



Better Environmental Solutions by Design™

Griffin Filters

Tech Notes

Winter Maintenance for your Dust Collector

Be Aware of What Winter Can Bring – Be Prepared for Winter

Many people are not aware that the cold weather can damage their Pulse Jet dust collector system. Freezing temperatures, snow and ice can do a job on your diaphragm valves and header assembly. The combination of colder temperatures and moisture can seriously harm the valves. And, the ambient temperatures do not have to be below freezing. As ambient temperatures cool, moisture in the system can freeze due to the cooling effect of the compressed air expanding as it is released by the diaphragm.

The pulse jet diaphragms can freeze in the open state and ice can rupture the internal diaphragms. The end result of an inoperable dust collector as these problems allow the compressed air header to lose the pressure and volume of air required to properly clean the filters. Compressed air is lost, energy costs increase and the dust cake builds on the filters restricting airflow. Pressure in the baghouse can build to the point that production is reduced or completely interrupted causing downtime and considerable financial loss.

HOW COLD WEATHER DAMAGES DUST COLLECTOR VALVES

One of the most common threats to dust collectors during the winter is ice formation on the diaphragm valves. A primary source of moisture comes from the core process of your compressed air system: air compressors collect not only the outside air, but also the air's moisture content. When the air is then compressed, so is its moisture content, causing the vapor to begin condensing. This condensation can even increase as the air passes through the increasingly cool system. Many compressors offer after coolers to remove much of the moisture, but trace amounts still pass through. As the air and condensation are released through your pulse mechanism, this trace moisture can then collect on the diaphragm valve, where it will freeze, causing the diaphragm to stick open or tear.

The consequences of a frozen valve include:

- **Wasted Compressed Air.** The valve will remain open, draining your compressed air supply and making your dust collector's cleaning mechanism ineffective.
- **Increased Operating Cost.** The compressor will run more often if not continuously trying to maintain a proper header pressure which increases energy consumption and raises operating costs.
- **Significant downtime.** If you do not have adequate spare parts, your collector may be down for one or more days while you wait for repair kits.

At minimum, we advise our customers to always use an air dryer in their compressed air systems. Even in warmer weather, moisture can cause significant harm to your dust collection system. Moisture or wet filters is never a good scenario in a baghouse. If you have any questions or concerns about your system, or if you would like to discuss other potential solutions, please feel free to call us at **(315) 451-5300**.

Silo Vents

The approach of winter is also a good time to inspect silo vents and provide preventative maintenance as required. While the silo vent does not have the same potential for a cold weather related performance problem as a Jet Pulse system, who wants to be on top of a silo working on a silo vent on a cold and windy day in the middle of winter should a problem occur. Silo vents are a mechanical system and components are eventually prone to failure due to wear and tear.

The Griffin Silo Filter Vent requires little maintenance, however as indicated in our manual **DAILY INSPECTION** and **PERIODIC MAINTENANCE** is recommended to assure best performance and compliance with local environmental regulations. An accurate log of inspection dates and maintenance work should be maintained in order to assure that the baghouse is functioning properly, and to determine how often maintenance is required.

DAILY INSPECTION

- Vent or blower outlet should be observed to be certain there are no visible emissions.
- Listen for any unusual noise, particularly during the shaking cycle.

PERIODIC MAINTENANCE

BAGS

- Check for signs of wear, stretching.
 - Leaking bags with holes may be loosened from shaker rack and tied off at the tubesheet until down time of collector allows replacement. Do not tie off more than 5% of total bags.
- When bags show general sign of wear, replace all bags at the same time.
- Avoid leakage and blinding caused by worn, dirty bags. Maintain proper silo pressurization with clean, well-maintained bags.
- Replace bag hooks as required to prevent mechanical damage and extend bag life.

SHAKER MECHANISM

- When all bags are out for replacement, perform necessary maintenance to the shaker mechanism.

- 1/6 hp shaker motors have pre-lubricated, sealed bearings. 1/4 hp motors should be lubricated with a lithium based grease every 6 months.
- Inspect v-belt drive for wear and check alignment.
- Check drive arm alignment.
- Make certain that the bag rack is hanging square.
- Place a drop of light oil on the hanger and drive arm bearings.
- Replace worn shaker parts to ensure proper operation.

BLOWER

- Check fan blades for wear or damage.
- Test run fan and listen for vibration.
- Lubricate motor with a lithium based grease every 6 months.

HOUSING

- Check door and flange gaskets to make certain they are sealing air tight. Prevent moisture intrusion into the silo.
- Wire brush and paint any spots of rust.