

# RICHTER CHEMIE-TECHNIK

**The Answer to Corrosion**

**Series KNAR**

## Operating Manual for Control Ball Valves with One-piece V-Control Ball/Stem and Richter ENVIPACK Universal Packing Box

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Total No. of pages 8

### Local agent:

See order

Reprinting is generally permitted,  
indicating the source.  
However, our prior written consent must  
be obtained in all cases.

### Note:

Before transport, installation operation, etc.  
read these instructions carefully!

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## 1 General

The German version of these operating instructions is authoritative.

RICHTER ball valves comply with the general delivery conditions for valves as per DIN 3230 resp. MSS SP-72.

Enclosed operating instructions for accessories are also to be carefully read and observed.

### 1.1 Use

The universal corrosion-resistant fluoroplastic lining of the valve makes it ideally suited for aggressive media.

When the valve is to be employed using alternative operational data, the operating company has to carefully consider whether the valve and accessories are suitable for the new application.

### 1.2 Product data

Type code

KNAR : Control ball valve with lever  
or with actuator

Nominal diameters : 1", 1½", 2", 3", 4", 6".

These control ball valves are not piggable.

## 2 Safety



The safety precautions in these operating instructions are specially marked with the standard symbol for danger when non-observance could endanger personnel.

**CAUTION !**

The non-observance of these safety precautions can affect the valve and impair its operation.

### 2.1 Qualifications and training of personnel

The personnel responsible for installation, operation and maintenance must hold the appropriate qualifications.

The operating company must precisely define the responsibilities, competence and supervision of the personnel. If the personnel lack the necessary knowledge, they are to be trained and instructed.

If required, this can be carried out by the manufacturer/ supplier of the valve at the request of the operating company.

Furthermore, the operating company is to ensure that the contents of the operating instructions have been fully understood by the personnel.

### 2.2 Dangers through non-observance of the safety precautions

The non-observance of the safety precautions can lead to the loss of all claims for damages.

Non-observance may - for example - result in the following:

- failure of important functions of the valve / plant.
- endangering of personnel by electrical, mechanical and chemical influences.
- endangering the environment through leakage of dangerous media.

## 2.3 Safety awareness at work

Attention is to be paid to the following:

- The safety precautions in these operating instructions.
- The national regulations concerning accident prevention.
- The working, operating and safety regulations of the operating company.

### 2.4 Safety precautions for the operator/user

- If hot or cold components of the valve are a source of danger, the operating company has to secure these components against contact.
- Contact guard for moving parts must not be removed when valve is in operation.

### 2.5 Safety precautions for maintenance

Work on remotely actuated valves is only to be carried out when they are at a standstill.

Valves delivering harmful media which are a health hazard must be decontaminated.

On completion of work, all safety and protective equipment must immediately be refitted resp. reactivated.

Before reoperation, attention has to be paid to the instructions in the section "Initial start-up".

### 2.6 Unauthorized reconstruction and manufacture of spare parts

Reconstruction or alterations to the valve are only permissible with the agreement of the manufacturer.

Original spare parts and accessories authorized by the manufacturer serve to maintain safety.

The use of unauthorized parts can annul all liability of the manufacturer for the consequences.

### 2.7 Improper operation

The operational reliability of the valve supplied is only guaranteed when used as designated, as laid down in **Section 1** of these operating instructions.

The application limits given on the identification plate must not be exceeded under any circumstances.

## 3 Transport and storage



The universally recognized rules of technique and the regulations regarding accident prevention have to be observed at all times during transport handling.

### 3.1 Transport

The goods have to be handled with care in order to avoid damage. The flange caps provide protection during transport and may not be removed.

### 3.2 Unpacking

Immediately after unpacking, the shipment is to be checked in respect of entirety and possible transport damage.

### 3.3 Storage

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

Storage should be in a dry room at a temperature as constant as possible.

Storage over a longer period may necessitate individual moisture-proof packaging. This is dependent on the local conditions.

### 3.4 Return shipment



Operators of valves used for aggressive or toxic media have to ensure that the valves have been well flushed and cleaned before being handed to the maintenance personnel. This is of particular importance when returning to the manufacturer.

#### 3.4.1 Certificate of safety

A certificate of safety in accordance with EUROPUMP relating to the application has to be enclosed with the return shipment.

If necessary, safety and decontamination measures are to be included.

Forms can be obtained from Richter.

## 4 Description of product

Control ball valves of the series KNAR with V-control ball/stem are suitable for shutting off and controlling media in pipelines. The drawings in [Section 9](#) show the construction.

### 4.1 Housing

The housing of the valve consists of a body and an end piece. As per DIN EN 19 and MSS SP-25, the body carries the following data:

- nominal diameter
- nominal pressure
- body material
- lining material
- manufacturer's mark
- foundry sign
- cast charge number

### 4.2 V-control ball/stem

The main advantage of a one-piece V-control ball/stem is the transmission of force free of play. This is of particular importance for plastic-lined components.

The end surface of the stem respectively the pivot are marked with:

- direction of flow
- flow rate  $K_{Vs}$  resp.  $C_v$
- lining material

The closing occurs clockwise, seen from the top of the valve.

### 4.3 Richter ENVIPACK universal packing

The packing insert is permanently connected to the thrust ring.

The spring gland follower exerts a relatively even pre-loading.

### 4.4 Valve actuation

The ball/stem has a pivot to attach a lever resp. a coupling.

Lever resp. pivot parallel to the axis of the pipeline:

Valve open

Lever resp. pivot at right angles to the axis of the pipeline:

Valve closed

-----  
In the case of a coupling, a red mark indicates the position of the ball.

Mark parallel to the axis of the pipeline:

Valve open

Mark at right angle to the axis of the pipeline:

Valve closed

The transmission of torque is made free of play:

- by a sleeve nut
- by a setscrew

#### 4.4.1 Actuated by lever

The lever is attached to the pivot of the stem and fixed with a bolt. A lever stop limits the rotation.

#### 4.4.2 Actuated by worm gear

Richter ball valves can be operated with all commercially available worm gears which are equipped with an F-connection as per ISO 5211. Couplings and brackets are part of Richter's range of products.

#### 4.4.3 Remotely actuated

Richter ball valves can be remotely actuated by means of pneumatic, hydraulic or electric quarter-turn actuators with an F-connection as per ISO 5211. Couplings and brackets are part of Richter's range of products.

#### 4.4.4 Required breakaway torque

**CAUTION !** The breakaway torque of the actuator must be at least as high as the breakaway torque of the valve, about 20% higher being better however.

Media of higher viscosity and/or those with solids may require an increased factor of safety when calculating the size of the actuator. This is particularly true for non-Newtonian liquids such as high polymer substances, suspensions, pastes, lubricants, resins, lacquers etc.

Admissible factors of safety lie in the range of 20 - 50% of the breakaway torque.

To prevent damage to the valve, particular attention must be paid to the maximum admissible breakaway torque in [Section 9](#).

## 4.5 Identification plate

An identification plate permanently fitted onto the shell contains the following information:

- valve series, nominal pressure, lining material
- admissible operating pressures at admissible temperatures
- Richter serial-no.
- possibly, customer details

Example of serial-no.: 96 4875/2/1

In case of queries please state the serial-no. of the valve.

An additional plate points out:

- direction of flow
- control characteristic
- flow rate  $K_{vs}$  resp.  $C_v$

## 5 Installation

Contamination or damage of the sealing surfaces can best be avoided by leaving the flange caps on the flanges until just before installation.

To prevent the sealing surfaces being damaged by the mating flanges, we recommend the installation of gaskets.

When there is a considerable danger of damage to the plastic sealing surfaces, e.g. with mating flanges of metal or enamel, PTFE-lined seals with a metal inlay should be used.

### 5.1 Location and direction of flow

Any fitting position can be chosen, but the installation is dependent of the direction of flow.

### 5.2 Earthing of the valve

The earthing is effected via the pipeline bolts.  
The V-control ball/stem is earthed via a grounding spring washer.

## 6 Operation

### 6.1 Initial start-up

**CAUTION !** Normally the valves have been tested for tightness with water and air. Unless other arrangements have been agreed to, there may still be a residual quantity of water in the flow section of the valve. This is to be taken into account due to a possible reaction with the operating medium.

Following the initial loading of the valve with operating pressure and operating temperature, the torques of all connecting bolts must be checked. For table of torques see [Section 9](#).

### 6.2 Shut-down



Before loosening the flange bolts:

- ensure plant to be free of pressure
- flush out medium
- observe safety regulations

Having dismantled the valve, immediately protect the flanges against mechanical damage by means of flange caps.

### 6.2.1 Additional information for KNAR with actuator



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

### 6.3 Inadmissible modes of operation and their consequences

- Crystallisation must be prevented (e.g. by means of heating the valve). Damage to the seat rings or the V-control ball/stem would otherwise be unavoidable.
- In extreme cases, the ball can be blocked.
- Accelerated wear is the result of operation with solids.
- Operation during cavitation leads to increased wear.
- Non-observance of the pressure-temperature diagram can lead to damage.

## 7 Maintenance

### 7.1 Tightness

Sporadic check in accordance with the plant requirements on the following pieces:

- Packing
- Flange connections body / end piece
- Flange connections to pipelines

### 7.2 Screwed connections

Sporadically check the torques of the following pieces in accordance with the plant requirements:

- Packing nuts
- Housing bolts
- Pipeline bolts

For torques, see [Section 9](#).

### 7.3 Cleaning



Before beginning maintenance, the valve is to be thoroughly cleaned.

The V-control ball/stem must be set into "semi-open" position. Even with proper cleaning and flushing of the valve, a residual quantity of medium may remain in the valve, e.g. between the sealing surfaces. The plastic components may have also absorbed medium which gradually seeps out of the material following cleaning.

For this reason, regulation safety clothing is to be worn. See also [Section 3.4](#).

## 7.4 Dismantling

### 7.4.1 KNAR with lever

- Remove lever.
- Dismount packing gland follower resp. spring gland follower.
- Dismount thrust ring together with packing insert and grounding spring washer.
- Remove end piece.
- Pay attention when dismantling the ball/stem not to damage the body lining.
- Remove seat rings.

### 7.4.2 KNAR with actuator

- Loosen the sleeve nut at the coupling approx 2 rotations. Before doing so, notice the drawing in [Section 9](#).
- Loosen the setscrew in the coupling 1 rotation.
- Remove actuator and coupling.
- Dismount packing gland follower and spring gland follower.
- Remove bracket.

The remaining disassembly is carried out as described in [Section 7.4.1](#).

## 7.5 Assembly

- Position seat rings in the body and in the end piece.
- Pay attention when mounting the V-control ball/stem not to damage the body lining. Notice the direction of flow.
- See also drawing in [Section 9](#).
- Mount the end piece. Tighten the greased nuts only handtight. housing
- Adjust V-control ball/stem.
- Press in packing insert together with thrust ring.
- Press in grounding spring washer.
- Tighten housing nuts crosswise with a torque according to [Section 9](#).

### 7.5.1 KNAR with lever

- Mount lever stop. In doing so, notice direction of rotation of V-control ball/stem. See drawing in [Section 9](#).
- Mount spring gland follower and packing gland follower. In doing so, notice central position. Observe torques in [Section 9](#).
- Close tapped holes still open with sealing caps.
- Mount lever.

### 7.5.2 KNAR with actuator

- Mount the bracket with the opening at right angle to the direction of flow.
- Mount spring gland follower and packing gland follower. In doing so, notice central position. Observe torques in [Section 9](#).
- Mount coupling and actuator. In doing so, notice direction of rotation of V-control ball/stem. See drawing in [Section 9](#).
- Position of the actuator in accordance with the operating instructions of the actuator.
- Tighten the setscrew in the coupling.
- Tighten the sleeve nut at the coupling **firmly**. Before doing so, notice the drawing in [Section 9](#).

## 7.6 Conversion from lever to actuator

- Remove lever.
- Remove spring gland follower, packing gland follower, lever stop and sealing caps.
- Check the fits of coupling, bracket and actuator.

The further assembly occurs as in [Section 7.5.2](#) described.

## 7.7 Tests

Following the assembly, the valve has to be tested.

- Measurement of the breakaway torque

The breakaway torque required for opening and closing the valve is to be ascertained. The maximum torque must not exceed the values given in [Section 9](#).

- Tightness

The tightness of the packing and the seat rings must be tested.

Tightness is verified according to DIN 3230 part 3, BF and BO, leak rate 1 respectively MSS SP-72.

Test medium:	air
Test pressure:	6 bar resp. 87psig
Test temperature:	15 to 35° C resp. 59 to 95°F
Test period:	to DN 1½" 15 seconds DN 2" to DN 6" 60 seconds

## 8 Malfunctions; causes and their elimination

- [Flange connection valve/pipeline leaking](#)

Tighten screw connections with torque according to [Section 9](#). Should this not produce the required tightness, the recommended torque may be exceeded by 10%. If this fails to stop the leakage, dismantle and inspect the valve.

- [Flange connection body/end piece leaking](#)

Tighten housing nuts. Same procedure as above.

- [Packing leaking](#)

Tighten packing nuts according to details in [Section 9](#).

- [Valve does not switch](#)

Is the actuator supplied with power ?  
Has a directional control valve been correctly connected ?  
Is there foreign matter in the ball valve ?

- [The ball fails to fully close](#)

Is the stem deformed ?

Is the coupling worn ?

For worm gears or actuators check whether the limit stops can be adjusted. Refer to the operating instructions issued by the manufacturer of the worm gear or actuator for details.

### CAUTION !

Never actuate valve by force or by "elongating the lever".

1. Try to get the valve running by carefully switching on and off.
2. Remove the lever stop and try to actuate the valve against the normal direction of rotation.
3. If an actuation with the maximum admissible torque as given in [Section 9](#) does not prove possible, the valve is to be dismantled and individual components are to be checked.

## 9 Tables, diagrams, drawings

### 9.1 Connecting dimensions

- Face to face : ANSI B 16.10 Series 8
- Flange bores : ANSI B 16.5 Class 150
- Actuator : ISO 5211 F05 for DN 1"  
F07 for DN 1½" and DN 2"  
F10 for DN 3" and DN 4"  
F12 for DN 6"

### 9.2 Weights (with lever)

DN	Kg
1"	5,6
1½"	12,0
2"	14,5
3"	33,5
4"	50,0
6"	91,0

**1 kg = 2,2 lbs**

### 9.3 Flow rates $K_{vs}$ in m³/h

3 different flow rates available for each DN

DN	$K_{vs1}$	$K_{vs2}$	$K_{vs3}$
	m³/h	m³/h	m³/h
1"	8	14	20
1½"	16	25	40
2"	25	40	60
3"	80	120	160
4"	100	160	250
6"	160	250	400

**1 m³/h = 1,165 USgpm**

### 9.4 Flow rates $K_v$ in %

angle of opening %	$K_v$ %	
10	5,5	Characteristic : equal percentage Rangeability : 1:25
20	7,6	
30	10,5	Best control range: 20-90% of the angle of opening
40	14,5	
50	20,0	
60	27,6	
70	38,1	
80	52,5	
90	72,5	
100	100,0	

### 9.5 z - values

for the different V-control ball/stem according to the  $K_{vs}$ -values in [Section 9.3](#) at  $K_v / K_{vs} = 75\%$

DN	z1	z2	z3
1"	0,60	0,58	0,43
1½"	0,53	0,50	0,35
2"	0,47	0,39	0,32
3"	0,31	0,29	0,22
4"	0,27	0,24	0,16
6"	0,15	0,13	0,08

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

$X_F$ =differential pressure ratio of the plant  
 $\Delta p$ =differential pressure inlet/outlet  
 $p_1$ =absolute pressure at the inlet  
 $p_v$ =vapour pressure at operating temperature

- $X_F \leq z$  : non-critical conditions
- $X_F \leq 1,4 \times z$  : tolerable cavitation
- $X_F > 1,4 \times z$  : unacceptable cavitation

### 9.6 Breakaway torques

DN	$\Delta p$ in bar				
	3	6	12	19	max.perm.
	Nm	Nm	Nm	Nm	Nm
1"	8	8	8	10	28
1½"	15	15	16	20	80
2"	20	20	21	25	100
3"	50	50	68	90	250
4"	80	80	98	140	350
6"	200	230	290	325	1200

**1 Nm = 8,85 in-lbs**

Testmedium: Water 20 °C. For other media, higher breakaway torques can occur.

### 9.7 Torques

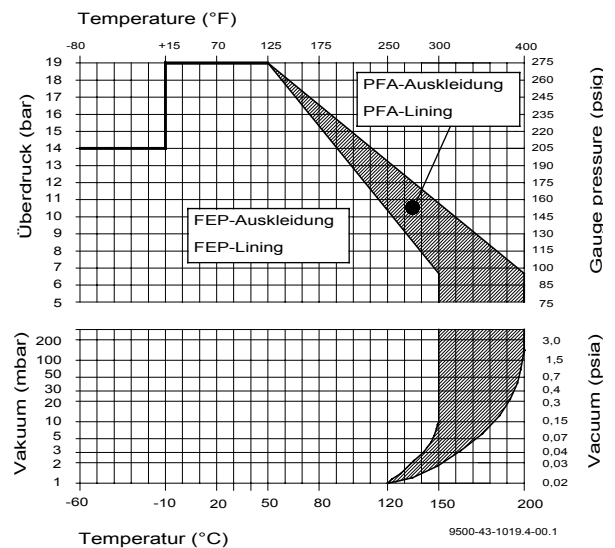
Bolts greased, tighten crosswise

Packing nuts: See [Section 9.9](#)

DN	Housing nuts		Pipeline bolts	
	number and size	Nm	number and size	Nm
1"	4 x M12	35	4x1/2"	10
1½"	4 x M16	45	4x1/2"	20
2"	4 x M16	45	4x5/8"	30
3"	6 x M16	50	4x5/8"	50
4"	6 x M20	60	8x5/8"	30
6"	8 x M20	150	8x3/4"	55

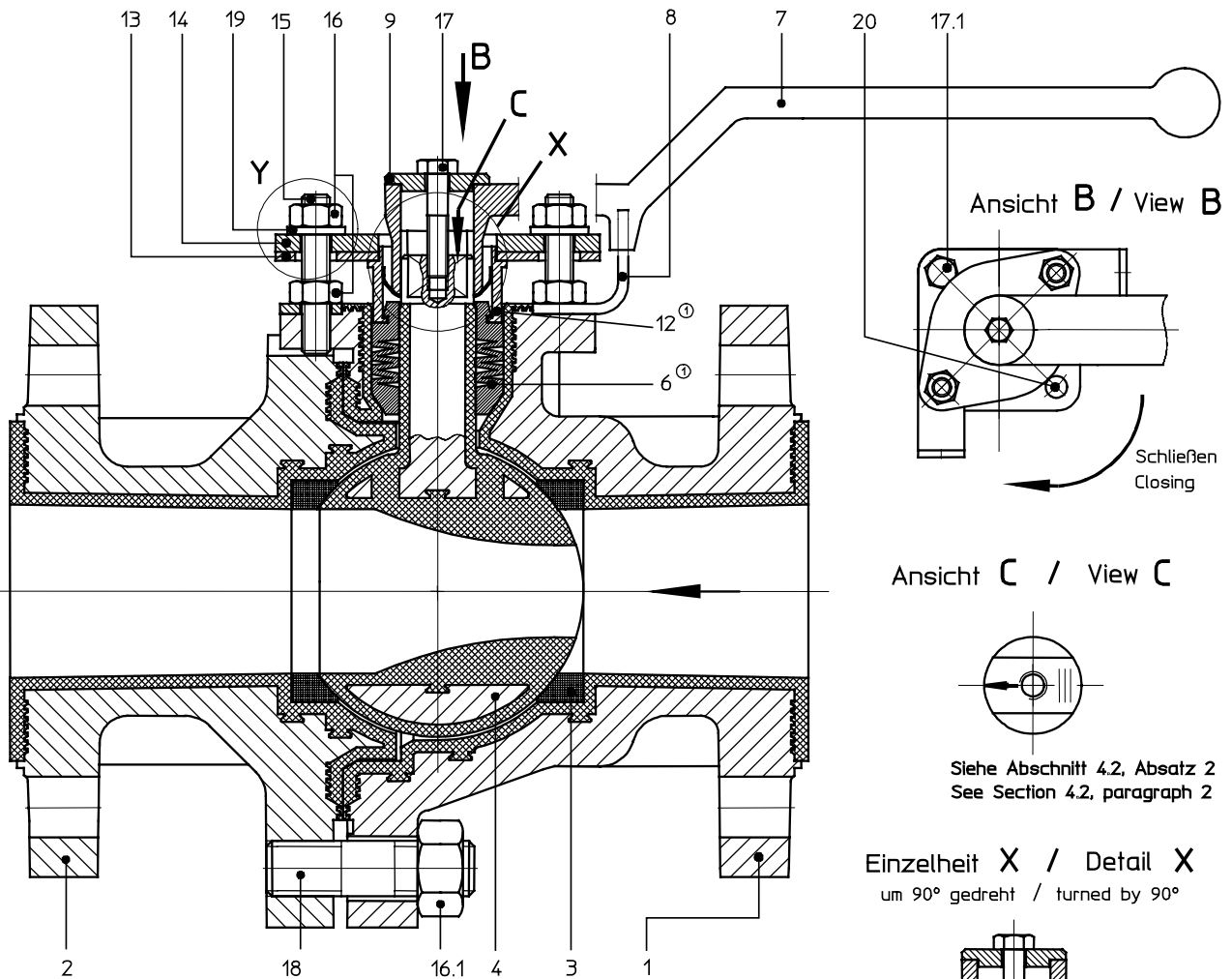
**1 Nm = 8,85 in-lbs**

### 9.8 Pressure-Temperature-Diagram



9.9 Sectional drawings

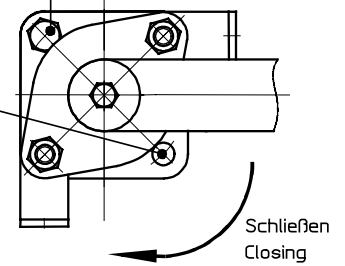
KNAR mit Handhebel in Offen-Stellung  
KNAR with Lever in Open Position



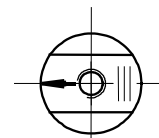
- |                 |                                |                             |
|-----------------|--------------------------------|-----------------------------|
| 1               | Gehäusestutzen                 | Body                        |
| 2               | Stutzen                        | End piece                   |
| 3               | Sitzring                       | Seat ring                   |
| 4               | V-Regelkugelwelle              | V-control ball/stem         |
| 6 <sup>Ⓢ</sup>  | Stopfbuchseinsatz <sup>Ⓢ</sup> | Packing insert <sup>Ⓢ</sup> |
| 7               | Hebel                          | Lever                       |
| 8               | Hebelanschlag                  | Lever stop                  |
| 9               | Scheibe                        | Disc                        |
| 11              | Erdungsscheibe                 | Grounding spring washer     |
| 12 <sup>Ⓢ</sup> | Druckring <sup>Ⓢ</sup>         | Thrust ring <sup>Ⓢ</sup>    |
| 13              | Federbrille                    | Spring gland follower       |
| 14              | Stopfbuchsbrille               | Packing gland follower      |
| 15              | Gewindestift                   | Setscrew                    |
| 16              | 6kt-Mutter                     | Hex. nut                    |
| 16.1            | 6kt-Mutter                     | Hex. nut                    |
| 17              | 6kt-Schraube                   | Hex. bolt                   |
| 17.1            | 6kt-Schraube                   | Hex. screw                  |
| 18              | Stiftschraube                  | Stud                        |
| 19              | Scheibe                        | Washer                      |
| 20              | Stopfen                        | Cap                         |

Ⓢ Pos. 6 und Pos. 12 werden als ein Bauteil geliefert. Pos. 6 and Pos. 12 supplied as single component

Ansicht B / View B

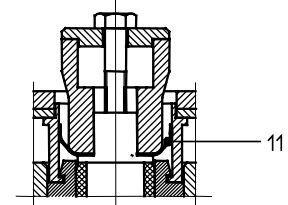


Ansicht C / View C

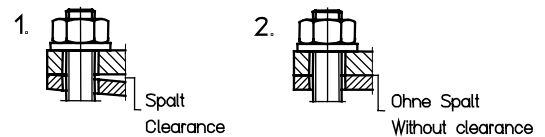


Siehe Abschnitt 4.2, Absatz 2  
See Section 4.2, paragraph 2

Einzelheit X / Detail X  
um 90° gedreht / turned by 90°



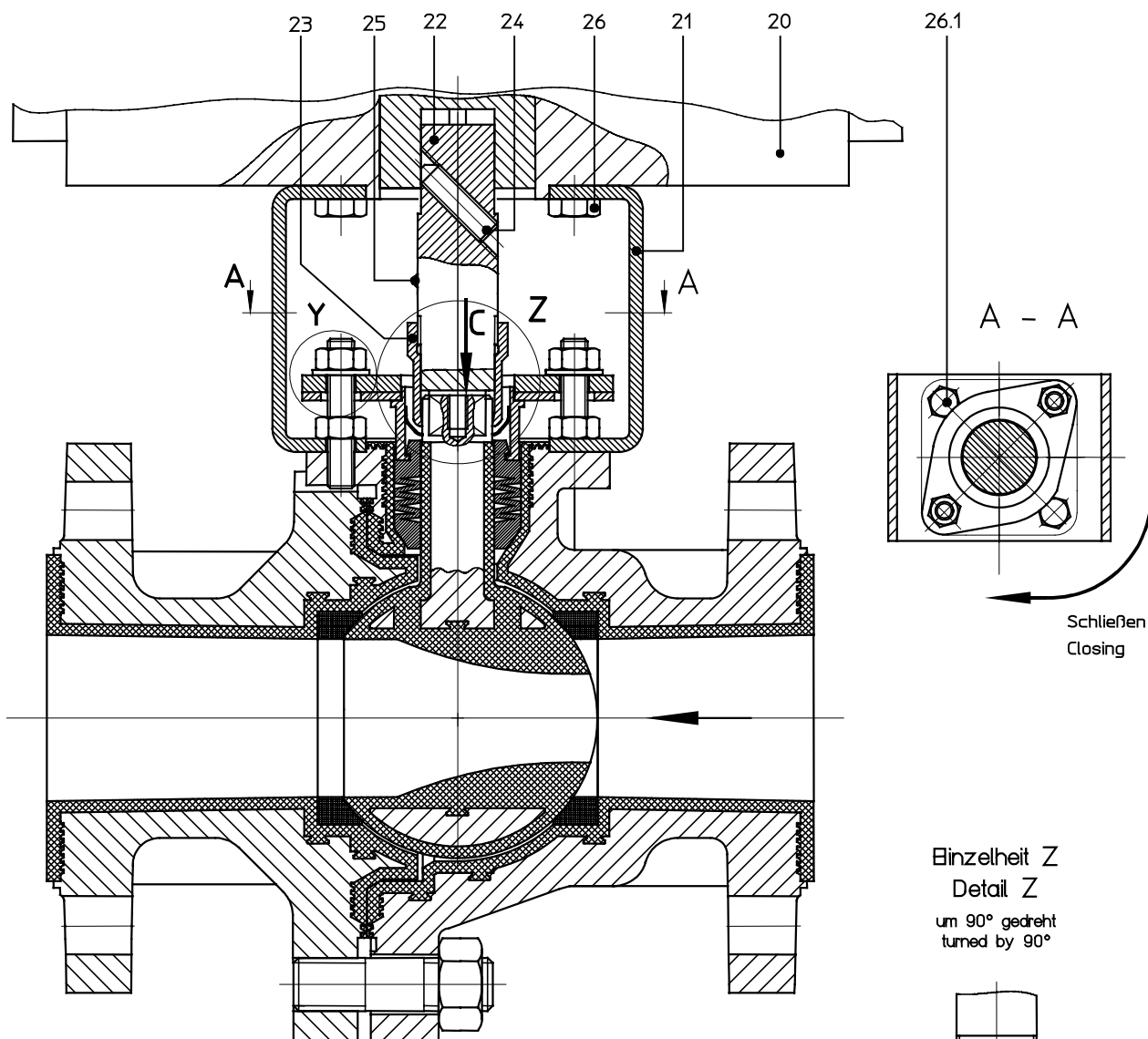
Einzelheit Y / Detail Y



Stopfbuchsbrille anziehen  
bis Federbrille ohne Spalt anliegt.  
Tighten packing gland follower until spring  
gland follower is sitting without clearance.

9500-43-1025/4-0

KNAR mit Antrieb in Offen-Stellung  
 KNAR with Actuator in Open Position



Einzelheit Z  
 Detail Z  
 um 90° gedreht  
 turned by 90°

Achtung : Linksgewinde  
 Attention : left-handed thread

festziehen / tighten

lösen / loosen

20	Antrieb	Actuator
21	Laterne	Bracket
22	Kupplung	Coupling
23	Überwurfmutter	Sleeve nut
24	Gewindestift	Setscrew
25	Halbrundkerbnagel (Stellungsanzeige)	Round head grooved pin (Position indicator)
26	6kt-Schraube	Hex. screw
26.1	6kt-Schraube	Hex. screw

9500-43-1025/4-0

# 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 and can be operated both manually as well as mechanically/electrically.**
- **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.**

Supplementary notes:

- **Electric/mechanical actuators must be subjected to their own conformity assessment to ATEX.**

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

## **1. Intended use:**

**Inadmissible modes of operation, even for brief periods, may result in serious damage to the unit.**

**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  
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, RSS, BAV, KSE, GU, GUT, PA):  
The bellows are not offered with a conductive lining, i.e. the restrictions under point 1 apply.

**Safety notes for applications in potentially explosive  
areas based on the  
Directive 94/9/ EC (Atex 95)**

**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 unit 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.
- Attachments such as actuators, position controllers, limit switches etc. must satisfy the relevant safety regulations as regards explosion protection and, if required, be designed in compliance with Atex.  
Special attention must be paid to the appropriate safety and explosion protection notes in the respective operating manuals.
- Plastic-lined valves must not be operated with carbon disulphide.

## 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:**

()

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()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 GMBH

Enclosures

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