MultiPix™ / SolidPix™
Fixed-Frame
Reference TheaterCurve Xmask 2-Ways
(Lateral Masking System)

Installation Manual

Revision I 2010.05.06

SCREEN™ RESEARCH

Action: W: Written R: Page revised A: Page added D: Page deleted C: Rewritten completely			**Updating Tab**		
Date	Rev. N°	Action	Rev. Pages	New Pages	Reason for Revision
2008.02.28	A	W			- New installation manual.
2008.03.05	B	A		34. 35	- New chapter:"Install The Housings For Masking The Image Sides"
2008.03.07	C	W	all		- Complete rewriting
2008.03.19	D	A		8, 9	- New instructions to release housings from the horizontal frame pieces before frame assembly.
2009.05.12	E	C	All		- Product Design reviewed
2010.01.07	F	R	19 to 23		- Mask Guiding system Design improvements
2010.02.24	G	R A	19 to 25	 29	- Mask Guiding system Design improvements - Brackets redesign - Flush covers assembly
2010.03.24	H	R	All		XMask2 Range Update
2010.05.06	I	R	25		Endstops checking process revised for ILT motors

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All information in this manual is based on the latest product information available at the time of printing. Screen Research reserves the right to make changes at any time without notice and without incurring any obligation.

This manual should be considered a permanent part of the Xmask 2-Ways and should remain with the screen if resold.

Current versions of documentation are posted on the Screen Research website at www.screenresearch.com

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Congratulations on your purchase of the best no-compromise projection screen, built with wonderfull MultiPix™/SolidPix™ projection screen.

We want to help you to get the best results from your new product and to operate it safely. This manual contains information on how to do that; please read it carefully before operating.

About the Xmask 2-Ways

Your Xmask is a projection screen integrated into a fixed frame and native format 16:9 or 2.35:1. Its innovative motorized masks frame your image with the black border it deserves, no matter what its format, and significantly improve the contrast and perceived image quality.

About the motor controlled system

The Xmask 2-Ways may uses a MCS (motor controlled system) for operation of the masking motors. Masking positions are preset to achieve desired aspect ratios.

Refer to the MCS manual for more information on installing the MCS and operating the masking motors with the MCS.

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Workspace preparation

Specifications regarding the individual screen dimensions, weight, assembling type, and controls are provided by Screen Research when the product is ordered. Before beginning the installation:

• Check the specifications for the type of assembling to be used.

• Prepare for electrical access to the motor(s).

• Check the size and weight of the screen to be installed so that you can plan for the number of people required for the assembling procedure. You need at least two people to mount the smaller screens; more are needed for larger, heavier screens.

• Make sure there is a clean surface on which to unroll the screen. Do not operate the equipment in a confined space. You will need an area the size of the finished screen plus approximatively 18" (50 cm) on all sides to walk around the screen. A soft surface such as carpet is best to operate.

You will need:

• Ladders for the operators supporting the screen during the assembling process, as needed.

• A level.

• A flat screwdriver and a PZ2 screwdriver to attach the frame on its structure.

• A hacksaw or a knife to cut the Pi-Grip.

• Fasteners appropriate for the surface on which the screen is being mounted.

• Drills for making holes to the mounting surface as needed.

Unpacking

Your Xmask is shipped with the necessary materials, tools and spare parts for installing the screen.

Carefully unpack and check that you have all of the items shown in the packing list supplied with your screen.

CAUTION:

During the installation, do not place the equipment on an unstable cart, stand, table or ladder. The equipment may fall, causing injury to a child, adult or pets and damage to the equipment.

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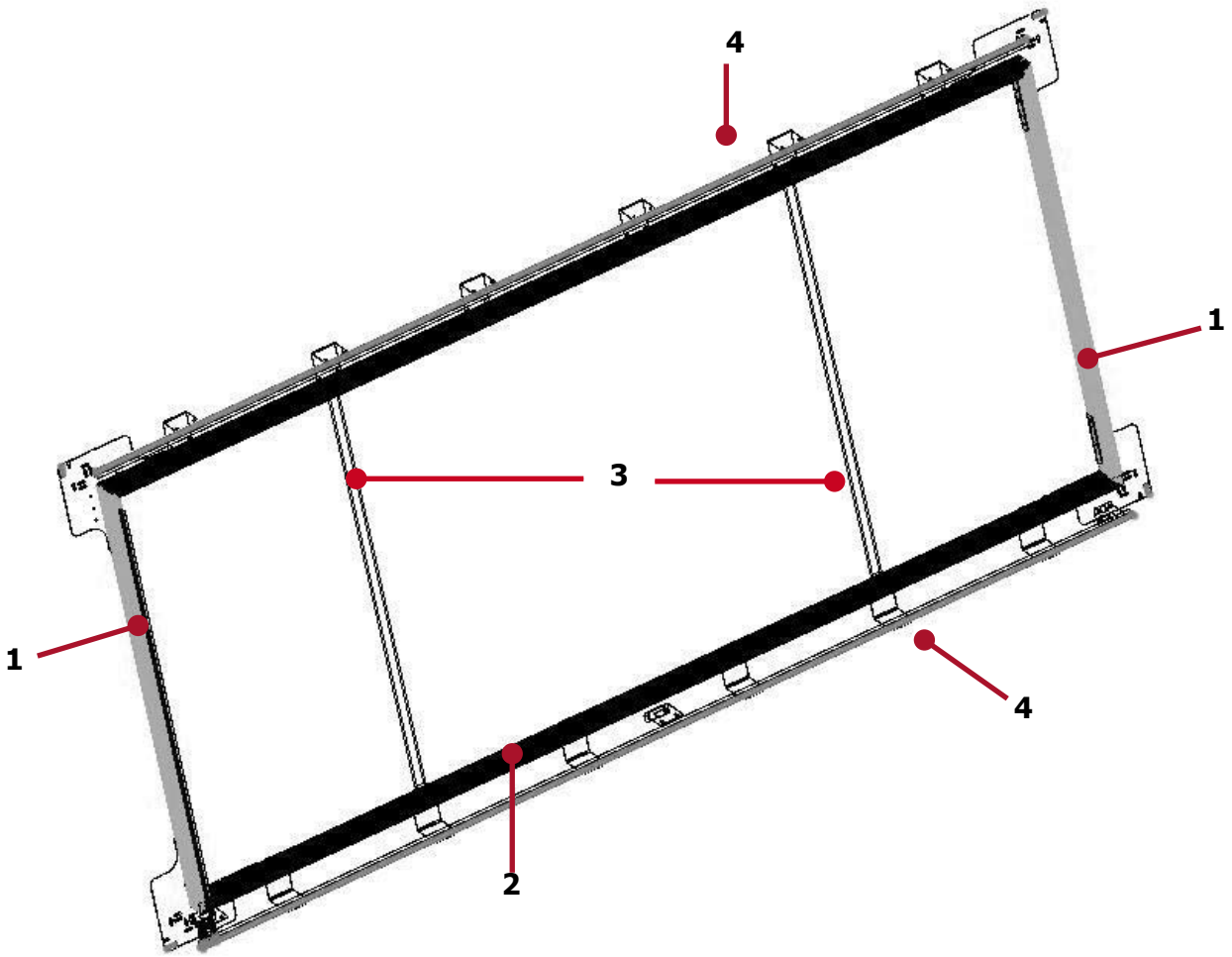
Xmask 2-Ways characteristics

This section identifies the principal components of the Xmask 2-Ways with a lateral masking system.

The unit is shipped in several sections: one for the left and right blocks, plus one section for the top and bottom frame bars.

1. Lateral blocks.
2. Long aluminium frame bars for the top and bottom sides of the frame structure.
3. Frame stiffeners.
4. Horizontal casings.



Xmask front view without covering

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This section provides instructions for assembling the frame structure of the Xmask 2-Ways.

CAUTION

Professional mounting techniques should be used. Scren Research cannot be liable for substandard or faulty installation.

1. Pick up the Top and Bottom sides from the transit box and remove protection foam

Horizontal Frame

Velvet Covering

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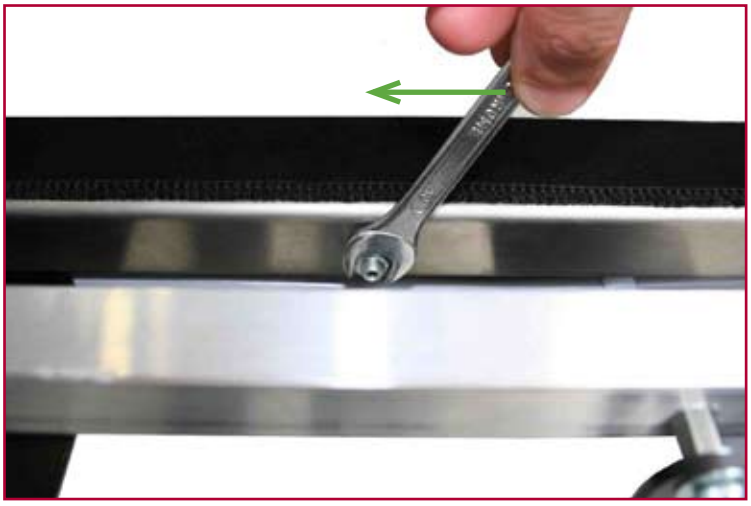
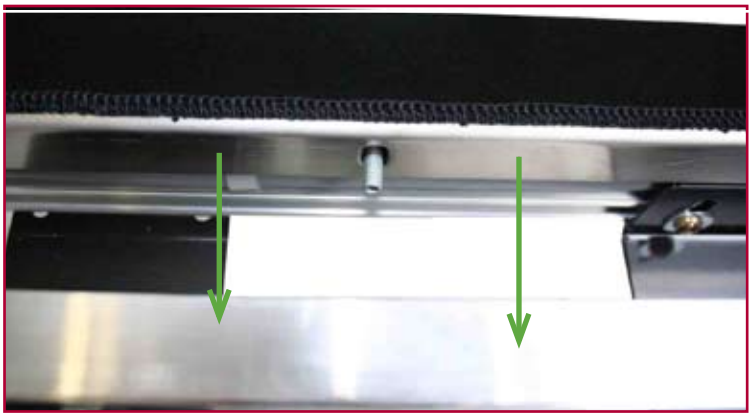
2. Unscrew the long aluminium housings (top and bottom) from the long aluminium frame bars.



3. Release the housings from the top and bottom frame pieces.



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4. Keep the housings for later on (see section "**Housings For Image Side Installation**").

5. In order to build the structural frame, place the four frame pieces on your workspace (2 lateral blocks + 1 Top block + 1 bottom block).

6. unscrew the 2 plates of each each corner from the two lateral blocks. (do not remove the plates)

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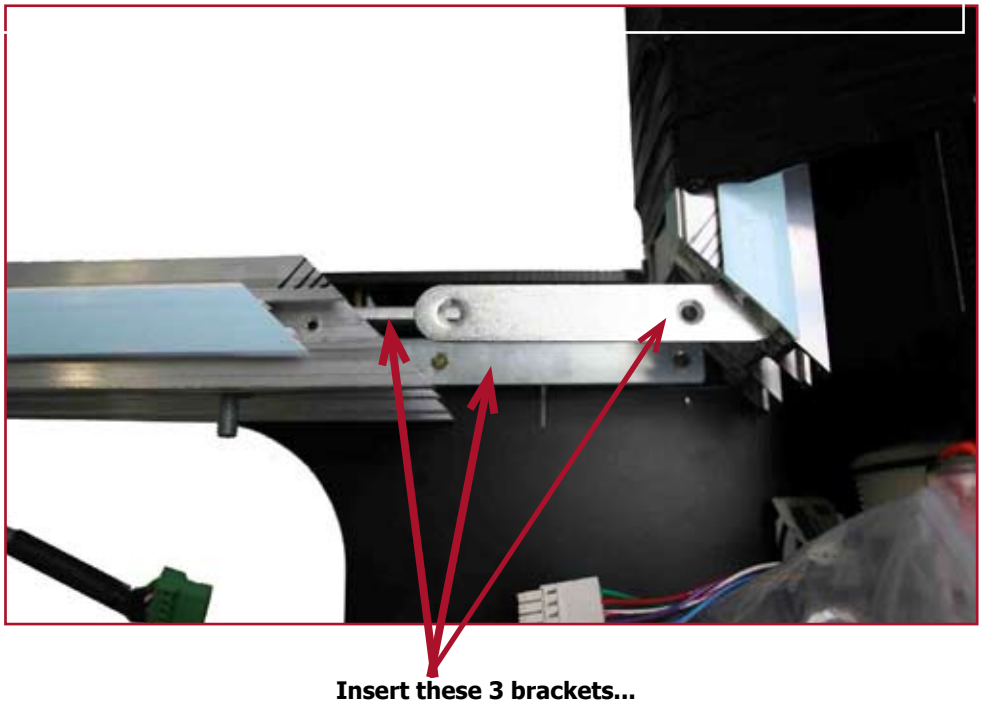
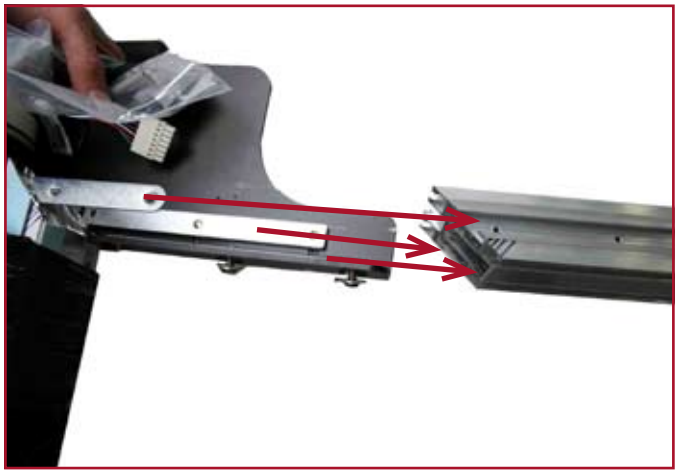
7. Insert the 3 brackets from the lateral blocks inside each middle groove of the long aluminium frame bars.



Insert these 3 brackets...



... inside the frame grooves

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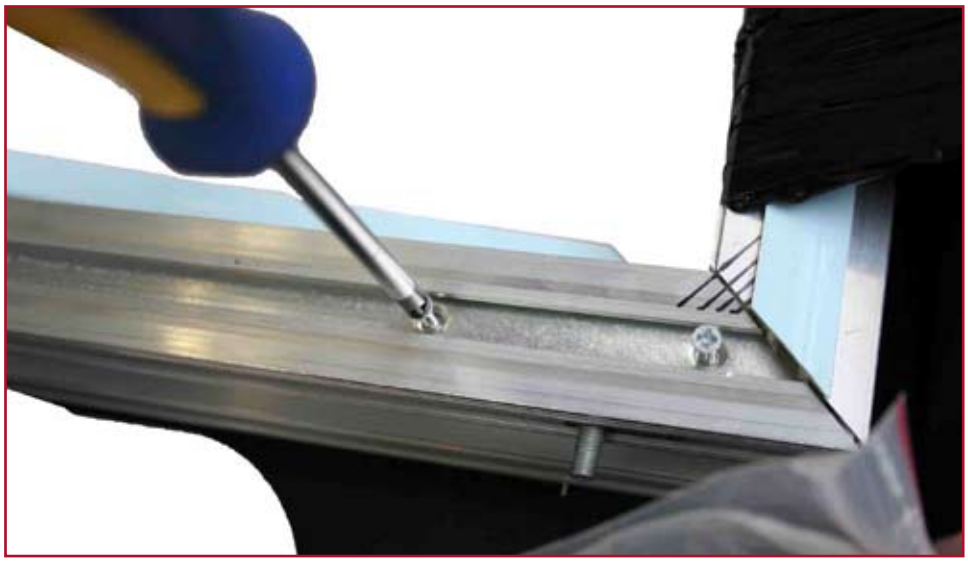
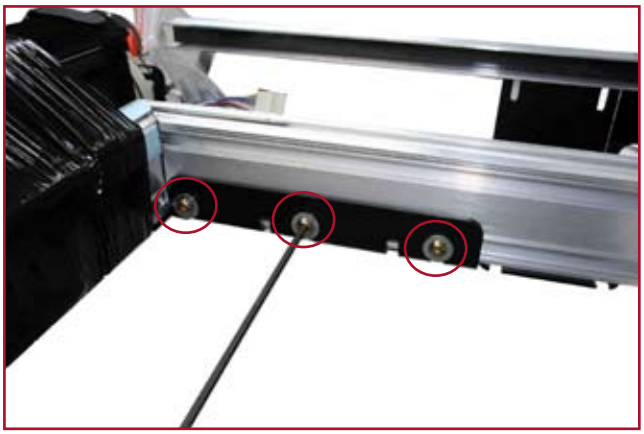
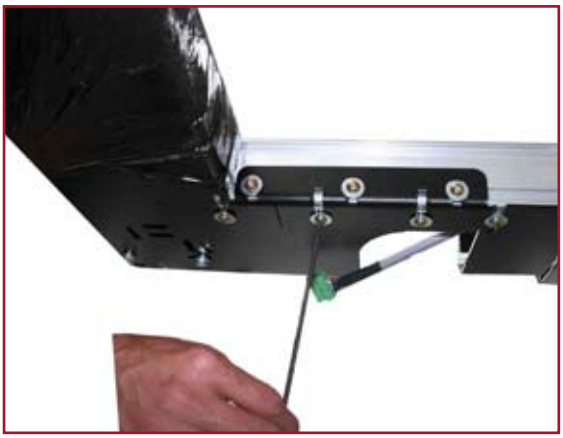
7. Screw the flat brackets to the frame using the 3.5 mm X 25 mm flathead sheet metal screws provided.



8. Tighten the screws of the two plates already inserted in the angular casings.





9. Repeat the steps for the 3 other angles.

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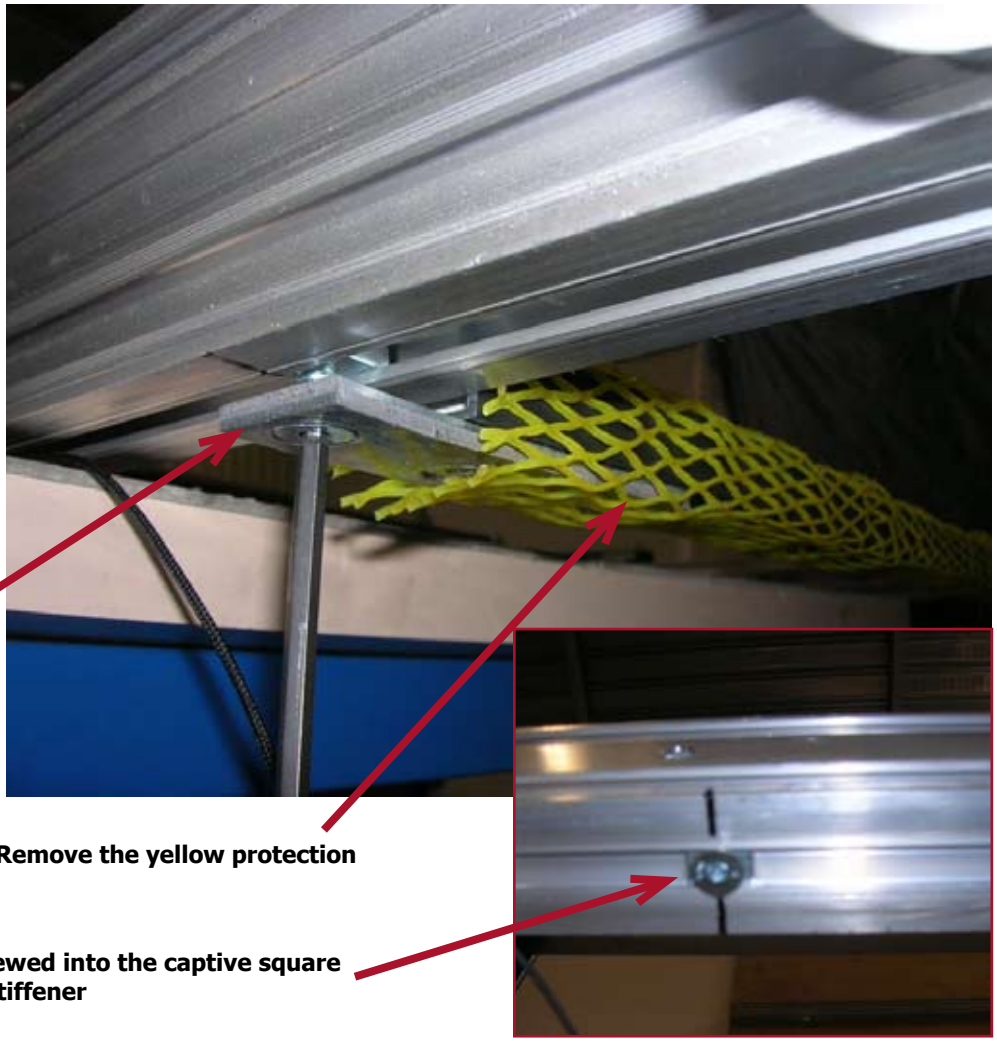
This section provides instructions for attaching the frame stiffeners to the frame structure.

Screen < 130”

1. Remove the yellow protection from the frame stiffener.

2. Attach the frame stiffeners to the rear side of the frame, screwing them into the captive square nuts which are in the rear groove of the frame.

3. Place the frame stiffeners approximately 1/3 and 2/3 of the way across the frame (where they are black marks).



Frame stiffener

Remove the yellow protection

Use the screw that is screwed into the captive square nut to attach the frame stiffener

CAUTION

Make sure that the frame stiffeners do not interfere with the speaker placement.

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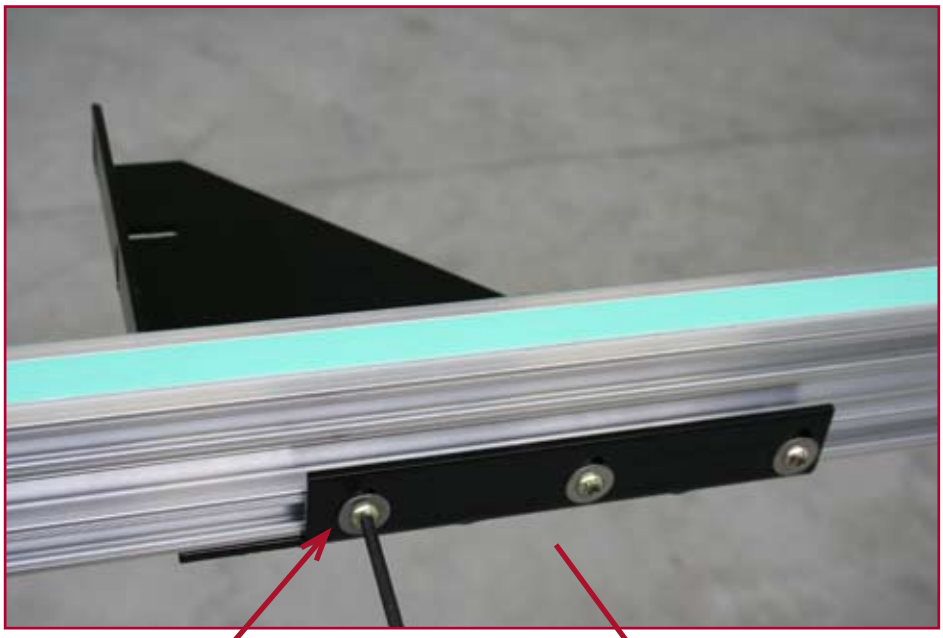
This section provides instructions for attaching the frame stiffeners and the black backing layer to the frame structure.

Screen ≥ 130”

1. Attach the corner for the stiffeners on the top and bottom frame pieces. Screw them to the flat frame extensions inserted into the channel of the aluminium frame bars.



Screw in front and under the support

CAUTION

Make sure that the frame stiffeners do not interfere with the speaker placement.

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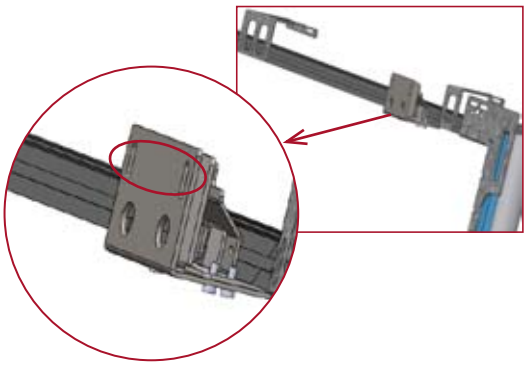
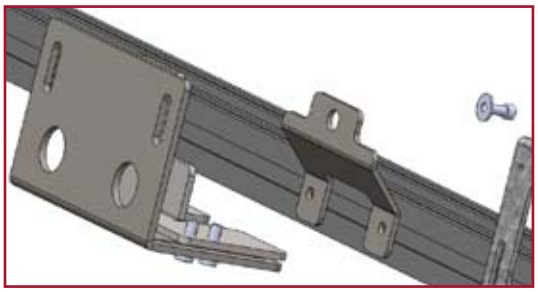
TIPS:

To make easy the wall mounting, you can already attached the four wall brackets on the screen as shown in section "**ATTACHING THE WALL MOUNTING BRACKETS**". Then, you are allowed to locate and draw bracket's positions onto the wall.



After locating and drawing the four bracket's position on the wall, remove the brackets from the screen as shown below:



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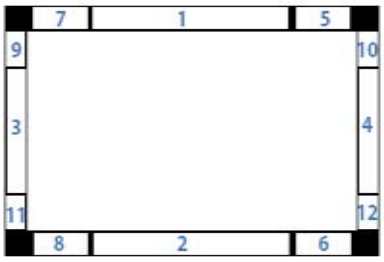
This section provides instructions for attaching the projection screen fabric to the frame structure.

1. Place the projection screen fabric onto the frame by using the small pieces of Pi-Grip (5 cm). Place them in the order indicated on the drawing below.



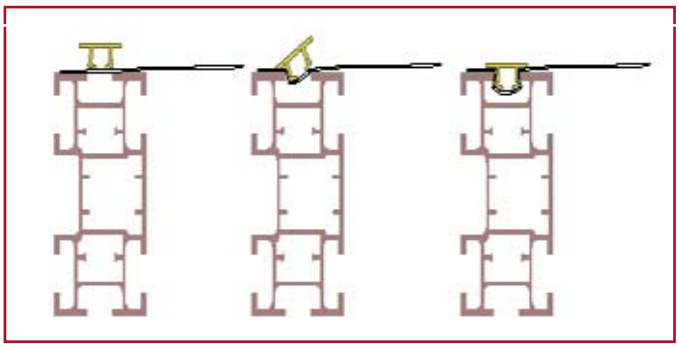
INFORMATION

At this point the projection screen fabric should be slightly taut.

2. Stretch the projection screen fabric with the long pieces of Pi-Grip. Begin with the top of the frame.

INFORMATION

Start at one end of the Pi-Grip and progress towards the other end. Generally the Pi-Grip can be installed by hand, but you can use the mallet if necessary.



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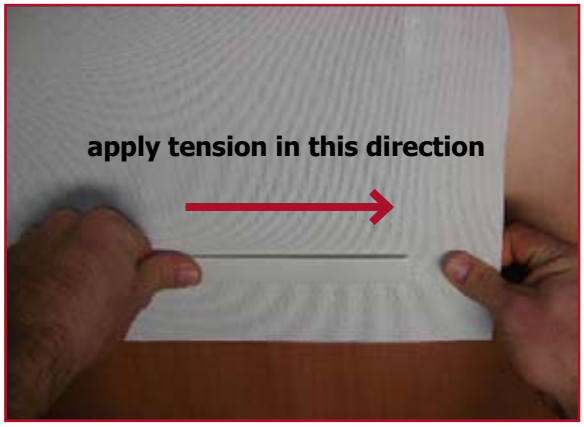
3. As you insert the Pi-Grip, apply a slight tension on the projection screen fabric along the axis of the Pi-Grip that you are inserting.



4. Continue with the other sides of the frame in the order indicated.

INFORMATION

As you insert the pieces of Pi-Grip, the projection screen fabric should become reasonalby taut.

5. Once the projection screen fabric is installed, verify that the tension is even and sufficient. Lift the screen and inspect the projection side.

INFORMATION

If necessary, you can restretch the projection screen fabric by removing and reinstalling the Pi-Grip.

6. Once you are satisfied with the tension in the projection screen fabric, cut the excess with the cutting tool.

Leave as much extra fabric as possible to assist in future re-tensioning; make sure to cut enough to allow the cables and pulleys to operate properly.

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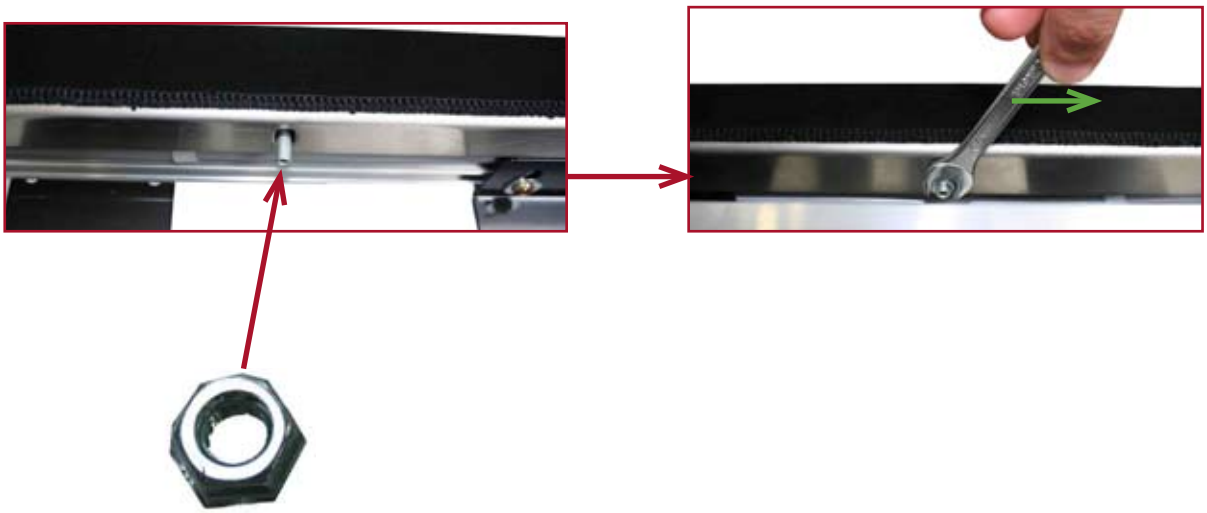
This section provides instructions for attaching the housings to the frame structure to improve the image sides quality.

INFORMATION

In order to obtain a better quality of images at the screen sides and also to reduce the shadow effect, we recommand to install housings for masking the image sides of the screen.

1. Use the long aluminium housing.

2. Recover entirely the top (or bottom) aluminium frame piece with the housing.



3. Repeat from step 1 to 3 for installing the bottom (or top) housing.

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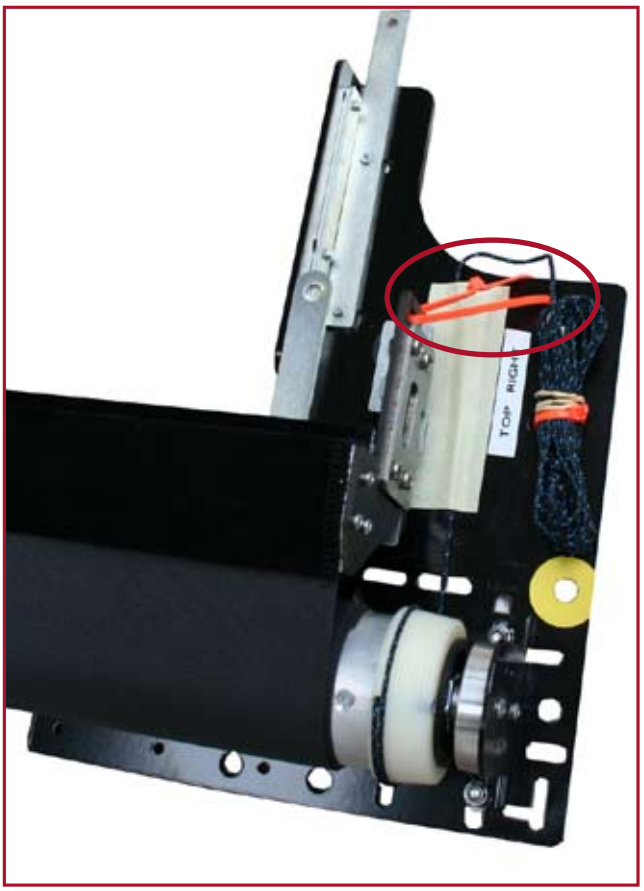
This section provides instructions to install the lateral masks onto the frame structure.

1. Remove masking transit black plastic film and cut every orange collar at each side of the lateral blocks.

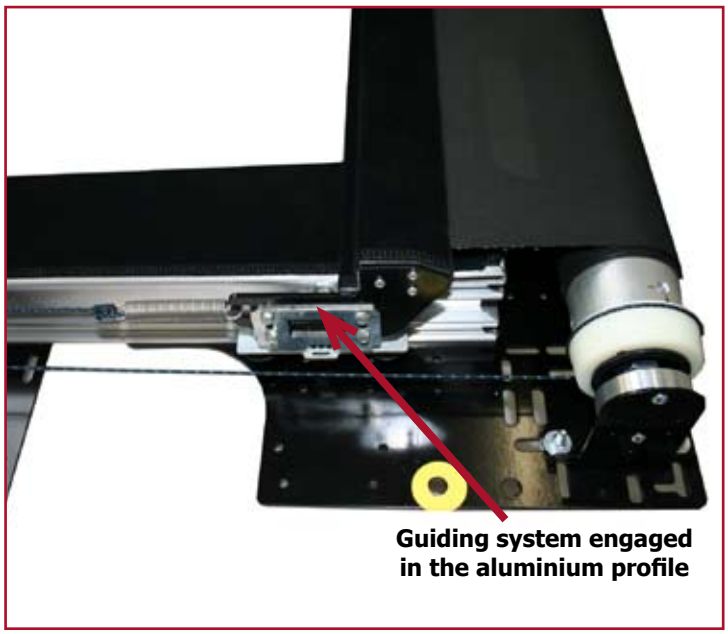
WARNING:
Do not use a cutting tool



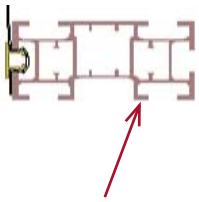
©Screen Research 2010

2. Lay the lateral masks over the projection screen fabric.

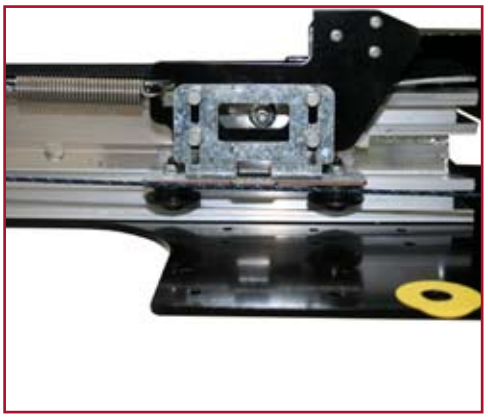
3. Engaged the top guiding system onto the aluminium frame as shown below:



4. Repeat this operation for the wheel of the other side mask guide using the spring mechanism as shown below:



Guiding system engaged in the 2nd groove of the aluminium profile



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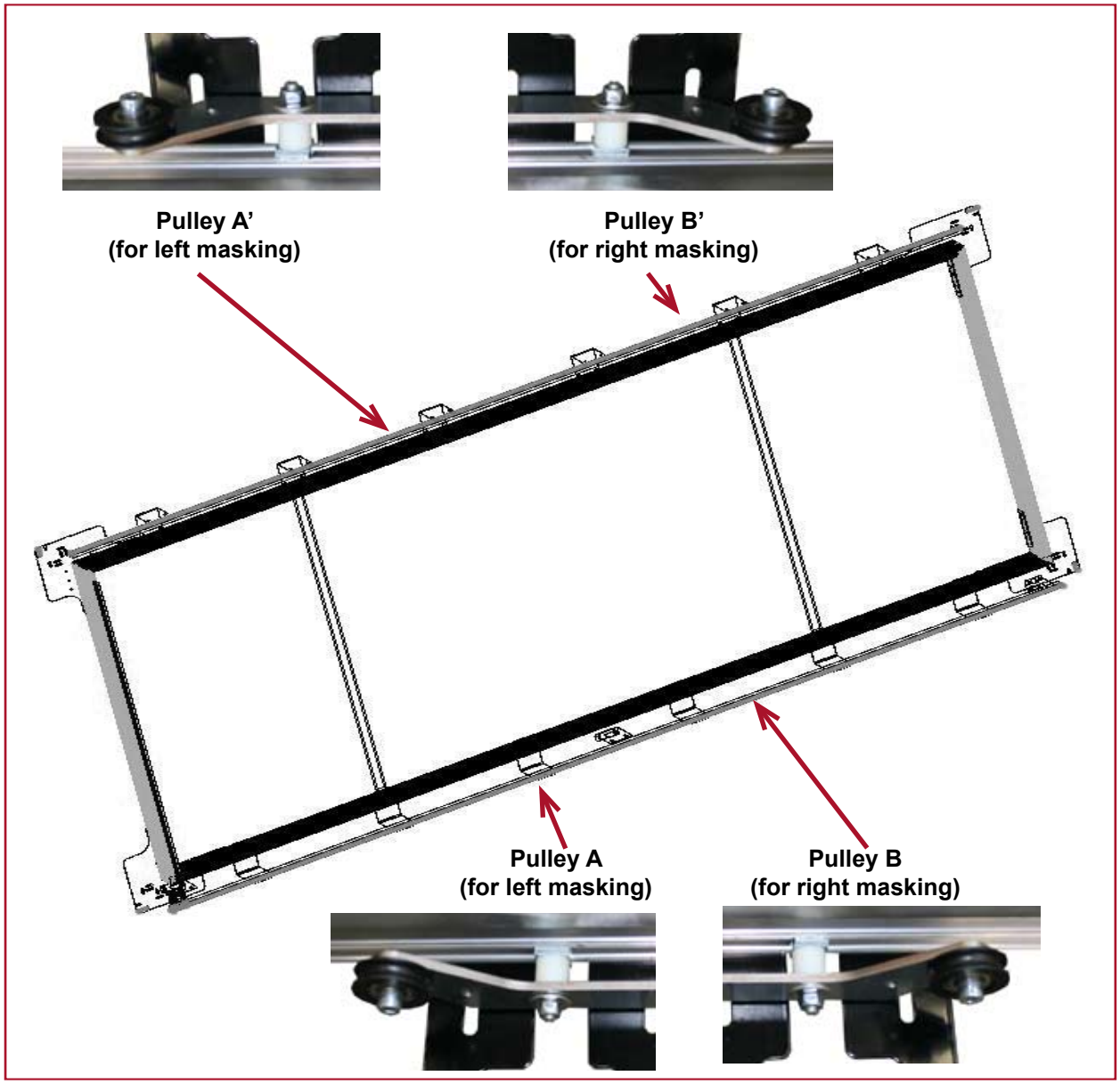
4. Repeat this operation for the wheel of the other side mask guide.

5. Pull the cable starting from the cable roller.

6. Pass the cable around the pulley.



XMask Front view

Use Pulley A and A' for left masking
Use Pulley B and B' for right masking

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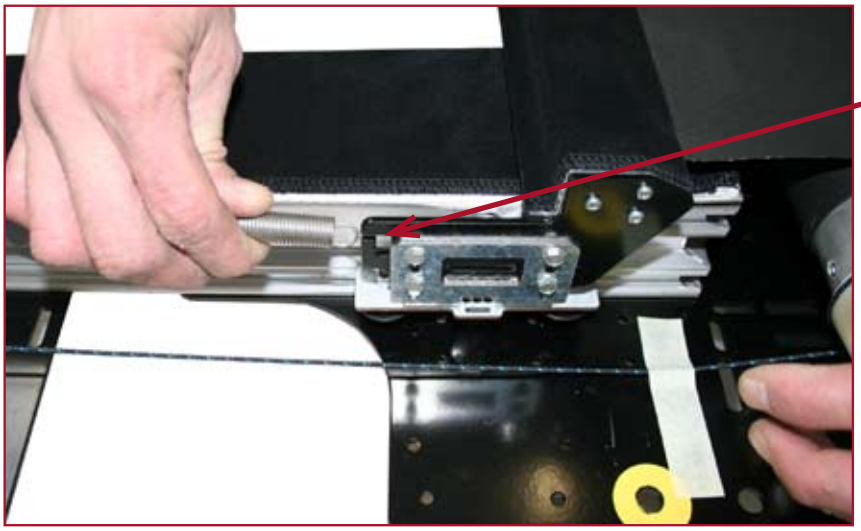
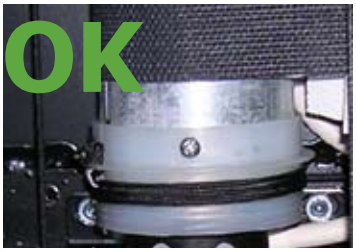
7. Attach the cable to the spring at the mask edge.



Attached the spring on the mask guiding system

8. Verify that the black cable is properly wound around the grooved guide on each end of the tube. The cable should not grooves or overlap itself.



9. Repeat from step 1 to 10 for the other lateral mask.

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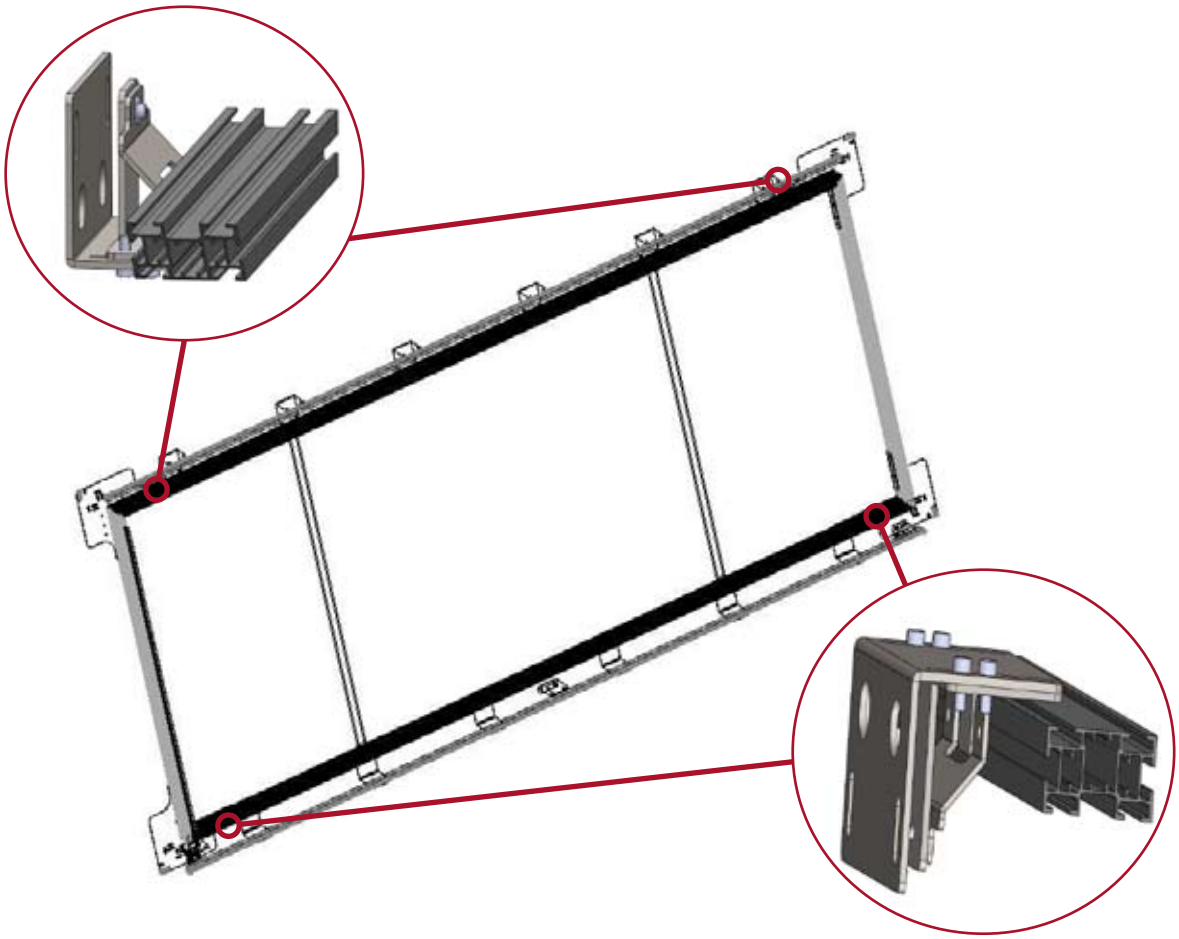
This section provides instructions for attaching the wall mounting brackets to the frame.

INFORMATION

The Xmask will be secured to the wall with screws (not included), one at each corner.
Ensure that sufficient number of people operate for this step. (recommended 3 people for screen ≤ 130" and 4 people for screen up to 160")

CAUTION

Take care not to touch or damage the masks which are rolled on the motor tubes.
Fasten the Xmask to the wall in all four corners to prevent it from sliding off the fixation brackets.



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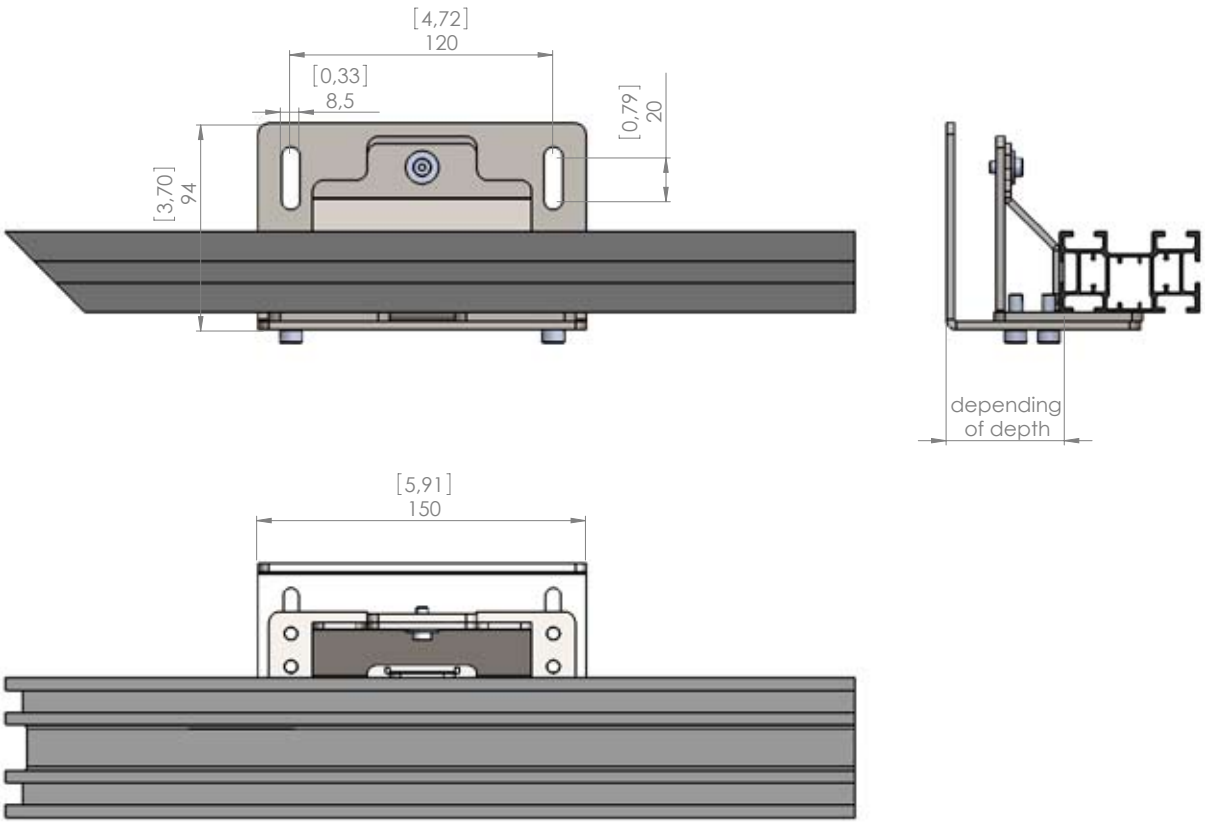
Brackets dimensions:



1. Attach the mounting brackets to the wall. These brackets will hold the full weight of the screen, so make sure they are securely fastened.

2. Prepare the wall for the screws using anchoring methods appropriate to the structure of the wall.

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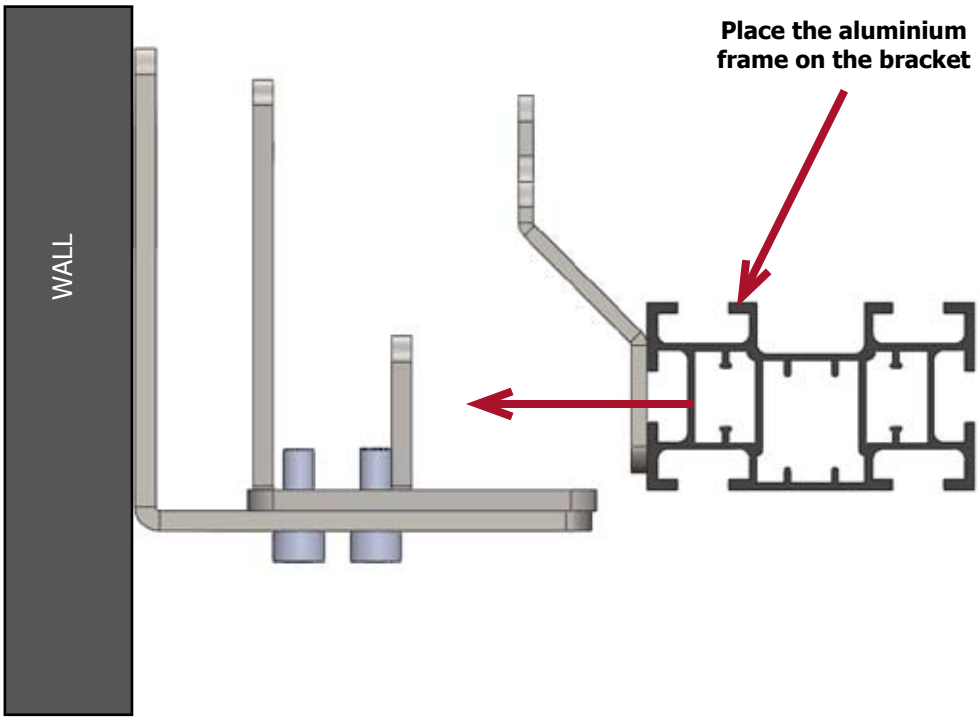
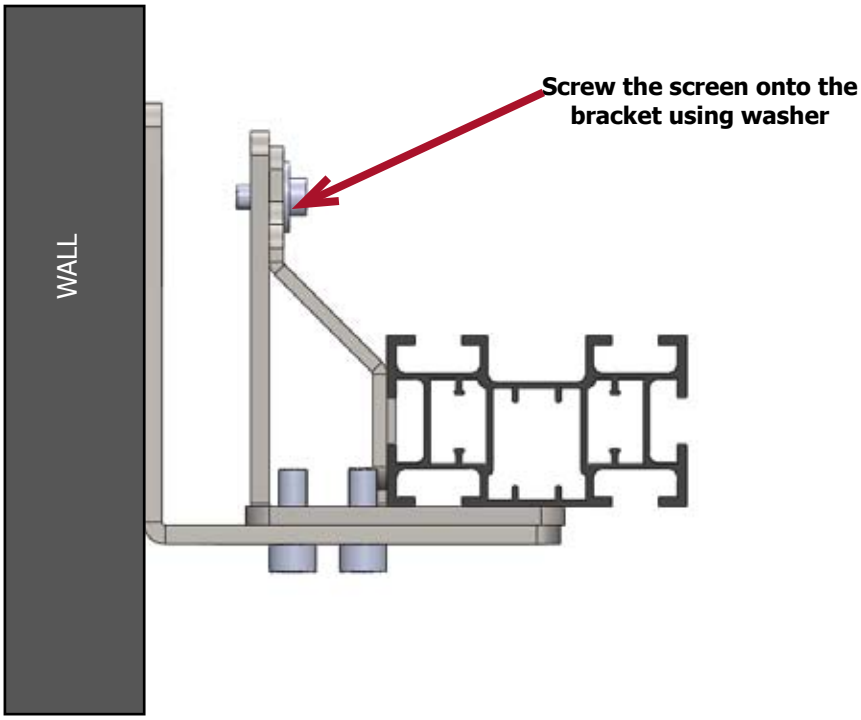
3. Place the long aluminium frame bar on the mounting bracket.



4. Screw the screen onto each brackets, to secure the screen:



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This section provides instructions for checking that the motors work in both directions and stop in the appropriate positions.

CAUTION

It is important that, upon installation, you verify the end stops of the masking system in order to prevent your Xmask from damage.
Masks end stops are set at the factory but it could have been released during shipping.

Your Xmask is supplied with a RS232/RS485 converter which allowed you to send commands throught the motors to verify the limits of travel of the masks. When you extend or retract a mask, it should stop at its preset limit.

N.B: if your screen has been ordered with an IR remote control it is easier and preferable to used it.

1. Connect the motor and the 4ILT interface power cable to a power source.

2. Test that the motors work in both directions and that they stop in the appropriate positions by sending the following commands:

Protocol commands	
Baud rate	4800
Parity	Odd
Data Bits	8
Stop Bits	1
Action	**Code Hexadécimal**
Move up motor 1	67F2FBFFFFFF000000FEFE074D
Move up motor 2	67F2FBFFFFFF000000FDFE074C
Move up motor 3	67F2FBFFFFFF000000FCFE074B
Move up motor 4	67F2FBFFFFFF000000FBFE074A
Move down motor 1	67F2FBFFFFFF000000FEFD074C
Move down motor 2	67F2FBFFFFFF000000FDFD074B
Move down motor 3	67F2FBFFFFFF000000FCFD074A
Move down motor 4	67F2FBFFFFFF000000FBFD0749
Move stop motor 1	67F2FBFFFFFF000000FEFC074B
Move stop motor 2	67F2FBFFFFFF000000FDFC074A
Move stop motor 3	67F2FBFFFFFF000000FCFC0749
Move stop motor 4	67F2FBFFFFFF000000FBFC0748

CAUTION

Take care as the mask moves in both directions that the black cable winds and unwinds properly.
Be prepared to stop the motor immediately if a problem appears.

3. Once the masks have gone back and forth a few times, check that they are parallel to the frame.

INFORMATION

You can adjust this on each mask using the four M5X8 screws that attach each mask to sheetmetal frame.

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This section provides instructions for readjusting the masks end stops in case they released during shipping.

CAUTION

The extension and retraction limit switches have been preset at the factory. Consequently, we advise you to avoid readjusting the masks end stops.
Failure to perform this procedure will void the product warranty. Please contact the factory if you have any question.

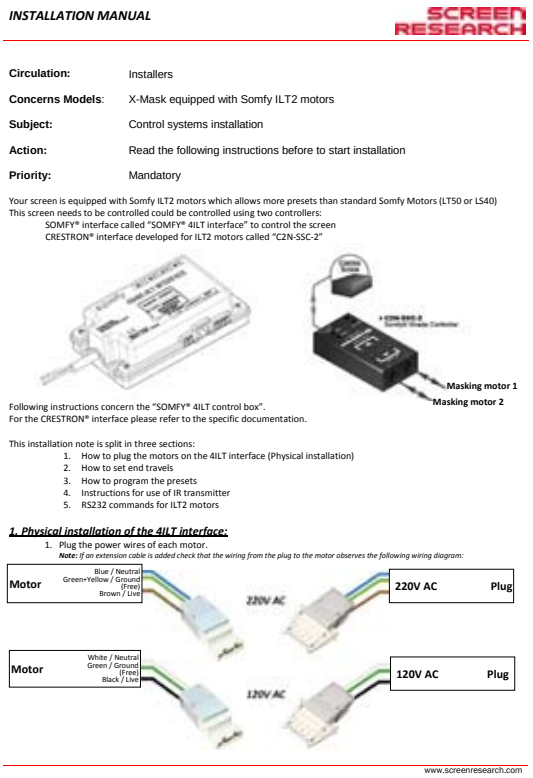
Your Xmask is equipped with a Somfy ILT motors

These limits (or end stops) are electronically set inside motors CPU at the factory. These limits can be set using IR remote contol or ILT setting tool only.

The ILT setting Tool need to be requested by the distributor to SR.

End stops cannot be set using RS485 commands.

Refere to the ILT interface user manual to change the end stops.



INSTALLATION MANUAL

SCREEN RESEARCH

Circulation:	Installers
Concerns Models:	X-Mask equipped with Somfy ILT2 motors
Subject:	Control systems installation
Action:	Read the following instructions before to start installation
Priority:	Mandatory

Your screen is equipped with Somfy ILT2 motors which allows more presets than standard Somfy Motors (LT50 or LS40)
This screen needs to be controlled could be controlled using two controllers:
SOMFY® interface called "SOMFY® 4ILT interface" to control the screen
CRESTRON® interface developed for ILT2 motors called "CZN-SSC-2"

Masking motor 1
Masking motor 2

Following instructions concern the "SOMFY® 4ILT control box".
For the CRESTRON® interface please refer to the specific documentation.

This installation note is split in three sections:
1. How to plug the motors on the 4ILT interface (Physical installation)
2. How to set end travels
3. How to program the presets
4. Instructions for use of IR transmitter
5. RS232 commands for ILT2 motors

1. Physical installation of the 4ILT interface:

1. Plug the power wires of each motor.
Note: *If an extension cable is added check that the wiring from the plug to the motor observes the following wiring diagram:*

Motor — Blue / Neutral; Green+Yellow / Ground; (Free); Brown / Live — 220V AC — 220V AC Plug

Motor — White / Neutral; Green / Ground; (Free); Black / Live — 120V AC — 120V AC Plug

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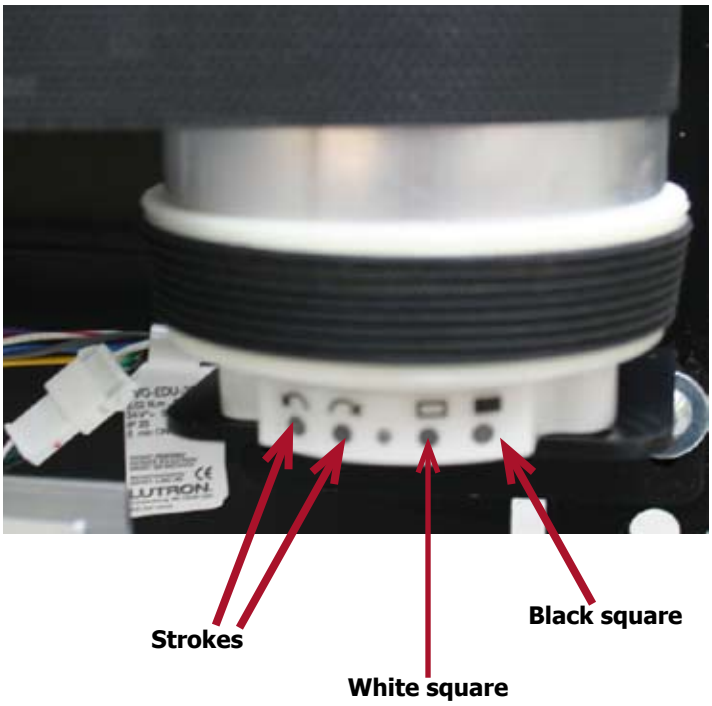
Your Xmask is equipped with a Lutron motor

These limits (or end stops) are set by buttons.

The black square means: mask extended.
The white square means: mask retracted.
The left and right strokes are for the masks limit settings.

To set the extended position of a mask:
- press briefly one time the black square;
- set the mask position using the left and right strokes;
- when the right limit (or end stop) is reached press and hold for 5 seconds the black square until the LED will flash for 2 seconds and then the go dark.

To set the retracted position of a mask:
- "touch" briefly one time the white square;
- set the mask position using the left and right strokes;
- when the right limit (or end stop) is reached press and hold for 5 seconds the white square until the LED will flash for 2 seconds and then go dark.



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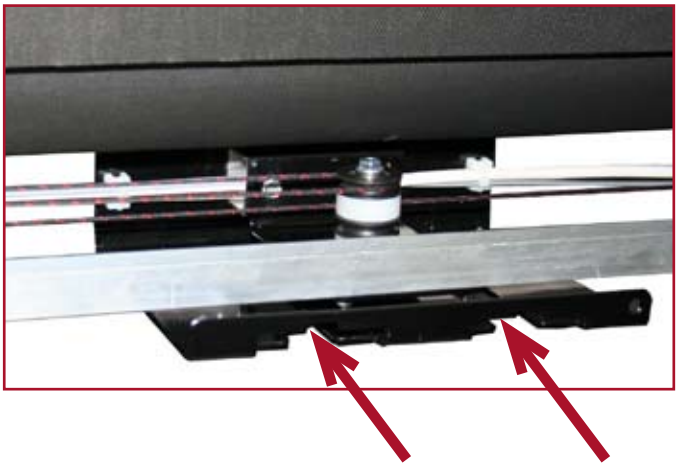
This section provides instructions for flush covers assembly and mounting

CAUTION

Please handle with extrem care the flush covers.
They are wrapped with a very fragile velvet finishing

1. Mount the top and bottom covers as shown below:



Insert the plates inside these slots

2. Mount the vertical covers following the same logic.

3. Check at each corner that the stems are engaged in each flat angle bracker and screw the wing nuts as shown below:

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The surface of your screen is delicate. Special attention to these instructions should be followed when cleaning.

CAUTION

Never attempt to use solvents, chemicals or abrasive cleaners on the screen. A soft cloth or brush may be used to lightly whisk away any loose dirt or particles.

Do not use a sharp instrument to remove any particles. Soflly brush from the center to the edges. An uphostery brush attachment on a vacuum cleaner may be used, but only if it is perfectly clean. We encourage you to keep your screen clean.

Avoid getting any foreign materials on it, as cleaning it may prove very difficult or even impossible (paint, ink, etc.).

CAUTION

Never paint in the vicinity of the screen unless the fabric is completely protected.

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All Rights Reserved
16 rue Pasteur
PA du Ragon
44119 Treillières
FRANCE
Tel: +33 (0)2 40 77 87 89
Fax: +33 (0)2 40 77 86 78

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Product Warranty

Screen Research's warranty covers defects in workmanship and fabrics provided.

The Xmask 2-Ways has been installed in a normal environment and maintened according to the written instructions.

Frame, projection surface fabric and assembly hardware are guaranteed for two (2) years from date of installation, not to exceed twenty-seven (27) months from the date of invoice.

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+33 (0)2 40 77 87 89

techsupport@screenresearch.com