

*"It delivered room-shaking bass and dramatically demonstrated the effectiveness of a single subwoofer placed to one side of the room"*

- Julian Hirsh  
Stereo Review, January 1997

*"If you want the absolute-deepest, most feel it-in-your-tushy BASS under a grand, look no farther than the Velodyne . . ."*

- Corey Greenberg  
Home Theater, February 1995

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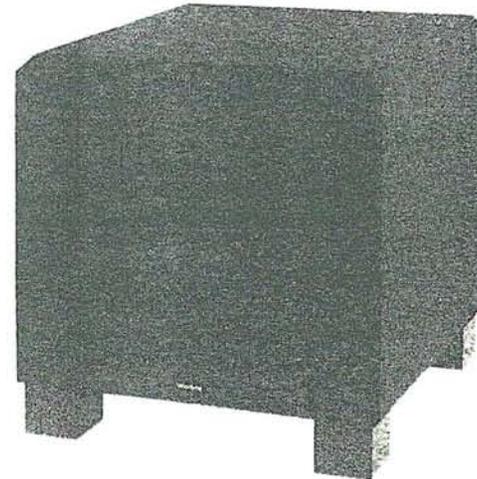
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Rev. B

# 8100X Owner's Manual



**Velodyne**<sup>®</sup>  
Audio/Video Subwoofer System

## Congratulations!

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Congratulations on your purchase of a Velodyne VA-8100X subwoofer system. This system represents the state of the art in accurate low frequency reproduction. Read and follow the instructions below to insure safe and proper system operation.

### 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. 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. Record the serial number in the space provided on the warranty card for future reference.

## Product Features & Controls

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- Built-in 100 watt (RMS) power amplifier
- Subwoofer Direct - switchable crossover bypass
- Adjustable (40 to 120 Hz) low-pass crossover
- Passive (85 Hz fixed) high-pass crossover
- Line-level inputs & outputs
- Speaker-level inputs & outputs
- Signal sensing auto turn on/off with bypass option
- Variable volume control
- Selectable phase control (0 or 180 degrees)
- Anti-clipping circuitry
- Magnetically shielded for video use
- Dual staggered low-pass crossover; 12dB/octave initial, 24dB/octave ultimate
- Gain compression circuit to protect woofer from over excursion
- Input overload protection

## Installation

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Your new VA-8100X subwoofer system 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.**

### inputs

Your new VA-8100X subwoofer is equipped with both speaker-level and line-level inputs. Use the LINE-IN jacks when connecting your subwoofer to a pre-amp, signal processor, or line-level crossover. The FROM AMPLIFIER jacks connect directly to the speaker outputs of a integrated amplifier or receiver. Your amplifier section will notice no additional loading effects when you use these inputs because of their high impedance.

### Note

*Do not use both LINE-IN and FROM AMPLIFIER inputs simultaneously.*

### Caution!

*Polarity is critical when using speaker level inputs. Reversing the polarity of speaker level inputs can damage the unit.*

### Volume control

This control allows you to balance the output from the subwoofer to the main speakers in your system. This control should be set to achieve similar volume level from both the main speakers and subwoofer.

### Low-pass crossover

Both sets of inputs sum the left and right channels together and the resulting signal is passed 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 40 to 120 Hz. The subwoofer's response will begin rolling off above the frequency you set this control to.

*continued . . .*



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.

A bypass switch is also provided if you wish to use an external crossover. If you are not using an external crossover, we recommend that you use the one provided within the unit for optimum performance.

### Phase adjustment

This control allows you the ability to compensate for having the subwoofer in a different location than the main speakers. Ideally, you will have the sound from the subwoofer reach the listening position the same time as the sound from the main speakers. However, if the distance from the listening position to the subwoofer and the distance from listening position to the main speakers differs, the sound from each will reach your ears at a different time.

This control allows the signal to be delayed 180 degrees so the output of the subwoofer will blend in to that of your main speakers without any cancellation.

### Auto turn on function

With this function in the "auto" position, your subwoofer can be safely left with the main power switch on continuously. The subwoofer will turn itself on automatically when an audio signal is present. If no signal is present for approximately 15 minutes, the unit will switch to standby mode. While in standby mode, your subwoofer will draw very minimal power. This function can be disabled by leaving the switch in the "on" position.

### Power switch

The master power switch is located on the right half of the unit. This rocker style switch is the main on/off for the unit. This switch should be set to position 1 for on (up), 0 for off (down).

## Line-level connection

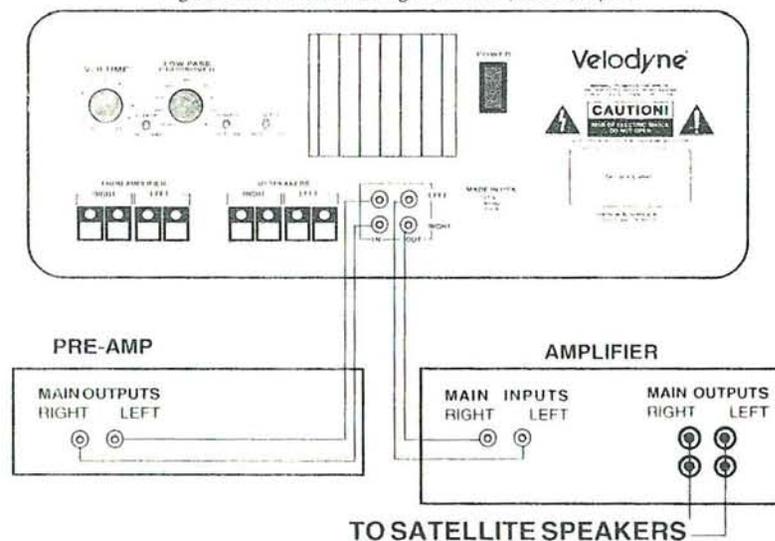
Figure 1 shows connection to a pre-amplifier's main outputs and returning them to your amplifier inputs.

When installed in this fashion, your satellite speakers will be crossed over at 85Hz which 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.

### A word about subwoofer outputs

The Velodyne subwoofer is designed to operate using the full range audio signal for input when using the built-in crossover. Some surround sound processors/receivers, including the Dolby AC3 system with their .1 channel output, have a "subwoofer out" jack that

Figure 1: Installation using line-level (line in) inputs



is already crossed over and designed to be used with a conventional amplifier and speaker. Combining both an external crossover and the one internal to the subwoofer may result in low output and increased noise. In these cases, to optimize your subwoofer perfor



mance you should bypass the internal crossover in your *Velodyne* subwoofer, the Subwoofer Direct feature.

To bypass the crossover within the subwoofer, simply locate the switch marked "out / in" on the back panel of the subwoofer and set to the "out" position. This will eliminate the internal crossover function.

**Note**

If not using an external crossover, you should use the built-in crossover for optimal performance.

## Subwoofer out from A/V Processor

From the low pass output of your signal processor Install into right or left RCA line in connector in the back of the subwoofer or use a "Y" connector adapter into both right and left RCA line in connectors in the back of the subwoofer, and switch the crossover switch to "out".

## Speaker-level connection

Figure 2 shows an easy way to connect your VA-8100X subwoofer directly to your receiver or integrated amplifier.

When connected in this fashion, your satellite speakers will be crossed over at 85 Hz, which removes the lower bass from your speakers thus, enabling them to do a better job reproducing high frequencies.

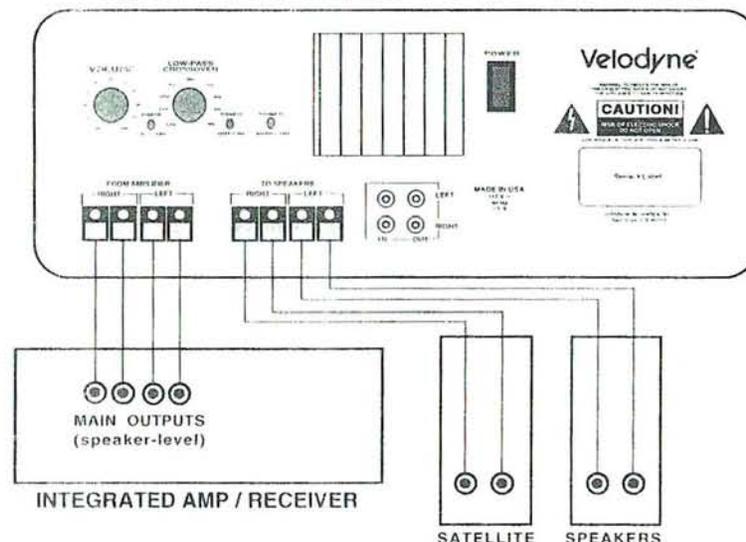
You may also connect your satellites directly to your receiver or amplifier along with the subwoofer if you wish to bypass the internal high-pass crossover.

**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 that all connections are tight, and that there are no loose strands or frayed wires.



Figure 2: Installation using speaker-level (from amplifier) inputs



## Interconnect cables

When installing your VA-8100X using the line-level inputs/outputs, you should use standard shielded phono cables. Always keep the lines as short as practical to minimize noise.

When using the speaker-level inputs/outputs, use the same quality speaker cable to your subwoofer as you run to your satellites.

## Placement

True subwoofers operate at extremely low frequencies which are primarily omnidirectional. While it is recommended that the subwoofer be placed on the same plane as the satellite speakers, room and system conditions often dictate otherwise. Keep in mind that frequency response and output levels can be **drastically** influ-

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enced 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!**

*The VA series subwoofers have amplifiers built into the cabinet. Do not place the cabinet next to sources of heat such as furnace registers, radiators, etc. The power cord should be routed in such a way that it will not be walked on, pinched, or compressed in any way.*

Regardless of where you install your VA-8100X subwoofer, it must remain in an upright position (passive radiator facing downward). Using, shipping, or otherwise storing the VA-8100X subwoofer in any other position for an extended period of time may result in damage to the unit not covered by warranty.

The VA-8100X subwoofer is magnetically shielded to reduce magnetic emission from its cabinet to increase the number of possible locations available for placement. However, this shielding may not be adequate for all installations. Certain types of televisions are particularly sensitive to stray magnetic fields. If your television produces distorted colors after installation of your VA-8100X subwoofer, simply increase the distance between your television and the VA-8100X until normal color and operation is returned.

## **Care of your subwoofer**

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Do not use any harsh detergents or chemicals to clean the cabinet. Abrasives, detergents, or cleaning solutions may damage the finish on the cabinet. We recommend using a damp cloth to clean the cabinet.

During normal conditions, the VA-8100X 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.

If you plan to leave the VA-8100X unused for an extended period of time, we recommend that you turn off the unit by the master power switch on the rear panel.

## **Troubleshooting & Service**

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Before seeking service for your VA-8100X subwoofer, please recheck all systems. Following is a simple troubleshooting guide to assist you.

1. Verify unit is plugged in and power outlet used is active.
2. Is power switch on?
3. Is auto turn on/off set properly?
4. Is unit receiving an input signal from your source?
5. Have all controls on subwoofer (volume, crossover, phase, etc.) been properly set?
6. If unit has been running at high levels, one of the protection circuits may be engaged.
  - Has the built-in amplifier overheated?
  - Has the speaker's voice coil started to heat up?

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 will 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!**



## INSTALLATION WORKSHEET

SPECIFICATIONS	VA-8100X
Cabinet - including legs	15.5"x14.5"x14.5" (H,W,D)
Frequency Response	35 - 120 Hz, +/- 3 dB
High Pass Crossover	Passive 85 Hz, 6dB/octave slope
Low Pass Crossover	40 - 120 Hz, active-adjustable
Amplifier	100 watts, 250 watts peak, Class A/B
Woofer	8" forward firing
Passive Radiator	10" downward firing
Magnet	55 oz.
Voice Coil	2" diameter
Inputs/Outputs	Line and speaker level
Warranty	Two years (parts & labor)
Weight	45 lbs. (approx.)

*Specifications are subject to change without notice.*

Date: \_\_\_\_\_ MODEL/SERIAL# \_\_\_\_\_

Installed by: \_\_\_\_\_ Phone: \_\_\_\_\_

Volume Setting: \_\_\_\_\_ Output Level (dB): \_\_\_\_\_

Low Pass X-Over: \_\_\_\_\_ Hz Phase Pos.: 0° \_\_\_\_\_

180° \_\_\_\_\_

### Output Levels: (Speakers)

Left Front: \_\_\_\_\_ dB Right Front: \_\_\_\_\_ dB

Left Rear: \_\_\_\_\_ dB Right Rear: \_\_\_\_\_ dB

Center: \_\_\_\_\_ dB

*FOR YOUR RECORDS...*

DATE PURCHASED \_\_\_\_\_

DEALER \_\_\_\_\_

SERIAL # \_\_\_\_\_

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

