

Filters



DF, DFF & DFFX Series

Service and Parts

up to 528 gpm (2000 l/min), up to 6000 psi (420 bar)

1. Maintenance

1.1 General

Please follow the maintenance instructions.

1.2 Installation

Before installing 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 type code label on the filter.

Important:

When using filters without bypass valve and at operating pressures above 290 psi (20 bar), high differential pressure-resistant filter elements of the type BH4HC should be used for safety reasons.

1.3 Commissioning

Check that the correct filter element is installed. 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 Maintenance Tools

Size	Wrench for filter bowl	Allen key for oil drain plug	Wrench for VD 0 A.1	Allen key for check valve plug M60x2
30	Hex 24	Hex 6*	Hex 27	-
60-140	Hex 27	Hex 10*	Hex 27	-
160-280	Hex 32	Hex 10*	Hex 27	-
330-4000	Hex 36	Hex 10	Hex 27	-
DFFX (all sizes)	-	-	-	Hex 32

*for SO184

1.5 Torque Values

Type	Torque Nm[ft-lb]
VD-clog ind	100 [74] 50 [37] (A, LE, LZ)
Oil Drain Plug	110 [81] - G1/2 30 [22] - G1/4
Bowl/Lid or end cover	Do not Torque (See 1.3 and 2.2)
Check Valve Plug M60x2 DFFX (all sizes)	500 [369]

2. Element Replacement

2.1 Element Removal

- Switch off hydraulic system and release filter pressure.
- Remove oil drain plug (if present). Drain oil into container.
- One-piece bowl:**
Unscrew filter bowl (drain fluid into a suitable container and clean or dispose of it in accordance with environmental regulations).
- Two-piece bowl:**
Unscrew lid cover (drain fluid into a suitable container and clean or dispose of it in accordance with environmental regulations) and remove threaded pin.
- Top removable:**
Unscrew the lid
- Remove filter element from element nozzle in filter head (check surface of element for contamination residue and larger particles; these can indicate damage to components).
- Replace or clean filter element - only W/HC (wire screen) and V (metal fiber) elements can be cleaned.
- Clean filter bowl and filter head; particular attention must be given to the threads.
- Examine filter, especially sealing surfaces, for mechanical damage.
- Check O-rings – and replace if necessary

2.2 Element Installation

- Wet the sealing surfaces and thread on the filter head and bowl/lid, as well as the O-ring, with clean operating fluid.
- When installing a new filter element, check that the designation corresponds to that of the old element.
- Place filter element carefully on to the element nozzle.
In addition, on two-piece bowl:
Install element with threaded pin.
- One-piece bowl:**
Apply silver grade anti-seize (per Mil-PRF-907E) to threads. Screw in filter bowl fully (metal to metal contact).
Two-piece bowl and top removable:
Apply silver grade anti-seize (per Mil-PRF-907E) to threads. Screw in lid fully (metal to metal contact).
- Screw in oil drain plug (if present).
- Unscrew filter bowl or lid by one quarter-turn.
- Switch on hydraulic system and vent filter at a suitable point in the system.
- Check filter for leakage.

NOTE:

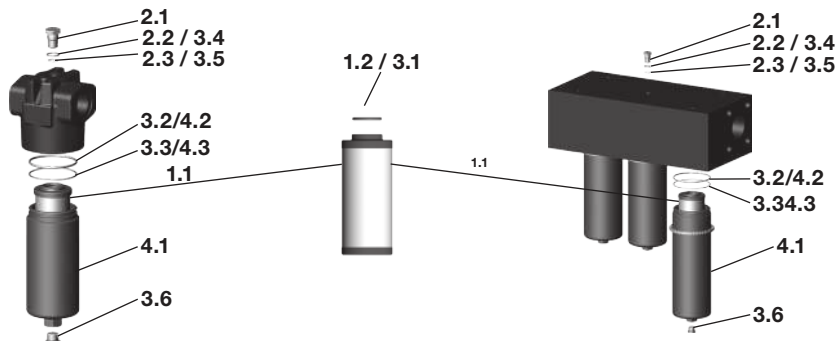
Contamination or incomplete pressure release on disassembly can lead to seizing of the bowl thread.

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

FILTER MAINTENANCE

3. Spare Parts

3.1 DF 30 – 660, 2000; DFF 60 – 660; DFFX 330 – 660 (One-piece bowl); DF top removable 330 – 660



Item	Consists	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 indicator 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
4.		Bowl Assembly	2065581	2062767	2062906	311177	2062862	2065421
		Bowl Assembly /-V	TBD	1261270	TBD	TBD	2075203	2071324
	4.1	Bowl	BOWL DF30	BOWL DF60	BOWL DF110	BOWL DF140	BOWL DF160	BOWL DF240
	4.2	O-ring (bowl)	46 x 3	59 x 3	59 x 3	59 x 3	80 x 4	80 x 4
	4.3	Back-up ring (bowl)	DF...30	DF...60	DF...60	DF...60	DF...160	DF...160

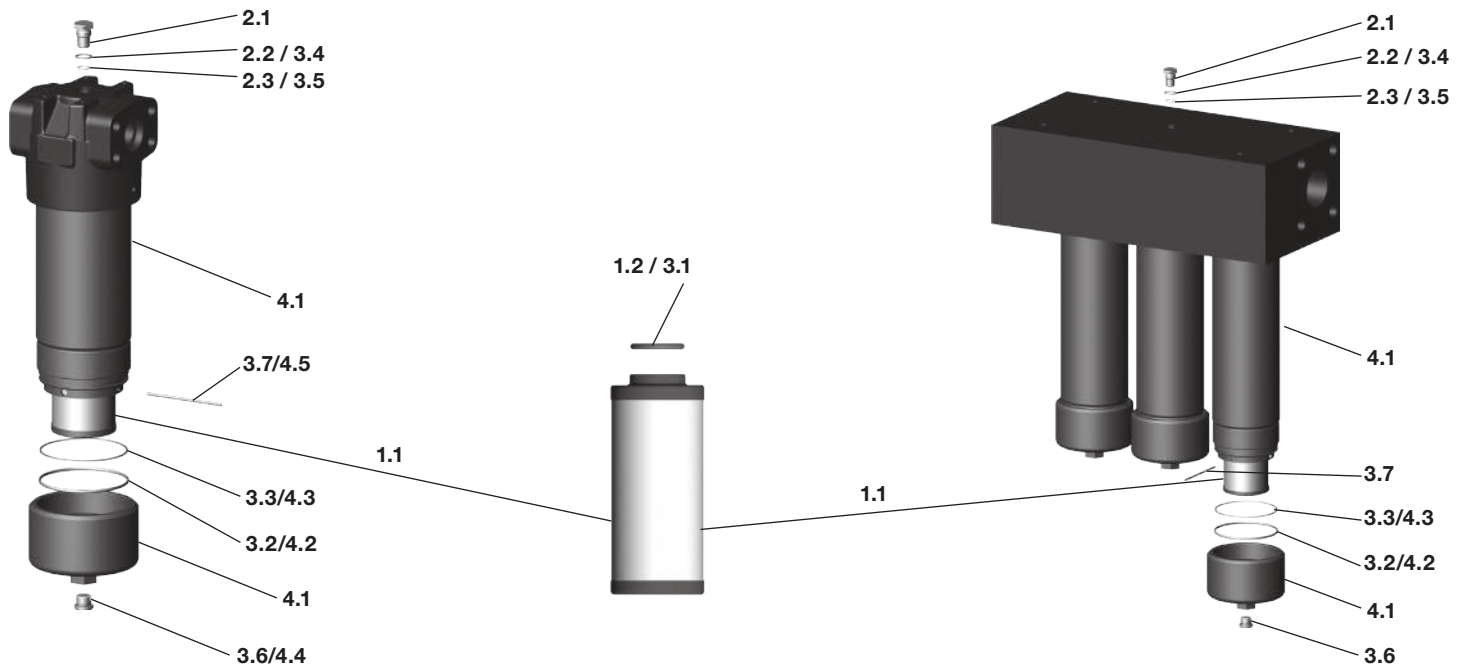
Item	Consists	Description	280	330	500	660	2000
1.		Filter element	See Point 4. Replacement elements				
	1.1	Filter element	0280 D...	0330 D...	0500 D...	0660 D...	3 x 0660 D...
	1.2	O-ring	34 x 3	48 x 3	48 x 3	48 x 3	48 x 3
2.		Clogging indicator or indicator plug	See Point 5. Replacement clogging indicator				
	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
4.		Bowl Assembly Bowl Assembly /-V	2074896 TBD	2062542 2071872	TBD TBD	2068080 2062861	Consult HYDAC
	4.1	Bowl	BOWL DF280	BOWL DF330	BOWL DF500	BOWL DF660	
	4.2	O-ring (bowl)	80 x 4	117 x 4	117 x 4	117 x 4	
	4.3	Back-up ring (bowl)	DF...160	DF...330	DF...330	DF...330	

*If present. - O-Ring durometer can range from 70-80Sh. EPR Seal Kits available on request.

- Bowl assembly kits on request – kits include bowl with seals, drain plug (DF30-280 SO184, DF330-4000) and threaded pin(DF330-4000 2.0).

- Check Valve Kit (DFFX, all sizes): P/N 1299741

3.2 Spare Parts Drawing DF 660 – 1500, 3000, 4000; DFF 660 – 1500; DFFX 660 – 1320 (Two-piece bowl); DF top removable 660 – 1320



Item	Consists	Description	660	990	1320	1500	3000	4000
1.		Filter element	See Point 4. Replacement elements					
	1.1	Filter element	0660 D...	0990 D...	1320 D...	1500 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
2.		Clogging indicator or indicator plug	See Point 5. Replacement clogging indicator					
	2.1	Indicator 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	Threaded pin		M4 x 120		M4 x 135	M4 x 120	
4.		Bowl Assembly Bowl Assembly /-V	1262358 TBD	TBD TBD	TBD TBD	Consult HYDAC		
	4.1	Bowl	BOWL DF660	BOWL DF990	BOWL DF1320			
	4.2	O-ring (bowl)	117 x 4	117 x 4	117 x 4			
	4.3	Back-up ring (bowl)	DF...330	DF...330	DF...330			
	4.4	Oil drain plug	G 1/2					
	4.5	Threaded pin	M4 x 120			M4 x 135	M4 x 120	

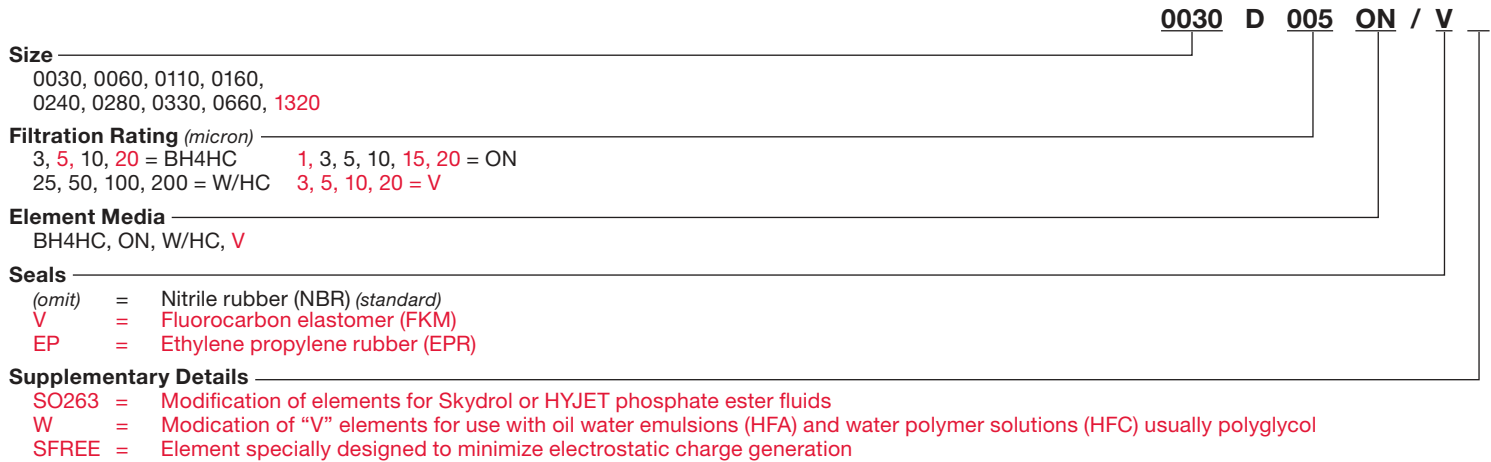
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- Bowl assembly kits on request – kits include bowl with seals, drain plug (DF30-280 SO184, DF330-4000) and threaded pin(DF330-4000 2.0).

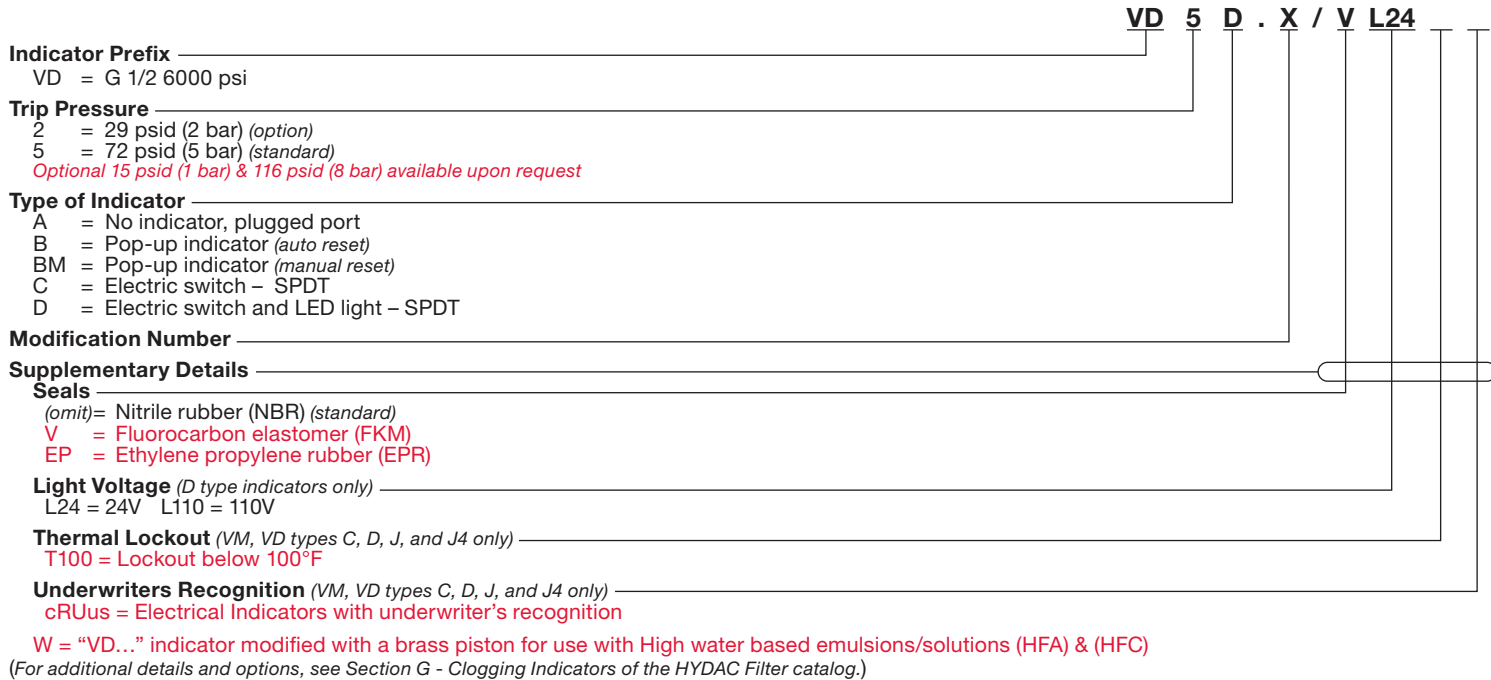
- Check Valve Kit (DFFX, all sizes): P/N 1299741

FILTER MAINTENANCE

4. Replacement Element Model Code



5. Clogging Indicator Model Code

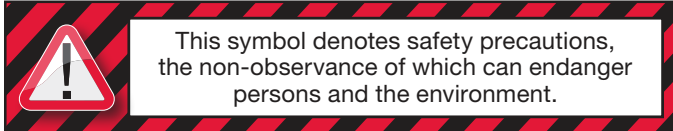


6. Maintenance Instructions

6.1 User Instructions for Filters



- This pressure equipment must only be put into operation in conjunction with a machine or system.
- The pressure equipment must only be used as stipulated in the operating instructions of the machine or system.
- This pressure equipment must only be operated using hydraulic or lubricating fluid.
- It is the responsibility of the operator to comply with the water regulations of the country concerned.



CAUTION

- The user must take appropriate action (e.g. venting) to prevent the formation of air pockets.
- Repairs, maintenance work and commissioning must only be carried out by trained personnel.
- Allow the pressure equipment to cool before handling.
- The stipulations of the operating instructions of the machine or the system must be followed.
- Statutory accident prevention regulations, safety regulations and safety data sheets for fluids must be observed.
- Filter housing must be grounded.
- When working on, or in the vicinity of, hydraulic systems, open flames, sparks and smoking are forbidden.
- 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.
- 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!

- Caution: pressure equipment! Before any work is carried out on the pressure equipment, ensure the pressure chamber concerned (filter housing) is depressurized.
- On no account must any modifications (*welding, drilling, opening by force...*) be carried out on the pressure equipment.
- When using electrical clogging indicators, the electrical power supply to the system must be switched off before removing the clogging indicator connector.

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 every 6 months or upon indication, whichever occurs first.

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/HC and V elements can be cleaned).

When no clogging indicator has been installed, 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, 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.

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

Hydraulic filters are defined as fluid power parts / components and are therefore excluded from the scope of the Machinery Directive, sections 1.4.1 - 1.4.3. They do not bear the CE mark.

Before using these components, ensure compliance with the specifications provided by HYDAC Technology Corporation. The specifications also contain information on the relevant essential health and safety requirements (based on Machinery Directive 2006/42/EC).

We hereby declare that the filters are intended to be incorporated into machinery within the terms of the 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.

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NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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