



# Operating manual

Solenoid-Valve

## Series EVS...R/EVSO

Normally opened

EN





# Operating manual

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# Operating manual

## 1.0 General remarks

This operating manual includes instructions to assemble and operate the valve in the prescribed and safe way. **Additionally, the adequate operating instructions of each special solenoid drive must be considered.**

Series MG...(Xn)...	220.100.011 DE / 220.100.038 EN
Series MG...x	220.100.028 DE / 220.100.040 EN
Series MG...m	220.100.004 DE / 220.100.039 EN

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:

Uni-Geräte E. Mangelmann Elektrotechnische Fabrik GmbH  
Holtumsweg 13, 47652 Weeze, Germany

### Designation

Direct-acting, normally opened NO, spring-loaded automatic blow-off valve with solenoid actuator.

### Working pressure:

5 - EVS...R	0 - 5 bar (0 - 500 kPa)
10 - EVS...R	0 - 10 bar (0 - 1000 kPa)
25 - EVS...R	0 - 25 bar (0 - 2500 kPa)
140 - EVS...R	0 - 140 bar (0 - 14000 kPa)
160 - EVS...R	0 - 160 bar (0 - 16000 kPa)
162 - EVS...R	0 - 162 bar (0 - 16200 kPa)
40 - EVSO	0 - 40 bar (0 - 4000 kPa)
55 - EVSO	0 - 55 bar (0 - 5500 kPa)

### Type:

**5 - EVS...R / 10 - EVS...R**

### Fitting position:

vertical or horizontal drive

### Medium:

nitrogen, natural gas

### Medium temperature:

-20 °C to + 60 °C (253 K to 333 K)

### Ambient temperature:

-20 °C to + 60 °C (253 K to 333 K)

### Type:

**25 - EVS...R (Xde)**

### Fitting position:

vertical drive  $\pm 5^\circ$ ,  
with order supplement „W“ vertical or horizontal drive.

### Medium:

propan, butan

### Medium temperature:

-20 °C to + 120 °C (253 K to 393 K)

### Ambient temperature:

-20 °C to + 60 °C (253 K to 333 K)





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<b>Type:</b>	<b>140 - EVS...R</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	fuel oil, water
<b>Medium temperature:</b>	5 °C to + 140 °C (278 K to 413 K)
<b>Ambient temperature:</b>	-20 °C to + 80 °C (253 K to 353 K)
<b>Type:</b>	<b>160 - EVS...R</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	demineralize water
<b>Medium temperature:</b>	5 °C to + 70 °C (278 K to 343 K)
<b>Ambient temperature:</b>	-20 °C to + 80 °C (253 K to 353 K)
<b>Type:</b>	<b>162 - EVS...R</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	demineralize water
<b>Medium temperature:</b>	5 °C to + 100 °C (278 K to 373 K)
<b>Ambient temperature:</b>	-20 °C to + 80 °C (253 K to 353 K)
<b>Type:</b>	<b>40 - EVSO</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	natural gas
<b>Medium temperature:</b>	-20 °C to + 100 °C (253 K to 373 K)
<b>Ambient temperature:</b>	-20 °C to + 60 °C (253 K to 333 K)
<b>Type:</b>	<b>40 - EVSO</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	propan, butan
<b>Medium temperature:</b>	-30 °C to + 120 °C (243 K to 393 K)
<b>Ambient temperature:</b>	-20 °C to + 50 °C (253 K to 323 K)
<b>Type:</b>	<b>40 - EVSO</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	propan, butan
<b>Medium temperature:</b>	-30 °C to + 140 °C (243 K to 413 K)
<b>Ambient temperature:</b>	-20 °C to + 60 °C (253 K to 333 K)
<b>Type:</b>	<b>55 - EVSO</b>
<b>Fitting position:</b>	vertical drive $\pm 5^\circ$ , with order supplement „W“ vertical or horizontal drive.
<b>Medium:</b>	natural gas
<b>Medium temperature:</b>	-20 °C to + 230 °C (253 K to 503 K)
<b>Ambient temperature:</b>	-20 °C to + 60 °C (253 K to 333 K)
<b>Switching cycles:</b>	see operating instructions solenoid drive





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## Threaded connection at DIN ISO 228-1

Connection G	1/4 (2)	3/8 (3)	1/2 (5)	3/4 (7)	1 (10)	1 1/4 (12)	1 1/2 (15)	2 (20)	Test pressure (*) PT
160 - EVS...R	-	O	-	-	-	-	-	-	240 bar
162 - EVS...R	O	-	-	-	-	-	-	-	240 bar

(\*) Test pressure to perform leakage test "No FUNCTION TEST"

O Acceptance test certificate 3.2 possible, - not available

## Flange connection measures acc. to DIN EN 1092-1 / ANSI

Flange DN	PN / ANSI	15 5N	20 7N	25 10N	32 12N	40 15N	50 20N	65 25N	80 30N	100	Test pressure (*) PT
5 - EVS...R	10-40	O	O	-	-	O	O	-	-	O	15 bar
10 - EVS...R	10-40	O	O	-	-	O	O	-	-	O	15 bar
25 - EVS...R	300lbs	-	-	O <sup>1) 2)</sup>	-	-	-	-	-	-	38 bar
25 - EVS...R.Xde	300lbs	-	-	O <sup>3)</sup>	-	-	-	-	-	-	38 bar
140 - EVS...R	160	O	-	-	-	-	-	-	-	-	210 bar
40-EVSO	63	-	-	-	-	-	X	-	-	-	60 bar
40-EVSO	40	X	X	-	-	-	-	-	-	-	60 bar
40-EVSO	300lbs	X <sup>4)5)</sup>	-	-	-	-	-	-	-	-	60 bar

(\*) Test pressure to perform leakage test "No FUNCTION TEST"

O Acceptance test certificate 3.2 possible, - not available

<sup>1)</sup> Valve chamber to ANSI 300lbs table 2, row 15 (see fig. 3.1)

<sup>2)</sup> Valve chamber to ANSI 300lbs table 2, row 21 (see fig. 3.2)

<sup>3)</sup> Valve chamber to ANSI 300lbs table 2, row 21 (see fig. 3.3)

<sup>4)</sup> Valve chamber to ANSI 300lbs table 2, row 15 (see fig. 6.2)

<sup>5)</sup> Valve chamber to ANSI 300lbs table 2, row 21 (see fig. 6.3)

## Flange connection measures acc. to DIN EN 1092-1

Flange DN	PN	15 5N	20 7N	25 10N	32 12N	40 15N	50 20N	65 25N	80 30N	100	Test pressure (*) PT
55-EVSO	100	-	-	-	-	X <sup>1)</sup>	-	-	-	-	83 bar

(\*) Test pressure to perform leakage test "No FUNCTION TEST"

X<sup>1)</sup> Type examination 97/23/EC, Certificate 01 202 931-B-15-0023-01, O Acceptance test certificate 3.2 possible, - not available

### Voltage:

VDC 12 – 440 (-15% to +10%)

VAC 24 – 500 (-15% to +10%)

### Protection type:

IP54 or IP65

### Frequency:

40 – 60 Hz

### Power:

10 – 4000 W

Details to the electrical data can be found on the type sign and the adequate operating instructions of the solenoid drives.

## 1.2 Application

The solenoid-valves EVS...R and EVSO are used for the throughput of a medium without control energy and for the discharge of a medium.

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.





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## 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 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.**





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## 2.6 Safety information for the use in explosion-prone areas guideline 2014/34/EU

- 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.
- Any modifications whatsoever to the valve are not allowed. The ATEX approval is void with immediate effect if the valve is modified without prior authorization (even including painting).
- Uni-Geräte GmbH must be consulted before any modifications are made.

Furthermore we point out the guideline 1999/92/EG, 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.

## 2.7 Safety information regarding guideline 2014/68/EU attachment I



### **DANGER!**

Uni-valves are not an accessory with a safety function as defined in the PED 2014/68/EU Article 2 (4) and Article 4 (1) (d) by category IV Use or classify!

## 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.

During transport, storage and decommissioning, protective caps must be attached to the sides of the valve.

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 °C.

**Never transport the valve at screwed cable glands, appliance plugs or add-on units.** The valve can be transported at ring nuts, flange borings or by means of a belt under the solenoid drive.

Transport the valve in a box or on a pallet with soft base and it smoothly on even floor. **Never put valve on attachment parts.**

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.





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## 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.
- Appropriate treatment protects against damage.

## 4.0 Product description

The solenoid-valves in the EVS...R and EVSO series are direct-acting, normally opened NO, spring-loaded automatic blow off valves with solenoid actuator.

The sectional drawing part 11.1 in Fig. 1 - Fig. 7 shows the valve construction.

### 4.1 Funktion

By switching on the solenoid drive, the solenoid core (207) is drawn against the upper part (106). The pressure spring (503) is pressed and the balance piston (220) (EVSO with valve disc (200)) closes the valve cross section. The valve is closed.

The valve opened by switching off, interruption or failure of power energy to solenoid drive. Due to press of the pressure spring (503) the balance piston opens (220) (EVSO with valve disc (200)). The valve is open

### 4.2 Technische Daten

**Closing times:** 0,3 – 0,7s depends upon nominal width

**Opening times:** < 1s

#### Solenoid-drive types MG...

Connection G	1/4 (2)	3/8 (3)	1/2 (5)	3/4 (7)	1 (10)	1 1/4 (12)	1 1/2 (15)	2 (20)
160 - EVS...R	-	018	-	-	-	-	-	-
162 - EVS...R	018	-	-	-	-	-	-	-

Flange DN Flange ANSI	15 1/2"	20 3/4"	25 1"	32 1 1/4"	40 1 1/2"	50 2"	65 2 1/2"	80 3"	100 4"
5 - EVS...R	010	010	-	-	014	016	-	-	019A1
10 - EVS...R	010	010	-	-	016	019	-	-	019A1
25 - EVS...R	-	-	018	-	-	-	-	-	-
25 - EVS...R.Xde	-	-	018	-	-	-	-	-	-
140 - EVS...R	018	-	-	-	-	-	-	-	-
40-EVSO	-	-	-	-	-	020.1	-	-	-
40-EVSO	018	018	-	-	-	-	-	-	-
40-EVSO	018	-	-	-	-	-	-	-	-
55-EVSO	-	-	-	-	020.1	-	-	-	-

Drive types with "A" consist of pickup and holding winding







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## Max. valve loading by pipe power

The indicated moments may not work longer than 10s.

DN		8	10	15	20	25	32	40	50	65	80	100	125	≥150
<b>Torsion</b>	<b>Nm</b>	20	35	50	85	125	160	200	250 <sup>1)</sup>	325 <sup>1)</sup>	400 <sup>1)</sup>	-	-	-
<b>Bending</b>	<b>Nm</b>	35	70	105	225	340	475	610	1100	1600	2400	5000	6000	7600

<sup>1)</sup> Not valid in case of valves with flanges

## Starting torque, pipe screws greased

DN		8	10	15	20	25	32	40	50	65	80	100	125	≥150
<b>Torque</b>	<b>Nm</b>	20	30	30	30	30	50	50	50	50	50	80	160	160

## Starting torque, product screws and nuts greased

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

## 4.3 Marking

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

- Fabricator
- Valve type, nominal width, pressure and temperature indication, fitting position
- Year of construction / production no.
- Valve class and valve group
- CE-Sign and no. of relevant location
- Fluid group and test pressure PT
- Solenoid drive type
- Electr. performance
- Voltage
- Frequency
- Protection type

When using solenoid drives for ex-protection zone 1 refer to information in the valid operating instructions.

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.





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## 5.2 Installation

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



### NOTICE!

- Remove protective caps.
- 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.

For shut-off / blow-off valves: Install dirt trap upstream of the valve.

Observe the direction of flow.

The mesh size of the dirt trap must have the following properties:

- be smaller than 1.5 mm
- a test mandrel of 1 mm diameter to pass and not allow.

If two valves are combined to form a group, one dirt trap installed upstream of the first valve is sufficient. The Uni-Geräte dirt traps of the SFR Series are approved for use together with the solenoid-valves in accordance with EU/2016/426.

The valve can be installed with upright but not suspended solenoid drive. Valves with order suffix "W" in the type designation can be installed with horizontal solenoid drive.



### NOTICE!

Please observe the solenoid drive documentation.

## 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.





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## 6.3 Maintenance

Solenoid-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

### Repair or maintenance works at the manufacturing company (UNI- Geräte)

- Valves and fittings must be delivered clean and free from substances which are harmful to health or to the environment.

### Uni-Geräte prescribes the following maintenance intervals for valves with **SIL requirements**:

The safety requirements with regard to the maintenance intervals to be adhered are described in the **SIL manual** of the type series and must be complied with.

## 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 Fehlersuchplan

Malfunction	Possible causes	Remedy
No flow	Valve does not open	Switch off solenoid drive (800) Check, if there is still any residual voltage
	Protective caps were not removed	Remove protective caps
Low flow rate	Clogging in the pipework system	Check pipework system
	Contaminated strainer	Filter clean/exchange
Valve leaking at seat, no internal tightness	Valve seat gasket (400) or valve seat (100) damaged by external particles	See section 8 or replace valve
No external tightness	Gaskets damaged	See section 8 or replace valve





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Malfunction	Possible causes	Remedy
Valve does not close	Working pressure too high	Compare working pressure with the data on the rating plate
	Solenoid drive no voltage	Switch on solenoid drive (800) Check whether there is residual voltage, see section 4.1
Flange fracture (valve/ pipework)	Screws not tightened uniformly, mating flanges not aligned	Align pipework. Install new valve!



## NOTICE!

Observe section 9.0 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)
- For special application such as for oxygen use only the approved lubricants and appropriate sealing materials (BAM- approval)

### 8.1 Replacement of wear parts

Shut down the valve as described in section 6.2.

Switch off and dismantle the solenoid drive as described in the operating manual of the solenoid drive.



### DANGER!

After continuous operation, the solenoid drive may be hot! Danger of burns!

### Flange version

Fig. 1 5-EVS...R... / 10-EVS...R... (DN15, DN20)

Fig. 2 5-EVS...R... / 10-EVS...R... (DN40, DN50)

#### Removal of solenoid actuator (800)

See operating instructions for solenoid actuator.

#### Removal of limit switch mounting (097)

Open the limit switch housing (120). De-energise limit switch (803) and disconnect. Undo grub screw (941) and remove together with limit switch actuators (513). Undo and remove hexagon nut (901/2). Remove limit switch mounting (097) from spindle guide (212).

Unscrew spindle guide (212#) all the way out of housing flange (108).





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## Removal of solenoid valve

### Fig. 1 5-EVS...R... / 10-EVS...R... (DN15, DN20)

Unscrew upper section of housing (106) from piston guide (221). Release bolt connection (902, 912 or 949) and remove. Remove magnet core (207) complete with guiding rings (206), valve pin (214) compression spring (503), hexagon nut (901/1) and locking plate (908) from balancing piston (220) and place on a clean surface.

Undo Allen bolt (900) and remove with snap ring (905). Remove housing flange (108).

Remove balancing piston (220\*) complete with valve disk (200\*), limit switch spindle (243), limit switch connecting piece (246\*) and valve disk seal (400\*) from valve housing (100).

### Fig. 2 5-EVS...R... / 10-EVS...R... (DN40, DN50)

Undo grub screw (941) at the upper section of housing (106). Unscrew upper section of housing (106) from piston guide (221). Release bolt connection (902, 912 or 949) and remove. Remove magnet core (207) complete with guide rings (206), valve pin (214) compression spring (503), hexagon nut (901/1) and locking plate (908) from balancing piston (220) and place on a clean surface.

Undo Allen bolt (900) and remove with spring ring (905). Remove housing flange (108).

The limit switch connecting piece (246) can be unscrewed from the valve spindle (205) by counterholding the balancing piston (220). Take balancing piston (220) out of valve housing (100) from above and remove. Undo grub screw (941) at the guide part (255) and unscrew piston guide (221) from guide part (255).



## NOTICE!

The spare parts in the spare parts kit must be installed when the valve is reconditioned.



## CAUTION!

The wearing parts must be installed properly and not damaged during installation.

Assemble valve in reverse order.



## NOTICE!

### (Fig.2 5-EVS...R... / 10-EVS...R... (DN40, DN50))

The connection between the valve spindle (205) and the valve disk must be completely (200#) secured with Loctite 577.

Examine the valve acc. to DIN EN 12266-1 for internal and external leaks and finally carry out a function test.

## Flange version

Fig.2 10-EVS 100H.R...

Fig. 3.1 25-EVS 10N.R...

Fig. 3.2 25-EVS 10N.R...

Fig. 3.3 25-EVS 10N.R.Xde...

Fig. 4 140-EVS 5N.R...

Fig. 6.1 40-EVSO 20NH...

Fig. 6.2 40-EVSO 5NH... / 40-EVSO 7NH...

Fig. 6.3 40-EVSO 5NH...

Fig. 7 55-EVSO 15NH...

Replace the complete valve

## Thread version

Fig. 5 160-EVS 3R... / 162-EVS 2R...

Replace the complete valve





# Operating manual

## 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 resp. regulations 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 resp. regulations, i.e. in conformity with the relevant, in particular harmonised standards. Regulation EU/2016/426 and directive 2014/68/EU are of relevance for the valve (mechanical part).

### Notes on Regulation EU/2016/426 (Gas Appliances Regulation GAR):

The valves have been developed, manufactured and tested in compliance with the applicable harmonised standard and comply with the relevant requirements of the Regulation EU/2016/426. Unless otherwise stated separately, this has been confirmed by a type examination.

### Notes on Directive 2014/68/EU (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 2014/68/EU Article 14 Module H. The valves comply with the fundamental requirements of Directive 2014/68/EU. Valves in according to Article 1 Paragraph 2,f,v or Article 4 paragraph 3 are not allowed to have the CE Mark in according to Article 18.

### Note concerning ex-guideline 2014/34/EU (explosion guideline ATEX):

The product is not subject to guideline 2014/34/EU, 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 to spring loaded components in medium filled rooms. In case of electric drives, sensors or other electric components the application as per 2014/34/EU is to be checked separately.



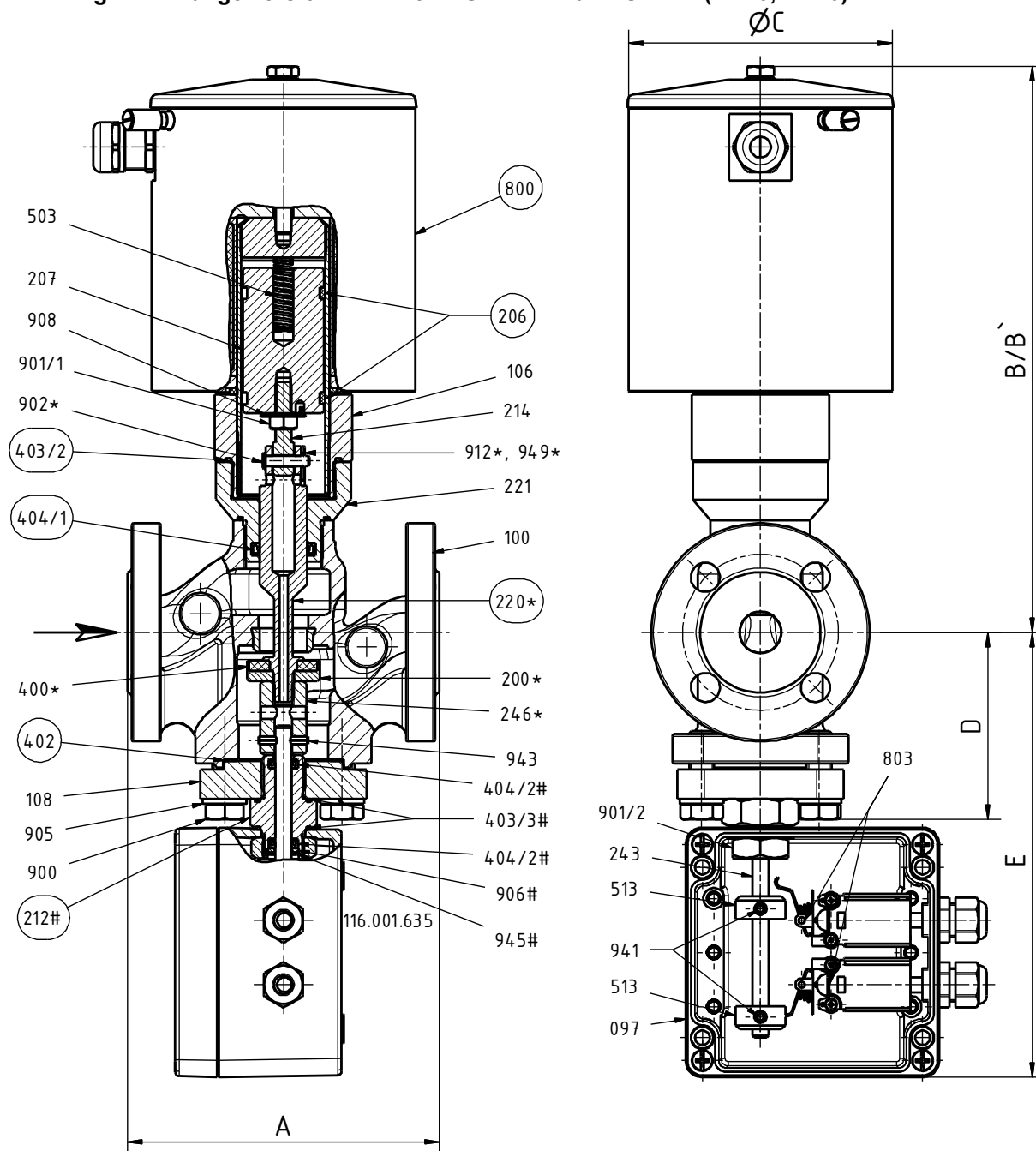


# Operating manual

## 11.0 Drawing

### 11.1 Fig. 1 Flange version

5-EVS...R... / 10-EVS...R... (DN15, DN20)



Type	DN	A	B	B'	ØC	D	E
5-EVS 5NH.R...(72)	15	130	273	360	127	90	214
10-EVS 5NH.R...(72)	15	130	273	360	127	90	214
5-EVS 7NH.R...(72)	20	150	273	360	127	90	214
10-EVS 7NH.R...(72)	20	150	273	360	127	90	214

O = Spare part kit

(...#,...\*) supplied as a complete unit

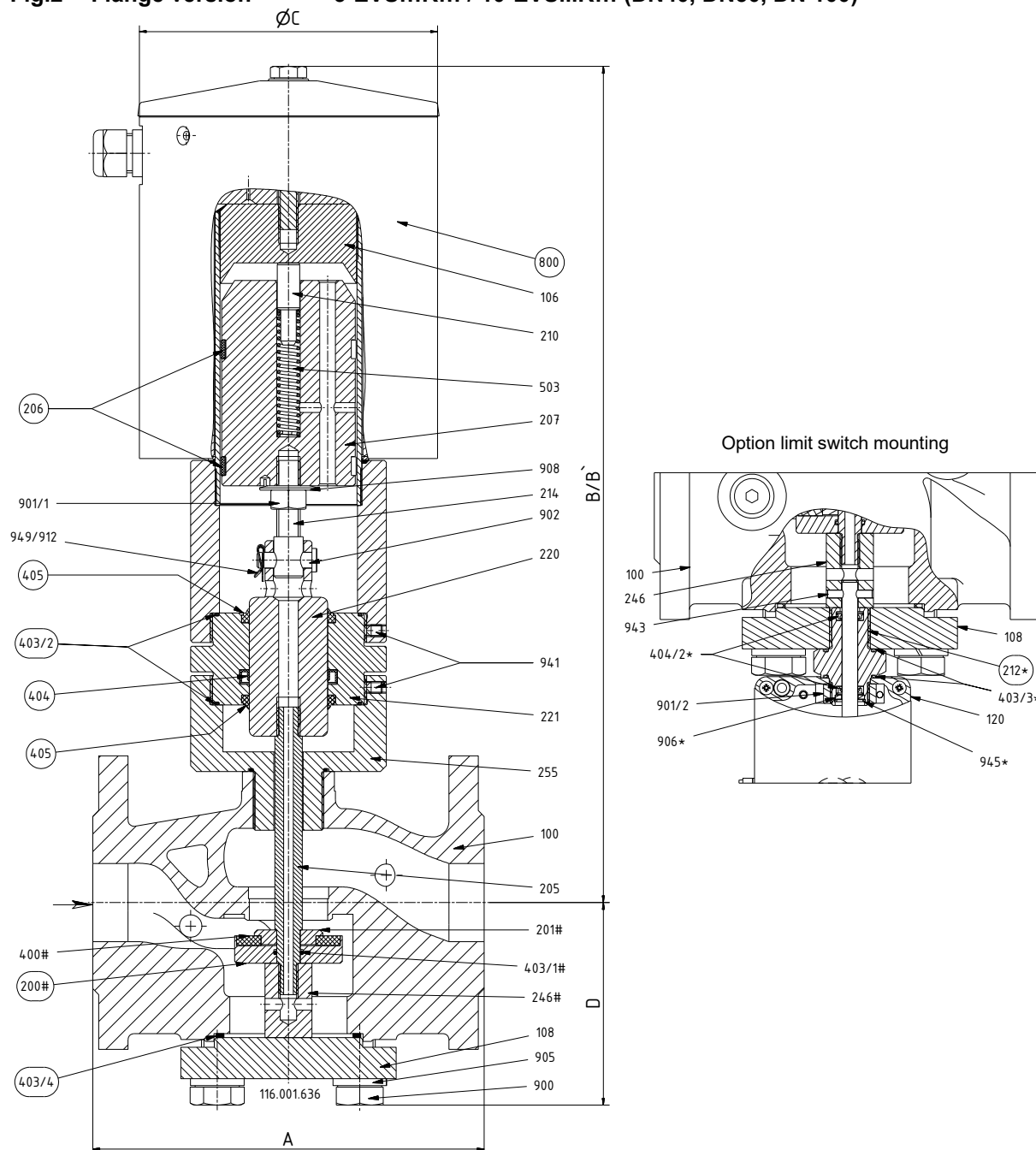






# Operating manual

**Fig.2 Flange version 5-EVS...R... / 10-EVS...R... (DN40, DN50, DN 100)**



Type	DN	A	B	B'	ØC	D
<b>5-EVS 15NH.R...(72)</b>	40	200	430	565	152	104
<b>10-EVS 15NH.R...(72)</b>	40	200	430	565	152	104
<b>5-EVS 20NH.R...(72)</b>	50	230	464	600	152	115
<b>10-EVS 20NH.R...(72)</b>	50	230	464	600	152	115
<b>10-EVS 100H.R...</b>	100	350	615	765	191	150

O = Spare part kit

(...#,...\*) supplied as a complete unit





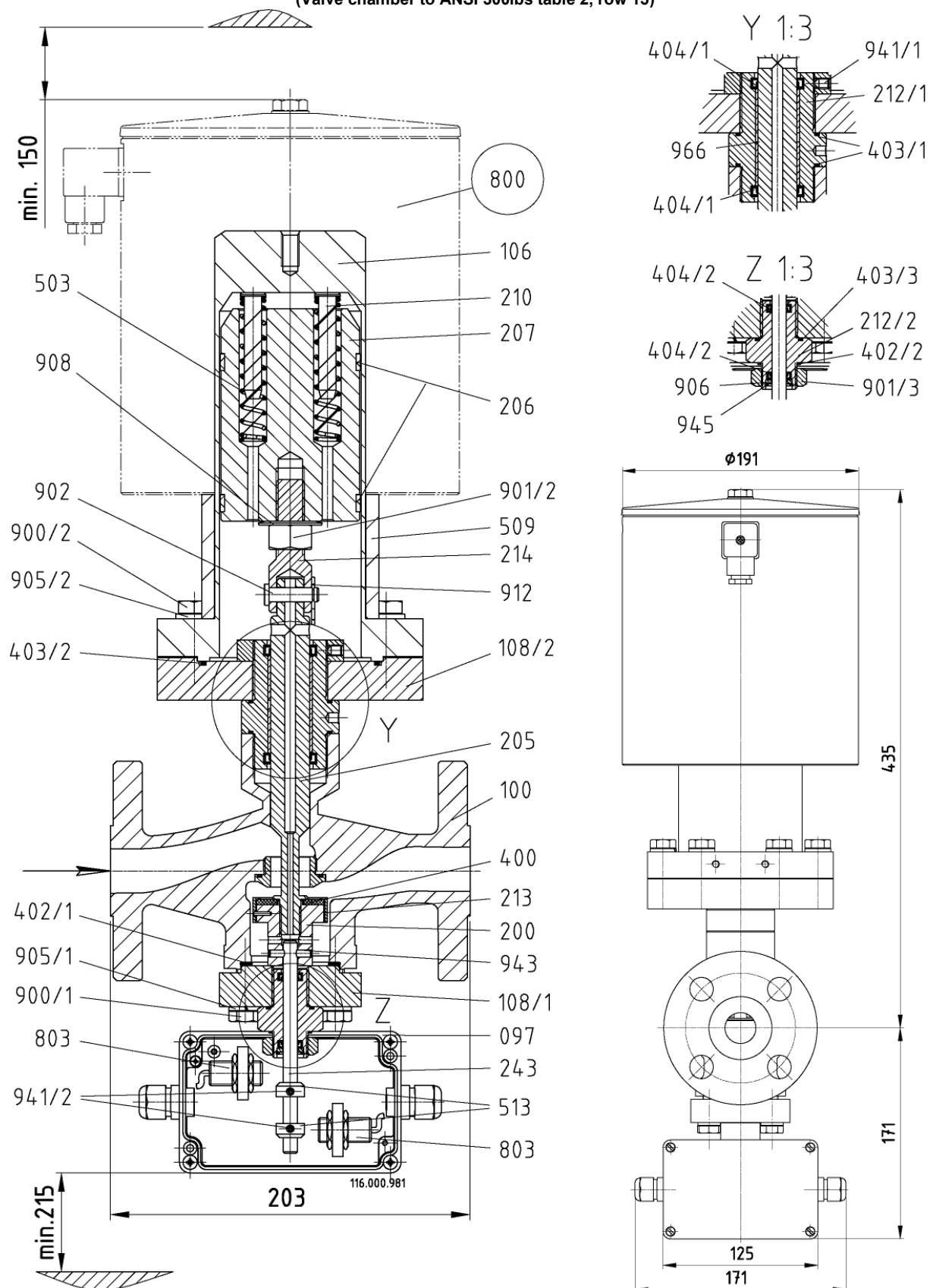


# Operating manual

Fig.3.1 Flange version

25-EVS 10N.R...

(Valve chamber to ANSI 300lbs table 2, row 15)

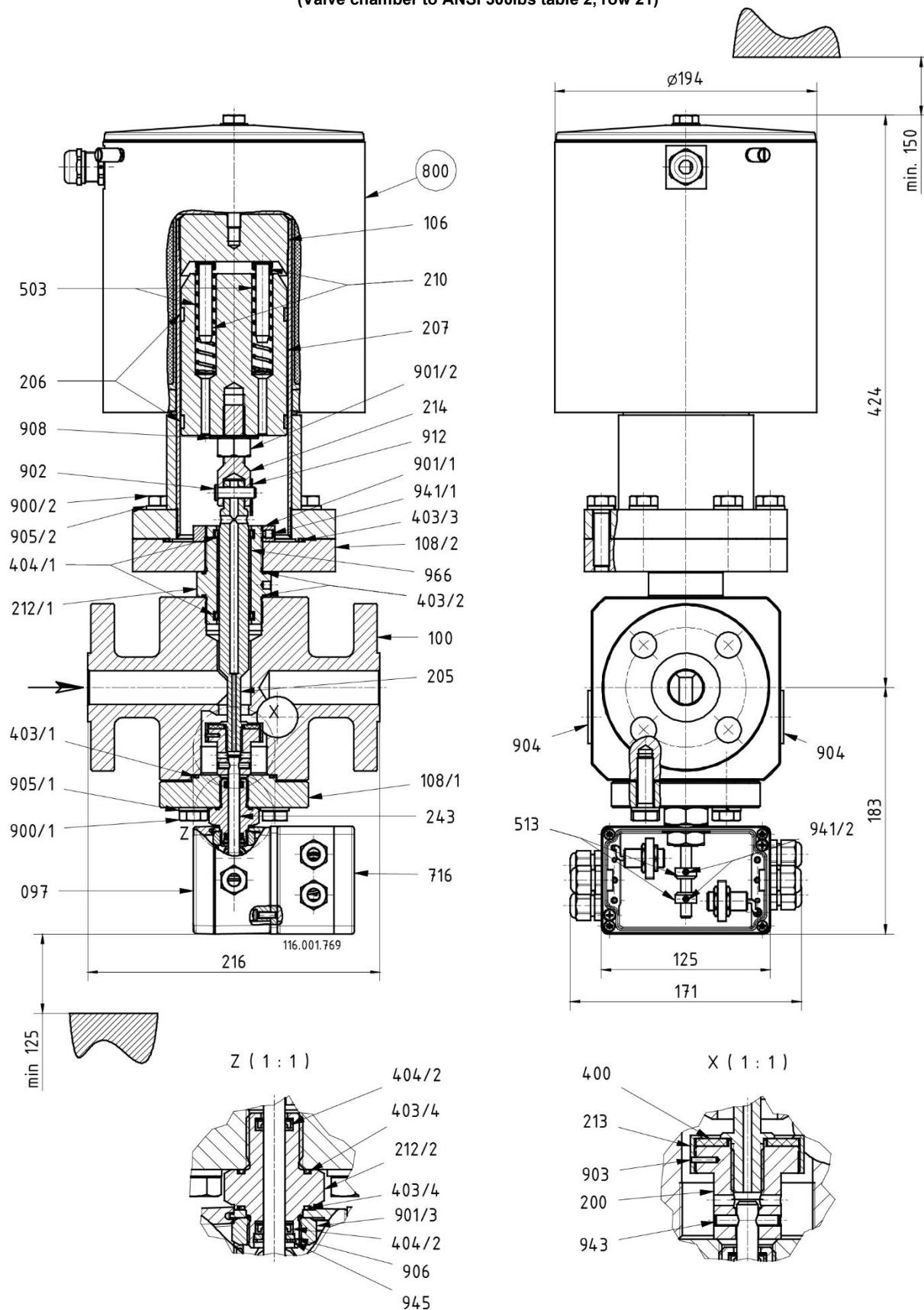




# Operating manual

Fig.3.2 Flange version

25-EVS 10N.R...  
(Valve chamber to ANSI 300lbs table 2, row 21)

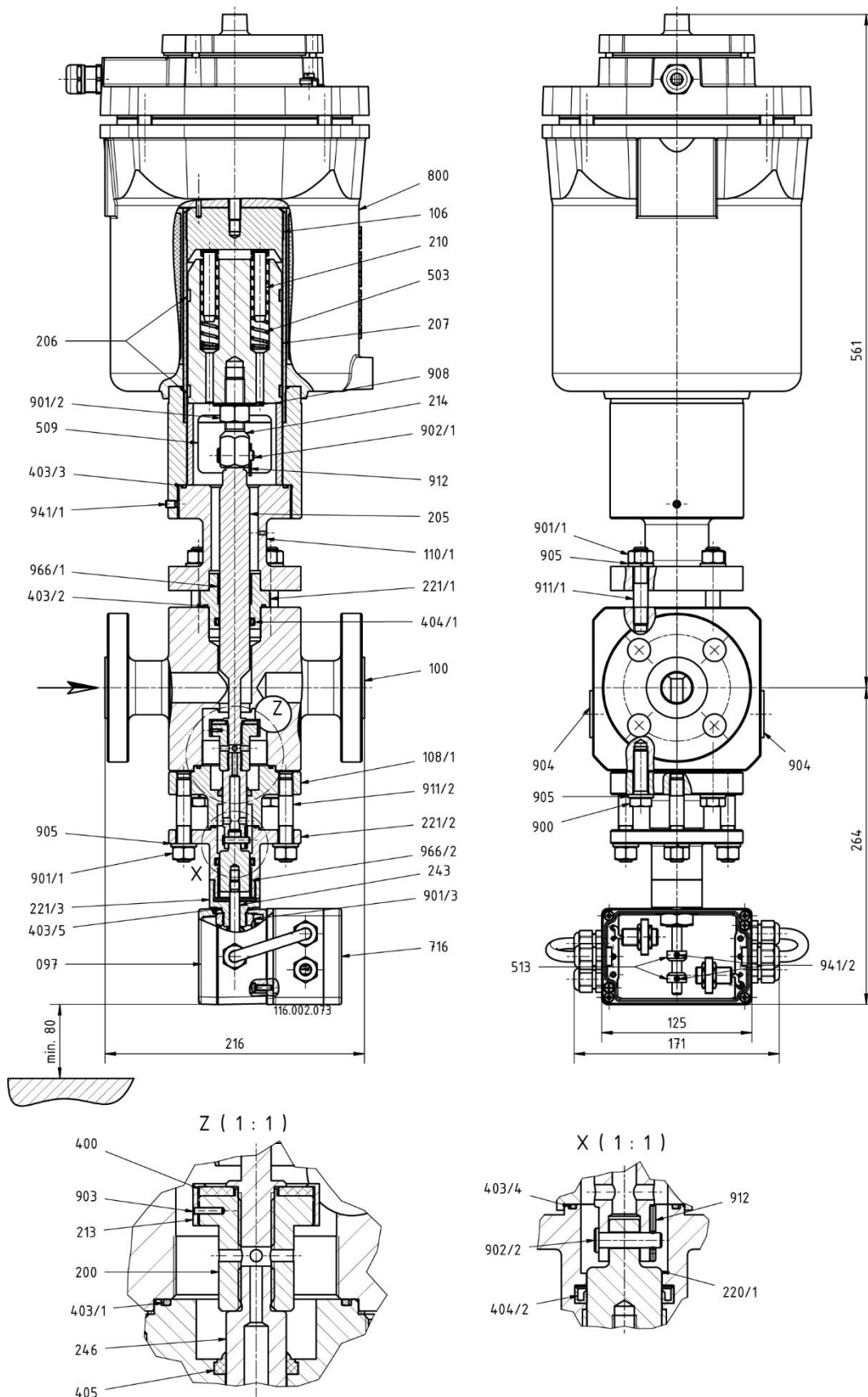




# Operating manual

Fig.3.3 Flange version

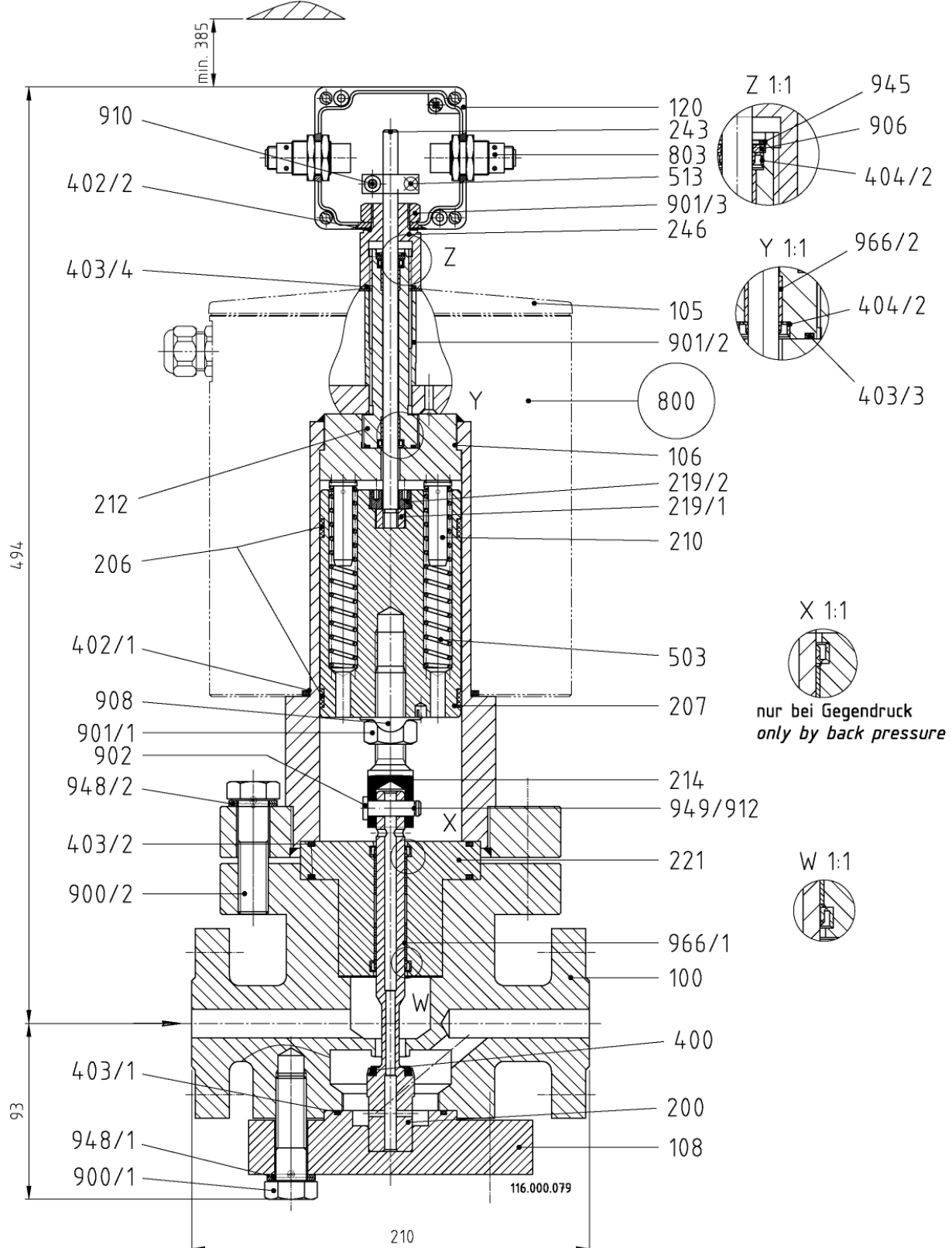
25-EVS 10N.R.Xde...  
(Valve chamber to ANSI 300lbs table 2, row 21)





# Operating manual

Fig.4 Flange version 140-EVS 5N.R...

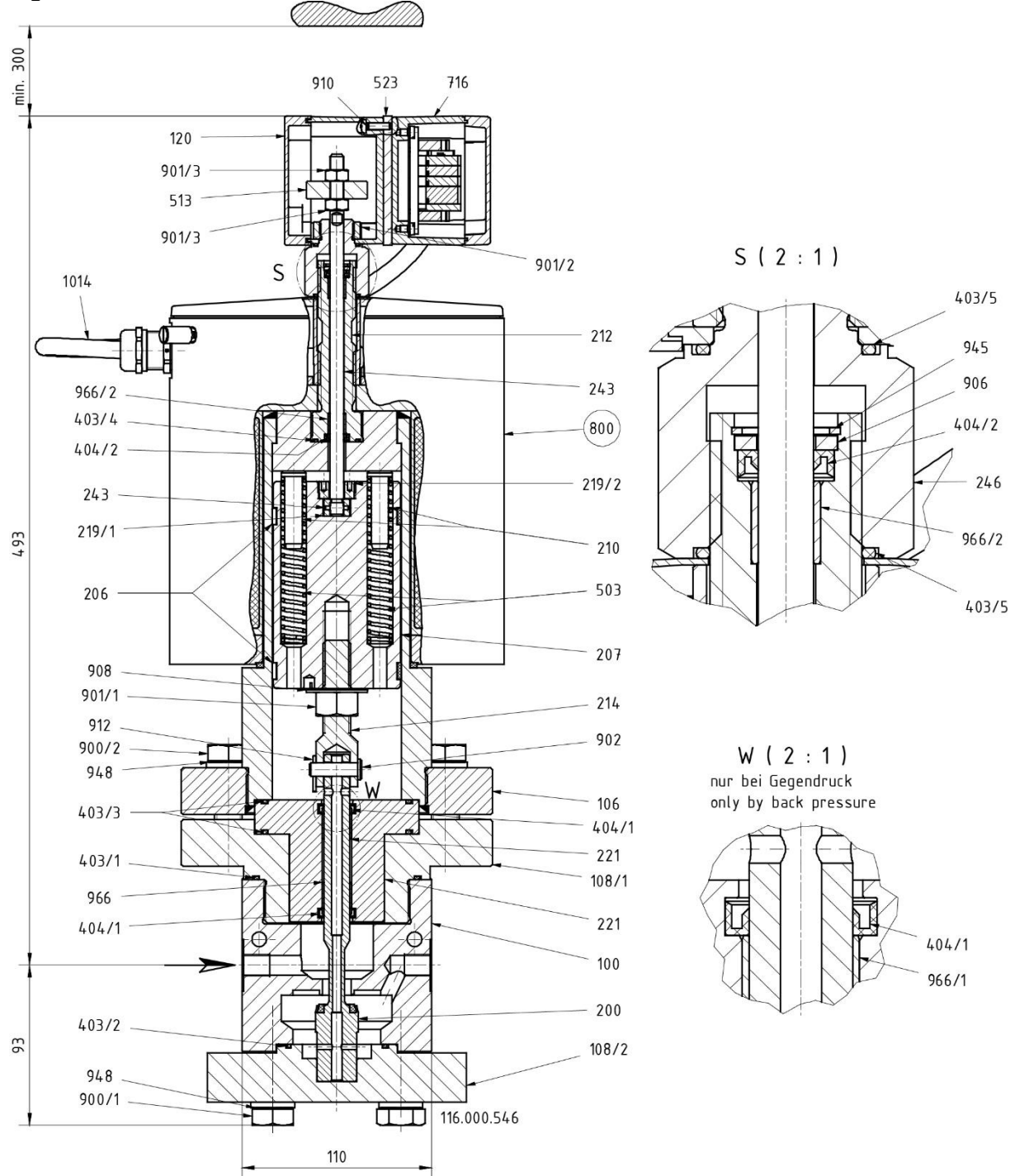






# Operating manual

**Fig.5 Thread version 160-EVS 3R... / 162-EVS 2R...**

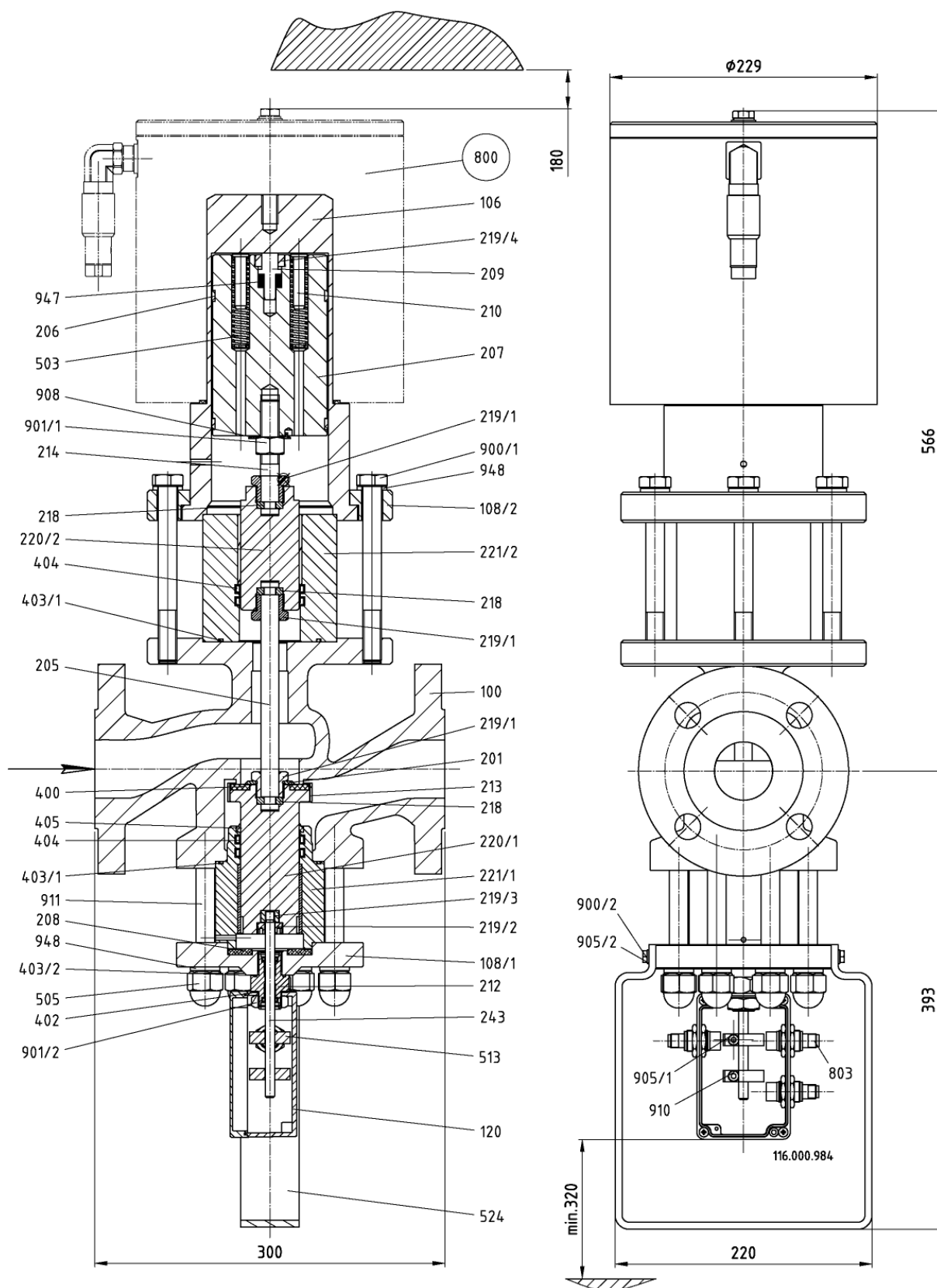




# Operating manual

Fig.6.1 Flange version

40-EVSO 20NH...

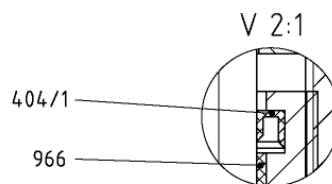
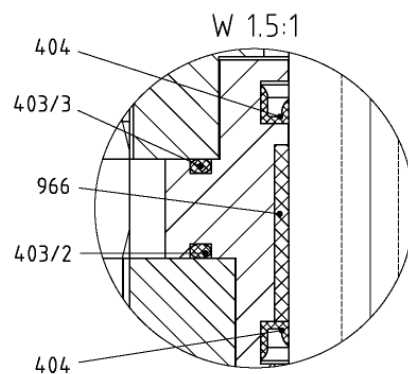
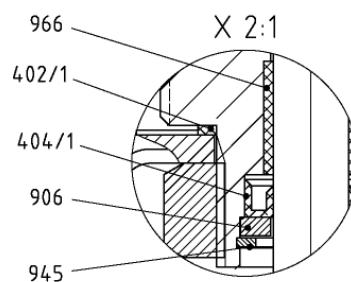
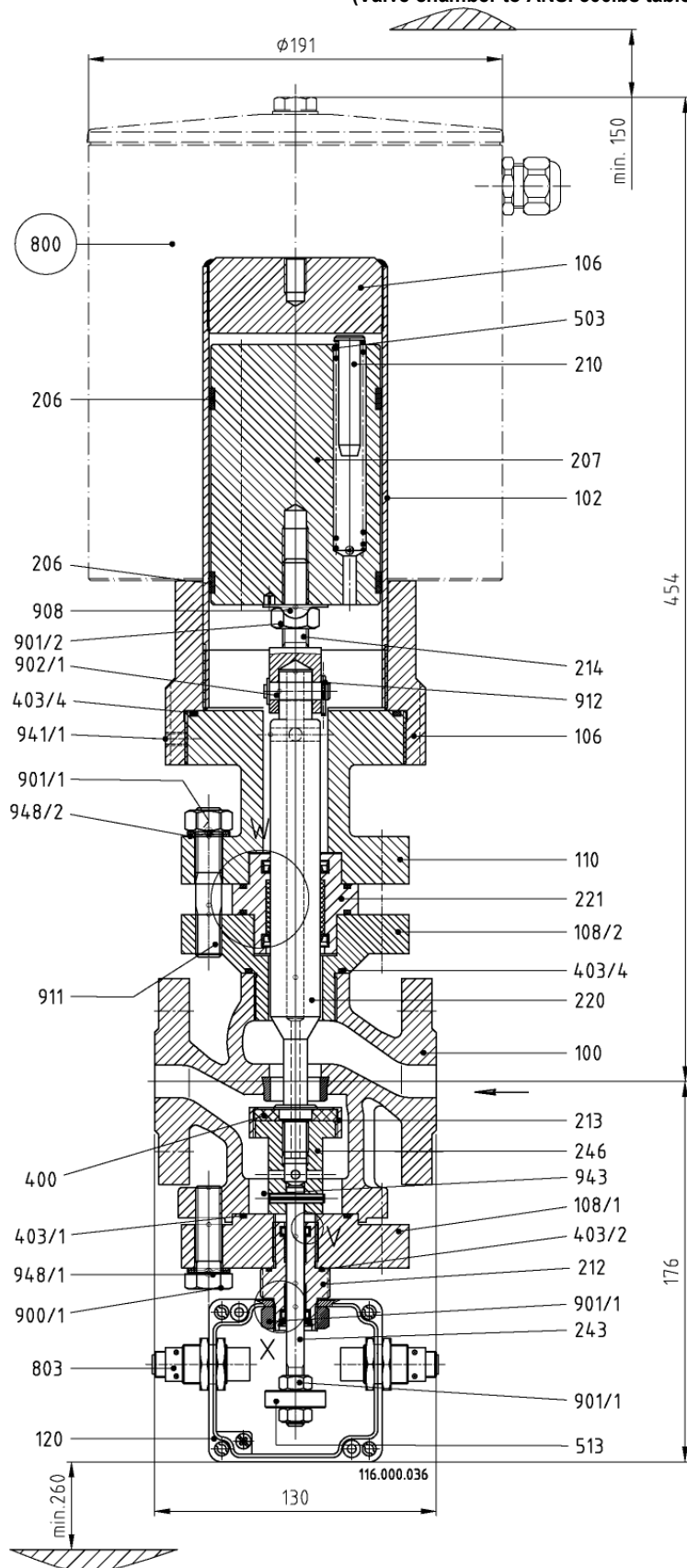




# Operating manual

Fig.6.2 Flange version

40-EVSO 5NH... / 40-EVSO 7NH...  
(Valve chamber to ANSI 300lbs table 2, row 15)

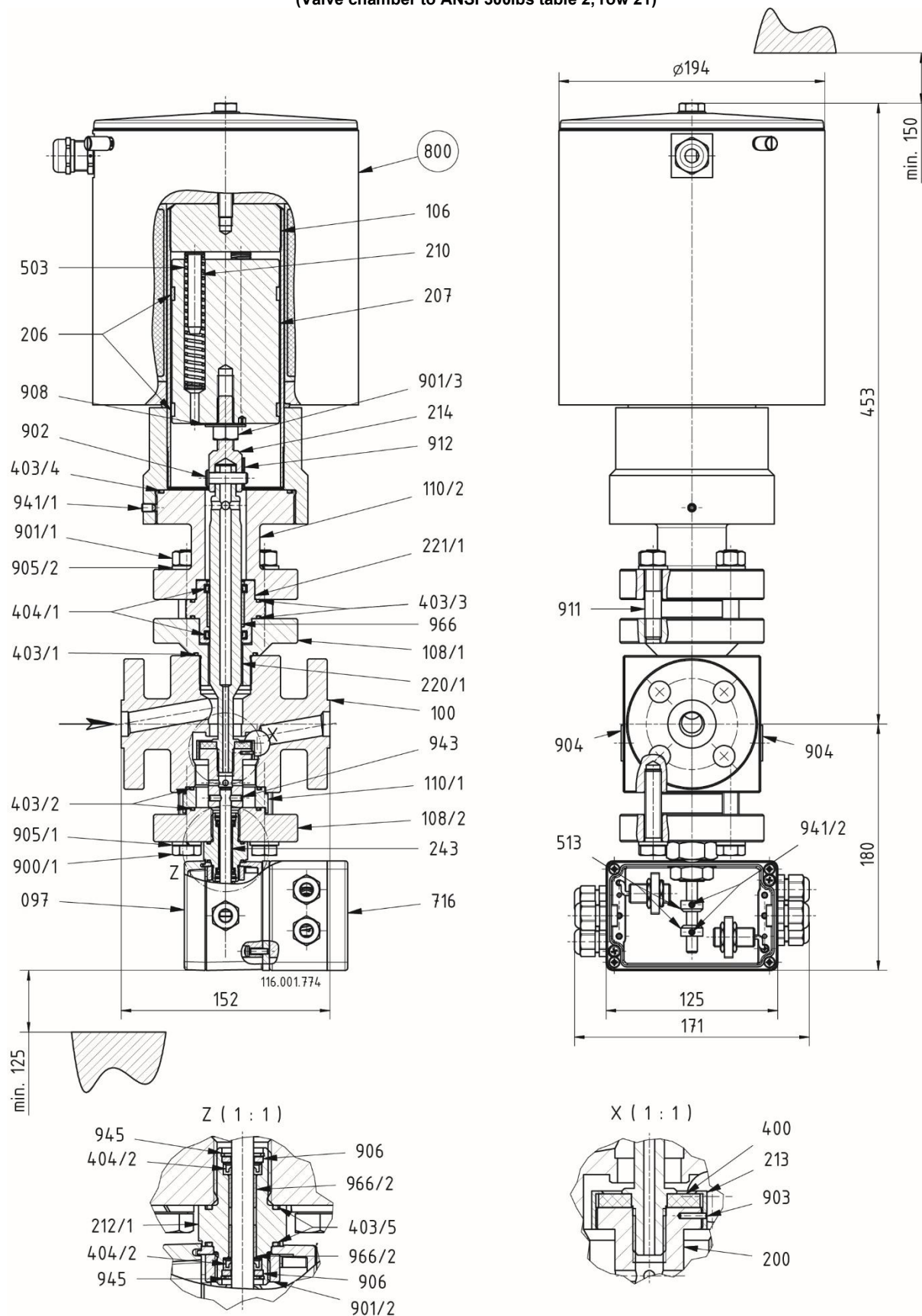




# Operating manual

Fig.6.3 Flange version

40-EVSO 5NH...  
(Valve chamber to ANSI 300lbs table 2, row 21)

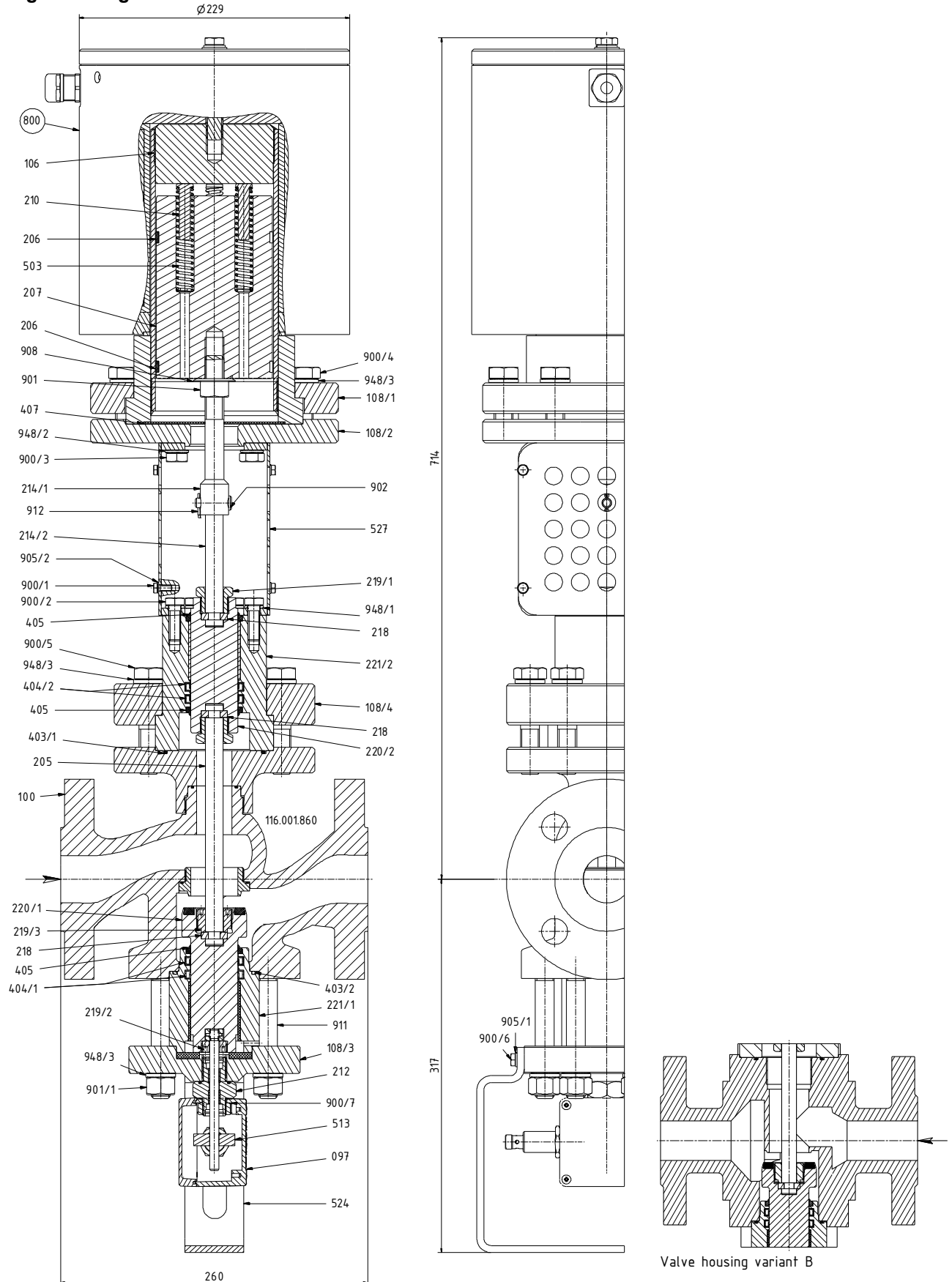






# Operating manual

**Fig.7 Flange version 55-EVSO 15NH...**





# Operating manual

## 11.2 List of parts

Pos./ Item	St./ Qty	Benennung	Description
097	1	Endschalteranbau	Limit switch mounting
100	1	Ventilgehäuse	Valve chamber
105	1	Magnetgehäusedeckel	Solenoid housing cover
106	1	Oberteil	Upper part
108/1	1	Gehäuseflansch	Housing flange
108/2	1	Gehäuseflansch	Housing flange
108/3	1	Gehäuseflansch	Housing flange
110/1	1	Distanzstück	Spacer
110/2	1	Distanzstück	Spacer
120	1	Endschaltergehäuse	Limit switch housing
200	1	Ventilteller	Valve disc
201	1	Tellerscheibe	Disc plate
205	1	Ventilspindel	Valve spindle
206	2	Führungsring	Guide ring
207	1	Magnetkern	Solenoid core
208	1	Schlagdämpfung	Sound insulation
209	1	Abwurfbolzen	Discharge bolt
210	1/2/3/4	Federbolzen	Spring bolt
212/1	1	Spindelführung	Spindle guide
212/2	1	Spindelführung	Spindle guide
213	1	Gewinding	Threaded ring
214/x	1	Ventilstift	Valve pin
218/x	1	Zweiteiliger Ring	Two-piece ring
219/1	1	Spindelmutter	Spindle nut
219/2	1	Spindelmutter	Spindle nut
219/3	1	Spindelmutter	Spindle nut
219/4	1	Spindelmutter	Spindle nut
220/1	1	Ausgleichskolben	Balance piston
220/2	1	Ausgleichskolben	Balance piston
221/1	1	Kolbenführung	Piston guide
221/2	1	Kolbenführung	Piston guide
221/3	1	Kolbenführung	Piston guide
242	1	Telleranschlag	Plate notuce
243	1	Endschalterspindel	Limit switch spindle
246	1	Verbindungsstück	Connecting piece
400	1	Ventiltellerdichtung	Valve disc seal
402/1	1	Flachdichtung	Flat gasket
402/2	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	1	O-Ring	O-ring
403/5	1	O-Ring	O-ring
403/6	1	O-Ring	O-ring
404/1	1	Lippenring	Lip-ring
404/2	1	Lippenring	Lip-ring
404/3	1	Lippenring	Lip-ring
405/x	1	Abstreifring	Scraper ring
407	1	Staubschutzmembrane	Dust guard membrane
503	1/2/3/4	Druckfeder	Pressure spring
505	4/8	Schutzkappe	Protective cap
509	1	Distanzring	Distance ring
513	1/2	Endschalterbetätigung	Adjusting ring
524	1	Schutzbügel	Hoop guard





# Operating manual

Pos./ Item	St./ Qty	Benennung	Description
527	1	Schutzgitter	Guard
716	1	Klemmkasten	Terminal box
722	1	Adapterstück (metr.-PG)	Adapter piece
800	1	Magnet-Antrieb	Solenoid drive
803	1/2	Endschalter	Limit switch
900/x	4/6/8	Sechskantschraube	Hex. head screw
901/1	4/6	Sechskantmutter	Hex. nut
901/2	8	Sechskantmutter	Hex. nut
901/3	1	Sechskantmutter	Hex. nut
902/1	1	Bolzen	Bolt
902/2	1	Bolzen	Bolt
903	1	Kerbstift	Grooved dowel pin
904	2	Verschlussschraube	Plug
905	4/6/8	Federring	Lock washer
905/1	4	Federring	Lock washer
905/2	4/8	Federring	Lock washer
906	1	Scheibe	Washer
908	1	Sicherungsblech	Safety plate
910	4	Zylinderschraube	Cylinder head screw+
911/1	4	Stiftschraube	Stud
911/2	6	Stiftschraube	Stud
912	2	Splint	Split pin
941/1	1	Gewindestift	Threaded pin
941/2	1	Gewindestift	Threaded pin
943	1	Schwerspannstift	Spring dowel pin
945	1	Sicherungsring	Safety ring
947	1	Tellerfedern	Disk spring
948/1	4/6/8	Nordlockscheibe	Safety disc
948/2	4	Nordlockscheibe	Safety disc
948/3	4	Nordlockscheibe	Safety disc
949	1	SL-Sicherung	SL-fuse
966/1	1	DU-Buchse	DU-bush
966/2	1	DU-Buchse	DU-bush
966/3	1	DU-Buchse	DU-bush
966/4	1	DU-Buchse	DU-bush

## Spare parts

Version	Fig.	Type	Spare parts
Flange version	Fig. 1	5 - EVS 5NH.R... / 10 - EVS 5NH.R... 5 - EVS 7NH.R... / 10 - EVS 7NH.R...	Solenoid drive (800), Spare part kit
	Fig. 2	5 - EVS 15NH.R... / 10 - EVS 15NH.R... 5 - EVS 20NH.R... / 10 - EVS 20NH.R...	Solenoid drive (800), Spare part kit
	Fig. 2	10 - EVS 100H.R...	Solenoid drive (800)
	Fig. 3.1	25 - EVS 10N.R...	Solenoid drive (800)
	Fig. 3.2	25 - EVS 10N.R...	Solenoid drive (800)
	Fig. 3.3	25 - EVS 10N.R.Xde...	-
	Fig. 4	140 - EVS 5N.R...	Solenoid drive (800)
	Fig. 6.1	40 - EVSO 20NH...	Solenoid drive (800)
	Fig. 6.2	40 - EVSO 5NH... / 40 - EVSO 7NH...	Solenoid drive (800)
	Fig. 6.3	40 - EVSO 5NH...	Solenoid drive (800)
	Fig. 7	55 - EVSO 15NH...	Solenoid drive (800)
Thread version	Fig. 5	160 - EVS 3R... / 162 - EVS 2R...	Solenoid drive (800)





# Operating manual

## 12.0 Declaration of conformity



### EG-Konformitätserklärung / EC-Declaration of conformity



Der Hersteller / The manufacturer

UNI Geräte E. Mangelmann  
Elektrotechnische Fabrik GmbH  
Holtumsweg 13  
47652 Weeze, Germany  
Telefon.: +49 (0) 2837/9134-0  
E-Mail: [info@uni-geraete.com](mailto:info@uni-geraete.com)  
Homepage: [www.uni-geraete.com](http://www.uni-geraete.com)

erklärt hiermit, dass folgende unten aufgeführte Absperr- / Abblasearmaturen  
in den Betriebsdrücken 0 – 55 bar,  
mit den Nennweiten DN15 - DN40  
*hereby declares that the following shut-off / blow-off valves  
in the operating pressure 0 – 55 bar,  
with nominal sizes DN15 – DN40*

die Sicherheitsanforderungen der / meet the safety requirements of the

#### Richtlinie / Directive 97/23/EG

des Europäischen Parlaments und des Rates vom 29. Mai 1997 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten  
über Druckgeräte und den folgenden Konformitätsbewertungsverfahren unterzogen wurden. Die alleinige Verantwortung für die  
Ausstellung dieser Konformitätserklärung trägt der Hersteller.

*of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States  
concerning pressure equipment and have undergone the following conformity assessment procedures. The manufacturer bears  
sole responsibility for issuing this Declaration of Conformity.*

#### Konformitätsbewertungsverfahren Modul B / Conformity assessment procedure Module B

(Konformität auf der Grundlage einer EG-Baumusterprüfung)  
(Conformity on the basis of a EC type examination)

Druckgerät / Baugruppe equipment / assemblies	Typ / type	Baureihe / Series
Absperrventil / shut off valve	Elektro-Magnet-Ventil / solenoid-valve	40-EVF..NH.Ü.Av..
		55-EVF..NH.Ü.Av..
Abblaseventil / blow off valve	Elektro-Magnet-Ventil / solenoid-valve	50-EVF..N.Xn.Ü.R.P..
		55-EVF..N.Xn.Ü.R.P..
		55-EVSO 15NH-4R.P.Xn..

Notifizierte Stelle / Notified body: TÜV Rheinland Industrie Service GmbH, Am grauen Stein, D-51105 Köln  
Benannte Stelle-Nr. / Notified body no: 0035  
Zertifikat / Certificate: 01 202 931-B-15-0023-01

#### Angewandte Normen / Applied standards

DIN EN 13611:2011, DIN 3394-1:2004; prEN 16678:2013;

Die Fa. UNI Geräte E. Mangelmann Elektrotechnische Fabrik GmbH ist zertifiziert nach  
The company UNI Geräte E. Mangelmann Elektrotechnische Fabrik GmbH is certified according to  
**DIN EN ISO 9001:2015**

Weeze, 28.03.2025

Ort und Datum / Place and date

Bevollmächtigter der Druckgeräterichtlinie  
Authorized for pressure equipment directive  
Robert Boese

