

Washing Parts in Manufacturing Cells 'Just In Time'

Cellular manufacturing has gained widespread acceptance in the manufacturing industry. The concept of breaking the plant floor into smaller, more manageable sub units has offered production supervisors the opportunity to be more flexible in scheduling and more disciplined in performing preventative maintenance tasks. These smaller manufacturing units are able to accommodate a wide range of product styles while remaining specialized in similar material. They can also enable the manufacturer to produce prototype products, short run parts and make minor engineering design changes without needing to affect other product lines. Neither do these cellular units halt or slow production of one unit to increase that of another.

While the cellular system increases productivity, it can still be slowed if cellular washing stations are not incorporated into the scheme. A central parts washer serving all cells is inefficient and a waste of company resources. If a plant employs a central washer, they can expect to see several downsides.

First, there will be a glut of heavy, dangerous forklift traffic as parts are transported to and from the washer. These loads not only will take up floor space, but will also require fork truck drivers who will be a monetary drain on the company since fork drivers only provide transport to and from the washer and the cost for their service adds nothing to the value of the product.

Further, the parts will be transported in large bins that are contaminated with soil. Dirty parts are dumped into these bins. The dirt on the parts contaminates the bins. Clean parts are transported in these dirty bins. This renders the washing process pointless since the clean parts are soiled once again as soon as they are exposed to the interior of a dirty transporting bin.

Large batches of product will also be sitting at the washer, waiting for their time in the cleaning system. Parts that sit for long periods of time are more difficult to wash than those that enter the washer immediately after they have been formed or ground or bored. It is much more difficult to break the surface tension of coolant, lubricant or oil when it has had time to dry on the part rather than that which has been recently applied. Idle time will result in a decrease of quality cleaning.

A central washer is also ill equipped to efficiently perform its task. By using one washer, all parts are forced through the same system. This is not as effective as sending the parts through a custom designed system to clean one specific style of parts.

Finally, time is wasted moving parts to and from manufacturing cells to the central washer. This unnecessary movement will slow production rates and add unnecessary cost to the project.

The answer to this problem is the incorporation of small part specific washers at each of the manufacturing cells. Installation of these washers will combat the wastefulness of the central system as well as result in higher quality parts.

The cells will be able to wash each part immediately after production. By doing this the manufacturer eliminates wait time and prevents lubricant from drying and becoming very difficult to remove. These units also significantly cut back on forklift traffic, making the plant floor a safer, less congested area as well as reducing labor costs.

Thus, the inventory of unwashed parts is eliminated, parts are cleaned more easily and parts are cleaned more effectively for lower cost per piece.

