

Here are two slightly different parts lists. Only two items, capacitors C1021 (40 μ F) and C2081 (30 μ F), are different on these lists. They are highlighted in yellow. As of August 2006, their total prices differed by about \$32 US. Parts List 1 uses less expensive bi-polar electrolytic capacitors, and Parts List 2 uses somewhat more expensive metallized polypropylene (MPP) capacitors. List 1 uses Bennic (Madisound <http://www.madisound.com/index.html>) bipolar electrolytic caps for C1021 and C2081.

JBL L-100 New Crossover – Parts List 1				part #	\$ each	No.	Price
	Madisound Inductors						
L1011	Sledgehammer steel laminate core 2.5 mH	15 g	0.16 Ω		11.20	2	\$22.40
L2071	Sidewinder air core 0.55 mH	16 g	0.23 Ω		7.35	2	\$14.70
L2091	Sidewinder air core 0.15 mH	16 g	0.11 Ω		3.65	2	\$7.30
L2021	MB air core 0.67 mH	19 g	0.4 Ω		3.65	2	\$7.30
L3021	MB air core 0.20 mH	19 g	0.17 Ω		2.70	2	\$5.40
	Madisound Capacitors						
C1021	Bennic bi-polar electrolytic	40 μ F			1.25	2	\$2.50
C2081	Bennic bi-polar electrolytic	31 μ F			1.10	2	\$2.20
C3061	Bennic Metalized Polypropylene (MPP)	3.9 μ F			1.85	2	\$3.70
	Parts Express						\$0
C2011	Dayton MPP Capacitor	15 μ F		027-432	4.10	4	\$16.40
C2031	Dayton MPP Capacitor	15 μ F		027-432			\$0
C3011	Dayton MPP Capacitor	2 μ F		027-414	1.52	2	\$3.04
C3031	Dayton MPP Capacitor	4 μ F		027-421	1.85	2	\$3.70
R2021	0.5 Ω non-inductive resistor			004-.5	1.25	2	\$2.50
R2051	3 Ω non-inductive resistor			004-3	1.25	2	\$2.50
R2081	1 Ω non-inductive resistor			004-1	1.25	2	\$2.50
R3021	2 Ω non-inductive resistor			004-2	1.25	2	\$2.50
	Total						\$98.64

List 2 uses Dayton (Parts Express <http://www.partsexpress.com/index.cfm>) metallized polypropylene (MPP) caps for C1021 and C2081.

JBL L-100 New Crossover – Parts List 2				part #	\$ each	No.	Price
	Madisound						
L1011	Sledgehammer steel laminate core 2.5 mH	15 g	0.16 Ω		11.20	2	\$22.40
L2071	Sidewinder air core 0.55 mH	16 g	0.23 Ω		7.35	2	\$14.70
L2091	Sidewinder air core 0.15 mH	16 g	0.11 Ω		3.65	2	\$7.30
L2021	MB air core 0.67 mH	19 g	0.4 Ω		3.65	2	\$7.30
L3021	MB air core 0.20 mH	19 g	0.17 Ω		2.70	2	\$5.40
C3061	Bennic MPP	3.9 μ F			1.85	2	\$3.70
	Parts Express						\$0
C1021	Dayton MPP Capacitor	40 μ F		027-442	10.45	2	\$20.90
C2011	Dayton MPP Capacitor	15 μ F		027-432	4.10	4	\$16.40
C2031	Dayton MPP Capacitor	15 μ F		027-432			\$0
C2081	Dayton MPP Capacitor	30 μ F		027-440	7.88	2	\$15.76
C3011	Dayton MPP Capacitor	2 μ F		027-414	1.52	2	\$3.04
C3031	Dayton MPP Capacitor	4 μ F		027-421	1.85	2	\$3.70
R2021	0.5 Ω non-inductive resistor			004-.5	1.25	2	\$2.50
R2051	3 Ω non-inductive resistor			004-3	1.25	2	\$2.50

R2081	1 Ω non-inductive resistor			004-1	1.25	2	\$2.50
R3021	2 Ω non-inductive resistor			004-2	1.25	2	\$2.50
	Total			\$130.60			

When I built mine, I splurged and used the MPP capacitors from List 2. Crossovers built with parts from either list should sound the same, so take your pick. Note that the large value MPP capacitors are larger in size than the electrolytic ones, and that is reflected in my crossover layout diagram.

Neither of these types of capacitors is as expensive as exotic or boutique capacitors. The house brands from Parts Express (Dayton) and Madisound (Bennic) are both very reasonably priced and very good performers.

It has now been nearly a year since building these new crossovers, and I am still quite happy with them. Now that most of the frequency range is smooth, the exaggerated bass response of the L-100 became a more prominent problem. The L-100 cabinet is about 2 ft³ and has a port vent. With the 123A 12" woofer, it causes a large peak, roughly 5 dB, in the 50-80 Hz range, that overemphasizes the bass. The best cabinet for these 12" woofers would be a 3.0-3.3 ft³ sealed box, which would require a completely new cabinet. I found a much easier way to at least partially fix this problem. I sealed the port opening with a 3" Plumber's Test Plug. I can find them at my local



Home Depot or Loews' in the plumbing pipe department for less than \$4. I think the photo shows a smaller plug smaller than 3", but they are all similar. They consist of a rubber ring held between two metal plates, with a nut and bolt. Tightening the wingnut presses the two plates closer and expands the rubber ring. Plumbers use these to temporarily seal drain pipes so they can test for leaks.

To seal my L-100s, I filed down the smaller of the two plates until it would fit into the roughly 2 $\frac{7}{8}$ " diameter port. Then I turned the wingnut until the rubber ring was snug. I think it made a noticeable improvement, but I haven't measured this to be sure.

If you have any gullible audiophile friends, try slightly turning the wingnut while playing some music and ask if they hear the difference. I find that about half agree with me and say it makes a big improvement!