



TI-P078-06  
 CH Issue 6

# KA43, KB43 and KC43 Steel 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

**KA43** Normally open with flanged connections.

**KB43** Normally open with phosphor bronze pressure balancing bellows with flanged connections.

**KC43** Normally open with stainless steel pressure balancing bellows with flanged connections.

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

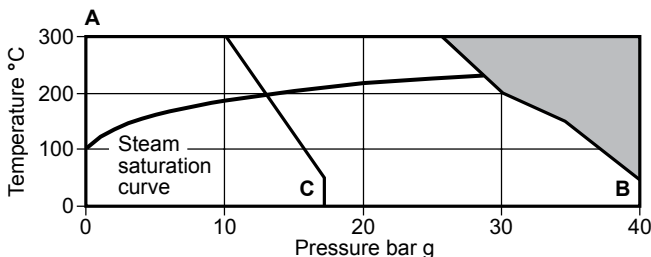
## Standards

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. Additionally, at extra cost, certification to EN 10204 3.1 can be supplied. **Note:** All certification/inspection requirements must be stated at the time of order placement.

## Pressure / temperature limits



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

**A - B** Flanged EN 1092 PN40, ASME 300 and BS 10 Table H.

**A - C** Flanged EN 1092 PN25 and ASME 150.

Body design conditions	PN40
Maximum design pressure	40 bar g @ 20°C
Maximum design temperature	300°C @ 25.8 bar g
Minimum design temperature	-10°C
Maximum operating temperature	<b>A - B</b> 300°C @ 25.8 bar g <b>A - C</b> 300°C @ 10.0 bar g
Minimum operating temperature	0°C

**Note:** For lower operating temperatures consult Spirax Sarco

	Size	DN15	DN20	DN25	DN32	DN40	DN50
Maximum differential pressure bar	<b>KA43</b>	17.0	10.0	4.5	3.0	2.0	1.5
	<b>KB43</b>	-	-	10.0	9.0	8.2	6.9
	<b>KC43</b>	-	-	-	16.0	16.0	13.8

Designed for a maximum cold hydraulic test pressure of 24 bar g

## Size and pipe connections

**KA43** DN15, DN20, DN25, DN32, DN40 and DN50

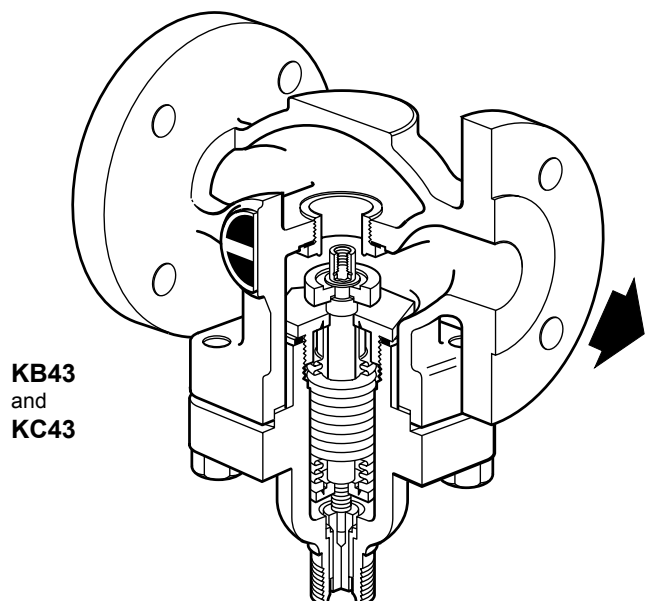
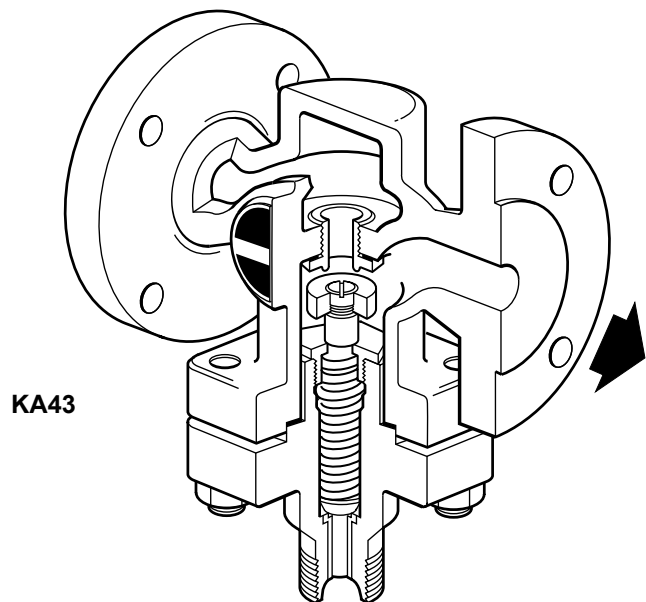
**KB43** DN25, DN32, DN40 and DN50

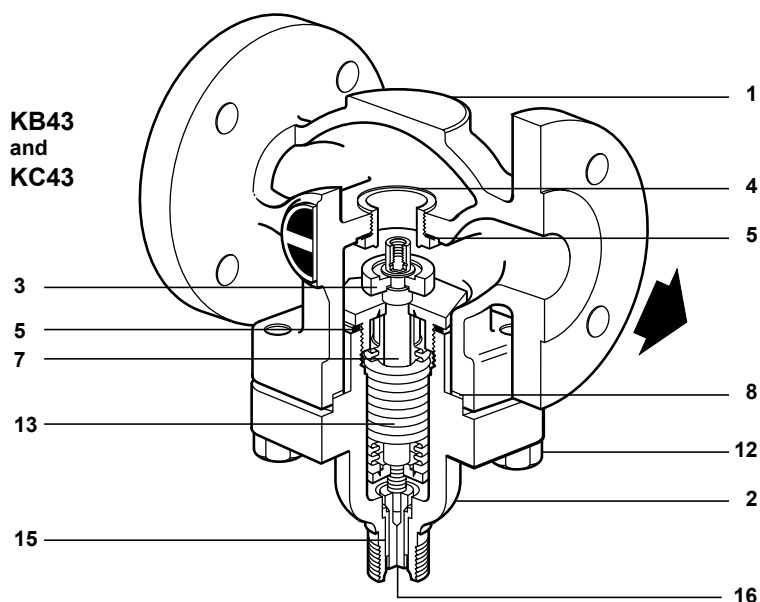
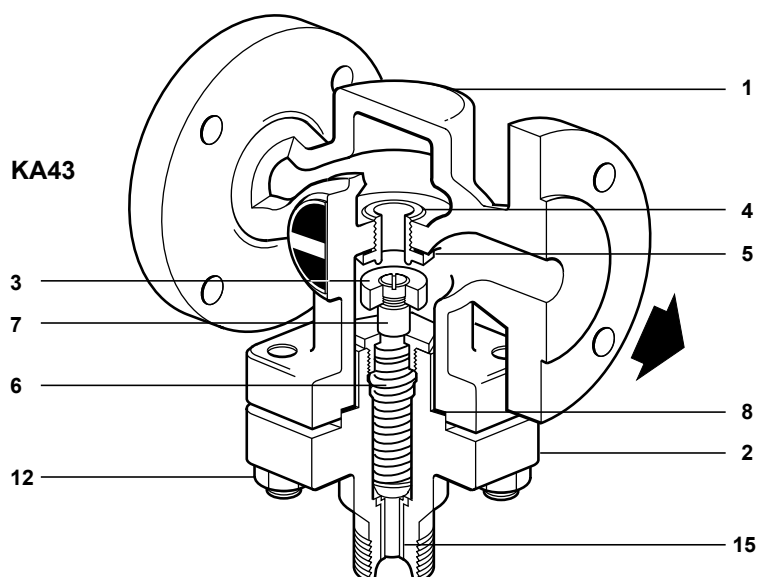
**KC43** DN32, DN40 and DN50

## Standard flanges:

EN 1092 PN25 and EN 1092 PN40,  
 ASME 300 and BS 10 Table H.

The following flanges are available on request: ASME 150.





## Materials

No. Part		Material	
1	Body	Steel	EN 10213 GP240 GH+N
2	Bonnet	DN15 - DN25	Steel DIN 17243 C22.8
		DN32 - DN50	Steel EN 10213 GP240 GH+N
3	Valve head	Stainless steel	BS 970 431 S29
4	Valve seat ring	Stainless steel	BS 970 431 S29
5	Valve seat gasket	DN15 to DN25	Mild steel BS 1449 CS 4
		DN32 to DN50	Reinforced exfoliated graphite
6	Return spring	Stainless steel	BS 2056 302 S 26
7	Stem	KA and KB	Brass BS 2872 CZ 121
		KC	Stainless steel BS 970 321 S20
8	Bonnet gasket	Reinforced exfoliated graphite	
12	Bonnet studs	Steel	BS 4439 Gr. 8.8
	Bonnet nuts	Steel	BS 3692 Gr. 8
13	Bellows	KB	Phosphor bronze EN 12449 Cu Sn 6
		KC	Stainless steel AISI 316 L
14	Bellows gasket (not shown)	Reinforced exfoliated graphite	
15	Bonnet bush	Brass	BS 2874 CZ 121
16	Plunger	Brass	BS 2874 CZ 121

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

Size	DN15	DN20	DN25	DN32	DN40	DN50
KA43	2.90	4.64	9.80	16.48	23.70	34.00
KB43	-	-	9.80	16.48	23.70	34.00
KC43	-	-	-	16.48	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

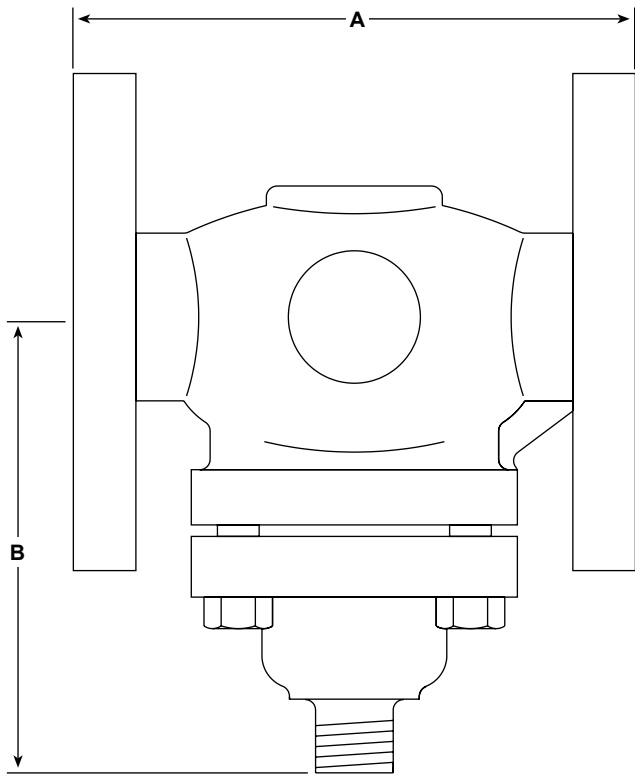
### Capacities

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	PN25	ASME	Table	KA43	KB43	Weight	
	PN40	300	'H'	B	KC43	KA43	KB43/ KC43
	A	A	A		B		
DN15	130	130	130	105		4.3	
DN20	150	150	150	105		6.3	
DN25	160	162	162	105	138	8.0	8.2
DN32	180	180	180	110	152	8.7	9.1
DN40	200	202	198	110	152	9.7	10.1
DN50	230	232	228	110	152	14.6	15.0



### 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 DN20 KA43 self-acting control valve with steel body having flanged EN 1092 PN40 connections.

### Spare parts

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

#### Available spares

	Valve seat assembly	A, D, E, L
KA43	Set of gaskets	E, L
	Set of bonnet studs and nuts (set of 4)	S
	Valve seat assembly (excluding bellows and stem assembly)	A, B, C, D, E, L, U, G
KB and KC43	Bellows and stem assembly	G, L, N, H
	Set of gaskets	B, C, E, L, U, G
	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 DN20 KB43 self-acting control valve.

