Why Cleaning Equipment is Essential to Equipment Care

Why clean equipment? You clean to inspect and inspect to detect. Cleaning is the front line effort to maintain functional equipment. First let's look at the equipment in our facilities. Equipment is made up of components which have tight tolerances. These components make up the processes of our equipment and are made up of different types of parts. When parts are performing properly, the processes perform properly which allows the equipment to be employed to make products.

Dirt and contamination at the part level will cause the part to change and malfunction. This change in tolerances will increase variation in the operation. Eventually, this variation will create a quality issue. These malfunctions can be caused by fatigue due to excess heat or pressure, friction, cracks, misalignments or loose fasteners and will decrease the effectiveness and precision of the operating components. In other words, no matter the cause the equipment has changed and until an action is taken to return the machine to original condition, the machine will not perform correctly.

To find these abnormal states it sometimes requires a deep cleaning so the layer of material hiding the defects is removed. Many of these abnormal states can be hidden for a long time buried under dirt and debris. This contamination is from leaks, manufacturing waste and some times just can't be cleaned because access is not available. Many times these problems have existed for a long period of time, and we have convinced ourselves that it is only a minor problem and can be ignored.

From the time that an abnormal state exists to when it and the consequences are repaired there is a gradual loss of performance in the equipment. **The purpose of cleaning is to detect issues of this type when they are small or in their early stage.** A deep cleaning like brush cleaning parts will provide the opportunity to find loose fasteners, small abnormalities, wear points and patterns, and leaks.

Clean to Inspect

Inspect to Detect

A rule of thumb is 75% of maintenance problems can be prevented by properly training machine operators to detect abnormal conditions when they are in an early stage.