



# Spira-trol™ Two-port Control Valves

## EN Standard K and L Series

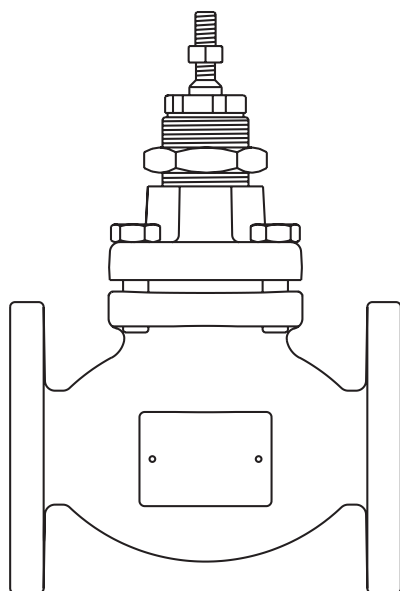
### DN15 to DN100 (½" to 4")

### Description

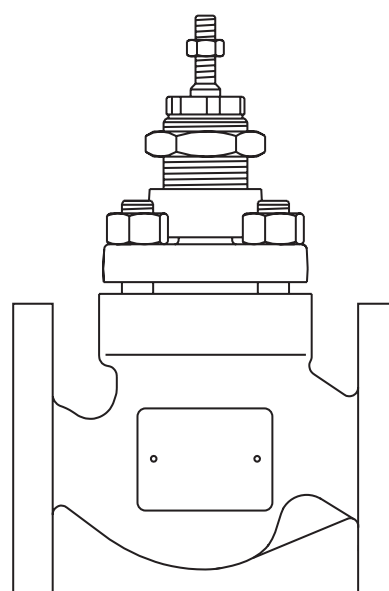
Spira-trol™ is a range of two-port single seat globe valves with cage retained seats conforming to EN standard. These valves are available in four body materials in sizes ranging from DN15 to DN100 (½" to 4"). When used in conjunction with a pneumatic or electric linear actuator they provide characterised modulating or on/off control.

**Important note:** Throughout this document, reference has been made to the standard KE or LE control valve. With the exception of trim type, the KE, LE, KF, LF, KL and LL control valves are identical.

BSP threaded connections are to standard BSP T Rp (ISO 7-1).



**L Series**  
 DN15 to DN100 (½" to 4")



**K Series**  
 DN15 to DN100 (½" to 4")

### Sizes and pipe connections


Valve Series	Material	Screwed	Flanged					
		BSP	PN16	PN16	PN25	PN40	JIS/KS10	JIS/KS20
		Up to DN50 (2")	DN65 and DN100 (2½" and 4") <sup>1</sup>	DN15-DN100 (½" to 4")				
L Series	Cast Iron	•		•				
	Carbon Steel			•			•	
	Stainless Steel			•			•	
K Series	SG Iron	•	•		•		•	
	Carbon Steel					•		•
	Stainless Steel	•				•		•

<sup>1</sup> For others size use PN25 body which are dimensionally identical to PN16.

## Compliance

The Spira-trol™ control valve when coupled to the PN9000 series or AEL7 actuator (as defined in the technical information sheets TI-P357-30 and TI-P713-02) complies with the requirements of Machinery Directive 2006/42EC. Please refer to the installation and maintenance instructions for the PN9000 series (IM-P357-29) and the Spira-trol™ valve (IM-S24-42) and the AEL7 (IM-P713-01) for potential hazards and safety information relating to the installation, commissioning, maintenance and disposal of the product assembly and its component parts.

## Standards

Designed in accordance with EN 60534. This product fully complies with the requirements of the European Pressure Equipment Directive 2014/68/EU and carries the  mark when so required.

## Certification

This product is available with certification to EN 10204 3.1.

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

## Food contact

This product is not to be used on steam, liquid or gas that either forms an ingredient of, or comes into direct contact with food products in the EU.

For up to date information on product compliance please visit : [www.spiraxsarco.com/product-compliance](http://www.spiraxsarco.com/product-compliance)

## Spira-trol™ valve characteristic - options:

**KE and LE Equal percentage (E)** - Suitable for most modulating process control applications providing good control at all flowrates.

**KF and LF Fast opening (F)** - For on/off applications only.

**KL and LL Linear (L)** - Primarily for liquid flow control where the differential pressures across the valve is constant.

## Spira-trol™ valve options:

<b>Stem sealing</b>	<b>PTFE chevron seals (P-N)</b>	Standard
	<b>Graphite packing (H)</b>	High temperature applications
	<b>Bellows/graphite secondary seals (D)</b>	Zero emissions and high temperature applications PN25 - Up to 400 °C (752 °F)
<b>Seating</b>	<b>Metal-to-metal</b>	431 stainless steel - standard 316L stainless steel
	<b>Soft seating</b>	Up to 152 °C (305.6 °F) - PTFE for Class VI shut-off for low temperature applications.
		Up to 220°C (428 °F) - PEEK (C and P) for Class VI shut-off
	<b>Hard facing</b>	316L stainless steel with Stellite™ 6 facing
<b>Bonnet type</b>	Standard bonnet	
	Extended bonnet for hot/cold applications (Only available on K Series)	
<b>Trim</b>	Standard trim	
	Low noise and anti-cavitation trim (see TI-S24-59). Not available with Reverseable PEEK Seat (C)	

Spira-trol™ is a modular valve based on 4 body sizes covering DN15-100 (DN15-25, DN32-50, DN65-80, DN100) sizes in order to reduce the number of spare parts. The valves are available with a range of accessories including actuators, positioners, solenoid valves, limit switches.

Please refer to respective data sheets.

For Special trims please refer to TI-S24-59  
For ASME version please refer to TI-S24-72  
For smart positioner please refer to TI-P706-01, TI-P706-04 and TI-P707-02  
For pneumatic positioners please refer to TI-P704-01  
For electro-pneumatic positioners please refer to TI-P703-01 and TI-P703-03  
For large size Spira-trol™ please refer to TI-S24-73

## Materials - DN15 to DN100 (1/2" to 4")

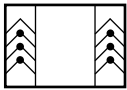
	LE3		KE7	LE-KE4		LE-KE6	
	DN15-50 (1/2"-2")	DN65-100 (2 1/2"-4")	DN15-100 (1/2"-4")	DN15-50 (1/2"-2")	DN65-100 (2 1/2"-4")	DN15-50 (1/2"-2")	DN65-100 (2 1/2"-4")
<b>1 Body</b>	EN1563 : ENGJS-400-18		EN1563 : ENGJS-400-18LT	EN10273 : 1.0460	EN10213 : 1.0619N	EN10213 : 1.4408	
<b>2 Bonnet</b>	EN1563 : ENGJS-400-18	EN1561 : ENGJL-250	EN1563 : ENGJS-400-18LT	EN10213 : 1.0619N		EN10213 : 1.4408	
<b>2a Bonnet extension</b>	EN10213 : 1.0619N					EN10213 : 1.4408	
<b>2b Bellows</b>	Stainless steel 316L						
<b>2c Extended bonnet</b>	EN10213 : 1.0619N					EN10213 : 1.4408	

Alternative body and bonnet material available on request

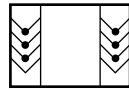
### \* Graphite packing

High temperature packing	9	Lower and upper stem guide	Stellite 6
	14	Grafoil packing	Graphite rings
	10, 11, 12, 15, 17 and 19 Not used		

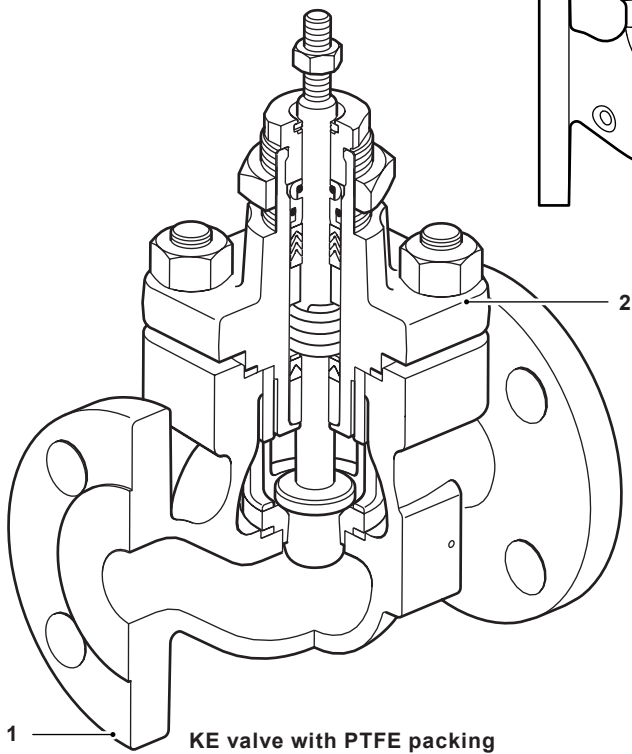
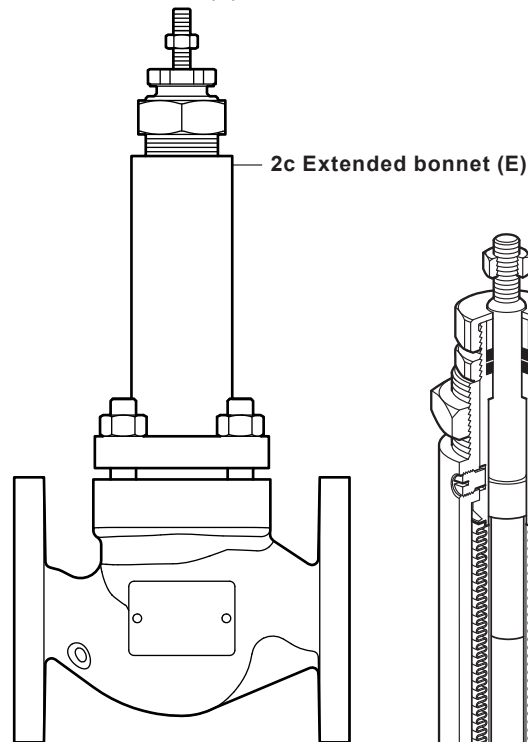
\* PTFE stem sealing



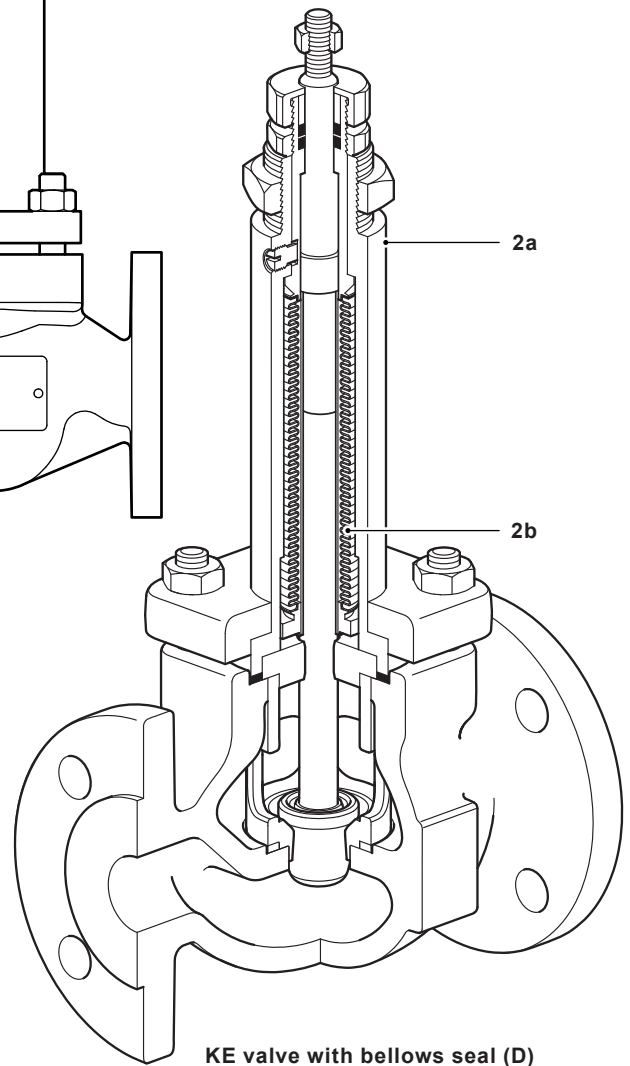
PTFE stem sealing for vacuum service



### KE valve with extended bonnet (E)



KE valve with PTFE packing

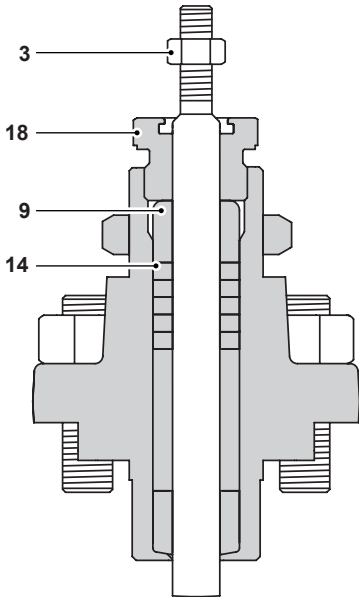


KE valve with bellows seal (D)

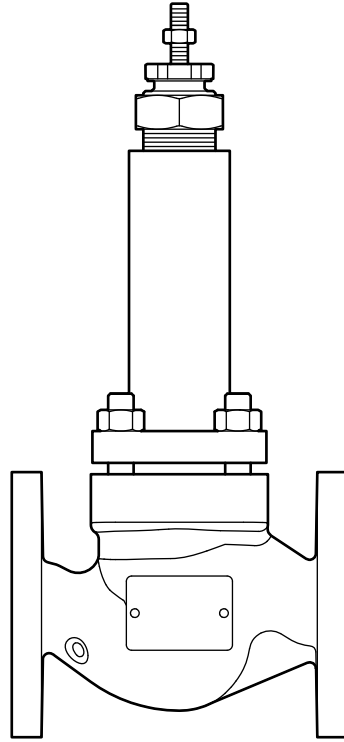
## Materials - DN15 to DN100 (½" to 4") continued

3	Stem lock-nut			Stainless steel A2-70
4	Bonnet gasket			Graphite and stainless steel
5	Seat retainer			Duplex stainless steel ASME A994 CD4MCuN
6	Valve seat ring	Seat option	T	Stainless steel 431
		Seat option	S	Stainless steel 316L
		Seat option	W	Stainless steel 316L + Stellite™ 6
		Seat option	C and P	PEEK
		Seat option	G	Stainless Steel 316L + PTFE
7	Seat gasket			Graphite and stainless steel
8	Valve plug and stem	Seat option	T	Stainless steel 431
		Seat option	S	Stainless steel 316L
		Seat option	W	Stainless steel 316L + Stellite™ 6
		Seat option	C/G/P	Stainless steel 316L for stainless steel valve and Stainless steel 431 for all other materials
9	Lower stem guide	Bonnet option	P	PTFE glass filled
		Bonnet option	N	Nitronic™ 60
		Bonnet option	H	Stellite™ 6
10	Lower stem wiper	Bonnet option	P - N	PTFE
11	Packing guard washer			Stainless steel 316L
12	Spring	Bonnet option	P - N	Stainless steel 316L
13	Packing spacer			Stainless steel 316L
14	Packing set	Bonnet option	P - N	PTFE chevron
		Bonnet option	H	Graphite rings
15	Outer 'O' ring	Bonnet option	P - N	VITON™
16	Upper stem guide	Bonnet option	P	PTFE glass filled
		Bonnet option	N	Nitronic™ 60
		Bonnet option	H	Stellite™ 6
17	Inner 'O' ring	Bonnet option	P - N	VITON™
18	Gland nut			Stainless steel 316L for stainless steel valve and stainless steel 431 for all others materials
19	Scraper ring	Bonnet option	P - N	PTFE
20	Actuator clamp nut	Stainless steel valve		Nickel plated carbon steel
		All others		Zinc plated carbon steel
22	Bonnet extension gasket			Graphite and stainless steel
26	Spindle lock and anti-rotation nut			Stainless steel
27	Nut	Bolting option	S	Stainless steel A2-70 for stainless steel valve and carbon steel Gr.8 for all others
		Bolting option	H	Stainless steel A2-70
28	Stud	Bolting option	S	Stainless steel A2-70 for stainless steel valve and carbon steel 8.8 for all others
		Bolting option	H	Stainless steel A2-70

KE valve with graphite packing



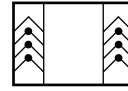
KE valve with extended bonnet (E)



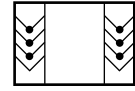
\* Graphite packing

High temperature packing	9	Lower and upper stem guide	Stellite 6
	16		
	14	Grafoil packing	Graphite rings
	10, 11, 12, 15, 17 and 19 Not used		

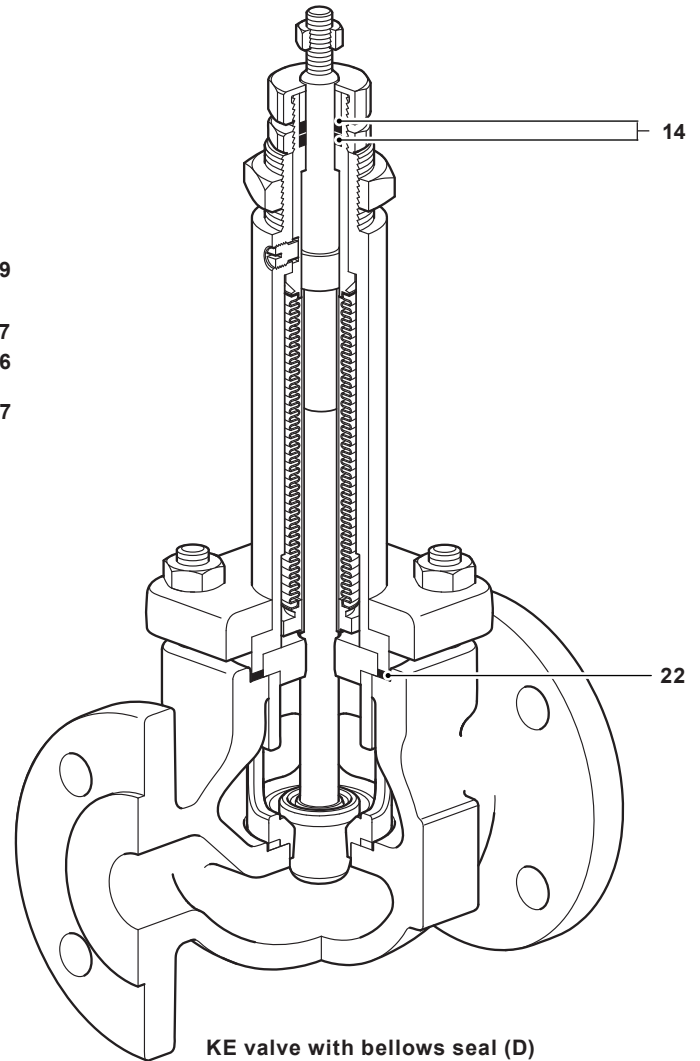
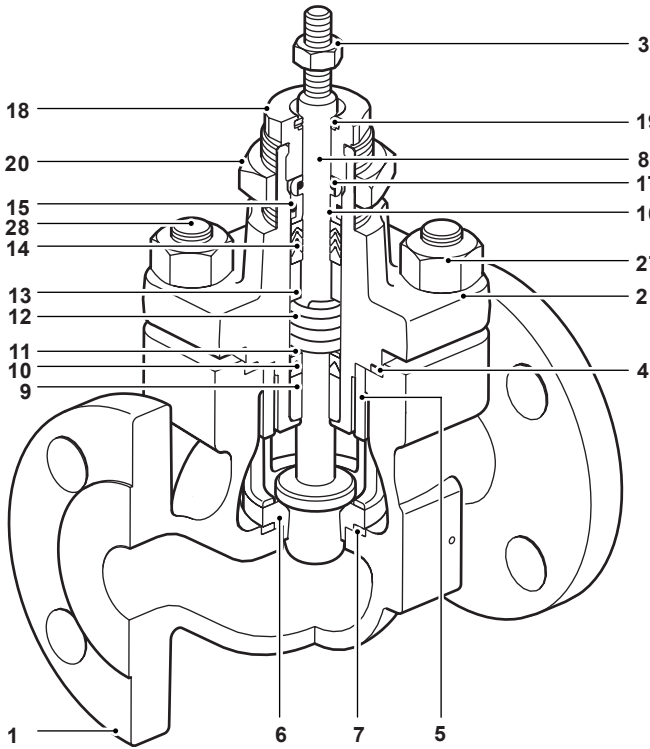
\* PTFE stem sealing



PTFE stem sealing for vacuum service



KE valve with PTFE packing



## K<sub>v</sub> values

Valve size		DN15 (½")	DN20 (¾")	DN25 (1")	DN32 (1¼")	DN40 (1½")	DN50 (2")	DN65 (2½")	DN80 (3")	DN100 (4")	
Standard trim	High capacity Equal %	4.9	7.2		17.5	31.0	46.0				
	Full port	Equal %	4.0	6.3	10.0	16.0	25.0	36.0	73	100	160
		Linear	4.0	6.3	10.0	16.0	25.0	36.0	73	100	160
		Fast opening	4.9	7.2	11.0	18.0	31.0	50.0	90	117	180
		Reduced trim 1	Equal %	2.5	4.0	6.3	10.0	16.0	25.0	36	73
		Linear	2.5	4.0	6.3	10.0	16.0	25.0	36	73	100
	Reduced trim 2	Equal %	1.6	2.5	4.0	6.3	10.0	16.0	25	36	63
		Linear	1.6	2.5	4.0	6.3	10.0	16.0	25	36	63
	Reduced trim 3	Equal %	1.0	1.6	2.5	4.0	6.3	10.0	16	25	36
		Linear	1.0	1.6	2.5	4.0	6.3	10.0	16	25	36
	Reduced trim 4	Equal %		1.0	1.6		4.0	6.3		16	
		Linear		1.0	1.6		4.0	6.3		16	
	Reduced trim 5	Equal %			1.0			4.0			
		Linear			1.0			4.0			
	Microflute (Linear only) (not available with C Seat option)		0.5	0.5	0.5						
			0.2	0.2	0.2						
			0.1	0.1	0.1						
			0.07	0.07	0.07						
		0.01	0.01	0.01							

**Note:** For low noise and anti-cavitation K<sub>v</sub> please see TI-S24-59

## Bellows D Service Life Expectancy

Valve			Process		Estimated life expectancy (operations)	
Inlet Size	Stem Ø	No. Ply	Pressure	Temperature	100% Stroke	25-75% modulation
DN15-50 (½"-2")	12 mm (0.47")	3	10.6 bar g (153.7 psi g)	20 °C (68 °F)	220,000	>2,000,000
			10.6 bar g (153.7 psi g)	185 °C (365 °F)	150,000	>2,000,000
			17.1 bar g (247.9 psi g)	400 °C (752 °F)	30,000	750,000
DN65-100 (2½"-4")	16 mm (0.63")	3	10.6 bar g (153.7 psi g)	20 °C (68 °F)	200,000	>2,000,000
			10.6 bar g (153.7 psi g)	185 °C (365 °F)	140,000	2,000,000
			17.1 bar g (247.9 psi g)	400 °C (752 °F)	30,000	150,000

**Note:** 316L material. Refer to IM-S24-42 for valve body material pressure and temperature limitations

**For Full Temperature/Pressure Operating Curves, please refer to IM-S24-42**

**Spira-trol series valve**

Nominal Pressure		PN16	PN25	PN16	PN40	PN16	PN40	
Body Material		LE3	KE7	LE4	KE4	LE6	KE6	
Connection type	Flanged	PN16	DN15-100 (½"-4")	DN65 and 100 (2½"-4")	DN15-100 (½"-4")	DN15-100 (½"-4")	N/A	
		PN25		DN15-100 (½"-4")				
		PN40				DN15-100 (½"-4")	DN15-100 (½"-4")	
	Threaded	JIS/ KS10		DN15-100 (½"-4")	DN15-100 (½"-4")		DN15-100 (½"-4")	N/A
		JIS/ KS20				DN15-100 (½"-4")	DN15-100 (½"-4")	
		BSP	DN15-50 (½"-2")				DN15-50 (½"-2")	
Maximum operating pressure	Flanged	PN16	16 bar @ 120 °C (232 psi @ 248 °F)		16 bar @ 50 °C (232 psi @ 122 °F)	16 bar @ 100 °C (232 psi @ 212 °F)		
		PN25		25 bar @ 120 °C 362 psi @ 248 °F				
		PN40				40 bar @ 50 °C (580 psi @ 122 °F)	40 bar @ 100 °C (580 psi @ 212 °F)	
	Threaded	JIS/ KS10		13.7 bar @ 120 °C (199 psi @ 248 °F)	14 bar @ 120 °C (203 psi @ 248 °F)		14 bar @ 120 °C (203 psi @ 248 °F)	
		JIS/ KS20				34 bar @ 120 °C (493 psi @ 248 °F)	34 bar @ 120 °C (493 psi @ 248 °F)	
		BSP	16 bar @ 120 °C 232 psi @ 248 °F	25 bar @ 120 °C (362 psi @ 248 °F)				40 bar @ 100 °C (580 psi @ 212 °F)
Maximum operating temperature	Seat	PEEK C and P	220 °C (428 °F)					
		PTFE insert G	152 °C (305 °F)					
	316L/ Stellite6	431S29 T	400 °C (752 °F)					
		316L S						
		316L/ Stellite6 W						
Operating temperature range	Std. Bonnet	-10 to +300 °C (14 to 572 °F)						
	Ext. Bonnet		-10 to +350 °C (14 to 662 °F)		-10 to +400 °C (14 to 752 °F)		-10 to +400 °C (14 to 752 °F)	

**Spira-trol series valve (continued on next page)**

**Spira-trol series valve (continued)**

		Body Material	LE3	KE7	LE4	KE4	LE6	KE6	
<b>Maximum operating temperature</b>	Stem Seal	P and N	250 °C (482 °F)						
		H	400 °C (752 °F)						
		Bellows D							
<b>Maximum operating temperature</b>	Flanged	PN16	300 °C (572 °F)	350 °C (662 °F)	400 °C (752 °F)		400 °C (752 °F)		
		PN25		350 °C (662 °F)					
		PN40				400 °C (752 °F)		400 °C (752 °F)	
		JIS/KS10		300 °C (572 °F)			300 °C (572 °F)		
		JIS/KS20				400 °C (752 °F)		400 °C (752 °F)	
		Threaded	BSP	300 °C (572 °F)	350 °C (662 °F)	400 °C (752 °F)			
		<b>Maximum saturated steam service</b>	Body	PN16	12.9 bar g (187 psi g)	14.6 bar g (212 psi g)	13.3 bar g (193 psi g)		13.4 bar g (194 psi g)
PN25				22.5 bar g (326 psi g)					
Flanged	PN40						31.1 bar g (451 psi g)		32.2 bar g (467 psi g)
JIS/KS10				12.4 bar g (180 psi g)	13 bar g (189 psi g)	N/A	13 bar g (189 psi g)		
JIS/KS20						30.1 bar g (437 psi g)		30.1 bar g (437 psi g)	
Threaded	BSP			12.9 bar g (187 psi g)	22.5 bar g (326 psi g)				32.2 bar g (467 psi g)
Seat	C and P			19 bar g (276 psi g)					
		G	4 bar g (58 psi g)						
	Bellows	D	12.9 bar g (187 psi g)	22.5 bar g (326 psi g)	13.3 bar g (193 psi g)	20.2 bar g (293 psi g)	13.4 bar g (194 psi g)	20.6 bar g (299 psi g)	
<b>Leakage class</b>	In accordance to IEC 60534-4	PEEK	Class VI						
		PTFE	Class VI						
		Metal	Class IV (Class V on request)						
		Stellite™	Class IV (Class V on request)						
		Balanced	Class IV						
<b>Characteristic</b>	Equal %		Linear			Fast Acting			
<b>Rangeability</b>	50 : 1		30 : 1			10 : 1			
<b>Travel</b>	DN15 to DN50 (½" to 2"): 20 mm (0.79") DN65 to DN100 (2½" to 4"): 30 mm (1.18")								

**Note:** Consider the limitation of all of the constructive components when selecting a valve

**Maximum differential pressures for Class IV shut-off in bar g (psi g)**  
**- Metal Seated (T&S)**  
**- FLOW UNDER**  
**- standard trim**  
**- (Pneumatic Actuators)**

Acuator Type	Valve DN	DN15 to DN25 (½" to 1")																							
		0.01-0.07-0.1-0.2		0.5-1.0		1.6		2.5		4.0		4.9-6.3		7.2		10		11							
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D			
PN9120E 0.2-1.0	Kvs 192 (43)	40																							
		(580)																							
PN9120E 0.4-1.2	Kvs 384 (86)	40	25	17.6	26.5	0.6	12.2	5.1	40	29.5	25	27.8	12.9	21.3	15.4	20.5	8.7	15.4	5.8	11.2	11.4	3.7			
		(580)	(363)	(255)	(384)	(9)	(178)	(74)	(580)	(428)	(363)	(403)	(187)	(308)	(223)	(223)	(297)	(126)	(223)	(84)	(162)	(165)	(54)		
PN9126E 1.0-2.0	Kvs 960 (216)	40	40	25	40	25	40	40	40	40	25	40	25	25	25	20.5	8.7	15.4	5.8	11.2	11.4	3.7	8		
		(580)	(580)	(363)	(580)	(363)	(580)	(580)	(580)	(580)	(363)	(363)	(363)	(363)	(363)	(363)	(297)	(126)	(223)	(84)	(162)	(165)	(54)	(116)	
PN9123E 2.0-4.0	Kvs 1920 (432)	40	40	25	40	25	40	40	40	40	25	40	25	25	25	20.5	8.7	15.4	5.8	11.2	11.4	3.7	25		
		(580)	(580)	(363)	(580)	(363)	(580)	(580)	(580)	(580)	(363)	(363)	(363)	(363)	(363)	(363)	(297)	(126)	(223)	(84)	(162)	(165)	(54)	(363)	



**Maximum differential pressures for Class IV shut-off in bar g (psi g)**  
**- Metal Seated (T&S)**  
**- FLOW UNDER**  
**- standard trim**  
**- (Pneumatic Actuators)**  
**- continued**

Actuator Type	DN65 to 100 (2½" to 4")																					
	Valve size			16			25			36			63-73-90			100-117			160-180			
	Kvs	Stem sealing	Actuator thrust in N (lbf.)	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D	
PN9230E 0.2-1.0	680 (153)		2.8 (41)			1.2 (17)																
PN9230E 0.4-1.2	1360 (306)		16.6 (241)	6.3 (91)	5.4 (78)	4.7 (68)	3.2 (46)	2.7 (39)	0.9 (13)													
PN9236E 1.0-2.0	3400 (764)		40 (580)	40 (580)	23.4 (339)	18.9 (274)	16 (232)	15.5 (225)	8.2 (119)	6.4 (93)	7.9 (115)	4.7 (68)	3.5 (51)	4.5 (65)	2.5 (36)	1.8 (26)	2.4 (35)					
PN9233E 2.0-4.0	6800 (1529)		40 (580)	40 (580)	40 (580)	25 (363)	37.4 (542)	34.2 (496)	20.2 (293)	18.4 (267)	19.9 (289)	12.4 (180)	11.2 (162)	12.2 (177)	7.3 (106)	6.6 (96)	7.2 (104)					
PN9330E 0.2-1.0	1340 (301)		16.2 (234)	5.9 (86)	5.2 (75)	4.5 (65)	3 (44)	2.5 (36)	0.9 (13)													
PN9330E 0.4-1.2	2680 (602)		40 (580)	33.2 (482)	17 (247)	12.5 (181)	11.5 (645)	8.3 (120)	5.6 (81)	3.8 (55)	5.3 (77)	3.1 (45)	1.9 (28)	2.9 (42)	1.5 (22)	0.7 (10)	1.4 (20)					
PN9336E 1.0-2.0	6700 (1506)		40 (580)	40 (580)	40 (580)	25 (363)	36.7 (532)	33.5 (486)	19.8 (287)	18 (261)	19.5 (283)	12.2 (108)	11 (160)	12 (174)	7.1 (103)	6.4 (93)	7 (102)					
PN9337E 2.5-3.5	16750 (3766)		40 (580)	40 (580)	40 (580)	25 (363)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	34.9 (506)	33.8 (490)	25 (363)	21.3 (304)	20.6 (299)	21.2 (307)					

**Maximum differential pressures for Class IV shut-off in bar g (psi g)**

- Metal Seated (T&S)
- FLOW UNDER
- standard trim
- (Electric Actuators)

Acuator Type	Valve DN	DN15 to DN25 (1/2" to 1")																													
		Up to 0,2			0.5-1.0			1.6			2.5			4.0			4.9-6.3			7.2			10			11					
		N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D						
AEL3	Kvs 2000 (450)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	38.3	30.5	25			
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(555)	(442)	(363)			
AEL71T	900 (202)	40	40	25	40	40	25	40	40	25	40	39.7	25	40	24.2	25	40	24.8	18.3	40	9.9	18.3	40	6.3	13	13.5	3.9	9.3	9.9	2.1	6.5
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(576)	(363)	(580)	(351)	(363)	(580)	(360)	(265)	(580)	(144)	(265)	(580)	(263)	(91)	(196)	(57)	(135)	(144)	(30)	(94)
AEL71	1200 (270)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	39.7	24.8	40	24.8	25	40	18.1	24.8	23	13.5	18.9	17.6	9.9	14.2
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(576)	(360)	(580)	(360)	(363)	(580)	(263)	(360)	(334)	(196)	(274)	(255)	(144)	(206)
AEL72/82	2000 (450)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	38.9	25	38.3	30.5	25
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(564)	(363)	(363)	(555)	(442)	(363)
AEL72T	2100 (472)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	33.1	25
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(480)	(480)	(363)
AEL73	4000 (899)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)
AEL83	4500 (1012)	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25	40	40	25
		(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)	(580)	(580)	(363)



**Maximum differential pressures for Class IV shut-off in bar g (psi g)**  
**- Metal Seated (T&S)**  
**- FLOW UNDER**  
**- standard trim**  
**- (Electric Actuated)**  
**- continued**

Actuator Type	DN65 to DN100 (2½" to 4")																									
	Valve size			16			25			36			63-73			100-117			160-180							
	Kvs	Stem sealing	Actuator thrust in N (lbf.)	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D					
<b>AEL71T</b>	900 (202)		7.3 (106)	5.6 (81)	1.3 (19)	0.6 (9)	0.3 (4)																			
<b>AEL71</b>	1200 (270)		13.4 (194)	11.8 (44)	4 (58)	3.3 (48)	2.2 (32)	1.7 (25)	0.4 (6)																	
<b>AEL72/82</b>	2000 (450)		29.7 (431)	19.3 (280)	11 (160)	6.6 (96)	7.2 (104)	4 (58)	3.2 (46)	1.4 (20)	2.9 (42)	1.5 (22)	0.4 (6)	1.3 (19)	0.5 (7)						0.4 (6)					
<b>AEL72T</b>	2100 (472)		31.7 (460)	21.3 (309)	11.9 (173)	7.4 (107)	7.8 (113)	4.6 (67)	3.6 (52)	1.8 (26)	3.3 (48)	1.7 (25)	0.6 (9)	1.6 (23)	0.6 (9)						0.5 (7)					
<b>AEL73</b>	4000 (899)		40 (580)	40 (580)	28.7 (416)	24.2 (351)	19.8 (287)	16.6 (241)	10.3 (149)	8.5 (123)	10 (145)	6 (87)	4.9 (71)	5.9 (86)	3.3 (48)	2.6 (38)	3.2 (46)									
<b>AEL74/84</b>	6000 (1349)		40 (580)	40 (580)	40 (580)	40 (580)	32.3 (468)	29.1 (422)	25 (363)	17.4 (252)	15.6 (226)	10.6 (153)	9.4 (136)	10.4 (151)	6.1 (88)	5.4 (78)	6 (87)									
<b>AEL75/85</b>	8000 (1798)		40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	24.4 (354)	22.6 (323)	15.1 (219)	13.9 (202)	14.9 (216)	9 (131)	8.2 (119)	8.9 (129)									
<b>AEL76/86</b>	12000 (2698)		40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	38.6 (560)	36.8 (534)	24.2 (351)	23 (334)	24 (348)	14.6 (212)	13.9 (202)	14.5 (210)									
<b>AEL77/87</b>	15000 (3372)		40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	40 (580)	40 (580)	30.9 (448)	29.8 (432)	25 (363)	18.8 (273)	18.1 (263)	18.7 (271)									
<b>AEL78</b>	20000 (4496)		40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	25.9 (376)	25.2 (365)	25 (363)									
<b>AEL83</b>	4500 (1012)		40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	40 (580)	40 (580)	40 (580)	40 (580)	25 (363)	25.9 (376)	25.2 (365)	25 (363)									
			Only for 431 trim																							

**Maximum differential pressures for Class VI shut-off in bar g (psi g)**  
**- Resilient Seated (P&C)**  
**- FLOW UNDER**  
**- standard trim**  
**- (Pneumatic Actuators)**

Actuator Type	DN15 to DN25 (½" to 1")																													
	Valve size			0.01-0.07			0.1-0.2			0.5			1.0			1.6			2.5			4.0			4.9-6.3			7.2		
	Kvs	Stem sealing	Actuator thrust in N (lbf.)	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D	N-P	H	D			
PN9126E 1.0-2.0	960 (216)		19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)		
PN9123E 2.0-4.0	1920 (432)		19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)		

Actuator Type	DN15-25 (½" to 1")							
	Valve size			11				
	Kvs	Stem sealing	Actuator thrust in N (lbf.)	N-P	H	D		
PN9126E 1.0-2.0	960 (216)		19 (276)	13.8 (200)	19 (276)	18.6 (270)	10.9 (158)	15.3 (222)
PN9123E 2.0-4.0	1920 (432)		19 (276)	19 (276)	19 (276)	19 (276)	19 (276)	19 (276)

**Note :** Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids or gases.



**Maximum differential pressures for Class VI shut-off in bar g (psi g)  
 - Resilient Seated (P&C)  
 - FLOW UNDER  
 - standard trim  
 - (Electric Actuators)**

Valve size		DN15 to DN25 (½" to 1")											
		Upto Kv6.3			7.2			10			11		
		P	H	D	P	H	D	P	H	D	P	H	D
Actuator Type	Stem sealing Actuator thrust in N (lbf.)												
		Kvs											
		2000 (450)											
		900 (202)											
AEL71		1200 (270)											
AEL72/82		2000 (450)											

Valve size		DN32 to DN50 (1¼" to 2")																															
		4				6.3				10				16				17.5-18				25				31-36				46-50			
		P	H	D	D	P	H	D	D	P	H	D	D	P	H	D	D	P	H	D	D	P	H	D	D	P	H	D	D				
Actuator Type	Stem sealing Actuator thrust in N (lbf.)																																
		Kvs																															
		2000 (450)																															
		900 (202)																															
AEL71		1200 (270)																															
AEL72/82		2000 (450)																															
AEL72T		2100 (472)																															
AEL83		2300 (517) (reduced thrust)																															

**Note :** Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids or gases.

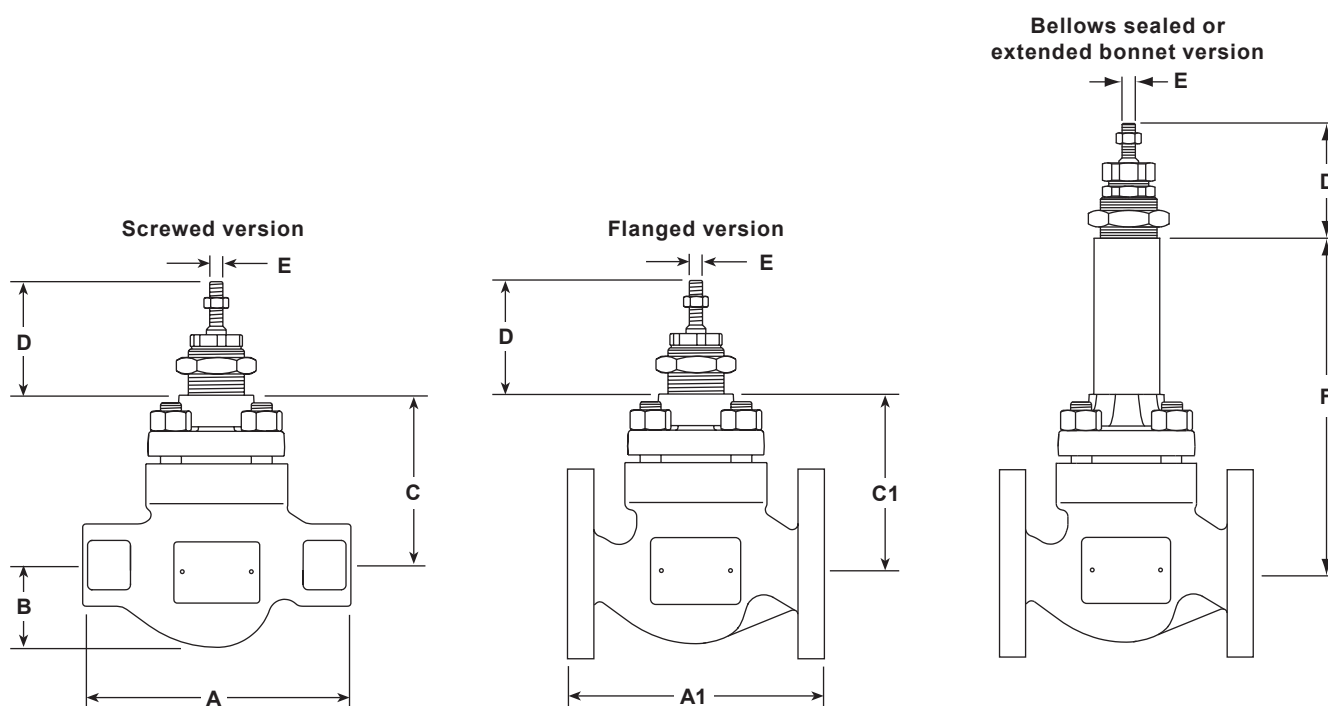
**Maximum differential pressures for Class VI shut-off in bar g (psi g)**  
**- Resilient Seated (P&C)**  
**- FLOW UNDER**  
**- standard trim**  
**- (Electric Actuators)**  
**- continued**

Actuator Type	DN65 to DN100 (2½" to 4")																					
	Valve size			16			25			36			63-90			100-117			160-180			
	Kvs	Stem sealing	Actuator thrust in N (lbf.)	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D	
AEL71T	900 (202)		12.1 (175)	1.7 (25)	10.4 (151)	4.5 (65)	3.8 (55)	2.9 (42)	2.4 (35)	1.3 (19)	1 (15)											
			18.2 (264)	7.8 (118)	16.6 (241)	7.2 (104)	2.7 (39)	6.4 (93)	4.8 (70)	4.3 (62)	2.4 (35)	2.1 (30)	0.6 (9)	0.5 (7)								
AEL72/82	2000 (450)		19 (276)	19 (276)	19 (276)	14.2 (206)	9.7 (141)	13.5 (196)	9.9 (144)	9.4 (136)	4.9 (71)	1.8 (26)	1.7 (25)									
			15.1 (219)	4.7 (68)	19 (276)	14.2 (206)	9.7 (141)	13.5 (196)	10.5 (152)	7.3 (106)	5.6 (81)	3.8 (55)	5.3 (77)	3.2 (46)	1.9 (28)	1.8 (26)						
AEL73	4000 (899)																					
AEL74/84	6000 (1349)																					
AEL75/85	8000 (1798)																					
AEL76/86	12000 (2698)																					
AEL77/87	15000 (3372)																					
AEL83	2300 (517) (reduced thrust)		19 (276)	19 (276)	19 (276)	16.8 (244)	12.3 (178)	16.1 (234)	10.5 (152)	7.3 (106)	10 (145)											
AEL83	4500 (1012)																					

**Note :** Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids or gases.

**Dimensions** for the **Spira-trol™ two-port control valve** approximate in mm and (inches)

Valve size	Screwed BSP			Flanged			D	Thread	Bellows seals and extended bonnet		
	A	B	C	A1	C1	E			mm	F	inches
DN15 (1/2")	130 (5.1)	40 (1.6)	103 (4.1)	130 (5.1)	124 (4.9)	103 (4.1)	69 (2.7)	M8	216	8.5	
DN20 (3/4")	155 (6.1)	45 (1.8)	103 (4.1)	150 (5.9)	144 (5.7)	103 (4.1)			218	8.58	
DN25 (1")	160 (6.3)	50 (2.0)	103 (4.1)	160 (6.3)	160 (6.3)	103 (4.1)			214	8.42	
DN32 (1 1/4")	185 (7.3)	60 (2.4)	132 (5.2)	180 (7.1)	176 (7.0)	132 (5.2)			243	9.57	
DN40 (1 1/2")	205 (8.1)	65 (2.6)	132 (5.2)	200 (7.9)	198 (7.8)	132 (5.2)			238	9.37	
DN50 (2")	230 (9.1)	80 (3.1)	127 (5.0)	230 (9.1)	222 (8.7)	127 (5.0)			351	13.82	
DN65 (2 1/2")				290 (11.4)	290 (11.4)	201 (7.9)	81 (3.2)	M12			
DN80 (3")				310 (12.2)	310 (12.2)	201 (7.9)					
DN100 (4")				350 (13.8)	350 (13.8)	216 (8.5)			365	14.37	

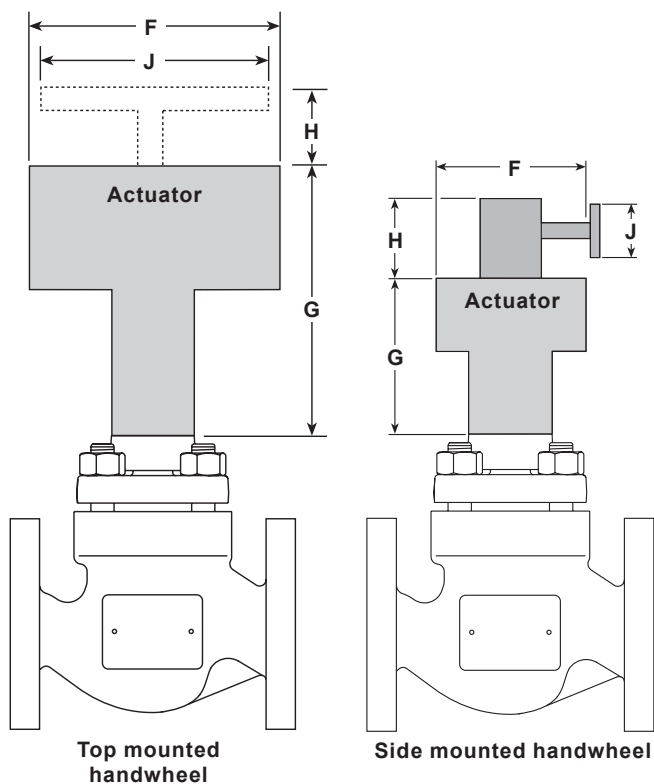


**Weights approximate in kg (and lbs)**

Valve size	KE valves					LE valves				Additional bellows and Extended bonnet
	KE43	KE61	KE63	KE71	KE73	LE31	LE33	LE43	LE63	
DN15 (1/2")	6.0 (13)	4.5 (10)	5.5 (12)	4.5 (10)	5.5 (12)	4.0 (9)	5.0 (11)	5.0 (11)	5.0 (11)	
DN20 (3/4")	6.8 (15)	5.5 (12)	6.8 (15)	5.5 (12)	6.8 (15)	5.0 (11)	6.0 (13)	6.0 (13)	6.0 (13)	4.5 (10)
DN25 (1")	7.0 (15)	6.0 (13)	7.0 (15)	6.0 (13)	7.0 (15)	5.5 (12)	6.5 (14)	6.5 (14)	6.5 (14)	
DN32 (1 1/4")	13.5 (30)	11.5 (25)	13.5 (30)	11.5 (25)	13.5 (30)	9.0 (20)	10.0 (22)	10.0 (22)	10.0 (22)	
DN40 (1 1/2")	14.0 (31)	12.0 (26)	14.0 (31)	12.0 (26)	14.0 (31)	10.0 (22)	12.8 (28)	12.8 (28)	12.8 (28)	5.5 (12)
DN50 (2")	17.0 (37)	13.0 (29)	17.0 (37)	13.0 (29)	17.0 (37)	11.0 (24)	15.0 (33)	15.0 (33)	15.0 (33)	
DN65 (2 1/2")	35.0 (77)		35.0 (77)		35.0 (77)	-	32.0 (71)	32.0 (71)	32.0 (71)	10 (21)
DN80 (3")	40.0 (88)		40.0 (88)		40.0 (88)	-	36.0 (79)	36.0 (79)	36.0 (79)	
DN100 (4")	54.0 (119)		54.0 (119)		54.0 (119)	-	53.0 (117)	53.0 (117)	53.0 (117)	

**Dimensions/weights** for the **PN actuator range** approximate in mm and kgs (inches and lbs)

Actuator range and variants	F		G		H		J		Weight			
	mm	inches	mm	inches	mm	inches	mm	inches	Actuator		With handwheel	
									kg	lbs	kg	lbs
PN9100E	170	6 <sup>1</sup> / <sub>16</sub> "	275	10 <sup>7</sup> / <sub>8</sub> "	55	2 <sup>3</sup> / <sub>16</sub> "	225	8 <sup>7</sup> / <sub>8</sub> "	6	13.25	+5.86	+13.00
PN9100R					140	5 <sup>1</sup> / <sub>2</sub> "					+2.50	+5.50
PN9200E	300	11 <sup>1</sup> / <sub>8</sub> "	300	11 <sup>1</sup> / <sub>8</sub> "	55	2 <sup>3</sup> / <sub>16</sub> "	225	8 <sup>7</sup> / <sub>8</sub> "	17	37.50	+7.20	+15.75
PN9200R					140	5 <sup>1</sup> / <sub>2</sub> "					+3.77	+8.50
PN9320E	390	15 <sup>1</sup> / <sub>2</sub> "	325	12 <sup>3</sup> / <sub>8</sub> "	65	2 <sup>9</sup> / <sub>16</sub> "	350	13 <sup>3</sup> / <sub>4</sub> "	27	59.50	+7.20	+15.75
PN9320R					150	15 <sup>1</sup> / <sub>8</sub> "					+3.77	+8.50
PN9330E	390	15 <sup>1</sup> / <sub>2</sub> "	335	13 <sup>3</sup> / <sub>8</sub> "	65	2 <sup>9</sup> / <sub>16</sub> "	350	13 <sup>3</sup> / <sub>4</sub> "	27	59.50	+7.20	+15.75
PN9330R					150	15 <sup>1</sup> / <sub>8</sub> "					+3.77	+8.50
TN2100E	405	16"	369	14 <sup>1</sup> / <sub>2</sub> "	402	15 <sup>5</sup> / <sub>16</sub> "	330	13"	37	83.25	+23.00	+51.75
TN2100R												
TN2100DA	405	16"	369	14 <sup>1</sup> / <sub>2</sub> "					30	67.50		



**Dimensions/weights** for the **AEL actuator ranges**

approximate in mm and kgs (and in inches and lbs)

Actuator	F		G		Weight	
	mm	inches	mm	inches	kg	lbs
AEL3	230	9	283	11 <sup>1</sup> / <sub>4</sub>	5.7	12.5
AEL71T	162	6	490	19 <sup>1</sup> / <sub>4</sub>	8.7	19.5
AEL72T			508	20	9.3	20.5
AEL71	129	5	292	11 <sup>1</sup> / <sub>2</sub>	2.1	5
AEL72-3	173	7	379	15	4.8	11
AEL74	211	8 <sup>1</sup> / <sub>4</sub>	474	18 <sup>3</sup> / <sub>4</sub>	8.0	18
AEL75-7	259	10 <sup>1</sup> / <sub>4</sub>	527	20 <sup>3</sup> / <sub>4</sub>	15.0	33
AEL78	283	11 <sup>1</sup> / <sub>4</sub>	657	26	19.0	42
AEL62-3	180	7	459	18	5.0	11
AEL64			490	19 <sup>1</sup> / <sub>4</sub>	7.0	15.5
AEL65			557	22	10.0	22
AEL66	226	9	760	30	20.0	44

## Spare parts

### Spira-trol™ two-port control valve DN15 to DN100 - 1/2" to 4"

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

**Note:** When placing an order for spare parts please specify clearly the full product description as found on the label of the valve body, as this will ensure that the correct spare parts are supplied.

#### Available spares - K series

<b>Actuator clamping nut</b>		<b>A</b>
<b>Gasket set</b>	(Non-bellows sealed)	<b>B, G</b>
	PTFE packing	<b>C</b>
<b>Stem seal kits</b>	Graphite packing	<b>C1</b>
	Graphite seal set	<b>C2</b>
<b>Plug stem and seat kit</b>	* Equal percentage trim (No gaskets supplied)	<b>D, E</b>
	Fast opening trim (No gaskets supplied)	<b>D1, E</b>
	Linear trim (No gaskets supplied)	<b>D2, E</b>
<b>PTFE soft seat seal</b>		<b>H</b>

\* Specify if reduced trim.

#### How to order spares

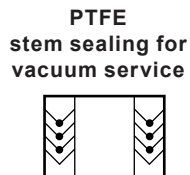
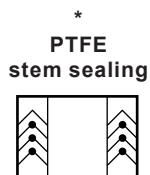
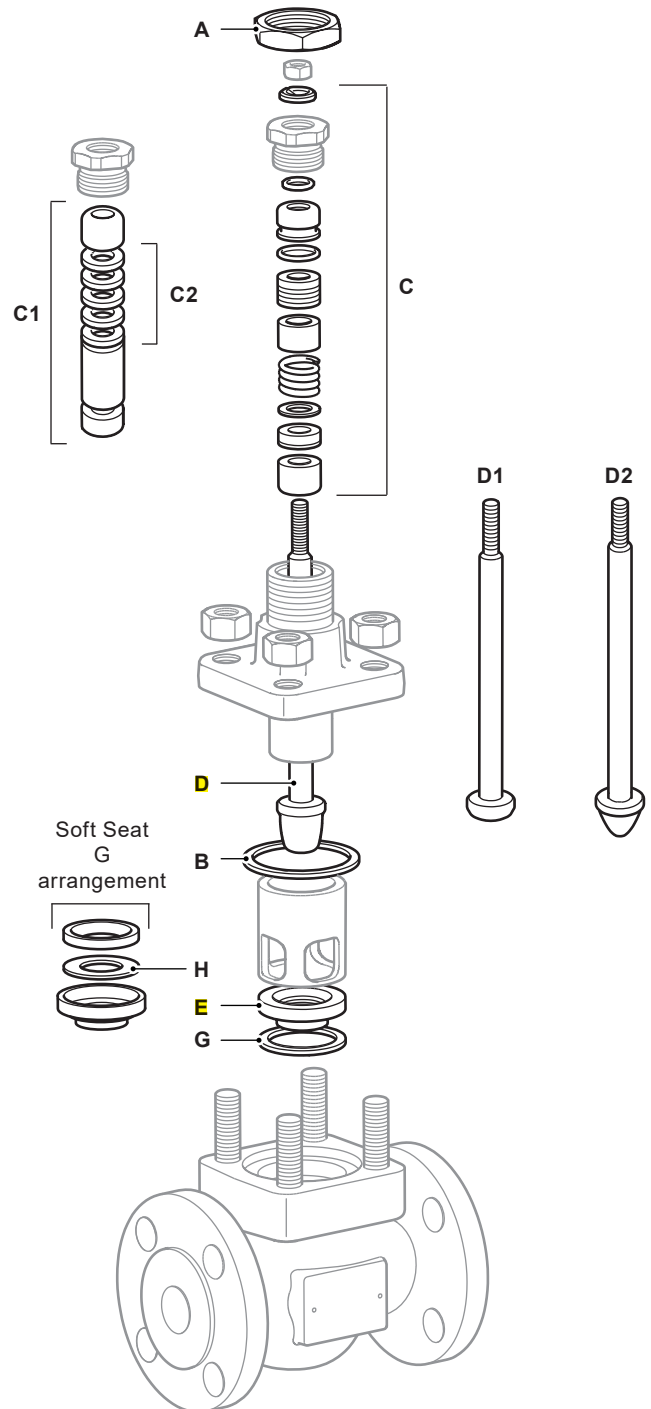
Always order spares by using the description given in the column headed 'Available spares', and state the size and type of valve including the full product description of the product.

#### Example:

1 - PTFE stem seal kit for a Spirax Sarco DN25 Spira-trol™ two-port KE43 PTSUSS.2 Kv 10 control valve.

#### How to fit spares

Full fitting instructions are given in the Installation and Maintenance Instructions supplied with the spare.



## Spare parts

### Spira-trol™ two-port control valve with bellows seal - Type D DN15 to DN100 - 1/2" to 4"

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

**Note:** When placing an order for spare parts please specify clearly the full product description as found on the label of the valve body, as this will ensure that the correct spare parts are supplied.

#### Available spares - K series

<b>Actuator clamping nut</b>		<b>A</b>
<b>Gasket set</b>	(Bellows sealed)	<b>B, G</b>
<b>Stem seal kit</b>	<b>Graphite</b> secondary seal and gasket set	<b>C3</b>
	<b>*Equal percentage trim</b> (No gaskets supplied)	<b>D6, E</b>
<b>Plug stem and seat kit</b>	<b>Fast opening trim</b> (No gaskets supplied)	<b>D7, E</b>
	<b>Linear trim</b> (No gaskets supplied)	<b>D8, E</b>
<b>Bellows seal assembly</b>		<b>F</b>
<b>PTFE soft seat seal</b>		<b>H</b>

\* Specify if reduced trim.

#### How to order spares

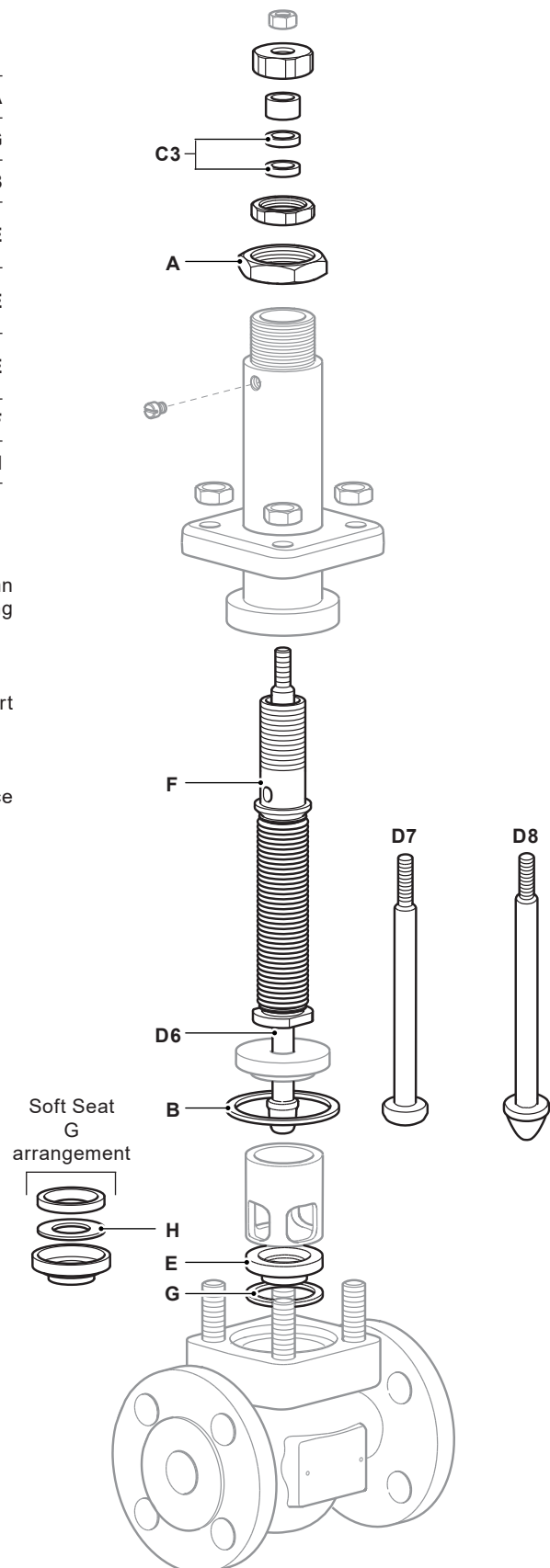
Always order spares by using the description given in the column headed 'Available spares', and state the size and type of valve including the full product description of the product.

#### Example:

1 - Graphite stem seal kit for a Spirax Sarco DN25 Spira-trol™ two-port KE43 DTSUSS.2 Kv 10 control valve.

#### How to fit spares

Full fitting instructions are given in the Installation and Maintenance Instructions supplied with the spare.



## Spira-trol™ selection guide:

<b>Valve size</b>	EN standard = DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100	<b>DN25</b>
<b>Valve series</b>	K = K series 2-port control valve L = L series 2-port control valve	<b>K</b>
<b>Valve characteristic</b>	E = Equal percentage F = Fast opening L = Linear	<b>E</b>
<b>Flange type</b>	Blank = EN (PN)	<b>Blank</b>
<b>Flow</b>	Blank = under T = over	<b>Blank</b>
<b>Body material</b>	3 = Cast iron 4 = Carbon steel 6 = Stainless steel 7 = SG iron	<b>4</b>
<b>Connections</b>	1 = Screwed 3 = Flanged	<b>3</b>
<b>Stem sealing</b>	D = Bellows/graphite secondary seals H = Graphite N = PTFE with Nitronic bush - DN15 to DN50 only P = PTFE V = PTFE for vacuum service	<b>P</b>
<b>Seating</b>	C = Steam-Tight Reversible PEEK seat G = PTFE soft seat P = Full PEEK S = 316L stainless steel T = 431 stainless steel W = 316L with stellite™ 6 facing	<b>T</b>
<b>Type of trim</b>	A1 = 1 stage anti-cavitation A2 = 2 stage anti-cavitation P1 = 1 stage low noise cage P2 = 2 stage low noise cage P3 = 3 stage low noise cage S = Standard trim	<b>S</b>
<b>Trim balancing</b>	B = Balanced (not available with seating option C) U = Unbalanced	<b>U</b>
<b>Bonnet type</b>	E = Extended (Only available for K Series) S = Standard	<b>S</b>
<b>Bolting</b>	H = High temperature S = Standard	<b>S</b>
<b>Series</b>	2 = .2	<b>.2</b>
<b>Kvs</b>	To be specified	<b>Kv 16</b>
<b>Connection type</b>	To be specified	<b>Flanged PN40</b>

### Selection example:

DN32	-	K	E	4	3	P	T	S	U	S	S		.2	-	Kv 16	-	Flanged PN40
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### How to order

**Example:** 1 off Spirax Sarco Spira-trol™ DN32 KE43PTSUSS.2 Kv 16 two-port control valve having flanged PN40 connections.