Subject: Pinging MQracing
Posted by Shane on Wed, 21 Dec 2005 19:23:46 GMT
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I was looking at the pictures of your up-and-coming preamp and was curious what you were using to mount the RCA jacks to? Is it PTFE or PVC? I've got a situation where this would be an excellent fix, but wasn't sure if PVC would be detrimental in any way.

Subject: Re: Pinging MQracing
Posted by MQracing on Wed, 21 Dec 2005 23:48:59 GMT
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Hi Shane:We're actually looking at several different materials.What we are most likely to settle on is a canvas phenolic board.I love teflon... but have been told that PTFE is tough as the devil to machine. And I am not sure if it can be laser cut or not. Great dielectrics. Man, how I love this stuff, but it would also probably be too expensive for us to use and stay within budget.PVC... nay... just not for me... wasn't even aware that you could get it in sheet form... but I guess ya can...hope I've been somewhat helpful,msl

Subject: Re: Pinging MQracing
Posted by Shane on Thu, 22 Dec 2005 00:03:34 GMT
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Thanks a bunch. Yeah, you can get PVC in just about any shape you want in grey or white. I've welded on PVC sheet material tons of times. Teflon isn't that hard to machine if your tooling is sharp. Machined a bunch of knife holders one time for a beef packing plant. If your cutters get dull though, watch out!They make sheet material out of just about any "plastic" you want: PVC, CPVC, Nylon, PTFE, Polyethylene, Polystyrene, etc....goto US Plastics website and you can see a bunch of different kinds.I just liked the looks of the recessed jacks and it looks like it would be much easier to drill the holes and mount than to thin down the case so you could mount the jacks to it.

Subject: Re: Pinging MQracing
Posted by Steve Eddy on Thu, 22 Dec 2005 00:45:34 GMT
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I was looking at the pictures of your up-and-coming preamp and was curious what you were using

to mount the RCA jacks to? Is it PTFE or PVC? I've got a situation where this would be an excellent fix, but wasn't sure if PVC would be detrimental in any way.Hello, Shane.The material wasn't plastic but actually some birdseye maple that I'd planed down to about 1/8". Though as Mike says we're likely going to end up using a cotton phenolic laminate which I really like for a number of reasons including sonics. se

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Subject: Re: Pinging MQracing
Posted by MQracing on Thu, 22 Dec 2005 00:54:43 GMT
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Hi Shane:Are you a machinist? You sound pretty fluent in it...we were thinking (for a different project of ours) of using either a glass or a lexan type top cover... but my partner in crime SE has been worried about how scratch proof lexan or some of the other plastics are...we've acquired a bunch of glass samples... and some of them look really nice... but, again, machining holes through the glass... intimidating? do you have any experience with glass or could you recommend a tough transparent or translucent plastic that holds up well to scratches and machines well?about the recessed jacks and not thinning down the wood case... that is what lead SE to coming up with the recessed rca jacks...and I was wrong on the canvas... Steve was kiddin' me and saying... canvas is good for tents but not for what we are doing... it is a cotton phenolic board that we are looking at.msl

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Subject: Re: Pinging MQracing
Posted by Shane on Thu, 22 Dec 2005 02:24:09 GMT
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Actually I'm a chemist. I did do welding/machining for about 4 years years ago before I decided to go back to school. I've welded plastic there and in my job now (we set up a new lab and had to fabricate some items).I've never messed with glass, but I've got picture frames that have holes drilled in them so I know it can be done.I can't think of any plastic that is clear or translucent that wouldn't show scratches or that doesn't scratch easily. Nature of the beast I guess.I really like the light/white look of the mounting panel behind the darker wood when looking through the holes on your prototype. I suppose a nice metal piece such as copper might look nice, too. But then you've got to deal with ground issues with the jacks.Shane

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Subject: Re: Pinging MQracing
Posted by Shane on Thu, 22 Dec 2005 02:30:23 GMT
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Where can you get/see phenolic laminate? I used to work with honeycomb phenolic panels used to build custom interior furniture for personal jets years ago. Very light, strong, and takes veneer very well.

Subject: Re: Pinging MQracing
Posted by MQracing on Thu, 22 Dec 2005 02:41:33 GMT
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Hi Shane::::I suppose a nice metal piece such as copper might look nice, too. But then you've got to deal with ground issues with the jacks.::::hey... help me lobby SE for the copper. That's what I've been saying I want to do. The jacks are insulated if I recall right... so that should not be an issue. glass shop told me that they could get special tooling (cutters) for glass... at some point we're just going to have to give it a try...I ask SE to put up some pics of the glass samples...shame on the plastic... easy to work with... and I keep thinking of al those acryllic turntable platters... or wanting that deep orange of a Parker Duofold fountain pen.I thought you said in an earlier post about welding plastic... but I wasn't sure. Is that done simply with heat? Can you get really smooth seams? msl

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Subject: Re: Pinging MQracing
Posted by Steve Eddy on Thu, 22 Dec 2005 03:04:23 GMT
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Where can you get/see phenolic laminate? You can get it from a number of places. I get it from McMaster-Carr. Though they don't have any decent photos of it. Since Mike wants me to take some photos of the glass, I guess I could take a few shots of the laminate.I used to work with honeycomb phenolic panels used to build custom interior furniture for personal jets years ago. Very light, strong, and takes veneer very well.Yeah? Haven't seen that before. I imagine it's rather like aluminum "aerolam"? I.e. a honeycomb sandwiched between to sheets?se

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Subject: SE - Copper would be cool!
Posted by Shane on Thu, 22 Dec 2005 03:10:12 GMT
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I thought you said in an earlier post about welding plastic... but I wasn't sure. Is that done simply with heat? Can you get really smooth seams?I've never seen smooth seams when plastic welding. It's basically just a small diameter heat gun used to melt plastic rod that is fed into the seam. SE --- Copper would be cool!

Subject: Re: Pinging MQracing
Posted by Steve Eddy on Thu, 22 Dec 2005 03:15:17 GMT
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I really like the light/white look of the mounting panel behind the darker wood when looking through the holes on your prototype.Actually that part IS plastic. It's the Delrin shoulder washers used for isolating the connectors and their diameter is virtually the same as the diameter of the through holes that the connectors are protruding through.I could have just mounted the RCAs without them but the diameter of the shoulder on the shoulder washer was 3/8" and the diameter of the threads on the RCA were some metric dimension so I just made it simple and drilled 3/8" holes. se

Subject: Re: Pinging MQracing
Posted by Shane on Thu, 22 Dec 2005 03:27:47 GMT
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That's the part I was asking about. LOL!! Looks like teflon?Anyway-- it looks like a great product so far.I'm making one more headphone amp that runs at about 70V (little steps for me), then it's time to move up to the real stuff so I can see what all the chatter about MQ iron is all about.

Subject: Re: SE - Copper would be cool!
Posted by Steve Eddy on Thu, 22 Dec 2005 03:33:09 GMT
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I've never seen smooth seams when plastic welding. It's basically just a small diameter heat gun used to melt plastic rod that is fed into the seam.Basically like a hot glue gun except you use hot plastic, yes?SE --- Copper would be cool!*grumble* *grumble* *grumble* se

Subject: Re: Pinging MQracing
Posted by Steve Eddy on Thu, 22 Dec 2005 04:35:19 GMT
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That's the part I was asking about. LOL!! Looks like teflon?Oh! Hehehe. Ok. I thought you might have been talking about a different photo that was of a walnut case without any top or bottom and you could see the edge of the maple piece.Anyway-- it looks like a great product so far. Thanks! Now just have to work on something to put INSIDE it. I'm making one more headphone amp that runs at about 70V (little steps for me), then it's time to move up to the real stuff so I can see what

all the chatter about MQ iron is all about.You're a braver man than I. I'm a big pussy when it comes to high voltages. However now that Mike's starting to develop some line level trannies I'll be able to use some MQ iron in spite of that. se

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Subject: Re: SE - Copper would be cool!
Posted by Thermionic on Thu, 22 Dec 2005 10:00:21 GMT
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I'm a tool and die maker with literally thousands of hours of experience in machining plastics, especially when working for a company that produced robotic poultry processing machinery.As someone had noted, Teflon is very easy to machine when using a razor sharp end mill. Delrin is even easier to machine, and machines more accurately, but requires a bit more deburring in most cases. But unlike some plastics, both these plastics can be very easily deburred by lightly scraping the edge of a stainless steel 6" scale over the burr. PVC is brittle, and more difficult to deburr. There are many different Nylons available, but the common type 66 is easiest to work with.The feasibility/possibility of laser cutting plastics was mentioned. What you'd want to use is abrasive water jet cutting, where a fine garnet oxide abrasive is fed through stream of water under tremendous pressure. It cuts plastic like a hot knife through butter, and leaves a very clean edge except for the entry/exit point.For scratch resistant clear plastics, nothing beats Lexan polycarbonate. But unlike acrylic monomers (Plexiglas, Perspex, Acrylite, Lucite), any scratches cannot be polished out very easily at all. Scratches will come right out of Plexiglas with ease using Novus plastic polish, which is hands-down the best polish available. I used to machine 12" long bevels on these 18" wide, 2" thick Plexiglas plates, that had to be scratch-free, crystal transparent across the entire 12" x 18" area when done. I used some progressively fine sanding discs on a hand sander to work out the flycutter marks and then the coarse sanding marks, then I went to some jeweler's rouge on a cotton buffing pad to get a dull shine. Finally, I went down to the coarse and fine Novus polish on cotton pads. It looked absolutely perfect when I was finished. They had used jeweler's rouge in progressively finer grades on the original prototype part, but it proved less than satisfactory. I recommended the Novus polishing system, and that made all the difference. I'm also a welder, with 2 years of welding school, and some 24 welding certifications, but quit work as a welder years ago. Plastic welding was a subject in welding school. I was even offered a job welding plastic once at a company that made machines to deflux PC boards after soldering. Very few thermosetting plastics can even be welded successfully, and polypropylene and polyethylene are definitely the easiest, best candidates. The weld is performed using a heat gun and a filler rod, just like oxyacetylene or TIG welding, except there is no actual molten puddle. The plastic is just heated to a semifluid state a little below it's scorch point, and the rod laid in in a continuous bead.Thermionic

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Subject: Re: SE - Copper would be cool!
Posted by Thermionic on Thu, 22 Dec 2005 10:14:12 GMT
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Oh yeah! BTW Mike, water jet cutting works very well with glass (not tempered glass, though). AAMOF, it works on most anything! Here's a link to the local water jet/laser cutting shop's website (I use them to do my all custom amp chassis), so you can see some samples of what it's capable of. The huge gear with the four holes cut in it (on the waterjet cutting page) was done for the tool and die shop I used to work for. The gear was actually a scrap piece that we had; the four round plates were our actual parts to do the job. The gear just happened to be the right thickness of material. Thermionic
http://acccutting.com/

Subject: wow... great post.. thank-you. <<nt>>
Posted by MQracing on Thu, 22 Dec 2005 17:54:07 GMT
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yellzee.

Subject: Re: SE - Copper would be cool!
Posted by MQracing on Thu, 22 Dec 2005 17:56:03 GMT
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Thanks for the leads. I had not even thought of water jet cutting. Later SE should be posting some pics of some neat glass...msl

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Subject: Glass samples
Posted by Steve Eddy on Fri, 23 Dec 2005 04:34:29 GMT
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I ask SE to put up some pics of the glass samples...Here ya go.se

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Subject: Re: Glass samples
Posted by Shane on Fri, 23 Dec 2005 05:29:43 GMT
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Cool. This is for the top plate? I like the smoked glass the best I think, but they are all pretty neat.

Subject: Re: Glass samples
Posted by Steve Eddy on Fri, 23 Dec 2005 06:03:18 GMT
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Cool. This is for the top plate? I like the smoked glass the best I think, but they are all pretty neat.Well, a top plate of sorts. The original inspiration was to use it for a funky little open-frame design I did a while back that Mike fell in love with, but he's been thinking of utilizing it for other purposes. Only problem is that most of the glass is rather too thick for what was originally intended.Here are a few photos.It was really just something I cobbled together out of scrap wood and spare parts to use as a simple volume control on the test bench. I didn't have any 6-32 nuts on hand so I just used some T-nuts. Anyway, Mike saw it and really liked it and thought the basic design could be scaled up a bit and make a suitable chassis for a relatively inexpensive commercial product. He didn't like that the open frame was so well, open so I came up with the idea of routing an 1/8" groove on the inside of the front and rear panels that would run between the dowels so some 1/8" plates of some sort of material could be inserted. To keep with the open frame concept, Mike thought about using glass and went to a local glass shop and got some samples.Anyway, yeah, I like the smoke glass too. Ideally though I'd like to find that same type in more of a bronze tone.Oh, and while I'm here, here are the photos of the phenolic laminates I told you about. The one on top is the cotton phenolic (Garolite LE) which uses layers of loosely woven cotton fabric impregnated with phenolic resin. The one on the bottom is the paper phenolic (Garolite XX) which uses layers of kraft paper impregnated with phenolic resin.I'm sure you've seen examples of the latter as it was commonly used as copper clad printed circuit board material before the glass epoxy boards became the norm. It's still used for making terminal boards, screw terminals, etc.Personally I like the cotton phenolic the best. se

Subject: Re: Holes in glass
Posted by 2wo on Fri, 23 Dec 2005 21:56:09 GMT
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Hi all,I work in stained glass and drilling holes in glass is not difficult. It is a matter of having the right bit and a little patience. There are carbide spade bits that are O.K. but slow. Then there diamond bits, the one I use is like a large dental burr. It puts drilling glass on the same footing as bitchy stainless steel .For a one off you can take a peace of tubing, file a few notches in the end and run it in a puddle of valve grinding compound. Works but very slow.Next time you are going up to the mountains stop at Warner Crivellaro. WWW.WARNER-CRIV.COM. They are right behind the ABE airport. A large warehouse/show room of every kind of glass imaginable and how to work it. Be amazed. Have you looked at Micarta? A knifemakers, handle material. It is a phenolic made from paper, linen or canvas and available in a range of colors...John

Subject: thank-you for the url...
Posted by MQracing on Sat, 24 Dec 2005 00:54:58 GMT

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They have more glass than a russian tube factory!!!Your right outside of Philly in Norristown... right?If you ever want to do a field trip up to ABE let me know :=))What's your first name?re: micarta... I will google them shortly and explore....sunds like you have a fair amount of experience in working with glass.I have been particularly attracted to the glass (shown in SE's pic) with the chicken wire... want to do some mixed media cases with wood and glass... and justapose the "positions" of each according to wood color, grain, and density and the type of glass and it's color and etc.the pieces that SE photographed were samples I picked up from a small mom and pop glass company in philly. Many of the pieces are 1/4" thick (which is fine if it was used for the front facia)... but I would like to find some of this same glass but in 1/8" thickness. Do you know of any good urls for larger selection of this type of glass?thanks again,msl

Subject: Re: SE - Copper would be cool!
Posted by 2wo on Sat, 24 Dec 2005 02:44:43 GMT
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While the plastic experts are here, a little help.I an looking to make an adjustable head for a spotting scope and I need a recommendation for material.I need a 3"x4"x4" or so hunk of plastic. I have seen a gray industrial material that I think wound be perfect but I don't know what it is.I need to 'machine' this on my drill press with not much more then an end mill and a cheep X,Y tableA fairly hard non slippery plastic that I can tap to say , ¼ 20 without cracking (with due care)I think plexiglass may be too prone to cracking, nylon may be too soft Delrin would be OK but this will need to clamp to a ¾ or 1" shaft and stay put. May still be OK but I wish I knew what the gray stuff is Thanks in advance for your help…John

Subject: Re: thank-you for the url...
Posted by 2wo on Sat, 24 Dec 2005 04:11:13 GMT
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Hey Mike,John, by the way. The wired glass doesn't do it for me, maybe it reminds me of high school too much ;(Anyway the reason it is ¼ " is that it is two sheets of glass with the wire fused between. It will be a bitch to cut, as a matter of fact you can't "cut" it you need a diamond saw(about $350).There is a lot of patterned glass out there, look at Pilkington (check out the reeded 9970-51). Look at glue chip and glass by Shott (I don't have a URL and I am not quite sure of the spelling but this is a solid lead) Next look at bevels, these are 5mm thick and can be had in clear, a few colors and glue chip. You need a few in hand to appreciate these. Now the wide, wide world of art glass. These start with Opal glass that starts Creamy white, like clouds, everywhere and any thing. As you add touch of color. This is the sort of glass you see in Tiffany style lamp shades and go from there .Past here is pure Art the problem is not trying to find a peace that will work, but trying to narrow down the possibilities…John

Subject: Re: Glass samples
Posted by MQracing on Mon, 26 Dec 2005 08:25:04 GMT
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Hi Steve:got the samples you sent me. the cotton board is really great looking.msl