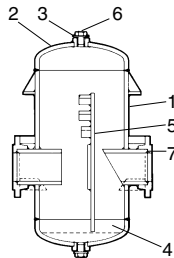


spirax sarco®

Steel Separator S4A

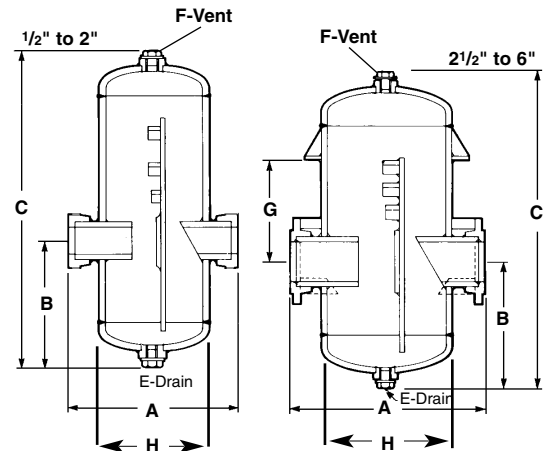
Moisture Separators are used to improve the quality of steam or compressed air either within the distribution system or on the supply inlet to equipment. Removal of moisture is by a series of baffles on which the suspended water droplets impinge and fall out by gravity to the drain, which must be piped to a trap.

Model ⇨	S4A	
PMO	600 psig	150/300 psig
Sizes	1/2" to 2"	2-1/2" to 6"
Connections	NPT, SW	ANSI 150 ANSI 300
Construction	Fabricated steel body	
ASME code stamped	600 psig	150 psig/300psig
Options	2-1/2" to 6" to 600 psig ASME code stamped. Gauge Glass Assembly 2-1/2" to 6"	



Typical Applications

On steam mains, as a drip station ahead of steam pressure reducing or temperature control valves. On the steam inlet to laundry presses and other process equipment which require dry saturated steam. On the compressed air supply to sensitive instruments and before filters.



Construction Materials

No. Part	Material
1 Body (1/2" to 2") (2-1/2" to 6")	Steel SA-106 GRB ASTM A 53 GRB
2 End Caps (1/2" to 6")	Steel SA-234 WPB
3 Coupling	Steel SA-105
4 Screen (4" & 6")	Steel ASTM A 569
5 Baffle	Steel ASTM A 569
6 Plug	Steel ASTM A105
7 End Connections (1/2" to 2") (2-1/2" to 6")	Steel SA-105 ASTM A105

Designed to Section VIII Division I of the ASME Boiler & Pressure Vessel Code.

Pressure Shell Design Conditions

(1/2" to 2")	NPT and Socket Weld
MAWP	600 psig/41.4 barg
Max. allowable working pressure	-20°F to 650°F/-29°C to 344°C
(2-1/2" to 6")	ANSI 150 flanged
	150 psig/10.4 barg
	-20°F to 650°F/-29°C to 344°C
	ANSI 300 flanged
	300 psig/20.7 barg
	-20°F to 650°F/-29°C to 344°C

Optional Pressure Shell Design Conditions

(2-1/2" to 6")	ANSI 600 Flanged
MAWP	600 psig/41.4 barg
Max. allowable working pressure	-20°F to 650°F/-29°C to 344°C

Dimensions (nominal) in inches and millimeters

Size	Conn.	A	B	C	E	F	G	H	Weight
1/2" 15	Scr/SW	9.0 229	5.2 132	10.6 269	3/4"	3/4"	—	2.5"	9.0 lb 4.1 kg
3/4" 20	Scr/SW	9.3 236	5.9 150	12.1 307	3/4"	3/4"	—	2.5"	10.0 lb 4.5 kg
1" 25	Scr/SW	11.8 300	6.0 152	14.1 358	3/4"	3/4"	—	4"	19.0 lb 8.6 kg
1-1/4" 32	Scr/SW	13.3 338	7.1 180	16.3 414	3/4"	3/4"	—	5"	30.0 lb 13.6 kg
1-1/2" 40	Scr/SW	15.4 391	7.6 193	19.0 483	1"	3/4"	—	6"	43.0 lb 19.5 kg
2" 50	Scr/SW	15.9 404	8.1 206	20.6 523	1"	3/4"	—	6"	50.0 lb 22.7 kg
2-1/2" 65	ANSI 150	22.5 572	9.4 239	24.5 622	1"	3/4"	7.1 180	8.7"	109.0 lb 49.4 kg
	ANSI 300	22.5 572	9.4 239	24.5 622	1"	3/4"	7.1 180	—	112.0 lb 50.8 kg
	ANSI 600	22.5 572	9.9 251	25.6 650	1"	3/4"	7.1 180	—	113.0 lb 51.3 kg
3" 80	ANSI 150	25.3 643	12.0 305	28.6 726	2"	3/4"	7.9 201	10.8"	163.0 lb 73.9 kg
	ANSI 300	25.3 643	12.0 305	28.8 732	2"	3/4"	7.9 201	—	169.0 lb 76.7 kg
	ANSI 600	25.3 645	12.7 323	29.9 759	2"	3/4"	7.9 201	—	189.0 lb 85.7 kg
4" 100	ANSI 150	29.0 737	12.6 320	31.2 792	2"	1-1/2"	8.8 224	12.8"	237.0 lb 107.5 kg
	ANSI 300	29.0 737	12.6 320	31.2 792	2"	1-1/2"	8.8 224	—	256.0 lb 116.1 kg
	ANSI 600	29.0 737	13.2 335	32.1 815	2"	1-1/2"	9.0 229	—	297.0 lb 134.7 kg
6" 150	ANSI 150	35.8 909	12.3 312	36.7 932	2"	1-1/2"	11.4 290	16.0"	365.0 lb 165.6 kg
	ANSI 300	35.8 909	12.4 315	36.9 937	2"	1-1/2"	11.4 290	—	401.0 lb 181.9 kg
	ANSI 600	35.8 909	13.0 330	37.8 960	2"	1-1/2"	11.4 290	—	551.0 lb 249.9 kg

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.

In the interests of development and improvement of the product, we reserve the right to change the specification.

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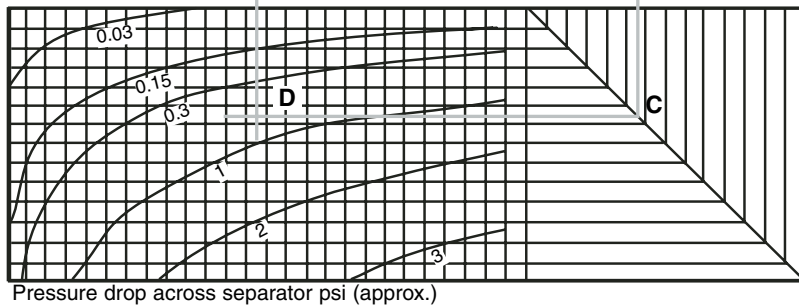
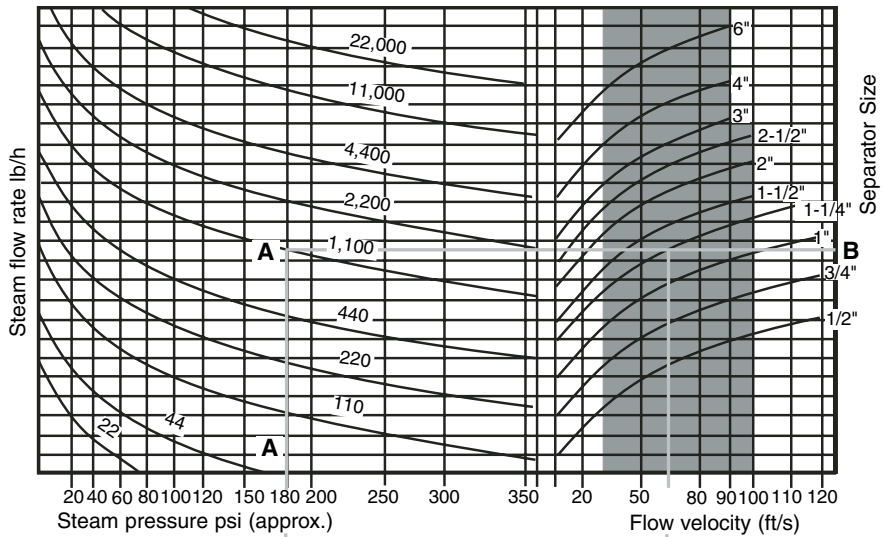
Steel Separator S4A

S4A Steam Sizing Chart

Sizing Example for Model S4A

1. Taking a steam pressure of 180 psig and flow rate of 1100 lb/h draw line A-A.
2. Draw horizontal line A-B.
3. Any separator curve that is bisected by line A-B within the shaded area will operate at near 100% efficiency.
4. Line velocity for any size can be determined by dropping a vertical line B-C (eg. 60 ft/s for 1-1/4" unit).
5. Pressure drop is determined by plotting lines C-D and A-D. The point of intersection is the pressure drop across the separator, ie: 0.5 psi.
6. Separators should be selected on the basis of the best compromise between line size, velocity and pressure drop for each application.

The shaded area denotes recommended selection for better than 99% separation efficiency.



S4A Separator Flow Velocity & Pressure Drop for compressed Air

Note: Any Separator curve that is bisected within the shaded area will operate at near 100% efficiency.

Sample Specification

Moisture Separator shall be of the high efficiency internal baffle type having a pressure drop that does not exceed an equivalent length of pipe. Separator shall be of steel construction in accordance with Section VIII, Division I of the ASME Boiler and Pressure Vessel Code. ASME Code Stamped for maximum working pressures of 150, 300, or 600 psig. A screwed bottom drain connection shall be provided for the installation of a trap to discharge accumulated liquid. A Spirax Sarco Float Operated Drain Trap and "Y" Type Strainer shall be installed on the drain connection.

