ZYTRONIC
The world at your finger tips

TOUCH FOIL INSTALLATION GUIDE

A SINGLE TOUCH
CAN BE THE BEGINNING
OF A JOURNEY…

CONTENTS

INTRODUCTION

Manufacturing touch technology products from a single site comprising three modern factory premises in Blaydon upon Tyne, United Kingdom, Zytronic produce a range of projected capacitive technology (PCT™ and MPCT™) touch interactive products which are used in electronic displays for information kiosks, ATM's, ticketing and gaming machines, as well as by military, computer, telecommunications and medical manufacturers.

Our diverse range of touch sensor technology products are all based on our internationally award winning projected capacitive technology, providing a highly durable and stable range of touch products where the sensing element is uniquely embedded behind the first surface of the touch substrate.

The Zytronic in-house glass processing facilities include automated cutting, edge grinding, polishing and drilling equipment complemented by bending and thermal tempering ovens and silk-screen printing equipment. These facilities are complemented by the lamination, material science and electronics skills and expertise of our dedicated staff.

Zytronic also has in-house electro-plating and coating facilities which enable the production of optical filters to enhance the performance of information displays and provide anti-vandal protection, RFI/EMI filters to minimise electromagnetic emissions and interference from electronic displays and specialised laminated products for the defence, rail, road and automotive industries.

Our commitment to innovative touch technology development in composite technology, stringent (ISO approved) quality controls and fast-response customer service is complimented by our own dedicated external sales team, undertaking both direct sales to major customers and assisting with sales through the extensive world-wide network of agents and distributors.

Zytronic - the Touch Technology specialists - providing a range of projected capacitance technology touch interactive products.

Our award winning projected capacitive touch technology products are being used in a range of industrial and public access and service applications such as information and financial kiosks, digital signage, ticketing, gaming and vending machines, as well as telematics and medical devices.

SPECIFICATION:
ZYFILM®
ZYPROFILM®

ZYTRONIC TOUCH FOILS

Our touch foils are designed for temporary or semi-permanent mounting to the rear surface of a rigid transparent substrate such as a single pane shop window. When installed and connected to our touch controller and PC, they are operated by touching the outside surface of the single pane window.

ZYFILM®

Is our transparent touch foil available in customisable sizes up to 85" diagonal and intended for use in front of an LCD (when mounted to a suitable supporting substrate).

ZYPROFILM®

Is our touch foil with an integral laminated rear projection film, available in customisable sizes up to 85" diagonal and intended for use with a rear projection system (when mounted to a suitable supporting substrate). Both sensor types are available with either 'cling film' front surface for easy application and removal, or optically 'clear' adhesive.

OPERATION

Unlike conventional capacitive systems, the unique sensing characteristics of PCT™ and MPCT™ sensors eliminate the need for an operating force. The foil sensors are designed to be mounted behind and operate through a supporting substrate such as a single pane glass window in a shop.

The touch screen is divided into an X-Y matrix of sensing cells, using an array of embedded 10µm copper electrodes. These electrodes are connected to a controller board and a charge is applied to the array.

Single/Dual touch - When a capacitive body approaches the surface of the sensor, a change in the oscillating frequency of the tracks around that particular point is registered; the position is then determined by the controller and firmware combination.

Multi Touch - When a finger or conductive stylus approaches the surface of the sensor, a change in the charge is detected in the nodes immediately beneath adjacent cells; the position is then determined by the controller and firmware combination.

APPLICATIONS

ZYFILM® and ZYPROFILM® are intended for use in large format interactive digital signage and information displays in retail, advertising and exhibitions environments.

ZYFILM® & ZYPROFILM® are flexible film touch sensors incorporating Zytronic's patented embedded Projected Capacitive Technology (PCT™) and Mutual Projected Capacitive Technology (MPCT™).

PRODUCT OPTIONS

CHOOSING THE RIGHT SPECIFICATION

Zytronic touch foils are produced in several different standard variants, allowing you to choose the most appropriate product to suit your project specific requirements:

ZYTRONIC PRODUCT	FILM CONSTRUCTION	INSTALLATION
ZYFILM®	Thick construction	Permanent adhesive
		Temporary static cling
	Thin construction	Permanent adhesive
ZYPROFILM®	Thick construction	Permanent adhesive
		Temporary static cling
	Thin construction	Permanent adhesive, with a separate projection film

THICK CONSTRUCTION:
• Greater rigidity makes the product easier to handle
  (particularly larger sizes).

THIN CONSTRUCTION:
• Greater flexibility means that the product can be rolled up for shipping
  (to reduce shipping costs).
• Greater conformability means the product can be used over stepped print
  borders with less air entrapment.

PERMANENT ADHESIVE FIXING:
• Intended for permanent installations. The product can still be removed but
  will be damaged by the removal process and no longer usable. Significant
  cleaning is required to remove the remaining adhesive.

TEMPORARY STATIC CLING FIXING:
• Intended for temporary installations. The product can be removed cleanly
  and will not be damaged by the removal process if sufficient care is taken.
  The product can be reapplied several times, although quality of subsequent
  installations will depend on reapplying the static cling liner without
  contamination.

FOIL SPECIFICATIONS

SENSOR	
Detection Method:	Projected Capacitive Technology (PCT™) or Mutual Projected Capacitive Technology (MPCT™).
Sensor:	PET film and/ or rear projection medium with embedded micro-fine sensing array.
Electronics:	Remotely sited PCB or USB connectivity (PCT= Serial or USB, MPCT = USB).
Size range:	15"- 85"

CONTROLLER	See controller data sheets.

MECHANICAL	
Immunity to damage:	Protected by mounting the sensor behind a suitable substrate, no moving parts.
Sensor thickness (approx):	ZYFILM® ~Thin 0.2mm / Thick 0.6mm
	ZYPROFILM® ~Thin 0.3mm / Thick 0.7mm depending on rear projection material selected.
Stylus type:	Finger, gloved hand, conductive stylus.
Operation Force:	<0.1g
Hardness:	Determined by mounting substrate.
Sensor MTBF:	Film with no moving parts or coatings, no known wear-out mechanisms when mounted behind a suitable substrate.

ENVIRONMENT	
Operating Temperature:	0°C to +50°C
Humidity:	RH 0-90% up to 40°C
Storage Temperature:	-10°C to 60°C
Storage Humidity:	RH 0-90% up to 40°C (max 2 weeks).
Resistance to Contamination:	Determined by the mounting substrate used (from operation side).
Water Resistance:	Determined by the mounting substrate used (from operation side).

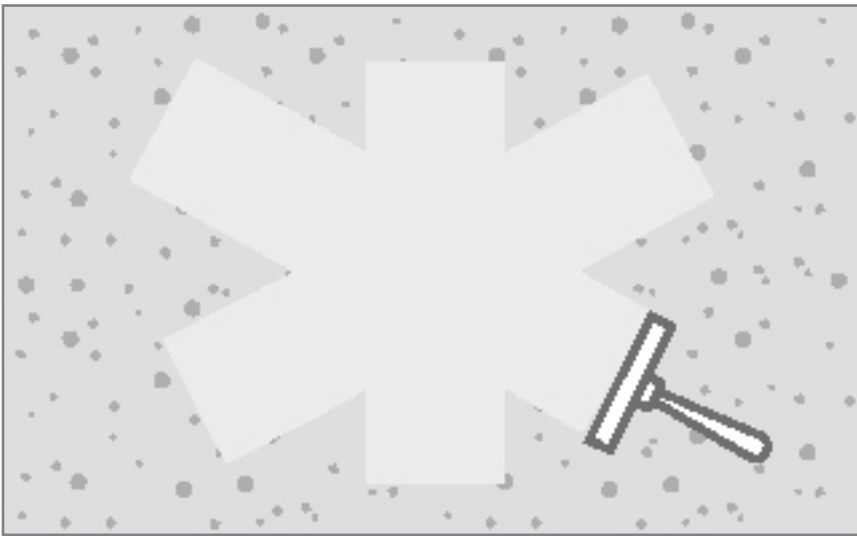| QUALITY	See cosmetic specification at: www.zytronic.co.uk

APPROVALS	RoHS compliant. CE, FCC and UL approved, . for further information please visit: www.zytronic.co.uk/support/quality-assurance

INSTALLATION:
LAMINATION

INSTALLATION: LAMINATION

STEP 1:

Clean the glass substrate with glass cleaner and ensure it is completely free from any dirt, oil or grease.

STEP 2:

Remove the release liner from the permanent adhesive or temporary static cling surface by carefully pulling it back at 180°. Temporarily taping down the flexible cable support strip can make this easier. For the temporary static cling version, roll up the liner and store for later reuse.
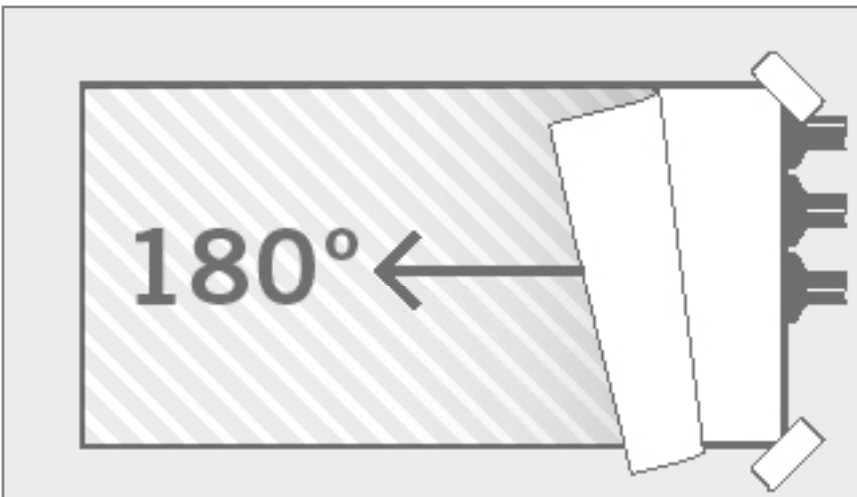
OPTIONAL: For permanent adhesive variants, apply a section of release liner to cover the film tail section. This will mask the adhesive so that the film tail section does not stick down. Carefully squeegee out the liquid, avoiding contact with the exposed adhesive.

This is not applicable if the design does not include a film tail.

NOTE:

Use premixed film application solution or a mixture of ~600 parts bottled water to 1 part mild dish soap.

STEP 3:

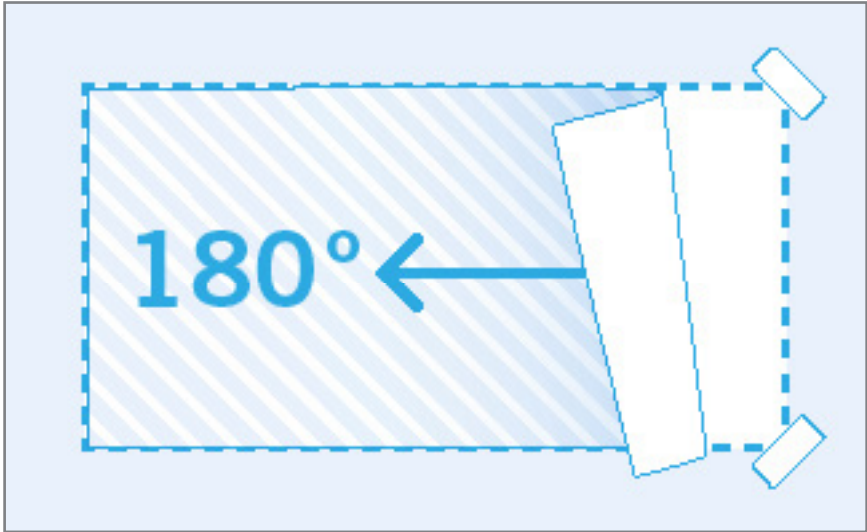Spray the permanent adhesive or temporary static cling surface with soap solution, ensuring that there are no dry spots.

STEP 4:

Spray the glass substrate with soap solution, ensuring that there are no dry spots in the area where the sensor will be applied.

STEP 5:

Apply the sensor to the glass substrate and slide into position.

FOR SEPARATE REAR PROJECTION FILM ONLY:

STEP 5.1:

Tack down the centre of the sensor with a light pressure squeegee stroke to help hold its position.
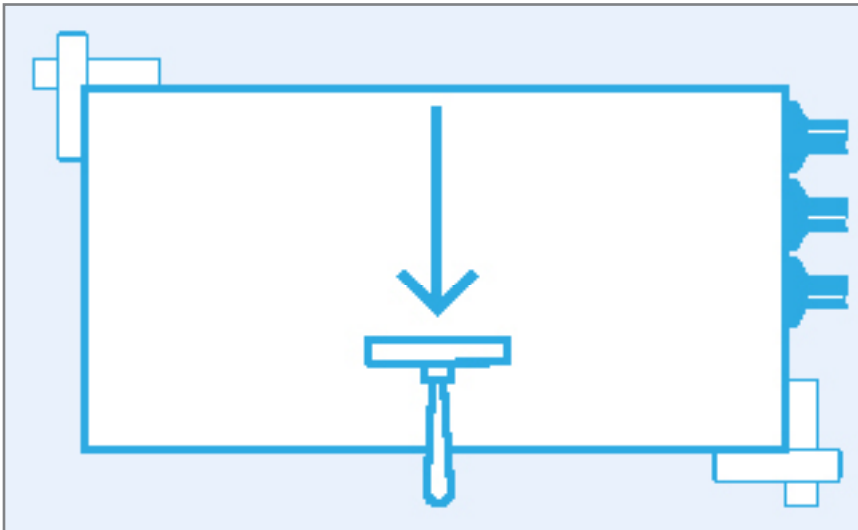
STEP 5.2:

Remove the protective liner from the rear of the sensor by carefully pulling it back at 180°. Use a piece of tape to help peel the liner away from the corner.
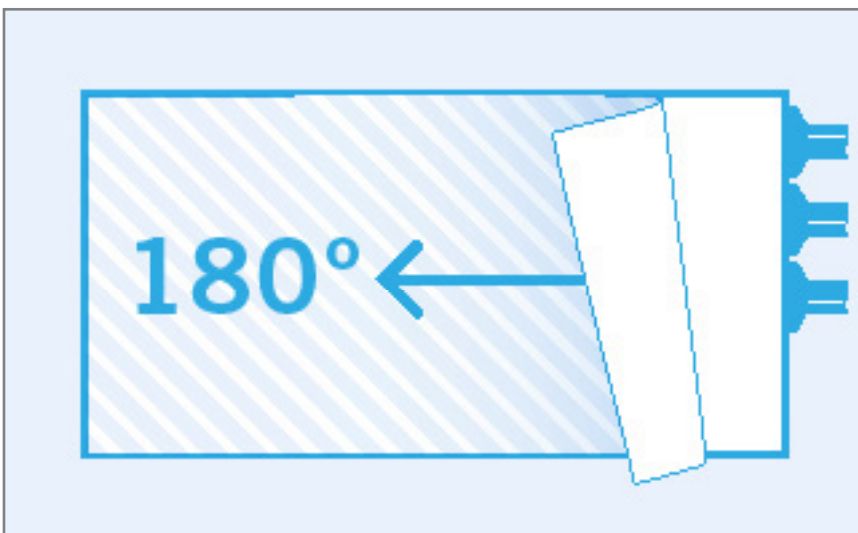
HANDY TIP:

Wetting your fingers with the soap solution can help to prevent them sticking to the permanent adhesive.

NOTE:

Larger sizes may require an additional person for installation.

STEP 5.3:

Spray the rear of the sensor with soap solution, ensuring that there are no dry spots.
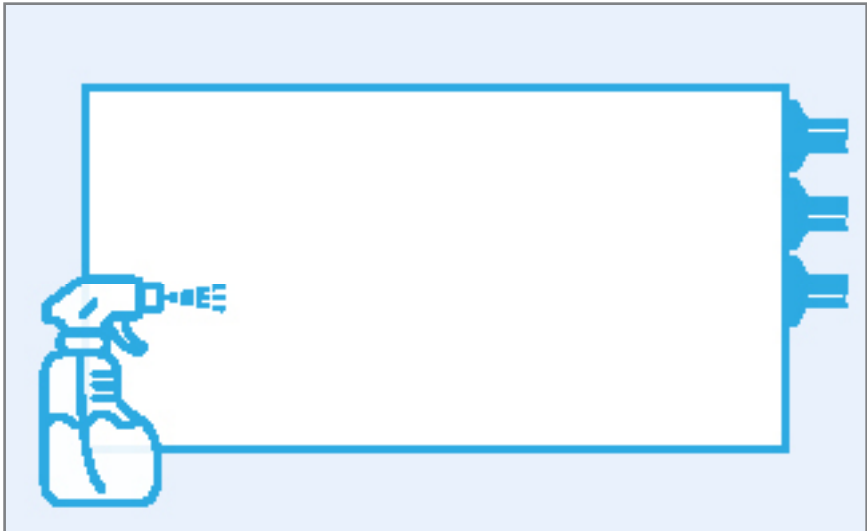
STEP 5.4:

Remove the release liner from the rear projection film surface by carefully pulling it back at 180°. Temporarily taping down a few millimetres of the corner can make this easier.

STEP 5.5:

Spray the rear projection film adhesive surface with soap solution, ensuring that there are no dry spots.
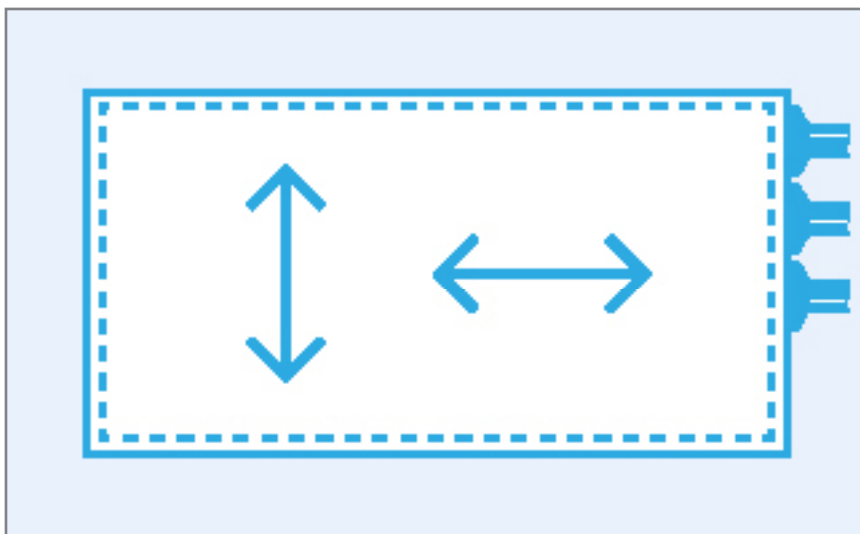
NOTE:

Use premixed film application solution or a mixture of ~600 parts bottled water to 1 part mild dish soap.

STEP 5.6:

Apply the rear projection film to the rear of the sensor and slide into a central position. Wetting your fingers with the soap solution can help to prevent them sticking to the rear projection film adhesive.

STEP 5.7:

Dry a small area at the centre of the top edge and apply temporary tape to help prevent unwanted movement during the squeegee operation.
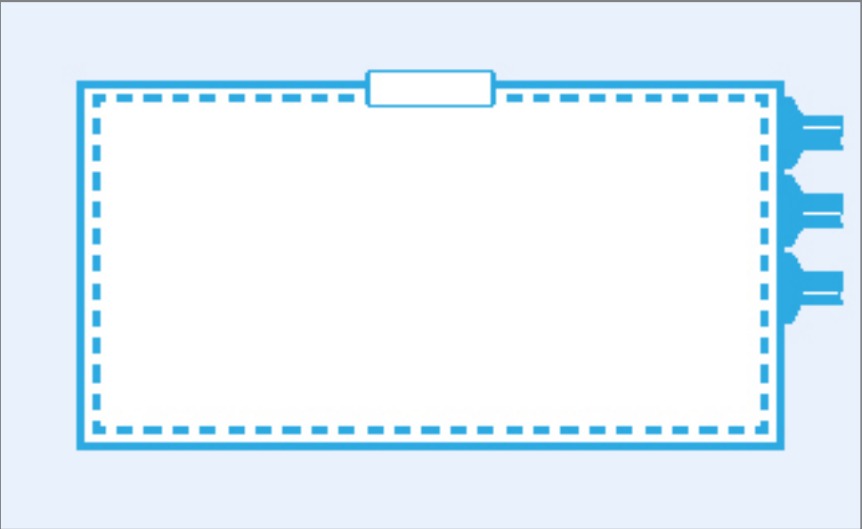

STEP 6:

Spray the sensor or rear projection film surface (covered with protective liner) with soap solution to lubricate.

STEP 7:

Working from the centre outwards, squeegee out the liquid and bubbles with firm pressure until no bubbles can be seen and no more liquid can be seen coming out at the edges. Dry up the liquid with a cloth as it is squeegeed out from under the film edges. Apply the squeegee to within a few millimetres of the flexible cable support plate. Dry as much liquid as possible around the flexible cables, taking care not to damage them. A plastic blade window foil application squeegee should be used to ensure sufficient pressure can be applied.
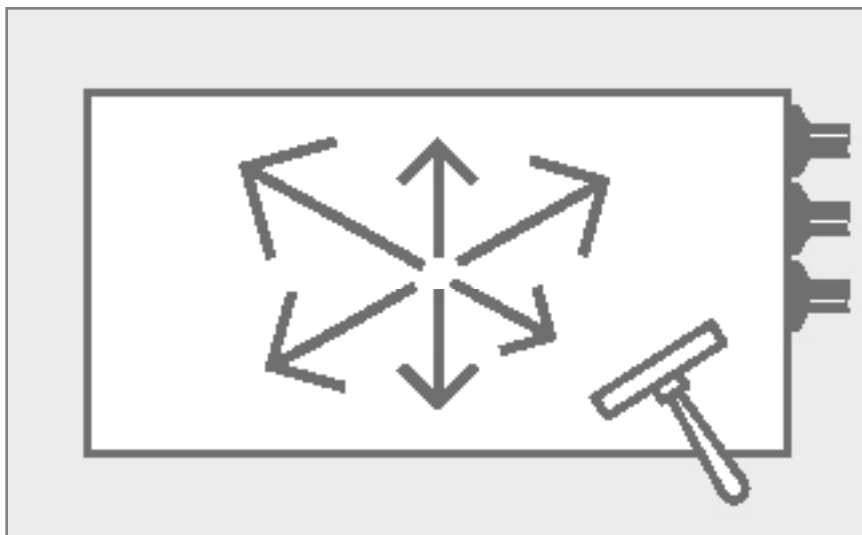
STEP 8:

Remove the protective liner from the rear of the sensor or rear projection film by carefully pulling it back at 180°. Use a piece of tape to help peel the liner away from the corner (standard grey rear projection film has a protective liner, other custom options may not).
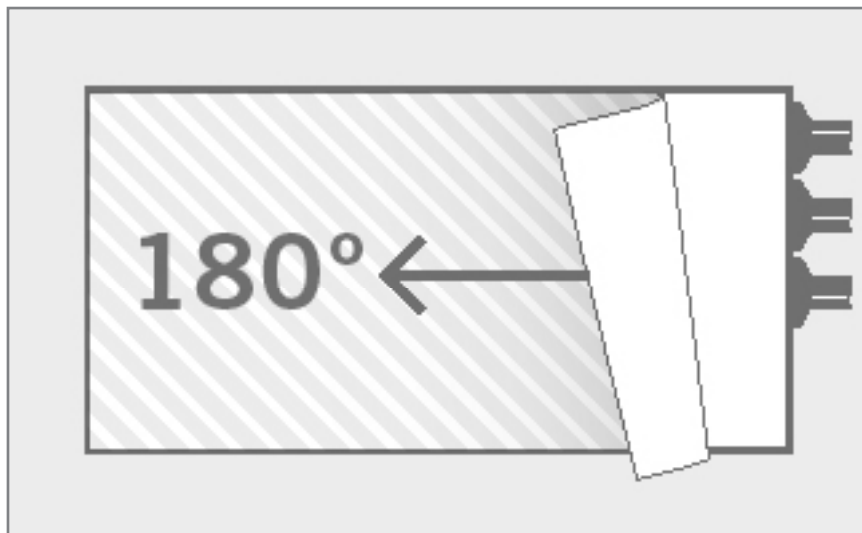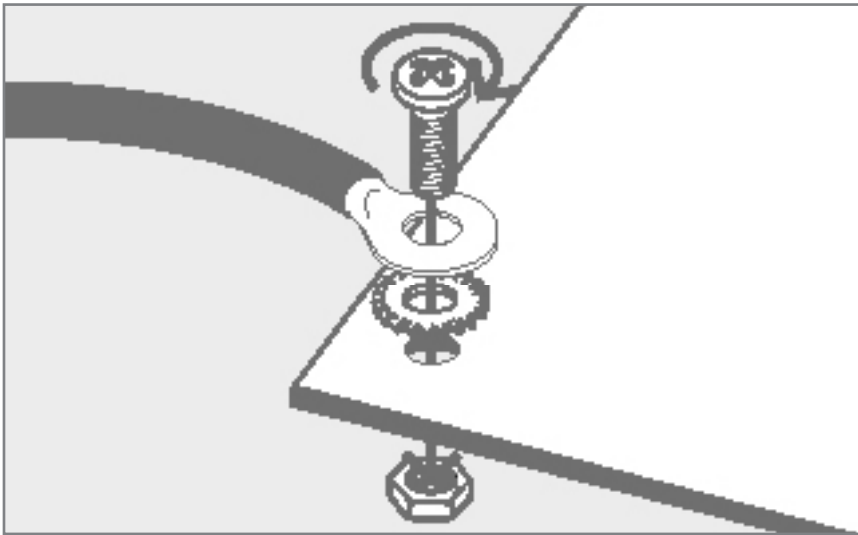
INSTALLATION:
CONTROLLER

INSTALLATION: CONTROLLER

STEP 1:

Attach a ground cable to one of the controller screw holes. This should be connected to a common ground with the PC system, LCD (if used), and a good earth ground.
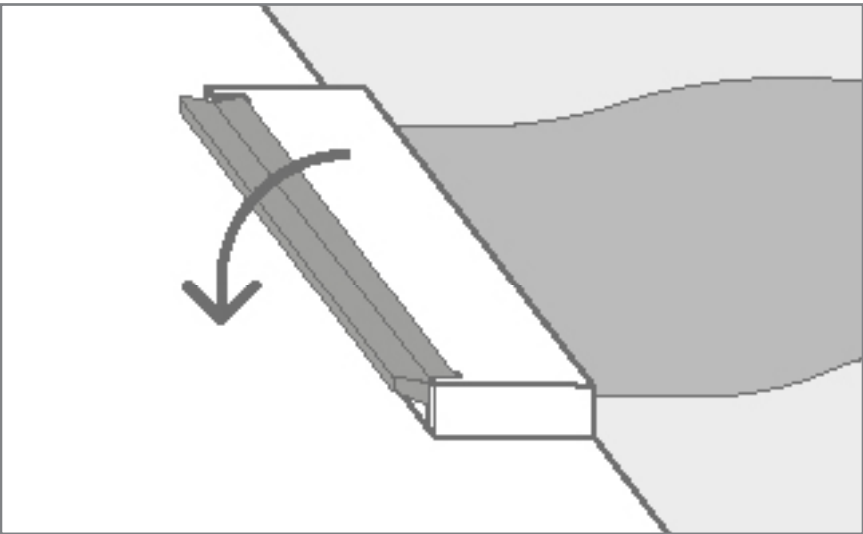

STEP 2:

With the controller mounted in position, plug the flexible cables into the appropriate ZIF connectors (refer to the product drawing for details). The flexible cable contacts must be dry and clean.
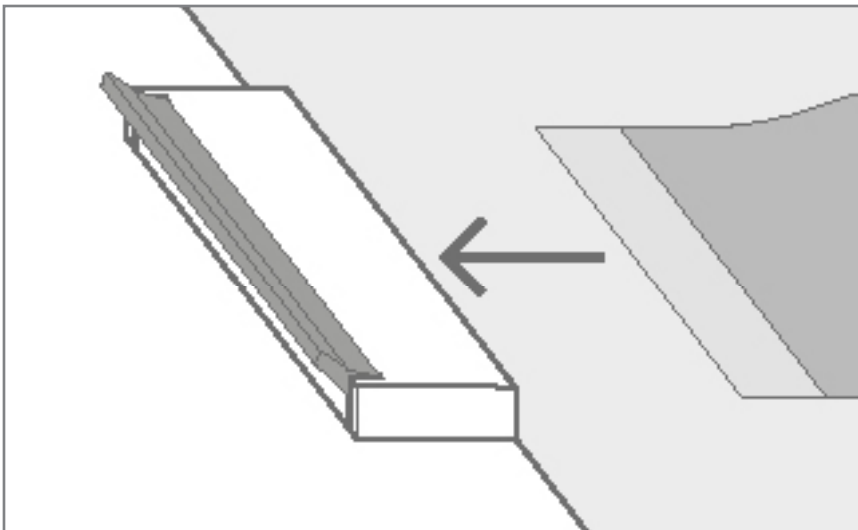
STEP 3:

Ensure that the flexible cables are fully inserted, and the ZIF connector locking bars are fully engaged.

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