Glass fibre filter elements ULP/UHC

with or without pre-filter
flow direction from in to out
up to 6 bar, filtration rating 5, 10, 20, 25 µm

1. GLASS FIBRE ELEMENT

1.1 DESCRIPTION

The 4-layered media structure of the ULP elements were developed on the basis of RT-Filtertechnik's many years of experience in mobile applications. The structure has a very low Δp/Q performance curve.

The 5-layered media structure of the UMC elements were developed on the basis of RT-Filtertechnik's many years of experience in mobile applications. The structure has a very high retention rate across the elements' entire service life. It is also highly stable in the event of flow rate fluctuations, which are very common in mobile applications.

1.2 GENERAL DATA

Collapse stability	6 bar
Filter element	ULP = Glass fibre UHC = Glass fibre with pre-filter
Temperature range	-30 °C to +100 °C For sealing material FPM to -10 °C
Flow direction	From inside to outside
Filtration rating	5, 10, 20, 25 µm
Bypass cracking pressure	The bypass valve function is realised in the filter or in the element spigot. The cracking pressure is 3 bar as standard (others on request)
Category of filter element	Single use element

1.3 HELIOS PLEAT GEOMETRY: ΔP OPTIMISED FILTRATION/OPTIONAL

Using high-quality folding machines and pleat geometries, high-quality filter elements can always be significantly optimised technologically. In addition, the use of these folding technologies enables the improvement of low-weight, flow-optimised filtration materials in terms of their service life and pulsation stability. The other way round, pulsation resistant filter media of higher weight can be produced with significantly reduced differential pressure difference compared to filter elements folded in the conventional manner.

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 FHA, HFB, HFC and HFD
- Operating fluids with high water content (>50% water content) on request

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2. MODEL CODE

2.1 MODEL CODE FOR STANDARD PRESSURE FILTER ELEMENTS

(Can be used in the following filters: LFR, LPFR, MDFR)

0080 D 010 ULP /-V

Size
0020, 0045, 0080, 0150, 0250

Type
D Pressure filter element

Filtration rating in µm
005, 010, 025

Filter material of element
ULP Collapse stability up to 6 bar

Supplementary details
V FPM (Viton) seal

2.2 MODEL CODE FOR RETURN LINE FILTER ELEMENTS

(Can be used in the following filters: RMER, RPER, RKMR)

0400 R 010 ULP /-V

Size
0170, 0230, 0300, 0310, 0400, 0500, 0600, 0800, 1200

Type
R Return line filter element

Filtration rating in µm
005, 010, 025

Filter material of element
ULP Collapse stability up to 6 bar

Supplementary details
V FPM (Viton) seal

2.3 MODEL CODE FOR RETURN LINE FILTER ELEMENTS RMTR

(Can be used in the following filters: RMTR)

0600 RMT 010 ULP /-V

Size
0600, 0800, 1200

Type
R Return line filter element

Filtration rating in µm
005, 010, 025

Filter material of element
ULP Collapse stability up to 6 bar

Supplementary details
V FPM (Viton) seal

2.4 MODEL CODE FOR STANDARD PRESSURE FILTER ELEMENTS WITH PRE-FILTER

(Can be used in the following filters: LFR, LPFR, MDFR)

0080 D 010 UHC /-V

Size
0020, 0045, 0080, 0150, 0250

Type
D Pressure filter element

Filtration rating in µm
005, 010, 020

Filter material of element
UHC Collapse stability up to 6 bar

Supplementary details
V FPM (Viton) seal

2.5 MODEL CODE FOR RETURN LINE FILTER ELEMENTS WITH PRE-FILTER

(Can be used in the following filters: RMER, RPER, RKMR, RFLR)

0400 R 010 UHC /-V

Size
0170, 0230, 0300, 0310, 0400, 0500, 0600, 0800, 1000, 1200

Type
R Return line filter element

Filtration rating in µm
005, 010, 020

Filter material of element
UHC Collapse stability up to 6 bar

Supplementary details
V FPM (Viton) seal

2.6 MODEL CODE FOR RETURN LINE FILTER ELEMENTS RMTR

(Can be used in the following filters: RMTR)

0600 RMT 010 UHC /-V

Size
0600, 0800, 1200

Type
R Return line filter element

Filtration rating in µm
005, 010, 020

Filter material of element
UHC Collapse stability up to 6 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

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

(* gradient coefficient 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"...ULP			
Filter size	5 µm	10 µm	25 µm
0020	32.4	17.6	8.0
0045	14.2	7.2	2.9
0080	11.3	5.5	2.2
0150	6.8	3.3	1.3
0250	4.2	2.0	0.8

Return line filter element "R"...ULP			
Filter size	5 µm	10 µm	25 µm
0170	3.23	1.70	0.79
0230	2.39	1.26	0.59
0300	1.79	0.94	0.44
0310	1.79	0.94	0.44
0400	1.37	0.72	0.33
0500	1.25	0.66	0.31
0600	0.50	0.25	0.08
0800	0.40	0.18	0.06
1200	0.24	0.10	0.03

Pressure filter element "D"...UHC			
Filter size	5 µm	10 µm	20 µm
0020	40.8	22.2	10.6
0045	18.0	9.0	4.5
0080	14.2	7.1	3.5
0150	8.6	4.3	2.0
0250	5.3	2.6	1.3

Return line filter element "R"...UHC			
Filter size	5 µm	10 µm	20 µm
0170	3.1	1.86	1.02
0230	2.9	1.38	0.76
0300	2.0	1.02	0.56
0310	2.0	1.02	0.56
0400	1.64	0.78	0.43
0500	1.51	0.72	0.40
0600	0.70	0.35	0.15
0800	0.54	0.26	0.09
1000	0.35	0.15	0.08
1200	0.28	0.13	0.06

Others on request!

4.2 CONTAMINATION RETENTION CAPACITY IN G

The contamination retention and particle filtration performance of an element are established in the multipass test to ISO 16889. This procedure with its precisely defined test conditions and a standard test dust (ISO MTD) enables the performance data of different elements to be compared.

Pressure filter element "D"...ULP			
Filter size	5 µm	10 µm	25 µm
0020	1.5	2.61	2.9
0045	3.4	6.03	6.7
0080	4.2	7.51	8.4
0150	5.3	9.45	10.5
0250	8.5	15.3	17.0

Return line filter element "R"...ULP			
Filter size	5 µm	10 µm	25 µm
0170	12.4	22.3	27.2
0230	17.4	31.3	38.1
0300	31.9	57.4	70.0
0310	27.1	48.8	59.5
0400	36.9	65.2	79.5
0500	43.8	78.9	96.2
0600	85.0	153.0	170.0
0800	115.0	207.0	230.0
1200	170.0	306.0	340.0

Pressure filter element "D"...UHC			
Filter size	5 µm	10 µm	20 µm
0020	4.6	6.9	7.8
0045	10.7	16.1	18.1
0080	13.4	20.0	22.6
0150	16.8	25.2	28.4
0250	27.2	40.8	45.9

Return line filter element "R"...UHC			
Filter size	5 µm	10 µm	20 µm
0170	24.3	36.4	44.4
0230	31.7	47.6	58.1
0300	51.8	77.7	94.8
0310	51.8	77.7	83.3
0400	60.8	91.2	111.3
0500	78.0	117.0	142.7
0600	272.0	408.0	459.0
0800	368.0	552.0	621.0
1000	438.0	658.0	739.0
1200	544.0	816.0	918.0

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.
All technical details are subject to change without notice.

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