

KE, KF and KL
DN15 to DN300

KEA, KFA and KLA
½" to 12"

GCV Two-Port Control Valves

EN Standard KE, KF and KL DN 15 to DN 300 and

ASME Standard KEA, KFA and KLA ½" to 12"

K Series

Description

GCV 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 DN300 (½" to 12"). When used in conjunction with a pneumatic or electric linear actuator they provide characterized modulating or on/off control.

Sizes and pipe connections

Body material	Connections	Type	Size range
Carbon steel	Screwed	NPT	KEA41 ½", ¾", 1", 1¼", 1½" and 2"
	Socket weld		KEA42 ½", ¾", 1", 1¼", 1½" and 2"
	Flanged	EN 1092 PN25 and PN40	KE43 DN15 to DN100
		EN 1092 PN16, PN25 and PN40	KE43 DN125, DN150, DN200, DN250 and DN300
		JIS 20 and KS 20	KE43 All variants between DN15 to DN100
		JIS 10, JIS 20, KS 10 and KS 20	KE43 DN125, DN150, DN200, DN250 and DN300
		ASME 300	KEA43 ½", ¾", 1", 1½", 2", 2½", 3" and 4"
		ASME 150 and ASME 300	KEA43 6" to 12"
	Screwed	BSP	KE61 DN15, DN20, DN25, DN32, DN40 and DN50
		NPT	KEA61 ½", ¾", 1", 1¼", 1½" and 2"
	Socket weld		KEA62 ½", ¾", 1", 1¼", 1½" and 2"
Stainless steel	Flanged	EN 1092 PN40	KE63 All variants between DN15 to DN100
		EN 1092 PN16, PN25 and PN40	KE63 DN125, DN150 and DN200
		JIS 20 and KS 20	KE63 All variants between DN15 to DN100
		JIS 10, JIS 20, KS 10 and KS 20	KE63 DN125, DN150 and DN200
		ASME 300	KEA63 ½", ¾", 1", 1½", 2", 2½", 3" and 4"
		ASME 150 and ASME 300	KEA63 6" and 8"
	Screwed	BSP	KE71 DN15, DN20, DN25, DN32, DN40 and DN50
SG iron	Flanged	EN 1092 PN16 and PN25	KE73 All variants between DN15 to DN200
		JIS 10 and KS 10	KE73 All variants between DN15 to DN200
		ASME 125 and ASME 250	KEA73 1", 1½", 2", 2½", 3", 4", 6" and 8"
		JIS10 and KS10	KEA73 ½", ¾", 1", 1¼", 1½", 2", 2½", 3" and 4"

GCV valve characteristic - options:

KE and KEA	Equal percentage (E) - Suitable for most modulating process control applications providing good control at all flowrates.
KF and KFA	Fast opening (F) - For on/off applications only.
KL and KLA	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 KE or KEA control valve. With the exception of trim type, the KE, KEA, KF, KFA, KL and KLA control valves are identical.

GCV valve options:

Stem sealing	PTFE chevron seals	Standard
	Graphite packing	High temperature applications
	Bellows/PTFE (B)	Zero emissions and thermal fluids
	Bellows/graphite (C)	Zero emissions, high temperature applications and thermal fluids
Seating	Bellows/graphite secondary seals (D)	Zero emissions and high temperature applications
	Metal-to-metal	431 stainless steel - standard 316L stainless steel - DN15 to DN100 only
	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 the corresponding Data Sheet)	

GCV valves are compatible with the following actuators and positioners:

Electric	EL3500, EL7200, AEL3, AEL5 and AEL6 series
Pneumatic	PN1000, PN2000, PN9000 and TN2000 series PP5 (pneumatic) or EP500S (electropneumatic)
Positioners	EP500A (intrinsically safe + explosion proof electropneumatic) SP400 and SP500 (microprocessor based electropneumatic)

Note: Reference the product specific 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  mark when so required.

Certification

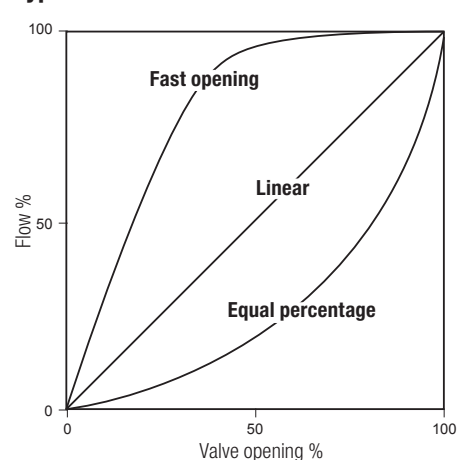
This product is available with certification to EN 10204 3.1.

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

Technical data

Plug design	Parabolic		
Leakage	Metal-to-metal	Balanced	Class IV
		Unbalanced	Class IV (Class V is optional)
	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 (1¾")
	DN125 - DN300	(5" - 12")	70 mm (2¾")

Typical flow characteristic curves



Materials - DN15 to DN100 (½" to 4")

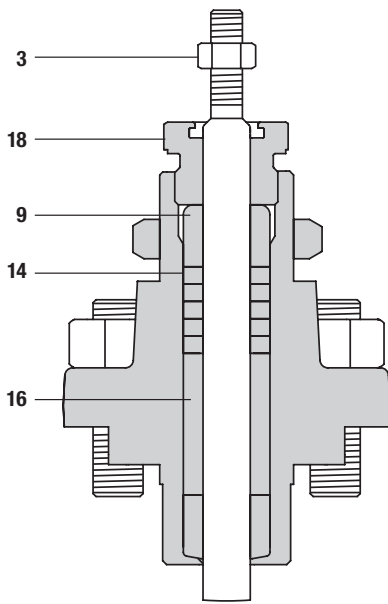
Body material	Type	No.	Part	Material		
Carbon steel	KE43	1	Body	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)	
		2	Bonnet	DN15 to DN50	Forged steel	EN 10222-2 P305GH 1.0436
				DN65 to DN100	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)
		2a	Bonnet extension	DN15 to DN100	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)
	2c	Extended bonnet	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)		
	KEA41 KEA42 KEA43	1	Body	Cast steel	ASTM A216 WCB	
		2	Bonnet	½" to 2"	Forged steel	ASTM A105N
				2½" to 4"	Cast steel	ASTM A216 WCB
		2a	Bonnet extension	Cast steel	ASTM A216 WCB	
		2c	Extended bonnet	Cast steel	ASTM A216 WCB	
Stainless steel	KE61 KE63	1	Body	Stainless steel	DIN GX5 CrNiMO 18-10 1.4581	
		2	Bonnet	Stainless steel	DIN GX5 CrNiMO 17-12-2 1.4401	
		2a	Bonnet extension			
		2c	Extended bonnet	Stainless steel	DIN GX5 CrNiMO 19-11-2 1.4408	
	KEA61 KEA62 KEA63	1	Body	Stainless steel	ASTM A351 CF8M	
		2	Bonnet			
		2a	Bonnet extension			
		2c	Extended bonnet	Stainless steel	ASTM A351 CF8M	
SG iron	KE71 KE73	1	Body	SG iron	EN-GJS-400-18U-LT	
		2	Bonnet			
		2a	Bonnet extension	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)	
		2c	Extended bonnet	Carbon steel	1.0619N	
	KEA71 KEA73	1	Body	SG iron	ASTM A395	
		2	Bonnet			
		2a	Bonnet extension	Cast steel	ASTM A216 WCB	
		2c	Extended bonnet			
All versions	2b	Bellows	Stainless steel	AISI 316L		
	3	Stem lock-nut	Stainless steel	AISI 431		
	4	Bonnet gasket	Reinforced exfoliated graphite			
	5	Seat retainer	Stainless steel	ASTM A351 CF8M		
	6	Valve seat ring	Seating version T	Stainless steel	AISI 431 S29	
			Seating versions P and K	PEEK		
			All others	Stainless steel	AISI 316L	
	7	Seat gasket	Reinforced exfoliated graphite			
	8	Valve plug and stem	Body	Stainless steel	AISI 316L	
			Seating version W	Stellite 6		
			All others	Stainless steel	AISI 431	
	9 *	Lower stem guide	Glass filled PTFE			
	10	Lower stem wiper	PTFE			
	11 *	Packing guard washer	Stainless steel	AISI 316L		
	12 *	Spring	Stainless steel	AISI 316L		
	13	Packing spacer	Stainless steel	AISI 316L		
	14 *	Chevron packing set	PTFE			
	15 *	Outer 'O' ring	Viton			
	16 *	Upper stem guide	Glass filled PTFE			
	17 *	Inner 'O' ring	Viton			
	18	Gland nut	KE63	Stainless steel	AISI 316L	
			All others	Stainless steel	AISI 431 S29	
	19	Scraper ring	PTFE			
	20	Actuator clamp nut	KEA6_	Stainless steel		
			Others	Plated carbon steel		
	21	Bellows assembly	Stainless steel	AISI 316L		
	22	Bonnet extension gasket	Reinforced exfoliated graphite			
	23	Top plate (used on bonnet extension only)	Stainless steel	AISI 316L		
	24	Lower spindle bearing housing	Stainless steel	AISI 316L		
	25	Lower spindle bearing	Stellite 6 or stainless steel for KE43, KE71 and KE73			
	26	Spindle lock and anti-rotation nut	Stainless steel			
	27 and 28 For nuts and studs, see the next page					

KE valve with extended bonnet (E)

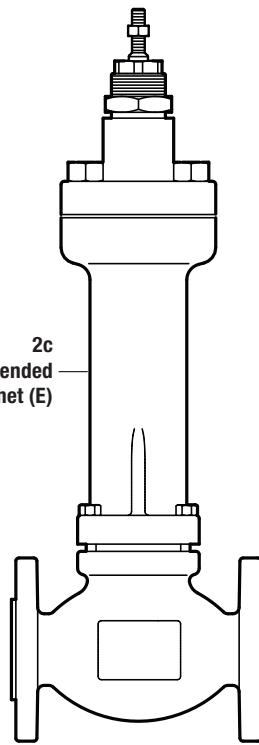
*** Graphite packing**

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

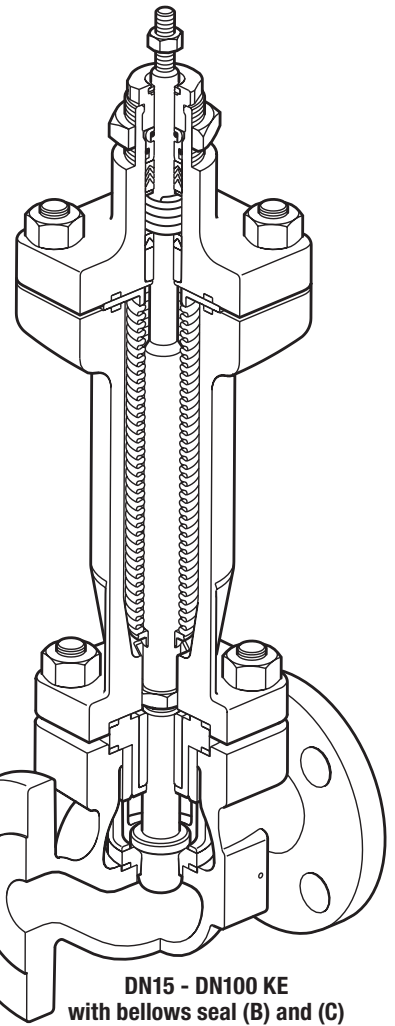
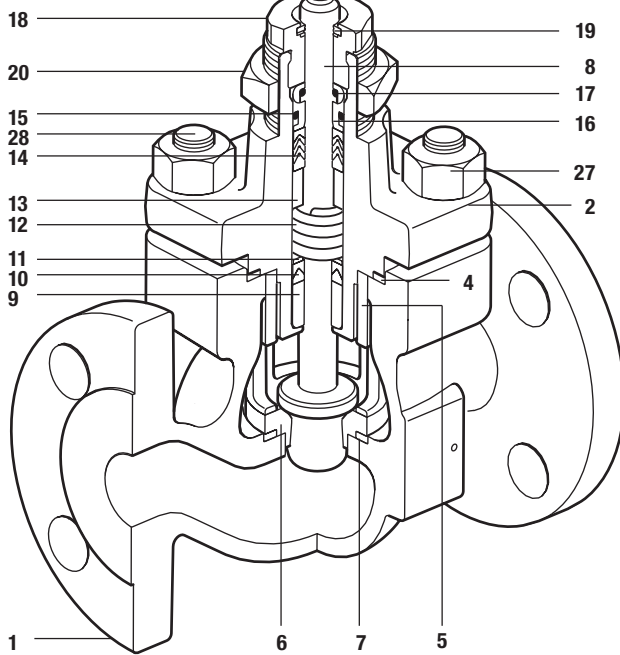
KE valve with graphite packing



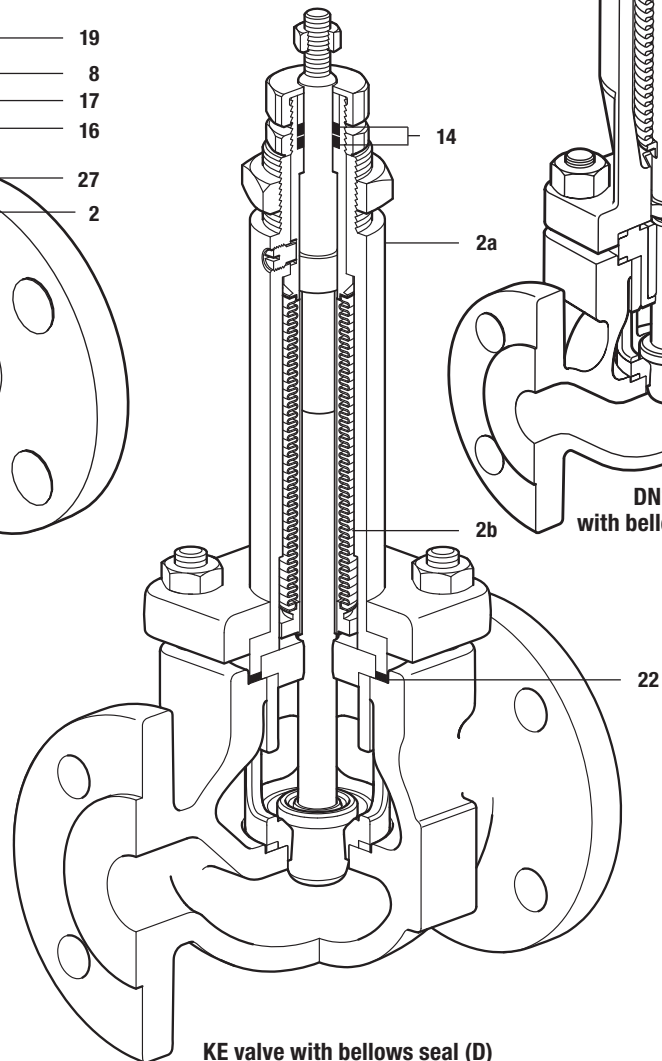
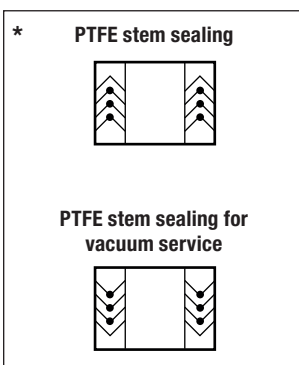
**2c
Extended bonnet (E)**



KE valve with PTFE packing



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



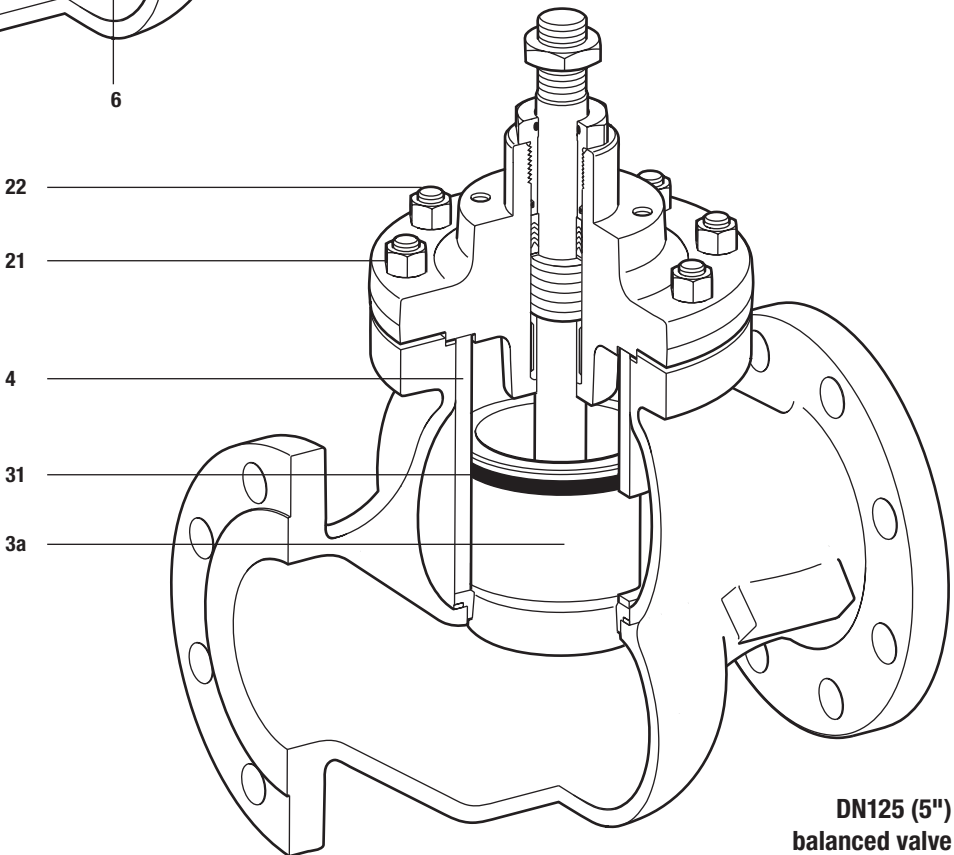
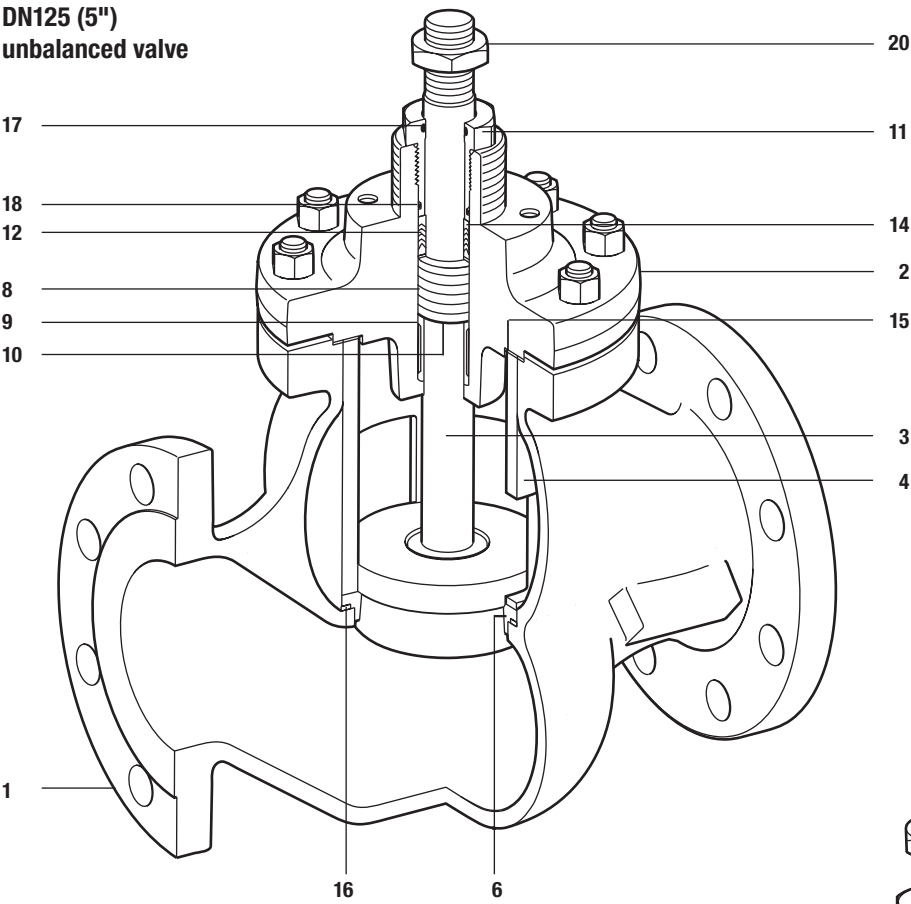
KE valve with bellows seal (D)

Materials - DN125 to DN300 (6" to 12")

Body material	Type	No.	Part	Material	
Carbon steel	KE43	1	Body	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)
		2	Bonnet	Cast steel	BS EN 10213 GP 240GH+N (1.0619N)
	KEA43	1	Body	Cast steel	ASTM A216 WCB
		2	Bonnet	Cast steel	ASTM A216 WCB
Stainless steel	KE63	1	Body	Stainless steel	EN 10213 (1.4408)
		2	Bonnet	Stainless steel	EN 10213 (1.4408)
	KEA63	1	Body	Stainless steel	ASTM A351 CF8M
		2	Bonnet	Stainless steel	ASTM A351 CF8M
SG iron	KE73	1	Body	SG iron	EN-GJS-400-18U-LT
		2	Bonnet	SG iron	EN-GJS-400-18U-LT
	KEA73	1	Body	SG iron	ASTM A395
		2	Bonnet	SG iron	ASTM A395
All versions	3	Plug and stem assembly	All others	Stainless steel	AISI 431
			KE63	Stainless steel	AISI 316L
			Seating version W	Stellite 6	
	4	Cage		Stainless steel	BS 31462 Grade ANC 2
	6	Valve seat ring	Seating version T	Stainless steel	AISI 431 S29
			Seating versions P and K	PEEK	
			All others	Stainless steel	Stellite 6
	9	Bearing		Stellite	
	10	Spacer (not used in DN125 valves)		Stainless steel	BS EN 1127
	11	Gland nut		Stainless steel	AISI 416
	14	Washer		Stainless steel	AISI 316L
	15	Bonnet gasket		Stainless steel/graphite	
	16	Seat gasket		Stainless steel/graphite	
	20	Stem nut		Stainless steel	AISI 316
	21	Standard bonnet nut	KE43	Carbon steel	BS EN ISO 898-1 Grade 8.8
			KE63	Stainless steel	A2-80
			KE73	Carbon steel	BS EN ISO 898-1 Grade 8.8
			KEA43	Carbon steel	ASTM A194 2H
			KEA63	Stainless steel	ASTM A194 8M
			KEA73	Carbon steel	ASTM A194 2H
		High temperature bonnet nut		Stainless steel	DIN ISO 3506 A2
	22	Standard stud	KE43	Carbon steel	BS EN ISO 898-1 Grade 8.8
			KE63	Stainless steel	A2
			KE73	Carbon steel	BS EN ISO 898-1 Grade 8.8
			KEA43	Carbon steel	ASTM A193 B7
			KEA63	Stainless steel	ASTM A193 B8M2
			KEA73	Carbon steel	ASTM A193 B7
		High temperature bonnet nut	KE43 KE73	Stainless steel	DIN ISO 3506 A2-80
PTFE gland versions	8	Spring		Stainless steel	
	12	Chevron packing set		PTFE	
	17	Stem 'O' ring		Viton	
	18	Bonnet 'O' ring		Viton	

High temperature gland versions	26	Gland packing	Graphite
	3a	Plug and stem assembly	Stainless steel
	29	Cage	Stainless steel
	31	Balanced seal	Graphite
Balanced versions			

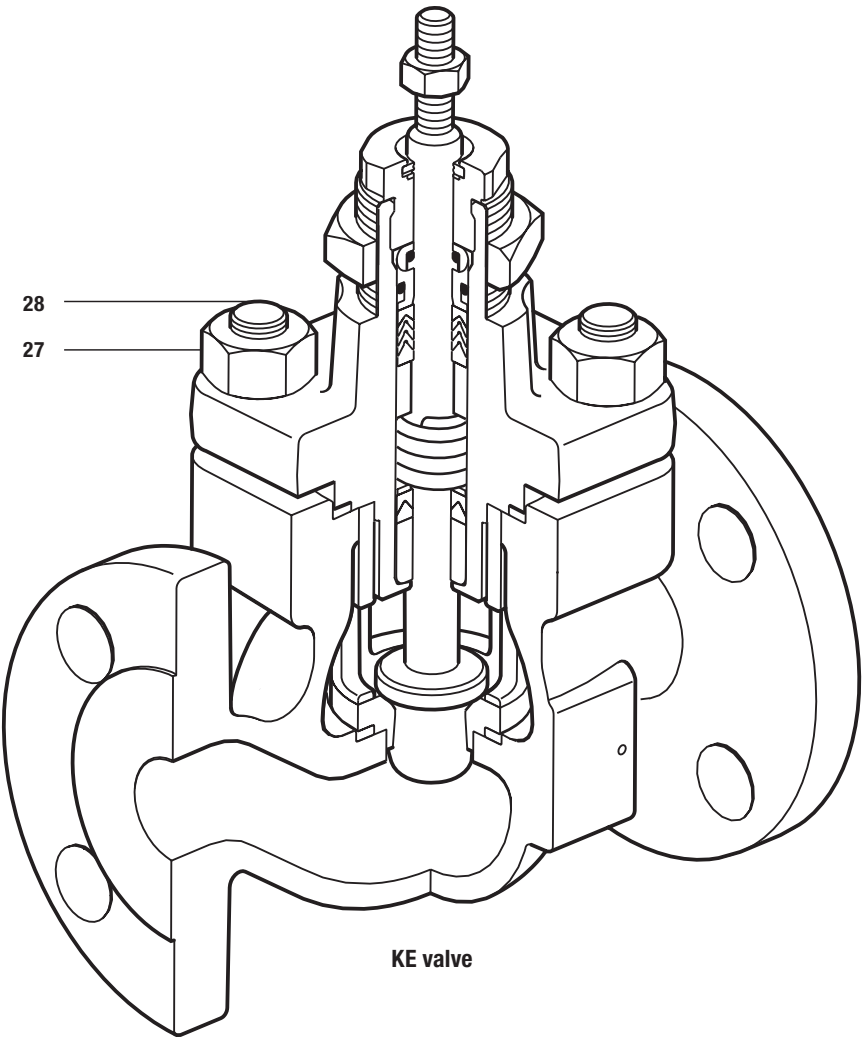
**DN125 (5")
unbalanced valve**



**DN125 (5")
balanced valve**

Materials - Nuts and studs DN15 to DN100 (½" to 4")

Body material	No.	Part	Material	
All versions	27	Standard bonnets nuts	KE4_ KE7_	Steel BS 3692 Gr.8
			KE6_	Stainless steel DIN ISO 3506 A2-70
		High temperature bonnets nuts	KE4_ and 7_	Stainless steel ISO3506 A2
			KEA4_ KEA6_ KEA7_	Steel ASTM A194 Gr.2H
	28	Standard bonnet studs	KE4_ KE7_	Steel BS 3692 Gr.8
			KE6_	Stainless steel DIN ISO 3506 A2-70
			KE4_ and 7_	Stainless steel ISO3506 A2
		Standard bonnet studs	KEA4_	Steel ASTM A193 Gr.B7
			KEA6_	Steel ASTM A193 Gr. B8 M2
			KEA7_	Steel ASTM A193 Gr. B7



K_v values

Valve size		DN15 (½")	DN20 (¾")	DN25 (1")	DN32 (1¼")	DN40 (1½")	DN50 (2")	DN65 (2½")	DN80 (3")	DN100 (4")	DN125 (5")	DN150 (6")	DN200 (8")	DN250 (10")	DN300 (12")
High capacity		Equal %	4.9	7.2	11.0	17.5	31.0	46.0	90	115					
Standard trim	Full port	Equal %	4.0	6.3	10.0	16.0	25.0	36.0	63	100	160	245	370	580	700
		Linear	4.0	6.3	10.0	16.0	25.0	36.0	63	100	160	260	390	640	780
		Fast opening	4.0	6.3	10.0	18.0	28.0	50.0	85	117	180	260	390	640	780
		Fast opening	4.0	6.3	10.0	18.0	28.0	50.0	85	117	180	260	390	640	780
	Reduced trim 1	Equal %	2.5	4.0	6.3	10.0	16.0	25.0	36	63	100	200	287	370	580
		Linear	2.5	4.0	6.3	10.0	16.0	25.0	36	63	100	200	287	550	640
	Reduced trim 2	Equal %	1.6	2.5	4.0	6.3	10.0	16.0	25	36	63	100	132	232	370
		Linear	1.6	2.5	4.0	6.3	10.0	16.0	25	36	63	100	132	232	550
	Reduced trim 3	Equal %	1.0	1.6	2.5	4.0	6.3	10.0	16	25	36	63	103	163	232
		Linear	1.0	1.6	2.5	4.0	6.3	10.0	16	25	36	63	103	163	232
	Reduced trim 4	Equal %		1.0	1.6		4.0	6.3		16				163	232
		Linear		1.0	1.6		4.0	6.3		16				163	232
	Reduced trim 5	Equal %			1.0		4.0								163
		Linear			1.0		4.0								163
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											

Note: For low noise and anti-cavitation K_v please see the corresponding Data Sheet.

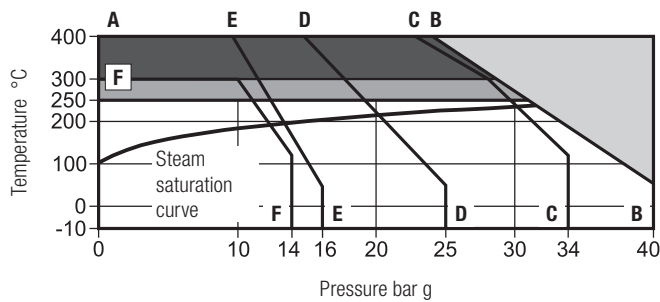
C_v (US) values

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")	DN150 (6")	DN200 (8")	DN250 (10")	DN300 (12")	
High capacity		Equal %	5.7	8.3	12.7	20.2	36.0	53.0	104.0	133.0					
Standard trim	Full port	Equal %	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	185.0	433	679	809	1156
		Linear	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	185.0	456	749	902	1272
		Fast opening	4.6	7.3	12.0	21.0	32.0	58.0	98.0	135.0	208.0	456	749	902	1272
	Reduced trim 1	Equal %	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	336	433	670	809
		Linear	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	116.0	336	636	740	902
	Reduced trim 2	Equal %	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	154	271	428	670
		Linear	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	73.0	154	271	636	740
	Reduced trim 3	Equal %	1.2	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	120	191	268	428
		Linear	1.2	1.8	2.9	4.6	7.3	12.0	18.0	29.0	42.0	120	191	268	636
	Reduced trim 4	Equal %		1.2	1.8		4.6	7.3		18.0				188	268
		Linear		1.2	1.8		4.6	7.3		18.0				188	268
	Reduced trim 5	Equal %			1.2		4.6								188
		Linear			1.2		4.6								188
	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											

Note: For low noise and anti-cavitation C_v please see the corresponding Data Sheet.

Pressure / temperature limits - KE43 (Carbon steel)



- The product **must not** be used in this region.
- High temperature packing is required for use in this region.
- High temperature bolting and packing is required for use in this region
- A - B** Flanged EN 1092 PN40.
- A - C** Flanged JIS/KS 20K.
- A - D** Flanged EN 1092 PN25.
- A - E** Flanged EN 1092 PN16.
- A - F** Flanged JIS/KS 10K.

- Notes:**
- Where 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.
 - When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown in table below.


Body design conditions		PN40
Maximum design pressure		40 bar g @ 50 °C
Maximum differential pressure design	PTFE soft seat (G)	7 bar
	PEEK soft seat (K)	7 bar
	Full PEEK seat (P)	19 bar
Maximum design temperature		400 °C
Minimum design temperature		-10 °C
Maximum operating temperature	PTFE soft seat (G)	200 °C
	Standard packing PTFE chevron	
	PEEK seat (K and P)	250 °C
	Extended bonnet (E) with PTFE chevron	
	High temperature packing (H)	
	Extended bonnet (E) with graphite packing	400 °C

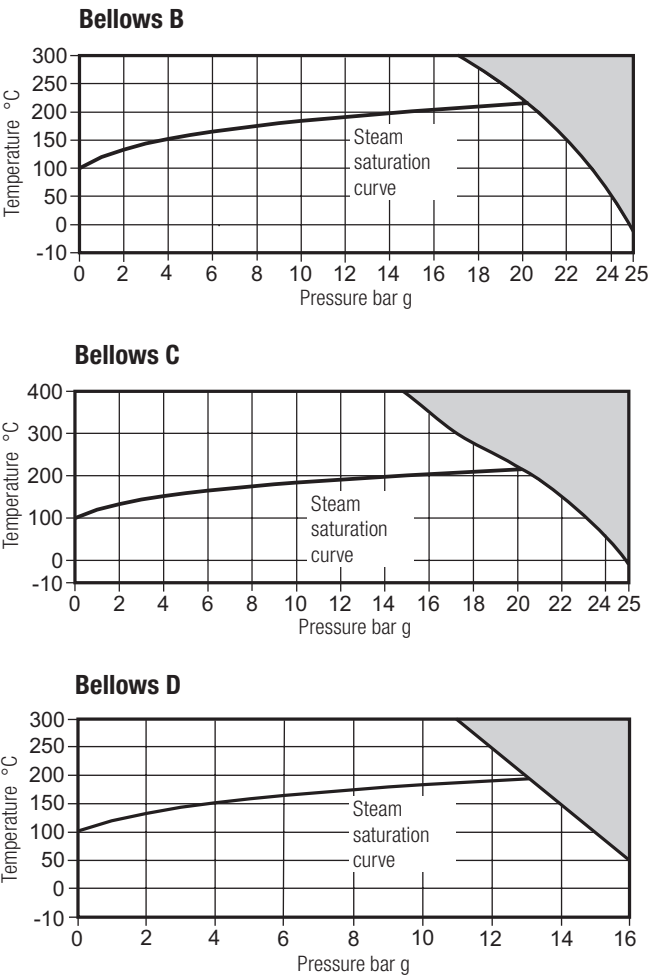
Note: We recommend that an extended bonnet (E) with graphite packing is used where valve operation is above 300 °C.

Pressure / temperature limits - KE43 (Carbon steel)

Maximum operating temperature - Bellows only

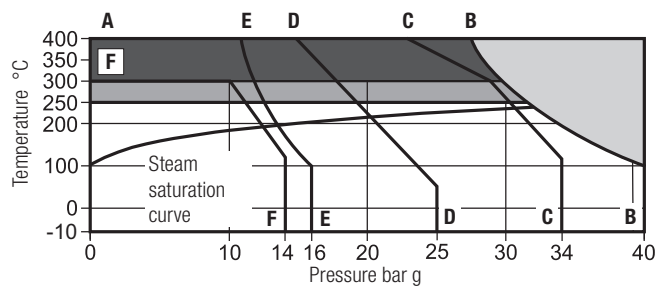
Note: When selecting a valve with a bellows sealed bonnet, the pressure / temperature limits of the bellows must be read in conjunction with the valve pressure / temperature limits shown later in this document.

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



Minimum operating temperature		-10 °C
Note: For lower operating temperatures consult GESTRA.		
Maximum differential pressures		See relevant actuator Technical Information sheet
Maximum cold hydraulic test pressure of: Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.	Bellows B	38 bar g
	Bellows C	
	Bellows D	24 bar g

Pressure / temperature limits - KE61 and KE63 (Stainless steel)



- The product **must not** be used in this region.
- High temperature packing is required for use in this region.
- High temperature bolting and packing is required for use in this region
- A - B** Flanged EN 1092 PN40 and Screwed BSP.
- A - C** Flanged JIS/KS 20K.
- A - D** Flanged EN 1092 PN25.
- A - E** Flanged EN 1092 PN16.
- A - F** Flanged JIS/KS 10K.

Notes:

- Where 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.
- When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown in table below.


Body design conditions		PN40
Maximum design pressure		40 bar g @ 50 °C
Maximum differential pressure design	PTFE soft seat (G)	7 bar
	PEEK soft seat (K)	7 bar
	Full PEEK seat (P)	19 bar
Maximum design temperature		400 °C
Minimum design temperature		-10 °C
Maximum operating temperature	PTFE soft seat (G)	200 °C
	Standard packing PTFE chevron	
	PEEK seat (K and P)	250 °C
	Extended bonnet (E) with PTFE chevron	
	High temperature packing (H)	
	Extended bonnet (E) with graphite packing	400 °C

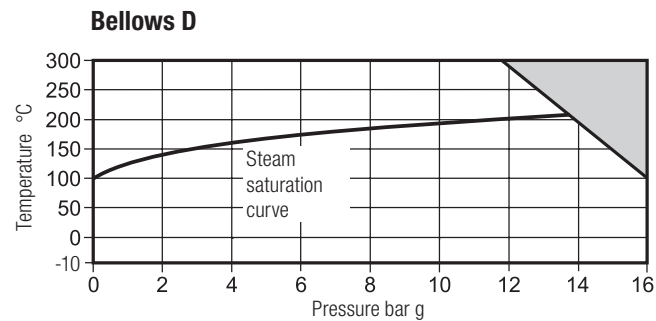
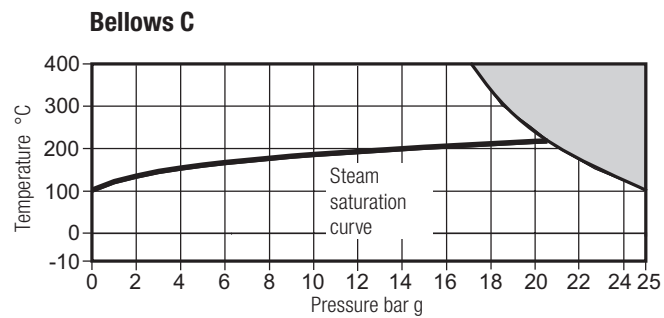
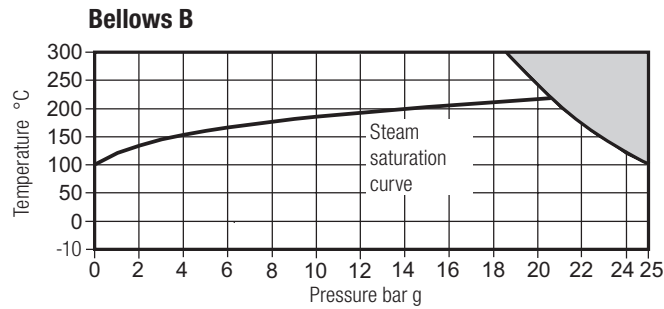
Note: We recommend that an extended bonnet (E) with graphite packing is used where valve operation is above 300 °C.

Pressure / temperature limits - KE61 and KE63 (Stainless steel)

Maximum operating temperature - Bellows only

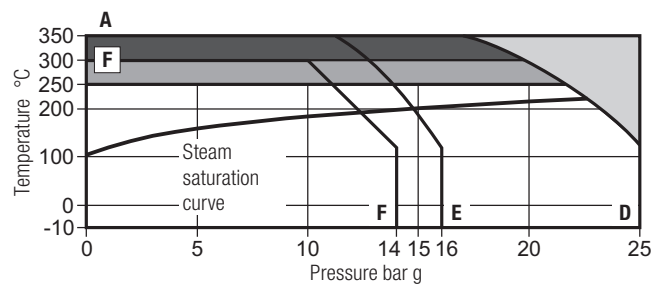
Note: When selecting a valve with a bellows sealed bonnet, the pressure / temperature limits of the bellows must be read in conjunction with the valve pressure / temperature limits shown later in this document.

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



Minimum operating temperature Note: For lower operating temperatures consult GESTRA.	PTFE packing	-10 °C
	Graphite packing	
Maximum differential pressures	See relevant actuator Technical Information sheet	
Maximum cold hydraulic test pressure of: Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.	Bellows B	38 bar g
	Bellows C	
	Bellows D	24 bar g

Pressure / temperature limits - KE71 and KE73 (SG iron)



- The product **must not** be used in this region.
- High temperature packing is required for use in this region.
- High temperature bolting and packing is required for use in this region
- A - D** Flanged EN 1092 PN40 and Screwed BSP.
- A - E** Flanged EN 1092 PN16.
- A - F** Flanged JIS/KS 10.

Notes:

- Where 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.
- When selecting a valve with a bellows sealed bonnet, the pressure / temperature limits of the bellows must be read in conjunction with the valve pressure / temperature limits shown in table below.


Body design conditions		PN25
Maximum design pressure		25 bar g @ 120 °C
Maximum differential pressure design	PTFE soft seat (G)	7 bar
	PEEK soft seat (K)	7 bar
	Full PEEK seat (P)	19 bar
Maximum design temperature		350 °C
Minimum design temperature		-10 °C
Maximum operating temperature	PTFE soft seat (G)	200 °C
	Standard packing PTFE chevron	
	PEEK seat (K and P)	250 °C
	Extended bonnet (E) with PTFE chevron	
	High temperature packing (H)	
	Extended bonnet (E) with graphite packing	350 °C

Note: We recommend that an extended bonnet (E) with graphite packing is used where valve operation is above 300 °C.

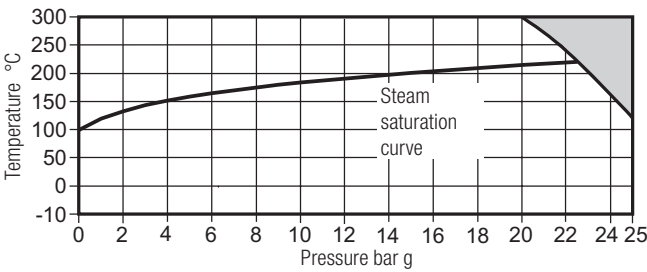
Pressure/temperature limits - KE71 and KE73 (SG iron)

Maximum operating temperature - Bellows only

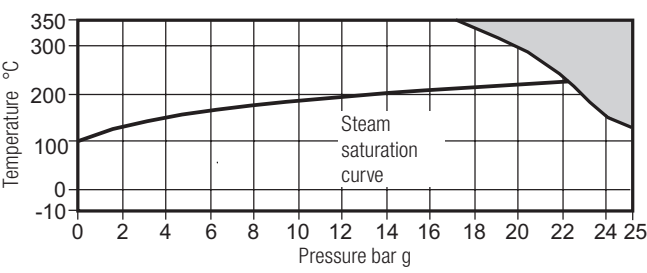
Note: When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown later in this document.

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

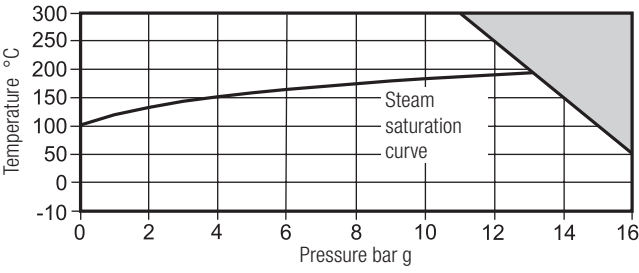
Bellows B



Bellows C



Bellows D



Minimum operating temperature

-10 °C

Note: For lower operating temperatures consult GESTRA.

Maximum differential pressures

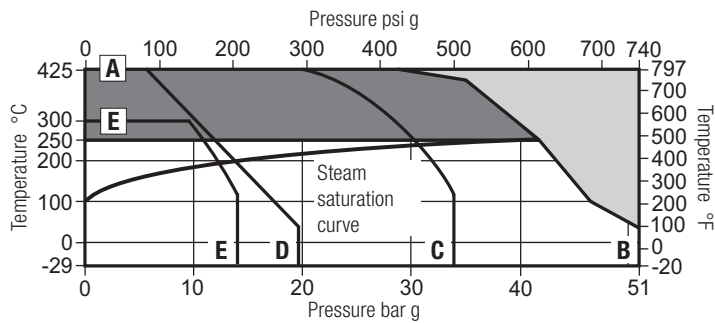
See relevant actuator Technical Information sheet

Maximum cold hydraulic test pressure of:

Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.

Bellows B	38 bar g
Bellows C	
Bellows D	24 bar g

Pressure / temperature limits - KEA41, KEA42 and KEA43 (Carbon steel)



- The product **must not** be used in this region.
- Graphite stem sealing is required for use in this region

- A - B Flanged ASME 300 and screwed NPT and SW.
- A - C Flanged JIS/KS 20.
- A - D Flanged ASME 150.
- E - E Flanged JIS/KS 10.

Notes:

- Where 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.
- When selecting a valve with a bellows sealed bonnet, the pressure / temperature limits of the bellows must be read in conjunction with the valve pressure / temperature limits shown above.
- As standard the KEA, KFA, KLA series two-port control valves are supplied with the PTFE stem sealing option.


Body design conditions		ASME 150 and ASME 300	
Maximum design pressure	ASME 150 (6" to 12" only)	19.6 bar g @ 38 °C	(284 psi g @ 100 °F)
	ASME 300	51.1 bar g @ 38 °C	(740 psi g @ 100 °F)
Maximum differential pressure design	PTFE soft seat (G)	7 bar	
	PEEK soft seat (K)	7 bar	
	Full PEEK seat (P)	19 bar	
Maximum design temperature		425 °C	(800 °F)
Minimum design temperature		-29 °C	(-20 °F)
Maximum operating temperature	PTFE soft seat (G)	200 °C	(392 °F)
	Standard packing PTFE chevron		
	PEEK seat (K and P)	250 °C	(482 °F)
	Extended bonnet (E) with PTFE chevron		
	Graphite packing (H)	425 °C	(800 °F)
	Extended bonnet (E) with graphite packing		

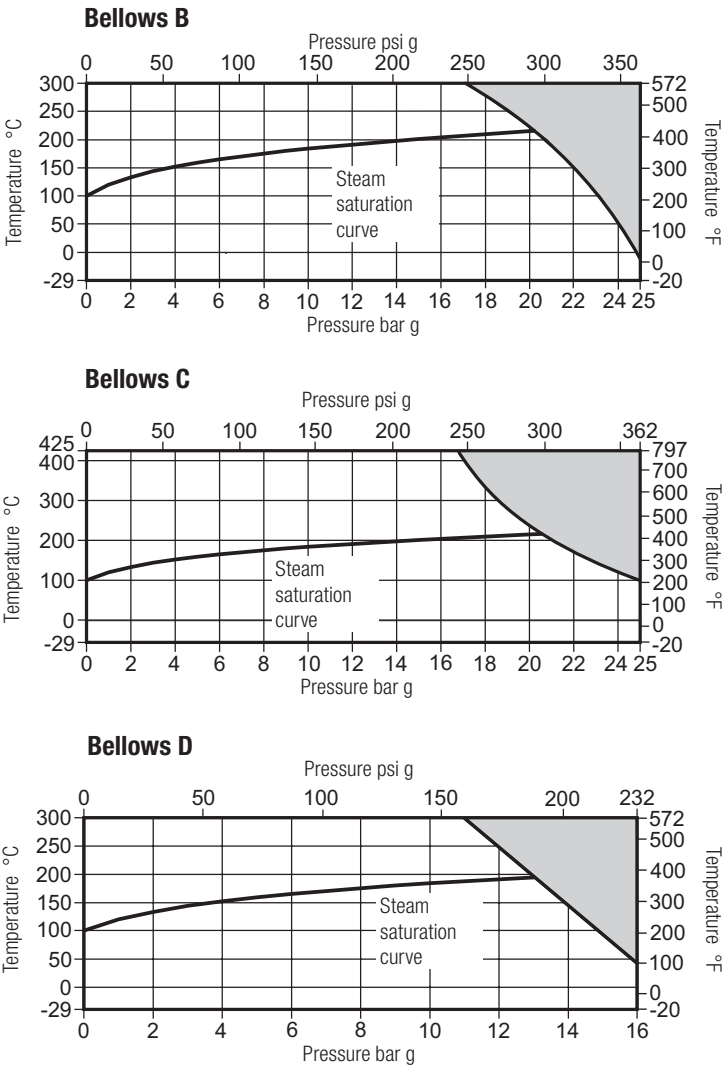
Note: We recommend that an extended bonnet (E) with graphite packing is used where valve operation is above 300 °C (572 °F).

Pressure/temperature limits - KEA41, KEA42 and KEA43 (Carbon steel)

Maximum operating temperature - Bellows only

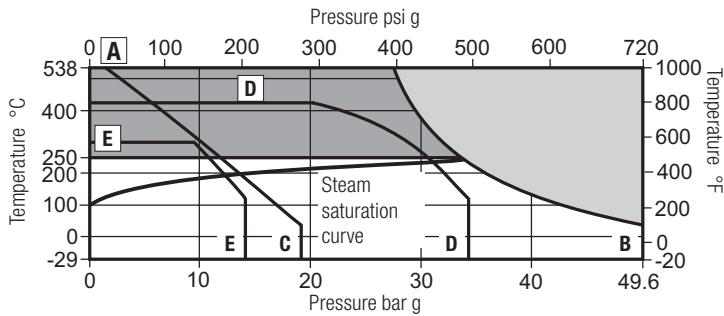
Note: When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown later in this document.

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



Minimum operating temperature			
Note: For lower operating temperatures consult GESTRA.		-29 °C (-20 °F)	
Maximum differential pressures		See relevant actuator Technical Information sheet	
Maximum cold hydraulic test pressure of: Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.	Bellows B	38 bar g	551 psi g
	Bellows C		
	Bellows D	24 bar g	348 psi g

Pressure /temperature limits - KEA61, KEA62 and KEA63 (Stainless steel)



- The product **must not** be used in this region.
- Graphite stem sealing is required for use in this region

- A - B Flanged ASME 300 and screwed NPT and SW.
- A - C Flanged JIS/KS 20.
- D - D Flanged ASME 150.
- E - E Flanged JIS/KS 10.

Notes:

- Where 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.
- When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown above.
- As standard the KEA, KFA, KLA series two-port control valves are supplied with the PTFE stem sealing option.


Body design conditions		ASME 150 and ASME 300	
Maximum design pressure	ASME 150 (6" to 8" only)	19.6 bar g @ 38 °C	(275 psi g @ 100 °F)
	ASME 300	49.6 bar g @ 38 °C	(720 psi g @ 100 °F)
Maximum differential pressure design	PTFE soft seat (G)	7 bar	
	PEEK soft seat (K)	7 bar	
	Full PEEK seat (P)	19 bar	
Maximum design temperature		538 °C	(1 000 °F)
Minimum design temperature		-29 °C	(-20 °F)
Maximum operating temperature	PTFE soft seat (G)	200 °C	(392 °F)
	Standard packing PTFE chevron		
	PEEK seat (K)	250 °C	(482 °F)
	Extended bonnet (E) with PTFE chevron		
	Graphite packing (H)		
	Extended bonnet (E) with graphite packing	538 °C	(1 000 °F)

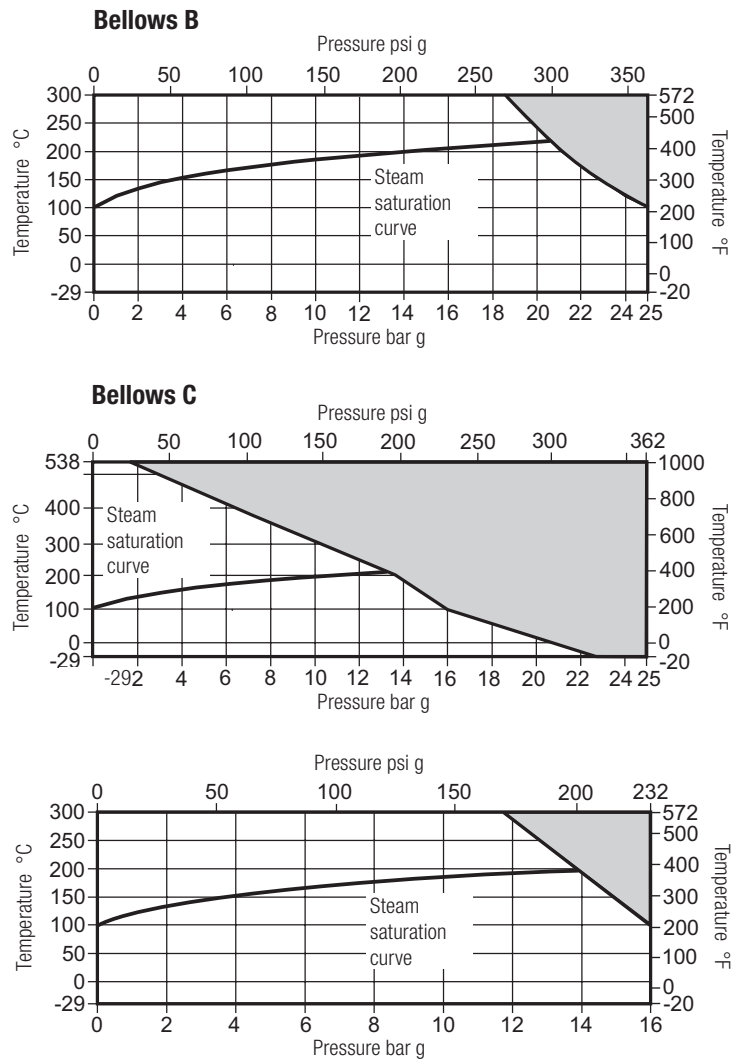
Note: We recommend that an extended bonnet (E) with graphite packing is used where valve operation is above 300 °C (572 °F).

Pressure / temperature limits - KEA61, KEA62 and KEA63 (Stainless steel)

Maximum operating temperature - Bellows only

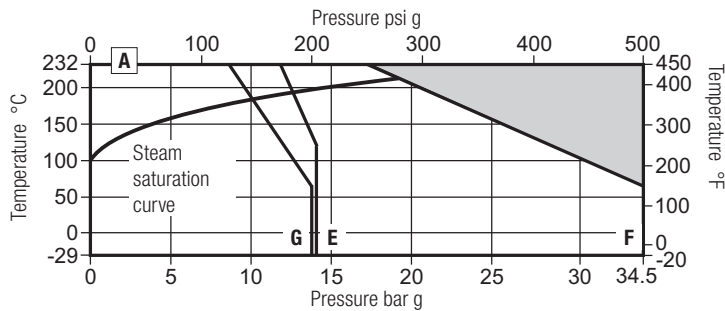
Note: When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown later in this document.

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



Minimum operating temperature Note: For lower operating temperatures consult GESTRA.	PTFE packing	-29 °C	(-20 °F)
	Graphite packing	-50 °C	(-58 °F)
Maximum differential pressures	See relevant actuator Technical Information sheet		
Maximum cold hydraulic test pressure of: Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.	Bellows B	38 bar g	551 psi g
	Bellows C		
	Bellows D	24 bar g	348 psi g

Pressure /temperature limits - KEA71 and KEA73 (SG iron)



- The product **must not** be used in this region.
- A - E** Flanged JIS/KS 10.
 - A - F** Flanged ASME 250 and screwed NPT and SW.
 - A - G** Flanged ASME 125.

Notes:


- Where 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.
- When selecting a valve with a bellows sealed bonnet, the pressure/temperature limits of the bellows must be read in conjunction with the valve pressure/temperature limits shown above.
- As standard the KEA, KFA, KLA series two-port control valves are supplied with the PTFE stem sealing option.

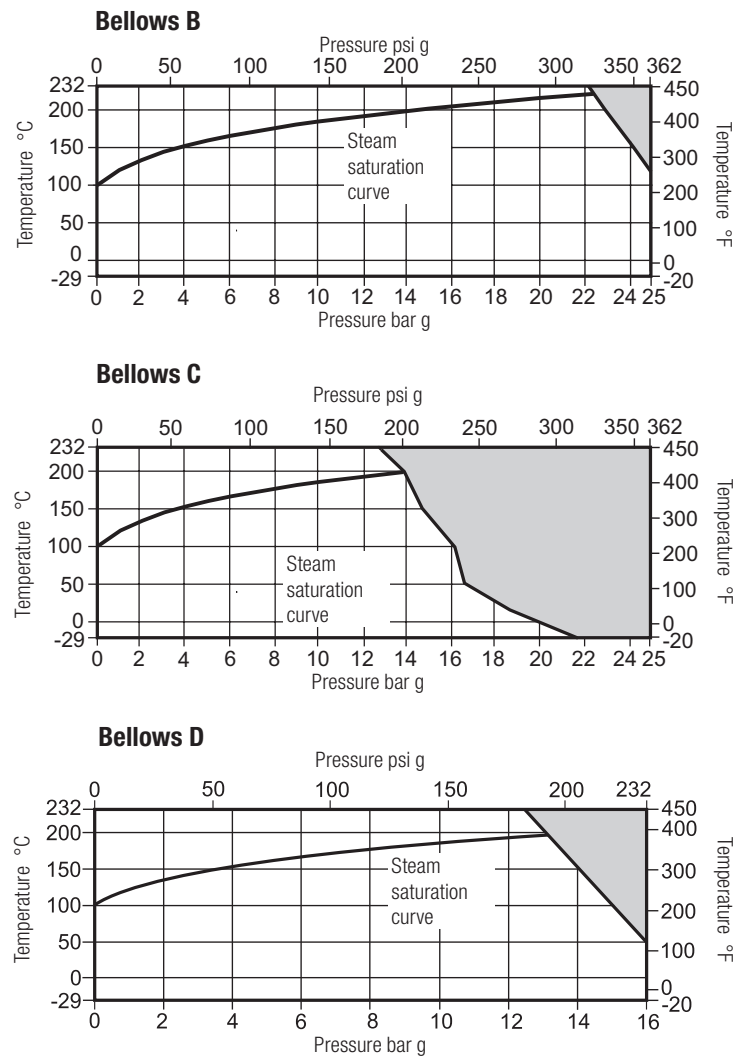
Body design conditions		ASME 125 and ASME 250	
Maximum design pressure	ASME 125	13.8 bar g @ 65 °C	(200 psi g @ 150 °F)
	ASME 250	34.5 bar g @ 65 °C	(500 psi g @ 150 °F)
Maximum differential pressure design	PTFE soft seat (G)	7 bar	
	PEEK soft seat (K)	7 bar	
	Full PEEK seat (P)	19 bar	
Maximum design temperature		232 °C	(450 °F)
Minimum design temperature		-29 °C	(-20 °F)
Maximum operating temperature	PTFE soft seat (G)	200 °C	(392 °F)
	Standard packing PTFE chevron		
	PEEK seat (K and P)		
	Graphite packing (H)	232 °C	(450 °F)
	Extended bonnet (E) with PTFE chevron		
	Extended bonnet (E) with graphite packing		

Pressure / temperature limits - KEA71 and KEA73 (SG iron)

Maximum operating temperature - Bellows only

Note: When selecting a valve with a bellows sealed bonnet, the pressure / temperature limits of the bellows must be read in conjunction with the valve pressure / temperature limits shown later in this document.

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

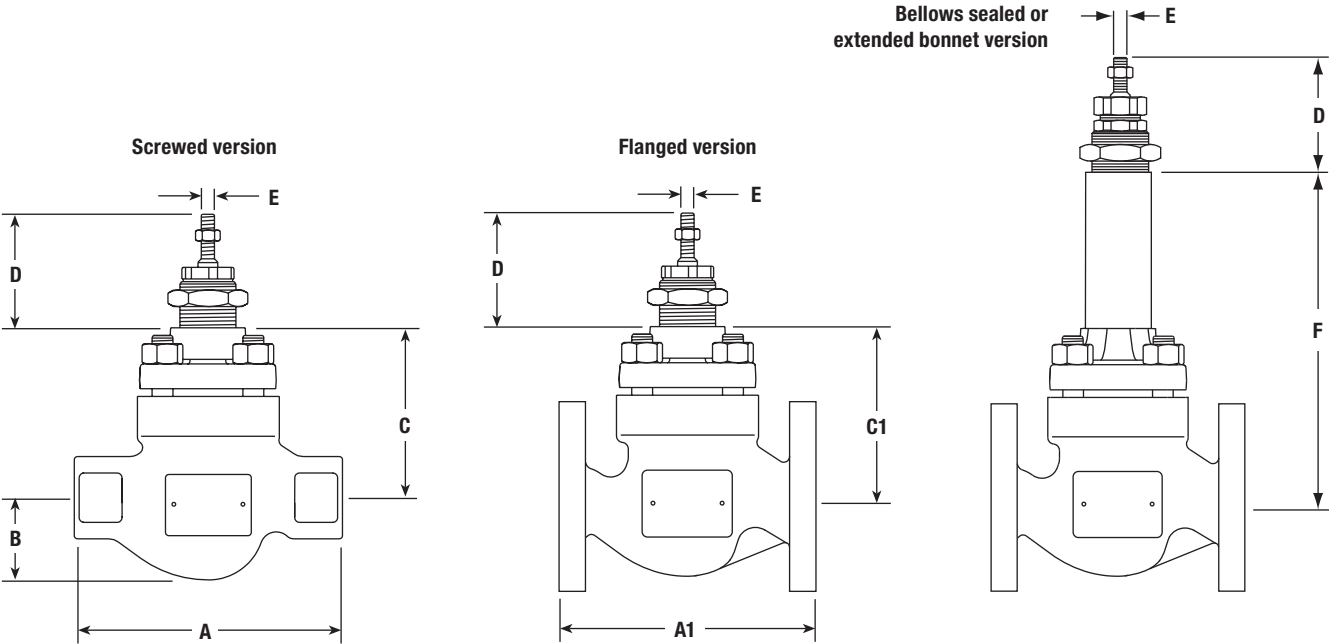


Minimum operating temperature		-29 °C	(-20 °F)
Note: For lower operating temperatures consult GESTRA.			
Maximum differential pressures		See relevant actuator Technical Information sheet	
		Bellows B	
			38 bar g 551 psi g
		Bellows C	
		Bellows D	24 bar g 348 psi g

Maximum cold hydraulic test pressure of:
Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.

Dimensions for the GCV two-port control valve approximate in mm and (inches)

Valve size	Screwed						Flanged							D	E Thread	F Bellows sealsExtended bonnet	
	BSP			NPT			KE valves			KEA valves							
	A	B	C	A	B	C	PN16 PN25 PN40	A1		C1	A1		C1				
								JIS /KS 1020	C1		KS 10	KS 20					
											ASME 125 and 150	ASME 250 and 300					
DN15 (½")	130	40	103	165 (6½")	44 (1¾")	102 (4")	130	130	130	103		190 (7½")	102 (4")	69 (2¾")	M8	237 (9")	336 (13.25")
DN20 (¾")	155	45	103	165 (6½")	44 (1¾")	102 (4")	150	150	150	103		190 (7½")	102 (4")				
DN25 (1")	160	50	103	197 (7¾")	57 (2¼")	102 (4")	160	160	160	103	184 (7¼")	197 (7¾")	102 (4")				
DN32 (1¼")	185	60	132	216 (8½")	57 (2¼")	127 (5")	180	180	180	132			127 (5")			267 (10½")	354 (13.94)
DN40 (1½")	205	65	132	235 (9¼")	63 (2½")	127 (5")	200	200	200	132	222 (8¾")	235 (9¼")	127 (5")				
DN50 (2")	230	80	127	267 (10½")	76 (3")	127 (5")	230	230	230	127	254 (10")	267 (10½")	127 (5")	81 (3")	M12	368 (14½")	416 (16.38")
DN65 (2½")							290	290	290	201	267 (10½)	292 (11½")	200 (7⅞")			368 (14½")	
DN80 (3")							310	310	310	201	298 (11¾)	317 (12½")	200 (7⅞")			381 (15")	431 (17")
DN100 (4")							350	350	350	216	349 (13¾)	368 (14½")	216 (8½")	125 (4⅞")	M30		538 (21 1⁄5")
DN125 (5")							400	403	425	257							556 (217⁄8")
DN150 (6")							480	451	473	275	451 (17¾")	473 (18⁹⁄8")	279 (11")				621 (24½")
DN200 (8")							600	543	568	341	543 (21³⁄8")	568 (22³⁄8")	343 (13½")				622 (24½")
DN250 (10")							730	673	708	344	673	708	344 (13½")				634 (25")
DN300 (12")							850	737	775	355	737	775	355 (14")				

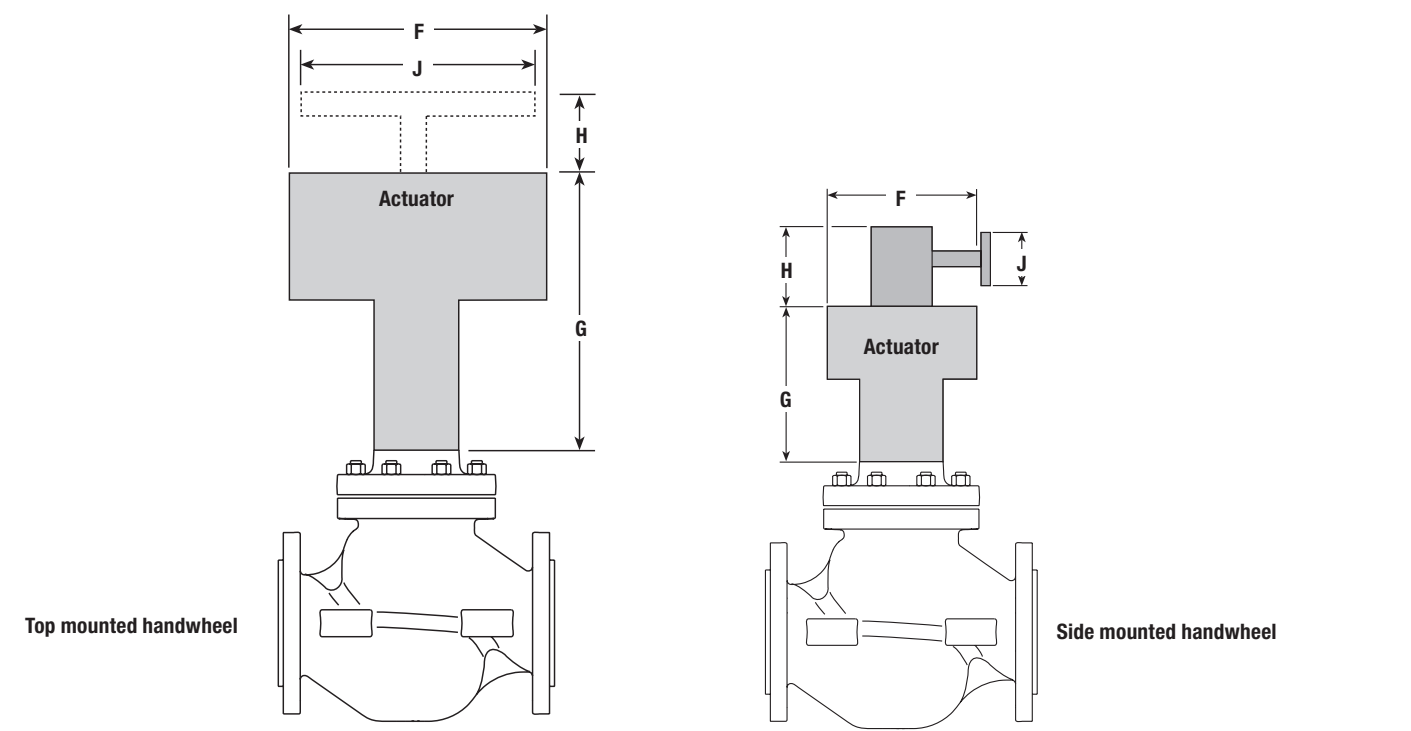


Weights for the **GCV two-port control valve** approximate in kg (and lbs)

Valve size	KE valves					KEA valves				Additional bellows and Extended bonnet	Additional balanced
	KE43	KE61	KE63	KE71	KE73	KEA43	KEA63	KEA73	KEA41 KEA42 KEA61 KEA62 KEA71		
DN15 (½")	6	4.5	5.5	4.5	5.5	7.3 (16)	7.3 (16)	7.3 (16)	7.3 (16)	4.5 (10)	
DN20 (¾")	6.8	5.5	6.8	5.5	6.8	8.2 (18)	8.2 (18)	8.2 (18)	7.3 (16)		
DN25 (1")	7	6	7	6	7	9.1 (20)	9.1 (20)	9.1 (20)	10 (22)		
DN32 (1¼")	13.5	11.5	13.5	11.5	13.5	14.1 (31)	14.1 (31)	13.2 (29)	11.3 (25)	5.5 (12)	
DN40 (1½")	14	12	14	12	14	16.3 (36)	16.3 (36)	14.1 (31)	14.1 (31)		
DN50 (2")	17	13	17	13	17	17.2 (38)	18.1 (40)	17.2 (38)	15 (33)		
DN65 (2½")	35		35		35	35.4 (78)	35.4 (78)	38.1 (84)		10 (21)	
DN80 (3")	40		40		40	39 (86)	40.4 (89)	41.3 (91)			
DN100 (4")	54		54		54	56.2 (124)	56.2 (124)	59.9 (132)		13 (28)	
DN125 (5")	81		81		81					16 (35)	2 (4.4)
DN150 (6")	121		121		121	130 (286)	130 (286)	130 (286)		16 (35)	3 (7)
DN200 (8")	210		210		210	210 (462)	210 (462)	210 (462)		16 (35)	10 (22)
DN250 (10")	228					242 (533)				16 (35)	10 (22)
DN300 (12")	451					465 (1025)				16 (35)	16 (35)

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								
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	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 7⁄8"	300	11 7⁄8"	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 7⁄8"	65	2 9⁄16"	350	13 3⁄4"	27	59.50	+7.20	+15.75
PN9320R					150	15 7⁄8"					+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 7⁄8"					+3.77	+8.50
PN9400E	732	28 3⁄4"	465	18 1⁄8"					60	132.00		
PN9400R												
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		
TN2277E	532	21"	863	34"	330	13"	330	13"	116	255.00	+21.00	+46.00
TN2277NDA	532	21"	863	34"					98	216.00		



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

Actuator range	F		G		Weight	
	mm	inches	mm	inches	kg	lbs
EL3500	135 x 161	5 1⁄4" x 6 1⁄4"	242	9 1⁄2"	1.3	3.0
EL3500 SE and SR	135 x 161	5 1⁄4" x 6 1⁄4"	284	11"	2.4	6.0
EL7200 series	100	4"	471	18 1⁄2"	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

GCV two-port control valve
DN15 to DN100 - ½" 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	(Non-bellows sealed)	B, G
	PTFE packing	C
	Graphite packing	C1
Stem seal kits	Graphite seal set	C2
	* Equal percentage trim (No gaskets supplied)	D, E
	Fast opening trim (No gaskets supplied)	D1, E
Plug stem and seat kit	Linear trim (No gaskets supplied)	D2, E
PTFE soft seat seal		H

Specify if reduced trim.

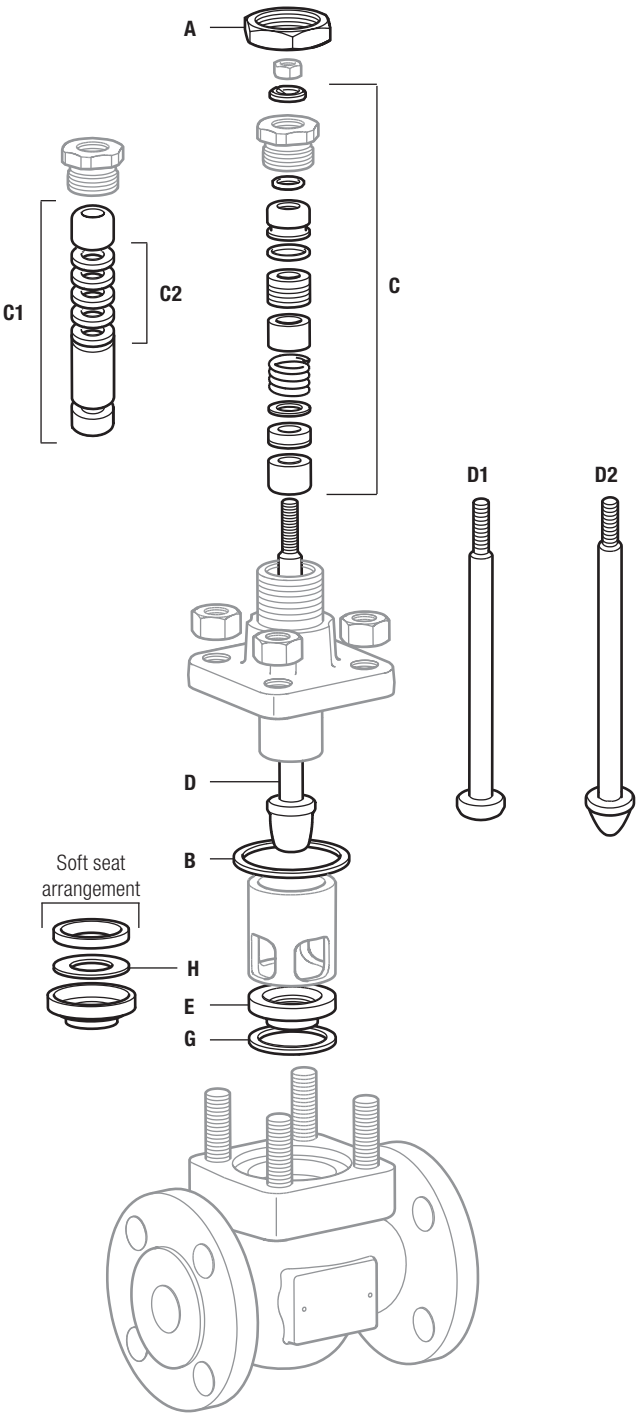
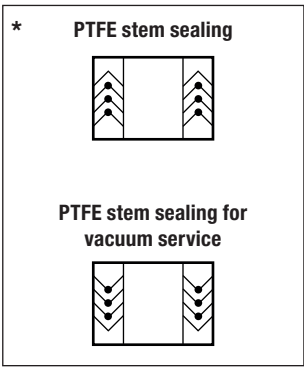
How to order spares

* 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 GESTRA DN25 GCV two-port KE43 PTSUSS.2 K_{VS} 10 control valve.

How to fit spares

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



Spare parts

GCV two-port control valve
Balanced and unbalanced
DN125 to DN300 - 6" to 12"

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

Gasket set Non bellows sealed	Balanced	A, B, G
	Unbalanced	B, G
Stem seal kit	PTFE chevrons	C3
	Graphite packing conversion kit (DN15 to DN100)	C4
	Graphite seal set	C5
Plug stem and seat kit	Balanced (No gaskets supplied)	A, D, E
	Unbalanced (No gaskets supplied)	D, E

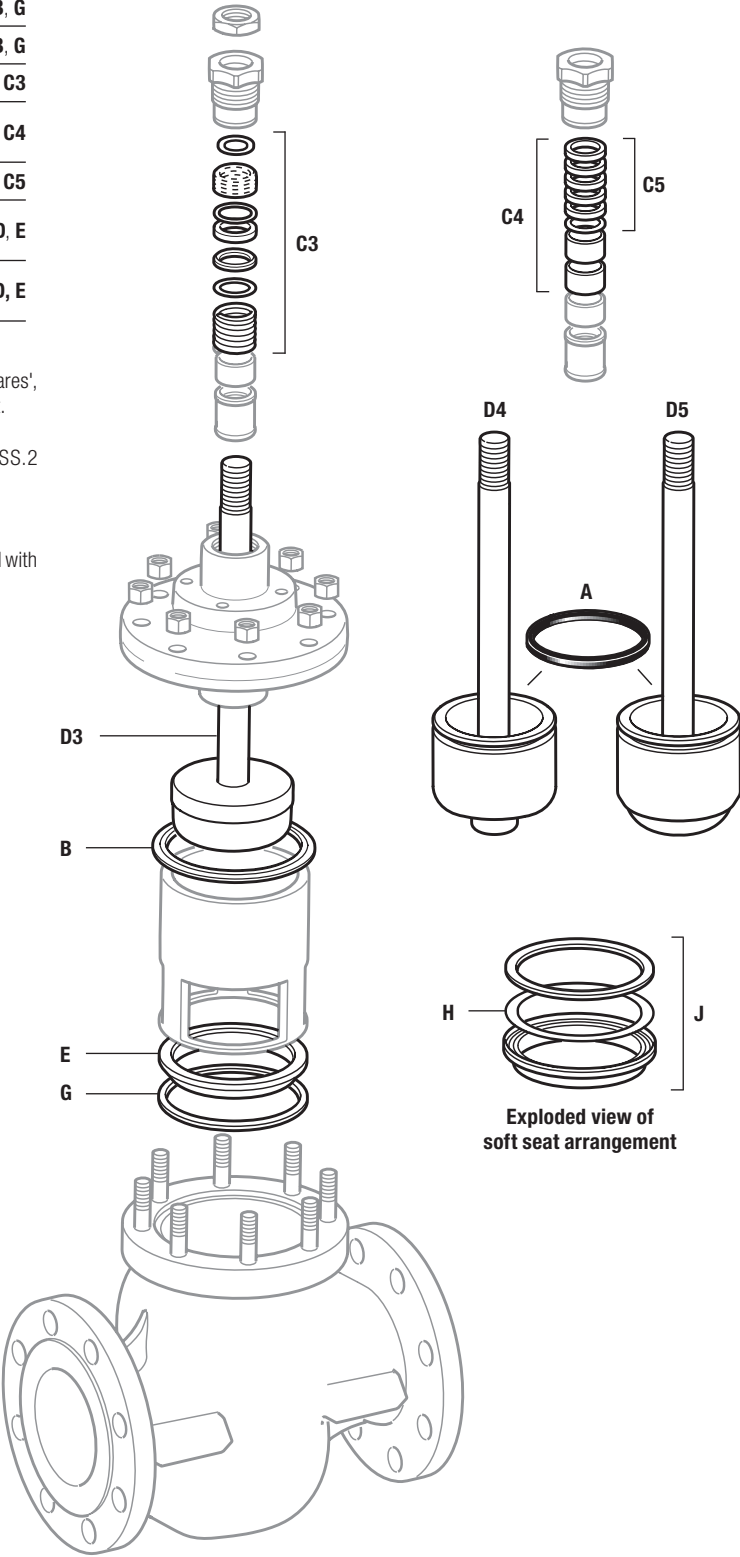
How to order spares

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

Example: 1 - PTFE stem seal kit for a GESTRA DN150 GCV two-port KE43 PTSBSS.2 Kvs 370 control valve.

How to fit spares

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



Spare parts

GCV two-port control valve with bellows seal - Type D DN15 to DN100 - ½" 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.

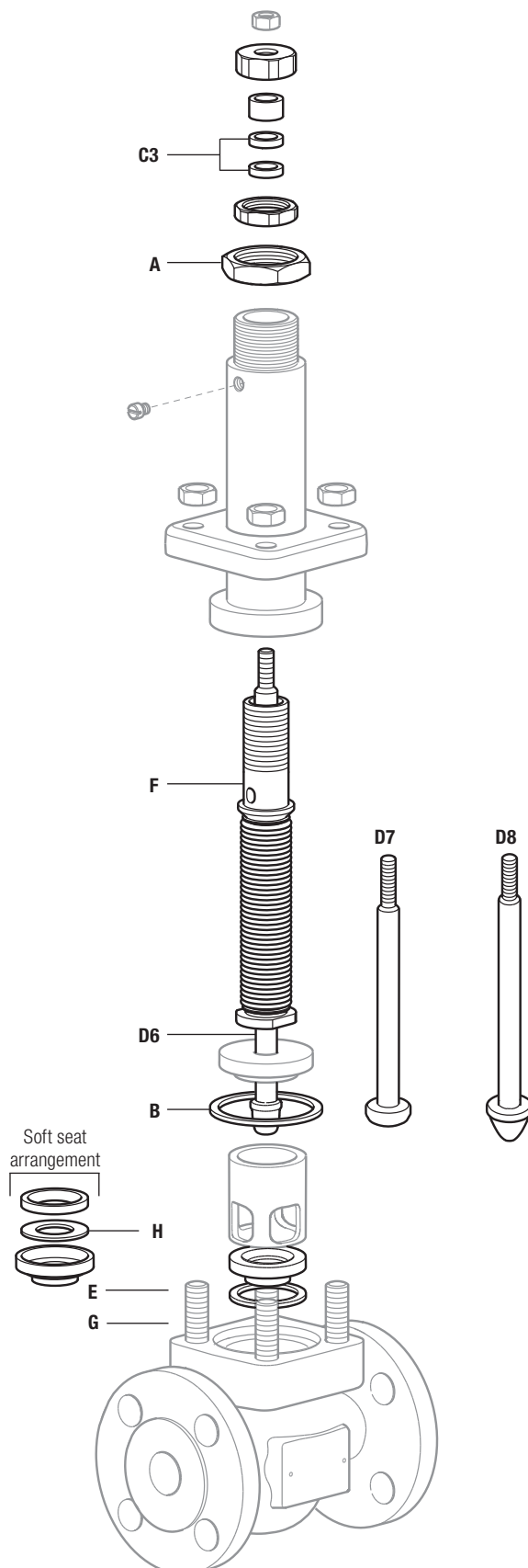
How to order spares

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 GESTRA DN25 GCV two-port KE43B TSUSS.2 Kvs10 control valve.

How to fit spares

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



Spare parts

GCV two-port control valve with bellows seal - Types B and C
DN15 to DN100 - ½" 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.

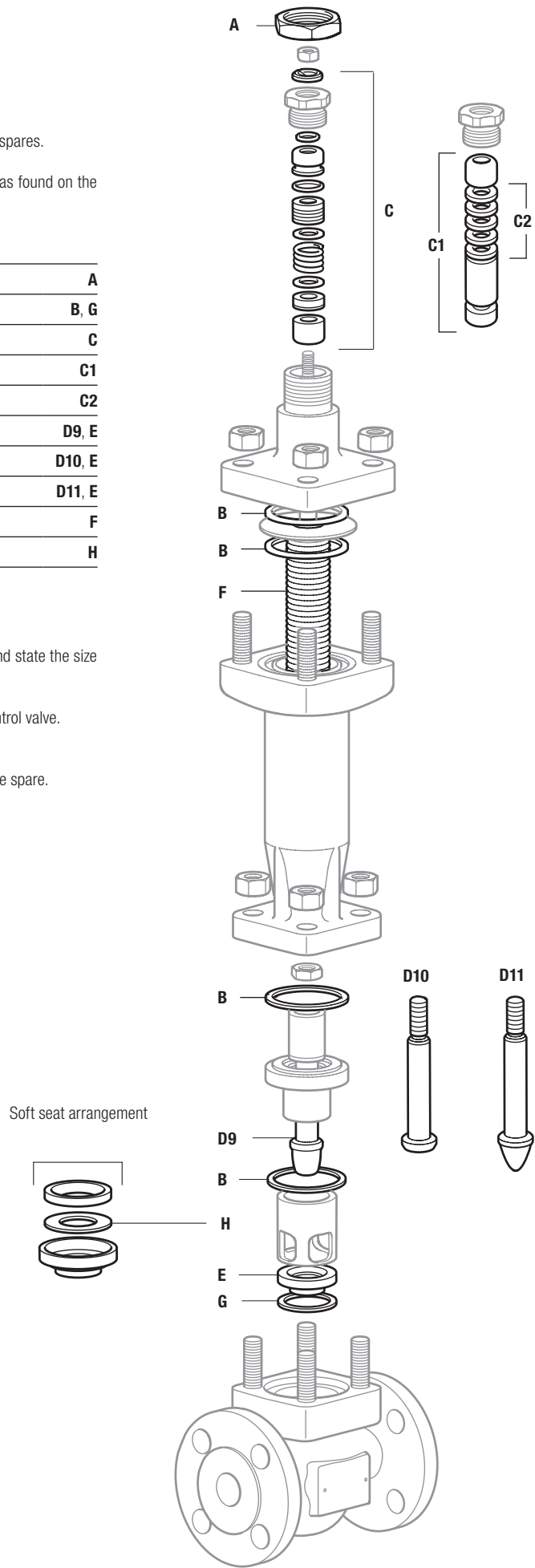
How to order spares

* 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 GESTRA DN25 GCV two-port KE43B TSUSS.2 K_{VS}10 control valve.

How to fit spares

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



GCV selection guide:

Valve size	EN standard = DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80, DN100, DN125, DN150, DN200, DN250 and 300	DN25
	ASME standard = ½", ¾", 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6", 8", 10" and 12"	
Valve series	K = K series 2-port control valve	K
Valve characteristic	E = Equal percentage	E
	F = Fast opening	
	L = Linear	
Flange type	A = ASME	Blank
	Blank = EN (PN)	
Flow	Blank = under	Blank
	T = over	
Body material	4 = Carbon steel	4
	6 = Stainless steel	
	7 = SG iron	
Connections	1 = Screwed	3
	2 = Socket weld	
	3 = Flanged	
Stem sealing	B = Bellows/PTFE secondary seals	P
	C = Bellows/graphite secondary seals	
	D = Bellows/graphite secondary seals	
	H = Graphite	
	N = PTFE with Nitronic bush - DN15 to DN50 only	
	P = PTFE	
Seating	V = PTFE for vacuum service	T
	G = PTFE soft seat	
	K = PEEK soft seat	
	P = Full PEEK	
	S = 316L stainless steel	
	T = 431 stainless steel	
Type of trim	W = 316L with stellite 6 facing	S
	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	
Trim balancing	S = Standard trim	U
	B = Balanced	
Bonnet type	U = Unbalanced	S
	E = Extended	
Bolting	S = Standard	S
	H = High temperature	
Finish	Blank = Standard	
	N = ENP coating	
Series	2 = .2	.2
K_{vs}	To be specified	K_{vs} 16
Connection type	To be specified	Flanged PN40

Selection example:

DN32	-	K	E	4	3	P	T	S	U	S	S		.2	-	K _{vs} 16	-	Flanged PN40
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How to order

Example: 1 off GESTRA GCV DN32 KE43PTSUSS.2 K_{vs} 16 two-port control valve having flanged PN40 connections.

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