

spirax/sarco®

LEA 31 and LEA 33 Cast Iron Valves

Description

A range of two port cast iron single seat globe valves conforming to ANSI/ASTM standard 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 characterised modulating or on/off flow control. For close control with pneumatic actuators a valve positioner should additionally be used.

Sizes and pipe connections

LEA31 1/2", 3/4", 1", 1-1/4", 1-1/2" and 2" screwed NPT.
LEA33 1", 1-1/2", 2", 2-1/2", 3" and 4" flanged ANSI 125.

Options

Trim	Equal %, reduced Cv, fast opening and soft seal.
Stern seal	PTFE chevrons, and graphite packing.

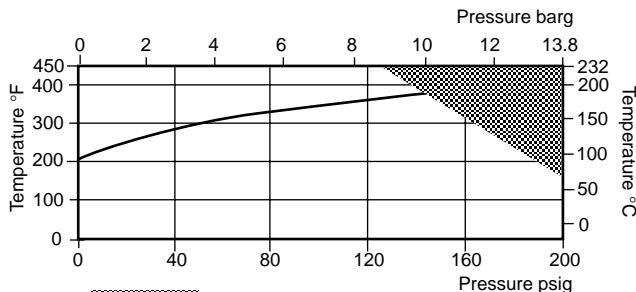
Technical data

Plug Design	1/2" to 2-1/2" (DN15 to DN65)	Contoured
	3" and 4" (DN80 and DN100)	Vee port
Leakage	Metal-to metal seat	ANSI/FCI 70/2 Class IV
	PTFE soft seat	ANSI/FCI 70/2 Class VI
Flow	LEA valves Equal percentage (modulating)	
	LFA valves Fast opening (on/off)	
Rangeability	50/1	
	1/2" to 2" (DN15 to DN50)	LEA 3/4" (20mm)
Travel	LFA 9/16" (15mm)	
	2-1/2" to 4" (DN65 to DN100)	LEA 1-3/16" (30mm)
	LFA 3/4" (20mm)	

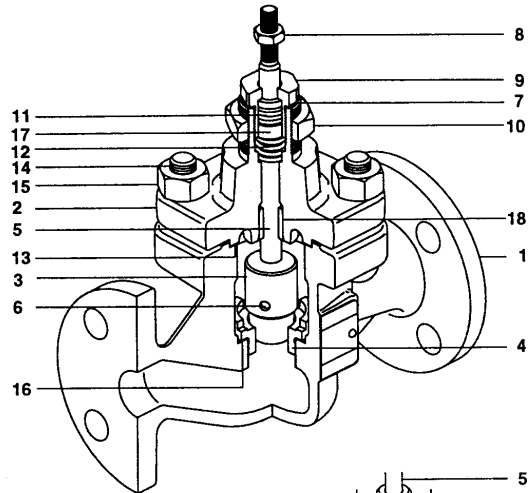
Limiting Conditions

Body design conditions	ANSI 125
Maximum design temperature	PTFE chevron seals 450°F (232°C) Graphite packed seals 450°F (232°C)
Minimum design temperature	14°F (-10°C)
Maximum cold hydraulic test pressure	300 psig (20.7 barg)
Maximum differential pressure	see actuator TIS.

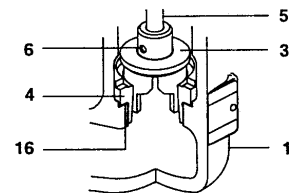
Operating Range



The product must not be used in this region.



LEA 33
3" and 4" plug and seat



Materials

No.	Part	Material	
1	Body	Cast Iron	ASTM A126 Class B
2	Bonnet	Ductile Iron	ASTM A395
3	Valve Plug	Stainless Steel	ASTM A276 Gr. 431
4	Valve Seat	Stainless Steel	ASTM A276
5	Valve Stem	Stainless Steel	ASTM A276 Gr. 431
6	Pin	Stainless Steel	A1S1 302
7	Gland Nut Gasket	Semi-Rigid Graphite Laminate	
8	Lock Nut	Stainless Steel	
9	Gland Nut	Stainless Steel	ASTM A276 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 Laminate	
14	Bonnet Studs	Steel	ASTM A193 B7
15	Bonnet Nuts	Steel	ASTM A194 2H
		1/2" to 3/4" (DN 15 to 20)	3/8" UNC
		1" to 2" (DN 25 to DN40)	1/2" UNC
		DN 50	5/8" UNC
16	Seat gasket	Semi-rigid graphite laminated	
17	Guide bush	Glass reinforced PTFE	
18	Bonnet guide	Stainless steel	AISI 440B hardened

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.

TIS 1.432 US 07.00

Cast Iron Valves

LEA 31 and LEA 33

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 % 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 trim for details see TIS 1.433 LEA valve options.

For conversion C_v(UK) = C_v(US) x 0.833 C_v K_{VS} = C_v(US) x 0.855

Dimensions

approximate in inches (mm)

Valve size	A	B	C	D
1/2" (DN15)	6.5 (165)	-	3.3 (84)	1.69 (43)
3/4" (DN20)	6.5 (165)	-	3.4 (87)	1.7 (44)
1" (DN25)	7.8 (197)	7.3 (184)	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)	4.0 (101)	2.5 (64)
2" (DN50)	10.5 (267)	10.0 (254)	4.2 (106)	3.0 (76)
2-1/2" (DN65)	-	10.9(276)	5.4 (136)	-
3" (DN80)	-	11.8 (298)	5.6 (141)	-
4" (DN100)	-	13.9(353)	6.5 (165)	-

Weights

approximate in pounds (kg)

	LEA31	LEA33
1/2" (DN15)	8.8 (4.0)	-
3/4" (DN20)	9.3 (4.2)	-
1" (DN25)	11.5 (5.2)	17.0 (7.7)
1-1/4" (DN32)	16.8 (7.6)	-
1-1/2" (DN40)	20.0 (9.1)	25.4 (11.5)
2" (DN50)	23.0 (10.4)	29.0 (13.0)
2-1/2" (DN65)	-	53.0 (24.0)
3" (DN80)	-	66.0 (30.0)
4" (DN100)	-	97.0 (44.0)

Sizing

For steam see TIS 1.618.

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 actuator.

How to order

Example: 1 off 2" LEA33 C_v(US)42 control valve flanged ANSI 125.

Spare parts

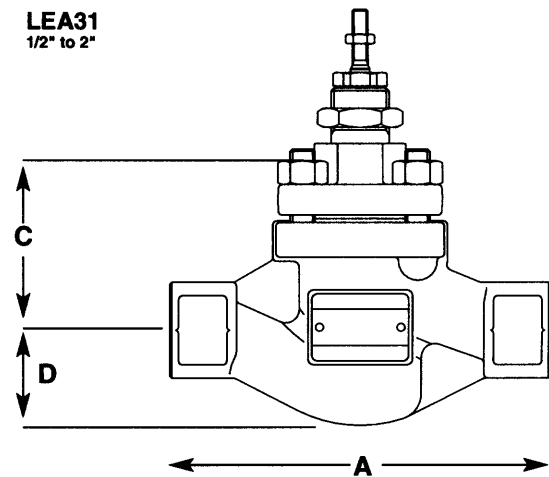
See TIS 1.430.

Compatible actuators and positioners

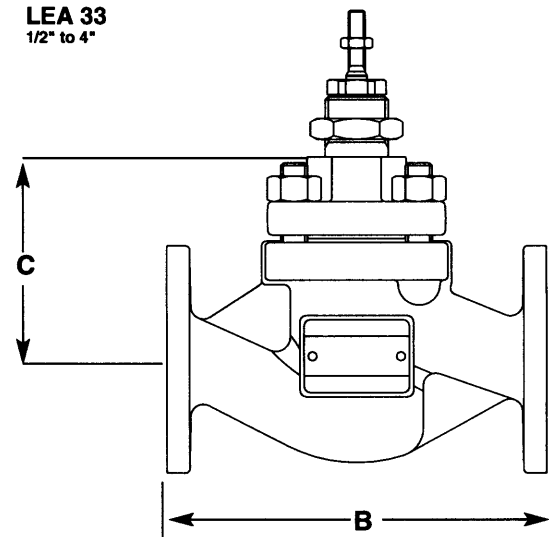
Electric	EL3500 and EL5600 series.
Pneumatic	PN3000 and PN4000 series.
Positioners	PP5 (pneumatic), EP5 (electropneumatic) and SP1 (smart electropneumatic).

Refer to relevant TIS for further details.

LEA31
1/2" to 2"



LEA 33
1/2" to 4"



TIS 1.432 US 07.00