



Target Machine Set-up and Changeover Reduction by 50%.... to Increased Capacity!

SMED (Part 1) Single Minute Exchange of Die, is a methodology that reduces a machine changeover or set-up. The rule of thumb is:

The Best Set-up... is NO SET-UP.

So any and all set-up steps that can be eliminated help reduce the set-up time. Many organizations have an inordinate amount of Down Time, and this robs your efficiency. There is actually a formula that is VERY SIMILAR to one used to determine Overall Equipment Efficiency (OEE):

Loading Time - Down Time/ Loading Time.

Loading time= the Net amount of time per shift that we are able to produce on that machine. It is calculated by the total time the employees are at the job site, less any and all breaks.

A standard shift is typically 8.5 hours or 510 Minutes, less 2, 10 -minute breaks, and 1, 30-minute Lunch. This brings this number down to 460 Minutes Net Time Available to produce. This is assuming the machine is shut down for breaks.

You would use the 510 Minutes if you practice higher capacity practices like staggered breaks, so that the machine never stops during the shift. It continues running –

Remember, machines do not take breaks. (But they do have to be properly maintained to keep them constantly running).

Now, let's say, that it takes about 30-45 minutes to change over a particular machine, and you do three set-ups a day on it. That's 135 Minutes of Down Time. (2.25 Hours of production lost on that machine each day)

Let's look at our formula for that machine: Our Loading Time is 460 Minutes. Therefore:

$460 \text{ Net Minutes Available} - 135 \text{ Minutes of Down Time} / 460 \text{ Minutes} = 325 / 460 \dots \text{ or } 70.6\%, \text{ round up to } 71\%.$

What this means, is that current Down Time is preventing you from fully utilizing your Available Time. You are only using 71% of this time.

Now, let's target this machine for a 50% reduction in changeover, by changing the the way we do things. The reason we target a 50% improvement is that any process that has not been previously fixed, contains at least 50% WASTE!!! 50% of 135 minutes is 67.5. So now that machine only has a little over one hour of Down Time Per Day! The Productivity formula, now looks like this:

$460 \text{ Min} - 67.5 \text{ Min} / 460 \text{ Min} = 392.5 \text{ Min} / 460 \text{ Min} \text{ or } 85.3\%$

By improving the way the machine is set-up, in other words reducing the Down Time, you have gained an extra 67.5 minutes of production per day, in this case an additional 14.7% of productivity!

How might this help reduce your back-log and improve on-time-delivery? How might this affect your output and increase your monthly revenue?

We can come out and help you reduce your downtime in five days. Please call us today at 805-405-2569, or email us at: <mailto:mcarlos@mculture.net>