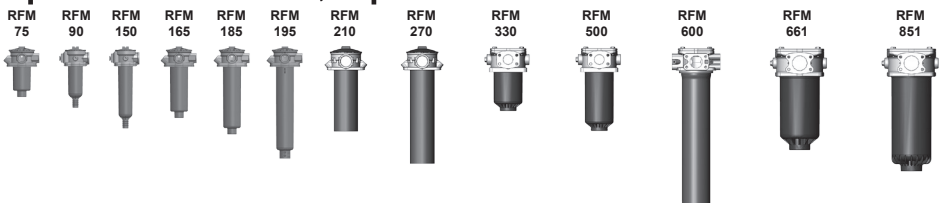
HYDAC INTERNATIONAL

Spare Parts List Return Line Filter RFM with 4-hole attachment

Tank-top mounted version: up to 850 l/min, up to 10 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!

1.3 COMMISSIONING

Check that the correct filter element is fitted. Screw on the cover (RFM 75-270) and screw it on with the appropriate tightening torque, or fit the cover (RFM 330-851) and tighten the cover bolts in alternation. Switch on the hydraulic system and check filter for leakage. Vent filter at an appropriate point in the system.

1.4 TOOLS REQUIRED FOR MAINTENANCE (Torque wrench)

Size	Torque value	Cover bolts Ext. hex. spanner
75	15 Nm	–
90/150	10 Nm	–
165/185	15 Nm	–
210/270	35 Nm	–
330/500	35 Nm	AF width 16
600	35 Nm	AF width 16
661/851	35 Nm	AF width 18

1.5 TORQUE VALUE FOR CLOGGING INDICATORS

Type	Max. torque
VR	33 Nm 15 Nm (for indicators B, BM, GC, LE, LZ, LEM)
VMF	10 Nm

1.6 TIGHENING TORQUES FOR STRAIGHT SCREW-IN UNION *

Pipe thread	Max. torque
G 1/2	50 Nm
G 3/4	60 Nm
G 1	70 Nm
G 1 1/4	70 Nm
G 1 1/2	70 Nm

* in acc. with DIN 3852

2. CHANGING THE ELEMENT

2.1 REMOVING THE ELEMENT

1. Switch off hydraulic system and release filter pressure.
2. Size 75–270:
   Unscrew cover
   Size 330–851:
   Loosen cover bolts and lift off cover.
3. Pull out the filter element with attached filter housing using handle.
4. Dismantle removed unit, i.e. lift out or turn out the filter element (with dirt retainer if present) from the filter housing by the handle (only for RFM 195)
5. Examine element surface for dirt residues and larger particles since these can be an indication of damage to components.
6. Remove dirt retainer (if present) by turning anti-clockwise – bayonet fitting
   Notice:
   For size 210, 270 and 600, the dirt retainer cannot be removed (it is fixed in place)!
7. Replace or clean filter element (only W/HC elements can be cleaned).
8. Clean housing, cover and dirt retainer (if present).
9. Examine filter, especially sealing surfaces, for mechanical damage.
10. Check O-rings – and replace if necessary

2.2 FITTING THE ELEMENT

1. Wet the sealing surfaces on the filter housing and cover, as well as the O-ring, with clean operating fluid.
2. When fitting a new filter element, check that the designation corresponds to that of the old element.
3. If present, fit the dirt retainer onto the new or cleaned filter element by turning clockwise.
4. Place filter element carefully onto the element spigot in the housing or screw it into the housing (RFM 195). Pay attention to the position of the handle on the element.
5. Install the filter element with attached filter housing.
6. Size 75–270:
   Replace cover and tighten with appropriate tightening torque.
   Size 330–851:
   Position cover and screw in cover bolts by hand; then tighten the cover bolts in alternation.
7. Switch on hydraulic system and vent filter at a suitable point in the system.
8. Check the filter for leakage.

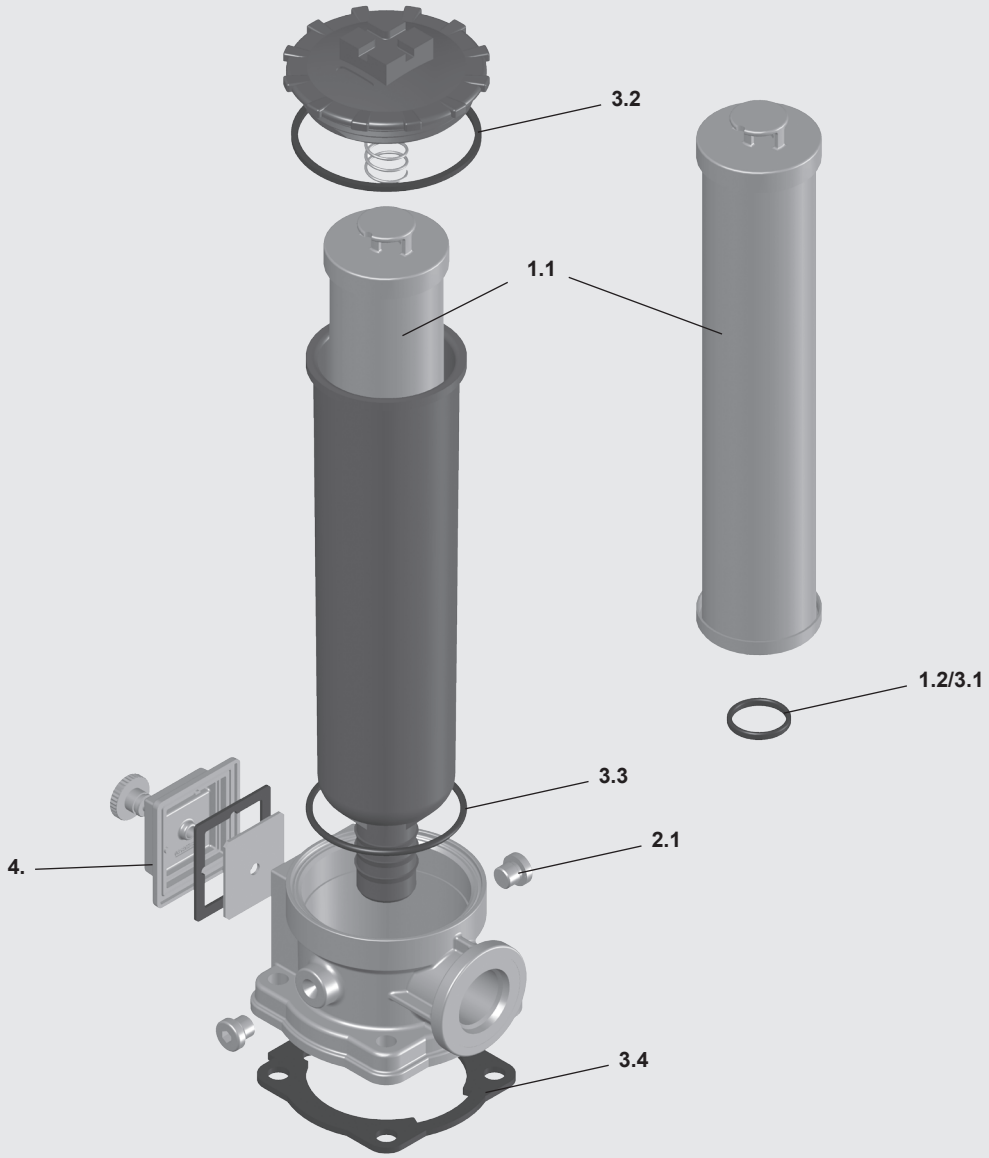
NOTICE:

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

EN 7.106.1.E4/08.17

3. SPARE PARTS

3.1 SPARE PARTS DRAWING RFM 90 AND 150

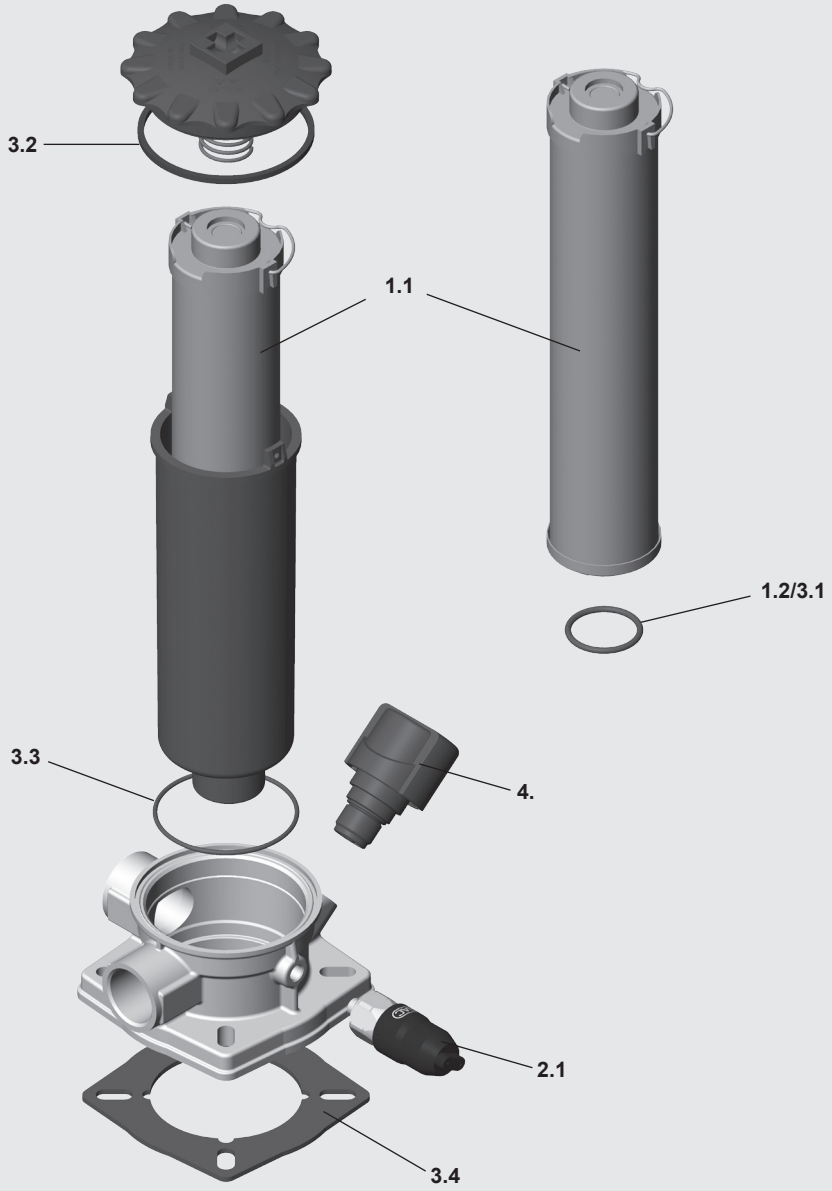


3.2 SPARE PARTS LIST RFM 90 AND 150

Item	Con-sists	Designation	RFM 90	RFM 150
1.		**Filter element**	**see Point 4. Replacement elements**	
	1.1	Filter element	0090 R...	0150 R...
	1.2	O-ring	22 x 3	22 x 3
2.		**Clogging indicator or screw plug**	**See Point 5. Replacement clogging indicator**	
	2.1	Screw plug VMF	VSTI See Point 5. Replacement clogging indicator	
3.		**Seal kit E RFM...90 W 0.X /-4L** **Seal kit E RFM...90 W 0.X /-V-4L**	01305305 01305306	
	3.1	O-ring (element)	22 x 3	
	3.2	Seal RFM (cover)	Seal RFM 90/170	
	3.3	O-ring (head)	60 x 3	
	3.4	Tank seal	Seal RFM 90/150 /-4L	
4.		**Breather filter RFM 90/150**	01284044 contains: seal (03588248) and breather filter (03186665)	

Other spare parts on request

3.3 SPARE PARTS DRAWING RFM 75, 165, 185, 195



3.4 SPARE PARTS LIST RFM 75, 165, 185, 195

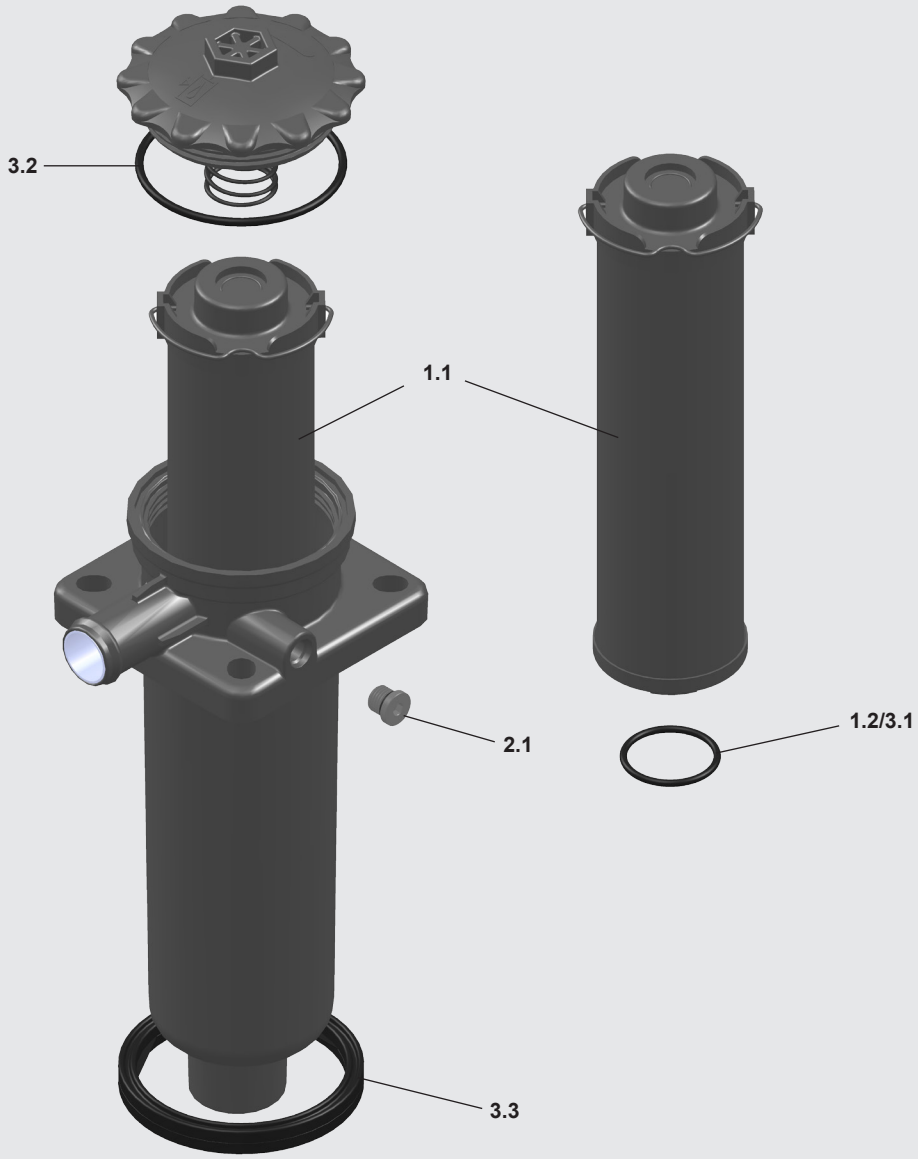
Item	Con-sists	Designation	RFM 75	RFM 165	RFM 185	RFM 195
1.		**Filter element**	**see Pt. 4. Replacement elements**			
	1.1	Filter element	0075 R...	0165 R...	0185 R...	0195 R...
	1.2	O-ring	34 x 3.5	34 x 3.5	34 x 3.5	36.17 x 2.62
2.		**Clogging indicator or screw plug**	**See Point 5. Replacement clogging indicator**			
	2.1	Screw plug VMF	VSTI See Point 5. Replacement clogging indicator			
3.		**Seal kit E RFM /-4L** **Seal kit E RFM /-V-4L**	01316123 01305307			01316124 01316125
	3.1	O-ring (element)	34 x 3.5			36.17 x 2.62
	3.2	Seal RFM (cover)	Kantseal			Kantseal
	3.3	O-ring (head)	71.12 x 2.62			71.12 x 2.62
	3.4	Tank seal	Seal RFM 185			Seal RFM 185

Other parts (not numbered)

Item	Con-sists	Designation	RFM 75	RFM 165	RFM 185	RFM 195
4.		Breather filter BF P 10 M 3 W 1.0	01284377			

Other spare parts on request

3.5 SPARE PARTS DRAWING RFMP 165

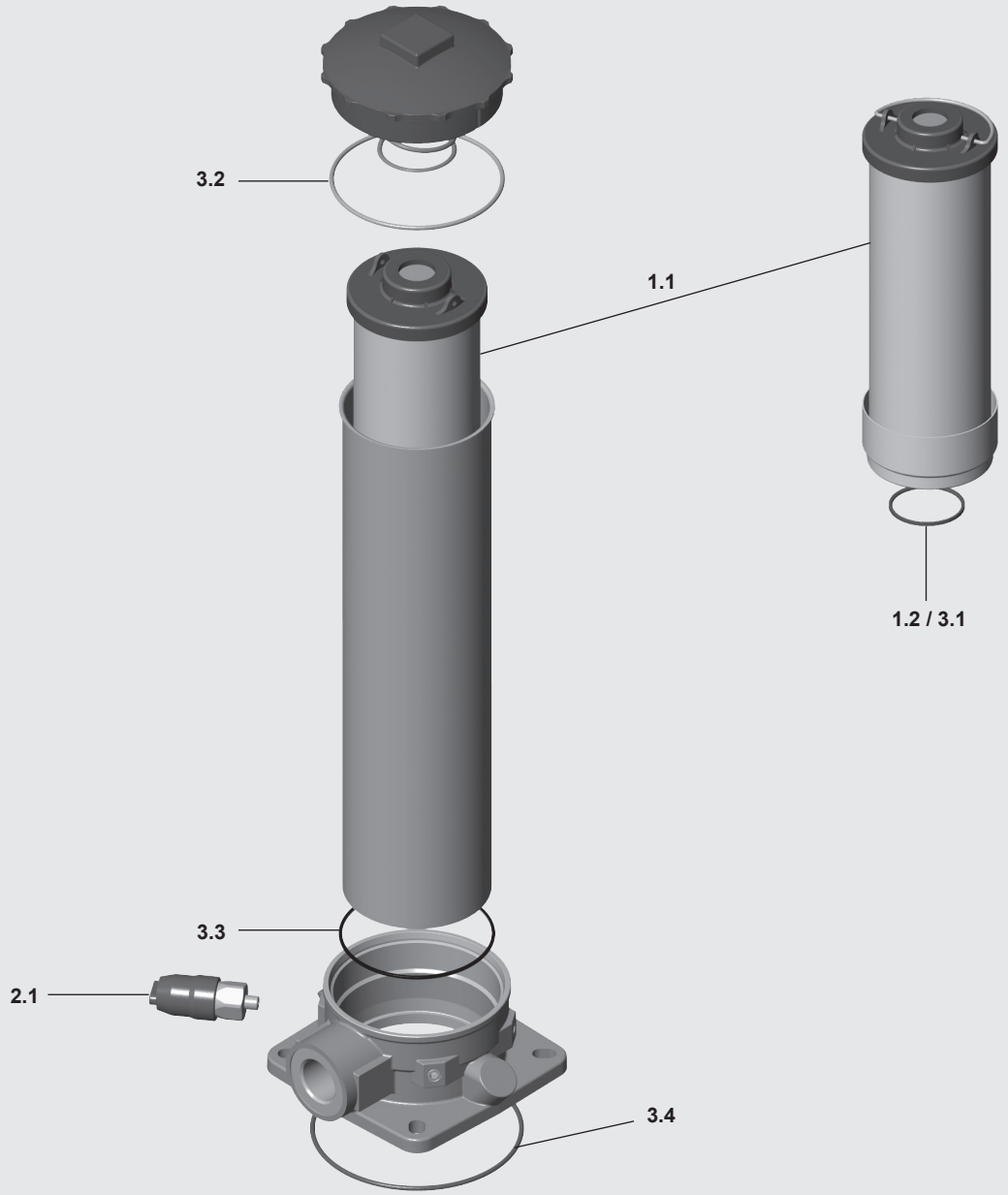


3.6 SPARE PARTS LIST RFMP 165

Item	Con-sists	Designation	RFMP 165
1.		**Filter element**	**see Point 4. Replacement elements**
	1.1	Filter element	0165 R...
	1.2	O-ring	34 x 3.5
2.		**Clogging indicator or screw plug**	**See Point 5. Replacement clogging indicator**
	2.1	Screw plug	Port: SAE-4 See Point 5. Replacement clogging indicator
3.		**Seal kit RFMP**	02088319
	3.1	O-ring (element)	34 x 3.5
	3.2	Seal RFMP (cover)	72.62 x 3.53
	3.3	Tank seal	02702043

Other spare parts on request

3.7 SPARE PARTS DRAWING RFM 210, 270

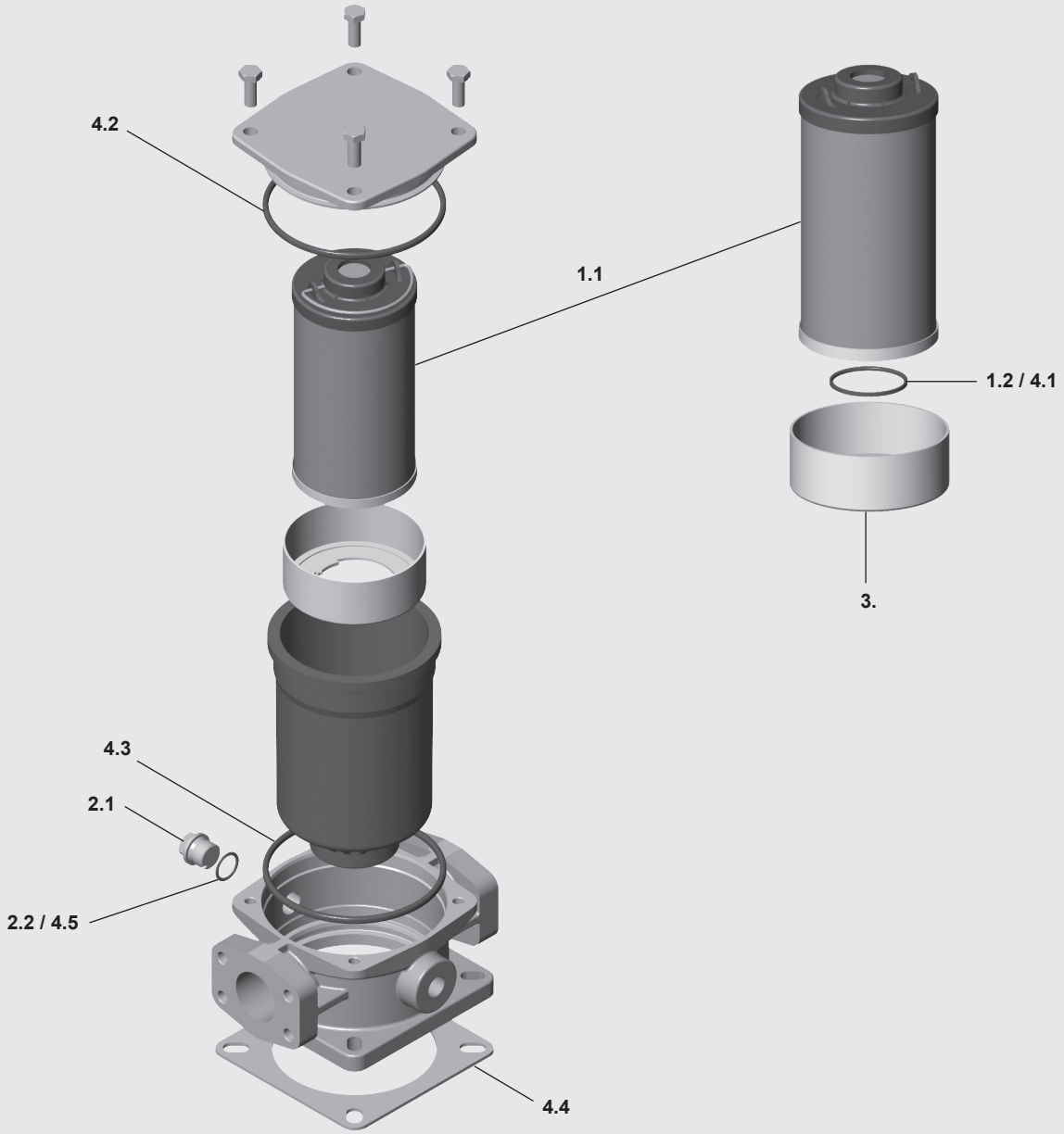


3.8 SPARE PARTS LIST RFM 210, 270

Item	Consists	Designation	RFM 210	RFM 270
1.		**Filter element**	**see Pt. 4. Replacement elements**	
	1.1	Filter element	0210 R...	0270 R...
	1.2	O-ring	40 x 3.5	40 x 3.5
2.		**Clogging indicator or screw plug**	**See Point 5. Replacement clogging indicator**	
	2.1	Screw plug VMF	Screw plug 1/8 See Point 5. Replacement clogging indicator	Screw plug 1/8 See Point 5. Replacement clogging indicator
3.		**Seal kit RFM Seal kit RFM /-V**	01278819 01278820	01278819 01278820
	3.1	O-ring (element)	40 x 3.5	40 x 3.5
	3.2	O-ring (cover)	110.72 x 3.53	110.72 x 3.53
	3.3	O-ring (head)	94.92 x 2.62	94.92 x 2.62
	3.4	O-ring (tank seal)	135.89 x 5.33 (pressure diecasting) 142.47 x 3.53 (shell casting) 136.12 x 3.53 (sand casting)	135.89 x 5.33 (pressure diecasting) 142.47 x 3.53 (shell casting) 136.12 x 3.53 (sand casting)

Other spare parts on request

3.9 SPARE PARTS DRAWING RFM 330, 500, 661, 851

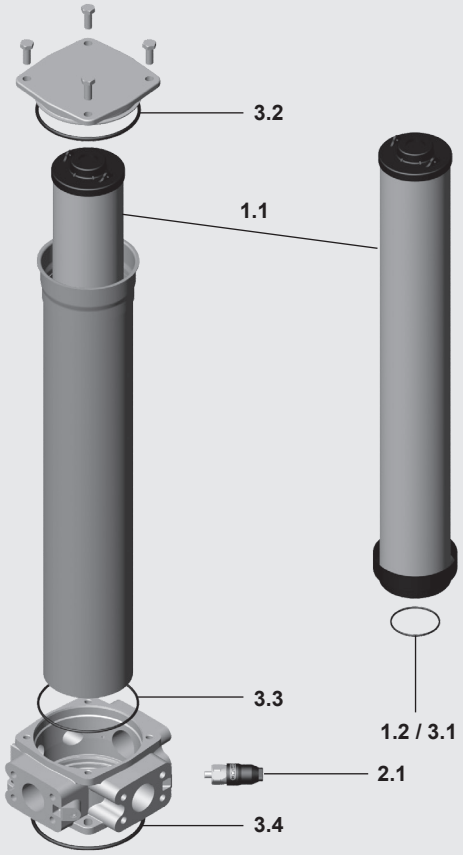


3.10 SPARE PARTS LIST RFM 330, 500, 661, 851

Item	Consists	Designation	RFM 330	RFM 500	RFM 661	RFM 851
1.		Filter element	**see Pt. 4. Replacement elements**			
	1.1	Filter element	0330 R...	0500 R...	0660 R…	0850 R…
	1.2	O-ring	48 x 3	48 x 3	68 x 5	68 x 5
2.		**Clogging indicator or screw plug** VR 0 A.0 VR 0 A.0 /-V	**See Point 5. Replacement clogging indicator** 00306006 00305928			
	2.1	Screw plug	G 1/2			
	2.2	O-ring	18 x 2.5			
3.		**Dirt retainer**	01202364	01202364	01202357	01202357
4.		**Seal kit RFM** **Seal kit RFM /-V**	01250666 00313109	01250666 00313109	00312485 00313110	00312485 00313110
	4.1	O-ring (element)	48 x 3	48 x 3	68 x 5	68 x 5
	4.2	O-ring (cover)	123.19 x 5.33	123.19 x 5.33	164.47 x 5.33	164.47 x 5.33
	4.3	O-ring (head)	123.19 x 5.33	123.19 x 5.33	164.47 x 5.33	164.47 x 5.33
	4.4	O-ring (tank seal)	Seal RFM 330	Seal RFM 330	Seal RF	Seal RF
	4.5	O-ring (VR 0 A.0)	18 x 2.5	18 x 2.5	18 x 2.5	18 x 2.5

Other spare parts on request

3.11 SPARE PARTS DRAWING RFM 600



3.12 SPARE PARTS LIST RFM 600

Item	Con-sists	Designation	RFM 600
1.		**Filter element**	**see Pt. 4. Replacement elements**
	1.1	Filter element	0600 R...
	1.2	O-ring	59 x 3
2.		**Clogging indicator or screw plug**	**See Point 5. Replacement clogging indicator**
	2.1	Screw plug VMF	VSTI See Point 5. Replacement clogging indicator
3.		**Seal kit RFM** **Seal kit RFM /-V**	01294508 01294509
	3.1	O-ring (element)	59 x 3
	3.2	O-ring (cover)	123.19 x 5.33
	3.3	O-ring (head)	123.42 x 3.53
	3.4	O-ring (tank seal)	135.89 x 5.33

Other spare parts on request

4. REPLACEMENT ELEMENT

0165 R 010 BN4HC /-V

Size
0075, 0090, 0150, 0165, 0185, 0195, 0210, 0270, 0330, 0500, 0600, 0660, 0850

Type
R

Filtration rating
ON 001, 003, 005, 010, 015, 020
ECON2: 003, 005, 010, 020
W/HC: 025, 050, 100, 200
P/HC: 010
BN4AM: 003, 010
AM: 040
MM: 010, 015

Filter material
ON, ECON2, W/HC, P/HC, MM, BN4AM, AM

Supplementary details
V (For description see "RFM with 4-hole attachment" brochure)

5. REPLACEMENT CLOGGING INDICATOR

VR 2 D . X /-L24

Type of indicator
VR connection G 1/2
VMF connection G 1/8

Pressure setting
2 Standard 2 bar, others on request

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)

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 guaranteed for 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.

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 configuration 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 or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.