



FATHOM[®] IWS
IN - WALL SUBWOOFER SYSTEMS



Enclosure Installation Manual

[illegible]

IMPORTANT SAFETY INSTRUCTIONS

- 1) **Read the Instructions** — All safety and operating instructions should be read before the subwoofer is operated.
- 2) **Retain the Instructions** — These instructions should be retained for future reference.
- 3) **Heed Warnings** — All warnings in these instructions should be followed.
- 4) **Water and Moisture** — The enclosure and subwoofer should NOT be used near water – for example, near a bathtub, washbowl, sink, laundry tub, in a wet basement, near a swimming pool, etc.
- 5) **Heat and Flames** — The enclosure and subwoofer should be situated away from heat sources such as radiators, heat registers, stoves, fireplaces, or other devices which produce heat. Do not place candles nearby.
- 6) **Object or Liquid Entry** — Care should be taken so that objects do not fall into and liquids are not spilled onto the enclosure, subwoofer or grille. Do not expose to dripping or splashing from liquids. Do not place objects filled with liquids nearby. For example: flower vases, beverages, liquid-fueled lamps, etc.
- 7) **Damage Requiring Service** — The subwoofer should be serviced by qualified service personnel when:
 - a. objects have fallen or liquid has been spilled into the subwoofer
 - b. the subwoofer has been exposed to rain
 - c. the subwoofer does not appear to operate normally or exhibits a marked change in performance
 - d. the subwoofer driver's cone and/or suspension has been physically damaged



WARNING

THIS SUBWOOFER IS CAPABLE OF PRODUCING VERY HIGH SOUND PRESSURE LEVELS. PLEASE EXERCISE RESTRAINT IN ITS OPERATION TO PROTECT YOUR HEARING FROM PERMANENT DAMAGE.

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INTRODUCTION

Thank you for choosing the JL Audio Fathom In-Wall Subwoofer System, also known as the IWS.

This document contains detailed instructions for the installation of the Fathom IWS enclosure. Since a portion of the enclosure will be inaccessible after installation, we strongly recommend reading these instructions completely before beginning the installation process. Please note, these instructions are for the installation of one (1) IWS enclosure. Simply repeat the steps to install additional enclosures.

FATHOM IWS SYSTEM OVERVIEW

- The Fathom IWS is offered in two options:
- System One includes all elements for the installation of one (1) subwoofer.
 - System Two includes all elements for the installation of two (2) subwoofers.

Each Fathom IWS System consists of four elements:

System One	System Two
(1) Enclosure	(2) Enclosures
(1) Subwoofer	(2) Subwoofers
(1) Grille Assembly	(2) Grille Assemblies
(1) 1kW Amplifier	(1) 2kW Amplifier
Each system includes specialized hardware to ensure proper installation.	



THE ENCLOSURE

The Fathom IWS enclosure is designed to suspend from a single anchor point inside the wall cavity of 16-inch, on-center stud (aluminum or wood) construction homes. Once installed, the enclosure will “hang” snugly within the wall cavity. The enclosure has various spacers and padding applied to specific areas, allowing it to only make gentle contact with its surrounding wallboard surfaces. The placement and amount of pressure applied by these pads is a critical design aspect to ensure proper fit and should not be altered in any way. Failure to use the proper enclosure and/or alteration of the spacers and padding will result in loss of performance and unwanted wall vibrations.

The Fathom IWS uses two enclosure types, referred to as the “A” box and the “B” box. The “A” box is designed for 2 x 4 stud construction, and the “B” box is designed for 2 x 6 stud construction.

Enclosure Type	Enclosure Dimensions*
“A” Box	70-inches x 13.75-inches x 2.9-inches (1778 mm x 349 mm x 74 mm)
“B” Box	55-inches x 13.75-inches x 4.7-inches (1397 mm x 349 mm x 119 mm)
*Dimensions listed are approximate and do not include various spacers and padding.	

Furthermore, depending on the actual stud dimensions, there are variations available for each enclosure type. We strongly recommend measuring your actual stud dimensions to verify you have the correct enclosure for your application (see chart below).

“A” Box Enclosure Variations for 2 x 4 Stud Construction		
Actual Stud Width	Enclosure Model	SKU
3 1/2-inches (89 mm)	IWEv2-113A-3.50	96093
3 5/8-inches (92 mm)	IWEv2-113A-3.63	96094
4-inches (102 mm)	IWEv2-113A-4.00	96095
“B” Box Enclosure Variations for 2 x 6 Stud Construction		
Actual Stud Width	Enclosure Model	SKU
5 1/2-inches (140 mm)	IWEv2-113B-5.50	96096
6-inches (152 mm)	IWEv2-113B-6.00	96097

THE SUBWOOFER

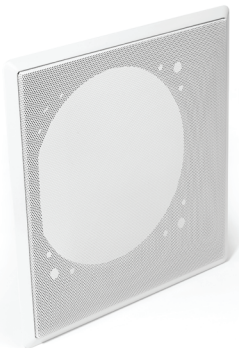
Derived from JL Audio’s revolutionary TW5 design platform, the subwoofer used in the Fathom IWS employs our patented thin-line woofer technology to achieve extreme excursion capability and ultra-low frequency extension. To reduce the possibility of damage during home construction or during the enclosure’s installation process, the subwoofer is not pre-installed. The subwoofer should only be installed after all aspects of construction and wall finishing have been completed.

THE GRILLE ASSEMBLY

The Fathom IWS enclosure uses a grille that mounts directly to the wall studs instead of the enclosure. The grille assembly consists of a removable outer metal mesh and grille tray unit. The grille’s design allows the enclosure to attach to the wall without making actual hard contact with the enclosure itself.

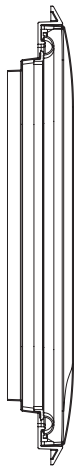
This unique mounting method allows the enclosure to essentially “float” within the wall cavity without transferring vibrations to the wall itself. A plastic paint guard is included to protect the woofer from overspray during painting. The outer metal mesh and grille frame should be painted separately to prevent them from sticking together.

The grille assembly is available in three size range options to accommodate nine different wallboard thicknesses. It is critical to use the correct grille size for proper fit. Refer to the chart below to verify that your grille assembly is compatible with the wallboard thickness used in your application. Do not attempt to use or modify a grille that does not fit your application.

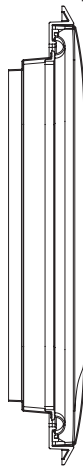


Wallboard Thickness (inches)	Wallboard Thickness (mm)	Grille Assembly Model	SKU
1/2" to less than 13/16"	12.7 mm to less than 20.6 mm	IWG-113-X	96090
13/16" to less than 1 3/16"	20.6 mm to less than 30.2 mm	IWG-113-Y	96091
1 3/16" to less than 1 9/16"	30.2 mm to less than 39.7 mm	IWG-113-Z	96092

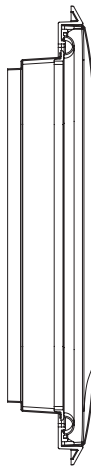
Note: The grille models listed on this page are only compatible with the v2 Enclosures listed on page 5.



X



Y



Z



THE AMPLIFIER

The Fathom IWS uses a unique amplifier, specifically engineered to take full advantage of the Fathom IWS subwoofer's full excursion envelope. There are two amplifier models, a 1kW amplifier for the System One and a 2kW version for the System Two. Both are available as either 120V or 240V AC powered. Besides their output and AC power distinctions, both amplifiers incorporate specific equalization curves for use with each particular enclosure type ("A" or "B" box). Refer to the charts below to verify that you have the correct amplifier for your application.

System One: 1kW Amplifier					
Amplifier Model	Amplifier SKU 120V / 60Hz	Amplifier SKU 240V / 50Hz	Enclosure Type	Enclosure SKU	Actual Stud Width
SA-1KW-IWS113Ax1	96070	96270	"A" Box	96093	3 1/2-inches (89 mm)
				96094	3 5/8-inches (92 mm)
				96095	4-inches (102 mm)
SA-1KW-IWS113Bx1	96071	96271	"B" Box	96096	5 1/2-inches (140 mm)
				96097	6-inches (152 mm)

System Two: 2kW Amplifier					
Amplifier Model	Amplifier SKU 120V / 60Hz	Amplifier SKU 240V / 50Hz	Enclosure Type	Enclosure SKU	Actual Stud Width
SA-2KW-IWS113Ax2	96072	96272	"A" Box	96093	3 1/2-inches (89 mm)
				96094	3 5/8-inches (92 mm)
				96095	4-inches (102 mm)
SA-2KW-IWS113Bx2	96073	96273	"B" Box	96096	5 1/2-inches (140 mm)
				96097	6-inches (152 mm)

INSTALLATION HARDWARE

The System One enclosure package includes all parts and hardware necessary for the installation of one (1) enclosure. The System Two enclosure package includes all parts and hardware to complete the installation of two (2) enclosures. Please verify that you have all the required items below before beginning the installation.

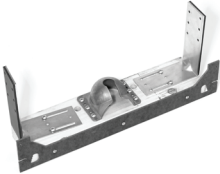
Item / Description	Qty Included With System One	Qty Included With System Two
IWS enclosure with pre-attached wallboard template	1	2
"Go" gauge, measuring 14 3/8-inches wide (365.1 mm)	1	2
Mounting bracket assembly (with centering template)	1	2
Hanging rod (11.25-inches for "A" box or 26.25-inches for "B" box)	1	2
#8, 1.25-inch wafer head screws	50	100
Wire/cable ties	3	6
Energy absorbing foam gasket strip	50 foot length	100 foot length

TOOLS FOR INSTALLATION

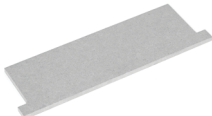
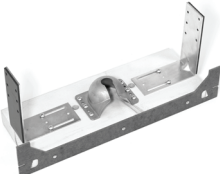
Below is a list of tools necessary to perform the installation of the Fathom IWS enclosure. Depending on the specifics of your installation, you may need additional tools, hardware and/or accessories. Enrolling a friend or coworker to assist in lifting the enclosure will be helpful.

- Safety glasses
- Cordless drill/driver with #2 Phillips bit
- Pliers
- Wire cutters
- Permanent marker
- Masking tape (optional)
- Tape measure (100-inch minimum)
- Drill bits
- Wire strippers
- Utility knife or scissors
- Drop cloth (optional)

WHAT'S IN THE BOX? THE "A" BOX

 Enclosure (x1)	 "Go" Gauge (x1)	 Mounting Bracket (x1)	 Foam Gasket (x1)
	 Hanging Rod (x1)	 Cable Ties (3)	 Pack of Screws (x1)

WHAT'S IN THE BOX? THE "B" BOX

 Enclosure (x1)	 "Go" Gauge (x1)	 Mounting Bracket (x1)	 Foam Gasket (x1)
	 Hanging Rod (x1)	 Cable Ties (3)	 Pack of Screws (x1)

ENCLOSURE INSTALLATION PROCEDURE

Prepping the Work Area

Fathom IWS enclosures may be installed in both new and pre-existing construction homes. When working with pre-existing construction, you will need to open a stud bay and expose the studs on either side of the opening. For pre-existing construction installations, we recommend using masking tape and a drop cloth to protect the home's interior from construction debris. **For your safety, make sure there are no live electrical circuits/conduits within the stud bay prior to beginning the installation.**

Evaluating the Wall Cavity

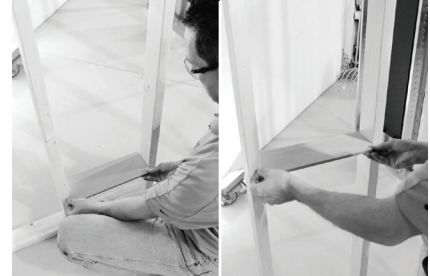
Inspect the stud bay to ensure that you have at least 93 5/8-inches (93.625 in/2.38 m) of unobstructed height inside the wall cavity (measurement should be taken from an unfinished floor). The IWS enclosure is designed to hang freely or "float" within the wall cavity, so anything coming into contact with it can lead to unwanted vibrations and rattles that cannot be accessed/corrected after the installation. The width inside the studs, over the entire 93 5/8-inches (93.625 in/2.38 m), must be no less than 14 3/8-inches (14.375 in/365.1 mm) and no greater than 14 7/8-inches (14.875 in/377.8 mm). The studs on either side of the wall cavity must be straight, plumb and parallel, without any twisting or bowing. If your stud bay has any obstructions (wiring, conduits, cross-members, etc.), you'll need to work with your general contractor to discuss removing/relocating them, or you will need to choose a different stud bay.

A "Go" gauge is provided to ensure that the minimum required width of 14 3/8-inches (14.375 in/365.1 mm) is maintained throughout the entire height of the wall cavity. To use, insert the "Go" gauge into the bottom of the wall cavity and slowly raise it to the top, keeping it level and parallel with the floor. If at any point the gauge binds or does not fit, you'll need to consult with your general contractor to safely modify or move the studs to allow for proper clearance.

Next, use a tape measure to verify that the maximum width between the studs does not exceed 14 7/8-inches (14.875 in/377.8 mm). Here again, if the width is too great at any point, consult with your general contractor to safely modify or move the studs. This is vital since the IWS grille assembly is designed to attach directly to the wall studs.



"Go" Gauge



Use the "Go" gauge to verify that the minimum width of 14 3/8-inches is maintained over entire wall cavity height.



Use a tape measure to verify that the maximum width of 14 7/8-inches over entire wall cavity height is not exceeded.

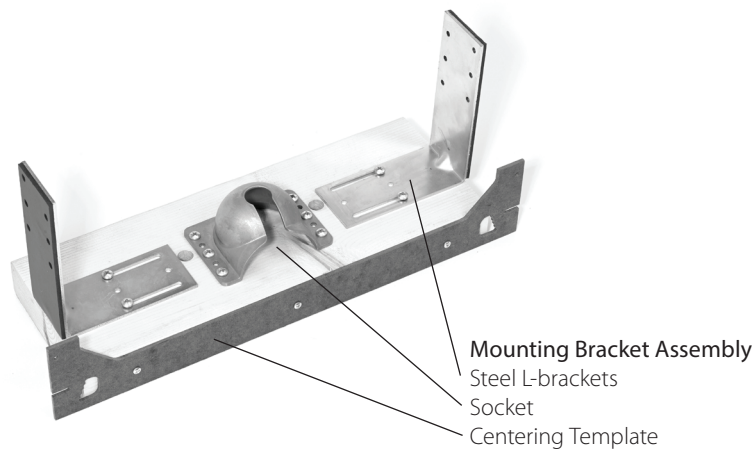


Figure 1



Figure 2



Figure 3
Mark both stud faces at 90 1/2-inches
up from an unfinished floor.



Figure 4

Installing the Mounting Bracket Assembly

The Fathom IWS enclosure mounting bracket assembly is designed for installation between the two studs at a specific height. The bracket assembly includes two steel L-brackets that are attached via slotted openings. The screws in the slotted openings are not fastened all the way, permitting the L-brackets to slide horizontally. This will allow the mounting bracket to be easily adjusted and centered between the two studs.

At this point, we suggest you consider your speaker cable's routing path before installing the mounting bracket assembly, as these areas may be difficult to access once the mounting bracket is in place.

- **To route the speaker cable through an above wall header:** Using the mounting bracket as a guide, insert a permanent marker through one of the predrilled holes in the wooden cross-member and mark the wall header above to drill a hole for routing your speaker cable into the wall cavity. (Figure 1 & 2)

- **To route the speaker cable through either adjacent stud bay:** With the mounting bracket installed (see following steps), drill a hole (below either steel L-bracket) into an adjacent stud bay to route your speaker cable. **Please note, when working with metal studs, make sure any drilled holes are clear of burrs and sharp edges.**

Measure up from an unfinished floor and mark both stud faces at 90 1/2-inches (90.5 in/2.3 m) with a permanent marker. (Figure 3) Position the mounting bracket assembly in the stud bay so that the bottom left and right edges of the centering template are level and line up with the marks on the stud faces. (Figure 4) Next, partially screw two of the #8 x 1.25-inch screws into the centering template's slotted openings. Make sure

to position each screw near the center of each slotted opening, **(Figure 5)** as the bracket needs to be able to shift left to right within the stud bay.

The centering template has two stepped window openings **(Figure 6)** that allow you to visually center the mounting bracket within the wall cavity, without taking tedious measurements. Viewing the stepped windows as a guide, center the mounting bracket assembly between the inside edges of the left and right wall studs. Once you have the same position in both stepped windows, tighten the two screws in the slotted openings completely and install the two remaining screws below to hold in place. **(Figure 7)**

With the mounting bracket centered, slide each steel L-bracket until the foam padding is firmly pressed against the inside of each stud, and secure in place using six #8 x 1.25-inch screws in each L-bracket. **(Figures 8 & 9)** Lock the mounting bracket in place by tightening the two pre-attached screws in the slotted holes of each L-bracket. **(Figure 10)** Do not install the remaining two screws in each L-bracket at this time.

Once the mounting bracket is firmly in place, remove the seven screws along the front of the centering template. **(Figure 11)** The template is no longer needed.



Figure 5



Figure 7



Figure 8

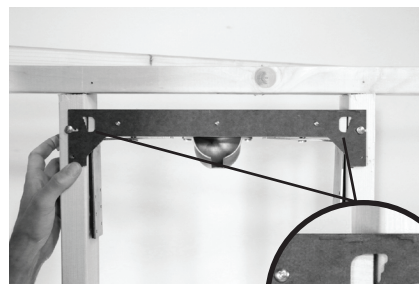


Figure 6

Stepped Windows
for Centering



Figure 9



Figure 10



Figure 11



Affix foam gasket strip to all stud and mounting bracket faces.



Foam gasket strips applied



Figure 12

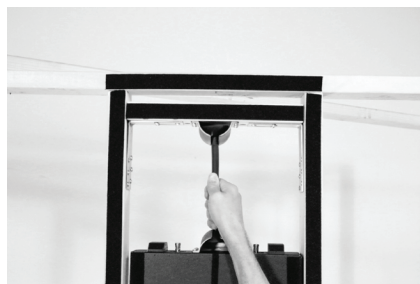


Figure 13



Figure 14



Figure 15

Applying the Foam Strips

The energy absorbing adhesive foam gasket strip is used to avoid potential vibrations, rattles and buzzing between the studs and wallboard, especially in installations with metal stud construction. Remove the backing and firmly press the foam gasket strip to all faces within the cavity (mounting bracket and stud faces). Use a utility knife or scissors to cut/trim the edges of the foam gasket strip.

Hanging the Enclosure

With the mounting bracket securely in place, insert one end of the hanging rod into the enclosure's socket (**Figure 12**) and, with the help of another person, lift the enclosure into the stud bay and place the other end of the hanging rod into the mounting bracket's socket. (**Figure 13**)

Inspect the space clearances between the enclosure's sides and the studs. The gap along the entire length of the enclosure should be equal on both sides. If the gaps are uneven, this means the enclosure is hanging off-center and the mounting bracket needs to be adjusted. Loosen the two slotted hole screws in each steel L-bracket and slide the wooden cross-member to the left or right until the enclosure is visually centered in the wall cavity.

Once centered, retighten the two slotted hole screws and install two more #8 x 1.25-inch screws in the locking positions in between the slotted holes of each L-bracket. (**Figure 14**)

Once in place, the enclosure should float freely within the wall cavity without making any hard contact. (**Figure 15**)

Mounting the Wallboard Template

The wallboard template is used to temporarily secure the enclosure in the wall cavity while also providing a hard edge for the surrounding wallboard installation. The wallboard template is pre-attached to the enclosure and must remain attached until the surrounding wallboard has been installed and the grille and subwoofer are ready to be mounted.

Visually center the step at the rear of the wallboard template to the inside edges of the left and right wall studs, **(Figure 16)** making sure you have the same amount of clearance on either side. Secure the wallboard template in position using eight #8 x 1.25-inch screws. **(Figure 17)**

Wiring the Enclosure

The final step before the wallboard installation is to route the speaker cable down to the enclosure. Feed the speaker cable through the previously drilled holes **(Figures 18 & 19)** in the wooden cross-member or through an adjacent stud. Remove the outer jacketing to expose the individual wires. **(Figures 20 & 21)** Although the hanging rod is padded to reduce vibrations, the wire jacketing should remain in place as far down the hanging rod as possible. Secure the jacketed portion to the rod using the supplied wire/cable ties. **(Figure 22)**

Observing correct polarity, remove the insulation from the individual wires and connect to the push terminals located on top of the enclosure. **(Figure 23)** To reduce the chances of noise and vibration, position the individual wires **(Figure 24)** so they do not come into contact with any surrounding parts (enclosure, mounting brackets, studs, wallboard surfaces or any other surfaces within the wall cavity). Any possible contact point may lead to undesirable rattles or buzzing, which will be inaccessible once the surrounding wallboard has been installed.

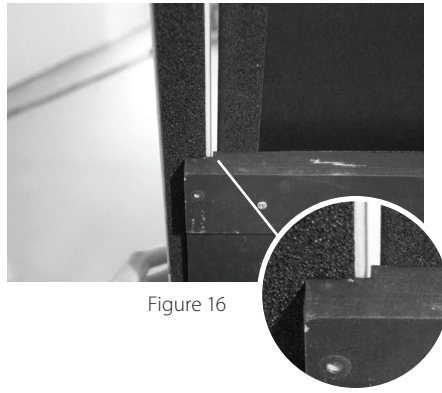


Figure 16



Figure 17

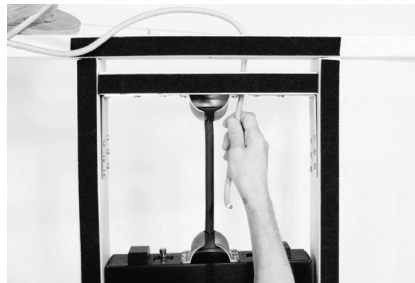


Figure 18



Figure 19



Figure 20



Figure 21

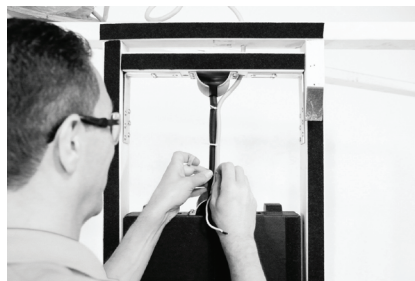


Figure 22



Figure 23

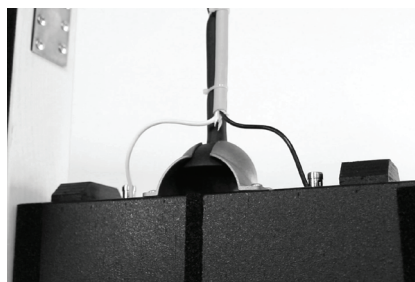


Figure 24



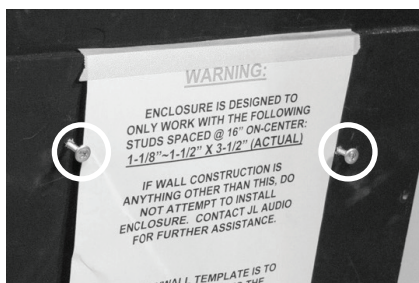
Figure 25
Install surrounding wallboard flush against wallboard template.



Figure 26



Figure 27



PRO-TIP

Installing the Wallboard

You may now proceed with installing the surrounding wallboard using the wallboard template as a hard edge. The surrounding wallboard should be installed flush against the wallboard template on all sides. (Figure 25)

Please note, it is critical that any gaps between the wallboard template and surrounding wallboard do not exceed 1/8-inches (0.125 in/3.2 mm).

Removing the Wallboard Template

Once the surrounding wallboard has been installed, verify that any gaps between the wallboard template and surrounding wallboard are no more than 1/8-inches (0.125 in/3.2 mm). Use joint compound to fill in any spaces greater than 1/8-inches (0.125 in/3.2 mm).

To remove the wallboard template, remove all twelve screws (4 inner and 8 outer) from the wallboard template and pull forward (Figure 26 & 27) to detach it. Note, there are four pins behind the wallboard template used for alignment with the enclosure, so the template must be pulled straight and away from the enclosure without tilting for removal.

Once removed, any remaining pins attached to the front of the enclosure can be removed using pliers.



PRO-TIP:

You may find it easier to partially screw two screws into the center area of the template to use as a grip as you pull forward.

Installing the Grille Tray

The grille assembly includes a plastic paint guard to protect the woofer from overspray during painting. The outer metal mesh grille should be painted separately from the grille tray to prevent them from sticking together. To separate the metal mesh grille from the grille tray, lay the grille face down and lift up on a corner of the grille's outer frame while holding the center grille section down.

With the wallboard template removed, test fit (**Figure 28**) the grille tray by inserting it into the opening. Make sure the mounting holes along the left and right sides of the grille tray, are aligned with both stud faces. The grille's outer frame should be level and make contact with the outer wallboard surface. The inner metal sleeve of the grille tray should fit into the woofer's mounting area. The woofer will mount directly through the metal sleeve into the enclosure. This will channel all of the woofer's energy through the grille opening while ensuring the enclosure remains decoupled from the wall. Once you've verified that the grille tray fits properly, secure it in place using the six screws that were supplied with the grille. (**Figures 29-31**)



Figure 28



Figure 29



Figure 30



Figure 31



Figure 32



Figure 33



Figure 34



Figure 35



Figure 36

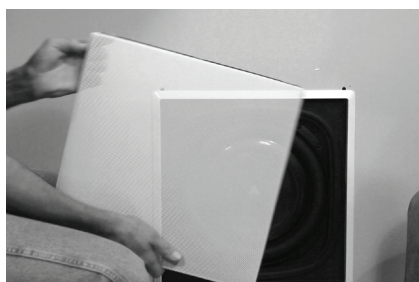


Figure 37



Figure 38



Figure 39

A.R.O. Calibration Jacks

Installing the Subwoofer and Grille

Reach into the enclosure's opening and locate the two speaker leads. Each lead is held in place by an elastic band (**Figures 32 & 33**) to hold the wires out of the way when mounting the subwoofer. These elastic bands should not be removed. Position the woofer with the JL Audio logo upright and connect each speaker lead to its respective terminal. (**Figures 34**) The holes on the subwoofer's frame should line up with the holes in the grille's inner metal sleeve. (**Figure 35**) Using the eight screws supplied with the subwoofer, mount the subwoofer through the grille's inner metal sleeve and into the enclosure.

(**Figure 36**)

Once the system has been calibrated (see below), the metal mesh grille may be installed. Insert the painted metal mesh grille into the grille's frame, making sure the notches in the metal mesh line up with the screws that hold the grille in place. (**Figure 37-38**)

Calibrating the Amplifier

To facilitate calibration of the Fathom IWS amplifier with your listening room, the Fathom IWS enclosure includes front-mounted speaker terminals (standard banana jacks). These terminals (**Figure 39**) will allow the user to temporarily connect the amplifier to the enclosure for calibration, even if the enclosure is permanently installed in the wall cavity. Refer to the Owner's Manual included with your amplifier for detailed installation instructions and A.R.O. calibration of your IWS system.

This completes the installation of the Fathom IWS enclosure.

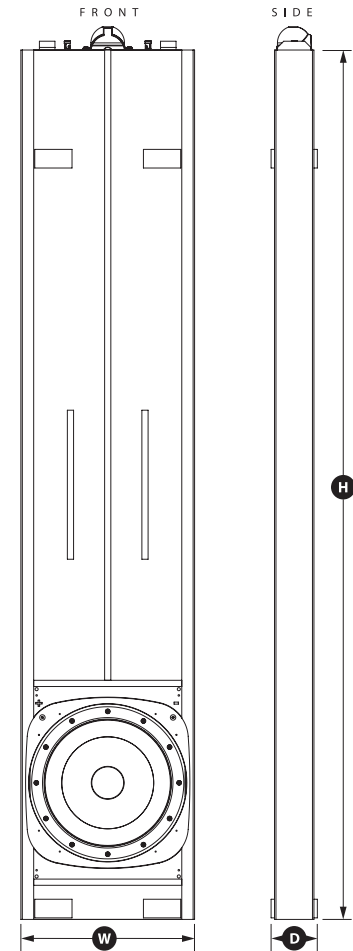
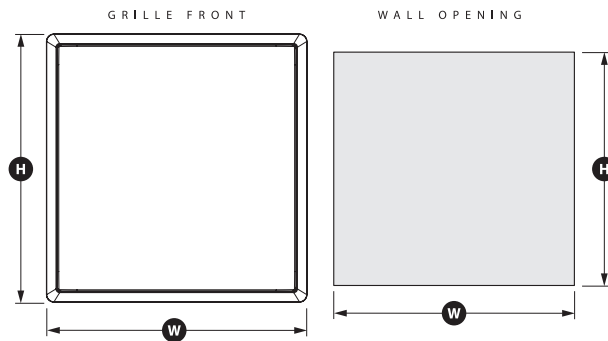
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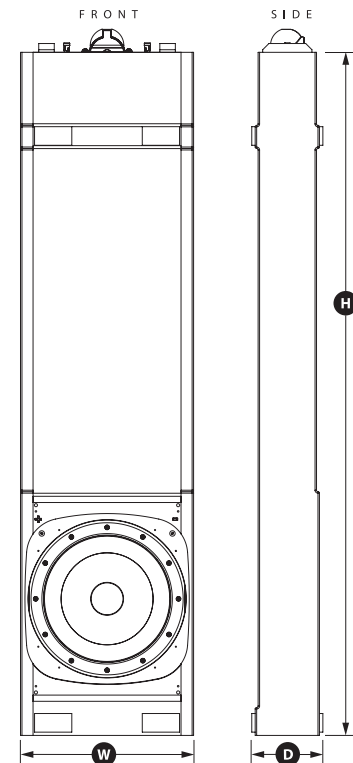
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Fathom® IWS Enclosure Specifications:

Specifications	Fathom® IWS-SYS-1	Fathom® IWS-SYS-2
Enclosure Type:	Single Sealed Enclosure	Two Sealed Enclosures
Driver(s):	13.5-in. (nominal diameter)	13.5-in. (nominal diameter) in each of two enclosures
Frequency Response (anechoic):	26 Hz - 101 Hz (+/- 1.5 dB) -3dB at 25 Hz / 112 Hz -10dB at 22 Hz / 150 Hz	
Effective Piston Area:	98.26 sq. in. 0.0634 sq. m.	196.51 sq. in. 0.1268 sq. m.
Effective Displacement:	147.3 cu. in. (2.41 liters)	294.6 cu. in. (4.82 liters)
2 x 4 Enclosure Dimensions: (H) Height x (W) Width x (D) Depth Measurements do not include padding material.	70 in. x 13.75 in. x 2.9 in. 1,778 mm x 349 mm x 74 mm	
2 x 6 Enclosure Dimensions: (H) Height x (W) Width x (D) Depth Measurements do not include padding material.	55 in. x 13.75 in. x 4.70 in. 1,397 mm x 349 mm x 119 mm	
Cabinet Finish:	Black Texture-Coated	
Grille Dimensions: (H) Height x (W) Width	17.64 in. x 17.14 in. 448 mm x 435 mm	
Wall Opening Dimensions: (H) Height x (W) Width	16.5 in. x 16 in. 419 mm x 406 mm	
Grille Finish:	White (paintable)	



"A" Box



"B" Box

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