

2000 cryogenic extended stem



Type 2000 can be combined with...



Typ 8690

Pneum. control unit
with feedback



Typ 8691

Control head

2/2-way Angle-Seat Valve for high-quality cryogenic applications and steam

- Spring return closed or open, double-acting, manual operation
- Materials: stainless steel
- High flow rate
- With self-adjusting packing glands, intermediate relief and wiper
- Process controllers, positioners, control heads, feedback switches for high accuracy and rangeability

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 stainless steel 2-way body.

The reliable self-adjusting packing gland provides high sealing integrity. These maintenance-free and robust valves can be retro-fitted with a comprehensive range of accessories for position indication, stroke limitation or manual override. They are also available as manually operated valves.

Applications:

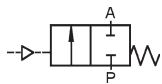
- ▶ Cryogenic 232 PSI / -320°F
- ▶ Steam up to 150 PSI / 365°F
- ▶ LN₂, O₂, Ar, CO₂, He, H₂, LNG
- ▶ Liquefied gases
- ▶ Systems engineering
- ▶ LNG storage and distribution
- ▶ Food processing – Lyophilization systems
- ▶ Dewars and tanks
- ▶ Medical facilities
- ▶ Road tankers
- ▶ Automated filling systems
- ▶ Transfer lines
- ▶ Vacuum jacketed and non-jacketed systems

Technical data	
Threaded connection	NPT, ISO
Weld ends	O.D. Tube
Nominal pressure stainless steel	232 PSI
Minimum control pressure	
Control function A	See chart on page 2
Control function B	See diagram on page 2
Maximum control pressure	145 PSI
Control fluid	Neutral gases, air
Maximum viscosity	.93 in ² /s (600 centistroke)
Temperatures	
Ambient	
PA-actuator	14°F to 140°F (-10°C to 60°C)
PPS-actuator	40°F to 266°F (5°C to 130°C)
Fluid	-320°F to 365°F (-196°C to 185°C)
Body material	316 Stainless Steel
Seal material	PTFE
Packing gland	Self-adjusting PTFE-stem seals, intermediate relief and wiper
Fluids	liquid oxygen, argon and nitrogen
Installation	Actuator in upright vertical position, no more than 45° from center.
Port connection	3/8" to 2" NPT

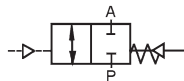
Technical data, continued

Control Functions

A – 2/2-way flow valve,
normally closed spring return

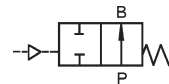


I – 2/2-way valve,
with double-acting actuator
(on request)

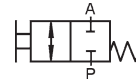


Control Functions

B – 2/2-way flow valve,
normally open spring return



Manually operated
I – 2/2-way valve



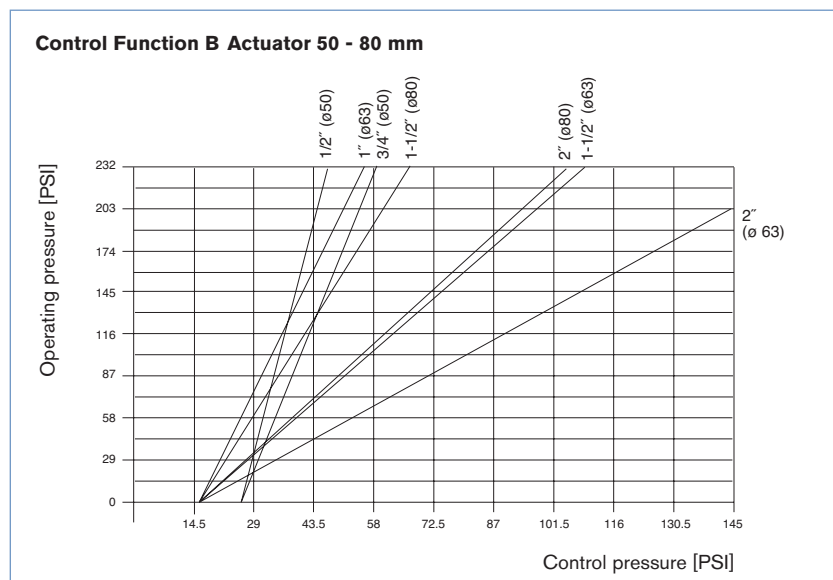
Connections ISO 228 NPT	Orifice [inch]	C _v	Max. Operating Pressure ¹⁾ } Differential Pressure ²⁾		Required Control Pressure CFA [PSI]	Weight [lbs.]	Actuator Size [mm] ø DIA
			CFA [PSI]	CFB [PSI]			
1/2	1/2"	4.9	232		56	4.2	50
				232			50
3/4	3/4"	9.4	232		56	2.6	50
				232			50
1	1	22.3	232		60	4.4	63
				232			63
1 1/2	1 1/2"	49.3	232		65	8.4	80
				130			7.3
				232	65	9.5	100
				232	65	11.7	80
2	2	64.6	203		65	16.1	100
				87			13.9
				232	65	23.1	125
				130	15.0	80	

1) Max. operating pressure with steam -> 150 PSI (365°F).

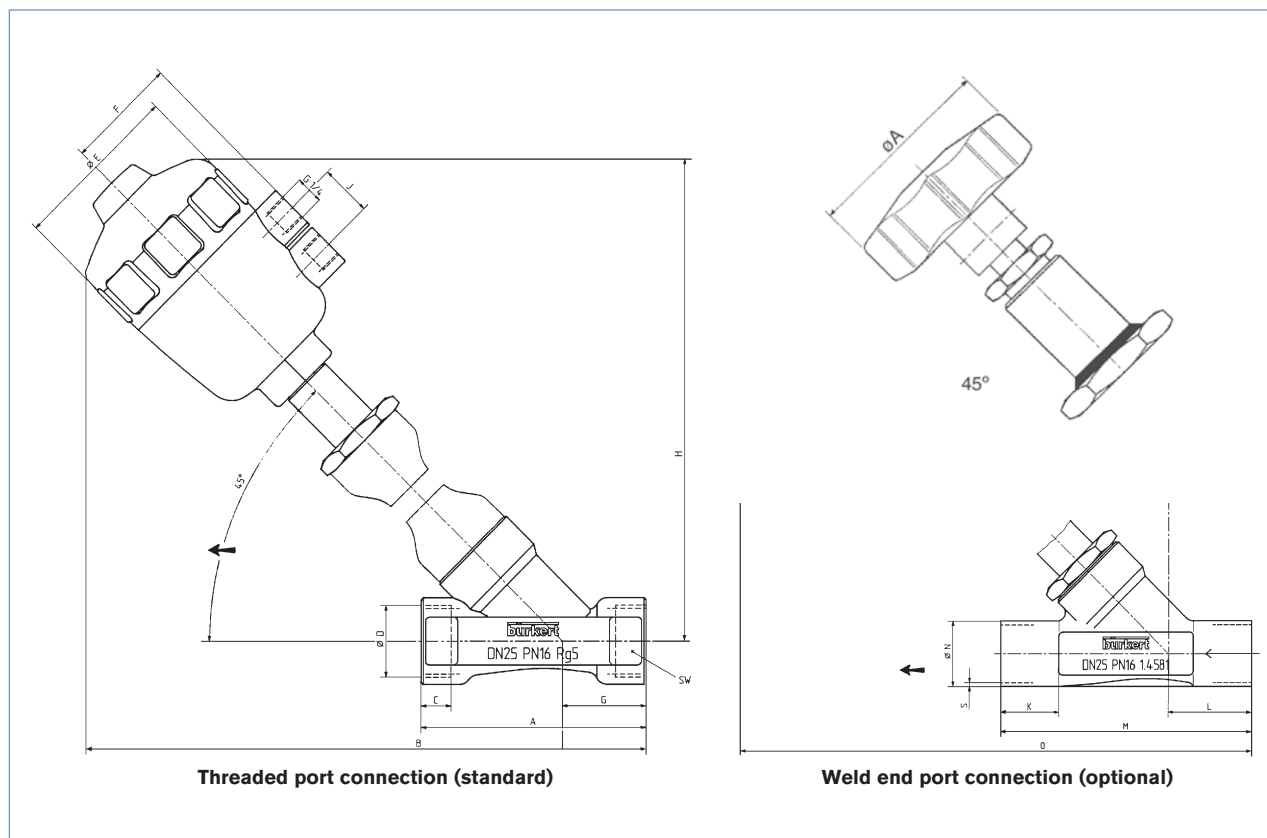
2) Higher differential pressures by other combinations of actuators on request.

All pressures quoted are gauge pressures with respect to the prevailing atmospheric pressure.

Pressure chart



Dimensions [inches]



Specifications

Function	CFA & B			CFA				CFB			
Actuator →	ø 50 mm		ø 63 mm	ø 80 mm	ø 100 mm		ø 125 mm	ø 63 mm		ø 80 mm	
DN →	DN13	DN20	DN25	DN40	DN40	DN50	DN50	DN40	DN50	DN40	DN50
Size →	½"	¾"	1"	1½"	1½"	2"	2"	1½"	2"	1½"	2"
A	2.5	2.9	3.5	4.7	4.7	5.9	5.9	4.7	5.9	4.7	5.9
B	13.7	13.9	15.2	19.0	21.0	22.7	23.9	18.2	20.0	19.0	23.2
C	.47	.47	.55	.70	.70	.78	.78	.70	.78	.70	.78
E	2.5	2.5	3.1	3.9	5.0	5.0	6.0	3.1	3.1	3.9	3.9
F	1.7	1.7	2.0	2.3	2.8	2.8	3.3	2.0	2.0	2.3	2.3
G	1.3	1.4	1.5	1.6	1.6	1.7	1.7	1.6	1.7	1.6	1.7
H	11.9	12.3	13.3	16.7	18.5	19.9	21.1	15.7	17.3	16.7	18.2
J	.94	.94	.94	.94	1.18	1.18	1.18	.94	.94	.94	.94
K	.78	.98	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
L	1.3	1.5	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
M	3.9	4.5	5.1	6.3	6.3	6.8	6.8	6.3	6.8	6.3	6.8
N	.83	1.0	1.3	1.9	1.9	2.3	2.3	1.9	2.3	1.9	2.3
O	6.8	7.1	8.5	10.1	12.1	12.8	13.8	9.3	10.0	10.1	10.8
S	.06	.06	.07	.07	.07	.10	.10	.07	.10	.07	.10

Ordering Chart (other versions on request)

Standard-Program

Type 2000 with Stainless Steel Body, PA-Actuator, Pilot Port with Stainless Steel

Control Function	Orifice [inch]	Port Connection	Actuator Size [mm]	Flow Direction	Operating Pressure ^{1) 2)} [PSI]	Order no.
A	1/2"	NPT 1/2	ø 50	below seat	232	
	3/4"	NPT 3/4	ø 50	below seat	160	
	1"	NPT 1	ø 63	below seat	160	
	1 1/2"	NPT 1 1/2	ø 80	below seat	116	
	1 1/2"	NPT 1 1/2	ø 100	below seat	188	
	2"	NPT 2	ø 100	below seat	116	
	2"	NPT 2	ø 125	below seat	174	
B	1/2"	NPT 1/2	ø 50	below seat	232	
	3/4"	NPT 3/4	ø 50	below seat	232	
	1"	NPT 1	ø 63	below seat	232	
	1 1/2"	NPT 1 1/2	ø 63	below seat	130	
	1 1/2"	NPT 1 1/2	ø 80	below seat	232	
	2"	NPT 2	ø 63	below seat	87	
	2"	NPT 2	ø 80	below seat	130	

Type 2000 with Stainless Steel Body, Manually Operated

Control Function	Orifice [inch]	Threaded Ports	Weight [lbs.]	Max Operating Pressure [PSI]	Order no.
Manual	1/2"	NPT 1/2	2.0	232	
	3/4"	NPT 3/4	2.2	232	
	1"	NPT 1	2.6	232	
	1 1/2"	NPT 1 1/2	3.5	232	
	2"	NPT 2	4.4	232	

On request:

- Double-acting actuator
- PPS-actuator for ambient temperatures up to 266°F
- Vacuum-version
- Control function B for pressures up to 232 PSI

Options:

- Stroke limitation (min./max flow)
- Position indication Type 1062 or position indication with external inductive switches.
- Manual override
- Namur adapter for pilot valve

Ordering information for valve system On/Off Type 8801-YE

A valve system On/Off Type 8801-YE consists of an angle seat valve Type 2100 and a pneumatic control unit Type 8690, control head Type 8691 (for valve actuator sizes $\varnothing 70/\varnothing 90\text{mm}$) or control head Type 8695 (for valve actuator size $\varnothing 50\text{ mm}$) (see separate datasheets). You order two components and receive a complete assembled and certified valve.

Ordering the valve system On/Off Type 8801-YE with valve actuator sizes $\varnothing 70 / \varnothing 90\text{ mm}$

Angle seat valve Type 2100 with actuator sizes $\varnothing 70/ \varnothing 90\text{ mm}$



Control units



Type 8690



Type 8691

Angle seat valve with desired control unit



Valve system On/Off
Type 8801-YE-K
2100 + 8690



Valve system On/Off
Type 8801-YE-H
2100 + 8691

If you click on any of the "More info" orange boxes below you will be taken to the product on our website where you can download the datasheet.

Pneumatic control unit Type 8690



The new generation of integrated controllers for combination with actuators from the process valve series Type 21xx is specially designed for the requirements of hygienic process environments. The pneumatic control unit Type 8690 combines electrical position feedback and pneumatic control for single or double-acting actuators, and is also optionally available as an intrinsically safe model to ATEX.

Main customer benefits:

- Compact design of the valve system with integrated controller meets the demands for plant washdown environments through the selection of materials, external seals and integrated control air supply to the actuator.
- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaptations allowing additional actuators of the process valve series, Type 20xx or actuators from other manufacturers to be used

Control head Type 8691



The new generation of integrated control heads for combination with actuators from the process valve series Type 21xx is specially designed for the requirements of hygienic process environments. The intelligent control head, Type 8691, detects the valve position by means of a contact-free analog position sensor circumventing excessive wear of mechanical parts. Single or double-acting actuators are controlled via the integral pilot valve. Communication interfaces AS-Interface and DeviceNet are available as options.

Main customer benefits:

- Compact, hygienic design of the valve system with integrated controller meets the demands of plant washdown environments through the selection of materials, external seals and integrated control air supply to the actuator.
- Automatic setting of the control head at the push of a button
- Even under dirty or dark environments, a clearly visible status display due to powerful LEDs
- Monitoring and diagnosis: Process valve systems with field bus interface used in modern plant processes
- Integrated pilot valve with manual actuation
- Air intake filter enhances the process valve system availability
- Simple and reliable actuator adaptations allowing additional actuators of the process valve series, Type 20xx or actuators from other manufacturers to be used