KBV21i and KBV40i
Key Operated Boiler Blowdown Valves

Description

The key operated boiler blowdown valve consists of a carbon steel reduced bore ball valve with carbon reinforced PTFE seats and a key operated mechanism in stainless steel. Two types of key are sold as optional extras and are available as follows:

- **Standard length key**.
- **Extended length 'T' bar type key** for use where access to the valve is limited.

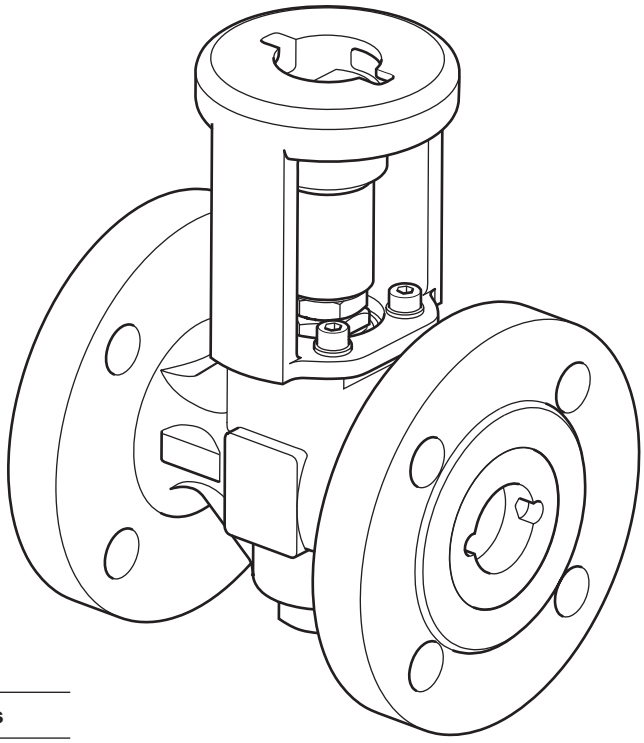
To ensure compliance with boiler regulations the key cannot be removed when the valve is open.
Note: The standard length key and extended length 'T' bar type key are sold separately. It is recommended that an extended length 'T' bar type key is purchased for valve sizes DN50 and DN65 (2" - 2½").

Standards

These products comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and carries the CE mark when so required.
ISO mounting in accordance with ISO 5211.
Antistatic device complying with ISO 7121 and BS 5351.

Certification

These products are available with certififcation to EN 10204 3.1.
Note: All certification / inspection requirements must be stated at the time of order placement.



Sizes and pipe connections

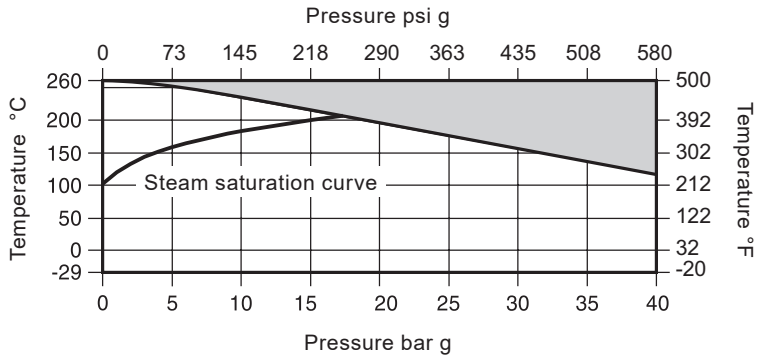
DN25, DN32, DN40, DN50 and DN65
(1", 1¼", 1½", 2" and 2½")
Flanged PN40 (F4), PN40 (BS) or ASME (ANSI) B 16.5 Class 300.

Available flange options:

Flange	Face-to-face	Flange thickness
PN40 (F4)	DIN 3002 F4	EN 1092 Part 1
PN40 (BS)	BS 2080	EN 1092 Part 1
ASME (ANSI) 300	ASME B 16.10	ASME B 16.5

Pressure / temperature limits

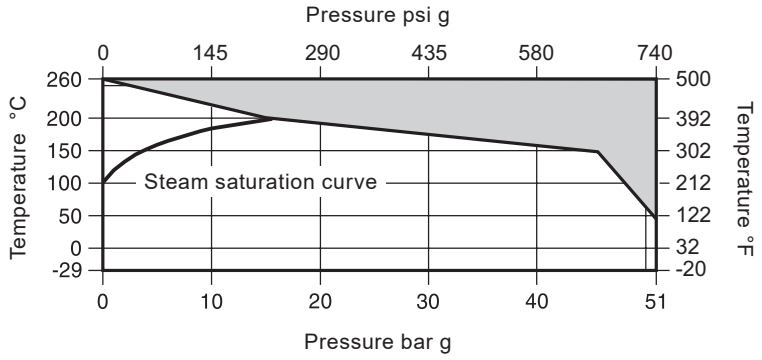
KBV21i



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

Body design conditions			PN40
PMA	Maximum allowable pressure	40 bar g @ 120 °C	580 psi g @ 248 °F
TMA	Maximum allowable temperature	260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum allowable temperature		-29 °C	-20 °F
PMO	Maximum operating pressure for saturated steam service	17.25 bar g	250 psi g
TMO	Maximum operating temperature	260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum operating temperature. **Note:** For lower operating temperatures consult Spirax Sarco		-29 °C	-20 °F
ΔPMX	Maximum differential pressure is limited to the PMO		
Designed for a maximum cold hydraulic test pressure of :		60 bar g	870 psi g

KBV40i



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

Body design conditions			ASME 300
PMA	Maximum allowable pressure	51 bar g @ 38 °C	740 psi g @ 100 °F
TMA	Maximum allowable temperature	260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum allowable temperature		-29 °C	-20 °F
PMO	Maximum operating pressure for saturated steam service	17.25 bar g	250 psi g
TMO	Maximum operating temperature	260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum operating temperature. **Note:** For lower operating temperatures consult Spirax Sarco		-29 °C	-20 °F
ΔPMX	Maximum differential pressure is limited to the PMO		
Designed for a maximum cold hydraulic test pressure of :		76.5 bar g	1110 psi g

Materials

Body and insert		Zinc plated carbon steel	ASTM A216 WCB
Stem seals		Antistatic R-PTFE	
Vented ball		Austenitic stainless steel	AISI 316
Stem	DN65 (2½")	Austenitic stainless steel	AISI 316
	DN25 - DN50 (1" - 2")	Martensitic stainless steel	AISI 420
Seats		Carbon and graphite reinforced PTFE	PDR 0.8

Valve coefficients

Size	**DN25 (1")**	**DN32 (1¼")**	**DN40 (1½")**	**DN50 (2")**	**DN65 (2½")**
Kv value	30	40	81	103	197

For conversion:
Cv (UK) = Kv x 0.963
Cv (US) = Kv x 1.156

How to specify

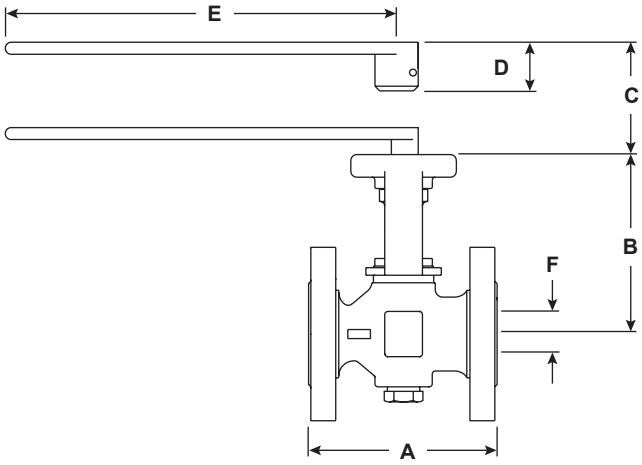
DN40 key operated boiler blowdown valve, flanged PN40 with carbon reinforced seats and stainless steel key.

How to order

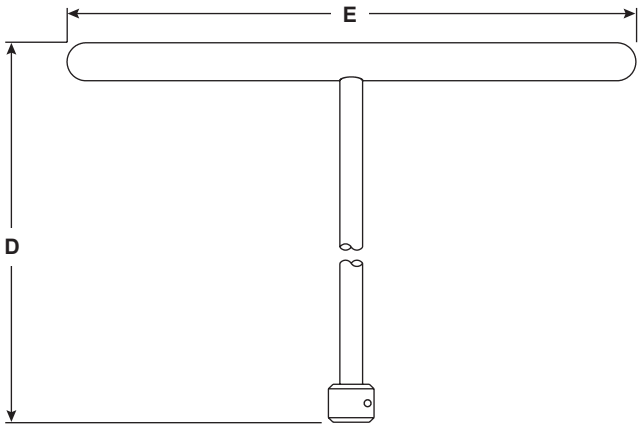
Example: 1 off Spirax Sarco DN40 KBV21i key operated boiler blowdown valve having PN40 (F4) flanged connections.

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

Standard key



'T' bar key

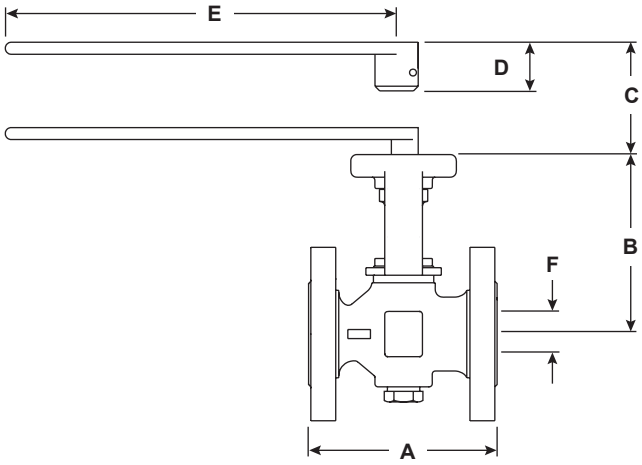


Valve size	Flange	A	B	C	D	E	F	Weight
DN25 (1")	PN40 (F4)	125 (4.9)	119 (4.7)	35 (1.4)			19 (0.75)	3.9 (8.6)
	PN40 BS	165 (6.5)	119 (4.7)	35 (1.4)			19 (0.75)	4.1 (9)
	Class 300	165 (6.5)	119 (4.7)	35 (1.4)			19 (0.75)	4.3 (9.5)
DN32 (1¼")	PN40 (F4)	130 (5.1)	130 (5.1)	35 (1.4)			25 (0.9)	5.3 (11.7)
	PN40 BS	178 (7)	130 (5.1)	35 (1.4)			25 (0.9)	5.7 (12.6)
	Class 300	178 (7)	130 (5.1)	35 (1.4)			25 (0.9)	5.5 (12.1)
DN40 (1½")	PN40 (F4)	140 (5.5)	131 (5.2)	35 (1.4)			30 (1.2)	6.7 (14.8)
	PN40 BS	190 (7.5)	131 (5.2)	35 (1.4)			30 (1.2)	7.1 (15.7)
	Class 300	190 (7.5)	131 (5.2)	35 (1.4)			30 (1.2)	8.0 (17.6)
Standard length key					32 (1.3)	258 (10.2)		0.4 (0.9)
Extended length 'T' bar key					500 (19.7)	375 (14.8)		0.9 (2)

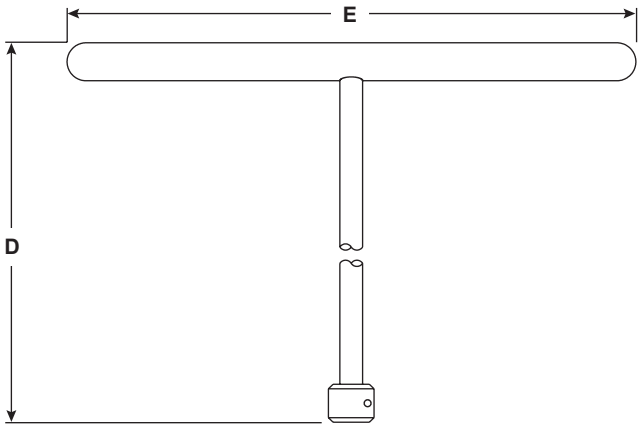
Dimensions/weights continued on next page

Dimensions/weights (approximate) in mm (in) and kg (lb) (continued)

Standard key



'T' bar key



Valve size	Flange	A	B	C	D	E	F	Weight
DN50 (2")	PN40 (F4)	150 (5.5)	139 (5.4)	35 (1.4)			37 (1.5)	9.0 (19.8)
	PN40 BS	216 (8.5)	139 (5.4)	35 (1.4)			37 (1.5)	9.9 (21.8)
	Class 300	216 (8.5)	139 (5.4)	35 (1.4)			37 (1.5)	10.1 (22.3)
DN65 (2½")	PN40 (F4)	170 (6.7)	140 (5.5)	35 (1.4)			50 (1.9)	12.4 (27.3)
	PN40 BS	241 (9.5)	140 (5.5)	35 (1.4)			50 (1.9)	13.9 (30.6)
	Class 300	241 (9.5)	140 (5.5)	35 (1.4)			50 (1.9)	15.0 (33.1)
Standard length key					32 (1.3)	258 (10.2)		0.4 (0.9)
Extended length 'T' bar key					500 (19.7)	375 (14.8)		0.9 (2)

Spare parts - DN25 to DN50 (1" to 2")

The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.
To ensure correct operation and maintain the warranty, use only Spirax Sarco original parts.
Before actioning any maintenance programme observe the 'Safety Information' in Section 1 of the Information and Maintenance Instructions IM-P405-48 supplied with the unit.

Available spares

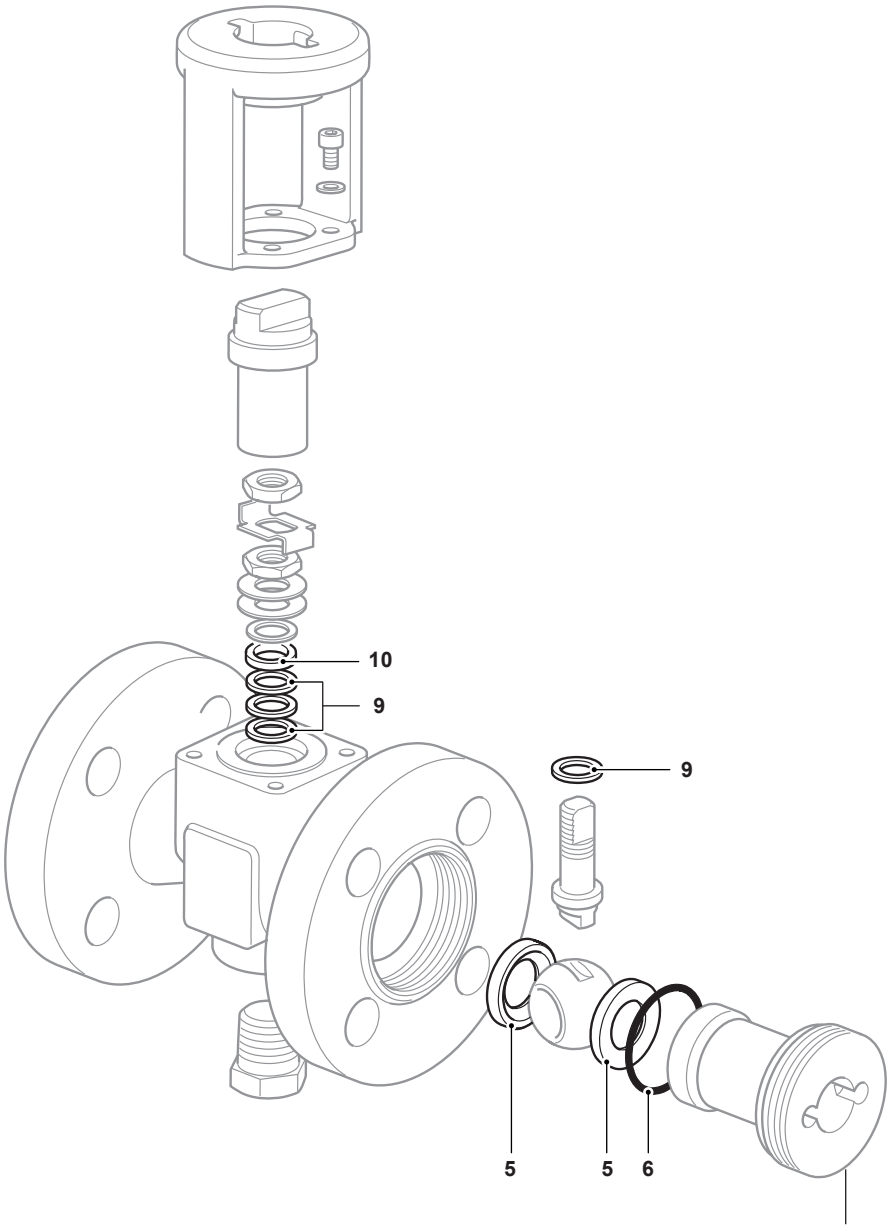
Seats, insert 'O' ring and stem seals	**5, 6, 9, 10**
Insert tool - Required to aid the removal of the ball valve insert (**2**)	**Not shown**

Please note: Spare parts are common for both the KBV21i and KBV40i.

Caution - The ball must be installed with the vent hole on the upstream side of the valve.

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 ball valve.
Example: 1 set of seats, insert 'O' ring and stem seals for a Spirax Sarco DN50 KBV21i boiler blowdown valve.



Ball valve insert (**2**)
(not an available spare).
Please note: You will need to order the **Insert tool** listed in the table above to aid removal.

Spare parts - DN65 (2½")

The spare parts available are shown in solid outline. Parts drawn in a grey line are not supplied as spares.
To ensure correct operation and maintain the warranty, use only Spirax Sarco original parts.
Before actioning any maintenance programme observe the 'Safety Information' in Section 1 of the Information and Maintenance Instructions IM-P405-48 supplied with the unit.

Available spares

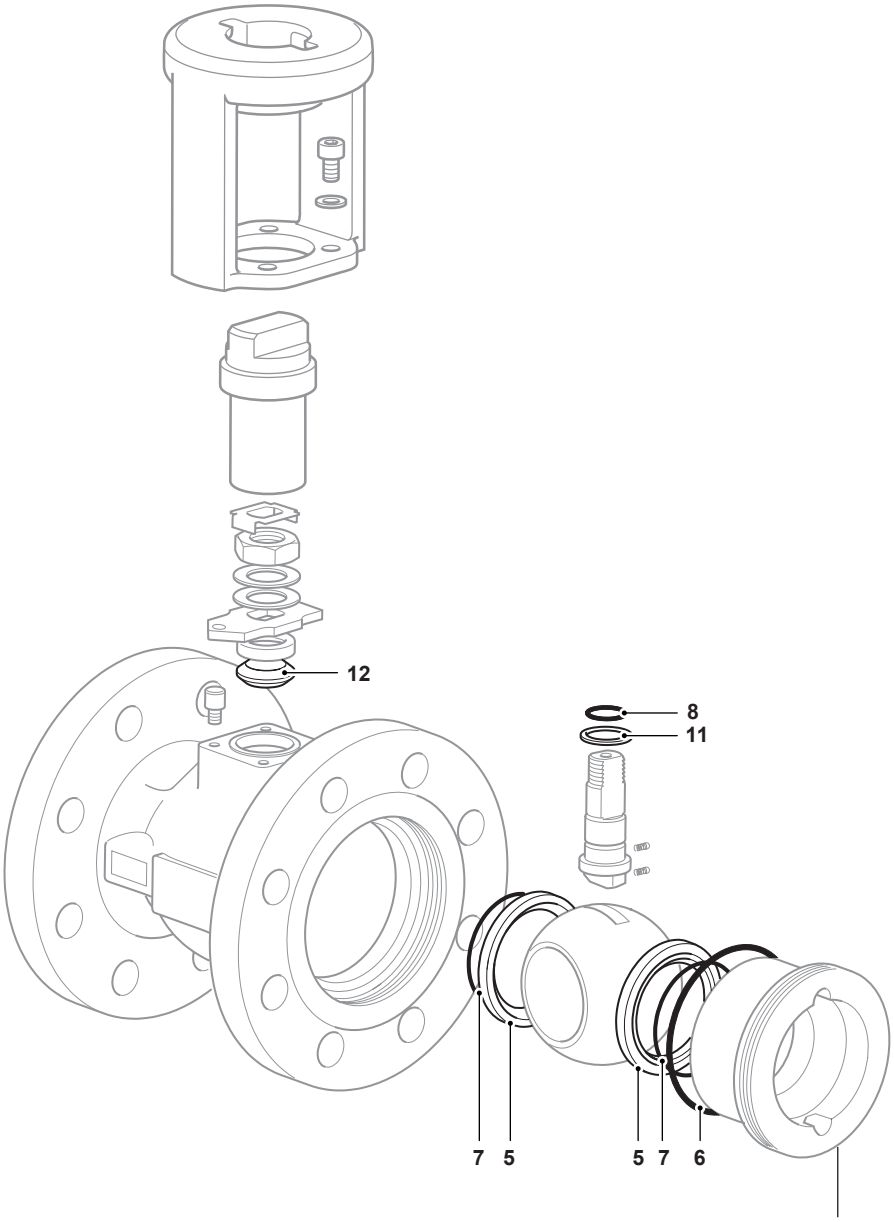
Seats, insert 'O' ring, seat 'O' ring, stem 'O' ring, lower stem seals and upper stem packing	**5, 6, 7, 8, 11, 12**
Insert tool - Required to aid the removal of the ball valve insert (**2**)	**Not shown**

Please note: Spare parts are common for both the KBV21i and KBV40i.

Caution - The ball must be installed with the vent hole on the upstream side of the valve.

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 ball valve.
Example: 1 set of seats, insert 'O' ring, seat 'O' ring, stem 'O' ring, lower stem seals and upper stem packing for a Spirax Sarco DN65 KBV40i boiler blowdown valve.



Ball valve insert (**2**)
(not an available spare).
Please note: You will need to order the **Insert tool** listed in the table above to aid removal.