

SPIRA-TROL 6" and 8" KEA, KFA and KLA Two-port Control Valves

Description

SPIRA-TROL is a range of two-port single seat globe valves with cage retained seats conforming to ASME standards. These valves are available in two body materials in sizes 6" and 8". When used in conjunction with a pneumatic or electric linear actuator they provide characterised modulating or on/off control.

SPIRA-TROL valve characteristic - options:

KEA	Equal percentage modified (E) - Suitable for most modulating process control applications providing good control at all flowrates.
KFA	Fast opening (F) - For on/off applications only.
KLA	Linear (L) - Primarily for liquid flow control where differential pressure across the valve is constant.

Important note: Throughout this document, reference has been made to the standard KEA control valve. With the exception of trim type, the KEA, KFA and KLA control valves are identical.

SPIRA-TROL valve options:

Stem sealing	PTFE seals	Standard
	Graphite packing	High temperature applications
	Metal-to-metal	431 stainless steel - standard
	Soft seating	PTFE for tight shut-off
Seating		316L stainless steel with
	Hard facing	Stellite 6 facing - for more arduous applications
Bonnet type	Standard bonnet	
Trim	Standard trim	
	Low noise cage	

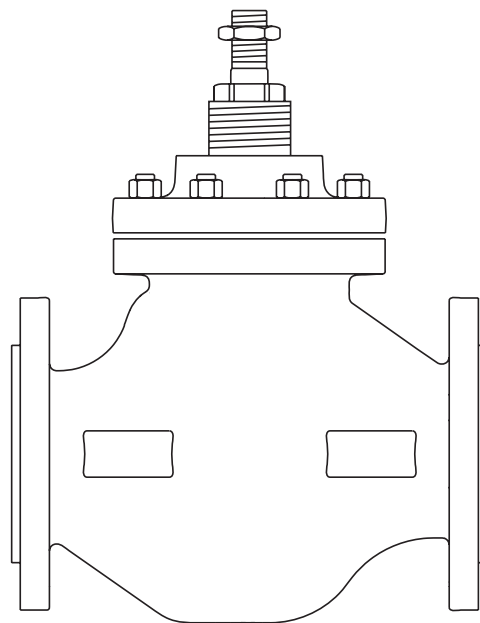
SPIRA-TROL two-port control valves are compatible with the following actuators and positioners:

Electric	EL5600 series, Rotork CVL
Pneumatic	PN1000, PN9400 and TN2000
Positioners	PP5 (pneumatic) or EP5 (electropneumatic)
	ISP5 (intrinsically safe electropneumatic)
	SP200, 400, 500 (microprocessor based electropneumatic)
	SP300 (digital communications)

Refer to the relevant Technical Information sheet for further details.

Sizes and pipe connections

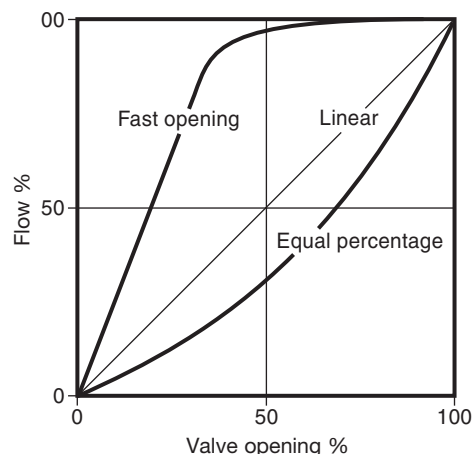
Type	Body material	Connections	Size range
KEA43	Cast steel	Flanged ASME 150 and ASME 300	6" and 8"
KEA73	SG iron	Flanged ASME 125 and ASME 250	6" and 8"



Technical data

Plug design		Parabolic
	Metal-to-metal	Class IV
Leakage	Soft seal	Unbalanced Class VI
		Balanced Class IV
Rangeability		50:1
Travel	6" and 8"	2¾"

Typical flow characteristic curves



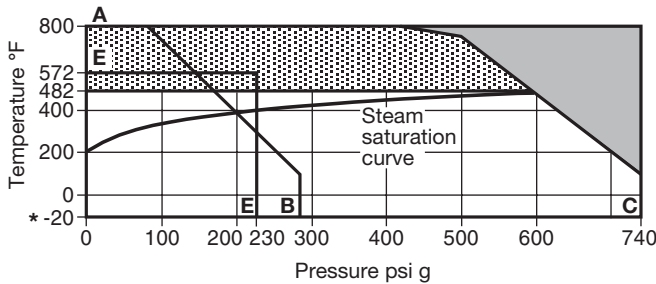
SPIRA-TROL 6" and 8" KEA, KFA and KLA Two-port Control Valves

Type	No.	Part	Material
KE43	1	Body	Cast steel ASTM A216 WCB
	2	Bonnet	Cast steel ASTM A216 WCB
KE73	1	Body	SG iron ASTM A395
	2	Bonnet	SG iron ASTM A395
All versions	3	Plug and stem assembly	Stainless steel
	4	Cage	Stainless steel
	6	Valve seat ring	Stainless steel
	9	Bearing	Stellite
	10	Spacer	Stainless steel
	11	Gland nut	Stainless steel
	14	Washer	Stainless steel
	15	Bonnet gasket	Stainless steel / graphite
	16	Seat gasket	Stainless steel / graphite
	20	Stem nut	Stainless steel
	21	Standard bonnet nut	ASTM A295 Gr. 2H
22	Standard stud	ASTM A295 Gr. 2H	
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
Balanced versions	3a	Plug and stem assembly	Stainless steel
	4	Cage	ENP / stainless steel
	31	Balanced seal	Graphite

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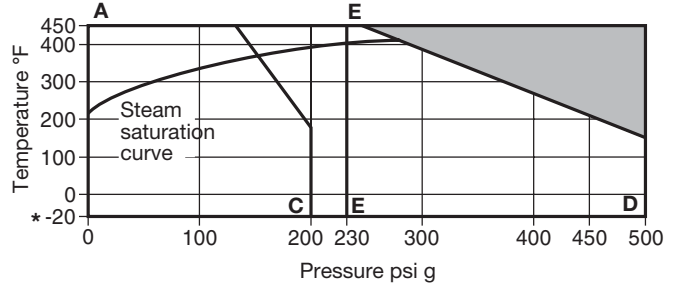
Pressure/temperature limits

KEA43 (Cast steel)



- A - B Flanged ASME (ANSI) 150.
- A - C Flanged ASME (ANSI) 300 and screwed NPT and SW.
- E - E Valves fitted with bellows are limited to a maximum bellows rating of 230 psi @ 572°F.

KEA73 (SG iron)



- A - C Flanged ASME (ANSI) 125.
- A - D Flanged ASME (ANSI) 250 and screwed NPT.
- E - E Valves fitted with bellows are limited to a maximum bellows rating of 230 psi.

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

Graphite stem sealing is required for use in this region.

Note: As standard the KEA, KFA, KLA series two-port control valves are supplied with the PTFE stem sealing option.

* If fluid temperature is below 0°F then the ambient conditions must be at or above 41°F.

Body design conditions	KEA4_	ASME (ANSI) 150
		ASME (ANSI) 300
	KEA7_	ASME (ANSI) 125
		ASME (ANSI) 250
Maximum design pressure	KEA4_	ASME (ANSI) 150 276 psi g @ 100°F
		ASME (ANSI) 300 740 psi g @ 100°F
	KEA7_	ASME (ANSI) 125 200 psi g @ 150°F
		ASME (ANSI) 250 500 psi g @ 150°F
Maximum design temperature	KEA4_	800°F
	KEA7_	450°F
Minimum design temperature	KEA4_	-20°F
	KEA7_	-20°F
Maximum operating temperature		Standard packing PTFE chevron 482°F
		PTFE soft seat (G) 392°F
		Graphite packing (H) 800°F
		Extended bonnet (E) with PTFE chevron 482°F
		Extended bonnet (E) with graphite packing 800°F
		Bellows (B) 572°F
Minimum operating temperature	KEA4_	-20°F
	KEA7_	-20°F
Maximum differential pressures:		See relevant actuator Technical Information sheet
Maximum cold hydraulic test pressure of:	KEA4_	1100 psi g
Warning: If the valve is fitted with a bellows it must be removed if hydraulic testing is to be done.	KEA7_	ASME (ANSI) 125 300 psi g
		ASME (ANSI) 250 750 psi g

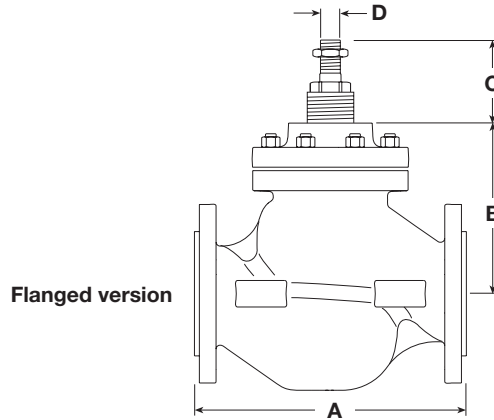
Cvs values

Size			6"	8"	
Travel			2 3/4"		
Trim	Full port	Equal %	433	679	
		Linear	456	749	
		Fast opening	456	749	
	Reductions	Trim 1	Equal %	336	433
			Linear	336	433
		Trim 2	Equal %	154	271
			Linear	154	271
		Trim 3	Equal %	120	191
			Linear	120	191
Low noise trim	Full port	Linear	351	604	
	Reductions	Trim 1	Linear	298	535
		Trim 2	Linear	234	410
		Trim 3	Linear	178	310

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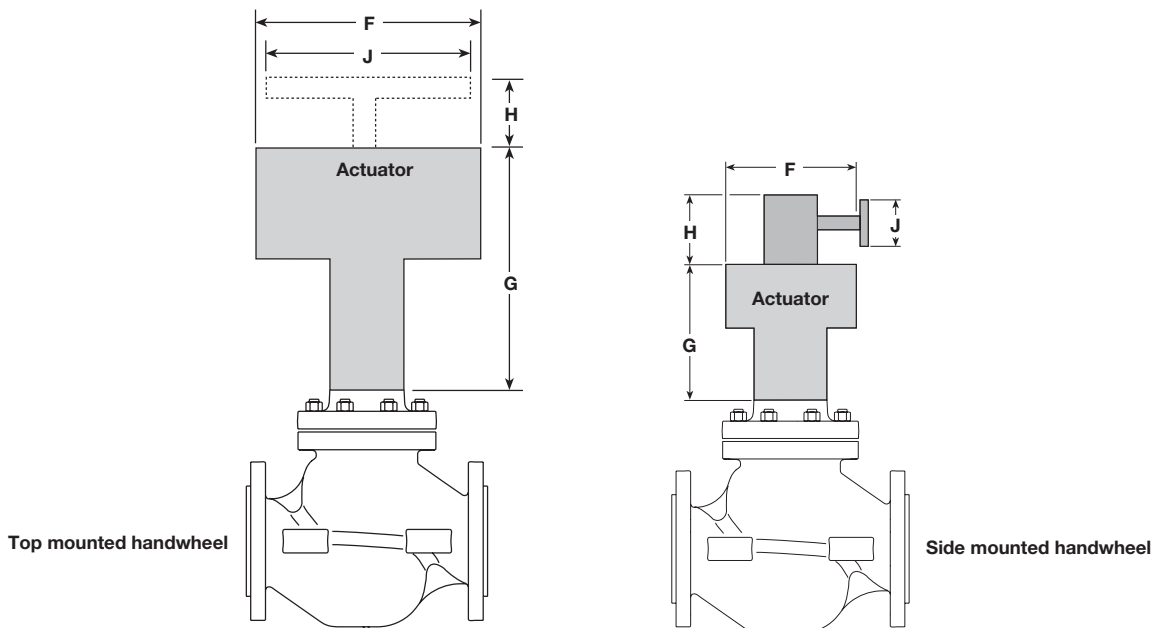
Dimensions / weights for the SPIRA-TROL (approximate) in inches and lbs

Valve size	A		B	C	D	Weight	
	ASME 125 and 150	ASME 250 and 300				Balanced	Unbalanced
6"	17 ³ / ₄ "	18 ⁵ / ₈ "	11"	4 ⁷ / ₈ "	M30	286	312
8"	21 ³ / ₈ "	22 ² / ₈ "	13 ¹ / ₂ "	4 ⁷ / ₈ "		462	486



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

Actuator range	F	G	H	J	Weight	
					Actuator	With handwheel
PN1600 and PN2600	18 ⁵ / ₁₆ "	46"	-	-	339	+ 103
PN9400 and variants	20 ¹ / ₂ "	-	28 ¹ / ₄ "	-	583	+ 116
TN2277E and variants	21"	34"	13"	13"	561	+ 103
TN2277NDA and variants	21"	34"	-	-	475	-
EL565	8 ³ / ₄ "	31 ³ / ₈ "	-	-	-	97



SPIRA-TROL 6" and 8" KEA, KFA and KLA Two-port Control Valves

Spare parts - SPIRA-TROL (unbalanced valve)

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 - KEA, KFA and KLA

Gasket set		B, G
Stem seal kits	PTFE chevrons	C
	Graphite packing	C2
PTFE to Graphite conversion kit		C1
	* Equal percentage trim (No gaskets supplied)	D, E
Plug stem and seat kit	Fast opening trim (No gaskets supplied)	D1, E
	Linear trim (No gaskets supplied)	D2, E
PFTE soft seal		H
Soft seat conversion kit		J

* Specify if reduced trim.

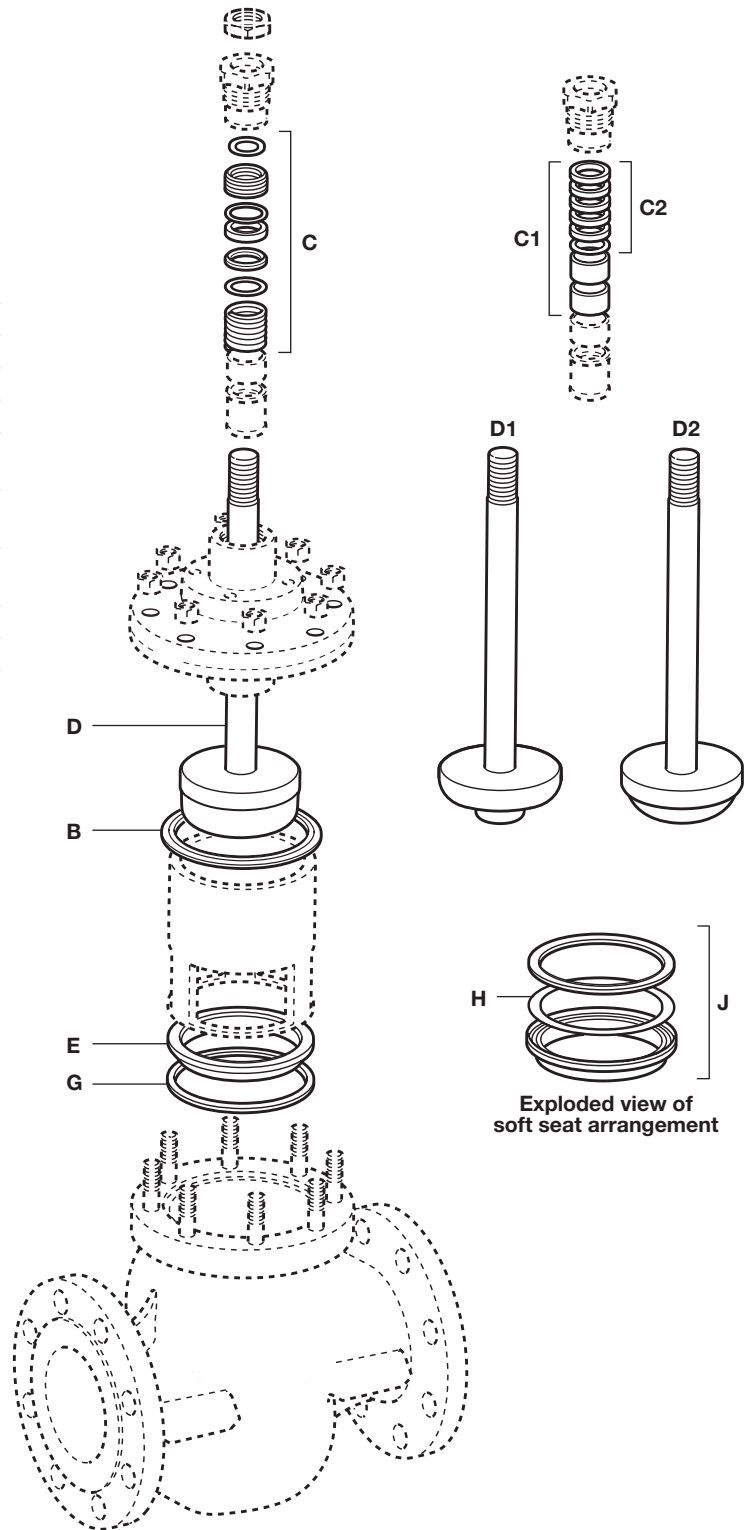
How to order spares

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 6" SPIRA-TROL two-port KEA43 PTSUSS.2 C_v 433 control valve.

How to fit spares

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



SPIRA-TROL 6" and 8" KEA, KFA and KLA Two-port Control Valves

Spare parts - SPIRA-TROL (balanced)

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 - KEA, KFA and KLA

Gasket set		A, B, G
Stem seal	PTFE chevrons	C
kits	Graphite packing	C2
PTFE to Graphite conversion kit		C1
	* Balanced equal percentage trim (No gaskets supplied)	A, D, E
Plug stem and seat kit	Balanced fast opening trim (No gaskets supplied)	A, D1, E
	Balanced linear trim (No gaskets supplied)	A, D2, E
PFTE soft seal		H
Soft seat conversion kit		J

* Specify if reduced trim.

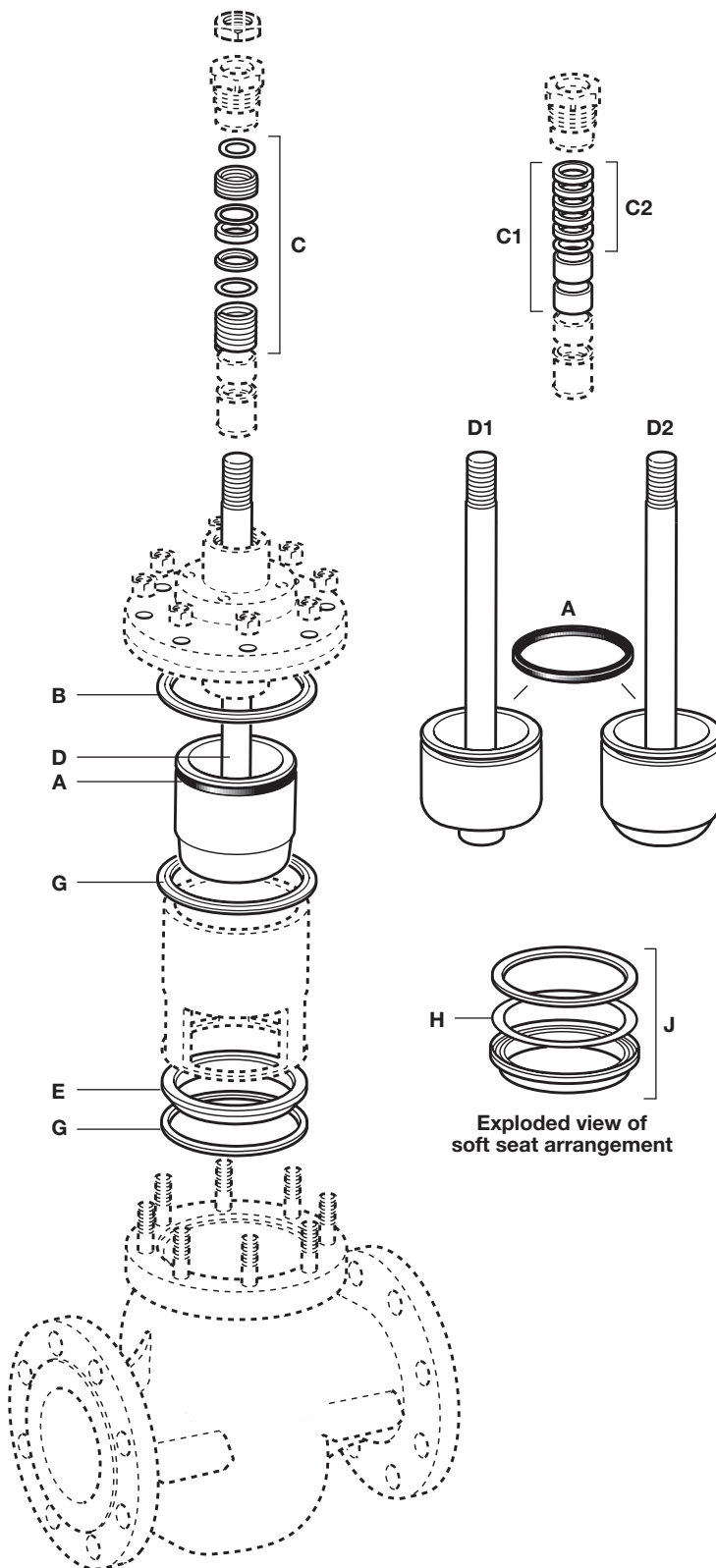
How to order spares

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 6" SPIRA-TROL two-port KEA43 PTBSS.2 C_V 433 control valve.

How to fit spares

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



Exploded view of soft seat arrangement

SPIRA-TROL 6" and 8" KEA, KFA and KLA Two-port Control Valves

SPIRA-TROL selection guide:

Valve size	6" and 8"	<input type="text" value="6"/>
Valve series	K = K series 2-port control valve	<input type="text" value="K"/>
	E = Equal percentage (not available for low noise option)	
Valve characteristic	F = Fast opening (not available for low noise option)	<input type="text" value="E"/>
	L = Linear	
Design code	A = ASME	<input type="text" value="A"/>
	T = Flow over	
Flow direction	Blank = Flow under	<input type="text"/>
	4 = Carbon steel	<input type="text" value="4"/>
Body material	7 = SG iron	
Connections	3 = Flanged	<input type="text" value="3"/>
	P = PTFE	<input type="text" value="P"/>
Stem sealing	H = Graphite	
	T = 431 stainless steel	<input type="text" value="T"/>
Seating	G = PTFE soft seat	
	W = 316L with stellite 6 facing	
Type of trim	S = Standard trim	<input type="text" value="S"/>
	P = Low noise cage (Linear balanced trim only)	
Trim balancing	B = Balanced	<input type="text" value="U"/>
	U = Unbalanced	
Bonnet type	S = Standard	<input type="text" value="S"/>
Bolting	S = Standard	<input type="text" value="S"/>
	H = High temperature	
Series	2 = .2	<input type="text" value=".2"/>
C_{vs}	To be specified	<input type="text" value="Cvs 433"/>
Connection type	To be specified	<input type="text" value="ASME 150"/>

Selection example:

- - -

How to order

Example: 1 off Spirax Sarco 6" SPIRA-TROL KEA 43PTSUSS.2 C_{vs} 433 two-port control valve having flanged ASME 150 connections.