I don’t know how this is going to work, I’m not good at putting a document together with Microsoft Works but let’s try to put in a photo. These are my cans siliconized together with the top manifold on and the bottom manifold you see on the table. On this panel core, it was 17 cans wide and 17 cans tall it was all I could fit into a four by eight insulated box (polyiso) the 4’ x 8’ are the outside measurements. The header caps are 44 ½” with ½” bend on all ends. I drilled the holes at 54mm dia. spaced at 66mm on center and came to find out they would “just fit” maybe 67mm O/C might work better just so things won’t be to tight or make the 10mm space between them 11mm to 12mm. I think 11mm will work fine, that is what I’m doing on the next one. Start 10mm from the header cap end before you start laying out and drilling. The bottom holes in the cans I drilled out at 44mm and the top ones at 51mm but you need to be really careful with the tops, the hole saw will just fit, no room to mess up ☺

So let’s start from the beginning. I want to thank the foremost first, a guy that goes by my2cents0 at YouTube for directing me to the Hungarian website that led me to an engineer whom I only know as Zoli. He actually speaks better French than Hungarian ☺ I want thank Zoli for his upmost patience with me on this project, I bugged him to death back and forth for nearly three months to make sure I was doing everything right. As I said before on cutting the cans with the hole saws I used in a drill press was a learning experience in itself. It took a little while to get the hang of it and near misses of flying objects, you would be amazed how fast a hole saw can take something right out of your hand. So first safety, have safety glasses and some leather gloves that some cotton jersey cloves will fit into. The cans will heat up rapidly while cutting the tops and bottoms out. I at first made some wooden jigs to hold the cans while cutting on the press.

I used a small rotary saw to start a whole for the diameter of which ever end of can I was working on. Then believe it or not I took a small straight cut router bit

put it in my drill press and cut out the rest of the hole. If you have a steady hand, set the depth on your press this is pretty easy to do. Notice my extra hand, a screen door spring holding the router bit to it's depth. Oh my, necessity really is the mother of invention. I made the jigs out of large stock of two 1" x 4" blocks of wood gluded together, then cut them down to a size easy to handle.

This jig is for the can tops, I marked the inside shoulder to be more plain and was cut to a depth just enough for the cans neck to fit into I also did this for the can bottoms.

After all this trouble I actually found out it was easier to do by just putting the coozie holder (as it's called around here) you see on the can and do it free hand,this is where the leather cloves and cottton jersey ones come in, as I said before the 51mm hole saw will just fit the can top inside the rim you have to be very careful here, most times this is where you going to mess up ☺ I ran my press at it's medium speed and used Lenox hole saws, they cut pretty well. Let the can spin a little if it wants while your holding it near the top, one finger on the can top close to the saw the rest around the coozie and the can will get hot fast. The bottoms using the 44mm hole saw are a breeze after the first few cans just remember to let the can spin a little as you cut it if it wants. If you try and hold the can to tight the hole saw will twist the can inside the coozie then it will be scrap because it will cause the can to wrinkle and although you may not see the very minute crack in the can it will be there, I sprayed primer on one can here as an example.

The ring you see around the can will become a leak down the road if you use it because of the expanding and contraction from heat over time and since a lot of your soda cans are only 10 microns thick this won't take very long. Notice the bricks at the lower right of the photo, these are what I used to keep pressure on the cans after the silicone was applied. Some cans with the tops and bottoms cut out.

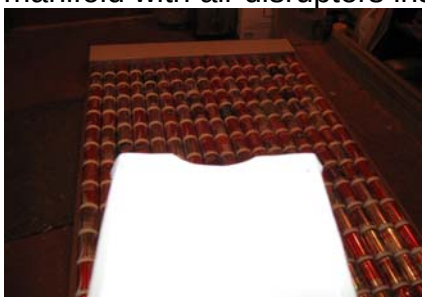
I used a 3" PVC pipe cut in half to hold my can tubes while the silicone cured, one note, buy an end cap for the pipe it will make things a little easier. I'll do that next time. Cut it in half also and glue it to your pipe, 1"x 4" boards nailed together will work just as good I think but I have not tried that yet. Here's the photos of the can tube construction, I just put silicone around the small end of the can, pressed them together while in the tube and while using one finger to smooth the silicone joint I used my other hand to turn the tube as I went along.

 You can see at the left one tube already complete in it's PVC holder.

 Let your hand rest gently on the other can while turning the assembly with your other hand, thumb and fore finger.

 There's that brick again, I was doing this in my living room floor because it was to cold to do it out in my shop. You could incline the tube a little and the brick has enough pressure to keep everything in place until the silicone sets. I did this until I had a stack 17 cans tall and 17 wide to fit the 44.5" manifold plates I had drilled out for them as shown in the top photo. Ok, you have your tube stacks made, the information here is for a 4' x 8' heater.

First I took a 1" x 4" and measured out the dimensions given to me by Zoli from his sketch-up drawing and drilled a test manifold to make sure everything would fit. It was tight. Since everything over in the UK etc is metric that is what I used, the closest hole saw I could come up with for the cans was a 54mm, it called for 55mm and spaced 66mm on center. I started 10mm from the edge of the manifold and did my layout. I think that 67mm on center would not hurt on the manifold layout, you still have room to do this. 
I just clamped a scrap of 1 x 4 under the manifold plate while drilling free hand. It worked out well for me. Here's a photo of drilling the cans free hand as I found

out was easier for me, maybe not you. Be very careful.  After I had done all this I fitted the can tubes into the top and bottom manifold plates and used silicone to seal them in place.  Don't be afraid to use plenty of silicone here just don't block the air way. After this measure what you have. I then cut aluminum flat plates to take up the room to make it fit into the 4' x 8' polyiso housing I built, they ended up being approx 6.75" tall by 3.5" deep 44.5" wide.  This photo here is of the new style manifold with air disrupters installed and end caps which I had to make myself.  I made these out of aluminum house trim coil and had to cut the radius on the ends to make them fit on each end of the manifolds. Making the end caps   I did this on top of my saw table just using some clamps and straight edge (aluminum door frame I salvaged) just bend it up with your hands then tap along the edge with a hammer and you will come out with a nice edge. Here's a photo of the painted

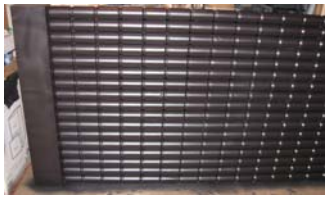
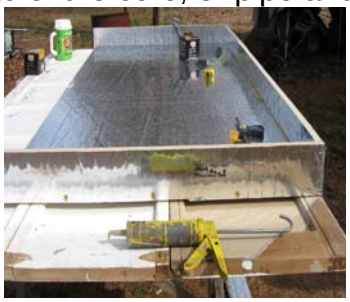
pane core, do this outside of your shop or house.  You want the core housing to be reflective so that any sun that passes by the core will be bounced back onto part of it. Photo of the intake with cover I made from aluminum and mounted a 6” duct fitting to it, I did the same for the outlet.

  Photo of outlet as you can see I only had a picture to go by, just simple air deflectors. Zoli said it looked good to him ☺ Photo of the core, 3” pipe and cans  Some photos of housing.  

I protected all exposed polyiso board with tape, the inside corners also.

 I then used silicone on all inside edges of the tape just to make sure they didn’t work loose over time as I’ve found out can happen.

Photo of collector in it’s housing.  You can see the reflection from the back of the housing here.  And this photo of collector on it’s side in my shop.

And the finished collector below. The strip you see in the center is to keep the panel from expanding over four feet wide which it would do when heated up. I also have 3/8ths inch aluminum rods in place to help support the twin walled polycarbonate panel in case it is mounted on the roof. This collector can also be mounted vertical or horizontal on the south side of your home and it will work fine. The only test I have run so far with Gary’s help was with the collector laying on it’s back on saw horses with the glazing just held on with some quick clamps. The test was promising with the collector running at 91cfm at a 60 degree temperature rise. I would like to see it run at 100cfm at around a 50 to 55 degree temp rise but that means a more powerful and louder fan which would require a muffler of some sort. One more note on the polycarbonate panel. The people at Tex Supply told me to be sure and cut the panel one half inch shorter than the collector frame all the way around because it would expand when heating up and they were right it did, a lot. To seal the glazing to the panel I used polyurethane foam in case anything were to go wrong down the road I can get into the panel easy.

Not a bad looking panel for my first one, can’t wait to build another ☺