

DETERMINING THE PROPER JUMPER SETTING FOR IMPEDANCE MATCHING

The jumper must be set in a position that correctly multiplies the impedance of the system to a level that is equal to or greater than the impedance of the amplifier. The jumper setting can be determined using the following simple steps:

1. Determine the amplifier's minimum impedance. The amplifier's minimum impedance is usually found following Wattage and Frequency Response in the amplifier's specification page of the manual. It may also be listed on the back panel of the amplifier near the speaker terminals. AC impedance is measured in ohms.
2. Identify the correct impedance-matching chart according to the amplifier's minimum impedance. There are two impedance matching charts, one for 8 ohm amplifiers and one for 4 ohm amplifiers. Choose the chart that describes your amplifier. If your amplifier is 6 ohm stable, use the 8 ohm chart.
3. Determine the impedance for each pair of speakers by referring to its manual.
4. Determine the total number of 4 ohm pairs of speakers. (rows on charts)
5. Determine the total number of 8 ohm pairs of speakers. (columns on charts)
6. Follow the appropriate row and column to determine jumper settings.

Impedance Matching For 4 Ohm Amplifiers

		8 Ohm Pairs																
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4 Ohm Pairs	0	-	1X	1X	2X	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X
	1	1X	2X	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X		
	2	2X	4X	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X				
	3	4X	4X	4X	8X	8X	8X	8X	8X	8X	8X	8X						
	4	4X	8X	8X	8X	8X	8X	8X	8X	8X								
	5	8X	8X	8X	8X	8X	8X	8X										
	6	8X	8X	8X	8X	8X												
	7	8X	8X	8X														
	8	8X																

Impedance Matching For 8 Ohm Amplifiers

		8 Ohm Pairs								
		0	1	2	3	4	5	6	7	8
4 Ohm Pairs	0	-	1X	2X	4X	4X	8X	8X	8X	8X
	1	2X	4X	4X	8X	8X	8X	8X		
	2	4X	8X	8X	8X	8X				
	3	8X	8X	8X						
	4	8X								

Example: The table to the right shows an 8 ohm minimum impedance amplifier with 1 pair of 4 ohm speakers and 3 pair of 8 ohm speakers. The chart indicates the jumper setting should be set at 8X

IMPEDANCE MATCHING VOLUME CONTROLS

Impedance matching volume controls eliminate the need for a speaker selector. By determining the drive capability of the amplifier with a few simple calculations, we can determine the number of speakers the system can safely operate.

CONSIDERATIONS

1. Make sure that your amplifier has adequate wattage for the number of speakers. Watts per channel divided by the number of pairs should equal or exceed the individual speaker's minimum wattage requirements.
2. You must use an impedance matching volume control for each pair of speakers.
3. Every jumper setting must be set on the same setting throughout the system.
4. A minimum speaker load of 4 ohms can be connected to the output of each impedance matching volume control.

OPERATION

1. Make sure the amplifier or receiver is OFF and set the volume to minimum.
2. Set the control's volume to maximum (fully clockwise).
3. Turn on the amplifier or receiver and select a music source, such as tuner or CD player.
4. Slowly turn up the amplifier or receiver volume and set it to a comfortable (not maximum) listening level. Be careful not to overdrive your amplifier. If the sound becomes muddy or distorted, you have reached the limit of your amplifier's volume capability and should quickly reduce the volume to avoid damaging your speakers.

NOTE: 12 o'clock (50%) on most receivers is full volume. An amplifier that is being driven beyond its potential will produce D/C voltage (clipping) which will not pass through a transformer, resulting in improper signal transfer and possible amplifier shutdown or damage.

5. Adjust the volume of the speakers to the desired listening level using the volume control.
6. You can turn off the speakers in each room by turning the knob on the volume control completely counter-clockwise.