

TECH TIPS

PERFORMANCE PICTOGRAMS

Decode The Pictograms On Hydraulic Filters.

The intent of the hydraulic filter is to promote long system life by keeping damaging contaminants out of the hydraulic fluid. The filter needs to 1) remove the contaminant particles that are of a size considered most damaging to that particular hydraulic system, 2) hold enough contaminant to last the recommended service interval before plugging, 3) have low resistance to fluid flow and 4) be structurally sound to withstand the pressures and pressure cycles of that hydraulic system.

Some hydraulic filters include industry-accepted pictograms to identify the performance of the filter based on industry standardized laboratory tests. This allows easy comparison of the performance ratings of different brands of filters to be used on the same application. Following are the four major criteria for hydraulic filter performance, the pictogram used for each, and a brief explanation of what each pictogram means.

Capacity and Efficiency:

The ISO 16889 industry standard multipass test is used to identify the number of particles of a given size that pass through the filter as well the total amount of contaminant that the filter holds before it plugs. In this example, this test tells us that:

- this filter has a minimum contaminant holding capacity of 85 grams of a standardized test contaminant.
- this filter has a beta ratio of 2, which indicates that this filter removes at least 50% of contaminant particles 10 microns in size or larger.
- the fluid flow rate at which the filter was tested was 1.2 liters per second.

Structural Integrity (Bubble Point):

The ISO 2942 industry standard test is used to ensure that the filter media does not leak due to holes or improper assembly. In this example, this test tells us that:

- this filter has a bubble point greater than 0.75 kilopascal.

Collapse Strength:

The ISO 2941 industry standard test is used to define the minimum acceptable differential pressure at which a structural failure of the filter element will occur. In this example, this test tells us that:

- the minimum pressure required to collapse this filter is 1380 kilopascals.

Resistance to Flow:

This test is used to show the maximum allowable differential pressure of a clean filter element tested at a prescribed flow and fluid viscosity. In this example, this test tells us that:

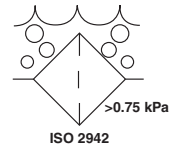
- the initial restriction or differential pressure caused by the filter element must be less than 120 kilopascals when using a fluid with a viscosity of 450 centistokes at a flow rate of 1.2 liters per second.

It is critical that the correct hydraulic filter be used for the specific application. Each filter must be designed to best protect system components, last long enough to achieve the desired service interval, allow proper fluid flow and maintain structural integrity.

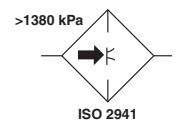
Capacity and Efficiency



Structural Integrity (Bubble Point)



Collapse Strength



Resistance to Flow

