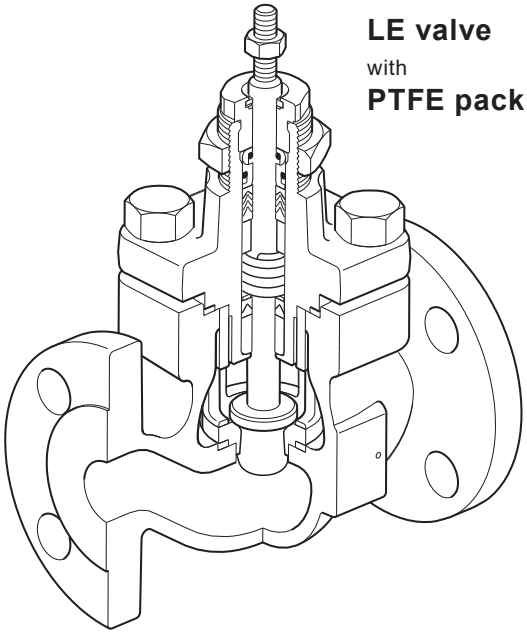
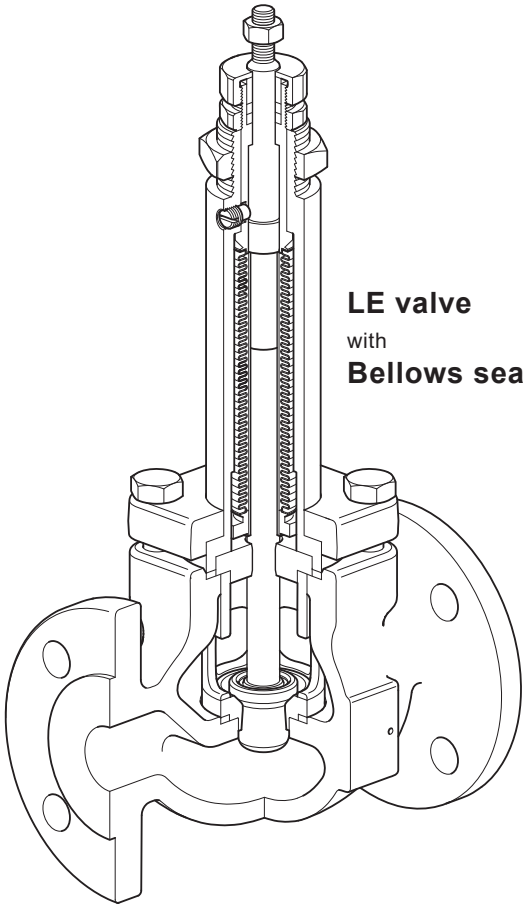
Spira-trol™ Two-port Control Valves EN Standard LE, LF and LL DN15 to DN100 and ASME Standard LEA, LFA and LLA ½" to 4"

Description

Spira-trol™ is a range of two-port single seat globe valves with cage retained seats conforming to EN and ASME standard. These valves are available in three 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 characterized modulating or on/off control.



LE valve
with
PTFE packing



LE valve
with
Bellows seal

Sizes and pipe connections

Body material	Connections		Type	Size range
Cast iron	Screwed	BSP	LE31	DN15, DN20, DN25, DN32, DN40 and DN50
		NPT	LEA31	½", ¾", 1", 1¼", 1½" and 2"
	Flanged	EN 1092 PN16, JIS/KS 10	LE33	DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
		ASME class 125	LEA33	1", 1½", 2", 2½", 3" and 4"
Carbon steel	Flanged	EN 1092 PN16, JIS/KS 10	LE43	DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
		ASME class 150	LEA43	½", ¾", 1", 1½", 2", 2½", 3" and 4"
		JIS/KS 10		½", ¾", 1", 1¼", 1½", 2", 2½", 3" and 4"
Stainless steel	Flanged	EN 1092 PN16, JIS/KS 10	LE63	DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
		ASME class 150	LEA63	½", ¾", 1", 1½", 2", 2½", 3" and 4"
		JIS/KS 10		½", ¾", 1", 1¼", 1½", 2", 2½", 3" and 4"

Spira-trol valve characteristic - options:

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

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

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

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

Spira-trol valve options:

Stem sealing	**PTFE chevron seals**	Standard
	Bellows/graphite secondary seals (D)	Zero emissions and high temperature applications
	Graphite packing	High temperature applications
Seating	**Metal-to-metal**	431 stainless steel - standard
		316L stainless steel
	Soft seating	Up to 200 °C (392 °F) - PTFE for Class VI shut-off
		Up to 250 °C (482 °F) - PEEK 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)	

Spira-trol valves are compatible with the following actuators and positioners:

Electric	EL3500, EL7200, AEL3, AEL5, AEL6 series and CVL
Pneumatic	PN1000, PN9000, PN2000, TN2000 and TN2100 Series
Positioners	PP5 (pneumatic)
	EP500A (intrinsically safe electropneumatic)
	SP400 and SP500 (microprocessor based electropneumatic)

Refer to the relevant Technical Information sheet for further details.

Standards

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

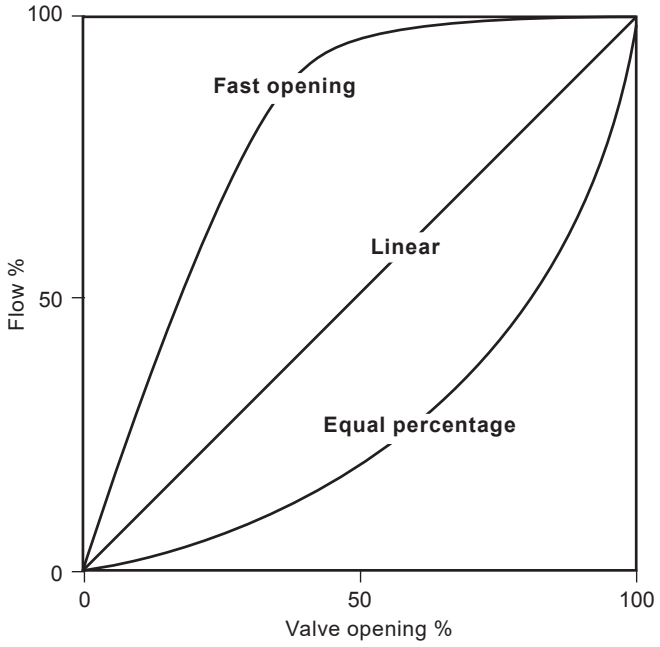
Certification

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.

Technical data

Plug design			Parabolic
Leakage	Metal-to-metal	Balanced and Unbalanced	Class IV
		Unbalanced	(optional) Class V
	Soft seal	Balanced	Class IV
		Unbalanced	Class VI
Rangeability	Equal		50:1
	Linear		30:1
	Fast		10:1
Travel	DN15 - DN50 (½" - 2")	20 mm (¾")	
	DN65 - DN100 (2½" - 4")	30 mm (1 3/16")	

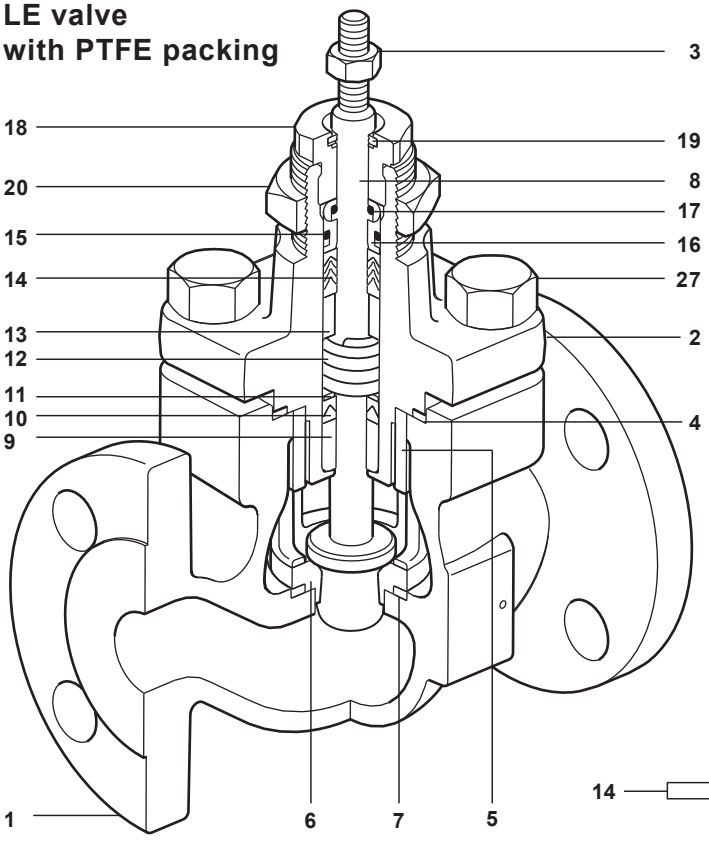
Typical flow characteristic curves



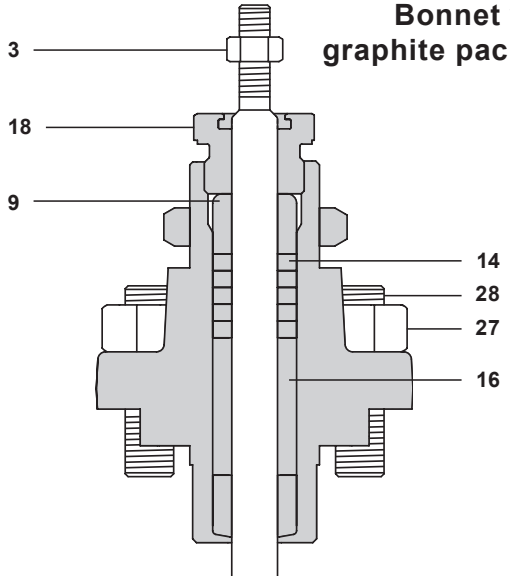
Materials

Body material	No.	Part		Type	Material	
Cast iron	1	Body		LE31 and LE33	SG iron	EN 1563 : EN-GJS-400-18
				LEA31 and LEA33	Cast iron	ASTM A126B
	2	Bonnet	DN15 - DN50 (½" - 2")	LE31 and LE33	SG iron	EN 1563 : EN-GJS-400-18
				LEA31 and LEA33	Ductile iron	ASTM A395
			DN65 - DN100 (2½" - 4")	LE31 and LE33	Cast iron	EN 1561 : EN-GJL-250
				LEA31 and LEA33	Ductile iron	ASTM A395
	2a	Bonnet extension		LE31 and LE33	Carbon steel	EN 10213 GP240GH+N (1.0619N) ASTM A216 WCB or A105N
				LEA31 and LEA33		
Carbon steel	1	Body		LE43	Carbon steel	EN 10213 GP240GH+N (1.0619N)
				LEA43	Cast steel	ASTM A216 WCB
	2	Bonnet	DN15 - DN50 (½" - 2")	LE43	Carbon steel	EN 10273 P250GH (1.0460)
				LEA43	Carbon steel	ASTM A105N
			DN65 - DN100 (2½" - 4")	LE43	Steel	EN10213 GP240GH+N (1.0619N)
				LEA43	Cast steel	ASTM A216 WCB
	2a	Bonnet extension		LE43 and LEA43	Carbon steel	EN 10213 GP240GH+N (1.0619N) ASTM A216 WCB or A105N
Stainless steel	1	Body		LE63	Stainless steel	EN 10213 1.4408
				LEA63		ASTM A351 CF8M
	2	Bonnet		LE63	Stainless steel	EN 10213 1.4408
				LEA63		ASTM A351 CF8M
	2a	Bonnet extension		LE63 and LEA63	Stainless steel	AISI 316L
All versions	2b	Bellows		All versions	Stainless steel	AISI 316L
	2c	Extended bonnet		LE63 and LEA63	Stainless steel	A351 CF8M and EN 10213 1.4408
				All others	Carbon steel	A216 WCB and EN 10213 1.0619N
	3	Stem lock-nut		All versions	Stainless steel	AISI 431
	4	Bonnet gasket		All versions	Reinforced exfoliated graphite	
	5	Seat retainer		All versions	Stainless steel	AISI 316L
	6	Valve seat ring		Seating version T	Stainless steel	AISI 431
				Seating versions P and K	PEEK	
				All others	Stainless steel	AISI 316L
	7	Seat gasket		Seating version W	Stellite	Alloy 6
	8	Valve plug and stem		All versions	Reinforced exfoliated graphite	
				All others	Stainless steel	AISI 431
				LE63		AISI 316L
	9 *	Lower stem guide		All versions	Glass filled PTFE, except Nitronic bush option	
	10 *	Lower stem wiper		All versions	PTFE	
	11 *	Packing guard washer		All versions	Stainless steel	AISI 316L
	12 *	Spring		All versions	Stainless steel	AISI 316L
	13	Packing spacer		All versions	Stainless steel	AISI 316L
	14 *	Chevron packing set		All versions	PTFE	
	15 *	Outer 'O' ring		All versions	Viton	
	16 *	Upper stem guide		All versions	Glass filled PTFE, except Nitronic bush option	
	17 *	Inner 'O' ring		All versions	Viton	
	18	Gland nut		All others	Stainless steel	AISI 431
				LE63		AISI 316L
	19	Scraper ring		All versions	PTFE	
	20	Actuator clamp nut		All versions	Plated carbon	NFA 35553 XC 18
	21	Bellows assembly		All versions	Stainless steel	
	22	Bonnet extension gasket		All versions	Reinforced exfoliated graphite	
	23	Top plate (bonnet extension only)		All versions	Stainless steel	AISI 316L
	24	Lower spindle bearing housing		All versions	Stainless steel	AISI 316L
	25	Lower spindle bearing		All versions	Stainless steel	AISI 431
				Without stainless steel	Stellite	Alloy 6
	26	Spindle lock and anti-rotation nut		All versions	Stainless steel	
	27	Bonnets nuts		LEA63	Stainless steel	ASTM A194 Gr. 8M
				All others	Steel	ASTM A194 Gr. 2H
		Set screws		LE63	Stainless steel	A2-70
				All others	Steel	8.8
	28	Standard bonnet studs		LEA63	Stainless steel	ASTM A193 Gr. B8 M2
				All others	Steel	ASTM A193 Gr. B7

LE valve with PTFE packing

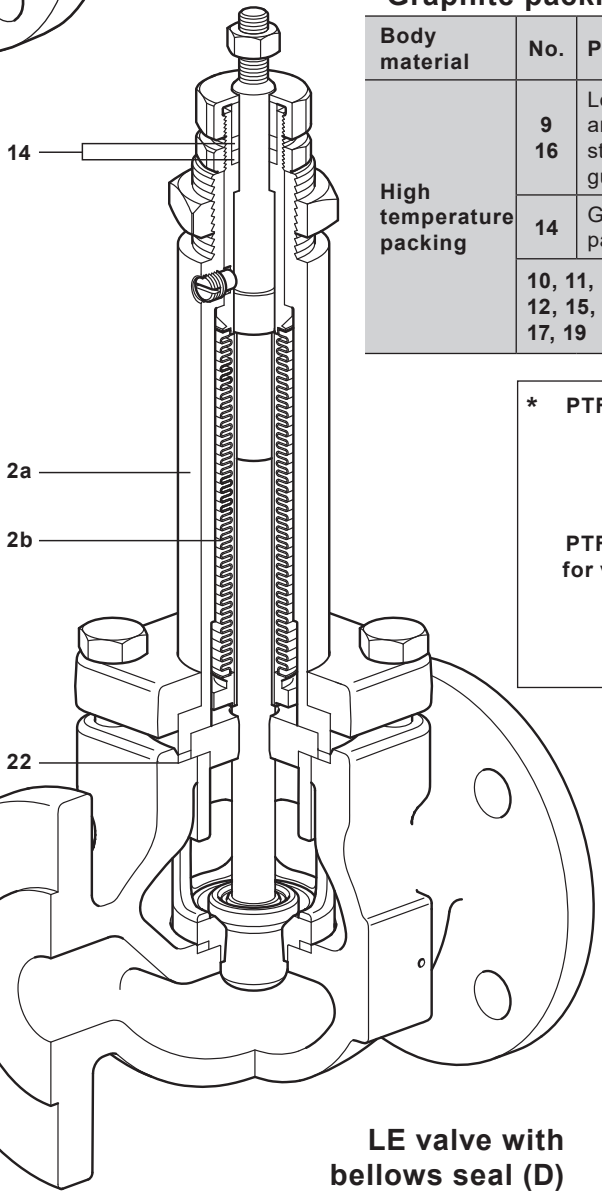


Bonnet with graphite packing



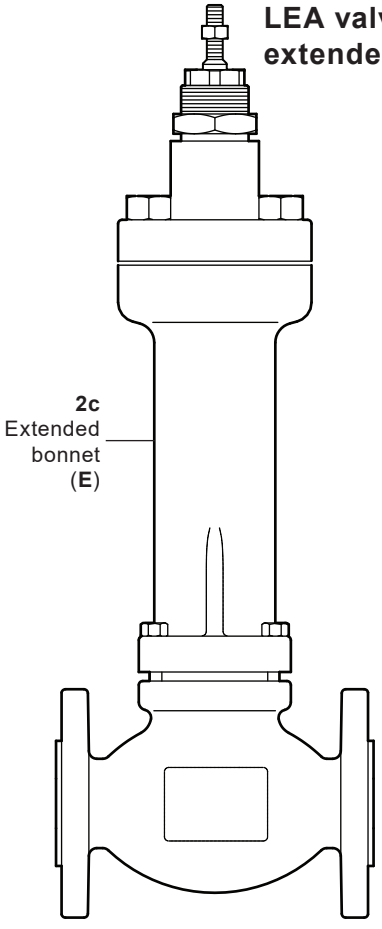
* Graphite packing

Body material	No.	Part	Material
High temperature packing	9 16	Lower and upper stem guide	Stellite 6
	14	Grafoil packing	Graphite rings
	10, 11, 12, 15, 17, 19	Not used	

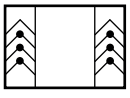


LE valve with bellows seal (D)

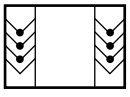
LEA valve with extended bonnet (E)



* 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	N/A
	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	4.0	6.3	10.0	18.0	28.0	50.0	85	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			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						

Notes:

- Special K_V on request
- For low noise and anticavitation K_V please see TI-S24-59

C_V (US) values

C_V (US) = C_V (UK) x 1.2009

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 %	5.7	8.3	12.7	20.2	36.0	53.0	104.0	133.0	N/A
	Full port	Equal %	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	185.0
		Linear	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	185.0
		Fast opening	4.6	7.3	12.0	21.0	32.0	58.0	98.0	135.0	208.0
	Reduced trim 1	Equal %	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0
		Linear	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0
	Reduced trim 2	Equal %	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0
		Linear	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0
	Reduced trim 3	Equal %	1.2	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0
		Linear	1.2	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0
	Reduced trim 4	Equal %		1.2	1.8		4.6	7.3		18.0	
		Linear		1.2	1.8		4.6	7.3		18.0	
	Reduced trim 5	Equal %			1.2			4.6			
		Linear			1.2			4.6			
Microflute			0.58	0.58	0.6						
			0.23	0.23	0.23						
			0.12	0.12	0.12						
			0.081	0.081	0.081						
			0.012	0.012	0.012						

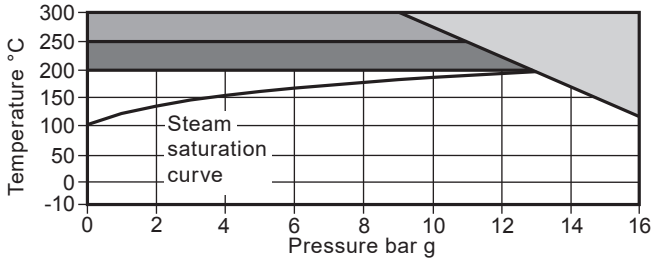
Notes:

- Special C_V on request
- For low noise and anticavitation C_V please see TI-S24-59

Pressure / temperature limits - LE31 and LE33 cast iron valve body

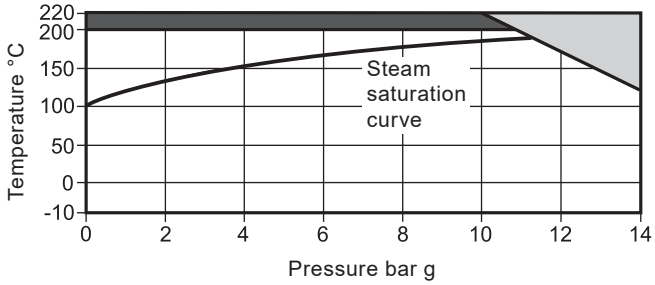
Screwed BSP

Flanged EN 1092 PN16



Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C, the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

Flanged JIS/KS 10



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

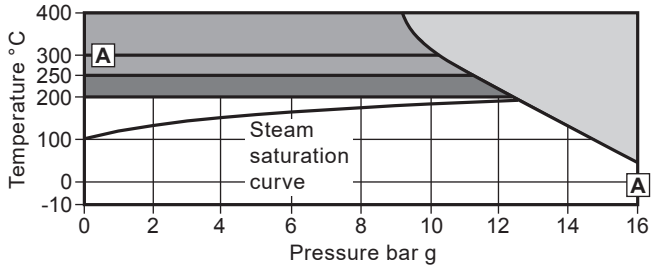
High temperature graphite packing is required for use in this region. **Note:** Soft seated valves cannot be used in this region.

PTFE soft seated valves are limited to a maximum operating temperature of 200 °C.

Body design conditions			PN16
Maximum design pressure			16 bar g @ 120 °C
Maximum design temperature			300 °C @ 9.6 bar g
Maximum differential pressure design	PTFE soft seat (G)		7 bar
	PEEK soft seat (K)		7 bar
	Full PEEK seat (P)		19 bar
Minimum design temperature			-10 °C
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	250 °C
	PTFE soft seat	- Option **G**	200 °C
	PEEK soft seat	- Option **K** or **P**	250 °C
	Graphite packing	- Option **H**	300 °C
	Extended bonnet with PTFE chevron	- Option **E**	250 °C
	Extended bonnet with graphite packing	- Option **E**	300 °C
	Bellows	- Option **D**	300 °C
Minimum operating temperature	**Note:** For lower operating temperatures consult Spirax Sarco		-10 °C
Maximum differential pressures	See relevant actuator Technical Information sheet.		
Maximum cold hydraulic test pressure of:			24 bar g

Pressure / temperature limits - LE43 carbon steel valve body

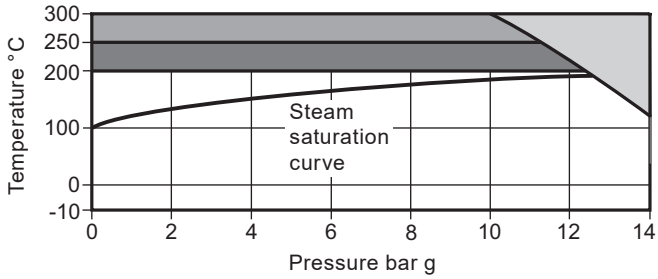
Flanged EN 1092 PN16



Please note -
Bellows sealed valves (Option **D**) are limited to **A** - **A**.

Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C, the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

Flanged JIS/KS 10



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

High temperature graphite packing is required for use in this region. **Note:** Soft seated valves cannot be used in this region.

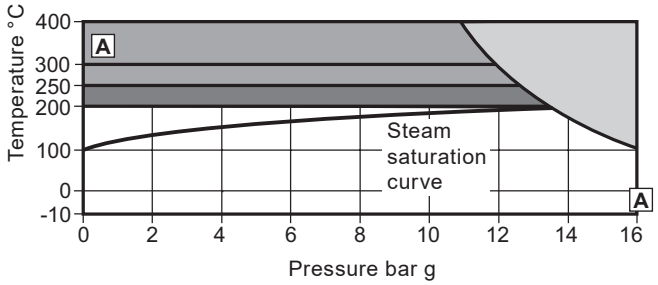
PTFE soft seated valves are limited to a maximum operating temperature of 200 °C.

Body design conditions			PN16
Maximum design pressure			16 bar g @ 50 °C
Maximum design temperature			400 °C @ 9.5 bar g
Maximum differential pressure design	PTFE soft seat (G)		7 bar
	PEEK soft seat (K)		7 bar
	Full PEEK seat (P)		19 bar
Minimum design temperature			-10 °C
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	250 °C
	PTFE soft seat	- Option **G**	200 °C
	PEEK soft seat	- Option **K** or **P**	250 °C
	Graphite packing	- Option **H**	400 °C
	Extended bonnet with PTFE chevron	- Option **E**	250 °C
	Extended bonnet with graphite packing	- Option **E**	400 °C
	Bellows (**A** - **A** on the LE43 chart)	- Option **D**	300 °C
Minimum operating temperature	**Note:** For lower operating temperatures consult Spirax Sarco		-10 °C
Maximum differential pressures	See relevant actuator Technical Information sheet.		
Maximum cold hydraulic test pressure of:			24 bar g

For valve operating above 300 °C extended bonnet is recommended for actuator suitability.

Pressure / temperature limits - LE63 stainless steel valve body

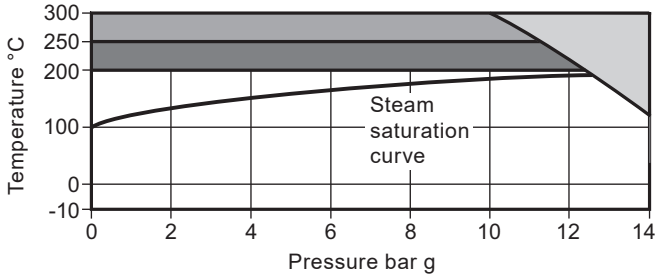
Flanged EN 1092 PN16



Please note -
Bellows sealed valves (Option **D**) are limited to **A** - **A**.

Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C, the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

Flanged JIS/KS 10



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

High temperature graphite packing is required for use in this region. **Note:** Soft seated valves cannot be used in this region.

PTFE soft seated valves are limited to a maximum operating temperature of 200 °C.

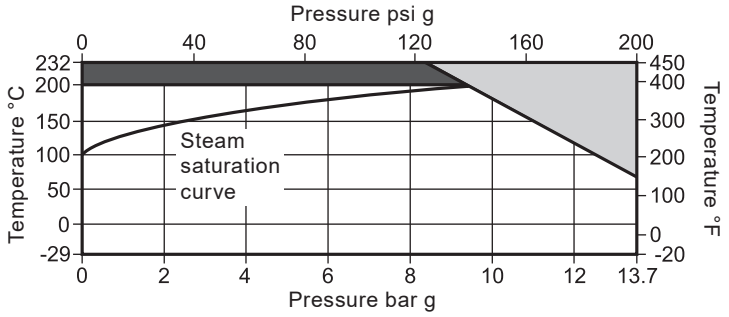
Body design conditions			PN16
Maximum design pressure			16 bar g @ 50 °C
Maximum design temperature			400 °C @ 10.9 bar g
Maximum differential pressure design	PTFE soft seat (G)		7 bar
	PEEK soft seat (K)		7 bar
	Full PEEK seat (P)		19 bar
Minimum design temperature			-10 °C
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	250 °C
	PTFE soft seat	- Option **G**	200 °C
	PEEK soft seat	- Option **K** or **P**	250 °C
	Graphite packing	- Option **H**	400 °C
	Extended bonnet with PTFE chevron	- Option **E**	250 °C
	Extended bonnet with graphite packing	- Option **E**	400 °C
	Bellows (**A** - **A** on the LE63 chart)	- Option **D**	300 °C
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco		PTFE packing	-28 °C
		Graphite packing	-10 °C
Maximum differential pressures	See relevant actuator Technical Information sheet.		
Maximum cold hydraulic test pressure of:			24 bar g

For valve operating above 300 °C extended bonnet is recommended for actuator suitability.

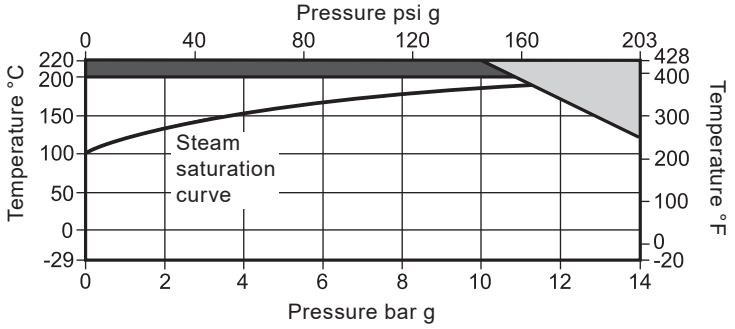
Pressure/temperature limits - LEA31 and LEA33 cast iron valve body

Screwed NPT

Flanged ASME class 125



Flanged JIS/KS 10



Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C (41 °F), the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

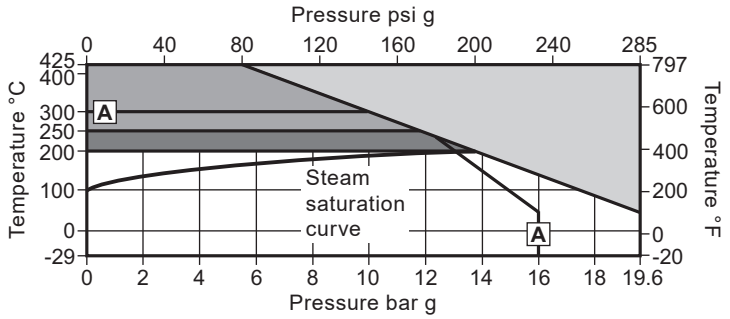
The product **must not** be used in this region.

PTFE soft seated valves are limited to a maximum operating temperature of 200 °C (392 °F).

Body design conditions				ASME 125
Maximum design pressure			13.7 bar g @ 65 °C	(200 psi g @ 150 °F)
Maximum design temperature			232 °C @ 8.6 bar g	(450 °F @ 125 psi g)
Maximum differential pressure design	PTFE soft seat (G)		7 bar	(101.5 psi g)
	PEEK soft seat (K)		7 bar	(101.5 psi g)
	Full PEEK seat (P)		19 bar	(275.5 psi g)
Minimum design temperature			-29 °C	(-20 °F)
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	232 °C	(450 °F)
	PTFE soft seat	- Option **G**	200 °C	(392 °F)
	PEEK soft seat	- Option **K** or **P**	232 °C	(450 °F)
	Graphite packing	- Option **H**	232 °C	(450 °F)
	Extended bonnet with PTFE chevron	- Option **E**	232 °C	(450 °F)
	Extended bonnet with graphite packing	- Option **E**	232 °C	(450 °F)
	Bellows	- Option **D**	232 °C	(450 °F)
Minimum operating temperature	**Note:** For lower operating temperatures consult Spirax Sarco		-29 °C	(-20 °F)
Maximum differential pressures	See relevant actuator Technical Information sheet.			
Maximum cold hydraulic test pressure of:			21 bar g	(300 psi g)

Pressure/temperature limits - LEA43 carbon steel valve body

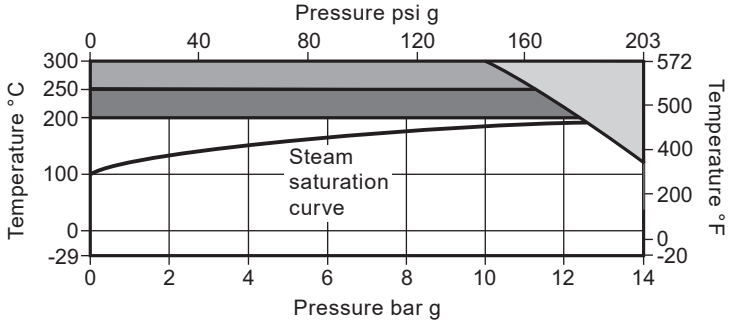
Flanged ASME class 150



Please note -
Bellows sealed valves (Option **D**) are limited to **A** - **A**.

Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C (41 °F), the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

Flanged JIS/KS 10



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

High temperature graphite packing is required for use in this region. **Note:** Soft seated valves cannot be used in this region.

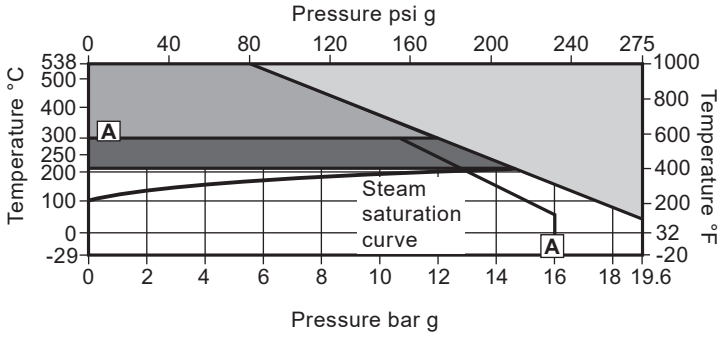
PTFE soft seated valves are limited to a maximum operating temperature of 200 °C (392 °F).

Body design conditions				ASME 150
Maximum design pressure			19.6 bar g @ 38 °C	(285 psi g @ 100 °F)
Maximum design temperature			425 °C @ 5.5 bar g	(800 °F @ 80 psi g)
Maximum differential pressure design	PTFE soft seat (G)		7 bar	(101.5 psi g)
	PEEK soft seat (K)		7 bar	(101.5 psi g)
	Full PEEK seat (P)		19 bar	(275.5 psi g)
Minimum design temperature			-29 °C	(-20 °F)
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	250 °C	(482 °F)
	PTFE soft seat	- Option **G**	200 °C	(392 °F)
	PEEK soft seat	- Option **K** or **P**	250 °C	(482 °F)
	Graphite packing	- Option **H**	425 °C	(800 °F)
	Extended bonnet with PTFE chevron	- Option **E**	250 °C	(482 °F)
	Extended bonnet with graphite packing	- Option **E**	425 °C	(800 °F)
	Bellows (**A** - **A** on the LEA43 chart)	- Option **D**	300 °C	(572 °F)
Minimum operating temperature	**Note:** For lower operating temperatures consult Spirax Sarco		-29 °C	(-20 °F)
Maximum differential pressures	See relevant actuator Technical Information sheet.			
Maximum cold hydraulic test pressure of:			29.5 bar g	(428 psi g)

For valve operating above 572 °F (300 °C) extended bonnet is recommended for actuator suitability.

Pressure/temperature limits - LEA63 stainless steel valve body

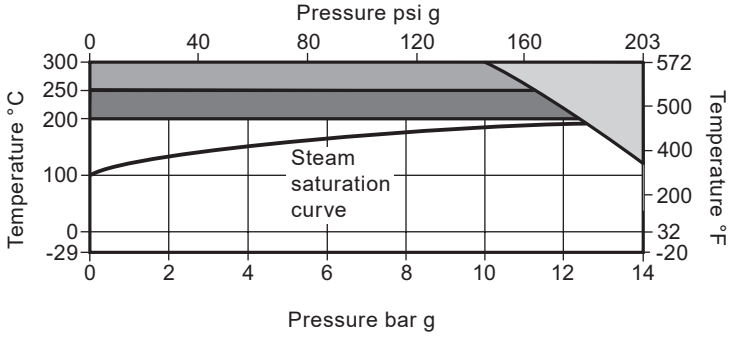
Flanged
ASME class 150



Please note -
Bellows sealed valves (Option **D**) are limited to **A** - **A**.

Note:
When the process fluid temperature is sub-zero and the ambient temperature is below +5 °C (41 °F), the external moving parts of the valve and actuator must be heat traced to maintain normal operation.

Flanged
JIS/KS 10



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

High temperature graphite packing is required for use in this region. **Note:** Soft seated valves cannot be used in this region.

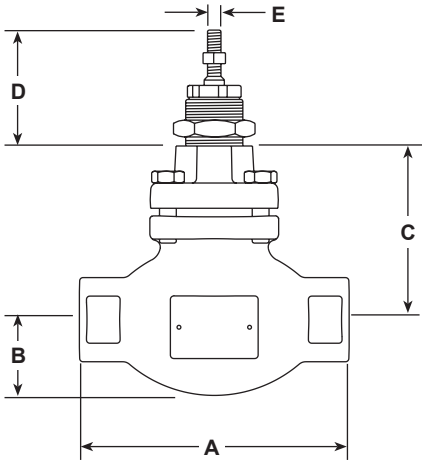
PTFE soft seated valves are limited to a maximum operating temperature of 200 °C (392 °F).

Body design conditions				ASME 150
Maximum design pressure			19.6 bar g @ 38 °C	(275 psi g @ 100 °F)
Maximum design temperature			538 °C @ 1.3 bar g	(1 000 °F @ 20 psi g)
Maximum differential pressure design	PTFE soft seat (G)		7 bar	(101.5 psi g)
	PEEK soft seat (K)		7 bar	(101.5 psi g)
	Full PEEK seat (P)		19 bar	(275.5 psi g)
Minimum design temperature			-29 °C	(14 °F)
Maximum operating temperature See the Spira-trol™ selection guide on page 18 for the full list of available options	Standard packing PTFE chevron	- Option **P** or **N**	250 °C	(482 °F)
	PTFE soft seat	- Option **G**	200 °C	(392 °F)
	PEEK soft seat	- Option **K** or **P**	250 °C	(482 °F)
	Graphite packing	- Option **H**	538 °C	(1 000 °F)
	Extended bonnet with PTFE chevron	- Option **E**	250 °C	(482 °F)
	Extended bonnet with graphite packing	- Option **E**	538 °C	(1 000 °F)
	Bellows (**A** - **A** on the LEA63 chart)	- Option **D**	300 °C	(572 °F)
Minimum operating temperature **Note:** For lower operating temperatures consult Spirax Sarco		PTFE packing	-29 °C	(14 °F)
		Graphite packing		
Maximum differential pressures	See relevant actuator Technical Information sheet.			
Maximum cold hydraulic test pressure of:			28.4 bar g	(413 psi g)

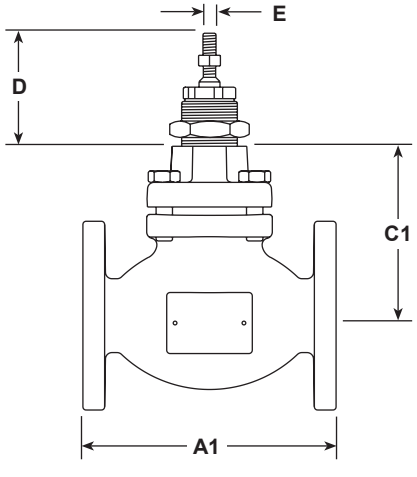
For valve operating above 572 °F (300 °C) extended bonnet is recommended for actuator suitability.

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

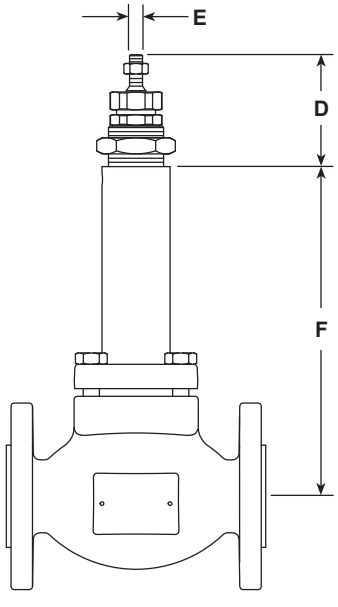
Valve size	Screwed						Flanged							
	BSP			NPT			LE valves			LEA valves				
	A	B	C	A	B	C	A1		C1	A1	C1	D	E	F
							PN16	JIS/KS LE43 LE63					Thread	Bellows seals / Extended bonnet
DN15 (½")	130	40	103	165 (6½")	44 (1¾")	102 (4")	130	123	103	184 (7¼")	102 (4")	69 (2¾")	M8	237 (9") / 336 (13.25")
DN20 (¾")	155	45	103	165 (6½")	44 (1¾")	102 (4")	150	144	103	184 (7¼")	102 (4")			237 (9") / 336 (13.25")
DN25 (1")	160	50	103	197 (7¾")	57 (2¼")	102 (4")	160	160	103	184 (7¼")	102 (4")			237 (9") / 336 (13.25")
DN32 (1¼")	185	60	132	216 (8½")	57 (2¼")	127 (5")	180	176	132	222 (8¾")	127 (5")			267 (10½") / 354 (13.94")
DN40 (1½")	205	65	132	235 (9¼")	63 (2½")	127 (5")	200	198	132	222 (8¾")	127 (5")			267 (10½") / 354 (13.94")
DN50 (2")	230	80	127	267 (10½")	76 (3")	127 (5")	230	222	127	254 (10")	127 (5")			267 (10½") / 354 (13.94")
DN65 (2½")							290	290	200	276 (10½")	200 (7⅞")	81 (3")	M12	368 (14½") / 416 (16.38")
DN80 (3")							310	310	200	298 (11¾")	200 (7⅞")			368 (14½") / 416 (16.38")
DN100 (4")							350	350	216	352 (13¾")	216 (8½")			381 (15") / 431 (17")



Screwed version



Flanged version



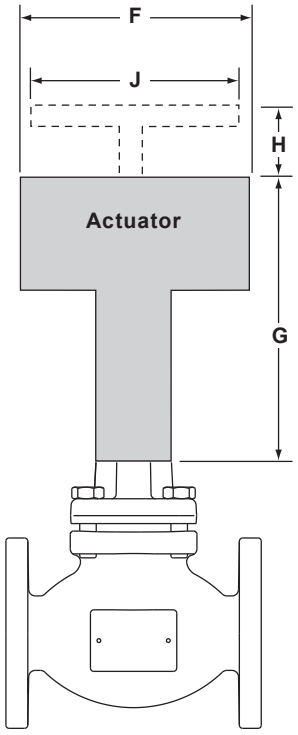
Bellows sealed or extended bonnet version

Weights for the **Spira-trol™ two-port control valve** approximate in kgs (and lbs)

Valve size	LE31	LE33	LE43	LE63	LEA31	LEA33	LEA43	LEA63	Additional bellows and Extended bonnet
DN15 (½")	4.0	5.0	5.0	5.0	7.3 (16)	7.3 (16)	7.3 (16)	7.3 (16)	4.5 (10)
DN20 (¾")	5.0	6.0	6.0	6.0	7.3 (16)	8.2 (18)	8.2 (18)	8.2 (18)	
DN25 (1")	5.5	6.5	6.5	6.5	10 (22)	13.6 (30)	13.6 (30)	13.6 (30)	
DN32 (1¼")	9.0	10.0	10.0	10.0	11.3 (25)	13.2 (29)	14.1 (31)	14.1 (31)	5.5 (12)
DN40 (1½")	10.0	12.8	12.8	12.8	14.1 (31)	14.1 (31)	16.3 (36)	16.3 (36)	
DN50 (2")	11.0	15.0	15.0	15.0	15 (33)	17.2 (38)	17.2 (38)	17.2 (38)	
DN65 (2½")		32.0	32.0	32.0		38 (84)	35 (78)	35 (78)	10.0 (21)
DN80 (3")		36.0	36.0	36.0		41 (91)	40 (89)	40 (89)	
DN100 (4")		53.0	53.0	53.0		60 (132)	56 (124)	56 (124)	13.0 (28)

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

Actuator range	F		G		H		J		Weight			
									Actuator		With handwheel	
	mm	inches	mm	inches	mm	inches	mm	inches	kg	lbs	kg	lbs
PN1500 and **PN2500**	405	16"	1 114	46"					55	121.00		
PN1600 and **PN2600**	465	18 5/16"	1 116	46"					70	154.00		
PN9100E and variants	170	6 11/16"	275	10 7/8"	55	2 3/16"	225	8 7/8"	6	13.25	+5.86	+13.00
PN9100R and variants					140	5 1/2"					+2.50	+5.50
PN9200E and variants	300	11 7/8"	300	11 7/8"	55	2 3/16"	225	8 7/8"	17	37.50	+7.20	+15.75
PN9200R and variants					140	5 1/2"					+3.77	+8.50
PN9320E and variants	390	15 9/16"	325	12 7/8"	65	2 9/16"	350	13 3/4"	27	59.50	+7.20	+15.75
PN9320R and variants					150	15 7/8"					+3.77	+8.50
PN9330E and variants	390	15 9/16"	335	13 3/8"	65	2 9/16"	350	13 3/4"	27	59.50	+7.20	+15.75
PN9330R and variants					150	15 7/8"					+3.77	+8.50



Dimensions/weights for the EL and AEL actuator ranges
approximate in mm and kgs (inches and lbs)

Actuator range	F		G		Weight	
	mm	inches	mm	inches	kg	lbs
EL3500	135 x 161	5¼" x 6¼"	242	9½"	1.3	3.0
EL3500 SE and **SR**	135 x 161	5¼" x 6¼"	284	11"	2.4	6.0
EL7200 series	100	4"	471	18½"	3.0	6.5
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™ - L series

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

Actuator clamping nut		**A**
Gasket set	(Non-bellows sealed)	**B, G**
Stem seal kits	**PTFE** packing	**C**
	Graphite packing	**C1**
	Graphite seal set	**C2**
Plug stem and seat kit	(No gaskets supplied)	**D, E**
PTFE or **PEEK soft seat seal**		**H**
		B, G, C1
Stem packing and gasket		**B, G, C**
		B, G, C2
Soft seat set		**H1**

Specify if reduced trim.

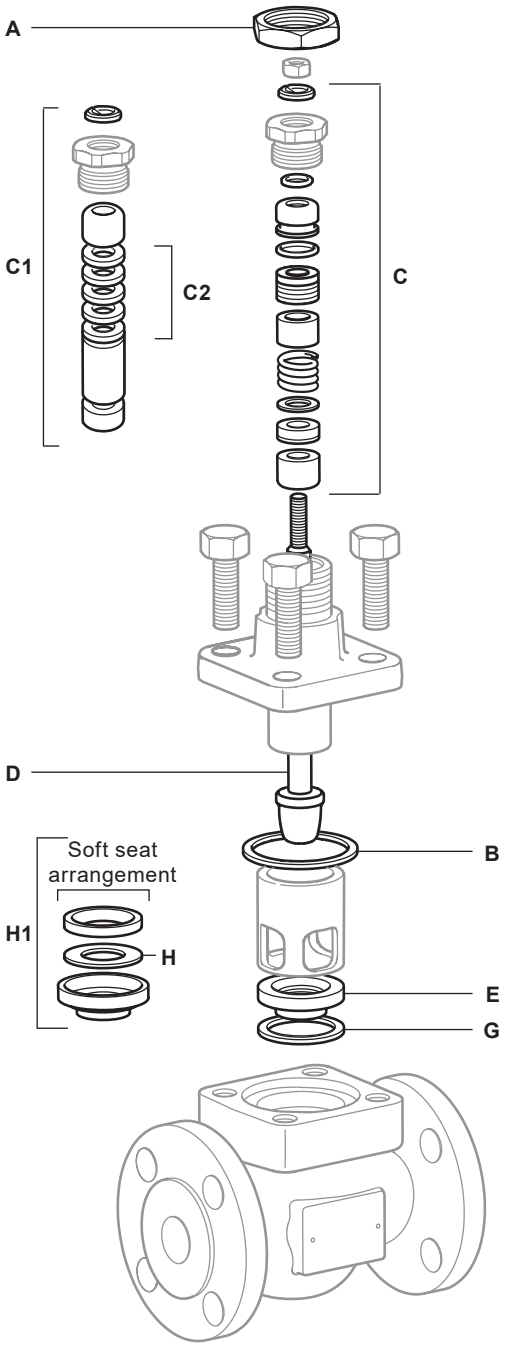
How to order spares

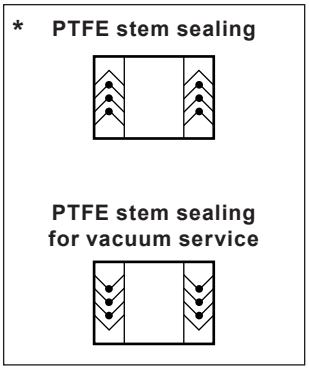
Always order spares by using the description given in the column headed 'Available spares', and state the size and type of valve including the full product description of the product.

Example: 1 - PTFE stem seal kit for a Spirax Sarco Spira-trol™ DN25 LE43PTSUSS.2 Kvs 10 two-port 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™ - L series with bellows seal

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

Actuator clamping nut		**A**
Gasket set	(Non-bellows sealed)	**B**, **G**
Stem seal kit	Graphite packing and gasket set	**C2**
Plug stem and seat kit	(No gaskets supplied)	**D, E**
Bellows seal assembly		**F**
PTFE or **PEEK soft seat seal**		**H**
Soft seat set		**H1**

Specify if reduced trim.

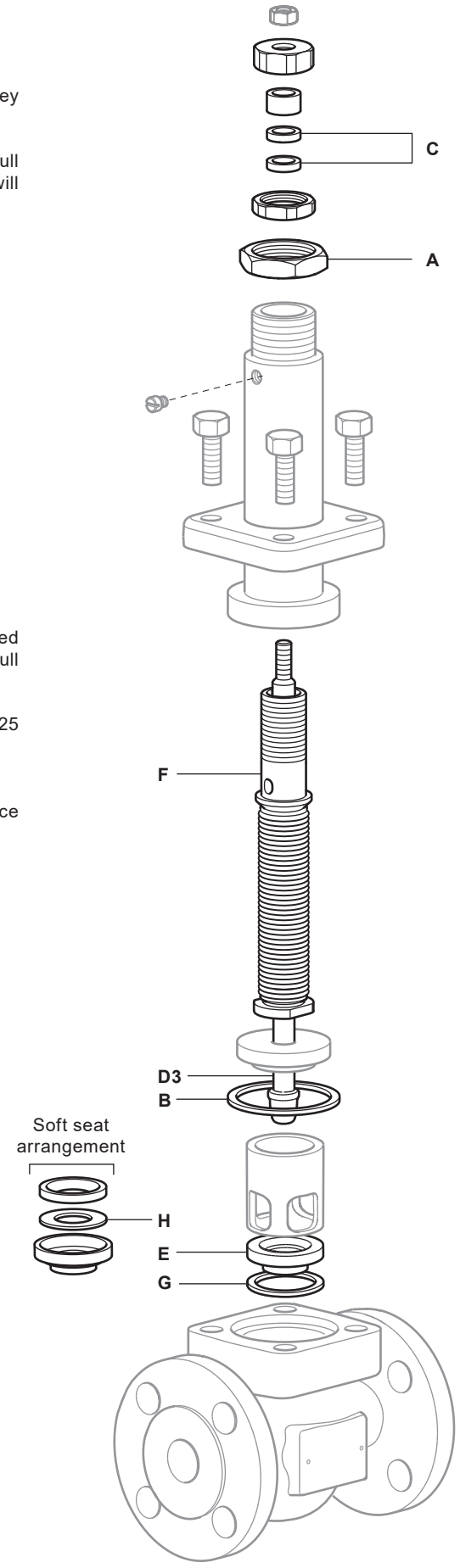
How to order spares

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 - Plug stem and seat kit for a Spirax Sarco Spira-trol™ DN25 LE43PTSUSS.2 K_{VS} 10 two-port 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 ASME standard = ½", ¾", 1", 1¼", 1½", 2", 2½", 3" and 4"	**1"**
Valve series	L = L series 2-port control valve	**L**
Valve characteristic	E = Equal percentage F = Fast opening L = Linear	**E**
Flange type	A = ASME Blank = EN (PN)	**A**
Flow	Blank = under T = over	**Blank**
Material	3 = Cast iron 4 = Carbon steel 6 = Stainless steel	**4**
Connections	1 = Screwed 3 = Flanged	**3**
Stem sealing	P = PTFE H = Graphite N = PTFE/Nitronic bush (½" to 2" only) D = Bellows V = PTFE for vacuum	**P**
Seating	T = 431 stainless steel G = PTFE soft seat S = 316L stainless steel W = 316L with stellite 6 facing P = Full PEEK K = PEEK soft seat	**T**
Type of trim	S = Standard trim A1 = 1 stage anticavitation A2 = 2 stage anticavitation P1 = 1 stage low noise cage P2 = 2 stage low noise cage P3 = 3 stage low noise cage	**S**
Trim balancing	U = Unbalanced B = Balanced (only available LEA series)	**U**
Bonnet type	S = Standard E = Extended	**S**
Bolting	S = Standard bolting H = High temperature (only available LE series)	**S**
Finish	Blank = Standard finish N = Nickel plated	**Blank**
Series	2 = .2	**0.2**
Kvs	To be specified	**C_V 10**
Connection type	To be specified	**Flanged ASME 150**

Selection example:

1"	-	**L**	**E**	**A**	**4**	**3**	**P**	**T**	**S**	**U**	**S**	**S**	**.2**	-	**C_V 10**	-	**Flanged ASME 150**

How to order

Example: 1 off Spirax Sarco Spira-trol™ 1" LEA43PTSUSS.2 C_V 12 two-port control valve having flanged ASME 150 connections.