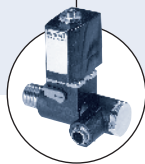


**2/2-way Angle-Seat Valve with NPT ends  
for media up to 365°F (185°C) 1/2" – 2 1/2"**

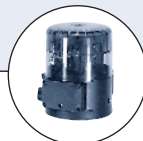


- High flow rates
- Very high cycle life
- Long life alternative to ball valves
- Threaded end body
- Suitable for 150 PSI steam
- Deliverable with flow direction below or above seat
- Normally closed, normally open; or double-acting

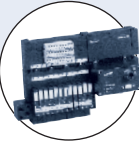
Type 2000 Angle Seat can be combined with...



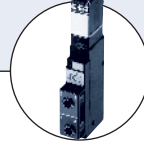
**Type 6012/6014 P**  
Pilot valve



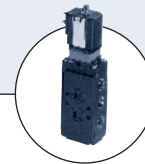
**Type 8631**  
TopControl On/Off-Pilot/Switch



**Type 8640/8644**  
Valve bank



**Type 5470**  
Solenoid valve



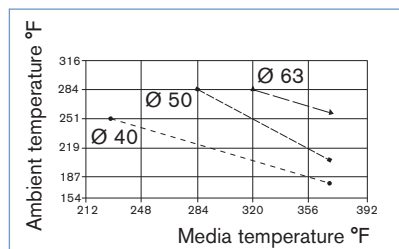
**Type 6519 NAMUR**  
Pilot valve

The externally piloted angle-seat valve is operated with a single or double-acting piston actuator. The actuator is available in two different materials, depending on the ambient temperature. High flow rates are attained with the virtually straight flow path. The reliable self-adjusting packing gland provides high sealing integrity. These maintenance-free and robust valves can be retrofitted with a comprehensive range of accessories for position indication, stroke limitation or manual override.

Flow to open valves are anti-waterhammer design (the line pressure dampens the closing). Flow to close valves for gases and steam can generally use smaller actuators, at a lower cost but may require higher air pilot pressure to open and may have a lower flow capacity  $C_v$  (see pressure charts).

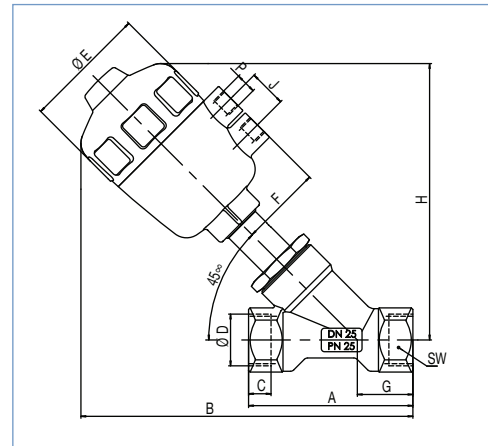
Technical data	
<b>Orifice</b>	1/2" – 2 1/2" (DN 13 – 65)
<b>Body materials</b>	Threaded port body Weld end body – Tube
	Investment cast bronze or 316L Stainless steel 316L – see 2000 tube end datasheet
<b>Actuator material</b>	PA, PPS on request
<b>Plug seal material</b>	PTFE (NBR, FKM and EPDM on request)
<b>Media</b>	Water, alcohol, oils, fuel, salt solution, alkali solutions, organic solvents, steam
<b>Viscosity</b>	max. .93 in <sup>2</sup> /s; 600 cSt; 600 mm <sup>2</sup> /s
<b>Packing gland</b> (with silicone grease)	PTFE V-rings with spring compensation
<b>Media temperature<sup>1)</sup></b>	14°F to 365°F (-10°C to +185°C) with PTFE seal
<b>Ambient temperature</b>	
<b>PA actuator<sup>1)</sup></b>	14°F to 140°F (-10°C to +60°C)
<b>PPS actuator</b>	
Actuator sizes Ø 40–80	41°F to 284°F (+5°C to +140°C)
Actuator sizes Ø 100–125	41°F to 194°F (+5°C to +90°C)
<b>Installation</b>	As required, preferably with actuator in upright position
<b>Control medium</b>	Neutral gases, air
<b>Max. pilot pressure</b>	
Actuator size Ø 40 - 80	PA and PPS 145 PSI
Actuator size Ø 100	PA 145 PSI
Actuator size Ø 100	PPS 100 PSI
Actuator size Ø 125	PA and PPS 100 PSI

<sup>1)</sup> **Note:** For PA actuators in the sizes 40, 50 and 63, the combination of max. media temperature and max. ambient temperature is as shown in the following chart. Use PPS actuator material above these lines.



Dimensions [mm]

DN Orifice	Threaded Port Body			All bodies				
	Ø D	A	B	C	Actuator size Ø	H	E Ø	P
13/15	NPT 1/2	85	173	14	50	137	64	G 1/4
20	NPT 3/4	95	178	14	50	145	64	G 1/4
			206	14	63	170	80	
25	NPT 1	105	212	14	50	148	64	G 1/4
			212	14	63	173	80	
			234	14	80	195	101	
32	NPT 1 1/4	130	226	16	63	186	80	G 1/4
			255	16	80	210	101	
			297	16	100	256	127	
40	NPT 1 1/2	130	230	18	63	189	80	G 1/4
			250	18	80	213	101	
			301	18	100	260	127	
			329	18	125	288	153	
50	NPT 2	150	250	20	63	205	80	G 1/4
			270	20	80	225	101	
			316	20	100	271	127	
			346	20	125	301	153	
65	NPT 2 1/2	185	296	22	80	239	101	G 1/4
			344	22	100	287	127	
			372	22	125	315	153	



Ordering chart for valves with FLOW DIRECTION BELOW SEAT  
Actuator material PA (polyamide) with threaded port

Control function	Orifice	Port Connection Threaded port NPT	Actuator size Ø [mm]	C <sub>v</sub> value	Operating pressure up to 365°F [PSI]	Minimum pilot pressure [PSI]	Item no. Bronze body	Item no. St. st. body
A 2/2-way, NC by spring action	1/2" (13)	1/2	50	4.9	232	56.5	454 604	454 619
	3/4" (20)	3/4	50	9.3	160	56.5	454 605	454 620
Normally closed	1" (25)	1	63	11.6	232	60.9	456 033	456 028
			63	22.0	160	60.9	454 606	454 621
	1 1/4" (32)	1 1/4	80	23.2	232	72.5	456 029	456 030
			63	31.3	87	60.9	456 031	456 032
	1 1/2" (40)	1 1/2	80	32.5	218	72.5	454 607	456 622
			80	44.1	150	72.5	454 608	454 623
			100	44.1	181	63.8	454 784	454 788
	2" (50)	2	125	44.1	232	60.9	456 067	456 068
			100	63.8	104	63.8	454 610	454 624
	2 1/2" (65)	2 1/2	125	100	63.8	150	46.4	454 785
104.4				75	46.4	454 611	454 625	
104.4				102	75.4	462 656	462 657	

B 2/2-way valve, open by spring force, available on request

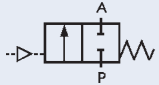
Other pressure ranges, circuit functions, flow from above, PPS actuators and accessories available on request

## Technical data

Flow direction above seat (only for gases and steam)	
<b>Media</b>	Gaseous media and steam
<b>Other technical data</b>	Please see information for flow direction below seat
<b>Attention!</b>	Valves with flow direction above seat are only conditionally usable for liquid media. There is a danger of waterhammer!

## Ordering chart for valves WITH FLOW DIRECTION ABOVE THE SEAT

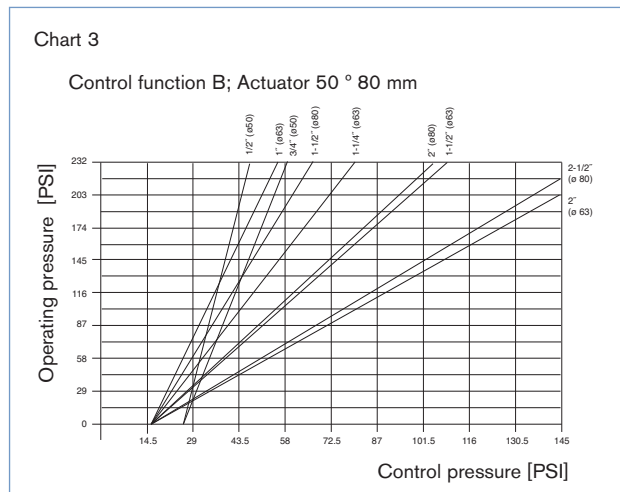
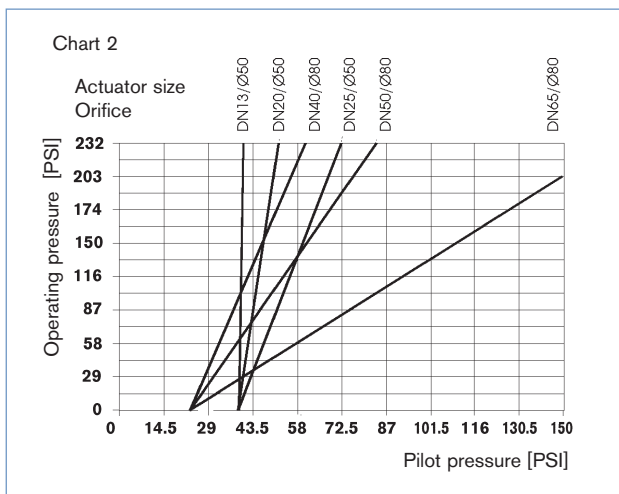
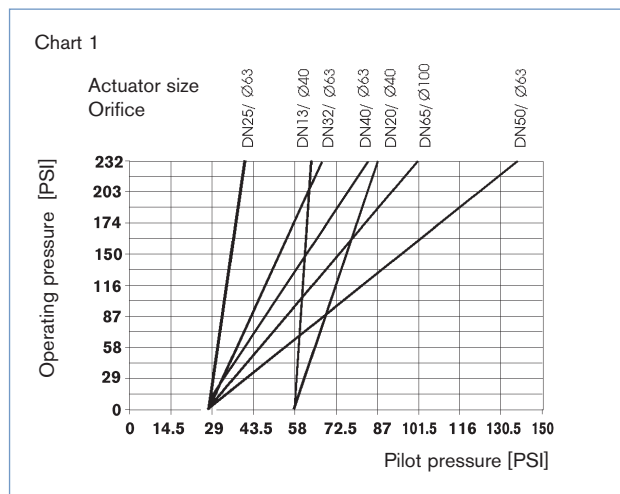
Actuator material PA (polyamide) with pilot pressure depending on operating pressure according to Charts 1 and 2

Control function	Orifice	Port Connection Threaded port NPT	Actuator size Ø [mm]	C <sub>v</sub> value	Operating pressure up to 365°F [PSI]	Item no. bronze body media inserts	Item no. St. st. body
<b>A</b> 2/2-way, NC by spring action  Normally closed	1/2" (13)	1/2	50	4.9	232	454 626	454 635
	3/4" (20)	3/4	50	9.3	232	454 627	454 636
	1" (25)	1	63	22.0	232	454 628	454 637
	1 1/4" (32)	1 1/4	63	31.3	232	454 629	454 638
	1 1/2" (40)	1 1/2	63	40.6	232 <sup>1)</sup>	454 630	454 639
			80	40.6	232	454 631	454 640
	2" (50)	2	63	56.8	232 <sup>1)</sup>	454 632	454 641
			80	60.3	232 <sup>1)</sup>	454 633	454 642
	2 1/2" (65)	2 1/2	80	89.3	203 <sup>1)</sup>	454 634	454 643

<sup>1)</sup> Pilot pressure >80 PSI at maximum system pressure.

Other pressure ranges, circuit functions, PPS actuators and accessories on request

Pressure charts 1 and 2 with circuit function A and flow direction above the seat (air pressure required to lift off the seat)



Pilot valve according to actuator size	Voltage	Item no.
<b>3/2-way pilot valves Type 6012 P/6014 P with banjo mounting; 1/4" NPT customer air connection</b>		
Type 6012 P for actuator Ø 50 and 63 mm	024 V/DC	428 565
$C_v = .05$	120 VAC/60 Hz	428 567
Type 6014 P for actuator Ø 50 to 125 mm	024 V/DC	429 134
$C_v = .13$	120 VAC/60 Hz	429 136

Fitting type	Shape	Material	Item no.
Male G 1/4 x 1/4 NPT female	Straight	Nickel plated brass	US62754
Male G 1/4 x 1/4" tube push connection	Swivel elbow	Nickel plated brass	US63251

Options and accessories (on request)

- Circuit function I (double-acting actuator) and B (spring-return normally-open)
- PPS actuator
- Electrical position feedback, Type 1060 and 1062
- Magnetic-inductive proximity sensors, Type 1071
- Stroke limitation max. and min./max.
- Manual actuator
- NAMUR adapter for pilot valves

**Note:** Please request the Accessories data sheet 2000 (Accessories for valve series 2000 – 2031).

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## Technical data

## Ordering chart for valves WITH FLOW DIRECTION BELOW THE SEAT, NORMALLY OPEN

Actuator material PA (polyamide) with pilot pressure depending on operating pressure according to Chart 3

Control function	Orifice	Port Connection Threaded port NPT	Actuator size Ø [mm]	C <sub>v</sub> value	Operating pressure up to 365°F [PSI]	Item no. bronze body	Item no. St. st. body
B 2/2-way, NO by spring action	1/2" (13)	1/2	50	4.9	232	454 612	454 597
	3/4" (20)	3/4	50	9.3	232	454 613	454 598
	1" (25)	1	63	22.0	232	454 614	454 599
Normally open	1 1/4" (32)	1 1/4	63	31.3	232	454 615	454 600
	1 1/2" (40)	1 1/2	63	40.6	232 <sup>1)</sup>	454 616	454 601
			80	40.6	232	454 786	454 790
	2" (50)	2	63	56.8	188 <sup>1)</sup>	454 617	454 602
			80	60.3	232 <sup>1)</sup>	454 787	454 791
	2 1/2" (65)	2 1/2	80	89.3	217 <sup>1)</sup>	454 618	454 603

<sup>1)</sup> Pilot pressure >80 PSI at maximum system pressure.

Other pressure ranges, circuit functions, PPS actuators and accessories on request

Connections NPT	Orifice [inch]	C <sub>v</sub>	Max. Operating Pressure <sup>2)</sup> } → Differential Pressure <sup>1)</sup>		Required Control Pressure CFA [PSI]	Weight [lbs.]	Actuator Size [mm] ø DIA
			CFA [PSI]	CFB [PSI]			
1/2	1/2	4.9	230		56	1.9	50
				230			50
3/4	3/4	9.4	160		56	2.1	50
				230			50
1	1	22.3	160		61	4.0	63
				230			63
1-1/4	1-1/4	32.2	203		65	6.8	80
				189			63
1-1/2	1-1/2	49.1	116		65	7.1	80
				131			63
			189		65	8.8	100
				230			80
2	2	64.4	116		65	15.4	100
				87			63
			174		65	22.4	125
				131			80
2-1/2	2-1/2	105.3	102		65	24.2	125
				87			80

<sup>1)</sup> Higher differential pressures by other combinations of actuators on request.<sup>2)</sup> Max. operating pressure with steam -> 150 PSI (365°F).

Ordering chart for valves

Ordering chart for valves WITH FLOW DIRECTION ABOVE THE SEAT, High temperature version, steam @ 150 PSI  
 Actuator material PPS (polyphenylsulfide) with pilot pressure depending on operating pressure according to Charts 1 and 2

Control function	Orifice	Port Connection Threaded port NPT	Actuator size Ø [mm]	C <sub>v</sub> value	Pilot air pressure @ 150 PSIG line pressure	Item no. bronze body	Item no. St. st. body
A 2/2-way, NC by spring action	1/2" (13)	1/2	50	4.9	<60	457 431	462 493
	3/4" (20)	3/4	50	9.3	<60	457 432	462 494
	1" (25)	1	63	22	<60	US09752	462 495
	1 1/4" (32)	1 1/4	63	31.3	<60	US09753	462 496
	1 1/2" (40)	1 1/2	63	40.6	66	457 335	462 497
	2" (50)	2	80	60.3	66	457 368	460 434
	2 1/2" (65)	2 1/2	100	104.4	78	US09754	US09755

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**Angle seat valve spare part sets** (kits contain a valve seat or sealing seat set; see drawing)

**SET 6 valve seat kit, 2/2-way valve with bronze body**

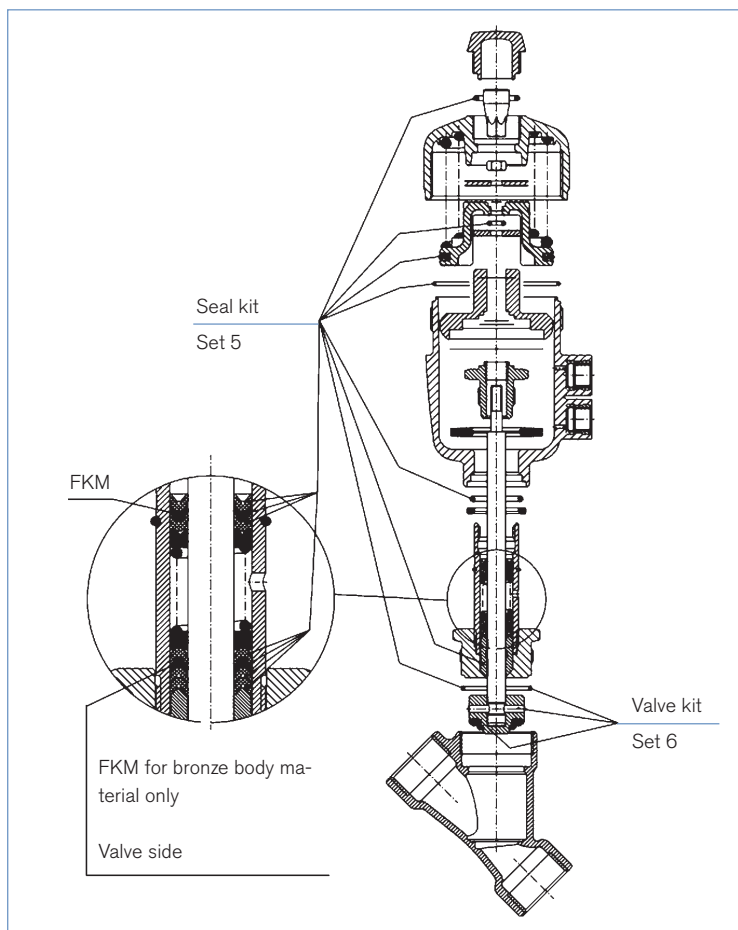
DN	Item no. PTFE seal	Item no. FKM seal
1/2" (13)	010 984 N	011 065 L
3/4" (20)	010 986 Q	011 070 V
1" (25) *	010 988 S	011 085 H
1" (25) **	159 635 D	--
1 1/4" (32)	011 044 P	011 088 L
1 1/2" (40)	011 046 R	011 107 L
2" (50)	011 390 T	011 109 W
2 1/2" (65)	011 064 K	011 120 L

**SET 6 valve seat kit, 2/2-way valve with stainless steel body**

DN	Item no. PTFE seal	Item no. FKM seal
1/2" (13)	011 134 E	011 234 J
3/4" (20)	011 171 K	011 253 V
1" (25) *	011 202 T	011 259 B
1" (25) **	160 737 G	--
1 1/4" (32)	011 208 H	011 262 W
1 1/2" (40)	011 209 A	011 267 T
2" (50)	011 214 N	011 269D
2 1/2" (65)	011 216 Q	011 307 U

\* Actuator size 50, Letter code D.

\*\* Actuator size 63/80, Letter code E/F.



**SET 5 Sealing set for PA-actuator**

Actuator size Ø	For Valve sizes	Item no. bronze body	Item no. stainless steel body
C 1 1/2" (40)	DN 13/20	643 438 D	643 438 D
D 2" (50)	DN 13/20/25	011 308 D	011 369 H
E 2 1/2" (63)	DN 25 - 50	011 334 N	011 372 U
F 3" (80)	DN 25 - 65	011 366 W	001 902 Y
G 4" (100)	DN 32 - 65	007 763 H	011 386 K
H 5" (125)	DN 40 - 65	011 368 G	011 387 L

**Set 5 sealing set for PPS-actuator**

Actuator sizes Ø	For Valve sizes	Item no. bronze body	Item no. stainless steel body
C 1 1/2" (40)	DN 13/20	643 536 X	643 536 X
D 2" (50)	DN 13/20/25	011 373 V	011 388 V
E 2 1/2" (63)	DN 25 - 50	007 765 B	007 766 C
F 3" (80)	DN 25 - 65	011 375 X	007 767 D
G 4" (100)	DN 32 - 65	011 374 W	011 389 W
H 5" (125)	DN 40 - 65	007 764 A	007 768 N

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