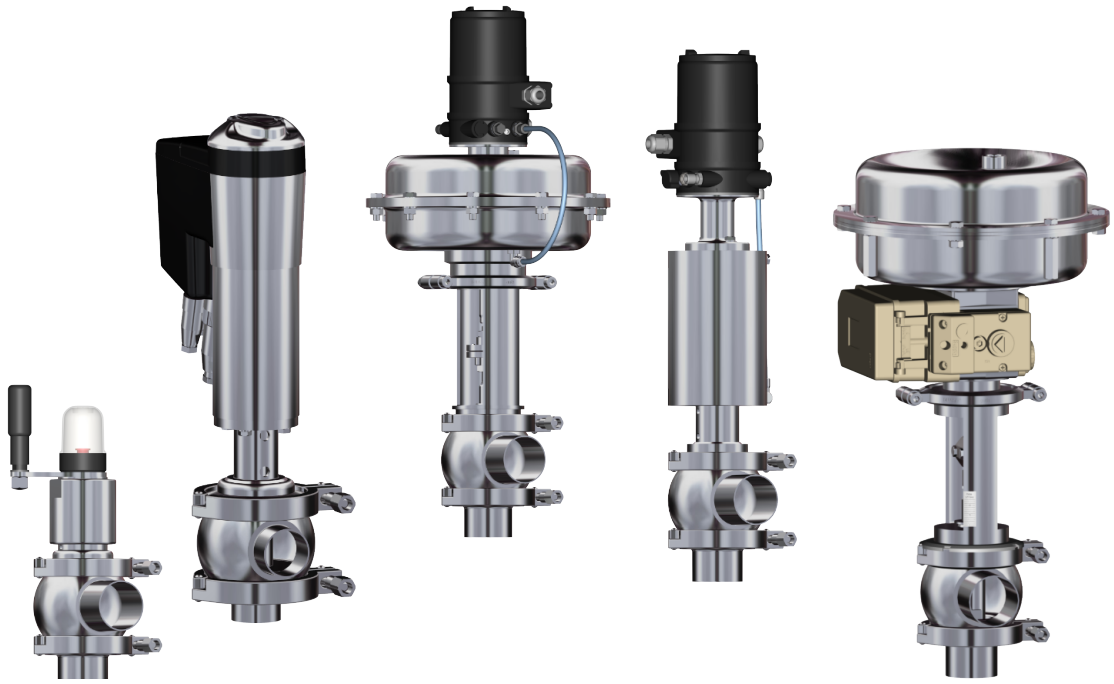
KIESELMANN
FLUID PROCESS GROUP

Translation of the original

Operating Instructions

Single Stage Control Valves

Type 91xx



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1 General informations

1.1 Informations for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.

Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN - service team will naturally be at your disposal.

1.2 Marking of security instructions

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which will result severe personal injury or death.
	WARNING	Imminent danger which may result severe personal injury or death.
	CAUTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTICE	An harmful situation which may result in damages of the product itself or of adjacent vicinity.
	INFORMATION	Marks application hints and other information which is particularly useful.

1.3 General designated use

The fitting is designed exclusively for the purposes described below. Using the fitting for purposes other than those mentioned is considered contrary to its designated use. KIESELMANN cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user. The prerequisite for the reliable and safe operation of the fitting is proper transportation and storage as well as competent installation and assembly. Operating the fitting within the limits of its designated use also involves observing the operating, inspection and maintenance instructions.

1.4 Personnel

Personnel entrusted with the operation and maintenance of the tank safety system must have the suitable qualification to carry out their tasks. They must be informed about possible dangers and must understand and observe the safety instructions given in the relevant manual. Only allow qualified personnel to make electrical connections.

1.5 Modifications, spare parts, accessories

Unauthorized modifications, additions or conversions which affect the safety of the fitting are not permitted. Safety devices must not be bypassed, removed or made inactive. Only use original spare parts and accessories recommended by the manufacturer.

1.6 General instructions

The user is obliged to operate the fitting only when it is in good working order. In addition to the instructions given in the operating manual, please observe the relevant accident prevention regulations, generally accepted safety regulations, regulations effective in the country of installation, working and safety instructions effective in the user's plant.

2 Safety instructions

2.1 Intended use

The control valve is used for the regulation of media in the food and beverage industry, in pharmaceutical and chemical engineering, as well as in bio-engineering.

2.2 General notes



NOTICE - observe the operating instructions

To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.



NOTICE

All data are in line with the current state of development. Subject to change as a result of technical progress.

2.3 General safety instructions



⚠ DANGER

Energized components

Electric shock and destruction of the board may occur.

- Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation.
- Wear grounding bracelet.
- Observe applicable accident prevention and safety regulations for electrical equipment!



⚠ WARNING

Risk of injury by moving parts

Do not grab into the valve when the actuator is pressurized. Limbs can be crushing or amputating.

- Remove the control air line before dismantling.
- Ensure that the actuator is unpressurized.



⚠ WARNING

Risk of injury by outflowing medium

Dismantling the valve or valve assemblies from the plant can cause injuries.

- Medias flowing through the leakage drain outlet are to be drained off without splashing into a discharge arrangement.
- Carry the disassembling only if when the plant has been rendered pressure-less and free of liquid and gas.



⚠ WARNING

Risk of injury by moving parts

When dismount the clamp coupling, the spring preloaded valve insert (air open - spring close) may incur serious injuries by jumping out of the housing.

- First pneumatically open the valve before disassembling the clamp coupling, so that upstroke the piston.
- Remove the valve core.
- Remove the control air line at valve insert.

⇨ Ensure that the actuator is unpressurized.



⚠ WARNING

ATEX - Guidelines

If the valve or the plant is operated in a potentially explosive atmosphere, the valid ATEX directive of the EC and the installation instructions in this operating manual must be observed.



⚠ CAUTION

When mounting the clamps, the max. torque must not be exceeded.

(see technical data)



⚠ CAUTION

To avoid air leaking, only use pneumatic connection parts that have an O-ring seal facing the even surface.



⚠ CAUTION

Before starting the system, the entire pipeline system must be thoroughly cleaned.



⚠ CAUTION

Steps should be taken to ensure that no external forces are exerted on the fitting.

3 Delivery, transport and storage

3.1 Delivery

- Immediately after receipt check the delivery for completeness and transport damages.
- Remove the packaging from the product.
- Retain packaging material, or expose of according to local regulations.

3.2 Transport



⚠ CAUTION

Risk of injury and damage to the product

During the transport the generally acknowledged rules of technology, the national accident prevention regulations and company internal work and safety regulations must be observed.

3.3 Storage



NOTICE

Damage to the product due to improper storage!

Observe storage instructions

avoid a prolonged storage



INFORMATION

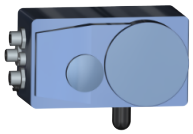
Recommendation for longer storage

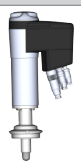
We recommend regularly checking the product and the prevailing storage conditions during long storage times.

- To avoid damage to seals and bearings,
  - products up to DN 125 / OD 5 inch should be stored horizontally for maximum 6 months.
  - products larger than DN 125 / 5 inch, should be stored in the upright position with the actuator on top.
- Don't store any objects on the products.
- Protect the products for wetness, dust and dirt.
- The product should be stored in a dry and well ventilated room at a constant temperature (optimal indoor temperature: 25 C ±5 ; indoor humidity data 60% ±5%).
- Protect seals, bearings and plastic parts for UV light and ozone.

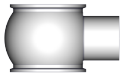
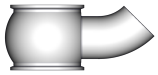
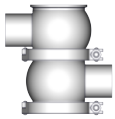
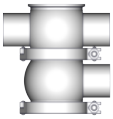
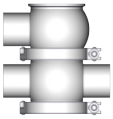
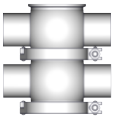
4 Specification

4.1 Modular system

control systems			
positioner			
Guth DigiPos	Bürkert Type 869x	Bürkert Type 879x	Samson Type 3730-X
			

drive systems				
Manual drive	Linear actuator pneumatic	Linear actuator electrical	pneum. Diaphragm actuator	
			FPG	Samson
				

Sealing material	
Elastomer - Elastomer	Elastomer - metallic
	

Valve housing			
E	T	S	LL
			
TL	LT	TT	
			

Control valve with

Linear actuator

Manual | pneumatic | electrical | Membrane



5 Function and operation

5.1 Description of function

The control valve is based on the KIESELMANN AI DS technology. Media with a Kvs-values 0,1 m³/h to 160 m³/h can be regulated through the interchangeable seat concept.

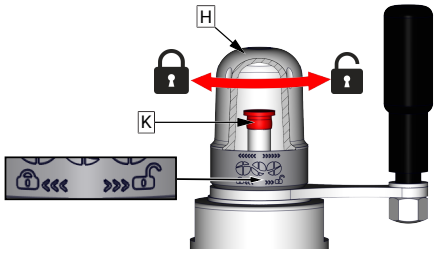
Manual drive

The valve is operated manually by turning the hand crank. Turn the hand wheel clockwise to close the valve, and counterclockwise to open it. The axial position of the hand crank remains unchanged. The valve position can be recognised by the position of the cap (K).

Locking device

The drive position can be fixed in any position.

The crank handle is clamped or released by turning the cover (H) clockwise or anti-clockwise.



Control via Bürkert Positioner

The valve is operated by means of a digital electro-pneumatic positioner. The positioner forms a closed circuit loop together with the lift actuator and the valve. The lift position defines the actual value which is recorded by a potentiometer. A proportional position is controlled with the specified target value (4-20mA). During the regulating process, the target value is constantly compared to the actual value; any regulating deviations are corrected. The micro-controller regulator allows an automatic zero and lift alignment and automatic commissioning.

Description of function for pneum. control valve

Valve function:	• control of media in pipelines.
Actuation:	• Pneumatic actuation by means of a lift drive (air/spring or air/air) • manual operation by a crank-handle (open / close)
Activation:	• pneumatically via solenoid valves (positioner) (see "Control via Bürkert positioner")

Description of function - pneum. Linear actuator

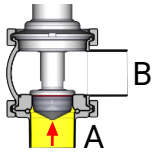
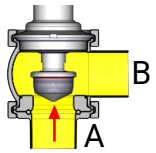
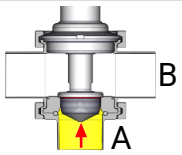
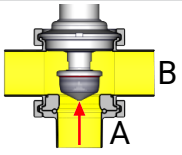
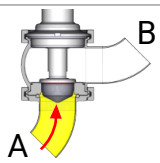
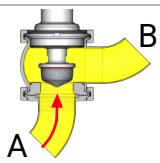
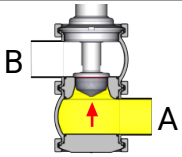
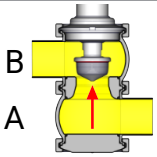
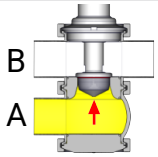
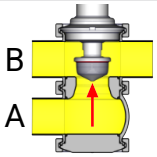
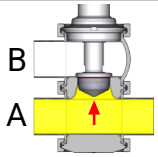
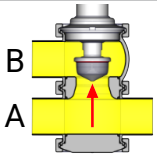
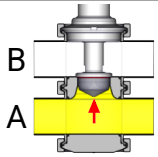
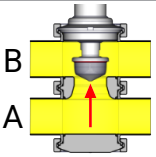
Safety position closed [Fail-closed (FC)]	
pneum. operated	→opens the valve
not pneum. operated	→spring force closes the valve

Safety position open [Fail-open (FO)]	
pneum. operated	→valve “CLOSE“
not pneum. operated	→spring force opens the valve

Safety position not defined [Double acting (DA)][1]	
pneum. operated	→opens the valve
not pneum. operated	→valve “CLOSE“

1. The valve position is not defined in case of decrease of pressure in the compressed air line.

5.2 Valve basic position:

Basic positon: Kind of actuation:	Valve closed Normally closed (NC)	Valve open Normally open (NO)
Type: 911x E Angle valve	 Section A - B closed	 Section A - B opened
Type: 912x T T-valve	 Section A - B closed	 Section A - B opened
Type: 913x S Inclined seat valve	 Section A - B closed	 Section A - B opened
Type: 914x LL Straight way valve	 Section A - B closed	 Section A - B opened
Type: 915x TL Straight way valve	 Section A - B closed	 Section A - B opened
Type: 916x LT Straight way valve	 Section A - B closed	 Section A - B opened
Type: 917x TT Straight way valve	 Section A - B closed	 Section A - B opened

6 Commissioning, service and maintenance

6.1 Commissioning

NOTICE

Check the valve for function!

Before using the valve, the function of the valve must be checked.

- Open and close the valve manually via the positioner.
- Check the settings of the positioner.

⇨ (Please refer the operating instructions of the positioner).

6.1.1 Installation instructions

Fitting position

Any installation position is possible, however preferably it should be installed vertically. Non-vertical installation means that the outflow pipes must be arranged to allow the liquids to run freely out of the housing.

NOTICE

The flow direction is generally in the direction A.

If installed horizontally, some minor residual liquids will remain in the housing.

6.1.2 General welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN ISO 9606-1). Use the TIG (Tungsten Inert Gas) welding process.

⚠ CAUTION

Damage and injuries due to high temperature supply

To avoid a distortion of the components, all welding parts must be welded to stress-relieved.

Allow all components to cool before assembling.

NOTICE

Damage due to impurities

Impurities can cause damage to the seals and seals area.

Clean inside areas prior to assembly.

6.1.3 ATEX - Guidelines

For valves or plants/installations that are operated in the ATEX area, sufficient bonding (grounding) must be ensured (see valid ATEX Guidelines EG).

6.2 Service

RECOMMENDATION

Replacement of seals

To achieve optimal maintenance cycles, the following points must be observed!

- When replacement of seals, all product-contacting seals should be replaced.
- Only original spare parts may be installed.

Maintenance interval

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals 1-year cycle. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

Lubricant recommendation

	EPDM; HNBR; NBR; PTFE; FKM; k-flex	-	Klüber Paraliq GTE703*
	Silicone	-	Klüber Sintheso pro AA2*
	Thread	-	Interflon Food*

*) It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.

6.3 Cleaning

Cleaning

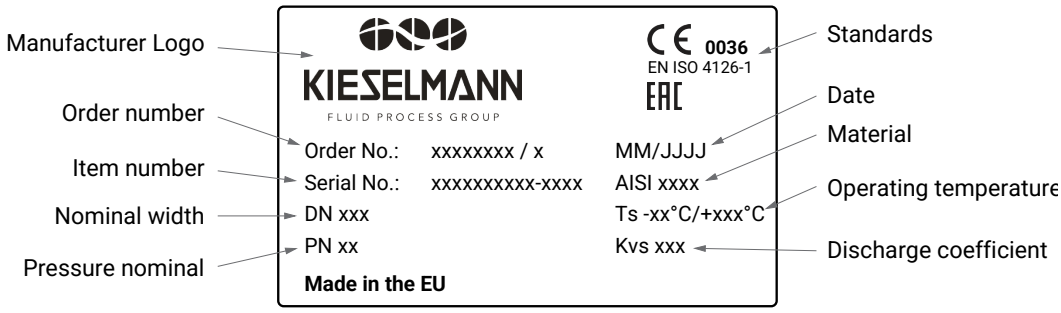
Ideally, cleaning is carried out with pipe system cleaning when the valve is open.

7 Technical data

7.1 control control valves

Model	control valve • elastomer sealing at the regulation cone (Elastomer / Elastomer) • metallic sealing at the regulation cone (Elastomer / metallic)	
Size	DN 20 - DN 125 OD 1 Inch - OD 5 Inch	
KV-value	0,2 m³/h - 160 m³/h (see KV - value [▶ 16])	
Connection type	• Weld-on end DIN EN 10357	
Nominal pressure (PN)	16 bar	
Leakage rate	A (EN 12266-1)	
Control air	Control air pressure: 5,5 - 8,0 bar	Control air quality: ISO 8573-1:2010 [3:(≤5 µm):4:4]
Temperature range	Ambient temperature: (air) Operating temperature: (depends on medium) Sterilisation temperature: (SIP 30 min)	+4°C to +45°C -0°C to +100°C EPDM +140°C HNBR +120°C FKM +110°C
Material (in contact with product)	Stainless steel: Surface: Sealing material:	1.4404 / AISI 316L Ra ≤ 0,8µm, e-polished • EDPM • HNBR • FKM

7.2 Identification



7.3 Torques

Torque: clamp coupling

ND	25	40	50	65	80	100	125	150
Inch	1	1½	2	2½	3	4	5	6
Torque [Nm]	15	15	15	25	25	55	65	65

7.4 KV - value

Kvs value, Nominal size & Actuator size													
Actuator type					Piston actuator					Diaphragm actuator			
Size					H104	H129	H167	H190	H230	M02	M2	M4	M10
min. Control air pressure [bar]					5.5	5.5	5.5	5.5	5.5	4	3	3	3
Kvs value [[m³/h]]	DN	OD	seat-Ø [mm]	Stroke [mm]	Closing pressure [bar]								
0.06	20	-	3	16	16					16			
0.1	20	-	4	16	16					16			
0.2	20	-	4	16	16					16			
0.4	20	-	4	16	16					16			
	25	1“	6	20	16					16			
1.0	25	1“	6	20	16					16			
1.6	25	1“	12	20	16					16			
2.5	25	1“	12	20	16					16			
4	25	1“	12	20	16					16			
	40	1½“			16					16			
7	25	1“	22	20	16					16			
	40	1½“			16					16			
10	25	1“	22	20	16	16				16	16		
	40	1½“			16	16				16	16		
	50	2“			16	16				16	16		
18	40	1½“	34	20	13	16				5	16		
	50	2“			13	16				5	16		
	65	2½“			12	16				5	16		
26	50	2“	46	20	7	11	16				14		
	65	2½“			7	11	16				14		
	80	3“			7	11	16				14		
40	50	2“	46	27		10	16					16	
	65	2½“				10	16					16	
	80	3“				10	16					16	
	100	4“				10	16					16	
52	65	2½“	60	27			14	16	16			10	16
	80	3“					14	16	16			10	16
	100	4“					14	16	16			10	16
68	65	2½“	60	27			14	16	16			10	16
	80	3“					14	15	16			10	16
	100	4“					14	15	16			10	16
85	80	3“	72	27			10	15	15			7	16
	100	4“					10	15	15			7	16
100	80	3“	81	27			8	12	12			7	16
	100	4“					8	12	12			7	16
	125	-					8	12	12			7	16
120	100	4“	95	27				9	9				12
	125	-						9	9				12
160	125	-	125	27				5	5				8

8 Disassembly and assembly

Assembly Tools

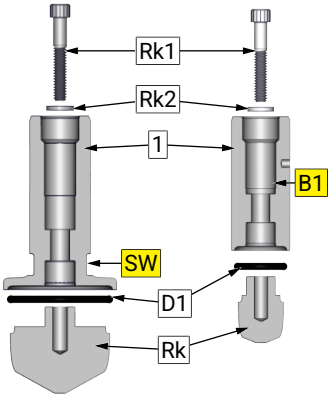
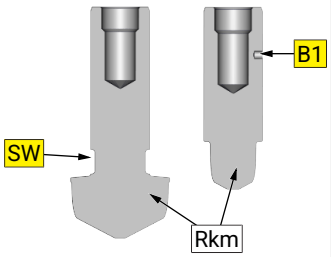
Pos.	Figure	Designation		Article number
T1		Combination wrench-Set	SW 8 - SW 24	-
T2		Allen key - Set	1.5 - 10	-
T10		Joint -pin wrench	Pin Ø6	8027000065-000
T11		Hinged hook wrench	DN25 - DN100 90/155 V2A	8028025100-020
T12a		Articulated face wrench	40-80mm, Ø5 40-80mm, Ø6 80-125mm, Ø8	8028340085-000 8028340080-000 8028380125-000
T32		Round rod	ø8	5620065007-020
T35		Pin punch	ø5	-

NOTICE

All threaded joint have right-hand thread.

Unscrew and remove control air, steam resp. cleaning lines and electrical lines, complete feedback unit or control head.

flow cone

	elastomer sealing at the flow cone (Rk)	metallic sealing at the flow cone (Rkm)
• 1 = Piston • B1 = Bore • D1 = O-ring • Rkm = flow cone metallic • Rk = Flow cone elastomer • Rk1 = Screw • Rk2 = Washer • SW = Wrench size		

8.1 Valve with Manual actuator

Dismount the valve insert

- Unscrew the clamp coupling (VK).
- Dismount the valve insert (VE) out of the housing (VG).
- Remove the housing bottom (Gb1) and interchangeable seat (Ws).
- Remove O-rings (D2), (D6) and (D7).

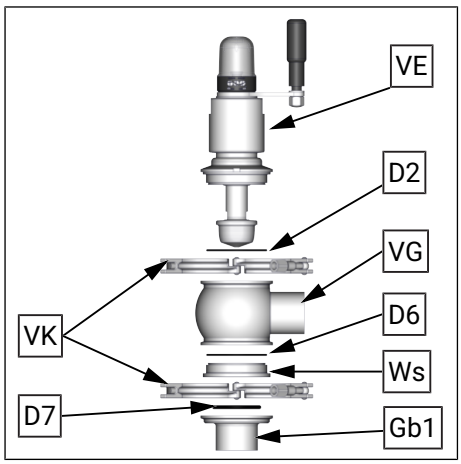


Figure 1

Replacement of seals

NOTICE

The bearing bush (3) do not need to be removed for a product-contacted seal change. The positions are not included in the seal set. If they are worn,please order them (see wearing parts kit).

NOTICE!

The piston rod must be locked for the following steps:

- Hold the piston rod (9) with a punch (T35) at the bore (B2).
  - For this purpose, the bore (B2) in the housing (13) and in the piston rod (9) must be adjusted congruently using the hand crank (19).
  - Now push the punch (T35) into the hole (B2).

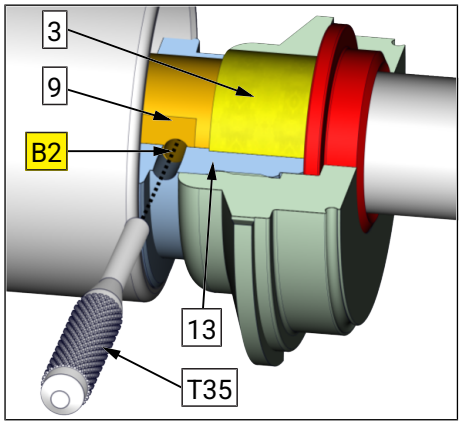


Figure 2

- Unscrew the insert (2) from the housing (13) with a hook spanner (T11).
- Hold with a punch (T35) at the bore (B2).

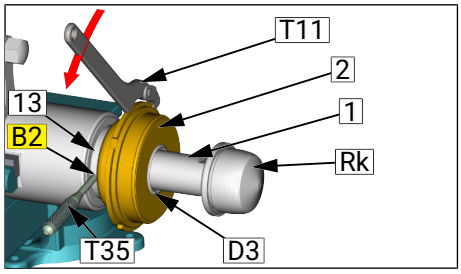


Figure 3

Assembly piston / control cone

INFORMATION

Construction-conditioned, there are two variants for dismantle of the piston (1) or metallic sealing control cone (Rkm):

Variant A: Dismounting via bore (B1).

Variant B: Dismounting via spanner flat (SW1)

– So that the bore (B1) will be visible, first dismantle the insert (2).

Variant A

- Unscrew the piston (1) respectively the control cone (Rkm) with a pin wrench (T10).
- Hold with a punch (T35) at the bore (B2).
- Remove the shaft seal (D3).

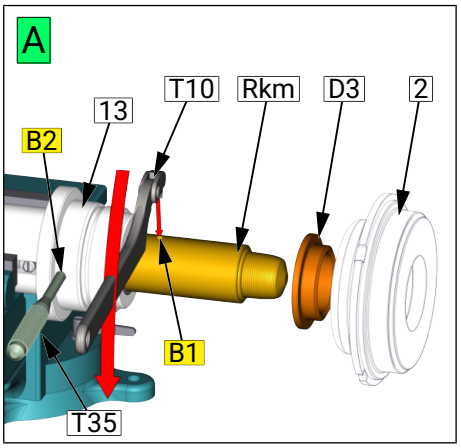


Figure 4

Variant B

- Unscrew the piston (1) at the spanner flat (SW1) with wrench (T1) respectively the control cone (Rkm) with a spanner (T1) from the piston rod (9).
- Hold with a punch (T35) at the bore (B2).
- Remove the shaft seal (D3).

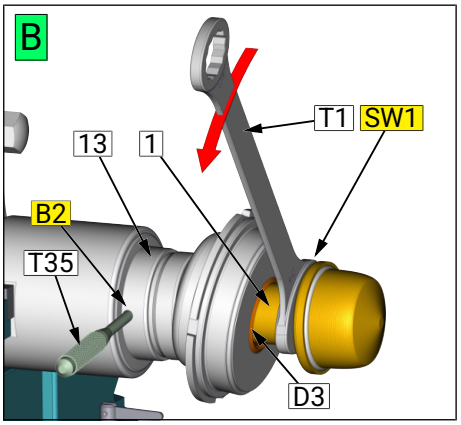


Figure 5

- The manual actuator (HA) do not need to be removed for a seal change.

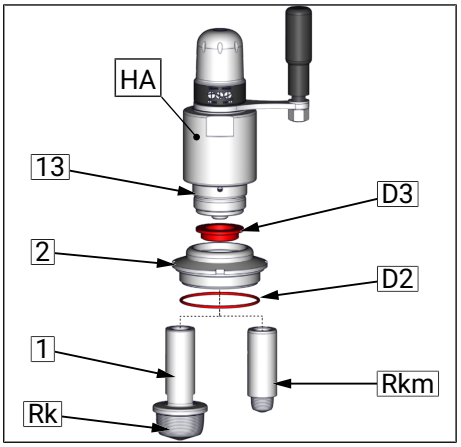


Figure 6

Assembly seal (D1)

- Clamp the cone (Rk) in a soft jawed vice. Unscrew the screw (Rk1).

  Remove piston (1) and dismantle O-ring (D1).

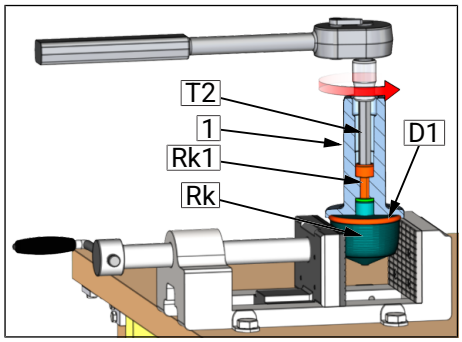


Figure 7

8.2 Valve with pneum. linear actuator

Dismount the valve insert

Valve insert (lö-fs)

- Connect compressed air to air supply (LA). The piston (1) retracts.
- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).

  Disconnect compressed air from air supply (LA). The piston returns to the basic position.

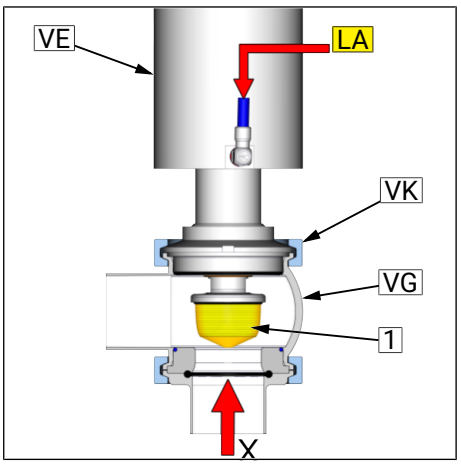


Figure 1

Valve insert (fö-ls), (lö-ls)

- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).
- Remove the O-ring (D2).
- Unscrew the locking clip (VK).
- Remove housing bottom (GB), interchangeable seat (WS), O-ring (D6) and (D7) from housing (VG).

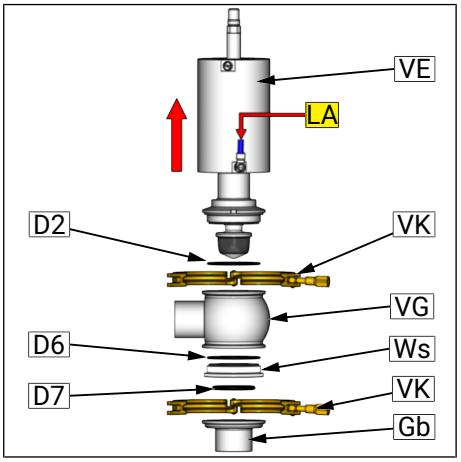


Figure 2

Replacement of seals

- Unscrew with a hook wrench (T11) the insert (2) from the lantern (4).

  For this, holding on the lantern (4) with a pin wrench (T10).

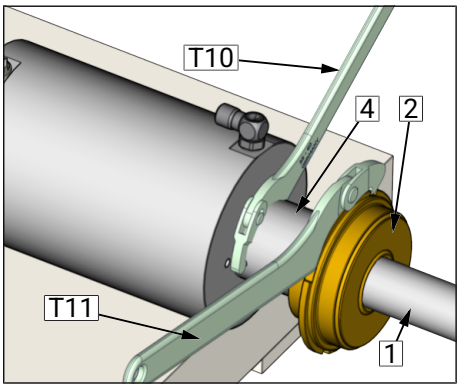


Figure 3

Assembly piston / control cone

INFORMATION

Construction-conditioned, there are two variants for dismantle of the piston (1) or metallic sealing control cone (Rkm):

Variant A: Dismounting via bore (B1).

Variant B: Dismounting via spanner flat (SW1)

– So that the bore (B1) will be visible, first dismantle the insert (2).

Variant A

- Unscrew the piston (1) respectively the control cone (Rkm) from the spindle (6) with a pin wrench (T10).

  Hold on at the spanner flat (SW2).
- Remove the shaft seal (D3).

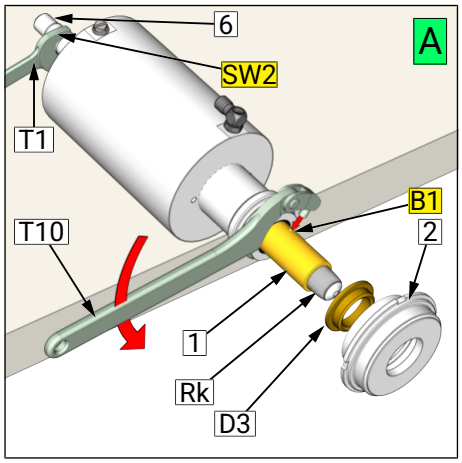


Figure 4

Variant B

- Unscrew the piston (1) respectively the control cone (Rkm) with a spanner (T1) from spindle (6).

  Hold on at the spanner flat (SW2).
- Remove the shaft seal (D3).

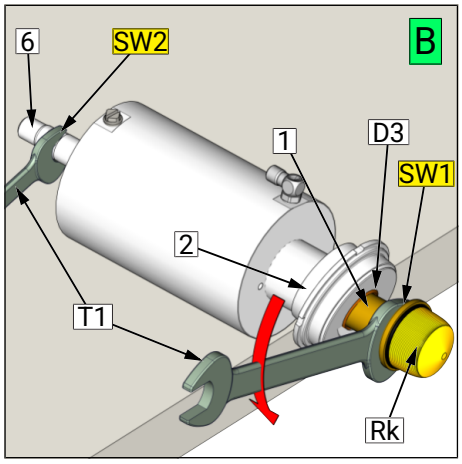


Figure 5

Assembly seals (D4) und (D5)

- Unscrew the lantern (4) with a pin wrench (T10) from actuator (PHA) and push it from piston rod (6).

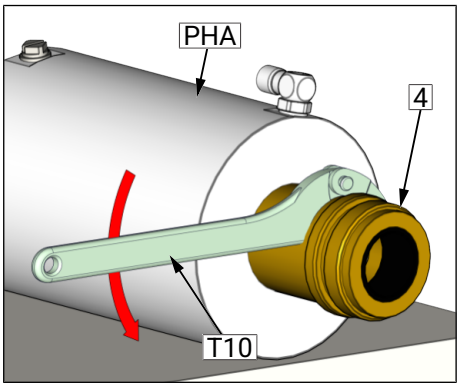


Figure 6

- Remove the distance (8), O-rings (D4) and (D5).

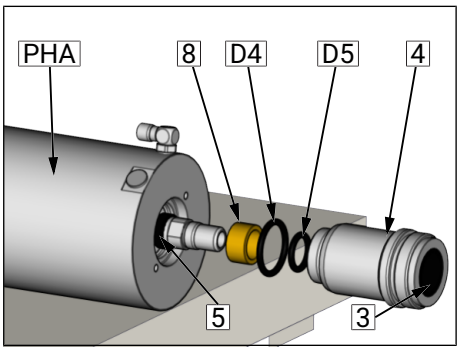


Figure 7

NOTICE

The distance (8) is fitted only with metric valves.

The bearing bushes (3) and (5) and the O-rings (D4) and (D5) do not need to be removed for a product-contacted seal change. The positions are not included in the seal set. If they are worn,please order them (see wearing parts kit).

- Unscrew the insert (7) from the actuator (PHA) with a pin type face spanner (T12).

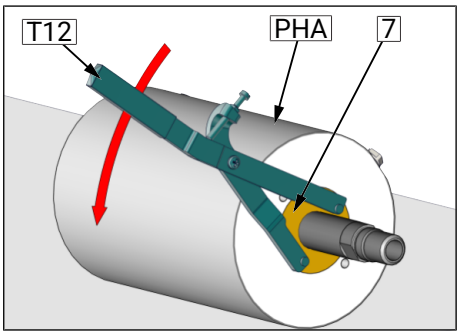


Figure 8

- Remove the O-rings (D4) and (D5).

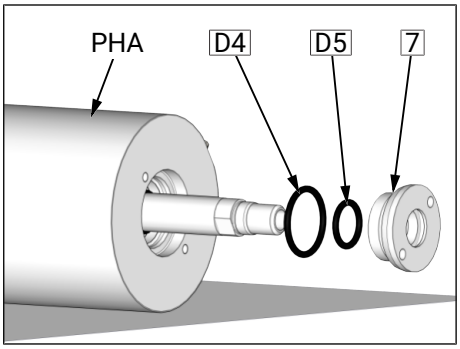


Figure 9

Assembly seal (D1)

- Clamp the cone (Rk) in a soft jawed vice. Unscrew the screw (Rk1).

  Remove piston (1) and dismantle O-ring (D1).

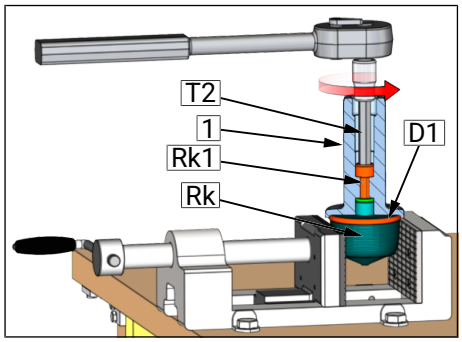


Figure 10

8.3 Valve with electric linear actuator



⚠ DANGER

Energized components

Electric shock and destruction of the board may occur.

- Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation.
- Wear grounding bracelet.
- Observe applicable accident prevention and safety regulations for electrical equipment!

Dismount the valve insert

- Unscrew the transparent hood (H) from the actuator (bayonet lock).
- Activate 'Local Control' using switch (S1).
- Press switch (S2). The piston (1) retracts.
- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).
- Press switch (S3). The piston (1) extends.
- Deactivate 'Local Control' using switch (S1).
- Unscrew the power connection and control connections.

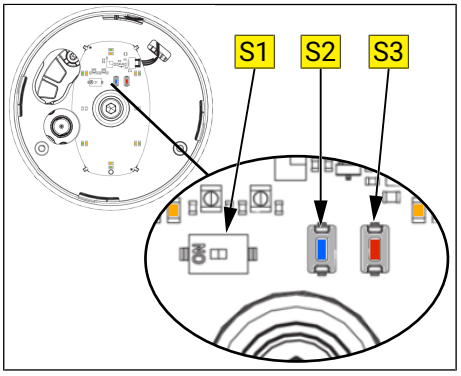


Figure 1

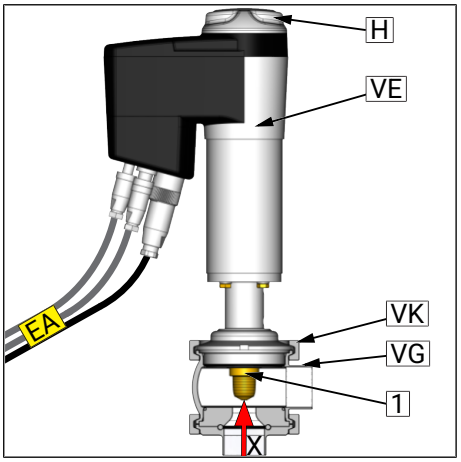


Figure 2

- Remove the O-ring (D2).
- Unscrew the locking clip (VK).
- Remove housing bottom (GB), interchangeable seat (WS), O-ring (D6) and (D7) from housing (VG).

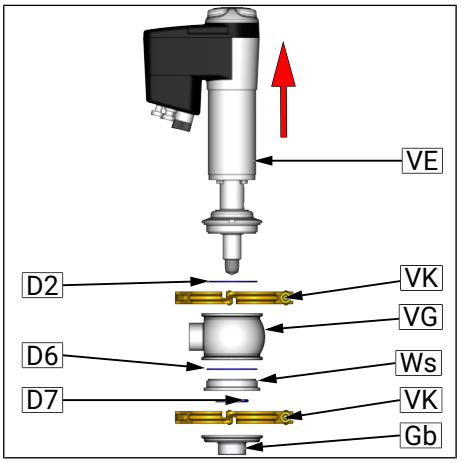


Figure 3

Replacement of seals

- Loosen the insert (2) from the lantern (4) using a hook spanner (T11).

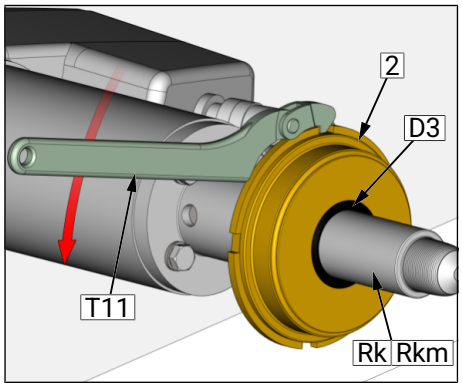


Figure 4

Assembly piston / control cone

INFORMATION

Construction-conditioned, there are two variants for dismantle of the piston (1) or metallic sealing control cone (Rkm):

Variant A: Dismounting via bore (B1).

Variant B: Dismounting via spanner flat (SW1)

– So that the bore (B1) will be visible, first dismantle the insert (2).

Variant A

- Unscrew the piston (1) respectively the control cone (Rkm) from the spindle (6) with a pin wrench (T10).

  Hold on at the spanner flat (SW2).
- Remove the shaft seal (D3).

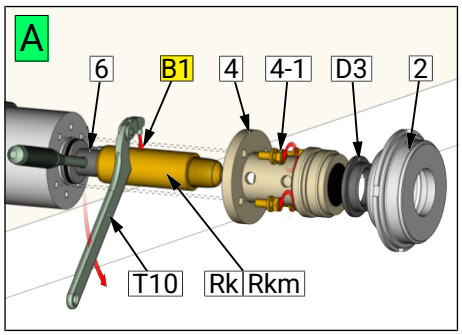


Figure 5

Variant B

- Unscrew the piston (1) respectively the control cone (Rkm) with a spanner (T1) from spindle (6).

  Hold against at the hole (B2).
- Unscrew the insert (2) and remove the shaft seal (D3).

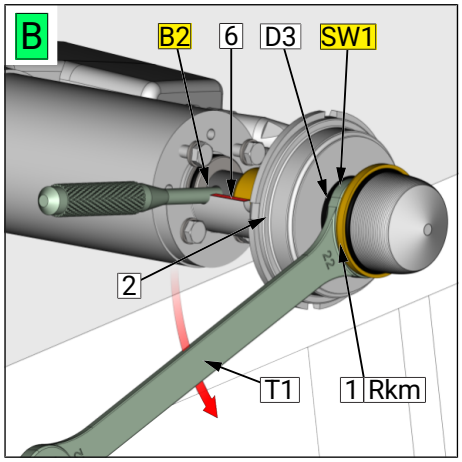


Figure 6

- Unscrew the insert (2) and remove the shaft seal (D3).
- Unscrew the screws (4-1) and remove the lantern (4).

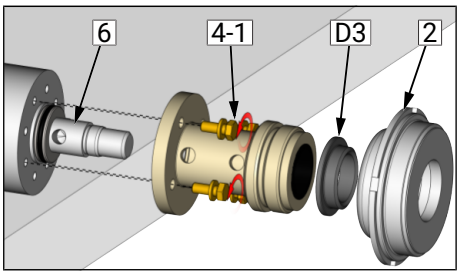


Figure 7

Assembly seals (D13) und (D14)

NOTICE

The bearing bushes (3) and the O-rings (D13) and (D14) do not need to be removed for a product-contacted seal change. The positions are not included in the seal set. If they are worn,please order them (see wearing parts kit).

- Unscrew the spindle (6).
- Remove the insert (5).
- Remove the O-rings (D13) and (D14).

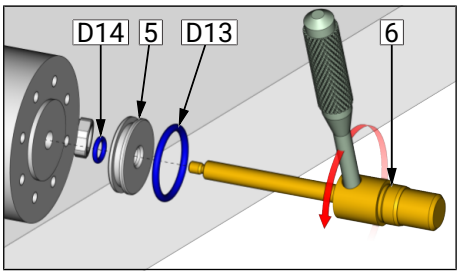


Figure 8

Assembly seal (D1)

- Clamp the cone (Rk) in a soft jawed vice. Unscrew the screw (Rk1).

  Remove piston (1) and dismantle O-ring (D1).

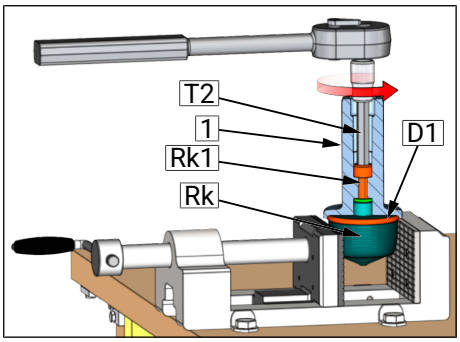


Figure 9

8.4 Valve with Diaphragm actuator FPG

Dismount the valve insert

Valve insert (lö-fs)

- Connect compressed air to air supply (LA). The piston (1) retracts.
- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).

  Disconnect compressed air from air supply (LA). The piston (1) returns to the basic position.

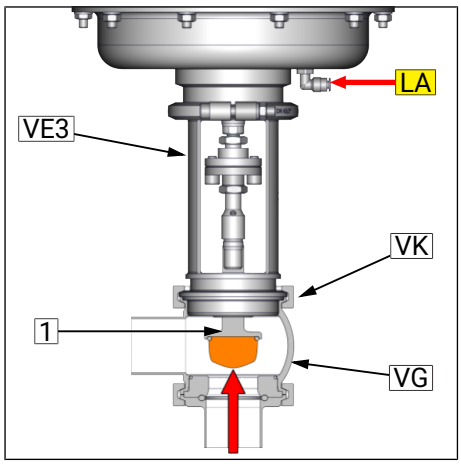


Figure 1

Valve insert (fö-ls) (lö-fs)

- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).

- Remove the O-ring (D2).
- Unscrew the locking clip (VK).
- Remove housing bottom (GB), interchangeable seat (WS), O-ring (D6) and (D7) from housing (VG).

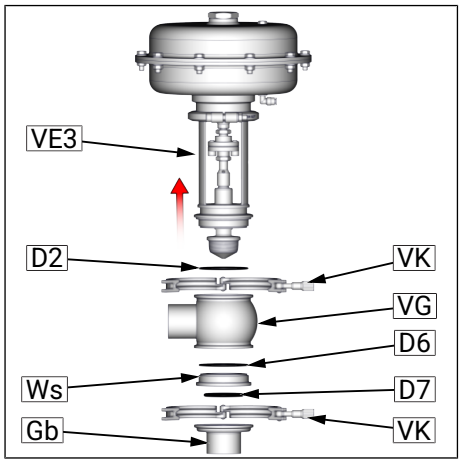


Figure 2

Replacement of seals

Assembly piston / control cone

INFORMATION

Construction-conditioned, there are two variants for dismantle of the piston (1) or metallic sealing control cone (Rkm):

Variant A: Dismounting via bore (B1).

Variant B: Dismounting via spanner flat (SW1)

– So that the bore (B1) will be visible, first dismantle the insert (2).

Variant A

- So that the bore (B1) will be visible, first dismantle the insert (2).
- Unscrew the piston (1) respectively the control cone (Rkm) from the spindle (6) with a pin wrench (T10).

  Use a round rod (T32) to hold up against the spindle (6) via the bore (Ø5).

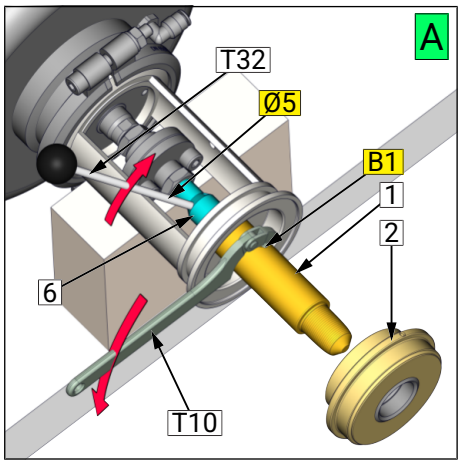


Figure 3

Variant B

- Unscrew the piston (1) respectively the control cone (Rkm) with a spanner (T1) from spindle (6).

  Use a round rod (T32) to hold up against the spindle (6) via the bore (Ø5).

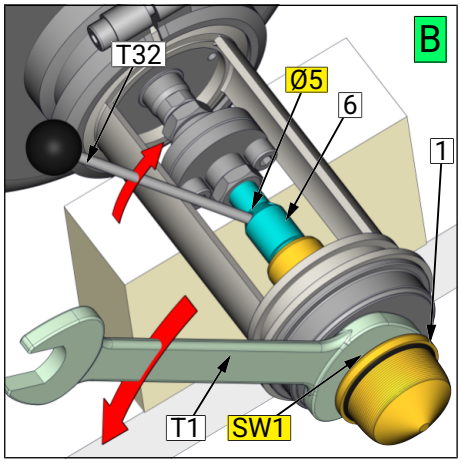


Figure 4

- Clamp the insert (2) in a soft jawed vice.

  Unscrew the lantern insert (7) from the insert (2) with a pin type face spanner (T12).

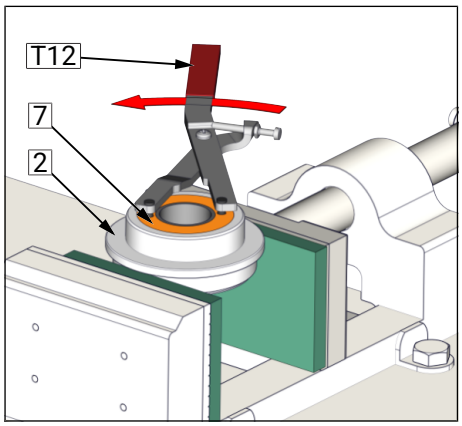


Figure 5

- Dismount seal (D3).

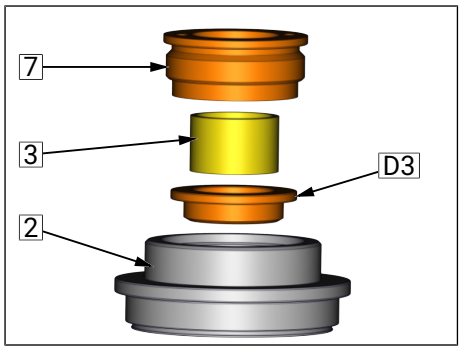


Figure 6

NOTICE

The bearing bush (3) do not need to be removed for a product-contacted seal change. The positions are not included in the seal set. If they are worn,please order them (see wearing parts kit).

Assembly seal (D1)

- Clamp the cone (Rk) in a soft jawed vice. Unscrew the screw (Rk1).

  Remove piston (1) and dismantle O-ring (D1).

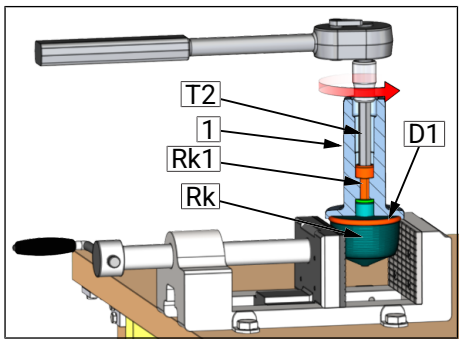


Figure 7

8.5 Valve with Diaphragm actuator - Samson

Dismount the valve insert

Valve insert (lö-fs)

- Connect compressed air to air supply (LA2). The piston (1) retracts.
- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).

  Disconnect compressed air from air supply (LA2). The piston (1) returns to the basic position.

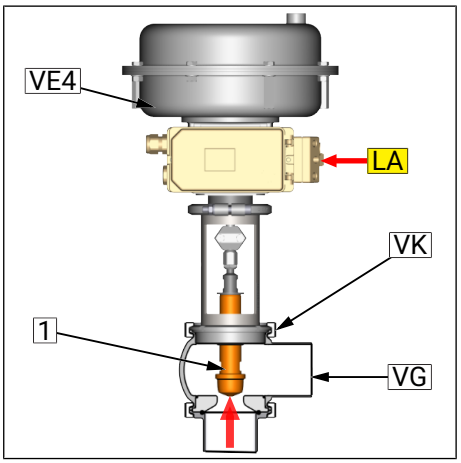


Figure 1

Valve insert (fö-ls) (lö-fs)

- Unscrew the locking clip (VK).
- Dismount the valve insert (VE) out of the housing (VG).
- Remove the O-ring (D2).
- Unscrew the locking clip (VK).
- Remove housing bottom (GB), interchangeable seat (WS), O-ring (D6) and (D7) from housing (VG).

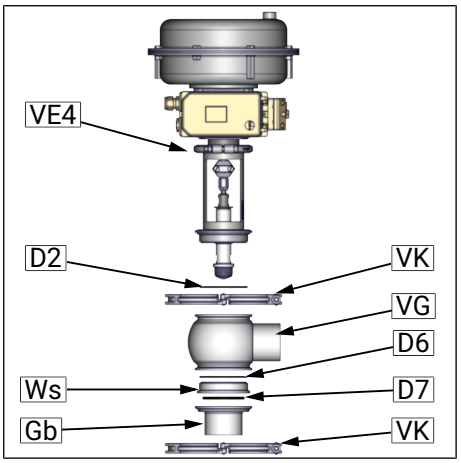


Figure 2

Replacement of seals

Assembly piston / control cone

INFORMATION

Construction-conditioned, there are two variants for dismantle of the piston (1) or metallic sealing control cone (Rkm):

Variant A: Dismounting via bore (B1).

Variant B: Dismounting via spanner flat (SW1)

– So that the bore (B1) will be visible, first dismantle the insert (2).

Variant A

- So that the bore (B1) will be visible, first dismantle the insert (2).
- Unscrew the piston (1) respectively the control cone (Rkm) from the spindle (6) with a pin wrench (T10).

  Use a round rod (T32) to hold up against the spindle (6) via the bore (Ø5).

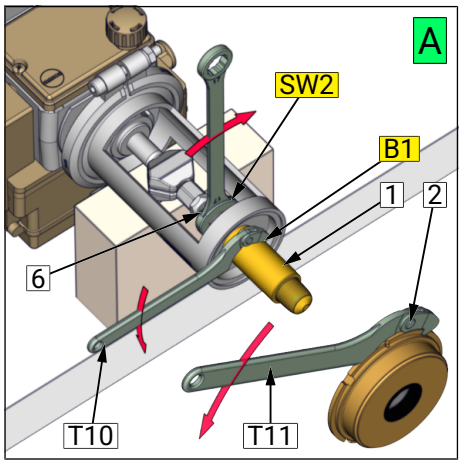


Figure 3

Variant B

- Unscrew the piston (1) respectively the control cone (Rkm) with a spanner (T1) from spindle (6).

  Use a round rod (T32) to hold up against the spindle (6) via the bore (Ø5).

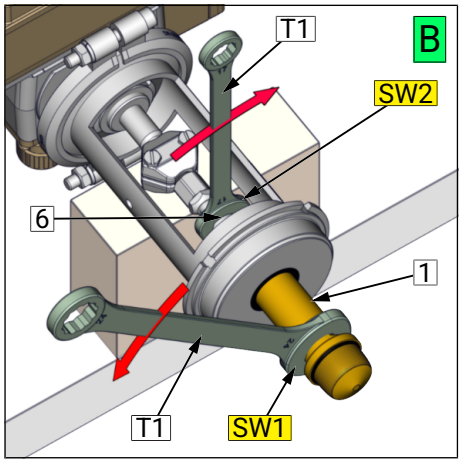


Figure 4

- Unscrew insert (2).

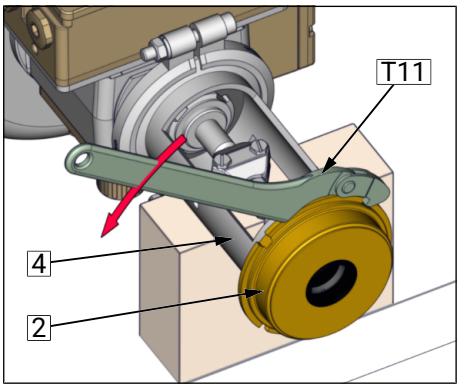


Figure 5

- Clamp the insert (2) in a soft jawed vice.

  Unscrew the lantern insert (7) from the insert (2) with a pin type face spanner (T12).

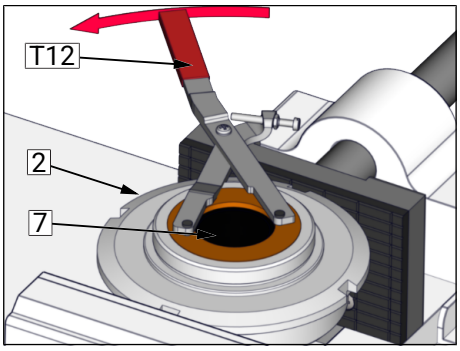


Figure 6

- Dismount seal (D3).

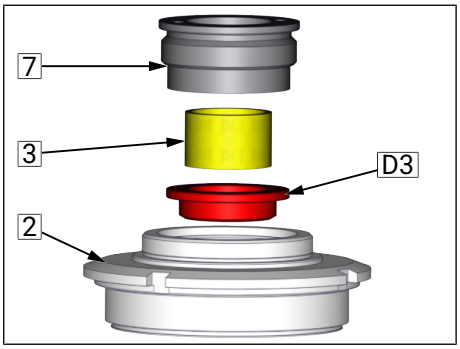


Figure 7

NOTICE

The bearing bush (3) do not need to be removed for a product-contacted seal change. The positions are not included in the seal set. If they are worn,please order them (see wearing parts kit).

Assembly seal (D1)

- Clamp the cone (Rk) in a soft jawed vice. Unscrew the screw (Rk1).

  Remove piston (1) and dismantle O-ring (D1).

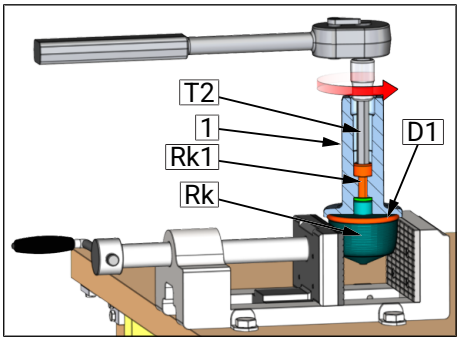


Figure 8

8.6 Assembly

- Assemble in reverse order.
- Before installation, thoroughly clean and slightly lubricate mounting areas and running surfaces.
- Check the function according to the specified performance data in the operating state.

NOTICE

Screw locking

➢ Assembly the thread connection (G1) with removable screw retention.

– e. g. Loctite 243

Clamp coupling (VK)

NOTICE

During assembly, the following points must be observed!

Carefully fit in the complete valve insert into the casing. When fitting the valve insert and running surfaces onto the piston, do not damage.

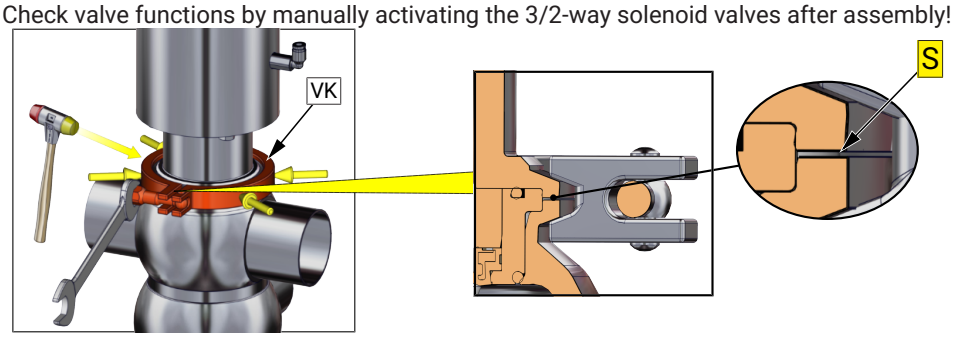
➢ **Mounting clamp coupling**

– For mounting the clamp coupling, please note that it continuously fits form locking to the inclinations of the casing and the lantern/casing bottom.

– The centring of the retaining clamp during tightening can be accomplished with a slight beat (please use a soft-head hammer) on the extent of the retaining clamp.

– When tightening the clamp coupling, please pay attention to the turning moment and the gap size 'S' (≤ 0,4mm) between the components.

– Check valve functions by manually activating the 3/2-way solenoid valves after assembly!



Torque: clamp coupling

DN	25	40	50	65	80	100
Inch	1	1½	2	2½	3	4
Torque [Nm]	15	15	15	25	25	55

9 Mounting kit for positioner

9.1 Bürkert positioner Type 8692, 8694

Disassembly

NOTICE

Before reaching into the device or the equipment, please note the operating instructions and the safety instructions for the Bürkert Positioner.

(Operating instructions for Bürkert Type 8615500120 / Type 8615500130-000)

⚠ DANGER

Energized components

Electric shock and destruction of the board may occur.

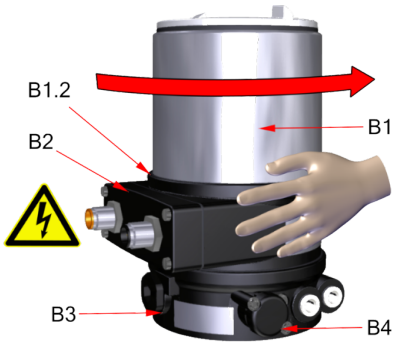
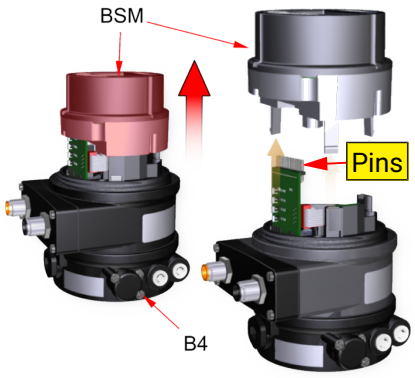
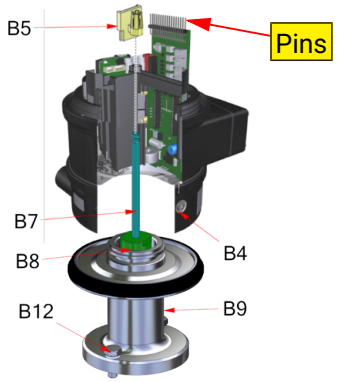
- Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation.
- Wear grounding bracelet.
- Observe applicable accident prevention and safety regulations for electrical equipment!

⚠ CAUTION

Risk of breakage

Breakage of the pneumatic connection pieces due to rotational impact!

- Before reaching into the device or the equipment, disconnect the compressed-air supply at the Positioner.
- Hold the electrical connection housing when unscrewing the housing jacket.

• Hold the electrical connection housing (B2) in place. • Unscrew the housing jacket (B1) in a counter-clockwise direction and remove them. • Remove the seal (1.2). • Remove electronics module (BSM).	• Pull off the puck (B5) upwards from the shift spindle (B7). • Screw out the screws (B4) max. 6-7 turns,not unscrewed. – (when unscrew complete the sheet metal nut is destroyed and must be replaced.)	• Remove carefully the Positioner upwards. • Unscrew the screws (B12) and remove the adapter (B9). • Unscrew the spindle adapter (B8) with the stem (B7) from the actuator spindle.
		

Assembly

- Assemble in reverse order.
- Before installation, thoroughly clean and slightly lubricate mounting areas and running surfaces.
- Check the function according to the specified performance data in the operating state.

⚠ CAUTION

Risk of breakage

Breakage of the pneumatic connection pieces due to rotational impact!

– When inserting the housing jacket, do not hold the actuator but the electrical connection housing above.
– Check that the seal is correctly positioned on the housing jacket.
– Tighten the screws (B4) only lightly (maximum tightening torque: 0.5 Nm).

⚠ CAUTION

Risk of breakage

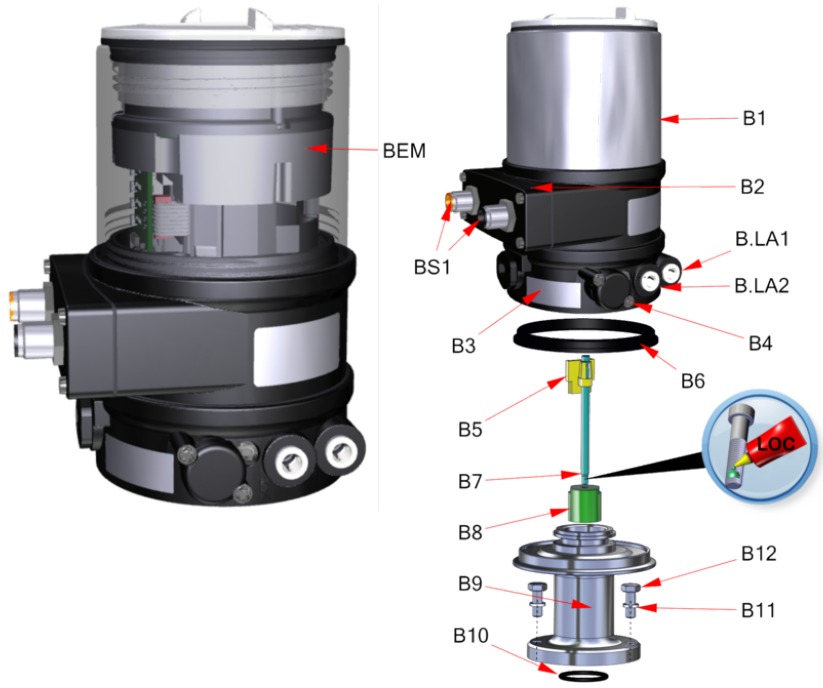
Be careful not damage the pins at the board!

– Attach electronics module carefully and press down evenly until the holders snap into place.

Art.-No.: 5200 104 561-000 (B2+B4 nickelized)
Art.-No.: 5200 104 561-100 (B2+B4 V2A)
Electro-pneumatical Positioner (the Positioner is not include in the mounting kit)

B1 = Housing body
B2 = Electrical connection
B3 = Housing actuator
B4 = Fastening screw
B5 = Puck
B6 = Seal
B7 = Spindle
B8 = Spindle adapter M4-M10
B9 = Adapter
B10 = O-ring
B11 = Disc
N12 = Screw DIN933

BS1 = Circular plug-in connector 24V DC (electrical connection)
BEM = Electronics Module
B.LA1 = Additional air port
B.LA2 =Additional Exhaust



9.2 Guth Positioner DIGIPOS

Disassembly

NOTICE

Before reaching into the device or the equipment, please note the operating instructions and the safety instructions for the Guth DigiPos Positioner.

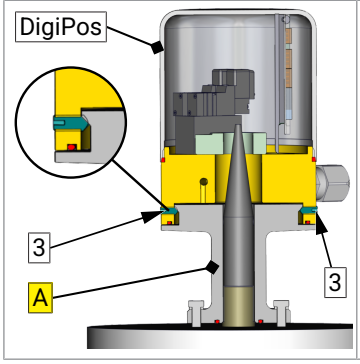
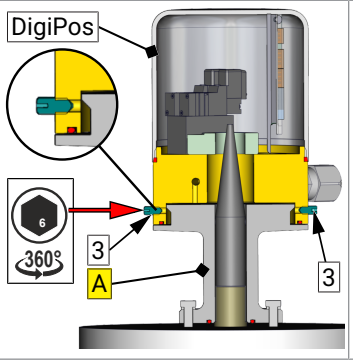
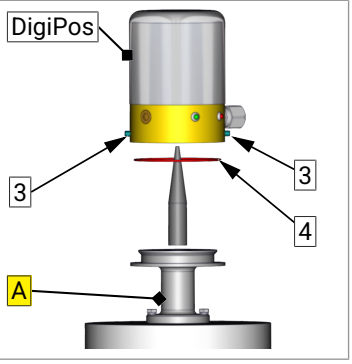
(Operating Instructions for Guth DigiPos Type BA_DP_022012)

⚠ DANGER

Energized components

Electric shock and destruction of the board may occur.

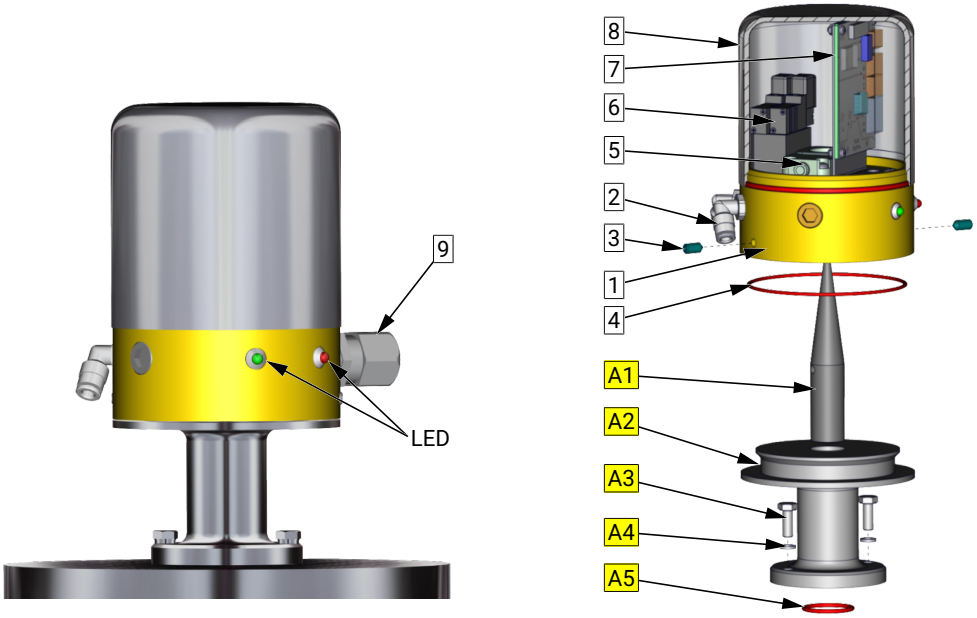
- Before reaching into the device or the equipment, switch off the power supply and secure to prevent reactivation.
- Wear grounding bracelet.
- Observe applicable accident prevention and safety regulations for electrical equipment!

• Disconnect all supply lines from the power supply and disconnect them.	• Loosen the set screws (3) 3-4 turns.	• Remove the positioner (DigiPos) from the adaptation (A). • Remove O-ring (4).
		

Assembly

- Assemble in reverse order.
- Before installation, thoroughly clean and slightly lubricate mounting areas and running surfaces.
- Check the function according to the specified performance data in the operating state.

Art.-No.: 5200 104 571-000 (LA nickelized)
Art.-No.: 5200 104 571-100 (LA stainless steel)
Adaptation (A1 - A5) - DigiPos positioner on control valve with linear actuator
(the Positioner is not include in the mounting kit)

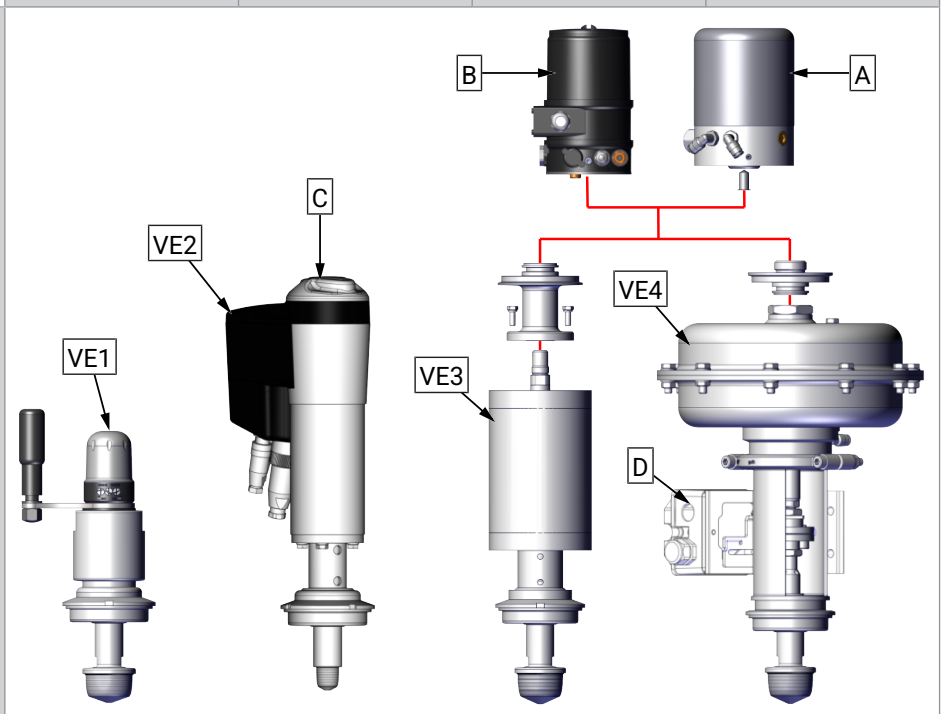


1	Base body	2	Air connection
3	Headless pin	4	O-ring
5	Inductive ring sensor	6	Valve assembly
7	DigiPos Platine	8	Cap
9	Screwed cable gland M20x1/4	A1	Liner
A2	adapter	A3	Screw
A4	Washer	A5	O-ring

10 Drawings and dimensions

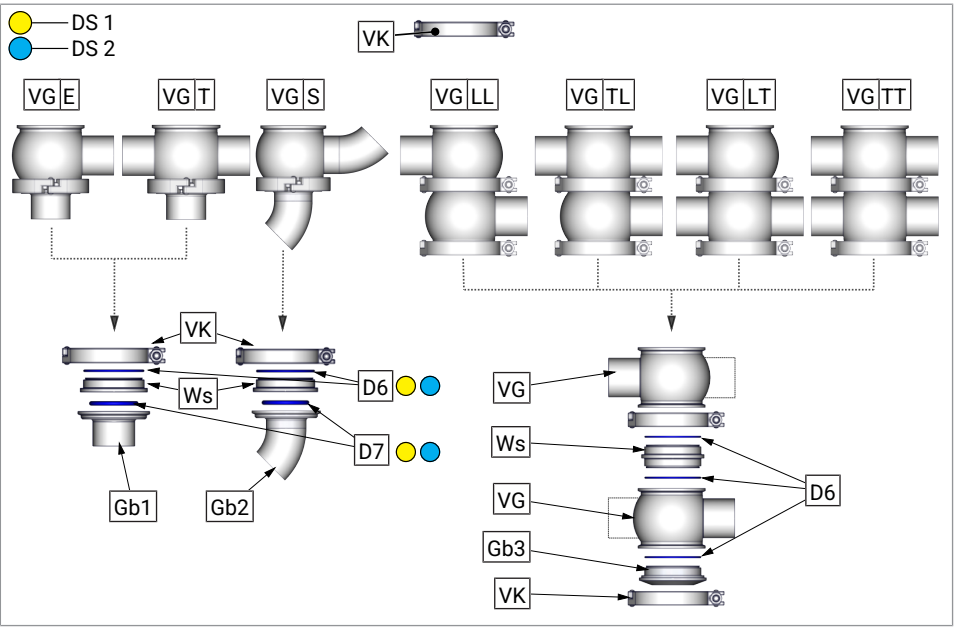
10.1 Drawings

10.1.1 Valve structure

	Manual	electrical	pneumatic	
	with crank handle	with piston actuator	with piston actuator	with diaphragm actuator
positioner A = DIGIPOS B = Bürkert Typ 869x C = Gemü D = Samson Valve insert with Piston actuator VE1 = Hand crank actuator VE2 = Linear actuator electrical VE3 = Linear actuator pneumatical VE 4 = Diaphragm actuator pneumatical				

10.1.2 Body and Body bottom

DS = Seal kit
D6 = O-ring
D7 = O-ring
Gb = Housing bottom
VG = Valve housing
VK = Clamp coupling
Ws = Interchangeable seat



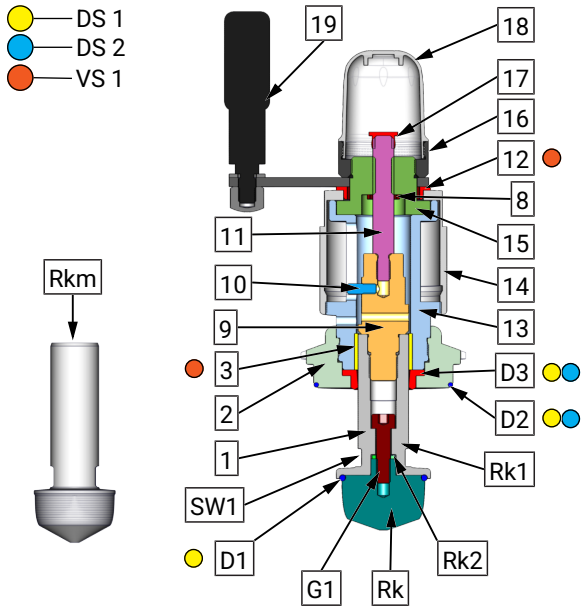
10.1.3 Valve inserts

Design: Manual actuator

- 1 = Piston
- 2 = Insert
- 3 = Plain bearing
- 4 = Lantern
- 5 = Bearing bush
- 6 = Spindle
- 7 = Insert lantern
- 8 = Valve lift stop

(not applicable by Inch-version)

- 9 = Piston rod
- 10 = Set screw
- 11 = Spindle
- 12 = Bearing bush
- 13 = Housing
- 14 = Housing body
- 15 = Guide nut
- 16 = Adapter
- 17 = Cap
- 18 = Hood
- 19 = Crank handle

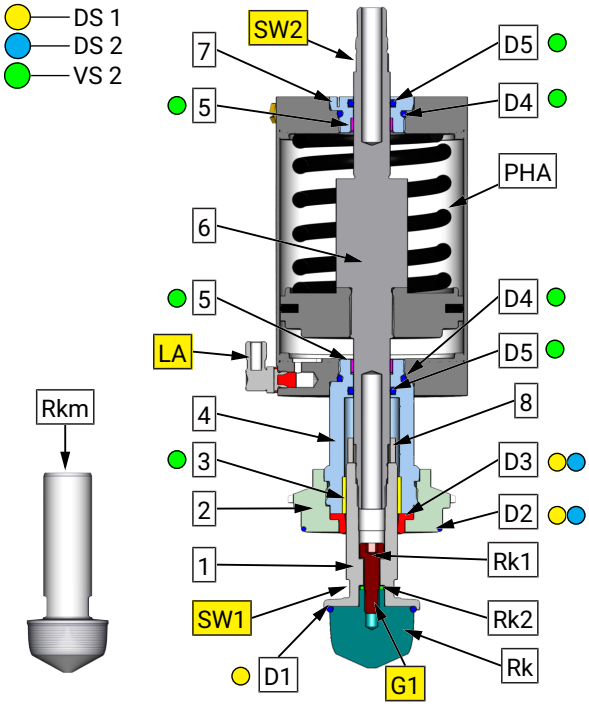


Design: Piston actuator

<u>seals</u>

- D1 = O-ring
- D2 = O-ring
- D3 = Shaft seal
- D4 = O-ring
- D5 = O-ring

- Rkm = Flow cone metallic
- Rk = Flow cone elastomer
- Rk1 = Screw
- Rk2 = Washer
- G1 = Thread connection
  Secure with threadlocker removeable
  (e.g. Loctite 243)
- SW = Wrench size
- PHA = pneum. Actuator



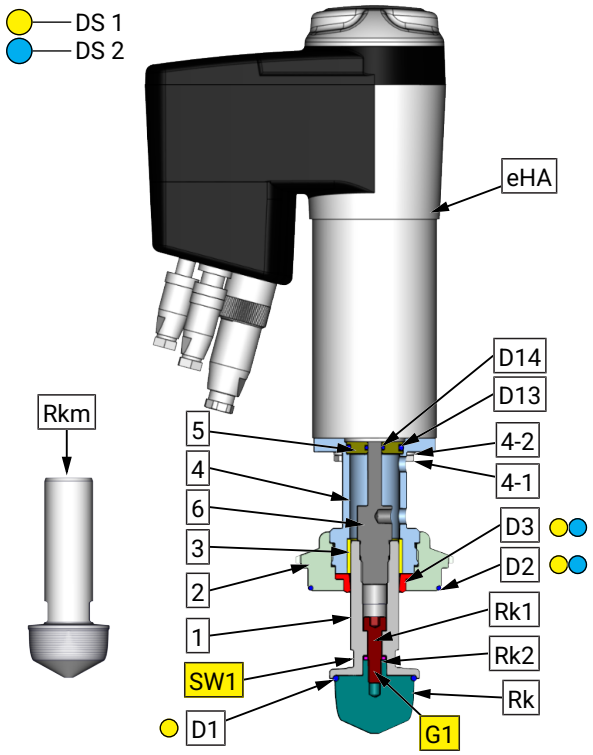
Version: electric linear actuator

- 1 = Piston
- 2 = Insert
- 3 = Plain bearing
- 4 = Lantern
- 4-1 = Screw
- 4-2 = Disc
- 5 = Insert lantern
- 6 = Spindle

<u>seals</u>

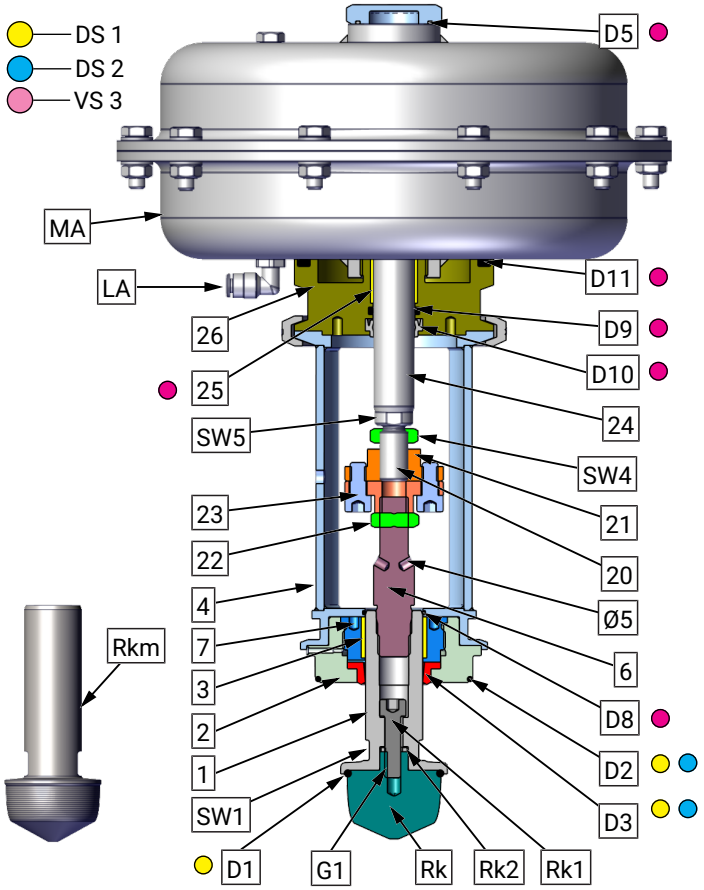
- D1 = O-ring
- D2 = O-ring
- D3 = Shaft seal
- D13 = O-ring
- D14 = O-ring

- Rkm = control cone metallic
- Rk = control cone elastomer
- Rk1 = Screw
- Rk2 = Washer
- G1 = Thread connection
  Secure with threadlocker removeable
  (e.g. Loctite 243)
- SW = Wrench size
- eHA = electric linear actuator



Design: Diaphragm actuator FPG

- 1 = Piston
- 2 = Insert
- 3 = Bearing bush
- 4 = Lantern
- 5 = --
- 6 = Spindle
- 7 = Insert lantern
- 8 - 19 = - -
- 20 = Coupling lower
- 21 = Coupling upper
- 22 = Nut
- 23 = Screw
- 24 = Shaft
- 25 = Plain bearing
- 26 = Adapter flange



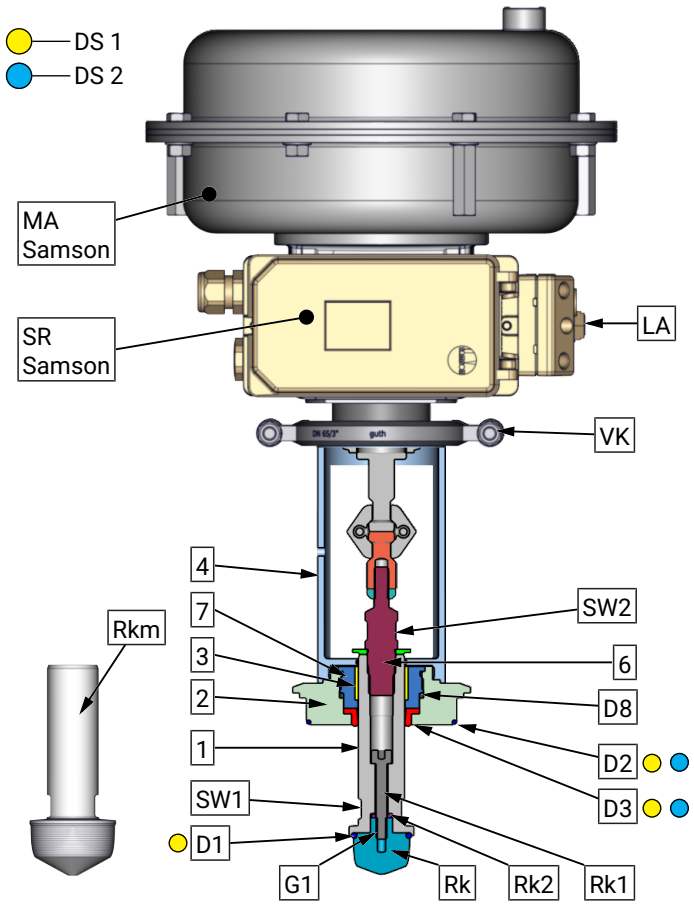
seals

- D1 = O-ring
- D2 = O-ring
- D3 = Shaft seal
- D4 = -
- D5 = -
- D6 = -
- D7 = -
- D8 = O-ring
- D9 = O-ring
- D10 = Lip seal
- D11 = O-ring
- D12 = O-ring

- MA = Diaphragm actuator
- Rkm = Flow cone metallic
- Rk = Flow cone elastomer
- Rk1 = Screw
- Rk2 = Washer
- VK = Clamp coupling
- G1 = Thread connection
  Secure with threadlocker removeable
  (e.g. Loctite 243)

Valve with Diaphragm actuator and Positioner Samson

- 1 = Piston
- 2 = Insert
- 3 = Bearing bush
- 4 = Lantern
- 5 = --
- 6 = Spindle
- 7 = Insert lantern



seals

- D1 = O-ring
- D2 = O-ring
- D3 = Shaft seal
- LA = Air connection
- MA = Diaphragm actuator
- Rkm = Flow cone metallic
- Rk = Flow cone elastomer
- Rk1 = Screw
- Rk2 = Washer
- SR = Positioner
- VK = Clamp coupling

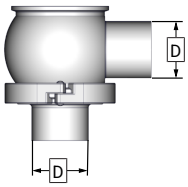
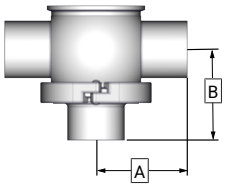
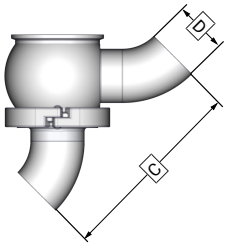
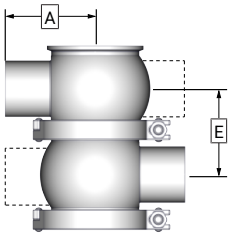
- G1 = Thread connection
  Secure with threadlocker removeable
  (e.g. Loctite 243)

10.2 Dimensions

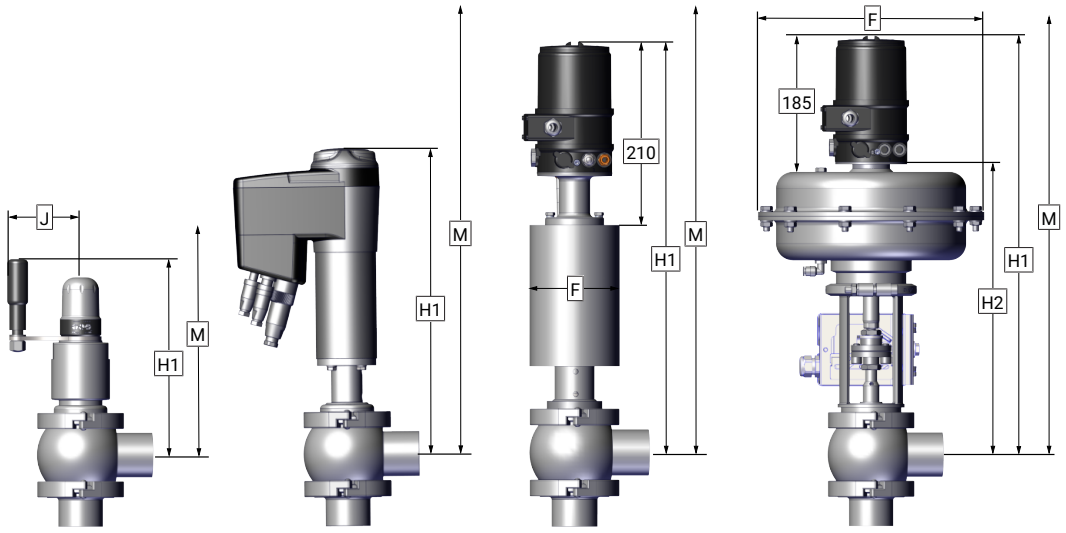
Wrench size (SW)

DN / OD = Nominal size	DN 25 OD 1	DN 40 OD 1½	DN 50 OD 2	DN 65 OD 2½	DN 80 OD 3	DN 100 OD 4	DN 125 OD 5
SW1	-	24					
SW2	17						
SW3	11						
SW4	17						
SW5	22						

Dimension - Housing

Angle housing **(E)**	**T-housing** **(T)**	**Inclined housing** **(S)**	**Double body** **(LL, TL, LT, TT)**
			

Dimension - Valve

Manual drive **Manual**	**el. elevating actuator** **Type: AG0, AG1, AG2, AG3**	**Piston actuator** **Type: H104, H129, H167, H230**	**Diaphragm actuator** **Type: M02, M2, M4, M10** **Type: 3277-175; -355; -394**
			

M = Assembly dimension

Dimension											
DN / OD	**D**	**A**	**B**	**C**	**E**	**Drive**	**F**	**H1**	**H2**	**J**	**M**

Abmessungen											
DN / OD	**D**	**A**	**B**	**C**	**E**	**Antrieb**	**F**	**H1**	**H2**	**J**	**M**
DN 20	Ø 23 x 1,5	65	65	-	-	H104	Ø 104	446	-	-	~550
						3277-175v2	Ø 215	-	404	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG0	-	274	-	-	330
DN 25	Ø 29 x 1,5	75	75	144	57	Manual	-	~224	-	88	-
OD 1	Ø 25,4 x 1,25				54	H104	Ø 104	459	-	-	~560
						H129	Ø 129	459	-	-	~560
						M02	Ø 165	437	287	-	~400
						M2	Ø 270	487	334	-	~640
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG1	-	350	-	-	412
DN 40	Ø 41 x 1,5	85	85	175	69	Manual	-	~230	-	88	-
OD 1½	Ø 38,1 x 1,65				66,1	H104	Ø 104	466	-	-	~560
						H129	Ø 129	466	-	-	~560
						M02	Ø 165	443	293	-	~400
						M2	Ø 270	493	340	-	~650
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	443	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG1	-356		-	-	433
DN 50	Ø 53x 1,5	85	85	189	81	Manual	-	~236	-	88	-
OD 2	Ø 50,8x 1,65				79	H104	Ø 104	472	-	-	~570
						H129	Ø 129	472	-	-	~570
						H167	Ø 167	472	-	-	~570
						M2	Ø 270	505	355	-	~650
						M4	Ø 270	494	341	-	~650
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG1	-	362	-	-	455
DN 65	Ø 70 x 2,0	105	105	215	97	Manual	-	~244		88	
OD 2½	Ø 63,5 x 1,65				91,5	H129	Ø 129	480	-	-	~600
						H167	Ø 167	480	-	-	~600
						H190	Ø 190	480	-	-	~600
						H230	Ø 230	480	-	-	~600
						M2	Ø 270	511	358	-	~660

Abmessungen											
DN / OD	**D**	**A**	**B**	**C**	**E**	**Antrieb**	**F**	**H1**	**H2**	**J**	**M**
						M4	Ø 270	511	358	-	~660
						M10	Ø 400	598	445	-	~720
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	460	-	-
						3277-750v2	Ø 394				
						AG1	-	370	-	-	588
						AG2	-	415	-	-	532
DN 80	Ø 85 x 2,0	115	115	290	112	Manual	-	~252	-	88	-
OD 3	Ø 76,2 x 1,65				104	H129	Ø 129	487	-	-	~620
						H167	Ø 167	487	-	-	~620
						H190	Ø 190	487	-	-	~620
						H230	Ø 230	487	-	-	~620
						M2	Ø 270	519	366	-	~670
						M4	Ø 270	519	366	-	~670
						M10	Ø 400	606	453	-	~740
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG1	-	378	-	-	505
						AG2	-	422	-	-	542
						AG3	-	442	-	-	564
DN 100	Ø 104 x 2,0	130	130	-	131	Manual	-	~261	-	88	-
OD 4	Ø 101,6 x 2,0				129	H129	Ø 129	497	-	-	~650
						H167	Ø 167	497	-	-	~650
						H190	Ø 190	497	-	-	~650
						H230	Ø 230	497	-	-	~650
						M4	Ø 270	540	387	-	~690
						M10	Ø 400	619	466	-	~770
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG2	-	431	-	-	582
						AG3	-	451	-	-	602
DN 125	Ø 129 x 2,0	160	160	-	-	Manual	-	~274	-	88	-
						H190	Ø 190	510	-	-	~690
						H230	Ø 230	510	-	-	~690
						M4	Ø 270	553	400	-	~700
						M10	Ø 400	632	479	-	~880
						3277-175v2	Ø 215	-	-	-	-
						3277-355v2	Ø 280	-	-	-	-
						3277-750v2	Ø 394	-	-	-	-
						AG3	-	464	-	-	650

11 Wearing parts

11.1 Overview - Seal and wearing parts kits

Seal kit - - in product contact		Material	Description
DS 1	a b c	Elastomer / EPDM Elastomer / HNBR Elastomer / FKM	Seal kit product contact elastomer sealing at the elastomer sealing at the control cone
DS 2	a b c	metallic / EPDM metallic / HNBR metallic / FKM	Seal kit product contact with metallic sealing at the control cone

Wear parts kit - Actuator		
VS 1		Wear parts kit for manual operation valves (without positions from the seal kit in product contact)
VS 2		Wear parts kit for pneumatic operation valves with linear actuator (without positions from the seal kit in product contact)
VS 3		Wear parts kit for pneumatic operation valves with diaphragm actuator (without positions from the seal kit in product contact)

Item	Description	DS 1 a / b / c	DS 2 a / b / c	VS 1	VS 2	VS 3
D1	O-ring (EPDM / HNBR / FKM)	x				
D2	O-ring (EPDM / HNBR / FKM)	x	x			
D3	Seal (EPDM / HNBR / FKM)	x	x			
D4	O-ring (NBR)				x	
D5	O-ring (HNBR)				x	x
D6	O-ring (EPDM / HNBR / FKM)	x	x			
D7	O-ring (EPDM / HNBR / FKM)	x	x			
D8	O-ring					x
D9	O-ring					x
D10	Scraper ring (NBR)					x
D11	O-ring					x
D12	O-ring					x
D13	O-ring (EPDM)					
D14	O-ring (EPDM)					
3	Plain bearing (XSM)			x	x	
5	Plain bearing (XSM)				x	
12	Scraper ring (NBR)			x		
25	Plain bearing (XSM)					x

Wearing part set DS1 (elastomeric sealing)

DN OD	K_{VS} Value	Seat-Ø	Seal kit **DS 1a EPDM**	Seal kit **DS 1b HNBR**	Seal kit **DS 1c FKM**
20	0,2	ø 5	9110 010 200-K990	9110 010 200-O990	9110 010 200-S990
25	0,4	ø 6	9110 010 400-K990	9110 010 400-O990	9110 010 400-S990
	1,0				
1“	1,6	ø 12	9110 012 000-K990	9110 012 000-O990	9110 012 000-S990
	2,5				
	4,0				
	7,0	ø 22	9110 017 000-K990	9110 017 000-O990	9110 017 000-S990
	10,0				
40	4,0	ø 12	9110 024 000-K990	9110 024 000-O990	9110 024 000-S990
	7,0	ø 22	9110 027 000-K990	9110 027 000-O990	9110 027 000-S990
1½“	10				
	18	ø 31	9110 029 100-K990	9110 029 100-O990	9110 029 100-S990
50	10	ø 22	9110 035 100-K990	9110 035 100-O990	9110 035 100-S990
	18	ø 31	9110 039 100-K990	9110 039 100-O990	9110 039 100-S990
2“	26	ø 46	9110 033 300-K990	9110 033 300-O990	9110 033 300-S990
	40				
65	18	ø 31	9110 049 100-K990	9110 049 100-O990	9110 049 100-S990
	26	ø 46	9110 043 300-K990	9110 043 300-O990	9110 043 300-S990
2½“	40				
	52	ø 60	9110 047 300-K990	9110 047 300-O990	9110 047 300-S990
	68				
80	26	ø 46	9110 053 300-K990	9110 053 300-O990	9110 053 300-S990
	40				
3“	68	ø 60	9110 057 300-K990	9110 057 300-O990	9110 057 300-S990
	52	ø 72	9110 055 400-K990	9110 055 400-O990	9110 055 400-S990
	85				
	100	ø 81	9110 053 300-K990	9110 053 300-O990	9110 053 300-S990
100	40	ø 46	9110 065 300-K990	9110 065 300-O990	9110 065 300-S990
	52	ø 60	9110 067 300-K990	9110 067 300-O990	9110 067 300-S990
4“	68				
	85	ø 72	9110 065 400-K990	9110 065 400-O990	9110 065 400-S990
	100	ø 81	9110 063 500-K990	9110 063 500-O990	9110 063 500-S990
	120	ø 95	9110 061 700-K990	9110 061 700-O990	9110 061 700-S990
125	85	ø 72	9110 075 400-K990	9110 075 400-O990	9110 075 400-S990
	100	ø 81	9110 073 500-K990	9110 073 500-O990	9110 073 500-S990
5“	120	ø 95	9110 071 700-K990	9110 071 700-O990	9110 071 700-S990
	160	ø 125	9110 075 500-K990	9110 075 500-O990	9110 075 500-S990

Wearing part set DS2 (metallic sealing)

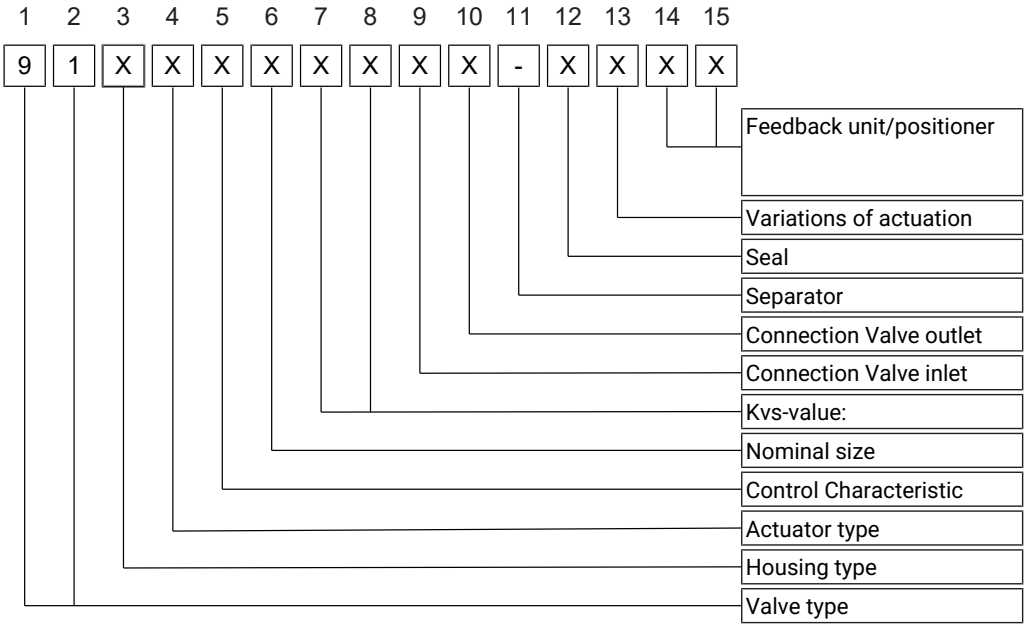
DN OD	K_{VS} Value	Seat-Ø	Seal kit **DS 2a EPDM**	Seal kit **DS 2b HNBR**	Seal kit **DS 2c FKM**
25	0,4 1,0	ø 6	9110 010 400-M990	9110 010 400-Q990	9110 010 400-U990
1“	1,6 2,5 4,0	ø 12	9110 012 000-M990	9110 012 000-Q990	9110 012 000-U990
	7,0 10,0	ø 22	9110 017 000-M990	9110 017 000-Q990	9110 017 000-U990
40	4,0	ø 12	9110 024 000-M990	9110 024 000-Q990	9110 024 000-U990
	7,0	ø 22	9110 027 000-M990	9110 027 000-Q990	9110 027 000-U990
1½“	10				
	18	ø 31	9110 029 100-M990	9110 029 100-Q990	9110 029 100-U990
50	10	ø 22	9110 035 100-M990	9110 035 100-Q990	9110 035 100-U990
	18	ø 31	9110 039 100-M990	9110 039 100-Q990	9110 039 100-U990
2“	26 40	ø 46	9110 033 300-M990	9110 033 300-Q990	9110 033 300-U990
65	18	ø 31	9110 049 100-M990	9110 049 100-Q990	9110 049 100-U990
	26	ø 46	9110 043 300-M990	9110 043 300-Q990	9110 043 300-U990
2½“	40				
	52 68	ø 60	9110 047 300-M990	9110 047 300-Q990	9110 047 300-U990
80	26 40	ø 46	9110 053 300-M990	9110 053 300-Q990	9110 053 300-U990
3“	68	ø 60	9110 057 300-M990	9110 057 300-Q990	9110 057 300-U990
	52 85	ø 72	9110 055 400-K990	9110 055 400-Q990	9110 055 400-U990
	100	ø 81	9110 053 300-M990	9110 053 300-Q990	9110 053 300-U990
100	40	ø 46	9110 065 300-M990	9110 065 300-Q990	9110 065 300-U990
	52	ø 60	9110 067 300-M990	9110 067 300-Q990	9110 067 300-U990
4“	68				
	85	ø 72	9110 065 400-M990	9110 065 400-Q990	9110 065 400-U990
	100	ø 81	9110 063 500-M990	9110 063 500-Q990	9110 063 500-U990
	120	ø 95	9110 061 700-M990	9110 061 700-Q990	9110 061 700-U990
125	85	ø 72	9110 075 400-M990	9110 075 400-Q990	9110 075 400-U990
	100	ø 81	9110 073 500-M990	9110 073 500-Q990	9110 073 500-U990
5“	120	ø 95	9110 071 700-M990	9110 071 700-Q990	9110 071 700-U990
	160	ø 125	9110 075 500-M990	9110 075 500-Q990	9110 075 500-U990

Wearing part set - Actuator

Kind of actuation		Wear parts kit Actuator 1	Wear parts kit Actuator 2	Wear parts kit Actuator 3
manual actuator	-	9111 000 000-991		
Linear actuator	ø104 ø129 ø167 ø190 ø230		9112 000 001-991 9112 000 002-991 9112 000 003-991 9112 000 004-991 9112 000 005-991	
Diaphragm actuator	M02 M2 M4 M10			9115 000 000-991 9115 000 002-991 9115 000 004-991 9115 000 006-991

12 Classification

12.1 Structure of Order Number



13 Appendix

13.1 Declaration of incorporation

Declaration of Incorporation

according to Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006

Manufacturer:
KIESELMANN GmbH
Paul-Kieselmann-Str. 4-10
D-75438 Knittlingen

We declare that the following pressure equipment

Designation	Function
Pneumatic Linear actuator	pneumatically operation of valves
Pneumatic Quarter-turn actuator	pneumatically operation of valves
Butterfly Valve (pneumatically operated)	Separation of medium flow
Ball Valve (pneumatically operated)	Separation of medium flow
Single seat Valve (pneumatically operated)	Separation of medium flow
Changeover Valve (pneumatically operated)	Separation of medium flow
Double-Seat mixproof Valve (pneumatically operated)	Separation of medium flow
Control Valve (pneumatically operated)	Regulation of medium flow
Throttling Valve (pneumatically operated)	Regulation of medium flow
Tank Outlet Valve (pneumatically operated)	Separation of medium flow
Sampling Valve (pneumatically operated)	Separation of medium flow

complies with the definition of an „incomplete machine“ according to Article 2 of the European Machinery Directive 2006/42/EG, when fitted in or merged with other machines or incomplete machines which also comply with the provision of the Directive.

Applied harmonized standards:

Directive 2014/68/EU
EN ISO 12100

Person responsible for documentation:

Achim Kauselmann
Documentation / Development
KIESELMANN GmbH

Knittlingen, 10.10.2020

i.V. Uwe Heisswolf
Head of Development

KIESELMANN
FLUID PROCESS GROUP

Notes

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