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Operating instructions

Butterfly valve BV..

Actuator with butterfly valve IB..



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Safety

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.

Explanation of symbols

■, **1**, **2**, **3**... = Action

▷ = Instruction

Liability

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

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.

Conversion, spare parts

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

Changes to edition 09.16

The following chapters have been changed:

- Checking the usage
- Installation
- Commissioning
- Accessories
- Certification

Checking the usage

Intended use

BVG, BVGF, BVA, BVAF, BVH, BVHS, BVHR

The butterfly valves are designed to adjust volumes of gas, cold and hot air and flue gas on gas and air appliances and flue gas lines. They are designed for a control ratio of up to 10:1.

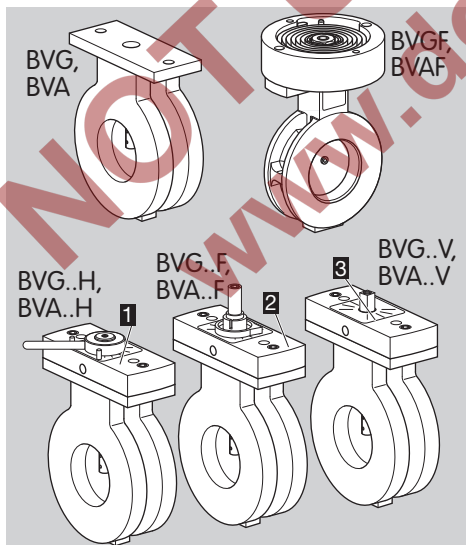
Actuator IC and butterfly valve BV.. (IB..) are suitable for regulating flow rates for modulating-controlled or stage-controlled combustion processes.

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

BVA..., BVG... type code

Code	Description
BVG	Butterfly valve for gas
BVGF	Clearance-free butterfly valve for gas
BVA	Butterfly valve for air
BVAF	Clearance-free butterfly valve for air
40–150	Nominal size
/25-/125	Reduced to nominal size
Z	For fitting between two flanges to EN 1092
W	For fitting between two ANSI flanges
	Max. inlet pressure $p_{u \text{ max.}}$: 500 mbar (7.25 psi)
05	With manual adjustment
H	With free shaft end
F	With free shaft end
V	With square shaft

BVA..., BVG... part designations



- 1 Adapter set with manual adjustment
- 2 Adapter set with free shaft end
- 3 Adapter set with square shaft

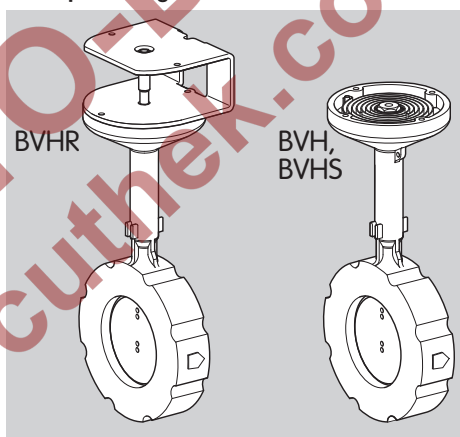
BVH.. type code

Code	Description
	Butterfly valve
BVH	for hot air and flue gas up to 450°C
BVHR	for hot air and flue gas up to 550°C
BVHS ¹⁾	like BVH, but with additional safety closing function
40–100	Nominal size
	For fitting:
Z	between two flanges to EN 1092
W	between two ANSI flanges
	Max. inlet pressure $p_{u \text{ max.}}$: 150 mbar (2.18 psi)
01	
A	With stop bar

¹⁾ BVHS can only be combined with IC 40S

The safety closing function closes butterfly valve BVHS if the voltage fails.

BVH.. part designations

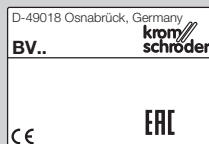


! CAUTION

The safety closing function on the BVHS should be used only for the intended function. If the safety closing function is used for controlled shut-down or for intermittent switching of the burner, this will reduce the service life of the butterfly valve.

BV.. type label

Gas type, inlet pressure and ambient temperature, see type label.

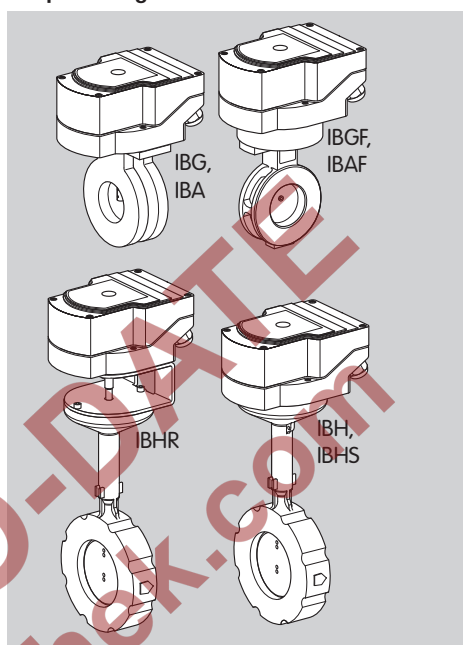


IB.. type code

Code	Description
IBG	Actuator IC 20 or IC 40 + BVG
IBGF	Actuator IC 20 or IC 40 + BVGF
IBA	Actuator IC 20 or IC 40 + BVA
IBAF	Actuator IC 20 or IC 40 + BVAF
IBH	Actuator IC 20 or IC 40 + BVH
IBHR	Actuator IC 20 or IC 40 + BVHR
IBHS	Actuator IC 40S + BVHS
40-150	BVG.., BVA.. nominal size
40-100	BVH.. nominal size
/25-125¹⁾	Reduced to nominal size
For fitting:	
Z	between two flanges to EN 1092
W	between two ANSI flanges
	Max. inlet pressure $p_{u \text{ max.}}$:
01	BVH..: 150 mbar (2.18 psi)
05	BVG.., BVA..: 500 mbar (7.25 psi)
A	BVH..: with stop bar
/20	Actuator IC 20
/40	Actuator IC 40
	Running time (at 50 Hz):
-07	7.5 s
-15	15 s
-30	30 s
-60	60 s
	Mains voltage:
W	230 V AC, 50/60 Hz
Q	120 V AC, 50/60 Hz
A	120-230 V AC, 50/60 Hz
	Torque:
2	2.5 Nm
3	3 Nm
E	Continuous control
T	Three-point step control
A	4 – 20 mA analogue input and digital inputs
D	Digital inputs
R10	1 k Ω feedback potentiometer

¹⁾ No reduction in the case of BVH, BVHR, BVHS

IB.. part designations



For further information, see www.docuthek.com → Elster Thermal Solutions → Products → 03 Valves and butterfly valves → Actuators IC → Operating instructions IC.

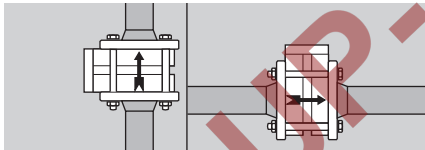
Installation

! CAUTION

Please observe the following to ensure that no damage occurs:

- Important! The medium must be dry in all conditions and must not contain condensate.
- Avoid pressure surges and temperature shocks.
- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the unit.
- Do not store or install the unit in the open air.
- Flange sealing surfaces must not be damaged by mechanical or other effects.
- If the actuator is retrofitted, the torque, direction of rotation and adjustment angles must be adjusted to the butterfly valve.

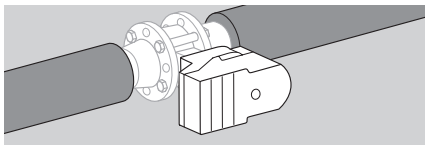
- ▷ A filter must be installed upstream of every system.
- ▷ The length of the inlet and outlet section should be $2 \times \text{DN}$.
- ▷ The butterfly valve is intended to be installed in-between two flanges.
- ▷ Installation in the vertical or horizontal position, not upside down. BVHR/IBHR: always position the actuator to the side of the pipe.



- ▷ We recommend installing the butterfly valve in the vertical position with the direction of flow from bottom to top in order to prevent condensation and to prevent dirt from accumulating on the stop bar in the case of butterfly valves with stop bar (BVH..A).

Hot air as a medium

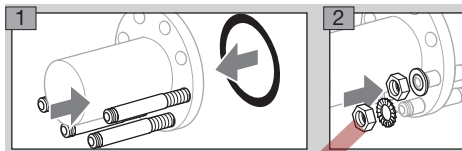
- ▷ If you are using an insulated pipeline ensure that there is sufficient installation space to access the screw connectors near the valve. Do not insulate the butterfly valve with thermal insulation.
- ▷ For a better dissipation of heat, turn the butterfly valve when installing so that the actuator is positioned to the side of the pipe.



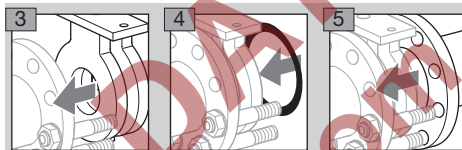
- ▷ Use heat deflectors for a medium temperature of $> 250^{\circ}\text{C}$, see page 6 (Accessories).
- ▷ Check the temperature resistance of the seals.

Installing the butterfly valve in the pipe

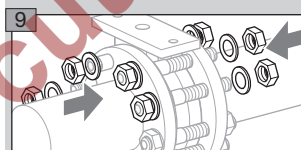
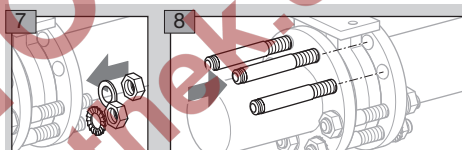
- ▷ The pictures below may not correspond to the actual valve type.



- ▷ Ensure that both serrated lock washers are fitted to the same screw.
- ▷ Install the butterfly valve in the pipe free of mechanical stress.



- 6 Centre the butterfly valve. Ensure that the valve disc can move unobstructed.



- ▷ If the butterfly valve is to be used without an actuator, an adapter set with manual adjustment is available, see page 6 (Accessories).

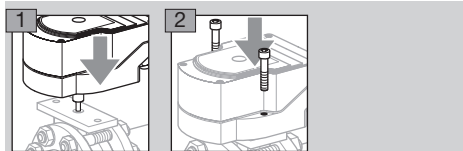
Mounting the actuator IC 20/IC 40 to the butterfly valve

- ▷ If the actuator and butterfly valve are pre-assembled (IB..), the fastening set will already be fitted. If the actuator is retrofitted, the fastening set is delivered enclosed as an additional item, see page 6 (Accessories).
- ▷ The actuator IC 20, IC 40 may be installed rotated by 180° on all butterfly valves.

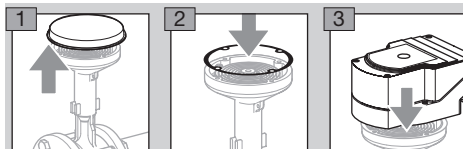
! CAUTION

- If the actuator is to be rotated by 180° following assembly to the butterfly valve, the actuator must be detached from the butterfly valve. Only turn the actuator. Otherwise, a change in the direction of rotation of the valve can lead to damage being caused to the mechanical and electronic components.

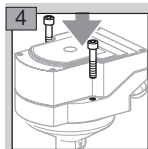
BVG, BVGF, BVA, BVAF



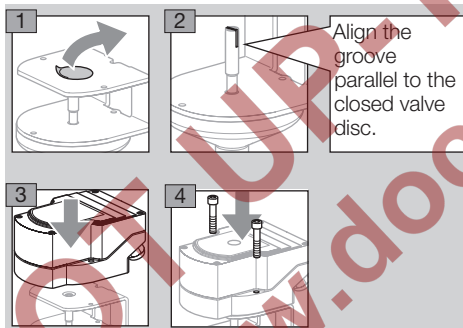
BVH, BVHS



- ▷ Permitted installation position for IC: cable glands point to the inlet or outlet of the pipe.



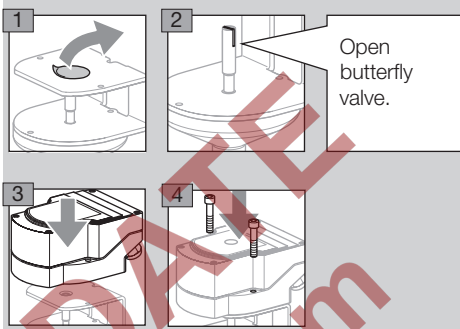
BVHR



- ▷ If the butterfly valve is to be mounted to an actuator other than an IC 20/IC 40, an adapter set is available, see page 6 (Accessories).

Tightness test

- 1 Close off the outlet of the butterfly valve with a blanking plate or close the gas solenoid valve downstream of the butterfly valve.



- 6 Once the tightness test has been successfully completed, remove the blanking plate or open the gas solenoid valve downstream of the butterfly valve.

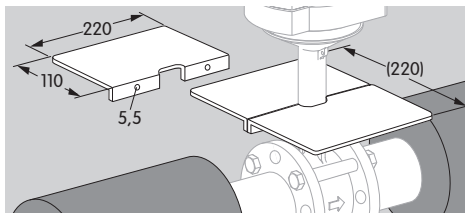
Commissioning

- ▷ The valve disc must open and close unobstructed.
- ▷ Purge the pipes thoroughly to remove any foreign particles from the system.
- ▷ For further information on commissioning the actuator, see enclosed Actuator IC 20/IC 30/IC 40 operating instructions or go to www.docuthek.com.

Accessories

Heat deflector

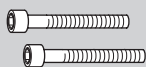
Install heat deflectors in order to protect the actuator from overheating if the medium temperature is $> 250^{\circ}\text{C}$ (482°F).



Order No.: 74921670

Fastening set for BVG, BVA, BVH, BVHR

For retrofitting IC 20/IC 40 to the butterfly valve.

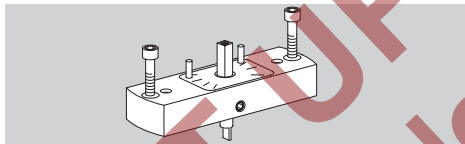


Order No.: 74921082

Adapter set for BVG, BVA

If the butterfly valve is to be installed without an actuator or with an actuator other than an IC, the following attachment sets can be used.

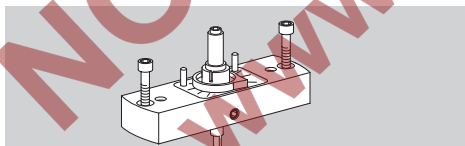
Adapter set with square shaft



Order No.: 74921674

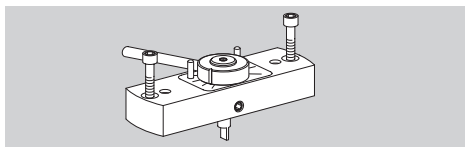
Adapter set with free shaft end

The actuator must have a $\varnothing 10$ mm socket.



Order No.: 74921676

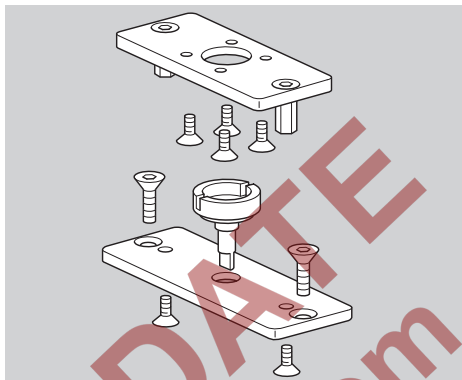
Adapter set with manual adjustment



Order No.: 74921678

Adapter set for IC 30

For the assembly of BVA/BVG and IC 30. The adapter set is delivered enclosed as an additional item.



Order No.: 74924996

For further information on the assembly with actuator IC 30, see enclosed Actuator IC 30 operating instructions or go to www.docuthek.com.

Maintenance

The butterfly valves BVG, BVGF, BVA, BVAF, BVH, BVHR and BVHS require little servicing.

We recommend a function check once a year. BVG, BVGF: check for external tightness once a year. If operated with biogas, a tightness test and function check must be carried out every six months.

Technical data

Gas type:

BVG, BVGF: natural gas, town gas, LPG, biogas (max. 0.1 %-by-vol. H_2S) and other non-aggressive fuel gases.

BVA, BVAF: air.

The gas must be dry in all conditions and must not contain condensate.

Housing material: AlSi,

valve disc: aluminium,

drive shaft: stainless steel,

seals: HNBR.

BVG, BVGF, BVA, BVAF

Nominal sizes DN 40 – 150,

reduction by 2 nominal sizes possible.

Inlet pressure p_u : max. 500 mbar (7.25 psi).

Medium and ambient temperatures:

-20 to +60°C (-4 to +140°F).

Storage temperature: -20 to +40°C (-4 to +104°F).

BVH, BVHR, BVHM, BVHS

Gas type: air and flue gas.

Nominal sizes DN 40 – 100.

Housing material: GGG,

valve disc: stainless steel,

drive shaft: stainless steel.

Inlet pressure p_u : max. 150 mbar (2.18 psi).

Pressure differential between inlet pressure p_u and outlet pressure p_d : max. 150 mbar (2.18 psi).

Medium temperature:

BVH: -20 to +450°C (-4 to +840°F),

BVHR: -20 to +550°C (-4 to +1020°F).

Ambient temperature:

-20 to +60°C (-4 to +140°F).

Storage temperature: -20 to +40°C (-4 to +104°F).

Logistics

Transport

Protect the unit from external forces (blows, shocks, vibration). On receipt of the product, check that the delivery is complete, see part designations. Report any transport damage immediately.

Storage

Store the product in a dry and clean place.
Storage temperature: see page 7 (Technical data).

Packaging

The packaging material is to be disposed of in accordance with local regulations.

Disposal

Components are to be disposed of separately in accordance with local regulations.

Certification

Declaration of conformity



We, the manufacturer, hereby declare that the products BVG, BVGF, BVA, BVAF, marked with product ID No. CE-0063BM1154, comply with the requirements of the listed Directives and Standards.

Directives:

- 2009/142/EC – GAD (valid until 20 April 2018)

Regulation:

- (EU) 2016/426 – GAR (valid from 21 April 2018)

Standards:

- EN 161

The relevant product corresponds to the tested type sample.

The production is subject to the surveillance procedure pursuant to Directive 2009/142/EC Annex II paragraph 3 (valid until 20 April 2018) and to Regulation (EU) 2016/426 Annex III paragraph 3 (valid from 21 April 2018).

Elster GmbH

Scan of the Declaration of conformity (D, GB) – see www.docuthek.com

Eurasian Customs Union



The product BV.. meets the technical specifications of the Eurasian Customs Union.

Contact

If you have any technical questions, please contact your local branch office/agent. The addresses are available on the Internet or from Elster GmbH.

We reserve the right to make technical modifications in the interests of progress.

Honeywell

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