

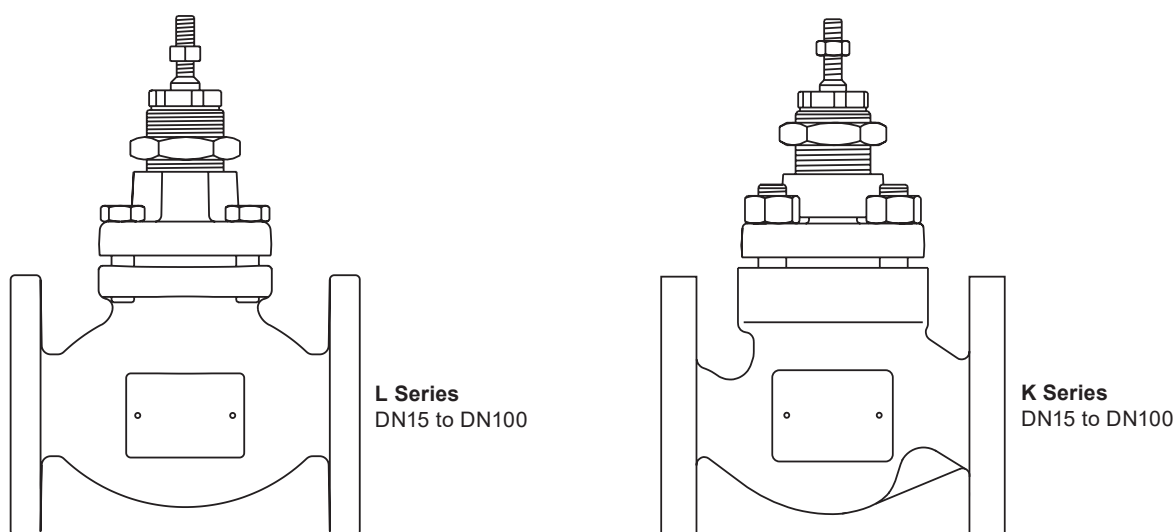


Spira-trol™ Two-port Control Valves EN Standard K and L Series DN15 to DN100

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. 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.



Sizes and pipe connections

Valve Series	Material	Screwed	Flanged					
		BSP	PN16	PN16	PN25	PN40	JIS/KS10	JIS/KS20
		Up to DN50	DN65 and DN100 ¹	DN15-DN100				
L Series	Cast Iron	•		•			•	
	Carbon Steel			•			•	
	Stainless Steel			•			•	
K Series	SG Iron	•	•		•		•	
	Carbon Steel					•		•
	Stainless Steel	•				•		•

¹ For others size use PN25 body which are dimensionally identical to PN16.

Standards

Designed in accordance with EN 60534. This product fully complies with the requirements of the EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations 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.

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:

Stem sealing	PTFE chevron seals (P-N)	Standard	
	Graphite packing (H)	High temperature applications	
	Bellows / PTFE (B)	Zero emissions and thermal fluids	PN25 - Up to 300 °C
	Bellows / graphite (C)	Zero emissions, high temperature applications and thermal fluids	PN25 - Up to 400 °C
	Bellows/graphite secondary seals (D)	Zero emissions and high temperature applications	PN16 - Up to 300 °C
Seating	Metal-to-metal	431 stainless steel - standard 316L stainless steel	
	Soft seating	Up to 170 °C - PTFE for Class VI shut-off for applications like compressed air or water where there is no temperature.	
		Up to 220°C - PEEK (C and P) for Class VI shut-off	
		Up to 250 °C - PEEK (K) for Class VI shut-off	
Hard facing	316L stainless steel with Stellite™ 6 facing - for more arduous applications		
Bonnet type	Standard bonnet		
	Extended bonnet for large pipe lagging or hot/cold applications		
Trim	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-P343-34 and TI-P343-36

For pneumatic positioners please refer to TI-P370-14

For electro-pneumatic positioners please refer to TI-P343-43 and TI-P343-45

For large size Spira-trol™ please refer to TI-S24-73

Materials - DN15 to DN100 (½" to 4")

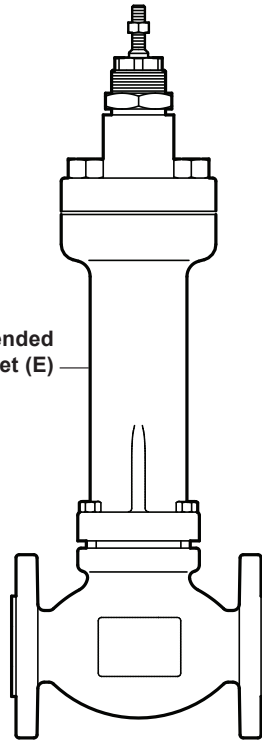
	LE3		KE7	LE-KE4		LE-KE6	
	DN15-50	DN65-100	DN15-100	DN15-50	DN65-100	DN15-50	DN65-100
1 Body	EN1563 : ENGJS-400-18		EN1563 : ENGJS-400-18LT	EN10273 : 1.0460	EN10213 : 1.0619N	EN10213 : 1.4408	
2 Bonnet	EN1563 : ENGJS-400-18	EN1561 : ENGJL-250	EN1563 : ENGJS-400-18LT	EN10213 : 1.0619N		EN10213 : 1.4408	
2a Bonnet extension	EN10213 : 1.0619N					EN10213 : 1.4408	
2b Bellows	Bonnet option B - C - D	Stainless steel 316L					
2c Extended bonnet	EN10213 : 1.0619N					EN10213 : 1.4408	

KE valve with extended bonnet (E)

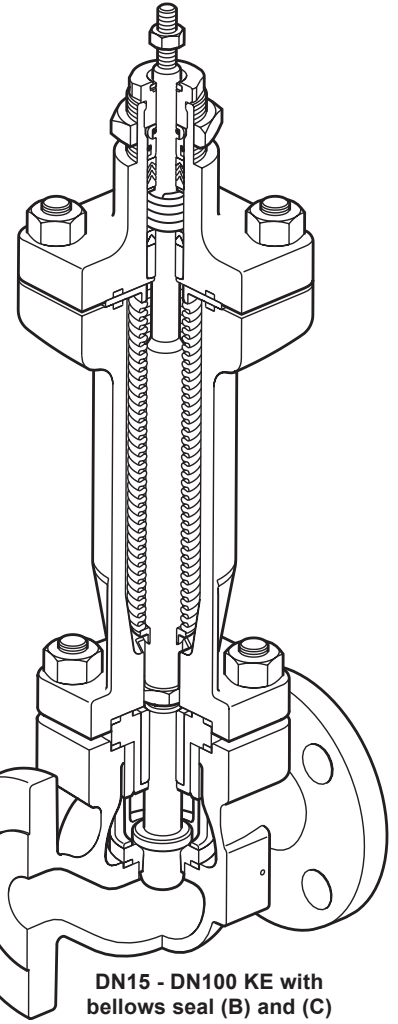
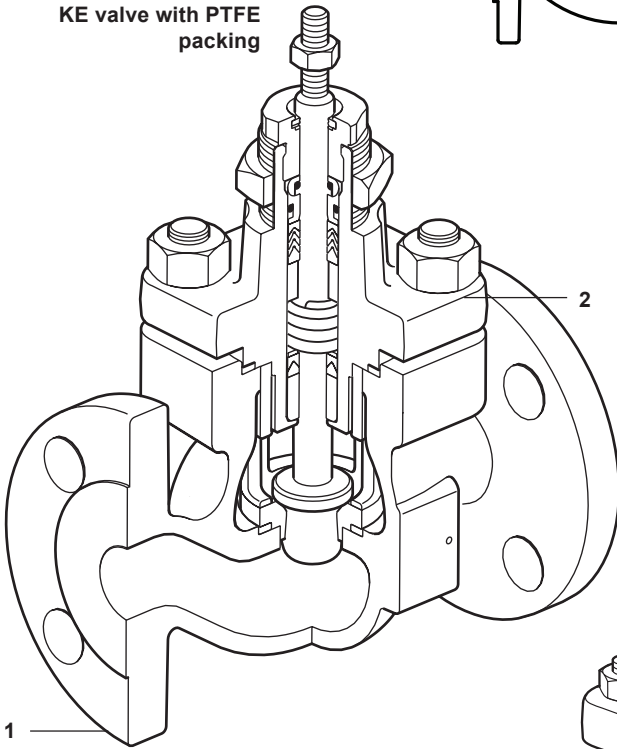
* Graphite packing

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		

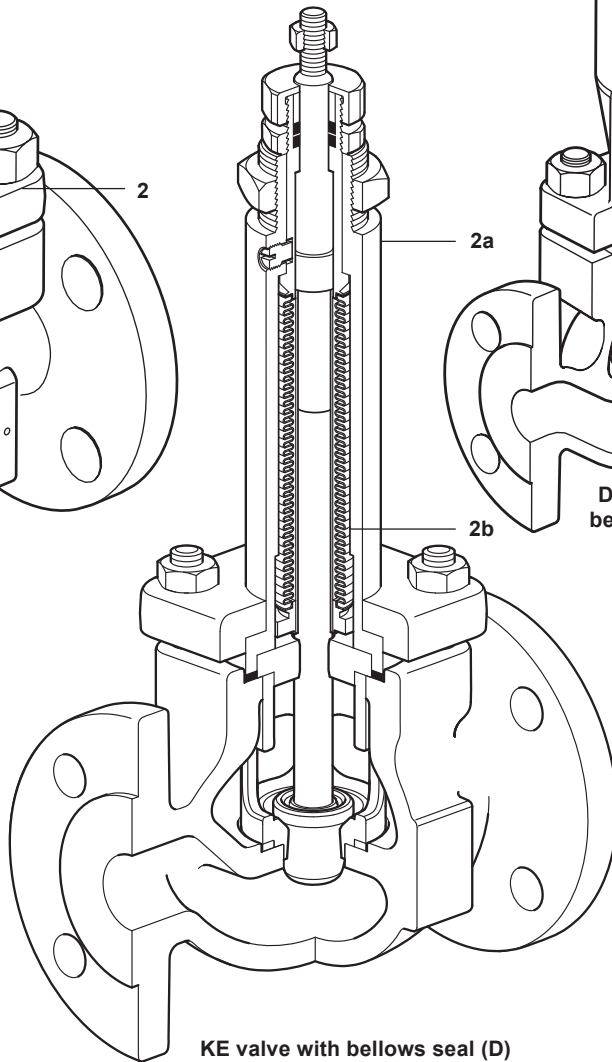
2c Extended bonnet (E)



KE valve with PTFE packing



DN15 - DN100 KE with bellows seal (B) and (C)



KE valve with bellows seal (D)

* PTFE stem sealing

PTFE stem sealing for vacuum service

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

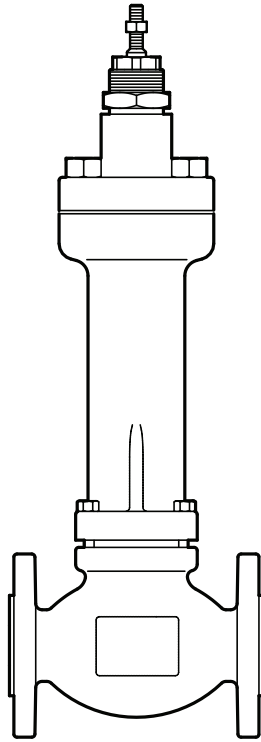
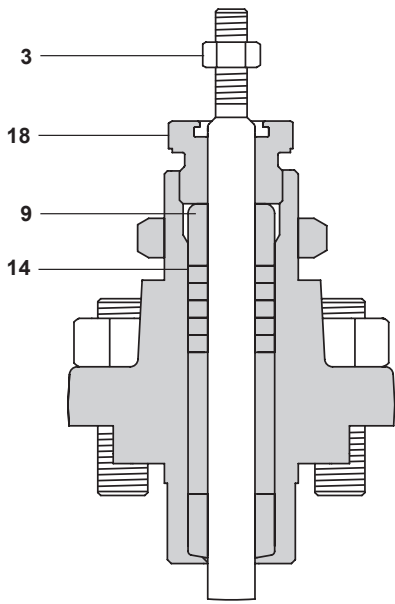
3	Stem lock-nut		Stainless steel A2-70
4	Bonnet gasket		Graphite and stainless steel
5	Seat retainer		Duplex stainless steel ASME A994 CD4MCuN
6	Valve seat ring	Seat option T	Stainless steel 431
		Seat option S	Stainless steel 316L
		Seat option W	Stainless steel 316L + Stellite™ 6
		Seat option C and P	PEEK
		Seat option K	Stainless steel 316L + 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/K/P	Stainless steel 316L for Stainless steel valve and Stainless steel 431 for all other materials
9	Lower stem guide	Bonnet option P - B	PTFE glass filled
		Bonnet option N	Nitronic™ 60
		Bonnet option H - C	Stellite™ 6
10	Lower stem wiper	Bonnet option P - N - B	PTFE
11	Packing guard washer		Stainless steel 316L
12	Spring	Bonnet option P - N - B	Stainless steel 316L
13	Packing spacer		Stainless steel 316L
14	Packing set	Bonnet option P - N - B	PTFE chevron
		Bonnet option H - C	Graphite rings
15	Outer 'O' ring	Bonnet option P - N - B	VITON™
16	Upper stem guide	Bonnet option P - B	PTFE glass filled
		Bonnet option N	Nitronic™ 60
		Bonnet option H - C	Stellite™ 6
17	Inner 'O' ring	Bonnet option P - N - B	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 - B	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
23	Top plate (used on bonnet extension only)		Stainless steel 316L
24	Lower spindle bearing housing		Stainless steel
25	Lower spindle bearing		Stellite™ 6 for stainless steel valve and stainless steel 431 for all others materials
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 S	Stainless steel A2-70

KE valve with extended bonnet (E)

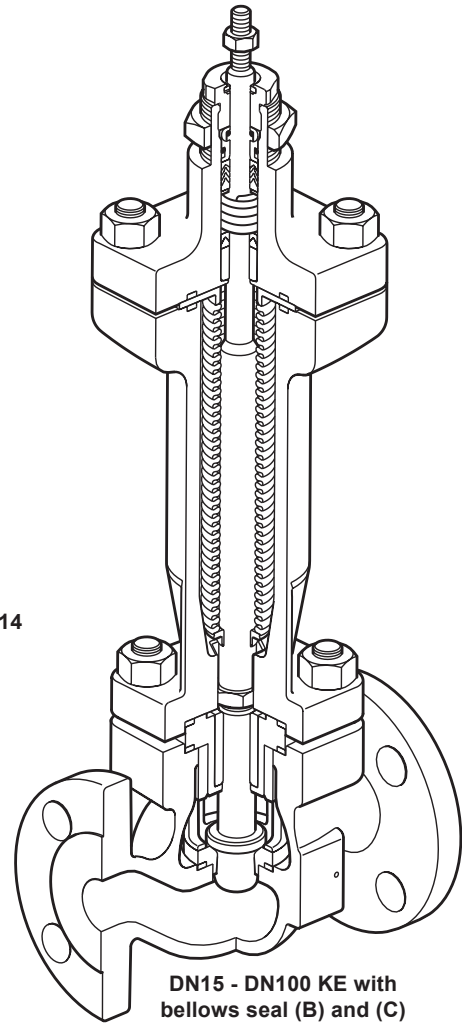
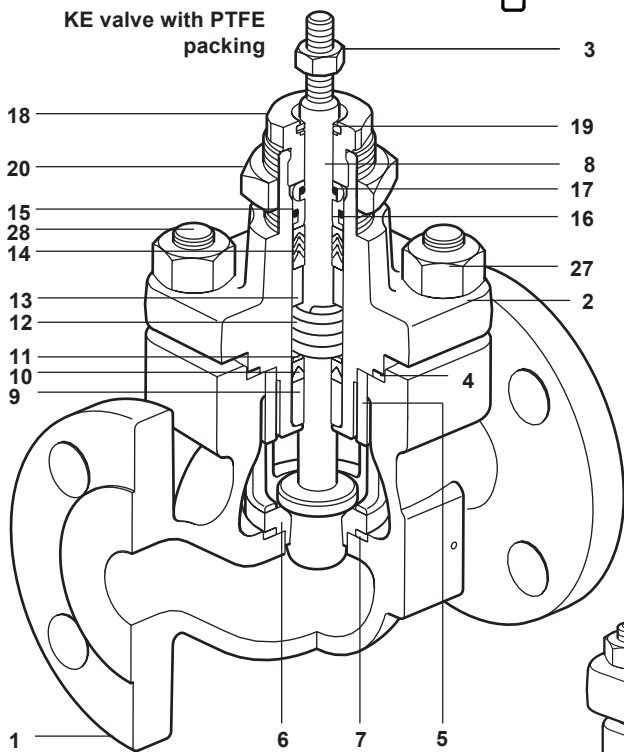
* Graphite packing

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

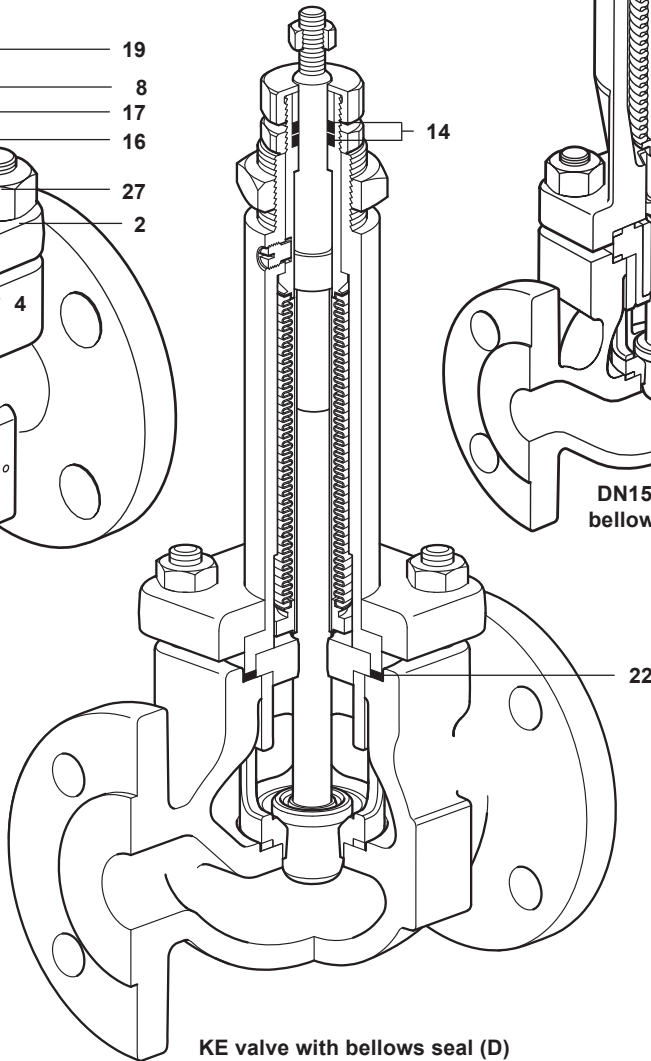
KE valve with graphite packing



KE valve with PTFE packing



DN15 - DN100 KE with bellows seal (B) and (C)



KE valve with bellows seal (D)

* PTFE stem sealing

PTFE stem sealing for vacuum service

K_v 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	11.0	17.5	31.0	46.0	90	115		
	Full port	Equal %	4.0	6.3	10.0	16.0	25.0	36.0	63	100	160
		Linear	4.0	6.3	10.0	16.0	25.0	36.0	63	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	63	100
		Linear	2.5	4.0	6.3	10.0	16.0	25.0	36	63	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 (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_v please see TI-S24-59

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	DN65 and 100	DN15-100	DN15-100	N/A
		PN25		DN15-100			
		PN40				DN15-100	DN15-100
		JIS/KS10	DN15-100	DN15-100	DN15-100	DN15-100	N/A
		JIS/KS20				DN15-100	DN15-100
	Threaded BSP	DN15-50	DN15-50			DN15-50	
Maximum operating pressure	Flanged	PN16	16 bar @ 120 °C	16 bar @ 120 °C	16 bar @ 50 °C	16 bar @ 100 °C	
		PN25		25 bar @ 120 °C			
		PN40				40 bar @ 50 °C	40 bar @ 100 °C
		JIS/KS10	13,7 bar @ 120 °C	13,7 bar @ 120 °C	14 bar @ 120 °C		14 bar @ 120 °C
		JIS/KS20				34 bar @ 120 °C	34 bar @ 120 °C
	Threaded BSP		16 bar @ 120 °C	25 bar @ 120 °C			40 bar @ 100 °C
Maximum operating temperature	Seat	PEEK C and P	220 °C				
		PEEK insert K	250 °C				
		PTFE insert G	170 °C				
		431S29 T	400 °C				
		316L S					
316L/ Stellite6 W							
Operating temperature range	Std. Bonnet	-10 to +300 °C	-10 to +300 °C	-10 to +300 °C	-10 to +300 °C	-10 to +300 °C	
	Ext. Bonnet	-10 to +300 °C	-10 to +350 °C	-10 to +400 °C	-10 to +400 °C	-10 to +400 °C	

		Body Material	LE3	KE7	LE4	KE4	LE6	KE6
Maximum operating temperature	Stem Seal	P and N and B	250 °C					
		H and C	300 °C	350 °C	400 °C			
		Bellows D	300 C					
Maximum operating temperature	Flanged	PN16	300 °C	350 °C	400 °C		400 °C	N/A
		PN25		350 °C				
		PN40				400 °C		400 °C
		JIS/KS10	220 °C	300 °C	300 °C		300 °C	
		JIS/KS20				400 °C		400 °C
		Threaded BSP	300 °C	350 °C	400 °C		400 °C	
Maximum saturated steam service	Body	PN16	12,9 bar g	14,6 bar g	13,3 bar g		13,4 bar g	
		PN25		22,5 bar g				
		PN40				31,1 bar g		32,2 bar g
		JIS/KS10	11 bar g	12,4 bar g	13 bar g	N/A	13 bar g	
		JIS/KS20				30,1 bar g		30,1 bar g
		Threaded BSP	12,9 bar g	22,5 bar g				32,2 bar g
		Seat	C, K and P	19 bar g				
Bellows	B and C	20,2 bar g				20,6 bar g		
	D	13,3 bar g				13,4 bar g		
Leakage class	In accordance to IEC 60534-4	PEEK	Class VI					
		PTFE						
		Metal	Class IV (Class V on request)					
		Stellite™						
		Balanced	Class IV					
Characteristic		Equal %	Linear			Fast Acting		
Rangeability		50 : 1	30 : 1			10 : 1		
Travel		DN15 to DN50 : 20 mm DN65 to DN100 : 30 mm						

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Pneumatic Actuators)

		DN15 - 25																																						
		0.01 - 0.07 - 0.1 - 0.2						0.5 - 1.0						1.6						2.5						4														
Actuator type	Valve DN	N		P		H		B		C		D		N		P		H		B		C		D		N		P		H		B		C		D				
	Kvs	Stem sealing	Actuator trust																																					
PN9126E (1.0 - 2.0)	960	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	29.5	16.0	16.0			
	1920	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	8.3	16.0	16.0		
PN9220E (0.2 - 1.0)	680	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	16.0	
	1360	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	16.0	
PN9226E (1.0 - 2.0)	3400	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	16.0
	6800	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0

		DN15 - 25																																					
		4.9 - 6.3						7.2						10						11																			
Actuator type	Valve DN	N		P		H		B		C		D		N		P		H		B		C		D		N		P		H		B		C		D			
	Kvs	Stem sealing	Actuator trust																																				
PN9126E (1.0 - 2.0)	960	27.8	27.8	12.9	16.0	20.5	20.5	8.7	16.0	15.4	15.4	5.8	11.2	11.4	11.4	11.4	11.4	3.7	8.0	16.0	36.2	36.2	28.5	16.0	16.0	11.2	11.4	11.4	11.4	3.7	8.0	16.0	36.2	36.2	28.5	16.0	16.0		
	1920	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	36.4	16.0	40.0	40.0	40.0	40.0	40.0	28.5	16.0	40.0	40.0	40.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
PN9220E (0.2 - 1.0)	680	13.8	13.8	7.4	16.0	9.5	9.5	4.4	16.0	6.5	6.5	2.3	4.4	4.2	4.2	4.2	4.2	0.8	0.8	16.0	28.1	28.1	18.6	16.0	16.0	2.3	4.2	4.2	4.2	0.8	0.8	16.0	28.1	28.1	18.6	16.0	16.0		
	1360	40.0	40.0	32.7	16.0	36.2	36.2	24.4	16.0	28.1	28.1	18.6	16.0	21.7	21.7	21.7	21.7	14.0	16.0	40.0	40.0	40.0	40.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
PN9226E (1.0 - 2.0)	3400	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
	6800	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Pneumatic Actuators) (continued)

Valve DN		DN32 - 50																														
		4						6.3						10						16						17.5 - 18						
		N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	
Actuator type	Kvs																															
	Stem sealing Actuator trust																															
PN9126E (1.0 - 2.0)	960	40.0	40.0	31.5		16.0	30.3	30.3	15.4		16.0	17.4	17.4	7.8		13.2	13.5	13.5	5.6		10.1	9.5	9.5	3.4		6.9						
PN9123E (2.0 - 4.0)	1920	40.0	40.0	40.0	11.0		16.0	40.0	40.0	3.4		16.0	40.0	40.0	38.4		16.0	38.8	38.8	30.9		16.0	29.1	29.1	23.0		16.0					
PN9220E (0.2 - 1.0)	680	33.2	33.2	7.6		16.0	16.3	16.3	1.4		9.9	8.5	8.5		4.3	6.2	6.2	6.2		2.7	3.8	3.8	3.8		1.2							
PN9220E (0.4 - 1.2)	1360	40.0	40.0	40.0		16.0	40.0	40.0	35.2		16.0	30.1	30.1	20.6		16.0	24.1	24.1	16.2		16.0	17.7	17.7	11.6		15.0						
PN9226E (1.0 - 2.0)	3400	40.0	40.0	40.0	25.0		16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	25.0	16.0	40.0	40.0	40.0	40.0	25.0	22.6	16.0						
PN9223E (2.0 - 4.0)	6800	40.0	40.0	40.0	25.0		16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	25.0	16.0	40.0	40.0	40.0	40.0	25.0	25.0	16.0						

Valve DN		DN32 - 50																								
		25						31 - 36						46 - 50												
		N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D							
Actuator type	Kvs																									
	Stem sealing Actuator trust																									
PN9126E (1.0 - 2.0)	960	3.6	3.6																							
PN9123E (2.0 - 4.0)	1920	14.2	14.2	10.9		12.7	10.8	10.8	8.1		9.6	7.0	7.0	5.1		6.2										
PN9220E (0.2 - 1.0)	680	0.5	0.5																							
PN9220E (0.4 - 1.2)	1360	8.0	8.0	4.7		6.6	5.8	5.8	3.2		4.7	3.5	3.5	1.6		2.7										
PN9226E (1.0 - 2.0)	3400	30.5	30.5	27.2	13.9	10.6	10.6	23.8	23.8	21.2	10.6	8.0	16.0	16.3	14.4	6.9	5.0	15.5								
PN9223E (2.0 - 4.0)	6800	40.0	40.0	40.0	25.0	25.0	25.0	40.0	40.0	40.0	25.0	25.0	16.0	37.7	37.7	35.8	25.0	25.0	16.0	40.0	40.0	40.0	40.0	25.0	25.0	16.0

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Pneumatic Actuators) (continued)

Actuator type	Valve DN	DN65 - 100																								
		16				25				36				63 - 90				100 - 115 - 117				160 - 180				
		P	H	B	C	D	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D
PN9230E (0.2 - 1.0)	680	2.8																								
		Actuator trust																								
PN9230E (0.4 - 1.2)	1360	16.6	6.3																							
		Actuator trust	5.4	0.9																						
PN9236E (1.0 - 2.0)	3400	40.0	40.0	15.4	5.0	5.0	23.4	18.9	4.9	0.4	0.4	16.0	12.8	2.8												
		Actuator trust	40.0	40.0	40.0	40.0	40.0	40.0	40.0	25.0	16.0	16.0	37.4	34.2	24.2	21.0	16.0	20.2	18.4	12.8	11.0	11.0	12.4	11.2	7.6	6.5
PN9233E (2.0 - 4.0)	6800	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	37.4	34.2	24.2	21.0	16.0	20.2	18.4	12.8	11.0	11.0	12.4	11.2	7.6	6.5	6.5
		Actuator trust	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
PN9330E (0.2 - 1.0)	1340	16.2	5.9																							
		Actuator trust	5.2	0.7																						
PN9330E (0.4 - 1.2)	2680	40.0	33.2	0.8																						
		Actuator trust	17.0	12.5																						
PN9336E (1.0 - 2.0)	6700	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	36.7	33.5	23.5	20.3	16.0	19.8	18.0	12.4	10.3	10.6	12.2	11.0	7.4	6.3	6.3
		Actuator trust	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
PN9337E (2.5 - 3.5)	16750	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	34.9	33.8	25.0	16.0	16.0
		Actuator trust	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Electric Actuators)

Actuator type		DN15 - 25																																							
		0.01 - 0.07 - 0.1 - 0.2								0.5 - 1.0								1.6								2.5								4							
		N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D				
Valve DN	Kvs	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				
	Stem sealing	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0				
Actuator trust	2000	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				
	1000	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0				
Actuator trust	2000	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				
	2300	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				
Actuator trust	4500	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				
	8000	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0				

Actuator type		DN15 - 25																																			
		4.9 - 6.3								7.2								10								11											
		N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D
Valve DN	Kvs	40.0	40.0	40.0	19.8	14.8	40.0	40.0	40.0	4.9	16.0	40.0	40.0	2.4	16.0	40.0	40.0	40.0	2.4	16.0	40.0	40.0	7.1	12.5	12.4	12.4	38.3	38.3	30.5	16.0	9.1	16.0	16.0	16.0	16.0	16.0	
	Stem sealing	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	
Actuator trust	2000	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	
	1000	29.8	29.8	29.8	14.8	14.8	16.0	22.0	22.0	10.0	16.0	40.0	40.0	10.2	2.4	16.0	40.0	40.0	40.0	10.2	2.4	16.0	40.0	40.0	7.1	12.5	12.4	12.4	4.7	9.1	16.0	16.0	16.0	16.0	16.0	16.0	
Actuator trust	2000	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	
	2300	40.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	40.0	40.0	40.0	16.0	
Actuator trust	4500	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0
	8000	40.0	40.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0	40.0	40.0	40.0	25.0	16.0

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Electric Actuators) (continued)

		DN32 - 50																																						
Valve DN		4						6.3						10						16						17.5 - 18														
Actuator type	Kvs	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D									
	Stem sealing																																							
	Actuator trust																																							
AEI3	2000	40.0	40.0	40.0	17.8	16.0	40.0	40.0	40.0	7.4	16.0	40.0	40.0	40.0	2.7	16.0	40.0	40.0	40.0	33.0	1.4	16.0	30.7	30.7	24.6	0.1	16.0	30.7	30.7	24.6	0.1	16.0	30.7	30.7	24.6	0.1				
AEI51	1000	40.0	40.0	34.9	16.0	32.3	32.3	17.3	16.0	18.6	18.6	9.1	14.5	14.6	14.6	6.7	11.2	10.3	10.3	4.2	7.7	16.0	30.7	30.7	24.6	0.1	16.0	30.7	30.7	24.6	0.1	16.0	30.7	30.7	24.6	0.1				
AEI52	2000	40.0	40.0	40.0	17.8	16.0	40.0	40.0	40.0	7.4	16.0	40.0	40.0	40.0	2.7	16.0	40.0	40.0	40.0	33.0	1.4	16.0	40.0	40.0	40.0	33.0	1.4	16.0	40.0	40.0	40.0	33.0	1.4	16.0	40.0	40.0	40.0	33.0	1.4	
AEI62	2300	40.0	40.0	40.0	25.0	17.8	16.0	40.0	40.0	22.3	7.4	16.0	40.0	40.0	12.3	2.7	16.0	40.0	40.0	40.0	9.3	1.4	16.0	40.0	40.0	40.0	9.3	1.4	16.0	40.0	40.0	40.0	9.3	1.4	16.0	40.0	40.0	40.0	9.3	1.4
AEI53/63	4500	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0
AEI54/64	8000	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0
AEI55/65	14000	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0

		DN32 - 50																																									
Valve DN		25						31 - 36						46 - 50																													
Actuator type	Kvs	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D	N	P	H	B	C	D																		
	Stem sealing																																										
	Actuator trust																																										
AEI3	2000	15.0	15.0	11.7	13.6	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7	15.0	15.0	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7	15.0	15.0	11.7	13.6	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7								
AEI51	1000	4.0	4.0	0.7	2.6	2.7	2.7	1.5	1.2	1.2	1.2	0.4	4.0	4.0	0.7	2.6	2.7	2.7	1.5	1.2	1.2	1.2	0.4	4.0	4.0	0.7	2.6	2.7	2.7	1.5	1.2	1.2	1.2	0.4									
AEI52	2000	15.0	15.0	11.7	13.6	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7	15.0	15.0	11.7	13.6	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7	15.0	15.0	11.7	13.6	11.5	11.5	8.8	10.3	7.5	7.5	5.6	6.7						
AEI62	2300	18.3	18.3	15.0	1.8	16.0	14.1	14.1	11.5	0.9	13.0	9.4	9.4	7.5	8.6	18.3	18.3	15.0	1.8	16.0	14.1	14.1	11.5	0.9	13.0	9.4	9.4	7.5	8.6	18.3	18.3	15.0	1.8	16.0	14.1	14.1	11.5	0.9	13.0	9.4	9.4	7.5	8.6
AEI53/63	4500	40.0	40.0	39.3	25.0	22.8	16.0	33.5	33.5	30.9	20.3	17.7	16.0	23.2	23.2	21.3	13.8	11.9	16.0	40.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0
AEI54/64	8000	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0			
AEI55/65	14000	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0	16.0	40.0	40.0	40.0	25.0	25.0			

Maximum differential pressures for Class IV shut-off - Metal Seat (T & S) - Flow under - standard trim - (Electric Actuators) (continued)

Valve DN		DN65 - 100																															
		16				25				36				63 - 90				100 - 115 - 117				160 - 180											
		P	H	B	C	D	C	B	H	P	H	B	C	D	C	B	H	P	H	B	C	D	C	B	H	P	H	B	C	D			
Actuator type	Kvs																																
	Stem sealing																																
	Actuator trust																																
AEL51	1000	9.3				2.2				0.9																							
AEL52	2000	29.7	19.3			11.0	6.6			7.2	4.0			3.2	1.4			1.5	0.4							0.5							
AEL62	2300	35.8	25.4			13.7	9.2			9.1	5.9			4.3	2.5			2.2	1.0							0.9	0.2						
AEL53/63	4500	40.0	40.0	25.0	25.0	33.1	28.6	14.6	10.0	22.9	19.7	9.7	6.5	12.1	10.2	4.6	2.8	7.2	6.0	2.4	1.3	2.8	2.8	2.8	2.8	4.0	3.3	1.1	0.3	0.3			
AEL54/64	8000	40.0	40.0	25.0	25.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	24.4	22.6	17.0	15.2	15.0	13.9	10.3	9.2	15.2	15.2	15.2	15.2	9.0	8.2	6.0	5.3	5.3			
AEL55/65	14000	40.0	40.0	25.0	25.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	25.0	28.7	27.5	23.9	22.8	16.0	16.0	16.0	16.0	17.4	16.7	14.5	13.8	13.8			
AEL56/66	25000	40.0	40.0	25.0	25.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	16.0	40.0	40.0	25.0	25.0	40.0	40.0	25.0	25.0	16.0	16.0	16.0	16.0	33.0	32.2	25.0	25.0	25.0	25.0	25.0	16.0

Maximum differential pressures for Class VI shut-off - Soft Seat (P & C) - Flow under - standard trim - (Pneumatic Actuators)

Actuator type	DN15 - 25																									
	Valve DN		0.01 - 0.07		0.1 - 0.2		0.5		1		1.6		2.5		4		4.9 - 6.3		7.2		10		11			
	Kvs	Stem sealing	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		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9123E (2.0 - 4.0)	1920		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9220E (0.2 - 1.0)	680		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9220E (0.4 - 1.2)	1360		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0

Actuator type	DN32 - 50																									
	Valve DN		4		6.3		10		16		17.5 - 18		25		31 - 36		46 - 50									
	Kvs	Stem sealing	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		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9123E (2.0 - 4.0)	1920		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9220E (0.2 - 1.0)	680		19.0	17.4	16.0	19.0	8.9	16.0	14.5	4.9	10.3	11.6	3.7	8.2	8.6	2.5	6.0	4.0	0.7	2.6	3.0	0.4	1.9	1.9	1.1	
PN9220E (0.4 - 1.2)	1360		19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0	19.0	19.0	16.0
PN9226E (1.0 - 2.0)	3400																									

Actuator type	DN65 - 100																																									
	Valve DN		16			25			36			63 - 90			100 - 115 - 117			160 - 180																								
	Kvs	Stem sealing	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D	P	H	B	C	D										
PN9230E (0.2 - 1.0)	680		7.6				2.6					1.6						0.5																								
PN9230E (0.4 - 1.2)	1360		19.0	11.1			8.6	4.1				5.8	2.6					2.9	1.1																							
PN9236E (1.0 - 2.0)	3400		19.0	19.0	19.0	9.8	9.8	19.0	8.0	3.5	3.5	18.7	15.5	5.5	2.2	2.2	10.2	8.4	2.7	0.9	0.9	6.3	5.1	1.5	0.4	0.4	3.7	3.0	0.8	0.7	0.7											
PN9233E (2.0 - 4.0)	6800																	19.0	19.0	14.8	13.0	14.0	12.8	9.2	8.1	8.1	8.5	7.8	5.6	4.9	4.9											
PN9330E (0.2 - 1.0)	1340		19.0	10.7			8.4	3.9				5.7	2.5					2.9	1.1																							
PN9330E (0.4 - 1.2)	2680						19.0	15.7	1.7			14.1	10.9	0.9				7.6	5.8	0.2																						
PN9336E (1.0 - 2.0)	6700																	19.0	19.0	14.4	12.6	12.6	13.8	12.6	9.0	7.9	8.4	7.7	5.4	4.7	4.7											
PN9337E (2.5 - 3.5)	16750																																									

Maximum differential pressures for Class VI shut-off - Soft Seat (P & C) - Flow under - standard trim - (Electric Actuators)

Valve DN		DN15 - 25																								
		0.01 - 0.07				0.1 - 0.2				0.5				1				1.6				2.5				
		N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D
Actuator type	Kvs																									
	Stem sealing																									
	Actuator thrust																									
	2000	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0
	1000	19.0	19.0			16.0	19.0	19.0			16.0	19.0	19.0			16.0	19.0	19.0			16.0	19.0	19.0			16.0
2000	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	
2300	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	19.0	19.0	19.0	19.0	16.0	
4500	19.0*	19.0*	19.0*	19.0*	16.0*	19.0*	19.0*	19.0*	19.0*	16.0*	19.0*	19.0*	19.0*	19.0*	16.0*	19.0*	19.0*	19.0*	19.0*	16.0*	19.0*	19.0*	19.0*	19.0*	16.0*	

Valve DN		DN15 - 25																							
		4				4.9 - 6.3				7.2				10				11							
		N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C
Actuator type	Kvs																								
	Stem sealing																								
	Actuator thrust																								
	2000	19.0	19.0	19.0	2.2	16.0	19.0	19.0	14.9	16.0	19.0	11.3	16.0	19.0	8.7	16.0	19.0	19.0	19.0	6.7	16.0				
	1000	19.0	19.0			16.0	19.0	19.0			16.0	19.0	15.1			16.0	19.0	11.9			16.0				
2000	19.0	19.0	19.0	2.2	16.0	19.0	19.0	14.9	16.0	19.0	11.3	16.0	19.0	8.7	16.0	19.0	19.0	19.0	6.7	16.0					
2300	19.0	19.0	19.0	2.2	16.0	19.0	19.0	14.9	16.0	19.0	11.3	16.0	19.0	8.7	16.0	19.0	19.0	19.0	6.7	18.0					
4500	19.0*	19.0*	19.0*	2.2*	16.0*	19.0*	19.0*	14.9*	16.0*	19.0*	11.3*	16.0*	19.0*	8.7*	16.0*	19.0*	19.0*	19.0*	6.7*	19.0*					

*Note: Actuator Thrust must be set to 50% of maximum.

Maximum differential pressures for Class VI shut-off - Soft Seat (P & C) - Flow under - standard trim - (Electric Actuators) (continued)

			DN32 - 50															
Actuator type	Valve DN	Kvs	4				6.3				10				16			
	Stem sealing		N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	
																		Actuator trust
AE13	2000	19.0	19.0	19.0	2.0	16.0	19.0	19.0	14.9	16.0	19.0	19.0	8.7	16.0	19.0	19.0	6.9	16.0
AE151	1000	19.0	19.0	16.0	19.0	19.0	19.0	15.1	16.0	19.0	15.1	16.0	19.0	12.1	16.0	19.0	16.0	16.0
AE152	2000	19.0	19.0	19.0	2.0	16.0	19.0	19.0	14.9	16.0	19.0	19.0	8.7	16.0	19.0	19.0	6.9	16.0
AE162	2300	19.0	19.0	19.0	19.0	16.0	19.0	19.0	14.9	16.0	19.0	19.0	18.3	16.0	19.0	19.0	14.8	16.0
AE163	4500	19.0*	19.0*	19.0*	19.0*	16.0*	19.0*	19.0*	19.0*	14.9*	19.0*	19.0*	18.3*	16.0*	19.0*	19.0*	13.5*	16.0*

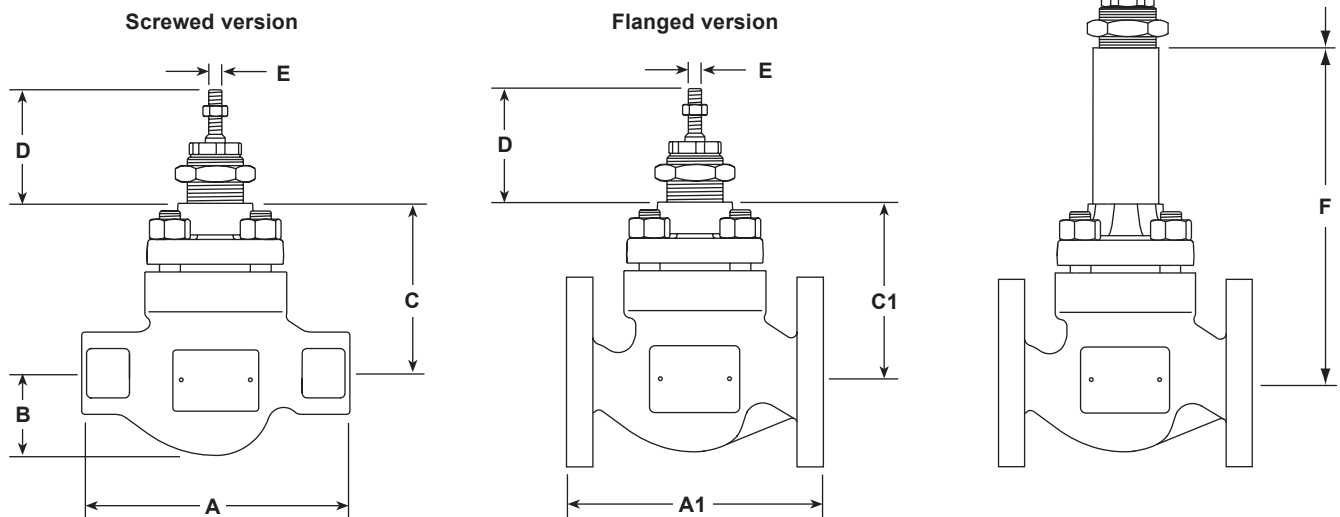
			DN32 - 50															
Actuator type	Valve DN	Kvs	17.5 - 18				25				31 - 36				46 - 50			
	Stem sealing		N-P	H	B	C	D	N-P	H	B	C	D	N-P	H	B	C	D	
																		Actuator trust
AE13	2000	19.0	19.0	4.9	16.0	18.6	15.3	2.1	6.0	14.6	12.0	1.4	13.5	10.2	8.3	0.7	9.4	
AE151	1000	15.1	9.0	12.5	7.6	4.3	6.1	5.8	3.2	4.7	3.9	2.0	3.1	3.1	3.1	3.1	3.1	
AE152	2000	19.0	19.0	4.9	16.0	18.6	15.3	2.1	6.0	14.6	12.0	1.4	13.5	10.2	8.3	0.7	9.4	
AE162	2300	19.0	19.0	11.1	4.9	16.0	19.0	18.6	5.4	2.1	16.0	17.3	14.6	4.1	1.4	16.0	12.1	10.2
AE163	4500	19.0*	19.0*	10.0*	4.9*	16.0*	19.0*	18.0*	5.4*	2.1*	16.0*	17.3*	14.6*	4.1*	1.4*	16.0*	12.1*	10.2*

			DN65 - 100																														
Actuator type	Valve DN	Kvs	16				25				36				63 - 90				100 - 115 - 117				160 - 180										
	Stem sealing		P	H	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P	H	P			
																															Actuator trust		
AE151	1000	14.1	3.7	5.4	0.9	3.6	0.4	1.7	0.9	0.9	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
AE152	2000	19.0	19.0	14.2	9.7	9.9	6.6	5.2	3.4	3.1	2.0	1.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AE162	2300	19.0	19.0	16.9	12.4	11.7	8.5	6.3	4.5	3.8	2.6	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
AE163	4500	19.0*	19.0*	16.9*	12.4*	11.7*	8.5*	14.1	12.2	6.6	4.8	4.8	8.8	7.6	4.0	2.9	2.9	5.3	4.6	2.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
AE153	4500							14.1	12.2	6.6	4.8	4.8	8.8	7.6	4.0	2.9	2.9	5.3	4.6	2.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
AE154/64	8000												16.7	15.5	11.9	10.8	10.8	10.2	9.5	7.3	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
AE155/65	14000																	18.7	18.0	15.7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0

*Note: Actuator Thrust must be set to 50% of maximum.

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

Valve size	Screwed BSP			Flanged		D	E Thread	F		
	A	B	C	A1 All (except LE43/LE63 JIS/KS10)	C1 LE43/63 JIS/KS10			Bellows seals	Extended bonnet	
DN15 (½")	130	40	103	130	124	103	69 (2¾")	M8	237 (9")	336 (13.25")
DN20 (¾")	155	45	103	150	144	103				
DN25 (1")	160	50	103	160	160	103				
DN32 (1¼")	185	60	132	180	176	132				
DN40 (1½")	205	65	132	200	198	132				
DN50 (2")	230	80	127	230	222	127	81 (3")	M12	267 (10½")	354 (13.94")
DN65 (2½")				290	290	201				
DN80 (3")				310	310	201				
DN100 (4")				350	350	216				

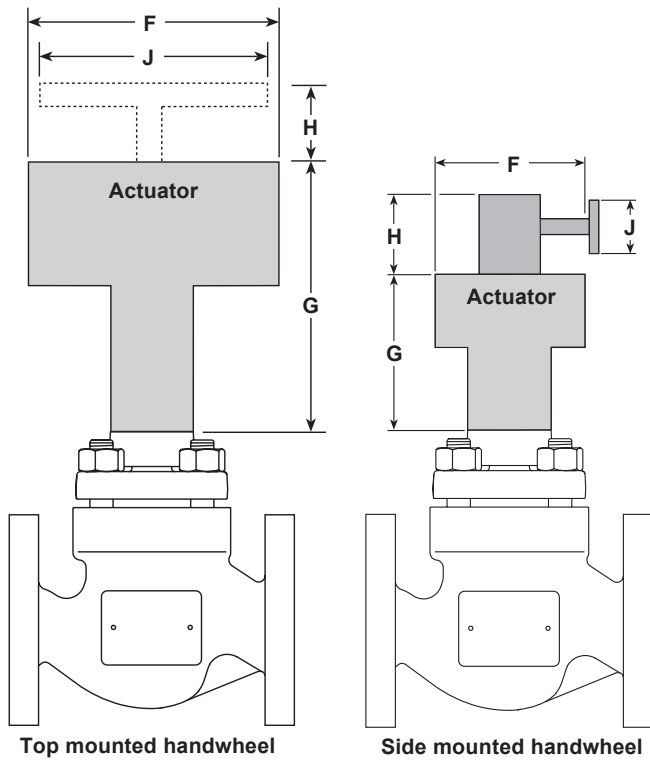


Weights
approximate
in kg (and lbs)

Valve size	KE valves					LE valves				Additional bellows and Extended bonnet
	KE43	KE61	KE63	KE71	KE73	LE31	LE33	LE43	LE63	
DN15 (½")	6.0	4.5	5.5	4.5	5.5	4.0	5.0	5.0	5.0	4.5 (10)
DN20 (¾")	6.8	5.5	6.8	5.5	6.8	5.0	6.0	6.0	6.0	
DN25 (1")	7.0	6.0	7.0	6.0	7.0	5.5	6.5	6.5	6.5	
DN32 (1¼")	13.5	11.5	13.5	11.5	13.5	9.0	10.0	10.0	10.0	5.5 (12)
DN40 (1½")	14.0	12.0	14	12.0	14.0	10.0	12.8	12.8	12.8	
DN50 (2")	17.0	13.0	17.0	13.0	17.0	11.0	15.0	15.0	15.0	
DN65 (2½")	35.0		35.0		35.0	-	32.0	32.0	32.0	10 (21)
DN80 (3")	40.0		40.0		40.0	-	36.0	36.0	36.0	
DN100 (4")	54.0		54.0		54.0	-	53.0	53.0	53.0	13 (28)

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 A"	275	10 ⁷ / ₈ "	55	2 ³ / ₁₆ "	225	8 ⁷ / ₈ "	6	13.25	+5.86	+13.00
PN9100R					140	5 ¹ / ₂ "					+2.50	+5.50
PN9200E	300	11 ¹ / ₈ "	300	11 ¹ / ₈ "	55	2 ³ / ₁₆ "	225	8 ⁷ / ₈ "	17	37.50	+7.20	+15.75
PN9200R					140	5 ¹ / ₂ "					+3.77	+8.50
PN9320E	390	15 ¹ / ₂ "	325	12 ¹ / ₈ "	65	2 ⁹ / ₁₆ "	350	13 ³ / ₄ "	27	59.50	+7.20	+15.75
PN9320R					150	15 ¹ / ₈ "					+3.77	+8.50
PN9330E	390	15 ¹ / ₂ "	335	13 ³ / ₈ "	65	2 ⁹ / ₁₆ "	350	13 ³ / ₄ "	27	59.50	+7.20	+15.75
PN9330R					150	15 ¹ / ₈ "					+3.77	+8.50
TN2000E	284	11 ¹ / ₄ "	334	13 ⁵ / ₃₂ "	144	5 ⁴³ / ₆₄ "	350	13 ³ / ₄ "	18	40.50	+5.00	+11.25
TN2000R											+6.00	+13.50
TN2000DA	284	11 ¹ / ₄ "	334	13 ⁵ / ₃₂ "					16	36.00		
TN2100E	405	16"	369	14 ¹ / ₂ "	402	15 ⁵³ / ₆₄ "	330	13"	37	83.25	+23.00	+51.75
TN2100R												
TN2100DA	405	16"	369	14 ¹ / ₂ "					30	67.50		



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

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

Actuator range	F		G		Weight	
	mm	inches	mm	inches	kg	lbs
AEL3	230 x 149	9" x 6"	283	11 1/4"	5.7	12.5
AEL55 and AEL65	180	7"	557	22"	10.0	22.0
AEL51, AEL52, AEL53, AEL62 and AEL63	177	7"	459	18"	5.0	11.0
AEL54 and AEL64	177	7"	490	19"	7.0	15.5
AEL56 and AEL66	226	9"	760	30"	20.0	44.0

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 broken 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

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

Specify if reduced trim.

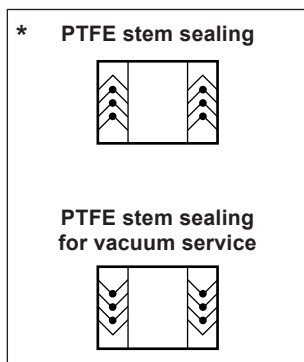
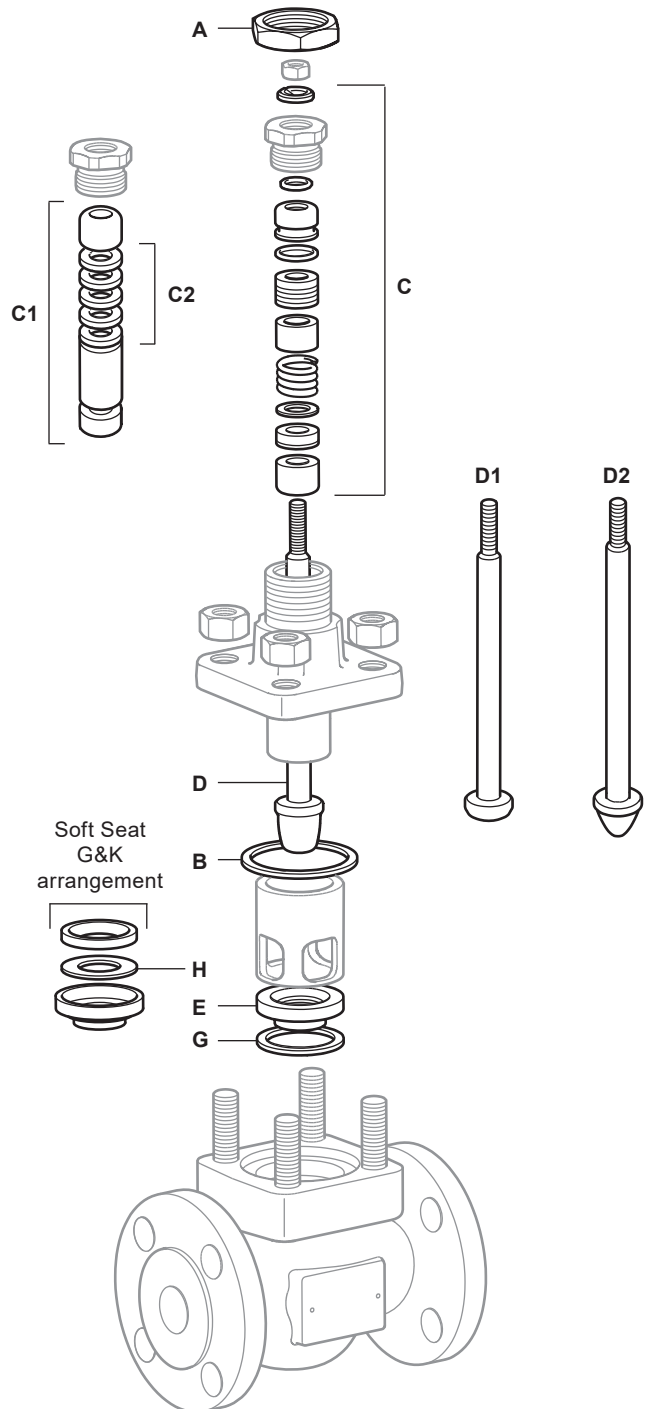
How to order spares

* 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 K_v 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

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

Specify if reduced trim.

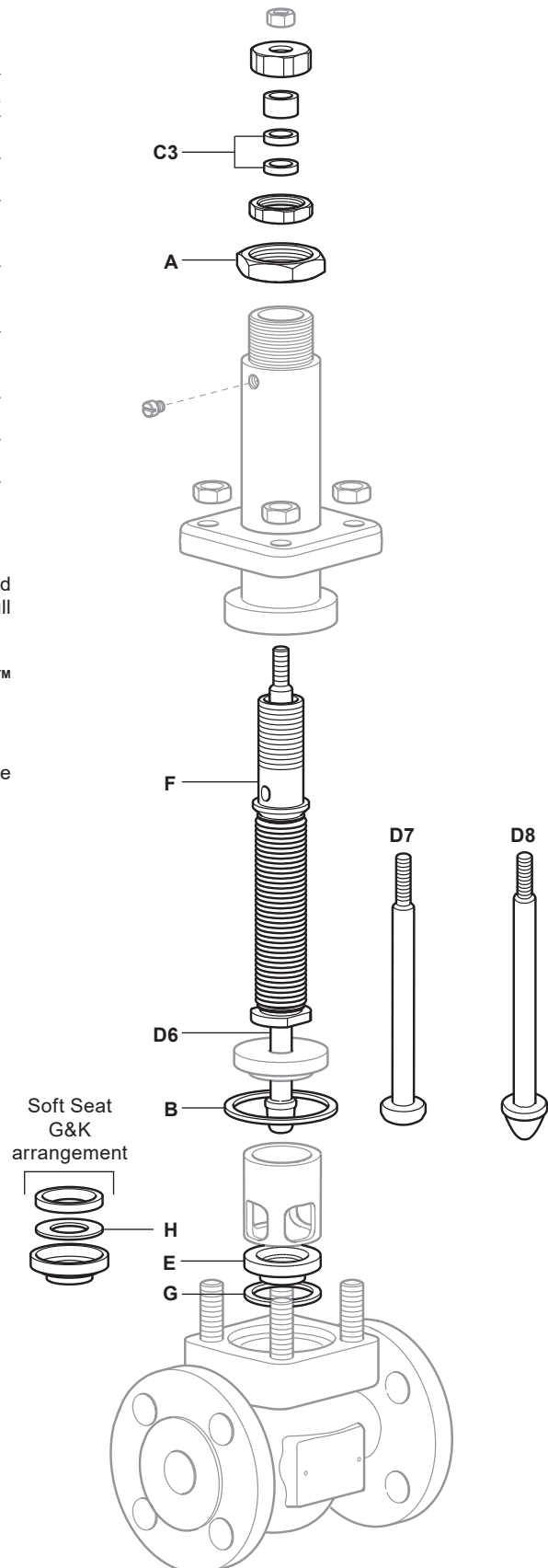
How to order spares

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 KE43B TSUSS.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 - Types B and C DN15 to DN100 - 1/2" to 4"

The spare parts available are shown in solid outline. Parts drawn in 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

Actuator clamping nut		A
Gasket set	(Bellows sealed)	B, G
	PTFE packing	C
Stem seal kits	Graphite packing	C1
	Graphite seal set	C2
	* Equal percentage trim (No gaskets supplied)	D9, E
Plug stem and seat kit	Fast opening trim (No gaskets supplied)	D10, E
	Linear trim (No gaskets supplied)	D11, E
Bellow seal assembly		F
PTFE soft seat seal		H

Specify if reduced trim.

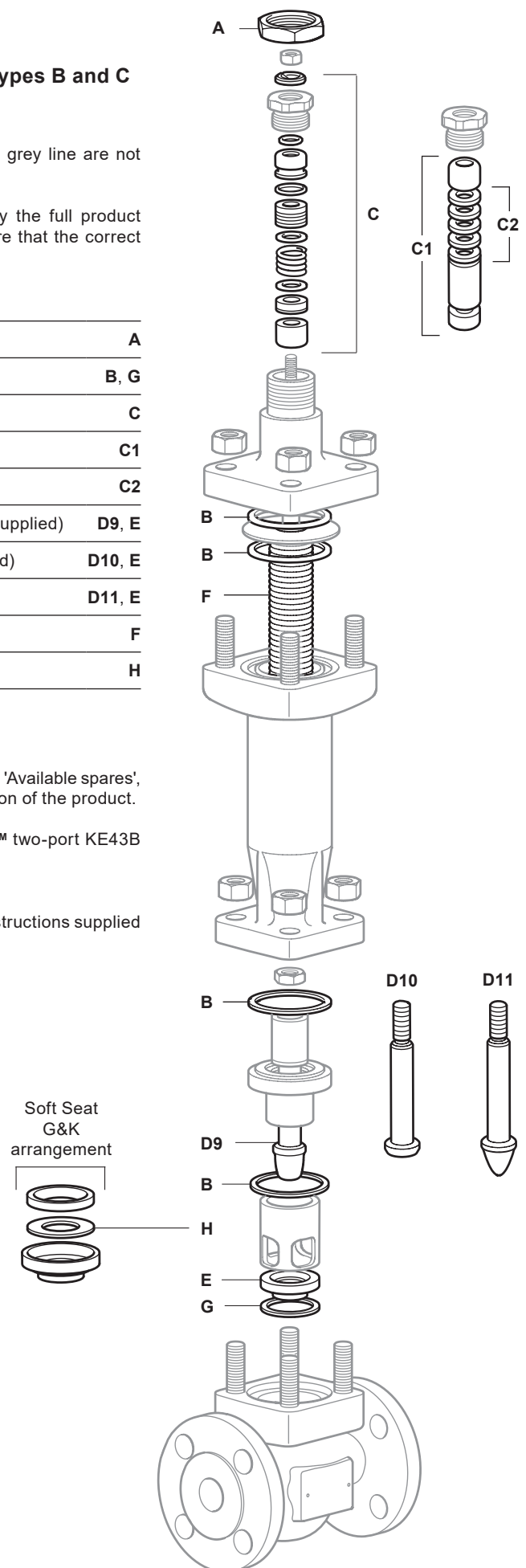
How to order spares

* 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 KE43B TSUSS.2 K_v 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:

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

Selection example:

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

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