



Imagine-Series Subwoofers

Installation Manual and User's Reference



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**Congratulations
on your Imagine
Subwoofer
purchase, and
welcome to
the world of
Hybrid Audio
Technologies!**

We realize that you have a choice in loudspeakers, and are thrilled that you have chosen the Imagine-series subwoofer drivers. For more information about Hybrid Audio Technologies, our philosophies regarding high-end mobile audio, to learn more about our lifetime guaranteed value program, and for information about our other products, please visit us at hybrid-audio.com

**Welcome and Introduction
by Scott Buwalda - Founder**

Speaker development is our passion! When installed and set-up properly, the Imagine Subwoofer you have purchased will make a remarkable improvement in the sound quality of virtually any mobile audio sound system and give years of superior performance.

With the publication of this manual, it is our goal to assist the “do it yourself” enthusiast and professional installer alike in getting the highest level of performance out of the Imagine subwoofer drivers using straight-forward installation advice.

Thank you, and happy listening!



The Imagine Subwoofer

A Brief History

The Imagine I6SW was the first subwoofer ever offered by Hybrid Audio Technologies. Originally designed to suit saddle-bag installations on touring motorcycles, the efficacy of the design was quickly proven in a wide variety of installations in virtually any automobile, where a small enclosure subwoofer could be used where space was at a premium.

In Spring 2009, the first I6SW prototypes were developed by company founder and lead designer Scott Buwalda, and the concept of an Imagine subwoofer line-up was born.

All the while the I6SW had been developed and launched to an enthusiastic reception of enthusiasts, custom installers, and motorcycle and ATV riders, we were working on the larger counterparts to the Imagine I6SW, the 8-inch Imagine I8SW and the 10-inch I10SW. In January 2011, final prototypes were approved for production after a long and strenuous program of evaluation by several Hybrid Audio specialty retail dealers for their use and assessment in the field. The combined efforts of our dealers and our own R&D team affirmed the design concept for a budget-friendly high-end sound quality subwoofer, and the I8SW and I10SW product was commenced. Production began in August 2011, and was completed in October 2011, after an in-process change was made to the reverse-roll surround to ensure reliability and longevity operation. The Imagine I8SW and I10SW were launched in late November 2011.

In September 2013, the Imagine subwoofer line-up was deemed complete with the long-anticipated Imagine 12-inch offering, named the Imagine I12SW-V2, or version 2, as the Imagine subwoofer line-up now enters its Version 2 phase to include the Imagine I6SW-V2 (the Imagine I8SW and Imagine I10SW remain the most-current 8-inch and 10-inch subwoofer models in this line-up, respectively). The Imagine I12SW-V2 was the subject of a considerable level of prototyping and real-world testing to conclude on a design that incorporates exceptional output and power handling, but also low distortion, moving mass, and inductance. Likewise, the V2 version of the widely-acclaimed Imagine I6SW

incorporates several mechanical enhancements, making the driver more amenable to a wider variety of enclosure designs

Attributes

Basket/Frame

The basket of the I6SW-V2, I8SW, I10SW, and I12SW-V2 is a stamped steel design with semi-gloss black powder coating. The frame includes spider venting for improved thermal power handling. The frame includes reverse-roll surround tooling proprietary to Hybrid Audio Technologies, allowing for close-tolerance flush and iso-mounting for easy grille clearance and locational clearance (such as underneath a seat, in a touring motorcycle saddle bag, or in a center console enclosure).

Motor and Voice Coil

The motore of the Imagine subwoofer is conventional dynamic with a large, high-grade ferrite magnet assembly with bumped and vented pole piece. The voice coil diameter for the four subwoofers is 51mm (2-inch) for elevated power handling, dissipation of heat (thereby lowering power compression), and maximizing the size of the magnet around the voice coil for enhanced motor compliance. The voice coil is a four-layer, high-purity aluminum, which is superior to copper for heat dissipation, as well as significantly reduced moving mass. The result is an extremely light weight winding, with low inductance and good power handling.

Suspension, Cone, Tinsel Leads & Terminals

The inverted surround is butyl rubber which is highly consistent, and does not suffer the variance

of natural rubbers. This rubber surround terminates mechanical vibrations well, having a low stiffness for positive damping of resonances. The spider material was chosen for optimal performance; the spider is a 90/10 cotton/Nomex blend with single-dip low viscosity phenolic. This material provides the stiffness desired without being overly brittle or stiff, where vibrations in the spider are well damped and do not translate into the former or the cone.

The Imagine subwoofers are cone-type drivers consisting of a polypropylene diaphragm with low moving mass. Polypropylene provides a good balance of strength, moving mass, and water resistance, in the event the Imagine subwoofers are used in all-weather climates, such as motorcycle, ATV, golf cart, and marine uses. The tinsel leads are bonded directly to the former and brought out to the terminals, which keeps tinsel lead slap to a minimum and does not compromise the structural integrity of the cone. The Imagine subwoofer comes equipped with heavy-duty PCB-mounted male blade-type terminals on the Imagine I8SW and I10SW, and nickel-plated push terminals on the I6SW-V2 and I12SW-V2, and give the end user flexibility in tinned wire or crimp terminal terminations.

Summary

The Imagine subwoofers are the ideal multi-purpose sound quality subwoofer speaker driver. Mechanical and electrical parameters are amenable to a variety of vented and sealed enclosures. At home in virtually any arrangement, the Imagine subwoofer is Hybrid Audio's Stage II subwoofer, boasting exceptional performance and a high-fidelity design philosophy.

Imagine Subwoofers Specifications & Parameters

	I6SW-V2	I8SW	I10SW	I12SW-V2
Overall Diameter	φ168 mm (6.6-inch)	φ206 mm (8.1-inch)	φ256 mm (10-inch)	φ309.5 mm (10.77-inch)
Mounting Depth	85 mm	102 mm	130 mm	127 mm
Bolt Circle Diameter	φ160 mm	φ192 mm	φ248 mm	φ294 mm
Mounting Hole	φ148 mm	φ184 mm	φ235 mm	φ283 mm
Pnom Rated Power Input (AES Standard)	125 watts	150 watts	175 watts	225 watts
Pmax Rated Power Input (AES Standard)	250 watts	300 watts	350 watts	450 watts
Frequency Response (+/- 3dB)	32 - 800 Hz	30 - 800 Hz	28 - 800 Hz	27 - 1000 Hz
Efficiency 2.83V/1 meter	88.6 dB	90 dB	91 dB	91.5 dB
Mms	56.6 g	63.5 g	88.5 g	171 g
Cms	308.9 um/N	310 um/N	285 um/N	202 um/N
BL (T*m)	17.681	13.3	13.6	16.4
Voice Coil Diameter	50 mm (2-inch)	50 mm (2-inch)	50 mm (2-inch)	50 mm (2-inch)
Impedance	4 Ω	4 Ω	4 Ω	4 Ω
DC Resistance	3.9 Ω	3.8 Ω	3.6 Ω	3.6 Ω
Fs (Free Air)	38 Hz	35 Hz	30 Hz	27 Hz
Qms	8.077	5.5	5.65	7.0
Qes	0.169	0.29	0.34	0.39
Qts	0.165	0.27	0.32	0.37
Xmax (Two Way)	12 mm	16 mm	18 mm	24 mm
Vas	7.263 L	18.5 L	49.5 L	71 L
Le	1.42 mH	1.52 mH	1.48 mH	1.56 mH
Sd	12,868 mm ²	20,612 mm ²	34,636 mm ²	49,876 mm ²

† Typically, in-car response including vehicular “cabin gain”, or the gain expected with subwoofer(s) installed in the vehicle, will result in an extended subbass response. This is a result of these frequencies being below the lowest resonance in the vehicle (typically around 50-70 Hz in most vehicles). In more practical terms, install the Imagine subwoofer(s) into your vehicle and you will see a dramatic improvement in subbass and midbass output, much more so than just simply listening to the Imagine in a large room, or worse yet, “free air” (we don’t recommend even trying the Imagine subwoofers in “free air” without some form of recommended enclosure).

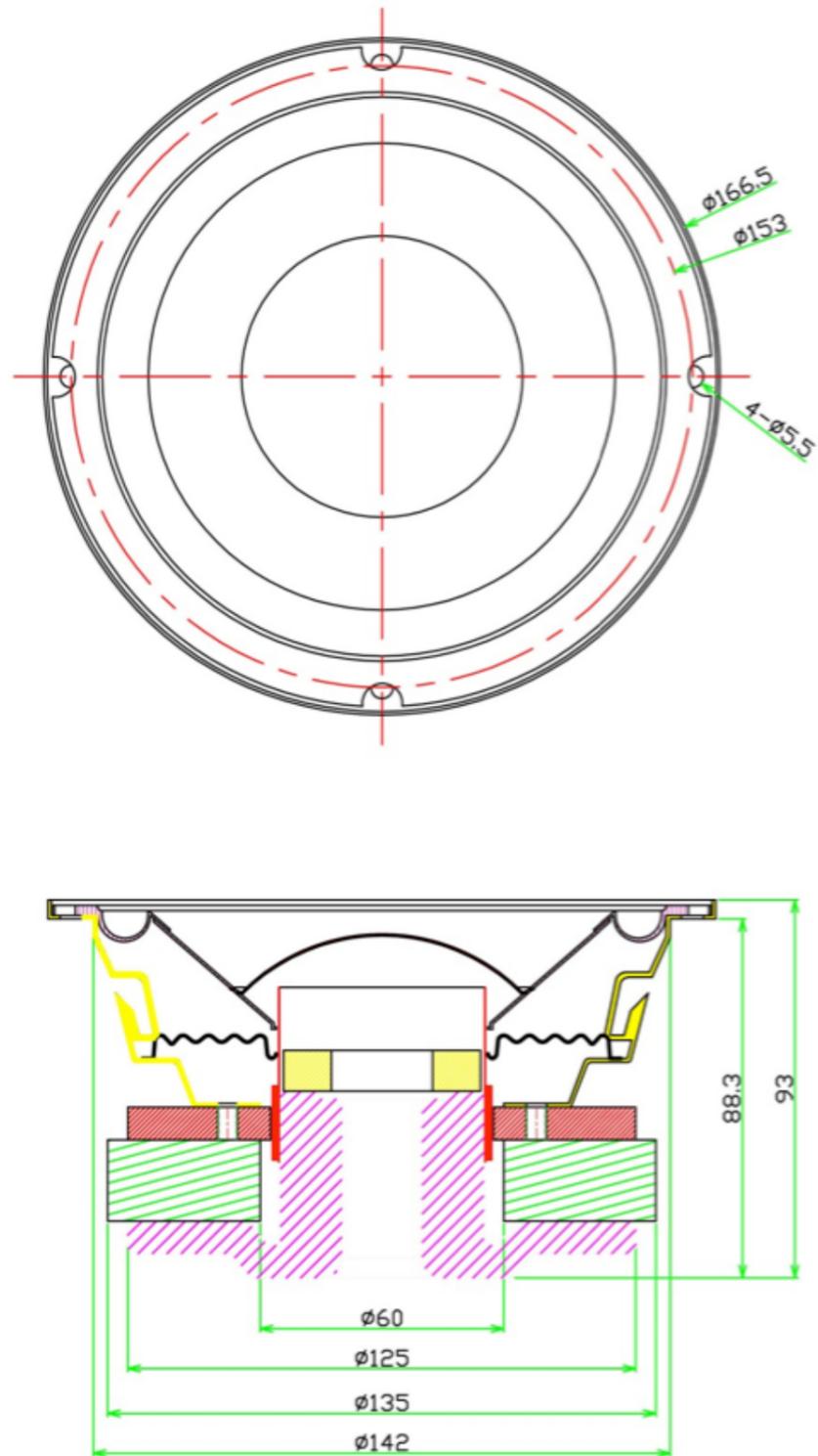
Imagine Subwoofers Enclosure Recommendations

		Trunk		SUV / Hatch/ Wagon	
		Vented	Sealed	Vented	Sealed
I6SW-V2	Vb	6.00 liter	8 liter	8.00 liter	10 liter
	Av	5.06 cm ²		5.06 cm ²	
	Lv	20.00 cm		15.00 cm	
I8SW	Vb	18.00 liter	18 liter	22.00 liter	21 liter
	Av	20.25 cm ²		20.25 cm ²	
	Lv	25.00 cm		21.00 cm	
I10SW	Vb	24.00 liter	22 liter	38.00 liter	26 liter
	Av	20.25 cm ²		45.57 cm ²	
	Lv	21.00 cm		25.00 cm	
I12SW-V2	Vb	48.00 liter	39 liter	52.00 liter	42 liter
	Av	45.57 cm ²		45.57 cm ²	
	Lv	23.00 cm		18.00 cm	

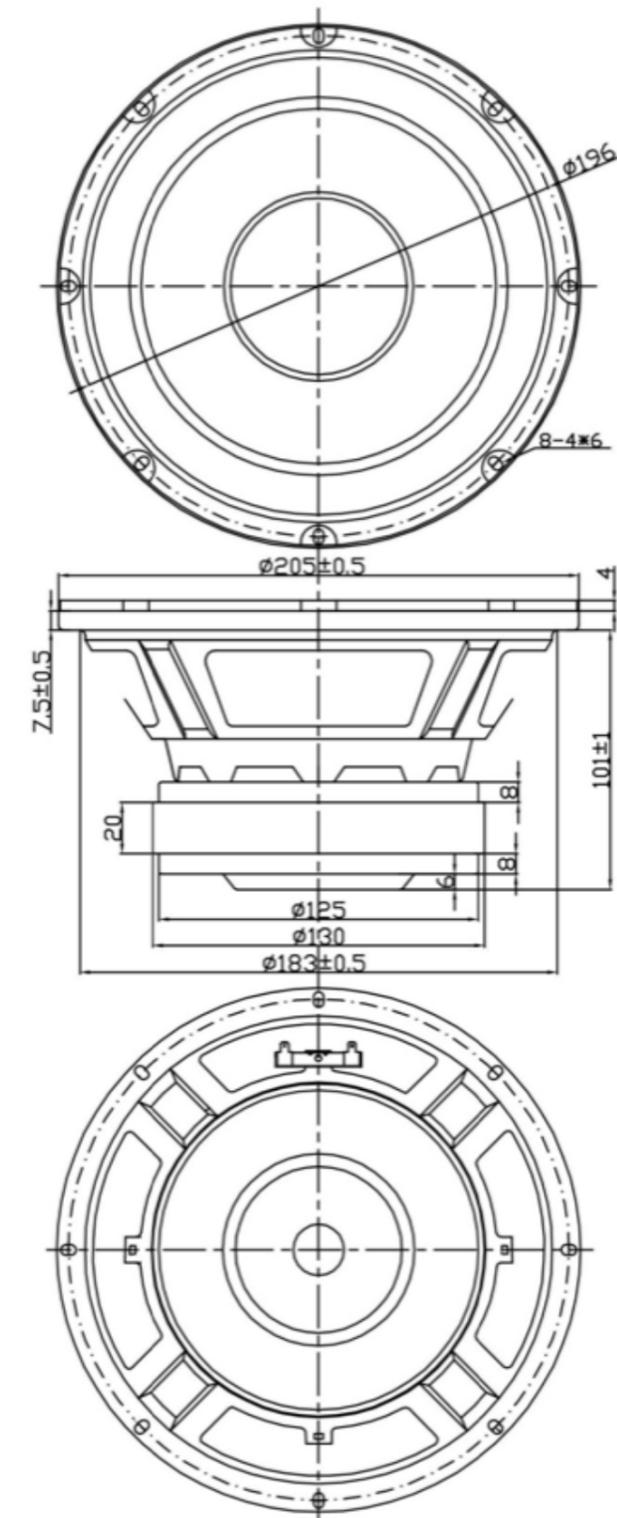
The user is encouraged to determine if the application most replicates that of a “trunk” or “boot” installation, or an installation in an SUV, hatchback, or wagon.

Vb = Volume of box
Av = Area of vent
Lv = Length of vent

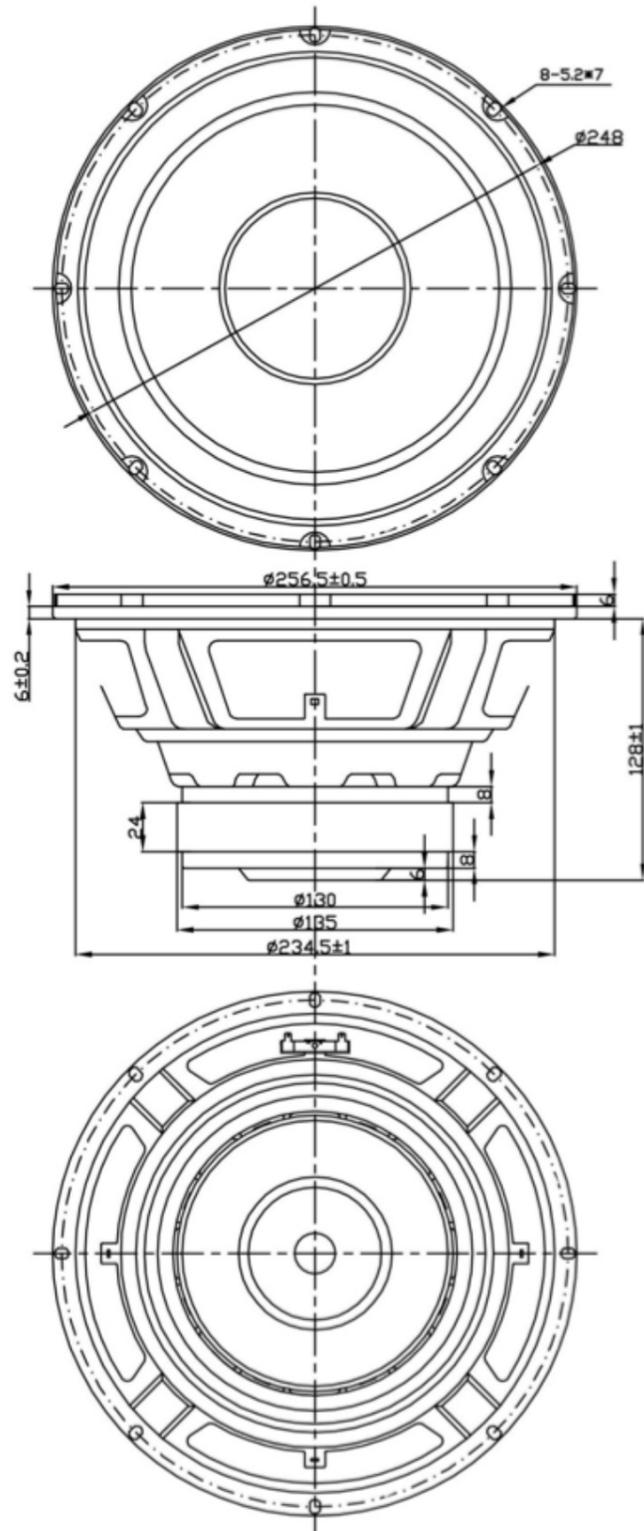
Imagine I6SW-V2 Mechanical Drawing



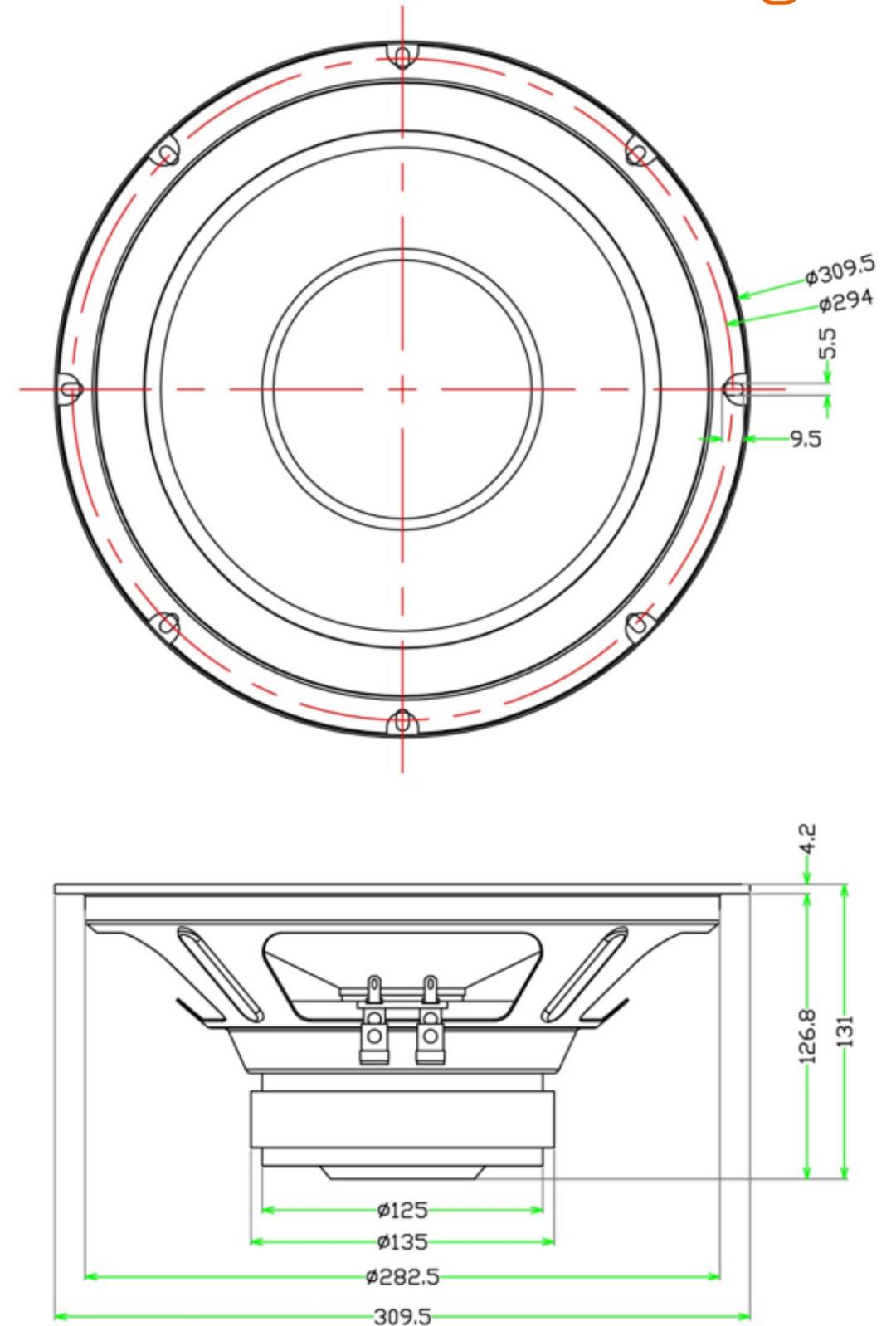
Imagine I8SW Mechanical Drawing



Imagine I10SW Mechanical Drawing



Imagine I12SW Mechanical Drawing



Imagine Subwoofer Warranty

Hybrid Audio Technologies extends a limited one year warranty to the original purchaser when self-installed, and three years warranty when installed by a certified Hybrid Audio Technologies dealer (United States only), and hereby certifies that this product will be free from defects in materials and workmanship under normal and proper use for one year from the date of purchase.

Hybrid Audio Technologies' responsibility under this warranty is limited to replacing or repairing, at Hybrid Audio Technologies' option, products or parts determined by Hybrid Audio Technologies to be defective either in materials, or workmanship. To attain warranty service, the customer must deliver the product or the defective part(s), appropriately packed with proof of purchase date, to an authorized Hybrid Audio Technologies dealer. In the event that a direct return from a consumer is required, the consumer must obtain from Hybrid Audio Technologies a return authorization number, and ship the defective product directly to Hybrid Audio Technologies. All shipping expenses are the customer's responsibility. If the product has been updated or superseded, a replacement will be made with a current model of the same quality and function. Warranty of the replacement parts is limited to 90 days or the unexpired portion of the warranty period of the product on which the parts are being used, whichever is longer.

This warranty does not cover any defects or costs caused by: (1) modification, alteration, repair or service of this product by any persons or company other than Hybrid Audio Technologies; (2) physical abuse to, overload of, or misuse of, the product or operation thereof in a manner inconsistent with the use indicated in the instructions; (3) any use of the product other than that for which it was intended; or (4) shipment of the product to Hybrid Audio Technologies for service. This warranty does not cover labor costs.

Hybrid Audio Technologies is not liable for any special incidental or consequential damages, including, but not limited to, personal injury, property damage, damage to or loss of equipment, loss of profits or revenue, costs of renting or buying replacements and/or any other additional expenses, even if Hybrid Audio Technologies has been informed of the prospect of such damages. Any express warranty not provided herein, and any remedy which other than the warranty contained herein might arise by inference or operation of law, is hereby excluded and disclaimed including the implied warranties of merchantability and of the fitness for a particular purpose

Thank You!

Hybrid Audio Technologies is delighted that you have chosen an Imagine component system for your high-end mobile audio sound system. We are convinced that a great product offering, backed up with unsurpassed customer service and technical support will advance the Hybrid Audio Technologies namesake in the coming years. We are pleased that you have joined us in our "new generation of in-car audio."

If there is anything we can do to help you get the most out of your Imagine installation, please do not hesitate to email us at: support@hybrid-audio.com, by phone: 770.888.8200, or by visiting us at: hybrid-audio.com



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