



Filters Driers

Filters driers contributing to maintain the cleanliness of circuits



ENGINEERING YOUR SUCCESS.

Filters Driers

HFC refrigerant and their associated oils are very hygroscopic more than CFC or HCFC and their mineral or alkyl benzene oils. The Polyol Esther Oil (POE) is made with of combination of ester acid and alcohol.

If a moisture content is more important than 75ppm, the mixture oil and water will generate acid and alcohol, it is a reversible process. At the same time, there could be a presence of moisture into the system wich could generate acid.

To prevent risk of acids generation, chemical products are used:

- Molecular sieve is used to trap moisture in channels of 3Å size. Channels can trap only the water molecules (the water molecules are smaller than refrigerant molecules).
The molecular sieve efficiency is roughly three times higher than activated alumina.
- Activated alumina is used to trap acid from the refrigerant and/or oil and moisture when the refrigerant has high content of moisture. Activated Alumina does not comply with low content of moisture as required with HFC refrigerants.

These chemical products are present in the filter driers and we recommend to use an efficient filter drier in the liquid line (PR / Catch-All®) of the thermodynamic system.

The **Filters Driers** can be sealed, for small systems, or flanged for larger systems. Chemical components can be filled in a compact bead or in compacted solid cores. Solid cores used chemical components moulded with a resin. This kind of filter drier is suitable for mobile system.

Chemical components inside filter driers are used alone or blended, it depends of the machine (rack, chiller etc...) and of the type of refrigerants used. A filter drier designed into a completely sealed refrigeration circuit, (ice machine, chiller etc.) can be supplied with a filter drier containing 100% molecular sieve.

In other machine designs, such as condensing units, the equipment is intended to be serviced. In this type of application, a filter drier with a blend of molecular sieve and activated alumina should be used. Sometimes moisture can become trapped inside the circuit. This could be due to the deterioration of the installation, as a result of a incomplete vacuum operation at start up, which could result in acids being formed. The use of a filter drier with activated alumina captures acids, ensuring longer system life.

The **Filter Drier** works in one direction only and is installed in the liquid line. In a reversible system like a heat pump or refrigeration unit with a defrosting by reversible cycle, the refrigerant must flow in two directions. For this application a special Bi flow filter, HPC, can be used. It is made with two special valve plates one at each end and traps the moisture, dirt and acids in both directions.

The efficiency of filters driers can also be checked by the addition of a sight glass with moisture indicator. When the filter drier is clogged, a few bubbles will appear in the sight glass and the temperature of the outlet is normally lower than in the inlet.



For all requests, consult your nearest Parker Sporlan Wholesaler or contact us on: racecustomerservice@parker.com / www.parker.com/race

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