-2

- Connect the motor and the wire according to the 5-5-3 wiring colours.



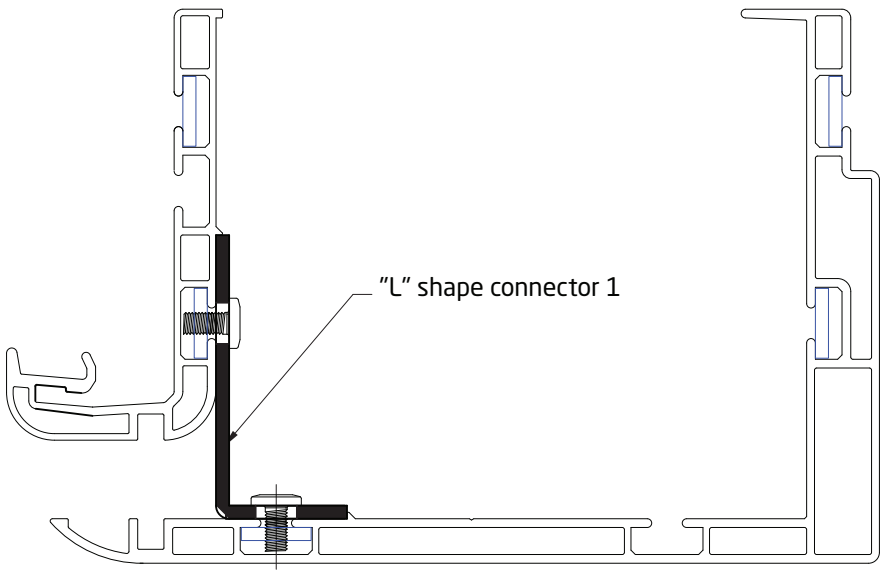

Drawing 5-5-3



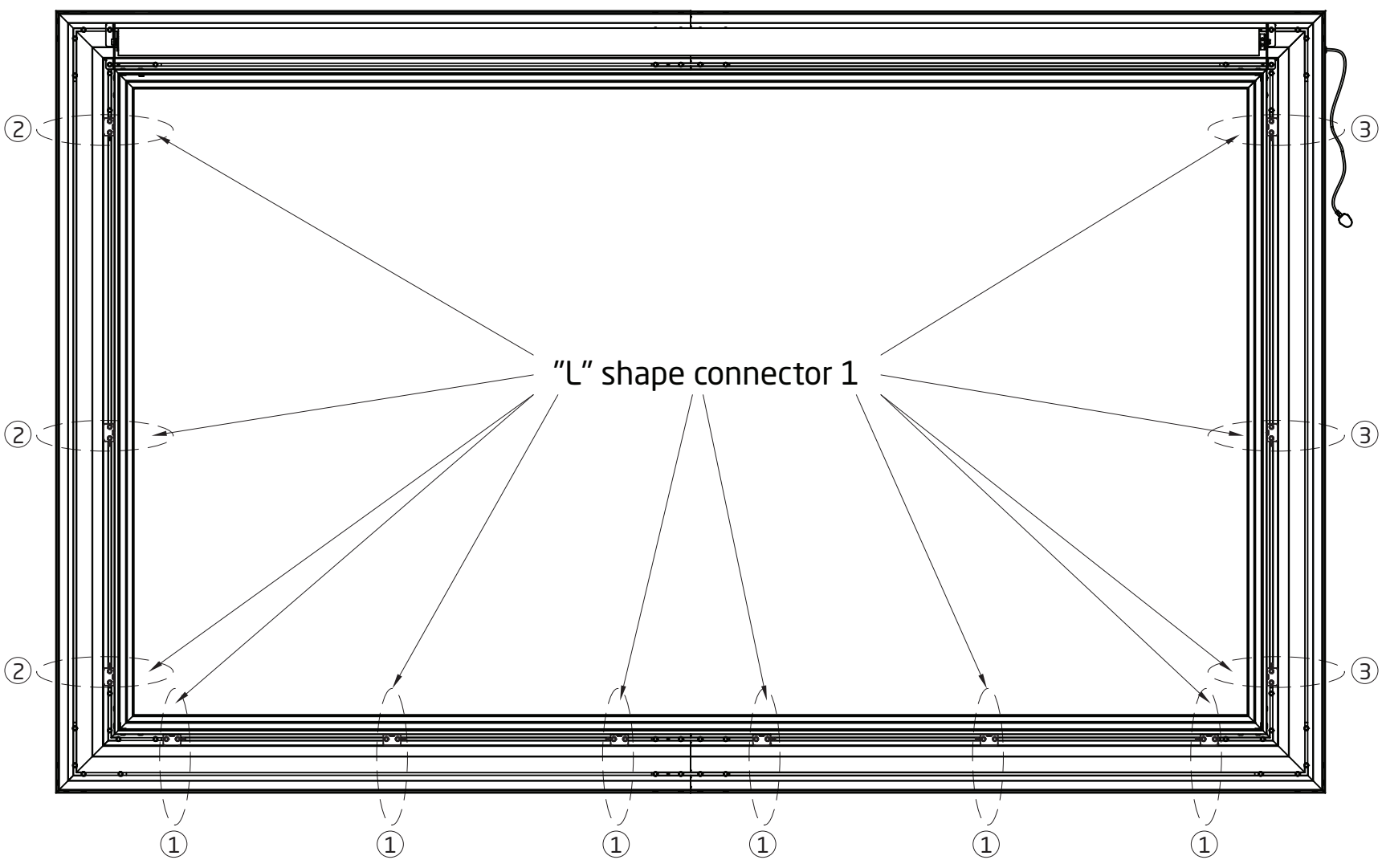

Drawing 5-5-4

**Step 6: Connecting the inner and outer frame.**

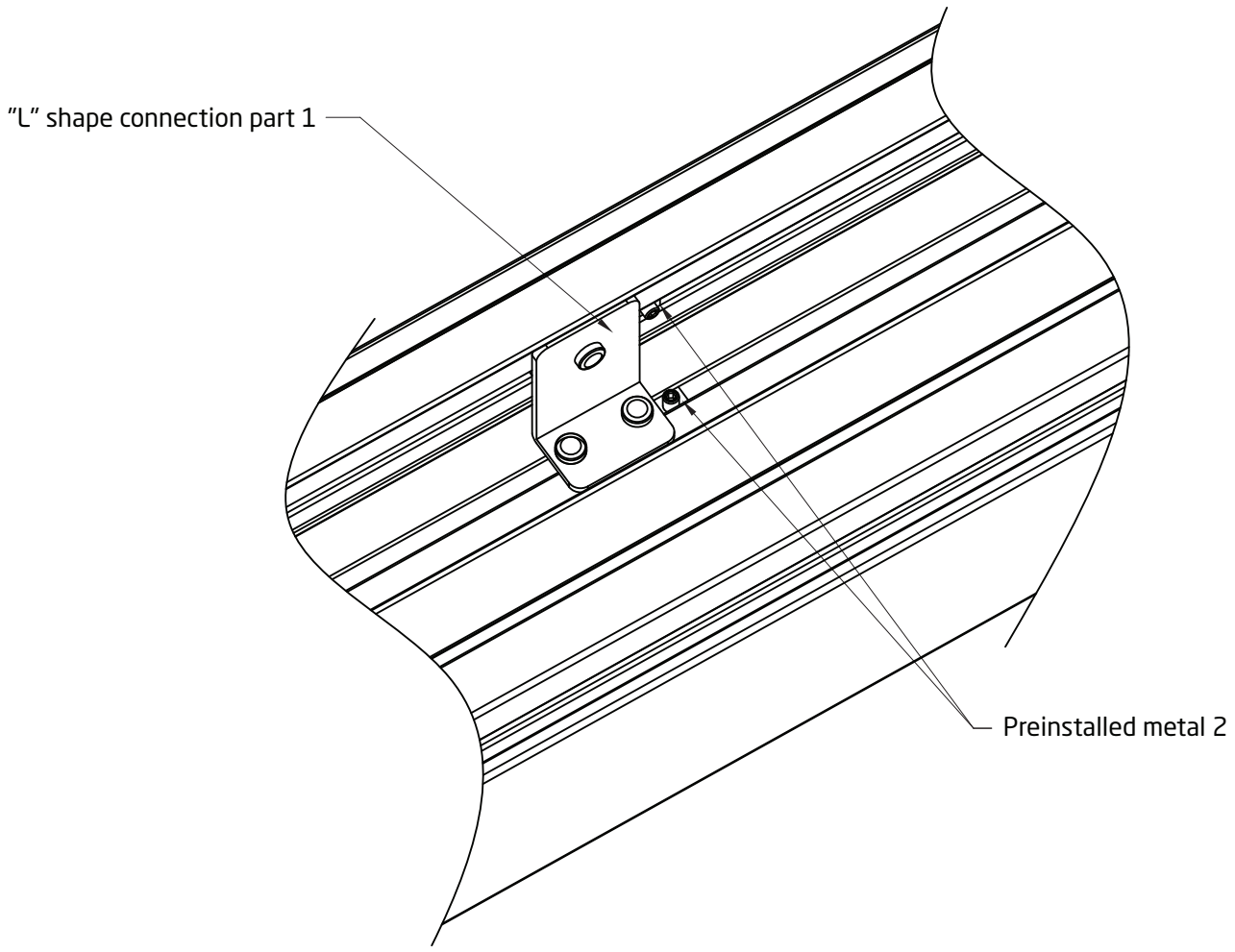
- After the masking roller is installed (or if the frame is to be used without the masking roller for now), connect the inner and outer frame by using the "L" shaped connector part 1 according to drawing 5-6-1 and 5-6-2. Connect the bottom parts first, then left and right side.
- The connection points are already pre-set from factory but can be easily modified by loosening the screws of the preinstalled metal parts and moving them if needed.
- For the upper section where the masking fabric is located, please do not use the "L"-shaped connectors as there are other connection pieces included for this section.



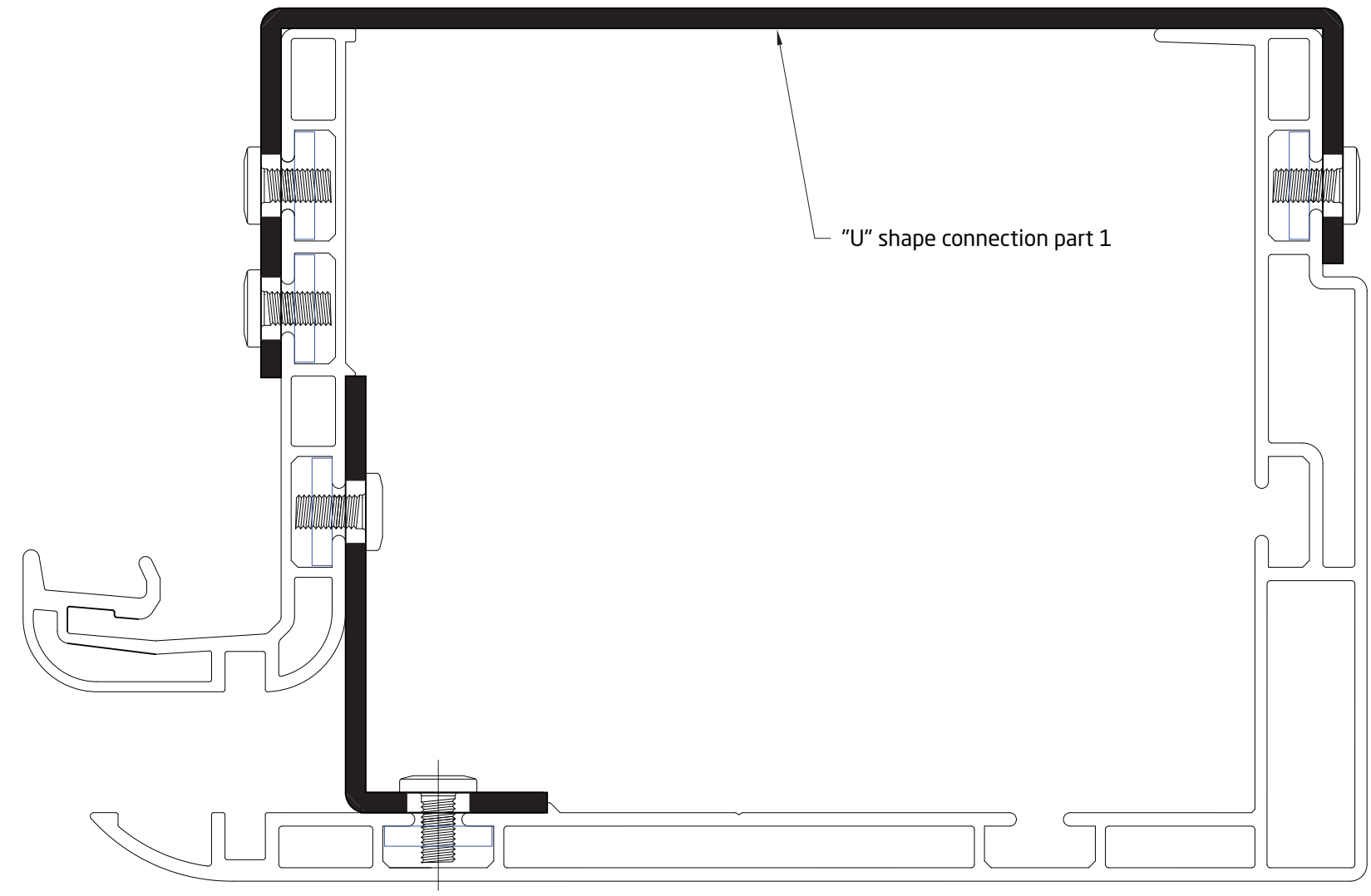

Drawing 5-6-1




Drawing 5-6-2

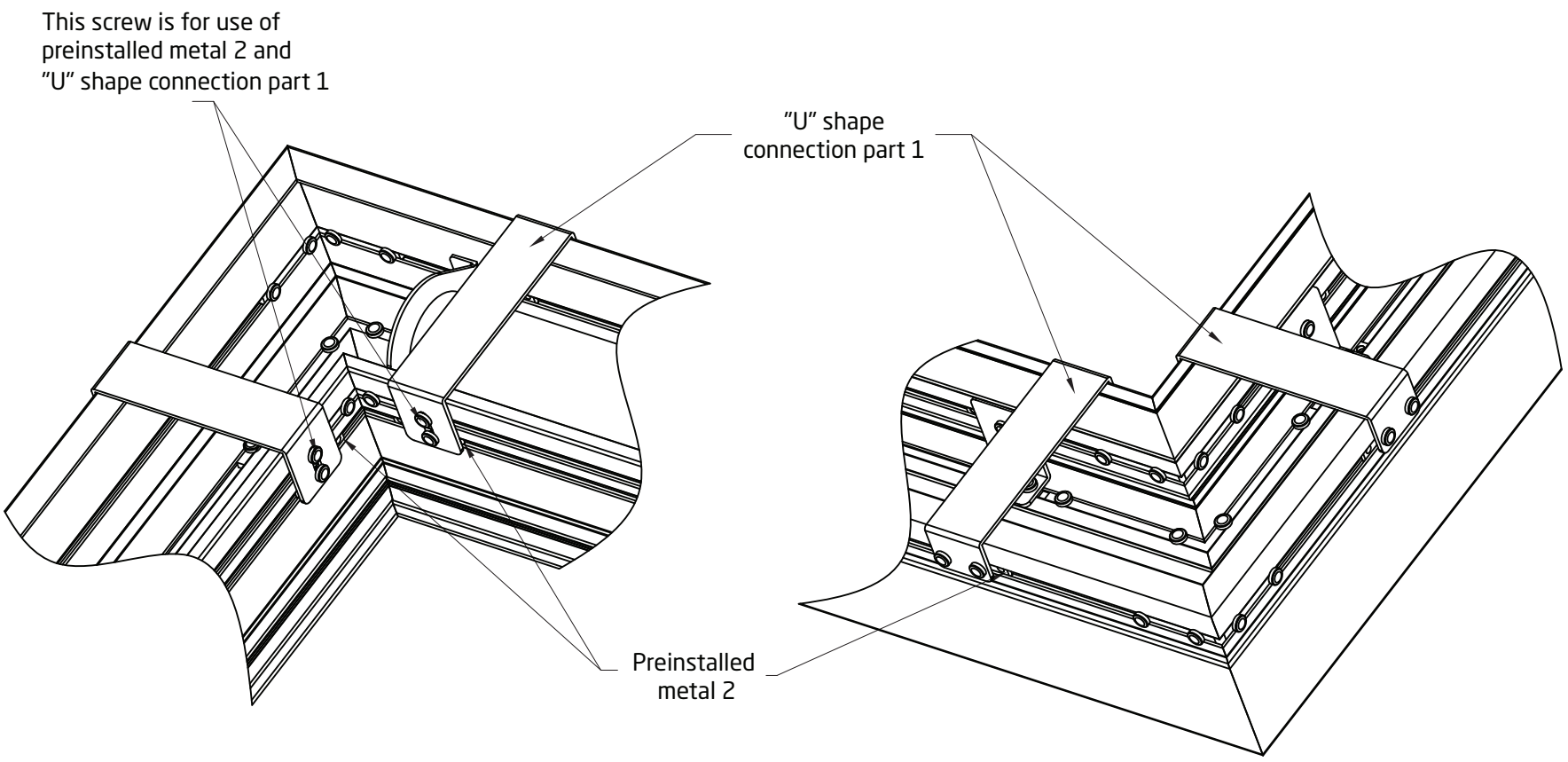



Drawing 5-6-3



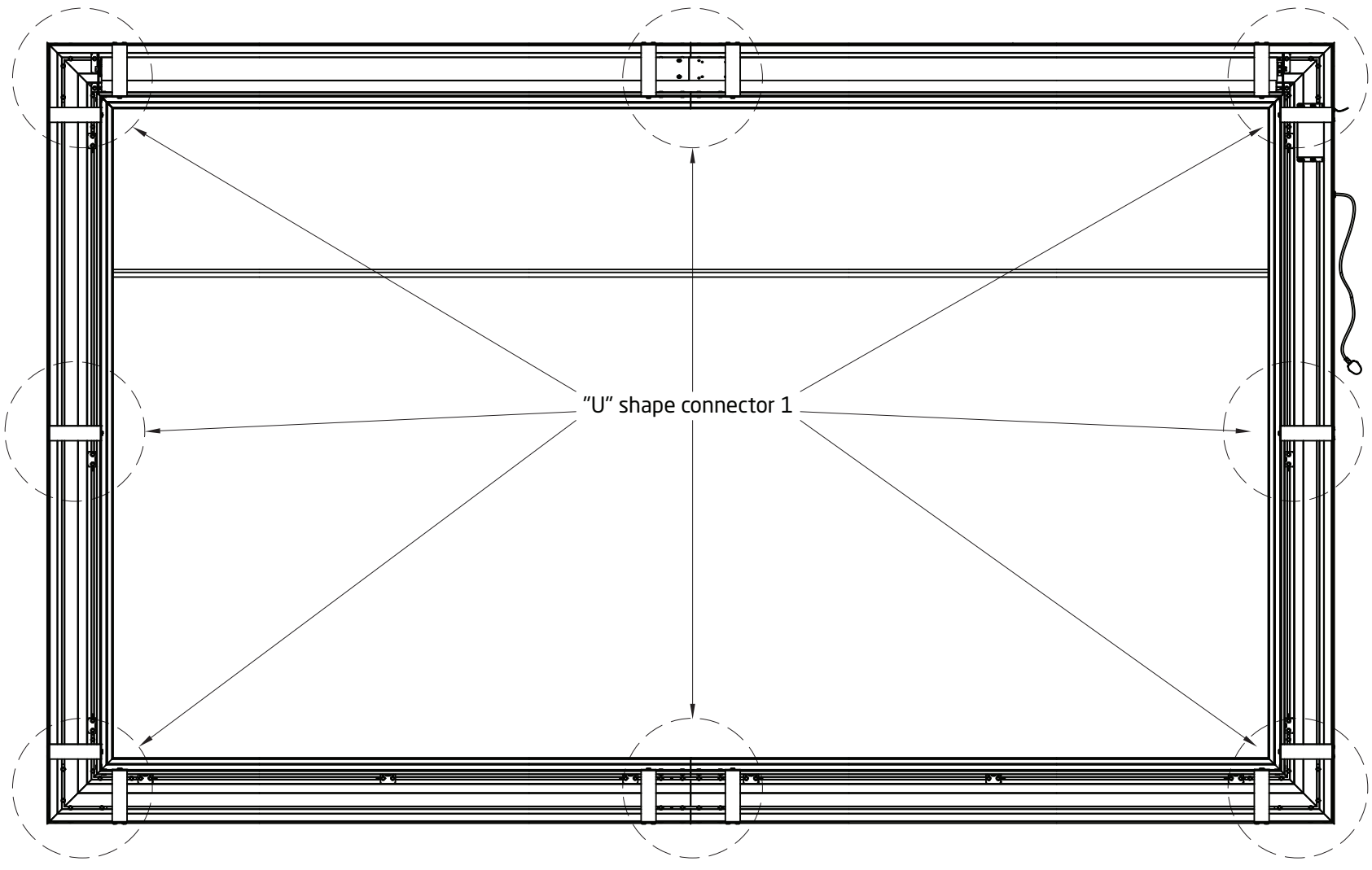

Drawing 5-6-4

- Please install the outer "U" connection parts into the pre-set positions as per drawing 5-6-5.




Drawing 5-6-5

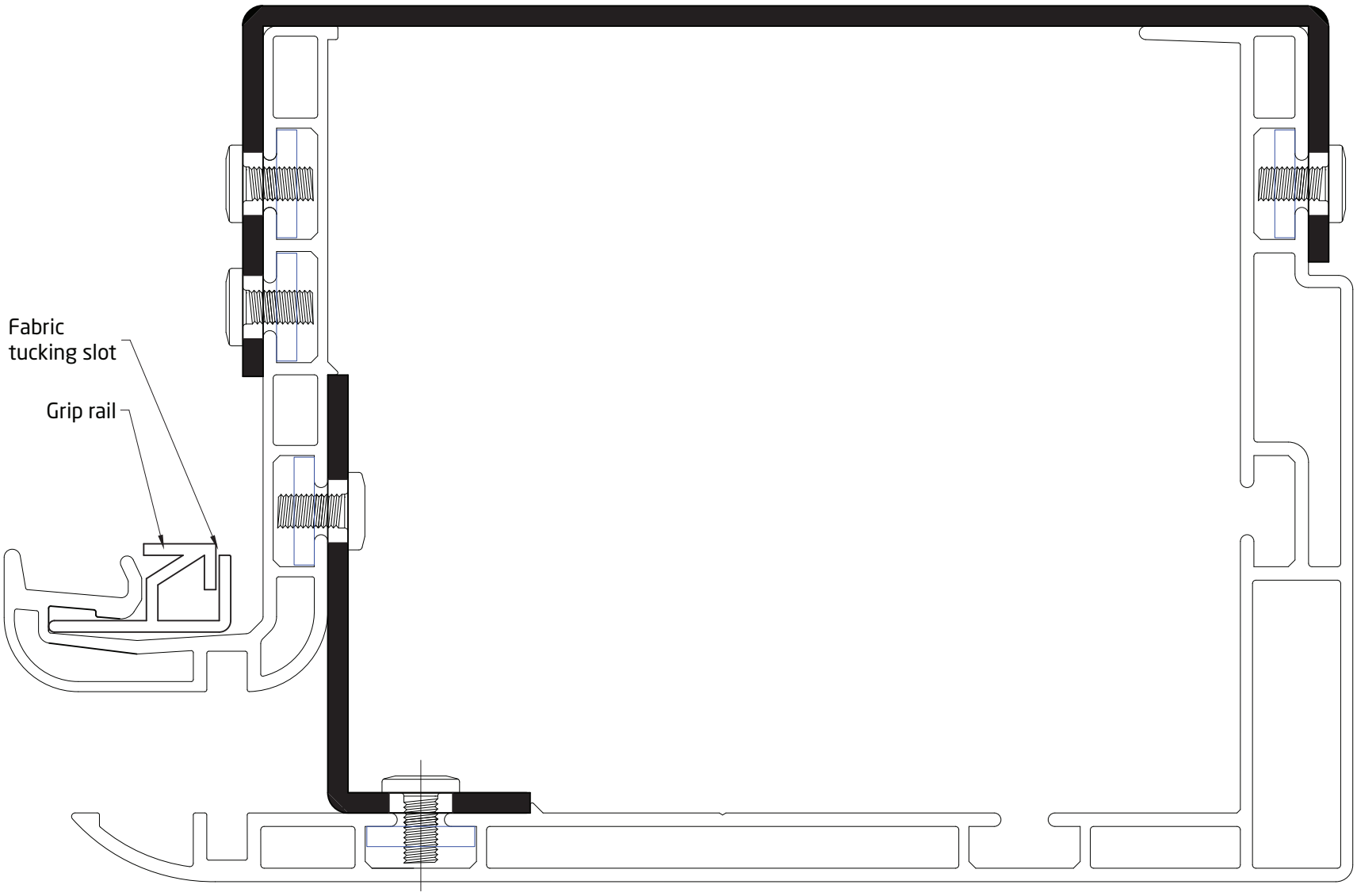
- Please install all the "U" connection parts according to the layout depicted in drawing 5-6-6.




Drawing 5-6-6

**Step 7: Installation of the projection screen material.**

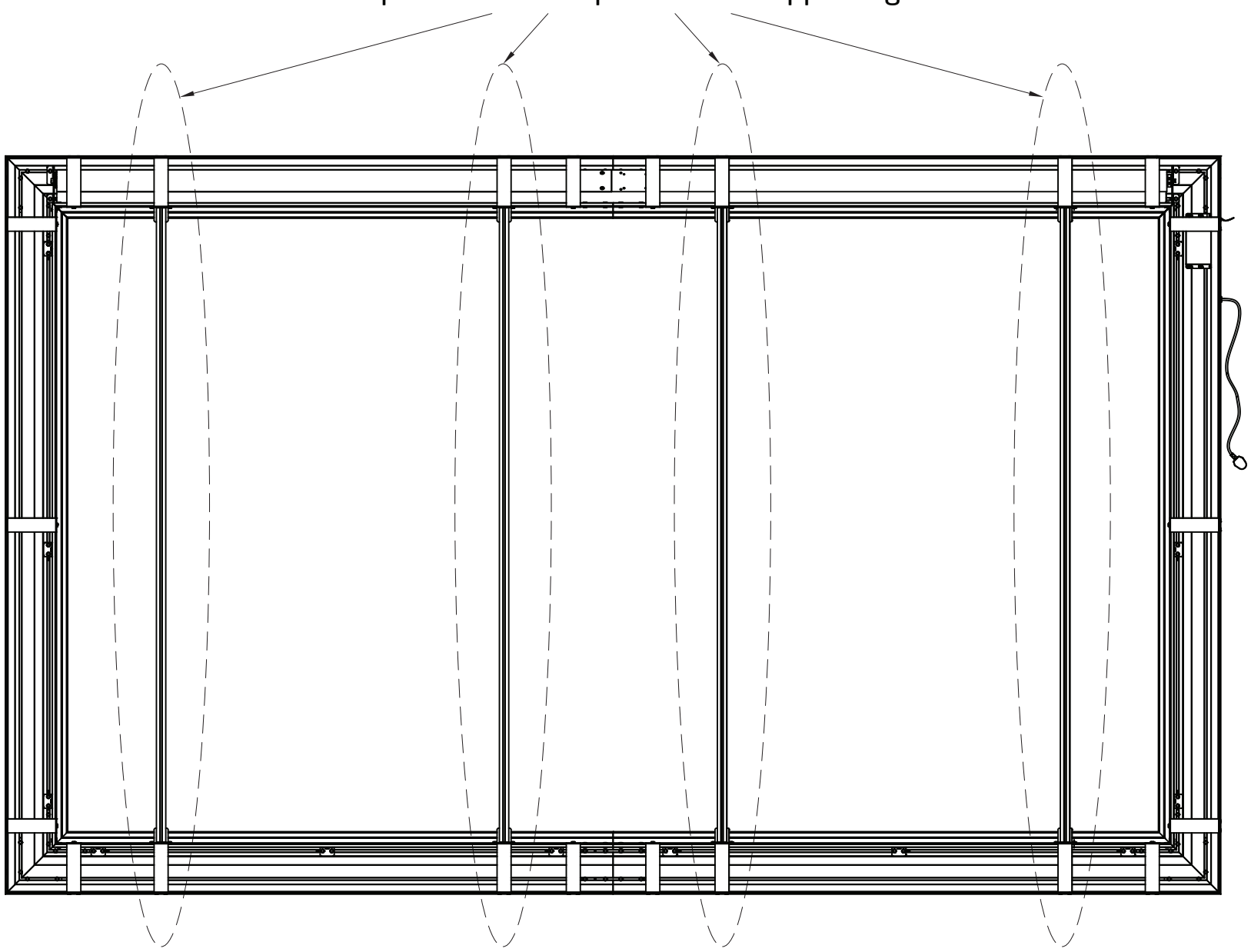
- Place grip rails inside the position depicted in drawing 5-7-1. Cut the rails to fit the entire length and width of the frame.
- Tuck the projection screen fabric into the slot by using either a metal pizza wheel or a professional tucking tool. Start tucking the two long sides, and then finally the short sides. Please review the UltraWeave product page online for videos.




Drawing 5-7-1

**Step 8: Installation of the supporting bar.**

- The 2-4 supporting bars (depending on size of the frame) is used to further stabilise the inner frame.
- Please make sure the bars does not conflict with speaker placement and attach them where it is feasible.

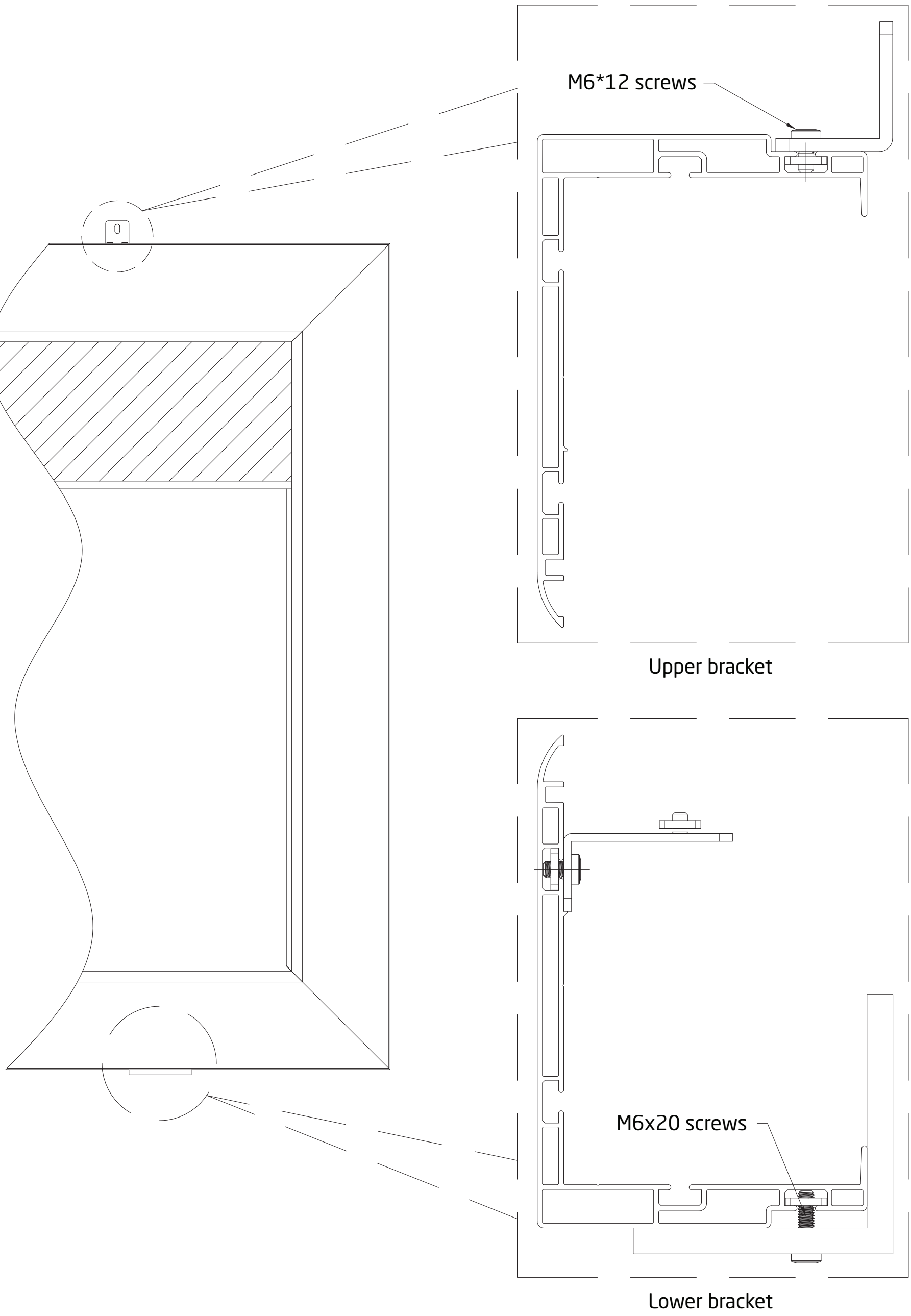



Drawing 5-8-1

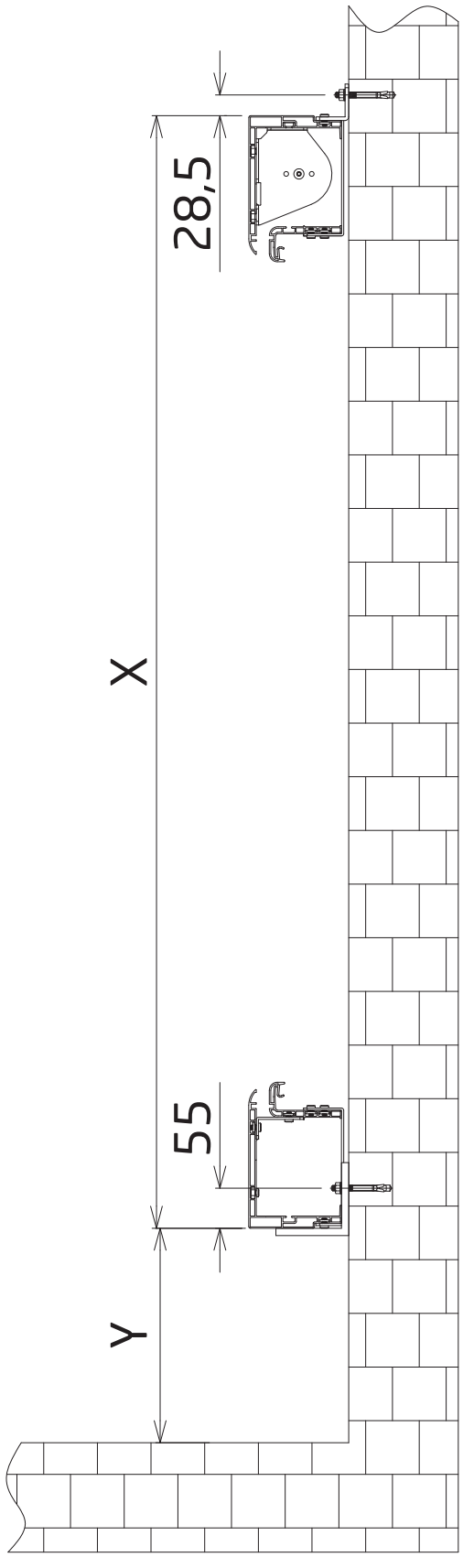
The number of supporting bars depend on the size of the frame. You can alternate the position if it conflicts with speaker placement. This is done by loosening the screws and repositioning the preinstalled metal components.

# ATTACHING THE FRAME TO THE WALL

- Wall mounting pieces are included as part of the accessory. The quantity supplied depends on the size of the frame.
- Before you install the brackets, please measure the width of the frame and install the brackets on the wall accordingly.
- Please make sure the wall brackets does not conflict with any of the "U"-shaped connection parts installed in the frame.
- Please install the brackets so that they correspond to your preferred height (Y) according to drawing 6-1-2.
- Please make sure the wall brackets are installed properly, the frame is very heavy.




Drawing 6-1-1




Drawing 6-1-2

# TESTING THE PRODUCT

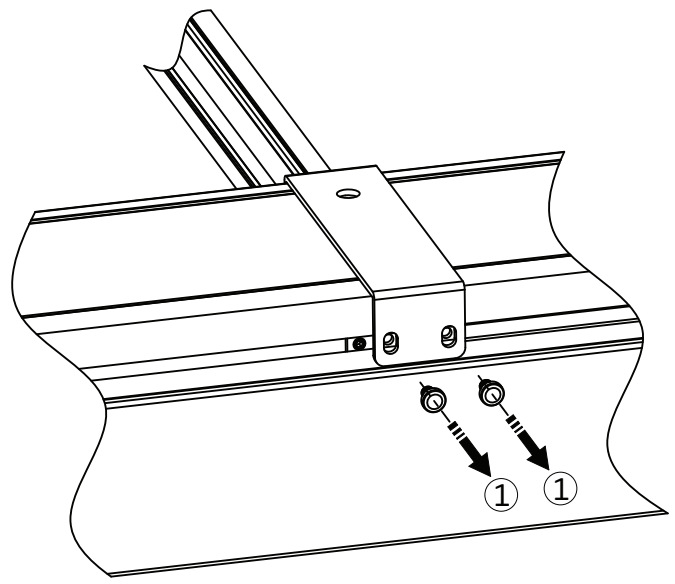
- Before connecting, please make sure you have ordered and received the correct voltage as this item is available in both 110V and 220V.
- If the global limits on the motor is not correctly set, this can be set manually. Please contact us for further descriptions if this is required. This should normally not be required as the motor is pre-programmed at the factory.
- To set the adjustable limits (i.e. the cinescope and 16:9 position, as well as the closed down position), please refer to the MASKING SYSTEM SETUP section.

# HOW TO RETROFIT THE MASKING ROLLER

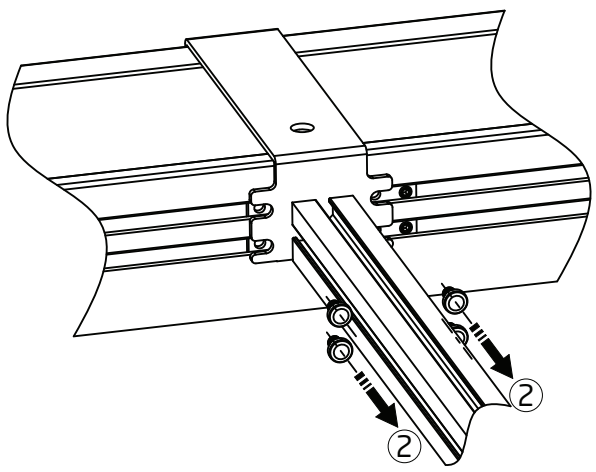
**Step 1: Detaching the frame from the wall.**

- As the frame is heavy, please make sure you have a sufficient number of people helping out. Please use a clean and sufficiently sized space and place the frame face down.

**Step 2: Remove the upper supporting connection parts.**

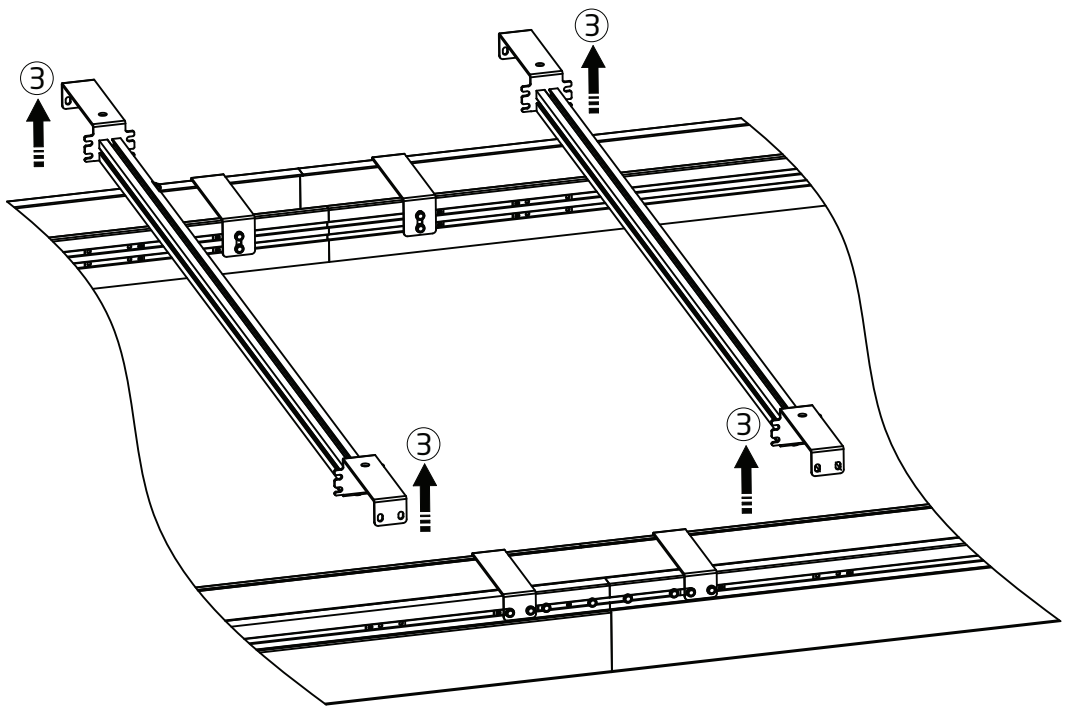



Drawing 5-2-1 (outer screws)

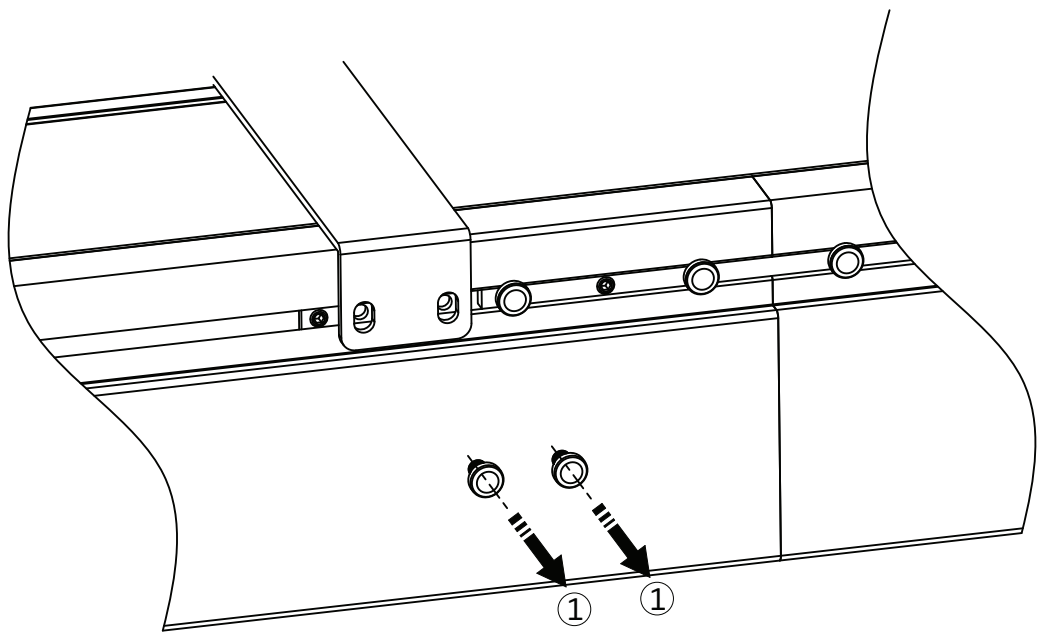



Drawing 5-2-2 (outer screws)

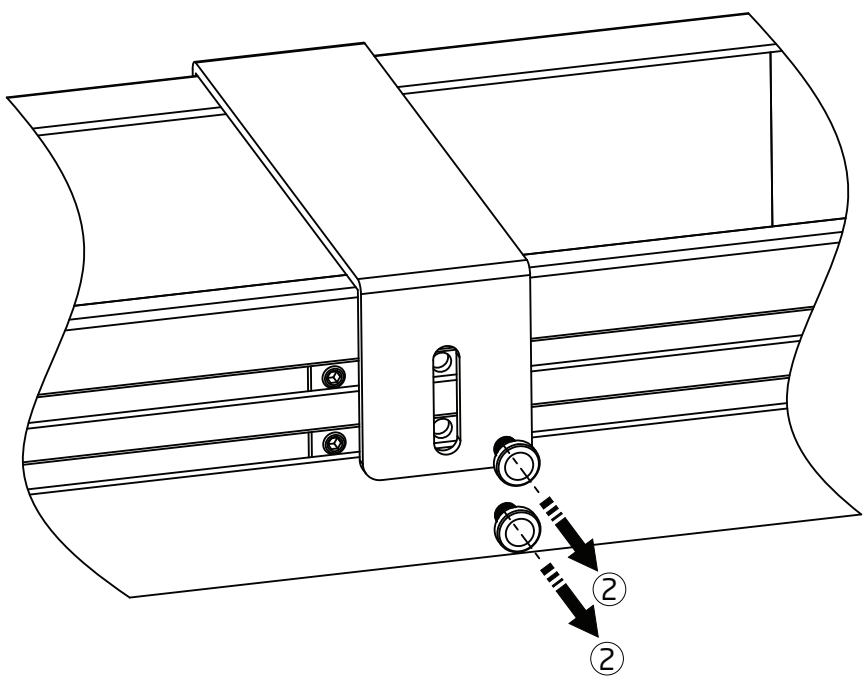
- Please remove the supporting connection parts



## Step 3: Remove the remaining upper connection parts.

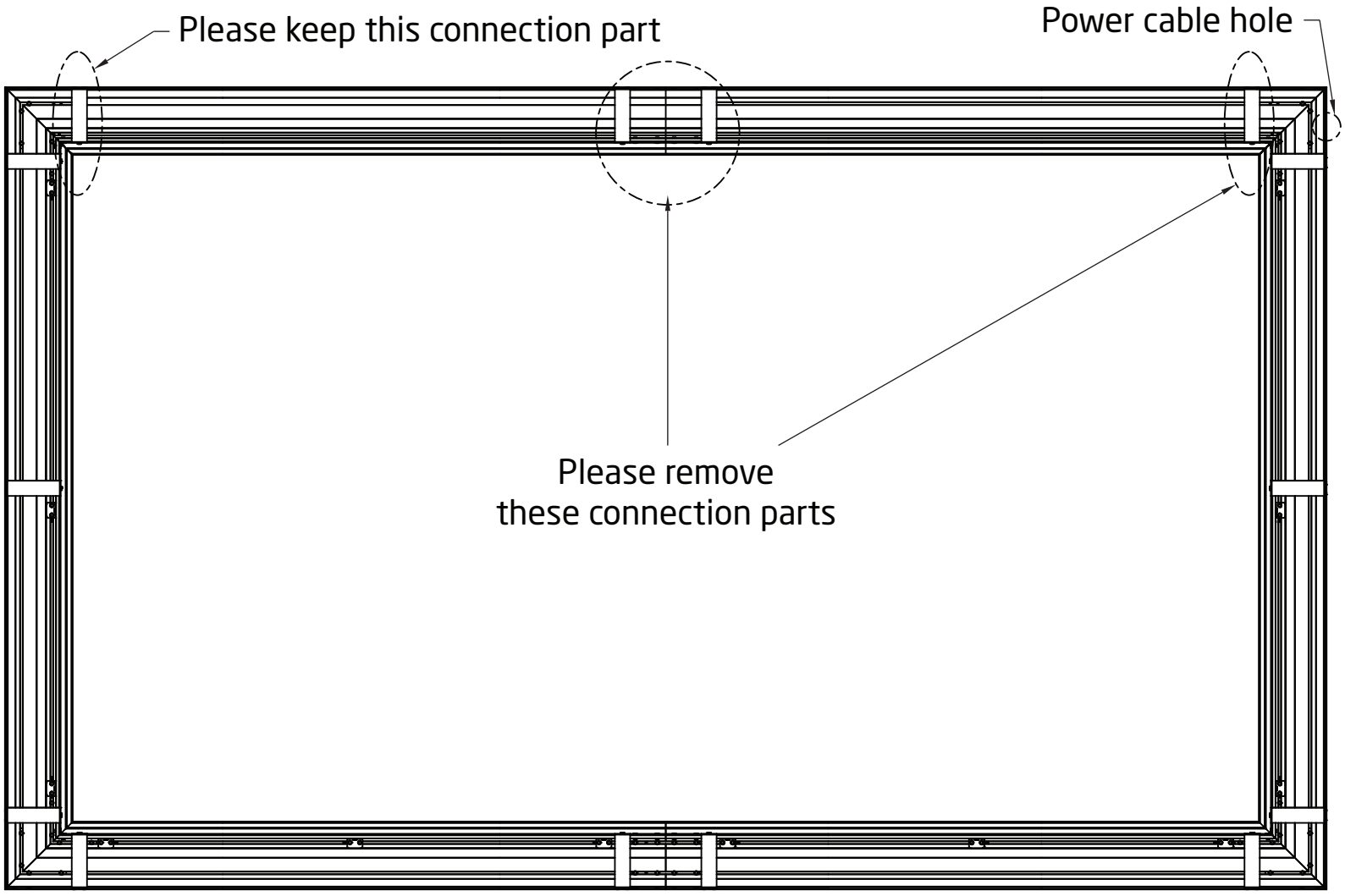



Drawing 5-3-1



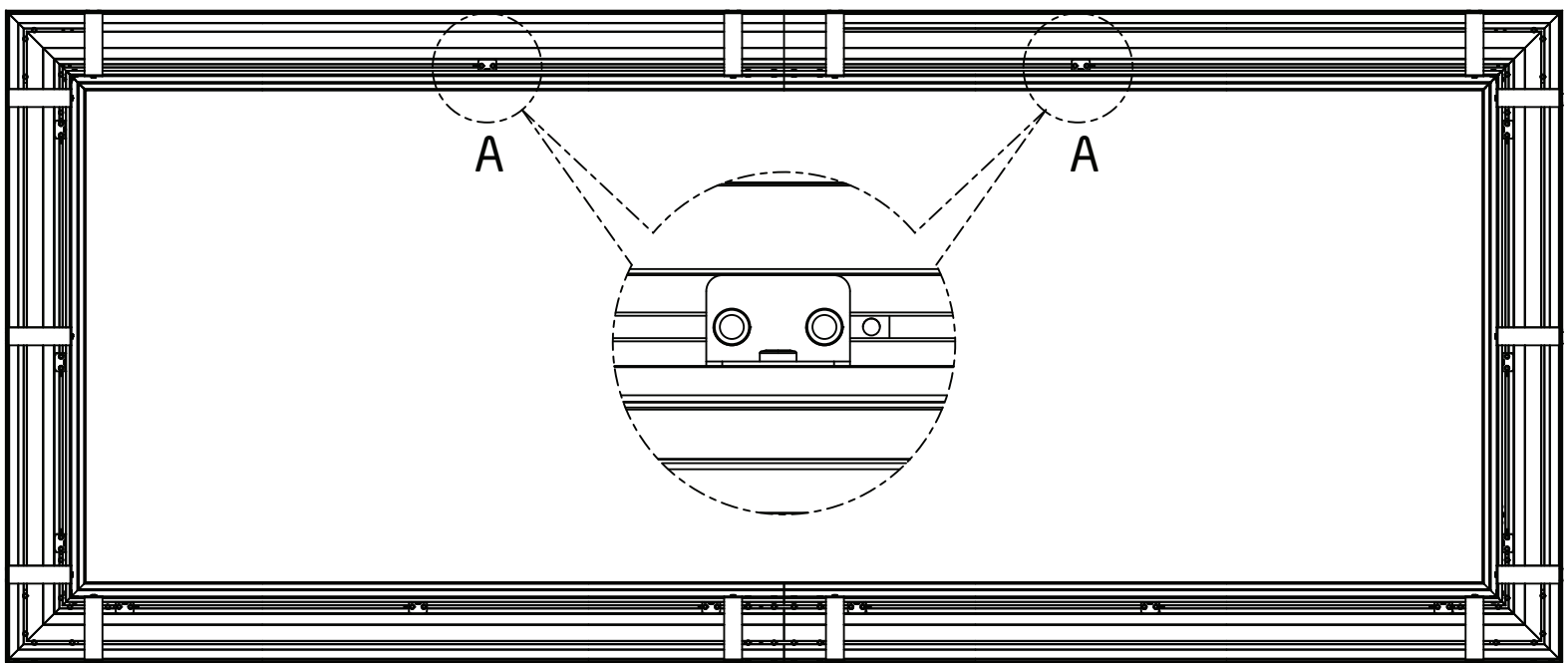

Drawing 5-3-2

**Please remove the indicated upper connection parts.**
PS! Please keep the left upper connection part to maintain stability.




Drawing 5-3-4

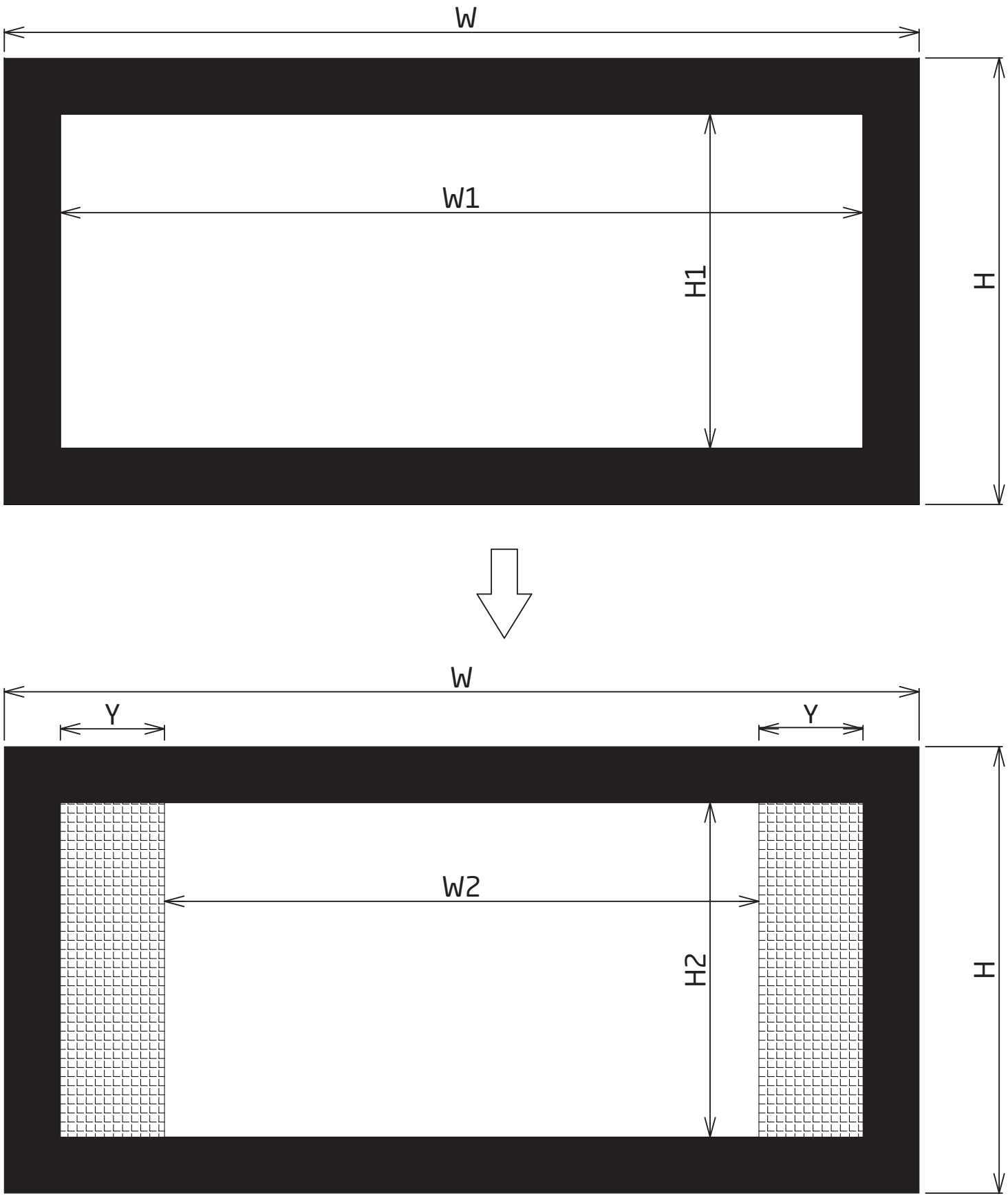
For 2.40:1 native frames >122”, you also need to remove the L-shaped connection part indicated in drawing 5-3-5.




Drawing 5-3-5

**Step 4: Please follow the regular procedure of installing the masking roller, and then reinstall the connection parts.**

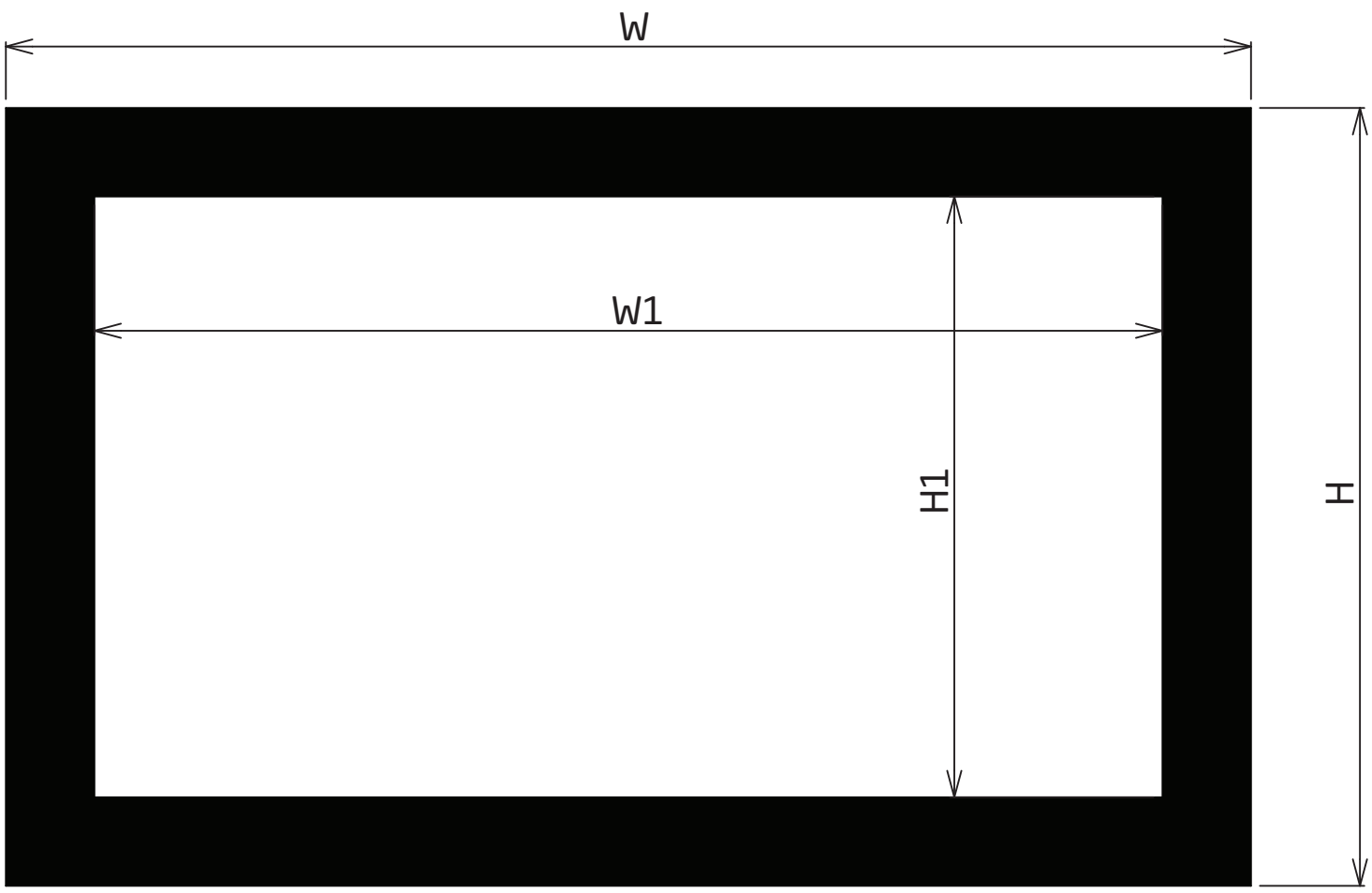
# SIZE AND MEASUREMENT OVERVIEW

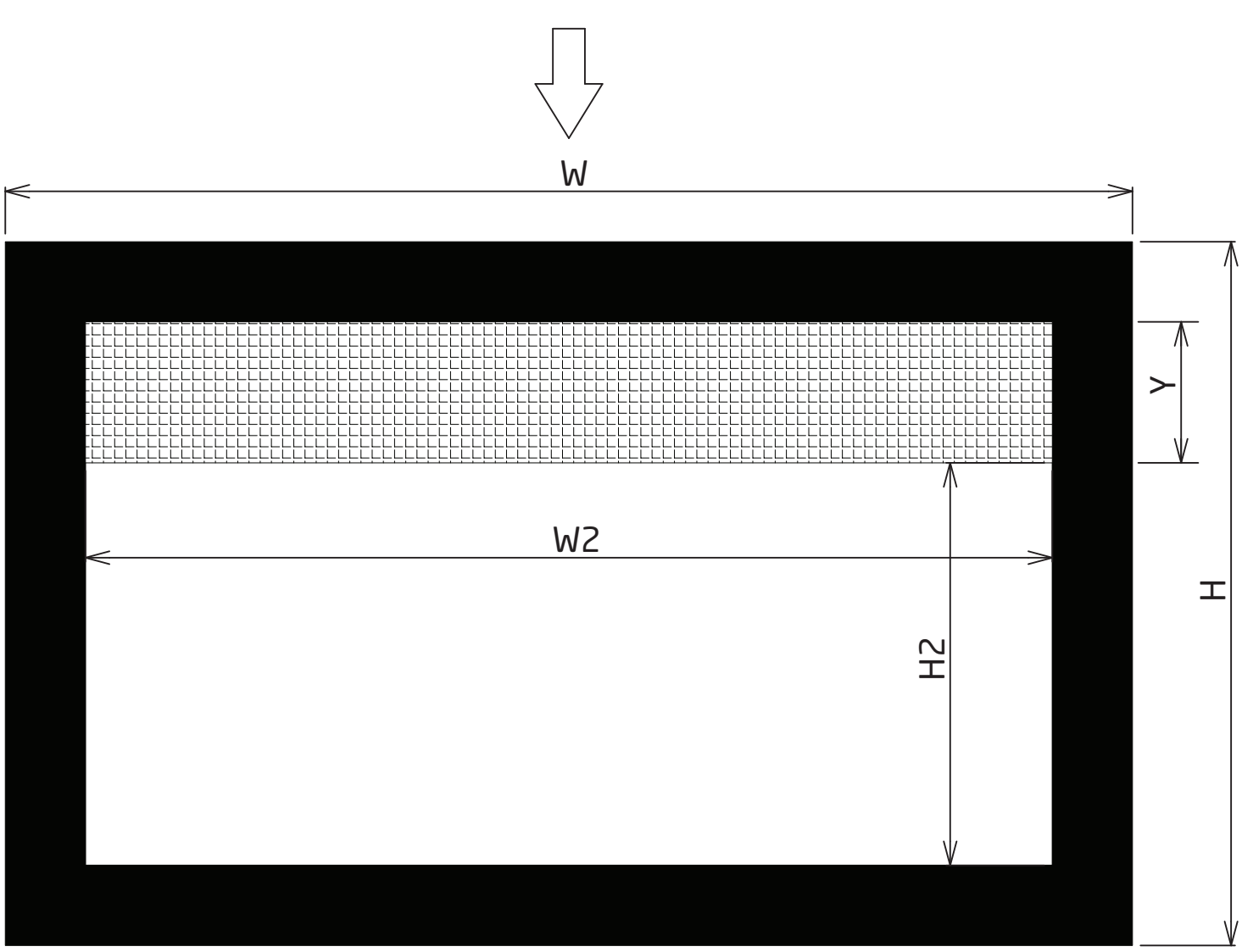



## Drawing 7-1-1

| 2.4:1 Transform to 16:9 (as shown drawing 7-1-1) | | | | | | | | | | Unit: mm |
|---|---|---|---|---|---|---|---|---|---|---|
| Native Format | | | | | | Transformed Format | | | | |
| Scale | Size(inch) | W | H | W1 | H1 | Scale | Size(inch) | W2 | H2 | Y |
| 2.4:1 | 122 | 3255 | 1590 | 2855 | 1190 | 16:9 | 96 | 2115 | 1190 | 370 |
| | 149 | 3897 | 1857 | 3497 | 1457 | | 117 | 2590 | 1457 | 453.5 |
| | 171 | 4406 | 2069 | 4006 | 1669 | | 134 | 2967 | 1669 | 519.5 |
| | 200 | 5092 | 2355 | 4692 | 1955 | | 157 | 3476 | 1955 | 608 |
| | 245 | 6144 | 2793 | 5744 | 2393 | | 192 | 4254 | 2393 | 745 |
| | 277 | 6895 | 3106 | 6495 | 2706 | | 217 | 4811 | 2706 | 842 |

Please note: All sizes except for the diagonal size (listed in inches) is listed in mm.




# Drawing 7-1-2

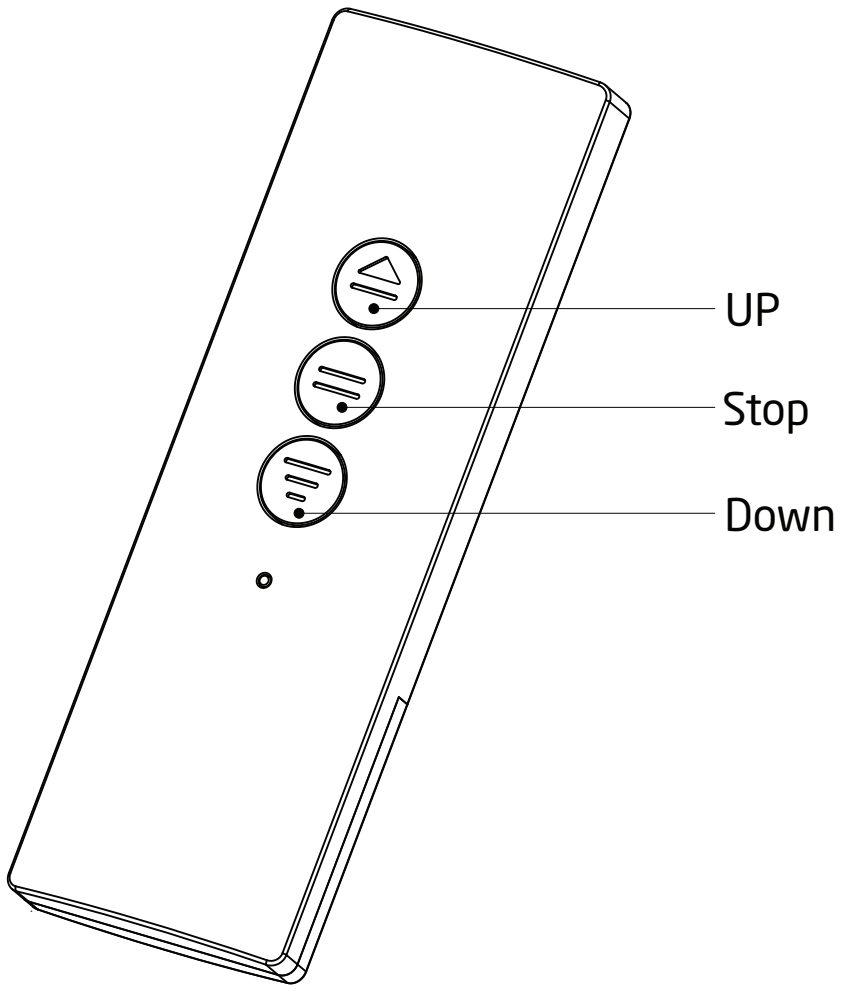
16:9 Transform to 2.4:1 (as shown drawing 7-1-2) Unit: mm

| Native Format | | | | | | Transformed Format | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Scale | Size(inch) | W | H | W1 | H1 | Scale | Size(inch) | W2 | H2 | Y |
| 16:9 | 109 | 2813 | 1757 | 2413 | 1357 | 2.4:1 | 103 | 2413 | 1005 | 352 |
| | 120 | 3057 | 1894 | 2657 | 1494 | | 113 | 2657 | 1107 | 387 |
| | 129 | 3256 | 2007 | 2856 | 1607 | | 122 | 2856 | 1190 | 417 |
| | 158 | 3898 | 2368 | 3498 | 1968 | | 149 | 3498 | 1458 | 510 |
| | 181 | 4407 | 2654 | 4007 | 2254 | | 171 | 4007 | 1670 | 584 |
| | 212 | 5093 | 3040 | 4693 | 2640 | | 200 | 4693 | 1955 | 685 |

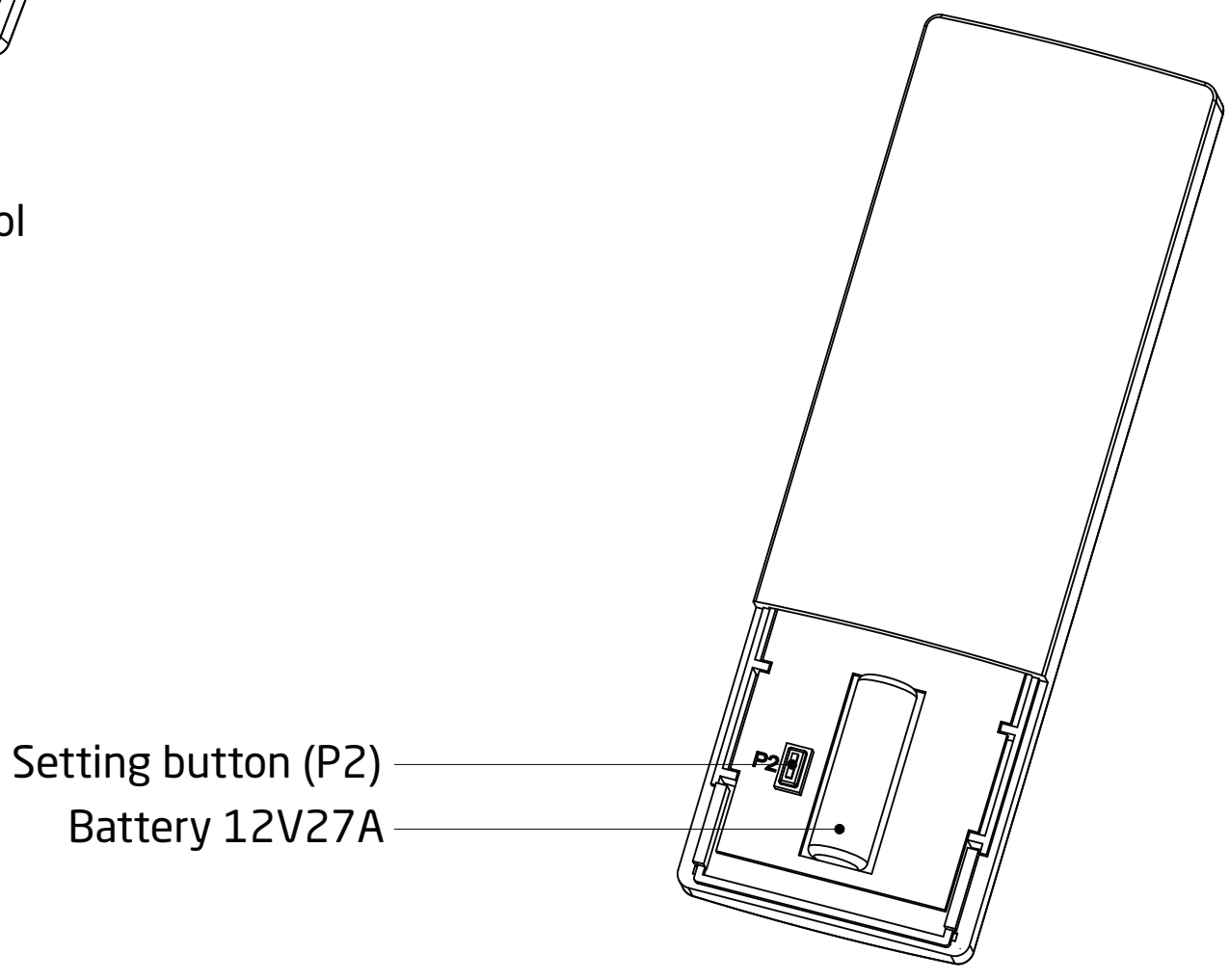
Please note: All sizes except for the diagonal size (listed in inches) is listed in mm.

# MASKING SYSTEM SETUP

## Supplied RF remote control

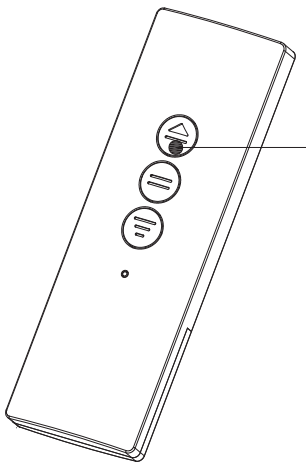
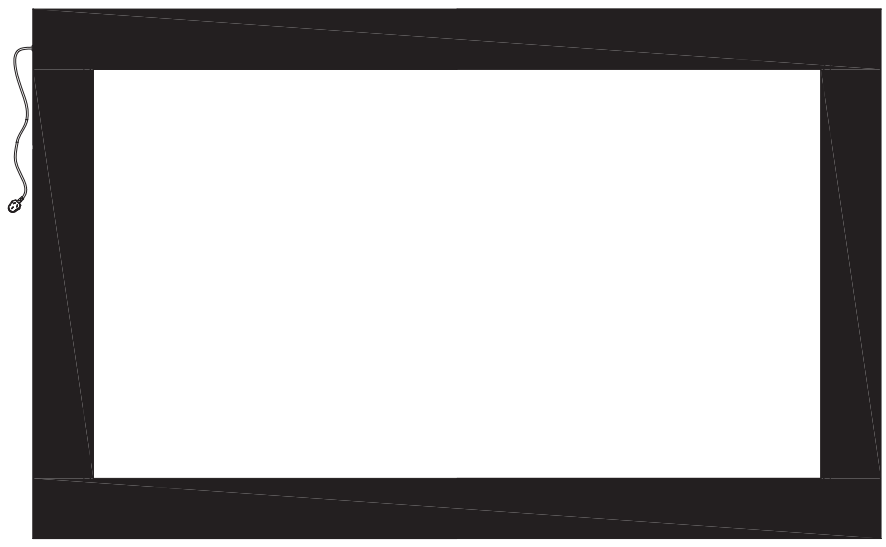
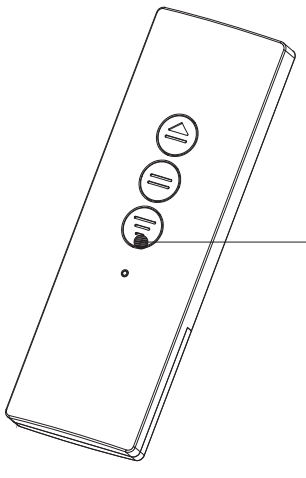
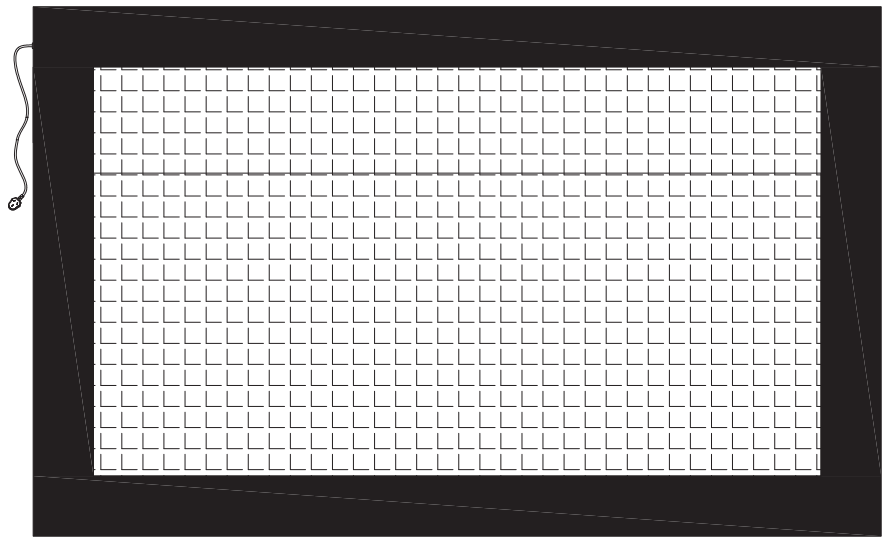
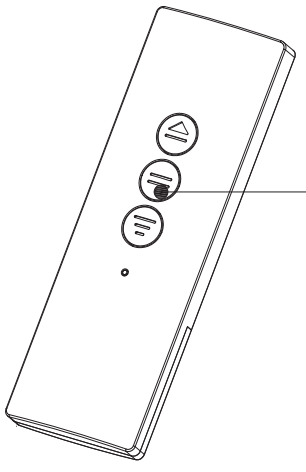
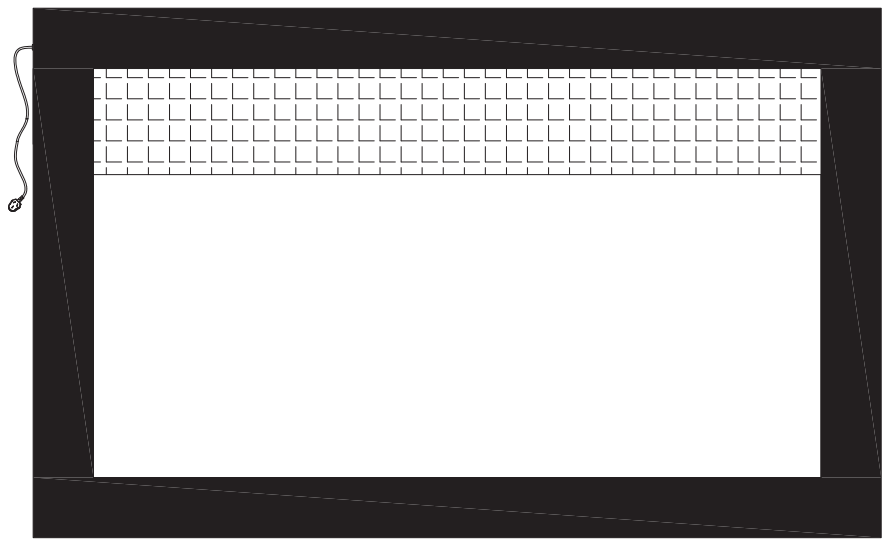



Front of the
remote control

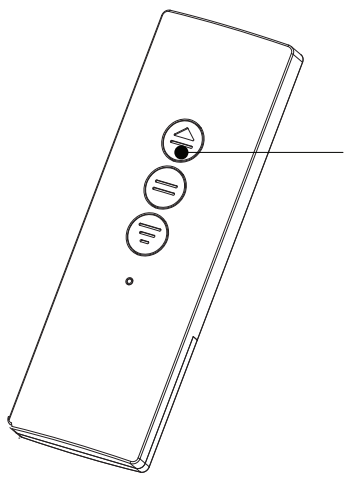
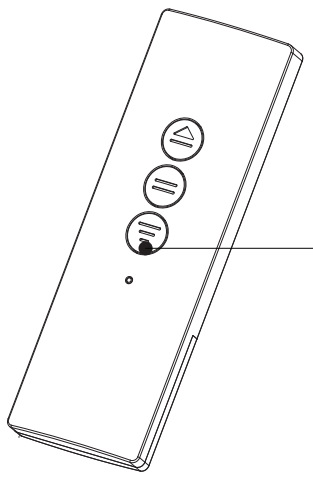



Rear of the
remote control

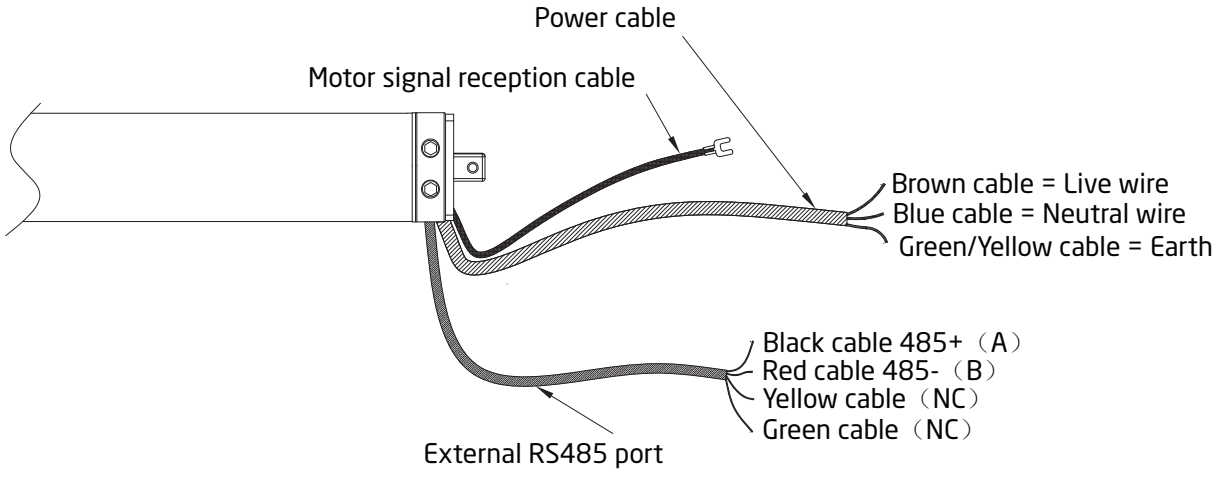
# MASKING FUNCTIONALITY OVERVIEW FOR THE 16:9 1-WAY SYSTEM

| Buttons | Masking function |
| --- | --- |
|  Up button (Short press) |  Masking fabric is retracted (16:9) |
|  Down button (Short press) |  Masking fabric is lowered, but can be stopped at any point using the middle "stop" button |
|  Stop button (press and hold for 3 seconds) |  Masking fabric stops at the 3. limit, i.e. the 2.40:1 masking position |

# MASKING FUNCTIONALITY OVERVIEW FOR THE 2.40:1 2-WAY SYSTEM

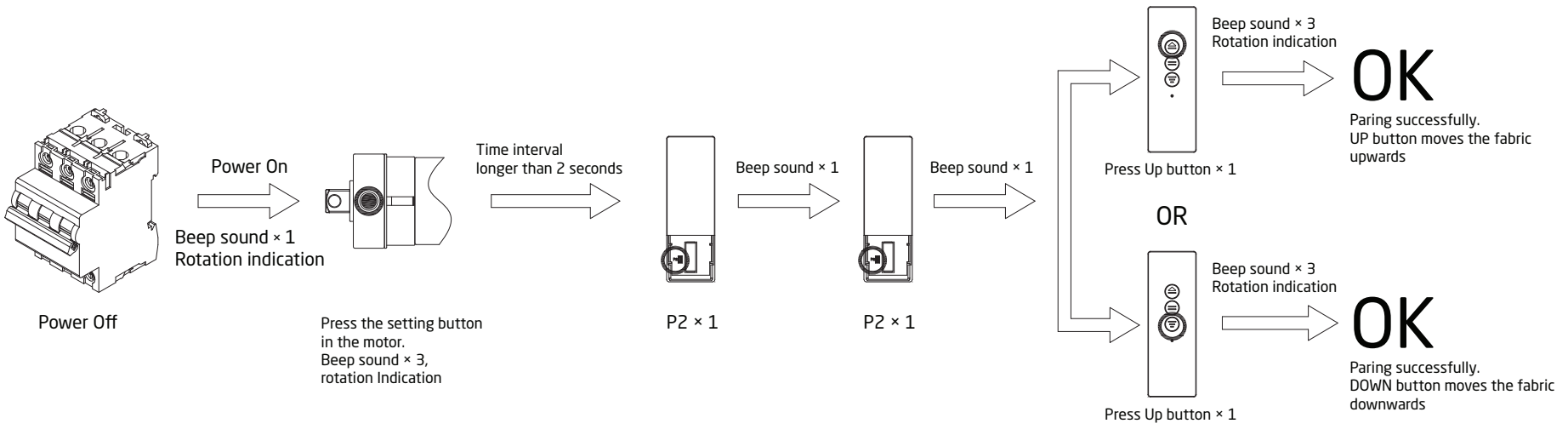
| Buttons | Masking function |
| --- | --- |
|  Up button (short press) | Masking fabric is retracted (2.40:1). |
|  Down button (short press) | Masking fabric is lowered, i.e. the 16:9 masking position. |

# Motor wiring overview




# How to pair the remote

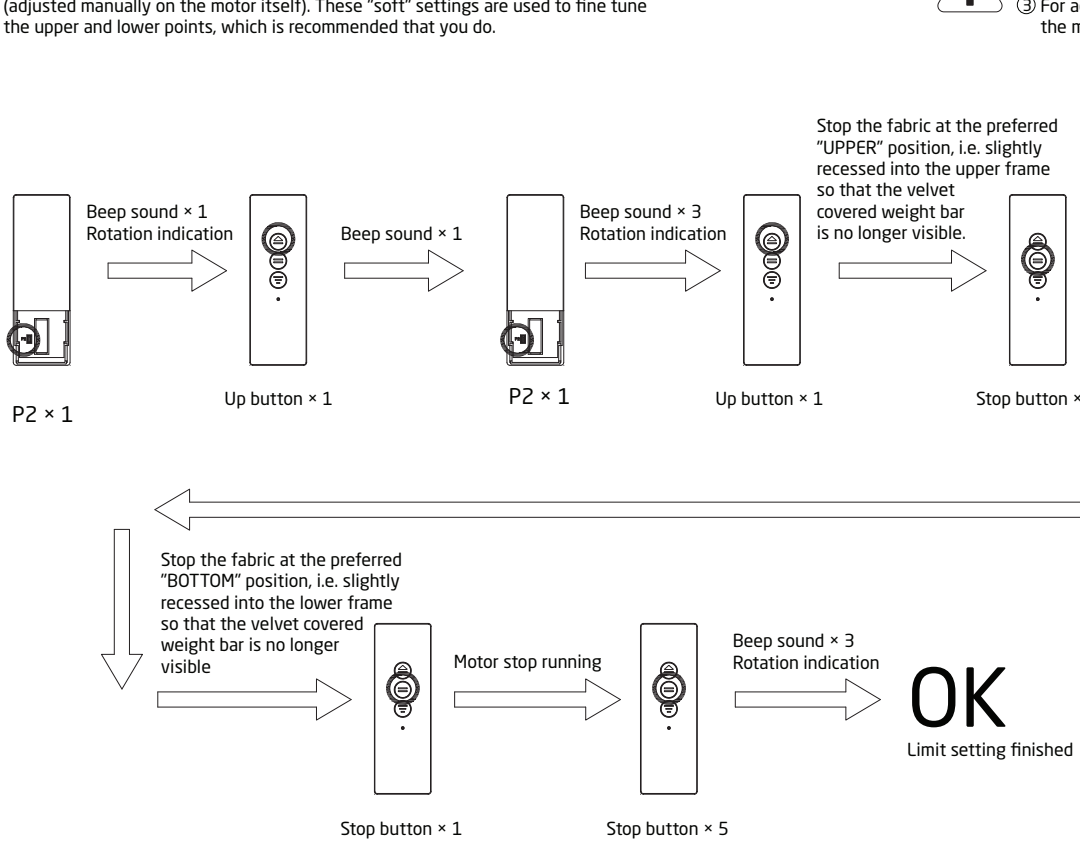
① While setting up the system, please make sure you press the corresponding button less than 6 seconds after the initial one in order for the command to be correctly registered.
② Please note that the original memory / pairing will be deleted once a new pairing is made.




# Upper and lower limit settings

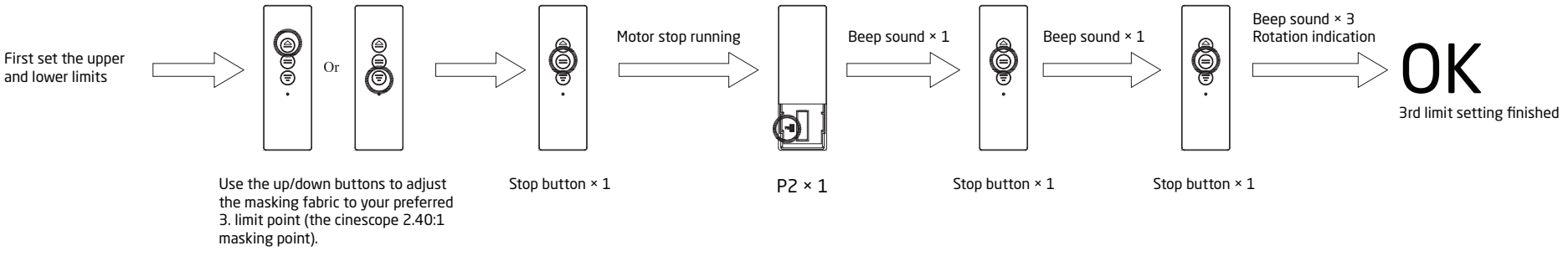
Please note, the mechanical upper and lower points are already set at the factory (adjusted manually on the motor itself). These "soft" settings are used to fine tune the upper and lower points, which is recommended that you do.

① The limits are stored also if power is disconnected.
② Please allow 2 minutes pause after new limits are set to automatically exit the settings.
③ For additional precision in adjusting, you can enter the "micro step" mode by pressing the P2-button WHILE the motor is moving either up or down. The exit the "micro step" mode, please press the P2 button again.

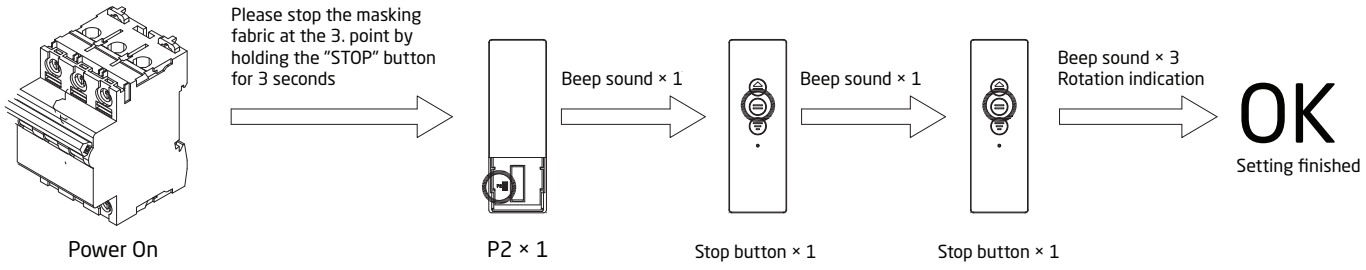


# Setting the Cinescope masking point (3. limit)

① The 3. limit point is set after the upper and lower limits are set. The the upper point is used for 16:9 and the lower point is used to close the masking on a 16:9 native screen, the 3rd point is set to change the aspect ratio from 16:9 to 2.40:1. For the 2.40:1 native screens and the 2-way masking systems only the upper (2.40:1) and lower (16:9) limits is set.
② Please note that resetting the upper and lower limits will also reset the 3. limit point.
③ For additional precision in adjusting, you can enter the "micro step" mode by pressing the P2-button WHILE the motor is moving either up or down. The exit the "micro step" mode, please press the P2 button again.
④ After setting the 3. point you can easily recall it by holding the "STOP" button for 3 seconds.

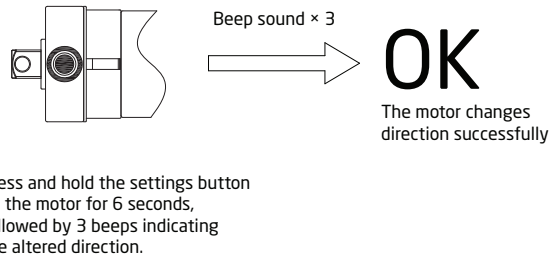



# Clearing the 3. limit point



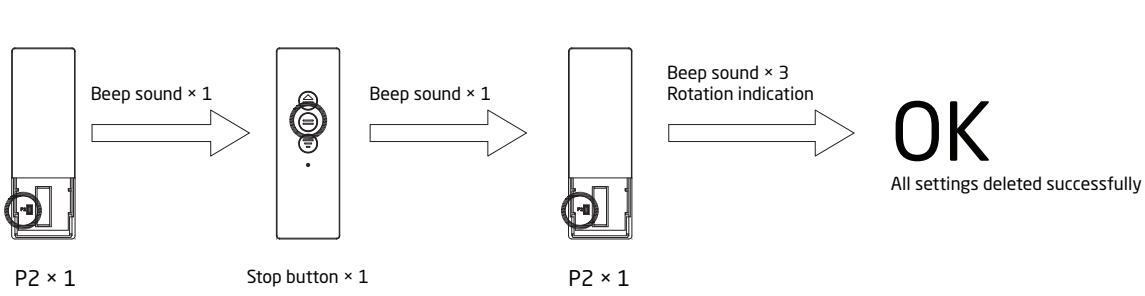

# Changing the direction of the motor

Changing the direction of the motor is only required if set incorrectly to begin with, or if the masking roller was attached the wrong way. Normally this setting should not be used.



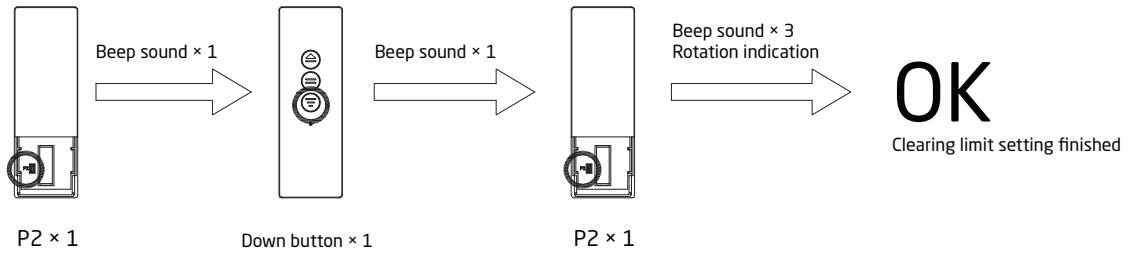

# Deleting the settings

Following this procedure will delete all memories!

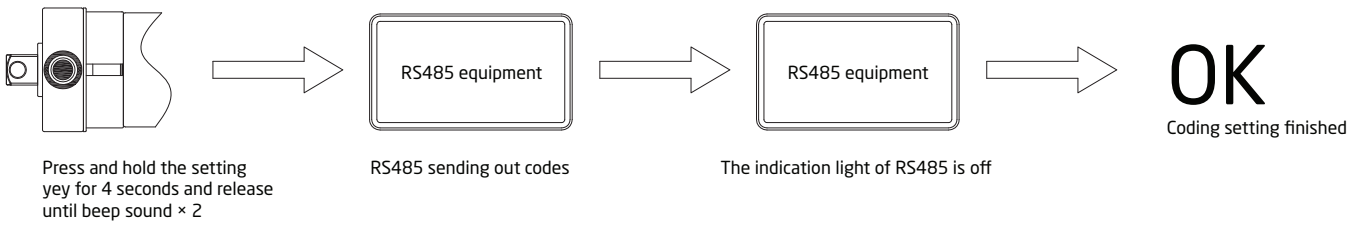



# Clearing the Limit Setting

Use this setting if you would only like to clear the limits. Please note that clearing the limits will remove both the upper, lower and the 3rd (masking) point (if set).



# RS485 Coding Setting




# 1 - RS485 read and write address overview

| Data address | Description | Data Format | Read / write | |
|---|---|---|---|---|
| 0x00 | ID_L | | Write | * |
| 0x01 | ID_H | | | * |
| 0x03 | Motor default direction | 0x00 - Default directiont<br>0x01 - Reverse directiont | Read / write | M |
| 0x05 | Motor status | 0x00 - STOP<br>0x01 - OPEN<br>0x02 - CLOSE<br>0x03 - SETTING | Read only | M |
| 0x09 | Limit status | Bit1 Limit Point Set 1<br>Bit2 Limit Point Set 2<br>Bit3 Limit Point Set 3<br>Bit4 Limit Point Set 4 | Read only | M |
| 0x0A | Touch and move mode | 0 - Off<br>1 - On | Read / write | M |
| 0x0C | Power on indication | 0 - No indication<br>1 - Sound<br>2 - Movement<br>3 - Movement AND sound | Read / write | M |
| 0xf1 | Module channel number | 1-15 | Read only | * |
| 0xfe | Protocol version | 0xA4 | Read only | * |

# 2 - RS485 control instructions

| Instructions | Description | Instruction parameters | Remarks |
|---|---|---|---|
| 0x01 | Move roller up | None | |
| 0x02 | Move roller down | None | |
| 0x03 | Stop command | None | |
| 0x05 | Set the limit | 1-4 - Set the upper limit point 22 - Set the lower limit point<br>23 - Set the 3rd limit 24 - Set the 4th limit | |
| 0x06 | Run to the limit point | 1-4 - Run to the upper limit point 22 - Run to the lower limit point<br>23 - Run to the 3rd limit 24 - Run to the 4th limit | |
| 0x07 | Delete the limits | None - Delete all 1-4 - Delete the upper limit point<br>22 - Delete the lower limit point 23 - Delete the 3rd limit 24 - Delete the 4th limit | |
| 0x08 | Reset to factory defaults | None | |