

How to Make a Wedding Band 52 to 66 K, XL & XLH

By the OSKRG vs.2



Tools Needed:

- Large Vise
- Torch
- Welder
- Large Channel locks
- Drill Motor
- For a 52 through 55 K Model:
 - A 5/16 x 24 Tap & 17/64 bit
- For a 56 through 66 K, XL & XLH:
 - A 3/8 bit
- 1" Solid Steel Round Stock
- Framing Square
- BFH, Good Size Hammer
- 2 Good Size Screwdrivers
- Silver Solder

Steps:

- 1. The rear downtubes measure 1" so you will need a 1" solid steel round stock to form the band around. I used one of the wheel supports from my John Deere 316 mowing deck, it turned out to be 1".**



2. It was difficult for me to determine the thickness of the steel to use for the wedding band due to rust and paint on the bands and differences in the “tightness” of the two band halves brought together. My guess is either .134, #10 BWG or .148”, #9 B.W.G. steel. It was easy to measure the 3/4” width of the bands on bikes. I could not find a source for #9 or #10 B.W.G. cold rolled steel so I bought 24”x 3/4”x 5/32” and had a machinist grind it down for me. I went with .148” this time. Next time I my compromise and split the difference between the #9 & #10 BWG steel and go with .140” #10 AWG.

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Steel Thickness Conversion Table (Gauge - Inch - MM)

Gauge No.	B.W.G.		U.S.G.		Gauge No.	B.W.G.		U.S.G.	
	inch	mm	inch	mm		inch	mm	inch	mm
6	.203	5.156	.2031	5.16	21	.032	.813	.0344	.873
7	.180	4.572	.1875	4.76	22	.028	.711	.0313	.794
8	.165	4.191	.1719	4.37	23	.025	.635	.0281	.714
9	.148	3.759	.1563	3.97	24	.022	.559	.0250	.635
10	.134	3.404	.1406	3.57	25	.020	.508	.0219	.556
11	.120	3.048	.1250	3.18	26	.018	.457	.0188	.478
12	.109	2.769	.1094	2.78	27	.016	.406	.0172	.437
13	.095	2.413	.0938	2.38	28	.014	.356	.0156	.396
14	.083	2.108	.0781	1.98	29	.013	.330	.0141	.358
15	.072	1.829	.0703	1.79	30	.012	.305	.0125	.318
16	.065	1.651	.0625	1.59	31	.010	.254	.0109	.277
17	.058	1.473	.0563	1.43	32	.009	.229	.0102	.259
18	.049	1.245	.0500	1.27	33	.008	.203	.0094	.239
19	.042	1.067	.0438	1.11	34	.007	.178	.0086	.218
20	.035	.889	.0375	.953	35	.005	.127	.0078	.198

Company Activity Brand

1 - Birmingham Wire Gauge for Iron & Steel Wire
- US Standard Gauge for Stainless Steel

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I then cut the stock into three 8" pieces.



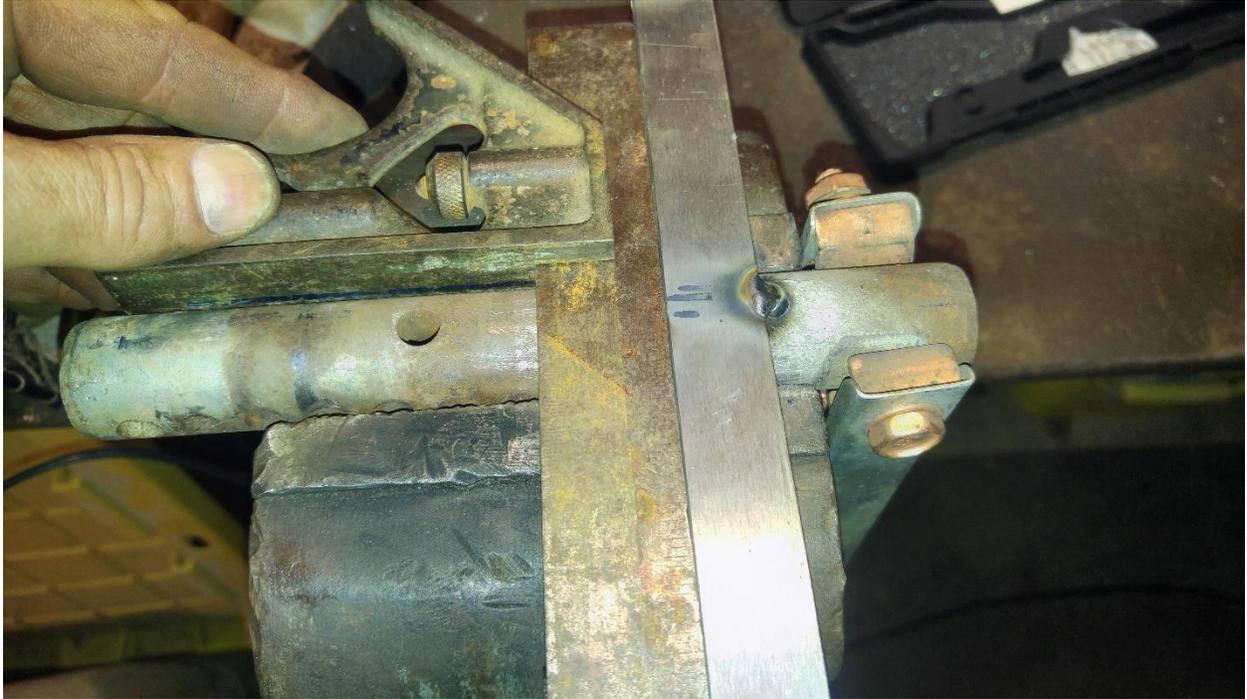
Easy to measure the $\frac{3}{4}$ ".



I have measured a number of wedding band thicknesses and have found them to be anywhere from .300 to .330. Again, I believe these differences to be more related to rust, paint and craftsmanship rather than varying steel thickness used.



3. Tack the steel to your 1" inch solid round stock on one side only. Use your framing square to make sure the band is perpendicular to the solid round form.



Once properly lined tack the other side.



4. Heat and bend half of the band at a time. You will want to get the steel cherry red hot all the way up to your tack welds and a good 1" from the tacks.



5. As quickly as you can turn off the torch and bend the band half with a large channel locks about 90 degrees. The quicker you can do this after removing the torch the easier it will be and the better it will shape.



It is important that the band steel wraps tightly/closely around your solid steel tube. I reheated the steel and while it was red hot used the hammer to bend it into a tighter radius if I noticed spots where it was away from the steel form.



After you repeat the process on the other half of the band it should look something like this.



6. Place the band into your large vice with it as close to your solid steel round form as possible.



Heat cherry red hot both sides of the band where the vice will be squeezing it. You will have to work the torch back and forth on both sides. While applying heat to both sides slowly turn the vice until the vice jaws have completely squeezed together the two halves of the band.



Band shown after the squeeze.



7. You will notice a gap where the two halves come together, I like to close this up more.



You can do this one half at a time. Using the torch get the area shown under the large chisel red hot, the hotter the better and then using a BFH, a large hammer, whack the chisel right at the base where the two halves come together. Repeat the process on the other half.



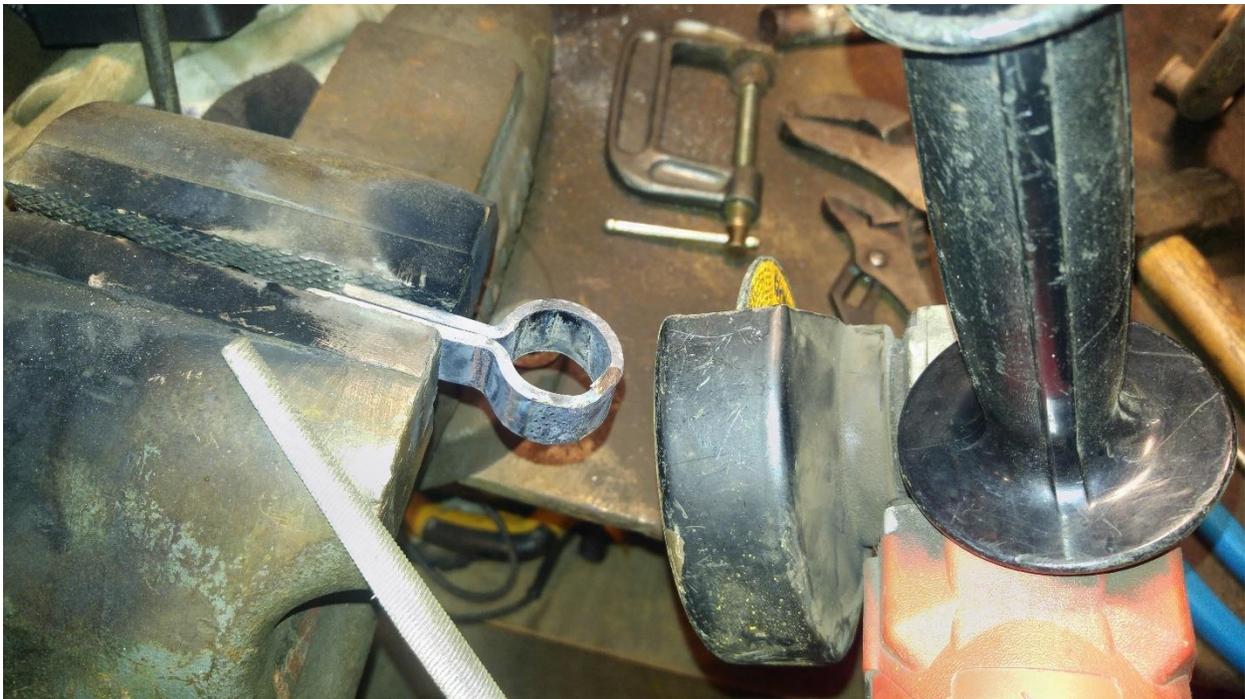
This should close the gap up some.



8. For removing the band from the solid round stock, I carefully ground the welds and then placing the band as shown in the vice I drove the solid stock out. With the weld sufficiently ground this broke the band loose.



Then using a grinder or files I dressed the band some to clean it up from the tack welds.



Using my .148 thickness steel stock this band at least at this point measured .308" which falls within the spectrum of measurements I've taken on factory bands.



9. Using several good size screwdrivers or something comparable open up your band to fit it over the downtube. You may need to drive it on with your BFH.





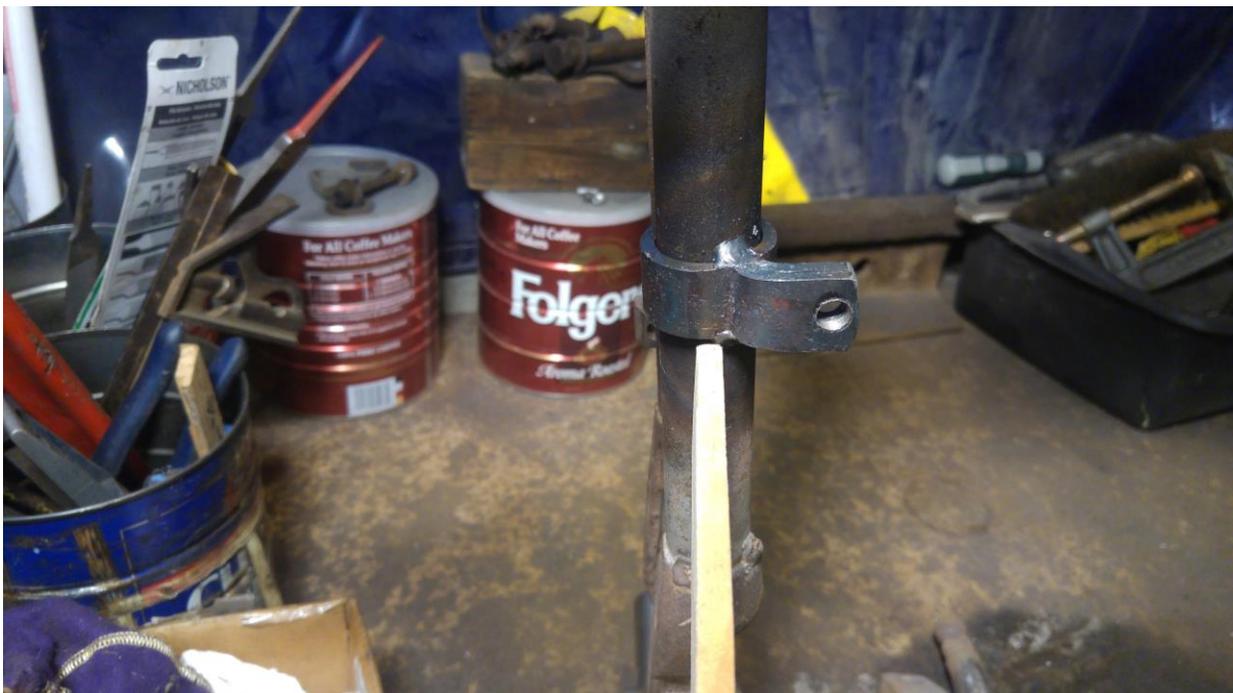
10. You will need to clamp in place the band in preparation for welding it in place. You will need to take care in positioning it height wise so that the eventual hole to be installed in the center of it lines up with the lower mounting hole of the oil tank bracket. You will also want to make sure that you have it at the appropriate angle relative to the rear downtube.

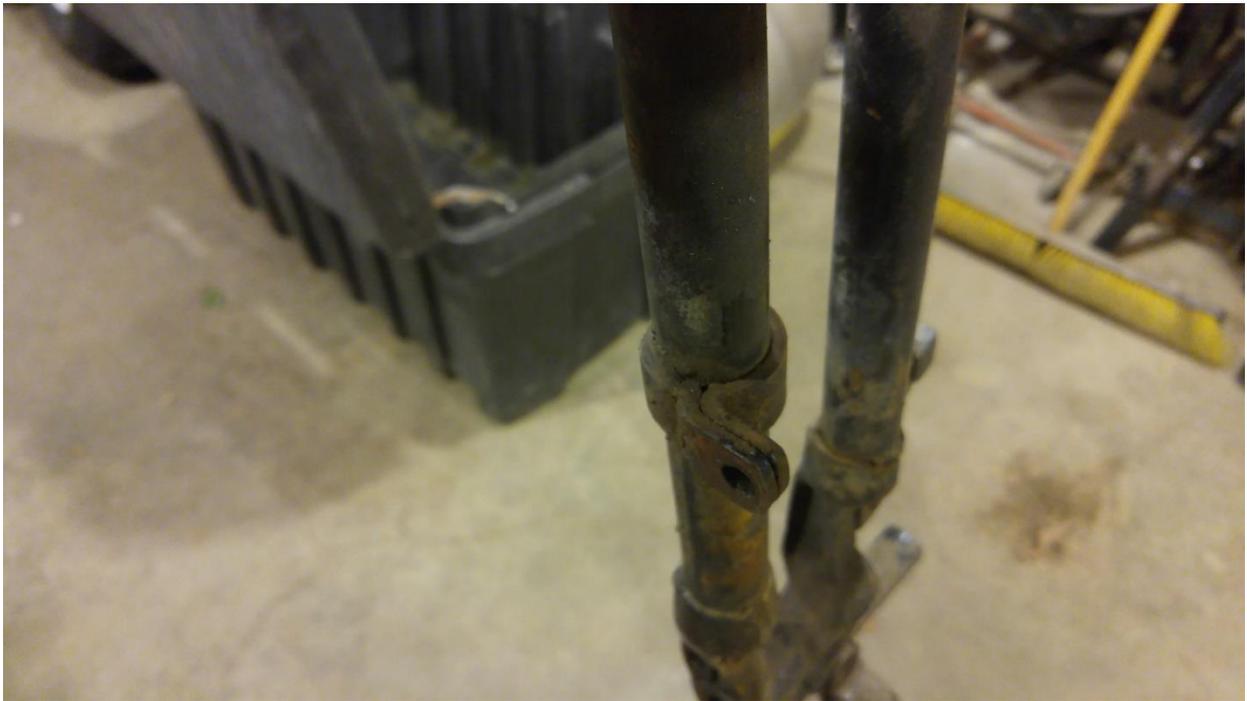


For the setting the height I would recommend mounting the oil tank bracket with the two top screws and then positioning the band so that the oil tank brackets bottom screw centers vertically on the band.



For setting the angle I have provided a number of pictures showing a factory installed band. If a line parallel to the two rear downtubes was at 6 o'clock I would say the band should angle out at about 5:15 to 5:30, this works for the ones I've done. The yardstick in the following pictures shows what I mean by a parallel line with the rear downtubes.







11. Once you have the band properly positioned weld it (not much is needed if you want to look factory) both on the top and bottom where the two halves come together and meet the downtube. I have seen a variety of welding schemes used, I believe it depended on who was working that day. I have seen additional tacks on some frames in different locations. What I would say is a must however are the two weld where the halves join the frame. These will anchor the band when you heat the band up and bend it into position.



12. Not shown in the following picture is the torch heating the two halves of the band up red hot as the channel locks make the final bend. I didn't have enough hands to hold the camera, torch and channel locks for this picture. You will want to have the frame somewhat anchored or wedged because you will be holding the torch in one hand and the channel locks in the other, as you bend the band the frame may try to move on you.



Band shown after the bend. What you are shooting for here is for it to be parallel with the frame front to back and if you laid a ruler against the rear downtube facing forward the inside edge of the band should line up with the inside edge of the ruler.





13. Cut the band at this point but I would not go shorter than about 1.95" as seen below. Better to be a little bit too long than to short. You will eventually be grinding/filing this edge down some for a finished look.



You can see from the examples shown below what the slightly rounded outer edge should look like. For final length, I would go more with the hole position leaving about 3/16" to the front of the hole. 56 through 66 should be an unthreaded hole to accommodate a 5/16 nut and bolt (as shown below with the red downtube on a 56K frame).



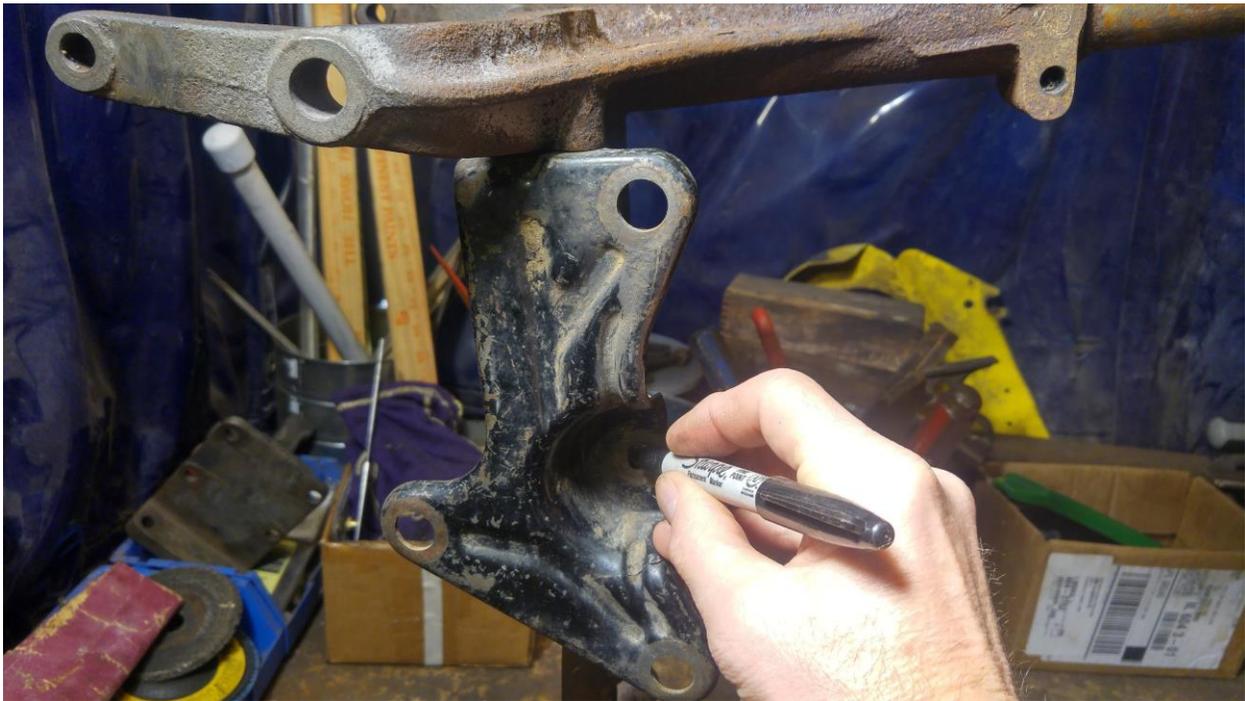
52 through 55 require a threaded hole, 5/16" x 24 thread as shown below with this 54 K frame.



14. Some bands have a weld on the front edge, others do not. This weld is ground smooth when you shape the front edge.



15. Mount the oil tank bracket by the top two bolts and with it secured mark the hole for the wedding band. You may need at this point to find a compromise between the dimensions I have given you and how the hole from the bracket lines up with the band. What I noticed is that most of the oil tank bracket top mounting flanges are bent somewhat from earlier use. This may shift the lower mounting hole towards the front or rear of the band. In addition, the rough length I advised you to cut the band down to will most likely be a little long and interfere with the front edge of the oil tank bracket. Don't bend the oil tank bracket towards the front to clear the rough-cut band, rather mark where the hole should be and grind/file the band to the appropriate length. Your finished hole position should be close to the dimension shown with the ruler in preceding pictures.

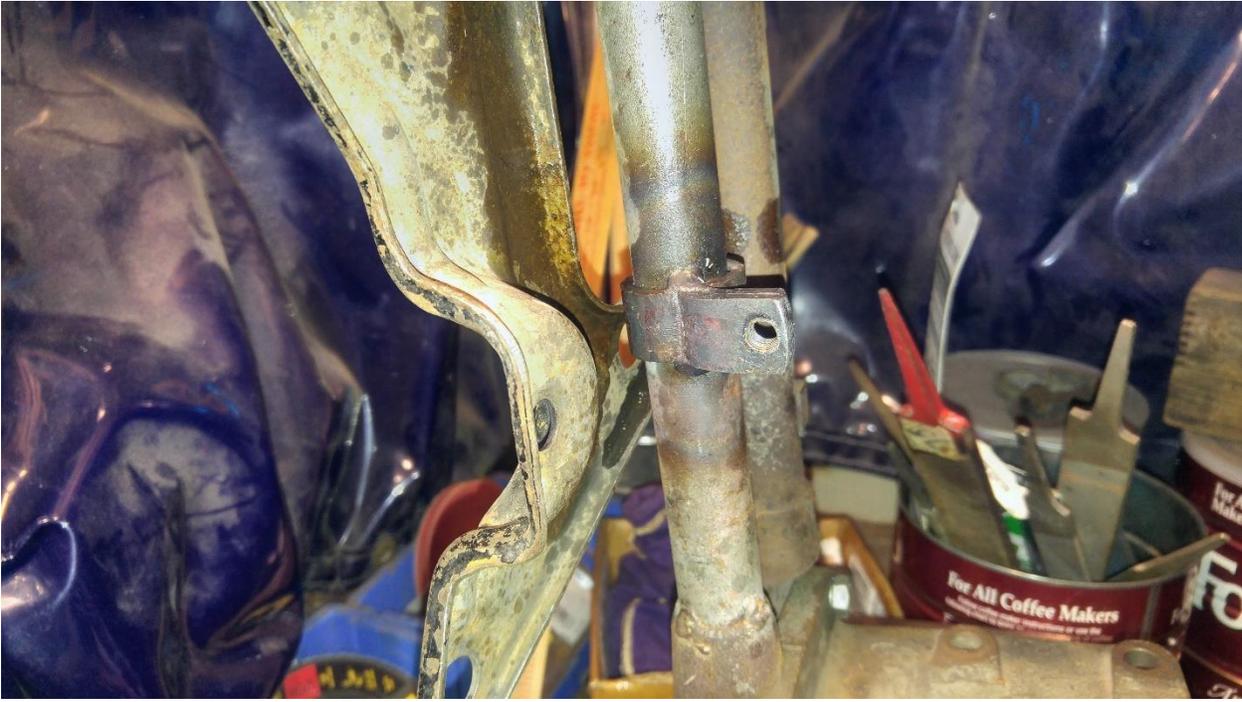




16. Drill or drill and tap the band.



17.Finish dress the front edge.



18. The final step if desired is to silver solder the band to the downtube, the factory did this. I used the rod shown below, it worked well.



Heat up the band and tube and let the solder flow. As before I couldn't hold the camera, torch and rod at the same time so below I show the heating and after that I show the rod. You'll want to work the rod while heating the band (at least this is the way I do it, bear in mind I'm an electrician not a welder/soldering professional).





19. Make sure your bracket works.

