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ISO 9001

spirax sarco

TI-P303-01

CH Issue 4

LE31 and LE33 Cast Iron Valves

Description

LE31 and LE33 are a range of two port cast iron single seat globe valves conforming to DIN 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 characterised modulating or on/off flow control. For close control with pneumatic actuators a valve positioner is also advisable.

Sizes and pipe connections

LE31 1/2", 3/4", 1", 1 1/4", 1 1/2" and 2".

Screwed BSP (BS 21 parallel). NPT also available.

LE33 DN15, 20, 25, 32, 40, 50, 65, 80 and 100.

Standard flange BS 4504 PN16.

Option of JIS 10 and KS 10. Refer to separate literature for details of ANSI standard LEA31 and LEA33 valves.

Options

Trim Equal %, reduced K_v, fast opening (on/off) and soft seal.

Stem seal PTFE chevrons or graphite packing.

Refer to TI-P303-05 for further details.

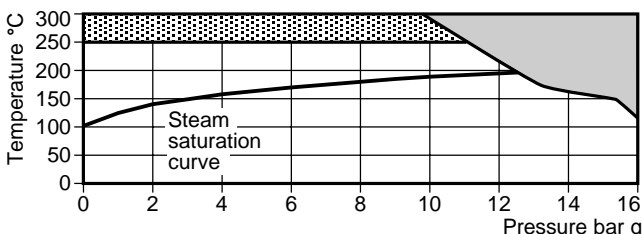
Technical data

Plug design	DN15 to DN65 (1/2" to 2 1/2")	Contoured
	DN80 and DN100 (3" and 4")	Vee port
Leakage	Metal-to-metal	IEC 534-4 Class IV (0.01% of K _v)
	Soft seal	IEC 534-4 Class VI
Flow characteristic (standard)	Equal percentage	
Rangeability	50 to 1	
Travel	DN15 to DN50 (1/2" to 2")	20 mm
	DN65 to DN100 (2 1/2" to 4")	30 mm

Limiting conditions

Body design conditions	PN16
Maximum design temperature	250°C
Graphite packed seals	300°C
Minimum design temperature	-10°C
Designed for a maximum cold hydraulic test pressure of 24 bar g	
Maximum differential pressures	see actuator TI

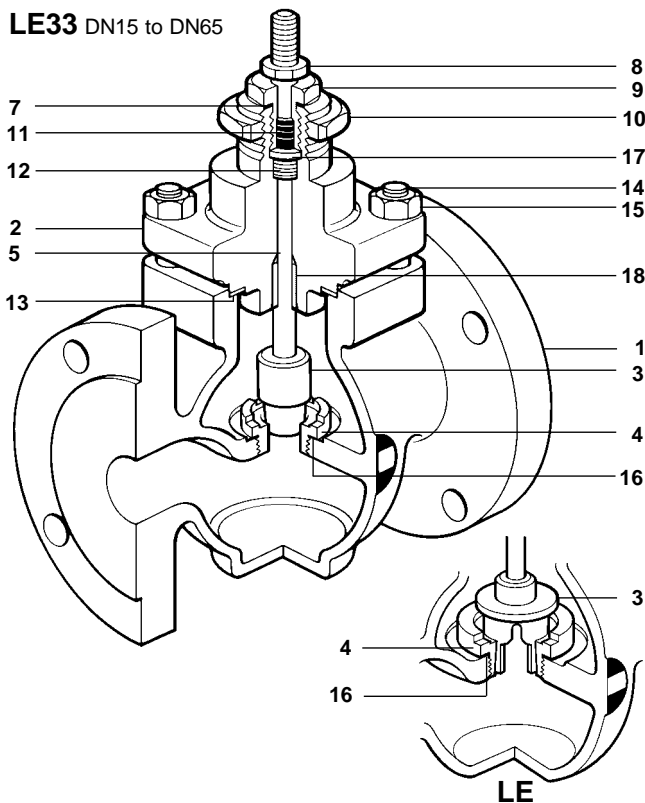
Operating range



The product must not be used in this region.

High temperature graphite packing required. See option TI-P303-05.

LE33 DN15 to DN65



LE
DN80 and DN100
plug and seat

Materials

No	Part	Material
1	Body	Cast iron DIN 1691 GG 25
2	Bonnet	SG iron DIN 1693 Gr. GGG 40.3
3	Valve plug	Stainless steel BS 970 431 S29
4	Valve seat	Stainless steel BS 970 431 S29
5	Valve stem	Stainless steel BS 970 431 S29
7	Gland nut gasket	Semi-rigid graphite laminated
8	Lock-nut	Stainless steel BS 6105 A4-80
9	Gland nut	Stainless steel BS 970 431 S29
10	Mounting nut	Mild steel zinc plated NFA 35553 XC 18S
11	Gland seals	PTFE chevrons Graphite rings
12	Gland spring	Stainless steel BS 2056 316 S42
13	Bonnet gasket	Semi-rigid graphite laminated
14	Bonnet studs	Steel BS 4439 Gr. 8.8
15	Bonnet nuts	Steel BS 3692 Gr. 8
16	Seat gasket	DN15 to DN40 (1/2" to 1 1/2") M10
		DN50 and DN65 (2" to 2 1/2") M12
		DN80 and DN100 (3" and 4") M16
16	Seat gasket	Semi-rigid graphite laminated
		PEEK DN15 - 50
17	Guide bush	PTFE DN65 - 100
		316L Graphite seal
18	Bonnet guide	Stainless steel A151 440B Hardened

Local regulations may restrict the use of this product to below the conditions quoted.

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

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Kvs values

Size	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100
Equal % trim	4	6.3	10	16	25	36	63	100	160
On/off trim	4	6.3	10	18	28	50	85	117	180

Three reductions in K_V are available for equal percentage trim, for further details see 'LE valve options' TI-P303-05.

For conversion C_V (UK) = $K_V \times 0.97$ C_V (US) = $K_V \times 1.17$

Dimensions/weights (approximate) in mm and kg

Size	BS 4504 PN16				Weights	
	A	B	C	D	LE31	LE33
DN15	88	130	90	38	2.3	3.6
DN20	102	150	90	38	2.8	4.2
DN25	134	160	99	51	4.0	7.0
DN32	144	180	104	51	5.0	9.2
DN40	150	200	104	62	7.0	10.2
DN50	180	230	108	71	8.6	12.5
DN65	-	290	141	-	-	19.5
DN80	-	310	148	-	-	25.3
DN100	-	350	169	-	-	36.4

Installation

The valve should be installed in a horizontal pipeline with the direction of flow as indicated by the arrow on the valve body. The actuator position will depend on the type fitted to the valve. Full instructions are supplied with the product.

How to order

Example: 1 off 1½" LE31, K_{VS} 25, Control valve screwed BSP.

Spare parts

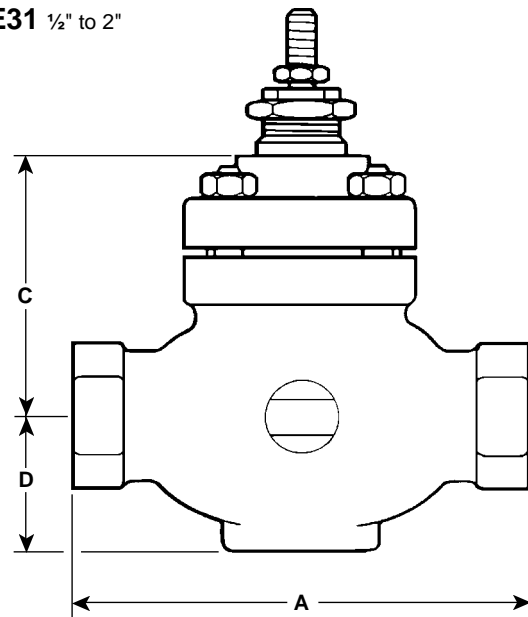
See TI-P303-02

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 TI for further details.

LE31 ½" to 2"



LE33 DN15 to DN100

