SAMSON SED

CATALOG

2/2 - Way Angle Seat Valves

SMART IN FLOW CONTROL.

Description and Features

The SED Angle Seat Valve is composed of a 2/2-way angle seat valve body and a pneumatically operated piston actuator, which is mounted with a stainless steel adaption to the valve body.
Depending on the size, the actuators are made of plastic or aluminium.
The plastic actuators consist of a high temperature resistant plastic.
A self-adjusting gland assures reliable longlife performance. The gland is protected against dust and damage by a wiper, which is located in front of the gland.

The SED Angle Seat Valve is suitable for shut off, dosing, control and regulating liquid or gaseous media.
The angle seat valve can be designed to specific requirements.
Applications engineered for optimized flow characteristics is achieved by reduced Kv/Cv-values and equal percentage or linear flow curves.
Even simple solutions like noise reduction are possible.

Features

- High flow rate.
- Assembly of actuator is isolated from the media with sealing prior to the thread.
- 360° adjustable actuator orientation.
- Comprehensive modular accessories suitable for retrofitting after installation.
- Actuator options include normally closed, normally open, or double acting.
- Variety of valve body end connections including threaded socket, butt weld and socket weld in different international standards, flanged ends and sanitary clamps.

Applications

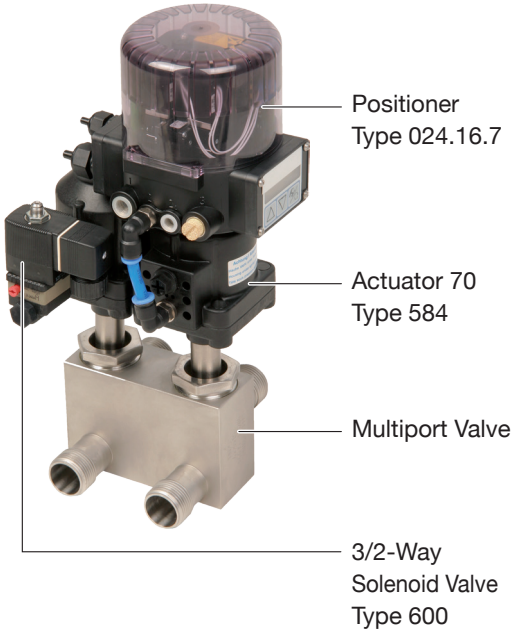
Industries, applications, and media where the SED seat valves may be used.

Industry:
Pharmaceutical, medical, food, beverage, cosmetics, chemical, packaging, plastic, rubber, textile and color industry.

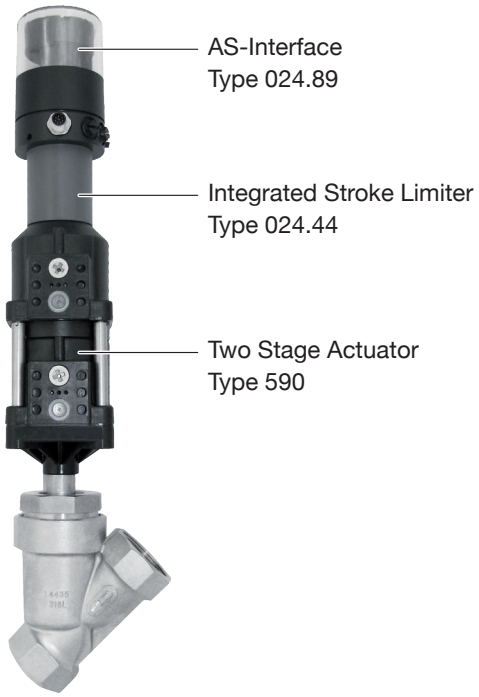
Applications:
Sterilization in CIP and SIP, autoclave, steam generation, washing and cleaning facilities, filling, cooling circuits, heating facilities, boiler construction, dosing, packaging, drying, temperature and pressure control and process flow.

Media:
Steam, water, cooling water, gases, nitrate, compressed air, oils and various chemicals.

Multiport valve for the control and shut off of heating or cooling media, heating of fermentation units and batch boilers.



2/2-way angle seat valves with two stage actuator, adjustable stroke limiter, AS-Interface and circumferential optical position indicator, used for the filling of production containers with weighing equipment.



Bioreactor from Solaris biotechnology with SED 2/2-Way Angle Seat Valves for purified steam and diaphragm valves for aseptic media.

Ordering Key and Ordering Example

Pos.	Description	Code	Specification
1	**Type:**	580	Manual valve, plastic hand wheel
		581	Manual valve, stainless steel hand wheel, metal bellow
		584	Pneumatic valve, plastic actuator material PAMX D6
		585	Pneumatic valve, aluminium actuator
		590	Pneumatic valve, two stage plastic actuator (only Cf. 1)
2	**Size:**	08-80	DN 8, 10, 15, 20, 25, 32, 40, 50, 65, 80
3	**Valve body material:**	7	Stainless steel, investment cast 1.4404/S31603, ASME BPE Table MM-2.1-1
		75	Stainless steel, investment cast 1.4408
4	**Valve body end connection:**	**1**	**Threaded socket BSP**
		1N	Threaded socket NPT
		40	**Butt weld end ISO 1127 (DIN 11866 Series B)**
		41	Butt weld end DIN 11850 Series 1
		42	**Butt weld end DIN 11850 Series 2 (DIN 11866 Series A)**
		45	**Butt weld end ASTM 269 ASME BPE (DIN 11866 Series C)**
		49	Butt weld end SMS 3008
		51	Flange PN10/16 DIN 2564, face to face DIN EN 558-1, Series 1
		740	Clamp ISO 1127, for tube EN ISO 1127 face to face DIN EN 558-1, Series 1
		742	Clamp DIN 32676, for tube DIN 11850 face to face DIN EN 558-1, Series 1
		745	Clamp ASME BPE, for tube ASME BPE face to face DIN EN 558-1, Series 1
5	**Sealing:**	3	Encapsulated circumferential PTFE sealing
6.1	**Actuator control function:**		Manually operated
		1	Normally closed (NC), orientation 90° to flow direction
		2	Normally open (NO), orientation 90° to flow direction
		3	Double action (DA), orientation in flow direction
6.2	**Actuator type:**	S	Plastic hand wheel
		T	Stainless steel hand wheel
		43	Plastic actuator with Stainless steel adaption, piston Ø 45 Flow **below** the seat
		44	Plastic actuator with Stainless steel adaption, piston Ø 45 Flow **above** the seat
		45	Plastic actuator with Stainless steel adaption, piston Ø 45 Flow **below** the seat
		46	Plastic actuator with Stainless steel adaption, piston Ø 45 Flow **above** the seat
		70	Plastic actuator with Stainless steel adaption, piston Ø 70 Flow **below** the seat
		71	Plastic actuator with Stainless steel adaption, piston Ø 70 Flow **above** the seat
		125	Plastic actuator with Stainless steel adaption, piston Ø 125 Flow **below** the seat
7	**Surface roughness of the bodies in Ra: (µm)**	02	Internal mechanically polished Ra ≤ 0,8 µm
		03	Internal mechanically polished Ra ≤ 0,8 µm + Electropolished
		07	Internal mechanically polished Ra ≤ 0,6 µm
		08	Internal mechanically polished Ra ≤ 0,6 µm + Electropolished
		09	Internal mechanically polished Ra ≤ 0,4 µm
		10	Internal mechanically polished Ra ≤ 0,4 µm + Electropolished

Bold = preferential standards

Type 584, Actuator 70

Code:	1		2		3		4		5		6.1		6.2
Artikel No.:	584	.	25	.	75	.	1	.	3	.	1		70

Type:
584
Pneumatic valve
Plastic actuator
Material PAMX D6

Size:
DN 25

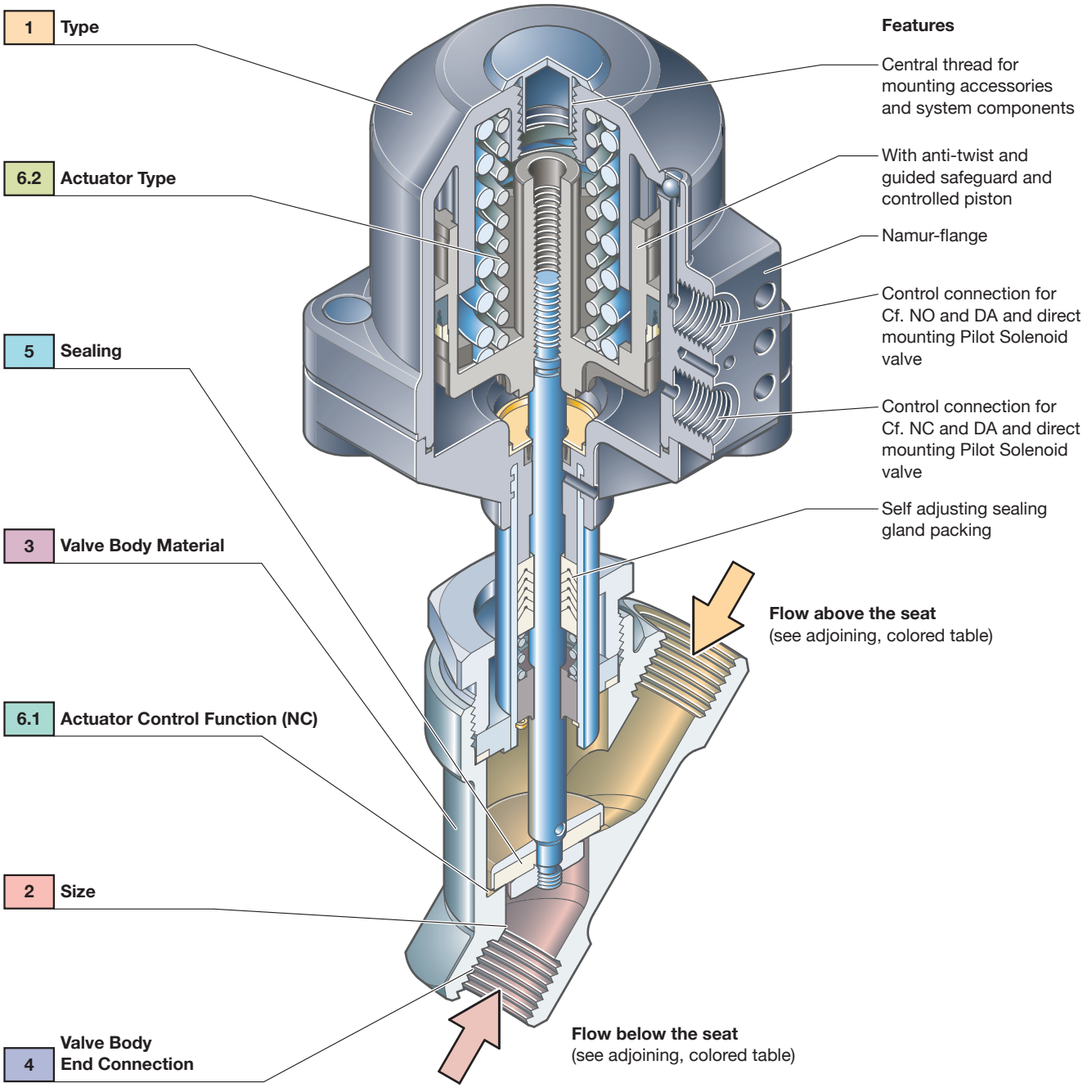
Valve Body Material:
Stainless steel, investment cast 1.4408/316

Valve Body End Connection:
Threaded socket

Sealing:
Encapsulated circumferential PTFE Sealing

Actuator Control Function:
Normally closed (NC), orientation 90° to flow direction

Actuator Type:
Plastic actuator with Stainless steel adaption, piston Ø 70



Technical Data

Operating Conditions

Operating Medium:	Neutral, agressive, gaseous, and liquid media. Media must be compatible with the materials of construction.
Viscosity:	Max. 600 mm^2/sec
Medium Temperature:	-10 to +180°C for PTFE sealing
Working Pressure:	See table
Control Medium:	Neutral gases, air
Temperature	
Control Medium:	Max. +80°C
Working Temperature:	-10 to +90°C
Size:	DN 8-80
Valve Body Material:	See ordering key page 4
Sealing:	PTFE capsuled (NBR, FKM, EPDM on request)
Actuator Material:	See ordering key page 4
Filling Volume:	Actuator 43, 45, 46 0,03 dm^3
	Actuator 70/71 0,13 dm^3
	Actuator 125 0,63 dm^3

Kv-Value Water (m^3/h)

Size	8	10	15	15	20	25	32	40	50	65	65	80
End connection Code												
Threaded socket	-	-	-	1,1N	1,1N	1,1N	1	1,1N	1,1N	-	1,1N	-
Butt weld ends	40	41, 42	45	40, 41, 42	40, 41, 42, 45	40, 41, 42,45,49	40, 41, 42	40, 41, 42,45,49	40,41, 42,45,49	45, 49	40, 42	40, 45, 49
Clamp ends	740	741, 742	745	740, 741, 742	740, 741, 742, 745	740, 741, 742, 745	740, 741, 742	740, 741, 742, 745	740, 741, 742, 745	745, 749	740, 741, 742	740,745, 749
Flange	-	-	-	51	51	51	51	51	51	-	51	51
Kv-Value actuator type code 43	2,1	2,4	2,4									
Kv-Value for all actuator types except code 43				5,2	10,0	15,0	22,5	40,0	72,0	72,0	105,0	105,0

Measuring at 20°C, 1 bar pressure at the valve input and the free outlet, measured at the valve body with threaded socket.

Working Pressure for Valves with flow **below** the seat

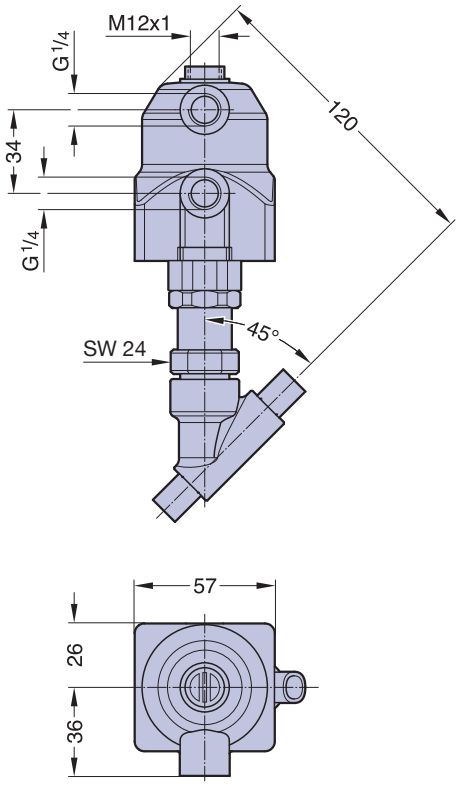
Actuator Type Code	Type	Ø Actuator Piston	Control Function (Cf.)	Control Pressure min. - max. (bar)	Size 8-15	15	20	25	32	40	50	65	80
					Working Pressure max. (bar)								
	580		Manually op.			16	16	16	10	10	10		
	581		Manually op.			10	10	10	10	10	10		
43	584	45	1 (NC)	4,5-7	16								
45	584	45	1 (NC)	4,5-7		11	6	2,5					
70	584/590	70	1 (NC)	4,5-7		25	20	10	7	4,5	3		
125	584	125	1 (NC)	4,5-7			25	25	25	20	15	10	7
43	584	45	2 (NO)	page 7	25								
45	584	45	2 (NO)	page 8		25	22	14					
70	584	70	2 (NO)	page 9		25	25	25	25	16	11		
125	584	125	2 (NO)	page 10						25	25	22	16
43	584	45	3 (DA)	page 7	25								
45	584	45	3 (DA)	page 8		25	25	20					
70	584	70	3 (DA)	page 9		25	25	25	25	17	11		
125	584	125	3 (DA)	page 10						25	25	22	16

Working Pressure for Valves with flow **above** the seat (suitable to only a limited extent for liquid media, there is a danger of waterhammer)

Actuator Type Code	Type	Ø Actuator Piston	Control Function (Cf.)	Control Pressure min. - max. (bar)	Size 8-15	15	20	25	32	40	50	65	80
					Working Pressure max. (bar)								
46	584	45	1 (NC)	page 8		10	10	10					
71	584	70	1 (NC)	page 9		10	10	10	10	10	10		

All pressures are gauge pressures.

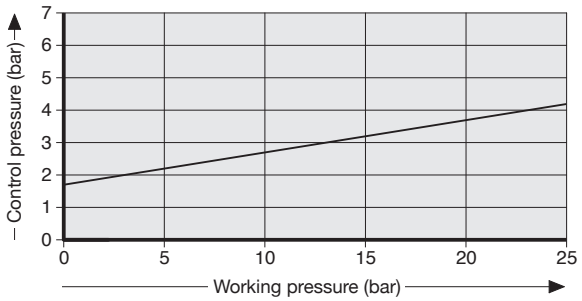
Type 584, Actuator 43



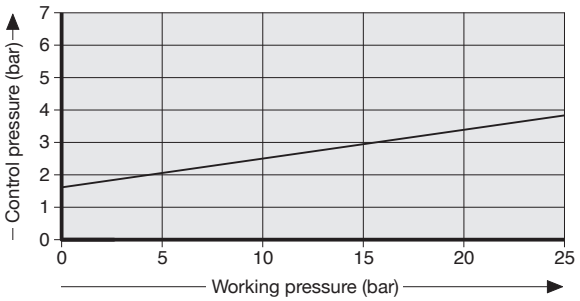
Weight ca. 0,7 kg

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Actuator 43 (NO), flow below the seat

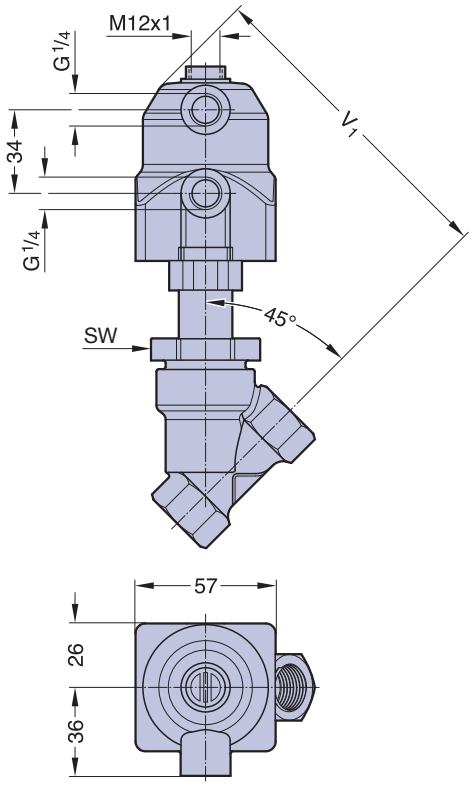


Actuator 43 (DA), flow below the seat

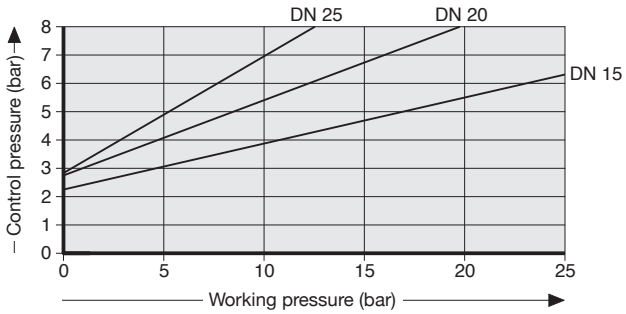


Working pressure normally closed (Cf. 1), flow below the seat as well as Working terms, see table page 6.
All pressures are gauge pressures.

Type 584, Actuator 45 and Actuator 46



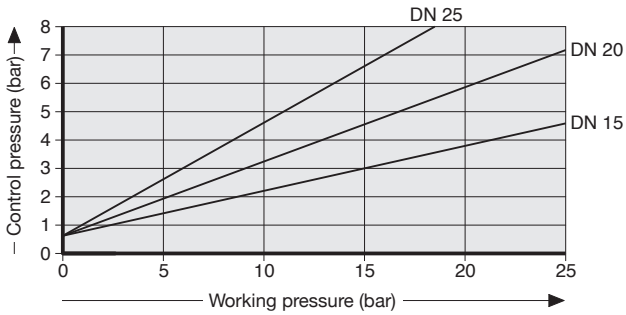
Actuator 45 (NO), flow below the seat



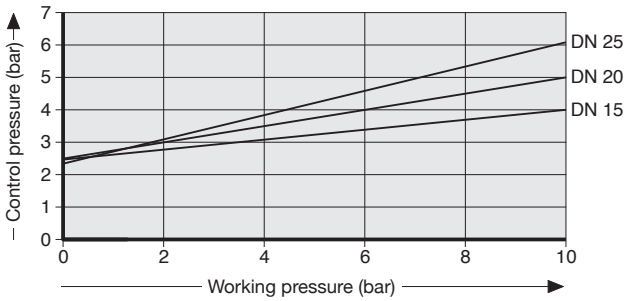
Measurement and weight table Actuator type 45 and 46			
DN	SW	V_1	Total weight ca. (kg)
15	36	130	0,8
20	41	136	1,1
25	46	140	1,2

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Actuator 45 (DA), flow below the seat



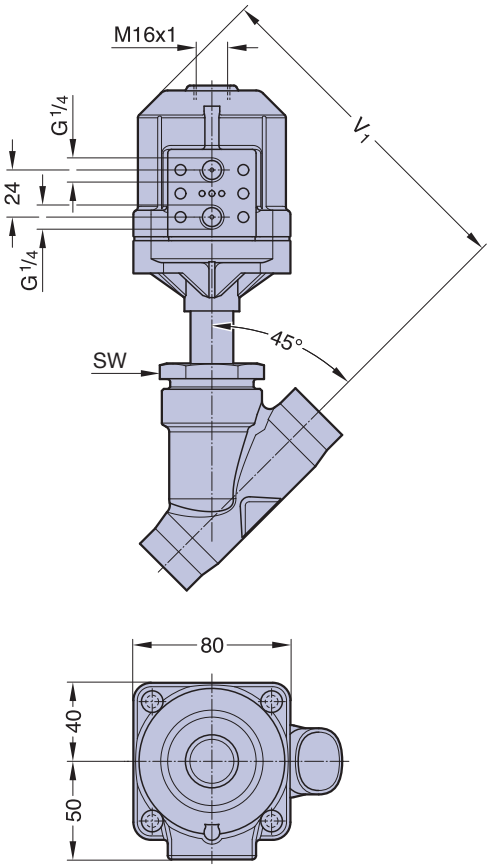
Actuator 46 (NC), flow above the seat



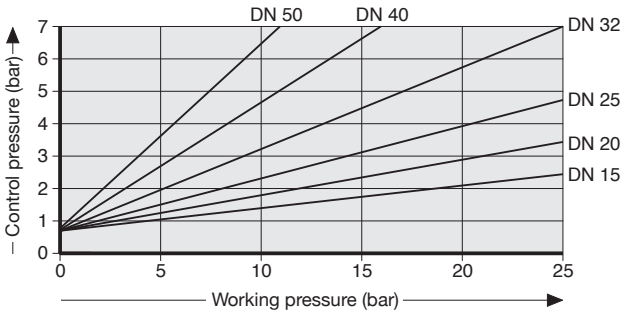
Working pressure normally closed (Cf. 1), flow below the seat as well as Working terms, see table page 6.
All pressures are gauge pressures.

Type 584, Actuator 70 and Actuator 71

Namur-Flange
The threaded bushing 024.583.001 for the valve mounting necessary is available on request.



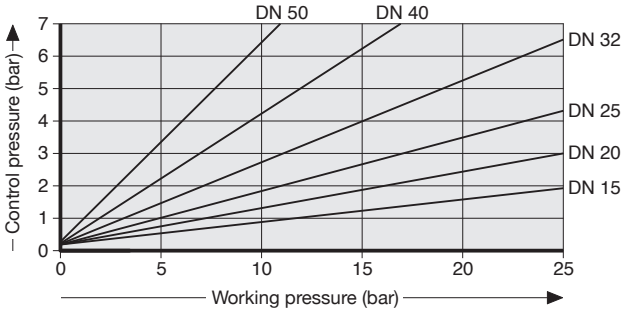
Actuator 70 (NO), flow below the seat



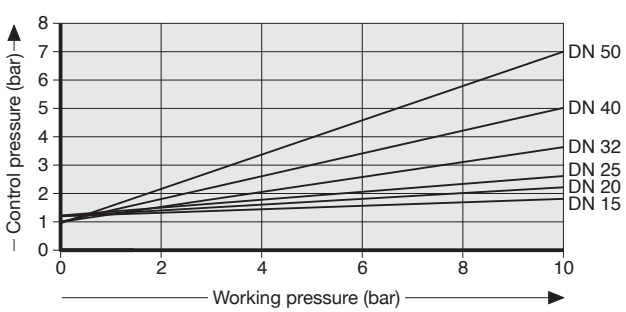
Measurement and weight table Actuator type 70 and 71			
DN	SW	V_1	Total weight ca. (kg)
15	36	162	1,2
20	41	173	1,3
25	46	173	1,6
32	55	179	2,1
40	60	185	2,2
50	75	192	3,2

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Actuator 70 (DA), flow below the seat

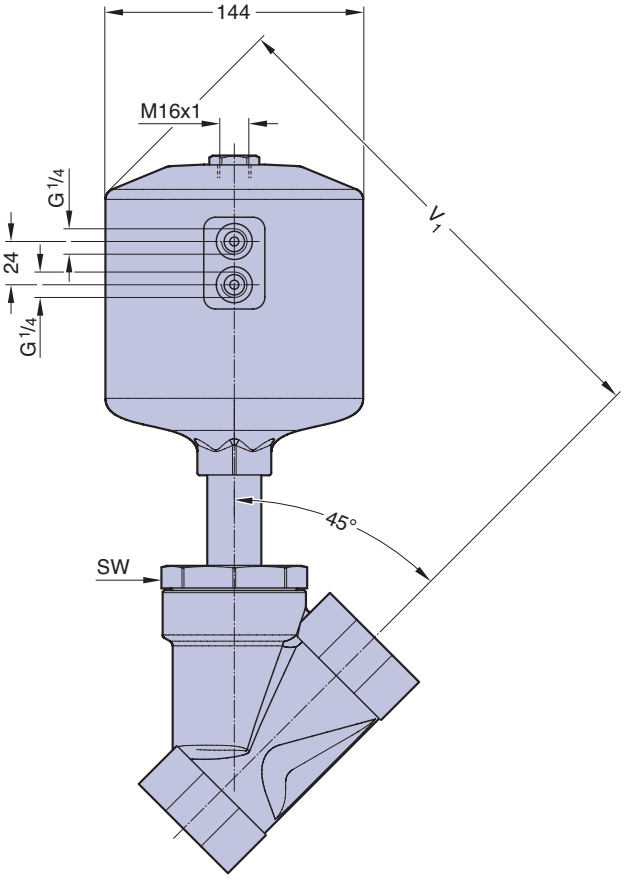


Actuator 71 (NC), flow above the seat



Working pressure normally closed (Cf. 1), flow below the seat as well as Working terms, see table page 6.
All pressures are gauge pressures.

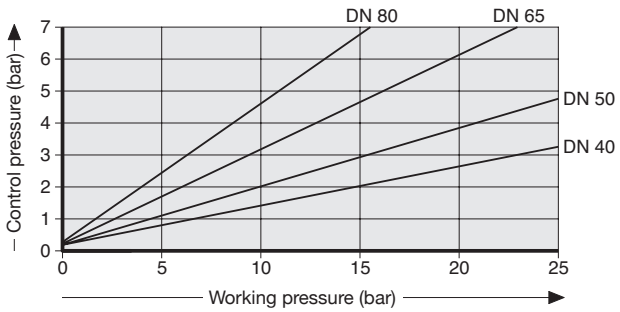
Type 584, Actuator 125



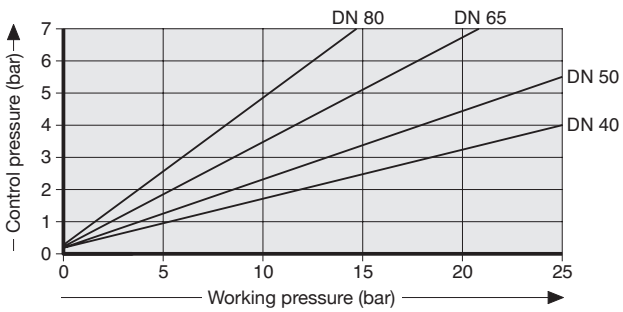
Measurement and weight table Actuator type 125			
DN	SW	V_1	Total weight ca. (kg)
20	41	258	3,7
25	46	263	3,9
32	55	269	4,4
40	60	274	4,9
50	75	282	5,9
65	75	295	7,8

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Actuator 125 (NO), flow below the seat

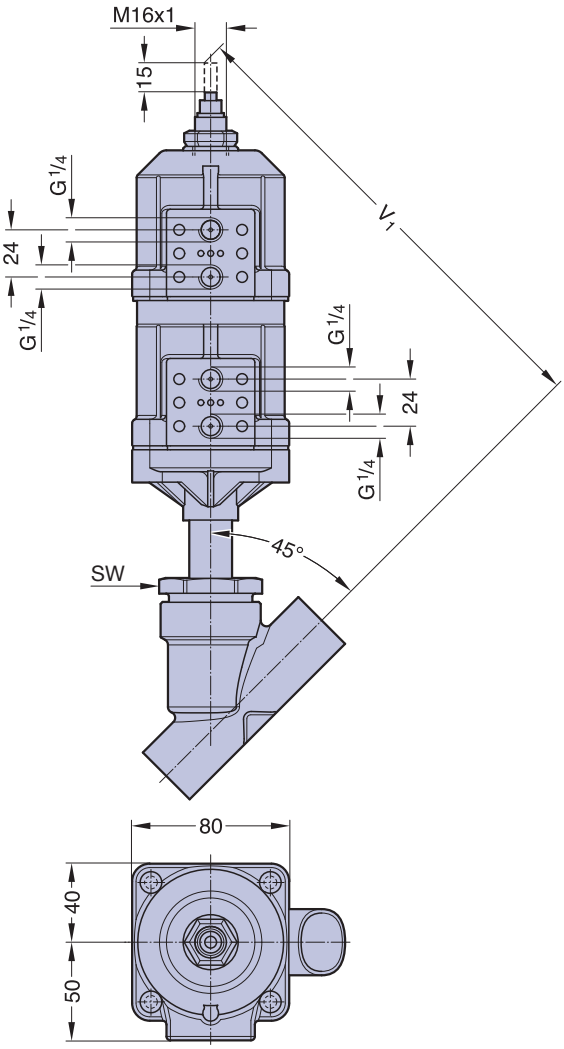


Actuator 125 (DA), flow below the seat



Working pressure normally closed (Cf. 1), flow below the seat as well as Working terms, see table page 6.
All pressures are gauge pressures.

Type 590, Two Stage Actuator 70



2/2-Way Angle Seat Valves with Two Stage Actuator
The pneumatically controlled two stage piston actuator is made of two plastic actuators. The two stages can be independently actuated from each other.
In order to open the valve completely with the full flowrate, the lower piston has to be actuated. Limited opening or flowrate is possible by actuating the upper piston.
An adjustable stroke limiter allows to adjust the linear movement of the upper position. An optical indicator which is directly connected with the valve spindle shows the stroke.
The control function of the valve is normally closed (Cf.1).

Application
The valve is mainly used for filling with controlled filling of a tank, container or barrel. For filling, the valve is completely opened with the full flow rate. At the end of the filling cycle, the valve automatically reduces to the second stage of filling with a reduced flow rate for an accurate finish fill.

Measurement and weight table Actuator type 70

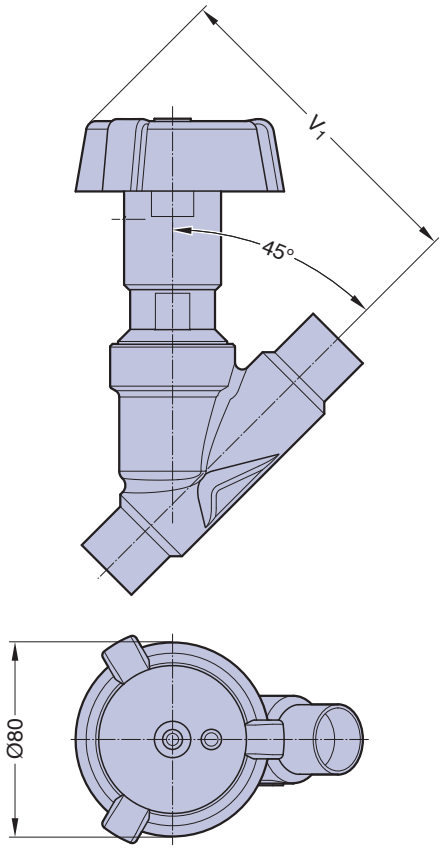
DN	SW	V_1	Total weight ca. (kg)
15	36	232	1,9
20	41	238	2,1
25	46	243	2,2
32	55	249	2,9
40	60	255	3
50	75	263	4

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Working pressure normally closed (Cf. 1), flow below the seat as well as Working terms, see table page 6.
All pressures are gauge pressures.

Type 580, Manually operated

Spindle sealing with self adjusting gland packing



Advantages:

- Hygenic design, easy cleaning
- High temperature resistance
- Minimized dead leg design
- Optical position indicator
- Easy maintenance
- Good regulation properties
- Clean and smooth exterior for sterile washdowns

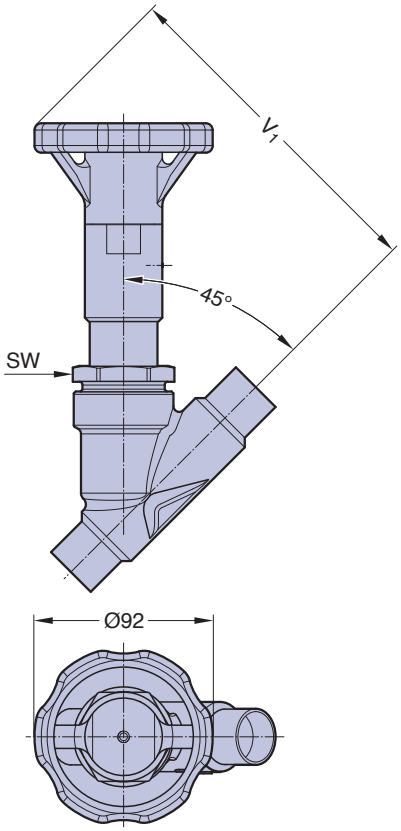
Measurement and weight table

DN	V_1	Total weight ca. (kg)
15	137	1,1
20	135	1,3
25	135	1,6
32	154	2,3
40	154	2,8
50	154	4,3

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Working pressure, see table page 6.
All pressures are gauge pressures.

Type 581, Manually operated



Advantages:

- Hygenic design, easy cleaning
- High temperature resistance
- Stainless steel below
- Minimized dead leg design
- Optical position indicator
- Easy maintenance
- Good regulation properties
- Clean and smooth exterior for sterile washdowns
- Regulating cone

Specific application:

- Pure or clean steam and gaseous media

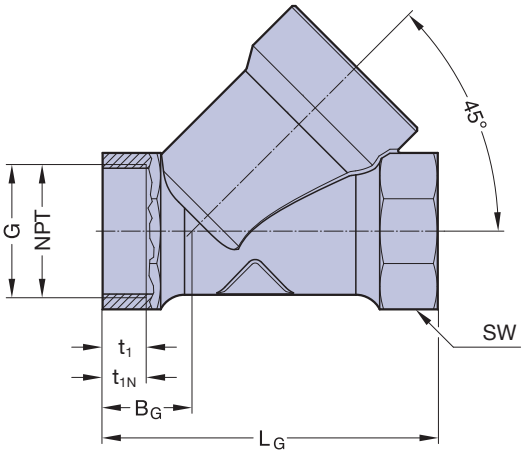
Measurement and weight table

DN	SW	V_1	Total weight ca. (kg)
15	36	177	1,8
20	41	168	1,9
25	46	175	2,1
32	55	183	2,9
40	60	189	3,4
50	75	197	4,4

Valve body types see page 14 - 15
Control equipment and accessories see page 108 - 115
catalog “Vales for aseptic Applications”

Working pressure, see table page 6.
All pressures are gauge pressures.

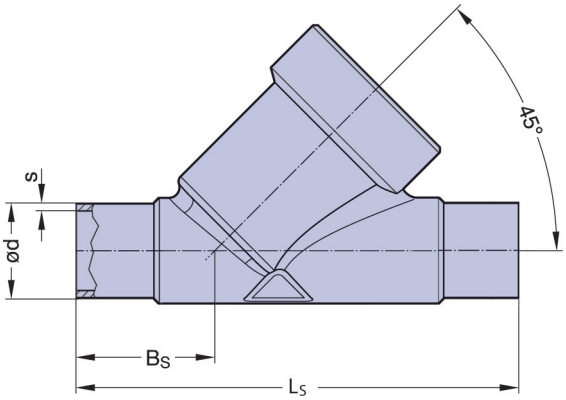
Valve Body Threaded Socket and Butt Weld End



Threaded Socket, Connection Code 1 (DIN ISO 228) & 1N (NPT), **Valve Body Material 1.4408 (Code 75)**

				DIN ISO 228, Code 1		NPT, Code 1N			
DN	L_G	B_G	Actuator Type	G	t_1	NPT	t_{1N}	SW	
15	65	17	45, 46, 70, 71	G 1/2	15,0	NPT 1/2	16	27	6-kt
20	75	18	45, 46, 70, 71, 125	G 3/4	14,0	NPT 3/4	17	32	6-kt
25	90	24	45, 46, 70, 71, 125	G 1	15,0	NPT 1	17	39	6-kt
32	110	33	70, 71, 125	G 1 1/4	17,0	n.a.	n.a.	50	8-kt
40	120	30	70, 71, 125	G 1 1/2	17,0	NPT 1 1/2	21	55	8-kt
50	150	40	70, 71, 125	G 2	18,5	NPT 2	22	70	8-kt
65	190	46	125	G 2 1/2	26,0	NPT 2 1/2	30	85	8-kt

Measurements in mm, G-Thread

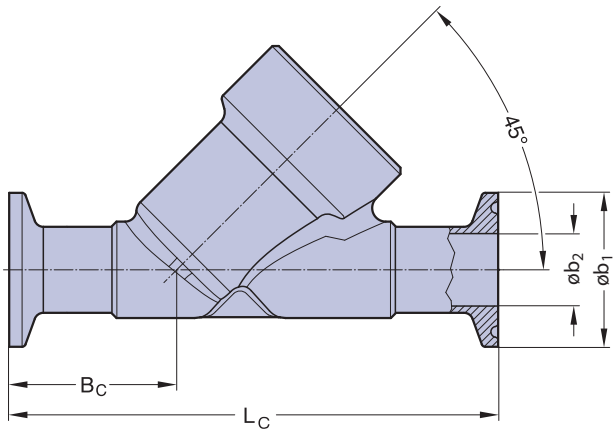


Butt Weld End, Valve Body Material 1.4404/316L (Code 7)

				Connection Code									
				DIN 11850				**SMS**		**ASTM 269**		**ISO 1127**	
				Series 1		**Series 2**		**3008**		**ASME BPE**			
Code				**41**		**42**		**49**		**45**		**40**	
DN	LS	BS	Actuator Type	ød	s	ød	s	ød	s	ød	s	ød	s
8	77	26	43, 44	-	-	-	-	-	-	-	-	13,5	1,6
10	77	26	43, 44	12	1	13	1,5	-	-	-	-	-	-
15	77	26	43, 44	-	-	-	-	-	-	12,7	1,65	-	-
15	105	35,5	45, 46, 70, 71	18	1	**19**	**1,5**	-	-	-	-	**21,3**	**1,6**
20	125	39	45, 46, 70, 71, 125	22	1	**23**	**1,5**	-	-	**19,05**	**1,65**	**26,9**	**1,6**
25	135	38,5	45, 46, 70, 71, 125	28	1	**29**	**1,5**	25	1,2	**25,4**	**1,65**	**33,7**	**2**
32	155	48	70, 71, 125	34	1	**35**	**1,5**	-	-	-	-	**42,4**	**2**
40	175	47	70, 71, 125	40	1	**41**	**1,5**	38	1,2	**38,1**	**1,65**	**48,3**	**2**
50	205	48	70, 71, 125	52	1	**53**	**1,5**	51	1,2	**50,8**	**1,65**	**60,3**	**2**
65	285	96	125	-	-	**70**	**2**	63,5	1,6	**63,5**	**1,65**	**76,1**	**2**
80	285	96	125	-	-	-	-	76,1	1,6	**76,2**	**1,65**	**88,9**	**2,3**

Measurements in mm, preferential standards in bold

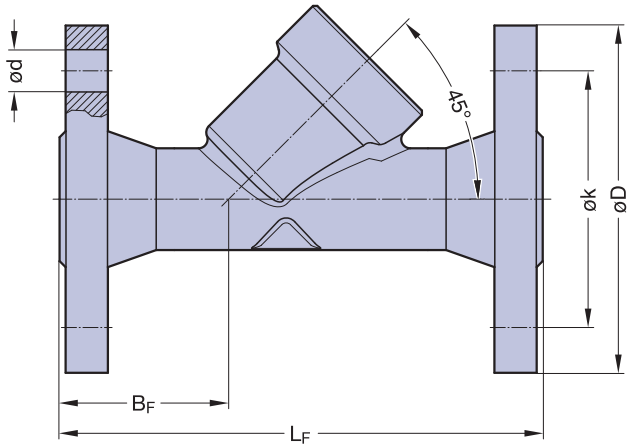
Valve Body Clamp Socket and Flange



Clamp End, Valve Body Material 1.4404/316L (Code 7)

					Connection Code					
Clamp End ident. **Tube End ident.**					Similar **ISO 2852** **ISO 1127**		**DIN 32676** **DIN 11850**		**ASME BPE** **ASME BPE**	
					740		**741 / 742**		**745**	
DN	NPS	LC	BC	Actuator Type	øb1	øb2	øb1	øb2	øb1	øb2
8	1/4	102	39	43, 44	25	10,3	-	-	-	-
10	3/8	102	39	43, 44	-	-	34	10	-	-
15	1/2	102	39	43, 44	-	-	-	-	25	9,4
15	1/2	130	48	45, 46, 70, 71	50,5	18,1	34	16	-	-
20	3/4	150	54	45, 46, 70, 71, 125	50,5	23,7	34	20	25	15,75
25	1	160	56	45, 46, 70, 71, 125	50,5	29,7	50,5	26	50,5	22,1
32	1 1/4	180	60,5	70, 71, 125	64	38,4	50,5	32	-	-
40	1 1/2	200	67	70, 71, 125	64	44,3	50,5	38	50,5	34,8
50	2	230	73	70, 71, 125	77,5	56,3	64	50	64	47,5
65	2 1/2	290	-	125	91	72,1	91	66	77,5	60,2
80	3	310	-	125	130	109,7	-	-	91	72,9

Measurements in mm, NPS inch



Flange, Connection Code 51, Valve Body Material 1.4404/316L (Code 7)

DN	L_F	B_F	Actuator Type	øD	ød	øk	number of drilling
15	130	42	45, 46, 70, 71	95	14	65	4
20	150	54	45, 46, 70, 71, 125	105	14	75	4
25	160	56	45, 46, 70, 71, 125	115	18	85	4
32	180	59	70, 71, 125	140	18	100	4
40	200	71	70, 71, 125	150	18	110	4
50	230	83	70, 71, 125	165	18	125	4
65	290	-	125	185	18	145	4
80	310	-	125	200	18	160	8

Measurements in mm

Accessories and System Components

MANUAL ADJUSTMENTS – OPTICAL INDICATION

024.10
Optical position indicator

024.11
Stroke limiter

024.12
Stroke limiter with optical position indicator

024.13
Manual override with optical position indicator

024.42
Manual override with hand wheel

ELECTRICAL SWITCH BOXES – MANUAL ADJUSTMENTS – PILOT CONTROL

024.63-024.65
Control head switch with optical indicator
024.89
AS-Interface

024.91-024.93
Control head switch

024.90
Limit switch, open position

024.50
Contact - Free Limit Switch for 2 & 3 valve positions
Optional with stainless steel housing

Type 600 - DN 1,6
3/2-way Solenoid Valve with hollow screw for single mounting

Type 602 - DN 1,2
3/2-way Solenoid Valve with hollow screw for single mounting

Type 603 - DN 1,2
3/2-way Solenoid valve for serial mounting

Type 605 - DN 1,6
3/2-way Solenoid valve for serial mounting

024.16.7
Electropneumatic positioner 4-20 mA
for pneumatically actuated valves with single or double acting actuator
Operating voltage 24 V
Central mounted and also for retrofitting microprocessor controlled electronics for signal processing, actual/setpoint optional as process controller with PID qualities.

Other positioners upon request.

Overview Product Range

Diaphragm Valve

Aseptic Diaphragm Valve

Industrial Metal Diaphragm Valve

Plastic Diaphragm Valve

Angle Seat Valve

Two-Way Metal Angle Seat Valve

Aseptic Process Solution

Sterile sampling unit

System Components

Contact - Free Limit Switch

Control Head

Digital Electropneumatic Positioner

Flow Measurement

Variable Area Flowmeter

Measuring Sensor

Notes

Notes

SAMSON SED

CATALOG

2/2 - Way
Angle Seat Valves

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TD09 0047 Rev1, Subject to alteration