

# Drilling Centered Holes for Mounting Plates, Version 1.0

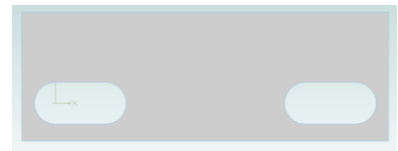
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By **R. G. Sparber**

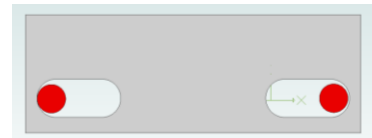
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I had to replace rusty, old, frozen wheels with new ones. The old casters were welded onto the frame, so it took a bit of grinding—the new wheels bolt-on. Each wheel has a mounting plate with four elongated holes. I have room to use two of them.



I plan to drill two holes through the frame. Both bolts wouldn't go through the mounting plate if I were to set them too far apart. The mounting plate will slide side to side if they are too close.



One way to locate these holes would be to measure the flange carefully, lay out the centers of the holes on the frame, punch, center drill, and then drill.

Another way is to trace the elongated holes by running a pencil around the perimeter and then using these figures to lay out the centers of the holes. Punch, center drill, and then drill the two holes.

Both of these approaches are prone to error and take a lot of time.

I will present a far more efficient and likely just as accurate method that requires no measuring. This technique is ancient, and I do not claim to be the inventor. I can't recall where I picked it up.

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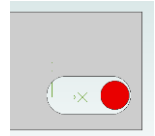


I positioned the caster and clamped it to the frame using a Vise-Grip.



Then I selected a drill bit that is a close fit to the hole in the mounting plate. In my case, a 9/16-inch drill bit is a nice loose fit.

After pouring a little cutting oil, I pressed the drill into the end of the elongated hole. I drilled enough to cut a cone and repeated the task on the other hole. Layout and center drill tasks are complete.



Lifting off the caster, I saw my two cones cut into the steel.



I then used my 1/4-inch drill to go through the frame, following each with my 3/8-inch drill bit. The cones guaranteed alignment.

Given the power limitations of my battery-powered drill, it is faster to drill the 3/8-inch hole in two steps than to go through with just the larger bit.

I deburred both holes and then degreased the area.



The bolts are a perfect fit into the elongated holes. Sorry, I forgot to take a picture.

I used spring washers under the nuts and an impact wrench to tighten the bolts. I don't expect them to come loose anytime soon.

I welcome your comments and questions.

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