

# Installation Manual


Dynamic 2 XL




# PLEASE READ PRIOR TO INSTALLATION

## Important Notes


The symbols below show important notes that must be read and understood at each stage of installation

 = Warnings (Safety or Installation Quality)

 = Information (Installation requirements or tips)

 Before installation of this projection screen you should fully read these instructions to ensure you are aware of the full installation procedure. In addition to the screen and accessories and in order to carry out the installation you will need:

- Spirit Level
- Philips Screw Driver
- Suitable screw fixings of at least 40mm. It is the responsibility of the installer to assess the wall structures the screen is being fitted to and that the fixing used are suitable to fixing the screen to the wall structure.
- In the Installation accessories you will find:
  - **White Cotton Gloves to be used at all times when handling the white screen fabric**
  - Fabric Installation tool
  - Hex Keys

 This screen is not designed to be fixed to a mobile/freestanding or non-permanent structure. The structure and fixings must be designed to be permanent and not move over time.

It is recommended that at least 4 or more people install the screen as larger screens can be heavy and awkward to lift. Good lifting practices and lifting aids should be used as required to aid installation. It is a requirement of installation that the installer does relevant risk assessments and implements relevant best lifting practices and use of equipment. Every installation is unique and therefore Display Technologies Ltd is unable to advise on the exact installation of each screen/project.

## Unpacking

Each screen is carefully packaged in our factory to ensure that it reaches you in perfect condition. The crates used for shipping are designed to protect the screen during shipping while at the same time be able to be easily broken down after use and should be recycled in accordance with local recycling laws. Each screen cover section is wrapped in protective packaging or in a PVC sleeve to ensure it is protected and stays clean. Care should be taken not to lay the velvet cover sections 'face down' prior to installation as this can cause 'crush marks' on the velvet face.



Do not unpack each piece from its protective packaging until you are ready to install it. This will ensure that you do not damage any of the velvet finished pieces accidentally during installation.



Note that the Dynamic 2XL is designed and recommended to be assembled on the wall so that a clear floor area big enough to build the screen is not required. DO NOT build the screen face down on the floor under any circumstances as this will result damage to the screen and mechanism.


The screen consists of 6 main parts. Top Left, Bottom Left, Top Right, Bottom Right, Left and Right. The bottom Right part also contains the control panel which is pre-fitted in ships in that part. The 6 parts fit together on the wall to form the screen. The Velvet covers then go over the screen frame to complete the installation.


## Installation

- The XL screen is designed to sit onto a floor or plinth at the bottom. First check that this is level and able to take the weight of the parts it is supporting. This will vary dependant on the size of the screen.
- Fix the Bottom Left and Bottom Right parts together using the joint parts partially installed on one side of the frame.
- Next do the same for the Top Left and Top Right parts.
- Mark on the wall the screen is being fitted to the central left to right point for the screen (normally the centre line of the room. This will be the centre of the Bottom screen section. The bottom section can be easily identified as it has the aluminium feet on the outside of the black framework.
- Now using this line, position the bottom section of screen against the wall and fix it using suitable DO NOT OVERTIGHTEN THESE. Use a spirit level to ensure that this section is level and central. **This is very important as it will form the basis for the rest of the screen to be built to.**



- Prepare the Right end section to be fitted. There is a joining angle bracket fitted to the bottom of the left side section. This lines up with the left side of the bottom section.
- Lift the left section vertically and line up the holes in this angle plate with the captive nuts in the bottom frame.

 When the sections ship the mask bars are loose. Especially when lifting the two side sections the mask bars should be supported so that they don't slide down and off the mask fabric.

 Take care not to trap any wires when fitting each section together.

- Bolt the two sections together with 2 x M6x16mm cap head bolts provided. Once tight use a spirit level to ensure that the side is vertical. Once it is, fix the rest of the side to the wall using appropriate fixings through the inner fixing flange of this section.



- Now connect the bottom of the right mask bar to the mask slider on the right of the bottom section. Slide the mask slider along to line up with the mask bar. Next loosen the hex bolts in the 2 silver joining pins. Slide up the joining pins into the mask bar. Retighten the hex bolts in both joining pins.



- Now connect the mask sensor to the mask bar. Pull out the brass end to the sensor. Slot the brass end into the slot in the back edge of the mask bar. Ensure that the cable is pulling from the sensor straight and not at an angle.



- Next repeat the process of installing the right section of screen to install the left section.



Only install 1 or two fixings into the fixing flange of the left section of screen at this point as it may need to be slackened and moved slightly to get the holes on the top section to line up during its installation.

- Next lift the top section of the screen up and onto the top angle brackets of the left and right screen sections.
- Secure the top section to the right section with 2 x M6x16mm cap head bolts provided.
- Secure the top section to the left section with 2 x M6x16mm cap head bolts provided. As noted above to may need to move the left section slightly to line up the holes with the top section.
- Secure the remainder of the left section with fixings through the inner fixing flange.



It is the installers responsibility to ensure relevant lifting equipment it used to lift the top section of the screen this is both the lift the screen and take the weight of it until fully supported by all fixing points and the vertical spreader bars are in place.

- Install the 4 vertical spreader bars equally along the length of the screen. These fit between the black powder coated screen surface profile on the top and bottom of the screen.
- Locate the bottom fixing jaw in the end of the spreader profile in the aluminium screen surface profile. Tighten the grub screw to open the jaw and fix in place. Repeat the process at the top of the spreader bar to fix it to the top screen section.
- Repeat for the other 3 spreader bars.
- Fix the top screen section fully through the fixing holes on the inner flange of the top screen section using suitable fixings.
- Now connect the top of the right mask bar to the mask slider on the right of the top screen section. Slide the mask slider along to line up with the mask bar. Next loosen the hex bolts in the 2 silver joining pins. Slide down the joining pins into the mask bar. Retighten the hex bolts in both joining pins.
- Now connect the top of the left mask bar to the mask slider on the left of the top screen section. Slide the mask slider along to line up with the mask bar. Next loosen the hex bolts in the 2 silver joining pins. Slide down the joining pins into the mask bar. Retighten the hex bolts in both joining pins.
- Now connect the mask sensor to the bottom of the left mask bar. Pull out the brass end to the sensor. Slot the brass end into the slot in the back edge of the mask bar. Ensure that the cable is pulling from the sensor straight and not at an angle.
- Next take the runner tension bands that are connected to the centre top section of screen. Take the left one out to the top left mask slider and connect the carabiner to the hole in the aluminium of the mask slider.



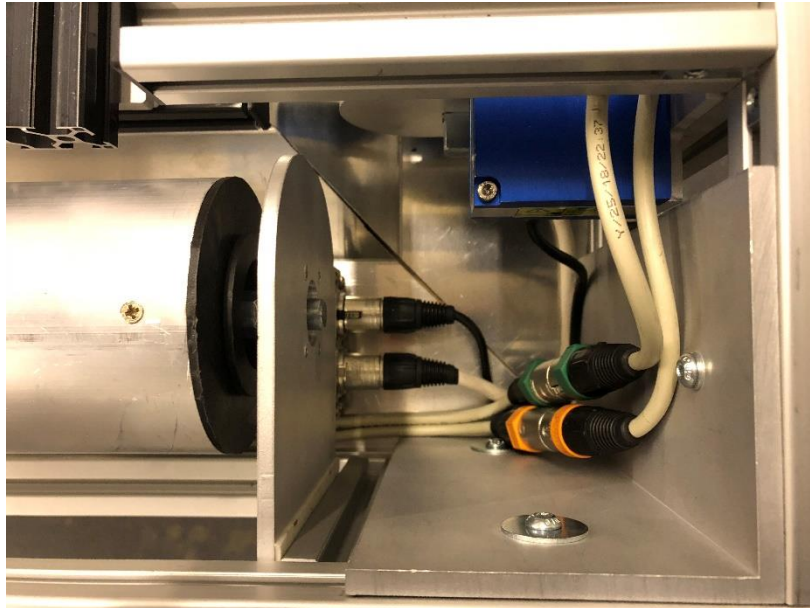
- Repeat the process to tension the top right mask
- Repeat for the bottom of the left mask

- Repeat for the bottom of the right mask.



## Electrical Connections

- The electrical connections that need to be made are at each of the 4 corners of the screen only. At each corner there are XLR connectors. Each of these are colour coded plug and sockets.
- Simply make these connections ensuring that the plug and sockets are properly connected and locked together.
- Ensure that the wiring is not obstructing any moving parts of the screen including the mask sensor wirers.



## Electrical Operation

- Make the electrical connection to the lead on the inside of the right screen section. The cables are marked with L-Live, N-Neutral and E-Earth labels. Connections should be made in accordance with local electrical regulations and approved practices.



Test all electrical operation before fitting the screen fabric

- Power on the electrical control panel
- The main control screen will be visible on the touch screen once it has booted up.



- To start operation press 'Home' this will set the masks to their home position (just covering the edge of the screen surface but showing the full width aspect of the screen).
- Now press 1.78 this will move the masks to a 16/9 image size.
- Cycle between Home and 1.78 2-3 times just to initialise the masks and ensure that everything centralises in the mask runners following transit.

The screen is now ready for operation and external RS232 control of operation. The RS232 connection is on the top of the control box and the cable to this can be routed through the right side frame following the power cable routing.


## Screen Covers

The black velvet screen covers are magnetic and fit to the black bracket supports around the screen to complete the installation of the screen

- First fit the two top straight sections of the screen working out from the centre of the screen. The sections are simply held in position with the making of the magnets with the black steel plates. Each velvet section is labelled with its location on the screen.
- Next fit the Bottom straight sections again starting from the centre of the screen. Not that these have aluminium supports on the inside which seat on top of the steel plates to prevent the magnets sliding down at all.
- Now fit the left side section cover ensuring that all joints are aligned.
- Now fit the right side section cover ensuring that all joints are aligned.
- Any misalignment can be easily be resolved by sliding the covers on the magnet fixings to ensure perfect joints.
- Misalignment on the top sections can be adjusted be altering the support bolts on the black steel plates. Wind them in or out accordingly to line up the covers.
- It may also be necessary to add one or two black adhesive packers (supplied) to the inside of the top lip of the top covers if they need to be raised in height at all.


## Screen Surface Installation

Your screen is delivered with a roll of fabric.

 Care and time should be taken during handling and installation of the screen surface. On larger screens you will need 2 people to complete this task.

- Take the roll of backing fabric and the fabric installation tool. Start to unroll the fabric from the roll by about 500mm. Holding the top corner of the fabric in one hand, line it up with the top left hand corner of the screen so that the edges of the fabric are in line with the outer edges of the screen frame.
- With the fabric tool push the tool onto the fabric and down into the white plastic fabric retaining track.
- 

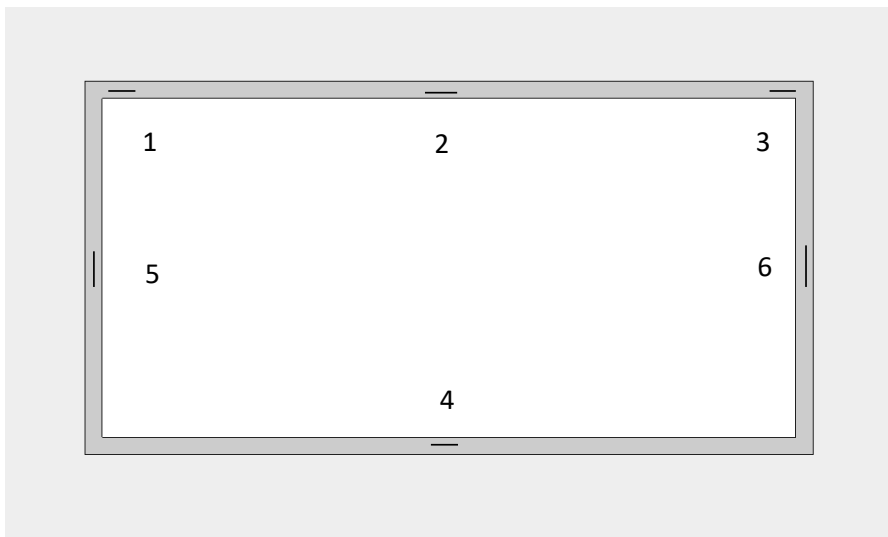


 You may want to try pushing the fabric tool into the fabric retaining track without any fabric first to get a feel for where it goes in and how much force is required.



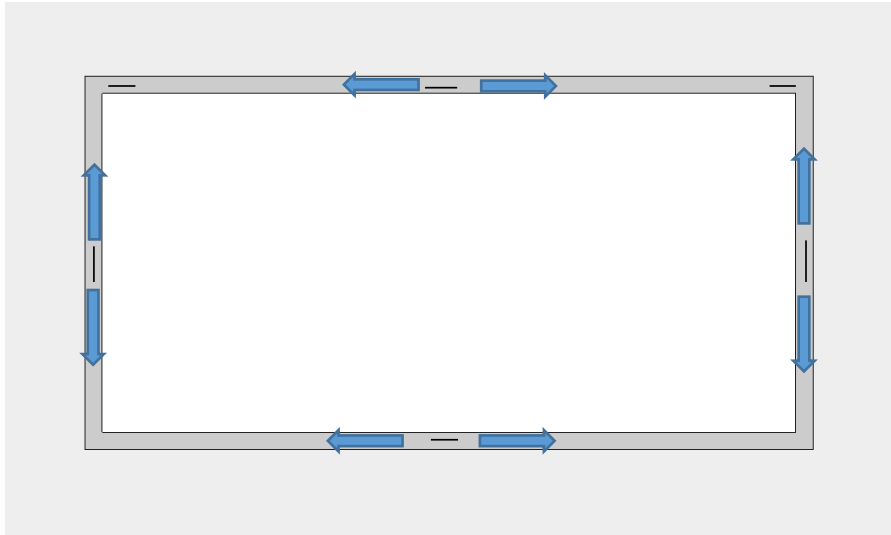
*Retaining track insertion point Fig. 8*

- Now unwind enough fabric from the roll to take you to the middle of the screen. Again ensuring that the top of the fabric is in line with the top of the screen push the fabric into the fabric retaining track in the centre of the top rail of the screen.
- Now unroll the remainder of the black backing fabric and repeat the process of tucking the fabric into the top right of the screen.
- You should now have the fabric hanging from the three tucked points on the top of the screen.
- Now using one hand apply a little bit of tension to the fabric at the bottom in the middle and then using the fabric installation tool tuck fabric into the centre bottom of the fabric retaining track.
- Now repeat this process on in the centre of the left and then right sides. See Fig.9.




*Fabric Tuck Order Fig. 9*

- Now continue to tuck in the fabric along the length of the retaining track working out from each central tuck. Only tuck max 300mm at a time in each direction and then go to the opposing side and tuck the same amount. This will ensure an even stretch across all the fabric.



*Direction of fabric Tucking Fig.10*

- Continue this process until you reach the corners of the screen. You may have to pull out the original tucks in the top left and right corners and re-tuck them to ensure that you have no wrinkles in the fabric.
- Ensure that you are happy that the fabric is flat and wrinkle free.
- Using sharp scissors cut the excess fabric off on the outside of the fabric retaining track leaving a 15mm – 20mm excess.
- Work around the screen to push this excess down into the fabric retaining track. It is best to do this in the same manner as the original tucks working out from the centres until all the excess is tucked in.
- Now repeat the exact same process you have just done for the black backing to install the white projection fabric. Ensure that you have the 'FACE SIDE' label of the fabric facing out in the room as this will be the side the projector will project onto.

 **Ensure that you use the white cotton gloves to handle the white projection fabric at all times and keep it away from dust or dirt as it can easily be marked.**