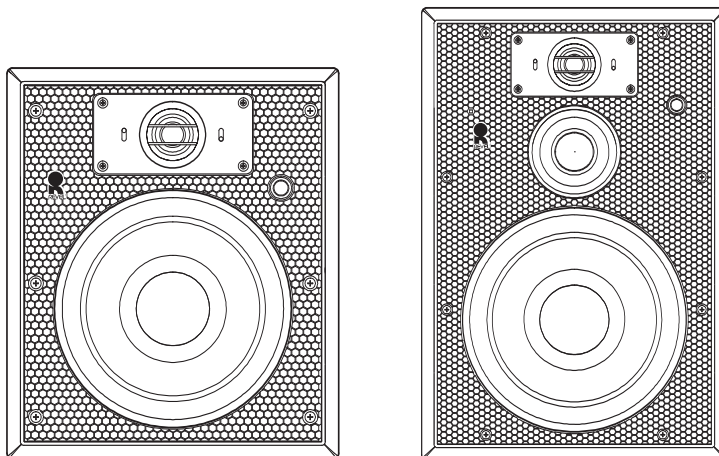


# Revel<sup>®</sup> **PERFORM***a*<sup>™</sup>

## IW70/IW90 In-Wall Loudspeakers Owner's Manual



***AVAILABLE AT  
DIGITAL CINEMA***



## DOCUMENTATION CONVENTIONS

This document contains general safety, installation and operation instructions for the Revel® Performa™ IW70/IW90 in-wall loudspeakers. It is important to read this document before attempting to use these products. Pay particular attention to safety instructions.

### WARNING!

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.

### CAUTION!

Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

*Note:*

*Calls attention to information that is essential to highlight.*

# REVEL® PERFORMA™ IW70/IW90 IN-WALL LOUDSPEAKERS

Since 1996, the Revel name has stood for the best in loudspeaker design and performance. Backed by Harman International's extensive research and design facilities, Revel loudspeakers benefit from cutting-edge development tools such as:

- a **multichannel listening lab** for double-blind, position-independent listening tests
- a **laser interferometer**, which enables detailed driver and baffle/frame analysis
- **multiple large anechoic chambers**, which allow for precise tests and measurements
- **finite element analysis**, utilized for advanced loudspeaker modeling
- a **stereo lithography apparatus**, which helps achieve extraordinarily tight tolerances

Revel Performa IW70/IW90 in-wall speakers draw upon the same research, resources and unique perspectives that put all Revel loudspeakers in a class by themselves. Revel Performa Series loudspeakers provide unparalleled value and are known for their standard-setting low coloration and freedom from distortion over an extraordinarily wide dynamic range.

Performa IW70/IW90 in-wall speakers provide audibly superior performance – validated by state-of-the-art Revel listening facilities – that far outclasses comparable products from competitors.

## HIGHLIGHTS

- The IW70's 7-1/2" (190mm) or IW90's 9" (230mm) woofer with a Micro Ceramic Composite (MCC) cone produces high output with low distortion.
- The IW90 features a 3-1/2" (90mm) midrange with an MCC cone for low-coloration, wide-dispersion midrange reproduction.
- The 1" (25mm) angle-adjustable tweeter, with its pure-titanium dome and integrated waveguide, provides optimized response, both on- and off-axis.
- The high-order crossover network features premium-quality components for exceptionally accurate timbre reproduction.
- The boundary-compensation switch maintains accuracy when placed near a secondary boundary (wall or ceiling).
- The three-position tweeter-level control provides optimum response, whether used with or without grilles.

## PRODUCT REGISTRATION

Please register your IW70/IW90 in-wall loudspeakers **within 15 days of purchase**. To do so, register online at [www.revelspeakers.com](http://www.revelspeakers.com). Retain the original dated sales receipt as proof of warranty coverage.



## INSTALLATION CONSIDERATIONS

Loudspeaker fidelity depends on the following factors:

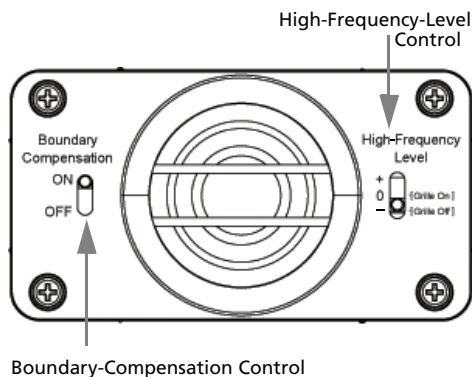
- Loudspeaker accuracy and placement
- Listening-room acoustics

But not all listening spaces can accommodate the ideal conditions for these two factors. Therefore, careful attention to the placement of your Revel in-wall loudspeakers will have the most significant impact on the general performance of the loudspeakers.

The advanced design features of Revel loudspeakers allow the Performa in-wall loudspeakers to achieve the best possible sound quality in any listening space. Revel loudspeakers also provide an unusually large degree of adjustment of the sound of the speaker to compensate for varying applications and room acoustics. The boundary-compensation switch and high-frequency-level control provide fine-tuning ability, even after the speaker has been installed.

### BOUNDARY-COMPENSATION CONTROL

The boundary-compensation switch controls the level of bass output of the speaker to accommodate the greater reflection of bass caused by a close secondary wall or the ceiling.



**Figure 1: IW70/IW90 control locations**

When possible, avoid placing the loudspeakers within 2 feet of an adjacent wall or ceiling. If the loudspeaker must be placed less than 2 feet from a secondary boundary (wall or ceiling), turn the boundary-compensation switch to the "On" position.

### HIGH-FREQUENCY-LEVEL CONTROL

The high-frequency-level control allows for fine-tuning of the tweeter output level. This three-position switch provides the listener with the ability to adjust the high-frequency range for various acoustical environments.

The high-frequency-level control has three positions:

- Set the high-frequency-level control to the center "0" position if the speaker will be used with the grille on. This is the normal setting.
- Set the high-frequency-level control to the "-" position if the speaker will be used without a grille.
- Set the high-frequency-level control to the "+" position if an increased high-frequency level is desired.

## LOUDSPEAKER PLACEMENT

The following general placement suggestions are accompanied by diagrams for recommended loudspeaker locations.

### IW70/IW90 IN-WALL LOUDSPEAKER PLACEMENT – 2-CHANNEL STEREO

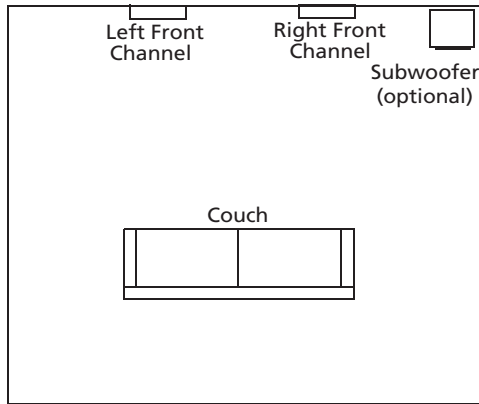
Before installing the loudspeakers, survey the listening area, keeping the following points in mind and using Figure 2 as a guide:

- Place the left and right loudspeakers as close to the same distance from the primary listening area as possible, and also at an equal distance from the side walls. Ideally, the distance between the left and right loudspeakers should be slightly less than the distance between them and the primary listening area. The distance between the left and right loudspeakers should also be the same distance as that from the loudspeakers to the side walls.
- When installing in the wall, position each speaker so that the tweeter is as close to ear level as possible.

**Note:**

*Avoid placing the woofers at the 1/4, 1/2 or 3/4 wall height positions, to prevent low-frequency cancellation.*

- Refer to the following "Home Theater" placement section if you also plan to use the speakers in a home theater system.



**Figure 2: IW70/IW90 in-wall loudspeaker placement – 2-channel stereo**

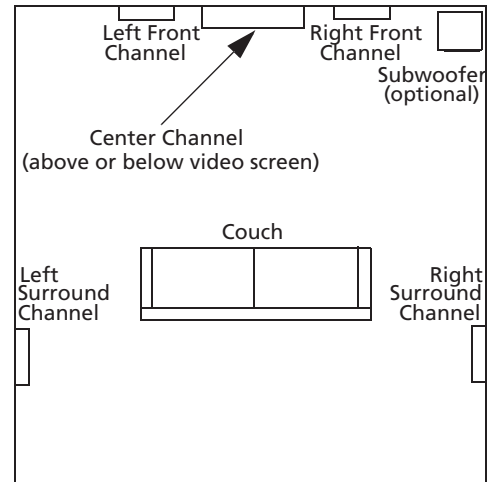
## IW70/IW90 IN-WALL LOUDSPEAKER PLACEMENT – HOME THEATER

Before installing the loudspeakers, survey the listening area, keeping the following points in mind and using Figures 3 and 4 as guides:

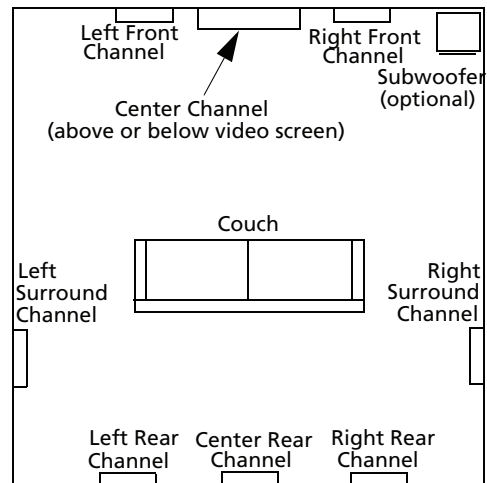
- For front-channel use, place one speaker on the left and another on the right along either side of the video screen. Left and right front loudspeakers should be relatively close to the sides of the video screen. For example, left and right loudspeakers used with a 50" video screen generally should not be more than 80" apart.
- A center channel speaker should go directly above or below the video screen and can be an in-wall, on-wall, in-ceiling or freestanding center channel.
- When installing in the wall, position each speaker so that the tweeter is as close to ear level as possible.

### Note:

Avoid placing the woofers at the 1/4, 1/2 or 3/4 wall-height positions, to prevent low-frequency cancellation.



**Figure 3: IW70/IW90 in-wall loudspeaker placement – 5.1-channel system**



**Figure 4: IW70/IW90 in-wall loudspeaker placement – 6- or 7.1-channel system**

## 2-CHANNEL STEREO SOUND

- Place the left and right loudspeakers as close to the same distance from the primary listening area as possible, and also at an equal distance from the side walls. Ideally, the distance between the left and right loudspeakers should be slightly less than the distance between them and the primary listening area. The distance between the left and right loudspeakers should also be the same distance as that between the loudspeakers and the side walls.

## MOUNTING INSTRUCTIONS

The Performa Series in-wall speakers were designed to be simple to install. However, if you are unable to clearly and fully understand and follow the instructions in this manual, or if you are unsure of your ability to properly install these loudspeakers, please contact your Revel dealer or a qualified installer.

Each loudspeaker comes with an integral wall-mounting system, designed for installation in the wallboard between the studs or rafters using the supplied hardware.

### WARNING!

Harman International Industries, Incorporated, assumes no responsibility for improper installation of hardware or for any personal injuries or product damage resulting from improper installation or a loudspeaker that has fallen.

### CAUTION!

Do not substitute mounting hardware! The supplied hardware is part of a factory-tested mounting system that works on wallboard only. To obtain additional hardware, contact your authorized Revel dealer.

The tools required to properly install the in-wall speakers are:

- Pencil
- Measuring tape
- Carpenter's level
- Phillips-head #2 screwdriver – DO NOT use a powered screwdriver of any kind
- Utility knife
- Awl
- Level

## REMOVE POWER

The speaker wires must be connected before the speaker is fully installed. To protect the audio system and the installer from accidental electrical shorting and surges during installation, turn all audio system power off before starting the speaker installation.

## SPEAKER WIRES

Using high-quality speaker wire will maintain the best sound quality from your Revel in-wall speakers. For distances of 100 feet or less, use at least #16-gauge speaker wire with polarity coding. For distances of greater than 100 feet, use at least #12-gauge wire or heavier. The side of the wire with a ridge or other coding is usually considered positive (+) polarity. Also consult the owner's manuals that were included with your amplifier or receiver to confirm proper connection procedures.

Observe polarities when making speaker connections. Connect each positive terminal on the back of the amplifier or receiver to the respective positive or "+" (red) terminal on each speaker. Connect the negative or "-" (black) terminals in the same way.

### CAUTION!

Do not reverse polarities (i.e., + to -, or - to +) when making connections. Doing so will cause poor imaging and diminished bass response. Be certain that positive and negative wire strands are completely isolated to avoid short circuits that may damage your equipment.

Use high-quality loudspeaker cable with a maximum total loop resistance of 0.07 ohms or less (for each wire run). Refer to the table on the next page to determine the appropriate maximum wire gauge.

All in-wall speaker wires must be UL-listed for use with in-wall applications.

## CAUTION!

Be sure to comply with local wiring codes. Harman International Industries, Incorporated, is not responsible for any damages or injuries that may result from faulty wiring.

### MINIMUM WIRE GAUGE

Gauge (AWG)	Length (Feet)	Length (Meters)
6	87	27
7	69	21
8	58	18
9	43	13
10	34	10
11	27	8
12	22	7
13	17	5
14	14	4
15	11	3
16	9	3
17	7	2
18	5	2

### NEW CONSTRUCTION

If you wish to preinstall a rough-in bracket before the drywall is installed, you will need to purchase the correct rough-in bracket kit for your loudspeaker model. Detailed instructions are supplied with the rough-in kit.

## INSTALLATION

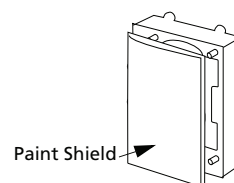
### IW70/IW90 IN-WALL LOUDSPEAKERS

To add the IW70/IW90 in-wall loudspeakers to finished construction, proceed with the following instructions.

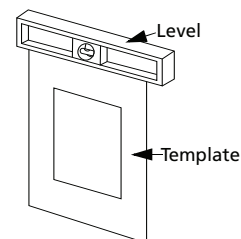
## CAUTION!

Ensure that all audio-system power is off before beginning the installation.

1. Remove the plastic paint shield from the speaker frame.

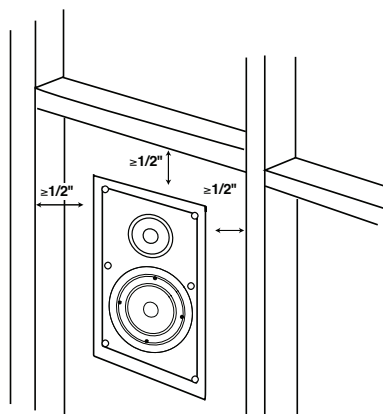


2. Determine the correct speaker location and use the template included in the packing materials and a level to mark the drywall.

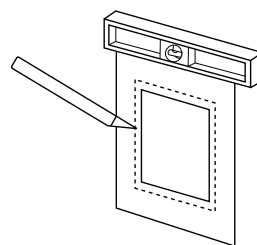


Always allow at least 1/2" between the wall stud and the speaker cutout or the locking tabs will not have the space to swivel into place.

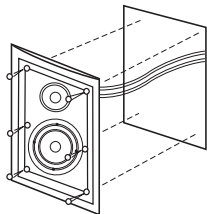
3. Ensure that the drywall, plywood or other appropriate wallboard is at least 1/2" thick and capable of withstanding the weight of the speaker being installed.



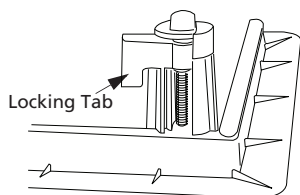
Cut the drywall along the speaker template marks made in Step 2.



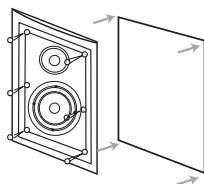
4. Connect the speaker wires to the speaker. Ensure that the polarity of each connection is correct.



5. Ensure that all six locking tabs are properly positioned against the locking-tab stops, located on the speaker frame.

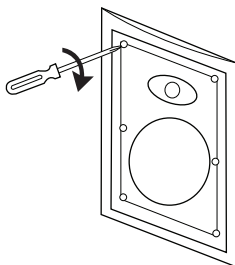


Carefully place the frame assembly into the wall, ensuring that there is no more than 1/8" play between the frame and the wall cutout.



After positioning the speaker in the mounting location, back each screw out one full turn counterclockwise.

6. Screw down each of the six Phillips-head screws, alternating between the six screws.

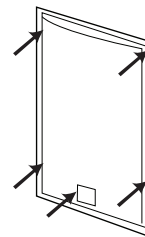


The locking tabs will swivel into place and secure the unit to the rear surface of the wall panel. Hand-tighten with a nonpowered, straight-handle Phillips-head screwdriver only. Ensure that the speaker is securely held in place and that all six locking tabs are firmly resting against the wall panel.

**Note:**

*Do not use a socket wrench, powered screwdriver, drill or any other powered tool.*

7. Attach the metal grille and logo.



## PAINTING THE SPEAKER FRAME AND GRILLE

The Revel IW70 and IW90 loudspeakers can be painted to match any décor. If you wish to change their color, the satin finish on the grille and frame will function as a primer coat. Follow these instructions for proper painting procedure:

1. Before beginning, carefully remove the grille (if installed), and install the supplied plastic paint shield securely in the recess in the baffle. The paint shield will protect the speaker components and baffle from paint residue.
2. Gently remove the scrim cloth from the grille before painting.
3. Use a high-quality spray paint and apply a thin coat of color.

## CAUTION!

Ensure that the grille perforations remain free of paint. Filling them with paint will diminish the sound quality.

4. A replacement scrim cloth is supplied. After the paint has dried, apply a light coat of spray adhesive to the inside of the perforated grille and attach a new scrim cloth.
5. Remove the paint shield from the baffle and attach the grille.



## LOUDSPEAKER OUTPUT LEVELS

High-order filters result in steep cutoffs to reduce potential damage from “out-of-band” frequencies. Combined with custom-designed transducers and high-quality filter network components, this approach helps the IW70 and IW90 loudspeakers to maintain their performance under extreme operating conditions. However, all loudspeakers have limits when it comes to continuous playback. To extend these limits, avoid playback at volume levels that result in distorted or strained sound.

If a subwoofer is in use in the system, the in-wall loudspeakers should have crossovers at 80Hz or above. Some A/V receivers or processors are set by identifying the loudspeakers as “small.”

## AVAILABLE ACCESSORIES

PCK7 preconstruction kit (rough-in frame) for IW70  
PCK9 preconstruction kit (rough-in frame) for IW90

FBF7 fire-rated back box for IW70  
FBF9 fire-rated back box for IW90

## OBTAINING SERVICE

To obtain warranty or nonwarranty service, contact an authorized Revel dealer. Refer to the included Revel warranty card for warranty information.



# SPECIFICATIONS

Specification	IW70	IW90
Frequency Response (2 $\pi$ anechoic)	40Hz* – 40kHz +/-3dB	32Hz* – 40kHz +/-3dB
Recommended Amplifier Power Range	15 – 150 Watts	15 – 200 Watts
Sensitivity (2.83V, 2 $\pi$ anechoic)	87dB	89dB
Nominal Impedance	8 Ohms	8 Ohms
Crossover Frequency	2600Hz; 18dB/octave	560Hz; 12dB/octave, 2800Hz; 18dB/octave
Low-Frequency Driver	7-1/2" (190mm) Micro Ceramic Composite (MCC) diaphragm	9" (230mm) Micro Ceramic Composite (MCC) diaphragm
Midrange Driver	N/A	3-1/2" (90mm) Micro Ceramic Composite (MCC) diaphragm
High-Frequency Driver	1" (25mm) Pure titanium	1" (25mm) Pure titanium
External Dimensions (H x W)	12-1/2" x 10-5/8" (317mm x 270mm)	17-15/16" x 12-3/16" (456mm x 309mm)
Mounting Cutout Size (H x W)	11-13/16" x 9-15/16" (300mm x 252mm)	17-1/4" x 11-7/16" (438mm x 291mm)
Mounting Depth	3-13/16" (97mm)	3-13/16" (97mm)
Recommended Optimum Enclosure Volume	60 Liters (or full stud bay)	60 Liters (or full stud bay)
Weight (Net)	7.0 lb (3.2kg)	12.0 lb (5.4kg)

\* will vary, depending on installation



## LIMITED WARRANTY

A valid serial number is required for warranty coverage. This Revel warranty protects the original retail purchaser for a period of five (5) years (parts and labor) from any failure as a result of original manufacturing defects, so long as:

1. The Revel products were purchased within the 50 United States, its territories or Canada.
2. The dealer from whom the Revel products were purchased was authorized to sell such products at the time of the original purchase.
3. The original, dated Bill of Sale is presented whenever service is required during the warranty period.

The balance of this warranty is transferable only if the used product is purchased from an authorized Revel dealer. This warranty is only valid for service within the United States, its territories and Canada; please contact an authorized Revel dealer for warranty and service information.

Any Revel product not performing satisfactorily may be returned to the factory for evaluation. Return authorization must first be obtained by either calling or writing Customer Service prior to shipping the product. The customer is responsible for shipping charges to the factory. Customer

Service will pay return shipping charges within the United States only in the event that the product is found to be defective, as mentioned above. There are other stipulations that may apply to shipping charges.

There is no other express warranty on this product. Neither this warranty nor any other warranty, express or implied, including implied warranties of merchantability and fitness, shall extend beyond the warranty period. No responsibility is assumed for any incidental or consequential damages, so that the above exclusion or limitation may not apply.

This warranty provides specific legal rights. Other states may provide additional rights. This warranty is applicable in the United States, its territories and Canada. Outside of the United States, its territories and Canada, please contact an authorized Revel dealer for warranty and service information. The information this document contains is subject to change without notice. In the event that there are differences between this warranty and the provisions of any advertisements, documentation, product brochures or packaging cartons, the terms of this warranty will prevail.

For customer service and product shipment information, go to [www.revelspeakers.com](http://www.revelspeakers.com).



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