

spirax sarco®

K Series 1/2" to 4" Cast Steel Control Valves

Description

A range of two port cast steel single seat globe valves conforming to ANSI/ASTM standards in sizes 1/2" to 4" (DN15 to DN100) available with screwed or flanged connections. When used in conjunction with a pneumatic or electric linear actuator, they provide characterized modulating or on/off flow control. For close control with pneumatic actuators, a valve positioner should be used.

Sizes and pipe connections

K_A41 1/2", 3/4", 1", 1-1/4", 1-1/2" and 2" screwed NPT.

K_A43 1/2", 3/4", 1", 1-1/2", 2", 2-1/2", 3" and 4" (DN15, 20, 25, 40, 50, 65, 80 and 100) flanged ANSI150 and ANSI 300.

Options

| | |
|-----------|--|
| Trim | Equal %, linear, reduced C _v , fast opening (on/off) soft seal, hard faced, low noise, and anti-cavitation. |
| Stem seal | PTFE chevrons and graphite packing. |

Refer to TI-P305-04 US for further details.

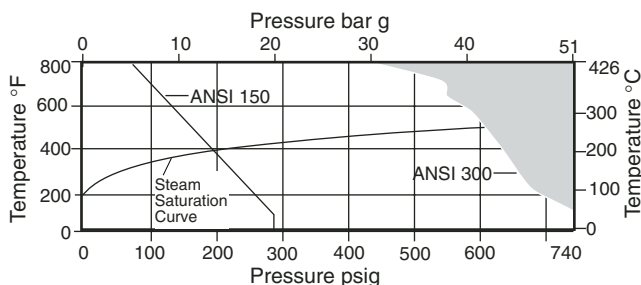
Technical data

| | | |
|---------------------|-------------------------------|-------------------------------|
| Plug design | 1/2" to 1-1/4" (DN15 to DN32) | Caged parabolic |
| | 1-1/2" to 4" (DN40 to DN100) | Vee port |
| Leakage | Metal-to-metal seat | ANSI/FCI 70/2 Class IV |
| | PTFE soft seal | ANSI/FCI 70/2 Class VI |
| Flow characteristic | KEA valves | Equal percentage (modulating) |
| | KLA valves | Linear (modulating) |
| | KFA valves | Fast opening (on/off) |
| Rangeability | | 50 to 1 |
| Travel | 1/2" to 2" (DN15 to DN50) | 3/4" (20 mm) |
| | 2-1/2" to 4" (DN65 to DN100) | 1-3/16" (30 mm) |

Limiting conditions

| | | |
|--------------------------------------|-----------------------|------------------------|
| Body design conditions | ANSI 150 and ANSI 300 | |
| Maximum design temperature | PTFE chevron seals | 482°F (250°C) |
| | Graphite packed seals | 800°F (426°C) |
| Minimum design temperature | 14°F (-10°C) | |
| Maximum cold hydraulic test pressure | ANSI 150 | 450 psig (31.0 bar g) |
| | ANSI 300 | 1125 psig (77.6 bar g) |
| Maximum differential pressures | see actuator TIS | |

Operating range

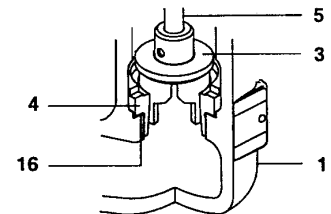
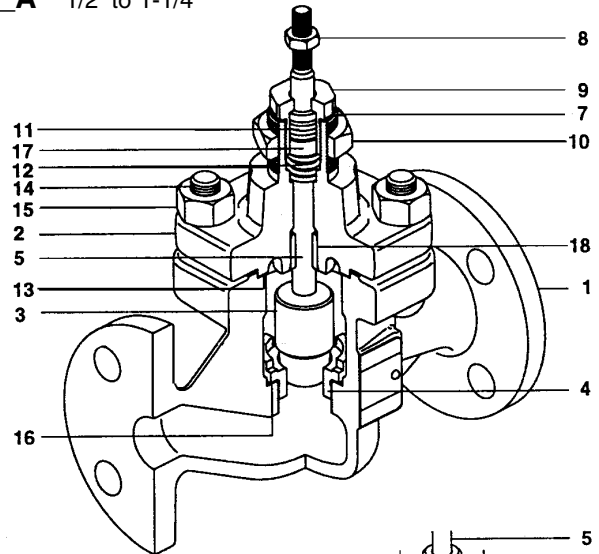


The product must not be used in this region.

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.

In the interests of development and improvement of the product, we reserve the right to change the specification.

K_A 1/2" to 1-1/4"



K_A

1-1/2" to 4" plug and seat

Materials

| | | | |
|----|------------------|------------------------------------|-------------------|
| 1 | Body | Cast steel | ASTM A216 WCB |
| 2 | Bonnet | Cast steel | ASTM A216 WCB |
| 3 | Valve plug | Stainless steel | ASTM A276 Gr. 431 |
| 4 | Valve seat | Stainless steel | ASTM A276 Gr. 431 |
| 5 | Valve stem | Stainless steel | ASTM A276 Gr. 431 |
| 7 | Gland nut gasket | Semi-rigid graphite laminated | |
| 8 | Lock-nut | Stainless steel | |
| 9 | Gland nut | Stainless steel | ASTM A276 Gr.431 |
| 10 | Mounting nut | Mild steel zinc plated | |
| 11 | Gland seals | PTFE chevrons | |
| 12 | Gland spring | Stainless steel | |
| 13 | Bonnet gasket | Semi-rigid graphite laminated | |
| 14 | Bonnet studs | Stainless steel | ASTM A193 B7 |
| 15 | Bonnet nuts | Stainless steel | ASTM A194 2H |
| | | 1/2" to 3/4" (DN15 and DN20) | 3/8" UNC |
| | | 1" to 2" (DN25 to DN50) | 1/2" UNC |
| | | 2-1/2" to 4" (DN65 to DN100) | 5/8" UNC |
| 16 | Seat gasket | Semi-rigid graphite laminated | |
| 17 | Guide bush | Glass reinforced PTFE | |
| 18 | Bonnet guide | Stainless steel AISI 440B Hardened | |

Note: Part No.18 'Bonnet guide' used on all valves above 1-1/2" and valves having soft seat and hard faced trims in smaller sizes.

K Series

1/2" to 4" Cast Steel Control Valves

C_V Values

| Size | 1/2" (DN15) | 3/4" (DN20) | 1" (DN25) | 1-1/4" (DN32) | 1-1/2" (DN40) | 2" (DN50) | 2-1/2" (DN65) | 3" (DN80) | 4" (DN100) |
|-------------------------|-------------|-------------|-----------|---------------|---------------|-----------|---------------|-----------|------------|
| Equal % and linear trim | 4.7 | 7.4 | 11.7 | 18.7 | 29.3 | 42 | 74 | 117 | 187 |
| On/Off trim | 4.7 | 7.4 | 11.7 | 21.0 | 32.8 | 59 | 99 | 137 | 211 |

Three reductions in C_V are available for equal percentage and linear trims, for details see TIS KEA valve options.
 For conversion C_V(UK) = C_V(US) x 0.833 K_{VS} = C_V(US) x 0.855

Dimensions

(approximate) in inches (mm)

| Valve size | A | B (ANSI 150) | B (ANSI 300) | C | D |
|---------------|------------|--------------|--------------|-----------|-----------|
| 1/2" (DN15) | 6.5 (165) | 7.3 (184) | 7.5 (191) | 3.3 (84) | 1.69 (43) |
| 3/4" (DN20) | 6.5 (165) | 7.3 (184) | 7.6 (194) | 3.4 (87) | 1.7 (44) |
| 1" (DN25) | 7.8 (197) | 7.3 (184) | 7.8 (197) | 3.8 (96) | 2.0 (51) |
| 1-1/4" (DN32) | 8.5 (216) | - | - | 4.0 (101) | 2.3 (58) |
| 1-1/2" (DN40) | 9.3 (235) | 8.8 (222) | 9.3 (235) | 4.0 (101) | 2.5 (64) |
| 2" (DN50) | 10.5 (267) | 10.0 (254) | 10.5 (267) | 4.2 (106) | 3.0 (76) |
| 2-1/2" (DN65) | - | 10.9 (276) | 11.5 (292) | 5.4 (136) | - |
| 3" (DN80) | - | 11.8 (298) | 12.5 (318) | 5.6 (141) | - |
| 4" (DN100) | - | 13.9 (353) | 14.5 (368) | 6.5 (165) | - |

Weights

(approximate) in pounds (kg)

| Valve size | K_A41 | K_A43 |
|---------------|-------------|--------------|
| 1/2" (DN15) | 8.4 (3.8) | 10.6 (4.8) |
| 3/4" (DN20) | 8.8 (4.0) | 13.2 (6.0) |
| 1" (DN25) | 12.1 (5.5) | 18.1 (8.2) |
| 1-1/4" (DN32) | 17.6 (8.0) | - |
| 1-1/2" (DN40) | 19.9 (9.0) | 30.9 (14.0) |
| 2" (DN50) | 23.2 (10.5) | 36.4 (16.5) |
| 2-1/2" (DN65) | - | 59.5 (27.0) |
| 3" (DN80) | - | 72.8 (33.0) |
| 4" (DN100) | - | 103.6 (47.0) |

Sizing

For steam see TIS 1.618.

Spare parts

See TIS 1.430.

Installation

The valve should be installed in a horizontal pipeline with the direction of flow arrow as indicated by the arrow on the valve body. If necessary the actuator should be commissioned in accordance with the Installation and Maintenance Instructions supplied with the valve.

How to order

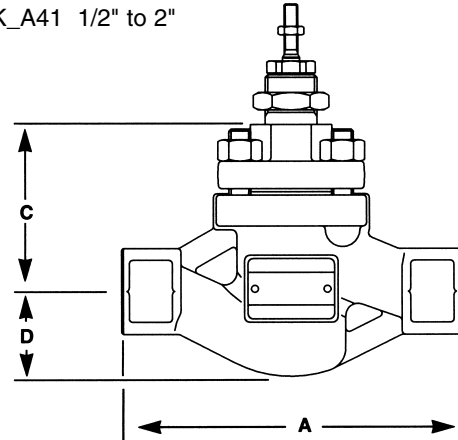
Example: 1 off - 2" KEA43 C_V (US) 42 control valve flanged ANSI 300.

Compatible actuators and positioners

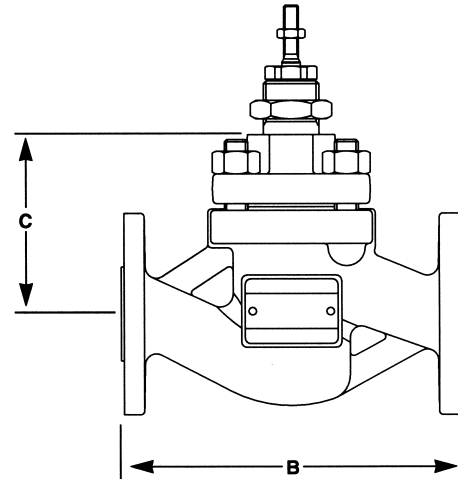
| | |
|--------------------|---|
| Electric | EL3500, EL5060 and EL5600 series. |
| Pneumatic | PN5000, 6000, 3000, 4000, 1000 Series |
| Positioners | PP5 (pneumatic), EPS (electropneumatic) and Sp2 (smart electropneumatic). |

Refer to relevant TIS sheet for further details

K_A41 1/2" to 2"



K_A43 1/2" to 4"



TI-1-429-US 9.03