9 Starting up

Warning

Follow instructions under section Safety Instructions **on page 5.**

Caution

- Avoid thermal shocks!
  – Bring valve slowly to operating temperature
  From temperature differences of approximately 300 K the temperature change velocity of max. 2 K/min has to be kept
- Check tightness of the flange connections
- Setting of gaskets: see also under DIN 2505 / 4.5
  – Tighten screw connections crosswise. (**Table(s) of torque moments** See page 12)

10 Maintenance

10.1 Servicing

Warning

- Clean spindle (50) regularly
  – Move actuator in its upper end position and secure it.
  – Clean spindle (50) with a soft cloth, but **never use grinding paper**.

10.2 Maintenance

The valve is mainly maintenance-free.
After a longer period of operation or under very changing operating conditions, the valve should be serviced according to section **Starting up** on page 7

10.3 Stuffing box sealing

The stuffing box sealing is maintenance-free.

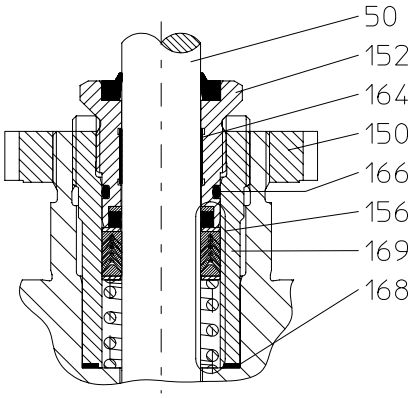


Fig. 1 -Stuffing box package- Detail X

11 Dismantling and remounting the valve

Warning

Follow instructions under section Safety Instructions **on page 5**

11.1 How to proceed

- Dismantling the valve
  – Dismantled parts have to be secured thoroughly against falling down (risk of injury or damage).

11.7 Spindle

The spindle (50) is interchangeable.

- Beat out the border of hex. nut (57)
- Unscrew and replace hex. nut (57)
- Pull spindle (50) out of the plug (26)

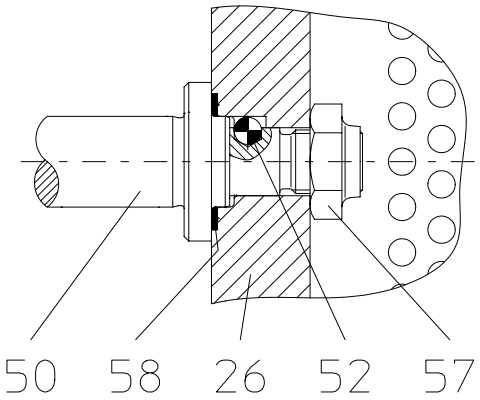


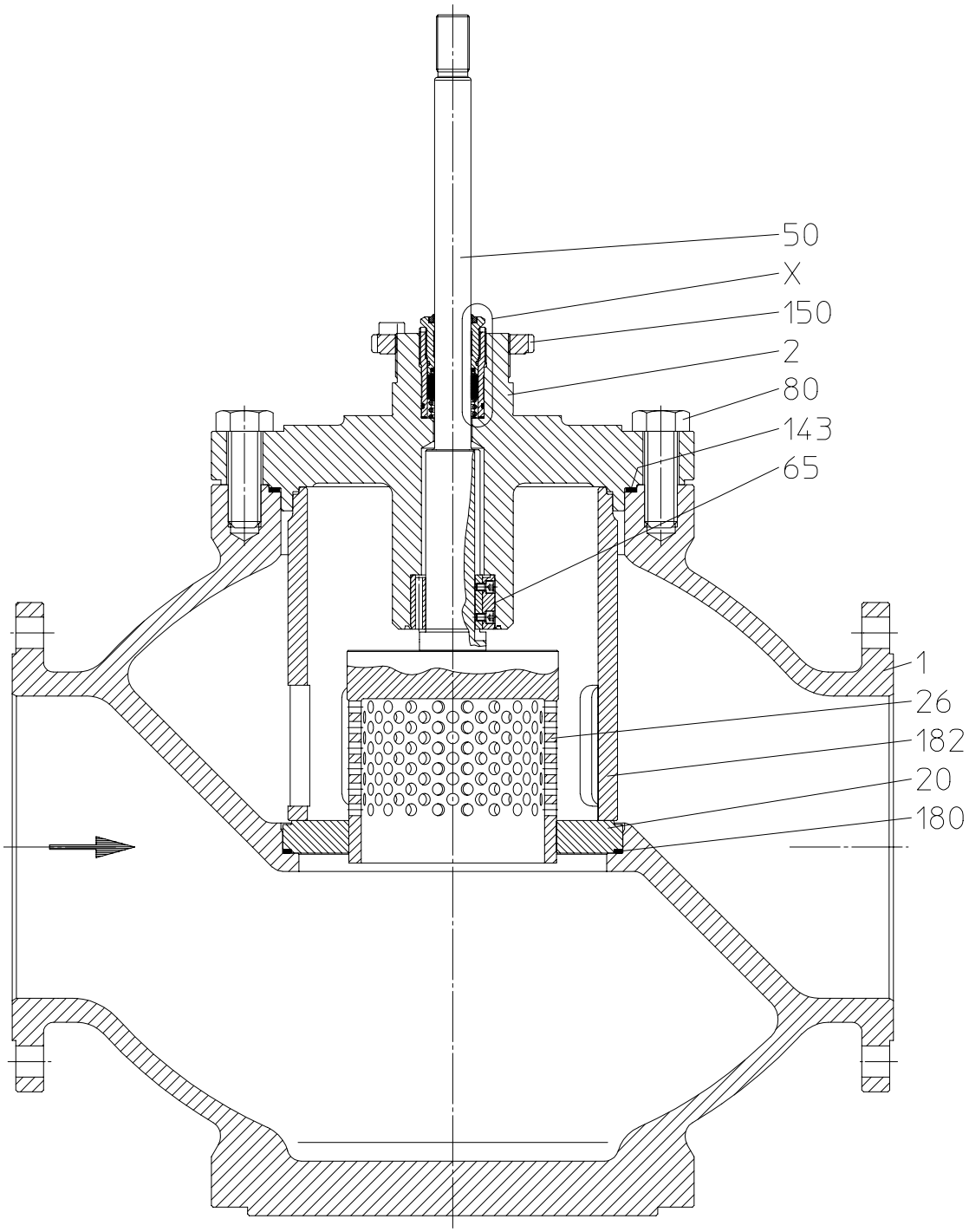
Fig. 2 -Mounting of plug and spindle

Picture shows example with perforated plug

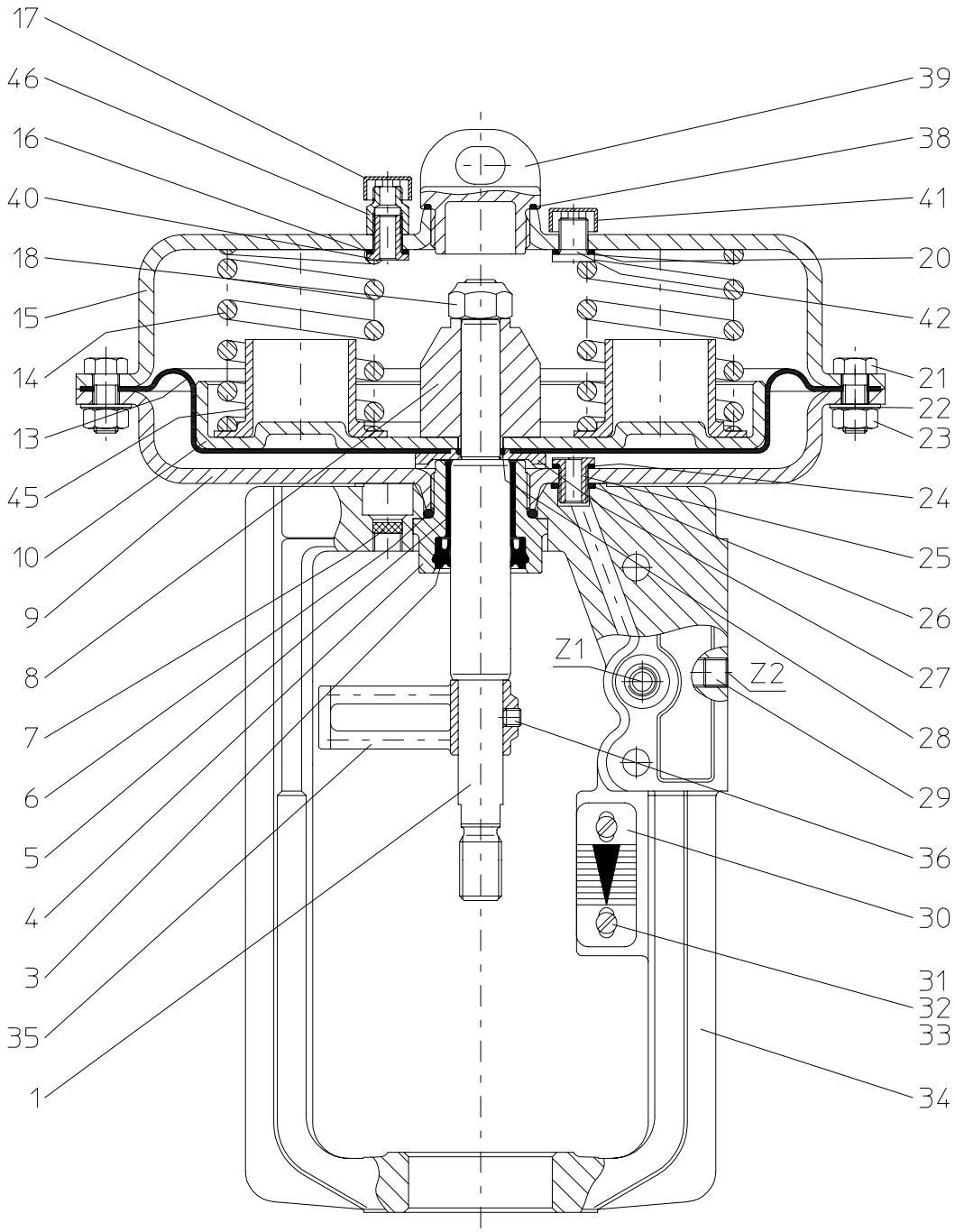
11.8 Spacer & seat

- Take spacer (182) and seat (20) out of the valve body (1).
  – Both sides of the seat (20) can be used.
- Replace sealing element (180).

12 Sectional Drawing No.318045



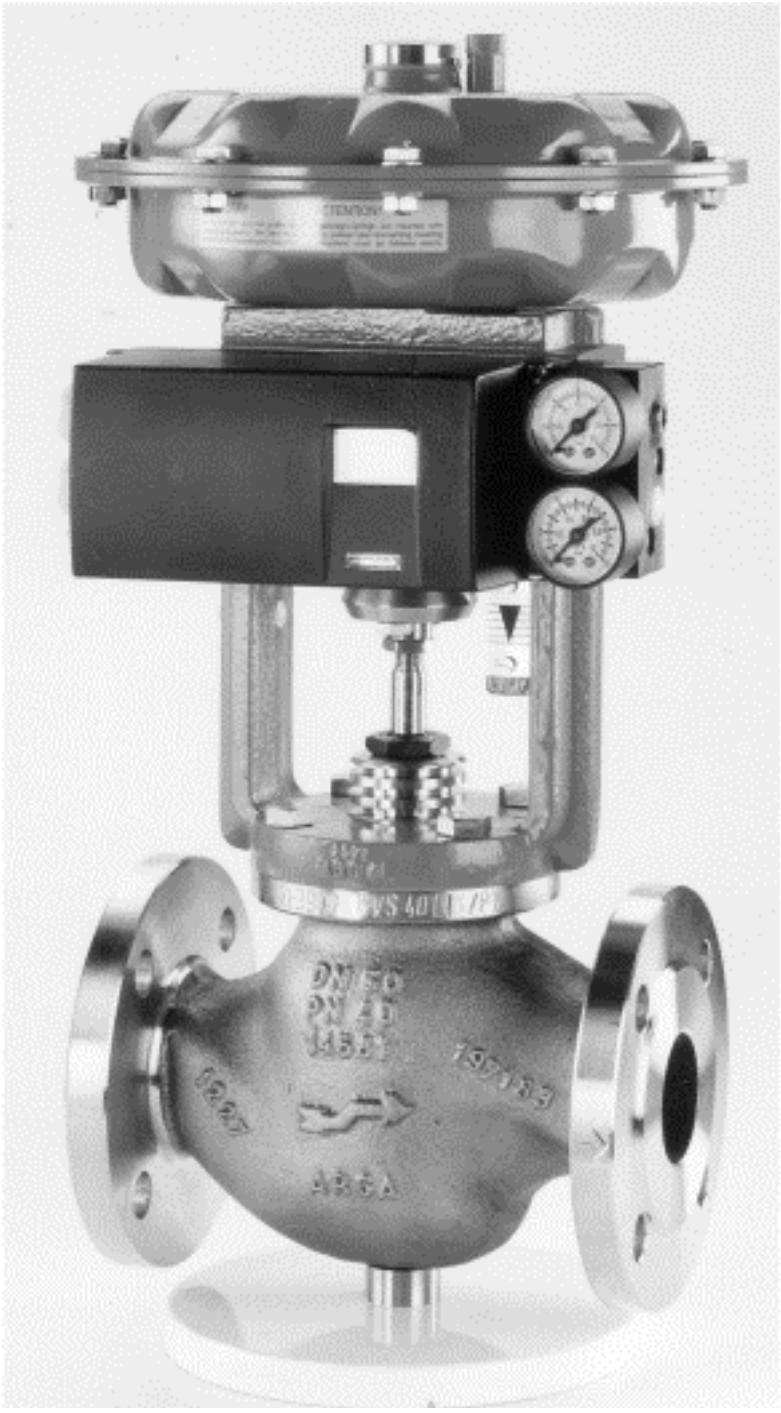
10.2 No.206722 (air to open)



ARCAPRO 827A.E/X∗ - ∗∗∗ - ∗∗∗

Electropneumatic Positioner for
Linear and Quarter-turn Actuators
Version without / with HART-Communication

Operating Instructions



2.3 Qualified Personnel

Qualified personnel are people who are familiar with the installation, mounting, commissioning, and operation of the product. These people have the following qualifications:

- They are authorized, trained or instructed in operating and maintaining devices and systems according to the safety regulations for electrical circuits, high pressures and aggressive as well as hazardous media.
- For explosion-proof devices: They are authorized, trained, or instructed in carrying out work on electrical circuits for hazardous systems.
- hey are trained or instructed in maintenance and use of appropriate safety equipment according to the safety regulations.

3 Description

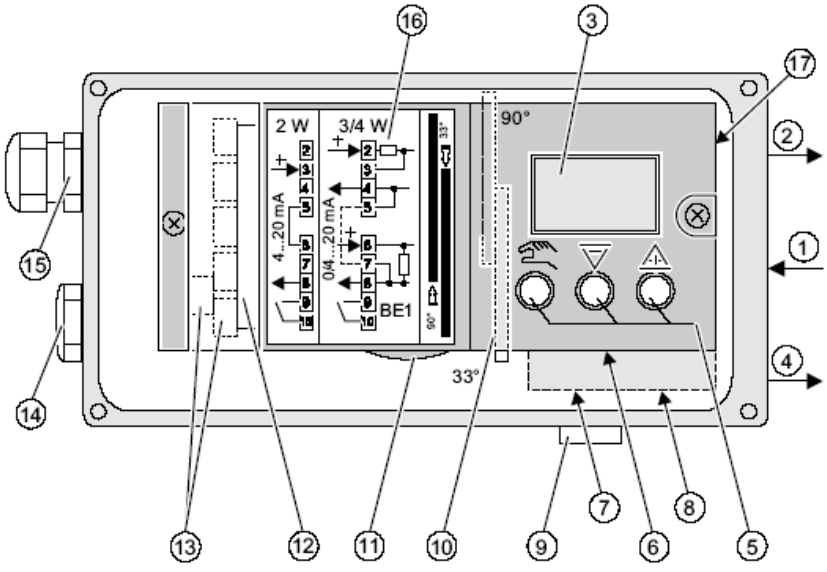
3.1 Function

- The electro-pneumatic positioner, in combination with the drive, forms a regulation system. The current position of the drive is detected using a servo potentiometer and is sent back as actual value x. The actual and target values are simultaneously displayed on the digital display.
- The setpoint w forms a current applied to the positioner, which in two-wire mode is also used to power the positioner. In 3- and 4-wire mode, power is supplied through a 24-V power input.
- The positioner works as a predictive five-point positioner, through whose output value ±Δy the integrated valves can be controlled by pulse length modulation.
- These positioning signals cause pressure changes in the drive chamber(s) and thus a repositioning of the drive until the regulation deviation returns to zero.
- Using three buttons and a digital display with the housing cover removed, operation (manual mode) and configuration (structuring, initialization, and parameterization) can be performed.

3.2 Structure

This device is modular built.

The options module analogue module, binary module, slot initiator module and limit switch module can be upgraded. The technical description contains the manual 827A-GB-GHB.



1. Input: supply air
2. Output: Actuating pressure Y1
3. Display
4. Output: Actuating pressure Y2 [1)]
5. Control buttons
6. Restrictor
7. Restrictor Y1 [1)]
8. Restrictor Y2 [1)]
9. Silencer
10. leverage ratio switch
11. Slip clutch adjusting wheel
12. Connection terminals motherboard
13. Connection terminals for optional module
14. Blinding plug
15. Cable gland
16. Terminal plate on cover
17. Purging air selector

[1)] for double-acting drives

Figure 1 Structure

⚠ WARNING

Assembling the components

For the composition of the components it must be ensured that only positioners and option modules that are certified for the relevant operating range are combined.

This condition applies in particular to the safe operation of the positioner in the areas of zone 1, 2 and 22, in which the atmosphere can be potentially explosive.

4 Assembly

4.1 General

⚠ CAUTION
Mechanical impact effect It is essential that the following sequence is observed during assembly in order to avoid injury or mechanical damage to the positioner/mounting kit: 1. Mechanically mount the positioner 2. Connect the auxiliary electrical power supply 3. Connect the pneumatic auxiliary power 4. Carry out the commissioning procedure

⚠ CAUTION
Humid environment/dry compressed air Install the positioner in a humid environment such that the positioner shaft does not freeze at low ambient temperatures. Ensure that water does not seep through an open enclosure or an open gland. Water may seep through if the positioner is not installed and connected on-site immediately and finally. As a general rule, the positioner must be operated only with dry compressed air. Therefore, use the customary water separator. An additional dryer is required in extreme cases. The use of dryers is especially important when you operate the positioner at low ambient temperatures. Set the Purge air switch to the "OUT" position when installing on the pneumatic block, above the pneumatic connections.

For quarter-turn actuators, use a sufficiently stable bracket (e.g. plate > 4 mm thick with reinforcements). On linear actuators, use the linear actuator mounting kit or the built-in fitting attachment..

4.1.1 Note on the Use of Positioners in Wet Environments

⚠ CAUTION
Never clean the positioner with a high pressure cleaner. Protection class IP66 is inadequate for this .

This information provides you with important notes on assembling the positioner in wet environments (frequent heavy rain and/or persistent tropical condensation) in which protection class IP66 is no longer sufficient, in particular when there is a risk that the water might freeze.

In order to prevent water entering the device in normal operation (e.g. through the air outlet holes) or the display becoming hard to read, you should avoid the unfavourable installation positions shown in Figure 2.

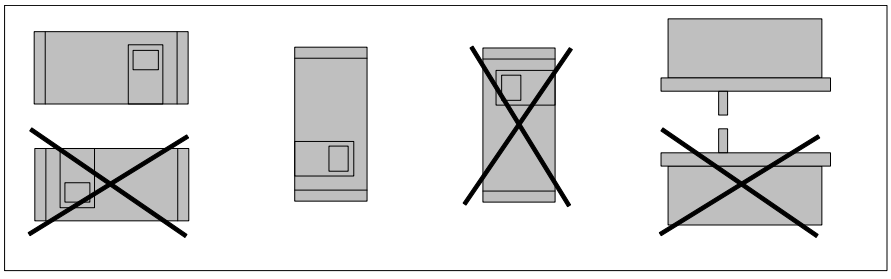


Figure 2 Favourable and unfavourable installation positions

If local conditions force you to operate the positioner in an unfavourable installation position, you can prevent the entry of water through additional measures.

Einbauzeichnung / Dimensional Drawing

Einsitz-Ventil DN6" ANSI150lbs + Mehrfederantrieb MFIII-60-S
Single seated valve DN6" ANSI150lbs + Multi-spring actuator MFIII-60-S

6N7-L1.812
Ventil - Innengarnitur . Antrieb / Valve - Trim . Actuator

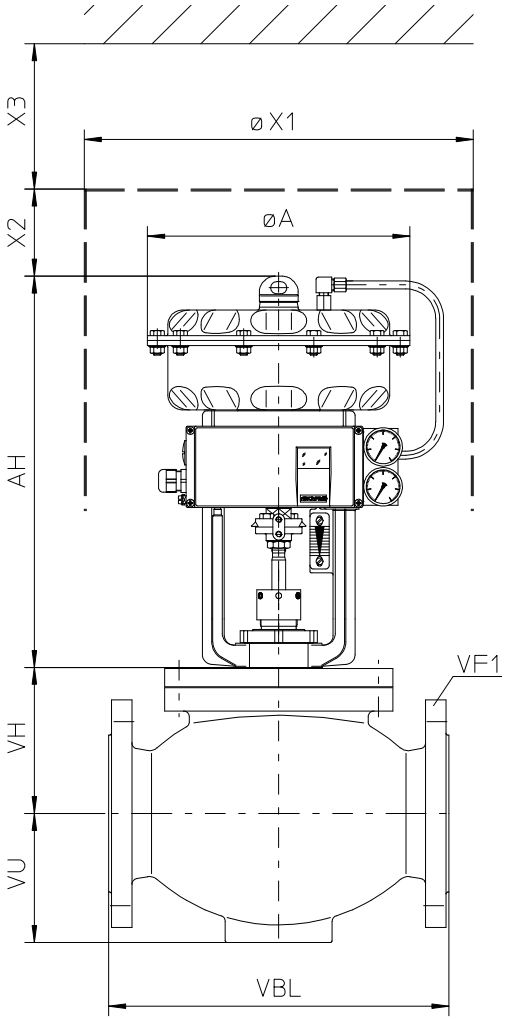
Auftrag / Order Ref.
Projekt / Project Ref.

2533481-KE, Item 200
Khatoon Abad - ACE Kom. 560 37595 - ACE Ident: 6970 426679 - TAG No.: FV 2900

Gewicht: ca. 250 kg
weight:

X3 = Freiraum für Demontage/
expansion space for dismounting

X1+X2 = Freiraum für
Zubehörgeräte Montage/
expansion space for
mounting of accessories

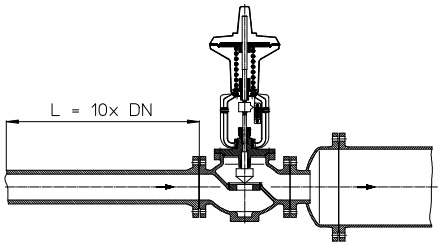


Durchflussrichtung/
Flow Direction

Auslegung Valve Design	16 bar 60°C
Gehäuse Material Body Material	A216WCB
Hydraulik Test hydraulic test	30 bar
Anschluß VF1 End Connections	DN6" ANSI 150 RF

Alle Maße in mm / all dimensions in mm

AH	625		
∅A	400		
VBL	451		
VH	260		
VU	190		
∅X1	900		
X2	250		
X3	min. 500		



Datum / date: 30.08.2011

ARCA-Regler GmbH D - 47918 Tönisvorst - http://www.arca-valve.com - eMail: sale@arca-valve.com

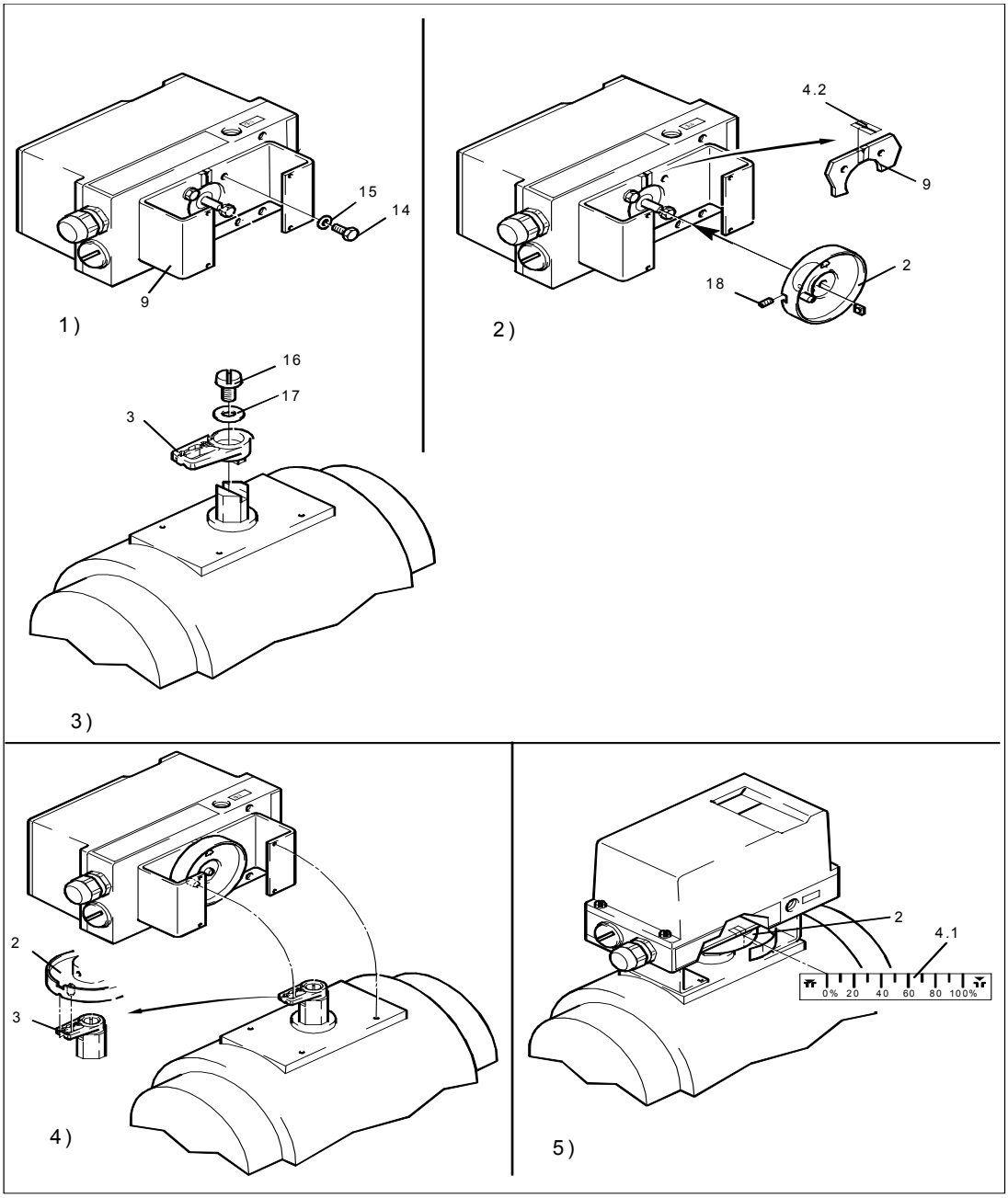
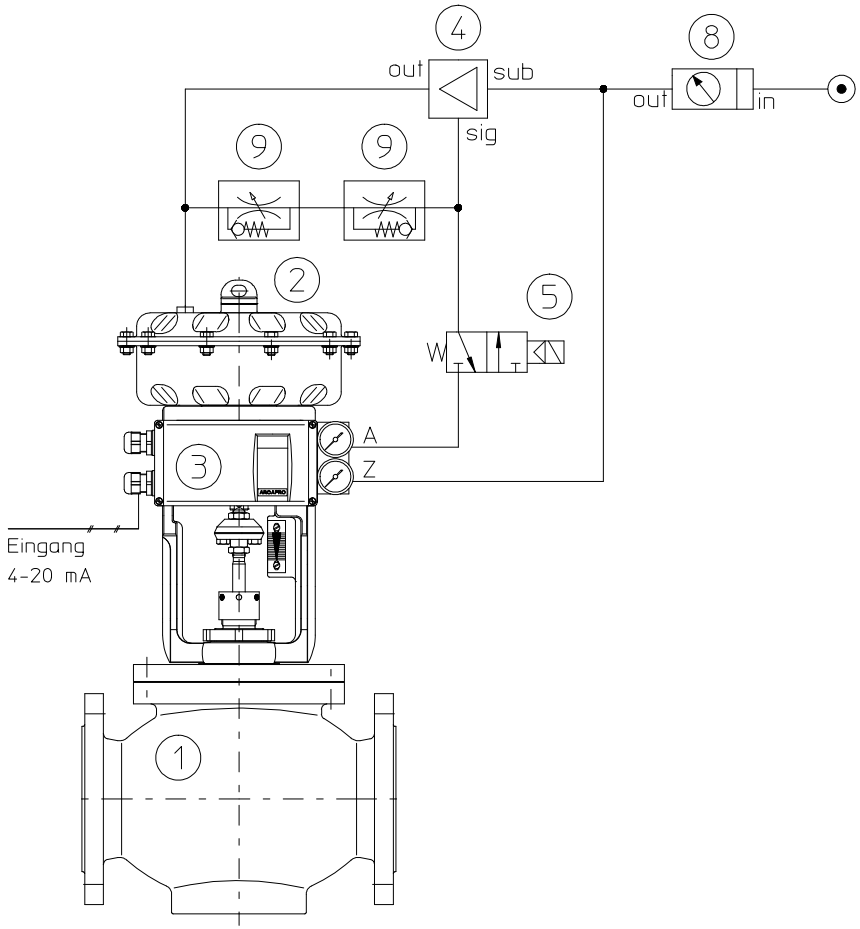


Figure 7 Assembly procedure for VDI/VDE 3845 quarter-turn actuator

ARCA VALVES	**Schemaplan für Zubehörgeräte / *Hook-up for accessories*** **Pos. 1 Regelventil mit Pos. 2 Antrieb Typ 812, Größe MFIII-60-S** ***Item 1 Control valve with Item 2 actuator type 812, size MFIII-60-S***	**SB2533481-KE-200** Zeichnungs-Nr. / Drawing No.
Auftrag / Order Ref. Projekt / Project Ref.	2533481-KE, Item 200 Khatoon Abad - ACE Kom. 560 37595 - ACE Ident: 6970 426679 - TAG No.: FV 2900	



Pos. / *Item*	Typ/*type* Hersteller/*manuf.*	Bezeichnung/ description
3	827A.E2-A0H-M10-G ARCAPRO II	digitaler E/P-Stellungsregler *digital I/P-positioner*
4	EVEX 1500-04F SMC	Volumenverstärker *volume booster*
5	L3532CGDoH-2A52 Seitz	3/2-Wege-Magnetventil *3/2-way solenoid valve*
6		
7		
8	ASH06-FR-SR-MD-10-X4 Bifold	Filter- und Reduzierstation *filter and reducing station*
9	GR-1/2 Festo	Drosselrückschlagventil *throttle check valve*
10		
11	G1/2 (not shown) (ohne Darstellung)	Hochleistungsschalldämpfer *heavy duty silencer*
12		
13