

## FILTER SAFETY AND INSPECTION METHODS

The safe use and maintenance of high pressure systems is an important factor to ensure both operator and service personnel safety. Of prime importance is the compressor filter system that consists of the final oil/water coalescing filter and the purification chambers. As part of this system are the check valve after the final oil/water separator, the pressure holding valve and auto-drain system.

All filters and separators that have a pressure change or cycle have to be checked for any sign of deterioration.

The other important factor is ensuring the compressor avoids short operational cycles and shortens the service life of the components. The hour meter and the filter system cycle counter monitor this. Typically the cycle counter value should be about 4 to 4.5 times the number of operating hours.

Filter systems are not designed for environments where chlorides or other contaminants may be in the ambient air. Some alloys used in the filter systems are more susceptible to stress cracking and corrosion. Preventative maintenance is critical to ensure operator safety.

### INSPECTION AND MAINTENANCE:

1. Ensure the filter service and cartridge changes are done every 6 months or when the filter cartridge life is reached. Service is required according to whichever comes first. The CSA standard calls for service every 6 months.
2. Service the check valve to make sure it is operating correctly and no short compressor operator cycles are occurring.
3. Verify the cycle counter number against the hour meter for the correct ratio of cycles per hours of operation.
4. Do a very careful cleaning of the final separator and filter chambers in advance of an inspection.
5. Use a light and do a careful inspection of the oil/water separator and the filter chambers to look for any sign of surface cracking or corrosion.
6. If any sign of surface cracking or corrosion is evident the chamber must be removed from service and a new CRN certified chamber installed in its place.

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7. Both the upper and lower caps must be removed in order to do a full and complete inspection of the chamber.
8. If anything unusual is found, send a photo to the factory for guidance prior to putting the item back in service.
9. All filter systems and the components within have a rated life and pressure cycle limit. This information is available from the specific manufacturer.

Within the industry all pressure components are designed to a standard. Designs are normally done to normal and standard conditions. Subjecting pressure components to environmental chemicals in the air or temperatures below freezing can have a life reducing effect.

This also applies to excessive pressure cycles. The larger the pressure change the shorter the component cycle life. It is recommended that filter component selection should have a design pressure rating above the system operating pressure. This improves the pressure component safety factor as well as increasing cycle life potential.

Jordair has discontinued the supply of SS, TS and NS type filter cartridges. Operator safety is our main concern. These old filter systems are all over 15-years in service and the compressor were not originally supplied with filter system cycle counters. There is not any practical way to confirm the actual pressure cycles only the operating hours.

Proper inspection, service and maintenance will help to keep these systems safe to operate and provide safety to the operational personnel.

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