Catch-All®

it's the CORE that counts!

Our reformulated moulded core offers a simple solution for today's complex systems

Compatible with CFC, HCFC and HFC refrigerants – including R-410A

Twice the water capacity while maintaining excellent acid and contaminant removal ability

Compatible with mineral oil, alkylbenzene and polyolester lubricants

The most advanced filter-drier available . . .
Made by the most experienced manufacturer

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Filter-Drier Selection for R-410A Systems

With the increased acceptance and continued growth of R-410A systems, questions and differences of opinion have developed within the industry regarding the use of filter-driers on these systems, and the optimum characteristics of these products. Sporlan calls on approximately 55 years of experience in filter-drier design, development, and application on systems. This experience has allowed us to develop an extensive understanding of system chemistry. Based on this background, Sporlan feels confident to discuss questions regarding desiccant selection, system filtration, and working pressure requirements of the Catch-All® Filter-Drier for R-410A/POE lubricant systems.

Desiccant selection and packaging (granular or moulded core types) differentiate filter-driers on the market. Most filter-driers contain a desiccant called molecular sieve or a combination of molecular sieve and activated alumina. Molecular sieve has excellent water capacity, but virtually no organic acid capacity. Activated alumina removes acids and some moisture from a system.

HFC systems need filter-driers with respectable water capacities simply due to the likelihood of higher moisture levels with the handling of hygroscopic (water absorbing) POE lubricants. However, filter-driers with only molecular sieve are not effective in removing organic acids. Organic acid can result from POE lubricant reactions with water and/or air in the system. The Catch-All Filter-Drier uses an appropriate blend of molecular sieve and activated alumina to remove a large range of contaminants that can exist in R-410A/POE lubricant systems. The desiccants used in the Catch-All are moulded into a core, thereby eliminating the possibility of desiccant attrition.

Some questions exist about the requirements of R-410A/POE lubricant systems. Here are Sporlan's answers to questions about the application of the Catch-All in these systems:

1) **Do R-410A systems require a molecular sieve that excludes R-32 refrigerant molecules?** R-410A contains R-32 in the blend. There has been discussion that a particular molecular sieve is required for these systems due to the absorption of R-32 by the molecular sieve. Sporlan and independent laboratories have evaluated the compatibility and dry-down behaviour of the molecular sieve used in the Catch-All. Testing demonstrates that special desiccants are NOT required. Results show the molecular sieve in the Catch-All effectively removes water in R-410A systems. When R-410A was analysed after exposure to the desiccant, the molecular sieve did not change the refrigerant blend.

2) **Does activated alumina cause harm to R-410A/POE lubricant systems?** No. Sporlan has extensively tested and analysed alumina's behaviour in R-410A/POE lubricant systems. Laboratory and system testing continue to support the use of activated alumina in the liquid and/or suction line of these systems.

3) **If molecular sieve removes moisture before it reacts with POE lubricant to form acid, is activated alumina necessary?** Yes. The potential for acid from various contaminants, and/or improperly operation systems, warrants the use of activated alumina in the Catch-All. Moisture can react with the POE lubricant in the compressor prior to being removed by the filter-drier(s). Air (from a poor evacuation) in a system can cause the formation of organic acids. Activated alumina removes these acids before they react with other materials in the system.

   A recent industry study statistically linked air to acid formation in HFC/POE lubricant systems. Acid was statistically linked to increased compressor wear. Since filter-driers will not remove air from a system, activated alumina will aid in maximizing compressor life by removing acids if they exist in the system. Conversely, a 100% molecular sieve filter-drier will not effectively remove these acids.

4) **What is the design pressure of liquid line Catch-Alls?** C-030 through C-600 and HPC-100 Series Catch-All Filter-Driers have a 650 psig rating for R-410A.

Based on design considerations and extensive testing, the Sporlan Catch-All Filter-Drier is the ideal choice for R-410A/POE lubricant systems