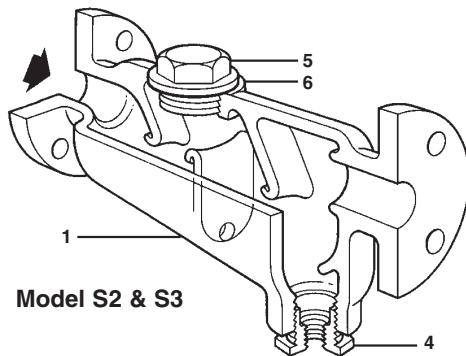


# spirax sarco®

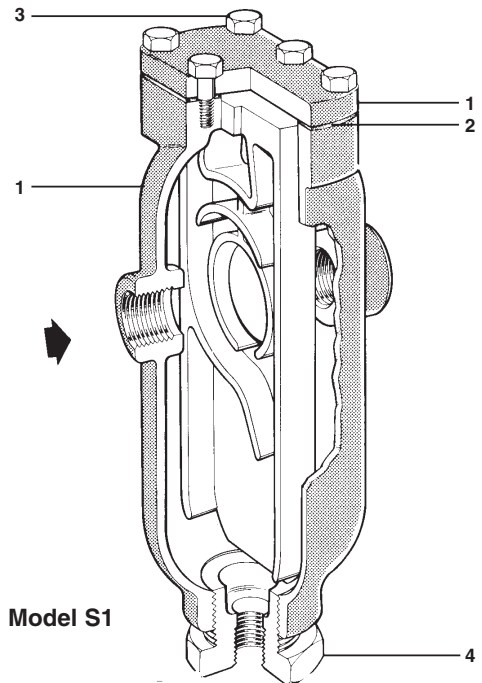
## Iron Separators S1, S2, S3

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 ↗	S1	S2	S3
<b>PMO</b>	200 psig	145 psig	
<b>Sizes</b>	1/2", 3/4", 1"	1-1/2", 2"	1-1/2" to 6"
<b>Connections</b>	NPT		ANSI 125
<b>Construction</b>	Ductile Iron	Cast Iron	



Model S2 & S3



Model S1

### Construction Materials

No.	Part	Material
1	S1 Body & Cover S2 & S3 Body	Ductile (SG) Iron Cast Iron
		DIN 1693 Gr GGG 40 ASTM A126 CLB
2	Gasket	Semi Rigid Graphite Laminate
3	Bolts	Steel UNF BS 1768 Gr 5
4	Bushing	Malleable Iron
5	Plug	Malleable Iron
6	Gasket	Reinforced Exfoliated Graphite

### Limiting Operating Conditions

**Max. Operating Pressure (PMO)** S1: 200 psig (14 barg)  
S2, S3: 145 psig (10 barg)

**Max. Operating Temperature** S1: 388°F (198°C)  
S2, S3: 363°F (184°C)

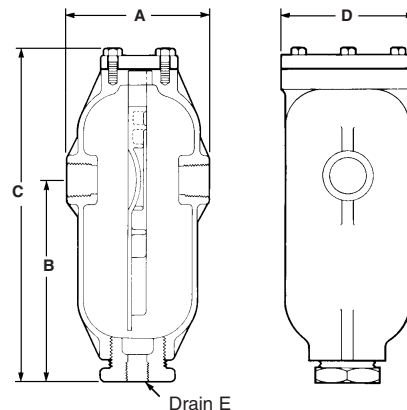
### Pressure Shell Design Conditions

**PMA** S1: 232 psig/0-248°F 16 barg/0-120°C  
Max. allowable pressure 160 psig/572°F 11 barg/300°C  
S2, S3: 232 psig/0-248°F 16 barg/0-120°C  
188 psig/428°F 13 barg/220°C

**TMA** S1: 572°F/0-160 psig 300°C/0-11 barg  
Max. allowable temp. S2, S3: 428°F/0-188 psig 220°C/0-13 barg

### 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.



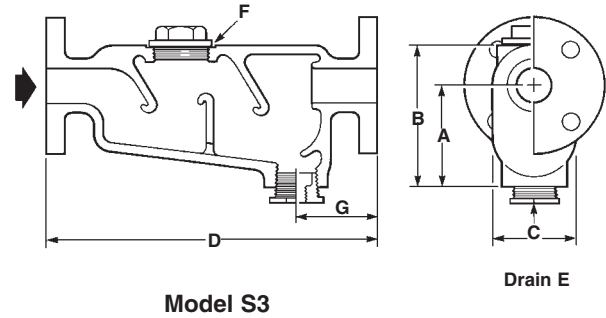
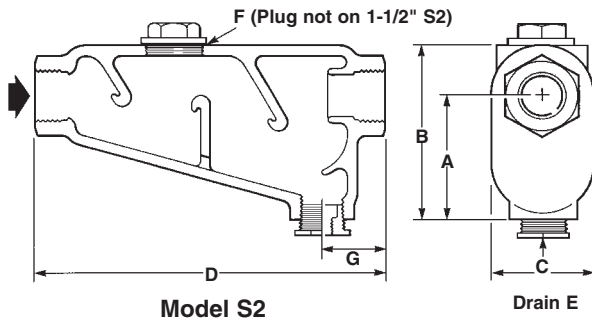
Dimensions Type S1 (nominal) in inches and millimeters

Size	A	B	C	D	E	Weight
1/2"	3.5 89	4.8 124	8.9 225	3.4 86	1/2"	6.0 LB 2.7 KG
3/4"	4.5 114	6.1 156	10.3 260	4.4 111	1/2"	9.3 LB 4.2 KG
1"	6.0 152	8.8 222	15.0 381	5.6 143	1/2"	18.0 LB 8.1 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.

# Iron Separators

## S1, S2, S3



### Recommended air capacities in SCFM

(SCFM based on approximately  
60 ft/s for 1/2" – 2-1/2" units, and 55 ft/s for 3" – 6" units)  
Convert CFM to SCFM =  $\frac{35.4 \times P_1 \times CFM}{460 + T}$        $T = ^\circ F$   
 $P_1 = \text{psia}$

#### Operating Pressure psig

Size	20	40	60	80	100	150	200
1/2"	20	30	40	55	65	95	125
3/4"	30	50	65	85	100	145	190
1"	50	80	105	135	165	240	315
1-1/2"	120	185	255	325	395	570	
2"	200	310	425	540	655	940	
2-1/2"	280	445	605	770	930	1340	
3"	360	570	780	990	1200	1725	
4"	625	985	1345	1705	2070	2970	
6"	1420	2240	3060	3880	4695	6745	

### Recommended saturated steam capacities

(lb/h based on approximately 100 ft/s)  
Based on flows and velocity indicated, the pressure drop will be  
no more than equivalent length of pipe.

#### Operating Pressure psig

Size	5	10	25	50	100	150	200
1/2"	37	46	71	113	195	277	354
3/4"	66	80	125	199	342	486	622
1"	107	130	203	323	555	788	1009
1-1/2"	253	308	480	761	1308	1792	
2"	417	508	791	1255	2156	2953	
2-1/2"	595	725	1129	1791	3076	4214	
3"	919	1120	1743	2766	4751	6507	
4"	1583	1928	3002	4764	8182	11206	
6"	3593	4377	6813	10813	18567	25431	

### Dimensions (nominal) in inches and millimeters

#### Type S2 with screwed connections

Size	A	B	C	D	E	F	G	Weight
1-1/2"	4.4 111	6.1 156	3.5 89	12.0 304	1/2"	-	2.4 60	21.5 lb 9.6 kg
2"	6.5 166	8.1 205	4.6 117	15.6 397	1/2"	M72	2.8 71	42.0 lb 19.0 kg

#### Type S3 with flanged connections

1-1/2"	4.4 111	6.1 156	3.5 89	14.4 365	1/2"	M56	3.7 94	31.0 lb 14.0 kg
2"	5.7 146	8.1 206	4.6 117	18.0 456	1/2"	M72	3.85 98	56.0 lb 25.4 kg
2-1/2"	7.2 184	9.1 232	5.6 146	16.0 406	3/4"	M56	3.85 98	81.0 lb 36.7 kg
3"	7.4 187	10.4 264	6.0 152	19.0 483	1"	M72	3.85 98	99.0 lb 44.9 kg
4"	9.4 238	13.3 337	7.8 197	27.3 692	1"	M72	4.6 118	165.0 lb 74.8 kg
6"	9.1 232	16.1 409	15.0 381	27.8 706	1"	M72	4.8 121	400 lb 181.4 kg

### 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. Body shall be iron with screwed or flanged connections. A screwed bottom drain shall be provided for the installation of a trap to discharge any accumulated liquid.

### Installation

Install in a horizontal pipeline with the drain directly below the line. Recommended trap is a continuous draining float operated type.

### Maintenance

The trap at the separator drain should be serviced periodically according to the manufacturer's instructions. The separator itself requires no maintenance.