



<http://www.hauntedyards.com/frames.html>

M.I.D.I.

MIDI Show Control

Thanks to Brent Ross and James DeBenedetti's evil influence...

I will be documenting my experiences setting up a MIDI show control system for my own records and for your information. There is not a lot of information out there for the home haunter who wants to use this system.

This is by far the biggest project I have undertaken so far and also the greatest expense. I feel though that investing in a good base control system will allow me the flexibility to add props with greater ease at a later date.

Hardware:

6 foot component rack - \$50
Computer in rack mount case - \$250
M-Audio Midi Man Oxygen 8 Keyboard - \$114
M-Audio Delta 1010LT 10 Channel in/out - \$174
Power One 24vdc 10amp DC Power Supply - \$14.95
Sprawling Delusions Delusional Prop Card - \$65
DigiTech Studio 100 - Effects Processor - \$50
Yamaha SPX100 - Digital Effects Processor - \$100
Rack Mount Project Case - \$30
Battery Power Backup System - 550va 330watt - \$69
Silicon Graphics 1600SW Monitor - \$89
Number9 Revolution IV1600 Video Card - \$95
Compaq Rackmount Keyboard w/ Trackball - \$39
Rackmount Keyboard Shelves (x2) - \$39
Sony STR-DE697 100w/x7 Discrete Amp - \$89



Cost to Date = \$1267.95
MSRP Value to Date = \$5615.75 (ish)

Recipe

After welding my rack from 1/8" x 1" tubing I mounted the rack mount rails by drilling holes and bolting them on being careful to line up each rail piece level.

Plans to weld your own rack can be found here:

"How To Build A Rack"



I then gave the rack 2 coats of flat black Rust-o-leum and 2 coats of automotive clearcoat.



Look at those sexy welds!

Here, I have mounted the effects processors to test the spacing of the mounting strips.



This is the project case I got off of Ebay to house the power supply and the MIDI controller cards. It's nicer than a blank face box since it have all those nice transmitter buttons! The power switch on the front of the box powers on the 24v power supply.



Here I am starting to wire in the power supply which with minor modifications fit perfectly into the project case.



This computer was purchased on EBay for the sole purpose of running this system. It was recommended that I set the system up on a computer dedicated to this purpose. I plan to build this into some kind of rack cabinet which will house the whole system.

The processor should be fast enough and it really only needs the Delta 1010LT card installed in it... and that's all the cards in the system save for video.

This way I can setup CuBase 2.0 SX and that will be the only software on the system eliminating glitches caused by running an excessive amount of applications. Like I am on the computer I am typing this on... hehe



I then gutted the computer and converted it to this rack mountable case.



Here you can see the power supply mounted and wired, the Sprawling Delusions MIDI card mounted on standoffs and a DIN Rail terminal block to distribute the power from the PS.

The terminal block is interesting as I found it in my junk drawer and with a tester it measures 25vdc out the bottom row of screws and 23vdc out the top row so there must be some reason for it... but I don't know what that would be... although it may be useful to use the top 23vdc screws one day. The power supply is wired into the ON switch on the front of the rackmount transmitter box which I was pretty happy about... but.... small things amuse me these days.



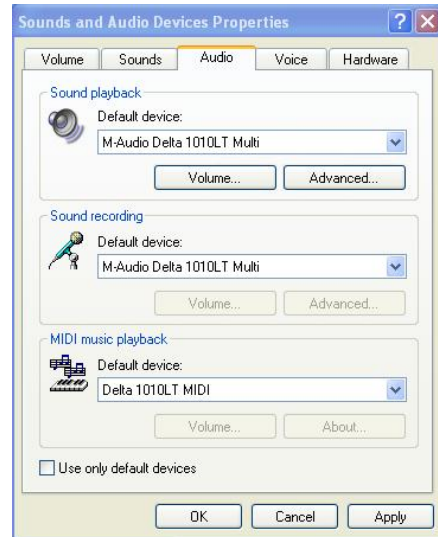
I added two rackmount keyboard shelves for the keyboard (no mouse needed) and the Oxygen 8 keyboard. I moved the computer up and left room for the surround amp when it comes this week. The LCD will be mounted permanently to a wall mount VESA compliant arm giving it more movement. It is thus far, everything I hoped it would be.



Obtained from
Omarshantedtrail.com

Setting-Up The System

The first thing I did was format the computer with a fresh installation of Windows XP. This is going to be the only function of the computer so it might as well be nice and clean. I entered the BIOS and disabled the onboard sound card and MIDI ports so as not to add to the confusion later. Then I downloaded the latest drivers from M-Audio for the Delta 1010LT sound card and the Oxygen-8 Keyboard and installed them. In the Windows Control Panel enter the sound card settings and make sure they are all set to use the Delta 1010 "Multi" setting.



The next thing to do was obtain a copy of CuBase SX 2.0 and install it.



The SD midi card "midi-in" gets plugged into the "midi-out" of the Delta 1010 by using a standard midi cable or one of the older style AT keyboard cables (5 pin din). In the box with the the SD midi card should be hook-up instructions for where to plug in the midi cable and where to plug in power and valves. Before shipping James preconfigured the SD midi card to be on the Oxygen8's default channel 1 (SD board selectable via jumpers - see included paper) and starting from note one (left most key on Oxygen8 when set down 4).

The next step was to setup up CuBase and this was the hardest part. Thanks to the awesome customer service of James at Sprawling Delusions, I was up and running in about 10 minutes. His Prop Interface card is pound for pound, dollar for dollar the best card out there. Buy It!

I launched Cubase (let it run its audio check) and configure it. After the program has launched the first thing to check is the that is it using the "multi" ASIO audio driver. Next you need to go in and activate each of the audio channels of the delta card. This is all done from the devices menu.

Setup		Add/Remove
ASIO Device: M-Audio Delta ASIO		
Port		Visible
1 Analog Out 1/2 Delta-1010LT [1]		Yes
2 Analog Out 1/2 Delta-1010LT [1]		Yes
3 Analog Out 3/4 Delta-1010LT [1]		Yes
4 Analog Out 3/4 Delta-1010LT [1]		Yes
5 Analog Out 5/6 Delta-1010LT [1]		Yes
6 Analog Out 5/6 Delta-1010LT [1]		Yes
7 Analog Out 7/8 Delta-1010LT [1]		Yes
8 Analog Out 7/8 Delta-1010LT [1]		Yes
9 SPDIF Out L/R Delta-1010LT [1]		Yes
10 SPDIF Out L/R Delta-1010LT [1]		Yes

At this point I am ready to add some tracks to a blank project. The first track to add is a Midi track set (should be options on end side of track) the track to midi channel "ANY" and set both the midi-in and midi-out to use the Delta 1010.



Next make sure all of your audio output are configured for use by entering the VST connections menu in the Devices menu. Then if you don't see this... Click "Add Bus" and add 4 additional Stereo bus. Then expand each and configure as shown by right clicking the right hand listing (ASIO Device Port).

VST Connections - Outputs		
Inputs	Outputs	
	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Left Right <ul style="list-style-type: none"> Left Right <ul style="list-style-type: none"> Left Right <ul style="list-style-type: none"> Left Right <ul style="list-style-type: none"> Left Right 	<ul style="list-style-type: none"> 1 Analog Out 1/2 Delta-1010LT [1] 2 Analog Out 1/2 Delta-1010LT [1] 3 Analog Out 3/4 Delta-1010LT [1] 4 Analog Out 3/4 Delta-1010LT [1] 5 Analog Out 5/6 Delta-1010LT [1] 6 Analog Out 5/6 Delta-1010LT [1] 7 Analog Out 7/8 Delta-1010LT [1] 8 Analog Out 7/8 Delta-1010LT [1] 9 SPDIF Out L/R Delta-1010LT [1] 10 SPDIF Out L/R Delta-1010LT [1]

Once this is done you can add Audio tracks to your project and have them sent to any of the 10 outputs of your sound card. You can have sound playing in 10 different areas of your haunt all from the same screen.

By the way you should have plugged the Oxygen8 keyboard out to the Delta 1010 midi in. With the Oxygen8 turned on shift the octaves down 4 (use the two buttons at the middle top of key board, red display should move to D4). When you press a key on the keyboard you should see both a red and green indicator move in the transport bar (floating window normally at the bottom) this is telling us that a midi signal is coming into CuBase and also going back out.

You should also be seeing two green bars move in the left end of the midi track indicating the same thing. If this is the case then the SD midi board and CuBase should be talking and whatever you have hooked to the SD board should be controllable at this point with the left most 16 keys of the Oxygen8.

Supplies:

Sprawling Delusions Creature Supply Shop - Delusional Prop Interface

EBay - Best place to get steals on industrial surplus valves and solenoids.

Inspiration:

Brent Ross - Devious Concoctions - The D.C. Cemetery

James DeBenedetti - Sprawling Delusions - Creature Supply Shop

Obtained from
Omarshantedtrail.com

<http://www.hauntedyards.com/images/books/rackbuildinghowto.pdf>

Rack Building How To

MOJO.cc proudly presents:

Build Your Own Rack Cabinet

Or, how to rack 'em and stack 'em for a third the price...

By Tom H. - Team Florida Mojo

NOTE: Due to TREMENDOUS bandwidth usage thanks to this article's sudden fame on sites like Overclockers.com and Slashdot (to the tune of 17 THOUSAND hits in 18 hours!), you may experience problems loading images. If you do, please load the individual images manually.

We've also removed the dark background from this page for the large number of users of browsers that don't display the table backgrounds, etc. this site uses. (The site's designed for 4th-generation or newer Windows-platform browsers, but has been getting a LOT of traffic from Linux/*NIX users whose browsers don't render the page the same way.)

Rack mounting equipment is so far the best means we've come up with as a species for packing a lot of processing power in little floorspace - 40 or more computers in a single storage space that uses 4.5 square feet of floor space and stands 8 feet tall. Rack mount cabinets are, on the other hand, appallingly expensive, often costing well over a thousand dollars US. And they're so heavy that you can pretty much be guaranteed another couple hundred dollars' worth of shipping charges will be tacked on if you buy one.

But if you're a home user with a lot of equipment, run a small office, a budding musician with a lot of rack mount toys, a home theater enthusiast wanting more functional and adjustable mounting space for your gear, or any of a number of other possibilities, rack mounting your gear may be the only game in town. But the expense, ouch the expense!

In this article we'll do something that so far we're not aware anyone has done yet - discuss building a small 18-unit (18 units of height x 1.75" of height per unit = 31.5" of mounting space) rack cabinet for as

little as \$50. If you're in need of a light- to medium-duty rack cabinet for lightweight gear such as musical effects and recording gear, home theater equipment, and so on, you'll be able to accomplish rack mounting for cheap. If you need EIA-standard-compliant storage for heavy equipment such as servers, UPS's, telecom gear, and so on, then you'll end up spending \$200 or so (assuming you know how to weld and have the equipment to do so - if not, figure more \$ to hire someone to do this work) on the 18-unit steel-framed cabinet we'll discuss in detail.

We will discuss the basic ideas and a how-to on building a light- or medium-duty wood-framed 18U rack cabinet for less than 200 lbs. of equipment, and then we'll jump into building a VERY heavy-duty 18U cabinet that can safely handle 600 lbs. of gear. If you need more or less height, you'll naturally need to scale the height accordingly, but 18 units is about the most comfortable height for home, small-office, or studio use.

Rackmount 101

First, the basics on racks and rack mount gear...

Rack mount equipment sizes are standardized, thankfully, so you'll most likely have and/or see equipment that designed for a "19-inch rack." This means that the faceplates or front panels on the equipment are 19 inches wide. The minimum height for any piece of equipment is called a "unit," (abbreviated as an uppercase 'U') and each unit is a multiple of 1.75" of vertical space. So a 3U device is 3 units x 1.75 per unit = 5.25" tall.

The standard also calls for the body of rack mount equipment to be 17 inches wide and can be however deep, although anything deeper than 28 inches is unusual for a 19" rack. Most rack mount computers that are 4 units tall are about 22 inches deep, for example.

Rack mount equipment is attached to a pair of rails, each of which has a series of holes drilled into it in a regular pattern, which is 1/2"-5/8"-5/8" and repeated for the entire height of the rail. The mounting holes for rack mount equipment require that the rails be aligned vertically to within 1/16", and must be as close to 18 1/4" apart center-to-center as you can get, although tolerance will vary with the mounting holes on the equipment's faceplate. As long as the horizontal distance is within 1/16" all is generally well.

Some rails use captive nuts, which are nuts with retaining clips that clip onto the rack rail over or into holes provided for this purpose, while other rails simply have drilled and tapped holes that can accept screws directly. Most US-made rack equipment is secured with 10-32 screws, although 10-24, 12-24, and M6 screws are also used. The screws have to be able to hold at least 30 lbs. per screw though, due to the next item for discussion:

Rack mount equipment weighing less than about 50 lbs. has to be designed so that the entire weight can be supported by the equipment's faceplate, and heavier gear generally requires a set of rails in the back of the cabinet to hold up the back end. (Sometimes the heavy stuff includes a set of rear rack brackets that attach to the side of the item in question, and other times a rack mount shelf is provided for this purpose.) Thanks to this requirement, rack mount equipment tends to have very thick faceplates and very stiff side panels to handle the weight. Rack mount equipment also usually will have a pair of handles on the front to make installation and removal easier.

If you have a front and rear set of rack rails, more options become possible, such as the use of rack slides to allow equipment to be pulled out like a drawer. Also, there are pullout shelves and storage drawers, keyboard drawers (these require narrow keyboards, obviously), even rackmount monitors.

Building a Light-Duty Open Rack Cabinet

Now that the basics have been covered, let's discuss the basic idea behind building a light-duty 18U rack cabinet for about \$50 in materials. This design would be suitable for home-theater, professional audio, and in some cases light-duty computing/networking applications where only a front rail set is required, and the total weight of equipment to be mounted is less than 150 lbs. The resulting cabinet is 33" tall, 20 5/8" wide, and 24" deep.

What you'll need for this design:

- ?? Two pieces of 5/8" thick plywood (DO NOT use particle board or OSB) cut to 24" wide x 31.75" long - these will form the sides;
- ?? Two pieces of 5/8" thick plywood cut to 24" wide 20 5/8" long - these will become the top and bottom;
- ?? Four pieces of 1" steel 90-degree angle stock, each 21" long

- ?? One box of 100 each (you'll only use about half, but buying them in this quantity is generally cheaper than buying them in sets of 50) of the following: 8-32 flat-head machine screws 1 1/4" long, #8 washers, #8 split lockwashers, and 8-32 nuts;
- ?? Eight each of the following: 1/4-20 x 1 1/8" flathead machine screw, 1/4-20 nut, 1/4" external-tooth lockwasher;
- ?? Sixteen 1/4" flat washers;
- ?? Two 18U rack rails from [MilesTek](http://www.milestek.com/) [http://www.milestek.com/], their part # [50-70226](http://www.milestek.com/OrderItem.asp?PartNumber=50-70226) [http://www.milestek.com/OrderItem.asp?PartNumber=50-70226];
- ?? A drill with two drill bits: 3/16" and 5/16";
- ?? A tube of construction adhesive (and a caulk gun if using that style of tube);
- ?? Measuring tape;
- ?? Two or more (Preferably at least four) clamps capable of opening at least 2";

And now, to build it:

First, use the construction adhesive to glue one piece of steel angle to the each end of the side panels along the 24" long edges, and make sure both steel angles are on the same side the plywood (presumably the worst-looking one, as whichever side the angles are glued to will be the inside of the cabinet.) Be sure to align one end of each angle with the edge of the panel, and also ensure that both angles on one panel align with the same side, so that there's a 3" gap between the angle's other end and the edge of the panel. These gaps allow clearance for the rack rails, and the edge with this gap will be the front of the cabinet.

Clamp the angles in place and let the adhesive set. Repeat this to make the two side panels.

Then, starting 1" in from the angle's end that aligns with the panel, drill a hole every 4 inches through angle and wood with a 3/16" drill bit, centering it in the flat part of the angle. Repeat for the other angle, and then repeat for the other side panel.

Slide an 8-32 screw into each hole from the outside (the wood side) and slip a flat washer, lockwasher, and nut onto the angle side.

Tighten them all evenly and with enough pressure to pull the heads of the screws flush with the surface of the wood. Again, repeat for the other angles on both panels. This finishes the side panels.

The top and bottom panels are then attached to the sides. The sides rest on the bottom, and the top rests on the sides. Since a 3" gap was left for clearance of the rack rails, make sure that the gaps on both sides are pointed in the same direction or you'll be unable to mount one of the rails. (Flip the side over to change which way the gaps point.)

Use more construction adhesive to glue the wood panels to each other where they butt together, as well as to glue the angles to the top and bottom. Again, clamp and let the adhesive set. As was done for the sides, drill holes every 4", starting 3" from the corner where the angles align with the back edges of the top and side, and 1 1/8" in from the outside edge. Use the same means to attach the top and bottom to the angles as was used to mount the angles to the sides.

Check for square by taking diagonal measurements across the open inside of the rack - if both measurements are within 1/16" of each other, you're square, otherwise carefully flex the cabinet slightly to force it into square.

Finally, it's time to mount the rack rails. Hold each rack rail flat against the side panel and centered on the panel vertically, keeping the shorter side that has the rack holes on it flush with the front edge of the side panel, and mark the second and fourth holes in from each end. Remove the rails and drill through the wood at each marked location with the 5/16" drill bit.

Slide all four 1/4-20 screws into one side panel and slip one flat washer onto each. Then slip the rail onto the screws and apply a flat washer, lockwasher, and nut to each. Gradually tighten each in sequence until the heads are pulled flush with the side panel's surface.

Then repeat for the other side.

Double-check your handiwork, and if all looks well you can start mounting your gear into the new cabinet. Or, finish its exterior however you feel fit and *then* start to fill it. If you plan to cover the exterior AND

the screw heads (which is NOT a good idea), you might want to apply some form of thread-locking compound on all the hardware used to secure the rack panels and rails, to prevent them working loose later. If you want to include a door, you'll need to either alter the design to suit the addition of a door, with the most notable change being the need to increase the depth by 3" and recess the rails at least 3" in from the front edge of the side panels. And then there's the door itself. Since the door can be anything - a cut-down interior door, a simple piece of plywood, even smoked acrylic (my personal favorite), the details of the door are left to the builder to work out based on the chosen material and application.

Building a Heavy-Duty Steel-Frame Open Rack Cabinet

And now, the granddaddy of homebrew rack cabinets, the steel-frame heavy-duty EIA-compliant cabinet. This design is suited to loads up to about 600 lbs. (assuming a height of 18U) and requires welding (stick or MIG) skills and equipment as well as some means to cut steel plate and tubing. However, for heavy equipment such as rack mount UPSs and multiple servers, this is the only way to go.

Since this design was actually built by the author (*Ed Note: Seemed like a good excuse to teach myself how to weld!*), this is the only design that will be included here with photographs.

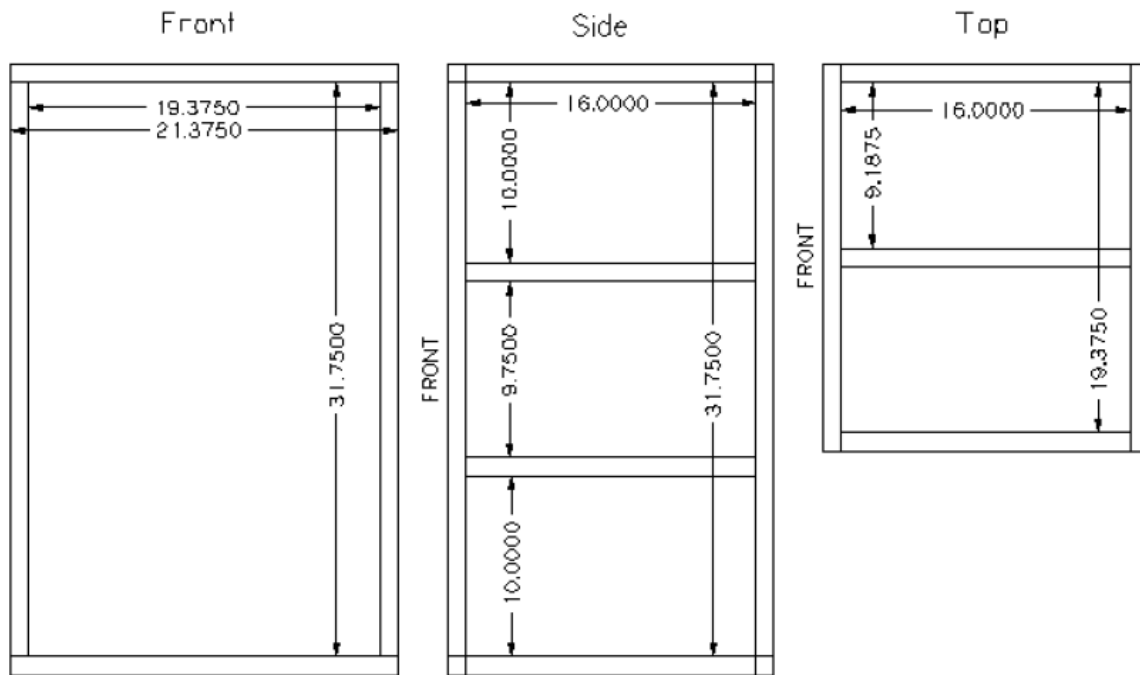
First, a few caveats:

1. This project requires welding. If you lack the equipment and/or skills to do this safely, you may want to hire someone to perform this process.
2. This project involves cutting steel. Usually, fiber-reinforced cutoff wheels or a bandsaw are used to perform this, and such tools are EXTREMELY dangerous. If it can cut steel, it can certainly go through bone. And then there's the eye hazards from flying metal particles. If you perform the steel cutting operation yourself it's advised that you not get a MRI or any other form of medical magnetic imaging procedures performed for a minimum of six (6) months, as a MRI can literally pull an iron filing *through* the body and this is NOT a good thing to have happen. (MRI technicians will usually refuse to give perform MRIs on any person employed as a metalworker for precisely this reason.) Again, this might be a good thing to pay to have done.

3. Welds generally get ground smooth - see above re: cutting for the hazards typical to grinding a welded bead.
4. Since there's welding and cutting involved, expect a lot of flesh-hostile things to be a concern, such as cutting yourself on a jagged metal edge or burning yourself on a fresh weld. For instance, a bit of glowing metal at about 1,800 deg. F is NOT a good thing to have land on your hand. Consult the manuals for your welding and cutting equipment for safety precautions appropriate to that equipment.

18U Rack Cabinet

Square-Tube Steel Frame Layout
 (All materials: 1" x 1" x .062" wall steel tubing.)



The design is simple, a basic ladder frame construction that's deliberately designed to be slightly larger than the rack space within, in order to allow room to adjust the vertical alignment, horizontal mounting-center spacing, and front-to-back alignment. Since rack rails are generally 1/2" longer than the number of units of mounting space they permit, an extra 1/8" was added to the inside height of the frame to allow some room to adjust the rails' heights. The front-to-back rail spacing was set at 18" in this design, as only two components destined for its use in the prototype cabinet are deeper than 18", and 18" is really the safe minimum depth for the rear rail set for most rack shelves, drawers, etc.



The material chosen was 0.62" wall, 1" x 1" square steel tubing. This tubing is widely available at home-improvement stores and usually costs about \$7 for a 6-foot length. For this project, six pieces of 6-foot tubing are required. As an option, a flat metal bar can be used to create corner reinforcements that double as mounting points for casters.





The tools used for the project are shown above. At left, a Hobart Handler MIG welder to perform the union of metal pieces, and a couple welding magnets to ensure angles are maintained and tubing held in place when the welding is performed. At right, a 10" miter saw with a metal-cutting blade. NOTE THE GUARD IS STILL ON THE SAW - if you use a miter saw and you removed the guard, *put the guard back on, fool!* The metal cutting blade is a compressed-abrasive type, and are also widely available at home-improvement stores. These must be used with caution though, as too much speed or pressure in the wrong direction may cause one to explode violently, and the little bits can do a number on anything nearby. (Thus the admonition to reinstall any missing guards.) They also throw sparks and dust during use, so cut outside or in a very well ventilated area only.

The first part of the process is to cut the stock tubing into pieces. For this project, we need 4 pieces that are 31 3/4" long, 4 pieces that are 21 3/8" long, and 10 pieces that are 16" long. If done correctly you can get all these lengths out of six 6-foot tubing sticks and have enough scrap left over to practice your welding and/or set the welder up for the material. Since the tubing walls are 0.062" thick, most MIG welders would work effectively at their lowest or second-lowest power setting and still get adequate metal penetration. Be careful about the power setting or you'll burn holes through the tubing.



Once the cut work is done, two of the 31 3/4" lengths and two of the 21 3/8" lengths are welded to form a rectangle. This is repeated to form the second. These will be the front and back openings and rack rail support struts for the rack cabinet's frame. Welding magnets make this process easy, by holding the tubing in place and keeping the angle 90 degrees.

Once the two rectangular sections are welded and the welds have been checked and allowed to cool, the sections are each checked to ensure that they aren't warped or bent into a slight "taco" shape (which is where diagonally opposite corners lift toward each other), which can happen with welding if a joint slips a bit during welding. Slight cases of warping can be corrected with a little brute force to bend the section flat, but more extreme examples might require cutting out and redoing the welds in one or more corners. Taking the time to do this job right the first time pays dividends.



Next, risers are welded at the corners of one of the sections. Again, welding magnets make this easier. When that's finished, the other section is placed onto the risers, indexed properly into place with magnets, and welded to form a basic enclosure.



The next step is to weld in the remaining 16" pieces that will serve as supports to reinforce the frame. One per side is centered into the top and bottom, and two into each side. These help distribute weight from the rack rails and help prevent the tubing buckling under extreme loads.

When the welding is completed and checked, the joints are ground smooth.



The next steps are to clean the frame thoroughly, and then to paint the frame completely with primer and then a good quality paint. This isn't intended to be cosmetic so much as to prevent corrosion – exposed steel will eventually rust.



With the frame finished, the rack rails can be mounted. Since the design leaves the rack slightly larger than required, the rails can be centered into the frame vertically by using something to gap the bottom of each rail up from the bottom tubing. A cheap but workable tool for this is an ordinary coin of roughly 1/16" thickness, such as a penny.

Simply place a penny on the bottom tubing and stand the rail vertically onto it.

Obtained from
Omarshantedtrail.com



With a rail held in place, its mounting holes can be marked. These should be centered on the tubing for greatest strength, and may result in the rail's rack mounting surface extending out from the front of the tubing. It's a good idea to use the second and fourth mounting holes from each end of the rail if there are enough holes. That way you won't drill close enough to the corners to risk disturbing a weld or unnecessarily weakening the structure of the frame. 5/16" holes are then drilled completely through the tubing to allow the use of 1/4-20 bolts to mount the rails. If you're using 1/4-20 carriage bolts, a rotary tool with an engraving bit can be used to square up the outside holes in order to provide something for the square portion of the carriage bolt's head something to grip.

Obtained from
Omarshaunted.com



Each rail is mounted with four 1/4-20 bolts, flat washers, lock washers, and nuts. An additional flat washer is placed between the rack rail and the frame itself in order to make sure the space between the rails is proper to produce the required horizontal mounting-hole spacing of 18 1/4". The rack rails are then checked to ensure they're level vertically as well as the right distance horizontally, and then hardware is tightened down to complete the installation.

The rear rail set is installed the same way.

Obtained from
Omarshantedtrail.com



If all goes well, faceplate filler panels, shelves, etc. should drop right in without interference or alignment problems.



At this point, the rack cabinet frame is complete enough to use as-is, or you can attach side panels to the frame using whatever hardware you need. One nice-looking (if a bit pricey) suggestion is to drill and tap holes and use cap screws to attach the side panels, and use tinted acrylic for the side panels themselves.



The prototype shown in this article was stuffed with gear without the addition of any side panels, as the author's need for the setup was a bit too immediate to allow for the wait time needed to get large enough acrylic panels. Despite not having side panels, the cabinet looks pretty slick (especially for a home-build setup!)

Now you've got all the know-how you need to build your own rack cabinet, and make it look however you want, without having to spend a fortune to get it. If only the rackmount gear was less expensive...

Tom H. is the Webmaster for OC Mojo, as well as the Group Coordinator and Grand-Poo-Bah of Team Florida Mojo, the eastern OC Mojo review team. .

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