



Food and Beverage

SUPRApak M Series Filter Systems

SUPRApak™ Filtration
For Medium Batch Depth Filtration



SUPRApak M Series-SA filtration units are turn-key systems designed for use with SUPRApak M filter modules, to handle medium batch sizes in wine, distilled spirits, sweeteners, gelatin, enzymes, and other food and beverage applications.

Features	Benefits
Closed filtration system	<ul style="list-style-type: none"> Increased process safety and product quality; no drip losses; minimum operator exposure to process fluids
Installation package with standard accessories	<ul style="list-style-type: none"> Turn-key installation allows quick integration into existing system
Compact design with high filtration area	<ul style="list-style-type: none"> High throughput filtration for medium batch production, resulting in low investment cost
Drainable, low hold-up volume assembly	<ul style="list-style-type: none"> Higher product yield; minimized cleaning costs
High quality internal surface finish, sanitary and crevice-free design	<ul style="list-style-type: none"> Enhanced cleanability
Modular construction available	<ul style="list-style-type: none"> Enables flexibility and matching of production volumes to equipment capacity
External tensioning device with preset torque limit	<ul style="list-style-type: none"> Provides secure operation without bypass
Simple, quick installation and servicing	<ul style="list-style-type: none"> Reduced labor and maintenance costs; reduced process downtime
Filter module lifting device available on request	<ul style="list-style-type: none"> Eases filter installation and removal
ATEX (94/9/EC) Group II, Category 2 documentation (Zones 1/21 and 2/22)	<ul style="list-style-type: none"> Suitable for use in potentially explosive environments

Description

SUPRApak M filtration units provide a closed system approach to high capacity depth filtration, maximizing product protection and minimizing product losses. They are a cost-effective alternative to traditional sheet filtration and lenticular module filtration.

SUPRApak M Series-SA units provide a complete installation package including standard accessories, which allows quick integration into an existing system. They hold from one to four SUPRApak M modules, representing up to approximately 11 m² (116.6 ft²) of filtration area in a very compact and low hold-up volume design. They are available either in single dome or flexible modular design.

Specifications

Minimum/Maximum Design Pressure ^{1,2}	-1 to 8 barg (-14.5 to 116 psig)
Minimum/Maximum Design Temperature ¹	-10 to 150 °C (14 to 302 °F)
Materials of Construction	Wetted parts 1.4404 (AISI 316L stainless steel)
Sealing Materials ³	EPDM elastomer
Internal Surface Finish	Housing ≤ 0.8 micrometers Ra (≤ 32 Ra microinches), electropolished
	Piping ≤ 0.8 micrometers Ra (≤ 32 Ra microinches)
Internal Welds	Housing Dressed and blended to provide uniform ripple- and crevice-free surface to ≤ 0.8 micrometers Ra (≤ 32 Ra microinches), electropolished
	Piping Weld finish is as welded with a uniform crevice-free profile. ≤ 1.6 micrometers Ra (≤ 63 Ra microinches), pickled and passivated or bright annealed
Connections	Inlet/Outlet DN40 (DIN 11851) 1.5 inch ISO 2852 clamp coupling compatible adaptors available by specific order
	Feed Fluid Vent DN6 (8 mm / 0.31 inch OD) hose tail
	Filtrate Vent DN6 (8 mm / 0.31 inch OD) hose tail
	Drains-Piping Drain-Safety Valve DN15 (18 mm / 0.71 inch OD) hose tail DN32 (34 mm / 1.34 inch OD)
Filter Module Compatibility ⁴	SUPRApak M series modules

¹ Maximum design pressure and temperature ratings are vessel ratings only. Safe operation will also depend on filter module and housing gasket use. EPDM assembly seals restrict continuous operating temperature to 130 °C (266 °F). For details on filter module temperature limitations, please refer to SUPRApak module literature.

² Design satisfies EC Pressure Equipment Directive (PED) 97/23/EC (Fluid Group 2, Category II, Module A1). Pressure rating is for liquid or gas. The PED category and fluid group classification indicates suitability of housing use on distilled spirits less than 70% by weight absolute alcohol. For such applications, the maximum allowable temperature must be below the flash point. For 70% by weight absolute alcohol the flashpoint is 21 °C (69.8 °F).

³ Please contact Pall to ensure the products meet specific National Legislation and/or Regional Regulatory requirements for food contact use.

⁴ Refer to Pall Food and Beverage SUPRApak module literature for additional guidelines on use.

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Technical Information

SUPRApak M Series-SA systems are supplied with standard accessories, which include inlet and outlet butterfly valves, a safety device with drain assembly, a feed fluid vent assembly with pressure gauge, a downstream drain assembly with pressure gauge, and a downstream non-return valve. Additional optional selections are: sight glass on feed fluid vent, and downstream sight glass.

Nominal Dimensions in mm (inches) —
for specific dimensions, please contact Pall⁵

	M-100	M-210	M-421
A	1040 (40.9)	1299 (51.1)	1818 (71.6)
B ^{6,7}	1001 (39.4)	1001 (39.4)	1001 (39.4)
C ⁶	513 (20.2)	513 (20.2)	513 (20.2)
D ^{6,7}	489 (19.3)	489 (19.3)	489 (19.3)
E ⁸	359 (14.1)	359 (14.1)	359 (14.1)
F	324 (12.8)	324 (12.8)	324 (12.8)

⁵ Pall Corporation reserves the right to make dimensional modifications at any time, maintaining the same fit, form, and function. Please request a general arrangement drawing if exact dimensions are required.

⁶ Indicated dimensions are for installations requiring DIN connections. For installations requiring clamp coupling connections, an optional DIN-clamp coupling adaptor is additionally available. See Optional Accessories. If adaptors are added to the inlet and outlet connections, add 88 mm (3.5 in) for each adaptor.

⁷ An optional sight glass for the filtrate piping is available. See Optional Accessories. Installation of this sight glass will add 156 mm (6.1 in) to this dimension.

⁸ Adjustable (leg height adjustment)

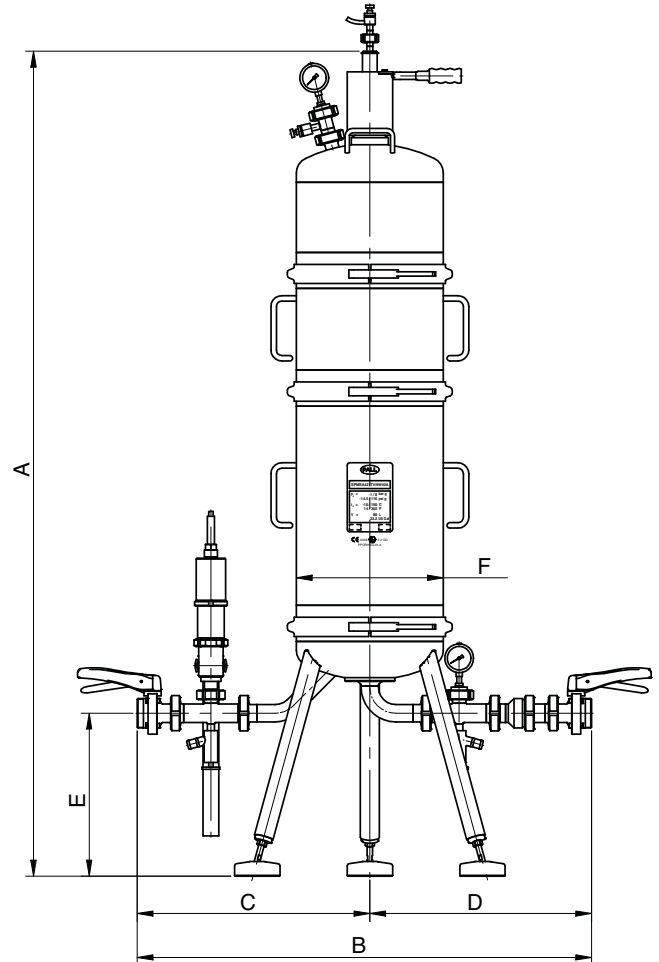


Figure 1: Dimensional information

Volume and Weight

	M-100	M-210	M-421
Volume L (US gal)	28.2 (7.5)	48.2 (12.7)	89.2 (23.6)
Weight kg (lb)	55.8 (123.0)	66.7 (147.1)	83.8 (184.8)

Standard Documentation⁹

- Certificate of Conformity to Quality Standards
- Final Inspection Certificate
- Installation/Operating Manual (IOM)

⁹ Additional documentation packages can be ordered. Please request PPD004BRONZ, PPD004SILVER, or PPD004GOLD.

This is a guide to the part numbering structure and possible options only.
For availability of specific options, please contact Pall.

Part Number: SPM SA TV NW40 A

Table 1

Example Part Number: **SPMSA421TVNW40A**

Note: See bold reference codes in the tables.

Table 1

Code	Bowl Height and Configuration	Number of SUPRApak Modules
100	1-High Bowl	1
210	2-High Split Bowl	1 or 2
421	4-High Split Bowl	1, 2, 3, or 4



Figure 2: Stainless steel core for hot fluid filtration

Optional Accessories

Part No.	Description	Details
25590-0226 ¹⁰	Hot Fluid Core	1.4404 (AISI 316L SS)
25590-0226-01 ¹⁰	Hot Fluid Core Extension Z1	1.4404 (AISI 316L SS)
25590-0226-02 ¹⁰	Hot Fluid Core Extension Z2	1.4404 (AISI 316L SS)
ACS1036AA	Hook Spanner DN10-20	Tool
ACS1037AA	Hook Spanner DN25-100	Tool
20040118-12	1-2 High Lifting Device	Supplied with Spacer
20040118-34	3-4 High Lifting Device	Supplied with Spacer
ACS1012AA	Sight Glass DN40	For filtrate piping
ACS1020AA	Sight Glass DN25	For feed fluid vent assembly
ACS1116AA	Maintenance Tool Kit	Hook spanners, adjustable torque wrench, torque unit tools
ACS1067GS	Inlet/Outlet Adaptor (DN40 to 1 1/2 inch clamp coupling)	Adaptor for piping adaption from DN to ISO 2852 clamp coupling connection

¹⁰ For hot fluid filtration (>40 °C/ >104 °F) select Hot Fluid Core for the top module in the stack and add Hot Fluid Core Extension Z1 (1-high section) and/or Hot Fluid Core Extension Z2 (2-high section) as required. A 1-high housing will only require the Hot Fluid Core.

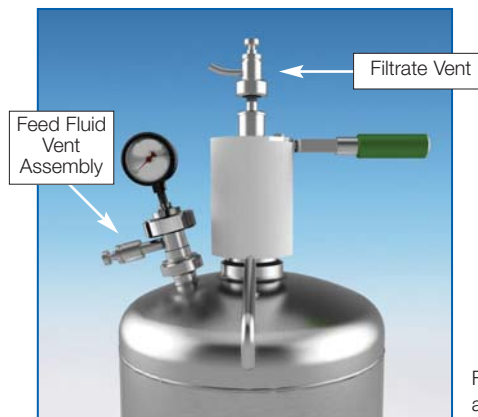


Figure 3: Feed fluid vent assembly and filtrate vent detail



Figure 4: Hooks grab the bottom of the SUPRApak module stack for easy handling.

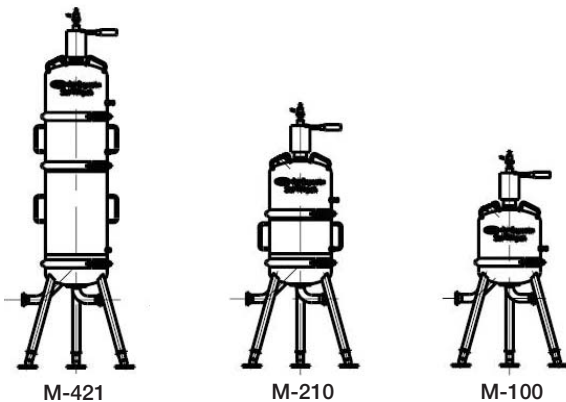


Figure 5: Single and split bowl designs offer flexibility.

Spare Parts

Part No.	Description	Details
ACS1004AM	Housing Z1 Extension Kit	Extension piece, closure clamp, o-ring
ACS1005AM	Housing Z2 Extension Kit	Extension piece, closure clamp, o-ring
ACS1006AM	Housing Closure Clamp	1.4301 (AISI 304 SS)
ACS1007EM	Housing O-Ring	EPDM elastomer
ACS1008FA	Pressure Gauge DN25	For feed fluid and filtrate piping
ACS1010CS	Butterfly Valve DN40	For feed fluid and filtrate piping
ACS1012AA	Sight Glass DN40	For filtrate piping
ACS1020AA	Sight Glass DN25	For feed fluid vent assembly
ACS1014CM	Non-Return Valve DN40	For filtrate piping
ACS1086EX	Safety Valve DN25/32	For feed fluid piping
ACS1080EA	DN40 Seal	EPDM elastomer, for piping
ACS1087EX	DN40 Seal Kit	EPDM elastomer kit, for butterfly valves
ACS1051EA	DN32 Seal	EPDM elastomer, for safety valve
ACS1052EA	DN25 Seal	EPDM elastomer, for pressure gauges
ACS1081EA	DN10 Seal	EPDM elastomer, for piping to filtrate vent
ACS1083EA	DN15 Seal Kit	EPDM elastomer kit, for drain valves
ACS1082EA	DN6 Seal Kit	EPDM elastomer kit, for feed fluid and filtrate vent valves
ACS1040AA	Torque Unit (vented)	Torque unit with filtrate vent
ACS1106EX	Torque Unit Rod Seal	EPDM elastomer
ACS1042AA	Torque Wrench	Torque unit spare part
ACS1043AA	Torque Unit Guide Bush	Torque unit spare part
ACS1043AA	Torque Unit Clamp Nut	Torque unit spare part
KCA69045	Torque Unit Circlip	Torque unit spare part



Figure 6: The torque unit is an external tensing device with preset torque limit, which provides reliable and secure operation without bypass.



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