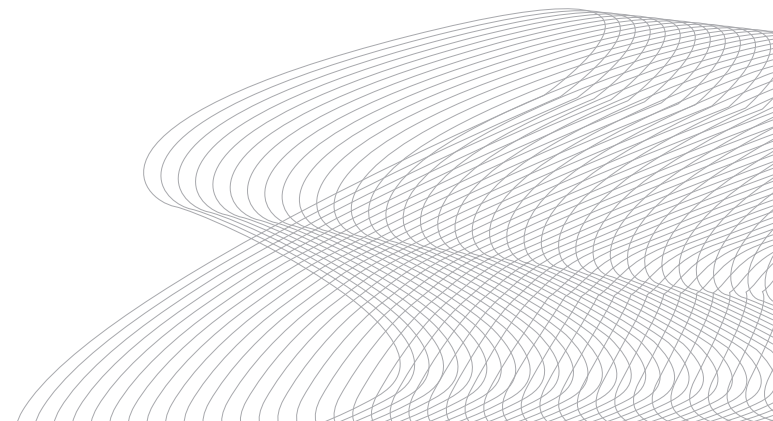




Halo series

Owner's Manual



Beyond Limits

In 2009 a group of Southern Californian designers, engineers, and audio enthusiasts joined together to form Starke Sound — a speaker company created specifically for high-end audiophiles. The founding partners all shared an interest in high-end audio performance and felt that the current state of speaker technology, particularly multichannel technology, was lacking not only in performance but also in the design of the speakers themselves.

We built a highly qualified multi-disciplinary design team to create a line of world class speakers that combines state of the art performance with a modern, sleek design. Our strict standards and engineering excellence have made Starke Sound a leader in the audio industry. Our goals were simple - high performance speakers with groundbreaking technology housed in beautiful cabinetry.

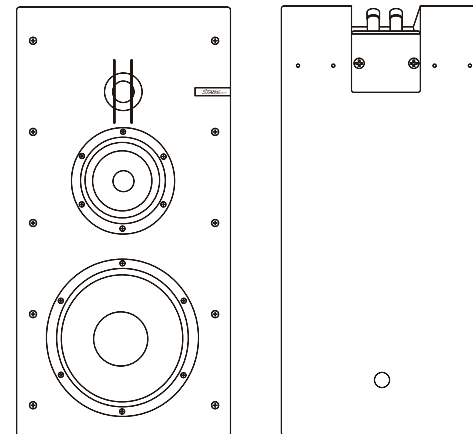
Starke Sound's relentless focus is on accurate acoustic reproduction with minimal distortion. Our multi-channel systems fulfill the need for timbral accuracy, wide dynamic range and optimal performance with speakers placed against, on or in walls and ceilings. This allows everyone at home to enjoy the best music and sound in a clutter free environment. A systems approach to design, our patented LMF Driver Technology©, advanced materials, and superior electrical components and cabinetry combine to reproduce lifelike performances in customers' homes. Starke Sound innovations and vertical integration result in high definition sound reproduction that is unparalleled.

We hope you enjoy listening to our speakers as much as we enjoyed making them.

Sincerely -
The Starke Sound Design Team

*More Powerful
Than It Looks*

IW-H1



Specifications	IW-H1 Elite / Be
Max SPL output (1m)	107dB
Frequency response (±2dB)	62Hz - 28kHz (Elite) / 62Hz-40 kHz (Be)
Recommended amplifier power	40 - 250W
Nominal impedance	4 ohms
Sensitivity (2.83v at 1m)	89dB
Drivers	1 inch / 4 inch / 5.25 inch
Tweeter	1 inch custom made softdome tweeter (Elite) / 1 inch Super Beryllium tweeter (Be) LMF® technology inside*
Midrange	4 inch carbon fiber cone with phase plug LMF® technology inside*
Bass driver	5.25 inch Starke Carbon cone LMF® technology inside*
Cabinet Structure	Sealed
Input terminals	Binding posts(Press type) Bare wire supported
Crossover	3 way
Boundary compensation	300Hz / 2900Hz
Grille	None
Finish	Aluminum and Piano Lacquer
Color options	Piano black / Piano white / Piano red
Full size	H 15.1 x W 7 x D 5.1 inches H 385 x W 180 x D 130 mm
Weight	17.6 lbs (8kg) / each
Shipping size	L 18.1 x W 8.1 x H 10.6 inches L 461 x W 206 x H 270 mm
Shipping weight	20.2 lbs (9.2 kg) / each
Warranty	10 years (from original purchase date)

More Powerful Than It Looks

... At least that's the case for the IW-H1 Elite. The efficiently compact IW-H1 utilizes state of the art Starke Sound LMF Technology™ that is proven to effectively reduce audio distortion. This model now offers a rear enclosure shell ensuring easy installation perfect for limited depth wall/ceiling assemblies. In addition to this we included rear aluminum hangers in order to provide a stable mounting foundation thus diminishing its vibration factor. This beautifully designed speaker can be installed as an in-wall or on-wall application.

Location of Front Channel Speakers

Three loudspeakers are to be placed across in the front of the listening room for the home theater system. The width of the stereo image is determined by the distance between the left and right speakers. The image will be too narrow if the speakers are placed too close together and, conversely, if placed too far apart, the blend will suffer creating a void in the middle section.

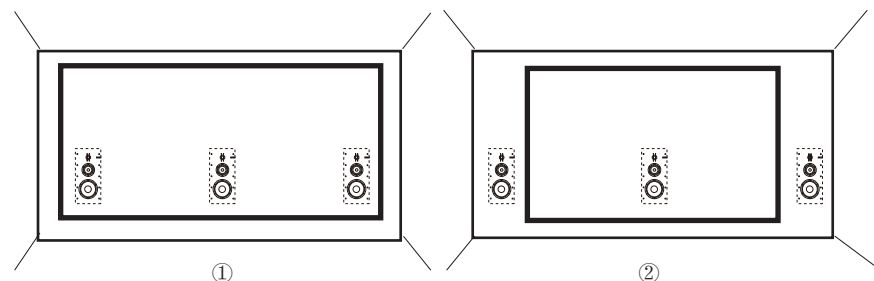
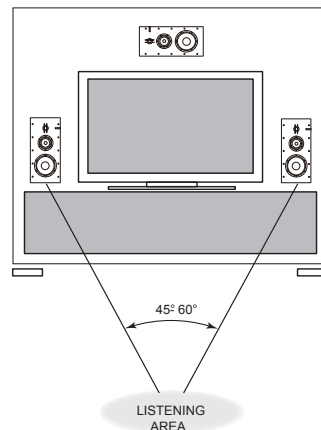
Your speakers should create a continuous "virtual image" when properly placed from left to right. As a result an illusion of sound outside, in front of, and behind the speaker systems will be created.

Starke Sound recommends a 45 degree to 60 degree angular separation when viewed from above. The distance between the speakers is 75% of the distance from the speakers to the listener at the minimum 45° separation. At the maximum 60° separation the distance between the speakers is equal to the distance from the speakers to the listener.

In order to create a seamless sound image across the front of the speakers one must carefully consider location and placement.

Optimally, there should be an equal distance from the left, right, and center channel speakers to the listener location.

The height of the midrange/tweeter module of the front channel speakers should be installed as close as possible to the height of a seated listener's ears. The front channel tweeters should be located within two vertical feet of that height.

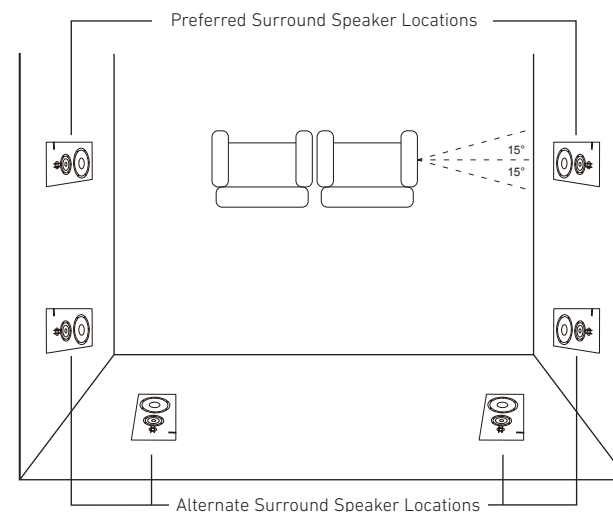


Picture 1: Recommended LCR speakers placement for screen size greater than 150".

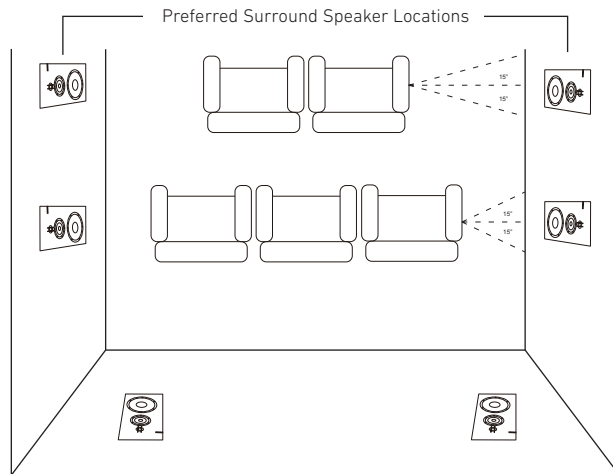
Picture 2: Recommended LCR speakers placement for screen size smaller than 150".

Location of Surround Speakers

Starke Sound has provided the following information for the placement of surround speakers. Although there are many opinions regarding placement and location of surround speakers Starke Sound has provided the following recommendations based on thorough research, academics, and our experience with many installations. Note: The choice of models used in the illustration below is arbitrary. The information described in the illustrations can be applied to both the IW and the IC series covered in this manual and in any of the surround locations.



If two surrounds are used in a standard 5.1 configuration (not 7.1 or EX), they are best mounted directly to the sides of the primary seating location, preferably within $\pm 15^\circ$ (see illustration). This placement is the preferred method over back wall mounting for a few reasons: 1. the placement of the surround speakers are located where the ear's ability to discriminate left from right is optimum. This produces the maximum sense of "envelopment" being surrounded by sound, 2. Mounting the rear speakers behind the listener increases the angle between the front and rear speakers. This results in reducing the chance that there will be a continuous front-to-rear sound image, lastly, 3. Since our ability to discriminate the front-to-rear location of a sound source is not very strong, locating surround speakers to the side of the listener will improve the listening experience. 7.1 or EX systems that use side and rear speakers together overcome all of these obstacles and give both maximum envelopment and a more continuous surround effect.



Recommended surround speakers placement for two rows of seats.

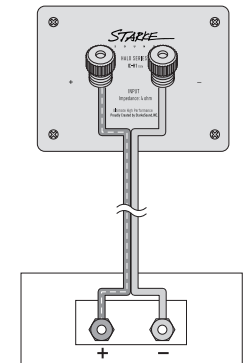
Another factor to consider is the evenness of sound coverage over the listening area. As most surround processors have the ability to set the balance of all channels, it is recommended to adjust a circulating noise signal in each channel until the apparent or measured sound level is even. The balance levels should be checked at multiple listening locations and adjusted for the best balance overall so as to provide the best sonic experience for as many of the listeners as possible. Surround speakers placed properly will minimize the level variation from seat to seat. Increasing the distance of the surround speakers from the listening area is the best way to improve evenness. Mounting the speakers high on the side walls or in the ceiling will improve the listening experience. Surround speakers should be mounted at a minimum of one foot (305 mm) above the height of a standing listener. Note: In the event of ceiling-mounted speakers, be sure to place the speakers close to the side walls well away from an overhead position. Be aware that placing the speakers too high can create an artificial elevation in the surrounds so be sure to place accordingly.

If you are planning a large theater room with three or more rows of seating, there should be more than one pair of surround speakers to give even more coverage and a more immersive sound field. Starke Sound recommends one pair of surround speakers be used for every other seating row (first, third, fifth, etc.). This method mimics the standard for most professional cinema applications.

Speaker Connection

Prior to wiring Starke Sound recommends that you plan and layout the wiring paths from the speakers to the amplifier. For runs up to 25 feet Starke Sound recommends a 16-gauge wire and for runs longer a 14-gauge wire is recommended. Take care to ensure that the integrity of the speaker wire is not threatened or compromised by resting/rubbing against any sharp or pointed objects. Before setting the wire in position be sure to allow approximately an extra foot (305 mm) of wire at the speaker location to ensure an easy connection the speaker.

For standard single wire connections, unscrew one set of the terminal knobs (rotate counter-clockwise). Remove approximately 1/2" (12mm) of the wire insulation from the two wire conductors and twist the wire strands into a tight bundle. Insert the wire into the terminal shaft hole and rotate the terminal knob clockwise to secure the wire in place. Take care that there are no stray or loose strands of wire that could touch the other terminal shaft.



Confirm that both the positive and negative speaker terminals of the amplifier are in connection with the corresponding + (red) and - (black) terminals at the speakers. If you look closely you will see that all wire is marked in some way to trace their respective connections. The two conductors will striped or ridged insulation in order to identify them. Alternatively the conductors may be color coded to ensure their identity. Wires with pin lugs or spade lugs are also accepted by the terminals. In addition, dual banana plugs can be plugged into the rear of the terminals.

Series/parallel wiring should be used when connecting more than two speakers per amplifier channel. Make certain in all cases that the total impedance does not fall below the amplifier's rating. If there is any question be sure to contact your STARKE SOUND dealer.

Power Handling and Listening Levels

Starke Sound recommends reasonable power output settings for the amplifier so it operates in a way that will not result in distortion. Even a modest amplifier, if producing distortion, can damage speakers. Turn down the volume if you hear a gritty noise or other signs of strain. Prolonged or repeated operation of your speakers with a distorted signal can cause damage that is not covered by the warranty. It is imperative you do not overdrive the bass capability of smaller speakers. Listen for noises, such as pops, caused by the music's bass line. Use of the loudness control and/or full bass boost at louder volumes may overdrive the woofer. Use such controls sparingly.

How to Care for your Speakers

Slightly dampen a soft terry cloth towel with water, glass cleaner, or a diluted, mild detergent and then carefully clean the speakers. The towel should be just damp enough to remove surface dirt without leaving a trail of moisture. Do not, under any circumstances, use abrasive cleaners or any cleaner containing chemicals harsher than those found in glass cleaner.

Limited warranty

Starke Sound will repair for the original owner any defect in materials or workmanship that occurs in normal use of the speaker system, without charge for parts and labor, for ten years from the date of purchase.

It is your responsibility to use the product according to the instructions supplied, to provide safe and secure transportation to an authorized Starke Sound service representative, and to present proof of purchase from an authorized Starke Sound dealer in the form of your sales slip when requesting service.

Damage that results from abuse, misuse, accidents, shipping, repairs, or modifications by anyone other than an authorized Starke Sound service representative is excluded from this warranty. This warranty is void if the serial number has been removed or defaced.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

If Service Seems Necessary

Contact the dealer from which you purchased the speaker system. If that is not possible, email us at:

service@starkesound.com

or write to:

Starke Sound, Inc.

ATTN: Service Department

17810 S. Main St. Ste. B, Gardena, CA 90248

We will promptly advise you of what action to take. If it is necessary to return your speaker system to the factory, please ship it prepaid in the original factory packaging. Please note that Starke Sound will not be held liable for shipping damage due to improper packaging. After it has been repaired, we will return it freight prepaid in the U.S. or Canada.



For European Customers

This symbol found on the product indicates that the product must not be disposed of with household waste. Instead, it may be placed in a separate collection facility for electronic waste or returned to a retailer when purchasing similar product. The producer paid to recycle this product. Doing this contributes to reuse and recycling, minimizes adverse effects on the environment and human health and avoids any fines for incorrect disposal.