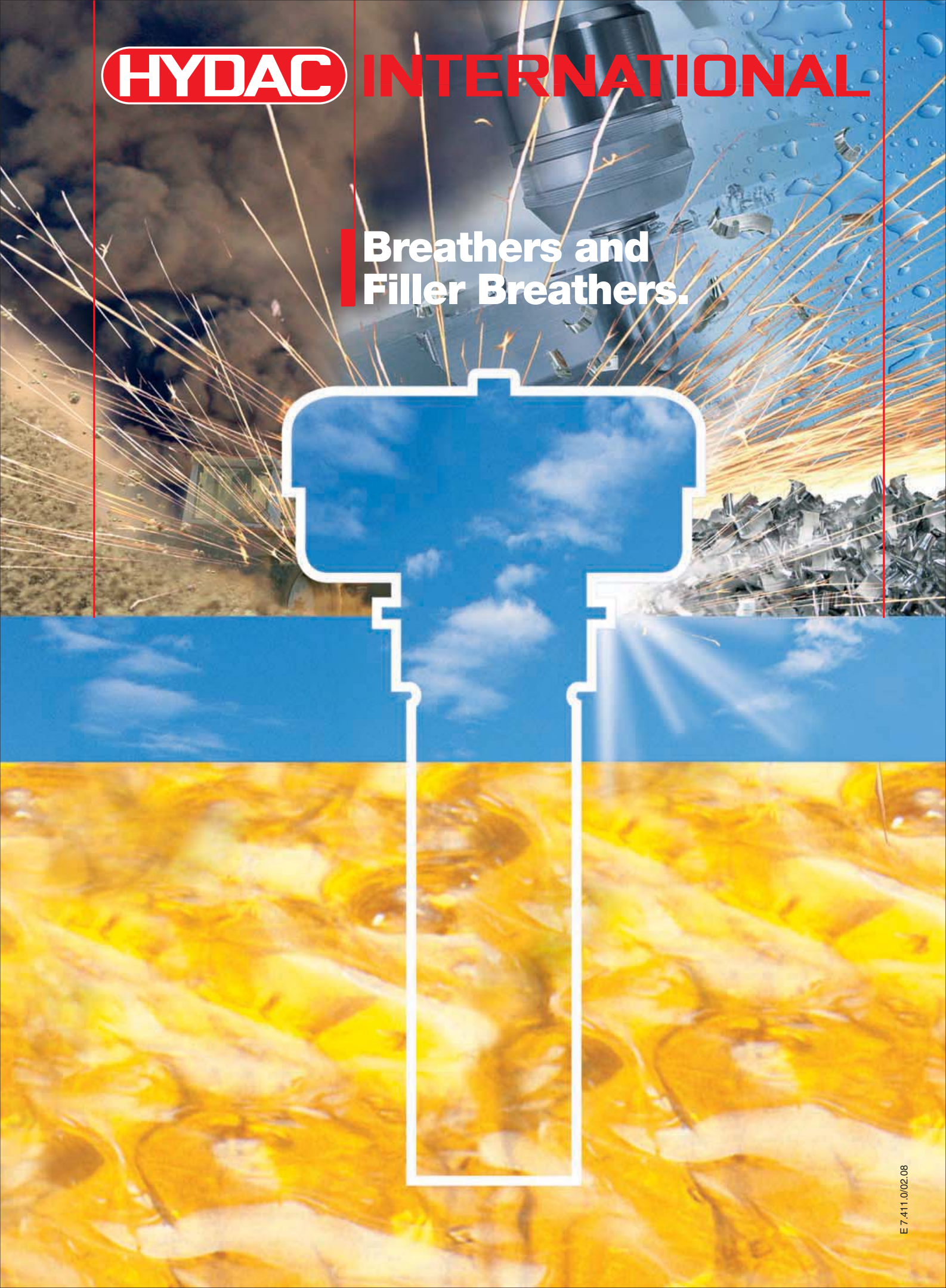




HYDAC INTERNATIONAL

**Breathers and
Filler Breathers.**



Your Professional Partner for Breathers and Filler Breathers.

HYDAC Quality.

HYDAC Filtration Technology is the result of tests carried out in our laboratories and of the experience gained in the field. 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, the solving of technical problems, specific customer requirements, and international standardisation.

HYDAC Products.

Our wide range of products, combined with our expertise in development, manufacturing, sales and service enables various industries worldwide to overcome the most diverse problems. 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 Applications.

For more than 40 years and with over 5,000 employees, 40 offices and with over 500 service partners HYDAC offers a combination of fluid technology, electronics and engineering. The industries include, but is in no way limited to:

Mobile Hydraulics:

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

Industrial Hydraulics:

- Machine Tools
- Injection Moulding
- Paper Industry
- Power Plants
- Mining Industry
- Automotive Production
- Iron-Steel-Metal
- Oil and Gas Industries
- Wind Power



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 $3\ \mu\text{m}$ at a separation value of $\beta = 500$, as standard. This corresponds to a retention rate of 99.5% for particles of $2\ \mu\text{m}$ and 100% for particles of $3\ \mu\text{m}$.

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:

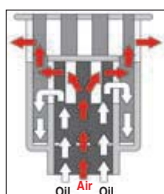
- For air breathers without clogging indicator:
Please change your air filter every 6 months or at every maintenance interval.
- For air breathers with clogging indicators:
Please change your air filter at 0.2 pressure drop since a higher pressure drop could lead to cavitation at the pump.

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 along) (not available for BF 8 and 9 or BF/ELF 3 and 4).
- Visual clogging indicator (available for BF 7, 8 and 9)
- Dipstick and integral check/bypass valve for pressurized tanks (not for BF 8 and 9)
- Customized 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



Customized thread

Breather filters and dryers.

Drymicron breather filters and dryers prevent contamination particles and water vapour from entering the tank (see Filter Catalogue, page 283).

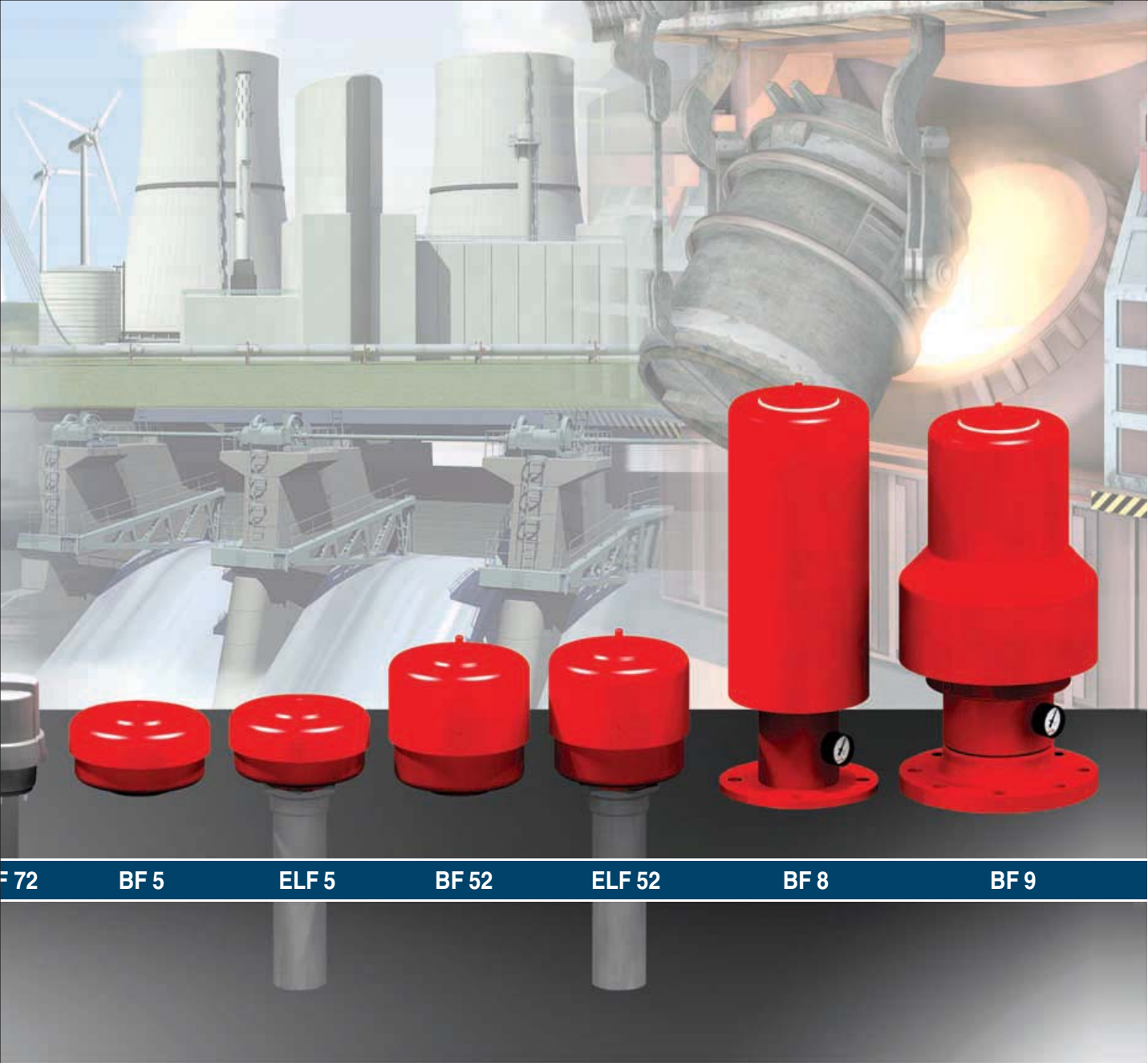




Technical Details	BF 10	ELF 10	BF 4	ELF 4	BF 30	ELF 30	BF 3	ELF 3	BF 7
Litres/min (at $\Delta p = 0.01$ bar)	200	200	125	125	400	400	400	400	1000
Litres/min (at $\Delta p = 0.04$ bar)	380	380	340	340	880	880	880	880	1800
Connection Type	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded
Connection Size(s)	1/2 NPT, G1/4 M22x1.5 SAE-12 male	3 Hole Flange	G1/4 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
Element Media	3 μm Paper	3 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper
Replaceable Element	No	No	No	No	No	No	No	No	Yes
Cap Material	Polyamide	Polyamide	Steel	Steel	Polyamide	Polyamide	Steel	Steel	Polyamide
Strainer Material	–	Polyamide	–	Polyamide	–	Polyamide	–	Polyamide	–
Clogging Indicator	–	–	–	–	–	–	–	–	Optional

Options	BF 10	ELF 10	BF 4	ELF 4	BF 30	ELF 30	BF 3	ELF 3	BF 7
Check Valve	Optional	Optional	–	–	Optional	Optional	Optional	Optional	–
Anti-Splash	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 72
BF 5
ELF 5
BF 52
ELF 52
BF 8
BF 9

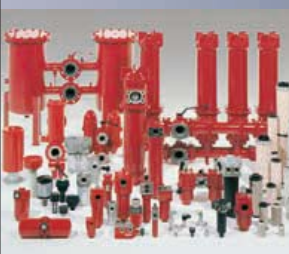
ELF 7	BF 72	ELF 72	Technical Details	BF 5	ELF 5	BF 52	ELF 52	BF 8	BF 9
1000	1200	1200	Litres/min (at $v = 20 \text{ m/s}$)	2600	2600	3600	3600	5500	9700
1800	2100	2100	Litres/min (at $\Delta p = 0.01 \text{ bar}$)	3000	3000	5000	5000	10000	15000
Flanged	Threaded	Flanged	Connection Type	Threaded	Threaded	Threaded	Threaded	Flange	Flange
6 Hole Flange	3/4 NPT G1 male	6 Hole Flange	Connection Size(s)	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
3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	Element Media	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	3 or 10 μm Paper	10 μm Betamicron	2 μm Betamicron
Yes	Yes	Yes	Replaceable Element	Yes	Yes	Yes	Yes	Yes	Yes
Polyamide	Polyamide	Polyamide	Cap Material	Steel	Steel	Steel	Steel	Steel	Steel
Polyamide	–	Polyamide	Strainer Material	–	Steel	–	Steel	–	–
Optional	Optional	Optional	Clogging Indicator	–	–	–	–	Optional	Optional

ELF 7	BF 72	ELF 72	Options	BF 5	ELF 5	BF 52	ELF 52	BF 8	BF 9
–	–	–	Check Valve	–	–	–	–	–	–
Optional	Optional	Optional	Anti-Splash	–	–	–	–	–	–
–	–	–	Dipstick	–	–	–	–	–	–

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



Brochure: Accumulators DEF 3.000



Broch.: Filtration Range DEF 7.000



Broch.: Filtr. for Indust. Proc. DEF 7.700



Broch.: Syst. Fluid Service DEF 7.929



Broch.: Compact Hydraulics DEF 5.300



Brochure: Accessories DEF 6.100



Brochure: Electronics 18.000



Broch.: Cooling Systems DEF 5.700

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-  HYDAC Companies
-  HYDAC Distributors and Service Partners



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