Metalworking

Manufacturing Efficiency: 5 Ways to Maximize Shop Floor Space

Roland Jones | Mar 30, 2021

Improving shop floor efficiencies is essential in today's competitive manufacturing market. Here's what you can do to take your productivity to the next level.

A shop floor can be a chaotic place. In a typical manufacturing facility, overcrowded tool cabinets, disorganized shelf space and improperly marked storage areas and walkways can make it difficult to keep all your tools, parts and materials in order. All of this can make a facility grossly inefficient.

The good news is that there are several best practices and solutions to help manufacturers find shop floor efficiencies, which are essential in today's competitive manufacturing market.

> **A factory or facility that adopts a lean-oriented production layout strives to create a continuous flow of workers, material and information.**

By developing a plan, it's quite possible to have a clean, organized and efficient shop floor that keeps workers safe and helps take your company's productivity to the next level. After all, shop floor efficiencies can play a big role in financial success.

Here are five of the most effective techniques and technologies for maximizing available space and creating shop floor efficiencies.

Read more: Lean Manufacturing: The Advantages of Adopting Agile Operations

No. 1: Lean Manufacturing Techniques

If your shop floor seems to be perennially cluttered, perhaps there's a bigger issue: Are you failing to preplan workstation needs before work begins to improve productivity and reduce movement? Are tools organized so that workers have them at their fingertips when they need them?

If these issues sound familiar, consider adopting a lean manufacturing practice such as 5S (a reference

to five Japanese terms that describe the different steps for reducing waste). 5S is designed to pare down clutter and efficiently organize items, increasing productivity as a result.

Lean manufacturing is all about using time and space effectively. It aims to minimize the time workers spend looking for tools, materials or information. A factory or facility that adopts a lean-oriented production layout strives to create a continuous flow of workers, material and information.

When this process is designed well it avoids the buildup of inventory and excess equipment. And it can ensure you're operating in a safe, clean environment where work is done efficiently.

Read more about how MSC helps companies improve efficiency using 5S

No. 2: Machine Monitoring Systems

Cutting downtime—especially unplanned downtime—is an essential part of keeping costs down.

Remote machine monitoring can help. It uses sensors mounted directly on your equipment to monitor a machine's health by constantly transmitting data about its operations to the internet (vibration or temperature, for example), allowing technicians to monitor performance and provide help when needed. If a level is exceeded, a worker can immediately take action.

If you're not using remote machine monitoring, now could be the time to think about adopting it. The advantage of this process is that your machines have constant oversight and monitoring, which can lead to process efficiencies and boost productivity.

Machine condition monitoring is part of a trend toward leveraging data in manufacturing to squeeze out operating efficiencies, which is a business imperative. If harnessed correctly, this information can positively affect your productivity and bottom line.

Manufacturers can save time and costs by quickly diagnosing problems. This means issues are resolved more efficiently and downtime is shortened, optimizing production.

Read more: How to Deliver Manufacturing Productivity Through New Equipment and Technology

No. 3: Efficient Assembly Lines

Flexibility and flow are vital for an efficient assembly line setup.

A lean workplace layout means, for example, having all of your most important working elements—your tools and most-used parts—nearby.

Several tools can help you achieve this, including:

- Carts or conveyor systems that come in different sizes and designs.
    - Some may be adjusted to various heights or have tilting capabilities to enable access deep into a container with minimal bending at the waist and back. Some with rotating tabletops allow for easy reach to parts at waist level.
    - Easy-to-reach shelving for small parts may fold out of the way when empty.
    - And some carts can meet up with slat conveyors to receive loads at an easy access height.
- Workbenches, such as those made by Little Giant & Treston.
- Safety signage that eliminates worker confusion or hesitation by ensuring the employee knows that personal protective equipment is required in a given area, or if social distancing is required.
- Floor tape and other visual cues that clearly show a path to a machine or help ensure workers know about approved production flows.

Read more: Principles of Lean Process Improvement: Minimize Movement

No. 4: Smart Workstation Setups

Properly designed and configured workstations are an important element of a lean manufacturing system. They can help reduce waste, improve efficiency and provide employees with a relaxed working position where work movements follow the body's natural movements.

- ***STAK storage solutions*** from Stanley Black & Decker's Vidmar that adjust as needed to accommodate changing inventory needs.
- Treston's ***FiFo (First in First out) Flow Rack*** system is a flexible shelving, storage and picking solution that brings items from the warehouse near to your production, assembly or packing station, ensuring needed parts are at hand and no time is wasted searching for items.
- ***Shadow boards*** visually manage tools that are used often during the workday so they are put back in the same spot after use and no one needs to waste time searching for them.
- ***Organizer bins*** help keep clutter to a minimum and improve your ability to organize parts around a workstation.
- Workstation dividers, barriers and other ***partition devices*** keep workers safely divided and help improve social distancing.
- ***Matting*** reduces worker fatigue and improves safety by reducing the possibility of injuries.

No. 5: Managing Social Distancing

Meeting the regulations that prevent workplace exposure to COVID-19 is vital for businesses to resume production efficiently and restore employee confidence.

The Occupational Safety and Health Administration (OSHA) ***has issued a series of industry-specific alerts*** designed to keep workers safe. For the manufacturing industry, OSHA suggests such measures as:

- Establishing flexible work hours, such as staggered shifts.
- Practicing sensible social distancing, requiring workers to be 6 feet apart where possible.
- Limiting the duration of work activities and/or implementing innovative approaches where social distancing is a challenge, such as temporarily moving or repositioning workstations to create more distance or installing barriers (e.g., plexiglass shields) between workstations.
- Discouraging workers from using other workers' tools and equipment.

Digital tools and technological solutions are also playing a role in helping manufacturers maintain social distancing measures.

While some companies are using their existing Wi-Fi communication systems to monitor the distance between individuals (Wi-Fi can see the location of devices such as tablets, laptops or smartphones and show where individual users are stationed), others have adopted wireless proximity systems (typically wearable devices or mobile apps that transmit signals so their proximity to another device can be determined). These devices emit a signal (an alarm, flash, vibration or text message to each person—or a supervisor—if individuals become too close).

Other technologies to keep workers at a safe distance include Haimer's ***contactless tool management system***, which allows tool operators to change tools without any personal interaction with their co-workers and therefore avoid lengthy and costly workplace cleaning periods.

Read more: COVID-19 Social Distancing: Technologies and Tactics to Keep Your Workers Safe

What steps are you taking to optimize space on your facility's shop floor? Share your thoughts and insights in the comments below.

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