

spirax sarco

SB and SBRA Bronze Valves

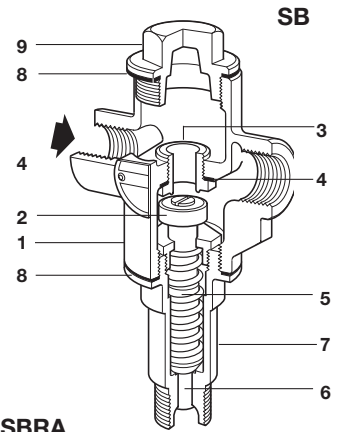
SB

Normally open, closes with temperature rise for heating, single seat.

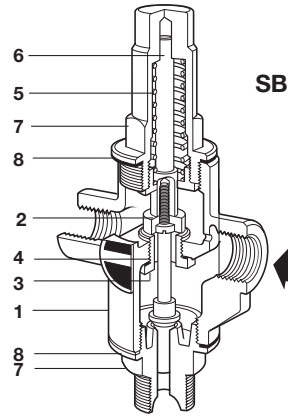
SBRA

Normally closed, opens with rising temperature for cooling. Single seat with optional 1/8" (C_v .44) bleed bypass and optional fusible device.

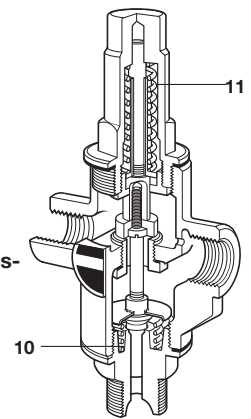
Model	SB, SBRA
Sizes	1/2", 3/4", 1"
Connections	NPT
Construction	Bronze Body Stainless Steel Trim
Options	BSP Connections ANSI 300 flanges (SB only)



SBRA



SBRA with fusible device and bleed

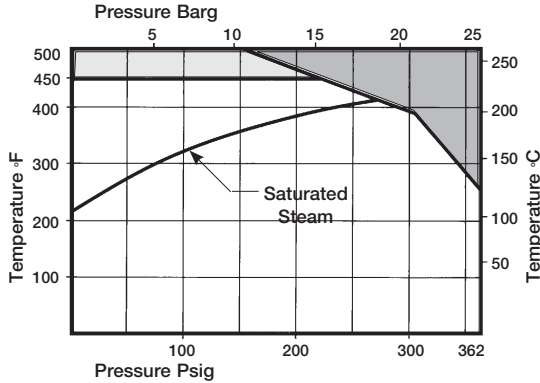


Limiting Operating Conditions

Maximum Differential Pressure

Size/DN	SB	SBRA
1/2	250 psi*	174 psi
15	17 bar	12 bar
3/4	150 psi*	101 psi
20	10 bar	7 bar
1	100 psi*	70 psi
25	6.8 bar	4.7 bar

* On liquid applications, the permissible maximum differential pressure may be affected by high static pressure. Please consult the factory if the application requires a large differential pressure with a high inlet pressure.



If the valve is to be used in this region, a spacer (stock #0467000) must be fitted between the valve and the control system to protect the control system from overheating.

The valves must not be used in this region

The valves may be used in this region provided that the above maximum differential pressures are not exceeded. Valves with ANSI flanges must not be used above flange limits.

SHUTOFF: ANSI CLASS IV

Pressure Shell Design Conditions

PMA 362 psig/248°F 25 barg/120°C
Max. allowable pressure 253 psig/428°F 17.5 barg/220°C
152 psig/500°F 10.5 barg/260°C

TMA 500°F/0-152 psig 260°C/0-10.5 barg
Max. allowable temperature

Typical Applications

Industrial or commercial applications using steam or hot water as a heating medium, or water for cooling.

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.

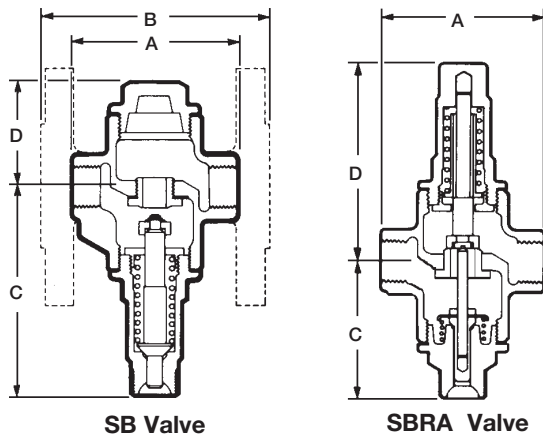
Construction Materials

No.	Part	Material	Material Spec.	Closest Equivalent
1	Body	Bronze	BS 1400 LG2	B62 UNS 83600
2	Valve	Stainless Steel		
3	Valve Seat	Stainless Steel		
4	Valve Seat Gasket	Copper		
5	Return Spring	Stainless Steel		
6	Push Rod	Brass		
7	Bonnet	Brass		
8	Bonnet Cap Gasket	Nickle Reinforced Exfoliated Graphite		
9	Cap	Brass	BS 2872 CZ 122	B283 UNS No. 37700
10	Fail Safe Spring	Stainless Steel		
11	Fusible Device	Brass		

SB and SBRA Bronze Valves

Dimensions (nominal) in inches and millimeters

SB VALVES		ANSI 300			WEIGHT	
SIZE	A	B	C	D	Scr.	Flg.
1/2 15	3.1 79	3.9 98	3.9 101	2.0 50	2.3 lb 1.0 kg	7.7 lb 3.5 kg
3/4 20	3.7 95	4.4 113	3.9 101	2.0 50	3.0 lb 1.3 kg	8.0 lb 3.6 kg
1 25	4.7 108	5.0 128	3.9 101	2.0 50	3.5 lb 1.5 kg	8.5 lb 3.8 kg
SBRA						
1/2 15	3.1 79	-	2.6 66	3.7 95	2.3 lb 1.0 kg	-
3/4 20	3.7 95	-	2.6 66	3.7 95	3.0 lb 1.3 kg	-
1 25	4.7 108	-	2.6 66	3.7 95	3.5 lb 1.5 kg	-



Cv at P Band*

Size	1/2"	3/4"	1"
Cv	3.0	4.5	7.9
P Band (°F)*	8°	8°	10°

* The proportional band (P Band) is the difference required between the desired set temperature and the actual controlled temperature to open the valve fully. The above figures apply to valves fitted with 121 or 123 control systems. For 122 or 128 systems, the P Band will be twice the amount shown. Example: For a 3/4" SB valve with a 122 control system, the valve will not fully open until the controlled temperature drops to 16°F below the set point. For complete sizing information, see TIS 1.011 (steam) or TIS 1.012 (water).

Sample Specification

Control valve shall be bronze body with stainless steel trim. Valve will achieve ANSI Class IV Shutoff. Valve is coupled to the appropriate temperature control system. This combined unit is self acting and provides proportional control action. The temperature control system shall be brass with PVC covered capillary or stainless steel sensor and capillary, oil filled, hydraulically operated; and shall incorporate packless glands and a gas filled overheat protection device. Temperature setting shall be adjustable while control is in service, include °F adjustment scale and shall incorporate a tamper proof device. When required, sensor bulb shall be mounted in a separable well for removal from the equipment. Refer to TIS 1.900 or 1.901 for temperature control system details.

Installation

The valve should be installed in a horizontal section of the heating or cooling medium inlet piping. The control system connection must point vertically downward. A bypass with suitable stop valves should be provided to permit servicing, and a Y-pattern strainer should be installed upstream of the valve. If the valve is smaller than the pipeline, eccentric reducers should be used. In a steam system, a steam trap should be installed upstream of the valve to ensure that the steam entering the valve is as dry as possible.

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Spare Parts

The diagram shows the exploded view of the valve assembly. The SB valve is shown on the left, and the SBRA valve with a fusible device is shown on the right. The parts are labeled with letters and numbers: L (gasket), E (gasket), D (nut), A (spring), L (washer), T1 (stem), *T (tamper proof device), A1 (stem), T (stem), R (stem), E (gasket), D1 (nut), S (fusible device), L2 (gasket). The Valve Seat and Stem Assembly is shown in heavy outline, while the fusible device and tamper proof device are shown in broken lines.

Valve Seat and Stem Assembly (SB valve)	A, D, E, L
Valve Seat and Stem Assembly (SBRA valve with or without fusible device)	A1, D1, E, T1, R, S
Fusible Device	T
Set of all Gaskets (SB valve)	E, L
Set of all Gaskets (SBRA valve with or without fusible device)	L1, L2, E,

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

Maintenance

Except for periodic cleaning of the upstream strainer, maintenance or servicing is normally required only if a malfunction is detected. Complete installation and maintenance instructions are given in the IMI sheet, which accompanies the product.

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