Velodyne®

VRP-1000™
and
VRP-1200™

User's Manual

Home Theater Subwoofer

Caution

To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

The lighting flash with arrowhead symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the subwoofer.

1. Read Instructions -- All safety and operating instructions should be read before the subwoofer is operated.
2. Retain Instructions -- The safety and operating instructions should be retained for future reference.
3. Heed Warnings -- All warnings on the subwoofer and in the operating instructions should be adhered to.
4. Follow Instructions -- All operating and use instructions should be followed.
5. Water and Moisture -- The subwoofer should not be used near water -- for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool or the like.
6. Carts and Stands -- The subwoofer should be used only with a cart or stand recommended by the manufacturer.
7. Wall or Ceiling Mounting -- The subwoofer should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation -- The subwoofer should be situated so that its location or position does not interfere with its proper ventilation. For example, the subwoofer should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat -- The subwoofer should be situated away from heat sources such as radiators, heat registers, stoves, or other subwoofers that produce heat.
10. Power Sources -- The subwoofer should be connected to a power supply only of the type described in the operating instructions or as marked on the subwoofer.
11. Power-Cord Protection -- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point at which they exit from the subwoofer.
12. "Caution: To prevent electrical shock, match wide blade of plug to wide slot, fully inserted.""Attention: Pour eviter les chocs electriques, introduire lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu' au fond".
13. Cleaning -- The subwoofer should be cleaned only as recommended by the manufacturer.
14. Nonuse Periods -- The power cord of the subwoofer should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry -- Care should be taken so that objects do not fall and liquids are not spilled onto the enclosure.
16. Damage Requiring Service -- The subwoofer should be serviced by qualified service personnel when:
    a. The power-supply cord or plug has been damaged.
    b. Objects have fallen or liquid has been spilled into the subwoofer.
    c. The subwoofer has been exposed to rain.
    d. The subwoofer does not appear to operate normally or exhibits a marked change in performance.
    e. The subwoofer has been dropped or damaged.
17. Servicing -- The user should not attempt to service the subwoofer beyond what is described in the operating instructions.

    All other servicing should be referred to qualified service personnel.

Congratulations!

Congratulations on your purchase of a Velodyne Rear Port (VRP) subwoofer system. This system represents the state-of-the-art in home audio reproduction and will provide you with years of listening pleasure when properly cared for. Read and follow this instruction manual to insure safe and proper system connection and operation.

Caution!
Please observe the following instructions to insure safe and proper system operation.

Note: Do not leave unit in direct sunlight or use in high humidity environments!!!

Warning!
To prevent fire or shock hazard, do not expose this equipment to rain or moisture. To avoid electrical shock, do not open speaker enclosure or amp chassis cover. Please observe all warnings on the equipment itself. There are no user serviceable parts inside. Please refer all service questions to your authorized Velodyne dealer.

Prior to Installation:
Please unpack the system carefully. This unit is heavy. Use caution when lifting or moving to avoid injury. Remove all staples used to seal the carton as they can scratch the cabinet. Please save the carton and all packaging materials for future use. Packing this unit in any other carton may result in severe damage when shipping. Record the serial number in the space provided on page 13 for future reference.

Product Features

- A single driver consisting of either:
  - 10" (8.2" piston diameter) subwoofer with 2.0" high-temp voice coil and 40 ounce motor structure or,
  - 12" (9.8" piston diameter) subwoofer with 2.0" high-temp voice coil and 40 ounce motor structure
- Adjustable (50 to 200 Hz) low-pass crossover with a 12 dB/octave slope
- Line-level (RCA) inputs
- Speaker-level inputs and outputs with spring loaded terminals

continued. . .

- Signal sensing auto turn on/off
- Variable volume control
- Selectable phase control (0° or 180°)
- Frequency response of 36 - 120 Hz (+/-3 dB)
- Green power on/ Red power standby mode indicator LED

Prepare for Installation

Your new Velodyne subwoofer provides for a number of installation options. Read all the installation information below in order to determine which installation option is best for your system. **Remember to perform all installation procedures with system power turned off to prevent possible damage.**

Placement

True subwoofers operate at extremely low frequencies that are primarily omni-directional. Keep in mind that frequency response and output level can be **drastically** influenced by placement, depending on the acoustic properties of the listening room. Typically, the optimum location for a subwoofer is tucked away in a corner of your listening room. This location will usually offer the greatest output levels and optimum low frequency extension. The worst location for a subwoofer is typically far away from any walls, and close to the center of your room. Avoid these locations when possible. When using a pair of Velodyne subwoofers in stereo, it is preferable to place each subwoofer by the satellite of the same channel.

Caution! This subwoofer has electronics built into the cabinet. Do not place the cabinet next to sources of heat such as furnace registers, radiators, etc., or near sources of excessive moisture, such as evaporative coolers, humidifiers, etc. The power cord should be routed in such a way that it will not be walked on, pinched, or compressed in any way that could result in damaging the insulation or wire.

Regardless of where you install your Velodyne subwoofer, it must remain in an upright position (woofer facing forward). Using, shipping, or otherwise storing the subwoofer in any other position for an extended period of time may result in damage to the unit not covered by warranty.

Your VRP subwoofer is magnetically shielded to reduce the amount of stray magnetic energy emitted from the speaker's motor structure. This greatly increases flexibility when placing the unit close to video

monitors, as there is very little stray magnetism. Certain types of televisions are particularly sensitive to stray magnetic fields. If your television produces distorted colors after installing your subwoofer, simply increase the distance between your television and the subwoofer until normal color and operation is returned.

Your new Velodyne subwoofer, like any good speaker system, requires proper positioning within the listening space to provide maximum performance. Improperly placed speakers may degrade the sound quality and reduce your listening pleasure. Depending on the size and type of furnishings in the room, perfect placement may not be possible. Finding the best location for your environment will likely require some experimentation. We suggest you experiment with the location during setup to find what sounds best to you when seated in your typical listening position.

Installation

Inputs

Your new subwoofer is equipped with speaker-level and line-level inputs. Use the **LINE LEVEL** jacks when connecting your subwoofer to a pre-amp, signal processor (such as LFE out), line-level crossover, or receiver with pre-amp level outputs. The **SPEAKER LEVEL** jacks connect directly to the speaker outputs of any amplifier, integrated amplifier, or receiver. Your amplifier section will notice no additional loading effects when you use these inputs due to their very high impedance.

Note: You do not need to connect both the left and right **LINE LEVEL** inputs from a single source (such as the LFE out on your receiver/ processor). These inputs are summed together and simply connecting one will provide the same amount of signal to the sub as if you had used a "Y" connector and connected both. If using the **SPEAKER LEVEL** inputs, you DO want to connect both channels, since different bass information might be present in each channel going to your main speakers.

Important!!!
Do not use both LINE LEVEL and SPEAKER LEVEL connections simultaneously!

continued. . .

Caution!!! To avoid damage to your main amplifier, be sure to maintain correct polarity when making all connections - red (positive) to red, and black (negative) to black. Be sure all connections are tight, and that there are no loose strands or frayed wires.

Volume Control

This control allows you to balance the output from the subwoofer to the main speakers/amplifier in your system. This control should be set to achieve similar output levels from both the main speakers and subwoofer when listening to music. A good starting point for the volume control is 2 or 3 graduations from minimum.

Low-pass Crossover - 50 to 200 Hz

As noted above, all inputs sum the left and right channels together, with the resulting signal passing through an adjustable low-pass crossover before being amplified. The crossover control allows you to adjust the upper limit of the subwoofer's frequency response from 50 to 200 Hz. The subwoofer's response will begin rolling off above the frequency you set this control to. You should set the crossover frequency to obtain a smooth and seamless transition from the subwoofer to the main speakers in your system. If your main speakers are smaller units with limited low frequency output, you may wish to choose a higher frequency (such as 100-120 Hz) than you would with larger speakers which have greater low frequency output. With larger speakers, you might start with this control set lower, such as 80 Hz.

Phase Adjustment - 0°/180°

This control allows you to "reverse" the phase of the subwoofer's output signal 180° to correct for any possible mismatch and resulting cancellation between the subwoofer and your main speakers/amplifier. To adjust, simply listen to the system with music playing, then depress the phase switch from one position to the other and listen for a change in low frequency output. The correct position will have a greater amount of apparent low frequency output.

Auto Turn on Function

The subwoofer will turn itself on automatically when an audio signal is present. If no signal is present for approximately 8 minutes, the unit will switch to standby mode (Red LED). While in standby mode, your subwoofer will draw very minimal power.

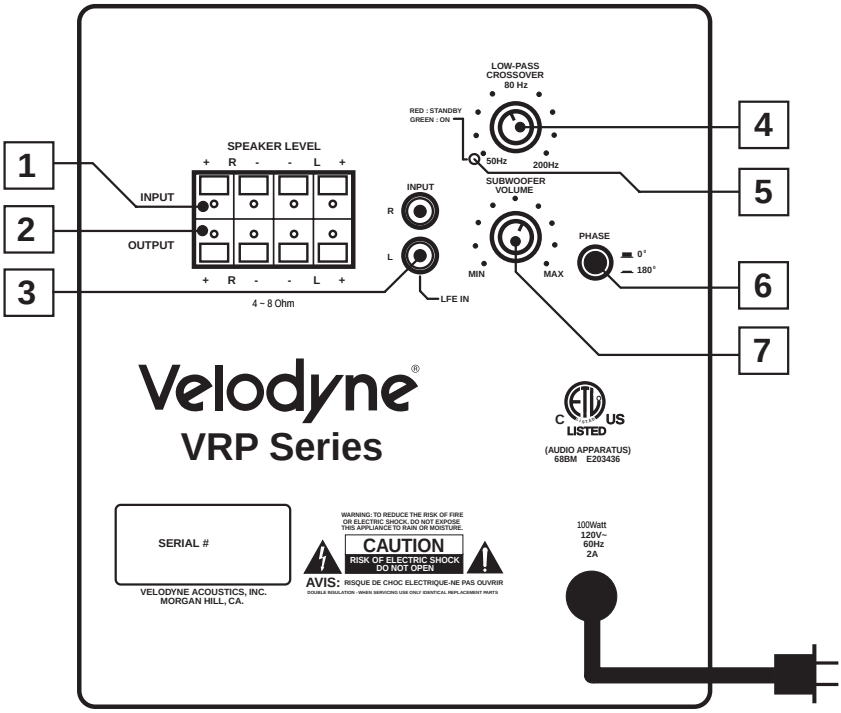


Figure 1. VRP Rear Panel Connections

Rear Panel Connections

Figure 1 shows the connections on the rear panel of the VRP. Following are brief descriptions of the connections described in Figure 1. More detail of these connections can be found below:

(1) SPEAKER LEVEL INPUT terminals
Connect these input terminals to the speaker output terminals of your amplifier or receiver.

(2) SPEAKER LEVEL OUTPUT terminals
The speaker-level signal to the front speakers is output from these terminals.

(3) LINE INPUT jacks
Connect these jacks to the LINE OUT jacks of the amplifier.

continued. . .

(4) LOW-PASS CROSSOVER
Use this knob to select the high-frequency range at which you wish to cut-off the signal to the subwoofer.

(5) Power indicator
Red: Unit is in standby mode.
Green: Unit is in operation mode.
(automatically turns to STANDBY mode if no signal for 8 min.)

(6) PHASE switch
Select the switch position at which you hear a louder bass sound.

(7) VOLUME LEVEL knob
Use this knob to adjust the output level of the subwoofer.

Crossovers

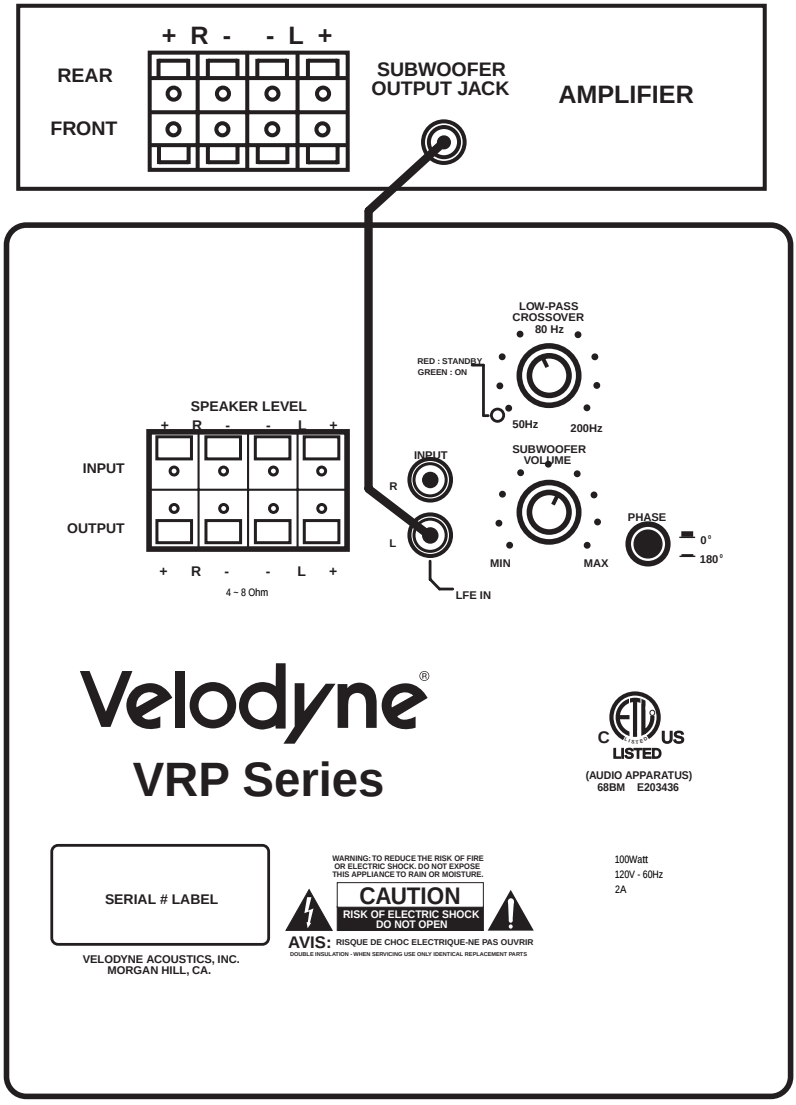
Speaker-level Connections

When installed in this fashion the satellite speakers will be crossed over at 80 Hz. This removes the lower bass from your amplifier and speakers, enabling them to do a better job reproducing high frequencies. By utilizing this method you will have a bi-amplified system, gaining improved power and headroom for your system.

Receiver/Processor Subwoofer Outputs

The Velodyne subwoofer is designed to operate using the full range audio signal for input when using the built-in crossover. Many home theater processors/receivers (Dolby Digital®, DTS®, THX®) have a "subwoofer out" jack (sometimes labeled "LFE") that is internally filtered, settable at the receiver/processor, and designed to be used with a powered subwoofer. In some installations, it may be beneficial to use BOTH the Velodyne crossover and the receiver/processor crossover, resulting in a steeper ultimate crossover slope. In some rare cases, combining both an external crossover and the one internal to the subwoofer may result in low output and increased noise. In these installations you may need to bypass the crossover in either the processor or your VRP subwoofer, or simply setting one crossover to a higher frequency (such as 120 Hz) will restore maximum performance.

(Refer to Figure 2a Line-Level Subwoofer Connection Diagram and Figure 2b Speaker-Level Subwoofer Connection Diagram, page 8 and 9 for connection diagrams.)



SUBWOOFER REAR PANEL

Figure 2a. Line-Level Subwoofer Connection Diagram

continued. . .

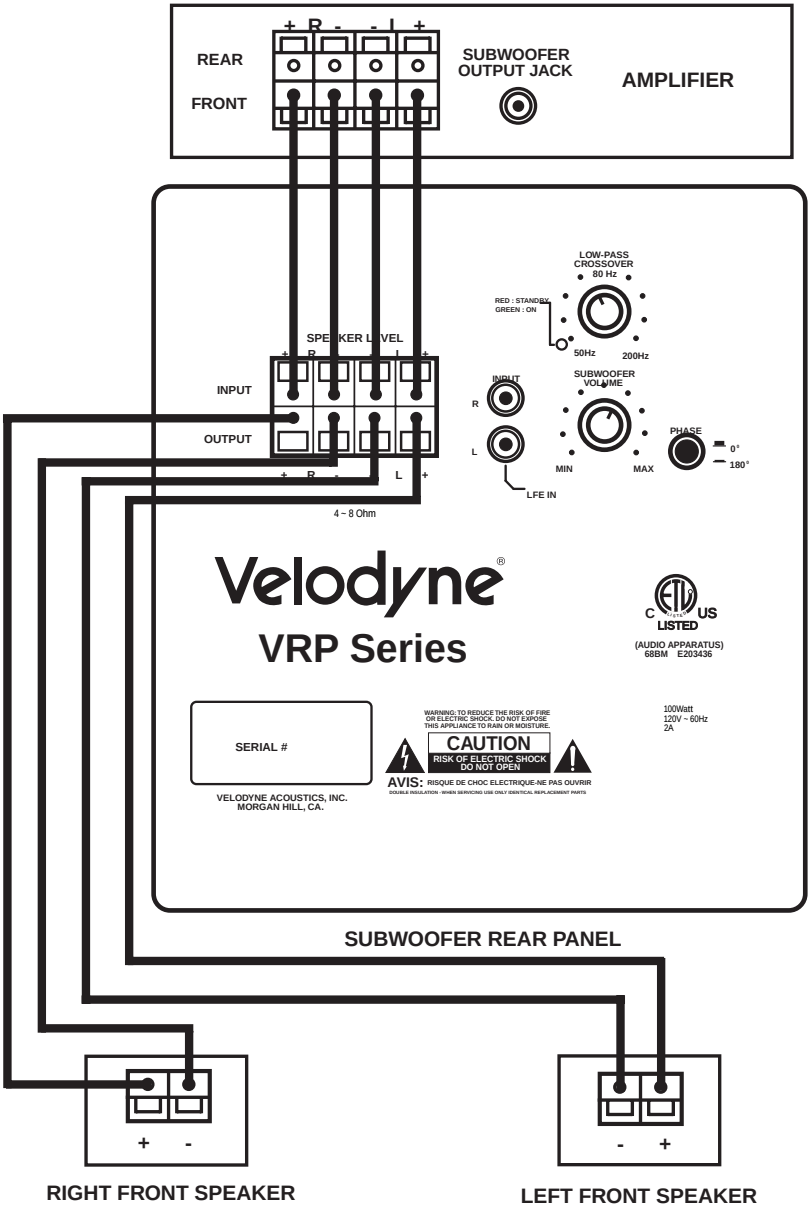


Figure 2b. Speaker-Level Subwoofer Connection Diagram

Interconnect Cables

When installing your new Velodyne subwoofer using the line level connections, you should always use shielded phono cables. There are many high quality cables available today. It is recommended that you keep the length of cable as short as possible to avoid any potential noise problems.

When using speaker level connections, use a high quality speaker cable that mates well with the connectors. Be very careful to avoid any loose strands or frayed wires that may result in a short, which may damage your equipment. Cables of extremely large size are typically not required. Extremely large gauge wire may not properly fit in the binding posts, resulting in a poor connection and possible short circuits.

Care of Your Subwoofer

Your Velodyne subwoofer does not require any regular maintenance. Normal dusting or cleaning of the surface for appearance purposes is all that is required. We suggest you avoid any harsh detergents or chemicals when cleaning the cabinet. Abrasives, detergents, or cleaning solutions may damage the finish on the cabinet. We recommend using only a damp cloth to clean the cabinet.

During normal conditions, your new subwoofer may be left on continuously without any problems. The unit is equipped with a signal-sensing turn on/off that will automatically turn on the unit when a signal is present at the inputs and turn off the unit after several minutes when there is no longer any signal at the inputs.

Protection Circuitry

Your new subwoofer is equipped with circuitry to provide maximum performance with greatest reliability.

The unit is protected against:
1) Overheating the amplifier.
2) Excessive drop in power line voltage.

If either of the above should happen, you should reduce the volume setting or shut the unit off until normal operating conditions return. You may also want to plug the unit into a different wall outlet, as dropping power line voltage will be most noticeable under strenuous conditions and may result in the unit shutting down intermittently.

Troubleshooting and Service

If you should experience a problem with the operation of your subwoofer, please check all of the following before seeking service. Following is a simple troubleshooting guide to assist you.

1. Verify that the unit is plugged in, the power outlet is active, and is supplying proper voltage.
2. Is unit receiving an input signal from your source?
3. Have all controls on subwoofer (volume, crossover, phase, etc.) been properly set?
4. If unit has been running at high levels for an extended period of time, one of the protection circuits may be engaged.
   - Is the built-in amplifier extremely hot to the touch?
   - Is your power line voltage sagging, such as when there are other devices on the same circuit drawing lots of power?

If the protection circuitry is active, the unit may cycle on and off until operating parameters return to normal. Under more serious conditions, the unit may shut off completely. Normal operation should return upon cooling, but you may be required to turn the power off and then on again to reset the unit.

The following conditions require service by a qualified technician:

1. The power cord has become damaged.
2. The unit does not appear to operate normally or exhibits a marked change in performance.
3. The unit has been exposed to water.
4. Some part of the cabinet or circuitry is physically damaged.

Thank You for Purchasing a Velodyne!

SPECIFICATIONS	VRP-1000	VRP-1200
Cabinet Design	Bass-reflex with built-in power amplifier	Bass-reflex with built-in power amplifier
Frequency response	35 Hz - 140 Hz (+/-3 dB)	29 Hz - 140 Hz (+/-3 dB)
Crossover frequency	50 - 200 Hz (variable)	50 - 200 Hz (variable)
Max. output power	165 watts Dynamic/ 115 watts RMS Power	195 watts Dynamic/ 130 watts RMS Power
Phase	0° or 180°	
Input impedance	1.2K ohm (for SPEAKER LEVEL INPUT terminals) 65K ohm (for LINE INPUT jacks)	
Sensitivity Speaker-Level Line	1.6V 230 mV	1.6V 230 mV
Speaker	10" (8.2" piston diameter)	12" (9.8" piston diameter)
Power Supply	120V, 60 Hz AC	
Power consumption	75 watts	
Cabinet (H,W,D) (cm)	15" x 12" x 16.75" 37.5 x 30 x 41.88	16.5" x 14.5" x 19.75" 41.25 x 36.25 x 49.38
Weight (approx.)	35 lbs. (16 Kg)	60 lbs. (27 Kg)

Specifications are subject to change without notice.

FOR YOUR RECORDS. . .

Date Puchased_____

Dealer_____

Serial #_____

**NOTE: Please complete and return your warranty card within ten (10) days or*

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LIMITED WARRANTY

VELODYNE ACOUSTICS, Inc. ("VELODYNE") warrants all powered subwoofers for a period of two years, and full range speakers for a period of five years. All VELODYNE products have a warranty from the date of purchase against defects in materials and workmanship subject to the following conditions:

1. VELODYNE is not responsible for defects which result from the use of an amplifier or controller other than the one originally supplied with the unit (subwoofer) or defects which result from modifications or repairs made by any component of the system by anyone other than a VELODYNE factory authorized service representative.
2. This warranty is void if any repairs or service covered by the terms of this warranty are made to any component of the system by anyone other than a VELODYNE factory authorized service representative..
3. VELODYNE is not responsible for damage caused by accidents, abuse, misuse, natural or personal disaster or unauthorized modification. The VELODYNE products are not intended for professional or commercial use and VELODYNE is not responsible for damage resulting from such use.
4. The VELODYNE product warranty is limited to units that are purchased from authorized VELODYNE dealers and finalized within authorized dealer locations.
5. This warranty is nontransferable under any condition.

TO OBTAIN SERVICE

Information regarding service may be obtained from the dealer from whom you purchased the unit, or by contacting VELODYNE customer service. Warranty service must be performed by a VELODYNE factory authorized service representative within the warranty period set forth above. If VELODYNE determines the unit is defective, VELODYNE will, at VELODYNE's option, repair or replace the product at no charge if the product is forwarded prepaid to a factory authorized service representative. Products forwarded to the factory authorized service representative should be shipped securely and properly packaged, insured, and freight prepaid.

Other Velodyne Subwoofer Products:

Digital Drive™ 1812™ Signature Edition

Digital Drive™ Series

DD-10
DD-12
DD-15
DD-18

SPL™ Series II

SPL-800 Series II
SPL-1000 Series II
SPL-1200 Series II

DLS™ Series

DLS-3500
DLS-3750
DLS-4000

HGS-X™ Series

HGS-10X
HGS-12X
HGS-15X

Deco System™

Deco System
Deco Satellites

DPS Series™

DPS-10
DPS-12

VX-10™

“Not only was the little Velodyne the best small sub I’ve ever used, it was one of the very best subs I’ve used.”

-John Potis
SoundStage!, April 2002

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