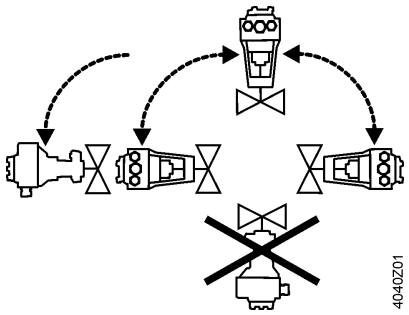
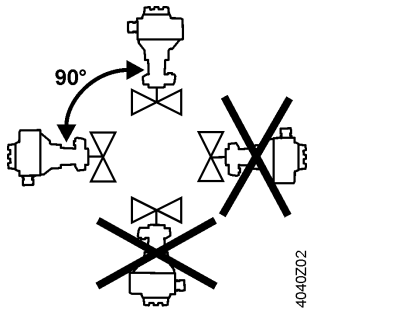
3 Handling

3.1 Mounting and installation

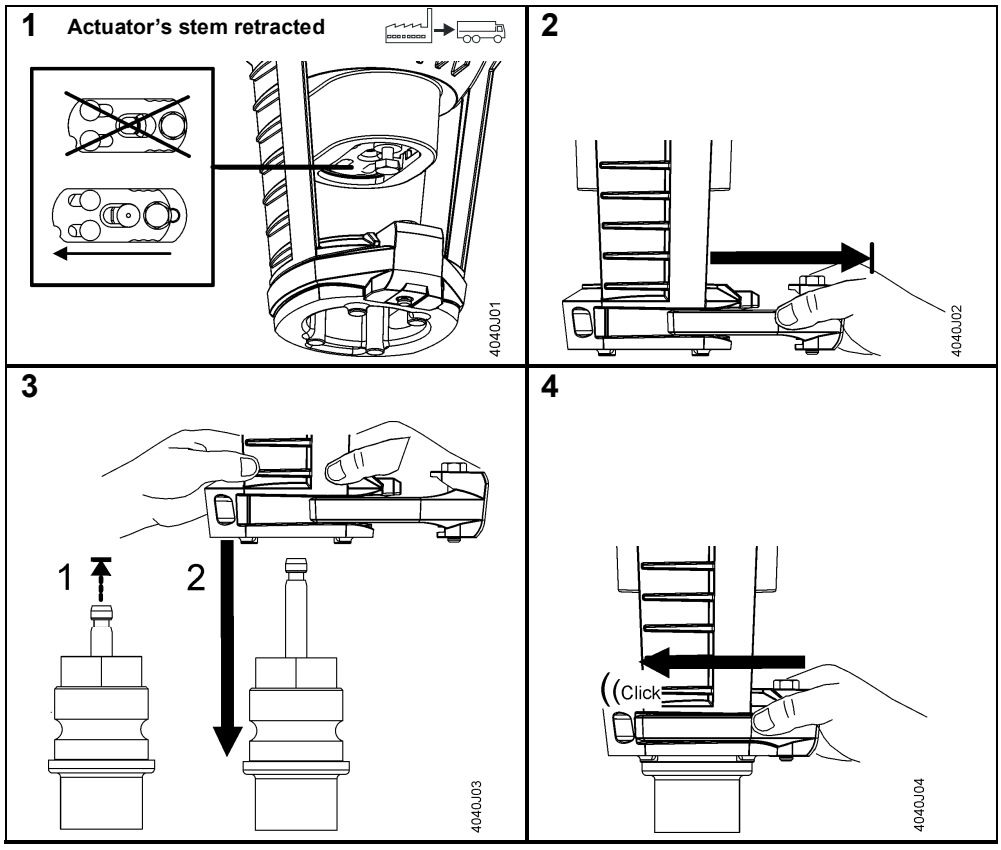
3.1.1 Mounting positions

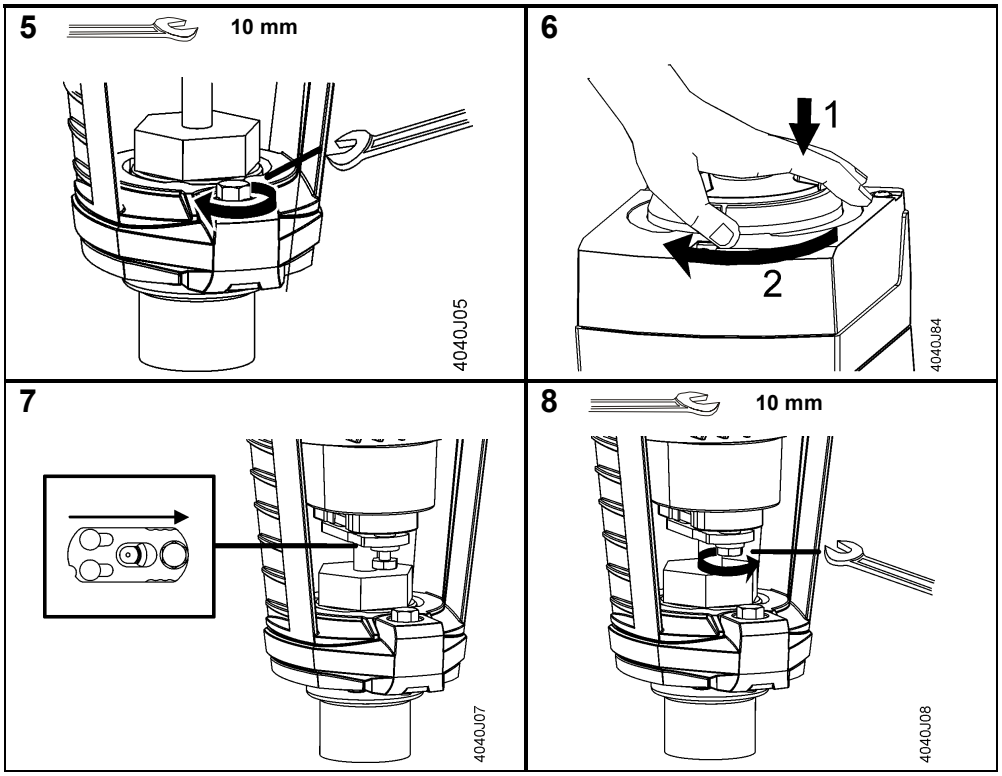
Indoor use	Outdoor use [1]
	

[1] Only in connection with weather shield ASK39.1

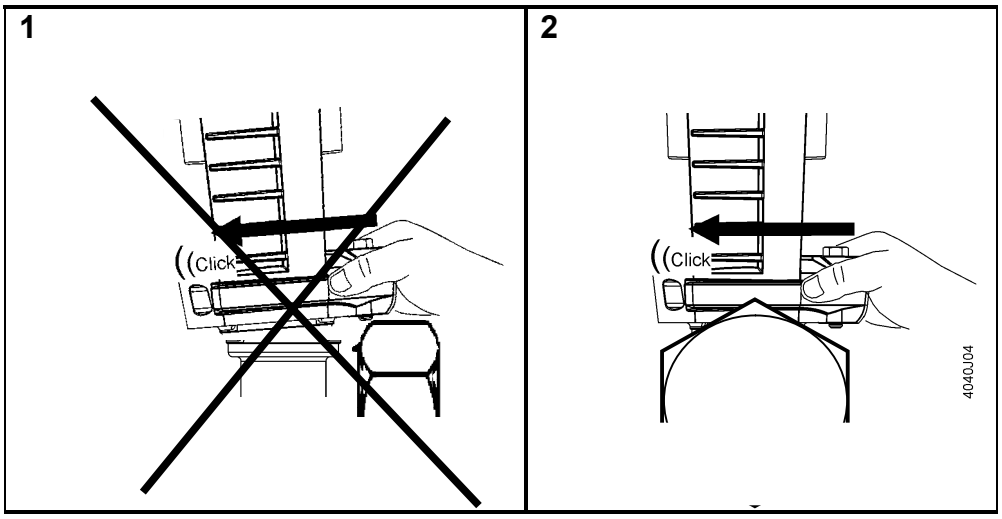
3.1.2 Fitting stroke actuators to seat valves VVF.. / VXF.. or VVG.. / VXG..

First, observe "Mounting positions" (page 19).





3.1.3 Avoid missalignement on V_G41 valves with fittings

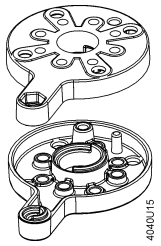
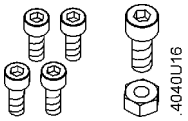


On threaded valves it's possible that the actuator is missaligned on the valve due to a collision with the fitting. If so, please take care for correct mounting, either by turning the actuator or by adjusting the fitting (e.g. use a second sealing to change fitting position).

3.1.4 Fitting rotary actuators to butterfly valves VKF41..

First, observe "Mounting positions" (page 19).

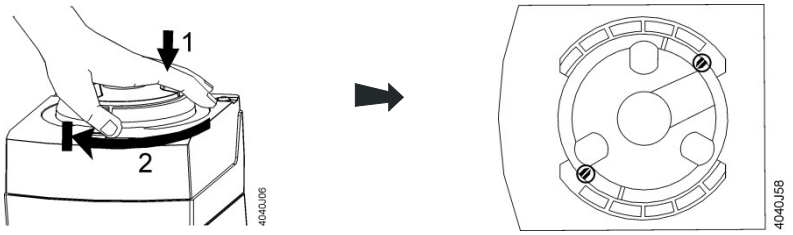
Mounting set ASK33N

Scope of delivery			
Mounting set (2 parts)	5 screws	1 adapter inc. fixing screw	1 adapter
	4 pcs. M6 x 16 mm 1 pc. M5 x 20 incl. nut 		

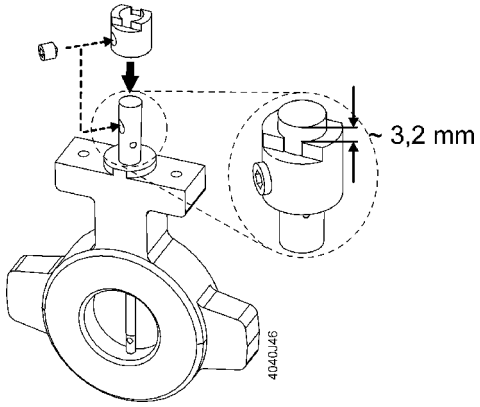
Note

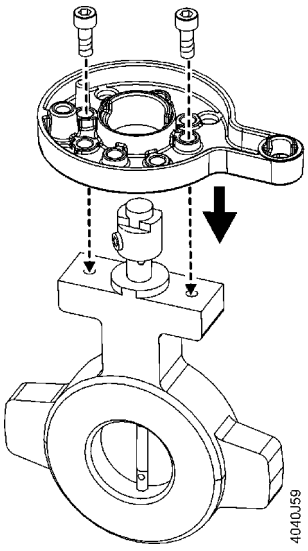
Actuators SAL.. are not compatible with mounting sets ASK31, ASK32, ASK33, ASK35, ASK40, and ASK41.

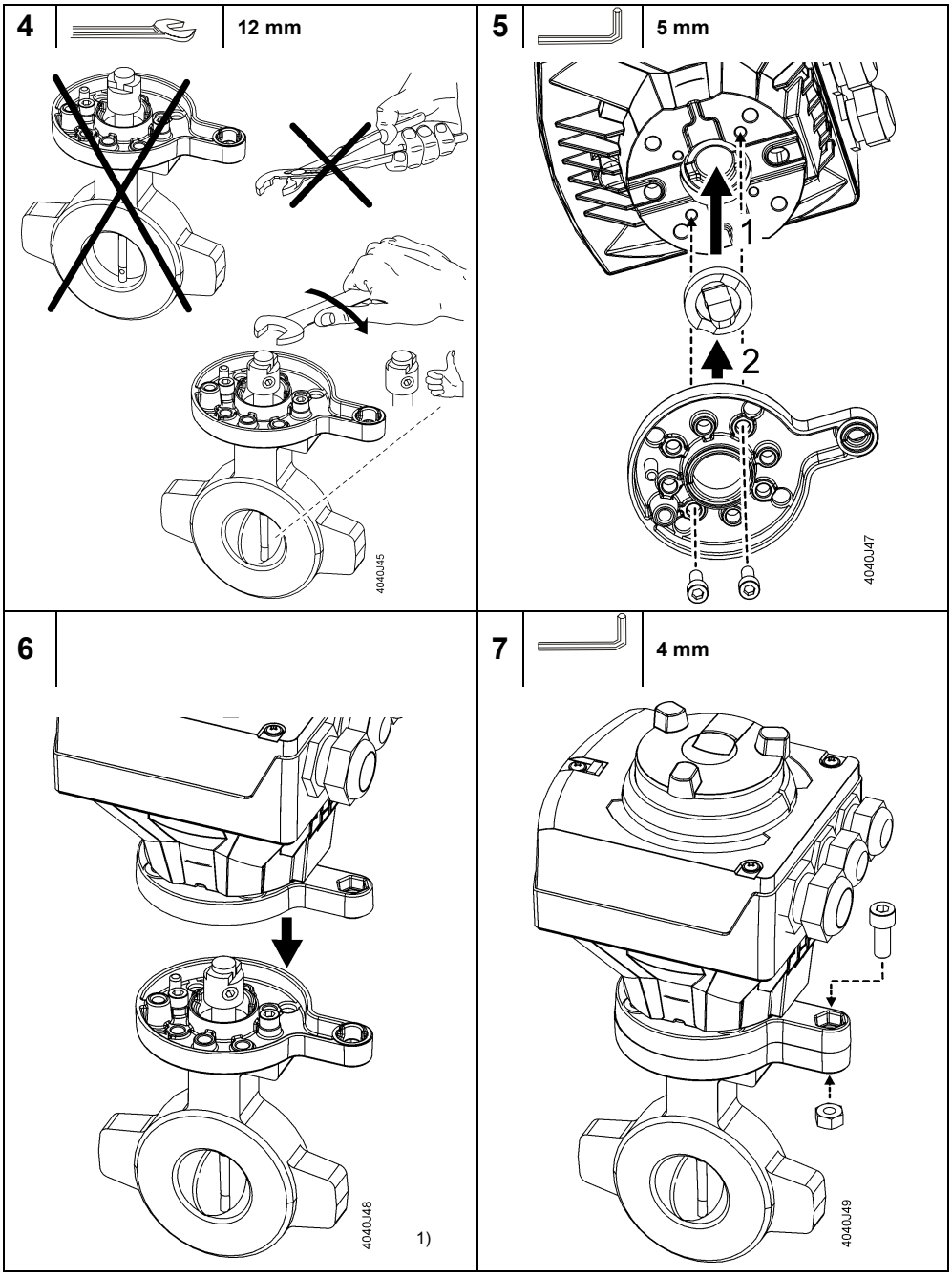
1



2		**5 mm**	**3**		**5 mm**





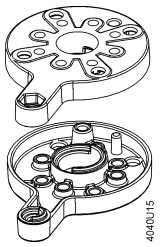
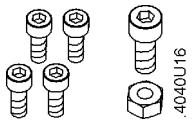
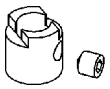
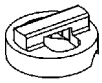


[1] Angle position errors between actuator shaft and valve stem must be corrected via manual control (refer to "Manual adjuster" page 51).

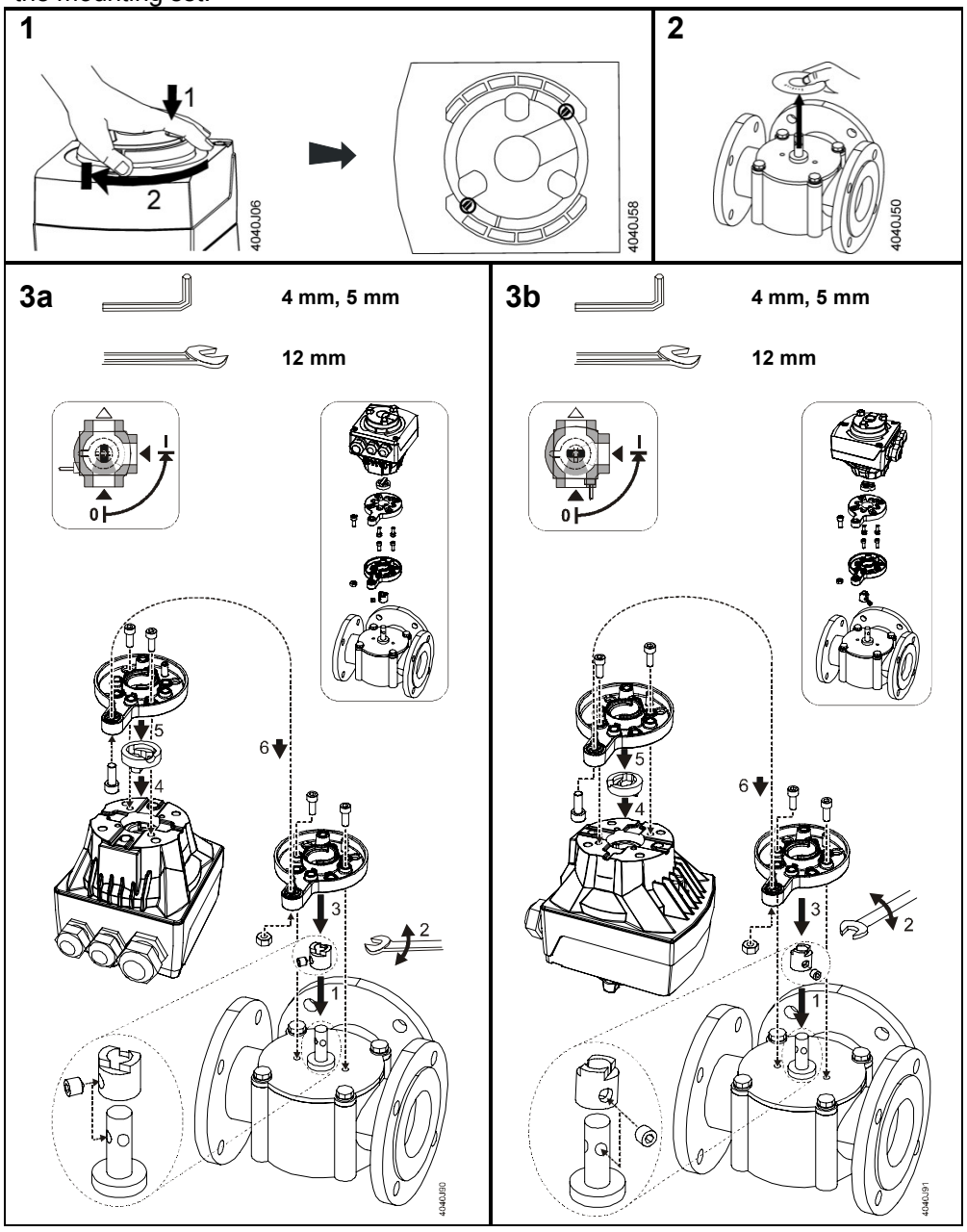
3.1.5 Fitting rotary actuators to slipper valves VBF21..

First, observe "Mounting positions" (page 19).

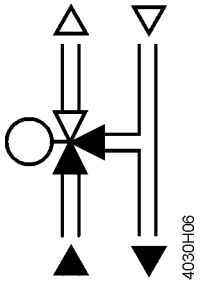
Mounting set ASK31N

Scope of delivery			
Mounting set (2 parts)	5 screws	1 adapter inc. fixing screw	1 adapter
 4040U15	4 pcs. M6 x 16 mm 1 pc. M5 x 20 mm incl. nut  4040U16	 4040U17	 4040U18

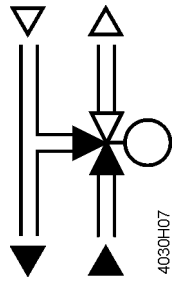
SAL..T10 rotary actuators only fit on VBF21.., DN65…150. For VBF21.., DN40/50 use SQK34.., SQK84.. or SQK33.00 rotary actuators.
With VBF21.. (e.g. DN 125), the following steps must be performed prior to fitting the mounting set.

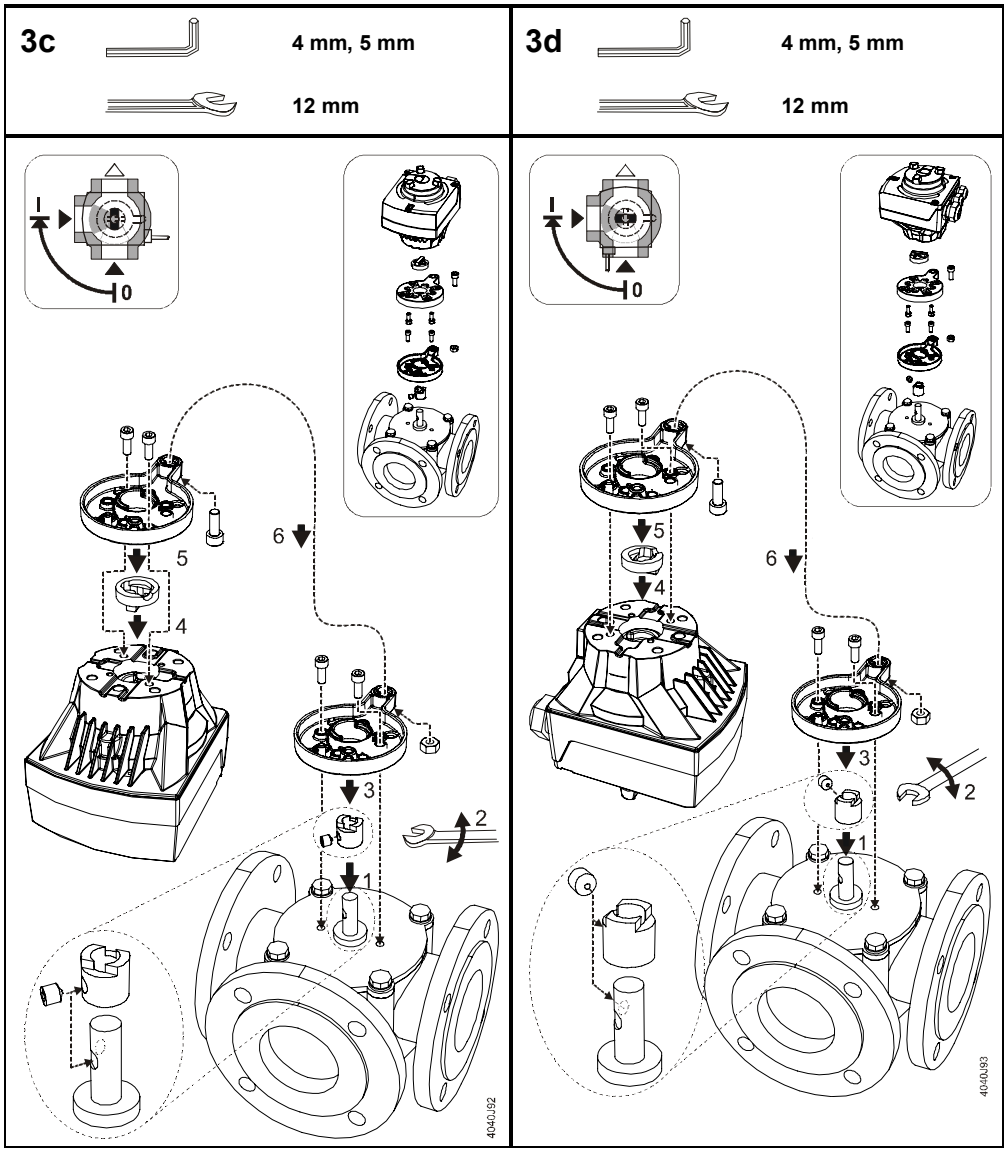


Opening counterclockwise



Opening clockwise



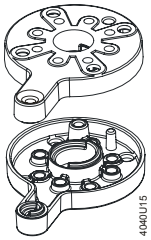
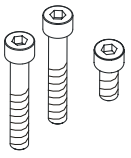
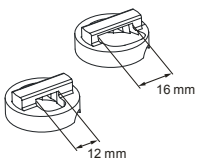


For further mounting positions of VBF 21.. and routing of the connection cables the rotary actuators and adapters must be mounted according to the sketches above.

3.1.6 Fitting rotary actuators to butterfly valves VKF45..

First, observe "Mounting positions" (page 19).

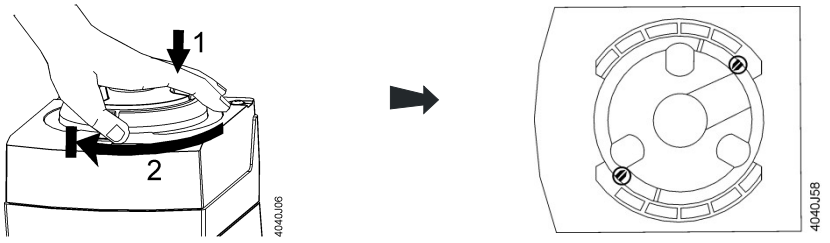
Mounting set ASK35N
For VKF45..

Scope of delivery		
Mounting set (2 parts)	5 screws	2 adapters
	2 pcs. M8 x 50 mm 1 pc. M5 x 20 mm incl. nut 	1 pc. 12 mm 1 pc. 16 mm 

Note

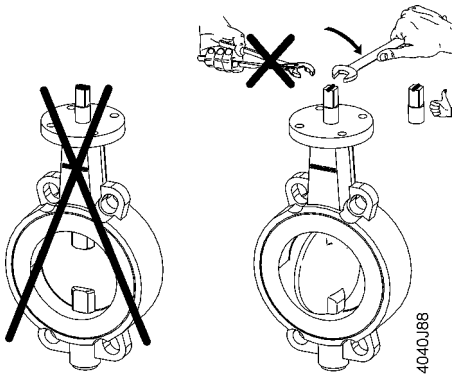
Actuators SAL.. are not suited for use with mounting sets ASK31, ASK32, ASK33, ASK35, ASK40, and ASK41.

1

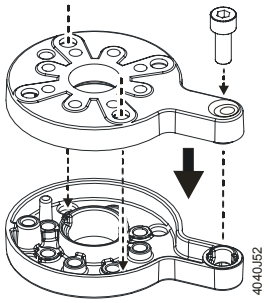


2

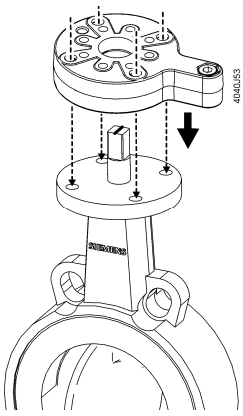
12 mm (DN 40…125)
16 mm (DN 150 / 200)



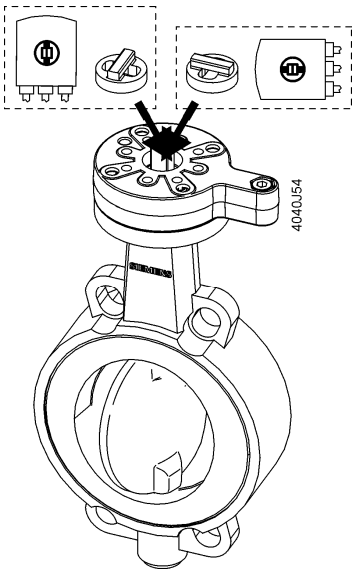
3 **4 mm**



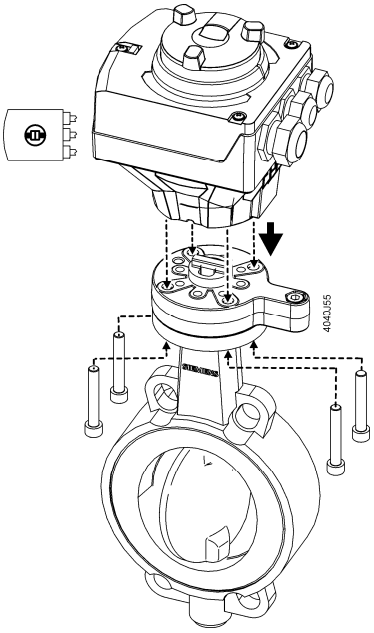
4



5



6 **6 mm**

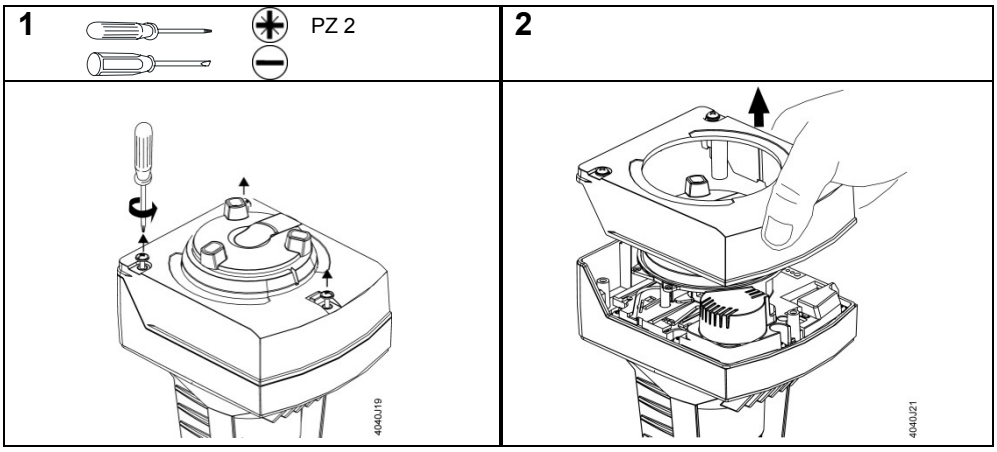


3.1.7 Accessories

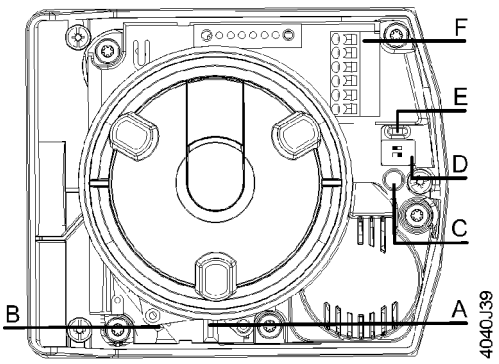
Special notes on mounting

Before fitting the accessory items shown below, the following steps must be performed:

1. Actuator is mechanically connected to a Siemens valve.
2. Observe compatibility and choice of combinations. Refer to "Accessories" (page 13).
3. Disconnect actuator from power. **Attention if AC 230 V connected danger of life!**
4. Only required with actuators without fail safe function: Using the manual adjuster, drive the actuator's stem to the fully retracted position and fix the coupling. See "Manual operation" and "Fixing coupling" (page 45).
5. When mounting two different accessories watch out for correct plug-in space A or B (see below).
6. To fit an auxiliary switch, potentiometer or function module, the housing cover must be removed.

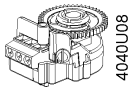


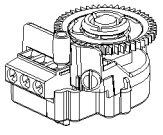
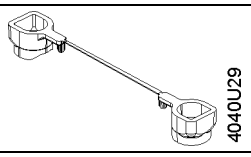
Interior view of setting elements and plug-in spaces



A	Plug-in space for… • **Potentiometer** ASZ7.5/.., or • **Auxiliary switch** ASC10.51
B	Plug-in space for… • **Function module** AZX61.1 , or • **Auxiliary switch** ASC10.51
C	LED
D	DIL switches
E	Calibration slot
F	Connection terminals

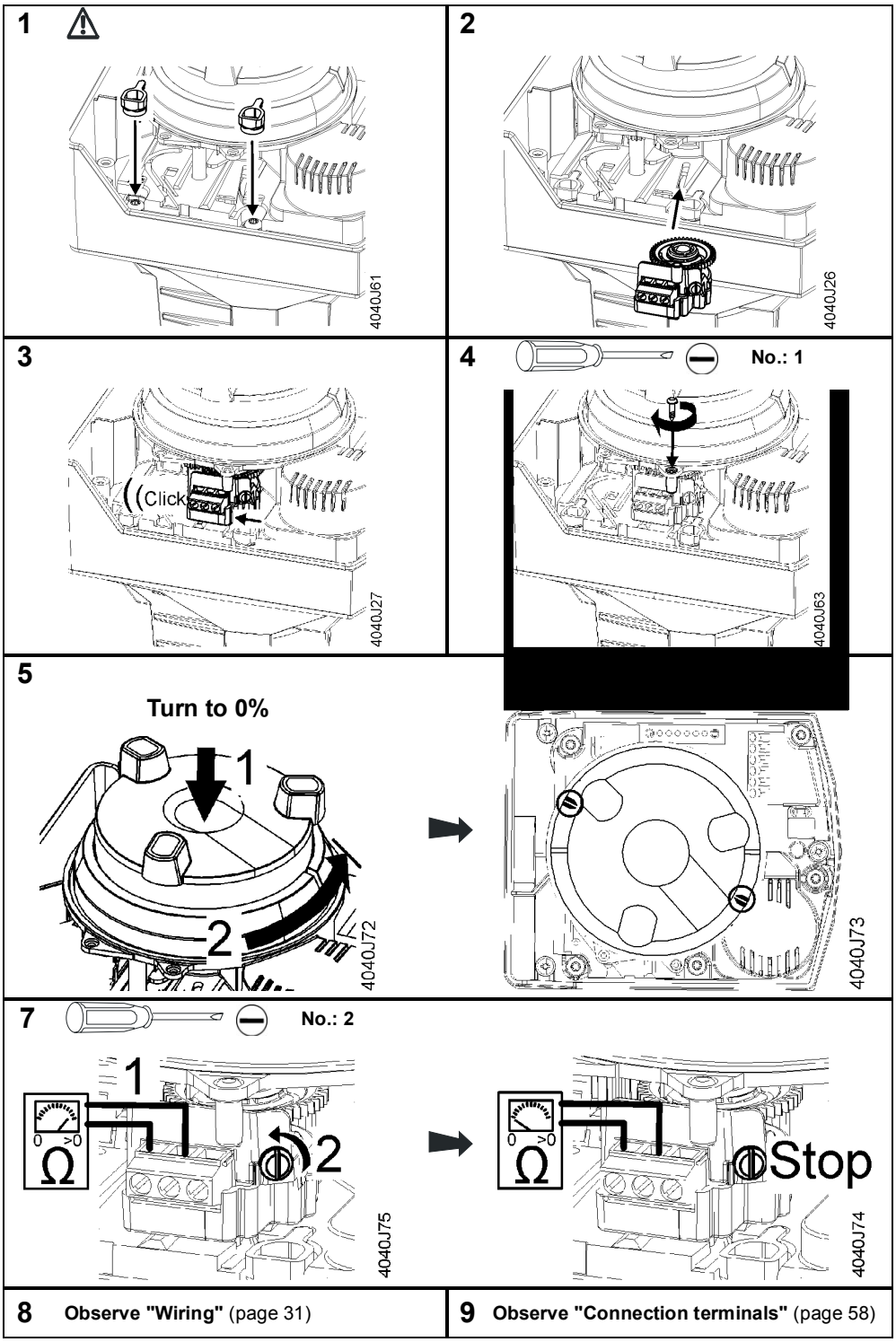
Potentiometer ASZ7.5/..



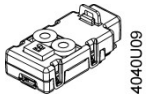
Scope of delivery		
1 potentiometer ASZ7.5/..	1 screw	2 screw covers
	1 pc. 	

- First, observe "Special notes on mounting" (page 26).
- **Fit the screw covers first – otherwise danger of life!**

Plug-in space A

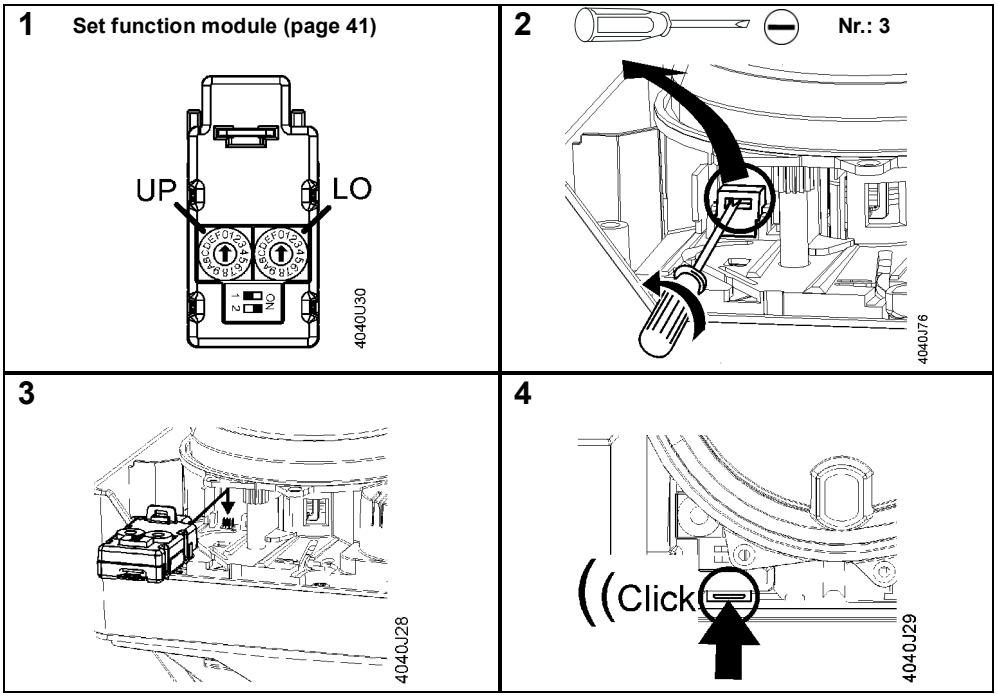


Function module AZX61.1

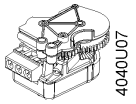


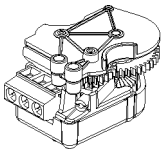
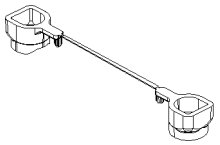
Plug-in space B

First, observe "Special notes on mounting" (page 26).



Auxiliary switch ASC10.51

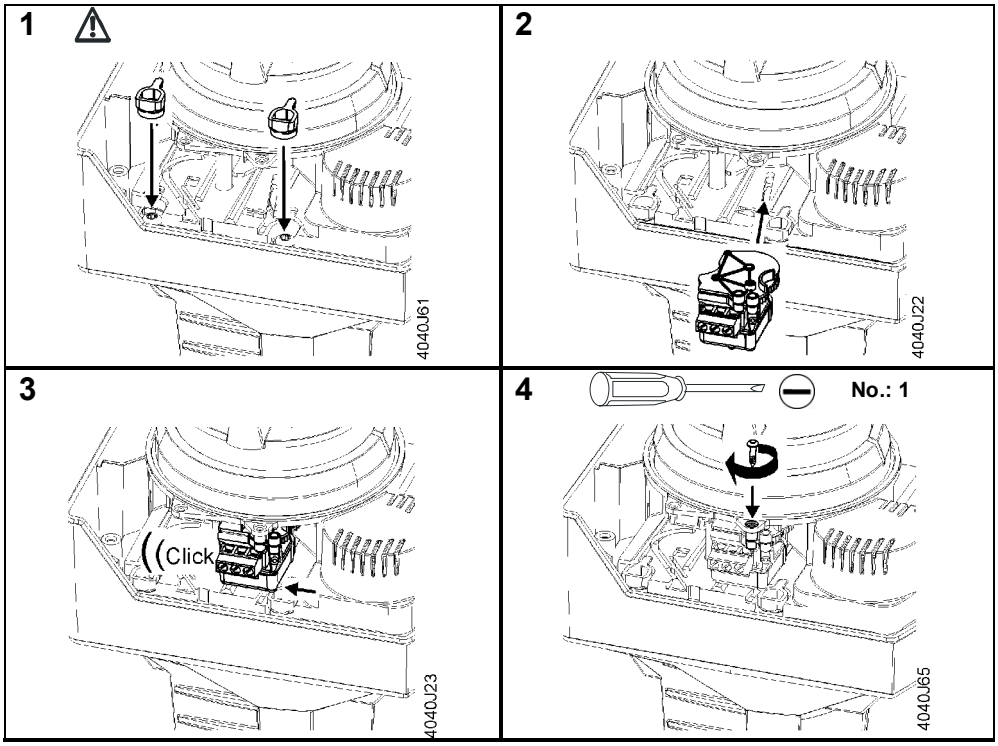


Scope of delivery		
1 auxiliary switch ASC10.51	1 screw	2 screw covers
	1 pc. 	

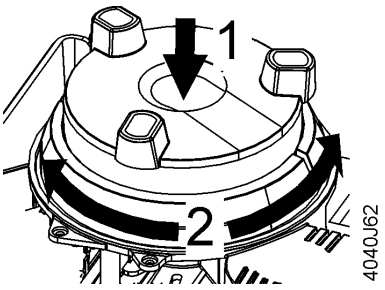
Plug-in space A

⚠

- First, observe "Special notes on mounting" (page 26).
- **Fit the screw covers first– otherwise danger of life!**

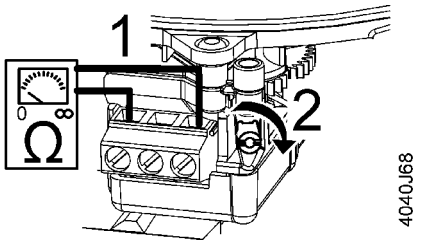


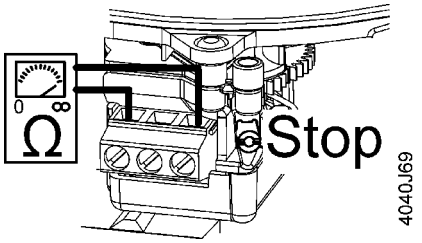
5 **Adjust switch position** (refer also to "Manual operation" page 51)



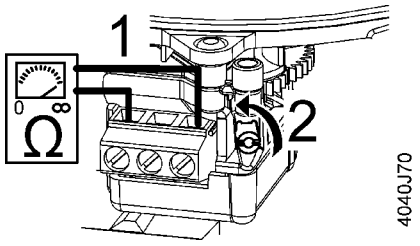
6 **No.:1**

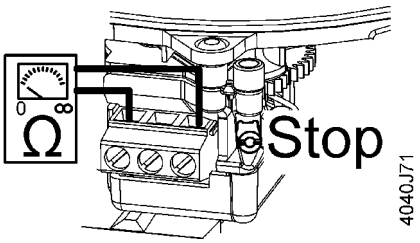
When initial situation: **0 Ω**





When initial situation: **∞ Ω**





7 **Observe "Wiring"** (page 31)

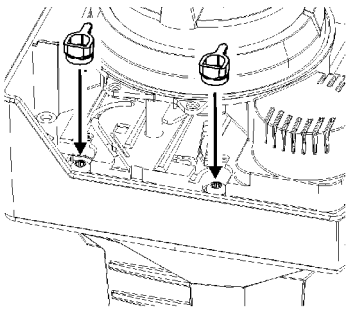
8 **Observe "Connection terminals"** (page 58)

Plug-in space B

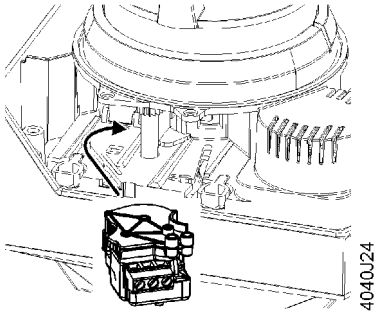
⚠

- First, observe "Special notes on mounting" (page 26).
- **First, fit the screw covers – otherwise danger of life!**

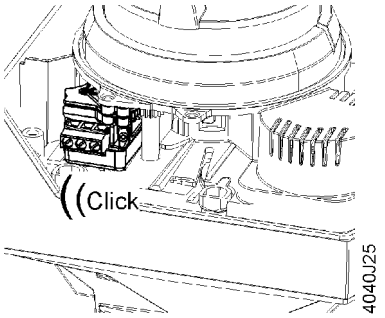
1 ⚠



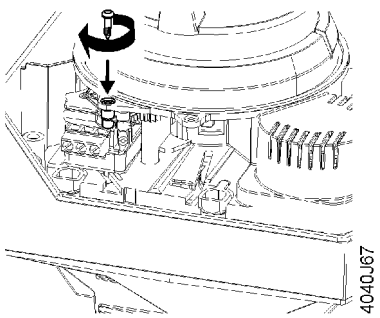
2



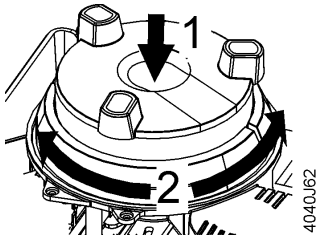
3



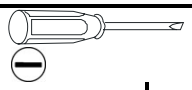
4 **No.: 1**



5 **Adjust switch position** (refer also to "Manual operation" page 51)

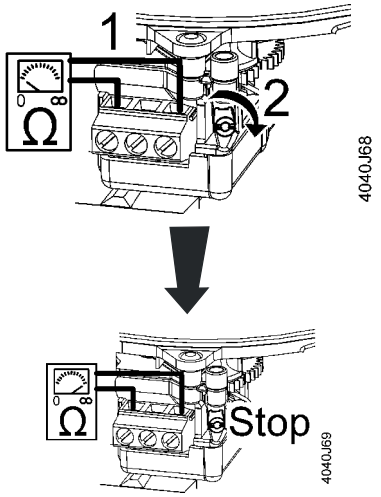


6

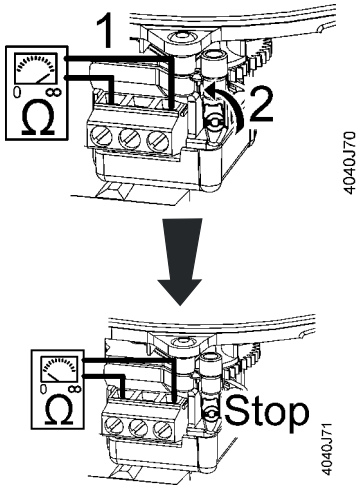


No.: 1

When initial situation: **0 Ω**



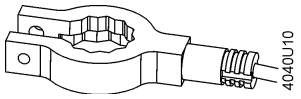
When initial situation: **∞ Ω**

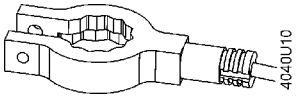
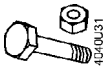


7 **Observe "Wiring"** (page 31)

8 **Observe "Connection terminals"** (page 58)

Stem heating element ASZ6.6

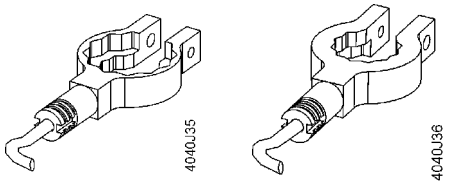


Scope of delivery	
1 stem heating element ASZ6.6	1 screw
	1 pc. M4 x 30 incl. nut 

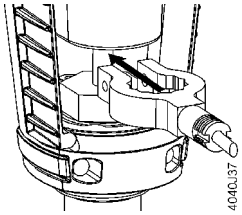
When fitting the stem heating element, stroke actuator and valve must be assembled. The stem heating element is powered separately.

First, observe "Special notes on mounting" (page 26).

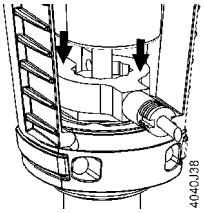
1 **10 mm** **14 mm**



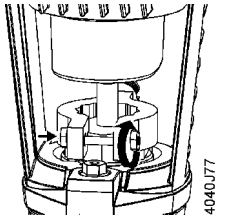
2



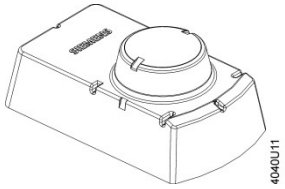
3



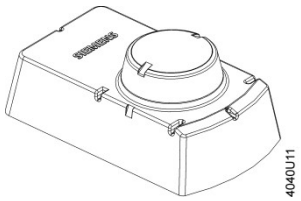
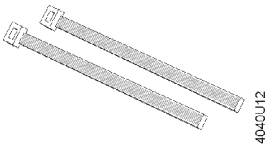
4 8 mm



Weather shield ASK39.1

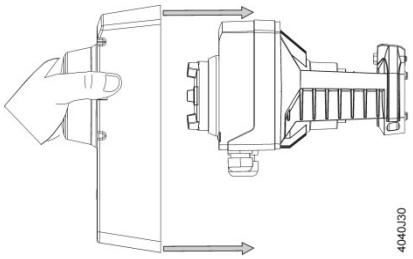
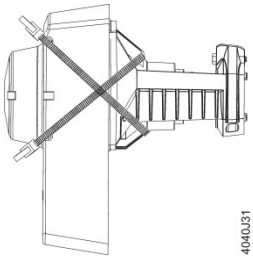


First, observe "Special notes on mounting" (page 26).

Scope of delivery	
Weather shield ASK39.1	2 UV-proof cable ties
	

Notes

- To protect the actuator when used outdoors, the weather shield must always be fitted.
- If fitted several times, 2 UV-proof cable ties (800 x 4 mm) must be used.
- The manual adjuster can not be used when the weather shield is mounted.

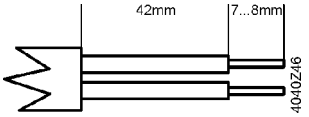
1	2
	

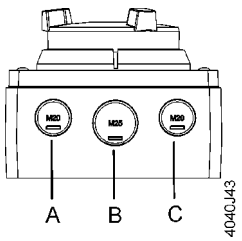
3.1.8 Wiring (installation)

Conduct the electrical connections in accordance with local regulations on electrical installations as well as the "Connection diagrams" on page 58.

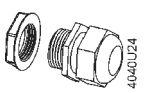
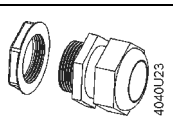
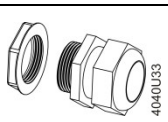
Preparation of wire endings

The cable endings must be prepared before as follows.





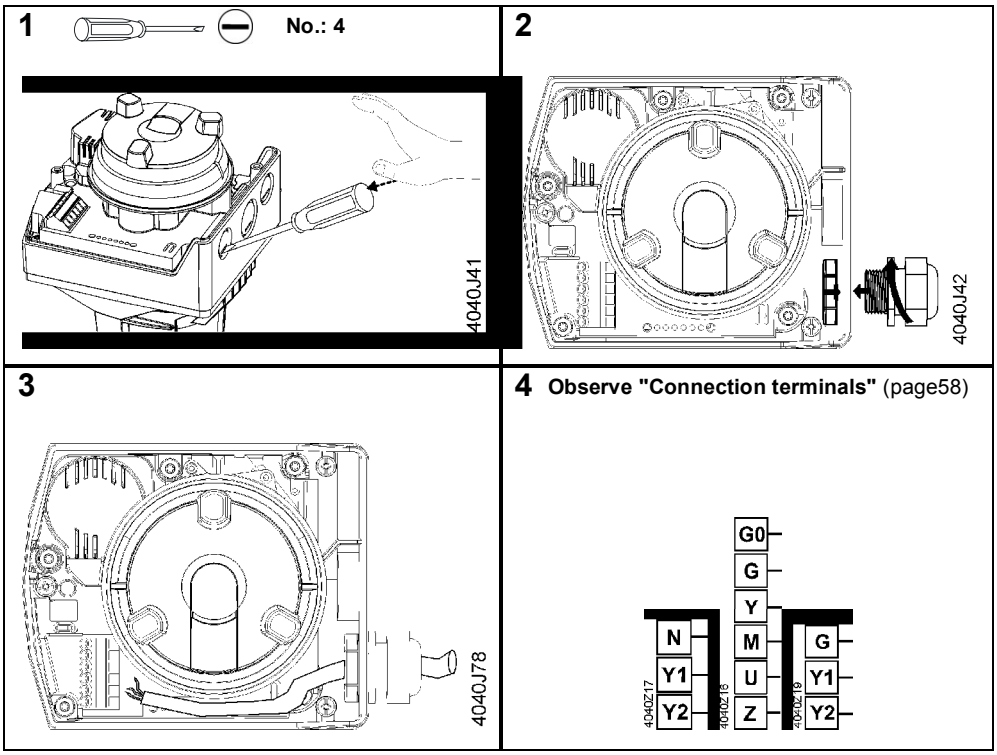
A	EU: M20 US: ½“	Standard	Connection actuator
B	EU: M25 US: ½“	Ground cable for outdoor installation	
C	EU: M20 US: ½“		Connection accessories

Cable glands (not contained in scope of delivery)		
Metric	Metric	Inch thread
M20	M25	½“
		

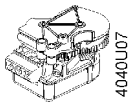
Prior to installation, the following preconditions must be satisfied:

- Actuator is mechanically connected to a Siemens valve.
- Housing cover is removed (step 6 "Special notes on mounting", page 26).

Actuator

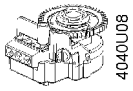


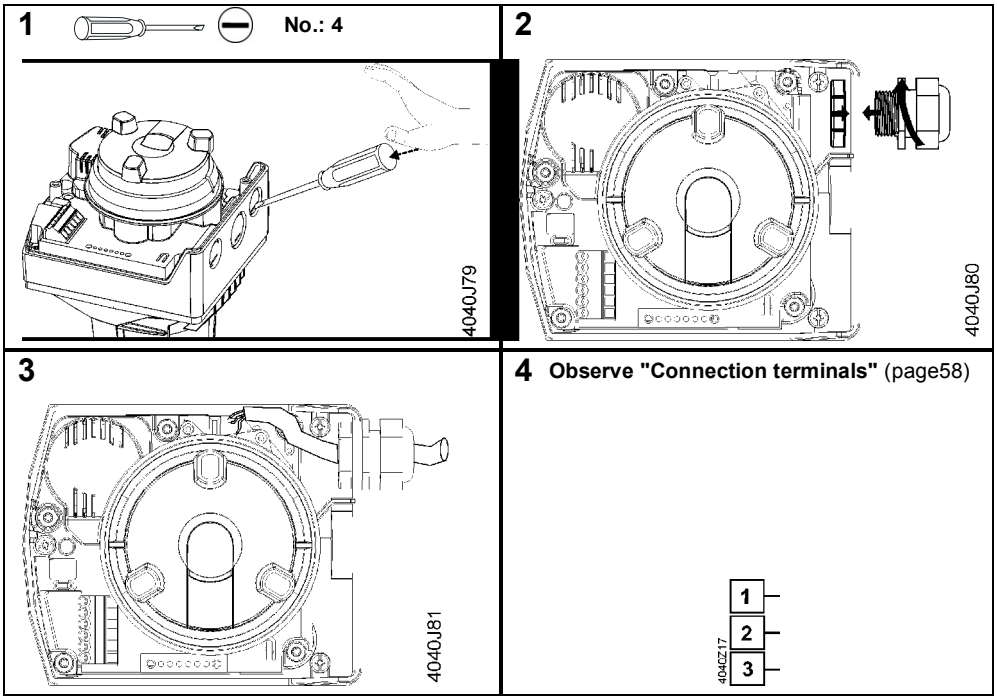
Auxiliary switch ASC10.51



and

Potentiometer ASZ7.5/..





3.2 Commissioning and operation

3.2.1 Function check and Calibration

Mechanically

Before making the function check, the following preconditions must be satisfied:
- Environmental conditions specified in chapter "Technical data" (page 55)
- Actuator is mechanically connected to a Siemens valve
- **Actuator is in "Manual operation" mode** (page 51).

The actuator can be operated with the help of the "Manual adjuster" (see page 51).

Manual adjuster	Stroke actuator	Rotary actuator	Control path valve A→AB	Bypass valve B → AB
Turning in clockwise direction	Actuator's stem extends	Actuator's spindle turns in clockwise direction	Opening	Closing
Turning in counter-clockwise direction	Actuator's stem retracts	Actuator's spindle turns in counterclockwise direction	Closing	Opening

Notes

- Ensure that the actuator's and valve's stem, or actuator's and valve's spindle are securely connected in all positions.
- If the actuator is forced to travel beyond its end positions, overload protection responds.
- Observe information given in chapter "Acting direction and flow characteristic" on page 44.

Electrically

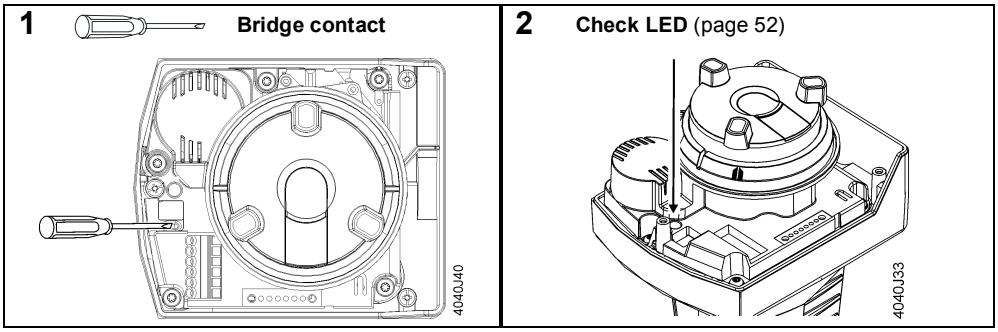
Before making the function check, the following preconditions must be satisfied:
- Environmental conditions specified in chapter "Technical data" (page 55).
- Actuator is mechanically connected to a Siemens valve.
- **Actuator is in "Automatic" mode** (page 51).
- Actuator and, if required, accessories are correctly fitted and connected. Also refer to "Connection terminals" (page 58).
- Power is applied.

SA..61..

Calibration is required with modulating actuators and SA..61.. before the function check.

General notes on calibration

Before making the calibration, the following preconditions must be satisfied:
- A description of the calibration function is given in chapter "Calibration" (page 44).
- Housing cover is removed (step 6 "Special notes on mounting", page 26).



If required, calibration can be repeated any number of times.

Make the function check for modulating actuators after the calibration with a point test according to the following table:

Connection terminals	Stroke actuator	Rotary actuator	Control path valve A→AB	Bypass valve B → AB	Position feedback U
Y 6 V 13.6 mA	Actuator's stem extends (60%)	Actuator's spindle turns in clockwise direction (60 %)	Opening	Closing	6 V
Y 5 V 12 mA	Actuator's stem retracts (50%)	Actuator's spindle turns in counterclockwise direction (50 %)	Closing	Opening	5 V
"Z" connected to "G"	Actuator's stem extends	Actuator's spindle turns in clockwise direction	Opening	Closing	10 V
"Z" connected to "G0"	Actuator's stem retracts	Actuator's spindle turns in counterclockwise direction	Closing	Opening	0 V

SA..31.. and SA..81..

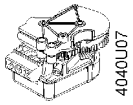
Make the function check for 3-position actuators according to the following table:

Connection terminals	Stroke actuator	Rotary actuator	Control path valve A→AB	Bypass valve B → AB
Voltage at Y1	Actuator's stem extends	Actuator's spindle turns in clockwise direction	Opening	Closing
Voltage at Y2	Actuator's stem retracts	Actuator's spindle turns in counter-clockwise direction	Closing	Opening
No voltage at Y1 and Y2	Actuator's stem maintains the position	Actuator's spindle maintains the position	Maintains the position	

Notes

- If function module AZX61.1 is used, observe information given in chapter "Changeover of acting direction" (page 42).
- Observe information given in chapter "Acting direction and flow characteristic" on page 44.

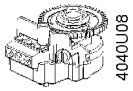
Auxiliary switch ASC10.51



Make the function check for mounted auxiliary switches according to the following table – example switching point at 25% position:

Connection terminals		Stroke actuator	Rotary actuator	Terminal S1 – S3	Terminal S1 – S2
Voltage at Y2	Y = 0 V	Actuator's stem retracts (until end position is reached)	Actuator's spindle turns in counter-clockwise direction (until end position is reached)	-	-
No voltage at Y1 und Y2	Y = 0 V	Actuator's stem maintains the position	Actuator's spindle maintains the position		
Voltage at Y1 for desired valve position % + 2% x positioning time **Example:** SAX31.00 = 27% x 120 sec = 32.5 sec	Valve position % + 2% Y = 2.7 V	Actuator's stem extends to desired position (27%)	Actuator's spindle turns in clockwise direction to desired position (27%)		
Check switching point with voltmeter		Actuator's stem maintains the position	Actuator's spindle maintains the position	-	-

Potentiometer ASZ7.5



Make the function check for mounted potentiometer according to the following table (Example values for ASZ7.5/1000):

Connection terminals	Stroke actuator	Rotary actuator	Terminal P1 – P2	Terminal P2 – P3
Voltage at Y2	Actuator's stem retracts (until end position is reached)	Actuator's spindle turns in counter-clockwise direction (until end position is reached)	-	-
No voltage at Y1 und Y2	Actuator's stem maintains the position	Actuator's spindle maintains the position	< 1 Ω	> 996 Ω
Voltage at Y1 for desired valve position % positioning time **Example:** SAX31.00 = 75% x 120 sec = 90 sec	Actuator's stem extends to desired position (75%)	Actuator's spindle turns in clockwise direction to desired position (75%)	-	-
Check position value with ohmmeter	Actuator's stem maintains the position	Actuator's spindle maintains the position	~ 560 Ω	~ 436 Ω
Voltage at Y2 for desired change of valve position % x positioning time **Example:** SAX31.00 = 10% x 120 sec = 12 sec	Actuator's stem retracts to desired position (65%)	Actuator's spindle turns in counter-clockwise to desired position (65%)	-	-
Check position value with ohmmeter	Actuator's stem maintains the position	Actuator's spindle maintains the position	~ 485 Ω	~ 511 Ω

Maintenance

The actuators are maintenance-free.

3.2.2 Disposal

The products contain electrical and electronic components and must not be disposed of together with domestic waste. This applies in particular to the printed circuit board.
Legislation may demand special handling of certain components, or it may be sensible from an ecological point of view.
Observe all local and currently valid legislation.