

Solenoid actuator MB 7

Technical Information · GB
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CE

krom
schroder

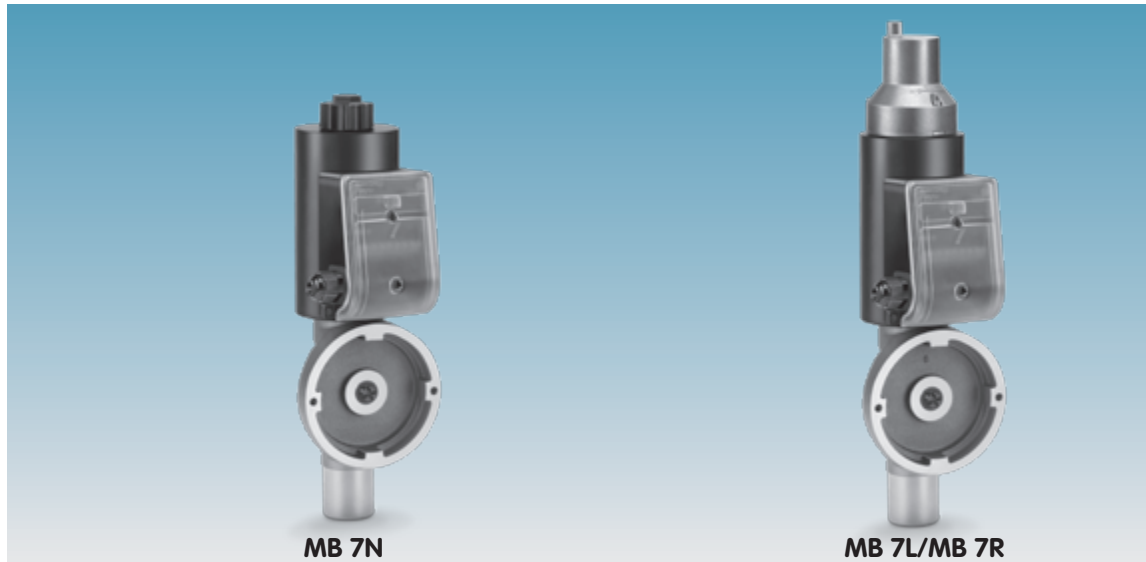
- Robust design for a long service life
- Simple installation using fastening set
- Valve disc position indicator
- Burner output adjustment by integrated air volume control for minimum and maximum flow rate
- Suitable for intermittent operation due to large number of operating cycles




elster
Kromschroder

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*Solenoid actuator
MB 7, quick or slow
opening*

1 Application

The solenoid actuator MB 7 serves as a drive for the butterfly valve BVHM. The unit made up of solenoid actuator MB 7 and butterfly valve BVHM can be used for staged control of industrial installations in cold- or hot-air operating mode.

Solenoid actuator MB 7 indicates the position of the valve disc. The air volumes for low and high fire can be controlled independently.

Due to the large number of operating cycles of solenoid actuator MB 7, the butterfly valve BVHM is suitable for intermittent operation.

*Solenoid actuator
MB 7 on butterfly
valve BVHM for
staged control of
hot or cold air*

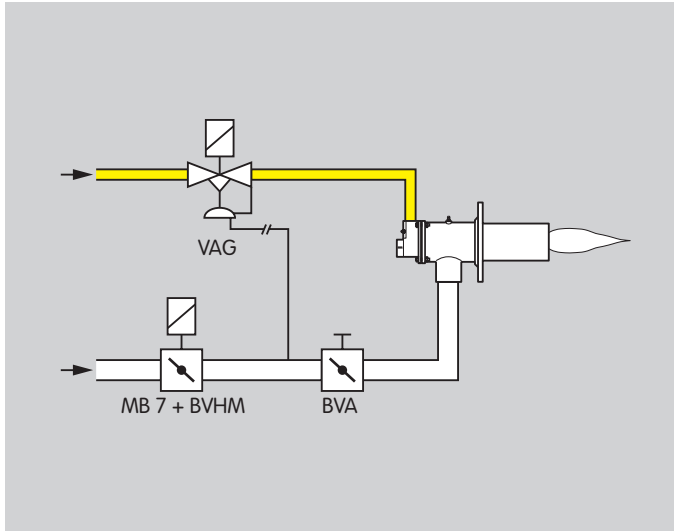


*Butterfly valve
BVHM on forging
furnace to reduce
the oxygen level*



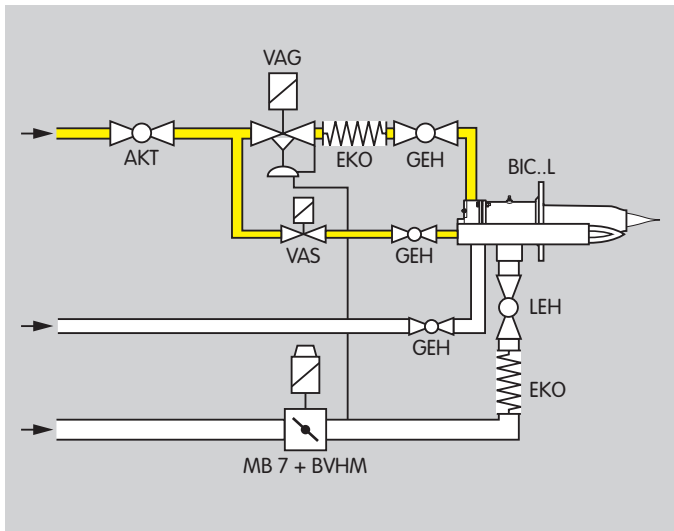
*Bogie hearth
annealing furnace*





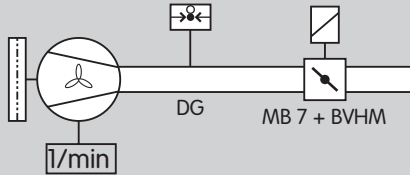
1.1 Examples of application

1.1.1 Large number of operating cycles for intermittent operation
Solenoid actuator MB 7 with butterfly valve BVHM is suitable for intermittent operation. The air volumes for low and high fire can be set independently on the solenoid actuator MB 7.



1.1.2 Air supply to forging furnace

The air supply to the forging furnace is controlled by the solenoid actuator MB 7 with slow opening and slow closing damping unit in conjunction with the butterfly valve BVHM. Since the valve disc is provided with a stop, the oxygen level in the furnace atmosphere is reduced in order to prevent scale formation on the material to be treated to an even larger extent.



1.1.3 Cooling air for annealing furnace

A fan introduces additional cooling air into the furnace through air nozzles. The air volume is controlled by the solenoid actuator MB 7 without damping unit and the butterfly valve BVHM.



2 Certification

Certificate of conformity

Kromschöder AG hereby certifies conformity with the following EU Directives:

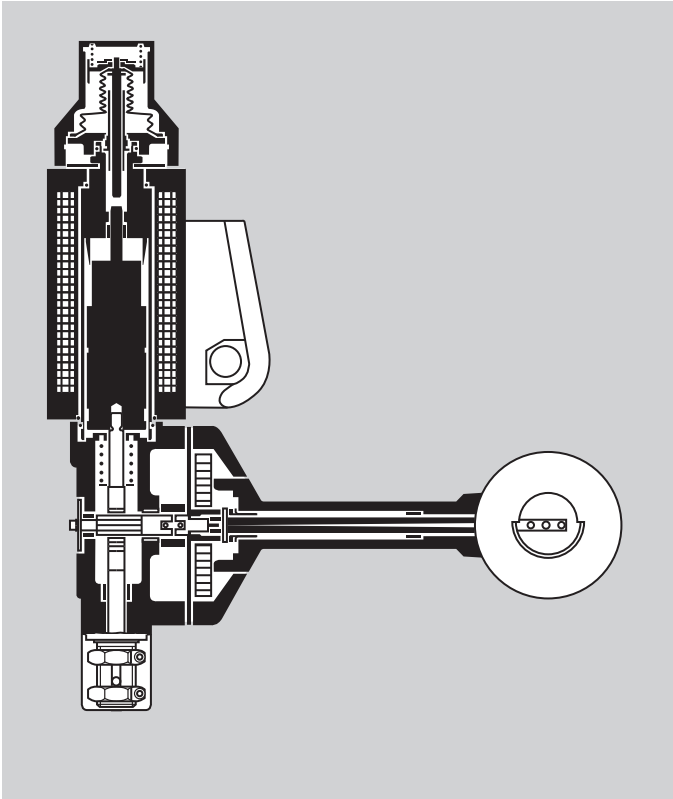
- Low Voltage Directive (73/23/EEC) on the basis of EN 60730-1,
- Electromagnetic Compatibility Directive (89/336/EEC) on the basis of EN 50082-2 and EN 50081-1.

FM approval

In preparation.

UL approval

In preparation.



3 Function

The solenoid actuator MB 7 is tailored to the butterfly valve BVHM. Via a coupling pin and ring (see "Accessories, Fastening set"), the solenoid actuator moves the butterfly valve to the Open or Closed position. The position of the valve can be read on a valve disc position indicator on the outside of the solenoid actuator. A large number of operating cycles enables intermittent operation.

In the event of a mains voltage failure, the solenoid actuator closes the butterfly valve. This prevents air from flowing into the furnace without being under control.

The solenoid actuator can be supplied in three versions:

M..N: quick opening, quick closing,

M..R: slow opening, slow closing, for High/Low control,

M..L: slow opening, quick closing, for On/Off control.

4 Replacement possibility for solenoid actuator

M is to be replaced by MB 7*

M		MB 7*	
M	Solenoid actuator for butterfly valve K	Solenoid actuator for butterfly valve BVHM	MB
5	Actuator size	Actuator size	7
6			7
R	Slow opening, slow closing	Slow opening, slow closing	R
L	Slow opening, quick closing	Slow opening, quick closing	L
N	Quick opening, quick closing	Quick opening, quick closing	N
T	Mains voltage: 220/240 V AC, 50/60 Hz	Mains voltage: 230 V AC, 50/60 Hz	W
Q	110/120 V AC, 50/60 Hz	120 V AC, 50/60 Hz	Q
		24 V DC	K
3	Electrical connection via terminals	Electrical connection via terminals	3
6	With 3-pin standard socket	With 3-pin standard socket	6
6L	With 3-pin standard socket, with lamp		–
9	Metal connection box		–
M 6LT3	Example	Example	MB 7LW3

* For possibilities to replace butterfly valve K by BVHM, see Technical Information BVG, BVA, BVH, BVHM (www.docuthek.com).

5 Selection

Solenoid actuator MB 7 for butterfly valve BVHM

Example

MB 7LW6

	7	R	L	N	W	Q	K	3	6
MB	●	●	●	●	●	●	●	●	●
Type									
Actuator size 7 for DN 40–100									
Slow opening, slow closing = R									
Slow opening, quick closing = L									
Quick opening, quick closing = N									
Mains voltage:									
230 V AC, 50/60 Hz = W									
120 V AC, 50/60 Hz = Q									
24 V DC = K									
Electrical connection:									
Terminal connection box, IP 54 = 3									
Terminal box with 3-pin standard socket, IP 54 = 6									

5.1 Differential pressure

The size of the valve BVHM influences the maximum differential pressure Δp for which the torque of the actuator MB 7 is adequate.

Butterfly valve	Max. inlet pressure p_e	max. Δp_{100}
BVHM 40	150 mbar (2.18 psi)	150 mbar (2.18 psi)
BVHM 50	150 mbar (2.18 psi)	130 mbar (1.88 psi)
BVHM 65	150 mbar (2.18 psi)	95 mbar (1.38 psi)
BVHM 80	150 mbar (2.18 psi)	55 mbar (0.80 psi)
BVHM 100	150 mbar (2.18 psi)	20 mbar (0.29 psi)

6 Project planning information

6.1 Installation

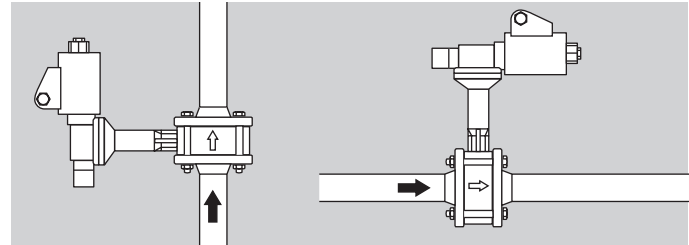
Actuator MB 7 and butterfly valve BVHM are supplied separately or assembled. Easy assembly with the butterfly valve BVHM using the fastening set (see "Accessories"), consisting of coupling pin, coupling ring and 2 screws, can be carried out either before or after installation of the butterfly valve in the pipework.

Solenoid actuator MB 7 and butterfly valve BVHM must not be in contact with masonry – minimum distance 20 mm (0.79 inch).

In conjunction with butterfly valve BVHM for hot air, the solenoid actuator can be used in temperatures of up to 250°C (480°F), with additional heat deflectors (see "Accessories") it can be used in temperatures of up to 450°C (840°F).

If insulated pipelines are used, ensure that the flanges and the butterfly valve BVHM are kept free of insulating material.

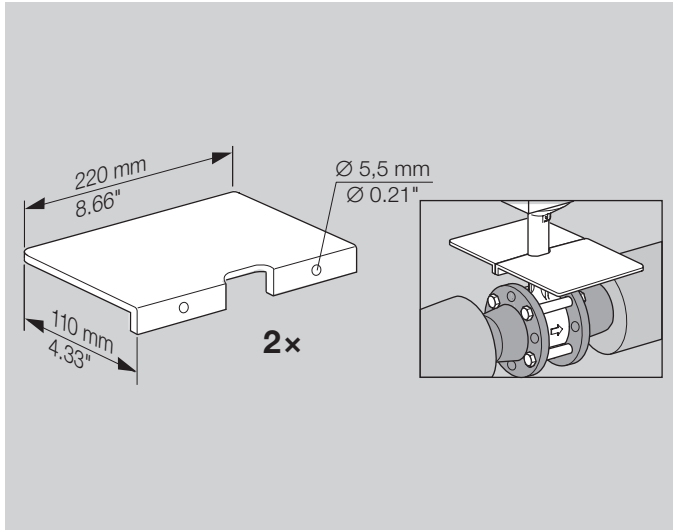
Installation position:



Black solenoid actuator in the vertical upright position or tilted up to the horizontal, not upside down.

The actuator must be installed in the vertical or horizontal position, not upside down.

When built into a vertical pipe, dirt may accumulate on the stop bar of butterfly valve BVHM, which may prevent the valve from closing properly. This is why we recommend selecting the direction of flow from bottom to top.



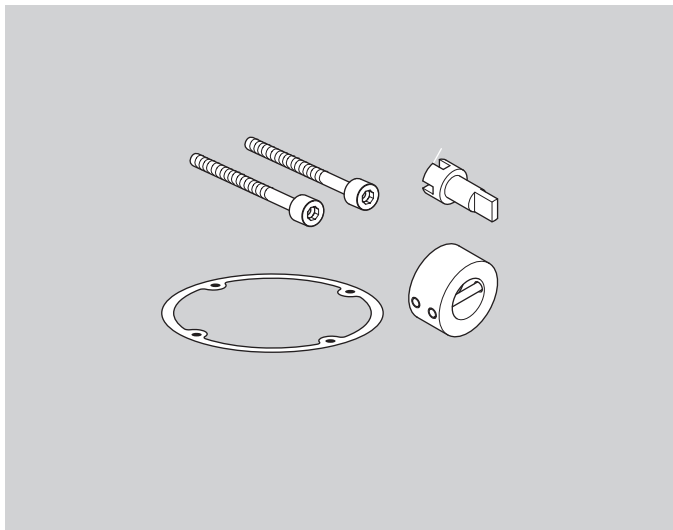
7 Accessories

7.1 Heat defectors

In conjunction with the butterfly valve BVHM the solenoid actuator can be used for hot air of:
 up to 250°C (480°F)
 up to 450°C (840°F) when heat defectors are installed.

If you are using an insulated pipeline ensure that there is sufficient installation space to access the heat defectors and the screw connectors near the valve.

Order number: 74921670



7.2 Fastening set

This is required to attach the solenoid actuator MB 7 to the butterfly valve BVHM. The fastening set is delivered enclosed as an additional item.

Order number: 74922222

8 Technical data

Number of operating cycles: High

Actuator MB 7 for valve housing BVHM 40 to BVHM 100

Mains voltage:

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

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

24 V DC +20/-20%.

The electrical power is the same both when switching on and in continuous operation.

Power consumption	
230 V AC	83 W
120 V AC	90 W
24 V DC	75 W

Ambient temperature:

-20 to +60°C (-4 to +140°F).

Enclosure: IP 65.

MB 7..R

Slow opening: approx. 2–4 s,

Slow closing: approx. 2–4 s.

MB 7..N

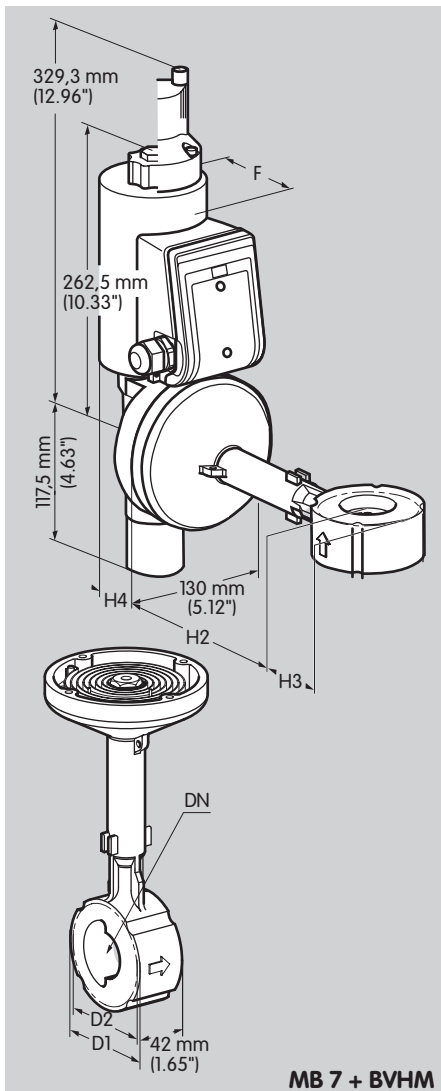
Quick opening: > 0.5 s,

Quick closing: > 0.5 s.

MB 7..L

Slow opening: approx. 2–4 s,

Quick closing: > 0.5 s.



8.1 MB 7 + BVHM dimensions

Type	DN	H2	H3	H4	D1	D2		F	Weight
		mm (inch)	mm (inch)	mm (inch)	mm (inch)	DIN mm (inch)	ANSI mm (inch)	mm (inch)	kg (lbs)
BVHM 40 + MB 7	40	234 (9,21)	46 (1,81)	91,5 (3,58)	92 (3,62)	86 (3,39)	85,7 (3,37)	92 (3,62)	11,79 (26)
BVHM 50 + MB 7	50	239 (9,40)	54 (2,12)	91,5 (3,58)	107 (4,21)	105 (4,13)	105 (4,13)	92 (3,62)	12,17 (26,83)
BVHM 65 + MB 7	65	243 (9,56)	64 (2,51)	91,5 (3,58)	127 (5)	127 (5)	124 (4,88)	92 (3,62)	13,05 (28,77)
BVHM 80 + MB 7	80	254 (10)	71 (2,80)	91,5 (3,58)	142 (5,59)	137 (5,39)	137 (5,39)	92 (3,62)	13,59 (29,96)
BVHM 100 + MB 7	100	265 (10,43)	88 (3,46)	91,5 (4,33)	175 (6,89)	162 (6,38)	175 (6,89)	92 (3,62)	14,97 (33)

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Searched for a long time
Didn't find information
What is missing?
No answer

Comprehension

Coherent
Too complicated
No answer

Scope

Too little
Sufficient
Too wide
No answer

Use

To get to know the product
To choose a product
Planning
To look for information

Navigation

I can find my way around
I got "lost"
No answer

My scope of functions

Technical department
Sales
No answer

Remarks

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