

SOLEN EXPRESSION SPEAKER KIT - DESCRIPTION

The Solen Expression speaker kit was designed with the words "smooth" and "fun" in mind. This was achieved by having the midrange slightly recessed in order to prevent vocals to be shouty. Bass is dominant and suprising for a 15cm woofer. The use of a tweeter with a small waveguide provides a great soundstage and imaging.

Solen offers the cabinets for this kit as either a flat pack or a assembled and professionnal painted cabinet.



Detailed plans are also provided if you want to do it yourself.

HIGHLIGHTS

- Laidback sound with slightly recessed midrange. Vocals are smooth and never shouty.
- Bass is strong and can fill small to medium size room.
- Great performance at lower listening volume.
- Simple, yet strong enclosure that is easy to build.

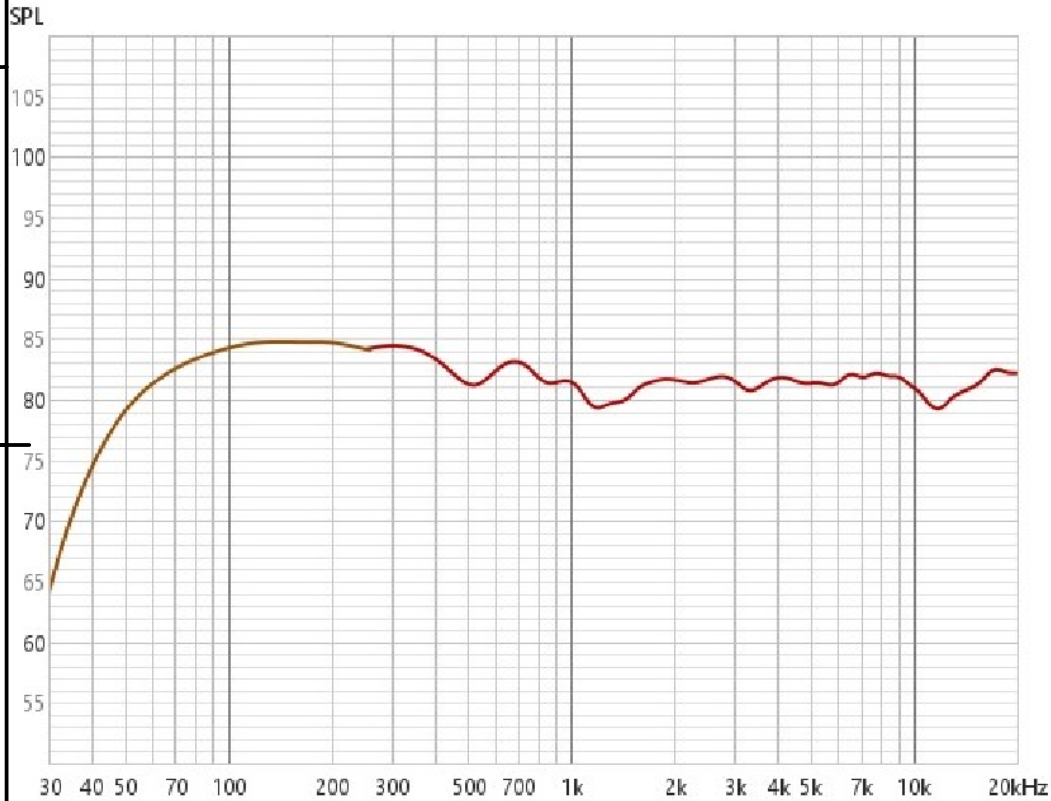
SPECIFICATIONS

- HIGH FREQUENCY DRIVER : SB Acoustics SB26STWGC-4
- LOW FREQUENCY DRIVER : Airborne FR148B8-10M
- FREQUENCY RESPONSE ON AXIS (± 3 dB) : 50 Hz - 25 kHz
- LOW FREQUENCY EXTENSION (-10dB IN ROOM): 37 Hz
- SENSITIVITY IN-ROOM (2.83V/1m): 84dB
- IMPEDANCE : 8Ω (minimum 8.8Ω at 195 Hz)
- EXTERNAL DIMENSIONS (HxWxD) : 350x190x255 mm
- RECOMMENDED AMPLIFIER POWER : 70W+ at 8Ω
- WEIGHT : 8.0 kg (17.6 lbs)

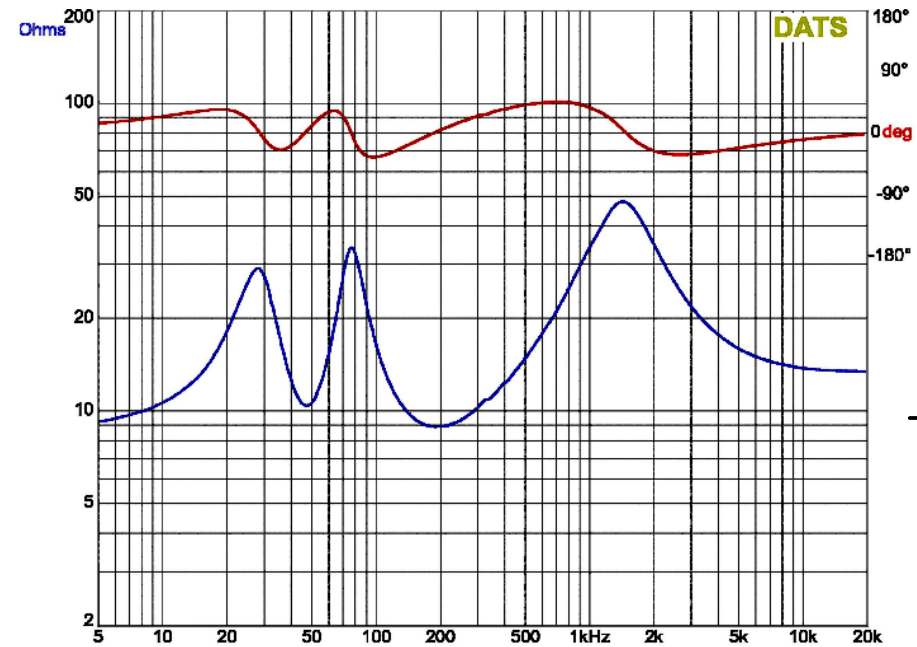
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		Drawn Date: 2024-04-18	Sheet Size: LETTER
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
SOLEN EXPRESSION SPEAKER KIT - MEASUREMENTS

FREQUENCY RESPONSE



IMPEDANCE CURVE

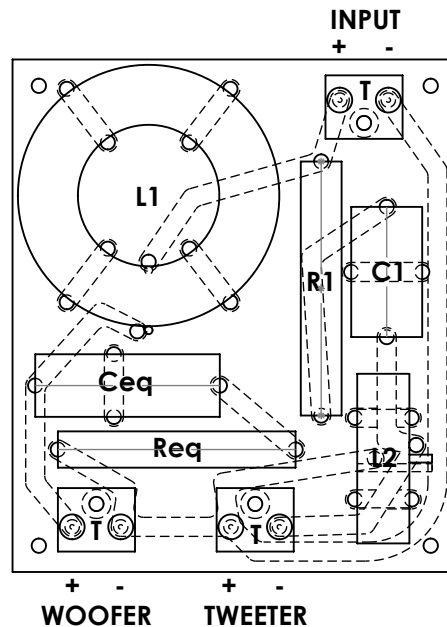
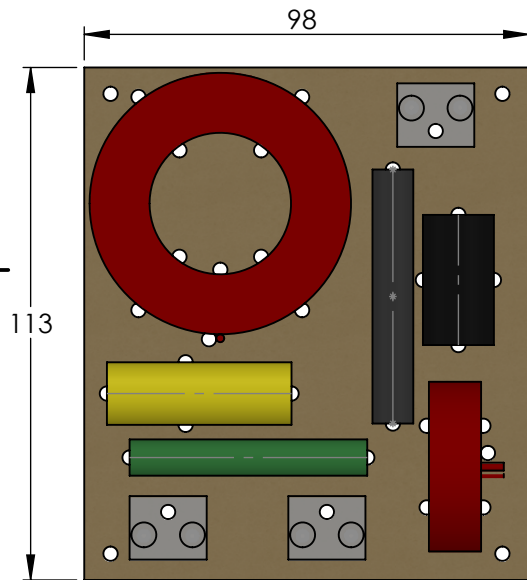


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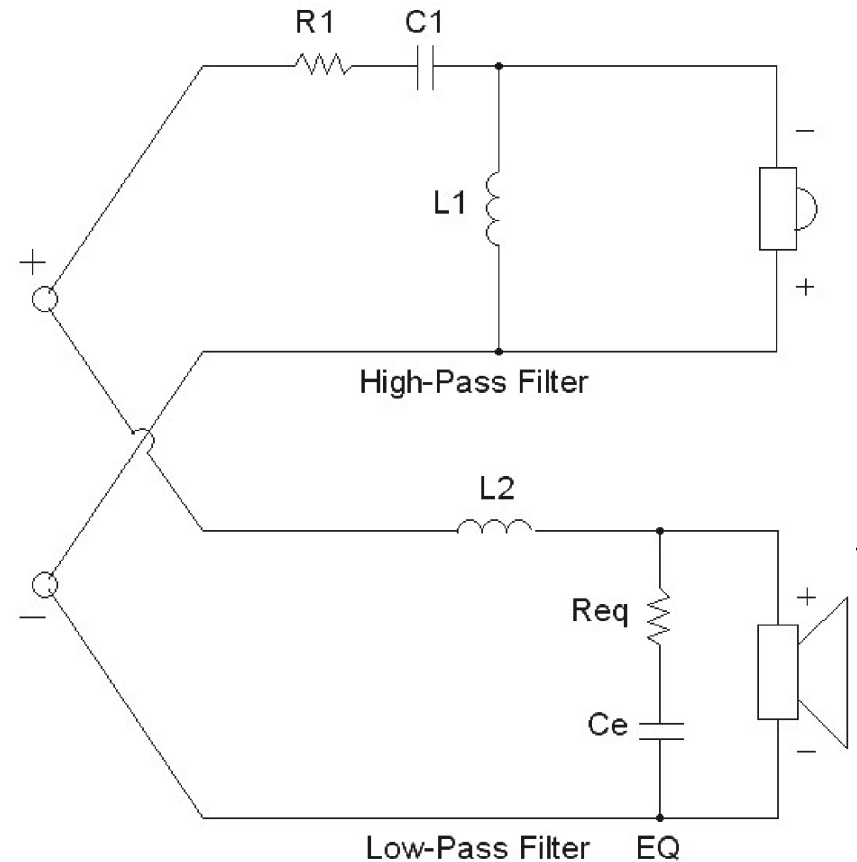
SOLEN EXPRESSION SPEAKER KIT - CROSSOVER

EXPRESSION CROSSOVER PARTS LIST

L1 : 3.6mH (S203.6) [1.5Ω DCR]
 L2 : 0.33mH (S20.33) [0.38Ω DCR]
 Ceq : 8.2µf (PEMT160J825)
 C1 : 3.9µf (PA390)
 Req : 4.3Ω (MO1000J4R3)
 R1 : 10Ω (AOC1600J10R)
 T : TERMINAL (322GDS)





EXPRESSION CROSSOVER SCHEMATIC



NOTES

- USE TIE WRAP ON THE INDUCTORS AND CAPACITORS TO FIX THEM IN PLACE.
- USE HOT GLUE ON EACH END OF THE RESISTORS.
- MAKE SURE TO REMOVE THE RED ENAMEL ON THE INDUCTORS TO SOLDER.
- PUT SMALL AMOUNTS OF HOT GLUE ON LOOSE WIRING IN THE PATHS UNDERNEATH THE CUSTOM HDF CROSSOVER BOARD

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SOLENS EXPRESSION SPEAKER KIT - ASSEMBLY INSTRUCTIONS (1/2)

1. DRIVERS AND TERMINAL SCREW HOLES

IT IS HIGHLY RECOMMENDED TO DRILL LOCATING HOLES FOR THE WOOFER, TWEETER AND TERMINAL.

1. INSERT THE DRIVERS IN THEIR RESPECTIVE OPENING;
2. ORIENT THE DRIVERS CORRECTLY (OR TO YOUR LIKING);
3. USE A CENTER HOLE PUNCH TO MARK WHERE TO DRILL;
4. REMOVE THE DRIVERS;
5. USE A DRILL BIT SLIGHTLY SMALLER THAN THE SHAFT OF THE SCREWS WHERE THE MARKS ARE;
6. DO THE SAME STEPS FOR THE TERMINAL AT THE BACK

2. CABLING

1. CUT THE FT4/16-2 TO THESE LENGHTS :

- A. 2x 7" (FOR THE TERMINAL)
- B. 2x 8" (FOR THE WOOFER)
- C. 2x 16" (FOR THE TWEETER)

2. INSTALL THE SPEAKER CONNECTORS ON THE CABLES :

- A. WOOFER CABLE : RED=GFD205-1614R // BLACK=GFD110-1614B
- B. TWEETER CABLE : RED=GFD205-1614R // BLACK=GFD110-1614B
- C. TERMINAL CABLE : RED=GFD205-1614R // BLACK=GFD205-1614B



(ONE END OF THE CABLES HAS NO CONNECTORS AS THEY GO IN THE TERMINALS (322GDS) ON THE CROSSOVER BOARD)

SCREWS

- OXSOCKET8X1 (10x) ARE USED FOR THE WOOFER
- OXSOCKET6X3/4 (16x) ARE USED FOR THE TWEETER AND TERMINAL
- 8X1/2 (8x) ARE USED TO FIX THE CROSSOVER ON THE BOTTOM INSIDE OF THE ENCLOSURE

3. WOOFER GASKET

APPLY THE GASKET (SCE41BSC) ON THE UNDER SIDE OF THE WOOFER FRAME.

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SOLEN EXPRESSION SPEAKER KIT - ASSEMBLY INSTRUCTIONS (2/2)



4. DAMPING MATERIAL

****THIS STEP HAS ALREADY BEEN DONE IF YOU BOUGHT THE ASSEMBLED CABINET****

1. APPLY THE DAMPING PAD INSIDE THE ENCLOSURE AS SHOWN ON THE "DAMPING MATERIAL" PAGE. YOU CAN USE A ROLLER TO APPLY PRESSURE TO MAKE SURE IT IS GLUED CORRECTLY. IT IS RECOMMENDED TO USE STAPLES TO MAKE SURE THE PADS DON'T COME OFF.
2. INSTALL THE RECYCLED FELT (FLEX-XEL-S-125) IN THE CABINET. IT IS RECOMMENDED TO USE STAPLES TO MAKE SURE IT DOESN'T MOVE AROUND.
 - A. ONE SMALL SHEET UNDER THE BRACE ON EACH SIDE;
 - B. MAKE A "U" SHAPE WITH THE BIG SHEET AND PLACE IT SO THAT IT GOES OVER THE PORT

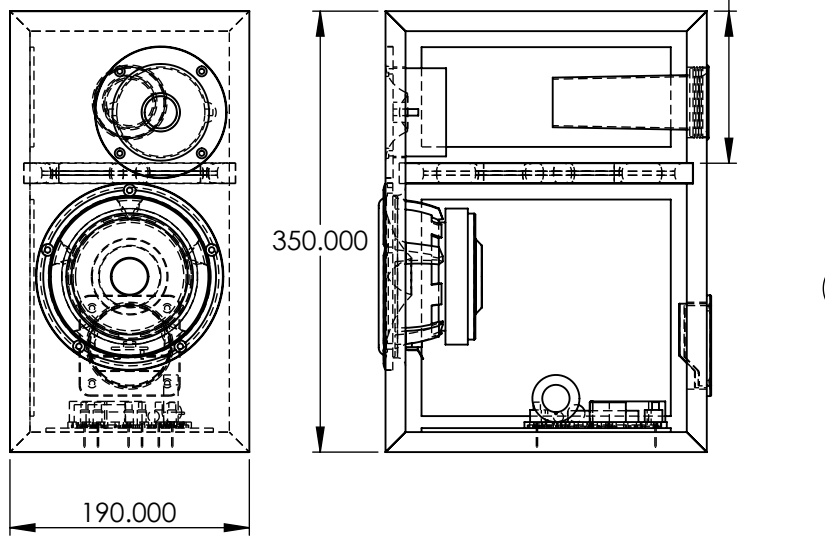
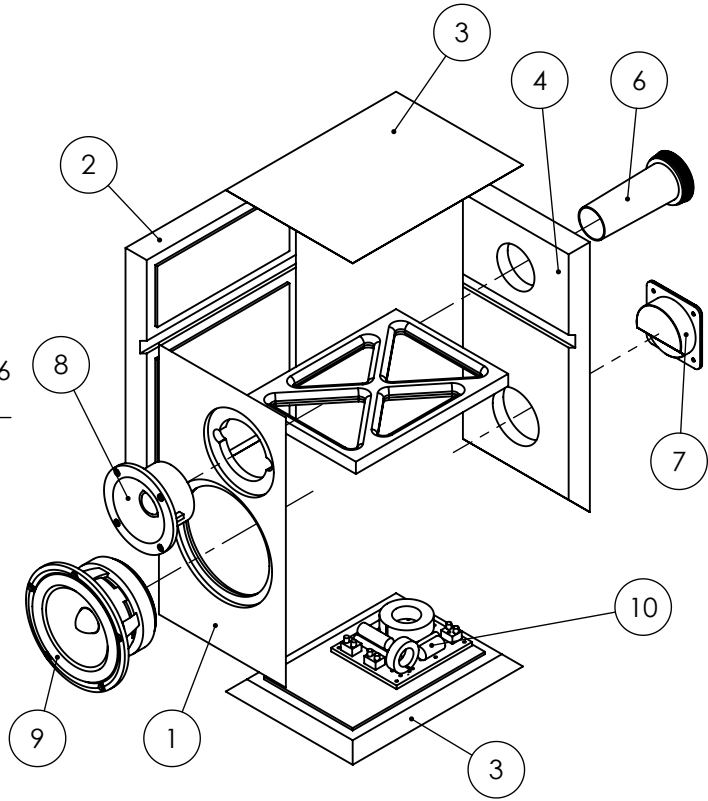
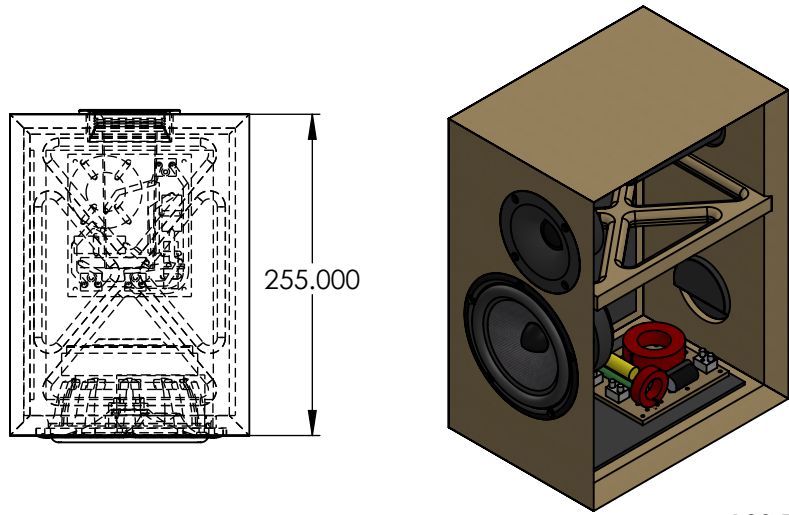
5. INSTALLING THE PARTS



1. CONNECT ALL THE CABLES ON THEIR RESPECTIVE TERMINALS ON THE CROSSOVER BOARD;
2. SCREW THE CROSSOVER BOARD INSIDE ON THE BOTTOM OF THE CABINET (USING THE 8X1/2). DON'T OVERTIGHTEN THEM.
3. CONNECT THE TWEETER AND SCREW IT IN PLACE (USING THE OXSOCKET6X3/4);
4. USE A TIE-WRAP TO FIX THE TWEETER CABLE ON THE PORT SO THAT IT DOESN'T MOVE AROUND (THIS STEP IS OPTIONNAL, BUT RECOMMENDED);
5. CONNECT THE WOOFER AND SCREW IT IN PLACE (USING THE OXSOCKET8X1);
6. CONNECT THE TERMINAL CONNECTORS AND SCREW IT IN PLACE (USING THE OXSOCKET6X3/4);
7. INSTALL THE PORT (PRESS FIT) IN THE SMALL OPENING AT THE BACK (BEHIND THE TWEETER);

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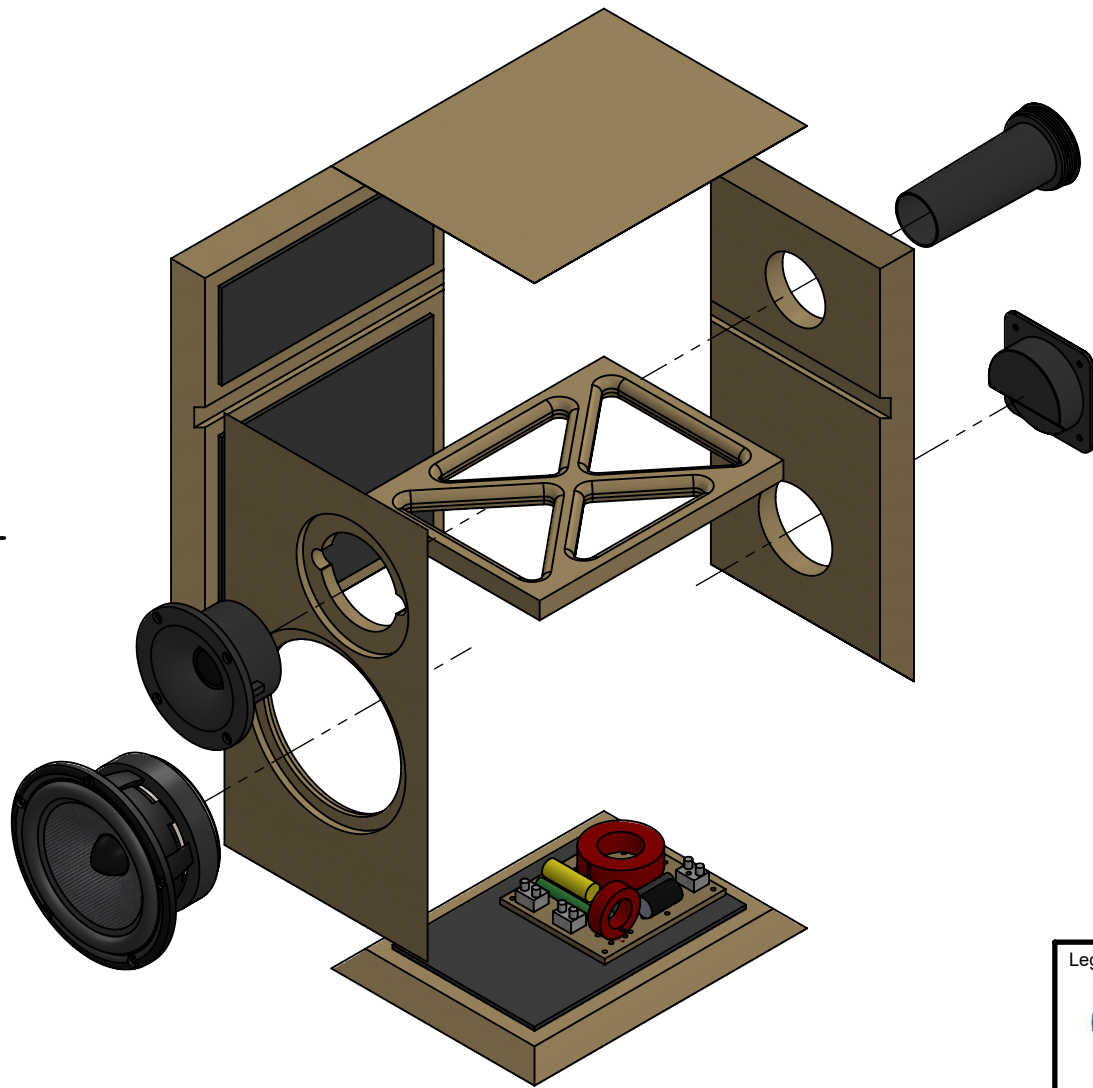
SOLEN EXPRESSION SPEAKER KIT - ENCLOSURE PLANS

ITEM NO.	PART NUMBER	QTY.
1	FRONT	1
2	SIDE	2
3	TOP & BOTTOM	2
4	BACK	1
5	BRACE	1
6	PT-1.6F	1
7	SPT10GAS	1
8	SB26STWGC-4	1
9	FR148B8-10M	1
10	CROSSOVER	1



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SOLEN EXPRESSION SPEAKER KIT - DAMPING MATERIAL





IT IS RECOMMENDED TO HAVE DAMPING PAD INSIDE THE ENCLOSURE TO REDUCE PANEL RESONANCES.

DAMPING PAD SHOULD BE PLACED :

- ON THE SIDES OVER AND UNDER THE BRACE
- ON THE TOP AND BOTTOM

FLEX-XEL S-125 (RECYCLED FELT) SHOULD BE PLACED :

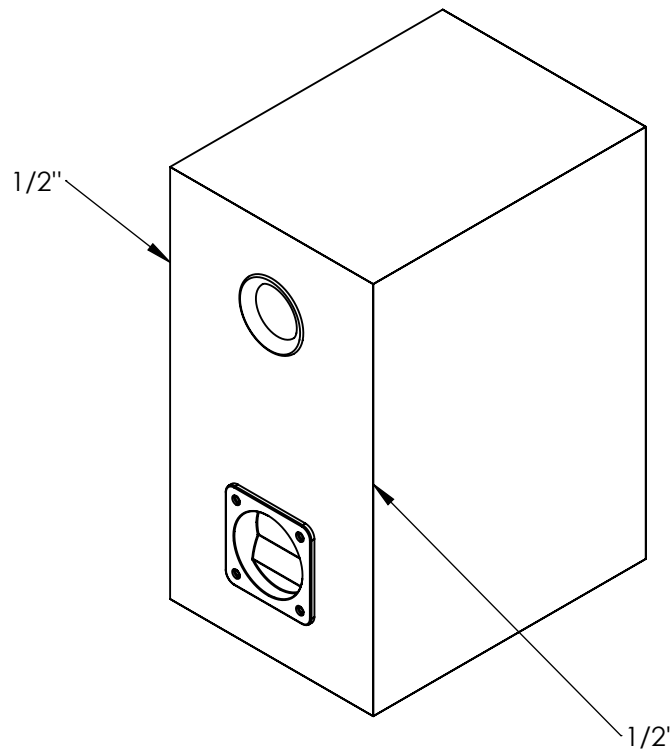
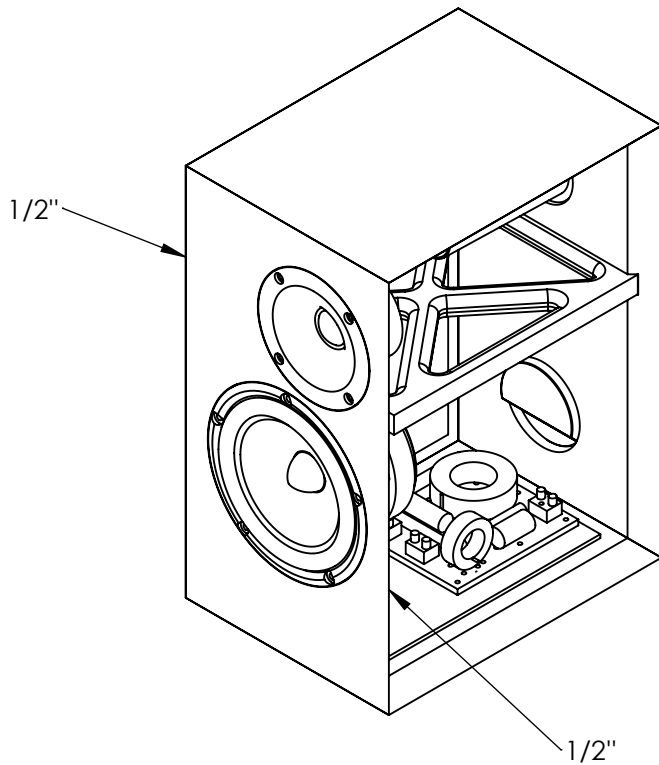
- ON THE SIDES OVER AND UNDER THE BRACE
- ON THE TOP

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	Material: N/A	
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6 5 4 3 2 1

FRONT AND BACK VERTICAL EDGES WITH 1/2" ROUNDING

ALL OTHER EDGES ROUNDED BY HAND



D

D

C

C



B

B

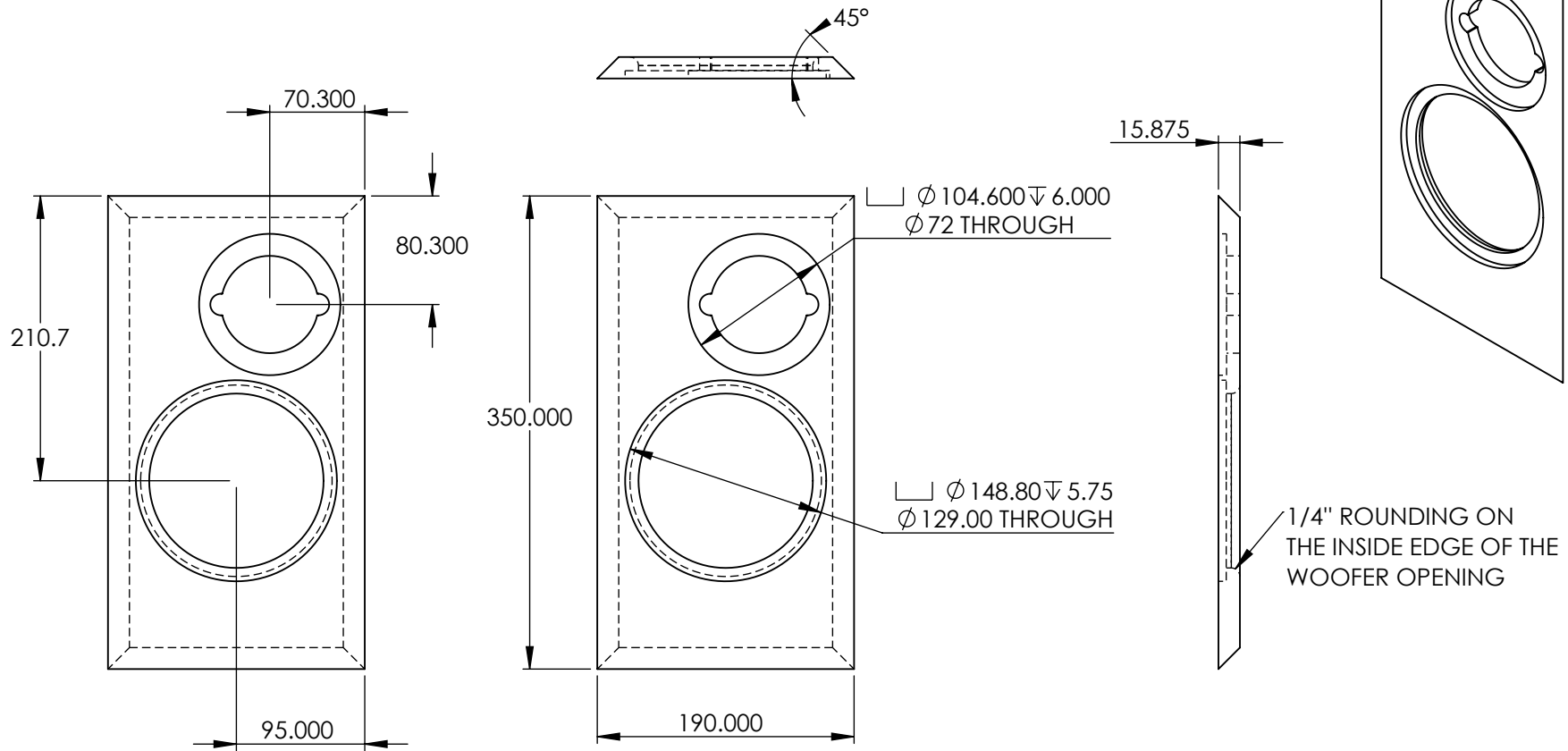
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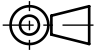
A

6 5 4 3 2 1

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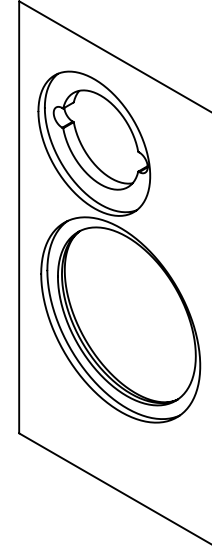
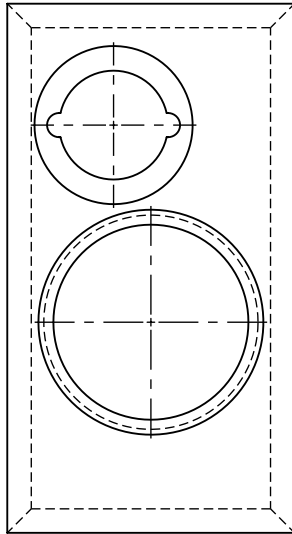
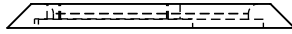
SOLEN EXPRESSION SPEAKER KIT - FRONT RIGHT





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	<p>Drawing Scale: 1:5</p>	<p>All Dimensions: mm</p>
	<p>Material: 5/8" MDF</p>	
	<p>Drawn by:</p> <p>LAURENT TARDIF</p>	
	<p>Drawn Date:</p> <p>2024-04-18</p>	<p>Sheet Size:</p> <p>LETTER</p>
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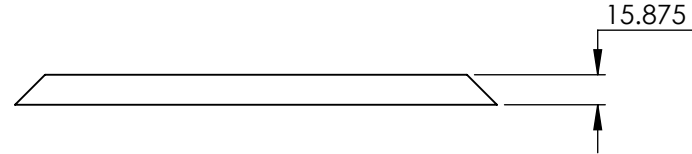
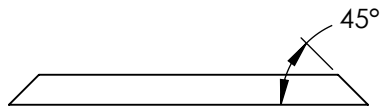
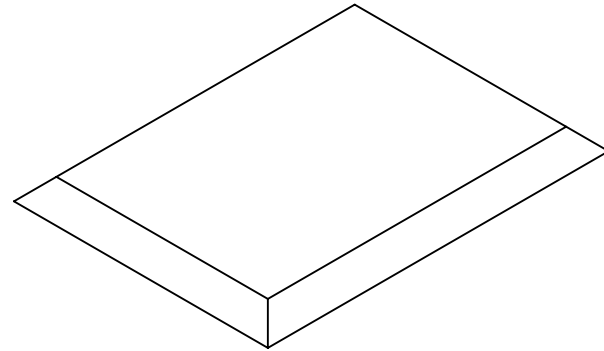
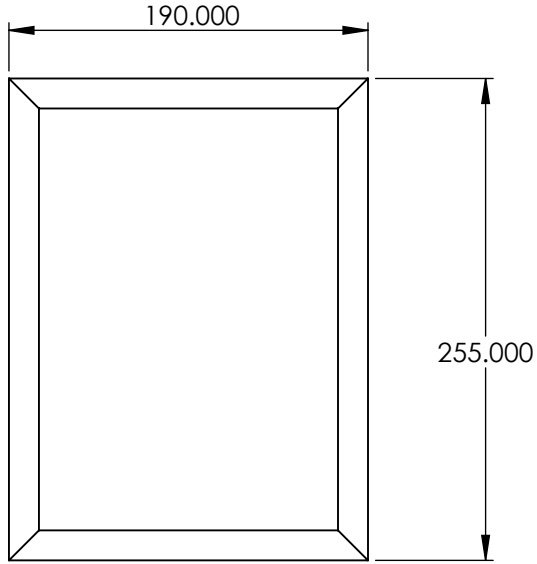
SOLEN EXPRESSION SPEAKER KIT - FRONT LEFT



SAME AS FRONT RIGHT, BUT TWEETER OFFSET IS MIRRORED



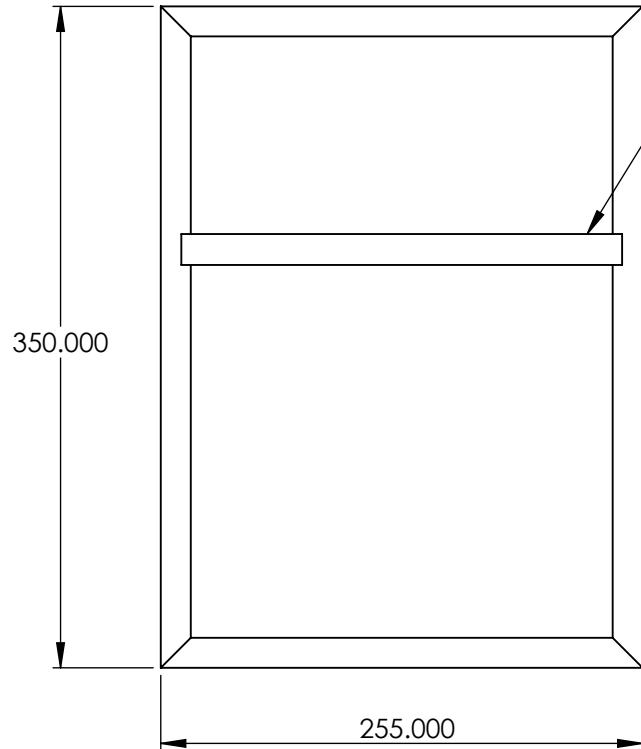
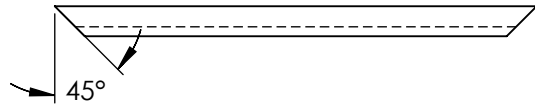
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	<p>Material: 5/8" MDF</p>	<p>Drawn by:</p> <p>LAURENT TARDIF</p>
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SOLEN EXPRESSION SPEAKER KIT - TOP & BOTTOM

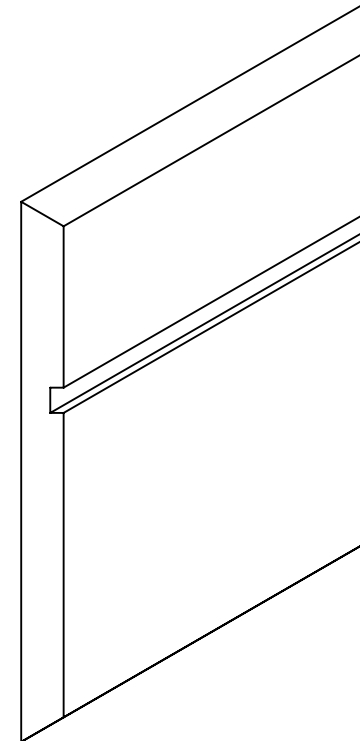
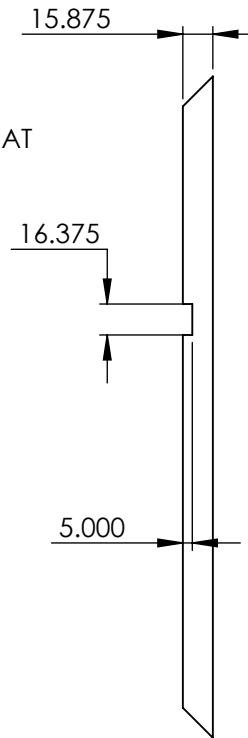




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	<p>Material: 5/8" MDF</p>	
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SOLEN EXPRESSION SPEAKER KIT - SIDE

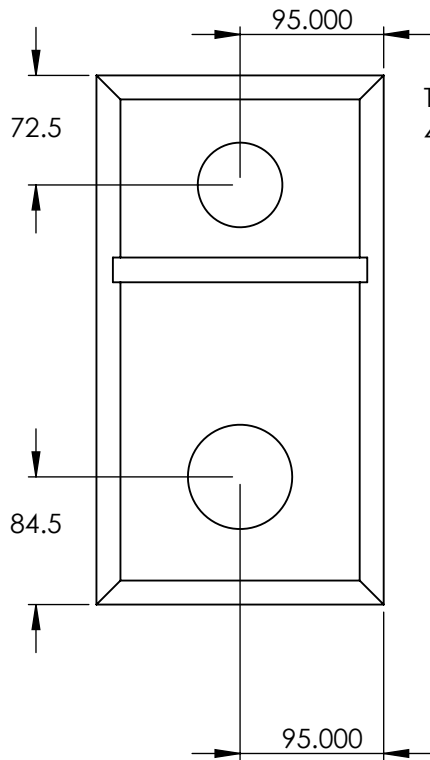


TOP OF THE BRACE AT 4 3/4" FROM THE TOP

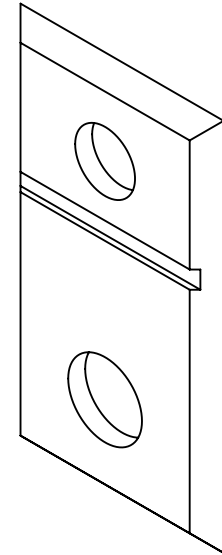
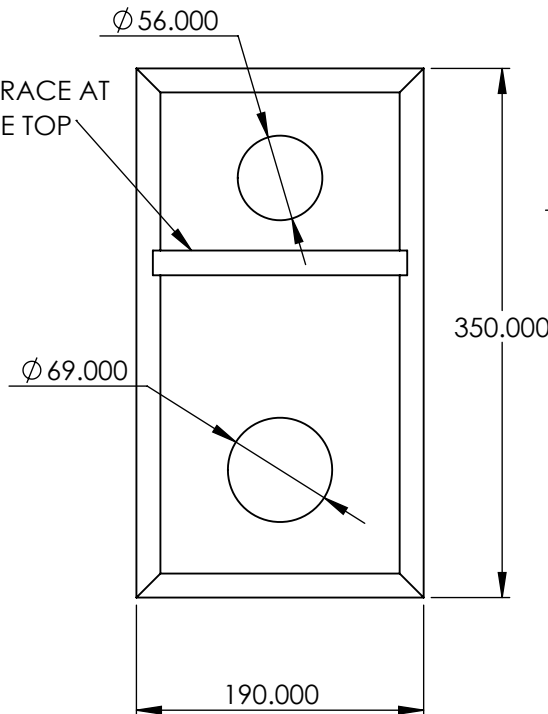




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	Sheet: 12 of 15	Revision: #1

SOLEN EXPRESSION SPEAKER KIT - BACK

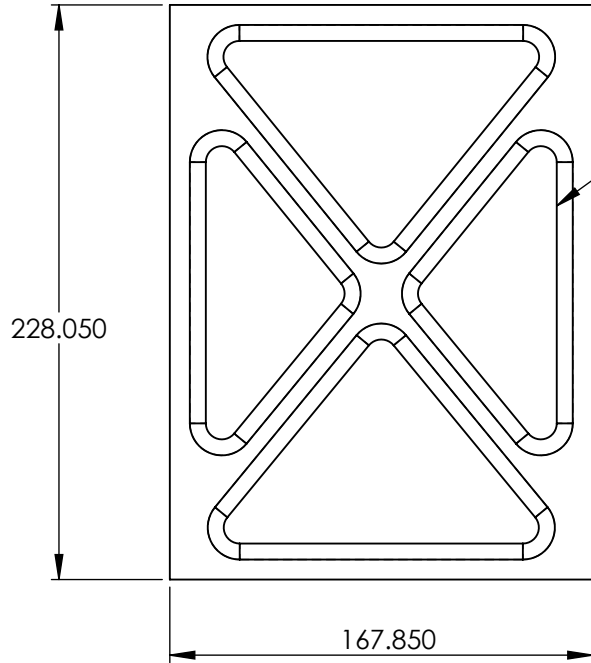


TOP OF THE BRACE AT
4³/₄" FROM THE TOP



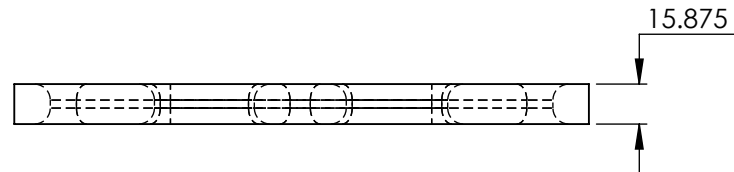
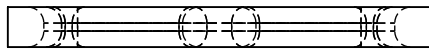
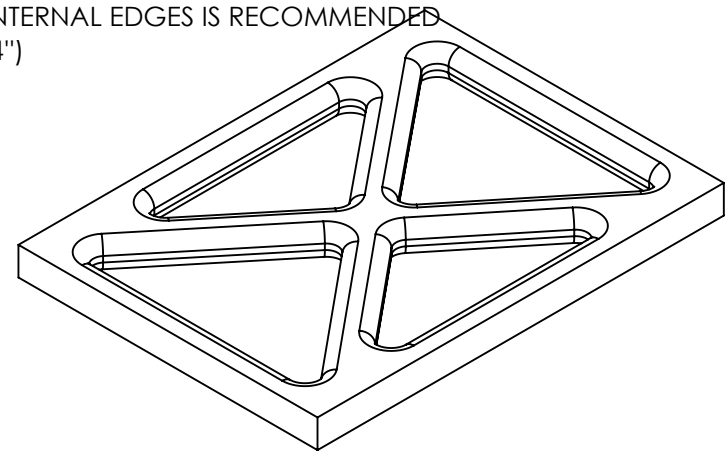
 <p>SOLEN ÉLECTRONIQUE INC., 3940 BLVD. SIR-WILFRID- LAURIER, (450) 656-2759 solen@solen.ca</p>	Legal Owner: EXPRESSION - BACK	Projection Method: THIRD ANGLE 
	Description: EXPRESSION - BACK	Drawing Scale: 1:5 All Dimensions: mm
	This drawing and any information or descriptive material set out on it are the confidential and copyright property of Solen Électronique INC. and MUST NOT BE DISCLOSED, COPIED, LOANED in whole or part or used for any purpose without the written permission of Solen Électronique INC.	Material: 5/8" MDF
	Drawn by: LAURENT TARDIF	Sheet Size: LETTER
	Drawn Date: 2024-04-18	Revision: #1
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SOLEN EXPRESSION SPEAKER KIT - BRACE



THE TOTAL SURFACE AREA OF THE BRACE OPENINGS IS RECOMMENDED TO BE OVER 130CM²

ROUNDING THE INTERNAL EDGES IS RECOMMENDED (AS SHOWN IS 1/4")

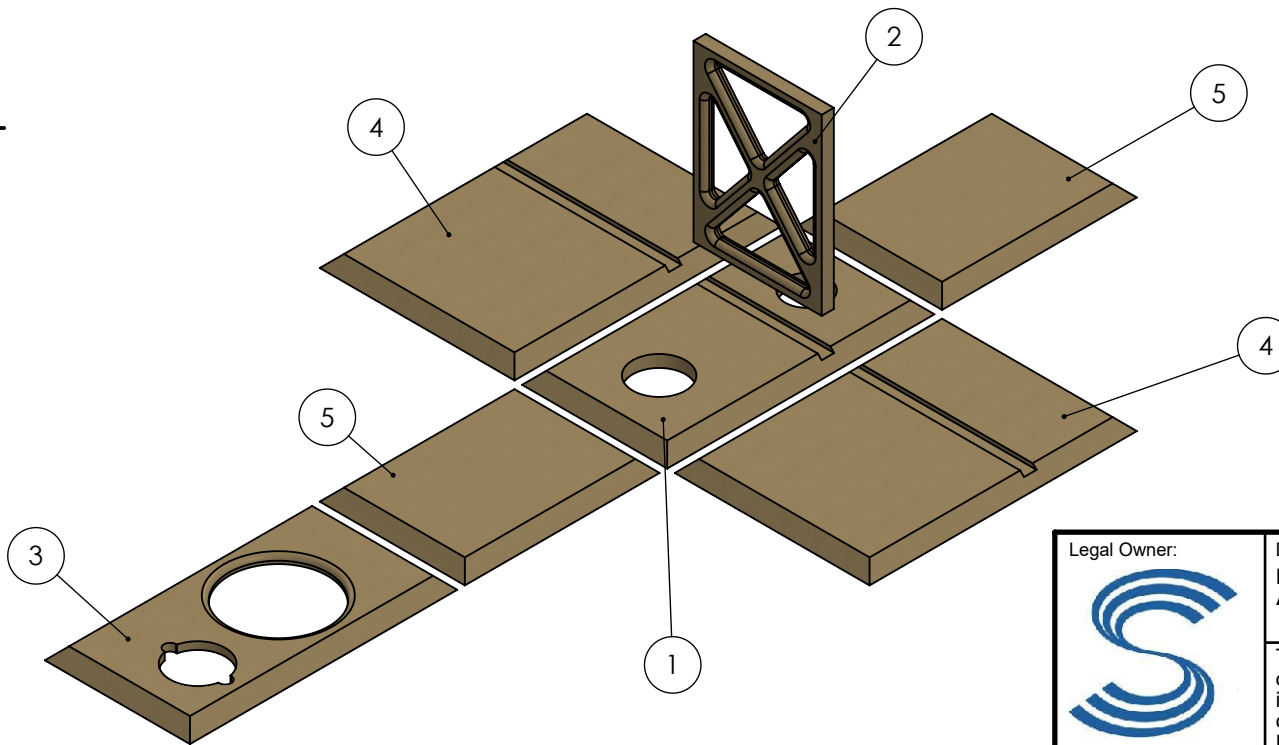




Legal Owner:  SOLEN ÉLECTRONIQUE INC., 3940 BLVD. SIR-WILFRID-LAURIER, (450) 656-2759 solen@solen.ca	Description: EXPRESSION - BRACE	Projection Method: THIRD ANGLE 	
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	Material: 5/8" MDF	Drawn by: LAURENT TARDIF	
	Drawn Date: 2024-04-18	Sheet Size: LETTER	
	Sheet: 14 of 15	Revision: #1	

SOLEN EXPRESSION SPEAKER KIT - FLAT PACK ASSEMBLY

- THE PARTS LAYOUT FOR TO ASSEMBLE THE FLAT PACK IS SHOWN HERE.
- TO MAKE SURE THAT THE ORIENTATION OF THE FRONT IS CORRECT, THE BRACE SHOULD BE BETWEEN THE TWEETER AND WOOFER WHEN ASSEMBLED.
- THE SLIGHTLY BIGGER BRACE OPENING SHOULD FACE THE FRONT OF THE CABINET.
- YOU CAN USE MASKING TAPE BETWEEN THE PARTS TO FACILITATE THE ASSEMBLY WHEN GLUING THE PARTS TOGETHER.
- WHEN ASSEMBLING, USE PLENTY OF GLUE ON ALL JOINT TO ENSURE A STRONG BOND AND WIPE OFF EXCESS GLUE.
- USE CLAMPS UNTIL THE GLUE HAS COMPLETELY DRIED.
- THE PORT IS PRESS FIT AND MIGHT REQUIRE SOME LIGHT SANDING ON THE OPENING AFTER PAINTING THE ENCLOSURE.

ITEM NO.	PART NUMBER	QTY
1	BACK	1
2	BRACE	1
3	FRONT	1
4	SIDE	2
5	TOP & BOTTOM	2



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		Material: N/A	
		Drawn by: LAURENT TARDIF	
		Drawn Date: 2024-04-18	Sheet Size: LETTER
	Sheet: 15 of 15	Revision: #1	