# Polypropylene Pellet Loader for a Gingery Plastic Injection Molding Machine

By R.G. Sparber

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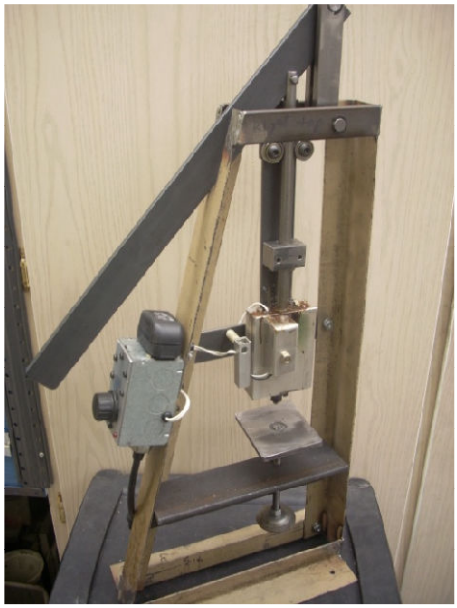
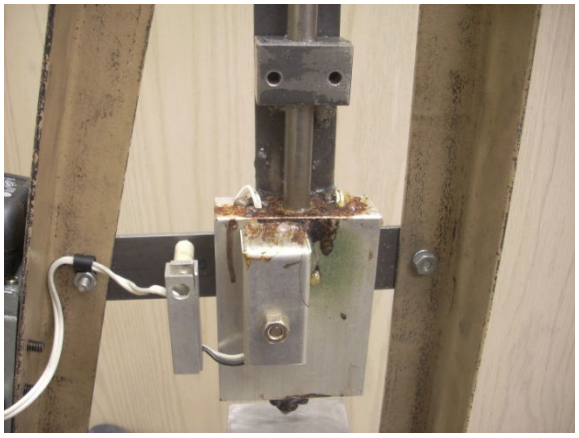


## The Problem

I have a bucket of new polypropylene pellets that work great in my Gingery Plastic Injection Molding machine. The problem is how to get them into the heating chamber. Here you see the plunger in the down position. When raised, I have about 1" of clearance and all surfaces are ***hot***. The pellets stick to all hot surfaces so you can't just pour them in. I was using a tiny spoon like device to pour about ¼ teaspoon in at a time. It took 12 trips to fill up the chamber. Clearly there is a better way.



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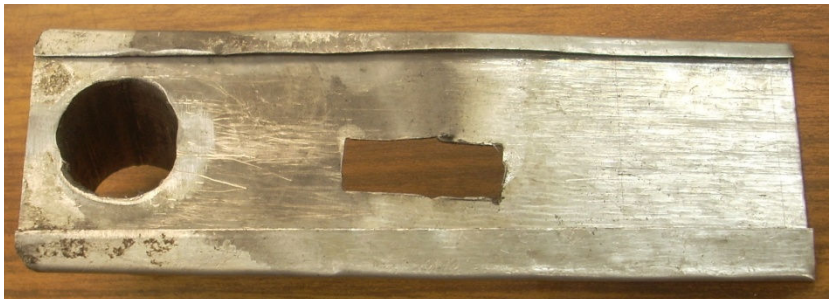
## The Solution

There is no lack of complex ways to get the pellets into the chamber. My goal was to find a simply way. I did go so far as to draw up plans for a tool that would have required a few hours on my mill. I'm sure it would have worked but clearly not worth the time to me.

After a lot of thought, I finally found a design worth my time to make. It is made of 28 gage galvanized sheet metal and a 1" length of galvanized conduit. The two were silver soldered together.

I first built it from card stock to be sure there were no obvious errors. Then the sheet metal was cut out and partially folded. The top piece shown above was drilled with a ¼" hole around the location of the pipe. This end was also sanded to remove most of the galvanized coating. A bolt was run through this hole to secure the pipe in position. With all surfaces clean, a bit of flux made the silver solder job easy. I did do this work outside just in case any of that zinc should burn off.

Here you see the back side. After the pipe was secured, I ran a ½" drill down it and then filed away the rest of the sheet metal. You can see the crimps running top and bottom.



This bit of sheet metal slides inside the crimp. The bent end gives me something to grab if it sticks.

Here you see the slide plate in the open position. This punched hole was an afterthought and turned out to be a good one. I could have avoided cutting that square hole and just punched through both pieces. Then when the hole appears, I know the pipe is open.

Using the tool is rather simple. I close the plate, dip it into the bucket to fill, and the brush off any loose pellets before they go flying onto the floor. The plunger is raised on the molding machine and the pipe centered. I lower the plunger onto the top of the pellets to steady the tool. Then the slider is pulled out until I see the hole. The plunger is then lowered and the sticky pellets are driven into the chamber. I found that it is best to leave the plunger down for a few seconds in order to prevent pulling pellets back out of the chamber.

I know that this is not a very impressive tool but that was the whole point of this design.

Rick Sparber

rgsparber@aol.com