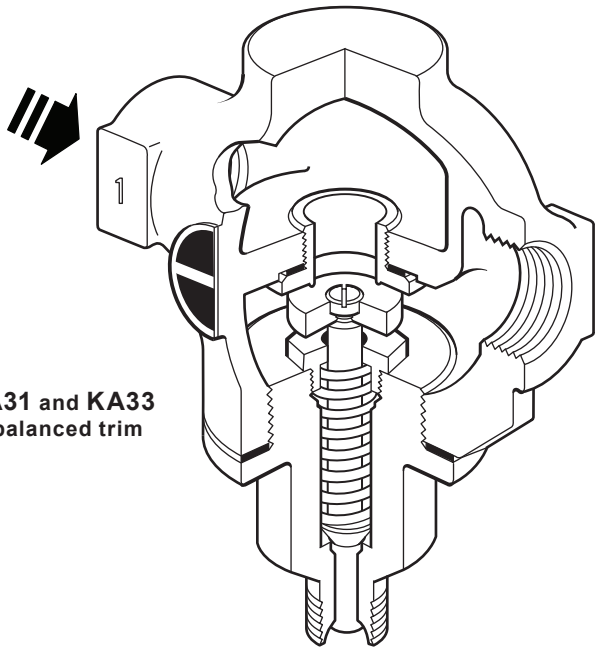
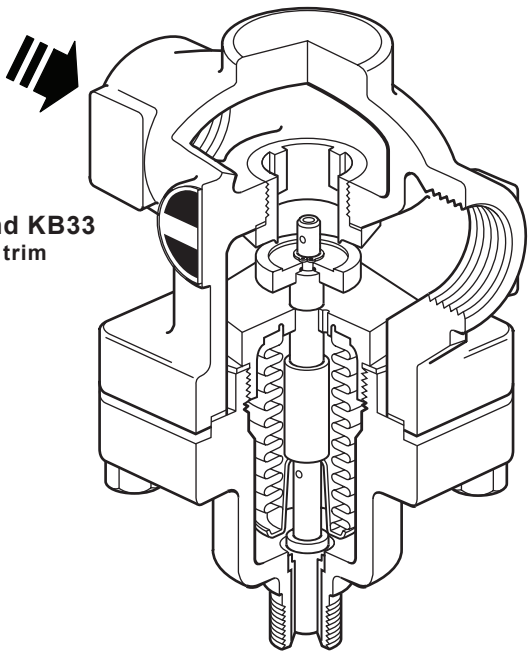
Local regulations may restrict the use of this product to below the conditions quoted.
In the interests of development and improvement of the product, we reserve the right to change the specification without notice. © Copyright 2025

KA31, KA33, KB31 and KB33 Cast Iron Self-acting Control Valves



KA31 and KA33
unbalanced trim



KB31 and KB33
balanced trim

Description

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

Available types

KA31	Normally open with screwed connections.
KA33	Normally open with flanged connections.
KB31	Normally open with phosphor bronze balancing bellows and screwed connections.
KB33	Normally open with phosphor bronze balancing bellows and 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 2014/68/EU 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.

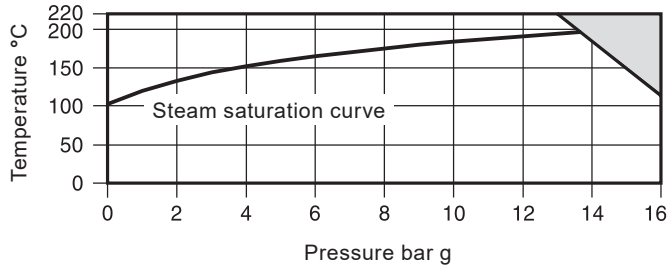
Sizes and pipe connections

Screwed	BSP T Rp (ISO 7-1) (BSP parallel) or NPT:	
	KA31	½", ¾", 1", 1¼", 1½" and 2"
	KB31	1", 1¼", 1½" and 2"

Flanged	EN 1092 PN16 and BS 10 Table F:	
	KA33	DN15, DN20, DN25, DN32, DN40 and DN50
	KB33	DN25, DN32, DN40 and DN50

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Pressure/temperature limits



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

Body design conditions	PN16
Maximum design pressure	16 bar g @ 120°C
Maximum design temperature	220°C @ 13.8 bar g
Minimum design temperature	-10°C
Maximum operating temperature	220°C
Minimum operating temperature	0°C

Note: For lower operating temperatures consult Spirax Sarco

	Size	DN15	DN20	DN25	DN32	DN40	DN50
Maximum differential pressure bar	**KA31**	13.0	10.3	4.5	3.0	2.0	1.5
	KA33	13.0	10.3	4.5	3.0	2.0	1.5
	KB31			10.3	9.0	8.2	6.9
	KB33			10.3	9.0	8.2	6.9

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

Kv values

Size	DN15	DN20	DN25	DN32	DN40	DN50	
KA31, KA33	2.90	4.64	9.80	16.48	23.70	34.00	For conversation Cv (UK) = Kv x 0.963 Cv (US) = Kv x 1.156
KB31, KB33			9.80	16.48	23.70	34.00	

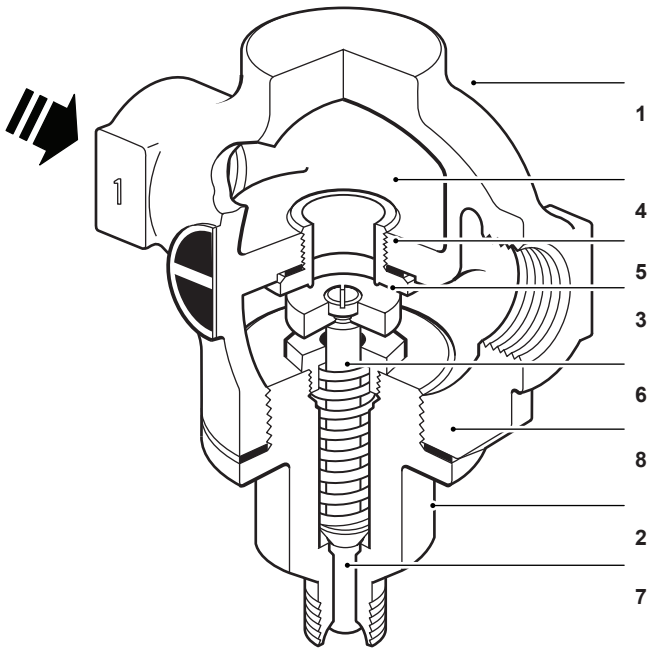
Capacities

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

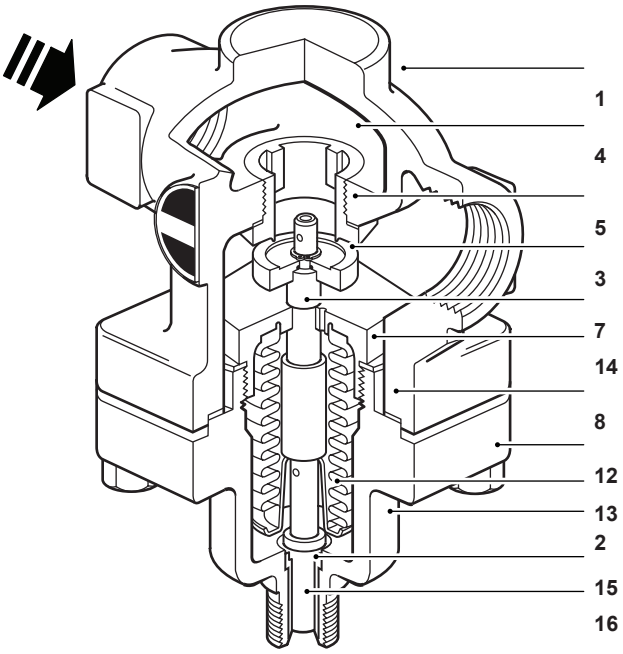
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Materials



KA31 and KA33
unbalanced trim



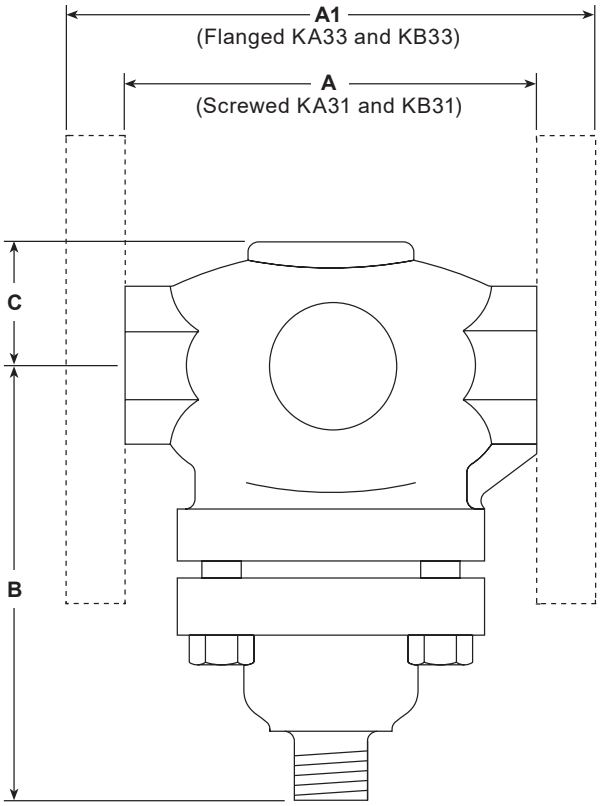
KB31 and KB33
balanced trim

No.	Part		Material	
1	Body		Cast iron	DIN 1691 GG 25
2	Bonnet		Cast iron	DIN 1691 GG 25
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	DN15-DN25	Mild steel	BS 1449 CS 4
		DN32-DN50	Reinforced exfoliated graphite	
6	Return spring		Stainless steel	BS 2056 302 S 26
7	Stem		Brass	BS 2874 CZ 121
8	Bonnet gasket		Reinforced exfoliated graphite	
12	Bonnet studs		Steel	BS 4439 Gr. 8.8
	Bonnet nuts		Steel	BS 3692 Gr. 8
13	Bellows		Phosphor bronze	EN 12449 Cu Sn 6
14	Bellows gasket		Reinforced exfoliated graphite	
15	Bonnet bush		Brass	BS 2874 CZ 121
16	Plunger		Brass	BS 2874 CZ 121

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Dimensions/weights (approximate) in mm and kg



	Size	A	PN16 A1	BS 10'F' A1	B	C	Weight Scr.	Weight Flg.
KA31 and KA33	DN15-½"	88	130	130	105	42	1.3	3.3
	DN20-¾"	102	150	147	105	38	1.6	4.3
	DN25-1"	134	160	157	107	51	3.2	5.7
	DN32-1¼"	144	180	180	110		5.1	8.8
	DN40-1½"	150	200	200	110		6.3	11.0
	DN50-2"	180	230	230	110		7.8	13.0
KB31 and KB33	DN25-1"	136	160	157	138	51	3.4	5.9
	DN32-1¼"	144	180	180	152	51	5.7	9.1
	DN40-1½"	150	200	200	152	62	6.9	11.2
	DN50-2"	180	230	230	152	71	8.8	13.4

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions 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 KA31 self-acting control valve with cast iron body.

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Spare parts

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

Available spares

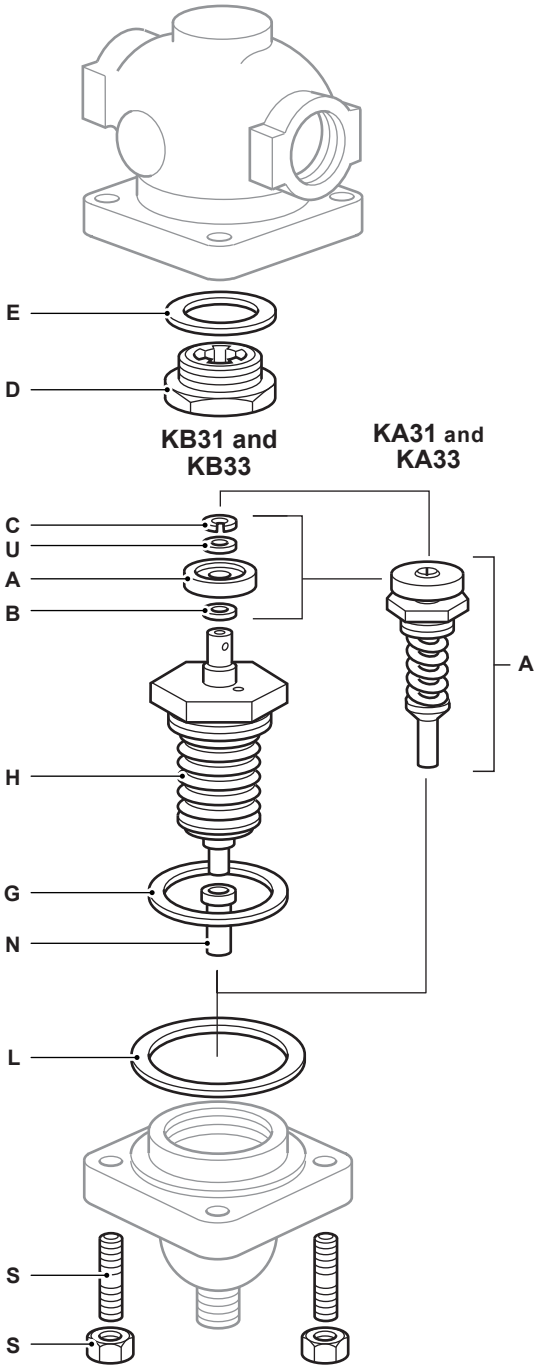
KA31 and KA33	
Valve seat assembly	**A, D, E, L**
Set of all gaskets	**E, L**
Set of bonnet studs and nuts (set of 4)	**S**

KB31 and KB33	
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 all 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 DN32 KB31 self-acting control valve.



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