Dust Collector Maintenance

Part four of a five part series by Eugene A. Tarabek

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Ventilation is the key to economical and efficient peening operation. It is generally the most neglected item, especially the dust collector.

The three most common types of dust collectors are the bag house, ultra jet and cartridge type.

The bag house type has a series of bags that accumulate the dust particles on the inside of the bags. After a period of operation the dust collector needs to be turned off in order for the bags to be cleaned. This is generally accomplished through a five minute automatic timer. The timer allows the fan to coast to a stop (3 minutes) and then the shaker shakes the bags (2 minutes) to remove the build-up of particles.

How often the bags require shaking depends on the build-up of dust in the bags. This is determined by a manometer that is hooked up to the collector to measure the pressure differential between the dirty and clean side of the collector.

When the fan is off the reading will be zero. After shaking the bags and restarting the fan, the pressure differential will read approximately one inch. As the bags become clogged the pressure differential increases. Once the shaking does not significantly drop the pressure differential the bags need to be replaced.

The ultra jet and cartridge type collectors collect the contaminants on the outside of the filters. The cleaning is accomplished by pulsing clean, dry compressed air down inside the bags/filters, reversing the air flow, and by gravity the contaminants travel down the bag/filter and eventually fall into the hopper.

This type of collectors operate at a higher pressure differential, usually four to five inches, as they utilize the build-up of contaminants on the outside of the bag/cartridges to aid in filtering the air.

Dust Collector Maintenance Tips

Daily
• Check the manometer/magnehelic gauge reading. This will alert you to when the bags require shaking or when there is a problem developing inside the collector.
• Check the fan discharge for visible dust emissions. If a visible emission is present, turn off the fan and inspect the interior of the collector for worn or leaking bags/cartridges.
• Check the hopper. It should be emptied when level is one-third full. When emptying the hopper, check for usable abrasive as its presence indicates a problem with the system.

Monthly
• Shaker type collector - check shaker V Belts for cracks and tension.

• Check fan V Belts for proper tension.
• Check the duct system for leaks or any settled material accumulating. This material should be removed before it interferes with the air flow.

Quarterly
• Inspect baffle plates behind the inlet pipe, and if appreciable wear is evident, replace. If neglected, the abrasive action will shorten bag/cartridge life.

Annually
• The dust collector housing must be maintained in an air and water tight condition. Flange bolts should be tightened and seams recaulked whenever leaks are detected. Protection against corrosion is required usually in the form of periodic painting as needed.
• Access and inspection doors must be kept tightly closed, except when the collector is being worked on. Threaded members in clamps, etc. must be lubricated and protected from corrosion.
• Door seals and gaskets should be maintained in good condition and replaced when they lose resiliency or become damaged.
• Door seals and gaskets are not to be painted at any time.

Safety
Before any maintenance is attempted on any of your equipment, be sure to disconnect the main power source and lockout the main panel. After the main panel is locked out, attempt to start one of the motors to assure electrical power has been disconnected.

Be sure that all guards are replaced and properly protect all moving chains, belts, drives, etc. to assure protection when working in the area.

Available from Electronics Inc.

Guidelines for Centrifugal Blast Cleaning
by A.W. Mallory

$35.00

Note: Price does not include shipping.
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