



Food and Beverage

# SUPRApak Multi-Stack Series Filter Systems

SUPRApak™ Filtration  
For High Volume Depth Filtration



SUPRApak Multi-Stack Series-SA housings are designed for use with SUPRApak L filter modules. They revolutionize high volume depth filtration applications in the food and beverage industry, providing a cost-effective alternative to classical sheet filtration.

Features	Benefits
Closed filtration system	<ul style="list-style-type: none"> <li>Increased process safety and product quality; minimized product losses, product contamination risk and personnel exposure to process fluids</li> </ul>
Installation package with standard accessories	<ul style="list-style-type: none"> <li>Turn-key installation allows quick integration into existing system</li> </ul>
Compact design with high filtration area	<ul style="list-style-type: none"> <li>Extremely high throughput at low investment cost</li> </ul>
Drainable, low hold-up volume assembly	<ul style="list-style-type: none"> <li>Higher product yield; minimized cleaning costs</li> </ul>
High quality internal surface finish, sanitary and crevice-free design	<ul style="list-style-type: none"> <li>Enhanced cleanability</li> </ul>
Flexible modular design	<ul style="list-style-type: none"> <li>Production volumes can be matched to equipment capacity by using different housing domes</li> </ul>
External tensioning devices	<ul style="list-style-type: none"> <li>Provides secure operation without bypass</li> </ul>
Dual inlet connections	<ul style="list-style-type: none"> <li>Minimizes product mixing zones</li> </ul>
Simple, quick installation and servicing	<ul style="list-style-type: none"> <li>Reduced labor, maintenance and downtime costs</li> </ul>
Filter module lifting device available on request	<ul style="list-style-type: none"> <li>Eases filter installation and removal</li> </ul>

### Description

SUPRApak Multi-Stack filtration units provide a closed system approach to high capacity depth filtration, maximizing product protection and minimizing product losses. Lower cost of ownership is achieved due to higher throughput, yield improvement, and reduced handling, cleaning, maintenance and downtime costs, when compared to sheet filtration.

SUPRApak Multi-Stack technology is ideal for use in high volume beer, sweetener, enzyme, gelatin, yeast extract, and other food and beverage applications.

SUPRApak Multi-Stack Series-SA units provide a complete installation package for quick integration into an existing system. They hold from 16 to 24 SUPRApak L modules, representing up to approximately 240 m<sup>2</sup> (2583 ft<sup>2</sup>) of filtration area in a very compact and low hold-up volume design. They are available in single dome design.

### Specifications

Minimum/Maximum Design Pressure <sup>1,2</sup>		Liquids and Gases: -1 to 6 barg (-14.5 to 87 psig)
Minimum/Maximum Operating Temperature <sup>1</sup>		-10 to 150 °C (14 to 302 °F)
Materials of Construction		Wetted parts 1.4404 (AISI 316L stainless steel)
Sealing Materials <sup>3</sup>		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	DN 100 (DIN 11851) 4 inch ISO 2852 clamp coupling compatible adaptors available by specific order
	Feed Fluid Vent	DN 25 (DIN 11850) pipe
	Filtrate Vent	DN 15 (DIN 11850) pipe
	Drains - Piping Drain - Safety	DN 25 (DIN 11850) pipe DN 50 (DIN 11850) pipe
Filter Module Compatibility <sup>4</sup>		SUPRApak L series modules

<sup>1</sup> 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 module temperature limitations, please refer to SUPRApak module literature.

<sup>2</sup> Design satisfies EC Pressure Equipment Directive (PED) 97/23/EC (Fluid Group 1, Category IV, Module G). Pressure rating is suitable for hazardous liquids or gases.

<sup>3</sup> Seal materials meet requirements for food contact use as detailed in FDA 21 CFR Section 177.2600, and EC Regulation 1935/2004, including BfR XV and XXI. Please contact Pall for additional options.

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

# SUPRApak Multi-Stack Series-SA Filter Systems

## Technical Information

SUPRApak Multi-Stack Series-SA systems are supplied with standard accessories. Riser pipes are additionally supplied for applications requiring minimized mixing zones. Please consult Pall.

### Nominal Dimensions in mm (inches) — For specific dimensions, please contact Pall<sup>5</sup>.

	MS-400	MS-500	MS-600
A	3500 (137.8)	4000 (157.5)	4500 (177.2)
B	2375 (93.5)	2630 (103.5)	2880 (113.4)
C <sup>6</sup>	616 (24.3)	616 (24.3)	616 (24.3)
D <sup>6</sup>	500 (19.7)	500 (19.7)	500 (19.7)
E <sup>7</sup>	1400 (55.1)	1400 (55.1)	1400 (55.1)
F <sup>7</sup>	1210 (47.6)	1210 (47.6)	1210 (47.6)
G	1050 (41.3)	1050 (41.3)	1050 (41.3)
H	2140 (84.3)	2393 (94.2)	2646 (104.2)
I <sup>7</sup>	1110 (43.7)	1110 (43.7)	1110 (43.7)

<sup>5</sup> 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.

<sup>6</sup> Adjustable (leg height adjustment)

<sup>7</sup> Indicated dimensions are for installations requiring DIN connections. For installations requiring clamp coupling connections, an optional DIN to clamp coupling adaptor is additionally available. See Optional Accessories. If adaptors are added to the inlet and outlet connections, add 63.3 mm (2.5 in) for each adaptor to the pipeline length.

### Volume and Weight<sup>8</sup>

		MS-400	MS-500	MS-600
Volume L (US gal)	SA	1060 (280)	1275 (337)	1490 (394)
	SARP	1090 (288)	1305 (345)	1520 (402)
Weight kg (lbs)	SA	810 (1786)	840 (1852)	870 (1918)
	SARP	840 (1852)	870 (1918)	900 (1984)

<sup>8</sup> Volumes and weights include housing, pipework, standard accessories.

### Standard Documentation<sup>9</sup>

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

<sup>9</sup> Additional documentation packages can be ordered.

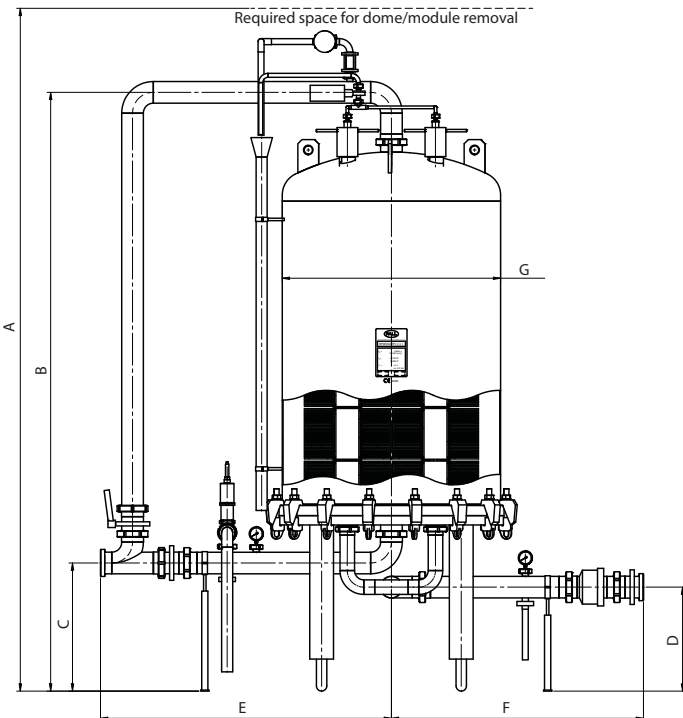


Figure 1: Dimensional information, SARP (with Riser Pipe)

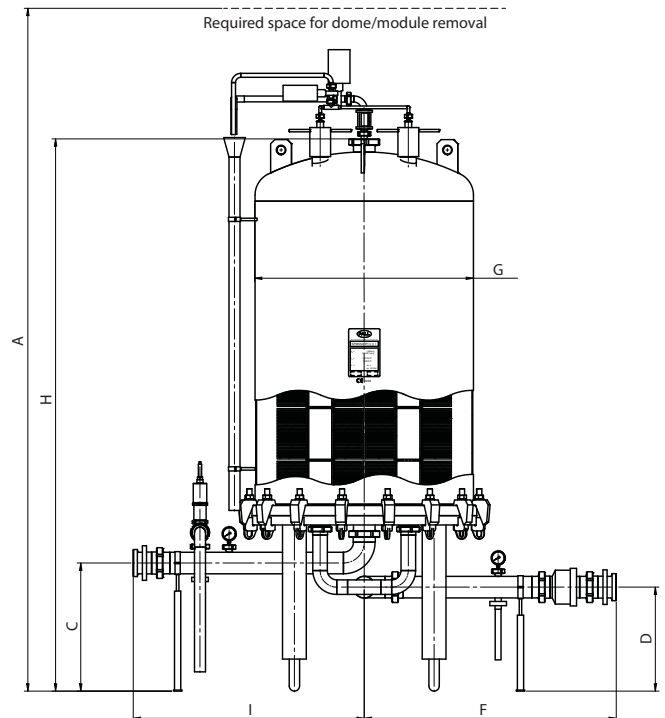


Figure 2: Dimensional information, SA (without Riser Pipe)

# SUPRApak Series

## SUPRApak Multi-Stack Series-SA Filter Systems Ordering Information

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

Part Number: SPMS SA (RP)  Table 1

Example Part Number: **SPMS SA 400**  
(without riser pipe)

Example Part Number: **SPMS SA RP 400**  
(with riser pipe)

Note: See bold reference code in the table.

### Optional Accessories

Part No.	Description	Details
ACS1056AA	Sight Glass DN 100	For filtrate side piping
25590-0226 <sup>10</sup>	Hot Fluid Core	1.4404 (AISI 316L SS)
25590-0226-01 <sup>10</sup>	Hot Fluid Core Extension Z1	1.4404 (AISI 316L SS)
25590-0226-02 <sup>10</sup>	Hot Fluid Core Extension Z2	1.4404 (AISI 316L SS)
ACS1036AA	Hook Spanner DN 10-20	Tool
ACS1037AA	Hook Spanner DN 25-100	Tool
20040118-34	3-4 High Lifting Device (incl. Stand)	Supplied with spacer
20040118-56	5-6 High Lifting Device (incl. Stand)	Supplied with spacer
ACS1067GS	Inlet/Outlet Adaptor (DN 100 – 4 inch clamp coupling)	Adaptor for piping adaption from DN to ISO 2852 clamp coupling connection

<sup>10</sup>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.

Table 1

Code	Bowl Height and Configuration	Number of SUPRApak Modules
<b>400</b>	4-High Bowl	16
500	5-High Bowl	20
600	6-High Bowl	24

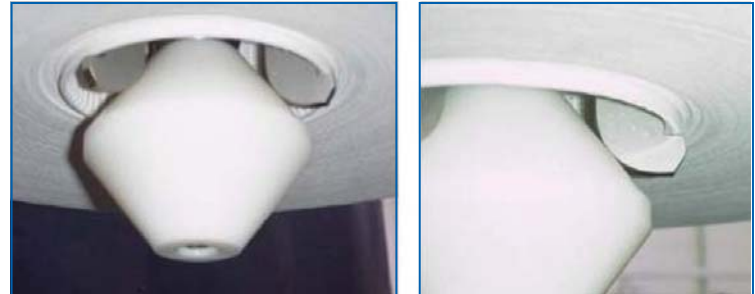
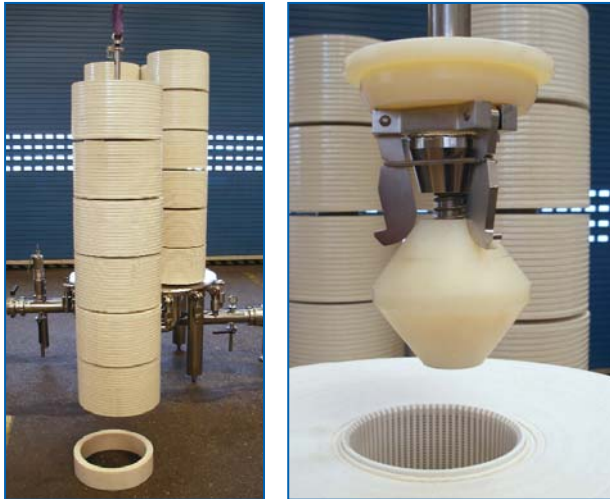


Figure 3a (far left): Lifting device enables insertion and removal of the entire stack of modules. Spacer pictured at the bottom enables lowering module stack onto a suitable raised surface. Figure 3b (left and above): Hooks on the lifting device grab the bottom of the SUPRApak module stack for easy handling.

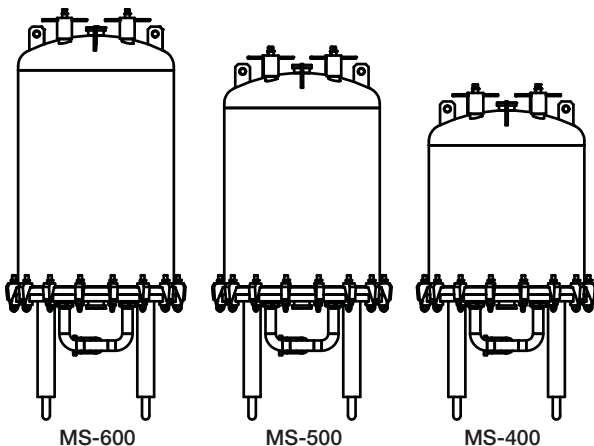


Figure 4: Different bowl heights offer flexibility.



Figure 5: For applications requiring minimized mixing zones, a riser pipe which splits the feed fluid flow is available.

### Spare Parts

Part No.	Description	Details
ACS1057EM	Housing O-Ring	EPDM
ACS1070AA	Torque Unit	Torque unit with filtrate vent
ACS1041AA	Torque Unit Rod Seal	EPDM
ACS1043AA	Torque Unit Guide Bush	Torque unit spare part
ACS1071JM	Torque Unit Clamp Nut	Torque unit spare part
ACS0951AM	Pressure Gauge DN 25	For feed fluid and filtrate sides
ACS1056AA	Sight Glass DN 100	For filtrate side piping
ACS1068AA	Sight Glass DN 25	For feed fluid vent
ACS1060CA	Butterfly Valve DN 100, Manual	For feed fluid and filtrate side piping
ACS1061CA	Butterfly Valve DN 25, Manual	For feed fluid and filtrate side drain
ACS1058CA	Butterfly Valve DN 25, Pneumatic	For feed fluid vent
ACS1059CA	Butterfly Valve DN 15, Pneumatic	For filtrate vent
ACS1062CA	Non Return Valve DN 100	For filtrate side piping
ACS1063CA	Safety Relief Valve DN 50	For feed fluid piping
ACS1064EM	DN 100 Seal	EPDM
ACS1065EM	DN 50 Seal	EPDM
ACS1052EA	DN 25 Seal	EPDM
ACS1069EM	DN 15 Seal	EPDM
ACS1066CA	Pilot Valve	Drive for feed fluid and filtrate vent

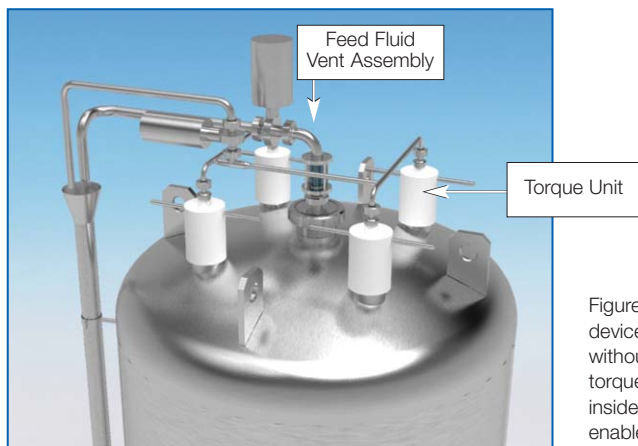


Figure 6: The torque unit is an external tensioning device, which provides reliable and secure operation without bypass. The filtrate vent, mounted on the torque unit, enables release of air from the filtrate inside the module core. The feed fluid vent assembly enables venting of air from the unfiltered fluid.



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