

**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 08.17**

The following chapters have been changed:

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

### BVH.. type code

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

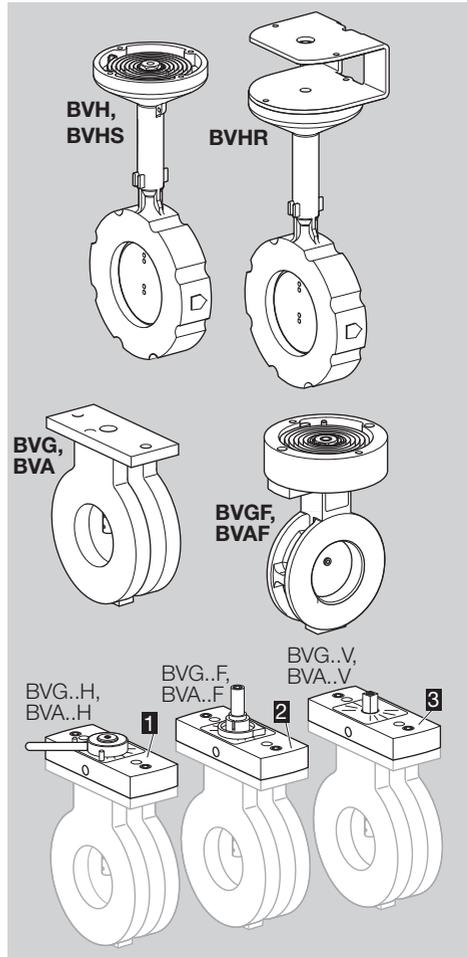
<sup>1)</sup> BVHS can only be combined with IC 40S

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

## ! 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.

## Part designations



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

The adapter sets can also be supplied as accessories.

### BV.. type label

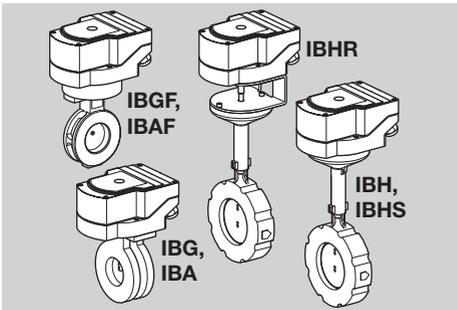
Gas type, inlet pressure and ambient temperature, see type label.



## IB.. type code

Code	Description
<b>IBG</b>	Actuator IC 20 or IC 40 + BVG
<b>IBGF</b>	Actuator IC 20 or IC 40 + BVGF
<b>IBA</b>	Actuator IC 20 or IC 40 + BVA
<b>IBAF</b>	Actuator IC 20 or IC 40 + BVAF
<b>IBH</b>	Actuator IC 20 or IC 40 + BVH
<b>IBHR</b>	Actuator IC 20 or IC 40 + BVHR
<b>IBHS</b>	Actuator IC 40S + BVHS
<b>40-150</b>	BVG.., BVA.. nominal size
<b>40-100</b>	BVH.. nominal size
<b>/25-125<sup>1)</sup></b>	Reduced to nominal size
For fitting:	
<b>Z</b>	between two flanges to EN 1092
<b>W</b>	between two ANSI flanges
	Max. inlet pressure $p_{U \max.}$ :
<b>01</b>	BVH..: 150 mbar (2.18 psi)
<b>05</b>	BVG.., BVA..: 500 mbar (7.25 psi)
<b>A</b>	BVH..: with stop bar
<b>/20</b>	Actuator IC 20
<b>/40</b>	Actuator IC 40
	Running time (at 50 Hz):
<b>-07</b>	7.5 s
<b>-15</b>	15 s
<b>-30</b>	30 s
<b>-60</b>	60 s
	Mains voltage:
<b>W</b>	230 V AC, 50/60 Hz
<b>Q</b>	120 V AC, 50/60 Hz
<b>A</b>	120-230 V AC, 50/60 Hz
	Torque:
<b>2</b>	2.5 Nm
<b>3</b>	3 Nm
<b>E</b>	Continuous control
<b>T</b>	Three-point step control
<b>A</b>	4 - 20 mA analogue input and digital inputs
<b>D</b>	Digital inputs
<b>R10</b>	1 k $\Omega$ feedback potentiometer

<sup>1)</sup> No reduction in the case of BVH, BVHR, BVHS



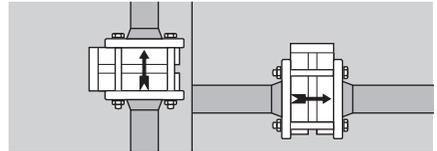
For further information, see [www.docuthek.com](http://www.docuthek.com) → Thermal Solutions → Products → 03 Valves and butterfly valves → Actuators IC → Operating instructions IC.

## Installation

### ! CAUTION

Please observe the following to ensure that no damage occurs:

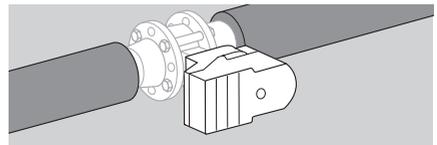
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
  - Avoid pressure surges and temperature shocks.
  - Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the unit.
  - Do not store or install the 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 x 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

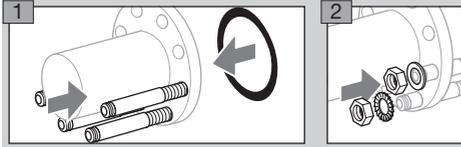
- ▷ If you are using an insulated pipeline ensure that there is sufficient installation space to access the screw connectors near the valve. Do not insulate the butterfly valve with thermal insulation.
- ▷ For a better dissipation of heat, turn the butterfly valve when installing so that the actuator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



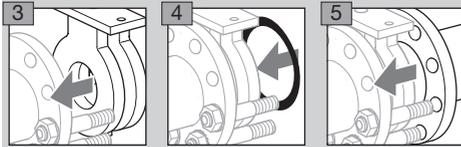
- ▷ Use heat deflectors for a medium temperature of > 250°C, see accessories.
- ▷ Check the temperature resistance of the seals.

## Installing the butterfly valve in the pipe

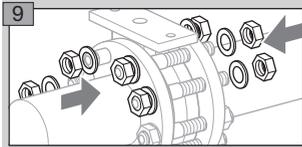
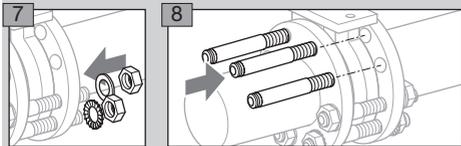
- ▷ The pictures below may not correspond to the actual valve type.



- ▷ 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 accessories.

## Mounting the actuator to BVA, BVG

- ▷ If the butterfly valve is to be mounted to an actuator other than an IC 20/IC 40, an adapter set will be available, see accessories.
- ▷ For further information on assembly of butterfly valve BVA, BVG with actuator IC 30/IC 50, see accessories or Actuator IC 30/IC 50 operating instructions, see [www.docuthek.com](http://www.docuthek.com) → Thermal Solutions → Products → O3 Valves and butterfly valves.

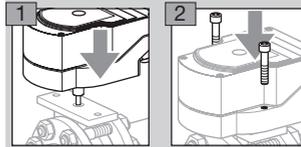
## Mounting the actuator IC 20/IC 40 to BVx

- ▷ 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 accessories.
- ▷ The actuator IC 20, IC 40 may be installed rotated by 180° on all butterfly valves.

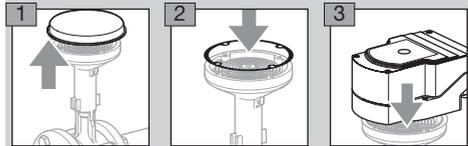
## ! CAUTION

- 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.

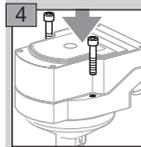
## BVG, BVGF, BVA, BVAF



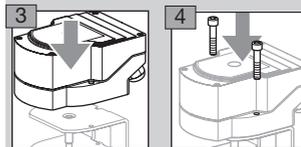
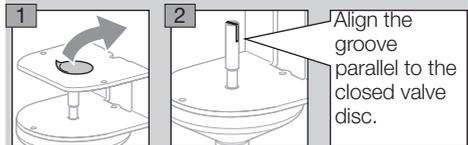
## BVH, BVHS



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

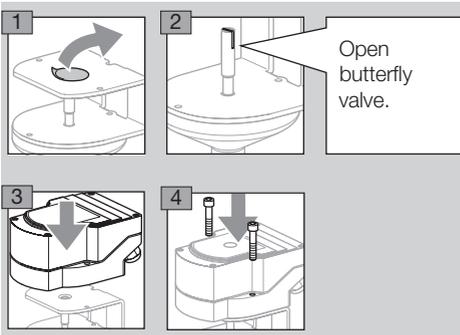


## BVHR



## 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.

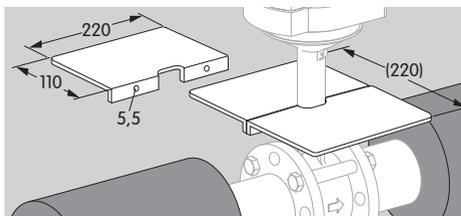
## Commissioning

- ▷ 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](http://www.docuthek.com).

## Accessories

### Heat deflector

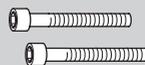
Install heat deflectors in order to protect the actuator from overheating if the medium temperature is  $> 250^{\circ}\text{C}$  ( $482^{\circ}\text{F}$ ).



Order No.: 74921670

### Fastening set for BVG, BVA, BVH, BVHR

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

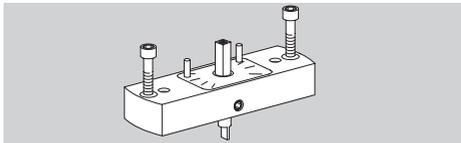


Order No.: 74921082

### 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.

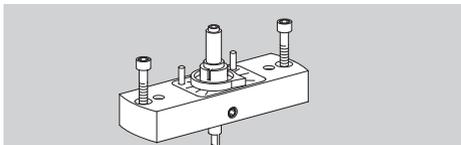
#### Adapter set with square shaft



Order No.: 74921674

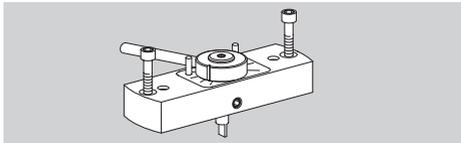
#### Adapter set with free shaft end

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



Order No.: 74921676

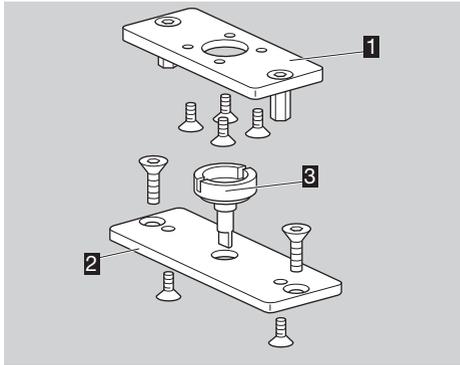
#### Adapter set with manual adjustment



Order No.: 74921678

### Adapter set IC 30 for BVA/BVG

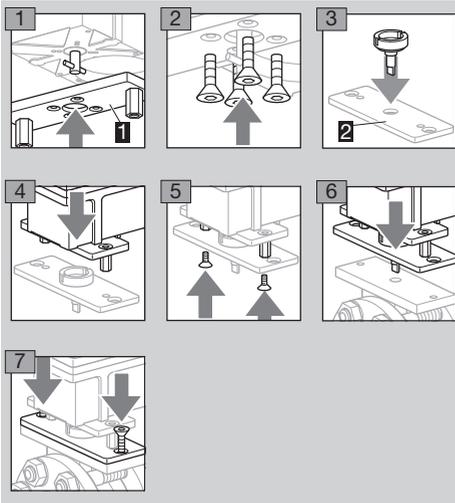
For the assembly of BVA/BVG and IC 30. The adapter set is delivered enclosed as an additional item.



Order No.: 74924996

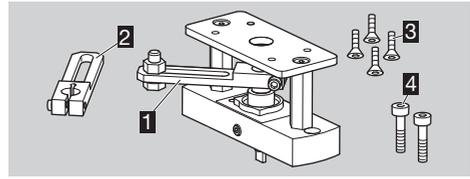
- 1 Adapter plate IC 30
- 2 Adapter plate BVA/BVG
- 3 Coupling

▷ The actuator can be turned through 180° to be installed on the adapter set.



### Adapter set IC 50 for BVA/BVG

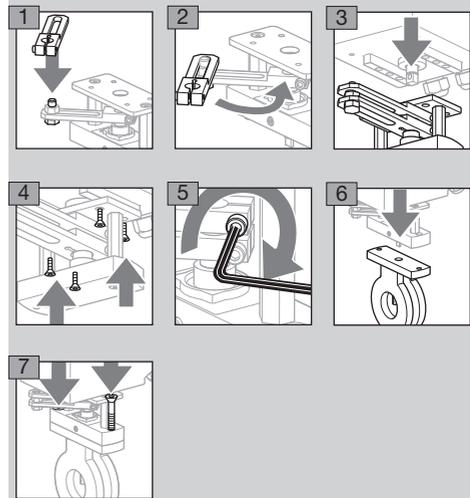
An adapter set can be supplied for the assembly of BVA/BVG and IC 50.



Order No.: 74926243.

- 1 Adapter set IC 50
- 2 Top oblong-hole lever for actuator IC 50
- 3 4 x M5 countersunk screws
- 4 2 x M6 set screws

- ▷ The actuator can be turned through 180° to be installed on the adapter set.
- ▷ Ensure that the connection cables are laid outside the levers' range of motion.



### 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

### Ambient conditions

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

Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO<sub>2</sub>.

The unit may only be stored/installed in enclosed rooms/buildings.

Ambient temperature: -20 to +60°C (-4 to +140°F).

Transport temperature = ambient temperature.

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

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

### Mechanical data

Gas type:

BVG, BVGF: natural gas, town gas, LPG, biogas (max. 0.1 %-by-vol. H<sub>2</sub>S) and other non-aggressive fuel gases.

BVA, BVAF: air.

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

Housing material: AlSi,

valve disc: aluminium,

drive shaft: stainless steel,

seals: HNBR.

### BVG, BVGF, BVA, BVAF

Nominal size: DN 40 – 150,

reduction by 2 nominal sizes possible.

Inlet pressure p<sub>U</sub>: max. 500 mbar (7.25 psi).

Medium temperature = ambient temperature.

### BVH, BVHR, BVHM, BVHS

Gas type: air and flue gas.

Nominal size: DN 40–100.

Housing material: GGG,

valve disc: stainless steel,

drive shaft: stainless steel.

Inlet pressure p<sub>U</sub>: max. 150 mbar (2.18 psi).

Pressure differential between inlet pressure p<sub>U</sub> and outlet pressure p<sub>D</sub>: 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).

## Logistics

### Transport

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

Transport temperature: see page 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, see page 2 (Part designations).

### Storage

Storage temperature: see page 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.

### 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 with product ID No. CE-0063BM1154 comply with the requirements of the listed Directives and Standards.

Regulation:

- (EU) 2016/426 – GAR

Standards:

- EN 161:2011+A3:2013

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

Scan of the Declaration of conformity (D, GB) – see [www.docuthek.com](http://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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schroder**

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