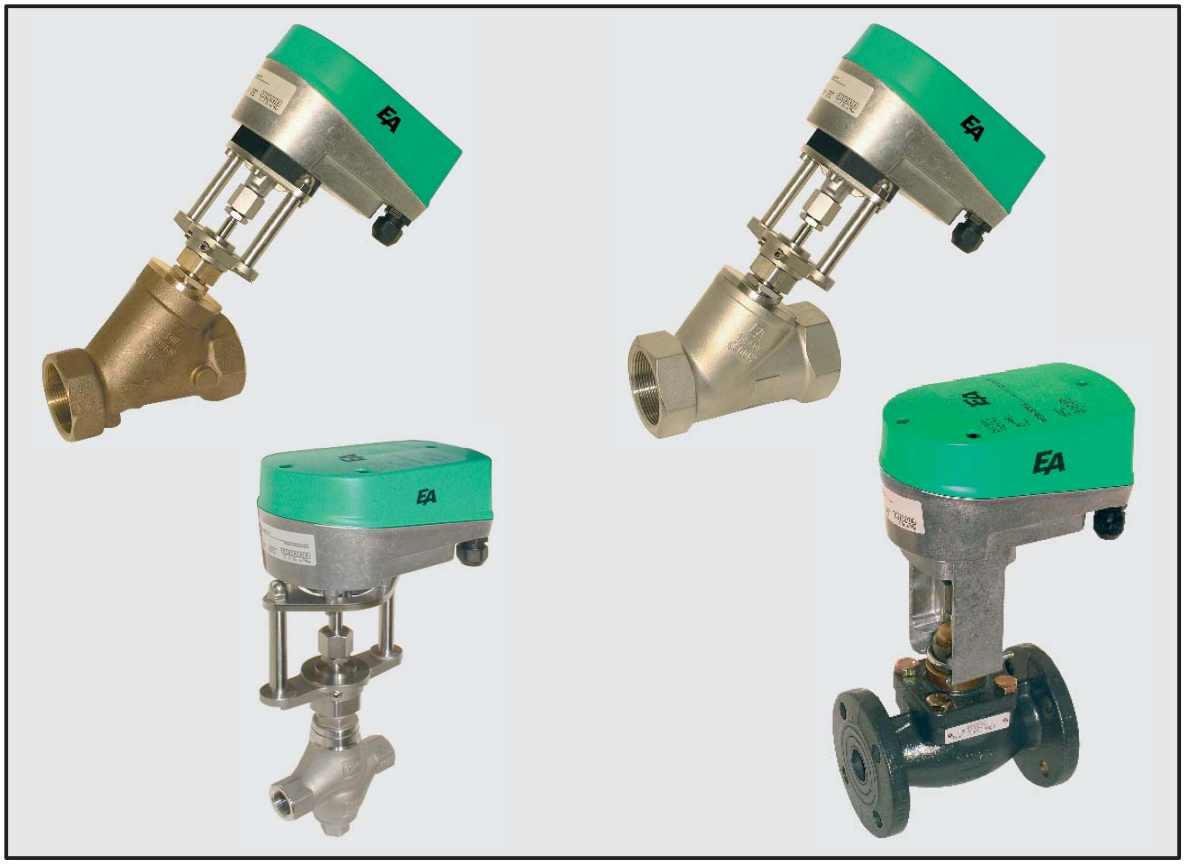
Qualität von Anfang an.

Original Operating Manual
Motor Control Valve
MBA / MBK
NBA / NBK
EBA / EBK



acc. to annex VI of the Directive 2006/42/EC

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1 Foreword

Dear customer,
Dear assembler / user,

these operation and installation manuals are intended to give you the knowledge which is necessary for you to be able to carry out the mounting and adjustment of an motor control valve rapidly and correctly.

Please read these instructions carefully and pay particular attention to the advice and warning notes.

Only instructed and qualified mechanician should mount, adjust or maintain the motor control valves.

Motor control valves are generally used for clean, gaseous and liquid media. At critical conditions or aggressive media the material of the body, internal parts and sealing must be checked for their suitability.

If you have any questions in relation to the motor control valve, we shall be pleased to answer them.
The telephone number will be found on the inside cover of these operation and installation manual.

Yours
END-Automation GmbH & Co. KG

2 General advice

2.1 Validity

These mounting and installation manual is valid for the standard version of the motor control valves and their variants with ´X` as preface to the type.

2.2 Inward monitoring

Please check
- directly after delivery the motor control valve for any transport damages and deficiencies
- with reference to the accompanying delivery note the number of parts.

Do not leave any parts in the package.

2.3 Complaints

Claims for replacement of goods which relate to transport damage can only be considered valid if the delivery company is notified without delay.

In case of returns (because of transport damage/repairs), please make a damage protocol and send the parts back to the manufacturer, if possible in the original packaging.

In case of return, please mention the following:
- Name and address of the consignee
- Stock-/ordering-/article-number
- Description of the defect

2.4 Guarantee

For our motor control valves we give a guarantee period in accordance with the sales contract.

The warranty and guarantee rules of **END-Automation GmbH & Co. KG** are applicable.

2.5 Symbols and their Signification

Paragraphs which are identified with this symbol contain very important advices; this also includes advices for averting health risks.
Observe these paragraphs without fail!

Paragraphs which are identified with this symbol contain very important advices; this also includes how to avoid damage to property.
Observe these paragraphs without fail!

This symbol indicates paragraphs which contain comments/advice or tips.

This spanner identifies the description of actions which you should carry out.

3 Safety advice

Depending on the technical circumstances and the time under and at which the motor control valve is mounted, adjusted and commissioned, you must in each case take into account particular safety aspects!

If, for example, the motor control valve works in an operational chemical plant, the potential hazards of commissioning have another dimension from that when this is only being carried out for test purposes an a „dry“ part of the plant in the assembly room.

Since we do not know the circumstances at the time of the mounting/adjustment/commissioning, you may find advice on hazards in the following descriptions which are not relevant to you .

3.1 Personal protection

3.1.1 Safety advice for mounting

We wish to point out expressly that the mounting, the electrical installation and the adjustment of the valves and the accessories must be carried out only by trained specialist personnel having mechanical and electrical knowledge!

Secure that the machine / plant come up to the Machinery Directive after the mounting and installing of the motor control valve.

Switch off all the devices / machines / plant affected by mounting or repair.
If appropriate, isolate the devices / machines / plant from the mains.

Check (for example in chemical plants) whether the switching off of devices / machines / plant will cause potential danger.

If appropriate, in the event of a fault in the motor control valve (in a plant which is in operation) inform the shift foreman / safety engineer or the works manager without delay about the fault, in order, for example, to avoid an outflow / overflow of chemicals or the discharge of gases in good time by means of suitable measures!

Before mounting or repair, relief the pressure from pneumatic / hydraulic devices / machines / plant.

If necessary, set up warning signs in order to prevent the inadvertent starting up of the devices / machines / plant.

Observe the respective relevant professional safety and accident prevention regulations when carrying out the mounting / repair work.

Check the correct functioning of the safety equipment (for example the emergency push off buttons/ safety valves, etc)!

The motor control valve must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC on machinery, where appropriate.

3.1.2 Safety advice for adjustment and starting

As a result of the starting (automatically or by hand) of a motor control valve the flow of gases, steam, liquids, etc. may be enabled or interrupted! Satisfy yourself that, as the result of the starting or the test adjustments of the valve, no potential hazards will be produced for the personnel or the environment!

If necessary, set up warning signs in order to prevent the inadvertent starting up or shutting down of the devices / machines / plant. By ending mounting check the correct function and the tightness of the valve.

Afer adjustment check the functioning of the motor control valve.

Check the functioning of the end position switches (Option)!

Check whether the actuating element is actually 100 % closed when the controller signals the corresponding end stop. (Option).

Through suitable measures, prevent links being trapped by moving actuating elements!

Check the right function of all safety devices (for example emergency off push buttons / safety valves, etc.)!

Carry out the starting and the adjustments only in accordance with the instructions described in this documentation!

When adjustments are being carried out on an opened and switch on (operational) limit switches or pilot valves, there is the risk that live parts(230V AC~) can be touched!
Therefore the adjustment must be carried out only by the electrician or a person having adequate training, who is aware of the potential hazard.

3.1.3 Safety advice for maintaining / repairing

Do not carry out any maintenances / repairs if the motor control valve will be under pressure.

Before disassembling or the motor control valve some essential points should be clarified!

- Will the valve to be disassembled be replaced by another immediately?
- If appropriate, does the production process of the plant needed to be stopped?
- Is it necessary to inform specific personnel about the disassembly?

If necessary, inform the shift foreman/ safety engineer or the manager about the maintenance or repair without delay in order, for example, to avoid an outflow/ overflow of chemicals or a discharge of gases in good time by means of suitable measures!

You have to relieve the pressure in the pipes in which the valve is mounted.

Switch off the power supply and relieve the pressure in the pipes.

If necessary set up warning signs in order to prevent

- **the inadvertent starting up of the devices/machines/plants in which the armature/ valve is mounted**
- **the switching on of pilot medium supply, pilot power supply and/or the power supply of actuators and accessories.**

In case of defect in the armature/valve make contact to the supplier. The telephone number will be found on the back cover of these mounting and installation manual.

If you ascertain a damage of the motor control valve, isolate the device from the mains. Please observe the safety advices.

Do not mount, start or adjust the motor control valve if itself, the pipes or the hole device will be damaged.

After the maintenance or repair check the right function of the armature/valve and the tightness of the pipe connections.

Also check the function of the accessories e.g. actuators, limit switches, etc.

3.2 Device safety

The motor control valves

- are quality products which are produced in accordance to the recognized industrial regulations.
- left the manufacturer`s work in a perfect safety condition.

In order to maintain this condition, as installer / user you must carry out your task in accordance with the description in these instructions, technically correctly and with the greatest possible precision .

We assume, as a trained specialist you are having mechanical and electrical knowledge!

Satisfy yourself that the motor control vales will only be used within their admissible limiting value (see the technical data) .

The motor control valves must be used only for a purpose corresponding to their construction!

The motor control valves must be used within the values specified in the technical data!

The operating of the motor control valve outside the nominal temperature range could destroy the sealing and the bearings.

The operating of the motor control valves outside the nominal pressure range could destroy the inner parts and the body.

The mentioned data are experience values only and describe the general condition of our product. They should be used as a guideline to evaluate the suitability of the non-concreate individual case, but without any guarantee for the suitability given by END-Automation.
The final responsibility to proof and confirm the suitability of our products, for which we confirm the perfect (faultless) quality by our delivery- and payment terms, lies in the dependance with your constructive responsibility to the end-user.

Never remove a cap or a other component part if the armature/valve will be under pressure.

Do not mount, start or adjust the armature/valve if itself, the pipes or a mounted actuator will be damaged.

After the maintenance or repair check the right function of the armature/valve and the tightness of the pipe connections.

Also check the function of the accessories e.g. actuators, limit switches, etc.

4 Device description

The motor control valves will be delivered in various variants. The following table explains the composition of the standards variants of our motor control valves to you. Of course we are delivering motor control valves, which are specifically adjusted to your requirements.

4.1 Motor control needle valve NBA/NBK

1. - 3. Digit Product	4. Digit Body material	5. Digit Seals material
NBA = Motor control needle valve open-close-control **NBK =** Motor control needle valve continuous control	**3 =** Stainless steel body made of brass on request	**0 =** metal **3 =** FKM **4 =** EPDM

6. + 7. Digit Control cone (flow rate)	8. + 9. Digit Actuator size					
01 = 10 - 100 l/h **02 =** 75 - 280 l/h **03 =** 200 - 800 l/h **04 =** 300 - 1300 l/h **05 =** 600 - 1600 l/h measured at Δp water = 1 bar	**actuator**	power consumption	operating time	force	voltage	control
		[VA]	[s/mm]	[N]	[V]	
	21	7	4	1000	230 AC	open/close
		5	4	1000	24 AC/DC	continuous

10. - 12. Digit Connection size	13. - 15. Digit Control signal	16. - 20. Digit Options
015 = G ½“ Other sizes and connection types on request	**/01 =** 1 ... 20mA 0,5 ... 10V **/04 =** 4 ... 20mA 2 ... 10V	**/FL =** flanged connection Other materials, additional limit switches, potentiometer and further options on request

4.2 Motor control valve MBA/MBK

1. - 3. Digit Product	4. Digit Body material	5. Digit Seals materials
MBA = Motor control valve open-close-control **MBK =** Motor control valve continuous control	**6 =** GGG 40.3	**7 =** Metal / PTFE

6. Digit Voltage	7. + 8. Digit Actuator size
2 = 24V AC/DC **6 =** 230V 50Hz	

actuator	power consumption open-close-control [VA]	power consumption continuous control [VA]	operating time [s/mm]	force [N]
21	7	5	4	1000
23	5,5	10	4	2000

9. - 11.(12.) Digit Connection size	Kv-value [m³/h]	12. - 14. (13. - 15.) Digit Control signal	15. - 20. (16. - 20.) Digit Options
015.1 = DN 15	0,63	**/01 =** 1 ... 20mA 0,5 ... 10V **/04 =** 4 ... 20mA 2 ... 10V	Other material, additional limit switches, potentiometer and further options on request.
015.2 = DN 15	1,0		
015.3 = DN 15	1,6		
015.4 = DN 15	2,5		
015.5 = DN 15	4,0		
020 = DN 20	6,3		
025 = DN 25	10,0		
032 = DN 32	16,0		
040 = DN 40	25,0		
050 = DN 50	40,0		
065 = DN 65	63,0		
080 = DN 80	100		
100 = DN100	145		
Other sizes and connection types on request.			

4.3 Motor control valve EBA/EBK

1. - 3. Digit Product	4. Digit Connection	5. Digit Ways	6. Digit Operation
EBA = Motor control valve open-close-control **EBK =** Motor control valve continuous control	**G** = threaded connection acc. to DIN ISO 228 T1 **A** = welded connection acc. to DIN 3239 **L** = welded connection acc. to ISO 4200 **M** = welded connection acc. to DIN 11850-R2 **F** = flanged connection EN1092-1 Typ 11-B	**2 =** 2/2-ways	**D =** direct acting

7. Digit Body material	8. Digit Seals material	9. Digit Control version	10. Digit Voltage
2 = Bronze **3 =** Stainless steel Other material on request	**Seat / Stem** **1 =** PTFE / PTFE Other material on request	**0 =** without control cone **1 =** with control cone By ordering please pretend the following values: - medium - $Q_{max.}$/Kv - ΔP_{min}	**2 =** 24 V AC/DC **6 =** 230 V, 50 Hz **Input signal** 1/4 ... 20 mA 0,5/2 ... 10 V **Output signal** 0/2 ... 10 V

11. + 12. Digit
Actuator size

	powe consumptin		operating time	force
	open-close-control	continuous control		
	[VA]	[VA]	[s/mm]	[N]
actuator 21	7	5	4	1000
actuator 23	5,5	10	4	2000

13. - 15. Digit
Connection size

flange / welded connection	threaded connection
015 = DN 15	G ½
020 = DN 20	G ¾
025 = DN 25	G 1
032 = DN 32	G 1¼
040 = DN 40	G 1½
050 = DN 50	G 2
065 = DN 65	G 2½
080 = DN 80	G 3

Other sizes on request

16. - 18. Stelle Control signal	19. + 20. Stelle Options
/01 = 1 ... 20 mA 0,5 ... 10 V **/04 =** 4 ... 20 mA 2 ... 10 V.	**/FL =** flanged connection Other material, additional limit switches, potentiometer and further options on request.

5 Mounting

5.1 General

Before you mount / disassemble, adjust or start operating of a motor control valve you have to read the

→ safety advice

If you have not yet done this, read this important advice now and then return to this point.

5.2 Corresponding use

Motor control valves will be used to control and to cut off medium flow.
It should only be used clean liquids and gases, on which the material of the motor control valve will be resistant. Pollution or using outside the nominal pressure range and/or the nominal temperature range should causes damages on the motor control valve especially on the seals. .

Motor control valves with metallic seals should only be used for clean liquid media.

5.3 Mounting / Disassembly

The mechanical installation are the same by all variants of the motor control valves. It differs only by the type of connection.

Observe the flow direction, specified on the valve body.

Remove the package and the safety devices (e.g. caps or plugs). Take care that there will be no parts of the package or other parts in the valve body.

Before mounting the motor control valve clean up the pipes. Pollution will be reduce the safety and the lifetime of the valve. If necessary mount a Y- strainer in front of the motor control valve.

Avoid strains of the valve body by non align pipes.

5.3.1 Mounting with threaded connection

Before lay on sealing compounds, test the hardly screwing of the pipes into valve body.

Lay on the correct sealing compounds on the pipes end. By using PTFE-ribbon or hemp sealing observe the screw direction. Don´t use sealing compounds which are not prescribed for your employment.

Screw the pipes into the connection ends of the valves. Don´t use the actuator as a lever.

Strike up the pipes with pressure after that time the manufacturer of the sealing compounds pretends for harden it.

Check the tightness of all connections.

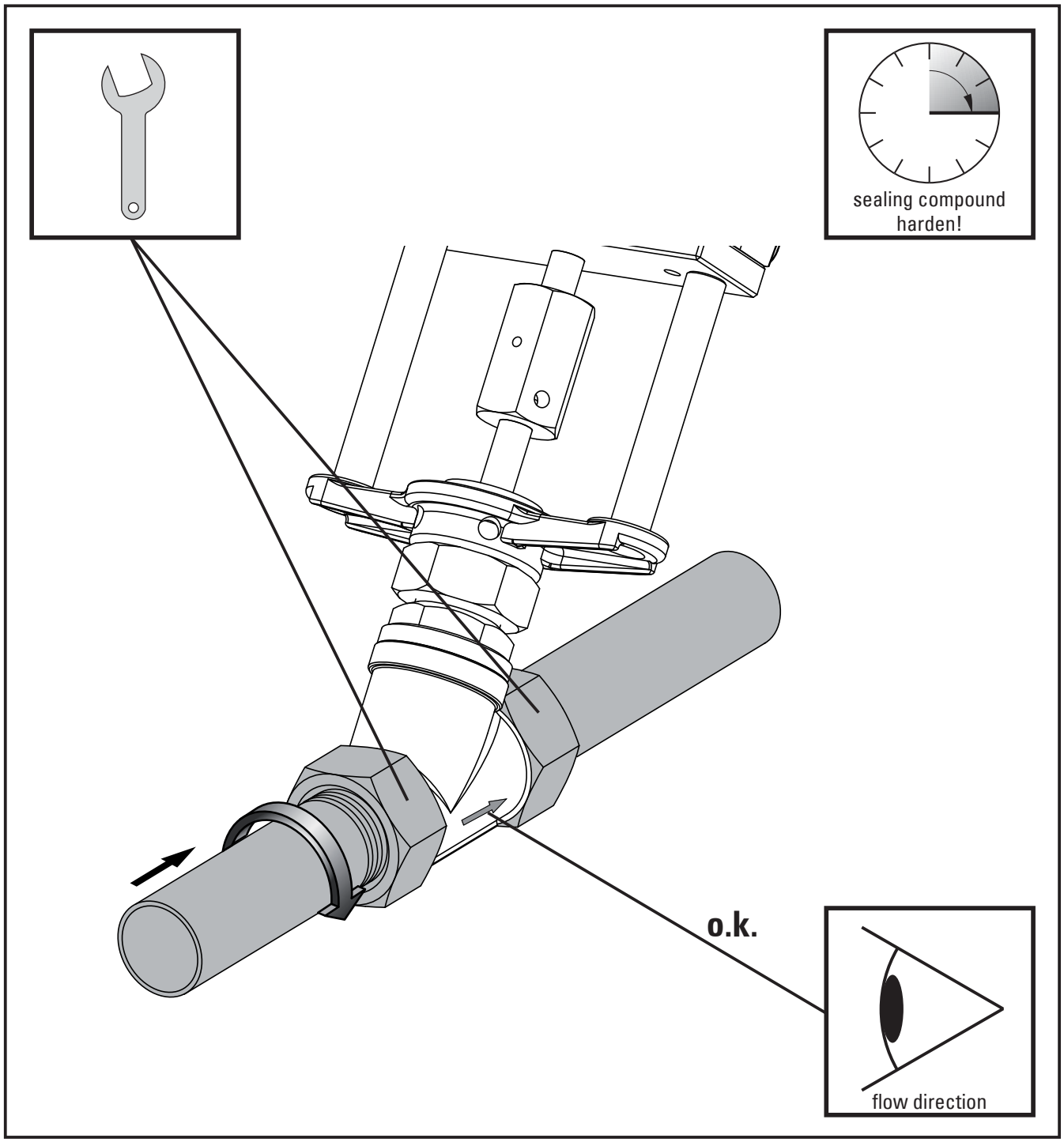

Fig. 5.1 - Mounting with threaded connection

5.3.2 Mounting with welded connection

By welding the valve body between the pipes you have to disassemble the screw joint with the actuator first, to prevent the damage of the sealing.

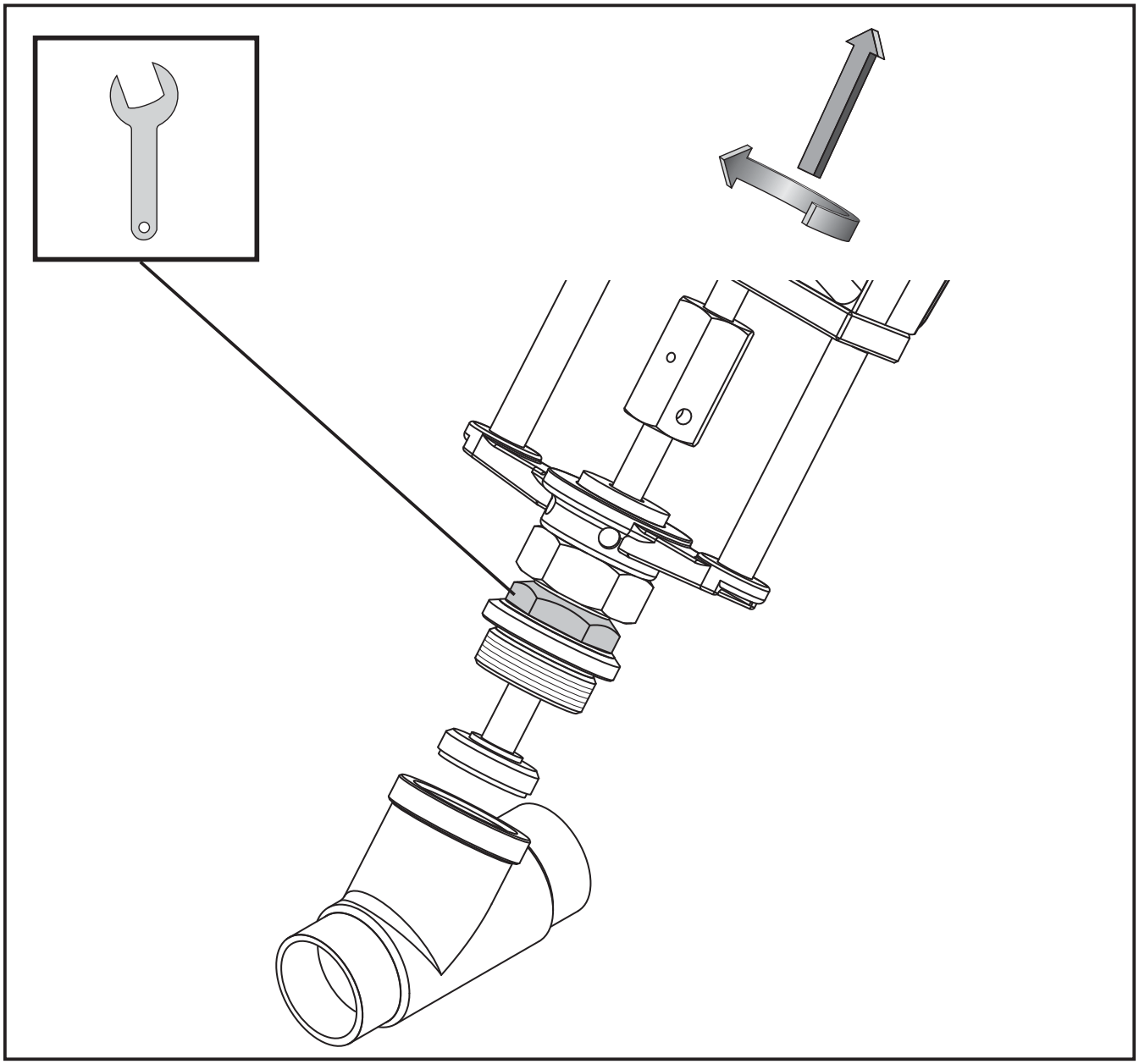

Fig. 5.2 - disassembly of the screw joint with the actuator

5.3.2.1 Disassembly of the screw joint with the actuator

Clamp the valve between a vice carefully. By using guard plates you can prevent the damage of the ends of the body.

STOP

To prevent the damage of the seat seals or the control cone bring the motor control valve in the open position by using the manual override. (Therefore observe **chapter 7: manual override**)

Loosen the screw joint with the actuator with a fit spanner. The spanner have to put on to the hexagon nut of the screw joint.

STOP

Screw out the screw joint with the actuator of the valve body and take it by side carefully. If you have to disassemble several motor control valves place a mark on the valve body and the electric actuator that you will be able to join the correct parts by a subsequent mounting of valve.

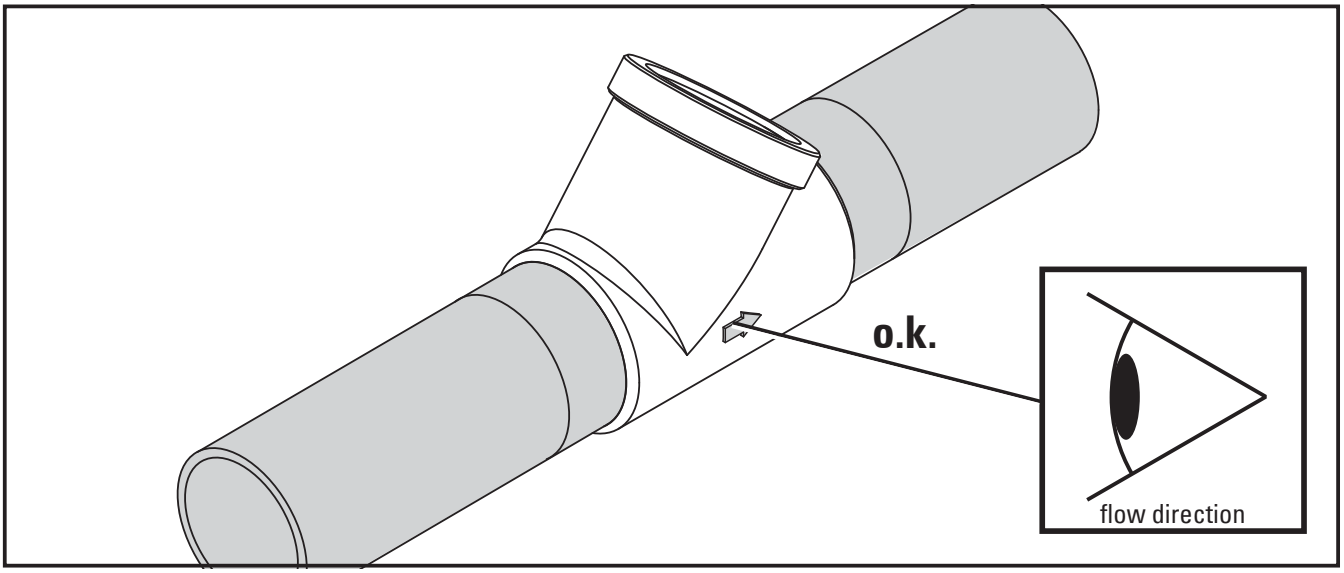

Fig. 5.3 - Welding of the valve body

5.3.2.2 Welding the valve body between two pipes

By welding the valve body with the pipes observe appropriate demands and guide lines.

The safety demands by welding are depending on the place and the position of the point of weld. Welding the parts at a serviceable device/machine/plant the potential of danger is as higher as welding the parts in a welding room.

If appropriate, inform the shift foreman / safety engineer or the works manager and the fire brigade of your factory

By welding observe your own national guide lines about safety and prevention of accidents.

5.3.2.3 Mounting of the screw joint with the actuator

Before mounting the screw joint with the actuator let the valve body cool down.

Screw the screw joint with the actuator top into the body.

Take care about the correct placement of the sealing into the screw joint and that there will be no pollution on the sealing or the seat.

Tighten the screw joint with the actuator with a fit spanner. The spanner have to put on to the hexagon nut of the screw joint.

Check the tightness of all the connections.

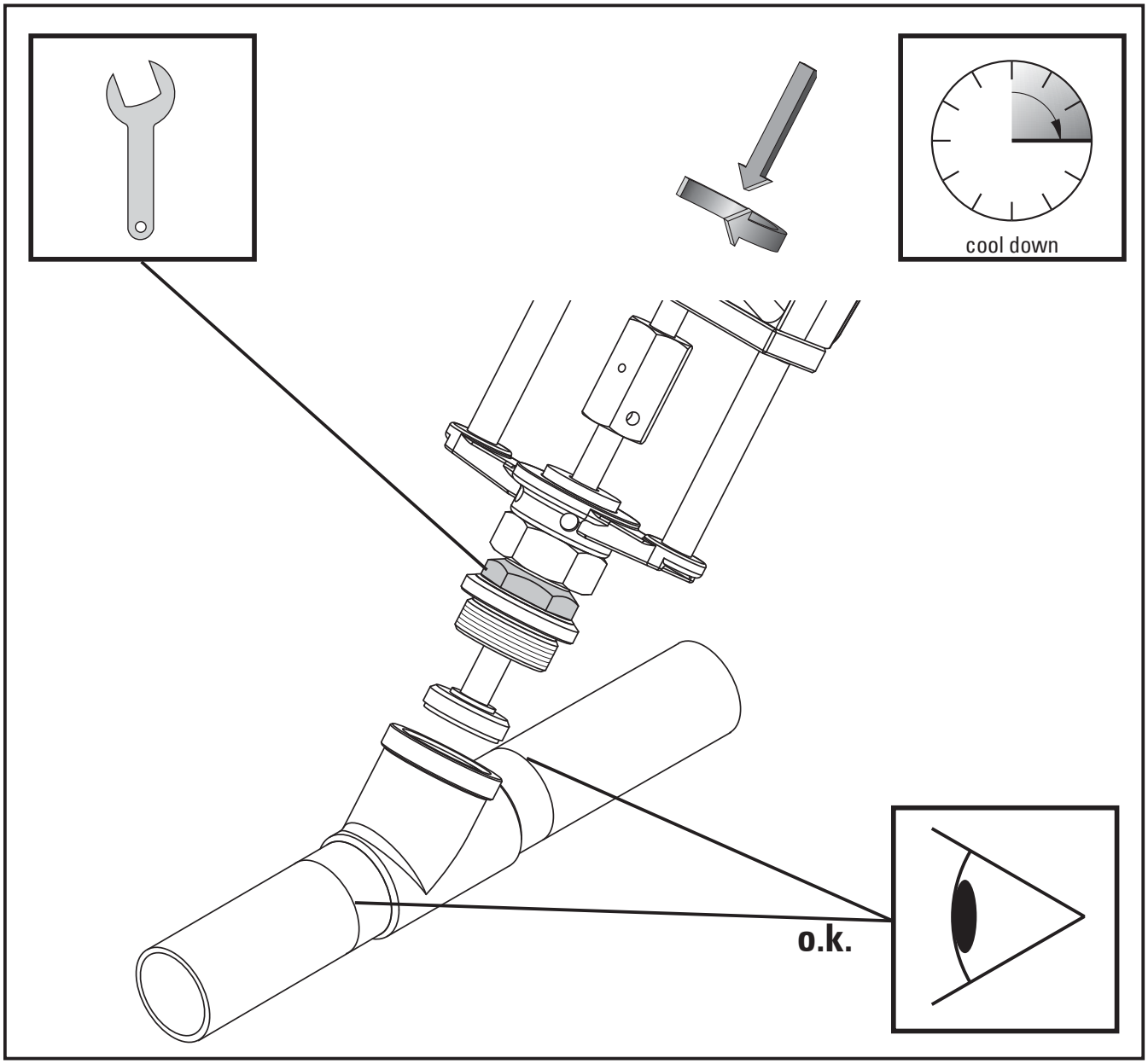

Fig. 5.4 --mounting of the screw joint with the actuator

5.3.3 Mounting with flanged connection

We assume, that you have mounted the flanges at the end of pipes and they are cooled down. (e.g. welded flanges).

Push the valve body between the flanges by using the appropriate sealing.

Aligns the flange boring and put the fit screws through the holes.

Screw the fit nuts onto the screws and tighten it up crosswise. By doing this observe the maximum torque of the screws.

Check the tightness of all connections.

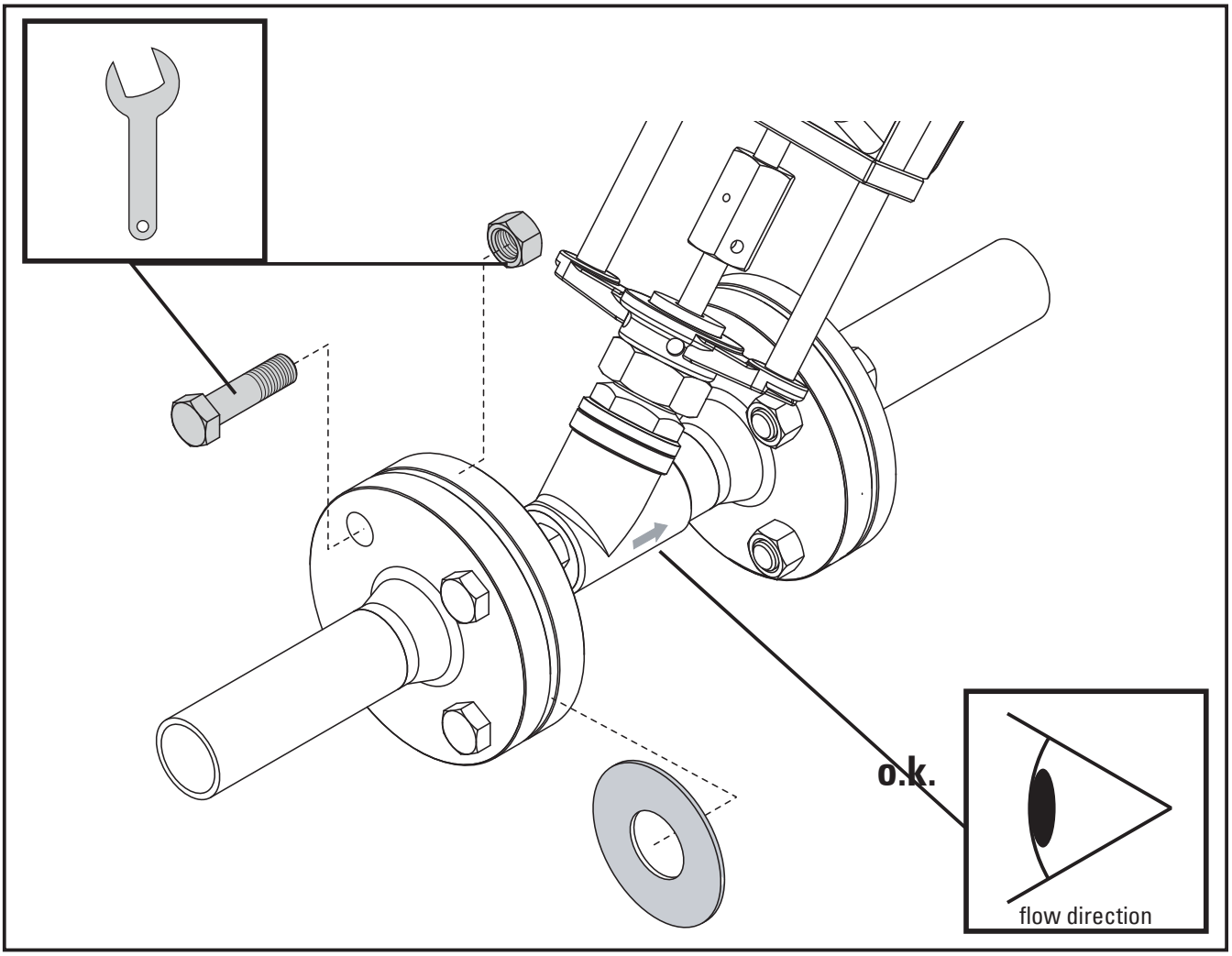

Fig. 5.5 - mounting with flanged connection

5.4 Maintenance

On normal accounts the motor control valves are maintenance free.

Check in regular turns the tightness of all connection and sealing of the motor control valve.

Please check also that the actuator will be dry inside.

STOP

In case of a defect at the motor control valve make contact with the supplier. The telephone number will be found on the back cover of these operation and installation manual.

STOP

If you determinate that there is a damage to the motor control valve, isolate it from the mains and the power supply. However, before doing this, it is essential to refer to the

→safety advice

6 Electrical installation

Before you mount / disassemble, adjust or start operating of a motor control valve you have to read the

→ **safety advice**

If you have not yet done this, read this important advice now and then return to this point.

6.1 Actuators with Continuous Control

At actuators with continuous control the power supply will be at actuator type 21/23 : 24V AC and 24V DC!

6.1.1 Wiring diagram actuator type 21/23

To control the electric actuator type 21/23 you can choose from voltage control signal 0,5 - 10V DC / 2 - 10V DC or current control signal 1 - 20mA / 4 - 20 mA.

6.1.1.1 Wiring diagram actuator 21/23 with voltage control signal

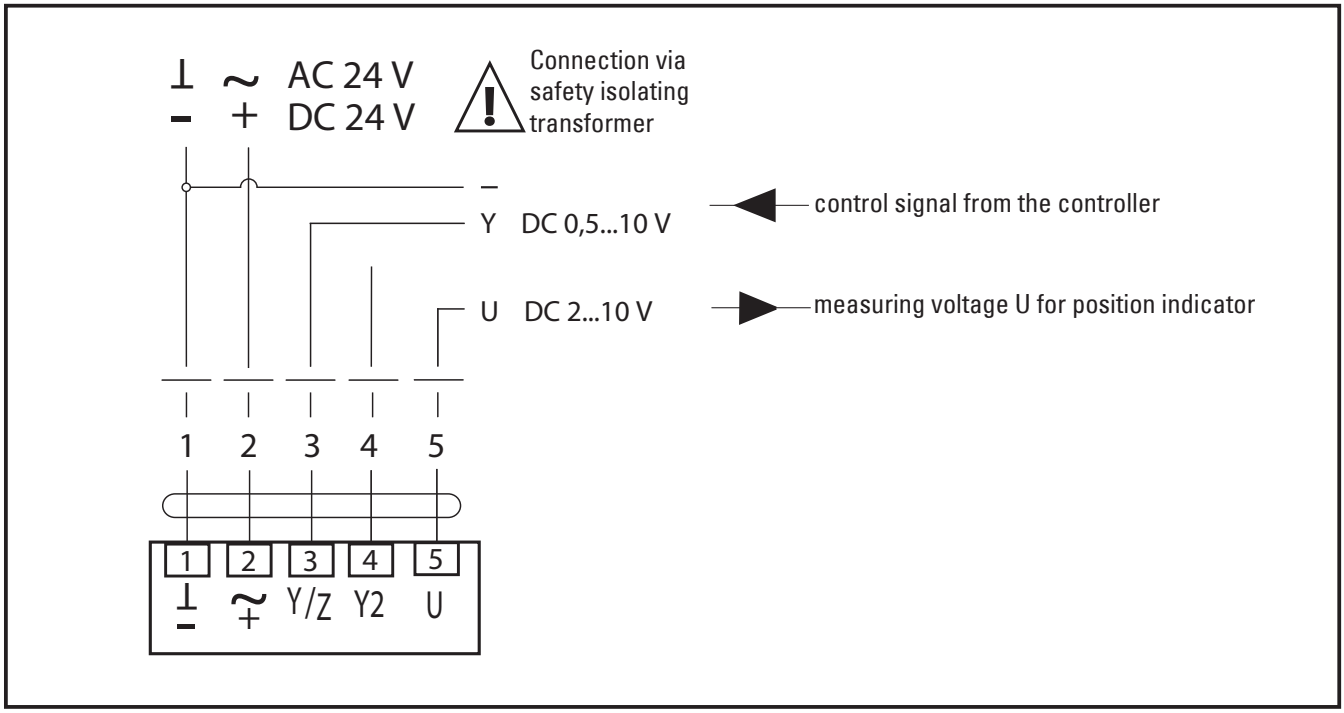

Fig. 6.1 - wiring diagram actuator 21/23 with voltage control signal

6.1.1.2 Wiring diagram actuator 21/23 with current control signal

If the actuator will be operate with a current control signal 1 - 20 mA / 4 - 20mA a resistor (500Ω) must be installed between terminal 1 and terminal 3. (wiring diagram on next page)

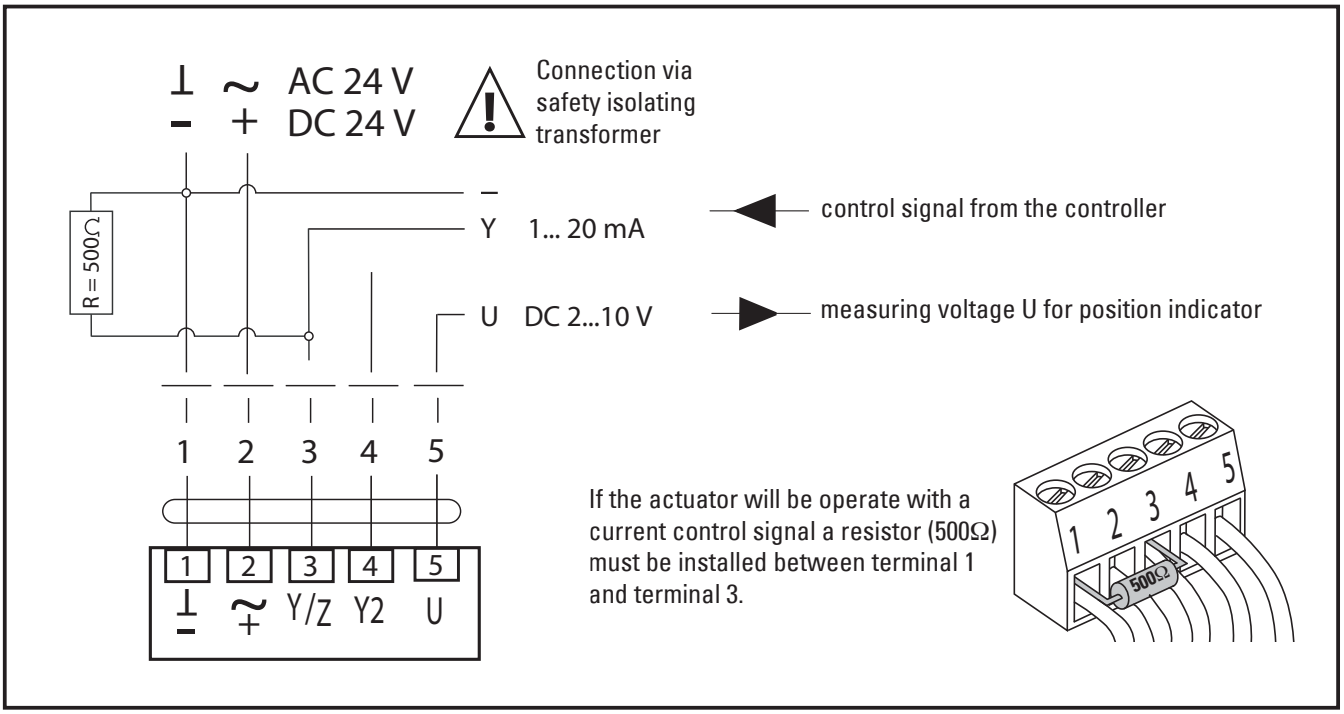

Fig. 6.2 - wiring diagram actuator 21/23 with current control signal

6.1.2 Arrangement of the operating controls actuator type 21/23

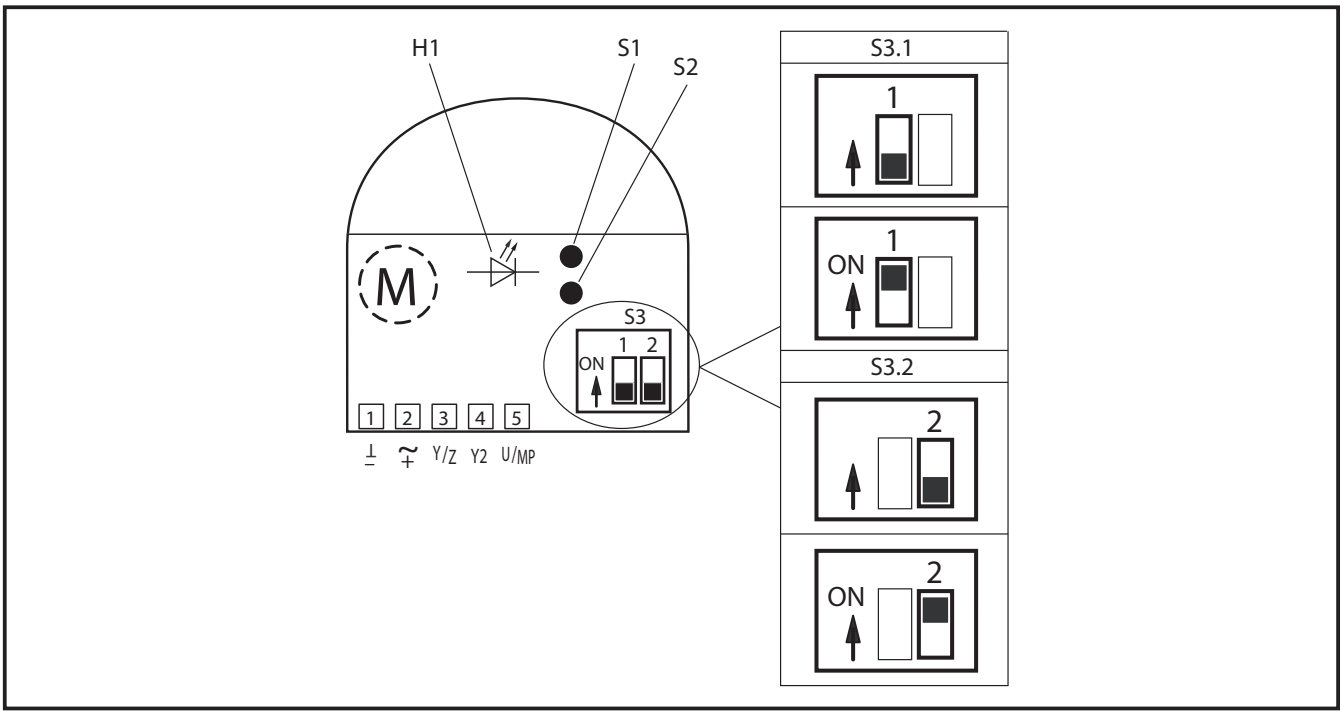

Fig. 6.3 - arrangement of the operating controls actuator 21/23

Under the cover of the actuator are the terminals for connecting the leads, the control devices S1, S2, and S3 and the LED indicator H1. By setting the slide switch S3 appropriately or by pressing the push-buttons S1 and S2 it is possible to configure the actuator very simply on-site to suite actual requirements when changes from the factory settings are needed.

STOP

Only properly authorised and trained persons may change the settings of slide switch S3 and push-button S2.

6.1.3 Setting and functional description of the switches S1 ... S3 (actuator type 21/23)

6.1.3.1 Switch S1 (Test)

By pressing **switch S1** the valve covers the full stroke in maximum running time and verifies the adapted stroke to ensure that both end points are reached (H=0% and H=100%).

6.1.3.2 Switch S2 (Int / Adaption)

By pressing **switch S2** the effected stroke (between the two mechanical end-stops of the valve) is acquired as 100% stroke and stored in the micro-processor. The control signal and running time are then matched to this 100% stroke.

6.1.3.3 Slide switch S3.1

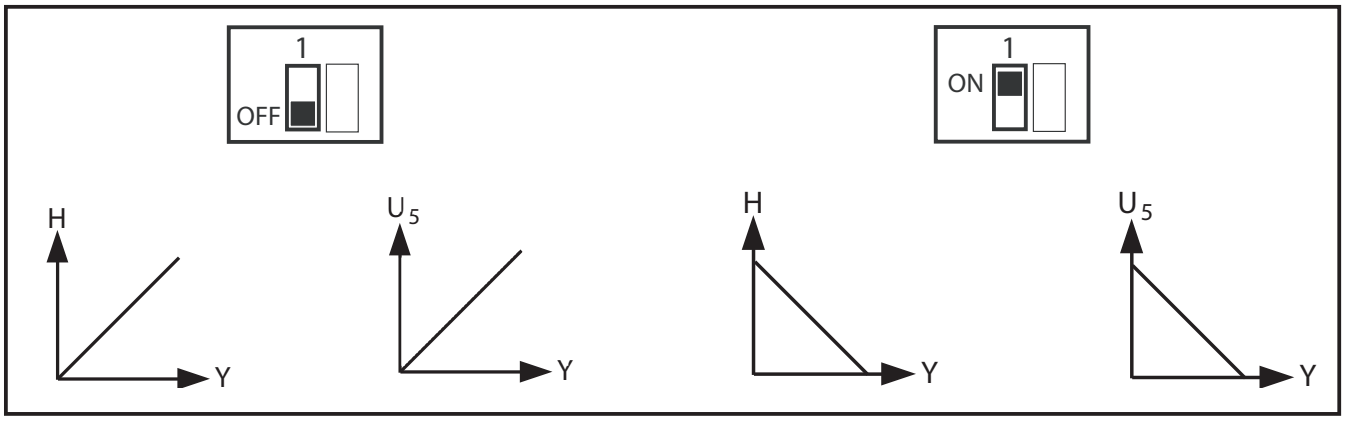

Fig. 6.4 - adjustment of the slide switch S3.1

OFF (Direct):
0% control signal corresponds to 0% position feedback.
(The actuating spindle is then retracted or extended depending on the choise of the closing point).
ON (Inverted):
0% control signal corresponds to 100% position feedback.
(The actuating spindle is then extended or retracted depending on the choise of the closing point).
Factory setting: OFF (Direct)

6.1.3.4 Slide switch S3.2

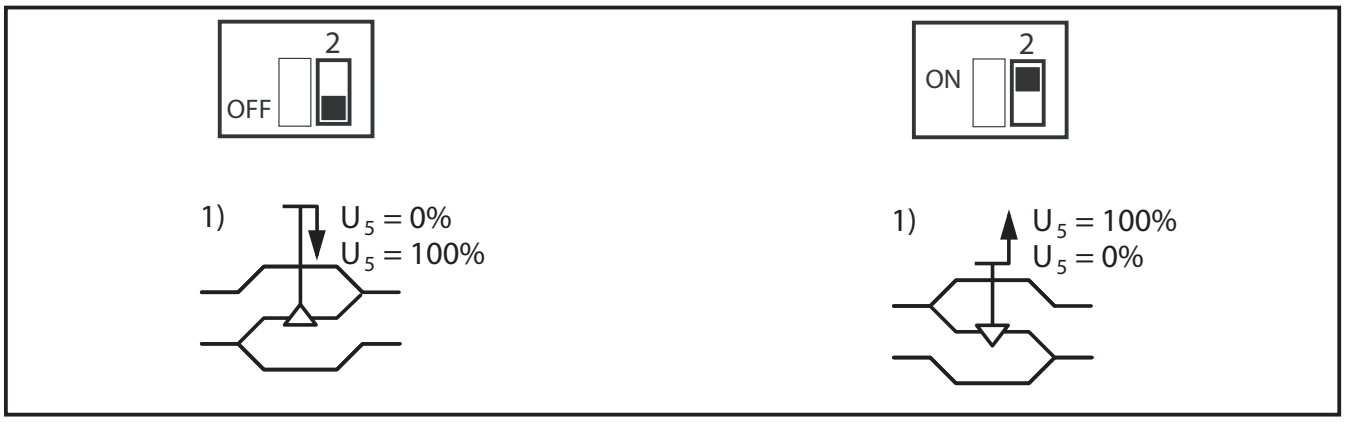

Fig. 6.5 - adjustment of the slide switch S3.2

OFF (Up):
The actuating spindle is retracted into the actuator and the valve and the valve stem is extended from the valve body. The position feedback indicates 0% if the stroke direction is “direct“.
ON (Down):
The actuating spindle is extended from the actuator and the valve stem is retracted into the valve body. The position feedback indicates 0% if the stroke direction is “direct“.
Factory setting: OFF (Up)

6.1.4 LED indicator H1:

Green steady light:	Actuator working properly
Green flashing light:	Test run or adaptation with synchronization in progress
Red steady light:	Fault
Red flashing light:	After power interruption (>2s). The valve is automatically synchronized at the selected closing point the next time it closes. The LED indicator changes from a red flashing light to a green steady light.
Alternating red/ green flashing light:	Addressing via the control system and operation of the adaptation push bottom S2 in progress.

6.2 Actuators with Open- Close- Control

At actuators with open-close- control the power supply will be at actuator type 21/23 : 230V DC!

6.2.1 Wiring diagram actuator type 21/23

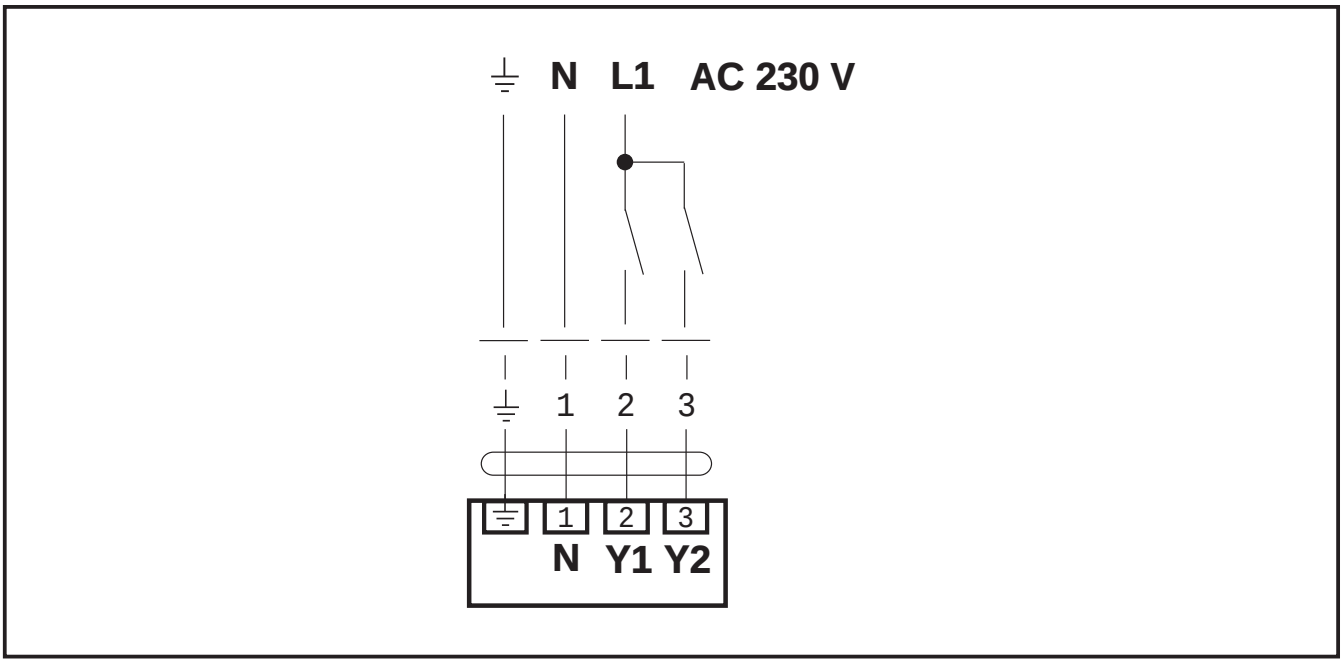

Fig. 6.6 - wiring diagram actuator type 21/23 with open-close- control

6.2.2 Arrangement of the operating controls actuator type 21/23

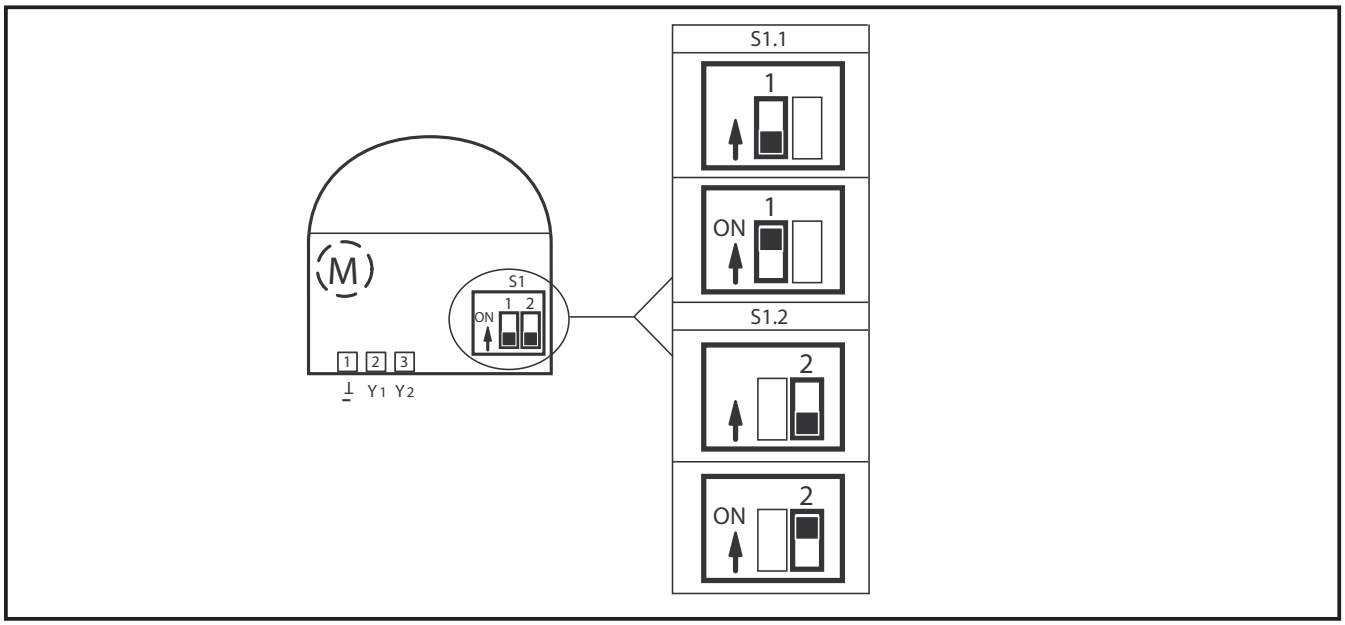

Fig. 6.7 - arrangement of the operating controls actuator type 21/23

Under the cover of the actuator are the terminals for connecting the lead and the S1 control device.

6.2.3 Setting and functional description of the switch S1 (Antrieb Typ 21/23)

6.2.3.1 Slide switch S1.1

Fig. 6.8 - setting of the slide switch S1.1

OFF :
Actuating time 7,5 s/mm.
ON :
Actuating time 4 s/mm.
Werkseinstellung: ON.

6.2.3.2 Slide switch S1.2

OFF (Up):
The actuator spindle is retracted into the actuator and the valve stem is extended from the fitting.
ON (Down):
The actuator spindle is extended from the actuator and the valve stem is retracted into the fitting.
Factory setting: ON (Up)

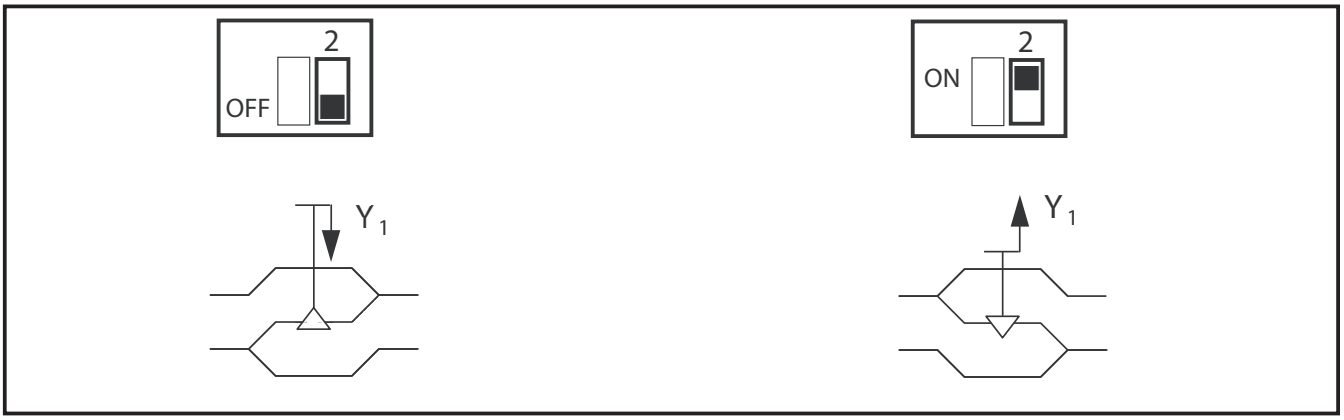

Fig. 6.9 - setting of the slide switch S1.2

7 Manual override

Before you mount / disassemble, adjust or start operating of a motor control valve you have to read the

→ safety advice

If you have not yet done this, read this important advice now and then return to this point.

7.1 Actuator 21/23

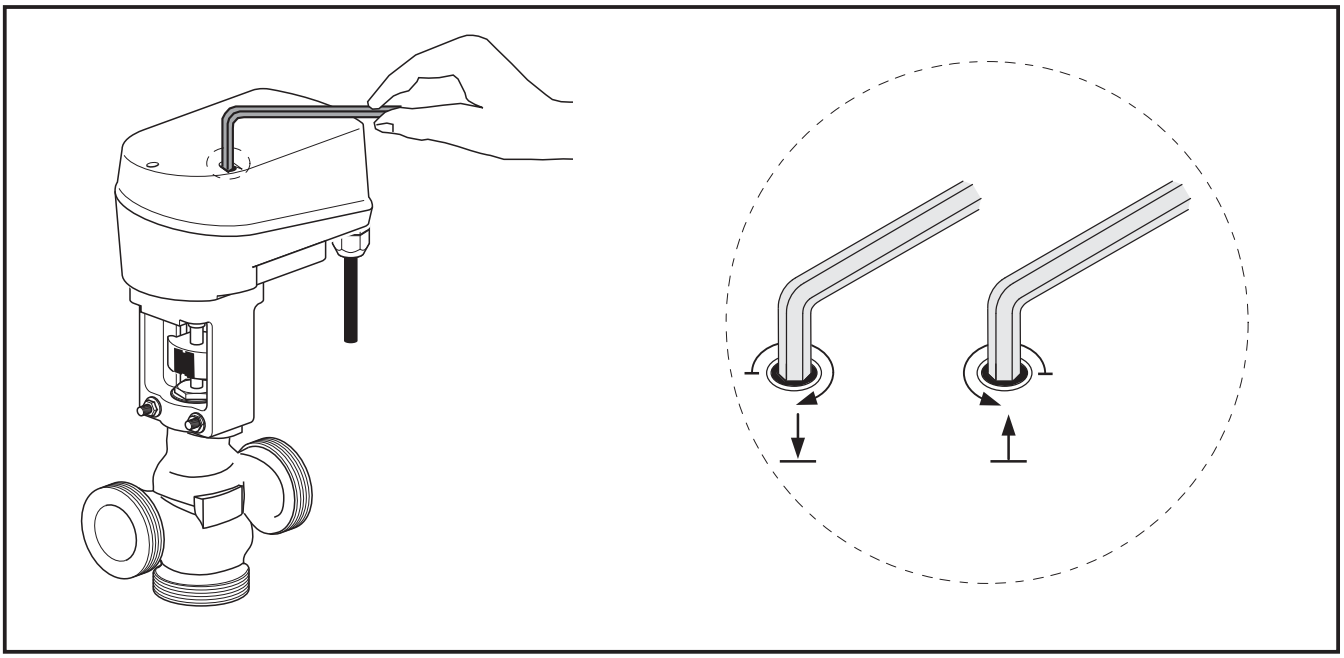

Fig. 7.1 - manual override: actuator 21/23

In case of isolated power supply the stroke of the actuator spindle could be adjusted by a 5mm allen key (allen key is not included with the actuator).

Disconnect the power supply.

Turning the allen key clockwise causes the actuator spindle to extend.

Turning the allen key counter clockwise causes the actuator spindle to retract.

8 Description of the actuators

Which actuator is working on your motor control valve, you can see by the article number of the motor control valves. You will find the code number of the actuator at the following places:

- Motor control valve NBA / NBK : 8.+9. digit of the article number
  example: NBA3301**21**015 = actuator 21
- Motor control valve MBA / MBK : 7+8. digit of the article number
  example: MBA672**21**015 = actuator 21
- Motor control valve EBA / EBK : 11.+12. digit of the article number
  example: EBAG2D21xx**21**020 = actuator 21

A ´X` as preface to the type of the motor control valve mentions a special variant of it. The ´X` do not take into consideration by deciding the type of the actuator.

8.1 Actuator type 21/23

8.1.1 Technical data

Typ	21	23	21	23
Operation	**continuous control (MBK, NBK, EBK)**		**open- close- control (MBA, NBA, EBA)**	
Power supply	24V AC/DC (+10%/ -15%)		230V 50Hz	
Nominal voltage range	19,2 ... 28,8 V AC 21,6 ... 28,8 V DC		198 ... 264V	
Power consumption	5 VA	10 VA	7 VA	5,5 VA
Input signal Y	0,5 -10 V (2 - 10 V) 1-20 mA (4 - 20 mA)		-	
Output signal X	2 - 10 V DC	2 - 10 V DC	-	
Actuating force	1000 N	2000 N	1000N	2000N
Speed	4 s/mm		7,5 s/mm / 4 s/mm	
Nominal stroke	20 mm	50 mm	20 mm	50 mm
Ambient temp. range	0 - 50 °C	0 - 50 °C	0 - 50 °C	0 - 50 °C
Degree of protection	IP 54	IP 54	IP 54	IP 54
Weight	1,5 kg	2,9 kg	1,5 kg	2,9 kg

CE-marking in accordance to: 2004/108/EC
Humidity test: EN 60730-1
Mode of operation type1 in acc. to: EN 60730-1

8.1.2 Dimension

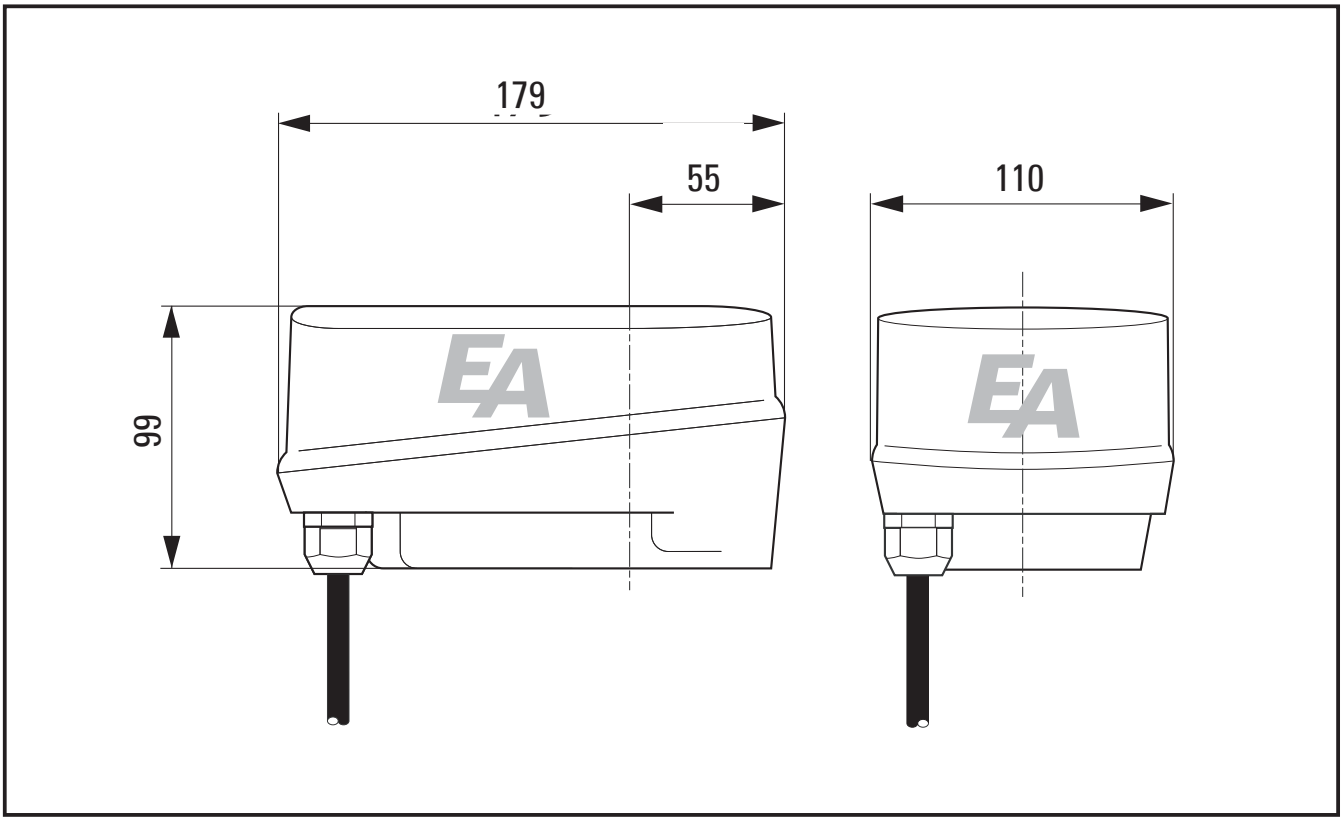

Fig. 8.1 - description of the actuators: dimension actuator type 21/23

8.1.3 Installation

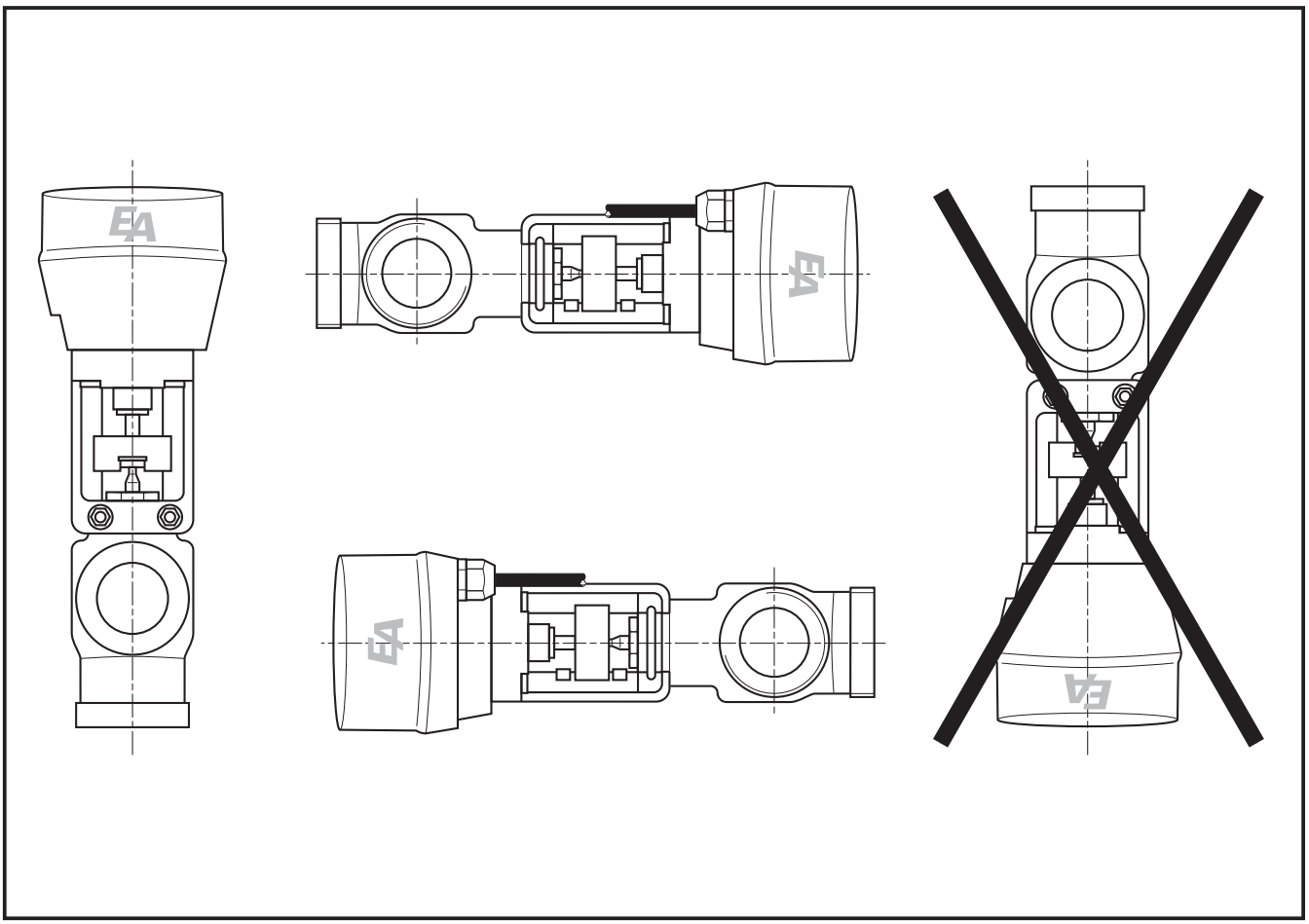

Fig. 8.2 - description of the actuators: installation actuator type 21/23

9 Index

Qualität von Anfang an.

(1) # Declaration in conformity

(2) ## as defined by Pressure-Equipment-Directive 97/23/EC

(3) This declaration apply to the article groups with the nominal sizes:

Articles	Nominal size
EBAG3	1¼" ... 2"
EBKG3	1¼" ... 2"
MBA	DN32 ... DN50
MBK	DN32 ... DN50

and all variations of these articles

(4) of the company **END-Automation GmbH & Co. KG**
D-32547 Bad Oeynhausen
Germany

(5) Herewith we declare that the above-mentioned articles in the conditions of our delivery are in conformity with the regulations of the Pressure Equipment Directive 97/23/EG.

(6) Applied conformity assessment procedure: Modul H.

(7) Notified body for conformity assessment PED an Quality-Management-System:

Bureau Veritas S.A.
Paris / Frankreich
Kennzeichen 0062

(8) Certificate numbers:
Quality Management System: INT8029DE/A
Certificate of System approval PED: 2008/176.15.3204/P

(9) Applied harmonized standards, in particular:

DIN EN 12516:2005 **Industrial valves - Shell design strength**

(10) On behalf

Bad Oeynhausen, 09. September 2009

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Friedhelm König
Technical Manager

Michael End
Quality Manager

Declaration without signature or company stamp shall not be valid. The declaration may be circulated only without alternation. Extracts or alternations are subject to approval by END-Automation GmbH & Co. KG.

Qualität von Anfang an.

(1) # Declaration in conformity

(2) ## as defined by Pressure-Equipment-Directive 97/23/EC

(3) This declaration apply to the article groups with the nominal sizes:

Articles	Nominal size
EBAG2	½" ... 3"
EBKG2	½“ ... 3“
EBAF3	DN15 ... DN80
EBKF3	DN15 ... DN80
EBAG3	½“ ... 1“
EBKG3	½“ ... 1“

Articles	Nominal size
MBA	DN15 ... DN25
MBK	DN15 ... DN25
NBA	½“
NBK	½“

and all variations of these articles

(4) of the company **END-Automation GmbH & Co. KG**
D-32547 Bad Oeynhausen
Germany

(5) Herewith we declare that the above-mentioned articles in the conditions of our delivery are in conformity with the regulations of Article 3 Part 3 of the directive 97/23/EG. These products bear no CE mark, but are in line to the good engineering practice designed and manufactured.

(6) Applied harmonized standards, in particular:

DIN EN 12516:2005 **Industrial valves - Shell design strength**

(7) On behalf

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Bad Oeynhausen, 09. September 2009

Friedhelm König
Technical Manager

Michael End
Quality Manager

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Qualität von Anfang an.

(1) # Declaration of incorporation

(2) ## according to annex II of the Directive 2006/42/EC on machinery

(3) This declaration apply to the article groups:

Article	Description
EBAG	Motor control valve
EBKG	Motor control valve

Article	Description
MBA	Motor control valve
MBK	Motor control valve

Article	Description
NBA	Motor control valve
NBK	Motor control valve

and all variations of these articles

(4) of the company: **END-Automation GmbH & Co. KG**
Oberbecksener Str. 78
D-32547 Bad Oeynhausen

Documentation authorized: **Lars-Michael Rolfsmeier**
Oberbecksener Str. 78
D-32547 Bad Oeynhausen

(5) Herewith we declare that the above mentioned articles in the conditions of our delivery are partly completed machinery according to annex 2 paragraph g of the directive 2006/42/EC on machinery. These products have no CE marking because of this directive.
The relevant technical documentation is compiled in accordance with part B of annex VII.

The actuators or the motor control valves are further in conformity with the regulations of the following directives:
Low Voltage Directive 2006/95/EC
Directive on Electromagnetic Compatibility (EMC) 2004/108/EC

Applied harmonized standards, in particular:

EN ISO 12100-1: 2004	**Safety of machinery - Basic concepts, general principles for design - Part 1**
EN ISO 12100-2: 2004	**Safety of machinery - Basic concepts, general principles for design - Part 2**
DIN EN ISO 14121-1:2007	**Safety of machinery - Risk assessment - Part 1**
DIN EN 60204-1:2006	**Safety of machinery - Electrical equipment of machines - Part 1**
DIN EN 15714-2:2009	**Industrial valves - Actuators - Part 2: Electric actuators for industrial valves**

If necessary the partly completed machinery are in conformity to the directives

94/9/EC	**ATEX Directive**
97/23/EC	**Directive on pressure equipment**

This conformity will declare in separately declarations.

(6) In response to a reasoned request the national authorities can demand the relevant information on the partly completed machinery. The transmission takes place by post or e-mail.

(7) The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC on machinery, where appropriate.

(8) Bad Oeynhausen, 09. November 2009, on behalf:

Friedhelm König
Technical Manager

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END AUTOMATION

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ISO 9001
97/23/EG
BUREAU VERITAS
Certification

BUREAU VERITAS 1828

N° INT80209DE