



A Quick and Cheap Rack System

Everyone needs a good rack system to store and display his audio gear. This author shares his solution.

By David Chaffey

Panic. Two weeks before the show in January, I had forgotten to secure a rack manufacturer for the event. Brainstorming all options and stalking Home Depot and Lowes for supplies, I came across the answer—a 24" wide × 18" deep × 36" tall wire shelf system (**Photo 1**). If you have been to any of the major big box stores, you have probably seen the wire rack (shelf) system (**Photo 2**). All are made in China and have a load rating of 300 lbs or more per shelf. Because they were about the right size, I started converting them into a rack system, which needed to be ready for a show less than two weeks away.

GOING SHOPPING

I purchased two shelf kits, a sheet or two of MDF, several cans of primer, several cans of lacquer, wood glue, and miscellaneous hardware. The amount you need will depend on your requirements. The nice thing about these units is that they include a spare set of couplers, so

you can make either a single 72" rack unit or two 36" units (which I used at the show).

With directions included, assembly is pretty straightforward, and parts are all easily identifiable. All parts are also interchangeable, although the leg tubes do have a long end/short end. As long as you position the correct end up or down, everything should line up great.

OVERCOMING OBSTACLES

Once you've assembled the shelf unit, problems start to rear their ugly head. Not really problems, but rather challenges. I started by filling the legs with sand and then replaced the black plastic caps with nicer-looking chromed caps available at your local hardware store (**Photo**



PHOTO 1: Completed rack unit you can put together.

3). I used a rubber mallet to compact the sand by tapping on the legs (gently) while pouring the sand in. I tapped on the sides and top until the sand stopped compacting. Problem one solved.

Because the equipment would not sit well on the wire shelves, I decided to add MDF. After working out a pattern—a rectangle with concave corners cut out—I used a scrap of plywood and a 1½" hole saw for the template. Use the hole saw to take out just the corner. But be careful. A drill press would be the safer and neater. Once the template had one good corner, I used it to cut all of the corners for all of the shelves with a router and a 1" long bottom-bearing bit. Do a test fit and if all goes well, the smartest thing (hindsight) is to use the first shelf as the template for the rest of the shelves (**Photo 4**). I decided to rout a 45° chamfer to give the front edge a better look and allow it to stand up better under abuse than a square edge. Prime the shelves with a dense coat a couple of times and sand in between to get the smoothest surface possible—especially on the chamfered edge—so the lacquer will look smooth as glass.

With the shelves cut, lacquered, assembled, and looking great, another



PHOTO 2: Wire-rack shelf system you can buy at most hardware stores.



PHOTO 3: Filling shelf legs with sand.

problem remains. The wire shelves need to be damped. My first thought was to screw another $\frac{3}{4}$ " MDF piece through the wire racks and into the top shelf. This would add too much weight, and I wished for a simpler solution.

My wife had used some non-slip throw rug material around the house. I determined that this perforated closed cell foam material should be perfect

(**Photo 5**). I tried it out on a couple of shelves, and it seemed to work wonders. You'll find this material at your big box (and some smaller) hardware stores.

Cut this material according to the pattern of the shelves and place it on the wire rack. With the lacquered shelf on and with the sand filled legs this cheap and useful rack system was very dead (quiet).

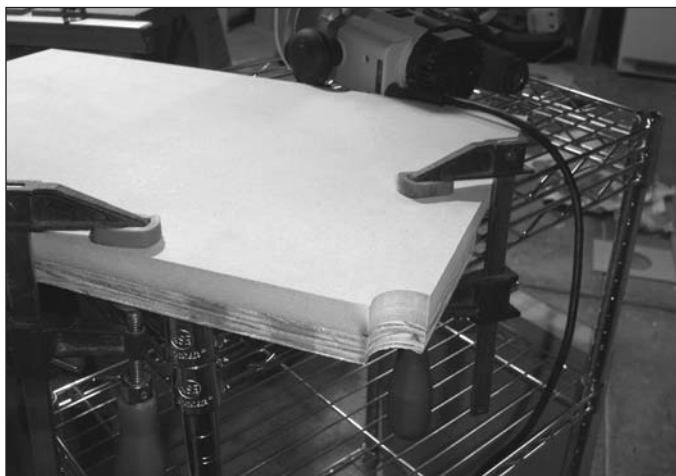


PHOTO 4: Cutting the MDF to fit.

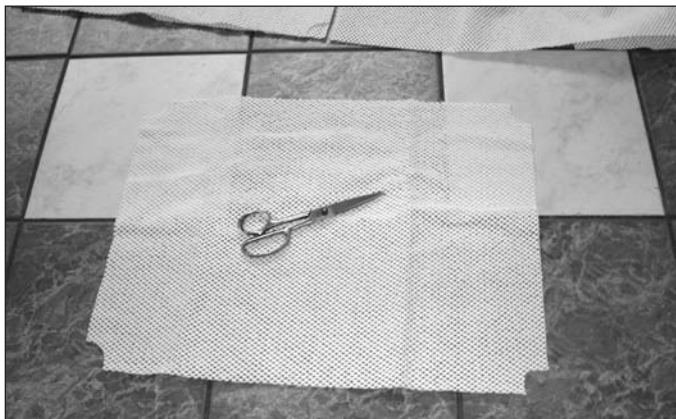


PHOTO 5: Damp the unit with rug underlayment.



PHOTO 6: Nifty rack system ready for the road.

There is no need to go into detail about the drawers or LP shelf, which you can individually design and build (**Photo 6**). The purpose of this rack was to contain all of the gear—including LPs and CDs—look decent, and *be quiet*.

The finishing touch was the addition of some brass spikes. The threads are $\frac{3}{8}$ x 16. Screw them into the base before you add the sand (unlike what I did the first time).

The triumph is in assembling something so useful and nice-looking (chrome and any color can look amazing). I hope that this will inspire you to build your own rack system and share it with all of us (**Photo 7**)!

ADDENDUM

The original article was written in January after the Las Vegas shows. Now in June (HE2006), we were in need

of more space as the system changed. The beauty was going to Lowes and getting another shelving unit and adding one side, an 18 x 48 slice off a sheet of MDF ($\frac{3}{4}$ " thick), and making two more shelves. And like magic you have a new unit (well, almost). The beauty and flexibility (and the ability to tear down) was great. I did not receive one negative comment about the unit at the show and heard several comments about how clever and useful they were. In a group of mega-buck systems with equipment stands that equal the price of an amplifier, turntable, or speakers, that's not bad. I am considering two changes:

1. making the shelves out of HDF and using automotive paint for durability (you may not need this, but this travels to shows with me).

2. making a compound of latex glue and sand to pour in the legs so I do not have to mess with the sand (again, this may not affect you if it is stationary).

I really like the look of the system when set up and the silence and flexibility of the rack. How many times have

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you bought an expensive system only to change components and find out that you cannot change the shelf height or number of shelves? You can get more sophisticated with isolation, and I plan on doing something better for the turntable on a top shelf, but this setup allows as many changes as you need or want to make without an insane investment.

I hope this inspires you to investigate alternatives to commercial rack systems, and I look forward to seeing what your ideas bring. *ax*



PHOTO 7: Or, the shelf complements your home system.

David Chaffey has been passionately interested in music and audio equipment since the age of 9. He grew up in a household in which family members voted for a stereo over a color TV, and he listened to musicals, classical, pop-jazz, a bit of country, and—as a young teen—rock. Being both in love with music and broke, David started designing loudspeakers that were both affordable and sounded great. He spent the next 25 years (while working) building systems for family and friends. He worked for 30 years in telecommunications and just before retiring had a chance to buy a small

loudspeaker (driver) company. He and his wife of 28 years are embarking on a new and exciting adventure (and bigger passion than telecommunications). His time is split between a home in California, a factory in Texas, and on the road as a salesman for his drivers.



PHOTO 8: Updated system with added shelves.

PARTS

1. Comes with three shelves per unit—18" deep × 24" wide × 36" high shelf unit from Lowes—apparently available online for \$32.97 each. I now have three sets (model # L0346—item #71485 distributed by LG Sourcing, Inc.) www.lowes.com/lowes/lkn?action=productDetail&productId=71485-80752-L0346&page=none.
2. Sand, rubber granules, lead shot, or whatever will fill the legs to your satisfaction.
3. Brass spikes. The last show I skipped the spikes and liked it just fine.
4. Shelving material – MDF or your choice.
5. Perforated carpet (non slip) pad.

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