

Bypass/pilot gas valve VBY 8

OPERATING INSTRUCTIONS

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1 SAFETY

1.1 Please read and keep in a safe place



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

1.2 Explanation of symbols

1, 2, 3, a, b, c = Action

→ = Instruction

1.3 Liability

We will not be held liable for damage resulting from non-observance of the instructions and non-compliant use.

1.4 Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:



DANGER

Indicates potentially fatal situations.



WARNING

Indicates possible danger to life and limb.



CAUTION

Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

1.5 Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

2 CHECKING THE USAGE

2.1 Intended use

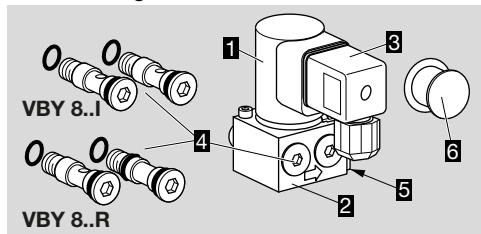
VBY 8 for automatic shut-off of a bypass or pilot gas volume on gas or air appliances. VBY is suitable for mounting on gas solenoid valve VAS 1 and double solenoid valve VCS 1.

This function is only guaranteed when used within the specified limits – see page 5 (7 Technical data). Any other use is considered as non-compliant.

2.2 Type code

VBY	Gas valve
8	Nominal size
I	For internal gas pick-up as bypass valve
R	For external gas pick-up as pilot gas valve
Q	Mains voltage 120 V AC, 50/60 Hz
K	Mains voltage 24 V DC
W	Mains voltage 230 V AC, 50/60 Hz
6L	Electrical connection via plug and socket with LED
-R	Attachment side of main valve: right
-L	Attachment side of main valve: left
B	Enclosed (separate packing unit)
05	Nozzle: 0.5 mm
D	With flow adjustment

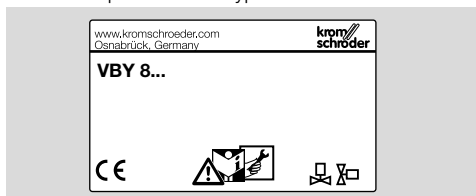
2.3 Part designations



- 1 Solenoid actuator
- 2 Valve block
- 3 Socket with LED
- 4 **VBY 8..I**: 2 x retaining screws with 4 x O-rings
VBY 8..R: 2 x retaining screws with 5 x O-rings
- 5 Screw plug at the outlet (R 1/4)
- 6 Grease for the O-rings

2.4 Type label

Mains voltage, electrical power consumption, ambient temperature, enclosure, inlet pressure and installation position: see type label.



3 INSTALLATION

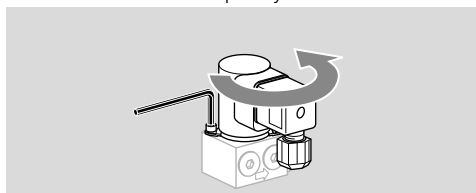
⚠ CAUTION

Incorrect installation

Please observe the following to ensure that the unit is not damaged during installation and operation:

- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the valve housing.
- A filter must be installed upstream of every system.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Do not clamp the unit in a vice or use it as a lever. Risk of external leakage.

- Note the attachment side of the main valve.
- Obey the direction of flow as marked on the VBY.
- Install the unit in the pipe free of mechanical stress.
- Installation position: black solenoid actuator in the vertical upright position or tilted up to the horizontal, not upside down.
- The solenoid actuator can be rotated to allow the socket for the electrical connection to be repositioned. To do so, loosen both screws, but do not unscrew completely.



- Once the solenoid actuator is in the desired position, re-tighten the screws.

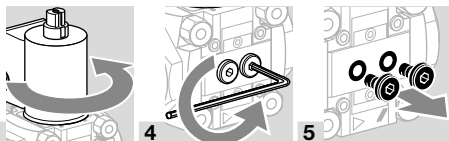
⚠ WARNING

Attention! Gas-filled space has been opened. Please observe the following to ensure that no damage occurs:

- Check for tightness, see page 4 (5 Tightness test).

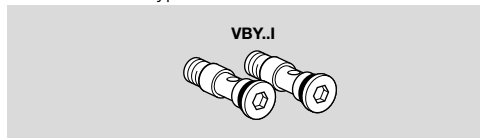
Prepare the installed main valve.

- 1 Disconnect the system from the electrical power supply.
 - 2 Close the gas supply.
- Turn the actuator so that the side on which the bypass/pilot gas valve is to be installed is accessible.



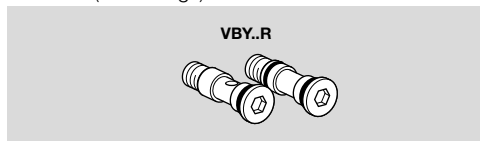
VBY 8..I as bypass valve

2 x retaining screws with 4 x O-rings: both retaining screws have a bypass orifice.



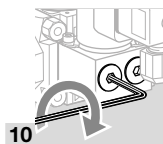
VBY 8..R as pilot gas valve

2 x retaining screws with 5 x O-rings: one retaining screw has a bypass orifice (2 x O-rings), the other does not (3 x O-rings).



Mounting the VBY

- 6 Grease O-rings.



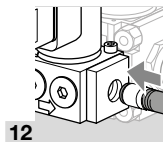
- Tighten the retaining screws alternately so that VBY and VAX are flush.

VBY 8..I as bypass valve

- The screw plug at the outlet remains in place.

VBY 8..R as pilot gas valve

- 11 Remove the screw plug at the outlet and connect the Rp 1/4 pilot gas supply line.



4 WIRING



WARNING

Risk of injury!

Please observe the following to ensure that no damage occurs:

- Electric shocks can be fatal! Before working on possible live components, ensure the unit is disconnected from the power supply.
- The solenoid actuator heats up during operation.



- Use temperature-resistant cable (> 80°C).

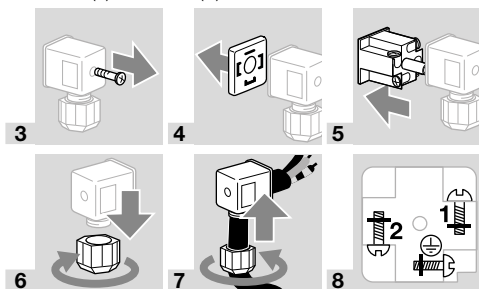
- 1 Disconnect the system from the electrical power supply.

- 2 Shut off the air supply.

- Wiring to EN 60204-1.

Socket

- 1 = N (-), 2 = LV1 (+)



- 9 Follow the reverse procedure when reassembling.

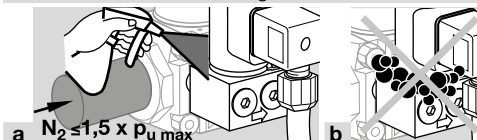
5 TIGHTNESS TEST

- 1 To be able to check the tightness, shut off the downstream pipeline as close as possible to the valve.
- 2 Close the main valve.
- 3 Close the bypass/pilot gas valve.

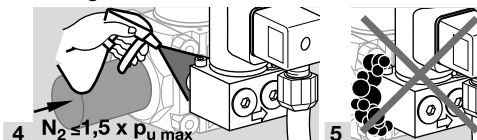
CAUTION

Possible leakage!

- If the actuator of the VBY is rotated, the tightness can no longer be guaranteed. To ensure that there are no leaks, check the actuator of the VBY for tightness.

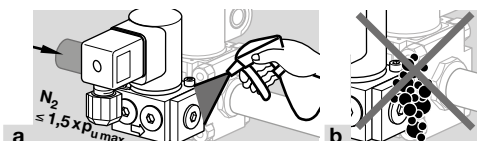


Checking the VBY for leaks on the inlet side



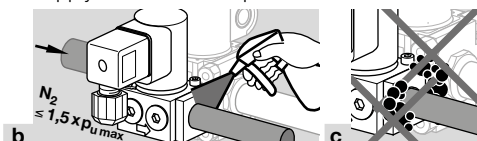
- 7 Open the bypass or pilot gas valve.

Checking the bypass valve VBY..I for leaks on the outlet side



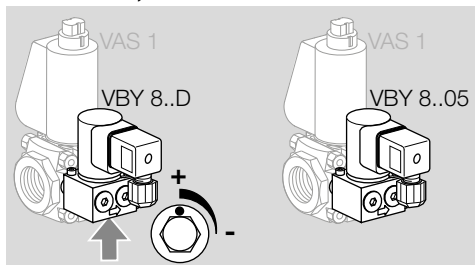
Checking the pilot gas valve VBY..R for leaks on the outlet side

- a To be able to check the VBY for leaks on the outlet side, shut off the downstream pilot gas supply line as close as possible to the VBY.



6 COMMISSIONING

6.1 Flow rate, VBY



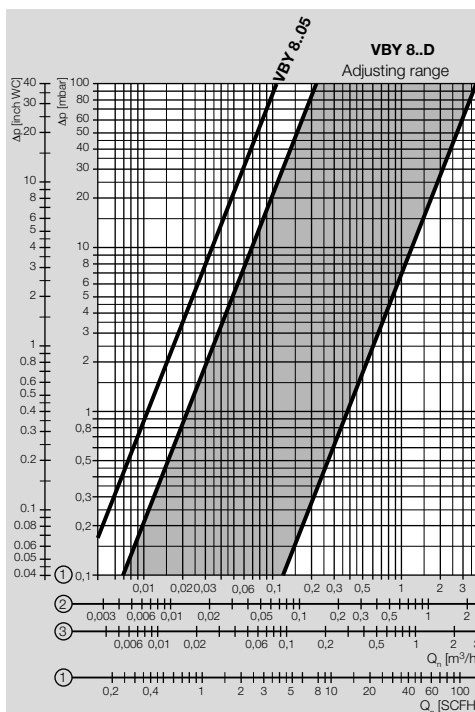
VBY 8..D

The flow rate can be set by turning the flow rate restrictor (4 mm/0.16" hexagon socket) ¼ of a turn. Flow rate: 10 to 100%.

- Only adjust the flow rate restrictor in the marked range; otherwise, the required gas volume will not be reached.

VBY 8..05

The flow is routed through a 0.5 mm (0.02") nozzle and thus has a fixed characteristic flow rate curve. Adjustment is not possible.



- 1 = natural gas ($\rho = 0.80 \text{ kg/m}^3$)
- 2 = propane ($\rho = 2.01 \text{ kg/m}^3$)
- 3 = air ($\rho = 1.29 \text{ kg/m}^3$)

7 TECHNICAL DATA

7.1 Ambient conditions

Icing, condensation and dew in and on the unit are not permitted.

Avoid direct sunlight or radiation from red-hot surfaces on the unit. Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO₂. The unit may only be stored/installed in enclosed rooms/buildings.

The unit is suitable for a maximum installation height of 2000 m AMSL.

Ambient temperature: 0 to +60°C (32 to +140°F), no condensation permitted.

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Storage temperature = transport temperature: 0 to +40°C (32 to +104°F).

Enclosure: IP 54.

This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

7.2 Mechanical data

Gas types: natural gas, LPG (gaseous), biogas (max. 0.1 %-by-vol. H₂S), hydrogen or clean air; other types of gas on request. The gas must be clean and dry in all temperature conditions and must not contain condensate.

Medium temperature = ambient temperature.

CE approved, max. inlet pressure p₁: 500 mbar (7.25 psig).

Flow adjustment limits the maximum flow rate to between approx. 10 and 100%.

Opening times:

quick opening: < 1 s.

Closing time:

quick closing: < 1 s.

Valve housing: aluminium,
valve seal: NBR.

Connection flanges:

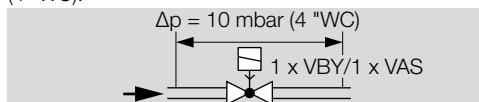
Rp internal thread to ISO 7-1.

Safety valve:

Class A, Group 2 pursuant to EN 161,
230 V AC, 120 V AC, 24 V DC

7.3 Air flow rate Q

Air flow rate Q for a pressure loss of $\Delta p = 10$ mbar (4 "WC):



	Air flow rate	
	Q [m³/h]	Q [SCFH]
Bypass valve VBY	0.85	30.01
Pilot gas valve VBY	0.89	31.43

7.4 Electrical data

Mains voltage:

230 V AC, +10/-15%, 50/60 Hz;

120 V AC, +10/-15%, 50/60 Hz;

24 V DC, ±20%.

Electrical connection: Plug with socket to EN 175301-803.

Power consumption:

Voltage	Power
24 V DC	8 W
120 V AC	8 W
230 V AC	9.5 W

8 DESIGNED LIFETIME

This information on the designed lifetime is based on using the product in accordance with these operating instructions. Once the designed lifetime has been reached, safety-relevant products must be replaced.

Designed lifetime (based on date of manufacture) in accordance with EN 161 for VBY 8:

Switching cycles	Time (years)
2 000 000	10

You can find further explanations in the applicable rules and regulations and on the afecor website (www.afecor.org).

This procedure applies to heating systems. For thermoprocessing equipment, observe local regulations.

9 LOGISTICS

Transport

Protect the unit from external forces (blows, shocks, vibration).

Transport temperature: see page 5 (7 Technical data).

Transport is subject to the ambient conditions described.

Report any transport damage on the unit or packaging without delay.

Check that the delivery is complete.

Storage

Storage temperature: see page 5 (7 Technical data).

Storage is subject to the ambient conditions described.

Storage time: 6 months in the original packaging before using for the first time. If stored for longer than this, the overall service life will be reduced by the corresponding amount of extra storage time.

10 DISPOSAL

Devices with electronic components:

WEEE Directive 2012/19/EU – Waste Electrical and Electronic Equipment Directive



At the end of the product life (number of operating cycles reached), dispose of the packaging and product in a corresponding recycling centre. Do not dispose of the unit with the usual domestic refuse. Do not burn the product.

On request, old units may be returned carriage paid to the manufacturer in accordance with the relevant waste legislation requirements.

11 CERTIFICATION

11.1 Certificate download

Certificates – see www.docuthek.com

11.2 Declaration of conformity



We, the manufacturer, hereby declare that the products VBY with product ID No. CE-0063BO1580 comply with the requirements of the listed Directives and Standards.

Directives:

- 2014/35/EU – LVD
- 2014/30/EU – EMC
- 2011/65/EU – RoHS II
- 2015/863/EU – RoHS III

Regulation:

- (EU) 2016/426 – GAR

Standards:

- EN 161:2022

The relevant product corresponds to the tested type sample.

The production is subject to the surveillance procedure pursuant to Regulation (EU) 2016/426 Annex III paragraph 3.

Elster GmbH

11.3 UKCA certified



Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019)

BS EN 161:2011+A3:2013

11.4 AGA approved



Australian Gas Association, Approval No.: 5319.

11.5 Eurasian Customs Union



The products VBY 8 meet the technical specifications of the Eurasian Customs Union.

11.6 REACH Regulation

The device contains substances of very high concern which are listed in the Candidate List of the European REACH Regulation No. 1907/2006. See Reach list HTS at www.docuthek.com.

11.7 China RoHS

Directive on the restriction of the use of hazardous substances (RoHS) in China. Scan of the Disclosure Table China RoHS2, see certificates at www.docuthek.com.

FOR MORE INFORMATION

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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