

Maintenance of Hydraulic and Ventilating Filters

General

The task of filters is to remove solid particles from hydraulic and lubrication systems. As a result the filter contaminates itself.

Ventilating filters contaminate due to the dusty ambient air.

To avoid malfunctions in the system, the maintenance intervals recommended by the manufacturer should be observed.

In filtration we differentiate between 2 filtration principles:

- › Depth filters with chaotically arranged fibres (e.g. glass fibres, polyester fibres)
- › Surface filters with geometrically defined gaps (e.g. filter mesh of metal or plastic wires)

With **depth filters** open pores or gaps in the filter material are clogged by different sized dirt particles and thus the differential pressure continuously increases. **Cleaning such a filter is not possible.**

Surface filters hold back all particles which are larger than the mesh size. Particularly strainers with a mesh size smaller 60 µm might be completely clogged at high contamination. **These filters are cleanable.**

Ventilating filters

ARGO-HYTOS ventilating filters are depth filters. These filters cannot be cleaned.

For operational safety reasons and to simplify maintenance, the housings cannot be opened. Changing the filter element is therefore not possible.

ARGO-HYTOS recommends changing the ventilating filters every 1000 operating hours, at least once a year. This applies to the operation of filters with the nominal volume flow rates specified by ARGO-HYTOS.



Ventilating filters

Hydraulic Filters

Maintaining filters with clogging indicator

By the use of a clogging indicator the pending filter maintenance is indicated and this results in an optimum utilization of the dirt holding capacity.

Clogging of the filter element and thus the differential pressure increase with growing lifetime.

The clogging indicator monitors the differential pressure and generates an electrical and / or optical signal as soon as the preset value is reached.

It should be noted that:

The differential pressure at the filter element increases not just due to clogging but also with the volume flow and the kinematic viscosity of the hydraulic fluid.

Therefore, the signal of the clogging indicator can be ignored if it occurs at high viscosity (low temperature of the hydraulic fluid) or exceeded flow rate.

So the filter element has to be replaced as soon as possible if the clogging indicator responds and causes a continuous signal at operating temperature and nominal flow.

Maintaining filters without clogging indicator

Depth filters

Should the ARGO-HYTOS filters be operated with the volume flow rates indicated in the catalogue with a medium dirt ingress of 0.07 g per l/min / 0.27 g per g, a **maintenance interval of 1000 operating hours, at least once a year** is recommended.

Taking into account the specific operating conditions, the maintenance interval may differ from this indication.



Depth filter (EXAPOR®MAX 2 filter element)

Surface filters

Due to their filter fineness, normally larger than 60 µm, surface filters cannot produce a sufficient oil cleanliness and are therefore used to protect the system.

The robust design allows the use in many applications throughout the entire lifetime, provided that visual inspections are regularly performed and that the filter elements are cleaned if necessary.

For cleaning we recommend:

- › Cleaning in ultrasonic bath for a few minutes. As an alternative, put filter in cleaning agent for approx. 15 minutes and remove dirt from the outside using a brush.
- › Then flush with fresh cleaning fluid from the inside to the outside.
- › Blow out with compressed air from the inside to the outside.

In any case be careful that no dirt enters the inner side (clean oil side) of the suction filter.

This kind of **cleaning can be performed up to 3 times**, then the filter has to be replaced.

Exceptions

Suction filter without sealing point to the surrounding

To guarantee lowest differential pressures in the suction line, a fixed maintenance interval is advisable.

The ARGO-HYTOS suction filters of series AS are surface filters and have a robust design with metal end caps, inner frame and filter mesh, so that **cleaning as above described is possible**.



Suction filter without sealing point to the surrounding

Suction filter with sealing point to the surrounding

The operational reliability of seals reduces with increasing lifetime. Thus suction filters as e.g. products of the ARGO-HYTOS series S0 have to be replaced regularly, preferably in connection with the change of the hydraulic fluid

It is recommended to install a new filter every **2000 operating hours, at least every 2 years**. In this case be careful that no dirt enters the inner side (clean oil side) of the suction filter.

Suction filters with synthetic fabric should not be cleaned but replaced.



Suction filter with synthetic fabric and sealing point to the surrounding

High pressure safety filter

Due to their design it is not economical to replace filter elements of high pressure safety filters, so that a new filter has to be installed when servicing.

Servicing should always be performed when the system is repaired as a result of a larger damage.



High pressure safety filters

Additional information

ARGO-HYTOS recommends to check the seals with each filter maintenance and replace them if necessary. Maintenance kits consisting e.g. of filter element, housing seal and maintenance instructions can be put together individually.

All by ARGO-HYTOS announced functionalities of the complete filters as well as the excellent characteristics of the filter element can only be guaranteed when using original ARGO-HYTOS spare parts.