

Operation: Knoll volume controls are very easy to use. The VS150im has a total of 12 different volume settings including fully off.

To increase the volume (in this room only), slide the volume control knob upwards. To lower the volume, slide the volume control knob downwards.

To set the correct amplifier or receiver volume setting, we suggest that you turn the Knoll room volume control in one room to maximum. Adjust the amplifier or receiver volume to the loudest comfortable setting you will use and no further or louder. This way the Knoll volume control has the most usable settings. If the amp volume control was set louder, the Knoll volume control would have to be turned down to be back at a comfortable level with less overall volume positions available.

Warranty

Knoll Systems warrants the VS150im sold in the USA and Canada by authorized Knoll dealers to be free of defects in materials and workmanship. This warranty extends for three full years from the date of purchase by the original consumer. Any products returned to Knoll Systems and found to be defective by Knoll Systems within the warranty period will be repaired or replaced at Knoll Systems option, at no charge. Knoll Systems will not be responsible for the actual cost of installation or removal of the product, nor for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights. You may have additional legal rights that vary from state-to-state.

Specifications

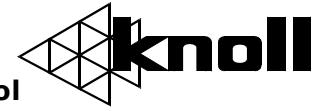
Peak RMS Power Rating	150-watts per channel
Continuous RMS Power	75-watts per channel
Frequency Response	20 to 20,000 Hz
Mounting Depth	2.25" (5.7cm)
Electrical Junction Box	Fits single gang
Speaker Impedance	4-16 ohms (single or multiple speakers)
Connection	Detachable screw terminals

Knoll Systems

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VS150im



Impedance Matching Volume Control Installation Instructions v1.3

Warning: To be installed and/or used in accordance with appropriate electrical codes and regulations.

Caution: Do not install these keypads in an electrical junction box with 110V or higher unless an approved barrier separates the high and low voltage sections.

Description: The Knoll VS150im is a twelve-position in-wall mountable stereo speaker volume control with impedance matching capability. From one to sixteen pairs of speakers can be safely driven from one stereo amplifier using an equal number of VS150im's. Separate impedance matching components are not required. The Knoll WT6 one stereo input to six stereo output connection strip is available to neaten the wiring of larger systems. A rotary switch version is available, model VC150im.

Basic System Layout and Pre-Wiring: A stereo amplifier controls multiple pairs of speakers. Decide where the speakers and volume controls will be placed in the various rooms. When wiring always leave an extra couple of feet of wire at both ends so installation of the speakers and volume controls is quick and easy. Up to 16 pairs of 8-ohm speakers can be safely connected to one amplifier. (8 pairs of 4-ohm speakers).

Run a **fire-rated** two-conductor speaker wire (14-18 gauge wire) from each speaker to the volume control location in each room. Next, run a four-conductor speaker wire from the volume control to the amplifier location. Ideally each run back to the amplifier is a home run, but wires can be daisy chained from room to room. If you plan to daisy chain the wiring we suggest using larger 14-gauge wire. If 2 pairs of speakers are being controlled by 1 volume control, wire the 2 pairs in series if they are 4 or 6-ohms and parallel if they are 8 or 16-ohms. Our web site has information on how to wire in series and parallel.

Warning: Never attempt to make the final combined speaker impedance less than 4-ohms as this may cause safety issues.

To make final trim-out quicker, the detachable connectors with the VS150im can be added to the wires now. They are available in bulk packs without the volume controls from Knoll.

To tidy up the installation, use Knoll's WT6 seven position wire connection strip at the amplifier. Two or more may be required for some installations.

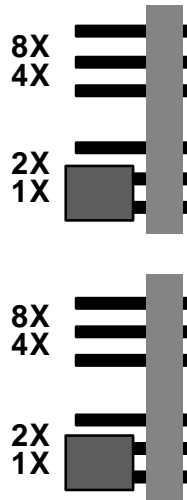
Setting the impedance matching jumpers:

Each of the VS150im volume controls needs to have the jumpers correctly set. The two jumpers are located on the rear side of the volume control. Both channels on all volume controls in this system should be set to the same jumper setting.

The jumper setting is determined by three factors:

1. The speaker impedance (all the speakers in this system should have the same impedance).
2. The number of volume controls connected to one stereo amplifier.
3. The minimum speaker load impedance the amplifier can handle.

In the left illustration both jumpers are shown set in the X1 position. The top jumper set is for the left speaker and the bottom set is for the right speaker. **Ideally, all volume controls in this system should have their jumpers set to the same correct position.** 4 and 8 ohm speakers can safely be combined in a system. Use the 4 ohm settings. The jumper needs to be pushed on as far as it goes.



To determine the correct jumper or shunt position, use the chart below.

When using amps or receivers with 8 ohm capacity

Jumper setting	X1	X2	X4	X8
4 Ohm speakers	don't	1 pair	2 pair	3-4 pair
8 Ohm speakers	1 pair	2 pair	3-4 pair	5-8 pair

When using amps or receivers with 4 ohm capacity

Jumper setting	X1	X2	X4	X8
4 Ohm speakers	1 pair	2 pair	3-4 pair	5-8 pair
8 Ohm speakers	2 pair	3-4 pair	5-8 pair	9-16 pr

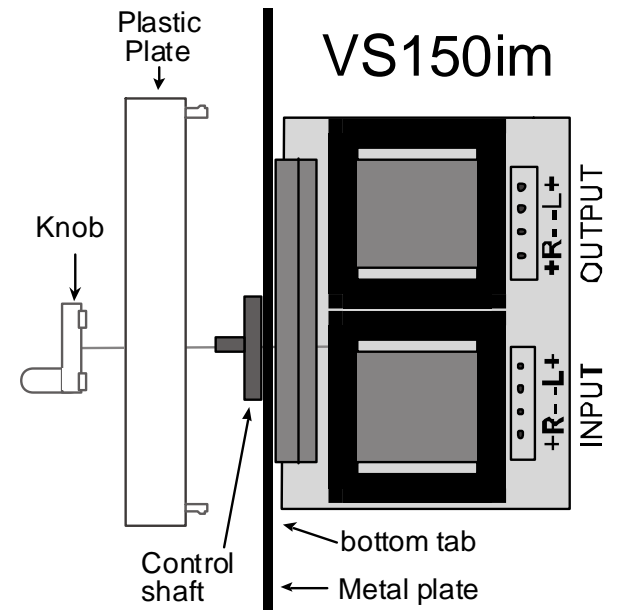
As an example, if the amplifier has 4-ohm capability with 7 pairs of 8 ohm speakers to be installed, set all VS150im jumpers to X4.

Connection and trim-out: Remove the eight position speaker connector. Remove about ¼" of insulation from the ends of all wires connected to the volume control and twist the exposed strands. The stereo amplifier or receiver outputs (left and right) are connected to the VS150im connector portion labeled "INPUT" on the volume control. Be very careful to observe the correct polarity. The VS150im uses independent floating grounds so bridged amplifiers can be used safely.

Warning: The VS150im is rated for use with maximum 150-watt per channel amplifiers. DO NOT use higher-powered amplifiers with this product for safety reasons.

Wire from the amplifier speaker terminals is always wired in parallel to all VS150im volume controls. To make the installation look neat and tidy, we suggest using one or more WT6 connection strips. When connecting to the amp make sure its power is switched off. Again strictly observe wiring polarity.

Connect the wires from the stereo speakers to the connector portion labeled "OUTPUT" on the volume control. Again series and parallel speaker wiring is acceptable so that the impedance the volume control sees is between 4 and 8 ohms. Be sure to strictly observe polarity, as incorrect polarity will result in poor bass performance.



When installing the volume control into the wall, we suggest moving any inside wall fixtures such as vapor barriers away from the autotransformers if possible.

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