Pall Corporation

9000

9050/9051 Series Filter Assembly

HIGH PRESSURE FILTERS

Pressure 1000 bar max • Port Size ⅜", ½" and ¾"

*Filtration. Separation. Solution.*SM

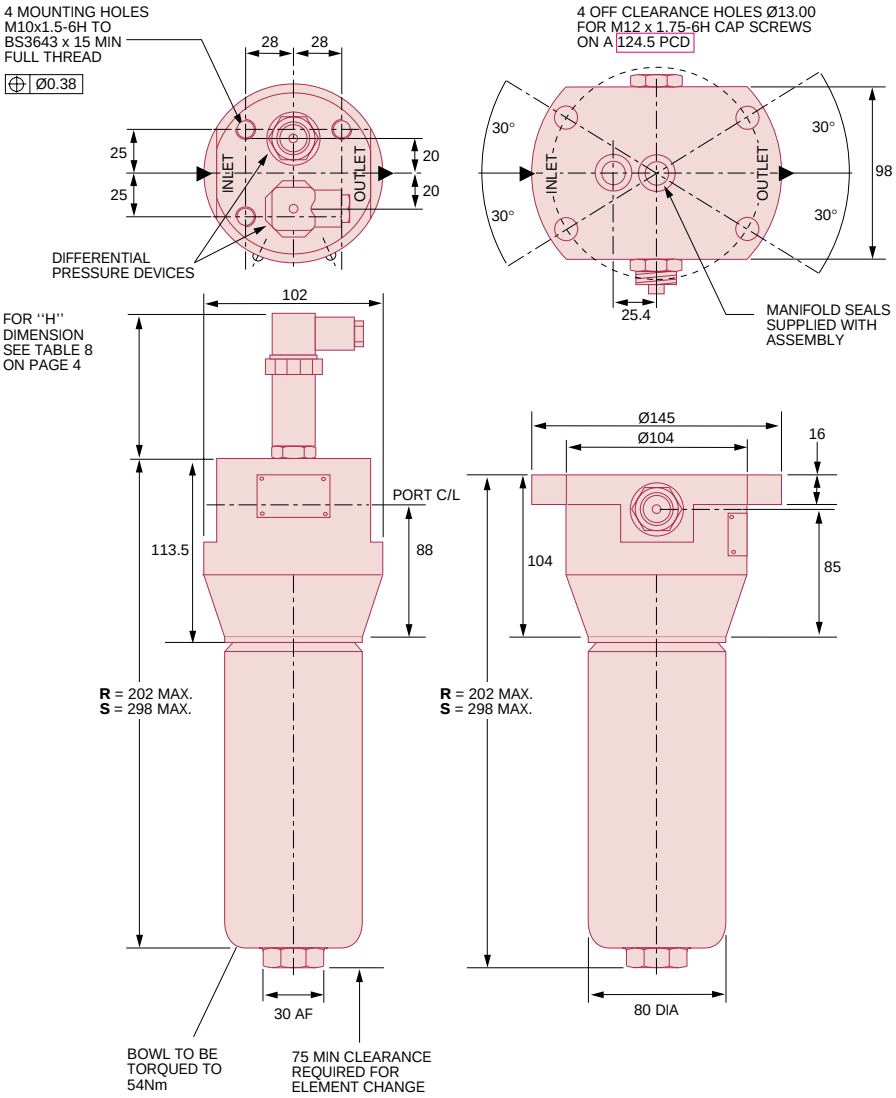
9050/9051 Series Filter Assembly
Technical Information

Notes and Specifications

Maximum working pressure:	700 bar
YA15 option:	1000 bar
Proof pressure:	1050 bar
YA15 option:	1500 bar
Burst pressure:	3150 bar typical
YA15 option:	4000 bar typical
Temperature range:	
Nitrile Seals:	-43˚C to +120˚C
Fluorocarbon Seals:	-29˚C to +120˚C
50˚C max in HWCF or water glycol fluids.	
Bypass valve setting:	9050 series only 3.4 ± 0.3 bar
ΔP switch indicator setting:	2.4 ± 0.3 bar
Bypass valve setting:	9051 series only None
ΔP switch indicator setting:	6.9 ± 1.0 bar
(See PME DELTAP for full indicator details)	
Materials:	Stainless steel 316S12 head, bowl and valve. YA15 - Duplex stainless steel to ATSM A789/SEW400
Disposable filter medium:	**Ultipor III**
Element collapse pressure rating per ISO 2941:	9050 series only 20 bar minimum with bypass valve. Note: For water containing fluids 10 bar minimum. If operating above 50°C, contact Pall Sales office. 9051 series only 210 bar minimum without bypass valve

The equipment has been assessed in accordance with the guidelines laid down in The European Pressure Directive 97/23/EC and has been classified within Sound Engineering Practice S.E.P. Suitable for use with Group 2 fluids only. Consult Pall Sales for other fluid/gas group suitability.

All dimensions in mm unless otherwise stated.



Multipass Filtration Ratings per ISO 16889

'Pall' Media Grade		Micrometre Size for ß×(c) Values*						Terminal ΔP Bar
		$ß_{x(c)}=2$	$ß_{x(c)}=10$	$ß_{x(c)}=75$	$ß_{x(c)}=100$	$ß_{x(c)}=200$	$ß_{x(c)}=1000$	
9020	KZ	<2	<2	<2	<2	2	2.5	4
	KP	<2	<2	3.1	3.3	3.8	5	4
	KN	2.1	3.4	5.0	5.2	5.7	7	4
	KS	3.2	5.5	8.3	8.7	9.7	12	4
	KT	7.2	11	15.8	16.5	18.2	22	4
9021	DP	<2	<2	3.0	3.2	3.8	5	16
	DT	3.3	6.3	10.1	10.7	12	15	16

* Beta ratios are designated using the symbol (c) to signify they were measured using the ISO 16889 procedure.

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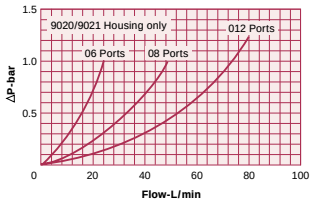
Filter assembly clean pressure drop = ΔP housing + ΔP element

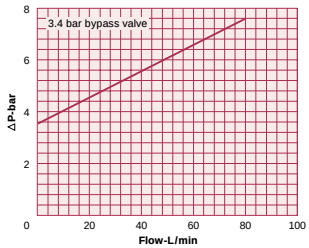
Housing pressure drop

Using fluid with s.g. 0.9 housing pressure drop is directly proportional to specific gravity.



Bypass valve curves

Bypass valve pressure drop using fluid with s.g. 0.9. Valve pressure drop is directly proportional to fluid specific gravity.



Element pressure drop factor

Multiply flow rate by Δp factor/1000 to determine pressure drop (bar) with fluid at 30 cSt 0.9 S.G. Correct for other viscosities and specific gravity by multiplying new viscosity in cSt/30 x new S.G./0.9.

9020 Series Element ΔP factor

Length	KZ	KP	KN	KS	KT
4"	40.8	15.1	11.4	7.7	4.6
8"	20.5	7.6	5.7	3.8	2.3

9021 Series Element ΔP factor

Length	DP	DT
4"	40.6	15.0
8"	19.9	7.3

Sample ΔP calculation

HH9020C12KTRBP at 40 L/min flow rate using a hydraulic fluid at 40 cSt and specific gravity (s.g.) 1.2.

ΔP assembly = ΔP housing + ΔP element
= (0.3 x 1.2/0.9)
+ ((40 x 4.6/1000) x 40/30 x 1.2/0.9)
= 0.4 (housing) + 0.33 (element)
= 0.73 bar

Ordering Information

Filter Assembly 'Pall' Part No:

H ☐ 905 ☐ ☐ ☐ ☐ ☐ ☐ ☐ 9 ☐
Table 1 — Table 2 Table 3 Table 4 Table 5 Table 6 Table 7 Table 8 — Table 9

Replacement Element 'Pall' Part No:

HC902 ☐ F ☐ ☐ ☐
Table 2 — Table 5 Table 6 Table 1

Seal Kit 'Pall' Part No:

H9050SK ☐
Table 1

Table 1. Seal Type

Code	Seal Material	Fluid Service
H	Nitrile	Petroleum, water-oil emulsions, water glycol.
Z	Fluorocarbon	Specified synthetics.

Table 2. Element Collapse Rating

Code	Option
0	20 bar diff. for housings with bypass valves.
1	210 bar diff. for housings without bypass valves. 'Dirt-Fuse' element option.

Table 3. Port Type

Code	Option
B*	NPT thread.
C*	BSP thread.
K	Top manifold mounting.
V	Autoclave type.

Table 4. Port Size Options

Code	Option	Available for
06	⅜"	Port type B, V.
08	½"	Port type B, C, K.
12	¾"	Port type B, C.

* Not available for 1000 bar variant

Table 5. Filter Element

Medium Code		Rating (μm) (ß×(c)≥1000)*
9020	KZ	2.5
	KP	5
	KN	7
	KS	12
	KT	22
9021	DP	5
	DT	15

Table 6. Length

Assembly Code	Element Code	Dry Wt.Kg 9050	9051
R	4	7.9	8.7
S	8	12.7	13.5

Table 7. Bypass Valve

Code	Valve Options	Available for
B	3.4 ± 0.3 bar	9050
W	No bypass valve	9051

Table 9. High Pressure Option

Code	Specification
YA15	1000 bar operating specification

Table 8. Differential Pressure (ΔP) Device Options

Code	Description	H Dim
BH	Bleed plug and seal in place of ΔP indicator.	8mm
E	Visual indicator in stainless steel. Button rises 5 mm on actuation.	23mm
K	'DeltaSense' differential pressure sensor. 4 - 20mA output.	78mm
MH	Electrical switch–SPDT. Automatic reset. Hirschmann type plug & socket. IEC class IP65.	78mm
PH	Visual indicator with thermal lockout. No signal below 0°C, signal above 27°C.	23mm
Q	Electrical switch–SPDT Automatic reset. Waterproof to IEC class IP65. Sheathed cable 3 x colour coded 1000mm flying lead.	66mm
W	Electrical switch–SPDT Automatic reset. For use in hazardous enviroments. Explosion protected to CENELEC EN 50014 Class EExdIICT6.	47mm

For full range of indicators, refer to PME DELTAP.

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Features and Benefits

Bypass valve

Full flow low inertia bypass valve mounted in the filter head between inlet and outlet port.

- Operation is independent of clogging indicator.
- Instant response to limit ΔP across element during cold starts and flow surges.
- Fluid flow clear of the element when in bypass mode.

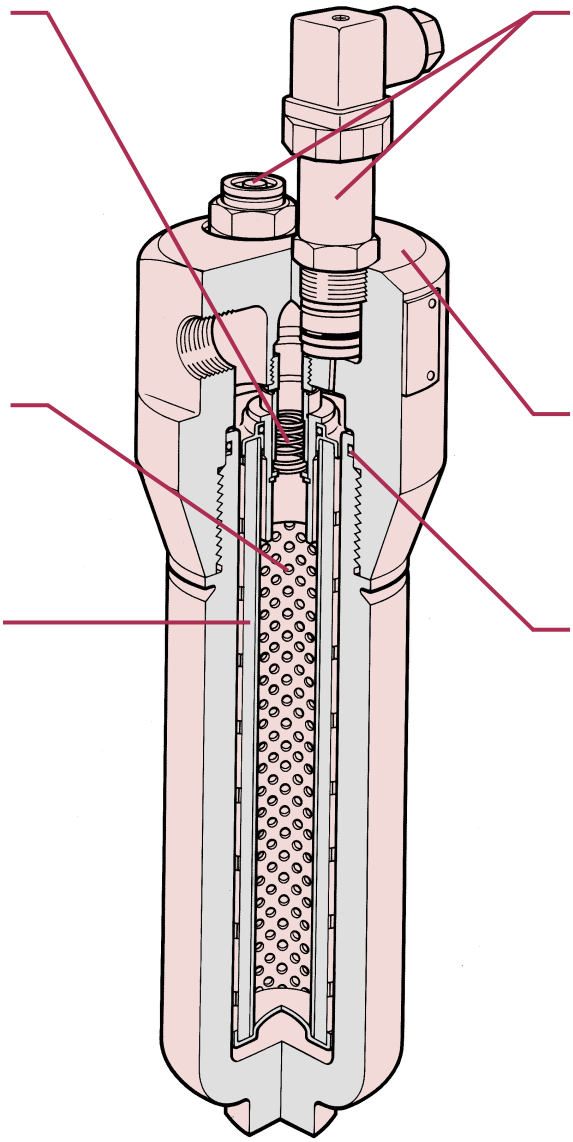
Fully supported element construction for out-to-in flow

- High collapse strength and filtration integrity.
- Uniform diffused flow.

Ultipor III elements

Ultipor III filter media

- Unique composite structure.
- Graded pore construction.
- Inert, inorganic fibres with corrosion protected steel endcap and core.
- Removal ratings:- 2.5, 5, 7, 12 and 22 micrometres where $ß_{x(c)} \geq 1000$ to ISO 16889.



Optional visual and electrical differential pressure indicating devices

Accurate and reliable indication of the need for element service.

Sampling port

Sampling via the differential pressure indicator port for sampling without breaking lines.

Mounting

Variety of head mountings for installation versatility. Pipe mounting, or top manifold options available.

Positive sealing

Unique positive sealing interface using standard ‘O’ rings.

Pall Corporation

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Your distributor is:

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