



VAT Vakuumventile AG  
CH-9469 Haag, Schweiz

## Product data sheet

**All-metal gate valve**  
**Series 481, DN 200 (ID 8'')**  
**Ordering No. 48146-RE24-ARH1**

### Description

Flange		Weld neck N.D. 200 schedule 20S
Actuator		Pneumatic double acting - without solenoid valve - with position indicator
Feed through		Bellows
Option	ARH =	Product: valve type ITER 1; Flange A+B: weld stub flange schedule 20S; Body: double wall body; Actuator: radiation resistant 10 <sup>6</sup> Gy; Position indicator: double; 200 °C; Glenair 6 pin connector; 125 °C; radiation resistant 10 <sup>6</sup> Gy; Bonnet flange: vacuum feedthrough double bellows; kind of seal double; VATSEAL; intermediate pumping between two bellows, double wall body and double bonnet seal; VCR ¼"

### Technical data

Leak rate (Test method acc. VAT Standard N-2100; He/air mix, ΔP = 1 bar)	- Valve body - Valve seat	< 1 · 10 <sup>-9</sup> mbar ls <sup>-1</sup> < 1 · 10 <sup>-9</sup> mbar ls <sup>-1</sup>
Pressure range		XUHV to 2 bar (abs)
Test pressure		1 bar
Differential pressure on the gate		≤ 2 bar
Differential pressure at opening		≤ 500 mbar, 1 bar with reduced cycle life
Conductance (molecular flow)		2 900 ls <sup>-1</sup>
Cycles until first service (Maximum values: depending on operating conditions and valve contamination)	- Normal conditions <sup>1</sup> - Extreme conditions <sup>2</sup>	20 000 1 000
Bake-out temperature (Maximum values: depending on operating conditions and sealing materials)	- Valve body - Actuator - Position indicator	≤ 240 °C ≤ 140 °C (for max. 100h) ≤ 200 °C
Heating and cooling rate		≤ 10 °C h <sup>-1</sup>
Material	- Valve body - Flange - Weld neck - Gate - Mechanism - Bellows - Actuator	AISI 316 L AISI 316 L ESR AISI 316 L AISI 316 L AISI 316 L AISI 316 L AISI 304; aluminium
Seal	- Bonnet - Gate - Actuator	metal, silver plated metal, silver plated EPDM

<sup>1</sup> Normal conditions: External pressure 0.1 MPa, pressure inside valve 0 MPa, bellows interspace pressure 0.05 MPa temperatures ambient.

<sup>2</sup> Extreme conditions: External pressure 0.2 MPa, pressure inside valve 0 MPa, bellows interspace pressure 0 MPa, temperature 100 °C

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Mounting position		any
Radiation resistance	<ul style="list-style-type: none"> <li>- Valve body</li> <li>- Actuator</li> <li>- Position indicators</li> </ul>	<ul style="list-style-type: none"> <li>10<sup>8</sup> Gy (10<sup>10</sup> rad)</li> <li>10<sup>6</sup> Gy (10<sup>8</sup> rad)</li> <li>10<sup>6</sup> Gy (10<sup>8</sup> rad)</li> </ul>
Maximum magnetic field levels		≤ 150 mT
Volume of pneumatic actuator		8.3 l / 0.293 ft <sup>3</sup>
Compressed air min. – max. overpressure		4 - 8 bar / 58 - 116 psig
Compressed air connections		1/8" ISO/NPT
Actuation time (valid for RT, Ø6mm tubing at 4 bar with flow rate of 400 l/min)	<ul style="list-style-type: none"> <li>- Closing</li> <li>- Opening</li> </ul>	<ul style="list-style-type: none"> <li>≤ 15.0 sec</li> <li>≤ 15.0 sec</li> </ul>
Weight	<ul style="list-style-type: none"> <li>- Valve complete</li> <li>- Actuator</li> </ul>	<ul style="list-style-type: none"> <li>135.9 kg / 299.6 lbs</li> <li>15.8 kg / 34.9 lbs</li> </ul>
Behavior in case of compressed air pressure drop	<ul style="list-style-type: none"> <li>- Valve closed</li> <li>- Valve open</li> </ul>	<ul style="list-style-type: none"> <li>Valve remains in closed position</li> <li>Undefined</li> </ul>
Behavior in case of power failure		Depending on control

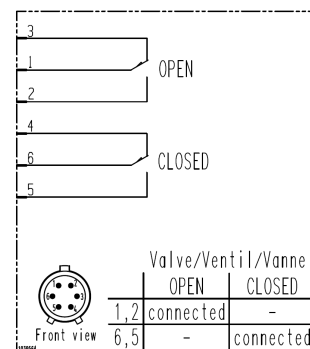
### Related documents

Dimensional drawing No.	478506 Rev D
STEP file No.	478498 Rev D

### Electrical connections

#### Position indicator (2x)

Type	micro switch
Voltage	≤ 50 V AC / DC
Current max.	≤ 1.0 A
Connector on the valve:	8070-2530-02Z16-6PA
Mating connector:*	8070-3039-01Z16-6KA (pins compatible with AWG 20 wire)



Wiring diagram

### References

The product data is based on either VAT internally/externally performed lab tests or supplier product information. Relevant references listed on document 838738.

\*The mating connector is not part of the valve and needs to be ordered separately at Glenair.

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