

## BUTTERFLY CONTROL VALVE WITH ISOLATION FUNCTION, SERIES 61.5

Downstream pressure control and isolation valve for SEMI, FPD, PV, SOLAR and industrial processes. Optimal for fast and demanding processes, e. g. CVD.



High pressure / low flow control capability

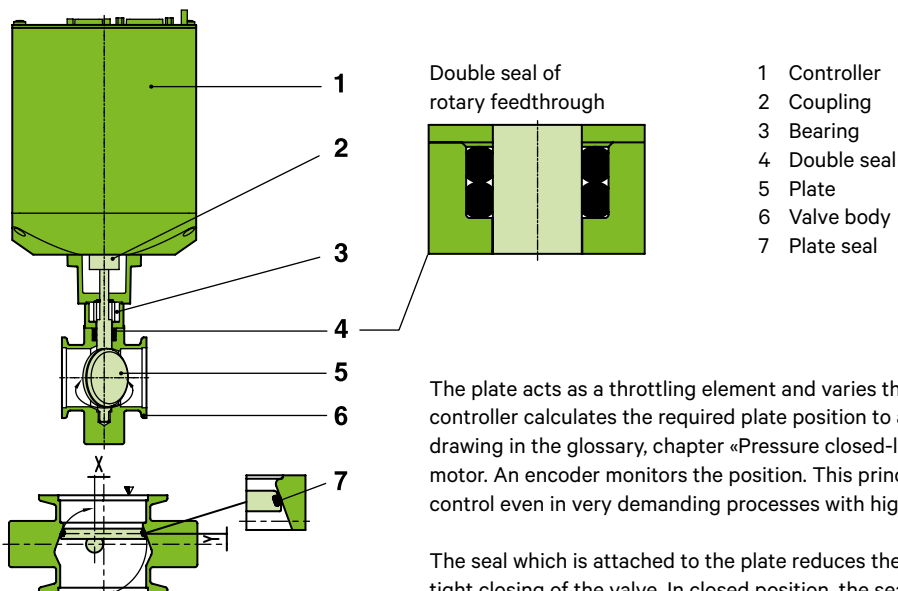
Excellent pressure control performance

Service port to connect a computer or a service box

### MAIN FEATURES

Sizes	DN 40 – 100 mm (1½" – 4")
Actuator	integrated pressure controller with stepper motor
Body material	hard anodized aluminum or stainless steel
Feedthrough	rotary feedthrough
Standard flanges	ISO-KF, ISO-F

### FUNCTIONAL PRINCIPLE



Double seal of rotary feedthrough

- 1 Controller
- 2 Coupling
- 3 Bearing
- 4 Double seal
- 5 Plate
- 6 Valve body
- 7 Plate seal

The plate acts as a throttling element and varies the conductance of the valve opening. The pressure controller calculates the required plate position to achieve the setpoint pressure. See also principle drawing in the glossary, chapter «Pressure closed-loop control». Actuation is performed by a stepper motor. An encoder monitors the position. This principle ensures fast and accurate process pressure control even in very demanding processes with high pressures and low flows.

The seal which is attached to the plate reduces the minimum controllable conductance and allows leak tight closing of the valve. In closed position, the seal is pressed on the body. See detail in drawing.

## TECHNICAL DATA

Leak rate <sup>1)</sup>	Valve body: hard anodized aluminum stainless steel	<1·10 <sup>-5</sup> mbar ls <sup>-1</sup> <1·10 <sup>-9</sup> mbar ls <sup>-1</sup>
Leak rate <sup>1)</sup>	Valve seat: hard anodized aluminum stainless steel	<1·10 <sup>-4</sup> mbar ls <sup>-1</sup> <1·10 <sup>-9</sup> mbar ls <sup>-1</sup>
Pressure range <sup>1)</sup>	Hard anodized aluminum Stainless steel	<1·10 <sup>-6</sup> mbar to 1.2 bar (abs) <1·10 <sup>-8</sup> mbar to 1.2 bar (abs)
Cycles until first service <sup>2)</sup>	Pressure control Isolation DN 40 – 50 DN 63 – 100	2 million 250 000 100 000
Temperature <sup>2)</sup>	Valve body Actuator: ambient	≤ 120 °C max. 50 °C (≤ 35 °C recommended)
Material	Aluminum valve body / plate Stainless steel valve body / plate Shaft Other parts	EN AW-6082 (3.2315) AISI 316L (1.4404 or 1.4435) AISI 316L (1.4404 or 1.4435) iglidur®X, AISI 316L (1.4404 or 1.4435)
Seal	Plate, feedthrough	FKM (e. g. Viton®)
Feedthrough		rotary feedthrough
Mounting position		valve seat towards chamber

DN (nominal I.D.)		Conductance (molecular flow)	Minimum controllable conductance (molecular flow)	Max. differential pressure on the plate	Operating time for throttling	Typical closing or opening time	Typical closing or opening time «position only» version	Weight: aluminum valve		Weight: stainless steel valve	
mm	inch	ls <sup>-1</sup>	ls <sup>-1</sup>	mbar	s	s	s	kg	lbs	kg	lbs
40	1½	60	0.05	1000	0.5	0.6	0.39	2.50	5.50	3.30	7.30
50	2	120	0.10	1000	0.5	0.6	0.39	2.70	6	3.60	7.90
63	2½	220	0.15	1000	0.5	0.6	0.39	3.80	8.40	5.90	13
80	3	360	0.20	1000	0.5	0.6	0.39	4.80	10.60	8.80	19.40
100	4	600	0.25	1000	0.5	0.6	0.39	5.20	11.50	9.70	21.40

<sup>1)</sup> Unheated on delivery.

<sup>2)</sup> Maximum values: depending on operating conditions and sealing materials.

Technical data for pressure controller: see pages 184 – 189

## OPTIONS, CUSTOMIZED SOLUTIONS



Certain options are not available for some nominal diameters or cannot be combined. Moreover, options can affect the general technical data.

### ACTUATOR

- Fast actuator (0.18 / 0.2 s) for DN 40 and DN 50
- Special control algorithms (fix PID, upstream, soft-pump) for DN 40 and DN 50
- «Position only» control version with resolution of 4000 steps (Pic. 1):  
Ordering number 616 . . . M1

### VALVE

- Other flanges, e. g. JIS, ASA-LP, CF-F
- Customer specified flanges
- Other sealing materials
- Vulcanized plate
- Heater (Pic. 2) for DN 40/50 with insulation
- Heater for DN 63–100 without insulation

## SPARE PARTS

We can offer a wide variety of spare parts. Please contact us for details and an offer.

Thank you for specifying the fabrication number of the valve indicated on the identification tag when asking for spare parts.

## ACCESSORIES

Flange connections for installation of the valve: see series 31 and 32

## ORDERING INFORMATION FOR STANDARD VALVES

### Valve with integrated pressure controller and stepper motor

DN		Ordering numbers									
mm	inch	hard anodized aluminum				stainless steel					
		ISO-KF		ISO-F		ISO-KF		ISO-F			
40	1½	61532-KH	x	y			61532-KE	x	y		
50	2	61534-KH	x	y			61534-KE	x	y		
63	2½				61536-PH	x	y		61536-PE	x	y
80	3				61538-PH	x	y		61538-PE	x	y
100	4				61540-PH	x	y		61540-PE	x	y

Controller configurations:	x		y		Interface	Number of sensors
	G = basic version	A = with SPS	H = with PFO	C = with SPS and PFO		
	T = basic version with VC master	V = with SPS and VC master	U = with PFO and VC master	W = with SPS, PFO and VC master	H = RS232	2
					V = RS232 + analog output	1
					W = RS232 + analog output	2
					C = Logic (analog / digital)	1
					E = Logic (analog / digital)	2
					P = DeviceNet®	1
					Q = DeviceNet®	2
					D = Profibus	1
					F = Profibus	2
					J = RS485	1
					K = RS485	2
					Y = Ethernet	1
					Z = Ethernet	2
					L = CC-Link	1
					N = CC-Link	2
					I = EtherCAT	1
					X = EtherCAT	2
					S = VC slave (without interface)	

SPS = Sensor Power Supply (±15 VDC power supply for sensor)	PFO = Power Failure Option (valve closes / opens automatically at power failure)	VC = Valve Cluster (for operating several valves synchronously)
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Example: 61534-KHGE

= aluminum valve, hard anodized, with ISO-KF DN 50 flanges, Logic interface, for 2 sensors

See OPTIONS for ordering information of «position only» version.

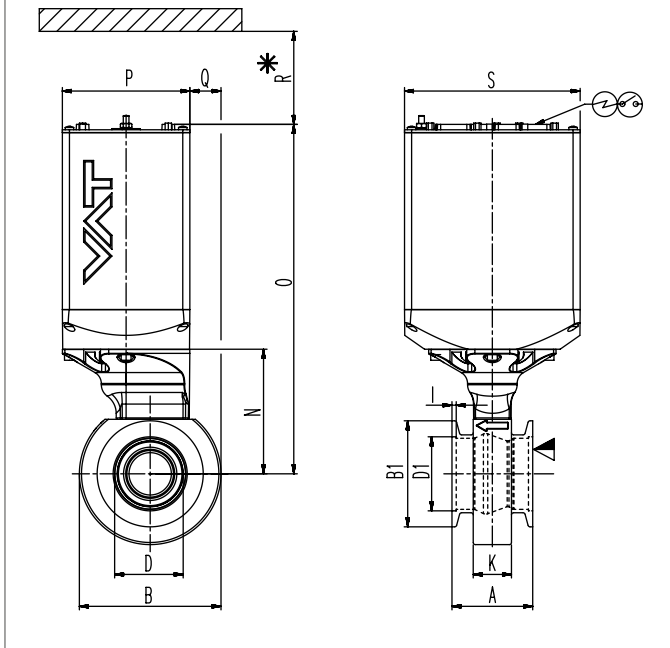
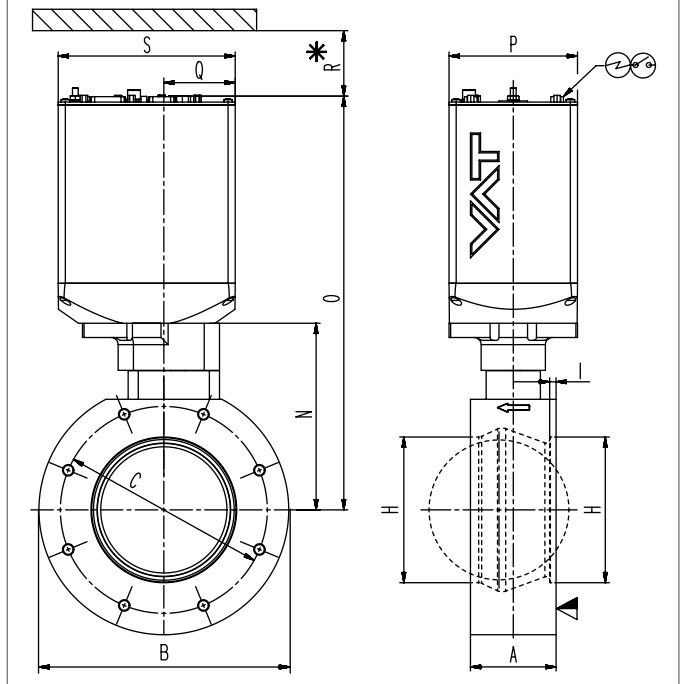
Pressure controller: see pages 184 – 189

## ORDERING INFORMATION FOR VALVES WITH OPTIONS

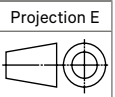
Basic ordering number plus «-X»: -X to be specified

Example: 61534-KHGG-X, X = valve with heater for 120 °C

## DIMENSIONS

 Valve with integrated pressure controller and stepper motor  
 DN 40 – 50 (1½" – 2") ISO-KF

 Valve with integrated pressure controller and stepper motor  
 DN 63 – 100 (2½" – 4") ISO-F


- ▼ Valve seat side
- \* Required for dismantling
- ⊕ Electrical connection
- ⊙ Position indicator

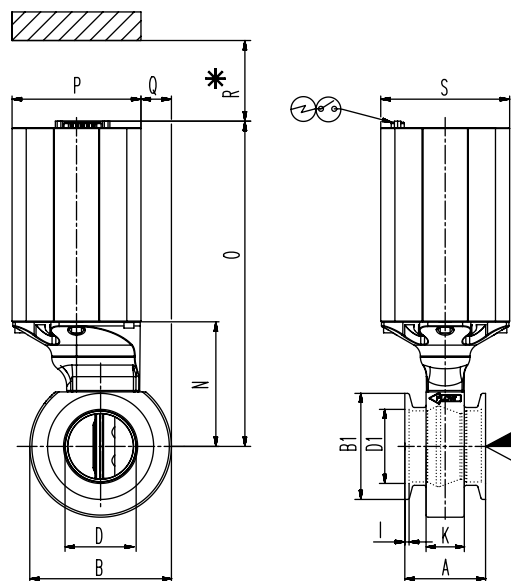


DN	mm	40	50
	inch	1½	2
A	mm	57	57
	inch	2.24	2.24
B	mm	90	100
	inch	3.54	3.94
B1	mm	54.90	74.90
	inch	2.16	2.95
D	mm	40	50
	inch	1.57	1.97
D1	mm	41.30	52.30
	inch	1.63	2.06
I	mm	3	3
	inch	0.12	0.12
K	mm	27	27
	inch	1.06	1.06
N	mm	83	88
	inch	3.27	3.46
O	mm	242	247
	inch	9.53	9.72
P	mm	90	90
	inch	3.54	3.54
Q	mm	18	22
	inch	0.71	0.87
R	mm	70	70
	inch	2.76	2.76
S	mm	124	124
	inch	4.88	4.88

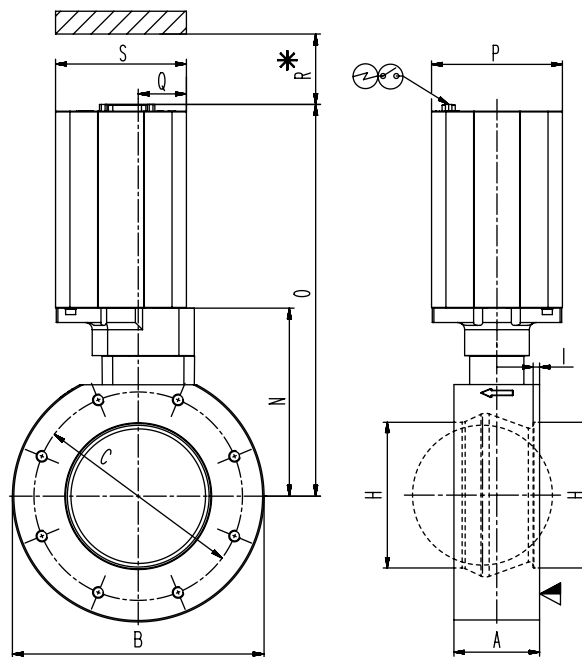
DN	mm	63	80	100
	inch	2½	3	4
A	mm	40	50	60
	inch	1.57	1.97	2.36
B	mm	130	165	175
	inch	5.12	6.50	6.89
C	mm	110	125	145
	inch	4.33	4.92	5.71
H	mm	70	83	102.10
	inch	2.76	3.27	4.02
I	mm	4.50	4.50	4.50
	inch	0.18	0.18	0.18
N	mm	108	126	131
	inch	4.25	4.96	5.16
O	mm	267	285	290
	inch	10.51	11.22	11.42
P	mm	90	90	90
	inch	3.54	3.54	3.54
Q	mm	46	48	50
	inch	1.81	1.89	1.97
R	mm	70	70	70
	inch	2.76	2.76	2.76
S	mm	124	124	124
	inch	4.88	4.88	4.88

## DIMENSIONS

Valve with integrated controller and stepper motor:  
«position only» version, ordering number 616 . . . M1  
DN 40 – 50 (1½" – 2") ISO-KF

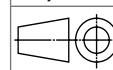


Valve with integrated controller and stepper motor:  
«position only» version, ordering number 616 . . . M1  
DN 63 – 100 (2½" – 4") ISO-F



- ▼ Valve seat side
- \* Required for dismantling
- ⊕ Electrical connection
- ⊙ Position indicator

Projection E



DN	mm	40	50
	inch	1½	2
A	mm	57	57
	inch	2.24	2.24
B	mm	90	100
	inch	3.54	3.94
B1	mm	54.90	74.90
	inch	2.16	2.95
D	mm	40	50
	inch	1.57	1.97
D1	mm	41.30	52.30
	inch	1.63	2.06
I	mm	3	3
	inch	0.12	0.12
K	mm	27	27
	inch	1.06	1.06
N	mm	83	88
	inch	3.27	3.46
O	mm	225	230
	inch	8.86	9.06
P	mm	91	91
	inch	3.58	3.58
Q	mm	17.50	21.50
	inch	0.69	0.85
R	mm	70	70
	inch	2.76	2.76
S	mm	91	91
	inch	3.58	3.58

DN	mm	63	80	100
	inch	2½	3	4
A	mm	40	50	60
	inch	1.57	1.97	2.36
B	mm	130	165	175
	inch	5.12	6.50	6.89
C	mm	110	125	145
	inch	4.33	4.92	5.71
H	mm	70	83	102.10
	inch	2.76	3.27	4.02
I	mm	4.50	4.50	4.50
	inch	0.18	0.18	0.18
N	mm	108	126	131
	inch	4.25	4.96	5.16
O	mm	249	267	272
	inch	9.80	10.51	10.71
P	mm	91	91	91
	inch	3.58	3.58	3.58
Q	mm	29.50	31.50	33.50
	inch	1.16	1.24	1.32
R	mm	70	70	70
	inch	2.76	2.76	2.76
S	mm	91	91	91
	inch	3.58	3.58	3.58