

Repairing A Portable Gazebo Strut, version 1.1

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Here in Phoenix Arizona during the summer you either are working under some shade or you are not working very long. It is not a matter of comfort. I have measured pieces of metal left in the sun for a few minutes at 160°F. Even with plenty to drink, my head starts to swim in less than an hour.



So when one of the struts on my portable gazebo snapped, it was not a happy time. These shades are expensive and the rest of the shelter was fine.

These struts are made of thin walled aluminum tubing. Making a new one would be tricky given the rounded edges.

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After a bit of wandering around my shop, I noticed some one foot long pieces of rebar. Nice and rough on the outside and easy to cut. It turned out they were a nice fit to go inside the broken strut. Those ribs should provide some holding power.



The first step was to grind bevels into the ends of the two rods.

Dennis MacIntye pointed out that there might be some tension when the structure was exposed to wind. Now would be a good time to coat the rebar with epoxy. It would act as a lubricant as the bar slid into the tubing and later help to anchor it.

He also suggested that if I had problems with the present arrangement, I could use a center punch to crunch in the tubing around the rebar. It would be tricky because it would be best to hit 3 sides at the same time.



Then I pounded the bars down inside the strut until it could not easily go further. Placing another rebar next to the assembly I could see my progress. I didn't want to use excessive force which could split the strut.



Using my bandsaw, I cut the two rebar so the exposed part was about equal to what was inside the strut.



Then I used my grinding wheel to put bevels on the end.



The other part of the strut had text on it so it was easy to figure out how the plastic sleeve must be positioned. I also compared it to one of the struts on the shelter. The ragged ends confirmed I had the strut oriented correctly. I didn't want to have to take this apart.



By holding one section of the strut while pounding the other end down on the workbench, the two ends met. I sighted along the strut to verify it was straight. This repair will see some bending of the strut and some compression. There should not be any tension which could pull it apart.



I then drilled a hole through the rebar using a sharp drill and lots of cutting oil.



The plastic sleeve easily slid back into position.



Here is the strut back on the job. I'm ready for another brutal summer in the Sonoran Desert!

Acknowledgement

Thank to Dennis MacIntye for his insights on better locking the rebar into the tubing.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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