

Optimicon® Pulse

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Optimised Filter Elements for Pressure Fluctuations in Hydraulic Systems

As part of its new Optimicon® element technology, HYDAC is now offering a filter element optimised to fit application-specific requirements, the Optimicon® Pulse. The new filter element technology has been designed especially for applications with frequent pressure fluctuations. Pressure fluctuations in hydraulic systems can be caused by the movement of cylinder pistons or the charging of accumulators, among other factors, and are therefore unavoidable. The frequency of fluctuations varies considerably depending on the application.

For example, in an injection moulding machine, the movement of the clamping unit causes a high pressure change. Efficient production demands a high throughput time, resulting in a high pressure fluctuation rate.

In highly stressed systems such as these, the components are designed to be fatigue-resistant. However, the filter element is often overlooked. The dynamic stress leads to a rapid fatigue fracture of the filter mesh pack, which means that the required oil cleanliness can no longer be attained. In addition, the filter pleats are pressed together during high pressure fluctuations, blocking the flow channels of the filter and leading to a differential pressure increase under dynamic stress.

The new HYDAC Optimicon® Pulse filter element can withstand these dynamic stresses. Special elastic materials in the filter mesh pack give the filter element a high fatigue strength. An innovative filter mesh pack geometry also successfully prevents blocks from forming in the filter element and reduces the differential pressure increase. Additionally, the Optimicon® Pulse filter element is fitted with the tried and tested Stat-Free® technology, which effectively prevents electrostatic discharge from forming in the hydraulic system.

The Optimicon® Pulse filter elements are tested for fatigue strength in a special pulsation test procedure. It has been shown that the innovative, application-specific elements can withstand a greater load cycle than standard elements.

In conclusion, using the new HYDAC Optimicon® Pulse filter elements in dynamic, highly stressed systems can prevent dirt penetration caused by a destroyed filter mesh pack.