



Precision Components Since 1924

The Processing of a Part (And Using the Global Supply Chain)

by Arnot Heller III

Every day we hear stories about the difficulty of US manufacturers to compete globally. Unfortunately, if one drills down and looks closely at the manufacturer, one can often find a processing problem hindering **manufacturing productivity**, as opposed to a currency or labor problem.

The US machine shop, now especially with the US currency continuing to fall, can be an incredibly efficient organization. However, even at our utmost efficiency, a shop cannot compete if the process is inherently inefficient. At CSP, we are always looking to add bits of **manufacturing efficiency** to our jobs. If done correctly, no shop can compete with the company that is the most efficient. The efficient machine shop can hold its pricing for the longest, survive the worst times, and support their customers the best in times of high demand due to high manufacturing productivity.

Sometimes we need to dive into the processing of a part to find manufacturing efficiencies. When we first went to China in 2002 we noticed a few things that set us apart from our Chinese partners, process wise. The first was a lack of automation in our partners' shops; the second was using forgings instead of bar stock. I would like to focus on the second point.

Bar stock is easy to hold, and machines, in general, are set up to process bar stock at a high rate of speed. Most machine shops today are set up to process components out of bar stock. This is fine for lower volumes, but as a company starts to increase these volumes it starts to lose efficiency over the company that is starting with a near net shape (forging). If we think about a part with a 3 minute cycle time, 180 seconds to make out of bar stock, and the same part takes 2 minutes, 120 seconds out of a forging, for 1000 pieces we might not worry about the difference in cycle time. It will basically take 17 hours longer to run the bar stock, but the set-up on the machine and the tooling for the machine are much more standard. If we wanted to use a forging we would have to wait weeks to make tooling, take on the tooling cost, and then figure out how to hold the part. The 17 hours, especially because most of it could be done "lights out", seems like a small price to pay.

Now let's think about that job being 50,000 pieces annually. Now the time difference is 834 hours, about 5 weeks, running 24/7 (literally). Now the customer is paying for a serious amount of inefficiency, as well as extra material cost, if the company does not change the process.

Our partners in China almost exclusively run forgings, as it saves material, and when labor cost is

low, material price is paramount. Our time spent with our partners has taught us to look at production jobs differently, and we have forced ourselves to not leave a single penny on the table when discussing processing. So the efficient company will not only look at automating the entire task, but also look at the cutting time of the part, and material out of the part. If it can save material for the customer, and machine time for itself, this transfers into **manufacturing efficiencies** that make it a win-win for everyone involved.

If you have a job that you think might benefit from this kind of thinking, please give us a call.