

# spirax sarco

TI-P078-04  
CH Issue 6

## KA51, KB51 and KC51 Bronze Self-Acting Control Valves

### Description

The KA, KB and KC range of two-port valves are used in conjunction with Spirax Sarco SA control systems to provide a self-acting temperature control unit.

Alternatively, they can be used as electrically actuated temperature control valves by fitting an EL7200 Series electric actuator with a suitable temperature transmitter and controller.

### Available types

**KA51** Normally open

**KB51** Normally open + phosphor bronze pressure balancing bellows

**KC51** Normally open + stainless steel pressure balancing bellows

**Note:** Pressure balancing bellows enables the valve to operate against higher differential pressures.

### Standards

These products fully comply with the requirements of the European Pressure Equipment Directive 97/23/EC and carry the CE mark when so required.

### Certification

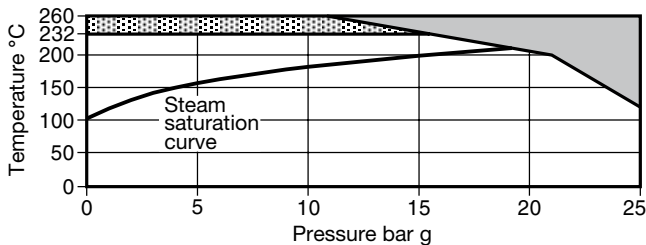
As standard these products are available with a manufacturers' Typical Test Report.

**Note:** All certification/inspection requirements must be stated at the time of order placement.

### Sizes and pipe connections

**KA51 and KB51:** 1", 1¼", 1½" and 2" **KC51:** 1½" and 2"  
Screwed BSP (BS 21 parallel) or NPT connections.

### Pressure / temperature limits



■ The product **must not** be used in this region.

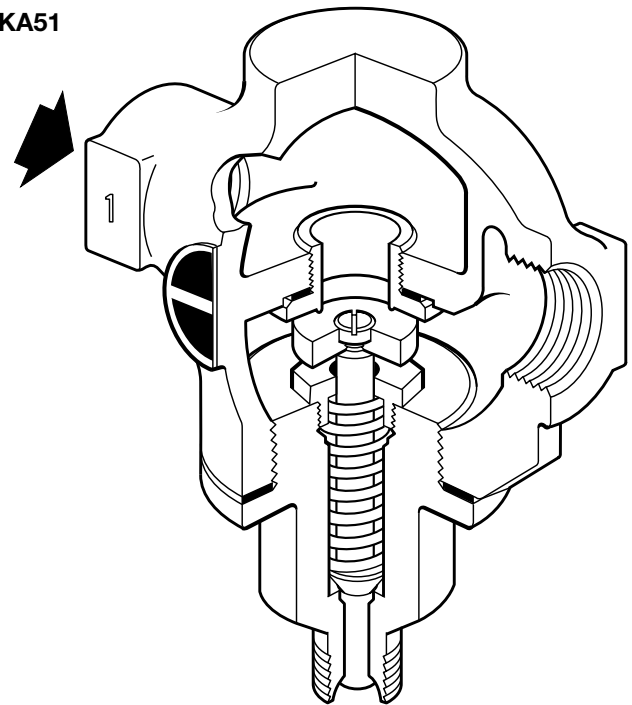
▨ For use in this region a Spirax Sarco spacer is required. See TI-P033-01 for further details.

Body design conditions		PN25
Maximum design pressure		25 bar g @ 260°C
Maximum design temperature	KA51, KC51	Fitted with a spacer and actuator 260°C
		Fitted with an actuator 232°C
	KB51	Fitted with an actuator 232°C
Minimum design temperature		-10°C
Maximum operating temperature		260°C @ 10.5 bar g
Minimum operating temperature		0°C
<b>Note:</b> For lower operating temperatures consult Spirax Sarco		

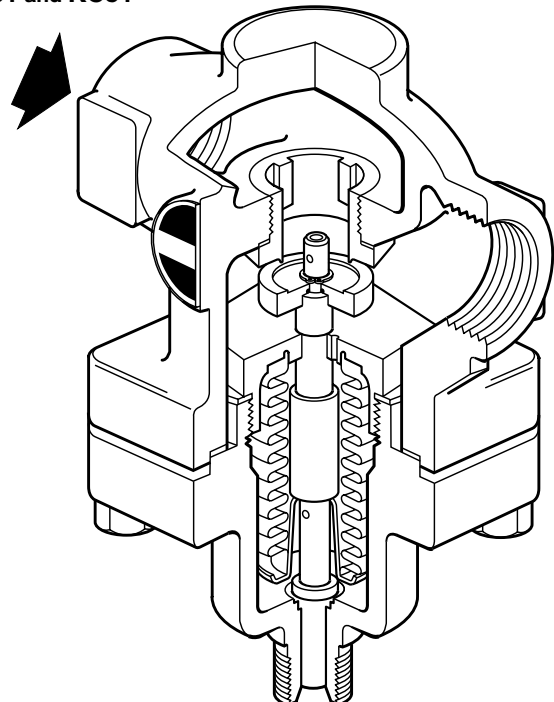
	Size	1"	1¼"	1½"	2"
Maximum differential pressure bar	<b>KA51</b>	4.5	3.0	2.0	1.5
	<b>KB51</b>	10.0	9.0	8.2	6.9
	<b>KC51</b>	-	-	16.0	13.8

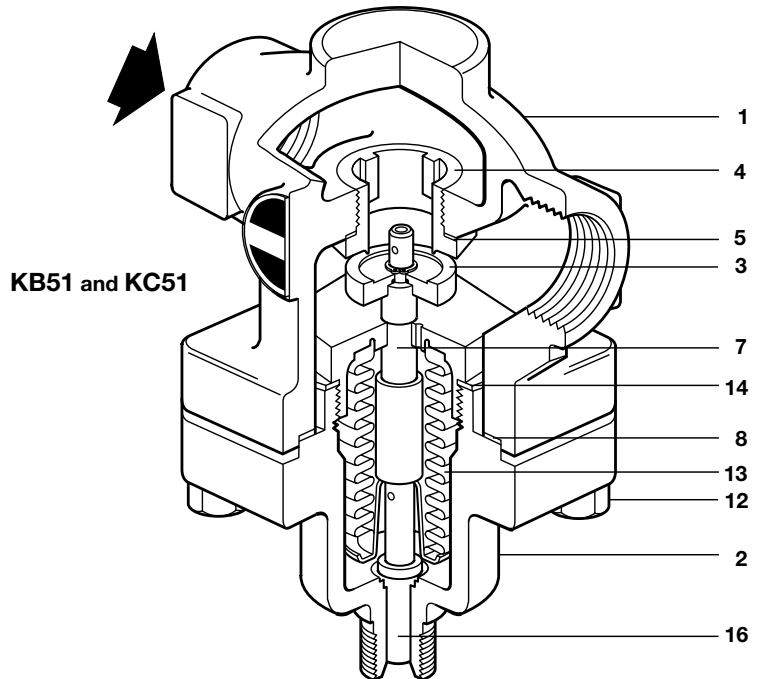
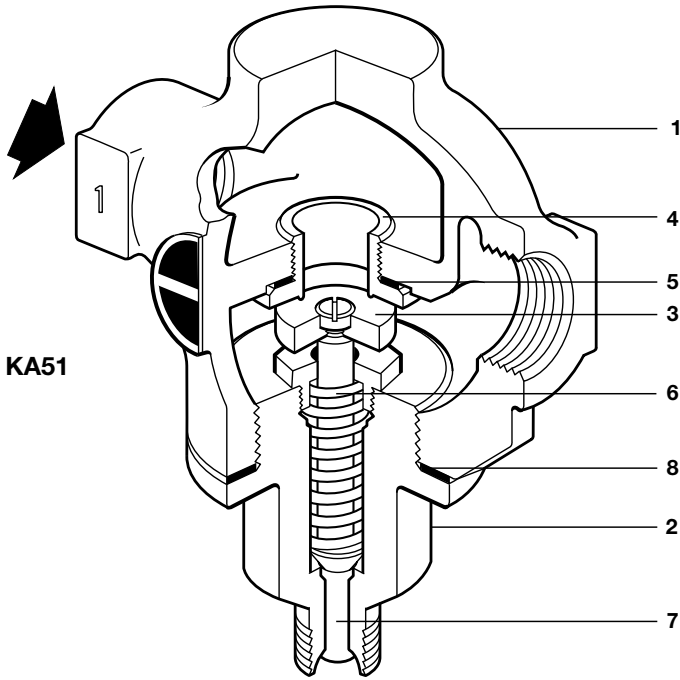
Designed for a maximum cold hydraulic test pressure of 38 bar g

KA51



KB51 and KC51





**Materials**

No.	Part	Material	
1	Body	Bronze	CC 491 KM
2	Bonnet	KA51, KB51 and 1½" KC51	Bronze CC 491 KM
		KC51 2"	Steel EN 10213 GP240 GH+N
3	Valve head	Stainless steel	BS 970 431 S 29
4	Valve seat ring	Stainless steel	BS 970 431 S 29
5	Valve seat gasket	1"	Mild steel BS 1449 CS 4
		1½" to 2"	Reinforced exfoliated graphite
6	Return spring	Stainless steel	BS 2056 302 S 26
7	Stem	KA51, KB51	Brass BS 2874 CZ 121
		KC51	Stainless steel BS 970 321 S20
8	Bonnet gasket	Reinforced exfoliated graphite	
12	Bonnet	Studs	Steel BS 4439 Gr. 8.8
		Nuts	Steel BS 3692 Gr. 8
13	Bellows	KA51	Phosphor bronze EN 12449 Cu Sn 6
		KC51	Stainless steel AISI 316L
14	Bellows gasket	Reinforced exfoliated graphite	
16	Plunger	Brass	BS 2874 CZ 121

### K<sub>v</sub> values

Size	1"	1¼"	1½"	2"
KA51 and KB51	9.80	16.48	23.70	34.00
KC51	-	-	16.48	34.00

For conversion: C<sub>v</sub> (UK) = K<sub>v</sub> x 0.963      C<sub>v</sub> (US) = K<sub>v</sub> x 1.156

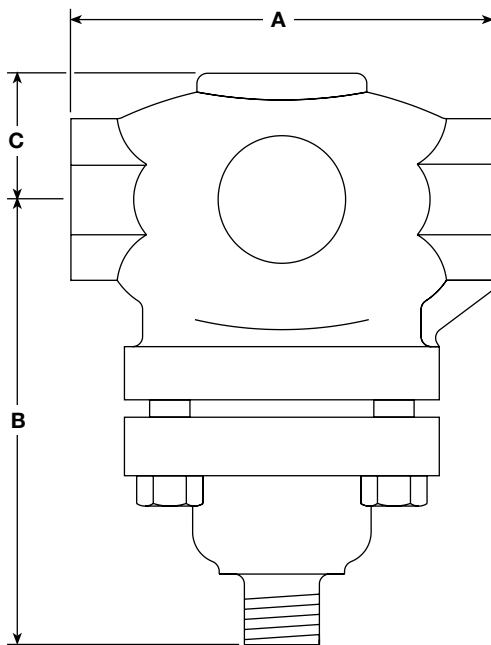
### Capacities

For saturated steam sizing capacities see TI-GCM-08.  
For water valve sizing capacities see TI-GCM-09.

### Dimensions/weights (approximate) in mm and kg

Size	KA51 KB51 KC51					Weight		
	A	B	B	B	C	KA51	KB51	KC51
1"	136	107	138	-	51	3.96	4.17	-
1¼"	144	110	152	-	51	6.20	7.00	-
1½"	150	110	152	152	62	7.52	8.32	8.32
2"	180	110	152	189	71	9.35	10.30	10.60

KB51 and KC51 shown



### Safety information, installation and maintenance

For full details see the Installation and Maintenance instructions (IM-S21-01) supplied with the product.

#### Installation note:

The valve should be fitted in a horizontal line with the actuator vertically below the pipeline.

### How to order

**Example:** 1 off Spirax Sarco 1¼" screwed BSP KA51 self-acting control valve with bronze body.

### Spare parts

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

#### Available spares

##### KA51

Valve seat assembly	A, D, E, L
Set of gaskets	E, L
Set of bonnet studs and nuts (set of 4)	S

##### KB51 and KC51

Valve seat assembly (excluding bellows and stem assembly)	A, B, C, D, E, L, U, G
Bellows and stem assembly	G, L, N, H
Set of gaskets	B, C, E, L, U
Set of bonnet studs and nuts (set of 4)	S

#### How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of valve.

**Example:** 1 - Valve seat assembly for a Spirax Sarco 1¼" KB51 self-acting control valve.

