



## Paper Filter Elements P/HC

up to 10 bar, filtration rating 10, 20 µm

### 1. PAPER ELEMENT

#### 1.1 DESCRIPTION

Paper filter elements are usually for applications requiring low levels of filtration. Typical applications are, for example, waste compactors for the filtration of lubrication oil or high-viscosity oils > ISO VG 100.

The filter element is constructed from randomly laid organic fibres that are stiffened with a binder.

Compared to P/HC elements, P elements have a smaller pleat depth.

"P/HC" paper elements are used in our return line filters.

#### Additional paper version

For low differential pressure stability (usually 2.5 to 3 bar) and for use as fuel and engine filters, randomly laid organic fibres are utilized, and stiffened using a phenolic resin as the binder.

HYDAC uses this material primarily in filler/breathers (e.g. BF, ELF: 0005 L 003 P), suction filters (e.g. SF, SFM: 0160 RS 010 P) as well as in spin-on cartridges (e.g. MF, MFD: 0160 MA 010 P). The pleated design provides a large filter surface at low cost.

For further information please see the relevant filter brochures.

#### 1.2 GENERAL DATA

Collapse stability	10 bar
Temperature range	-30 °C to +100 °C For sealing material FPM to -10 °C
Flow direction	From outside to inside
Filtration rating	10, 20 µm (others on request)
Bypass cracking pressure	Return line filter element ("R"): standard 3 bar (others on request)
Category of filter element	Single use element

#### 1.3 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

## 2. MODEL CODE

### 2.1 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	P/HC	/-V
<b>Size</b>	0030, 0060, 0075, 0090, 0110, 0150, 0160, 0165, 0185, 0240, 0330, 0500, 0660, 0850, 0950, 1300, 1700, 2600				
<b>Type</b>	R Return line filter element				
<b>Filtration rating in µm</b>	010, 020				
<b>Filter material of element</b>	P/HC				
<b>Supplementary details</b>	V FKM (Viton) seal KB without bypass valve				

## 3. FILTER CALCULATION / SIZING

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

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

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

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

(\*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 mm<sup>2</sup>/s. The pressure drop changes proportionally to the change in viscosity.

Pressure filter element "R" ...P/HC		
Size	10 µm	20 µm
0030	3.30	1.67
0060	1.67	0.83
0075	1.29	0.65
0090	1.05	0.53
0110	0.91	0.46
0150	0.73	0.31
0160	0.63	0.31
0165	0.61	0.30
0185	0.52	0.30
0195	0.33	0.16
0210	0.32	0.19
0240	0.42	0.21
0270	0.17	0.07
0280	0.20	0.10
0330	0.30	0.15
0450	0.25	0.13
0500	0.20	0.10
0580	0.10	0.05
0660	0.15	0.08
0750	0.08	0.04
0850	0.12	0.06
0950	0.11	0.05
1300	0.08	0.04
1700	0.06	0.03
2600	0.04	0.02
2700	0.05	0.02

## 4.2 FILTRATION AREA [CM<sup>2</sup>]

Pressure filter element "R" ...P/HC	
Size	
0030	283
0060	572
0075	1055
0090	1121
0110	1166
0150	1897
0160	1978
0165	1915
0185	2398
0195	3533
0210	4226
0240	3110
0270	8063
0280	6385
0330	4230
0450	5053
0500	6470
0580	12826
0660	8722
0750	15133
0850	11230
0950	15221
1300	21269
1700	23020
2600	43394
2700	36157

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

## 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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