



TI-P403-36-US  
Issue 1

## BCV31

### 3/4" Blowdown Control Valve

#### Description

The Spirax Sarco BCV31 is a pneumatically operated control valve for the blowdown of steam boilers. It is normally used with a controller as part of an automatic TDS control system, though it can also be used for other high pressure drop, low flowrate applications.

The flowrate is adjusted by limiting the spindle stroke to regulate the number of orifices that are uncovered.

The valve, which is specially designed to minimise seat erosion and ensure consistent tight shut-off, is supplied adjusted to its low flowrate setting of 10 mm.

It can be adjusted to give 15 mm stroke for medium flowrates, or to 20 mm stroke for high flowrates. The actuator has a mechanical stroke indicator and incorporates a rolling diaphragm.

A 1/4" NPT plug at the base of the valve may be removed to allow a sample cooler to be fitted (available from Spirax Sarco).

The BCV31 requires a regulated and filtered air supply (1/4" NPT), which should be free of oil and water, and a solenoid valve, (available from Spirax Sarco).

#### Operation

The valve is spring loaded to the closed position (spring retract), and is also held closed by the boiler pressure. When the solenoid valve opens, air is admitted to the actuator causing the valve to open to the selected stroke.

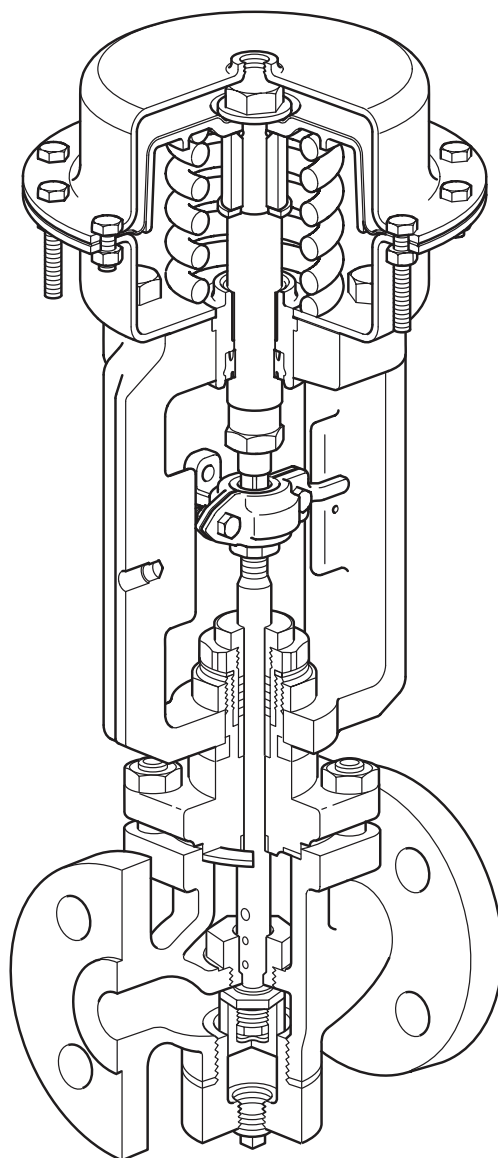
#### Sizes and pipe connections

3/4" ANSI Class 300

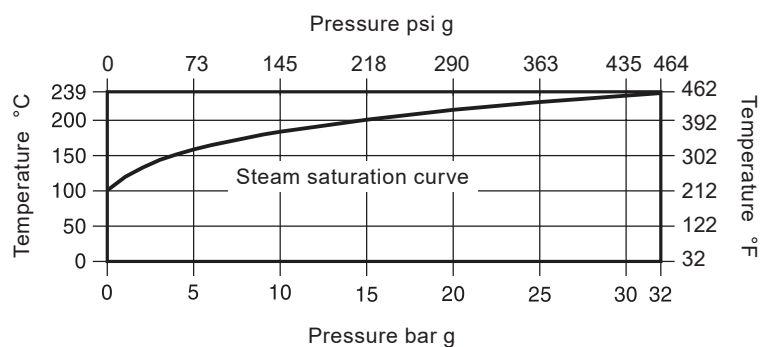
**Note:** All certification/inspection requirements must be stated at the time of order placement.

#### Capacities

Boiler pressure bar g (psi g)	Blowdown valve capacity kg/h (lb/h)		
	Low flowrates 10 mm stroke	Medium flowrates 15 mm stroke	High flowrates 20 mm stroke
5 (73)	380 (838)	530 (1168)	730 (1609)
7 (102)	460 (1014)	710 (1565)	1150 (2535)
10 (145)	570 (1257)	950 (2094)	1500 (3307)
15 (218)	700 (1543)	1150 (2535)	1650 (3638)
20 (290)	780 (1720)	1250 (2756)	1700 (3748)
32 (464)	940 (2072)	1400 (3036)	1800 (3968)



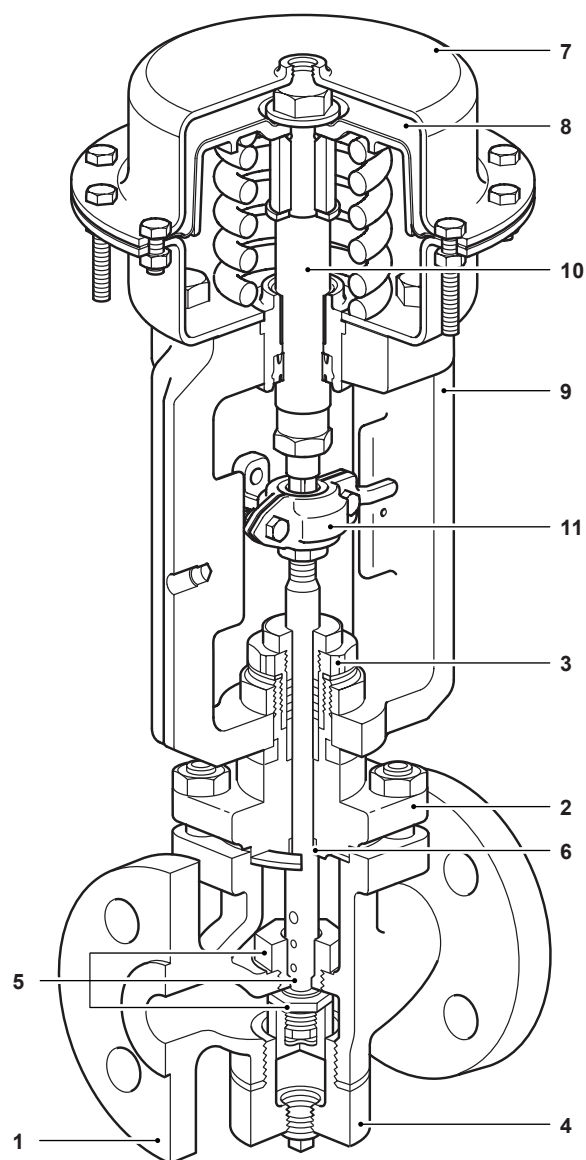
## Pressure/temperature limits



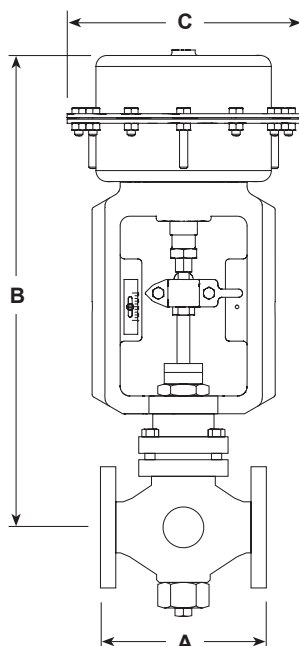
Maximum operating pressure	32 bar g	(464 psi g)
Maximum operating temperature	239 °C	(462 °F)
Maximum ambient temperature	110 °C	(230 °F)
Minimum ambient temperature	0 °C	(32 °F)
Minimum operating temperature	0 °C	(32 °F)
Air pressure range	3 to 6 bar g	(44 to 87 psi g)
Air consumption - normal	0.48 litres	(0.017 ft <sup>3</sup> )

## Materials

No.	Part	Material	
1	Body	Cast carbon steel	DIN 17245 GS-C25
2	Bonnet	Forged carbon steel	DIN 17243 C 22.8
3	Stuffing box assembly	Stainless steel/ graphite seals	ASTM A276 316L
4	Bottom cover	Carbon steel	BS 970 230 MO7
		3.1 version Forged carbon steel	DIN 17243 C 22.8
5	Internal components	Stainless steel (valve cone and seat are hardened)	Type 431
6	Guide bush	Phosphor bronze	BS EN 12163 CW451K
7	Diaphragm housing	Pressed steel	
8	Diaphragm	Reinforced NBR	
9	Yoke	SG iron	
10	Spindle	Stainless steel	
11	Connector	Carbon steel	



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



Size	A	B	C	D	Weight
DN20 ( $\frac{3}{4}$ " )	150 (5.9) (maximum)	361 (14.2 )	297 (11.7 )	$\frac{1}{4}$ " NPT	11.2 (24.7)

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

### Important

Your attention is drawn to Safety Information Leaflet IM-GCM-10, as well as to any national or regional regulations.

### Installation note

The valve itself may be installed outdoors without additional protection. The solenoid valve however, must be installed indoors, or adequately protected against outdoor conditions.

### Maintenance note

We recommend that the valve and actuator are examined annually and parts replaced as necessary.

## How to order

**Example:** 1 off Spirax Sarco  $\frac{3}{4}$ " BCV31 blowdown control valve having flanged ANSI 300 connections.

## Spare parts

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

### Available spares

	Gasket and packing set	Stock No. 4034682	4, 9, 13, 16, 22, 41
Valve	Valve cone, seat and stem set	Stock No. 4034683	3, 5, 6, 7, 8, 15, 16, 20 + Gasket and packing set
	Adjustable stuffing box kit	Stock No. 4034684	40, 42, 43, 44 + Gasket and packing set
Actuator	Stem seal kit		17, 18, 30
	Diaphragm kit		4, 9
	Travel indicator kit		15, 19, 20
	Spring kit		5
	Linkage kit (suitable for MK1 and Mk2 valves)		10, 13, 14, 26, 27

## How to order spares

Always order spares by using the description given above, and state the size and flange type of blowdown control valve.

### Example:

1 off Gasket and packing set, Stock No. 4034682, for a Spirax Sarco 3/4" BCV31 blowdown control valve having flanged ANSI 300 connections.

