

Globe Shut-off or Control Valve

bellows sealed



Keep for future use!

This operating manual must be strictly observed before transport, installation, commissioning etc. in order to avoid endangering.

Subject to change without notice.

Reproduction is generally permitted with indication of the source.

© Richter Chemie-Technik GmbH

List of Contents

1	Technical data	3	6	Operation	9
1.1	Intended use	3	6.1	Initial commissioning	9
1.2	Name plate, CE and body markings	4	6.2	Inadmissible modes of operation and their consequences	9
1.3	Tightening torques	4	6.3	Shutdown	9
1.4	Pressure-temperature diagram.....	5	7	Malfunctions	9
1.5	Flow rates, kv100 (Cv).....	5	8	Maintenance	10
1.6	Screw-in tool for seat	6	8.1	Dismantling	10
2	Notes on safety	6	8.1.1	Dismantling plug	10
2.1	For the customer / operator	6	8.1.2	Replacing packing rings	10
2.2	Inadmissible modes of operation.....	6	8.2	Assembly.....	11
3	Safety notes for applications in potentially explosive areas based on the Directive 94/9/ EC (Atex 95)	7	8.2.1	Installing plug	11
3.1	Intended use	7	8.2.2	Replacing seat	11
4	Transport and storage	8	9	Drawings	12
4.1	Storage	8	9.1	Sectional drawing HV, HVR, with standard bellows	12
4.2	Return consignments.....	8	9.2	Section, views and options for HV, HVR	13
5	Installation	8			
5.1	Flange caps and gaskets.....	8			
5.2	Direction of flow and installation position .	8			
5.3	Grounding	8			
5.4	Test pressure.....	8			

Relevant documents

- ◆ Declaration of conformity acc. to the EC Pressure Equipment Directive 97/23/EC
- ◆ Form for General Safety Certificate QM 0912-16-2001_en

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@richter-ct.com
 Internet: <http://www.richter-ct.com>

Designation :

Globe shut-off or control valve with safety stuffing box and bellows to German Clean Air Regulations (TA-Luft) as well as interchangeable seat and plug.

Series **HV** → version with on-off plug
HVR → version with control plug

Control characteristics for HVR to DIN EN 60534, equal percentage, linear, on-off, rangeability 25:1. V-plug, rangeability 100:1

Tightness tested to DIN EN 12266-1

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 (ANSI) B16.5 Class 150
- ASME (ANSI) B16.10, column 21, Class 150 with flanges ASME (ANSI) B16.5 Class 150, raised face

Testing for valves DIN EN 12266-1, 12266-2.

Materials :

Body material: Ductile cast iron EN-JS 1049 to DIN EN 1563 (0.7043 DIN 1693) or ASTM A395

Lining material: PFA or FEP
 on request : conductive design

Temperature range :

See pressure-temperature diagram in Section 1.5.

Operating pressure:

Standard bellows up to 10 bar
 Heavy-duty bellows up to 16 bar
 Hastelloy C-bellows up to 16 bar at 180 °C

Ball valve sizes in mm :

DN 15, 20, 25, 40, 50, 65, 80, 100
 1", 1½", 2", 2½", 3" 4" in inch

Weight:

Nom. Size	15	20	25	40	50	65	80	100
ASME	--	--	1"	1½"	2"	---	3"	4"
ca. kg	7	7	12	17	20	22	49	55

Installation position:

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

See Sections 5.2.

Dimensions and individual parts:

See sectional drawing in Section 9.

Wear parts: Seat, plug, bellows

Options :

Heavy-duty bellows DN 25 - 100 (1" - 4")

For permeating media and elevated pressures/temperatures

Hastelloy bellows

For special applications (e.g. extreme permeation)

Alarm or flushing connection

For higher safety requirements

1.1 Intended use

Richter globe shut-off or control valves of the series HV, HVR 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.

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

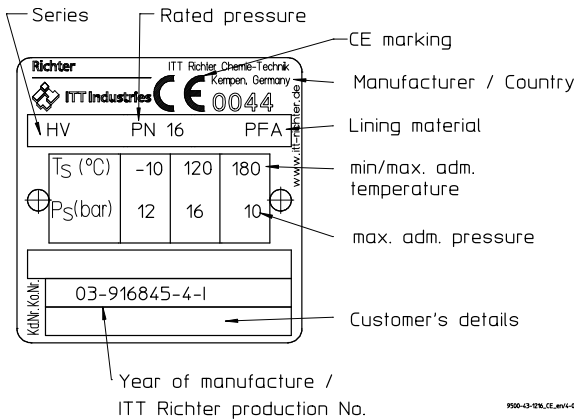
The operator must carefully examine in the event of operating data other than those provided whether the designs of the valve, accessories and materials are suitable for the new application (consult the manufacturer).

1.2 Name plate, CE and body markings

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

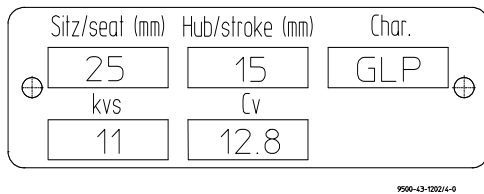
If the operator attaches his identification, it must be ensured that the valve matches the application in question.

Example of name plate with CE marking:



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

Example: Name plate for control data (HVR)



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

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

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
- ◆ Foundry date
- ◆ Arrow for direction of flow

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 7**, Flange connection valve / pipe is leaking.

The following tightening torques are recommended.

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

Flange nom. size		Screws [ISO/DIN]	Tightening torque [Nm]
[mm]	[inch]		
15	½"	4 x M12	12
20	¾"	4 x M12	12
25	1	4 x M12	12
40	1½"	4 x M16	22
50	2	4 x M16	30
65	--	4 x M16	40
80	3	8 x M16	25
100	4	8 x M16	30

Pipe screws, flanges to ASME Class 150

Flange nom. size		Screws [ASME]	Tightening torque [in-lbs]
[mm]	[inch]		
25	1	4 x ½"	106
40	1½"	4 x ⅝"	133
50	2	4 x ⅝"	221
80	3	4 x ⅝"	354
100	4	8 x ⅝"	266

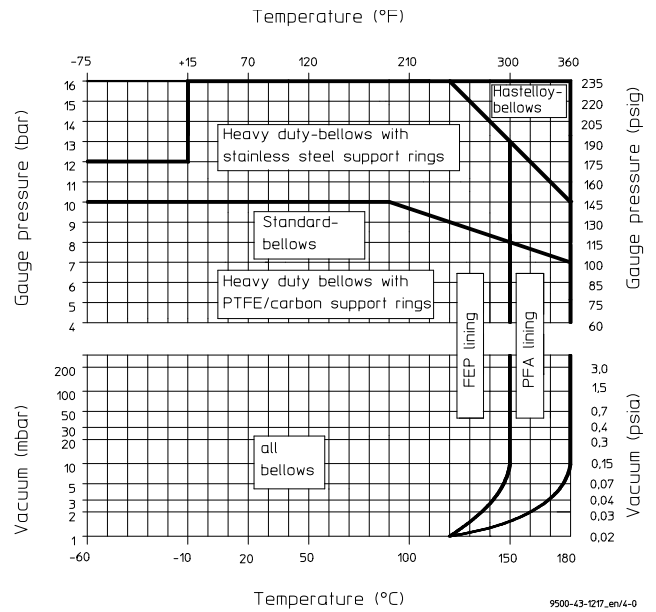
Cover screws

Flange nom. size		Screws [ISO/DIN]	Tightening torque [Nm]	Tightening torque [in-lbs]
[mm]	[inch]			
15	--	4 x M10	30	266
20	--	4 x M10	30	266
25	1	4 x M12	50	442
40	1½"	4 x M12	50	442
50	2	4 x M12	50	442
65	--	4 x M12	50	442
80	3	8 x M12	50	442
100	4	8 x M12	50	442

Seat and packing nut

DN		Seat Tightening torque		Packing nut Tightening torque	
[mm]	[inch]	[Nm]	[in-lbs]	[Nm]	[in-lbs]
15	--	3	26,5	7	62
20	--	3	26,5	7	62
25	1	6	26,5	7	62
40	1½	12	106	7	62
50	2	16	141,5	7	62
65	--	16	141,5	7	62
80	3	28	248	7	62
100	4	30	265,5	7	62

1.4 Pressure-temperature diagram



1.5 Flow rates, kv100 (Cv)

HVR with control plug

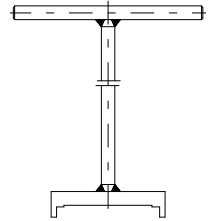
Nom. diameter		K _{v100} Cv	Seat -Ø in mm														
[mm]	[inch]		8	8	8	8	8	14	14	14	14	14	14	15	20	25	30
15	--	m ³ /h	0,05	0,10	0,20	0,50	0,80							4			
		USgpm	0,06	0,12	0,23	0,58	0,93							4,7			
20	--	m ³ /h	0,05	0,10	0,20	0,50	0,80							4			
		USgpm	0,06	0,12	0,23	0,58	0,93							4,7			
25	1	m ³ /h						0,05	0,10	0,20	0,50	0,80	1,20	4	7	11	
		USgpm						0,06	0,12	0,23	0,58	0,93	1,40	4,7	8,2	12,8	
Nom. diameter		K _{v100} Cv	Seat -Ø in mm														
mm	[inch]		15	20	25	30	40	50	65	80	96						
40	1½	m ³ /h	4	7	11	15	28		4	7	11						
		USgpm	4,7	8,2	12,8	17,5	32,6		4,7	8,2	12,8						
50	2	m ³ /h		7	11	15	28	42									
		USgpm		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						

HV with on-off plug

Nom. size [mm]		with max. seatø [mm]	kv100 [m ³ /h]	Cv [USgpm]
15	--	15	5	6
20	--	20	5	6
25	1	25	13	15
40	1½	40	30	35
50	2	50	45	52
65	--	50	45	52
80	3	80	111	129
100	4	96	160	186

1.6 Screw-in tool for seat

Nom. diameter		Article No.
[mm]	[inch]	
15, 20	--	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



2 Notes on safety

This operating manual contains fundamental information which is to be observed during installation, operation and maintenance. It must therefore 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 ball 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 ball 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 For the customer / operator

When using the valve, it must be ensured that

- ◆ 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.

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

2.2 Inadmissible modes of operation

The operational reliability of the valve supplied is only guaranteed if it is used properly in accordance with **Section 1.1** 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 94/9/ EC (Atex 95)

The valves are intended for use in a potentially explosive area and are therefore subject to the conformity assessment procedure of the directive 94/9/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

Inadmissible modes of 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 inadmissible modes of 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

Chargeable liquid and non-conductive lining
Charges can occur on the lining surface. As long as the valve is completely filled with medium, no hazardous discharges can result from these charges.

As a result, this can produce discharges inside the valve. However, these discharges 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.

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)

The following special feature applies to the series with bellows (HV, BAV, KSE, GU, GUT, PA):

The bellows are not offered in a conductive version, i.e. the restrictions under point 1. apply.

Richter optionally offers conductive metallic bellows for the series HV.

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 other action, e.g. cable bridges.
- Plastic-lined valves must not be operated with carbon disulphide.

4 Transport and storage



It is imperative, for all transport work, to 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 the valve must be protected against impacts and collisions.

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

Do not damage paint protection.

4.1 Storage

If the valve is not installed immediately after delivery, it must be put into proper storage.

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

4.2 Return consignments



Valves which have conveyed aggressive or toxic media must be well rinsed and cleaned before being returned to the manufacturer's works.

A **General Safety Certificate** on the field of application is to be enclosed with the returned goods.

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

Safety precautions and decontamination measures are to be mentioned.

5 Installation

Examine valve for in-transit damage, damaged globe shut-off or 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.



If the cover is provided with an alarm connection, it must also be connected or sealed. Otherwise medium could escape if the bellows are defective.

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.

5.1 Flange caps and gaskets

Leave protective caps on the flanges until just prior to installation.

Where there is a particularly high risk of damage to the plastic sealing surfaces, e.g. if the mating flanges are made of metal or enamel, PTFE-lined gaskets with a metal inlay should be used. These gaskets are available as special accessories in the ITT Richter range.

5.2 Direction of flow and installation position

Installation is independent of the direction of flow.

Any installation position can be chosen.

Otherwise, it is marked by a direction arrow on the ball valve, e.g. in the case of cavity-free ball/stem units.

5.3 Grounding

If the plant requires grounding the easiest solution is to place a toothed lock washer under the nut of a pipeline bolt of each valve flange.

Otherwise grounding must be ensured by different measures e.g. a cable link.

5.4 Test pressure

The test pressure PT of an **open valve** must not exceed the value of $1.5 \times \text{PN/PS}$ as per the identification of the valve.

6 Operation

6.1 Initial commissioning

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



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

To prevent leaks, all connection screws should be retightened after the initial loading of the valve with operating pressure and operating temperature. For torques, see **Section 1.3**.

6.2 Inadmissible modes of operation and their consequences

- ◆ Crystallisation may result in damage to the seat rings or ball/stem unit. This can be prevented by heating.
In extreme cases this may cause blocking.
- ◆ When used in the minus temperature range, the regulations applicable in the country in question must be observed.

- ◆ Operation with solids leads to increased wear.
- ◆ Operating during cavitation leads to increased wear.
- ◆ Non-observance of the pressure-temperature diagram can lead to damage.
- ◆ Do not subject the handwheel to heavy loads; the lever or valve may be damaged.

6.3 Shutdown

The local regulations are to be observed when dismantling the valve.

Prior to undoing the flange connection ensure, that the plant is depressurised and emptied.



Prior to starting any repair work, the valve is to be thoroughly cleaned. Even if the valve has been properly emptied and rinsed, residual medium may still be found in the valve, After dismantling, immediately protect the valve flanges against mechanical damage with flange caps. See also **Section 5.1**.

7 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 ball valve.
- ◆ Flange connection main body/cover is leaking
Retighten cover screws. See paragraph "Flange connection valve/pipe is leaking".
- ◆ Packing is leaking
Retighten packing nuts in line with the details in **Section 1.3**.
Disadvantages:
The medium can destroy the metallic internals relatively quickly.
The hysteresis can be impaired.
Replace bellows.
- ◆ Alarm connection reports a rise in pressure or a leak.
Replace bellows.
Replace plug and/or seat.
Replace packing rings.
- ◆ Valve can only be moved with difficulty.
Is the stuffing box tightened too much?
- ◆ Valve does not seal tight.
Are there solids between the seat and plug?
Are the sealing surfaces of the seat or plug damaged?
- ◆ 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.

8 Maintenance

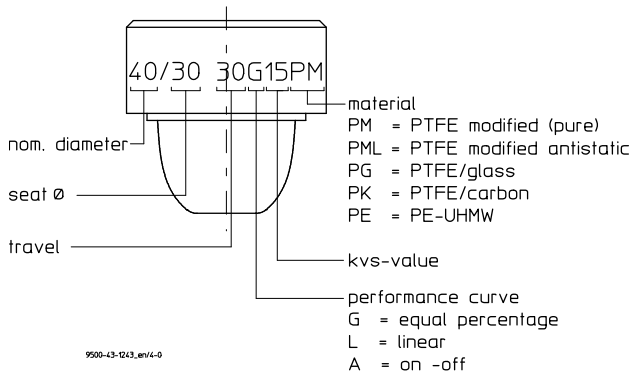
To prevent leaks, a regular check of the connection screws should be made in line with the operating requirements.

For torques, see **Section 1.3**.

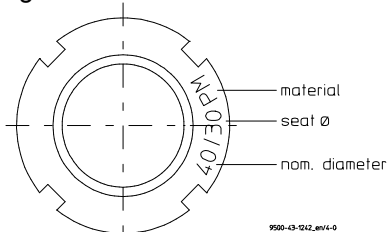
Spare parts are to be ordered with all the details in acc. with the valve identification.

Only original spare parts may be installed.

The seat is marked with:



The plug is marked with:



8.1 Dismantling

8.1.1 Dismantling plug

- Move plug **204** into the open position.
- Remove screw fittings **901/1**, **936/1** (with DN 100 **902/2**, **936/1**, **920/3**).
- Pull upper part vertically out of the body **100**.
- Undo bellows **206** with plug **204** by hand or use a strap wrench. Right-hand thread.
- With the heavy-duty bellows do not remove the support rings **231** and the support disc **232**.
- Pull out round cord **522** of the plug **204** with pliers.
- Unscrew plug **204** by hand or use a strap wrench. Right-hand thread.
- Check whether the seat is still OK.
If not: replace. See **Section 8.2.2**.

8.1.2 Replacing packing rings

Only replace packing rings and thrust ring when necessary.

Dismantling and assembly are described in the following, once the upper part has already been pulled out of the body.

DN 15 and DN 20

- Remove spring-type slotted pin **939/3**.
- Unscrew handwheel **210**.
- Unscrew packing nut **404**.
- Remove thrust ring **405/1**.
- Turn spindle **802** with guide **801** and, when thread is free, pull downwards.
- Replace packing rings **402/1**.
- Insert thrust ring **405/1** and packing nut **404**.
- Push spindle **802** with guide **801** upwards. Make sure that the round head rivet **565/1** lies in the groove of the cover **106**. Then screw spindle/guide into the cover.
- Tighten packing nut **404** slightly.
- Screw on handwheel **210**.
- Force in spring-type slotted pin **939/3**.

DN 25 - DN 65 (1" - 2")

- Force out spring-type slotted pins **939/2**.
- Unscrew handwheel hub **230** with handwheel **210**. The plain bearings **300/1**, **300/2** and the ring **500/1** may fall out of the cover **106**.
- Undo stuffing box screw fittings **902/1**, **920/1**, **554/1**.
- Force out spring-type slotted pin **939/1**.
- Pull out stem **855** downwards.
- Remove ring **500/1** and lower plain bearing **300/2**.
- Remove packing gland follower **503** and thrust ring **405/1**.
- Replace packing rings **402/1**.
- Insert thrust ring **405/1** and packing gland follower **503**.
- Before pushing up the stem, push plain bearing **300/2** and ring **500/1** over the stem.
- Push up stem **855** and force in spring-type slotted pin **939/1**.
- Tighten packing gland follower **503** slightly.
- Screw handwheel hub **230** with handwheel **210** into the plain bearings.
- Push up ring **500/1** and force in spring-type slotted pins **939/2**.

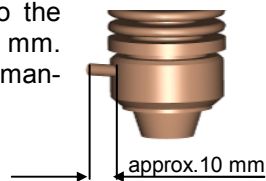
DN 80 and DN 100 (3" and 4")

- Unscrew groove nuts **509/1** off the handwheel hub **230**.
- Now proceed as described under DN 25 - DN 65.

8.2 Assembly

8.2.1 Installing plug

- Screw bellows **206** without lubricant onto the stem **855** 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 **204** onto the bellows without lubricant and tighten by hand.
- Press round cord **522** into the plug **204** apart from 10 mm. This facilitates the next dismantling operation.

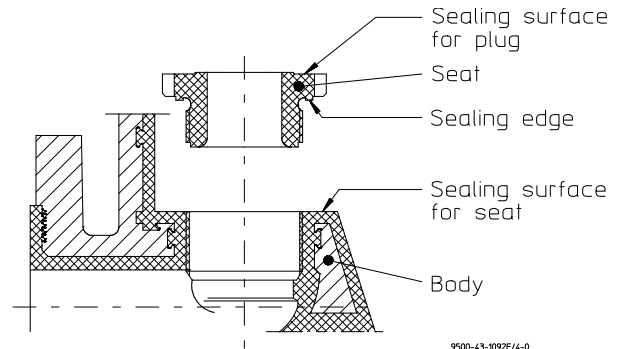


- Install stem **855** with bellows **206** and plug **204** without lubricant into the cover **106**.
- Carefully lower upper part into the body.
- Install cover screw fittings. For tightening torques, see [Section 1.3](#).

8.2.2 Replacing seat

A screw-in tool is required for the assembly and dismantling of the seat. The article numbers for the individual nominal sizes are listed in [Section 1.6](#).

The new seat must be carefully protected prior to assembly. The sealing edge and the sealing surface for the plug must not be damaged.



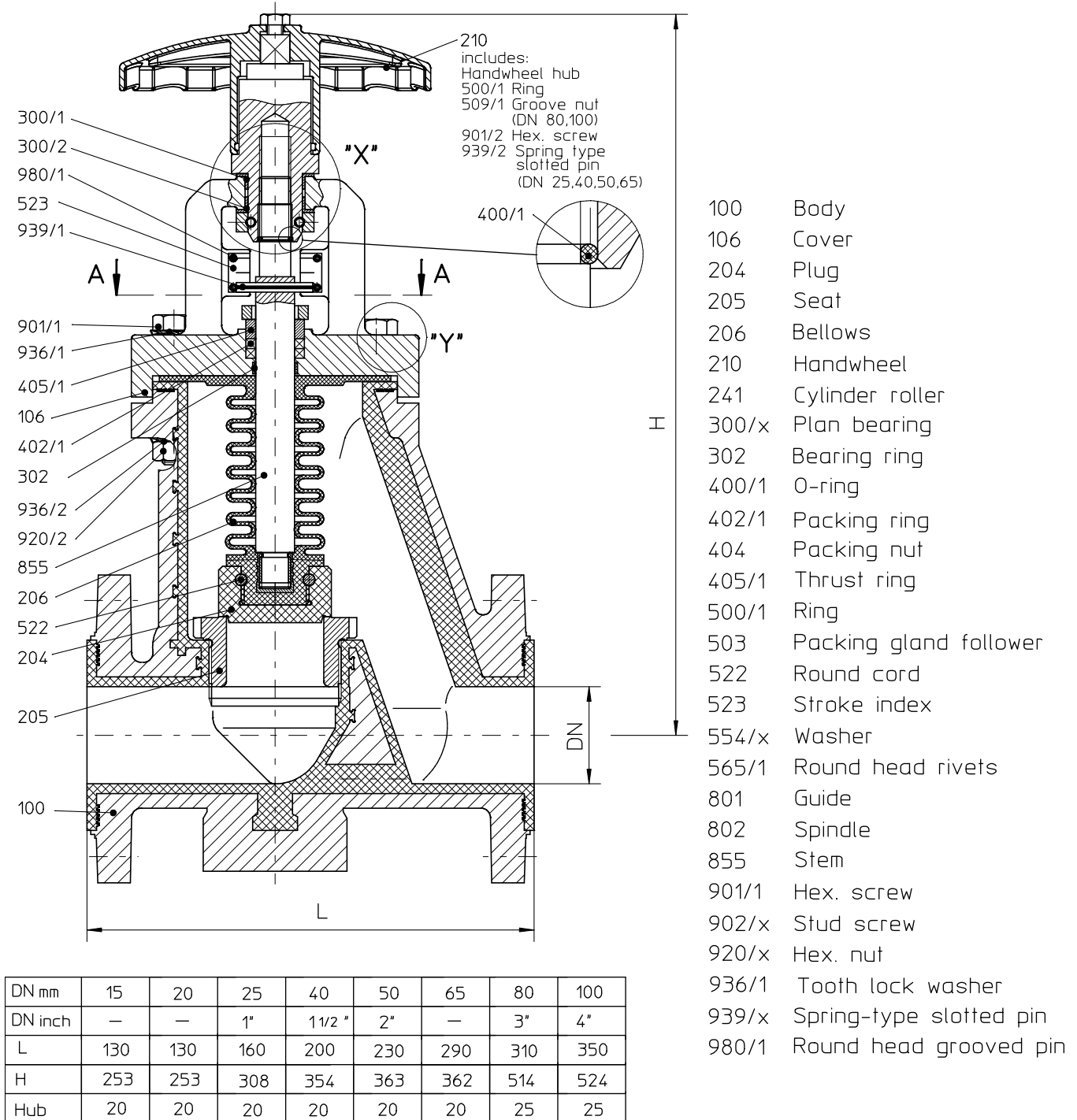
Remove the upper part of the valve as described in [Section 8.1.1](#).

- 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** without lubricant into the body using the Richter screw-in tool. For tightening torques, see [Section 1.3](#).
- The further assembly procedure is the same as described in [Section 8.2.1](#).

9 Drawings

9.1 Sectional drawing HV, HVR, with standard bellows

View shows DN 25 to DN 100

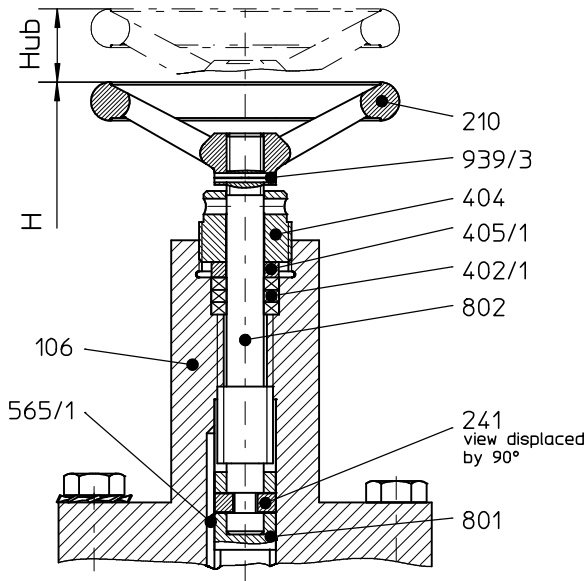


Dimensions in mm

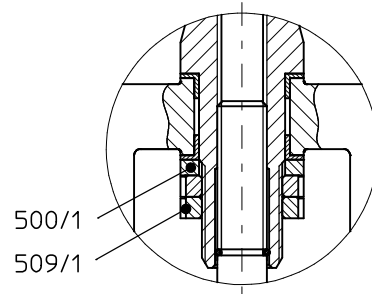
9500-43-1215_en/4-0

9.2 Section, views and options for HV, HVR

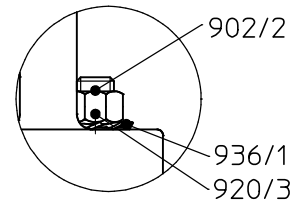
DN15 und DN20



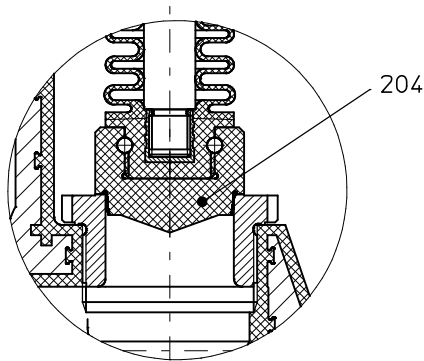
"X"
 DN80 and DN100



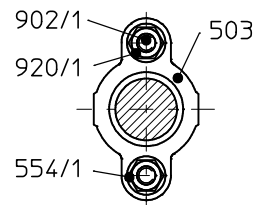
"Y"
 DN100



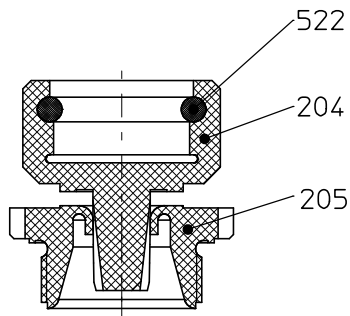
HVR control plug



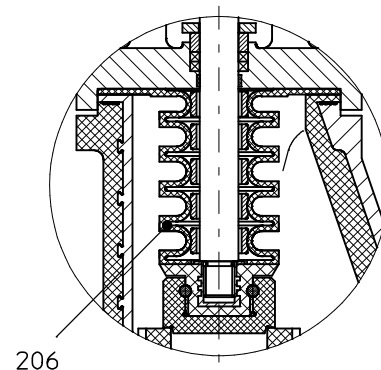
A-A



HVR control-V-plug
 for small cv-values



Option HD-bellows



206
 includes:
 231 support ring
 232 support disc

9500-43-1215_en/4-0

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

FAX**Fax No. ()****Pages (incl. cover sheet) ()****To:**

()

Richter Chemie-Technik GmbH
Otto-Schott-Straße 2
D-47906 KempenTelefon +49 (0) 21 52/146-0
Telefax +49 (0) 21 52/146-190richter-info@richter-ct.com
www.richter-ct.comContact person:
()Reference:
()Extension:
- ()E-Mail Address:
()Date:
()**Your order No.:** ()**Our Kom. No.:** ()**Serial No.:** ()

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 GMBHEnclosures

()