INSTALLATION AND OPERATING MANUAL

Series RSS/F

Chemical Bellows-sealed Globe Control Valve

remote actuated

Keep for future use!

This operating manual must be strictly observed before transport, installation, operation and maintenance

9560-010-en Revision 21 Edition 04/2025

RICHTER
Process Pumps & Valves

List of Contents

Relevant documents

- Data sheet
- EG-Declaration of conformity
- Declaration of conformity FDA & 97/48/EG
- Manufacturer Declaration ATEX Directive 2014/34/EU
- Manufacturer Declaration TA-Luft
- Form for Safety Information Concerning the Contamination QM 0912-16-2001_en
- Operating manual actuator

1 Technical data

Manufacturer:

Richter Chemie-Technik GmbH
Otto-Schott-Str. 2
D-47906 Kempen
Telephone: +49 (0) 2152 146-0
Fax: +49 (0) 2152 146-190
E-Mail: richter-info@idexcorp.com
Internet: http://www.richter-ct.com

Designation :

Chemical bellows-sealed globe control valve, series RSS/F, with safety stuffing box and bellows (DN 150 only with heavy duty-bellows) as well as interchangeable seat and plug, actuated pneumatically or by electric motor.
Control characteristics to DIN EN 60534, equal percentage, linear, on-off, rangeability 25:1.
V-plug, rangeability 100:1
Certified to Clean Air Act (TA-Luft)
Strength and tightness (P10, P11) of the pressure-bearing body tested to DIN EN 12266-1.
Gas-tight in the seat to DIN EN 12266-1 leak rate A

Face to face alternatively:

- EN 558-1 basic series 1, ISO 5752 series 1 with flanges DIN EN 1092-2, type B (ISO 7005-2 Type B) PN 16 or flanges drilled to ASME B16.5 Class 150
- ANSI/ISA-75.08.09-2004, class 150 with flanges ASME B16.5 Class 150, raised face
- ANSI/ISA-75.08.09-2004, class 300 with flanges ASME B16.5 Class 300, raised face

Materials :

Body material: Ductile cast iron EN-JS 1049 / ASTM A395
Lining material: PFA/PTFE .../F
On request: antistatic …/F-L
Bellows: PTFE, modified PTFE, Hastelloy
Seat and plug: reinforced modified PTFE
at low Cv values also Hastelloy, tantalum

Design pressure :

PN 10 with standard PTFE bellows
with heavy-duty PTFE bellows with PTFE/carbon support rings
PN 16 with heavy-duty PTFE bellows with stainless steel support rings
with Hastelloy C bellows
see pressure-temperature diagram in **Section 1.4**.

Sizes :

DN 15, 20, 25, 40, 50, 65, 80, 100, 150 in mm
½“, ¾“, 1“, 1½“, 2“, 3“, 4“ in inches, Cl 150
1“, 1½“, 2“ in inches, Cl 300 on request

Temperature range : - 60 °C to + 180 °C

see pressure-temperature diagram in **Section 1.4**.

Installation position :

Normally in horizontal line with the actuator on top. See **Section 6.2**.

The direction of flow is marked by an arrow cast into the body.

Dimensions and individual parts :

See sectional drawings in **Section 10**.

Weight :

Nominal size		Weight ca. kg	
ISO	ASME	ISO	ASME
15	**½“**	6	6
20	**¾“**	6	6
25	**1“**	11	11
40	**1½“**	17	17
50	**2“**	19	19
65	**--**	20	--
80	**3“**	39	39
100	**4“**	44	44
150	**6“**	155	155

For weight of actuator, see actuator manufacturer's manual.

Wear parts : Seat, plug, bellows

Options :

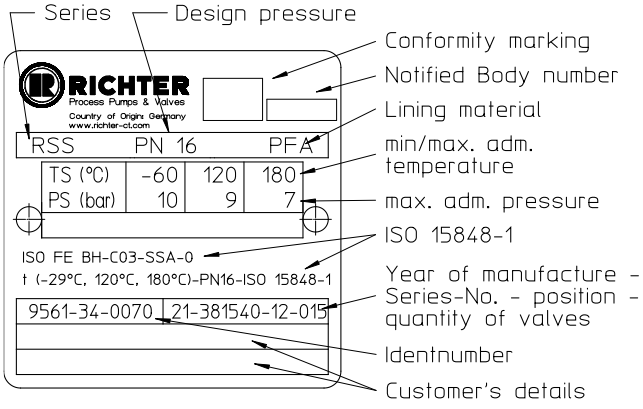
- Heavy-duty-bellows (DN 25-100, 1“- 4“)
  For permeating media and elevated pressures/temperatures
- DN 80-150, 3“-6“ guide tube made of Hastelloy
- Hastelloy C-bellows (not DN 150)
  For special applications (e.g. extreme permeation)
- V-control plug for small Cv values
- Monitoring connection
  For higher safety requirements
- Actuator and actuator accessories

1.1 Name plate, conformity and body markings

The stainless steel name plate is undetachably riveted to the body.

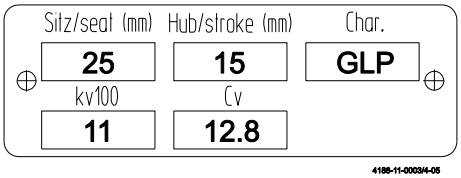
If the operator attaches his identification, it must be ensured that the valve matches the application in question.

Example of type plate with conformity marking:



No conformity marking is permissible for the sizes 15, 20 and 25; the name plate therefore has no conformity marking.

Example: Name plate for control data



If heavy-duty bellows are installed, another name plate indicates this:

HD - BVA = Heavy-duty bellows with support rings of stainless steel

HD - BKo = Heavy-duty bellows with support rings of PTFE/carbon

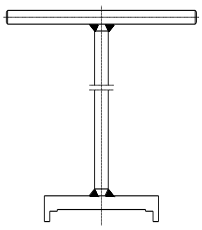
Body identification :

The following are visible on the body according to DIN EN 19 and AD 2000 A4:

- Nominal size
- Rated pressure
- Body material
- Manufacturer's identification
- Melt number/Foundry identification
- Cast date
- Arrow for direction of flow

1.2 Screw-in tools for seats

Nominal size [mm]	[inch]	Article No.
15, 20	½“, ¾“	9568-96-1011
25	1“	9568-96-1001
40	1½“	9568-96-1002
50, 65	2“	9568-96-1003
80	3“	9568-96-1004
100	4“	9568-96-1005
150	6“	9568-96-1013



1.3 Tightening torques

All screws greased, tighten in diametrically opposite sequence!

The tightening torques for pipe screws and body screws mentioned must not be exceeded. For an exception, see **Section 8**, Flange connection valve/pipe is leaking.

The following tightening torques are recommended.

Pipe screws, flanges to ISO/DIN

Flange Nominal size [mm]	screws [ISO/DIN]	Tightening torque [Nm]	[in-lbs]
15	4 x M12	6	55
20	4 x M12	8	70
25	4 x M12	10	90
40	4 x M16	20	175
50	4 x M16	26	230
65	4 x M16	40	355
80	8 x M16	25	220
100	8 x M16	35	310
150	8 x M20	65	575

Pipe screws, flanges to ASME Class 150 or flanges ISO/DIN drilled to ASME Class 150

Flange Nominal size [mm]	[inch]	screws [ASME]	Tightening torque [Nm]	[in-lbs]
15	½“	4 x ½“	5	45
20	¾“	4 x ½“	6	55
25	1“	4 x ½“	8	70
40	1½“	4 x ½“	15	135
50	2“	4 x ⅝“	25	220
65	--	4 x ⅝“	30	265
80	3“	4 x ⅝“	45	400
100	4“	8 x ⅝“	35	310
150	6“	8 x ¾“	80	710

Pipe screws, flanges to ASME Class 300

Flange Nominal size [mm]	[inch]	screws [ASME]	Tightening torque [Nm]	[in-lbs]
25	1	4 x ⅝“	15	133
40	1½	4 x ¾“	25	221
50	2	8 x ⅝“	15	133

Cover screws ISO/DIN

Flange Nominal size [mm]	[inch]	screws [ISO/DIN]	Tightening torque [Nm]	[in-lbs]
15	½“	4 x M10	30	266
20	¾“	4 x M10	30	266
25	1“	4 x M12	50	442
40	1½“	4 x M12	50	442
65	---	4 x M12	50	442
50	2“	4 x M12	50	442
80	3“	8 x M12	50	442
100	4“	8 x M12	50	442
150	6“	10 x M16	110	974

Cover screws ASME

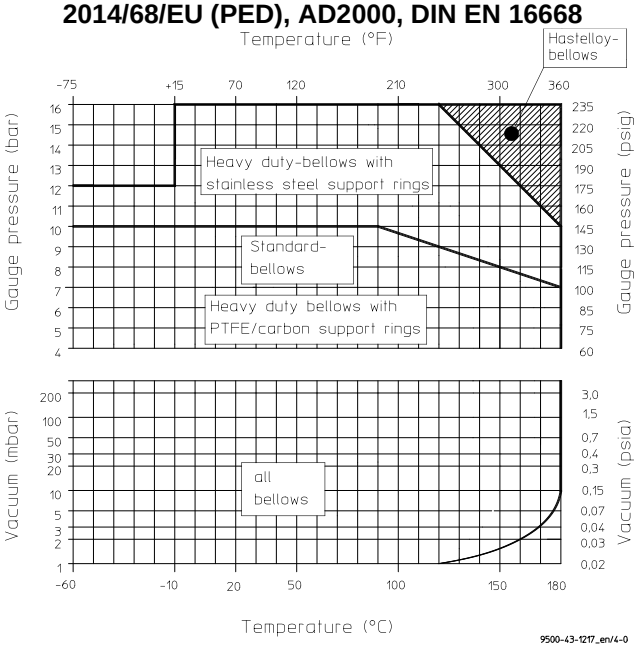
Flange Nominal size [mm]	[inch]	screws [ASME]	Tightening torque [Nm]	[in-lbs]
15	½“	4 x 3/8"	30	266
20	¾“	4 x 3/8"	30	266
25	1“	4 x ½“	50	442
40	1½“	4 x ½“	50	442
50	2“	4 x ½“	50	442
80	3“	8 x ½“	50	442
100	4“	8 x ½“	50	442

seat
Screws not greased

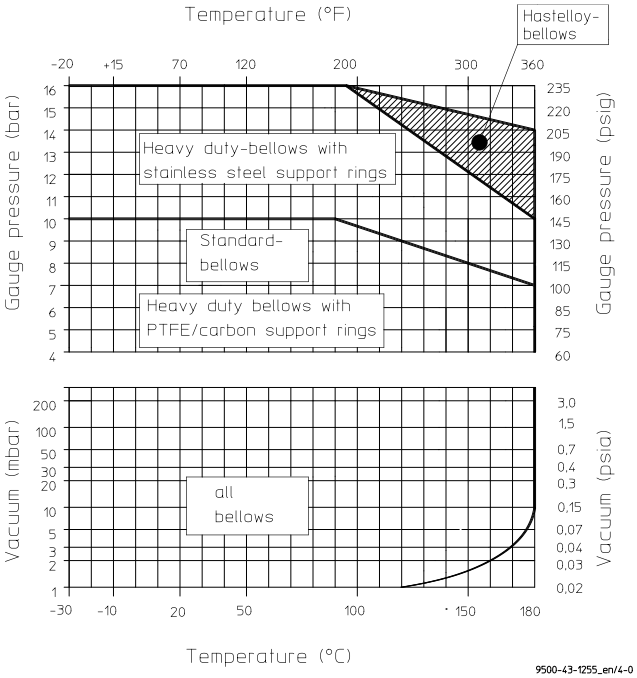
Flange Nominal size [mm]	[inch]	Tightening torque [Nm]	[in-lbs]
15	½“	3	26
20	¾“	3	26
25	1“	6	53
40	1½“	12	106
50	2“	16	142
65	---	16	142
80	3“	28	248
100	4“	30	265
150	6“	65	575

1.4 Pressure-temperature diagram

2014/68/EU (PED), AD2000, DIN EN 16668



ASME B 16.42



DIN EN ISO 15848-1 certificate valid from -29°C to 180°C

When used in the area of application of ASME or ANSI/ISA, the low temperature of ASTM A395 is limited to -20°F (-29°C).

When used in the minus temperature range, the regulations applicable in the country in question must be observed.

1.5 Flow values Kv_{100} (m^3/h)

V-plugs

Nominal size		kv100 Cv	Seat -ø in mm												
[mm]	[inch]		8	8	8	8	8	8	8	14	14	14	14	14	14	14
15	½“	m^3/h	0,01	0,02	0,05	0,10	0,20	0,50								
		USgpm	0.012	0.023	0.06	0.12	0.23	0.58								
20	¾“	m^3/h			0,05	0,1	0,2	0,5								
		USgpm			0,06	0.12	0.23	0.58								
25	1“	m^3/h							0,01	0,02	0,05	0,10	0,20	0,50	0,80	1,20
		USgpm							0.012	0.023	0.06	0.12	0.23	0.58	0.93	1.4

Parabol-plugs

Nominal size		kv100 Cv	Seat -ø in mm										
[mm]	[inch]		8	8	15	20	25	30	40	50	65	80	96
15	½“	m^3/h	1,20	2,00	4								
		USgpm	1.40	2.30	4.7								
20	¾“	m^3/h	1,20	2,00	4								
		USgpm	1.40	2.30	4.7								
25	1“	m^3/h		2,00	4	7	11						
		USgpm		2.30	4.7	8.2	12.8						
40	1½“	m^3/h			4	7	11	15	28				
		USgpm			4.7	8.2	12.8	17.5	32.6				
50	2"	m^3/h			4	7	11	15	28	42			
		USgpm			4.7	8.2	12.8	17.5	32.6	48.9			
65		m^3/h				7	11	15	28	42			
		USgpm				8.2	12.8	17.5	32.6	48.9			
80	3“	m^3/h						15	28	42	65	100	
		USgpm						17.5	32.6	48.9	75.7	117	
100	4“	m^3/h								42	65	100	155
		USgpm								48.9	75.7	117	180

U-Plugs

DN		Seat - ø in mm [inch]				
[mm]	[inch]	80 [3.15]	96 [3.78]	120 [4.72]	145 [5.71]	145 [5.71]
80	3"	90 m^3/h 105 USgpm	----			
100	4"	90 m^3/h 105 USgpm	135 m^3/h 157 USgpm			
150	6“			240 m^3/h 280 USgpm	300 m^3/h 350 USgpm	360 m^3/h 420 USgpm

Notes:

The next lower kv100/Cv value can also be achieved with special plugs without changing the seat ø.
This is important if the kv100/Cv value is subsequently changed as only the plug then has to be replaced.
Conversion into Cv (US gpm) = kv100 x 1,165.

1.6 Cavitation coefficient z

Kv / Kv_{100} = 75%

DN		Seat - ø in mm												
[mm]	[inch]	8	14	15	20	25	30	40	50	65	80	96	120	120	145
15	**½“**	0.60	0.60	0.60											
20	**¾“**	0.60	0.60	0.60											
25	**1"**	0.60	0.60	0.60	0.60	0.60									
40	**1½"**			0.60	0.60	0.60	0.55	0.50							
50	**2"**				0.60	0.60	0.55	0.50	0.40						
65	**--**				0.60	0.60	0.55	0.50	0.40						
80	**3"**						0.55	0.50	0.45	0.32	0.30				
100	**4"**								0.47	0.33	0.30	0.26			
150	**6“**												0.23	0.20	0.18

$$X_F = \frac{\Delta p}{p_1 - p_v}$$

XF = Differential pressure ratio
Δp = Differential pressure input/outlet
p1 = Absolute pressure at inlet
pv = Vapour pressure at operating temp.

XF	≤ z	:	non-critical conditions
XF	≤ 1,4 x z	:	tolerable cavitation
XF	> 1,4 x z	:	inadmissible cavitation

1.7 Valve travel

DN		Standard PTFE bellows			Heavy duty PTFE-bellows			Hastelloy bellows		
[mm]	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
15	**½“**	15	20					15	20	
20	**¾“**	15	20					15	20	
25	**1"**	15	20		15			15	20	
40	**1½"**	15	20	30	15	20		15	20	
50	**2"**	15	20	30	15	20		15	20	
65	**--**	15	20	30	15	20		15	20	
80	**3"**			30			30			30
100	**4"**			30			30			30
150	**6“**	--	--	--			50	--	--	--

The valve travel depends on the actuator selected.

1.8 Opening and closing forces required

The values specified in the tables apply to a seat/plug material of modified PTFE.
With other materials, e.g. PTFE/carbon, higher closing forces are required. Please inquire at manufacturer's.

If the maximum Δp is < p2, p2 is used in the tables. observe the application limits acc. to the pressure-temperature diagram in **Section 1.4**.

- A **mechanical travel stop** is required in the area marked.

  It is provided when
  Δp > 10 bar / 145 psi to Seat-Ø 15-50 mm
  Δp > 6 bar / 87 psi to Seat-Ø ≥ 65 mm

1.8.1 PTFE - Standard bellows

Opening forces
The opening forces remain below the closing forces and are therefore not shown.

Closing forces

Seat Ø	maximum Δp or p2 in bar									
	1	2	3	4	5	6	7	8	9	10
mm	N	N	N	N	N	N	N	N	N	N
8	290	310	330	350	370	390	410	430	450	470
14	330	385	435	490	540	595	645	695	750	800
15	330	385	435	490	540	595	645	695	750	800
20	390	460	525	595	665	730	800	865	935	1010
25	450	545	640	735	830	925	1020	1115	1205	1305
30	550	680	805	935	1065	1190	1320	1445	1575	1705
40	680	885	1085	1290	1490	1695	1895	2095	2300	2480
50	830	1130	1425	1720	2020	2315	2610	2910	3205	3500
65	1040	1500	1960	2420	2890	3350	3810	4270	4740	5190
80	1300	1970	2630	3300	3960	4630	5300	5960	6630	7305
96	1600	2520	3440	4370	5290	6210	7130	8050	8980	9900

1.8.2 Heavy-duty PTFE - bellows

Opening forces

DN [mm]	DN [inch]	N
25	1"	900
40	1½"	2000
50	2"	2000
65	--	2000
80	3"	800
100	4"	800
150	6“	2400

Closing forces

Seatø	maximum Δp or p2 in bar								
	1	2	3	4	5	6	7	8	9
mm	N	N	N	N	N	N	N	N	N
8	290	310	330	350	370	390	410	430	450
14	330	385	435	490	540	595	645	695	750
15	330	385	435	490	540	595	645	695	750
20	390	460	525	595	665	730	800	865	935
25	450	545	640	735	830	925	1020	1115	1205
30	550	680	805	935	1065	1190	1320	1445	1575
40	680	885	1085	1290	1490	1695	1895	2095	2300
50	830	1130	1425	1720	2020	2315	2610	2910	3205
65	1040	1500	1960	2420	2890	3350	3810	4270	4740
80	1300	1970	2630	3300	3960	4630	5300	5960	6630
96	1600	2520	3440	4370	5290	6210	7130	8050	8980
120	2375	3710	5022	6379	7691	9025	10371	11672	13029
145	3468	5416	7332	9313	11229	13177	15142	17041	19023

Seatø	maximum Δp or p2 in bar						
	10	11	12	13	14	15	16
mm	N	N	N	N	N	N	N
8	470	495	510	525	540	555	570
14	800	865	900	935	970	1005	1040
15	800	865	900	935	970	1005	1040
20	1010	1145	1195	1250	1300	1355	1410
25	1305	1475	1550	1625	1705	1780	1855
30	1705	1890	1990	2095	2195	2295	2400
40	2480	2750	2915	3080	3250	3415	3570
50	3500	3790	4035	4280	4525	4770	5020
65	5190	5675	6070	6465	6860	7255	7650
80	7305	7945	8525	9105	9685	10265	10850
96	9900	10790	11610	12425	13240	14060	14880
120	14363	15675	16829	18084	19317	20527	21715
145	20972	22887	24571	26404	28204	29971	31705

2 Notes on safety

This operating manual contains fundamental information which is to be observed during installation, operation and maintenance.

It must be read before installation and commissioning!

For valves which are used in potentially explosive areas, see **Section 3**.

Installation and operation are to be performed by qualified staff.

The area of responsibility, authority and supervision of the staff must be regulated by the customer.

General hazard symbol!
People may be put at risk.

Safety symbol! The control valve and its function may be put at risk if this safety symbol is not observed.

It is imperative to observe warnings and signs attached directly to the valve and they are to be kept fully legible.

Non-observance of the notes on safety may result in the loss of any and all claims for damages.

For example, non-observance may involve the following hazards:

- Failure of important functions of the valve/plant.
- Risk to people from electric, mechanical and chemical effects.
- Risk to the environment through leaks of hazardous substances.

2.1 Intended use

Richter bellows-sealed globe control valves of the series RSS/F are pressure containing components in accordance with the Pressure Equipment Directive (PED) for the passage and shut-off of fluids. The valves are suitable for vapours, gases and non-boiling liquids of group 1 according to the PED and have a corrosion-resistant plastic lining.

Sie werden zur Regelung von korrosiven, reinen und hochreinen Flüssigkeiten, Gasen und Dämpfen in Chemie-, Pharma-, Lebensmittel- und industriellen Prozessen eingesetzt.

Solids can lead to increased wear, damage to sealing surfaces or to a reduction in the service life of the valve.

The operator must carefully examine in the event of operating data other than those provided whether the designs of the valve, accessories and materials are suitable for the new application (consult the manufacturer).

2.2 For the customer / operator

When using the valve, it must be ensured that

- actuators which are retrofitted are adapted to suit the valve
- hot or cold valve parts are protected by the customer against being touched
- the valve has been properly installed in the pipe system
- the usual flow rates are not exceeded in continuous operation.

This is not the manufacturer's responsibility.

Loads caused by earthquakes were not allowed for in the design.

Fire protection to DIN EN ISO 10497 is not possible (plastic lining and plastic components).

2.3 Improper operation

The operational reliability of the valve supplied is only guaranteed if it is used properly in accordance with **Section 2.1** of this operating manual.

The operation limits specified on the identification plate and in the pressure-temperature diagram must under no circumstances be exceeded.

3 Safety notes for applications in potentially explosive areas based on the Directive 2014/34/ EC (ATEX)

The valves are intended for use in a potentially explosive area and are therefore subject to the conformity assessment procedure of the directive 2014/34/EC (ATEX).

As part of this conformity assessment, an ignition hazard analysis to EN 13463-1 to satisfy the fundamental safety and health requirements was conducted with the following result:

- **The valves do not have any ignition source of their own.**
- **The valves are not covered by the scope of application of the ATEX directive and therefore do not need to be identified accordingly.**
- **The valves may be used in a potentially explosive area.**

It is imperative to observe the individual points of intended use for application in a potentially explosive area.

3.1 Intended use

Improper operation, even for brief periods, may result in serious damage to the valve.
In connection with explosion protection, potential sources of ignition (overheating, electrostatic and induced charges, mechanical and electric sparks) may result from these improper operation; their occurrence can only be prevented by adhering to the intended use.
Furthermore, reference is made in this connection to the Directive 95/C332/06 (ATEX 118a) which contains the minimum regulations for improving the occupational health and safety of the workers who may be at risk from an explosive atmosphere.
A difference is made between two cases for the use of chargeable liquids (conductivity < 10^{-8} S/m):

1. **Chargeable liquid and non-conductive lining**
   Charges can occur on the lining surface. As a result, this can produce discharges inside and outside the valve.

   a) Discharges inside the valve

   However, these discharges inside the valve cannot cause ignitions if the valve is completely filled with medium.

   If the valve is not completely filled with medium, e.g. during evacuation and filling, the formation of an explosive atmosphere must be prevented, e.g. by superimposing a layer of nitrogen. It is recommended to wait 1 hour before removing the valve from the plant in order to permit the elimination of static peak charges.

   This means that, to safely prevent ignitions, the valve must be completely filled with medium at all times or else a potentially explosive atmosphere must be excluded by superimposing a layer of inert gas.

   b) Discharges outside the valve

   At the points where the non-conductive lining e.g. protrudes on the sealing surfaces to the outside or gets contact with the atmosphere on the outside, it may lead to discharges from the lining to nearby valves or attachments.

   To safely avoid explosion hazards and accidents, therefore, the atmosphere surrounding the valve must not be explosive.

2. Chargeable liquid and conductive lining

No hazardous charges can occur as charges are discharged direct via the lining and shell (surface resistance < 10^9 Ohm, leakage resistance < 10^6 Ohm)
If non-conductive versions of individual components are installed in the valve, it may restrict the permitted ATEX zone and explosion subgroup when operating the valve despite the conductive lining of the armor plating (see “Technical rules for hazardous substances: Avoidance of ignition hazards due to electrostatic charges” (TRGS 727)).
In these cases, consult the manufacturer.

Static discharges of non-conductive linings are only produced through the interaction with a non-conductive medium and are therefore the responsibility of the plant operator.

Static discharges are not sources of ignition which stem from the valves themselves!

- The temperature of the medium must not exceed the temperature of the corresponding temperature class or the maximum admissible medium temperature as per the operating manual.
- If the valve is heated (e.g. heating jacket), it must be ensured that the temperature classes prescribed in the Annex are observed.
- To achieve safe and reliable operation, it must be ensured in inspections at regular intervals that the valve is properly serviced and kept in technically perfect order.
- Increased wear to the valve can be expected with the conveyance of liquids containing abrasive constituents. The inspection intervals are to be reduced compared with the usual times.
- Actuators and electric peripherals, such as temperature, pressure and flow sensors etc., must comply with the valid safety requirements and explosion protection provisions.

- The valve must be grounded.
  This can be achieved in the simplest way via the pipe screws using tooth lock washers.
  Otherwise grounding must be ensured by different measures e.g. a cable link.
- Plastic-lined valves must not be operated with carbon disulphide.

4 Safety note for valves, certified to Clean Air Act (TA-Luft)

Certificate / Manufacturer Declaration Validity is dependent on the operating instructions being read and observed.

- Carry out regular maintenance intervals and check the tightness of the screw connections and tighten as necessary.

5 Transport, storage and disposal

For all transport work, observe generally accepted engineering practice and the accident prevention regulations.

The valve is supplied with flange caps. Do not remove them until just before installation. They protect the plastic surfaces against dirt and mechanical damage.

Handle the goods being transported with care. During transport protect the valve against impacts and collisions.

Directly after receipt of the goods, check the consignment for completeness and any in-transit damage.

Do not damage paint protection.

5.1 Storage

If the valve is not installed immediately after delivery, store them properly.

The valves be stored in a dry, vibration-free and well-ventilated room at as constant a temperature as possible.

Protect elastomers against UV light.

In general, a storage period of 10 years should not be exceeded.

5.2 Return consignments

Valves which have conveyed aggressive or toxic media rinse and clean before being returned to the manufacturer's works.

It is **imperative** to enclose a **safety information sheet / general safety certificate** on the field of application with the return consignment.

Pre-printed forms are enclosed with the installation and operating manual.

Safety precautions and decontamination measures are to be mentioned.

5.3 Disposal

Parts of the valve may be contaminated with medium which is detrimental to health and the environment and therefore cleaning is not sufficient.

Risk of personal injury or damage to the environment due to the medium!

- Wear protective clothing when work is performed on the valve.
- Prior to the disposal of the valve:
  - Collect any medium, etc. which has escaped and dispose of it in accordance with the local regulations.
  - Neutralise any medium residues in the valve.
- Separate valve materials (plastics, metals, etc.) and dispose of them in accordance with the local regulations.

6 Installation

- Examine valve for in-transit damage, damaged control valves must not be installed.
- Before installation the valve and the connecting pipe must be carefully cleaned to remove any dirt, especially hard foreign matter.
- During installation, pay attention to the correct tightening torque, aligned pipes and tension-free assembly.
- The all-round gap between the body and the cover must remain constant so that a centric position of the plug in relation to the seat is guaranteed.
- Operation during maintenance work can be continued with a bypass around the control valve.

Ensure that a remotely actuated actuator cannot be accidentally switched on.

- Depending on the kv-value, the free cross section in the valve may be much smaller than the cross section of the nominal size. To prevent clogging, the pipe must be carefully cleaned upstream of the valve.

6.1 Flange caps and gaskets

- Contamination of or damage to the sealing surfaces is best avoided if the protective caps remain on the flanges until just before installation.

If plastic sealing surfaces, e.g. on mating flanges made of metal or enamel, can be damaged, use PTFE-lined seals with a metal inlay.
These gaskets are available as special accessories in the Richter range.

6.2 Direction of flow and installation position

Normally the valve is installed in a horizontal pipe with the actuator on top. The valve can also be installed with the actuator underneath.
However, this is only admissible if there is no risk of contamination to the bellows, e.g. from the sedimentation of solids.

Inclined positions of the actuator are only admissible after consultation with the manufacturer. In this case a support structure may have to be provided for the actuator.
The direction of flow is from below against the plug. An arrow on the body indicates the direction of flow.

6.3 Grounding

The valve must be grounded. This can be achieved in the simplest way via the pipe screws using tooth lock washers.
One pipe screw per flange is underlaid with toothed disks.
At the customer's request a setscrew M6 with a hex. nut and washer will be provided at each flange as an additional grounding connection.
Otherwise grounding must be ensured by different measures e.g. a cable link.

6.4 Test pressure

The test pressure PT of an open valve must not exceed the value of 1.5 x PN/PS as per the identification of the valve.

6.5 Monitoring connection

If the cover flange has a screw-in fitting for an alarm connection, the latter must also be connected or the screw-in fitting has to be sealed. Otherwise, medium could escape if the bellows became defective.

In order to ensure leak monitoring, Richter recommends the combination of the safety stuffing box with a warning connection.

7 Operation

7.1 Initial commissioning

Normally, the valves have been tested for leaks with air or water. Prior to initial operation check cover screws.
For tightening torques, see **Section 1.3**.

Unless otherwise agreed there could be residual amounts of water in the flow section of the valve.
This could result in a possible reaction with the medium.

To prevent external leaks, it is possible to retighten all connecting screws after the valve has been subjected to the initial operating pressure and temperature.
For tightening torques, see **Section 1.3**.

7.2 Improper operation and their consequences

- Crystallisation must be prevented, e.g. by heating. In extreme cases this may cause blocking.
- Increased wear occurs in operation with solids contents.
- Operation during cavitation leads to increased wear.
- Non-observance of the pressure-temperature diagram can lead to damage.
- If no monitoring is provided by the warning connection, do not tighten safety stuffing box. Otherwise any leak cannot be seen.
- The valve is not to be operated in the wrong direction of flow. Otherwise, it may close unintentionally with an actuator of normal dimensions.

7.3 Shutdown

The local regulations are to be observed when dismantling the valve.
Make sure that a remote-controlled actuator cannot be switched on by accident.

In the case of a diaphragm actuator make sure that there is no more compressed air in the actuator; the springs must be in the unstressed state.
Before undoing the pipe or cover flange bolts, ensure that the plant is depressurised on both sides of the valve.

Prior to starting any repair work, the valve is to be thoroughly cleaned. Medium residue may be in the valve even if it has been properly drained and flushed. Drain the valve on both sides.

After dismantling, immediately protect the valve flanges against mechanical damage by using flange caps. See also **Section 6.1**.

8 Malfunctions

- Flange connection valve/pipe is leaking

  Retighten the flange screws to a tightening torque according to **Section 1.3**. If this does not remedy the leak, the recommended torques may be exceeded by 10%.

  If this also fails to stop the leak, dismantle and inspect the valve.

- Flange connection main body/cover is leaking

  Retighten the cover screws to a tightening torque according to **Section 1.3**. If this does not remedy the leak, the recommended torques may be exceeded by 10%.

  If this also fails to stop the leak, dismantle and inspect the valve.

- Packing is leaking

  First of all, the packing gland follower can be tightened.

  Then dismount the valve as quickly as possible and repair.

  Replace bellows.

  Replace plug and/or seat.

  Replace packing rings.

- Monitoring connection reports a rise in pressure or a leak

  Replace bellows.

  Replace plug and/or seat.

  Replace packing rings.

- Valve does not switch

  Is the actuator supplied with power?

  Is any directional control valve correctly connected?

  Is there foreign matter in the valve?

  Is the stuffing box tightened too much?

- Valve does not close tight

  Check distance of the travel stop.

  Are there any solids between seat and plug?

  Are the sealing surfaces of the seat or plug damaged?

  Is the actuator too small?

  Is the air pressure high enough?

  Is the positioner set correctly?

- Valve does not open completely

  Is the air pressure high enough?

  Is the positioner set correctly?

  Does the actuator permit enough travel?

  Does the valve permit enough travel?

- The flow rate is too high or too low.
- The performance curve is not correct.
- The valve cavitates.

  Do the rated data according to the data sheet or works certificate match the data of the plant?

  Are the correct seat and plug installed? See markings on the seat and plug and compare them with the name plate and the data sheet.

9 Maintenance

- All repair work is to be performed by qualified personnel using the appropriate tools.
- For the arrangement, designation and item numbers of all parts of the valve, see **Section 10**.
- Order spare parts with all the details in acc. with the valve identification.
- **Only original spare parts may be installed.**
- The maintenance staff can decide whether the valve is dismantled from the pipe or not for maintenance work.
  In both cases **Section 7.3** is to be observed.
- It is also up to the maintenance staff to decide whether the actuator or other accessories are dismantled for the maintenance work.
- **Section 9.4** is to be observed for re-assembly of the actuator.
- To prevent leaks, a regular check of the connection screws make in line with the operating requirements.
  For tightening torques, see **Section 1.3**.

9.1 Setting the travel stop

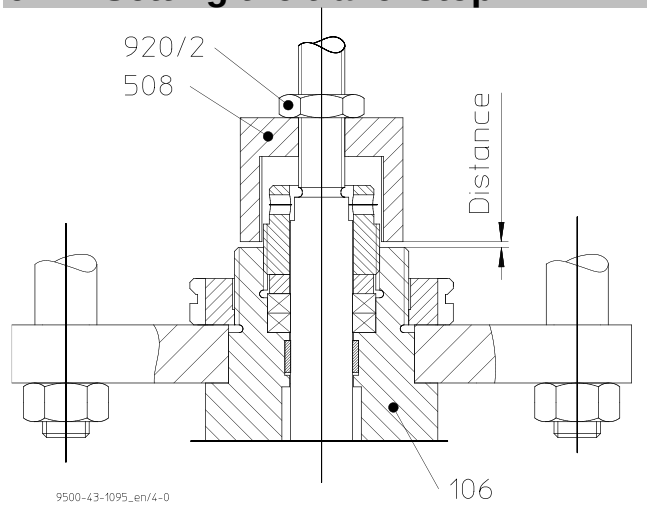


Fig. 1

To ensure the valve closes tight, a distance between the travel stop **508** and cover **106** must be observed:
DN 15 - 50 (½“.– 2“) : 0.5 mm
DN 65 - 150 (2½“ – 6“) : 1.0 mm
If these distances are not correct, the travel stop must be reset:

- Close valve.
- Remove protection bellows **687**.
- Move travel stop **508** to the correct distance.
- Tighten lock nut **920/3**.

9.2 Dismantling

9.2.1 Maintenance of the upper section

This mainly involves the following work:

- Replacing the plug **204**.
- Replacing the bellows **206**.
- Inspecting the metal parts of the upper section and replacing them if necessary.

The entire dismantling and assembly procedure is described below. If only partial assembly is required, this can be derived from the text.

9.2.2 Dismantling plug

- Move plug **204** into open position if the actuator **850** is mounted.
- Remove cover nuts and screws **901/1**, **1x936/1**, **1x936/2** and **920/2** (DN 100 (4“) **902/2**, **1x936/1**, **1x936/2**, **920/1** and **920/2**).
- Pull cover **106** vertically out of the body **100**.
- Remove protective bellows **687**, travel stop **508** and packing nut **404**.
- Remove valve stem **800** with bellows **206** and plug **204** below.
- Clamp valve stem **800** in a vice with protective jaws.
- Pull round cord **522** out of the plug **204** with a pair of pliers.
- Unscrew plug **204** by hand or with a strap wrench. Right-hand thread.
- Unscrew bellows **206** by hand or with a strap wrench. Right-hand thread.
  With the heavy-duty bellows do not remove the support rings **231** and the support disc **232**.

9.2.3 Replace packing rings.

- Only replace packing rings **402/1** and thrust ring **405** when necessary.
- Only remove guide rings **302** if necessary. Use a sharp tool, e.g. scribing iron or screwdriver.
- With DN 80 und DN 100 (3“ and 4“): only remove guide **801** if necessary. Press in the direction of the stuffing box using a press.
  Check to see whether the seat **205** is still ok.
  If not: replace. See **Section 9.3**.

9.2.4 Assembly

DN 15 - DN 65 (½“.– 2½“)

- Insert guide rings **302/1**, **302/2**.
- Clamp valve stem **800** in a vice with protective jaws.
- Screw bellows **206** without lubricant onto the valve stem **800** and tighten by hand.
- Check whether the new plug **204** fits into the seat **205**. Make sure that neither the seat nor the plug is damaged.
- Screw plug **204** with plug onto the bellows **206** without lubricant and tighten by hand.
- Press round cord **522** into the plug **204** leaving about 10 mm over. This facilitates the next dismantling operation.

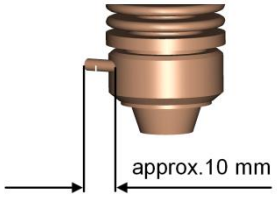


Fig. 2

- Install valve stem **800** with bellows **206** and plug **204** without lubricant into the cover **106**.
- Insert packing rings **402/1** offset by 90° and thrust ring **405** into the cover and tighten with packing nut **404**. For tightening torques, see **Section 1.3**.
- Screw travel stop **508** and lock nut **920/2** onto the valve stem **800**.
- Carefully lower upper section into the body.
- Install cover **106**. For tightening torques, see **Section 1.3**.
- If the bracket **510** or yoke **516** was dismantled, install it again. Tighten groove nut **509/1**.
- Mount the protective bellows **687** with inserted snap rings **954/1** onto the valve stem **800**.
- Mount clip **937/1** onto the valve stem **800**.
- If the actuator **850** was removed, mount it again now.
- Set valve and mount coupling **804**. See **Section 9.4.**
- Set travel stop **508**. See **Section 9.1**.
- Attach protective bellows **687** with clip **937/1.**
- Connect monitoring connection again.

DN 80 bis DN 150 (3“ bis 6“)

- Press guide **801** into the cover **106** without lubricant.
- Now continue as described under assembly DN 15 - DN 65 (½“.– 2½“).

9.3 Replacing seat

The plug is marked with:

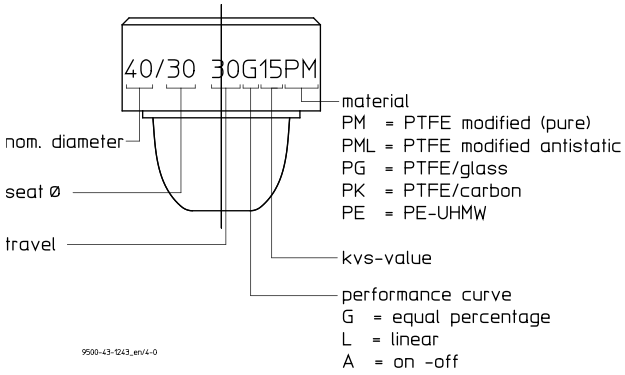


Fig. 3

The seat is marked with:

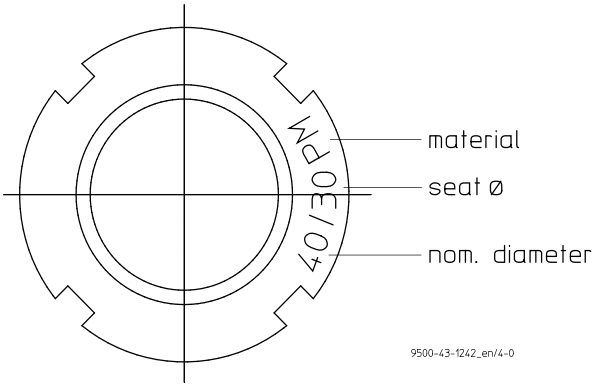


Fig. 4

- A screw-in tool is required for assembling and dismantling the seat **205**. The article numbers for the individual nominal sizes are listed in **Section 1.2**.
- The new seat is to be carefully protected prior to assembly. The sealing edge and the sealing surface for the plug must not be damaged.

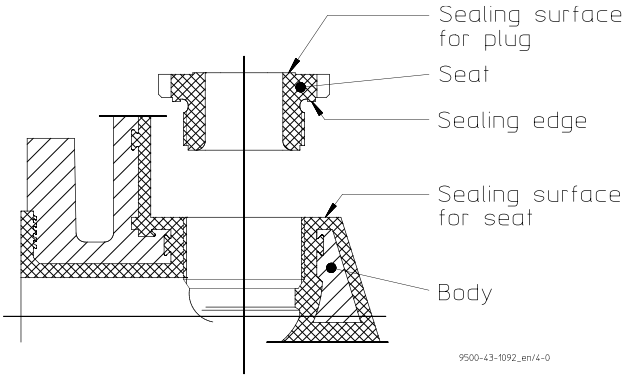


Fig. 5

- Remove the upper section as described in **Section 9.2.**
- Screw the seat **205** out of the body with the Richter screw-in tool.
  Right-hand thread.
- Carefully clean the sealing surface in the body **100** and check for damage.

- If there is any damage, you can try to rework the sealing surface.
- Screw the new seat **205** into the body **100** without lubricant using the Richter screw-in tool. For tightening torques, see **Section 1.3**.
- Further assembly as described in **Section 9.2**.

9.3.1 V-plug

In contrast to the normal valve plug, the seat diameter is smaller than the V-plug diameter.
The V-plug is pushed firmly over the resilient sealing lip of the valve seat. This seals the plug.

9.4 Mounting the actuator

- Assembly of the actuator varied depending on the make and type.
- The operating manuals for actuators, positioners and other accessories must be observed.

As regards the process valve, special attention is to be paid to the following:

- The stem **800** must under no circumstances by turned to adapt to the coupling **804**. If turned counterclockwise, it would otherwise turn out of the metal core of the bellows **206**.
- The actuator manufacturers prescribe that the valve is moved into the closed position when the coupling **804** is mounted. In this closed position many bellows are pre-tensioned in the valve. They would possibly open the valve again. Therefore, the stem **800** is to be kept in the closed position when the coupling **804** is mounted.

The safety function, i.e. opening or closing of the valve if the air or power fails, must be checked.

10 Drawings

10.1 Legend

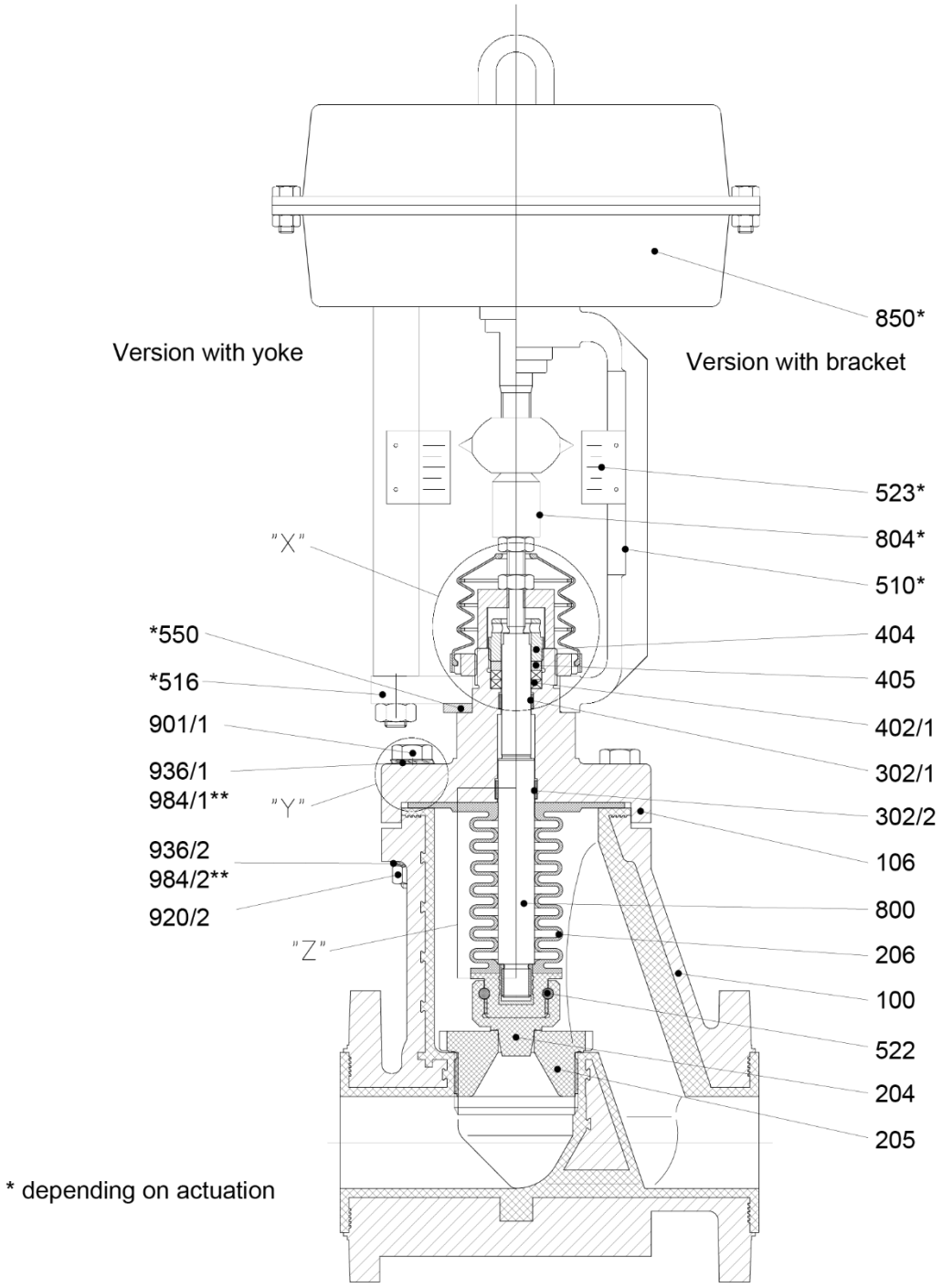
100 body
106 Cover
204 plug
205 Seat
206 Bellows
206 heavy-duty bellows
includes:
231 support ring
232 support disc

302/x guide ring
402/1 Packing ring
404 Packing nut
405 thrust ring
508 Travel stop
510 bracket
516 Yoke
522 round cord
523 Stroke index
550 disc
687 protective bellows
includes:
509/1 Groove nut
954/1 Snap ring
937/1 Clip

800 Valve stem
801 guide
(DN 80-150, 3“-6“)
804 Coupling
850 actuator
901/1 Hex. screw
(DN 15 to 80, ½" to 3")
902/1 Stud screw
(DN 100, 4")
917/1 screw-in pipe connector
920/x Hex. nut
936/x Tooth lock washer
938/1 hex. head screw plug
984/x ** wedge lock washer

** wedge lock washer made of HC-276 for valves with screws/nuts made of HC

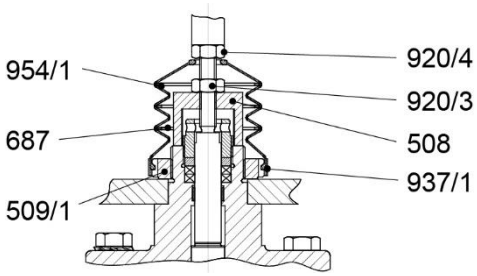
10.2 RSS/F Sectional drawing (with standard UVV-bellows)



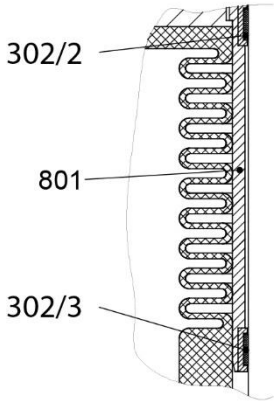
* depending on actuation

10.3 RSS/F – Details and options

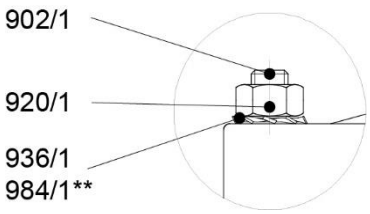
Detail "X" Travel Stop



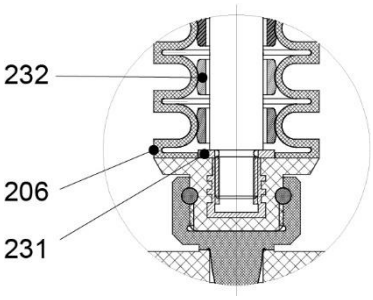
Detail "Z" (DN 80, 100, 3", 4")



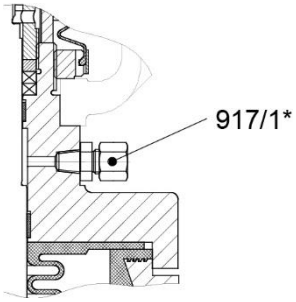
Detail "Y" (DN 100, 4")



Option heavy-duty bellows

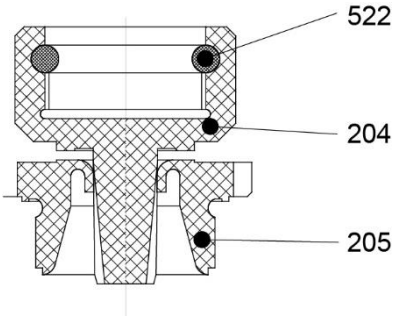


Option monitoring connection

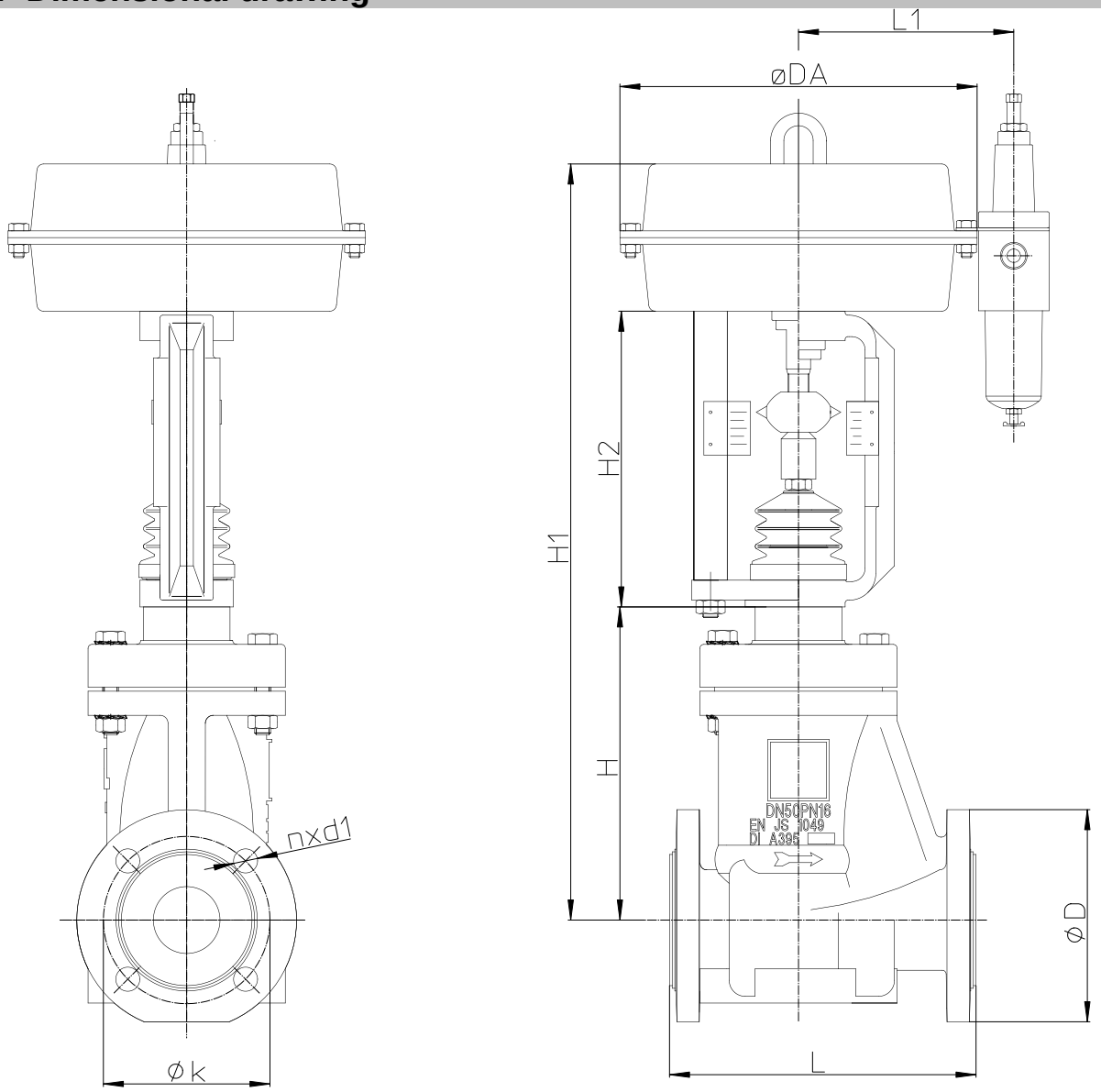


***** If requested with **938/1**

V-control plug for small kv values



10.4 Dimensional drawing



DN							EN 558 Reihe 1		ANSI/ISA-75.08.01 Class 150		ANSI/ISA-75.08.01 Class 300	
		ØDA	H1	H		L1	L		L		L	
m	inch	mm/in	mm/in	mm	inch	mm/in	mm	inch	mm	inch	mm	inch
15	½"			130	5.12		130	5.12	130[1)]	5.12[1)]	[2)]	[2)]
20	¾"										[2)]	[2)]
25	1"			185	7.28		160	6.30	184	7.24	197	7.76
40	1½"			225	8.86		200	7.87	222	8.70	235	9.25
50	2"			230	9.05		230	9.05	254	10.00	267	10.50
65	2½"						290	11.42	[2)]	[2)]	[2)]	[2)]
80	3"			340	13.35		310	12.20	298	11.73	[2)]	[2)]
100	4"			350	13.78		350	13.78	352	13.86	[2)]	[2)]
150	6“			512	20.16		480	18.90	480[1)]	18.9[1)]	[2)]	[2)]

1) not to ANSI/ISA
2) not available

10.4.1 Flange connection dimensions

DN		EN 558 Reihe 1			ASME Class 150			ASME Class 300		
		ØD	Øk	n x d_1	ØD	Øk	n x d_1	ØD	Øk	n x d_1
mm	inch	mm	mm	mm	mm	mm	inch	mm	mm	inch
15	½"	95	65	4x14	105[3)]	60.5	4x$^5/_8$“	[2)]	[2)]	[2)]
20	¾"	105	75	4x14	105[3)]	70	4x$^5/_8$“	[2)]	[2)]	[2)]
25	1"	115	85	4x14	108	79.5	4x16	115	89	4x19
40	1½"	150	110	4x19	150	98.6	4x16	156	114.5	4x22.5
50	2"	165	125	4x19	165	120.5	4x18	165	127	8x19
65	2½"	185	145	4x19	[2)]	[2)]	[2)]	[2)]	[2)]	[2)]
80	3"	200	160	8x19	191	152.4	4x19	[2)]	[2)]	[2)]
100	4"	220	180	8x19	229	190.5	8x18	[2)]	[2)]	[2)]
150	6“	285	240	8x23	285[3)]	241.5	8x22	[2)]	[2)]	[2)]

[3)] FlangeØ acc. to ISO/DIN

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RICHTER
Process Pumps & Valves
A Unit of IDEX Corporation

CE Konformitätserklärung nach EN ISO//IEC 17050
Declaration of Conformity according to EN ISO//IEC 17050

Produkt *Product*	Kunststoffausgekleidete Regelarmaturen *Plastic lined control valves*
Bauart *Design*	Absperr- oder Regelventil, Faltenbalg-Stellventil *Globe shut-off or control valve, bellows control valve*
Baureihe *Series*	HV, HVR, RSS
Nennweite *Size*	DN 15 bis DN 150, ½" bis 6" *DN 15 to DN 150, ½" to 6"*
Seriennummer *Series number*	ab/*from* 01.09.2024
EU-Richtlinie *EU-Directive*	2014/68/EU Druckgeräterichtlinie 2006/42/EG [2] Maschinenrichtlinie Anhang II, Nr. 1A 2014/68/EU *Pressure Equipment* *2006/42/EC [2] Directive Machinery Annex II, No. 1A*
Angewandte Technische Spezifikation *Applied Technical Specification*	DIN EN 16668, AD2000 DIN EN ISO 12100
Überwachungsverfahren *Surveillance Procedure*	2014/68/EU Zertifizierungsstelle für Druckgeräte der TÜV Nord Systems GmbH & Co. KG Große Bahnstraße 31 D-22525 Hamburg Notified Body 0045
Konformitätsbewertungs-verfahren 2014/68/EU *Conformity assessment procedure 2014/68/EU*	Modul H Zertifikats Nr. 0045/202/1411/Z/00470/22/D/001(00)
Kennzeichnung *Marking*	2014/68/EU [1] ≥ DN 32, ≥ 1" CE 0045 2006/42/EG *2006/42/EC* CE

Das Unternehmen Richter Chemie-Technik GmbH bescheinigt hiermit, dass die o.a. Baureihen die grundsätzlichen Anforderungen der aufgeführten Richtlinien und Normen erfüllen.
Richter Chemie-Technik GmbH confirms that the basic requirements of the above-specified directives and standards have been fulfilled.

1) Für nicht aufgeführte Nennweiten ist eine Kennzeichnung nicht zulässig.
For sizes not listed a marking is not permitted.
2) Armaturen mit freiem Wellenende, vorbereitet für Antrieb oder mit Antrieb und Zubehör. Ausgenommen sind handbetätigte Armaturen.
Valves with a bare shaft, prepared for actuator or with actuator and accessories. Excluded are manually actuated valves.

Kempen, 01.09.2024

i.V. C. Muders

Christian Muders
Director Global Engineering

Manuel Müller
Quality Manager

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RICHTER
Process Pumps & Valves
A Unit of IDEX Corporation

UK CA

Konformitätserklärung
Declaration of Conformity

In Übereinstimmung mit den Leitlinien der britischen Regierung
in accordance with UK government guidance

Produkt *Product*	Kunststoffausgekleidete Regelarmaturen *Plastic lined globe control valves*
Bauart *Design*	Absperr- oder Regelventil, Faltenbalg-Stellventil *Globe shut-off or control valve, bellows control valve*
Baureihe *Serie*	HV, HVR, RSS
Nennweite *Size*	DN 15 bis DN 150, ½" bis 6" *DN 15 to DN 150, ½" to 6"*
Seriennummer *Series number*	ab/*from* 01.09.2024
UK Gesetzliche Vorschriften *UK Statutory instruments*	2016 No. 1105 Druckgeräteverordnung 2016 2008 No. 1597 [1)] Maschinenverordnung 2008 *2016 No. 1105 The Pressure Equipment Regulations 2016* *2008 No. 1597 [1)] The Supply of Machinery Regulations 2008*
Angewandte Technische Spezifikation *Applied Technical Specification*	DIN EN ISO 12100 DIN EN 16668, EN 13445
Überwachungsverfahren *Surveillance Procedure*	2016 No. 1105, 2008 No. 1597 Conformity Assessment Durchgeführt gemäß dem bestehenden PED-Modul H-Zertifikat im Rahmen der Erleichterungen der britischen Regierung vom Juni 2022. Applied according to existing PED Module H certificate under the UK government June 2022 easements.
Konformitätsbewertungs-verfahren 2014/68/EU *Conformity assessment procedure 2014/68/EU*	Modul H Zertifikats Nr. 0045/202/1411/Z/00771/19/D/001(00), TÜV Nord CE 0045 *Module H* *Certificate no.* 0045/202/1411/Z/00771/19/D/001(00), *TÜV Nord CE 0045*
Kennzeichnung *Marking*	2016 No. 1105, 2008 No. 1597 [1)] *2016 No. 1105, 2008 No. 1597 [1)]* UK CA

Das Unternehmen Richter Chemie-Technik GmbH bescheinigt hiermit, dass die o.a. Baureihen die grundsätzlichen Anforderungen der aufgeführten Richtlinien und Normen erfüllen. Diese Erklärung wird unter der alleinigen Verantwortung des Herstellers abgegeben.
Richter Chemie-Technik GmbH confirms that the basic requirements of the above specified directives and standards have been fulfilled. This declaration is issued under the sole responsibility of the manufacturer.

1) Armaturen mit freiem Wellenende, vorbereitet für Antrieb oder mit Antrieb und Zubehör. Ausgenommen sind handbetätigte Armaturen.
Valves with a bare shaft, prepared for actuator or with actuator and accessories. Excluded are manually actuated valves.

Kempen, 01.09.2024

i. V. C. Muders

Christian Muders
Director Global Engineering

Manuel Müller
Quality Manager

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RICHTER
Process Pumps & Valves
A Unit of IDEX Corporation

Konformitätserklärung FDA & 2014/68/EU
Declaration of Conformity

Produkt *Product*	PFA ausgekleidete Regelarmaturen *PFA control valves*
Bauarten *Design*	Absperr- oder Regelventil, Faltenbalg-Stellventil *Globe shut-off or control valve, bellows control valve*
Baureihen *Series*	HV, HVR, RSS
Richtlinie Directive	FDA Regulation 21 CFR §177.15 50 2014/68/EU, EU Nr. 10/2011, EU Nr. 1935/2004, 84/500/EWG, 2005/31/EG
Mediumberührte Werkstoffe Materials of media-wetted parts	PFA PTFE Mod. PTFE

Das Unternehmen Richter Chemie-Technik GmbH bescheinigt hiermit, dass in medium berührten Teilen der o.a. Baureihen Materialien verwendet wurden, welche die Vorschriften der FDA Regulation 21 CFR §177.15 50, die Verordnungen 2014/68/EU, EU Nr. 10/2011, EU Nr. 1935/2004, 84/500/EWG und 2005/31/EG erfüllen bzw. dafür die allgemeinen Unbedenklichkeitsbescheinigungen des Herstellers/Lieferanten oder Prüflabors vorliegen. Entsprechende Einzelnachweise sind vorhanden.

The company, Richter Chemie-Technik GmbH, herewith certifies that in medium-wetted parts of the above-mentioned series materials were used which satisfy the provisions of the FDA Regulation 21 CFR §177.15 50 and Directives 2014/68/EU, EU no. 10/2011, EU Nr. 1935/2004, 84/500/EWG and 2005/31/EG or for which general compliance certificates of the manufacturer/supplier/test laboratory are available. Relevant *individual proof can be provided.*

Kempen, 01.09.2024

i.V. C. Muders

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i.V. M. S.

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RICHTER
Process Pumps & Valves

IDEX
FLUID & METERING

Herstellererklärung ATEX Richtlinie 2014/34/EU

Manufacturer's Declaration ATEX Directive 2014/34/EU

Alle Richter Armaturen inkl. Absperr-, Regel- und Sicherheitsventile
All Richter Valves incl. Shut-off, Control and Safety Valves

Die oben bezeichneten Armaturen wurden einer Risikoanalyse nach der Richtlinie 2014/34/EU mit folgendem Ergebnis unterzogen:
The valves specified above underwent a risk analysis according to Directive 2014/34/EU with the following result:

- **Richter Armaturen besitzen keine eigenen potentiellen Zündquellen. Die Armaturen können sowohl manuell als auch mechanisch/elektrisch angetrieben werden.**
  Die Armaturen fallen nicht in den Anwendungsbereich der ATEX-Richtlinie 2014/34/EU und dürfen deshalb auch nicht danach gekennzeichnet werden.
  Richter valves do not have their own potential sources of ignition. The valves can be actuated manually as well as mechanically/electrically.
  ATEX Directive 2014/34/EU is not applicable to these valves. Therefore, it is not allowed to mark the valves according to that Directive.

- **Die Armaturen dürfen in explosionsgefährdeten Bereichen eingesetzt werden.**
  The valves can be used in potentially explosive atmospheres.

- **Dennoch müssen für den Armatureneinsatz in explosionsgefährdeten Bereichen Sicherheitshinweise bzgl. des Explosionsschutzes beachtet werden. Richter hat hierzu die Betriebsanleitungen um den Zusatz „Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen in Anlehnung an die Richtlinie 2014/34/EU" erweitert.**
  However, when using the valves in potentially explosive atmospheres, specific safety notes on explosion protection must be observed. Here, Richter has extended their operating manuals to include the supplement „Safety notes for applications in potentially explosive atmospheres based on Directive 2014/34/EU ".

Ergänzender Hinweis: *Supplementary note:*

- **Elektrische/mechanische Antriebe müssen einer eigenen Konformitätsbewertung nach ATEX unterzogen werden.**
  Electrical/mechanical actuators must undergo a separate conformity assessment.

Kempen, 01.09.2021

i. V. Kleining

Gregor Kleining
Director Global Engineering

i. A. Watermann

Ivo Watermann
ATEX Beauftragter

RICHTER
Process Pumps & Valves
A Unit of IDEX Corporation

Herstellererklärung / *Manufacturer´s Declaration*

TA-Luft / *German Clean Air Act*

Richter Stellventil / *Richter Control Valve*

Hiermit erklären wir, dass die Stellventile der Baureihen
Hereby we declare, that the Control Valves of the series

RSS, HV

die Anforderung der Leckagerate L_B (≤ 10^{-4} mg/s·m) gemäß Ziffer 5.2.6.4 der Technischen Anleitung-zur Reinhaltung der Luft (TA-Luft) von 2021 erfüllen.

Grundlage sind die Prüfungen sowie deren Bewertung und Qualifikation nach DIN EN ISO 15848-1 vom TÜV Süd Industrie Service GmbH.

Voraussetzung für die Gültigkeit der Herstellererklärung ist das Beachten und Einhalten der Betriebsanleitung.

meet the requirement of the leakage rate L_B (≤ 10^{-4} mg/s·m) according to clause 5.2.6.4 of German Clean Air Act (TA-Luft) of 2021.

This is based on the tests as well as their evaluation and qualification according to DIN EN ISO 15848-1 by TÜV Süd Industrie Service GmbH.

A prerequisite for the validity of the manufacturer's declaration is that the operating instruction manuals are observed and complied with.

Kempen, 01.09.2024

i.V. C. Muders

Christian Muders
Director Global Engineering

Manuel Müller
Quality Manager

Richter Chemie-Technik GmbH · Postfach 10 06 09 · D-47883 Kempen

08.01.2015

Declaration of no objection

Dear Sirs,

The compliance with laws for the industrial safety obligates all commercial enterprises to protect their employees and/or humans and environment against harmful effects while handling dangerous materials.
The laws are such as: the Health and Safety at Work Act (ArbStättV), the Ordinance on Harzadous Substances (GefStoffV, BIOSTOFFV), the procedures for the prevention of accidents as well as regulations to environmental protection, e.g. the Waste Management Law (AbfG) and the Water Resources Act (WHG)

An inspection/repair of Richter products and parts will only take place, if the attached explanation is filled out correctly and completely by authorized and qualified technical personnel and is available.

In principle, radioactively loaded devices sent in, are not accepted.

Despite careful draining and cleaning of the devices, safety precautions should be necessary however, the essential information must be given.

The enclosed declaration of no objection is part of the inspection/repair order. Even if this certificate is available, we reserve the right to reject the acceptance of this order for other reasons.

Best regards
RICHTER CHEMIE-TECHNIK GMBH

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Sitz der Gesellschaft: Kempen · Amtsgericht Krefeld HRB 9635
Geschäftsführer: Barbara Wladarz, Bret A. Prybylski

Safety Information / Declaration of No Objection Concerning the Contamination of Richter-Pumps, -Valves and Components

1 SCOPE AND PURPOSE

Each entrepreneur (operator) carries the responsibility for the health and safety of his employees. This extends also to the personnel, who implements repairs with the operator or with the contractor.

Enclosed declaration is for the information of the contractor concerning the possible contamination of the pumps, valves and component sent in for repair. On the basis of this information for the contractor is it possible to meet the necessary preventive action during the execution of the repair.

Note: The same regulations apply to repairs **on-site**.

2 PREPARATION OF DISPATCH

Before the dispatch of the aggregates the operator must fill in the following declaration completely and attach it to the shipping documents. The shipping instructions indicated in the respective manual are to be considered, for example:

- Discharge of operational liquids
- remove filter inserts
- lock all openings hermetically
- proper packing
- Dispatch in suitable transport container
- Declaration of the contamination fixed **outside!!** on the packing

Declaration about the Contamination of Richter Pumps, -Valves and Components

RICHTER Process Pumps & Valves

The repair and/or maintenance of pumps, valves and components can only be implemented if a completely filled out declaration is available. If this is not the case, delay of the work will occur. If this declaration is not attached to the devices, which have to be repaired, the transmission can be rejected.

Every aggregate has to have it's own declaration.

This declaration may be filled out and signed only by authorized technical personnel of the operator.

Contractor/dep./institute :	Reason for transmitting ❄ Please mark the applicable
	Repair: o subject to fee o Warranty
Street :	**Austausch:** o subject to fee o Warranty
Postcode, city :	o Exchange/ Replacement already initiated/received
Contact person :	**Return**: o Leasing o Loan o for credit note
Phone : Fax :	
End user :	

A. Details of Richter-product:

Classification:
Article number:
Serial number:

Failure description:

B. Condition of the Richter-product:

	no[1]	yes	no
Was it in operation ?	o	o	
Drained (product/operating supply item) ?		o	o
All openings hermetically locked!		o	
Cleaned ?		o	o
If yes, with which cleaning agent:			
and with which cleaning method:			

Contamination :

	no[1]	yes
toxic	o	o
caustic	o	o
inflammable	o	o
explosive[2]	o	o
mikrobiological[2]	o	o
radioactive[3]		
other pollutant	o	o

[1] if "no", then forward to **D**.

[2] Aggregates, which are contaminated with microbiological or explosive substances, are only accepted with documented evidence of an approved cleaning.

[3] Aggregates, which are contaminated with radioactive substances, are not accepted in principle.

C. Details of the discharged materials (must be filled out imperatively)

1. **With which materials did the aggregate come into contact ?** Trade name and/or chemical designation of operational funds and discharged materials, material properties, e.g. as per safety data sheet (e.g. toxic, inflammable, caustic)

X	Trade name:	Chemical designation:
a)		
b)		
c)		
d)		

	no	yes
2. **Are the materials specified above harmful to health ?**	o	o
3. **Dangerous decomposition products during thermal load ?**	o	o

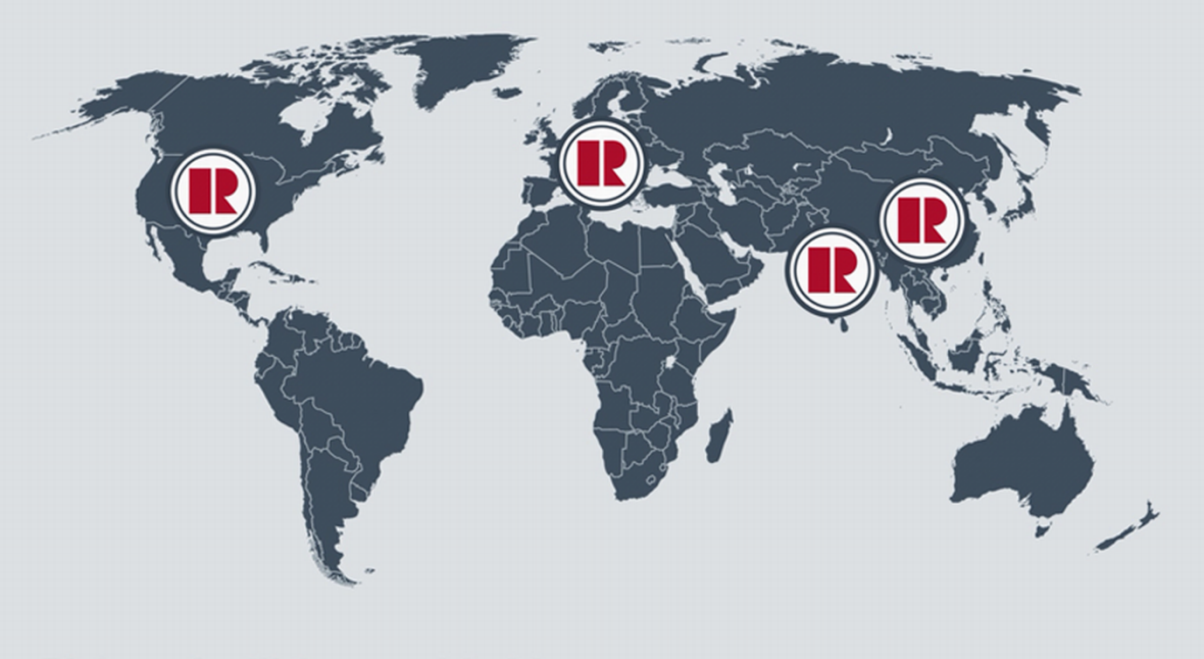
If yes, which ones?

D. Mandatory declaration: We assure that the data in this explanation are truthful and complete and as a signatory I am able to form an opinion about this. We are aware that we are responsible towards the contractor for damages, which results from incomplete and incorrect data. We commit ourselves to exempt the contractor from claims for damages of thirds resulting from incomplete or incorrect data. We are aware that we are directly responsible towards thirds, irrespective of this declaration, which belongs in particularly to the employees of the contractor consigned with the handling repair of the product.

Name of the authorized person (in block letters): _____

Date _____ Signature _____

Company stamp



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RICHTER
KEEP ON FLOWING