Number: FS-2016-01 Date: March 18, 2016

Model: ***All Buses With SKF Air Dryers*** ***Approved:***

Robert L. Birdwell, Executive Director
Quality Control & Field Service

Subject: Use Of Non-SKF Cartridges In SKF Air Dryers

SKF has notified us that the use of non-SKF cartridges in the SKF air dryers could result in an unsafe failure.

They report that the canister can experience an 'explosive release' due to over pressurization.

We recommend only using genuine SKF cartidges in the SKF dryers.

RLB:rlb

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SAFETY NOTICE FOR END USERS OF SKF BRAKEMASTER AIR DRYERS

March 14, 2016

It has come to our attention that some cartridges not manufactured by SKF that are being sold for use with SKF Air Dryers are unsafe. SKF has performed tests on two non-SKF cartridges used with SKF air dryers and both failed unsafely when subjected to over-pressurization. The failures resulted in a rapid and complete separation of the canister from the base plate. This failure could result in an explosive release of the canister.

SKF wants to remind all end use customers to only use genuine SKF cartridges in your SKF air dryers. In addition, if any of your air dryers today are using non-genuine SKF cartridges, we ask that you remove them immediately and replace them with genuine SKF cartridges.

Please let us know if you have any questions or concerns.

Thank you for your cooperation.

SKF USA, Inc.
Sealing Solutions
900 N. State Street
Elgin, IL 60123

Mohawk cartridge evaluation

Leslie Kern
Product Manager

2/12/2016

SKF

Mohawk cartridge evaluation-

Safety related test

- Hydrostatic Burst testing evaluates performance in case of over-pressurization
- This provides redundancy in case of failure of the pressure relieve valve
- Minimum Industry standard is 400 psi (2 times the pressure relief valve rating)
- The Mohawk canister failed right at the minimum requirement of 400 psi. Given further sampling this could prove unsafe.
- The Mohawk failure mode resulted in a rapid and complete separation of the canister from the base plate
- The result in the field would have been an **explosive release of the canister.**

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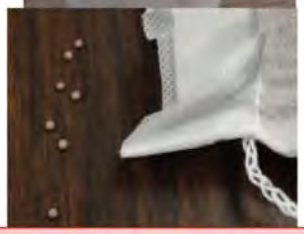
Desiccant Bag comparison



Mohawk Loose stitch allowed desiccant to escape

Machine pressed vs. stitched bag

- Gaps in closure allowed desiccant to escape
  - Potential air system contamination
  - Potential air blockage at filter plate
- Cloth material has looser mesh
  - Potentially less effective filtration
  - Bag integrity over time may be compromised
  - Filtration tests to be scheduled

Mohawk Desiccant stuck in air holes of filter plate

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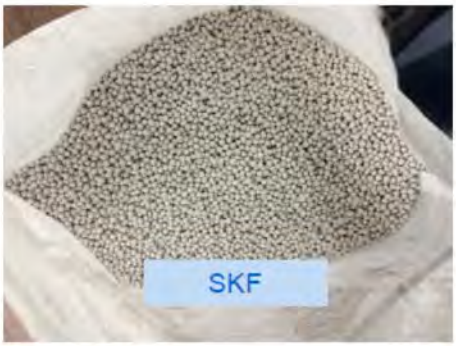
Desiccant comparison

- Desiccant
  - Visually different desiccant
  - Performance testing to be scheduled
- Desiccant compression
  - Mohawk spring is 10% shorter than SKF specification
  - Potential for movement and pulverization
    - Air system contamination
    - Removing drying capacity of air dryer



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Mohawk Filter plate molding issue

Plastic filter plate has manufacturing defects due to plastic overflow covering holes

- Potential for floating plastic debris
- Prevents the full flow of air
- Uneven distribution of air over desiccant could impact drying performance

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Filter Comparison

- Separator media less porous compared to SKF
  - Potentially less effective
  - Tear in separator material could further degrade over time and travel causing blockage

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Discussion

- Major concern regarding safety based on results of hydrostatic burst testing
- Concern that desiccant could travel and cause system contamination and create air flow restriction which would place burden on compressor
- Performance testing for flow restrictions, dew point and filtration need to be conducted as soon as more samples are available
- SKF does not recommend Mohawk as replacement canister

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