

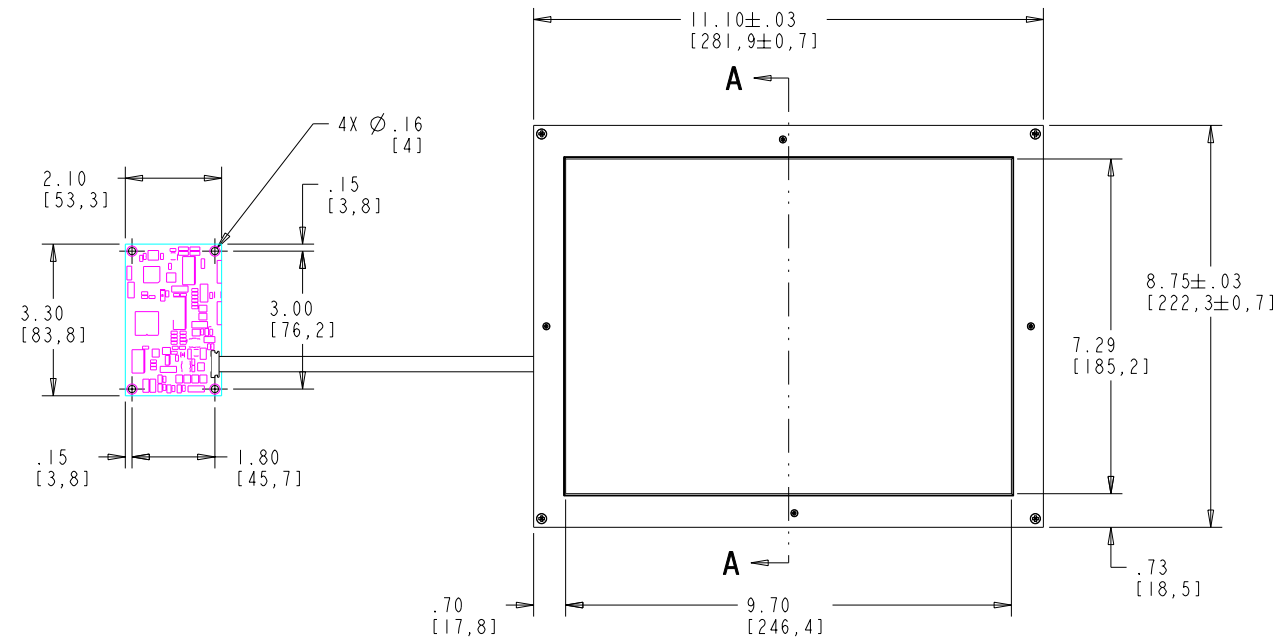
PROPRIETARY TO ELO TOUCHSYSTEMS, INC. AND SHALL NOT BE DISCLOSED OTHER THAN TO NECESSARY EMPLOYEES OR SUPPLIERS WITHOUT THE EXPRESS WRITTEN CONSENT OF ELO TOUCHSYSTEMS, INC.

CARROLLTOUCH TOUCHSCREEN

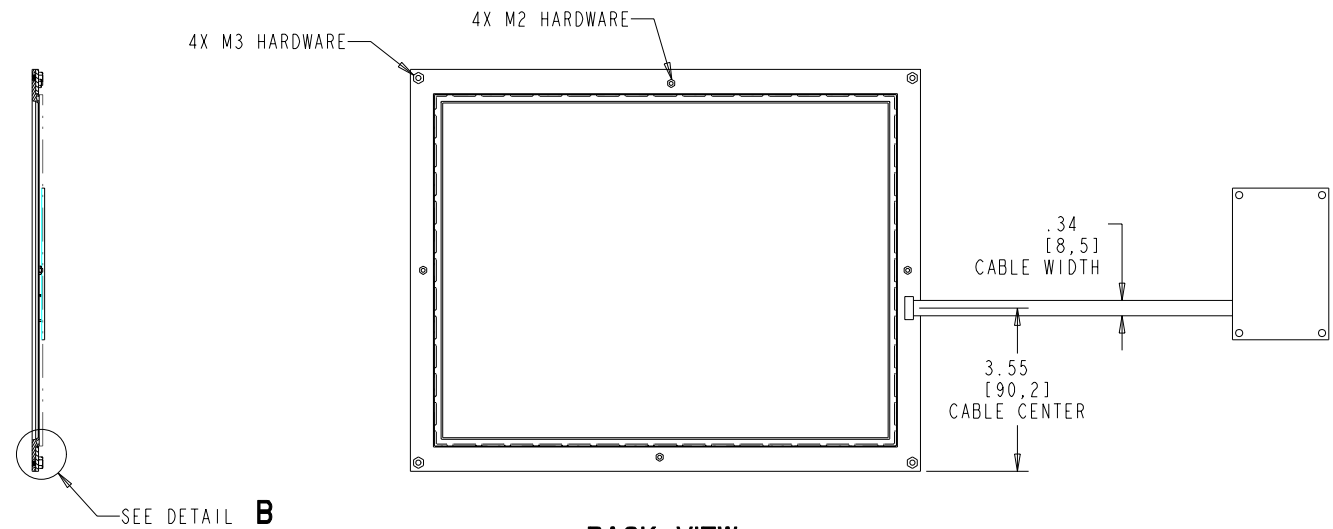
SCN-CT-FLT12.1-OD1-OXX-L

REVISIONS

REV	ZONE	BY	DESCRIPTION	DATE	APPROVED
A	--	HAG	RELEASED PER ECO 002419	06.21.02	
B	--	HAG	REVISED PER ECO 002629	09.30.02	



FRONT VIEW

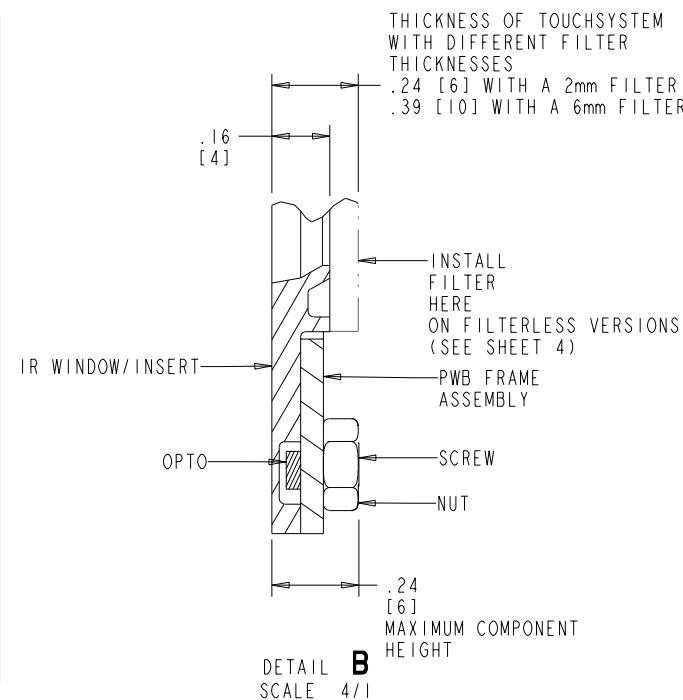


BACK VIEW

SECTION **A-A**

PIN OUT FOR P2 CONNECTOR ON CONTROLLER			
SIGNAL NAME	DB-9 PIN	P2 PIN	SOURCED BY
-DCD	1	1	ctrlr
-DSR	6	2	ctrlr
RXD	2	3	ctrlr
-RTS	7	4	host
TXD	3	5	host
-CTS	8	6	ctrlr
-DTR	4	7	host
RI	9	8	n/u
SG	5	9	com
n/u	n/c	10	n/u

PIN OUT FOR P4 CONNECTOR ON CONTROLLER		
SIGNAL NAME	P4 PIN	SIGNAL FUNCTION
+REGULATED PWR	1	+5 VOLTS DC +/-5%
PWR COM	2	SUPPLY VOLTAGE NEGATIVE
RESERVED	3	NO CONNECTION ALLOWED
PWR COM	4	SUPPLY VOLTAGE NEGATIVE
LED REMOTE	5	
n/c	6	KEY LOCATION
n/c	7	
FRAME GROUND	8	
-RESET	9	OPEN=NORMAL OPERATION SHORT TO PWR COM=HARDWARE RESET
RESERVED	10	NO CONNECTION ALLOWED



POTENTIAL DISPLAYS AND MEASUREMENTS

MANUFACTURER	DISPLAY MODEL	ACTIVE AREA X	ACTIVE AREA Y	OUTSIDE X	OUTSIDE Y
HITACHI	TX31D30VC1CAA	246	184.5	280	205.5
NEC	NL10276AC24-05	245.76	184.32	290	255
NEC	NL8060AC31-12G	246	184.5	280	210
SHARP	LQ12IS1DG11	246	184.5	290	225
SHARP	LQ12IS1DG31	246	184.5	276	209
TOSHIBA	LTM12C275A	246	184.5	290	220
TOSHIBA	LTM12C289	246	184.5	278.3	209

PIP NUMBER	DESCRIPTION	DESCRIPTION
C35522-000	SCN-CT-FLT12.1-OD1-000-L	FILTERLESS
E93152-000	SCN-CT-FLT12.1-OD1-018-L	2.3mm THICK, GLASS
D20416-000	SCN-CT-FLT12.1-OD1-002-L	2mm THICK, ACRYLIC

ITEM NO.	QTY REQ'D	DRAWING OR PART NO.	DESCRIPTION	MATERIAL SPECIFICATION															
PARTS LIST																			
<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">PART. NO. MS500283</td> <td style="width: 20%;">UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS</td> <td style="width: 20%;">DRAWN A.GRICE</td> <td style="width: 20%;">DATE 06.21.02</td> <td style="width: 20%;">TITLE MKTG DWG., SCN-CT-FLT12.1-OD1-000-L SCN-CT-FLT12.1-OD1-018-L SCN-CT-FLT12.1-OD1-002-L</td> </tr> <tr> <td>INCH</td> <td>TOLERANCES ARE: DECIMALS ±1/2° XX : ± .030 XXX : ± .020 XXXX : ± .010</td> <td>CHECK A.GRICE</td> <td>DATE 06.21.02</td> <td></td> </tr> <tr> <td>DO NOT SCALE DRAWING</td> <td>ANGLES ±1/2° FRACTIONS ±1/32</td> <td>DESIGN A.GRICE</td> <td>THIRD ANGLE PROJECTION</td> <td></td> </tr> </table>					PART. NO. MS500283	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS	DRAWN A.GRICE	DATE 06.21.02	TITLE MKTG DWG., SCN-CT-FLT12.1-OD1-000-L SCN-CT-FLT12.1-OD1-018-L SCN-CT-FLT12.1-OD1-002-L	INCH	TOLERANCES ARE: DECIMALS ±1/2° XX : ± .030 XXX : ± .020 XXXX : ± .010	CHECK A.GRICE	DATE 06.21.02		DO NOT SCALE DRAWING	ANGLES ±1/2° FRACTIONS ±1/32	DESIGN A.GRICE	THIRD ANGLE PROJECTION	
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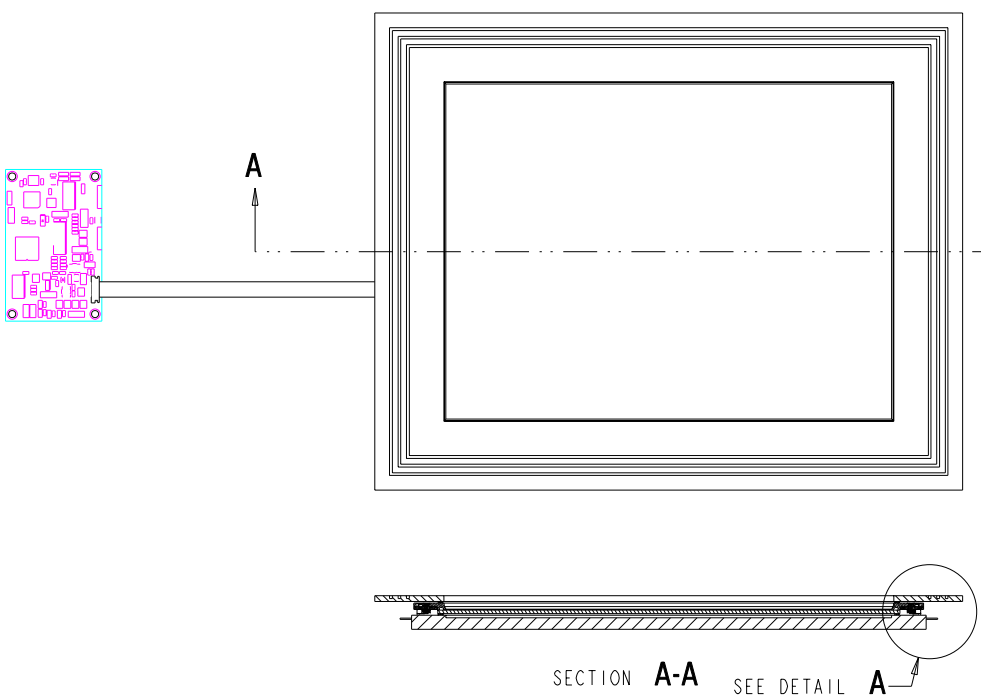
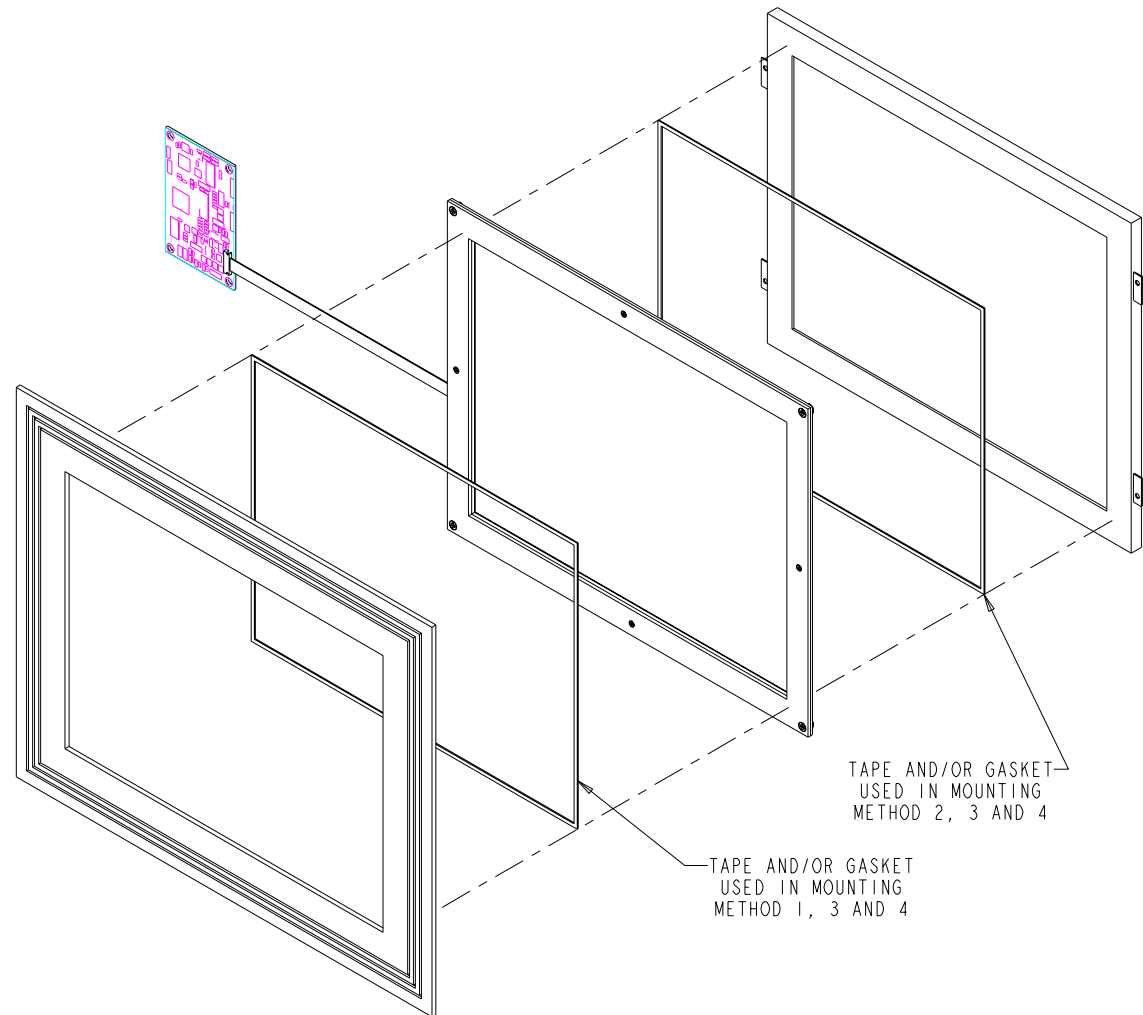


SHEET 1 OF 4 REV B

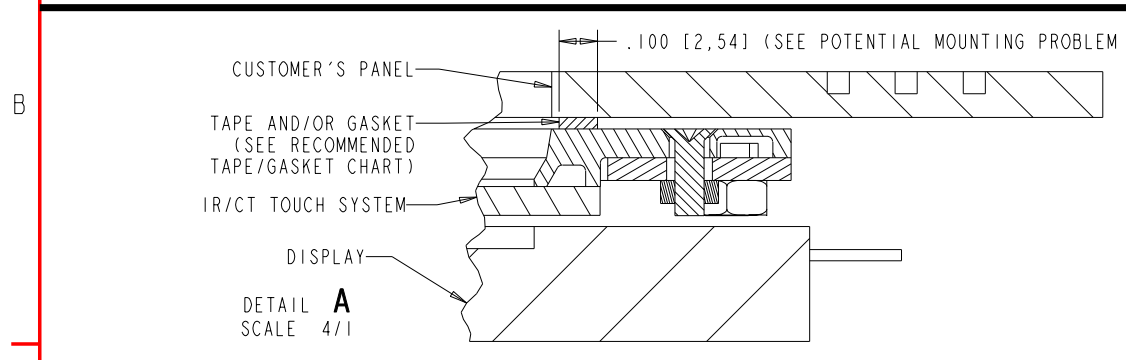
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CARROLLTOUCH TOUCHSCREEN
SCN-CT-FLT12.1-OD1-0XX-L

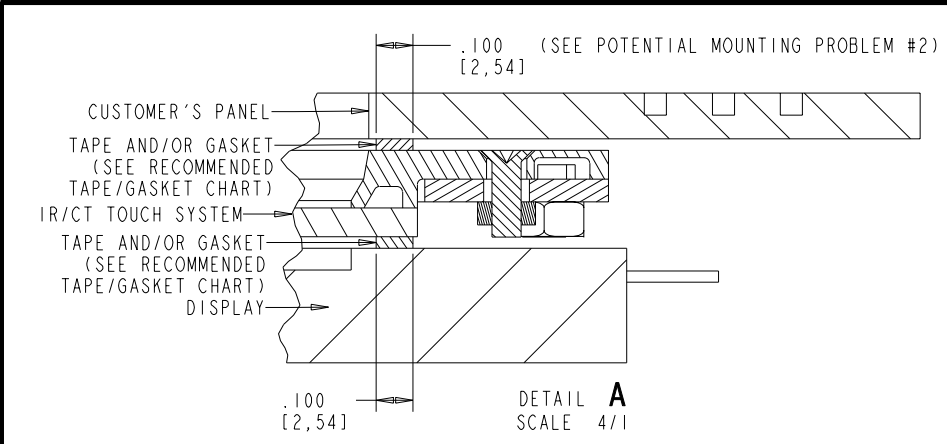
MOUNTING METHODS



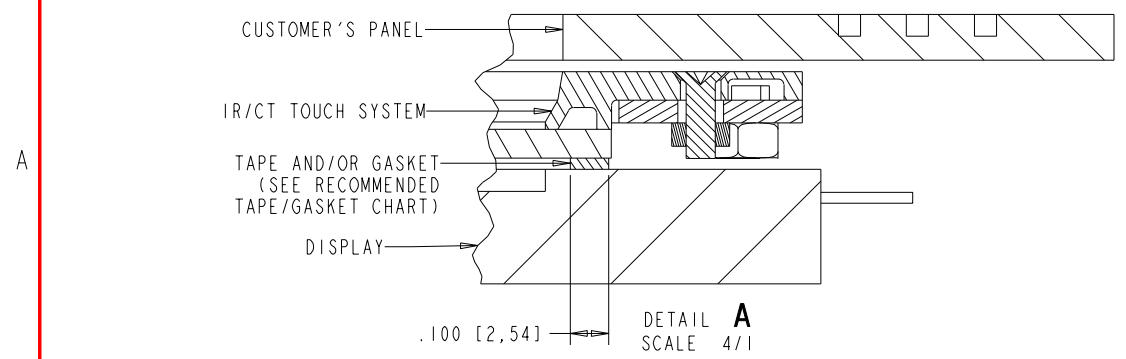
RECOMMENDED TAPES/GASKETS				
BETWEEN CUSTOMER PANEL AND TOUCH SYSTEM (DOUBLE AND SINGLE SIDED ADHESIVE TAPE)				
MOUNTING METHOD	MFG	MFG PART NUMBER	THICKNESS	COMPRESSED THICKNESS
1, 2 AND 3	3M	9500PL	.005 in (0.13 mm)	.005 in (0.13 mm)
	3M	4920	.015 in (0.4 mm)	.015 in (0.4 mm)
	EASTERN	2032AB	.032 in (0.8 mm)	.025 in (0.64 mm)
4	ROGERS CORP	4701-30	.09 in (2.29 mm)	.03 in (0.76 mm)
BETWEEN DISPLAY AND TOUCH SYSTEM (SINGLE SIDED ADHESIVE TAPE ONLY)				
MOUNTING METHOD	MFG	MFG PART NUMBER	THICKNESS	COMPRESSED THICKNESS
2, 3 AND 4	ROGERS CORP	4701-30	.09 in (2.29 mm)	.03 in (0.76 mm)



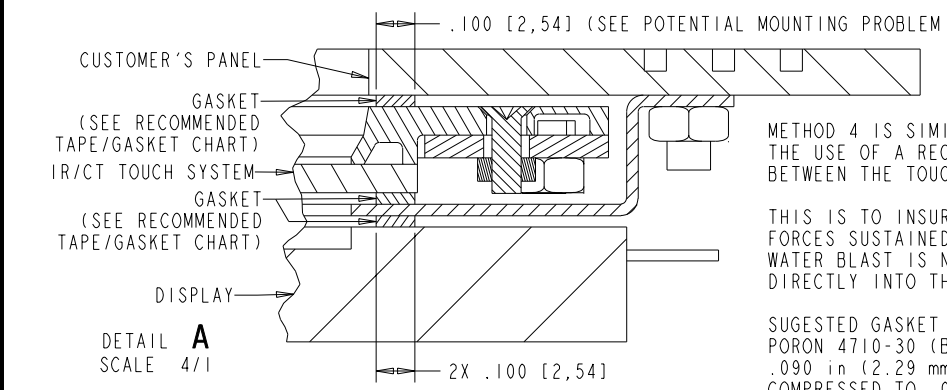
METHOD 1 MOUNTING
 TOUCH SYSTEM IS TAPED ONLY TO THE CUSTOMER PANEL
 ADVANTAGE: WATER/DUST SEAL BETWEEN THE CUSTOMER PANEL AND TOUCH SYSTEM.
 DISADVANTAGE: DUST CAN ENTER BETWEEN THE TOUCH SYSTEM AND THE DISPLAY.
 SUGGESTED TAPE:
 SEE RECOMMENDED TAPE TABLE



METHOD 3 MOUNTING
 TOUCH SYSTEM IS "SANDWICHED" BETWEEN THE CUSTOMER PANEL AND THE DISPLAY. THE TAPE CAN BE IN STRIPS TO FORM A RECTANGLE ON THE CUSTOMERS PANEL OR ON THE IR/CT TOUCH SYSTEM
 ADVANTAGE: BOTH WATER AND DUST SEAL CAN BE ACHIEVED ON THE OPERATOR SIDE OF DEVICE AND A DUST SEAL CAN BE ACHIEVED BETWEEN THE TOUCH SYSTEM AND THE DISPLAY.
 DISADVANTAGE: SEE POTENTIAL MOUNTING PROBLEMS #1
 SUGGESTED TAPE:
 SEE RECOMMENDED TAPE TABLE



METHOD 2 MOUNTING
 TOUCH SYSTEM IS TAPED ONLY TO THE DISPLAY
 ADVANTAGE: ALIGNMENT DIRECTLY TO THE DISPLAY
 DISADVANTAGE: A POSSIBLE WATER/DUST LEAKAGE BETWEEN THE CUSTOMER PANEL AND THE TOUCH SYSTEM.
 SUGGESTED TAPE:
 SEE RECOMMENDED TAPE TABLE



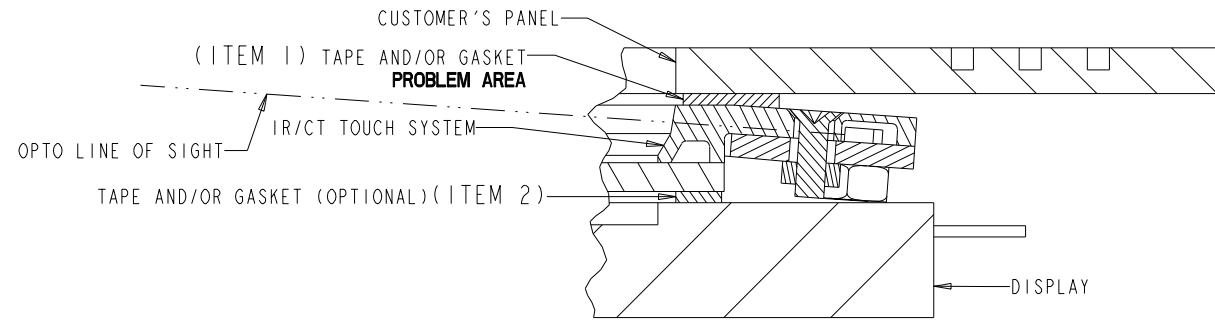
METHOD 4 MOUNTING
 IS A NEMA 4, 4X AND 12 SEAL FROM THE OPERATOR SIDE OF THE DEVICE.
 METHOD 4 IS SIMILAR TO METHOD 3, WITH THE EXCEPTION OF THE USE OF A RECTANGULAR BRACKET SANDWICHED BETWEEN THE TOUCH SYSTEM AND THE DISPLAY.
 THIS IS TO INSURE THAT THE FORCES SUSTAINED FROM THE WATER BLAST IS NOT TRANSFERED DIRECTLY INTO THE DISPLAY.
 SUGGESTED GASKET MATERIAL:
 PORON 4710-30 (BY:ROGERS CORP.)
 .090 in (2.29 mm) THICK,
 COMPRESSED TO .030 in (0.76 mm).

TITLE				
MKTG DWG., SCN-CT-FLT12.1-OD1-000-L SCN-CT-FLT12.1-OD1-018-L SCN-CT-FLT12.1-OD1-002-L				
SIZE	SCALE	SHEET	DWG. NO.	REV
D	1/2	2 OF 4	MS500285	B

DWG. NO. MS500285 REV. B SHEET 2 OF 4

POTENTIAL MOUNTING PROBLEMS

POTENTIAL MOUNTING PROBLEM #1



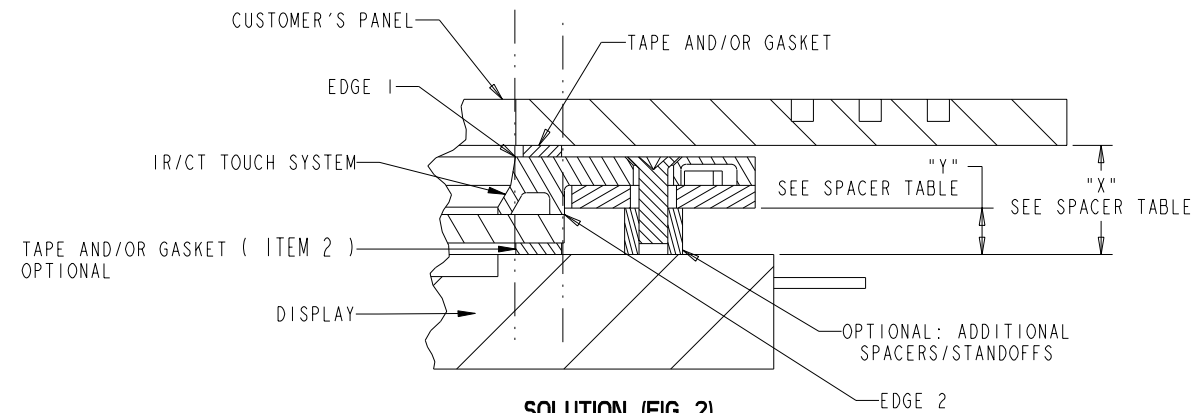
PROBLEM (FIG 1)

GASKET (ITEM 1) TOO WIDE

PROBLEM (FIG 1): THIS DESIGN CAUSES THE TOUCH SYSTEM TO TILT. THE PROPER OPTO ALIGNMENT IS NOT ACHIEVED DUE TO EXTRA WIDTH OF TAPE/GASKET MOUNTED TO CUSTOMER PANEL. SEE SOLUTIONS BELOW.

SPACER TABLE FOR FIG 2	
DISTANCE "X"	SPACER LENGTH "Y"
6mm	3mm
7mm	4mm
8mm	5mm

* PROVIDES .5mm OVER CORRECTION WHICH SLIGHTLY ENHANCES OPTICAL SIGNAL

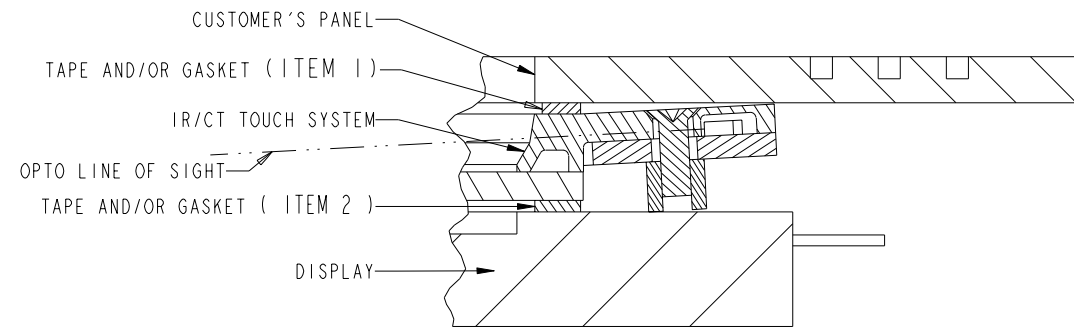


SOLUTION (FIG 2)

SOLUTION (FIG 2)

SOLUTION (FIG 2): MAKE THE GASKET (ITEM 1) SO THAT THE INSIDE OPENING LINES UP WITH THE EDGE OF THE TOUCH SYSTEM (EDGE 1) AND THE OUTER OPENING LINES UP WITH THE OUTER EDGES OF THE FILTER (EDGE 2).

RECOMMENDED SPACER INSTALLATION WITH THE SOLUTION SEE TABLE FOR SPACER LENGTH.

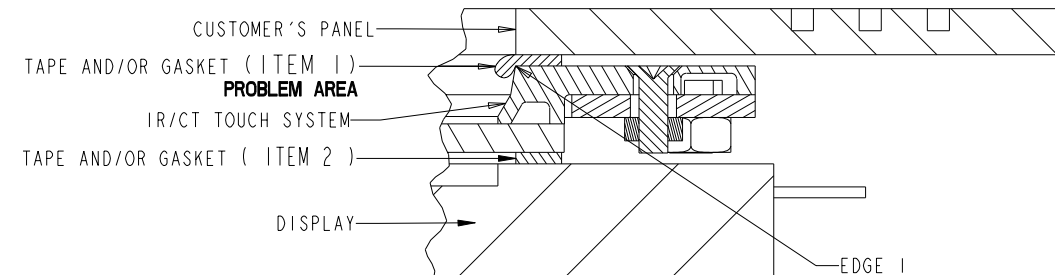


OVER CORRECTION (FIG 3)

OVER CORRECTION (FIG 3)

SPACER INSTALLATION MAY CAUSE SLIGHT OVER CORRECTION OF OPTO LINE OF SIGHT (FIG 3). CORRECTION SHOULD BE LESS THAN 1mm.

POTENTIAL MOUNTING PROBLEM #2



GASKET INTERFERENCE INTO OPTO LINE OF SIGHT (FIG 4)

GASKET INTERFERENCE INTO OPTO LINE OF SIGHT (FIG 4)

PROBLEM: WHEN THE GASKET IS COMPRESSED IT MAY BLEED OVER INTO THE LINE OF SIGHT OF THE OPTO'S AS SEEN IN FIG 4.

SOLUTION: SET THE GASKET AWAY FROM EDGE 1 ABOUT .5mm TO 1mm (AS SEEN IN FIG 3) TO PROVIDE OPTIMUM GASKET EXPANSION DURING COMPRESSION WITHOUT BLEEDING OVER EDGE 1 INTO THE OPTO'S LINE OF SIGHT OR CUT GASKET OFF SO OPTO LINE OF SIGHT IS NOT OBSTRUCTED.

TITLE				
MKTG DWG.				
SCN-CT-FLT12.1-OD1-000-L				
SCN-CT-FLT12.1-OD1-018-L				
SCN-CT-FLT12.1-OD1-002-L				DWG. NO. MS500285
SIZE	SCALE	SHEET	DWG. NO.	REV
D	1/2	3 OF 4	MS500285	B

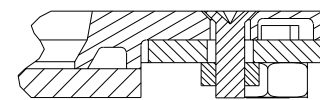
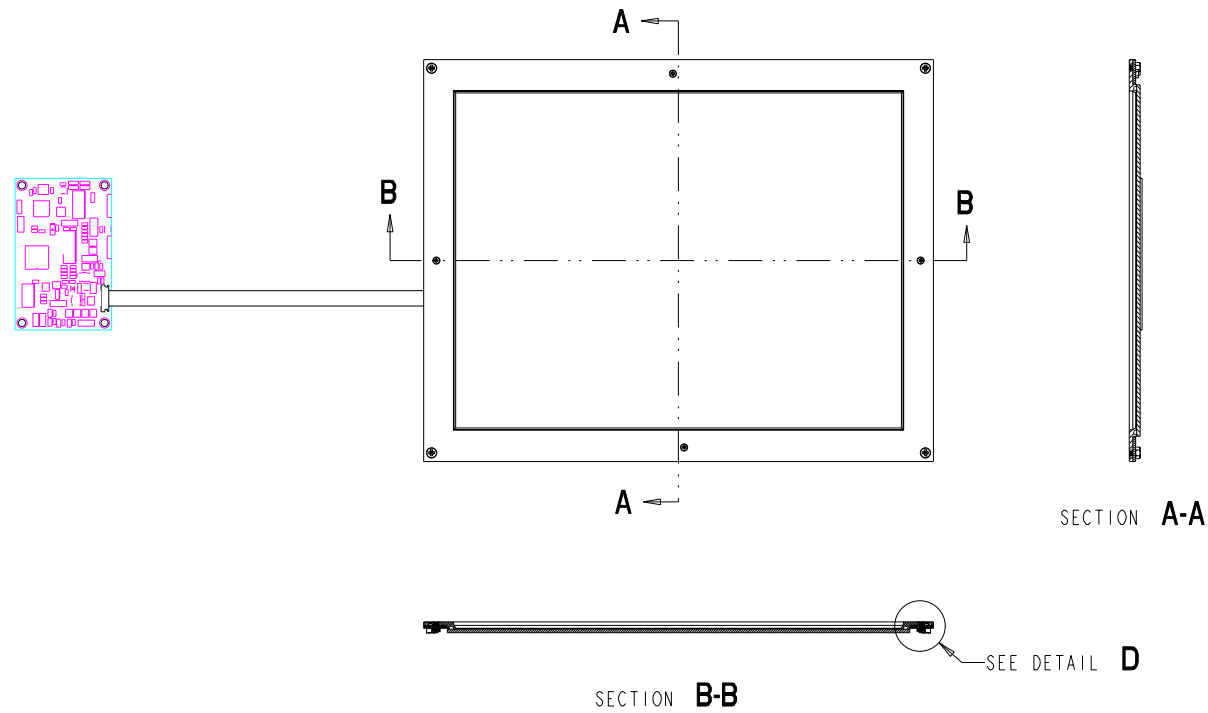
REV 4 3/11 MS500285

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CARROLLTOUCH TOUCHSCREEN

SCN-CT-FLT12.1-OD1-OXX-L

**ADHERING A FILTER TO A
NO-FILTER CT TOUCH SYSTEM**



DETAIL D
SCALE 4/1

STEP 1

APPLY PROTECTIVE TAPE TO THE TOUCH SYSTEM AS SHOWN IN FIGURE 1, BETWEEN CIRCUIT BOARDS AND INSERT ON ALL 4 SIDES. LAY THE TAPE OVER THE CIRCUIT BOARDS, TO PROTECT THE CIRCUITRY FROM THE ADHESIVE DURING APPLICATION AND CURING.

STEP 2

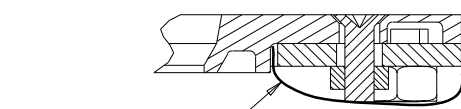
APPLY ADHESIVE AND FILTER IN ACCORDANCE TO CT SPECIFICATION 2000-0340. SEE FIGURE 2. FILTER SIZE FOR THE 12LP IS 7.65 in (194.31 mm) X 10.06 in (255.52 mm)

STEP 3

AFTER CURING REMOVE TAPE AND ADHESIVE FROM ASSEMBLY IN ACCORDANCE TO SPECIFICATION CT 2000-0340. SEE FIGURE 3.

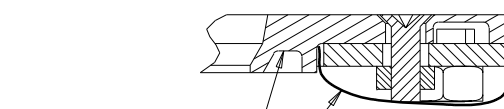
STEP 4

THE FINAL ASSEMBLY SHOULD LOOK LIKE FIGURE 4.



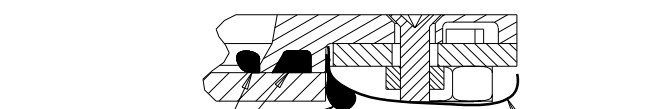
DETAIL D
SCALE 4/1

FIGURE 1



APPLY
ADHESIVE AND FILTER
PROTECTIVE TAPE
DETAIL D
SCALE 4/1

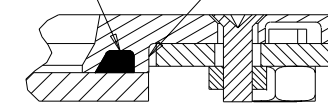
FIGURE 2



CURED ADHESIVE
PROTECTIVE TAPE
DETAIL D
SCALE 4/1

FIGURE 3

CURED ADHESIVE
ADHESIVE AND FILTER NOT TO EXTEND BEYOND THIS WALL ON ALL 4 SIDES.



DETAIL D
SCALE 4/1

FIGURE 4

TITLE
MKTG DWG.
SCN-CT-FLT12.1-OD1-000-L
SCN-CT-FLT12.1-OD1-018-L
SCN-CT-FLT12.1-OD1-002-L



SIZE	SCALE	SHEET	DWG. NO.	REV
D	1/2	4 OF 4	MS500285	B

REV
4 OF 4

DWG. NO. MS500285