



HYDAC INTERNATIONAL

**Breathers and
Filler Breathers**

Your Professional Partner for Breathers and Filler Breathers.

HYDAC Quality.

HYDAC filtration technology is the culmination of rigorous laboratory testing as well as practical field-testing. It offers a complete range of filters for liquid and gaseous media. The HYDAC Filter Division manufactures products tailored to market requirements and to the highest quality standards, backed by modern machinery and a large production capacity. HYDAC Filtration Technology is based on intensive basic research, technical problem solving, specific customer requirements, and international standardization.

HYDAC Products.

Our wide range of products, combined with our expertise in development, manufacturing, sales and service enables the widest range of requirements to be met worldwide.

Our quality and environment certification to ISO 9001/2000 and ISO 14001 denote first class quality and responsible management of our resources.

System solutions.

One supplier. One contact.

Wherever you need us, we are there to help you find the most effective solution – for every application, from components to a complete system.

HYDAC is represented in all industries.

For more than 40 years and with over 5,000 employees, 40 overseas subsidiaries and over 500 sales and service partners worldwide, we are in close contact with our customers, providing engineering advice, production, installation and service. Core industries include:

Mobile Hydraulics:

- Construction Machinery
- Agricultural Machinery
- Municipal Machines
- Fork Lifts
- Mining Machinery

Industrial Hydraulics:

- Machine Tools
- Injection Moulding Machines
- Paper Industry
- Power Plant Technology
- Mining
- Automotive Industry
- Iron/Steel/Metal Production
- Oil and Gas Industry
- Wind Energy





The importance of top quality air filters.

Air filters are an essential component of every hydraulic system. They guarantee that the air drawn into the tank as a result of fluctuations in the oil level is filtered reliably.

Very often too little attention is paid to air filters, with disastrous consequences.

They are seen as mass-produced items and are selected purely on price. This misapprehension can lead to inefficiency in the system and even to failure of components.

By using first class, cost-effective HYDAC breather filters, contamination is prevented from entering the system from the air – which means:

Longer life expectancy and availability for the whole system.

Top quality filter elements.

HYDAC air filter elements consist of high quality phenolic resin impregnated paper and provide a low-cost, yet very efficient protection against airborne contamination.

In contrast to the foam material elements, phenolic resin impregnated paper is resistant to water and therefore also ensures optimum component protection when water is drawn in.

HYDAC paper elements for air filters have a filtration rating of 3 µm at a separation value of $\beta = 500$. This corresponds to a retention rate of 99.5 % for particles of 2 µm and 100 % for particles of 3 µm.

Recommendations.

Higher specifications for cleanliness of the operating fluid result in increased demands on the filtration concept used. Accordingly, HYDAC recommends selecting an air filter that has at least the same filtration rating as the finest system filter in the hydraulic circuit.

The following changing intervals are recommended:

For air breathers without clogging indicator:

Please change your air filter every 6 months or at every service interval.

For air breathers with clogging indicators:

Please change your air filter at 0.2 pressure drop since a higher pressure drop could lead to cavitation at the pump.

Special features of the filter housing.

The durable HYDAC air filter housings are made from strong metal or glass fibre reinforced polyamide (PA6). They are particularly appropriate for the punishing demands of mobile applications.

Options:

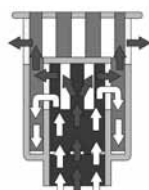
HYDAC's unique anti-splash feature prevents oil from splashing out of the tank via the breather filter (e.g. when the mobile machine is driving mode) (not available for BF 8 and 9 or BF/ELF 3 and 4).

Visual clogging indicator (available for BF 7, 8 and 9)

Dipstick (only on BF 10, 30)

Integrated check/bypass valve for pressurized tanks (not for BF/ELF 10, 30 and 5)

Custom thread (available on BF 7, 10 and 30) and cap with company logo (available for BF/ELF 7, 10 and 30)



Anti-splash protection



Visual clogging indicator



BF 10
with dipstick



Cap with company name /
company logo



Custom thread

Breather filters and dryers.

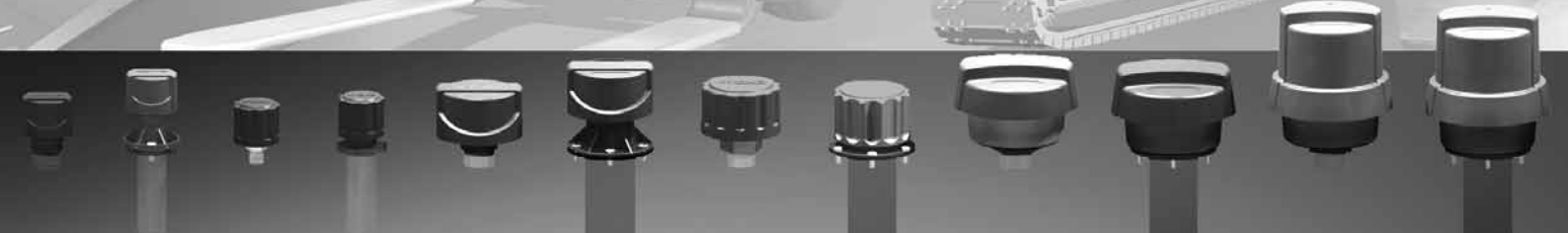
Drymicron breather filters and dryers prevent contamination particles and water vapour from entering the tank (see "Breather Dryer BDL/BDM" and "BDE" sections of the Filter Catalogue).



BDL / BDM



BDE



BF 10 ELF 10 BF 4 ELF 4 BF 30 ELF 30 BF 3 ELF 3 BF 7 ELF 7 BF 72 ELF 72

Technical Details	BF 10	ELF 10	BF 4	ELF 4	BF 30	ELF 30	BF 3	ELF 3	BF 7	ELF 7	BF 72	ELF 72
Litres/min (at $\Delta p = 0.01$ bar)	200	200	125	125	400	400	400	400	1000	1000	1200	1200
Litres/min (at $\Delta p = 0.04$ bar)	380	380	340	340	880	880	880	880	1800	1800	2100	2100
Connection type	Thread	Flange	Thread	Flange	Thread	Flange	Thread	Flange	Thread	Flange	Thread	Flange
Connection size	1/2 NPT, G1/4, M22x1.5, G3/8, SAE-12 male	3 hole flange	G 1/4 male	3 hole flange	G3/4, 3/4 NPT, M30x1.5, SAE-12, M42x2	6 hole flange	G3/4, G1/2 G3/8 male	6 hole flange	3/4 NPT, G1 male, 1 5/16-12 UN	6 hole flange	3/4 NPT, G1 male, 1 5/16-12 UN	6 hole flange
Element media	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper	3 μ m paper
Replaceable element	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Material of cap	Polyamide	Polyamide	Steel	Steel	Polyamide	Polyamide	Steel	Steel	Polyamide	Polyamide	Polyamide	Polyamide
Material of strainer	–	Polyamide	–	Polyamide	–	Polyamide	–	Polyamide	–	Polyamide	–	Polyamide
Clogging indicator	–	–	–	–	–	–	–	–	Optional	Optional	Optional	Optional

Options	BF 10	ELF 10	BF 4	ELF 4	BF 30	ELF 30	BF 3	ELF 3	BF 7	ELF 7	BF 72	ELF 72
Check valve	Optional	Optional	–	–	Optional	Optional	Optional	Optional	–	–	–	–
Anti-splash	Optional	Optional	–	–	Optional	Optional	–	–	Optional	Optional	Optional	Optional
Dipstick	Optional	Optional	–	–	Optional	Optional	Optional	Optional	–	–	–	–

For sizes BF/ELF 10 to BF/ELF 72, we recommend sizing the filters according to differential pressure ($\Delta p = 0.01$ bar)!



BF 5 ELF 5 BF 52 ELF 52 BF 8 BF 9

Technical Details	BF 5	ELF 5	BF 52	ELF 52	BF 8	BF 9
Litres/min (at $v = 20 \text{ m/s}$)	2600	2600	3600	3600	5500	9700
Litres/min (at $\Delta p = 0.01 \text{ bar}$)	3000	3000	5000	5000	10000	15000
Connection type	Thread	Thread	Thread	Thread	Flange	Flange
Connection size	G2 1/2 female	G2 1/2, G3 male	G2 1/2 female	G2 1/2, G3 male	DN93, 4 hole flange	DN125 8 hole flange
Element media	3 μm paper	3 μm paper	3 μm paper	3 μm paper	1 μm , 2 μm Betamicron	2 μm Betamicron
Replaceable element	Yes	Yes	Yes	Yes	Yes	Yes
Material of cap	Steel	Steel	Steel	Steel	Steel	Aluminium
Material of strainer	–	Steel	–	Steel	–	–
Clogging indicator	–	–	–	–	Optional	Optional

Options	BF 5	ELF 5	BF 52	ELF 52	BF 8	BF 9
Check valve	Optional	Optional	Optional	Optional	–	–
Anti-splash	–	–	–	–	–	–
Dipstick	–	–	–	–	–	–

For sizes BF 5 to BF 9, we recommend sizing the filters according to flow velocity ($v = 20 \text{ m/s}$)!

The information in this brochure relates to the operating conditions and applications described.
For applications and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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