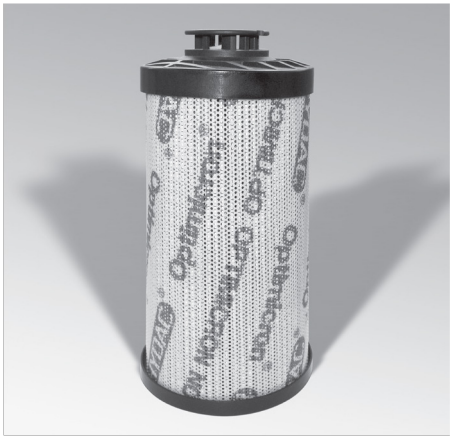

Optimicron® Filter Elements ON

up to 20 bar, filtration rating 1, 3, 5, 10, 15 and 20 µm

Optimicron®

Please note:
Ongoing conversion from Betamicron® (BN4HC) to Optimicron® (ON)!

1. OPTIMICRON®

1.1 DESCRIPTION

The new Optimicron® filter elements have been optimised in respect of filtration performance and energy efficiency. They offer the best combination when it comes to separation efficiency, service life and differential pressure.

As a complete package the innovative characteristics of the new technology have a very positive impact on the differential pressure of the elements. For example, the new HELIOS filter mesh pack geometry has the effect of stabilising the pleats and increasing the available area of incident flow. The obvious advantage is improved flow conditions and as a result lower differential pressure.

HELIOS

The efficient micro-glass media forming the core of the filter element delivers first class filtration efficiency and a low differential pressure over the whole lifetime of the element and is now also available in 1 and 15 µm ratings.

The new design of the filter mesh pack and the combination of (up to seven) exclusive filtration layers has a particularly favourable effect on the differential pressure. So for example, a drainage layer with asymmetrical thread thickness as the first layer on the contaminated side channels the fluid and at the same time provides extensive and soft support of the other media. The penultimate filter layer, the so-called integrated drainage layer, ensures directed flow and prevents impact losses, dead spaces and turbulence which usually occur when wire mesh is used exclusively.

1.2 GENERAL DATA

Collapse stability	20 bar
Temperature range	-30 °C to +100 °C For sealing material FPM to -10 °C
Flow direction	From outside to inside
Filtration rating	1, 3, 5, 10, 15, 20 µm
Bypass cracking pressure	Pressure filter element (**"D"**): Without bypass valve as standard Return line filter element (**"R"**): Standard 3 bar (others on request) Return line filter element (**"RD"**): Standard 3.4 bar
Category of filter element	Single use element

1.3 STAT-FREE® TECHNOLOGY OPTIONAL

By completely revising the materials used, e.g. through the use of conductive plastics, fully discharge-capable filter elements are the result. Electrical charging of the filter elements during operation has therefore been reduced to a negligible level. The risks of sudden sparking and the subsequent formation of soot or sludge in the oil are therefore reliably eliminated.

With the new Stat-Free® filter elements, HYDAC has for the first time succeeded in combining excellent electrostatic characteristics with filtration performance. Unprecedented low charge generation in the filter when the system fluid is a new type of filter mesh

pack and element design.

1.4 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG
- Fire-resistant fluids HFA, HFB, HFC and HFD
- Operating fluids with high water content (>50% water content) on request

1.5 INNOVATIVE OUTER WRAP WITH IMPROVED DIFFUSER EFFECT FOR PRINTING WITH CUSTOMER LOGO

Since the outer wrap can be printed with the customer logo, it also acts as an advertising medium for the OEM security of the spares same time, the user f obtaining an original cular benefit: the logo y legible even in the ndition.

1.APPLICATION

Optimicron® filter elements are intended to be used in all industries where particular importance is placed on first class filtration efficiency, high cleanliness classes as well as on significant savings in energy costs and on sustainable filtration.

2. MODEL CODE

2.1 MODEL CODE FOR STANDARD PRESSURE FILTER ELEMENTS

(Can be used in the following filters: LFM, MFM, MFM…/-OIU, MFM..L.., DFM, HFM, LPF, LF, LFF, MDF, HDF, HDFF, DF, DFF, DFFX, FLND, FMND, DFDK, DF…MHA, DF…MHE, DF…M A, DF…M P, DFZ, DF…Q E, DFP, DFPF)

0660 D 010 ON /-V

Size
0030, 0035, 0055, 0060, 0075, 0095, 0110, 0140, 0160,
0240, 0260, 0280, 0300, 0330, 0450, 0500, 0650, 0660,
0900, 0990, 1320, 1500

Type
D Pressure filter element

Filtration rating in µm
001, 003, 005, 010, 015, 020

Filter material of element
ON Collapse stability up to 20 bar

Supplementary details
V FPM (Viton) seal
SFREE Stat-Free® element technology

2.2 MODEL CODE FOR STANDARD RETURN LINE FILTER ELEMENTS

(Can be used in the following filters: RFM, RF, RFD, RFL, RFLD, NF, NFD)

0660 R 010 ON /-V

Size
0030, 0060, 0075, 0090, 0110, 0150, 0160, 0165, 0185,
0195, 0210, 0240, 0260, 0270, 0280, 0330, 0450, 0500,
0580, 0600, 0660, 0750, 0850, 0950, 1300, 1700, 2600

Type
R Return line filter element

Filtration rating in µm
001, 003, 005, 010, 015, 020

Filter material of element
ON Collapse stability up to 20 bar

Supplementary details
V FPM (Viton) seal
KB without bypass valve
SFREE Stat-Free® element technology

2.3 MODEL CODE FOR RETURN LINE FILTER ELEMENTS IN PRESSURE FILTERS

(Can be used in the following filters: LPF…/-TH, LPF…GGA)

0241 RD 010 ON /-V

Size
0161, 0241, 0261, 0281

Type
RD Return line filter element for pressure filters

Filtration rating in µm
001, 003, 005, 010, 015, 020

Filter material of element
ON Collapse stability up to 20 bar

Supplementary details
V FPM (Viton) seal

3. FILTER CALCULATION / SIZING

The total pressure drop of a filter at a certain flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

$\Delta p_{housing}$ = see housing curve in the relevant filter brochure

$$\Delta p_{element} = Q \cdot \frac{SK^* \cdot viscosity}{1000 \quad 30}$$

(*see Point 4.1)

4. ELEMENT CHARACTERISTICS

4.1 GRADIENT COEFFICIENTS FOR FILTER ELEMENTS

The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

Pressure filter element "D"...ON

Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm
0030	77.8	63.9	43.3	22.8	14.0	11.3
0035	50.2	21.3	17.1	13.7	10.0	7.44
0055	26.0	12.3	9.90	7.90	5.17	3.84
0060	53.5	26.0	18.3	12.1	9.78	6.32
0075	16.7	8.40	6.75	5.40	3.33	2.48
0095	13.2	6.74	5.40	4.33	2.62	1.92
0110	25.8	13.4	9.61	6.06	4.63	2.99
0140	19.9	11.5	7.39	4.38	3.54	2.29
0160	18.5	11.0	7.70	4.10	3.71	3.18
0240	11.5	6.90	5.34	3.19	2.44	2.10
0260 8.18 4.96 3.87 2.31 1.83 1.44 0280 5.54 3.37 2.74 1.49 1.36 1.17 0300 14.6 8.90 7.13						
4.88 2.80 2.61 0330 8.23 4.19 3.37 2.46 1.55 1.22 0450 7.30 4.45 3.52 2.39 1.40 1.26 0500						
5.05 2.57 2.07 1.23 0.95 0.75 0650 4.46 2.69 2.20 1.47 0.86						
						0.81
0660	3.78	1.93	1.56	0.93	0.71	0.56
0900	3.37	2.10	1.67	1.10	0.65	0.63
0990	2.51	1.28	1.03	0.61	0.47	0.37
1320	1.85	0.97	0.76	0.45	0.35	0.27
1500	1.64	0.97	0.70	0.48	0.36	0.28

Return line element "R"...ON

Size	1 µm	3 µm	5 µm	10 µm	15 µm	20 µm
0030	89.8	68.4	43.9	26.8	16.8	14.7
0060	47.2	23.6	17.2	9.82	9.01	6.85
0075	25.6	19.4	13.4	7.31	4.80	4.40
0090	22.5	13.1	9.49	6.07	4.30	3.21
0110	22.3	13.1	8.87	5.40	4.26	3.24
0150	13.4	7.80	5.65	3.61	2.55	1.91
0160	16.0	8.00	5.68	3.22	2.69	2.32
0165	14.1	9.44	7.37	4.02	2.25	2.42
0185	10.4	7.44	5.74	2.93	1.65	1.41
0195	7.66	5.48	4.22	2.16	1.22	1.04
0210	5.66	3.28	2.55	1.53	1.00	0.88
0240	10.4	5.18	3.66	2.27	1.84	1.41
0270	3.66	2.12	1.65	0.99	0.65	0.57
0280 5.10 2.57 2.08 0330 8.09 3.72 2.73 1.48 1.28 1.02 0450 4.63 3.33 3.17 2.30 1.64 1.00 0.85 0.80						
0500 5.27 2.60 1.90 1.09 0.84 0.69 0580 2.49 1.23 0.90 0.53 0.40 0.34 0600 2.35 1.23 1.10						
0.61 0.42 0.34						
0660 3.57 1.69 1.21 0.67 0.57 0750 2.11 1.12 0.92 0.53 0.34 0.32 0850 2.77 1.31 1.00 0.58 0.45						
0.44 0.36						
0950	2.39	1.03	0.79	0.48	0.38	0.31
1300 1.72 0.72 0.59 0.35 0.32 0.22 1700 1.35 0.64 0.53 0.28 0.25 0.18 2600 0.84 0.36 0.29						
0.18 0.16 0.11 2700 0.91 0.35 0.30 0.18 0.17 0.08						

Return line element "RD"...ON

Size 1 µm 3 µm 5 µm 10 µm 15 µm 20 µm 0161 17.71 10.67						
			8.76	4.97	3.41	3.04
0241	10.86	6.54	5.37	3.05	2.09	1.87
0261	7.19	4.33	3.56	2.02	1.38	1.24
0281	4.47	2.69	2.21	1.25	0.86	0.77

For information on bypass valve curves, please see Filter Element (Quick Selection) brochure no.: E 7.221../..

NOTES

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.

HYDAC Filtertechnik GmbH
Industriegebiet