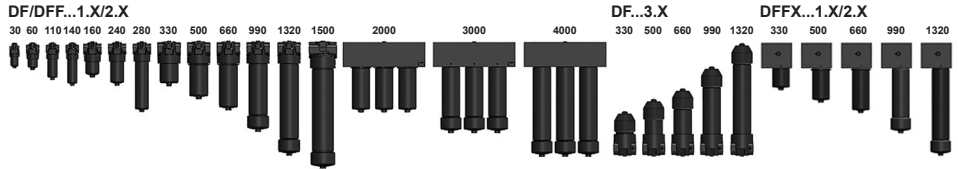




Spare Parts List Pressure Filter DF Pressure Filter for Reversible Oil Flow DFF/DFFX up to 1800 l/min, up to 420 bar



1. MAINTENANCE

1.1 GENERAL

Please follow the maintenance instructions!

1.2 INSTALLATION

Before fitting the filter into the system, check that the operating pressure of the system does not exceed the permitted operating pressure of the filter.

Refer to the name plate on the filter!

Important:

When using filters without bypass valve and at operating pressures above 20 bar, highly differential pressure-resistant filter elements of the type BH4HC, OH/PS must be used for safety reasons.

1.3 COMMISSIONING

Check that the correct filter element is fitted. Screw in bowl again fully and then unscrew by one quarter-turn (the sealing effect will not be improved by overtightening).

Switch on the hydraulic system and check filter for leakage.

Vent filter at an appropriate point in the system.

Under extreme conditions (e.g. cold start), bypass valves will allow a partial flow past the element for a short time.

1.4 TOOLS REQUIRED FOR MAINTENANCE

Size	Spanner for filter bowl	Allen key for oil drain plug	Key for VD 0 A.1
30	AF width 24	AF width 6*	AF width 27
60-140	AF width 27	AF width 10*	AF width 27
160-280	AF width 32	AF width 10*	AF width 27
330-4000	AF width 36	AF width 10	AF width 27

*for SO184

1.5 TORQUE VALUE FOR CLOGGING INDICATORS

Type	Max. torque
VD	100 Nm (B, C, D) 50 Nm (A, LE, LZ)

2. CHANGING THE ELEMENT

2.1 REMOVING THE ELEMENT

1. Switch off hydraulic system and release filter pressure.
2. Remove oil drain plug (if present). Drain oil into container.
3. One-piece bowl (1.X):
Unscrew filter bowl (drain fluid into a suitable container and clean or dispose of it in accordance with environmental regulations).
- Two-piece bowl (2.X):
Unscrew end cover (drain fluid into a suitable container and clean or dispose of it in accordance with environmental regulations) and remove grub screw.
- Top-removable (3.X):
Unscrew and remove bowl cover.
4. Remove filter element from element spigot in filter head (check surface of element for contamination residue and larger particles; these can indicate damage to components).
5. Replace or clean filter element (only W and V elements can be cleaned).

6. Clean filter bowl and filter head; particular attention must be given to the threads!

7. Examine filter, especially sealing surfaces, for mechanical damage.

8. Check O-rings – and replace if necessary

2.2 FITTING THE ELEMENT

1. Wet the sealing surfaces and thread on the filter head and bowl/end cover, as well as the O-ring, with clean operating fluid.
2. Before fitting a new filter element, check that the designation corresponds to that of the old element.

3. Place filter element carefully onto the element spigot.

In addition, on two-piece bowl (2.X):
Fix element with grub screw.

4. One-piece bowl (1.X):
Screw in filter bowl fully.

Two-piece bowl (2.X) and top removable (3.X):
Screw in end cover fully.

5. Screw in oil drain plug (if present).

6. Unscrew filter bowl or end cover by one quarter-turn.

7. Switch on hydraulic system and vent filter at a suitable point in the system.

8. Check the filter for leakage.

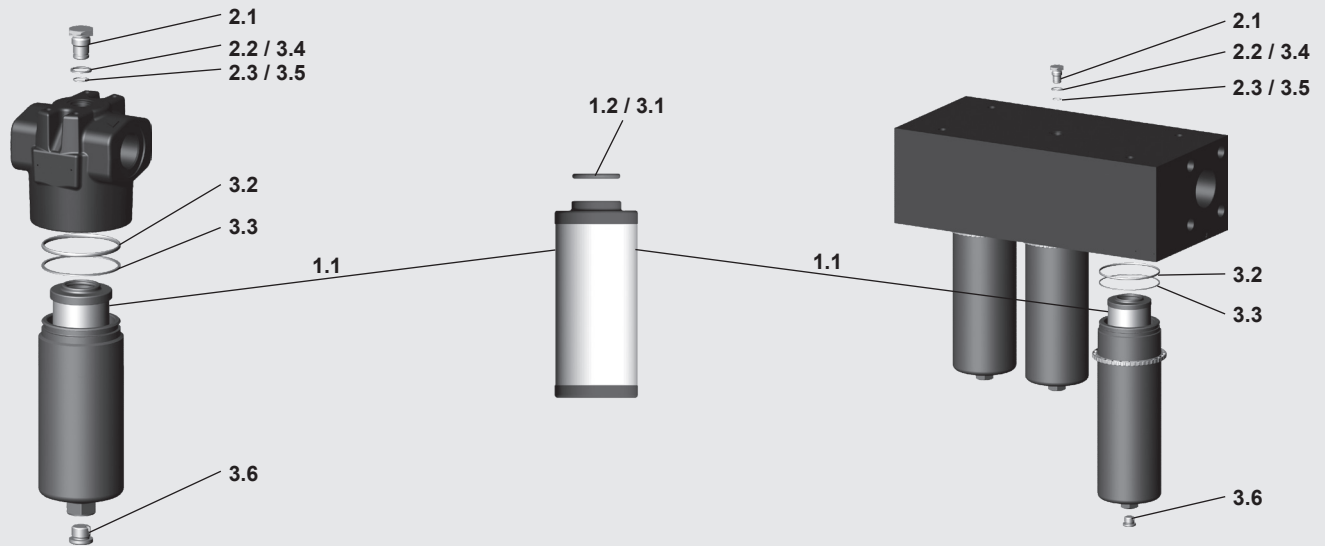
NOTICE:

Contamination or incomplete pressure release on disassembly can lead to seizing of the bowl thread.

Filter elements which cannot be cleaned must be disposed of in accordance with environmental protection regulations.

3. SPARE PARTS

3.1 SPARE PARTS DRAWING DF 30 – 660, 2000; DFF 60 – 660; DFFX 330 – 660 ... 1.X (one-piece bowl) DF top-removable 330 – 660 ... 3.X



3.2 SPARE PARTS LIST DF 30 – 660, 2000; DFF 60 – 660; DFFX 330 – 660 ... 1.X (one-piece bowl) DF top-removable 330 – 660 ... 3.X

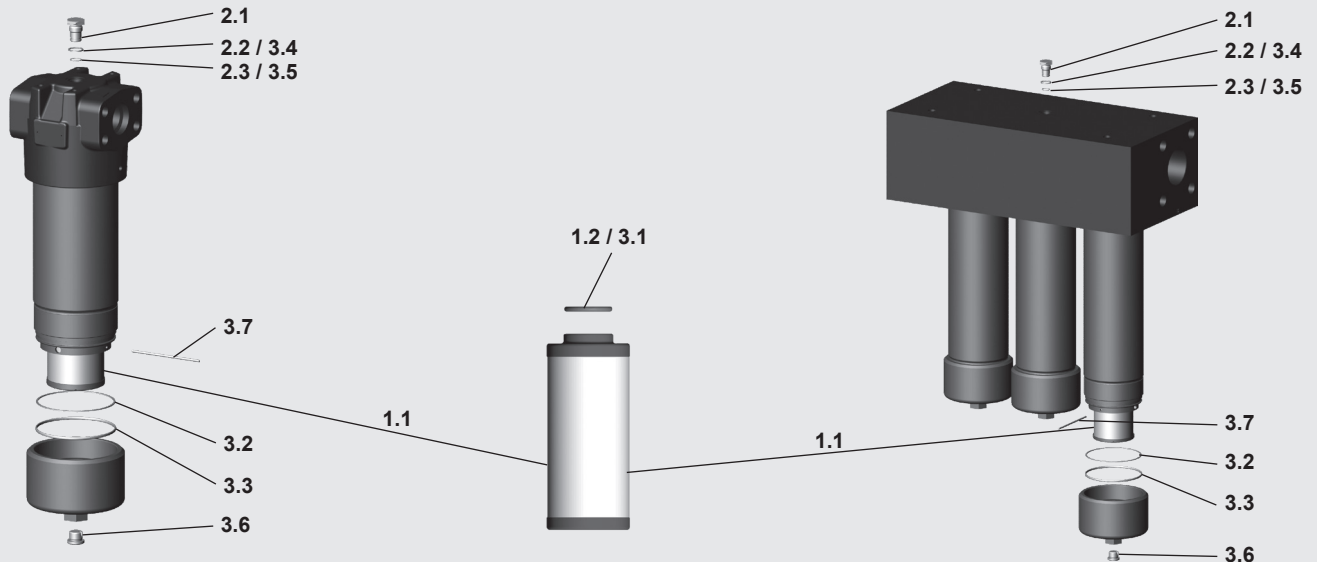
Item	Con-sists	Description	30	60	110	140	160	240
1.		Filter element	See Point 4. Replacement elements					
	1.1	Filter element	0030 D...	0060 D...	0110 D...	0140 D...	0160 D...	0240 D...
	1.2	O-ring	12.37 x 2.62	22 x 3	22 x 3	22 x 3	34 x 3	34 x 3
2.		Clogging indicator or screw plug	See Point 5. Replacement clogging indicator					
	2.1	Screw plug VD 0 A.1 / VD 0 A.1 /-V	00305932 / 00305931					
	2.2	Profile seal ring	VM...					
	2.3	O-ring	15 x 1.5					
3.		Repair kit DF Repair kit DF /-V	00305791 00305792		01260990 00302094		00305264 00304037	
	3.1	O-ring (element)	12.37 x 2.62		22 x 3		34 x 3	
	3.2	O-ring (bowl)	46 x 3		59 x 3		80 x 4	
	3.3	Back-up ring (bowl)	DF...30		DF...60		DF...160	
	3.4	Profile seal ring (indicator)	VM...		VM...		VM...	
	3.5	O-ring (indicator)	15 x 1.5		15 x 1.5		15 x 1.5	
	3.6*	Oil drain plug	G 1/4		G 1/2		G 1/2	

Item	Con-sists	Description	280	330	500	660	2000
1.		Filter element	See Point 4. Replacement elements				
	1.1	Filter element	0280 D...	0330 D...	0500 D...	0660 D...	3 x 0660 D...
	1.2	O-ring	34 x 3	48 x 3	48 x 3	48 x 3	48 x 3
2.		Clogging indicator or screw plug	See Point 5. Replacement clogging indicator				
	2.1	Screw plug VD 0 A.1 / VD 0 A.1 /-V	00305932 / 00305931				
	2.2	Profile seal ring	VM...				
	2.3	O-ring	15 x 1.5				
3.		Repair kit DF Repair kit DF /-V	00305264 00304037		00302270 00302271		3 x 00302270 3 x 00302271
	3.1	O-ring (element)	34 x 3		48 x 3		48 x 3
	3.2	O-ring (bowl)	80 x 4		117 x 4		117 x 4
	3.3	Back-up ring (bowl)	DF...160		DF...330		DF...330
	3.4	Profile seal ring (indicator)	VM...		VM...		VM...
	3.5	O-ring (indicator)	15 x 1.5		15 x 1.5		15 x 1.5
	3.6*	Oil drain plug	G 1/2		G 1/2		G 1/2

*if present

Other spare parts on request

3.3 SPARE PARTS DRAWING DF 660 – 1500, 2000, 3000, 4000; DFF 660 – 1500; DFFX 660 – 1320 ... 2.X (two-piece bowl); DF top removable 660 – 1320 ... 3.X



3.4 SPARE PARTS LIST DF 660 – 1500, 2000, 3000, 4000; DFF 660 – 1500; DFFX 660 – 1320 ... 2.X (two-piece bowl); DF top removable 660 – 1320 ... 3.X

Item	Consists	Description	660	990	1320	1500	2000	3000	4000	
1.		Filter element	See Point 4. Replacement elements							
	1.1	Filter element	0660 D...	0990 D...	1320 D...	1500 D...	3 x 0660 D...	3 x 0990D ...	3 x 1320 D...	
	1.2	O-ring	48 x 3	48 x 3	48 x 3	59.92 x 3.53	48 x 3	48 x 3	48 x 3	
2.		Clogging indicator or screw plug	See Point 5. Replacement clogging indicator							
	2.1	Screw plug VD 0 A.1 VD 0 A.1 /-V				00305932 00305931				
	2.2	Profile seal ring	VM...							
	2.3	O-ring	15 x 1.5							
3.		Repair kit DF Repair kit DF /-V		01263575 01263576		01289468 01290014		3 x 01263575 3 x 01263576		
	3.1	O-ring (element)		48 x 3		59.92 x 3.53		48 x 3		
	3.2	O-ring (bowl)		117 x 4		132.72 x 5.33		117 x 4		
	3.3	Back-up ring (bowl)		DF...330		DF..1000		DF...330		
	3.4	Profile seal ring (indicator)		VM...		VM...		VM...		
	3.5	O-ring (indicator)		15 x 1.5		15 x 1.5		15 x 1.5		
	3.6	Oil drain plug		G 1/2		G 1/2		G 1/2		
	3.7	Grub screw		M4 x 120		M4 x 135		M4 x 120		

4. REPLACEMENT ELEMENT

	0060	D	010	ON	/-V
Size	0030, 0060, 0110, 0140, 0160, 0240, 0280, 0330, 0660, 0990, 1320, 1500				
Type	D				
Filtration rating	ON 001, 003, 005, 010, 015, 020 BH4HC, ON/PS, OH/PS, V: 003, 005, 010, 020 W: 025, 050, 100, 200				
Filter material	ON, BH4HC, ON/PS, OH/PS, V, W				
Supplementary details	V, W (For description, see "DF" brochure)				

5. REPLACEMENT CLOGGING INDICATOR

	VD	5	D	X	/-L24
Type of indicator	VD Differential pressure indicator up to 420 bar operating pressure				
Response pressure	5 Standard for DF filters: 5 bar* 8 Standard for DFF/DFFX filters: 8 bar*				
Type of clogging indicator	A with screw plug in indicator port B visual C electrical D visual and electrical				
Modification number	X the latest version is always supplied				
Supplementary details	L..., LED, V, W (for description, see "Clogging Indicators" brochure)				

* others on request

6. MAINTENANCE INSTRUCTIONS

6.1 USER INSTRUCTIONS FOR FILTERS



Notice

This pressure equipment must only be put into operation in conjunction with a machine or system.



Notice

The pressure equipment must only be used as stipulated in the operating instructions of the machine or system.



Notice

This pressure equipment must only be operated using hydraulic or lubricating fluid.



Caution

The user must take appropriate action (e.g. venting) to prevent the formation of air pockets.



Caution

Repair, maintenance work and commissioning must be carried out by specialist personnel only.

Allow the pressure equipment to cool before handling.

The stipulations of the operating instructions of the machine or system must be followed.



Danger

Caution: pressure equipment! Before any work is carried out on the pressure equipment, ensure the pressure chamber concerned (filter housing) is depressurised.



Danger

On no account must any modifications (welding, drilling, opening by force etc.) be carried out on the pressure equipment.



Notice

It is the responsibility of the owner to comply with the water regulations of the country concerned.



Caution

Statutory accident prevention regulations, safety regulations and safety data sheets for fluids must be observed.



Caution

Filter housing must be earthed.



Caution

When working on, or in the vicinity of, hydraulic systems, naked flames, spark generation and smoking are forbidden.



Caution

Hydraulic oils and water-polluting fluids must not be allowed to enter the soil or watercourses or sewer systems. Please ensure safe and environmentally friendly disposal of hydraulic oils. The relevant regulations in the country concerned with regard to ground water pollution, used oil and waste must be complied with.



Caution

Whenever work is carried out on the filter, be prepared for hot oil to escape which can cause injury or scalding as a result of its high pressure or temperature.



Danger

When using electrical clogging indicators, the electrical power supply to the system must be switched off before removing the clogging indicator connector.

Customer Information in respect of Machinery Directive 2006/42/EC

Hydraulic filters are fluid power parts/ components and are therefore excluded from the scope of the Machinery Directive. They do not bear the CE mark. Before using these components, ensure compliance with the specifications provided by HYDAC Filtertechnik GmbH in this documentation.

The specifications also contain information on the relevant essential health and safety requirements (based on Machinery Directive 2006/42/EC) that are to be applied by the user.

We hereby declare that the filters are intended to be incorporated into machinery within the terms of the Machinery Directive 2006/42/EC.

It is prohibited to put the filters into service until the machinery as a whole is in conformity with the provisions of the Machinery Directive. Furthermore, our Terms of Sale and Delivery are available on our website (www.hydac.com).

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6.2 MAINTENANCE, GENERAL

This section describes maintenance work which must be carried out periodically. The operational safety and life expectancy of the filter, and whether it is ready for use, depend to a large extent on regular and careful maintenance.

6.3 MAINTENANCE MEASURES

- Spare parts must fulfil the technical requirements specified by the manufacturer. This is always ensured when using original HYDAC spare parts.
- Keep tools, working area and equipment clean.
- After disassembling the filter, clean all parts, check for damage or wear and replace parts if necessary.
- When changing a filter element, a high level of cleanliness must be observed!

6.4 INTERVAL BETWEEN ELEMENT CHANGES

In principle we recommend that the filter element is changed after 1 year of operation at the latest.

We recommend installing the filter with a clogging indicator (visual and/or electrical or electronic) to monitor the filter element.

If the clogging indicator responds, it is necessary to change or clean the filter element without delay (only W and V elements can be cleaned).

When no clogging indicator has been fitted, we recommend changing the elements at specific intervals.

(The frequency of changing the filter elements depends on the filter design and the conditions under which the filter is operated.) When filter elements are subject to high dynamic loading it may prove necessary to change them more frequently. The same applies when the hydraulic system is commissioned or repaired or when the oil is changed.

The standard clogging indicators only respond when fluid is flowing through the filter. With electrical indicators the signal can also be converted into a continuous display on the control panel. In this case the continuous display must be switched off during a cold start or after changing the element.

If the clogging indicator responds during a cold start only, it is possible that the element does not yet need to be changed.

NOTE

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.

