

spirax sarco®

KA 43, KB 43 and KC 43 Cast Steel Valves

KA 43 - Normally open, closes with rising temperature for heating. Single seat.

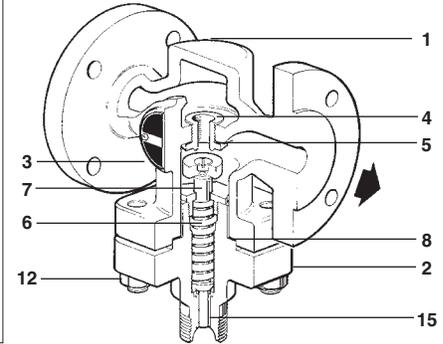
KB 43 - Normally open, closes with rising temperature for heating. Single seat with **phosphor bronze** pressure balancing bellows.

KC 43 - Normally open, closes with rising temperature for heating. Single seat with **stainless steel** pressure balancing bellows.

The pressure balancing bellows enables the valve to operate against higher differential pressure.

Model	KA 43	KB 43	KC 43
Sizes	1/2" to 2"	1", 1-1/4", 1-1/2", 2"	1-1/4", 1-1/2", 2"
Connections	ANSI 300 flanged		
Construction	Carbon Steel Body Stainless Steel Trim		
Options	ANSI 150 flanges		

KA 43



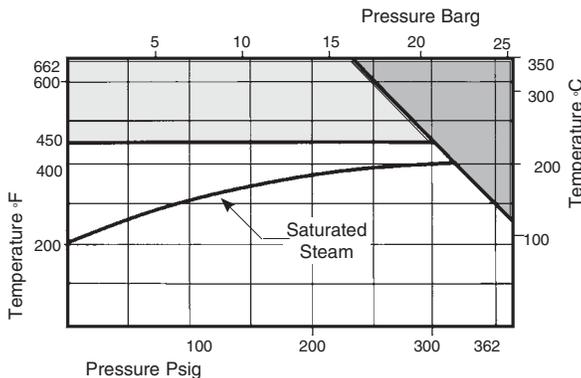
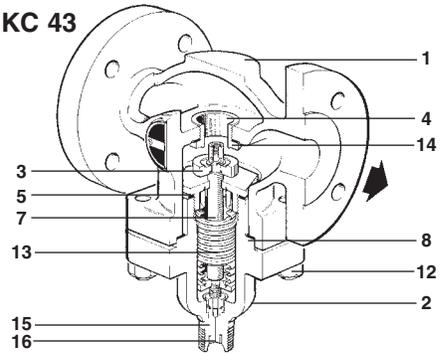
Limiting Operating Conditions

Maximum Differential Pressure

Size-DN	KA 43	KB 43	KC 43
1/2 15 mm	250 psi 17 bar		
3/4 20 mm	145 psi 10 bar		
1 25 mm	65 psi 4.5 bar	145 psi 10 bar	
1-1/4 32 mm	43 psi 3 bar	130 psi 9 bar	232 psi 16 bar
1-1/2 40 mm	29 psi 2 bar	119 psi 8.2 bar	232 psi 16 bar
2 50 mm	21 psi 1.5 bar	100 psi 6.9 bar	200 psi 13.8 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.

KB 43, KC 43



If a KA 43 or KC 43 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 KB 43 valve cannot be used with a spacer, and is limited to 450°F.

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

Construction Materials

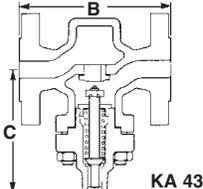
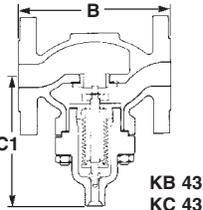
No.	Part	Material	Material Spec.	Closest Equivalent
1	Body	Steel	DIN 17245 GSC 25	A216 Gr WCB
2	Bonnet	Steel	DIN 17245 GSC 25	A216 Gr WCB
3	Valve	Stainless Steel	BS 970 431 S29	A276 Type 431
4	Valve Seat	Stainless Steel	BS 970 431 S29	A276 Type 431
5	Valve Seat Gasket			
	1/2 to 1	Mild Steel	BS 1449 CS 4	A366
	1-1/4 to 2	Nickle Reinforced Exfoliated Graphite		
6	Return Spring	Stainless Steel	BS 970 302 S25	
7	Push Rod KA & KB	Brass	BS 2872 CZ 121 4 Pb	
	KC	Stainless Steel	BS 970 321 S20	
8	Bonnet Gasket	Nickle Reinforced Exfoliated Graphite		
12	Bonnet Studs	Steel	BS 4439 Gr. 8.8	A354
	Bonnet Nuts	Steel	BS 3692 Gr 8	ANSI B18.2.4.1 W
	1/2 to 1-1/2	M10 x 35		
	2	M12 x 35		
13	Bellows KB	Phosphor Bronze		
	KC	Stainless Steel	AISI 316 L	
14	Bellows Gasket	Nickle Reinforced Exfoliated Graphite		
15	Bonnet Bush	Brass	BS 2874 CZ 121	B16M
16	Plunger	Brass	BS 2874 CZ 121	B16M

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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KA 43, KB 43 and KC 43 Cast Steel Valves

Dimensions (nominal) in inches and millimeters						
Size	ANSI 300			Weight		
	B	C	C1	KA	KB/KC	
1/2	5.1	4.1	—	9.5 lb	—	 KA 43
	130	105		4.3 kg		
3/4	5.9	4.1	—	13.9 lb	—	 KB 43 KC 43
	150	105		6.3 kg		
1	6.3	4.1	5.4*	17.6 lb	18.1 lb	
	160	105	138	8.0 kg	8.2 kg	
1-1/4	7.1	4.3	6.0	19.2 lb	20.0 lb	
	180	110	152	8.7 kg	9.1 kg	
1-1/2	8.0	4.3	6.0	24.4 lb	22.3 lb	
	202	110	152	9.7 kg	10.1 kg	
2	9.2	4.3	7.3	32.2 lb	33.1 lb	
	232	110	187	14.6 kg	15.0 kg	

* KC 43 is not available in 1" size

Pressure Shell Design Conditions

PMA	362 psig/248°F	25 barg/120°C
Max. allowable pressure	290 psig/482°F	20 barg/250°C
	188 psig/750°F	13 barg/400°C

TMA	750°F/0-188 psig	400°C/0-13 barg
Max. allowable temperature		

Typical Applications

Small process applications using steam or hot water as a heating medium.

C_v at P Band*

Size	1/2	3/4	1	1-1/4	1-1/2	2
KA & KB	3.36	5.4	11.4	19.2	27.6	39.6
KC				19.2	19.2	39.6
P Band (°F)*	8°	10°	12.4°	20°	22.5°	23.8°

* 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, (which cannot be used on valves larger than 1") the P Band will be twice the amount shown.

Example: For a 1" KA 43 valve with a 122 control system, the valve will not fully open until the controlled temperature drops to 24.8°F below the set point. For complete sizing information, see TIS 1.011 (steam) or TIS 1.012 (water).

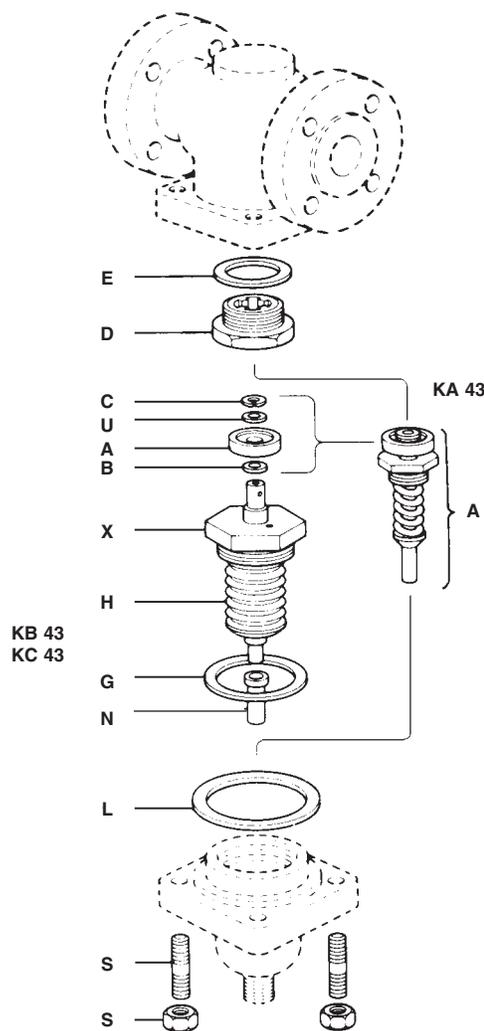
Sample Specification

Control valve shall be steel body with stainless steel trim, single seated with flanged pipe connections. Valve shall 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 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.

Spare Parts



KA 43

Valve & Seat Assembly A, D, E, L

Set of all Gaskets E, L

Set of Bonnet Studs & Nuts (set of 4) S

KB & KC 43

Valve & Seat Assembly A, B, C, D, E, L, U, G
excluding Bellows & Push Rod

Bellows & Push Rod Assembly G, L, H, N

Set of all Gaskets B, C, E, L, U, G

Set of Bonnet Studs & Nuts (set of 4) S

Available spare parts 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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