

## Description

The 51E type is a range of two-way cast iron single seat globe valves with proportional pneumatic actuator in sizes DN25 to DN80 available with flanged connections, suitable for steam and liquid.

The 51E type provide characterized modulating flow control, which contains two types, Normal Close (N.C.) and Normal Open (N.O.).

The pneumatic actuators are a range of single spring linear actuators having a diaphragm for 3-15 psi (0.2-1 bar) air pressure.

Each actuator is fitted with a combined mechanical stroke indicator. For control with pneumatic actuators an I/P transducer is required.



## Limiting Conditions

Body Design Condition	PN16
Maximum Design Temperature	PTFE Packing 180 °C
	Graphite Packing 300 °C
Maximum Cold Hydraulic Test Pressure	20 kgf/cm <sup>2</sup>
Maximum Operating Pressure	10 kgf/cm <sup>2</sup>

## Technical Data

Applicable Fluid	Steam, Liquid	
Operating	Linear	Normal Close
		Normal Open
Type of Valve	Single Seated	
Characteristics	Proportional	
Air Operating Range	3 – 15 psi ( 0.2 – 1 bar )	
Leakage	Metal to Metal ( 0.01 % of Cv )	
Air Supply Actuator Connection	¼" PT	
Actuating	Pneumatic	
Stem Seal	PTFE Packing 180 °C	
	Graphite Packing 300 °C	
Plug Design	Parabolic	

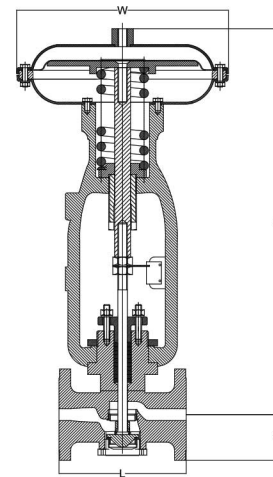
## Sizes and Pipe Connections

DN 25, 32, 40, 50, 65, 80 Flanged (DIN 2502)

## Dimensions (Approximate) mm

Size	Operating Type					
		N.C.	N.O.	N.C.	N.O.	G
	W	L	L	H	H	
DN 25	265	120	160	455	490	60
DN 32	265	120	160	455	490	70
DN 40	265	205	205	455	505	75
DN 50	265	205	205	495	550	85
DN 65	265	325	325	550	550	95
DN 80	265	325	325	550	550	100

Constructions are a bit different according the sizes.



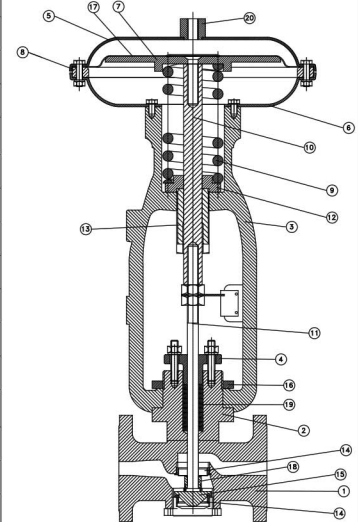
## Pneumatic Diaphragm Control Valves (Proportional) - 51E

### Weights (Approximate) kg

Size	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
Normal Open	20	21.5	24.5	26.5	36	36
Normal Close	19.5	19	24	26	35.5	36

### Materials

No.	Part	Material
1	Body	GG 25
2	Bonnet	Gray Cast
3	Yoke	GG 25
4	Packing Flange	Gray Cast
5	Upper Diaphragm Casing	C.S.
6	Lower Diaphragm Casing	C.S.
7	Diaphragm Plate	Gray Cast
8	Casing Ring	Gray Cast
9	Spring *	Cadmium Plate
10	Actuator Stem	C.S.
11	Valve Stem	AISI 304
12	Lower Spring Bottom	Gray Cast
13	Spring Adjuster	Brass
14	Seat Ring	AISI 304
15	Valve Plug	AISI 304
16	Yoke Luck Nut	Brass
17	Diaphragm *	Nylon Insert
18	Plug Nut	AISI 304
19	Packing	Graphite or Teflon
20	Actuator Stem Screw	C.S.



Note: (\*) Spare Part

### Cv Values

Size	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
Normal Open	8	10	18	28	42	51
Normal Close	8	10	18	28	42	51

Note: The capacity of E.S.E valves is expressed as the flow co-efficient Cv. The flow co-efficient value Kvs is extensively used in Europe. Its relationship to the Cv unit is given by  $Cv=1.167 Kvs$ .

### 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 air supply should be installed in the ¼"PT air supply connection on top of the actuator.

### How to Order

Example: 51E – DN25 – N.C., Diaphragm Control Valve with PTFE packing.