

Operating and mounting manual

Safety blow off valve

gas – pneumatic valve

EPV(O)...R

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1.0 General Remarks

This operating manual includes instructions to assemble and operate the valve in the prescribed and safe way. **Additionally and in accordance with the solenoid drive of the control valve (805), the relevant manufacturer's operating instructions (BTA) must be taken into consideration.**

If any difficulties appear that can not be solved by means of the operating manual, further information may be demanded from the manufacturer.

This operating manual is in accordance with the relevant valid EN safety standards and the valid prescriptions and rules of the Federal Republic of Germany.

If the solenoids are used abroad of the FRG, the operator and/or the person who is responsible for the plant concept must take care that the valid national rules are met.

The manufacturer reserves the right of any technical change and improvement.

The use of these operating instructions suppose the qualification of the user according to paragraph 2.3 "qualified staff".

The operating staff must be trained in accordance with the operating instructions. The operating manual must always be available at the location where used.

1.1 Valve data

Manufacturer:

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Designation

Directly functioning, currentless open, spring-loaded gas release valve with pneumatic drive.

Type test acc. to 90/396/EEC
DIN EN 161
DIN 3394-1

Prod. Id. Nr. CE-0085AS0513
Gr. 2
Kl. 0

Working pressure

1-4 EPV(O)..R	0 - 1bar
3-4 EPV(O)..R	0 - 3bar
5-4 EPV(O)..R	0 - 5bar
6-4 EPV(O)..R	0 - 6bar
10-4 EPV(O)..R	0 - 10bar
16-4-EPV(O)..R	0 - 16bar

Medium temperature: -20°C to + 60°C

Working pressure 63-4-EPV(O)...R 0 - 63bar

Medium temperature: -20°C to + 150°C

Ambient temperature: -20°C to + 60°C

Fitting position: vertical or horizontal drive.

Switching cycles: 1000 cycles/h

Flange connection measures acc. to DIN EN 1092-2 / ANSI

Flange DN	PN	15	20	25	40	50	65	80	100	150	Design pressure PS = PN
Flange ANSI		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	
1-4-EPV(O)..R	16	-	-	-	-	-	-	O	-	O	PN 6
3-4-EPV(O)..R.	16	-	-	-	O	-	-	-	O	-	PN 6
5-4-EPV(O)..R	16	-	-	-	-	-	-	O	-	-	PN 10
6-4-EPV(O)..R	16	-	-	-	-	-	O	-	-	-	PN 10

Flange DN	PN	15	20	25	40	50	65	80	100	150	Design pressure PS = PN
Flange ANSI		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	
10-4-EPV(O)..R.	16	O	O	X	O	X	X	-	-	-	PN 16
16-4-EPV(O)..R	25-40	-	-	-	-	-	O	O	-	-	PN 25

Threaded connection dimension to DIN 2999 Part 1

Gewinde G	PN	3/4	Design pressure PS = PN
10-4-EPV(O)..R.	10	X	PN 10
63-4-EPV(O)..R	63	X	PN 63

X Type test acc. to 90/396/EEC, O Acceptance test certificate 3.2 possible, - not available

Control medium: Air, nitrogen -20°C up to + 60°C
Control pressure: Min. control pressure, second number on type plate
 Max. control pressure 10bar, e.g. 4-10bar
Electric connection control valve: Notice instructions on type plate of control valve

1.2 Application

The UNI Geräte gas – release – pneumatic valves EPV(O)..R are used to control gas fittings for leakages and to blow off excess or leak gas for example according, to DIN EN 746-2.

The valves are suitable for gases of the 1st, 2nd and 3rd gas families to G260 and for neutral gases and as a variant with material design for aggressive gases such as e.g. biogas, sewage plant gas or dump gas to G262.

If used in other cases, the operator must carefully check if construction/design of valve, accessories and materials are suitable for the new application. The range of application is subject to the responsibility of the plant planner. The service life of the valve is 20 years.

2.0 Danger Notices

2.1 Safety terms

The signal terms DANGER, CAUTION und NOTICE are used in this operating manual in case of notices concerning special dangers, or for unusual information, requiring a special marking.



DANGER! means that in case of non-observance there is danger to life and/or considerable damage.



CAUTION! means that in case of non-observance there is danger of injury and/or damage.



NOTICE! means that attention is drawn to technical correlations/connections.

Observance of other, not especially marked notices concerning transport, assembly, operation and maintenance and other data (in the operating manual, product documentation and at the unit itself) is also essential, in order to avoid disturbances that might affect direct or indirect damage to property or injury to persons.

2.2 Safety notice

Non observance of safety instructions can lead to loss of any claim for damages.

Non observance can lead to the following mentioned dangers:

- Failure of important functions of the valve/plant
- Endangering of persons by electrical or mechanical influences.
- Protection against accidental contact for moving parts may not be removed as long as the valve is in operation.
- Leakage of dangerous media (e.g. explosive, toxic, hot) must be removed in the way that there is no danger for persons or environment. Laws and regulations must be observed.

2.3 Qualified staff

These are persons who are familiar with erection, assembly, starting, operation and maintenance of the product and who have special qualifications acc. to their activities and functions, e.g.:

- Instruction and obligation to carry out and meet all regional and in-house orders and requirements.
- Education or instruction according to the safety engineering standards in use and maintenance of adequate safety and working protection equipment.
- Training in first aid.

2.4 Unauthorized modification and spare part production

Modification or changes of the valve are only allowed after agreement of the manufacturer. Original drawings and accessories authorized by the manufacturer are for safety purposes. The use of other parts or unauthorized constructive changes at the valve by third persons may cancel and abolish the manufacturer's liability for resulting consequences.

2.5 Unauthorized operation

Operational reliability of the delivered valve is only guaranteed in case of determined use in accordance to paragraph 1 of the operating manual. **The application limits mentioned on the type sign may on no account be exceeded.**

2.6 Safety information for the use in explosion-prone areas guideline 94/9/EC

- The temperature of the medium must not exceed the respective temperature class, and respectively, the respective maximum permitted medium temperature as per operation guideline.
- If the valve is heated (e.g. heating jacket), care must be taken, that the specified temperature class is kept in the time.
- The valve must be connected to the ground.
In the case most simple this can be realized via pipe screws by means of tooth disc.
Otherwise the connection to the ground must be implemented by other measures e.g. cable links.
- Control valves, electrical and electrical/mechanical drives as well as sensors must undergo a separate conformity check as per ATEX. In doing so the respective safety and explosion protection information in the operation instructions are to taken into special consideration.

Furthermore we point out the guideline 95/C332/06(ATEX 118a), which include the minimum regulations for the improvement of the health-related situation and the safety of the employees, who might be jeopardized by an explosive atmosphere.

3.0 Handling

3.1 Transport

For any transport works, the generally recognised technical rules and standards as well as rules for prevention of accidents must be observed.

In case of transport, storage and stopping, the flange protection caps must be mounted at both valve flanges.

The goods to be transported must be carefully treated. During transport, the valve must be protected against strokes, impacts or vibration. The coat of lacquer may not be damaged. Transport temperature is -20°C up to $+60^{\circ}\text{C}$.

Never transport the valve at pneumatic drive pipings / tubings or components. Transport the valve at provided transport angles (256) from KA120 or ring nut (926) from KA160.

Transport the valve in a box or on a pallet with soft base and put it smoothly on even floor. **Never put valve on the piping/tubing or its components.**

The goods must be checked on completeness and transport damage. See also section 9.0

3.2 Storage

If the valve is not installed immediately after delivery, it must be stored properly.

- Storage temperature -20°C up to + 60°C, dry and clean.
- The lacquer protects against corrosion in neutral dry atmosphere. Do not damage colour.
- In humid rooms, a drying agent or a heating resp. is necessary because of condensation of water.

Requirements according to DIN 7716 (products made of caoutchouc and rubber) must be met.

3.3 Handling before mounting

- In case of valve with protection caps, they must be removed before being mounted!
- Protect against atmospheric influences such as humidity (otherwise use drying agent).
- Appropriate treatment protects against damage.

4.0 Product Description

The gas – release– pneumatic valve EPV(O)..R is an automatically directly controlled, currentless open, fast opening blow-off valve according to DIN EN 13611, DIN 3394 and DIN 161 with pneumatic drive.

The drive is actuated by a 3/2 way control valve with solenoid drive, type 10-EVD 2 or 10-EVD 2/2401 resp.

The sectional drawing part 11.1 in Fig. 1, 2, 3 and 4 shows the valve construction.

4.1 Funktion

On opening the 3/2 way control valve (805) the control medium flows under the drive piston (217) via connection 3 → 2. The control medium presses the drive piston (217) against the pressure spring (503) and closes the pressurized valve disc (200) via the valve spindle (205) (200). The valve is closed.

The valve opens due to shutting off, power failure or interruption of the energy supply to the control valve (805). The compressed control medium in the pneumatic drive is released via the quick venting mechanism (601), the sound absorber (600) and the control valve (805). The drive KA70 is only relieved via the control valve (805).

4.2 Technical data

Opening times: 0,7 – 1s depends upon nominal width

Closing times: < 1s

Drive types and air consumption in standard litre (NL) per connection at 4 bar control pressure.

Flange DN Flange ANSI	15 1/2"	20 3/4"	25 1"	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	150 6"
1-4-EPV(O)..R	-	-	-	-	-	-	KA 70 1 NL	-	KA 120 5 NL
3-4-EPV(O)..R	-	-	-	KA 70 1 NL	-	-	-	KA 120 5 NL	-
5-4-EPV(O)..R.	-	-	-	-	-	.	KA 120 5 NL	-	-
6-4-EPV(O)..R.	-	-	-	-	-	KA 120 5 NL	.	-	-

Flange DN Flange ANSI	15 1/2"	20 3/4"	25 1"	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"	150 6"
10-4-EPV(O)..R	KA 70 1 NL	KA 70 1 NL	KA 70 1 NL	KA 120 5 NL	KA 120 5 NL	KA 120 5 NL	-	-	-
16-4-EPV(O)..R	-	-	-	-	-	KA 160 10 NL	KA 200 22 NL	-	-

Connection G	3/4
10-4-EPV(O)..R	KA 70 1 NL
63-4-EPV(O)..R	KA 70 1 NL

Air consumption for 10 bar, multiply control pressure table values by 2.2

Max. valve loading by pipe power to DIN EN 161

The indicated moments may not work longer than 10s.

DN		40	50	65	80	100	125	≥150
Torsion	Nm	200	250 ¹⁾	325 ¹⁾	400 ¹⁾	-	-	-
Bending	Nm	610	1100	1600	2400	5000	6000	7600

¹⁾ Not valid in case of valves with flanges

Starting torque, pipe screws greased

DN		40	50	65	80	100	125	≥150
Torque	Nm	50	50	50	50	80	160	160

Starting torque, product screws and nuts greased

Screw		M6	M8	M10	M12	M16	M20	M24
Torque	Nm	5	11	22	39	70	110	150

4.3 Marking

The type sign on the pneumatic drive has the following information:

- Fabricator
- Valve type, nominal width, pressure and temperature indication, fitting position
- Year of construction/ production no.
- Product ID No. to 90/396/EEC
- Valve class and valve group acc. to DIN EN 161, DIN 3394-1
- CE-sign and no. of relevant location to 97/23/EC
- Fluid group and test pressure PT to 97/23/EC
- Pneumatic drive type
- Control medium p_{min} and p_{max} for control medium

Refer also to section 10.0.

5.0 Installation

5.1 Warning of dangers during installation, operation and maintenance



DANGER!

Safe operation of the valve can only be guaranteed if it is installed, commissioned and maintained by qualified personnel (see point 2.3 "Qualified staff") correctly and in observance of the warnings in this operating manual. Apart from that, the operation safety order and the qualified use of tools and protection equipment must be guaranteed. The operating instructions for the valve must be observed during all work on or with the valve. Failure to observe these instructions may result in injury or in damage to the valve or other installations.

When the valve is used as a final sealing element, a safety precaution e.g. blanking disc, blind flange, etc., in accordance with the code of practice of the German Technical and Scientific Association for Gas and Water (DVGW) is recommended during all repair work.

5.2 Installation

Apart from the general installation guidelines, the following points should be observed:



NOTICE!

- Remove the flange covers.
- The inside of the valve and the pipeline must be free from foreign particles.
- Observe the installation position in relation to the flow direction, see markings on the valve.
- Centre gaskets between the flanges.
- The connecting flanges must be aligned.
- Ensure that none of the components is strained during installation.
- The valve must not be used as a fixed point; it is supported by the pipework system.
- Protect valves from soiling, particularly during construction work.
- Thermal expansion of the pipework must be equalized using compensators.

In accordance with DIN 3394-1 and DIN EN 161, a dirt trap must be installed upline of any safety shut-off device. The mesh size of the screen must be smaller than 1.5 mm and not allow a test mandrel of 1 mm diameter to pass. Where two safety shut-off devices are combined to form a group, one dirt trap installed upstream of the first valve is sufficient. The dirt trap must be installed not too far upline of the first valve. The UNI-Geräte dirt traps of the SFR Series are approved for use together with the gas pneumatic valves in accordance with 90/396/ECE.

The valve can be installed with vertical or horizontal pneumatic drive. The solenoid drive of the control valve should preferably be installed with vertical drive. The control air must be connected at connection 3. We recommend an air filter in front of the control valve. Mesh size 40 µm.



NOTICE!

Please observe the control valve operating instructions (BTA).

6.0 Operation



DANGER!

Before commissioning a new installation or before starting up an installation again after repairs or modifications, ensure:

- The proper completion of all installation and assembly work!
- Commissioning only by “qualified staff” (see point 2.3).
- Installation or repair of existing guards and protection equipment.

6.1 Commissioning

- Before commissioning, check the data on material, pressure, temperature and flow direction with the layout plan of the pipework system.
- Depending on the field of application, the local regulations have to be observed, e.g. the operation safety order.
- Residues in the pipework and the valve (dirt, weld beads, etc.) will inevitably result in leaks.
- Leakage inspection of the installed valve.

6.2 Shutting down

- Depending on the field of application, the local regulations have to be observed, e.g. the operation safety order.

6.3 Maintenance

Gas – pneumatic valves have to be checked at regular intervals for proper function and internal leak tightness. The intervals for regular inspections have to be defined by the operator according to the operating conditions. UNI-Geräte recommends an internal visual inspection once a year and an overhaul of the valve after 2 years or after the following number of switching cycles at the latest:

Application temperature	DN ≤ 25	≤ DN 80	≤ DN 150	> DN 150
≤ 25°C	150 000	75 000	25 000	20 000
> 25°C	50 000	25 000	25 000	5 000

6.4 Putting back into operation

When putting a valve back into operation, ensure that all the necessary steps described in section 5.2 (Installation) and section 6.1 (Commissioning) are repeated.

7.0 Troubleshooting

7.1 Detection of defects



DANGER!

Be sure to observe the safety instructions during troubleshooting.

If the malfunctions cannot be remedied using the following **“Troubleshooting plan (7.2)”** please contact the manufacturer.

In the event of faults in the function or operating behaviour of the valve, check whether the installation work was carried out and completed as described in this operating manual. Depending on the field of application, the operation safety order must be observed.

Check the data on material, pressure, temperature, voltage and flow direction with the layout plan of the pipework system. In addition, check whether the operating conditions correspond to the technical data in the data sheet or on the rating plate.

7.2 Troubleshooting plan

Malfunction	Possible causes	Remedy
No flow	Pneumatic drive does not open	Switch off control valve (805) Clean sound absorber (600)
	Flange covers were not removed	Remove flange covers
Low flow rate	Obstruction in the pipe system	Check pipe system
Valve leaking at seat, no internal tightness	Valve disc sealing (400) damaged by external particles	See section 8 or replace valve
No external tightness	Gaskets damaged	See section 8 or replace valve
Valve closes too slowly	Ventilation boring in spring cap (112) closed	Open boring
	Control pressure too low	Check control pressure
	Reduced conductor cross sections	Replace folded control lines
Valve opens too slowly	Dirt in control line	Clean sound absorber (600) Clean vent line
		Control valve does not open
Valve does not close	Dirt in control line	If necessary, clean filter in control line
	Reduced conductor cross sections	Replace folded control lines
	Screws not tightened uniformly, mating flanges not aligned	Align pipework. Install new valve



NOTICE!

Observe section 10.0 before all installation and repair work

Observe section 6.4 when putting the valve back into operation!

8.0 Dismantling of the Valve

In addition to the general installation guidelines and the operation safety order, the following points must also be observed:



DANGER!

- Depressurised pipework system
- Cooled medium
- Emptied installation
- Vent pipework systems containing corrosive, inflammable, aggressive or toxic media
- Have dismantling work carried out only by qualified staff (see point 2.3)

8.1 Replacement of wear parts

Shut down the valve as described in section 6.2.



DANGER!

Opening of pneumatic drive.

Spring cap is under spring tension. At least, two studs (236) must be permanently screwed in the spring cap.

Open shut-off valve and unscrew it. Remove two opposite studs and replace by threaded rods (see table).

Drive size	KA70	KA120	KA 160	KA200	KA250
Threaded rod	M6 x 250	M10 x 450	M12 x 450	M16 x 500	M20 x 750

Before loosening the two last nuts (901/1), tighten the nuts at the threaded rods hand-tightly. Loosen the studs (236) together with the nuts (901/1) and remove them. Then loosen and remove the nuts of the threaded rods.



NOTICE!

First, the spring cap (112) is pressed against the nuts of the threaded rod.

Remove threaded rods and spring cap (112). Disassemble spring guide pin (204), pressure springs (503) and pneumatic cylinder (111). Loosen nut (901/2). Remove spring disk (216), drive piston (217) and sealing piece (226).

Loosen hex. socket screw (910). Pull off separator (110) and spindle guide (212/2) via the valve spindle (205).

Flange version up to DN 100

Loosen hex. head screws (900). Pull housing flange (108), with valve spindle (205) and valve disc (200/1) completely out of the valve housing (100).

All parts marked as wear and tear parts are to be replaced.

Check valve spindle (205) for scoring and replace by a new one if necessary.

Check valve disc (200/1) with valve sealing (400) for damages and replace by a new one if necessary.

To replace the valve disc completely (200/1, 400) drive cotter pin (903) out of valve spindle (205). By turning it pull off the valve spindle (205) from the valve piece (202).



NOTICE!

Do not damage valve spindle (205) during de-installation, use existing key surface.



DANGER!

After pulling off of the valve piece (202), the valve spindle (205) must be pinned to the valve piece (202) by means of a cotter pin (903). If necessary the bore for the cotter pin (903) must be drilled. Up to three bores may be drilled into the valve spindle (202).

Assemble the valve in the reverse order to the dismantling.

Flange version from DN 125 onwards

Loosen hex. head screws (900). Pull housing flange (108), with valve spindle (205) and valve disc (200/1) completely out of the valve housing (100).

All parts marked as wear and tear parts are to be replaced.

Before demounting the valve spindle (205) loosen setscrew (941/1). The valve spindle (205) is de-installed by loosening the spindle nut (219).



NOTICE!

Two-piece ring (218) falls out.

Check valve spindle (205) for scoring and replace by a new one if necessary.

Check valve disc (200/1) with valve sealing (400) for damages and replace by a new one if necessary.

To replace the valve disc completely (200/1, 400) loosen setscrew (941/2) and unscrew plate stop (242) from the valve disc mounting (241).



DANGER!

On completely replacing of the valve disc (400, 200/1) tighten plate stop (242) and newly drill the bore for the setscrew (941/2) with a 5mm drill. Lock the plate stop (242) with the setscrew (941/2).

Assemble the valve in the reverse order to the dismantling.

Thread version 10-4-EPV(O)...R

Loosen and remove housing nut (101). Completely pull valve spindle (205) with valve disc (200) out of the valve housing (100).

Thread version 63-4-EPV(O)...R

Loosen and remove hex. head screw (900) with lock washer (905/1). Pull valve spindle (205) and valve disc (200/2) and spindle guide (212/1) out of the valve housing (100). Dismount the spindle guide (212/1) from the valve disk (200/2).

All parts marked as wear and tear parts are to be replaced.

Check valve spindle (205) for scoring and replace by a new one if necessary.

Check valve disc (200/1 resp. 200/2) with valve sealing (400) for damages and replace by a new one if necessary.

To replace the valve disc completely (200/1 resp. 200/2, 400) unscrew the valve disc (200/1 resp. 200/2) from the valve spindle (205).



NOTICE!

Lock valve spindle (205) and valve disc (200/1 resp. 200/2) with Loctite 245 or equivalent screw lock material.

Assemble the valve in the reverse order to the dismantling.

Grease the valve spindle (205) in the sector of the lip-rings (404) and in the area of the two-piece ring (218) with lubricant Staburags N32 or equivalent material (DVGW-authorization).

Grease the pneumatic cylinder (111) in the sector of the drive piston (217) with lubricant Staburags NBU 30.



CAUTION!

Install wear parts carefully and properly and do not damage them during assembly.

Examine the valve for internal and external leaks in accordance with DIN 3394-1 and finally carry out a function test.

9.0 Warranty

Scope and period of the warranty is specified in the edition of the “General Terms of Business of the UNI-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH” valid at the time of delivery or else in the purchase agreement.

We warranty that the valve is free from faults in line with the state of the art and for the confirmed field of application.

No warranty claims will be accepted for damage resulting from improper use or failure to observe these operating and installation instructions, the statutory accident prevention regulations, the EN, DIN and VDE standards and other codes and regulations.

Warranty claims will also not be accepted for damage occurring during operation due to operating conditions deviating from those specified in the data sheet or in other agreements.

Justified complaints will be remedied by reworking by us or specialist companies authorized by us.

Claims going beyond the scope of the warranty will not be accepted. The customer shall have no right to the supply of a replacement valve.

Maintenance work, installation of parts from other manufacturers, any modifications to the design and natural wear are not covered by the warranty.

Transport damage must be reported not to us but **without delay** to your responsible goods handling company, the railway company or the shipping agent as otherwise all claims for damages against these companies will be voided.

10.0 Explanation on Codes and Directives

The Commission of the European Union has laid down common directives for the free trading of goods within the Union specifying minimum requirements for safety and health protection. The CE symbol confirms that products comply with the EU directives, i.e. in conformity with the relevant, in particular harmonised standards. Directives 90/396/EEC, 2006/42/EC and 97/23/EC are of relevance for the gas pneumatic valve (mechanical part).

Notes on Directive 90/396/EEC (Appliances Burning Gaseous Fuels):

The valves have been developed, manufactured and tested in accordance with harmonised standard DIN EN 161 (DIN 3394-1, DIN 3391) and comply with the relevant requirements of the Union Directive 90/396/EEC. Unless otherwise stated separately, this has been confirmed by a type test.

Notes on Directive 2006/42/EC (Machinery Directive):

The valves have been developed, manufactured and tested in accordance with Directive 98/37/EC.

Notes on Directive 97/23/EG (Pressure Equipment Directive, DGRL):

It has been confirmed that the quality assurance in design control, manufacture and final acceptance of the manufacturer, UNI-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH, satisfy the requirements of 98/23/EC Annex III Module H. The gas pneumatic valves comply with the fundamental requirements of Directive 97/23/EC. Valves with permissible working pressures ≤ 0.5 bar, DN ≤ 25 and all products certified in accordance with category I and with 94/396/EEC are not covered by 97/23/EC. Only products covered by DGRL and classified in category I or higher may be marked in accordance with 97/23/EC. Fluid group 1 includes explosive, inflammable and toxic media. Fluid group 2 includes media not belonging to fluid group 1.

The control valve (805) with solenoid drive comply with the directives 2006/95/EC and 2004/108/EC.

Notes on Directive 2006/95/EC (Low Voltage Directive):

The drives have been developed, designed and manufactured in accordance with standard "Electromagnetic Devices" DIN EDV 0580. The requirements of the Low Voltage Directive that is applicable for rated voltages from 50 to 1000 V AC and 75 to 1500 V DC are therefore also satisfied.

Note on Directive 2004/108/EC (EMC Directive):

The magnet fulfil the requirements of the product family standards EN 55014-1,-2 , EN 61000-3-2, -3-3 for the industrial sector as well as for the sectors of housing, business and trade in small businesses. When using AC and DC versions, the user must provide a suitable mains filter (e.g. X capacitor 47 nF) at the connection to the mains power supply in order to suppress the physical mains-borne turn-off interference of the solenoid coil.

Solenoid drives as drive elements for valves do not represent independently operated devices in the sense of the EMC Directive and are only further processed by specialist companies or are installed in a machine. Commissioning is not permitted until it has been determined that the whole machine or plant complies with the provisions of the EMC Directive.

Note concerning ex-guideline 94/9/EC (explosion guideline ATEX):

The product is not subject to guideline 94/9/EC, since due to the loads occurring during practical operation, there is no effective source of ignition even in case of an error case to be assumed. This also applies for spring-loaded components, like for example the pneumatic drive. In case of electric drives, sensors or other electric components the application as per 94/9/EC is to be checked separately.

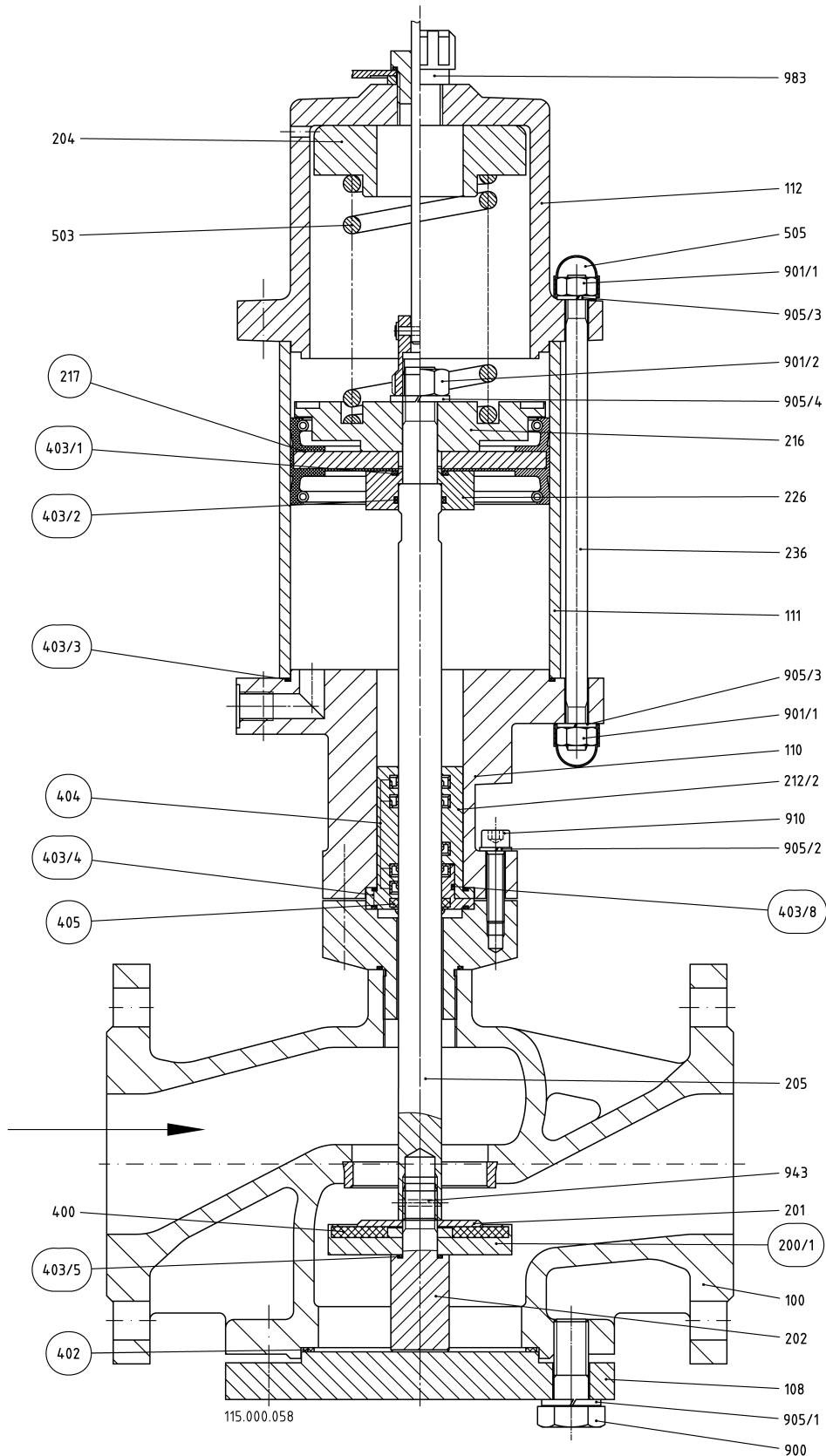
National Codes and Directives

For the use of safety shut-off devices in accordance with DIN EN 12952-8 or DIN EN 746, the requirements of DIN EN 161 and DIN 3394-1 have to be satisfied. This is confirmed by a type test or by an acceptance test certificate to EN10204-3.2.

Thread valves may be installed as follows:

DIN EN 746-2		DIN EN 12952-8	TRD 412		
Pressure bar	Nom. dia.	Nom. dia.	Pressure bar	Nom. dia.	Comment
$\leq 0,1$	$\leq G 3$	$\leq G 2$	≤ 4	$\leq G 2$	
≤ 2	$\leq G 2$		> 4	$\leq G 1$	Metal to metal joint
≤ 5	$\leq G 1$				

11.0 Sectional Drawing
11.1 Fig. 1 Flange design



O = Wearing parts

Fig. 2 Thread design 10-4-EPVO 10-4R...(special)

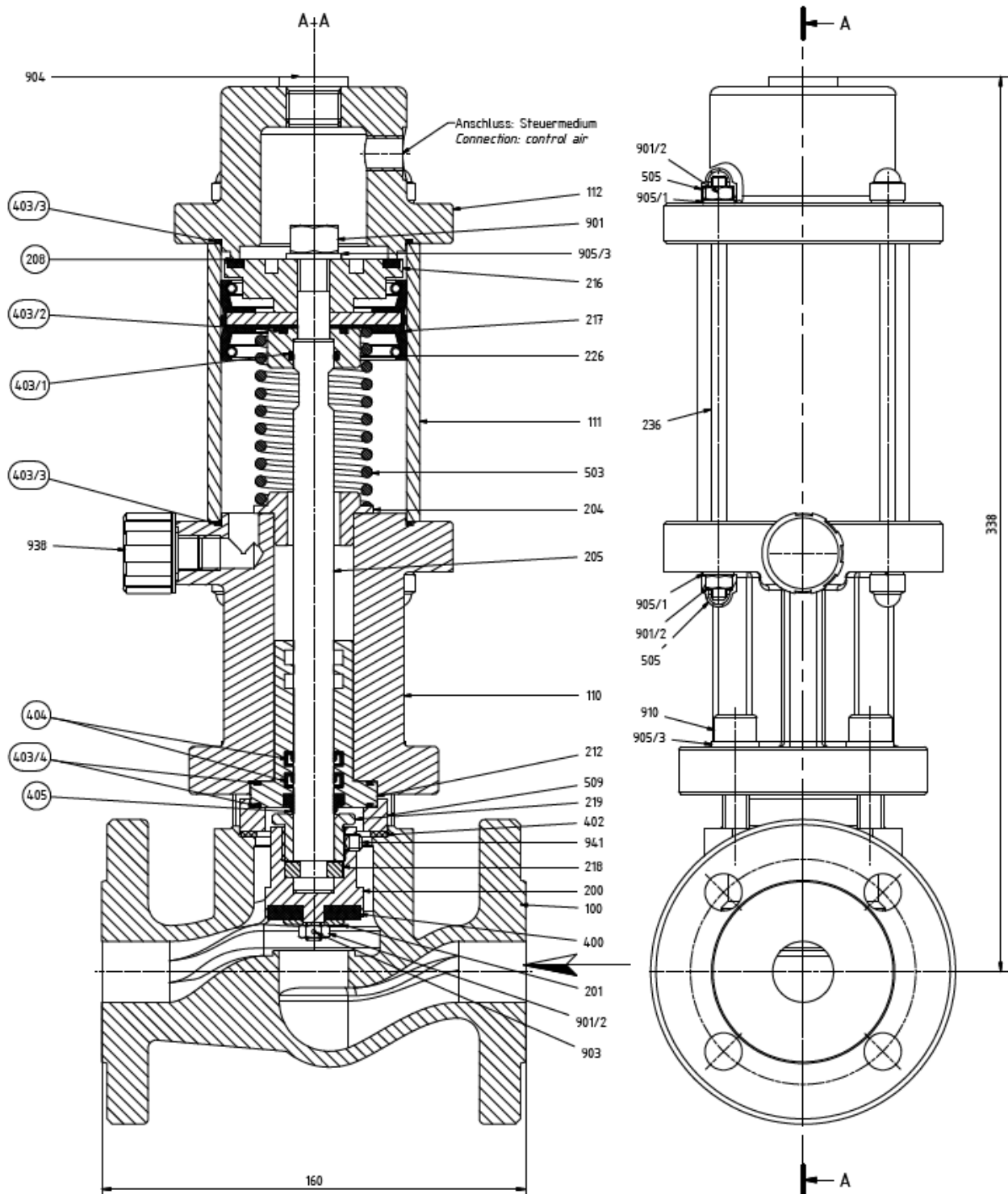
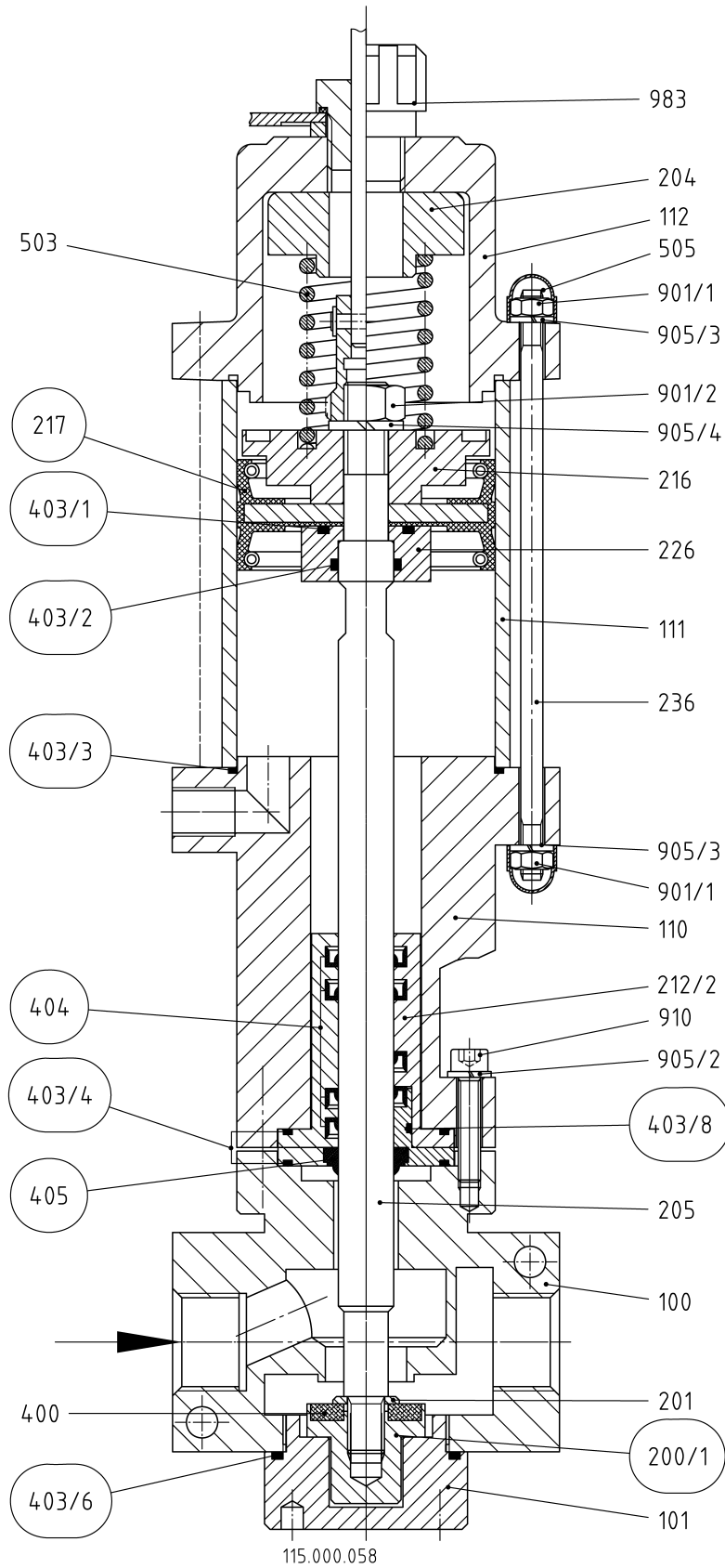
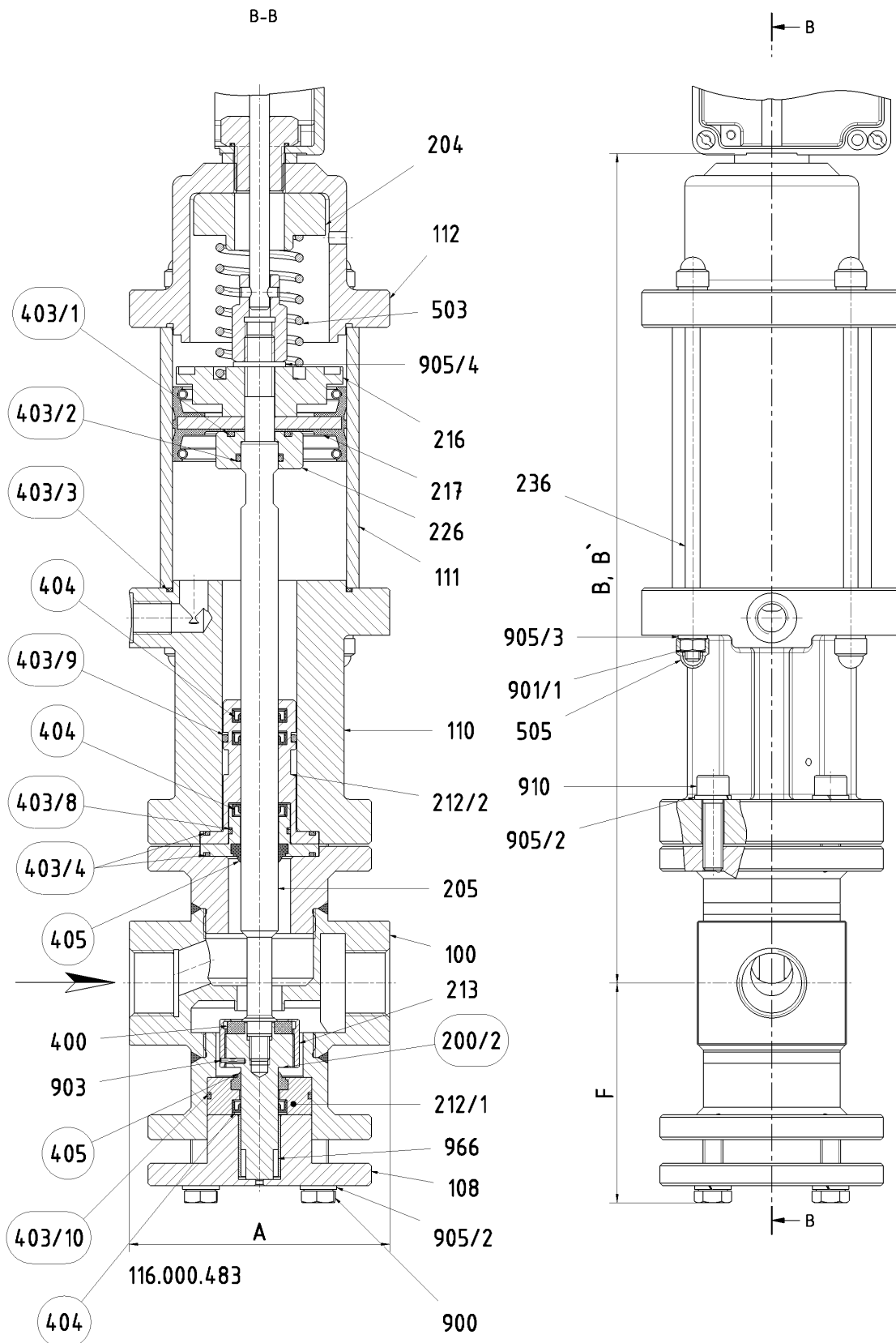


Fig. 3 Thread design 10-4-EPV(O)..R



O = Wearing parts

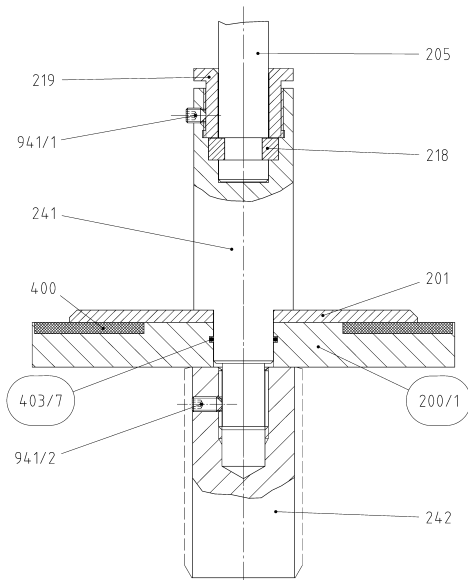
Fig. 3 Thread design 63-4-EPV(O)...R



O = Wearing parts

B' = Dimension for removing the spring cap.

11.2 Valve disc from DN 125



11.3 Projection Fig.1 Flange design

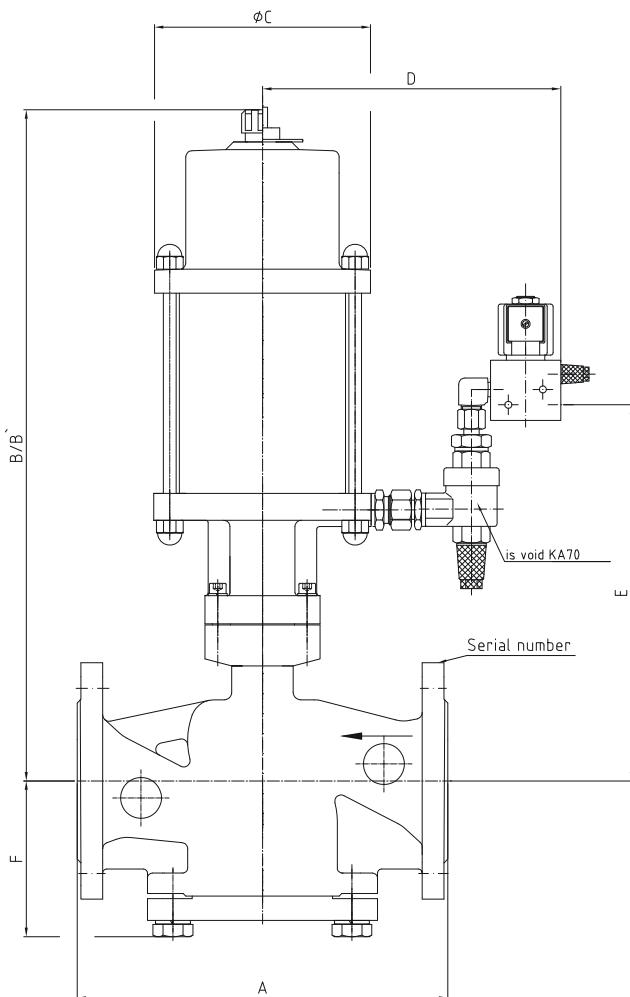
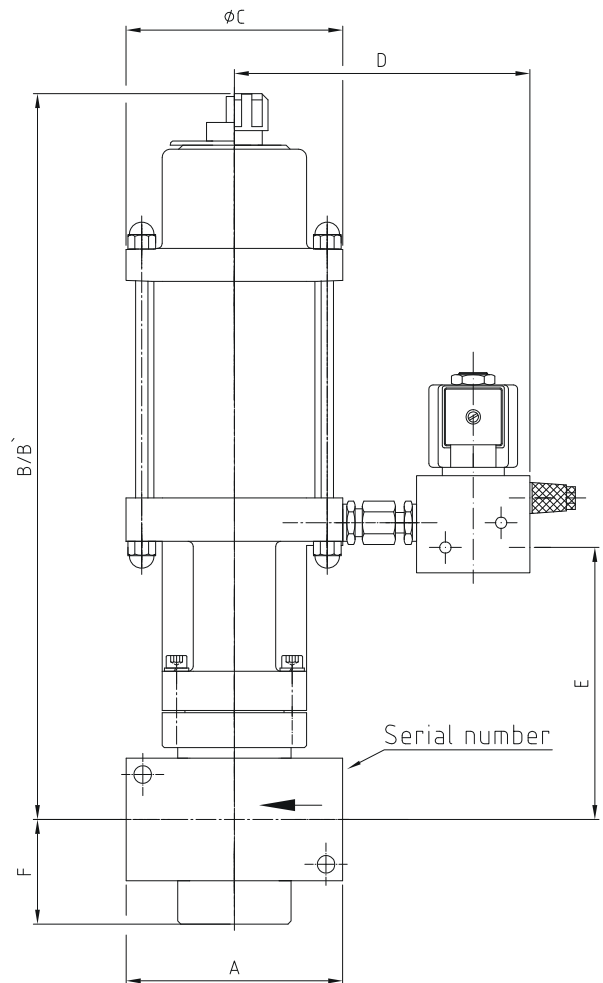
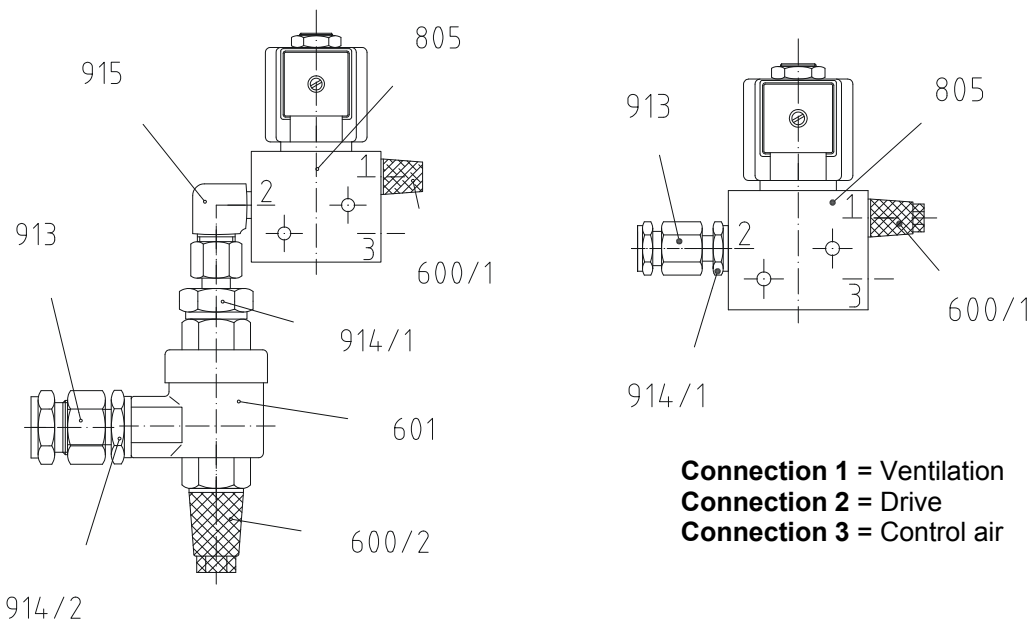


Fig. 2 Thread design



B' = Dimension for removing the spring cap.

11.4 Control valve



11.5 List of parts

Pos./ Item	Stück/ Qty.	Benennung	Description
100	1	Ventilgehäuse	Valve chamber/ housing
101	1	Gehäusemutter	Housing nut
108	1	Gehäuseflansch	Housing flange
110	1	Distanzstück	Spacer
111	1	Pneumatikzylinder	Pneumatic cylinder
112	1	Federdom	Spring cap
200/1	1	Ventilteller	Valve disk
200/2	1	Ventilteller	Valve disk
201	1	Tellerscheibe	Disk plate
202	1	Ventilstück	Valve piece
204	1	Federführung	Spring guide pin
205	1	Ventilspindel	Valve spindle
212/1	1	Spindelführung	Spindle guide
212/2	1	Spindelführung	Spindle guide
213	1	Gewinding	Ring nut
216	1	Federteller	Spring disk
217	1	Antriebskolben	Drive piston
218	1	Zweiteiliger Ring	Two-piece ring
219	1	Spindelmutter	Spindle nut
226	1	Dichtstück	Sealing piece
236	4	Stiftschraube	Stud
241	1	Ventiltelleraufhängung	Valve disk mounting
242	1	Telleranschlag	Plate notice
400	1	Ventiltellerdichtung	Valve disc sealing
402	1	Flachdichtung	Flat gasket
403/1	1	O-Ring	O-ring
403/2	1	O-Ring	O-ring
403/3	1	O-Ring	O-ring
403/4	2	O-Ring	O-ring
403/5	1	O-Ring	O-ring
403/6	1	O-Ring	O-ring

Pos./ Item	Stück/ Qty.	Benennung	Description
403/7	1	O-Ring	O-ring
403/8	1	O-Ring (nur bei buntmetallfreier Ausführung)	O-ring (only non-ferrous free metal type)
403/9	1	O-Ring	O-ring
403/10	1	O-Ring	O-ring
404	4/5	Lippenring	Lip-ring
405	1/2	Abstreifring	Scraper ring
503	1	Druckfeder	Pressure spring
505	8	Schutzkappe	Protective cap
600/1	1	Schalldämpfer	Sound absorber
600/2 ²⁾	1	Schalldämpfer	Sound absorber
601 ²⁾	1	Schnellentlüfter	Quick-venting mechanism
805	1	Steuerventil	Control valve
900	4/6	Sechskantschraube	Hex. head screw
901/1	8	Sechskantmutter	Hex. nut
901/2	1	Sechskantmutter	Hex. nut
903	1	Kerbstift	Grooved dowel pin
905/1	4/6	Federring	Lock washer
905/2	4	Federring	Lock washer
905/3	8	Federring	Lock washer
905/4	1	Federring	Lock washer
906	1	Scheibe	Washer
910	4	Zylinderschraube	Cylinder screw
913	1	Gerade Einschraubverschraubung	Linear threaded screw connection
914/1	1	Gerader Aufsteckstutzen	Linear put on adapter
914/2 ²⁾	1	Gerader Aufsteckstutzen	Linear put on adapter
915 ²⁾	1	Winkel-Einschraubverschraubung	Angle threaded screw connection
941	1	Gewindestift	Setscrew
943	1	Spannstift	Spring dowel sleeve
966	1	DU-Buchse	DU-liner
983	1	Entlüftungsstopfen	Exhaust plug

²⁾ Is void KA 70

Wearing parts

Pos./Item	Stück/ Qty.	Benennung	Description
200/1	1	Ventilteller kompl. (200/1; 400)	Valve disc compl. (200/1; 400)
200/2	1	Ventilteller kompl. (200/2, 213, 400, 903)	Valve disc compl. (200/2; 213, 400, 903)
402	1	Flachdichtung	Flat gasket
403/1	1	O-Ring	O-ring
403/2	1	O-Ring	O-ring
403/3	1	O-Ring	O-ring
403/4	2	O-Ring	O-ring
403/5	1	O-Ring	O-ring
403/6	1	O-Ring	O-ring
403/7	1	O-Ring	O-ring
403/8	1	O-Ring (nur bei buntmetallfreier Ausführung)	O-ring (only non-ferrous free metal type)
403/9	1	O-Ring	O-ring
403/10	1	O-Ring	O-ring
404	4/5	Lippenring	Lip-ring
405	1/2	Abstreifring	Scraper ring

Dimension Flange design

Series	DN	A ¹⁾	ANSI	A ²⁾	B	B`	ØC	D	E	F
1-4-EPV(O)..R	80	310	3"	241	420	620	105	150	225	145
	150	480	6"	406	600	870	170	230	350	220
3-4-EPV(O)..R	40	200	1 1/2"	165	390	550	105	150	175	110
	100	350	4"	292	570	830	170	230	320	155
5-4-EPV(O)..R	80	310	3"	241	540	800	170	230	290	145
6-4-EPV(O)..R	65	290	2 1/2"	216	520	770	170	230	270	125
10-4-EPV(O)..R	15	130	1/2"	108	355	515	105	150	165	82
	20	150	3/4"	117	355	515	105	150	165	82
	25	160	1"	127	360	520	105	150	*165	90
	40	200	1 1/2"	165	480	730	170	230	250	110
	50	230	2"	203	490	740	170	230	260	115
	65	290	2 1/2"	216	525	780	170	230	300	125
16-4-EPV(O)..R	65	290	2 1/2"	216	590	850	210	250	305	125
	80	310	3"	241	645	900	265	278	350	145

A¹⁾ = Dimension at DIN (resp. flanges ANSI and dimension DIN or flanges and dimension at DIN)

A²⁾ = Dimension at ANSI 150lbs (resp. flanges and dimension at ANSI)

* by 10-4-EPVO 10N-4R...(special RMG) = 309

Dimension Thread design

Series	G	A	B	B`	ØC	D	E	F
10-4-EPV(O)..R	3/4	105	320	480	105	150	135	60
63-4-EPV(O)..R	3/4	105	354	514	105	150	135	88

12.0 Declaration of Conformity

UNI-Geräte E. Mangelmann
Elektrotechnische Fabrik GmbH
Postfach 1261
D – 47649 Weeze



Konformitätserklärung *Declaration of Conformity*

Produkt <i>Product</i>	Sicherheitsabblaseventil <i>Safety blow-off valve</i>	
Handelsbezeichnung <i>Trade Mark</i>	Magnetventil <i>Blow-off Valve</i>	
Baureihe <i>Series</i>	10-4-EPVO...-4R...	
Nennweiten <i>Sizes</i>	DN 20 – DN 65	
EU-Richtlinien <i>EC-Directives</i>	90/396/EWG Gasgeräte richtlinie <i>Gas Appliance Directive</i> 2006/42/EG Maschinenrichtlinie <i>Machinery Directive</i> 2006/95/EG Niederspannungsrichtlinie <i>Low-Voltage Directive</i> 2004/108/EG EMV-Richtlinie <i>EMC Directive</i>	
Angewandte technische Spezifikation <i>Applied Technical Specification</i>	DIN 3394-1	
EG-Baumusterprüfung <i>EC-Type Examination</i>	90/396/EWG Deutsche Vereinigung des Gas- und Wasserfaches e.V. (DVGW) Notified Body 0085	
Überwachungsverfahren <i>Surveillance Procedure</i>	90/396/EWG Deutsche Vereinigung des Gas- und Wasserfaches e.V. (DVGW) Notified Body 0085	
Kennzeichnung <i>Marking</i>	90/396/EWG 2006/42/EG	CE-0085AS0513 CE


Das Unternehmen UNI Geräte E. Mangelmann Elektrotechnische Fabrik GmbH bescheinigt hiermit, dass die o.a. Baureihe die grundsätzlichen Anforderungen der aufgeführten Richtlinien und Normen erfüllt.

UNI Geräte E. Mangelmann Elektrotechnische Fabrik GmbH confirms that the basic requirements of the above specified directives and standards are fulfilled.

Weeze, den 11.12.2007



Geschäftsführer
Managing Director



Leiter Konstruktion
Head of Design