Subject: Re: 12 pi Subwoofers - How warm is too warm for plates
Posted by Wayne Parham on Tue, 12 Jun 2007 14:57:35 GMT
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That's a good question. Sorry, I didn't test that. The temperature measurements were at two places on the pole piece, at the front plate and at the rear plate.What I can tell you is that temperature drops considerably by the time it reaches the cooling plug mounting bolt. The cooling plug / access panel junction is there, and thermal energy spreads out along the plate at that point. You can feel that the bolts are slightly warm when the power levels are high for a long period of time, but they should not be alarmingly so. In fact, they should only feel slightly warm. I'd say probably 110° at the bolt is probably near the limit. Looking at the tests, you'll notice that at full power after two hours, the pole piece is 160° at the front plate and only 127° at the rear plate. The heat has dissipated over 30° over 2" along the cooling plug at that point. There is another inch or so to the plate, and that's where most of the heat dissipation takes place. So I would expect no more than 100° to maybe 110° at the bolt.Woofer cooling device - Test Cycle with Heat Exchanger InstalledOne last thing, and I think I already told you this. It's in the documentation that comes with the horns. The cooling plate will obviously loose its effectiveness if heated by an outside source. I'm not worrying about stacking two cabinets side-by-side. The plates will dissipate the heat just fine even if stacked together. But direct sunlight can heat the panels more than the voice coil does. If used outdoors, it's best to shade the panels. If you have a bank of horns side by side, they'll all shade each other. But the exposed sides should be shaded. One way to do this is to snap or tack a sheet of fabric over the plates.