# BCV43
# Blowdown Control Valves
# ¾" and 1½"

## Description

Spirax Sarco's BCV blowdown control valves are manufactured using the market proven SPIRA-TROL body. These valves have been specifically designed for the blowdown of steam boilers or for other high pressure drop, low flow applications, and are generally used with a blowdown controller as part of an automatic TDS control system.

The flowrate is adjusted by setting the stroke of the valve spindle. These valves have been specially designed to minimize seat erosion and ensure consistent shut-off.
A ¼" BSP plug at the base of the valve may be removed to allow a sample cooler to be fitted.

**Two versions are available:**
- Electrically actuated TDS blowdown control valve. (Non-UL Listed)
- Pneumatically actuated TDS blowdown control valve.

| Available model | Material | Connection |
|---|---|---|
| BCV43 | Carbon Steel | Flanged |

**SPIRA-TROL valve body options**

| | | |
|---|---|---|
| **Stem sealing** | Graphite packing | High temperature applications |
| **Seating** | Hard facing | 316L stainless steel with Stellite 6 facing |

**BCV blowdown control valves are compatible with the following actuators and positioners:**

| Version | Actuator | Positioners |
|---|---|---|
| **Electric** | AHL1 series | |
| **Pneumatic** | PN9_ _ _ series | PP5 (pneumatic) |
| | | EP5 (electropneumatic) |
| | | ISP5 (intrinsically safe electropneumatic) |
| | | SP400 and SP500 (microprocessor based electropneumatic) |

**Standards**
These products fully comply with the requirements of the European Pressure Equipment Directive 97 / 23 / EC.

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

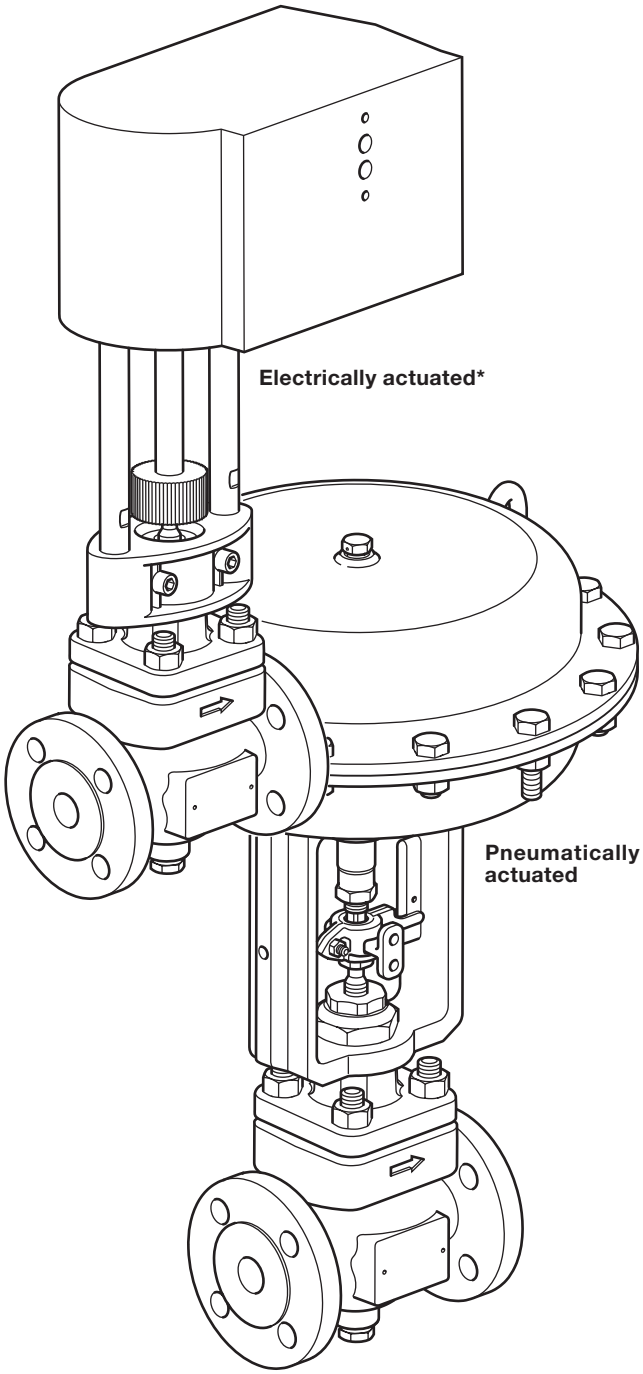
## Operation

**BCV blowdown control valves** are supplied in the normally closed position.
**Electrical version:** When the power is connected to the actuator the valve opens to the position set by the internal limit switch.
**Pneumatic version:** When the solenoid valve opens, air is admitted to the actuator activating the valve to open to the selected stroke.

*AHL1 series electric actuator is not UL Listed

## Size and pipe connections

¾" and 1½" Flanged
ASME class 300



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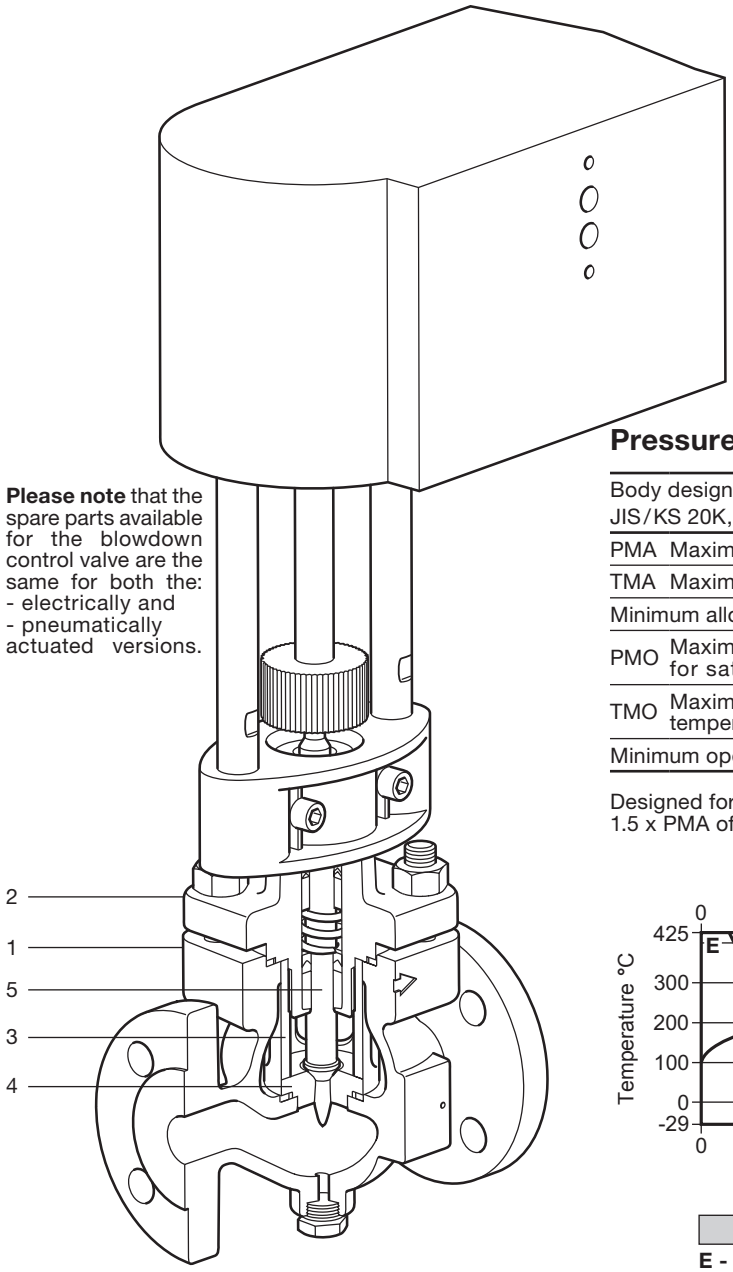
## Materials

Please note that the spare parts available for the blowdown control valve are the same for both the electrically and pneumatically actuated versions.

| No. | Part | Material | |
|---|---|---|---|
| 1. | **Body** | Carbon steel | 1.0619+N / WCB |
| 2. | **Bonnet** | Forged steel | 1.0460 / A105N or 1.0619 / WCB |
| 3. | **Seat retainer** | Stainless steel | 316L |
| 4. | **Seat** | Stainless steel | 316L with Stellite |
| 5. | **Plug** | Stainless steel | 316L with Stellite |




**Please note** that the spare parts available for the blowdown control valve are the same for both the:
- electrically and
- pneumatically

actuated versions.

## Electrical data

| Actuator | AHL1 series |
|---|---|
| Supply voltage | Standard 24 Vdc and 110 Vac |
| Supply frequency | 50 to 60 Hz |
| Power consumption | 10 to 18 watts |
| Actuator speed | 2 mm/s, 4 mm/s or 6 mm/s |
| Actuators thrust maximum | 450 lbf (2kN) |
| Maximum shut-off value | 600 psig (42 bar g) |

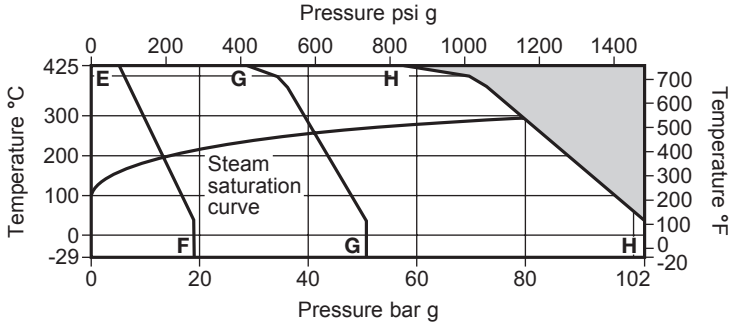
| Size | Actuator | Maximum shut-off value |
|---|---|---|
| ½" | AHL1 series / PN9123E | 600 psig (42 bar g) |
| 1½" | AHL1 series / PN9223E | 600 psig (42 bar g) |

## Pressure/temperature limits – BCV43

Body design conditions: PN40,PN63, or PN100
JIS/KS 20K, 30K, or 40K, ASME class 300

| | | | |
|---|---|---|---|
| PMA | Maximum allowable pressure | 51.1 bar g @ 38°C | 741 psi g @ 100°F |
| TMA | Maximum allowable temperature | 425°C @ 28.8 bar g | 797°F @ 418 psi g |
| | Minimum allowable temperature | -29°C | -20°F |
| PMO | Maximum operating pressure for saturated steam service | 41.7 bar g @ 254°C | 605 psi g @ 489°F |
| TMO | Maximum operating temperature | 425°C @ 28.8 bar g | 797°F @ 418 psi g |
| | Minimum operating temperature | -29°C | -20°F |

Designed for a maximum cold hydraulic test pressure of:
1.5 x PMA of the relative end connection of choice




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

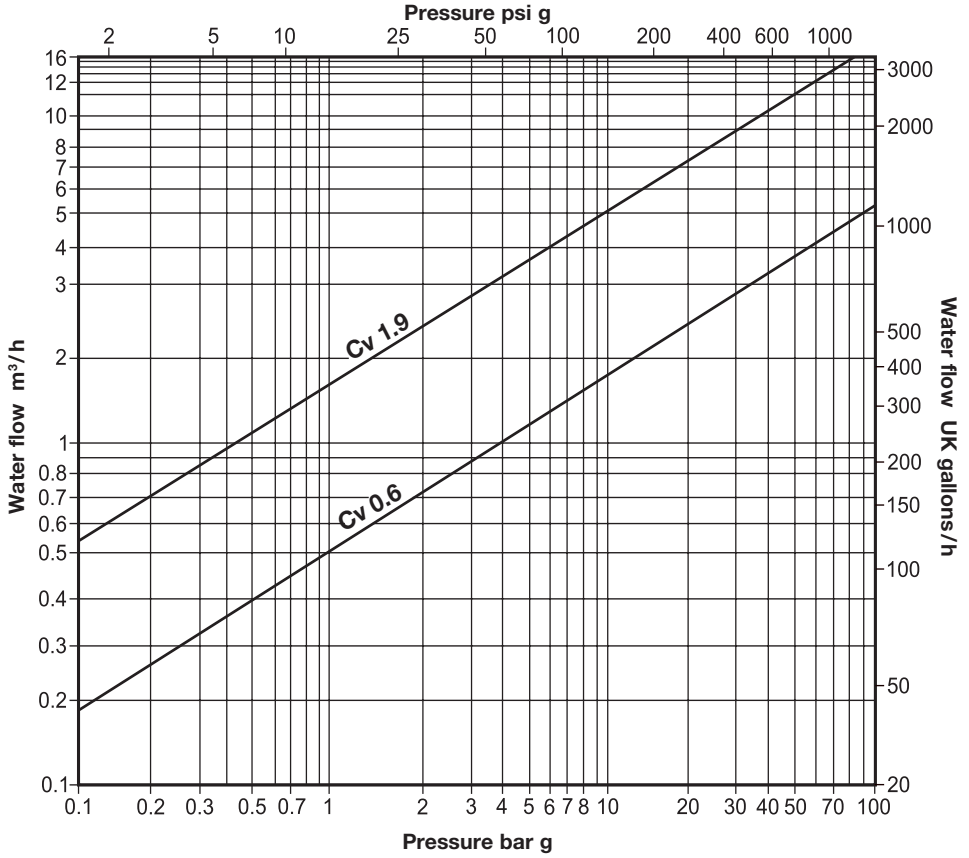
**E - G** Flanged ASME class 300

# BCV43 Blowdown Control Valves ¾" and 1½"

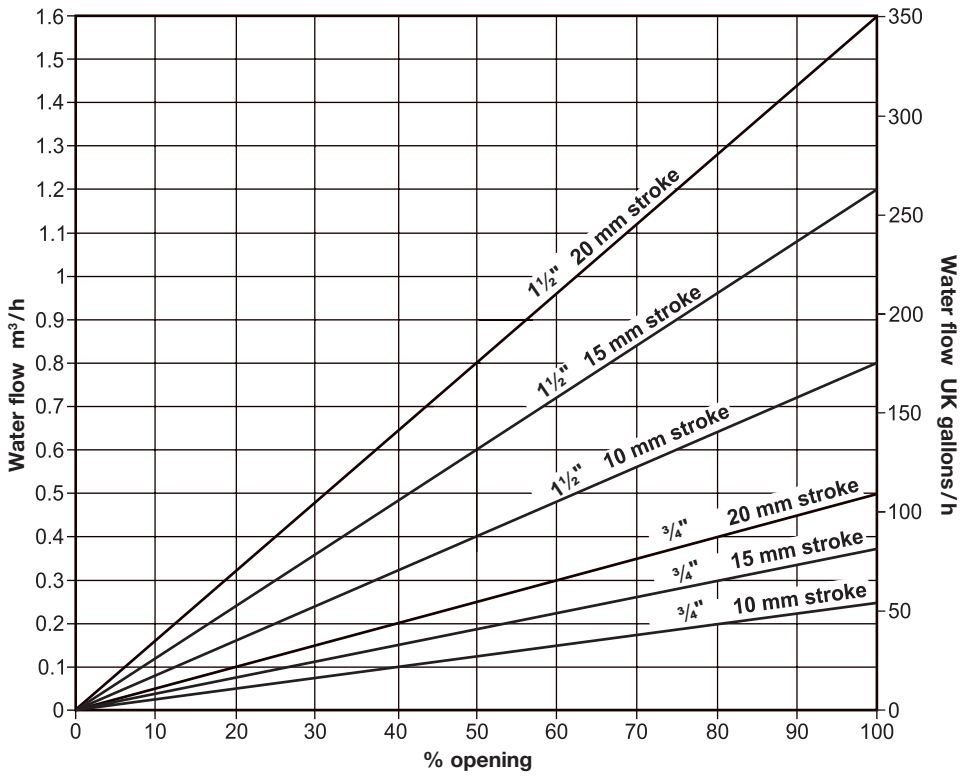
## $C_{VS}$ values

| Valve size | ¾" | 1½" |
|---|---|---|
| $C_{VS}$ value | 0.6 | 1.9 |

## $C_{VS}$ chart



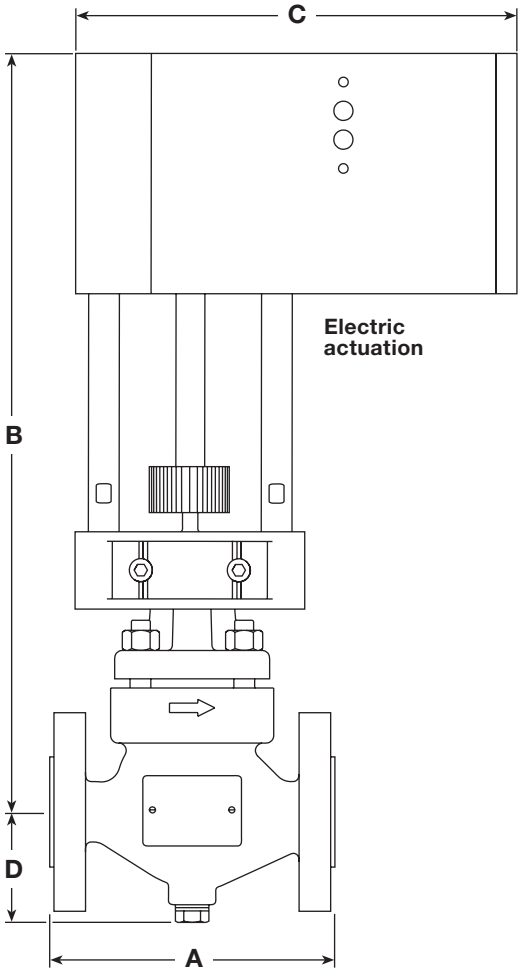

## Capacities

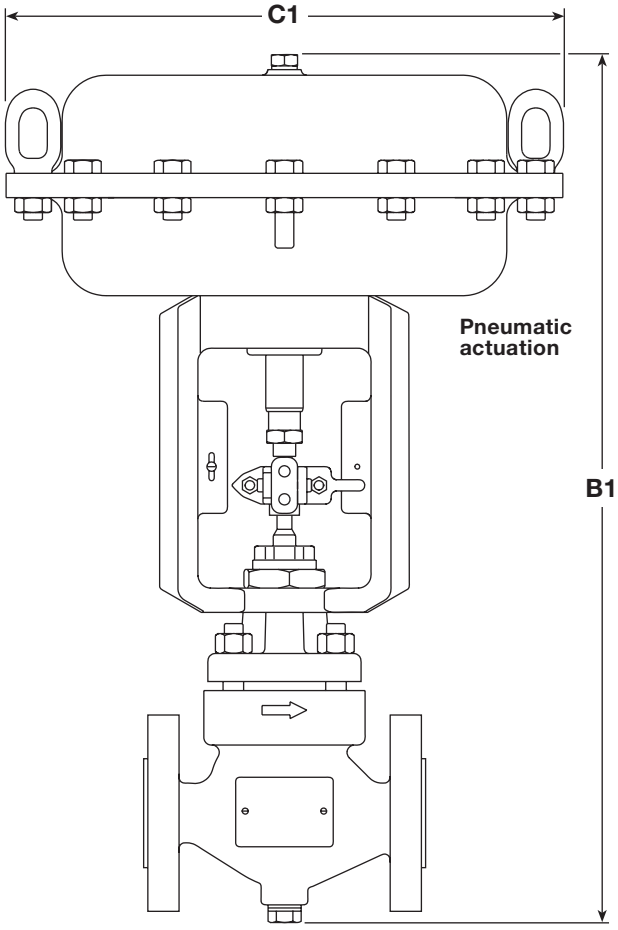


# BCV43 Blowdown Control Valves ¾" and 1½"

**Dimensions / weights** (approximate) in inches and lbs

| Size | A | B | B1 | C | C1 | D | Weight | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Electric version | Pneumatic version |
| | | | | | | | ASME 300 | ASME 300 |
| ¾" | 7.5 | 15.4 | 14.9 | 9.0 | 6.7 | 2.25 | 28.2 | 28.2 |
| 1½" | 9.25 | 16.6 | 17.0 | 9.0 | 11.8 | 3.0 | 44.0 | 68.3 |



# BCV43 Blowdown Control Valves ¾" and 1½"

## BCV selection guide

| | | | | |
|---|---|---|---|---|
| **Valve size** | | | ¾" and 1½" | |
| **Valve series** | | | **BCV** | |
| **Body material** | **4** | | Carbon steel | |
| **Connections** | **3** | | Flanged | |
| **Stem sealing** | **H** | = | Graphite | |
| **Seating** | **W** | = | Stainless Steel 316L with Stellite | |
| **Type of trim** | **S** | = | Standard trim | |
| **Trim-balancing** | **U** | = | Unbalanced | |
| **Bonnet type** | **S** | = | Standard | |
| **Bolting** | **S** | = | Standard | |
| **Flow coefficient** | | | To be specified | |
| **Connection type** | | | To be specified | |
| **Actuation** | **PN** | = | Pneumatic | |
| | **EL** | = | Electrical | 110 Vac or 24 Vac/Vdc |

## Available Models

| Pipe Size | | Cv | Pipe Connection | Actuation |
|---|---|---|---|---|
| 3/4" | BCV43HWSUSS | 0.6 | Flanged ASME300 | EL110VAC |
| 3/4" | BCV43HWSUSS | 0.6 | Flanged ASME300 | EL24VDC |
| 3/4" | BCV43HWSUSS | 0.6 | Flanged ASME300 | PN |
| 1 1/2" | BCV43HWSUSS | 1.9 | Flanged ASME300 | EL110VAC |
| 1 1/2" | BCV43HWSUSS | 1.9 | Flanged ASME300 | EL24VDC |
| 1 1/2" | BCV43HWSUSS | 1.9 | Flanged ASME300 | PN |

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P403-103) supplied with the product.

**Installation note:** The blowdown control valve should preferably be installed with the actuator vertically above the pipework and the flow direction as indicated on the valve body. It can be fitted in other positions, but not upside down.

**Disposal:** This product is recyclable. No ecological hazard is anticipated with the disposal of the product, providing due care is taken.

## Spare parts

The spare parts available are detailed below. No other parts are supplied as spares.

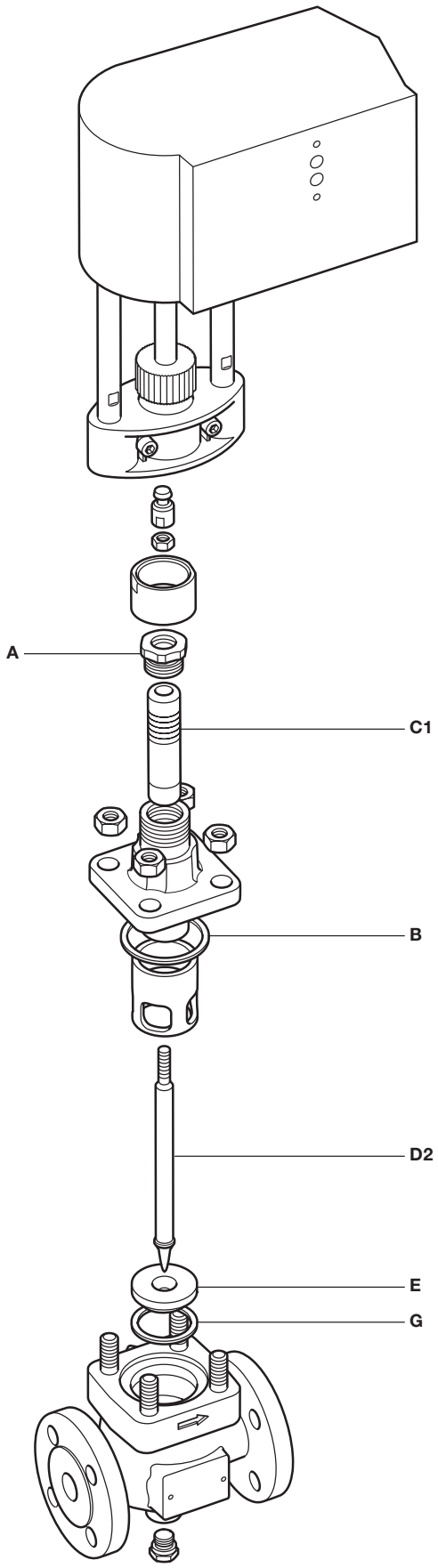
**Please note** that the spare parts available for the BCV blowdown control valve are the same for both the electrically and pneumatically actuated versions.

| Available spares | | |
|---|---|---|
| Actuator clamping nut | | **A** |
| Gasket set | | **B, G** |
| Stem seal kits | Graphite packing | **C1** |
| Plug stem and seat kit | Linear trim (No gaskets supplied) | **D2, E** |

**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 and specify clearly the full product description as found on the label of the blowdown control valve body, as this will ensure that the correct spare parts are supplied.

**Example:** 1 off Actuator clamping nut for a Spirax Sarco ¾" BCV43 blowdown control valve.







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