



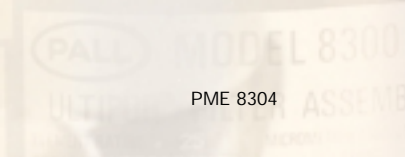
Pall Corporation

8304

8304 Series Coreless Filter Range

LOW PRESSURE FILTERS

Port Size 1½", 2" and 2½"



8304 Series Coreless Filter Assembly Technical Information

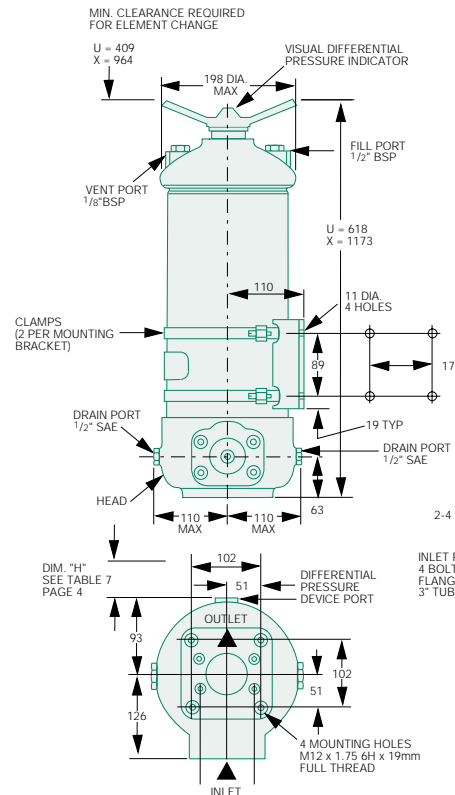
Notes and Specifications

Maximum working pressure:	28 bar
Typical fatigue pressure:	23 bar (NFPA/T2.6.1.R1 1991 Category B/90)
Proof pressure:	42 bar
Burst pressure:	145 bar typical
Temperature range:	
Nitrile Seals:	-43°C to +120°C
Fluorocarbon Seals:	-29°C to +120°C
	60°C max in HWCF or water glycol fluids.
Bypass valve settings:	3.4 ± 0.3 bar 1.7 ± 0.2 bar
ΔP switch indicator setting:	2.4 ± 0.3 bar 1.1 ± 0.2 bar
	(See PMEDELTA for full indicator details)
Materials:	Aluminium alloy head, cover handle and tube. Carbon steel centre post, permanent core and optional mounting bracket.
Finish:	
Cover and tube:	Gold anodised
Head and handle:	Black anodised
Bracket:	Zinc plated and passivated
Disposable filter medium:	Coreless Ultipor III
Element collapse pressure rating per ISO 2941:	10 bar minimum

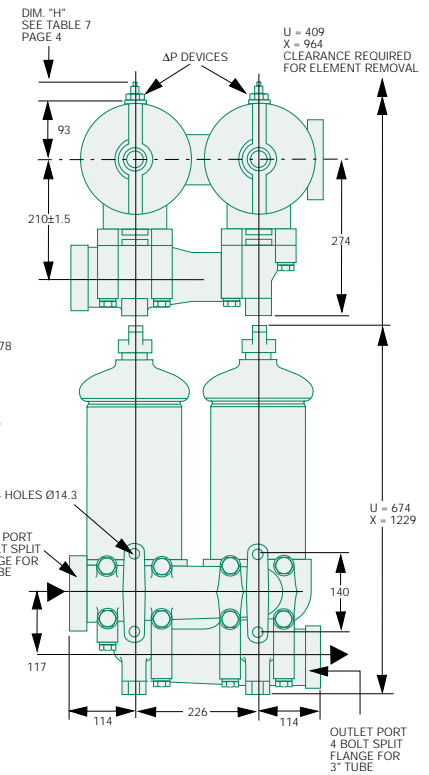
The equipment has been assessed in accordance with the guidelines laid down in The European Pressure Directive 97/23/EC and has been classified within Sound Engineering Practice S.E.P. Suitable for use with Group 2 fluids only. Consult Pall Sales for other fluid gas group suitability.

All dimensions in mm unless otherwise stated.

8304 Standard Option

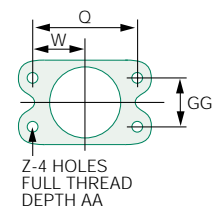


8304 Dual Manifold



Flange mounting bolt dimensions (per ISO 6162)

Filter Series	'Pall' P/N Code	Nominal Tube Size	GG	Q	Z Thread	AA Min
8304	F24	1½"	35.7	69.8	M12 x 1.75-6H	25
	F32	2"	42.9	77.8	M12 x 1.75-6H	25
	F40	2½"	50.8	88.9	M12 x 1.75-6H	25
Dual 8304	F48	3"	61.9	106.4	M16 x 2.75-6H	25



Multi-pass Filtration Ratings per ISO 16889

Pall Media Grade	Micrometre Size for β _X (c) Values*						Terminal ΔP Bar
	β _X (c)=2	β _X (c)=10	β _X (c)=75	β _X (c)=100	β _X (c)=200	β _X (c)=1000	
	KZ	<2	<2	<2	<2	2	
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

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

8304 Series Coreless Filter Assembly Technical Information

Filter assembly clean pressure drop
= ΔP housing + ΔP element

Element pressure drop factor

Multiply actual flow rate by ΔP factor/1000 to determine pressure drop 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.

Sample ΔP calculation

HH8304F40KNXBP 800 L/min flow rate using a hydraulic fluid at 50 cSt and specific gravity (s.g.) 1.2:

ΔP assembly

$$= \Delta P \text{ housing} + \Delta P \text{ element}$$

$$= (0.29 \times 1.2/0.9)$$

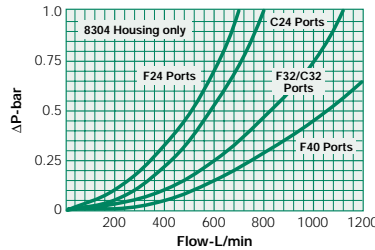
$$+ ((800 \times 0.3/1000) \times 50/30 \times 1.2/0.9)$$

$$= 0.39 \text{ (housing)} + 0.53 \text{ (element)}$$

$$= \mathbf{0.92 \text{ bar}}$$

Housing pressure drop

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

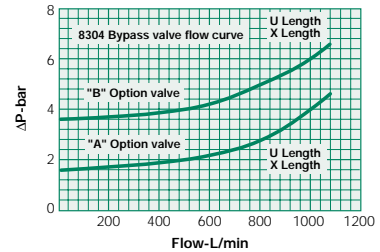


8304 Series Element ΔP factor

Length	KZ	KP	KN	KS	KT
16"	1.7	0.8	0.7	0.5	0.4
39"	0.6	0.3	0.3	0.2	0.1
Dual 39"	0.3	0.15	0.15	0.1	0.05

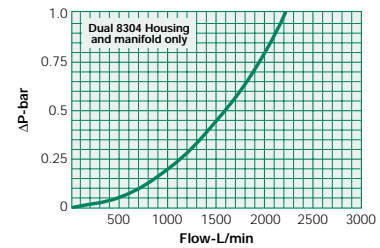
Bypass valve curves

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



Dual 8304 housing and manifold pressure drop

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



Ordering Information

Filter Assembly 'Pall' Part No:

Replacement Element 'Pall' Part No:

Seal Kit 'Pall' Part No:

Filter Assembly 'Pall' Part No:

H 8304

Table 1 Table 2 Table 3 Table 4 Table 5 Table 6 Table 7 Table 8

HC8304F

Table 4 Table 5 Table 1

H8300SK

Table 1

H 8300 SP2A3 F48

Table 1

The dual manifold is shipped unassembled. Also order two 8304 filter assemblies with F40 port options

Table 1. Seal Type

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

Table 2. Port Type

Code	Option
C	BSP thread
F	SAE split flange with metric holding bolts. Standard pressure 210 bar

Table 3. Port Size

Code	Option	Available for
24	1½"	C, F
32	2"	C, F
40	2½"	F

Table 4. Filter Element

Medium Code	Rating (µm) (β×(c)≥1000)*
KZ	2.5
KP	5
KN	7
KS	12
KT	22

Table 5. Length

Filter Type	Assembly Code	Element Code	Dry Wt.Kg
8304	U	16	21
	X	39	42
Dual 8304	U	16	47
	X	39	97

Table 6. Bypass Valve

Code	Option
A	1.5 ± 0.2 bar
B	3.4 ± 0.3 bar
Y	Non-bypass with 1.1 bar ΔP device
N	Non-bypass with 2.4 bar ΔP device
1	Non-bypass with option F, or B ΔP device

Table 7. Differential Pressure (ΔP) Device Options

Code	Description	H Dim
B	Bleed plug and seal in place of ΔP indicator.	8mm
D	Visual indicator.	23mm
E	Visual indicator in stainless steel.	23mm
M	Electrical switch-SPDT. Automatic reset. Hirschmann type plug & socket. IEC class IP65.	78mm
P	Visual indicator with thermal lockout.	23mm
R	Electrical switch-SPDT with neon light indicator. Hirschmann type plug & socket. IEC class IP65.	90mm
V	Combined visual/electrical switch (SPDT). Hirschmann type plug & socket.	68mm

Table 8. Mounting Bracket Option

Code	Number of Brackets
Omit	None
1	*X" length -3 off

8304 Series Coreless Filter Assembly Features and Benefits

Features and Benefits

Optional visual and electrical differential pressure indicating devices

- Accurate and reliable indication of the need for element service.

Ease of element change

Forged aluminium "T" handle and single element fitted over permanent centre core allows one man to change an element in 60 seconds without tools, reducing downtime.

Filter manifolding

Standard units can be manifolded together to give full flow filtration at higher flow rates or increase dirt capacity in systems.

Single piece elements

Avoids stacked element.

Housing of non-welded construction

Rugged construction rated for 28 bar working pressure. Superior strength and fatigue resistance.

Drain port

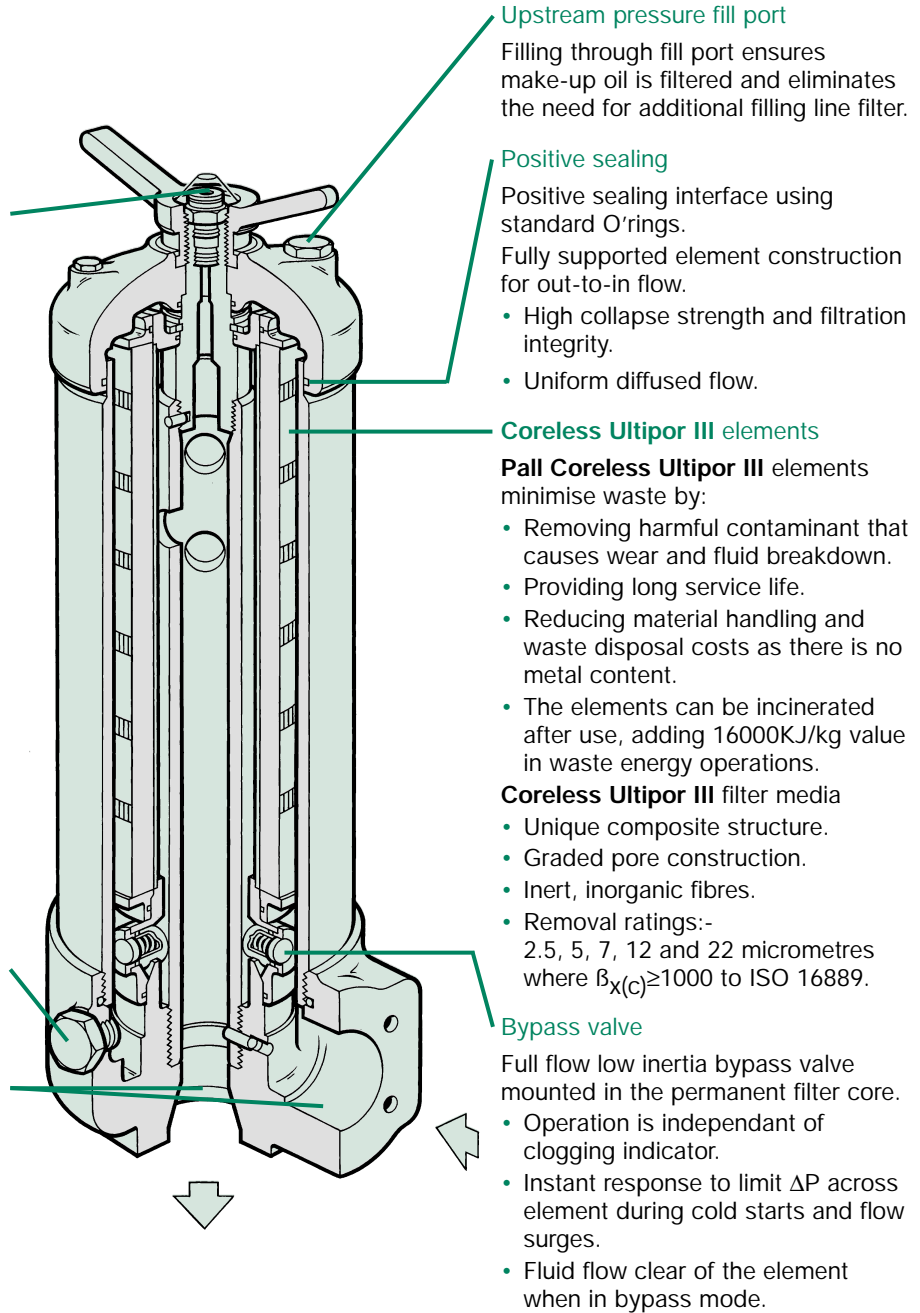
Drain port for draining during filter change.

Port options

Port options are 1½" and 2" BSP, or 1½", 2" and 2½" ISO, 4 bolt flange.

Sampling port

Integral sampling port for sampling without breaking lines.



Upstream pressure fill port

Filling through fill port ensures make-up oil is filtered and eliminates the need for additional filling line filter.

Positive sealing

Positive sealing interface using standard O'rings.

Fully supported element construction for out-to-in flow.

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

Coreless Ultipor III elements

Pall Coreless Ultipor III elements minimise waste by:

- Removing harmful contaminant that causes wear and fluid breakdown.
- Providing long service life.
- Reducing material handling and waste disposal costs as there is no metal content.
- The elements can be incinerated after use, adding 16000KJ/kg value in waste energy operations.

Coreless Ultipor III filter media

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

Bypass valve

Full flow low inertia bypass valve mounted in the permanent filter core.

- 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.



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