



## OEE for Discreet Manufacturing

*This document outlines the features and functions of the BarCode Guns offered exclusively by Shop Floor Automations, Inc.*



---

### Overview

How do you measure the efficiency of your manufacturing business? For many manufacturing companies, the answer is; "Not very well, if at all". Without a fair and accurate way to measure where your enterprise's efficiency is at, there is very little hope of making any significant and lasting improvements in it. For many enterprises, Overall Equipment Efficiency (OEE) is the answer to the efficiency question. OEE is literally a "Score" for your enterprise. With values from 0 to 100, OEE gives you a single measure to gauge your enterprise's efficiency. OEE is calculated by multiplying 3 factors:

Availability – What % of the possible machine time is being utilized?

Performance – How close to your ideal cycle times are you

Quality – What % of your parts are good vs scrap

By measuring these three factors, subtle inefficiencies can be detected and diagnosed. For instance; say you have machines running 95% of available time and they are within 2% of their ideal times, but 15% of parts are being scrapped; you end up with an OEE of only 79 ( $.95 \times .98 \times .85 = .79$ ). By considering each of the values, OEE gives you both a quick number to gauge efficiency by and also the underlying factors that can help diagnose the root causes of sub par efficiency performance.

Traditionally, OEE has been tracked via paper forms that are entered into a software system at some later date. Some newer OEE systems allow OEE data to be collected and presented in real time. By tracking OEE in real time, efficiency issues can be dealt with as they happen, not days or weeks after the fact.

### OEE & Discreet Manufacturing – Issues

Traditionally, OEE has been used primarily in process type manufacturing and because of this, discreet manufacturing poses some inherent issues. Some key issues with using OEE in a discreet manufacturing enterprise:

---

**Flexible time analysis – Generally**, traditional OEE is calculated on a shift basis. Because in discreet manufacturing, single parts have cycle times that can stretch beyond a single shift or day, discreet OEE requires a higher level of flexibility in reporting than traditional OEE.

**Weighing of machines** – Traditional OEE software often assumes that all processes or machines are similar and therefore OEE for cells, buildings or departments are simply an average of all of the OEE scores. Because discreet manufacturing almost always involves many different types of processes & parts, some mechanism for weighting each point of production and/or part needs to be built into whatever software you plan to use.

**Custom Software** – Very few OEE software packages are truly shrink wrap products. The more custom an OEE solution is, the more expensive and the less open it tends to be. Also, custom OEE packages rarely allow you to add functionality yourself.

### **Recommendations**

**Open Solution** – Find as open a solution as possible. Discreet manufacturing enterprises vary dramatically in their needs and expectations and the more flexible a solution you can find, the better.

**Discreet Manufacturing solution** – Do not assume a solution designed for process manufacturing (and most are) will work well for your enterprise.

**CNC experience** – Many CNCs offer a wealth of information. If CNCs are a part of the equipment that you wish to monitor, make sure you work with a company that has extensive experience monitoring various brands of CNCs.

**Automatic collection** – As much as possible, utilize your OEE system automatic data collection capabilities. Not only is manual input the least reliable and least accurate form of data collection, the time required to input OEE data on some manual system can become a source of the exact kind of inefficiency that OEE is designed to eliminate.

---

### **Summary**

For more information visit our web site at [www.shopfloorautomations.com](http://www.shopfloorautomations.com) or call us at (619)461-4000.