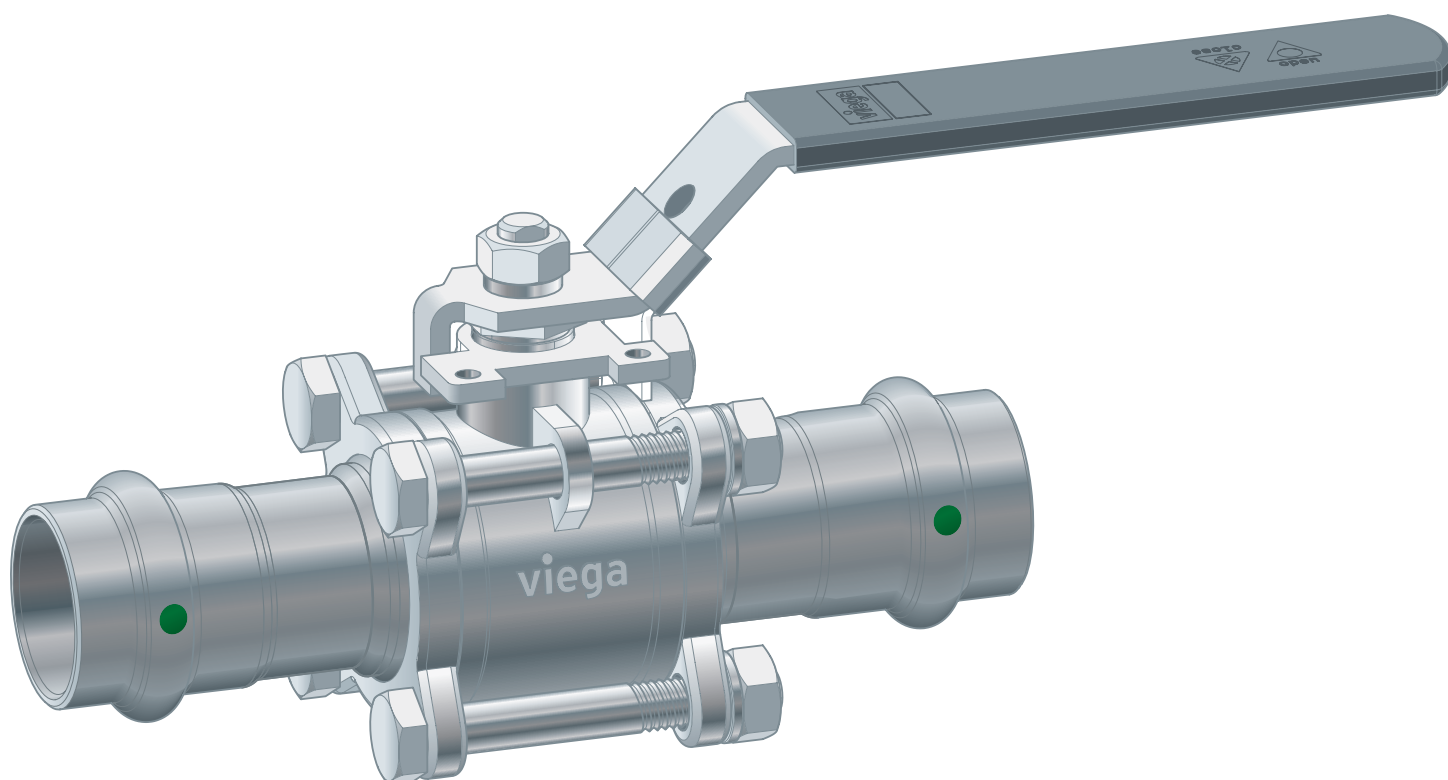


Instructions for Use

Easytop ball valve with Sanpress Inox press connections, 3-part with SC-Contur



for industrial and heating applications

Model
2375.8

viega

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1 About these instructions for use

Trade mark rights exist for this document; for further information, go to viega.com/legal.

1.1 Target groups

The information in this manual is directed at heating and sanitary professionals and trained personnel.

Individuals without the abovementioned training or qualification are not permitted to mount, install and, if required, maintain this product. This restriction does not extend to possible operating instructions.

The installation of Viega products must take place in accordance with the general rules of engineering and the Viega instructions for use.

1.2 Labelling of notes

Warning and advisory texts are set aside from the remainder of the text and are labelled with the relevant pictographs.



DANGER!

This symbol warns of possible life-threatening injury.



WARNING!

This symbol warns of possible serious injury.



CAUTION!

This symbol warns of possible injury.



NOTICE!

This symbol warns of possible damage to property.



This symbol gives additional information and hints.

1.3 About this translated version

This instruction for use contains important information about the choice of product or system, assembly and commissioning as well as intended use and, if required, maintenance measures. The information about the products, their properties and application technology are based on the current standards in Europe (e.g. EN) and/or in Germany (e.g. DIN/DVGW).

Some passages in the text may refer to technical codes in Europe/Germany. These should serve as recommendations in the absence of corresponding national regulations. The relevant national laws, standards, regulations, directives and other technical provisions take priority over the German/European directives specified in this manual: The information herein is not binding for other countries and regions; as said above, they should be understood as a recommendation.

2 Product information

2.1 Standards and regulations

The following standards and regulations apply to Germany / Europe and are provided as a support feature.

Regulations from section: Media

Scope / Notice	Regulations applicable in Germany
Suitability for heating water for pump hot water heating systems	VDI 2035 Page 1 and page 2

Regulations from section: Overview

Scope / Notice	Regulations applicable in Germany
Compliance with the inspection requirements (fittings group I)	DIN EN 13828

Regulations from section: Sealing elements

Scope / Notice	Regulations applicable in Germany
Area of use of the EPDM sealing element ■ Heating	DIN EN 12828

Regulations from section: Marking on components

Scope / Notice	Regulations applicable in Germany
Designation noise class I	DIN EN 13828

Regulations from section: Compatible components

Scope / Notice	Regulations applicable in Germany
Permitted pipe types	DVGW-Arbeitsblatt W 534
Permitted stainless steel pipes	DVGW-Arbeitsblatt GW 541
Permitted stainless steel pipes	DIN EN 10312
Permitted stainless steel pipes	DIN EN 10088

Regulations from section: Storage

Scope / Notice	Regulations applicable in Germany
Requirements for material storage	DIN EN 806-4, Chapter 4.2

Regulations from section: Corrosion

Scope / Notice	Regulations applicable in Germany
External corrosion protection	DIN EN 806-2
External corrosion protection	DIN 1988-200
External corrosion protection	DKI-Informationsdruck i. 160

Regulations from section: Leakage test

Scope / Notice	Regulations applicable in Germany
Test on a system that is finished but not yet covered	DIN EN 806-4
Leakage test for potable water installations	DIN EN 806, part 4
Leakage test for potable water installations	ZVSHK-Merkblatt „Dichtheitsprüfungen von Trinkwasserinstallationen mit Druckluft, Inertgas oder Wasser“
Requirements in filling and top-up water	VDI 2035

2.2 Intended use



Coordinate the use of the model for areas of use and media other than those described with the Viega Service Center.

A ball valve is a fitting that is able to shut-off and open individual pipeline sections through a 90° movement. The ball valve is not a control fitting and cannot be used for regulating volume flows. The ball must not be in an intermediate position.



NOTICE!

Opening and closing the ball valve quickly can cause pressure shocks in the system.

- Always open and close the ball valve slowly.

2.2.1 Areas of use

Use is possible in the following areas among others:

- Industrial and plant engineering
- Compressed air systems
- Rainwater systems
- Closed heating and cooling circuits
- Systems for technical gases (on request)

2.2.2 Media

The model is also suitable for the following media, amongst others:

- Maximum chloride concentration 250 mg/l pursuant to applicable regulations, see ↗ *'Regulations from section: Media' on page 6*
- Heating water for pump hot water heating systems, see ↗ *'Regulations from section: Media' on page 6*
- Compressed air in compliance with the specification of the sealing elements used
 - EPDM at oil concentration < 25 mg/m³

The model is not approved for use in potable water installations.

2.3 Product description

2.3.1 Overview

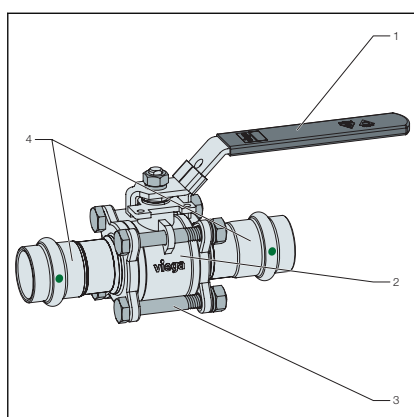
The 3-part Easytop ball valve with Sanpress Inox press connection is suitable for use in industrial installations and heating systems. The ball valve is easy to maintain due to its 3-part design. The internal sealing elements can be exchanged and the ball cleaned.



The Easytop system fittings comply with the test requirements specified in the applicable regulations, see [‘Regulations from section: Overview’ on page 6](#).
Sound protection $L_{ap} \leq 20 \text{ dB(A)}$

The model is equipped as follows:

- Valve casing made of steel, stainless
- Dual-sided Sanpress Inox press connection with SC-Contur
- L-shaped actuating lever made of metal
- position indication open/closed
- maintenance-free selector shaft
- sealing elements made of EPDM
- ball seal made of Teflon®
- stainless steel ball
- lockable



- 1 - L-shaped actuating lever made of metal
- 2 - middle part
- 3 - stud bolts
- 4 - Sanpress Inox press connection

The model is available in the following dimensions : d 15 / 18 / 22 / 28 / 35 / 42 / 54.

Fig. 1: 3-part ball valve

2.3.2 Pipes

Laying and fixing pipes

Only pipe clamps with chloride-free sound insulating inlays should be used to secure the pipes.

Observe the general rules of fixing technology:

- Do not use fixed pipelines as a support for other pipelines and components.
- Do not use pipe hooks.
- Observe the expansion direction: Plan fixed and gliding points.

Length expansion

Pipelines expand with heat. Heat expansion is dependent on the material. Changes in length lead to tension within the installation. These tensions must be equalised with suitable measures.

The following are effective:

- Fixed and gliding points
- Expansion equalisation joints (expansion bends)
- Compensators

Heat expansion co-efficients of various pipe materials

Material	Heat expansion co-efficient α [mm/mK]	Example: Length expansion with pipe lengths $L = 20$ m and $\Delta T = 50$ K [mm]
Stainless steel	0.0165	16.5

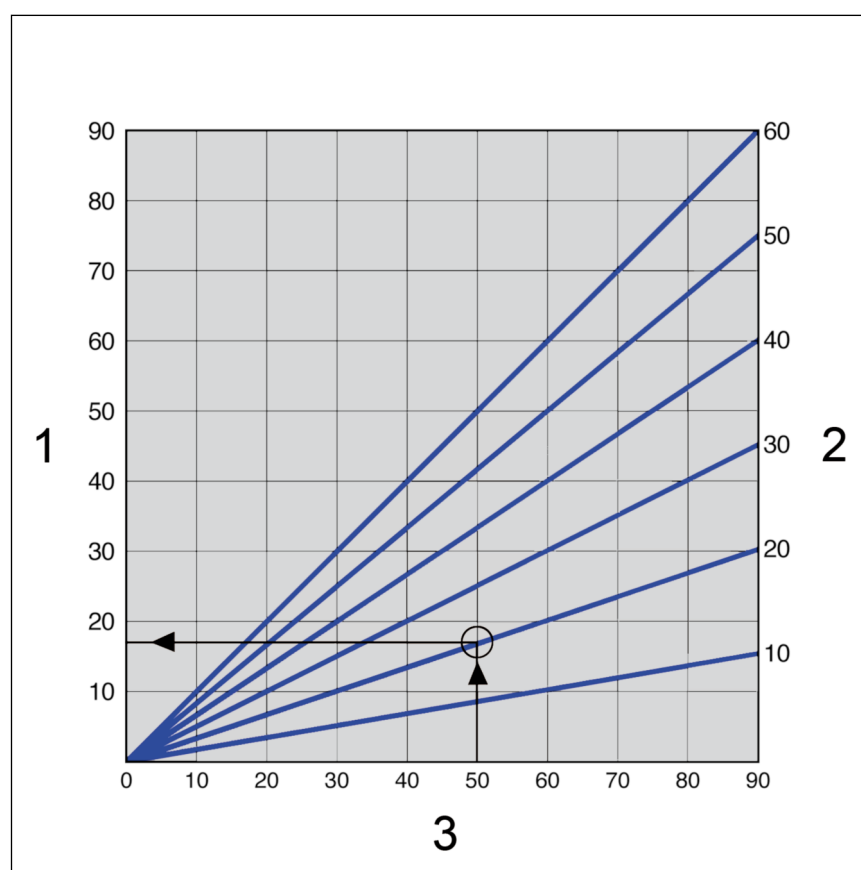


Fig. 2: Length expansion of Sanpress pipes

- 1 - Length expansion $\rightarrow \Delta l$ [mm]
- 2 - Pipe length $\rightarrow l_0$ [m]
- 3 - Temperature difference $\rightarrow \Delta \theta$ [K]

The length expansion Δl can be taken from the diagram or can be calculated using the following formula:

$$\Delta l = \alpha \text{ [mm/mK]} \times L \text{ [m]} \times \Delta \theta \text{ [K]}$$

For further information, refer to the instructions for use of the Sanpress and Sanpress Inox systems.

2.3.3 Press connection with SC-Contur

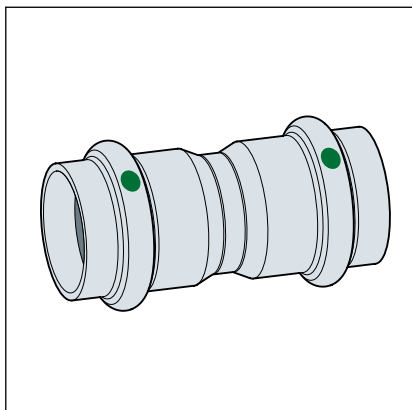


Fig. 3: Press connection using a press connector as an example

The press connection has a circumferential bead in which the sealing element lies. The connector is deformed upstream and downstream of the bead and permanently connected to the pipe during pressing. The sealing element is not deformed during pressing.

SC-Contur

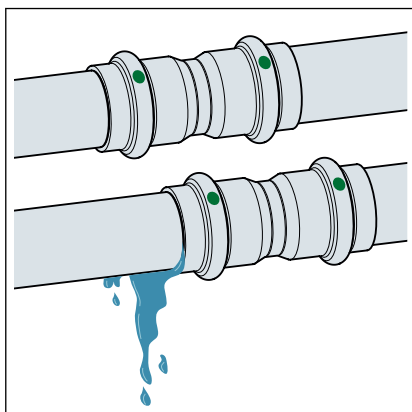


Fig. 4: SC-Contur

Viega press connectors are equipped with the SC-Contur. The SC-Contur is a safety technology that is certified by the DVGW and ensures that the connection is guaranteed to be leaky in an unpressed state. In this way, inadvertently unpressed connections are noticed immediately during a leakage test.

Viega guarantees that unpressed connections are visible during a leakage test:

- with the wet leakage test in the pressure range from 0.1–0.65 MPa (1.0–6.5 bar)
- With dry leakage test in the pressure range from 22 hPa–0.3 MPa (22 mbar–3.0 bar)

2.3.4 Sealing elements

Area of use of the EPDM sealing element

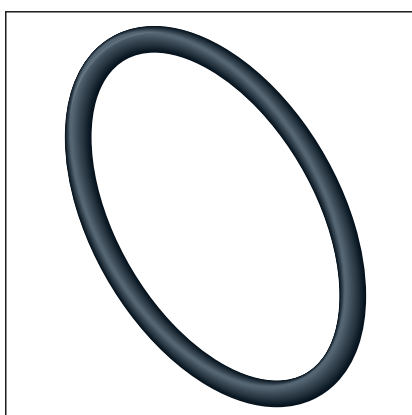


Fig. 5: EPDM round sealing element

The model is factory-fitted with EPDM sealing elements.

Area of use	Heating	Compressed air	Technical gases
Use	Pump hot water heating system	all pipeline sections	all pipeline sections
Operating temperature [T _{max.}]	110 °C	60 °C	—
Operating pressure [P _{max.}]	1.6 MPa (16 bar)	1.6 MPa (16 bar)	—
Comments	pursuant to the applicable regulations ¹⁾ T _{max.} : 105 °C 95 °C with radiator connection	dry, oil content < 25 mg / m ³	²⁾

¹⁾ see  'Regulations from section: Sealing elements' on page 6

²⁾ Consultation with the Viega Service Center required.

2.3.5 Technical data


Observe the following operating conditions for the installation of the model:

Operating temperature [T _{max.}]	110 °C
Operating pressure [P _{max.}]	1.0 MPa (10 bar)

2.3.6 Markings on components

The press connections are marked with a coloured dot. This identifies the SC-Contur, where the test medium would escape in the case of an inadvertently unpressed connection.

The model is marked as follows:

- noise class I pursuant to applicable regulations, see  'Regulations from section: Marking on components' on page 6
- Dimension
- green dot
- Position indicator on the actuating lever

2.3.7 Compatible components

The model is equipped with press connections and compatible with the Sanpress and Sanpress Inox system.

Pipes

The press connections are tested and approved according to the applicable regulations with the following pipe types:

- Stainless steel pipes (material 1.4401 / 1.4521)
 - see ↗ *'Regulations from section: Compatible components' on page 7*
- Inox industrial pipe (material 1.4520)

2.4 Information for use

2.4.1 Corrosion

Overground pipelines and fittings in rooms do not normally require external corrosion protection.

There are exceptions in the following cases:

- Contact with aggressive building materials such as nitrite or materials containing ammonium
- in aggressive surroundings

If external corrosion protection is required, observe the pertinent guidelines, see ↗ *'Regulations from section: Corrosion' on page 7*.



The chloride concentration in the medium must not exceed a maximum value of 250 mg/l.

This chloride is not a disinfectant, but in fact pertains to the content in sea and table salt (sodium chloride).

3 Handling

3.1 Transport

Observe the following when transporting pipes:

- Do not pull the pipes over the sill. The surface could be damaged.
- Secure pipes during transportation. Pipes may become bent due to shifting.
- Do not damage the protective caps on the pipe ends and do not remove them until immediately before mounting. Damaged pipe ends must not be pressed.



In addition, observe the instructions provided by the pipe manufacturer.

3.2 Storage

For storage, comply with the requirements specified in the applicable regulations, see [§ 'Regulations from section: Storage' on page 7](#)

- Store components in the original box until immediately before assembly.
- Store components in a clean and dry place.
- Do not store the components directly on the floor.
- Provide at least three points of support for the storage of pipes.
- Where possible, store different sizes separately.
Store small sizes on top of larger sizes if separate storage is not possible.
- Store pipes of different materials separately to prevent contact corrosion.



In addition, observe the instructions provided by the pipe manufacturer.

3.3 Assembly information

3.3.1 Mounting instructions

Checking system components



Do not remove the model from the packaging until immediately before use.

System components may, in some cases, become damaged through transportation and storage.

- Check all parts.
- Only use original parts in perfect condition.
- Damaged parts must be replaced. Do not attempt to repair them.
- Contaminated components may not be installed.
- Store products in a clean and dry place.

During assembly

Observe the following when mounting:

- Use suitable tools.
- Installation is not dependent on the direction of flow.



Choose the place of installation so that the fitting is easily accessible and simple to operate.

Laying and fixing pipes

For information, refer to the instructions for use of the Sanpress and Sanpress Inox systems.

3.3.2 Potential equalisation



DANGER! **Danger due to electrical current**

An electric shock can lead to burns and serious injury and even death.

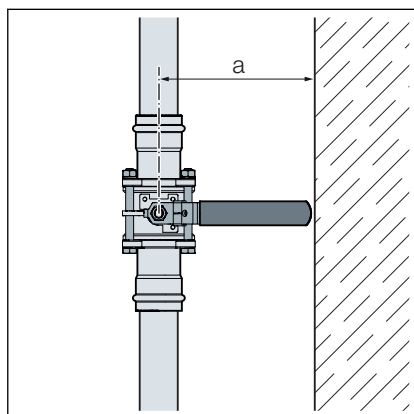
Because all metallic piping systems conduct electricity, unintentional contact with a live part can lead to the whole piping system and components connected to it (e. g. radiators) becoming energised.

- Only allow electrical work to be carried out by qualified electricians.
- Always integrate the metal piping system into the potential equalisation.



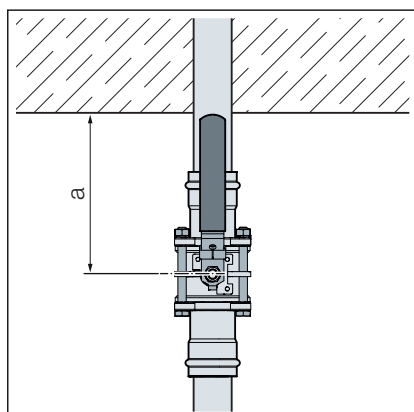
It is the fitter of the electrical system who is responsible for ensuring that the potential equalisation is tested and secured.

3.3.3 Space requirements and intervals



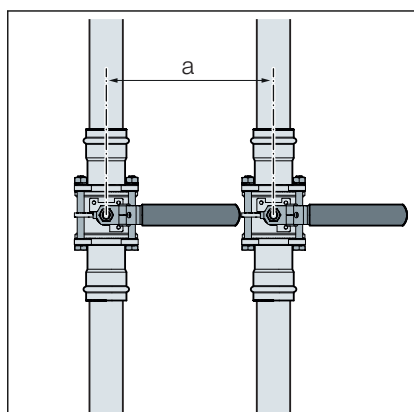
Horizontal space requirement for the actuating lever

Size [mm]	a [mm]
15	105
18	
22	150
28	
35	195
42	
54	



Vertical space requirement for the actuating lever

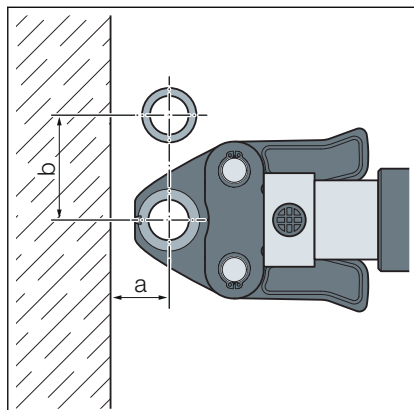
Size [mm]	a [mm]
15	105
18	
22	150
28	
35	195
42	
54	



Horizontal space requirement for the actuating lever

Size [mm]	a [mm]
15	135
18	135
22	185
28	185
35	235
42	240
54	240

Pressing between pipelines



Space requirement PT1, type 2 (PT2), PT3-EH, PT3-AH, Pressgun 4B, 4E, 5

d	15	18	22	28	35	42	54
a [mm]	20	20	25	25	30	45	50
b [mm]	50	55	60	70	85	100	115

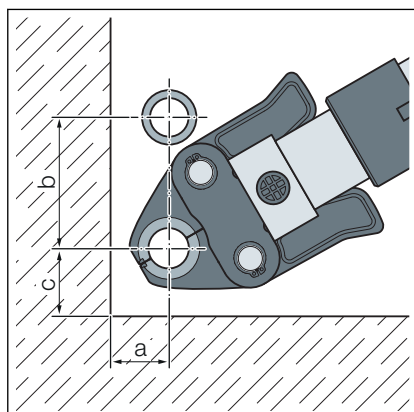
Space requirement Picco, Pressgun Picco

d	15	18	22	28	35
a [mm]	25	25	25	25	25
b [mm]	60	60	65	65	65

Space requirement press ring

d	15	18	22	28	35	42	54
a [mm]	40	45	45	50	55	60	65
b [mm]	50	55	60	70	75	85	90

Pressing between pipe and wall

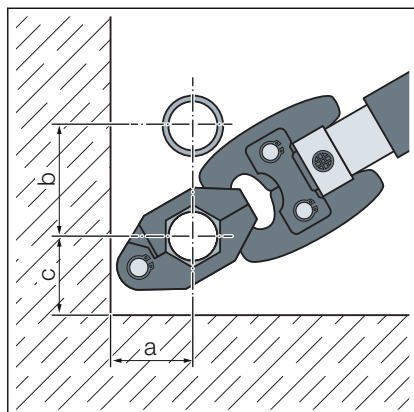


Space requirement PT1, type 2 (PT2), PT3-EH, PT3-AH, Pressgun 4B, 4E, 5

d	15	18	22	28	35	42	54
a [mm]	25	25	30	30	50	50	55
b [mm]	65	75	80	85	95	115	140
c [mm]	40	40	40	50	50	70	80

Space requirement Picco, Pressgun Picco

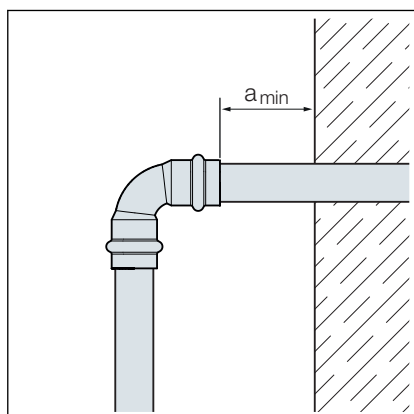
d	15	18	22	28	35
a [mm]	30	30	30	30	30
b [mm]	70	70	75	80	80
c [mm]	40	40	40	40	40



Space requirement press ring

d	15	18	22	28	35	42	54
a [mm]	40	45	45	50	55	60	65
b [mm]	50	55	60	70	75	85	90
c [mm]	35	40	40	45	50	55	65

Wall distance



Minimum distance with d 12–54

Press machine	a _{min} [mm]
Type 2 (PT2)	50
Type PT3-EH	
Type PT3-AH	
Pressgun 4E / 4B	
Pressgun 5	35
Picco / Pressgun Picco	

Interval between the pressings

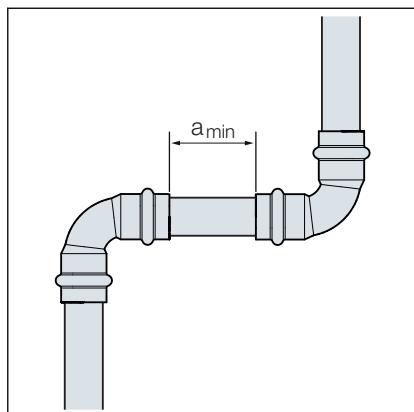


NOTICE!

Leaking press connections due to pipes being too short!

If two press connectors are to be mounted onto a pipe without an interval, the pipe must not be too short. If the pipe is not inserted up to the prescribed insertion depth in the press connector during pressing, the press connection may leak.

With pipes with a diameter of d 15–28, the length of the pipe must be at least as long as the total insertion depth of both press connectors.



Minimum distance with press jaws d 15–54

d	a _{min} [mm]
15	0
18	0
22	0
28	0
35	10
42	15
54	25

Z dimensions

For the Z dimensions, refer to the respective product page in the online catalogue.

3.3.4 Required tools

The following tools are required for production of a press connection:

- pipe cutter or a fine-toothed hacksaw
- deburrer and coloured pen for marking
- press machine with constant pressing force
- Press jaw or press ring with corresponding hinged adapter jaw, suitable for the pipe diameter and suitable profile



Viega recommends the use of Viega system tools when installing the press fittings.

The Viega system press tools have been developed and tailored specifically for the installation of Viega press connector systems.

3.4 Assembly

3.4.1 Permitted exchange of sealing elements



Important instruction

With their material-specific qualities, sealing elements in press connectors are adapted for use with the corresponding media and/or the areas of use of the piping systems and are generally only certified for them.

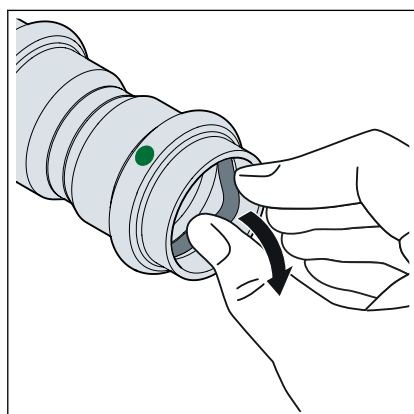
The exchange of a sealing element is generally permitted. The sealing element must be exchanged for a designated spare part for the intended application ↗ *Chapter 2.3.4 'Sealing elements' on page 11*. The use of other sealing elements is not permitted.

3.4.2 Replacing the sealing element

Removing the sealing element

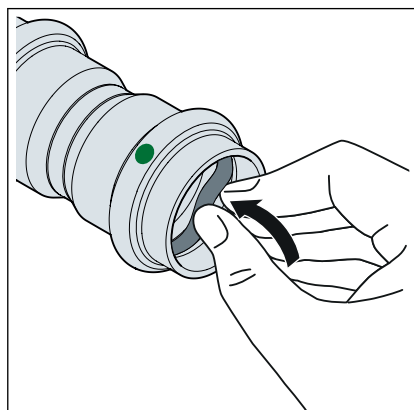


Do not use pointed or sharp-edged objects to remove the sealing element. They may damage the sealing element or the bead.



- Remove the sealing element from the bead.

Inserting the sealing element



- Insert a new, undamaged sealing element into the bead.
- Ensure that the complete sealing element is in the bead.

3.4.3 Shortening the pipes



NOTICE!

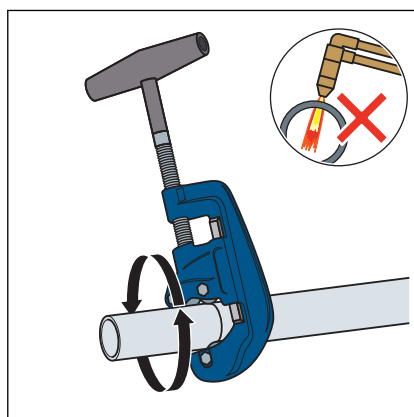
Leaking press connections due to damaged material!

Press connections can become leaky due to damaged pipes or sealing elements.

Observe the following instructions to avoid damage to pipes and sealing elements:

- Do not use cutting discs (angle grinders) or flame cutters when cutting to length.
- Do not use grease or oils (e. g. cutting oil).

For information about tools, also see [Chapter 3.3.4 'Required tools'](#) on page 19.



- Cut the pipe using a pipe cutter or fine-toothed hacksaw.
- Avoid grooves on the pipe surface.

3.4.4 Deburring the pipes

The pipe ends must be thoroughly deburred internally and externally after shortening.

Deburring prevents the sealing element being damaged or the that the press connector cants when mounted. Viega recommends using a deburrer (model 2292.2).



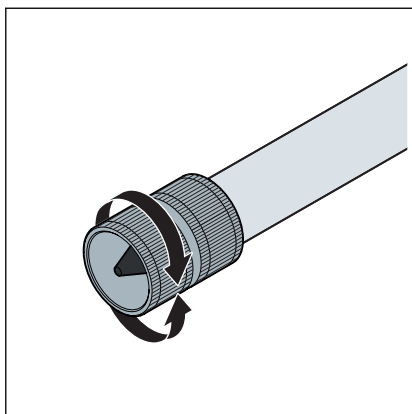
NOTICE!

Damage due to the wrong tool!

Do not use sanding disks or similar tools when deburring. The pipes could be damaged by these.

- Secure the pipe in the vice.
- When clamping, leave an interval of at least 100 mm (a) to the pipe end.

The pipe ends must not be bent or damaged.



► Deburr the inside and outside of the pipe.

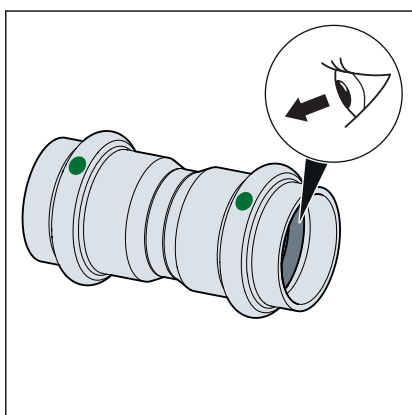
3.4.5 Pressing the connection



NOTICE! Leaking press connections due to pipes being too short

If two press connectors are to be mounted onto a pipe without an interval, the pipe must not be too short. If the pipe is not inserted up to the prescribed insertion depth in the press connector during pressing, the connection may become leaky.

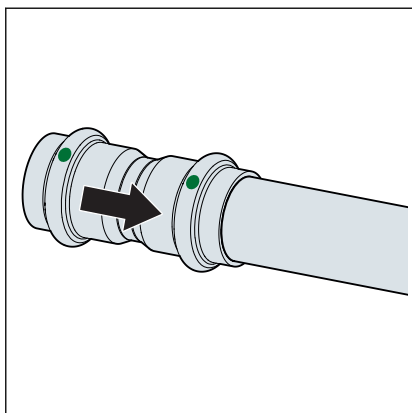
In the case of pipes with a diameter of d 15–28 mm, the pipe must be at least as long as the total insertion depth of both press connectors.



Requirements:

- The pipe end is not bent or damaged.
- The pipe is deburred.
- The correct sealing element is in the press connector.
EPDM = polished black

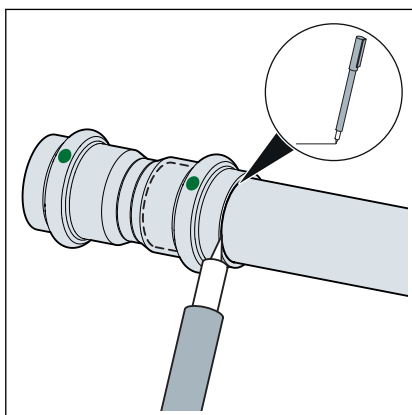
- The sealing element is undamaged.
- The complete sealing element is in the bead.
- Push the press connector onto the pipe as far as it will go.



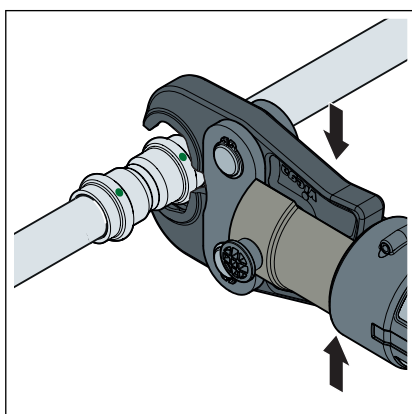
INFO! Viega recommends using the insertion depth template model 2494.

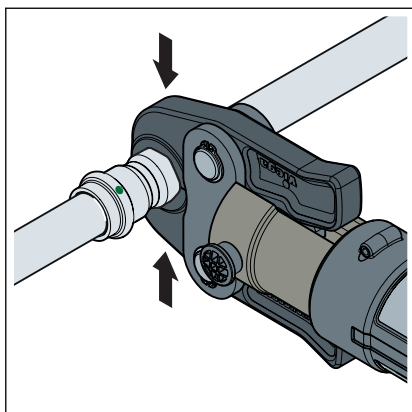
- Mark the insertion depth.
- Place the press jaw onto the press machine and push the retaining bolt in until it clicks into place.

INFO! Observe the press tool instruction manual.



- Open the press jaw and place it at a right-angle onto the press connector.
- Check the insertion depth using the marking.
- Ensure that the press jaw is placed centrally on the bead of the press connector.





- Carry out the pressing process.
- Open and remove the press jaw.
- Connection is pressed.

3.4.6 Leakage test

The installer must perform a leakage test before commissioning.

Carry out this test on a system that is finished but not covered yet.

Observe the applicable regulations, see ↗ *'Regulations from section: Leakage test' on page 7.*

The leakage test pursuant to the applicable regulations must also be carried out for non-potable water installations, see ↗ *'Regulations from section: Leakage test' on page 7.*



Also check the external leak tightness at the stuffing box and at the flange connections of the ball valve. If a leak occurs, observe the information on external leak tightness, see ↗ *Chapter 3.5 'Inspection' on page 24.*

Document the result.

3.5 Inspection



Inform your customer or the operator of the installation that an annual inspection must be carried out.

external leak tightness

- Check the leak tightness of the ball valve at the stuffing box and at the flange connections.

If the flange connection leaks, slowly tighten the stud bolts cross-wise until the leak is rectified.

If the stuffing box leaks, slowly tighten the stuffing box until the leak is rectified, see ↗ *Chapter 3.5.2 'Adjusting the stuffing box' on page 31.*

- Perform a function test after sealing.

If, once the screws are tightened, it is difficult or impossible to actuate the ball valve, replace the seals in the middle part, see ↗ *Chapter 3.5.1 'Replacing the sealing elements in the middle part' on page 25.*

3.5.1 Replacing the sealing elements in the middle part

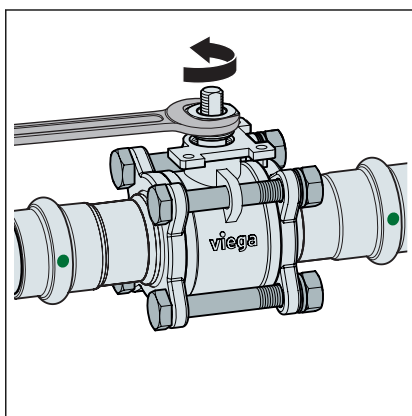
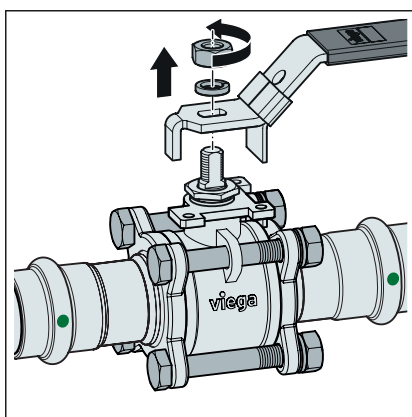


NOTICE!

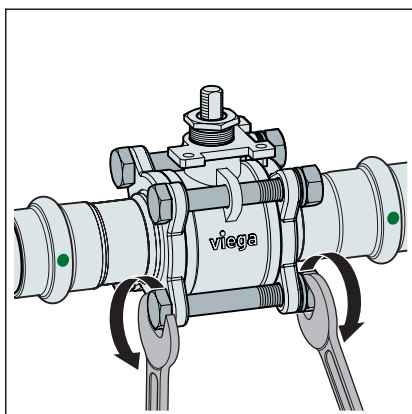
After disassembly, store the internal components such that they are protected from dirt and damage.

Check the internal components for dirt and damage prior to assembly. Clean the components as and when required.

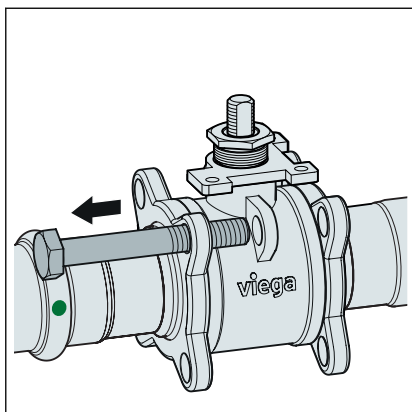
- Shut-off the supply line, secure to prevent unauthorised opening and drain the pipeline section.
- Open the ball valve.
- Remove the handle.



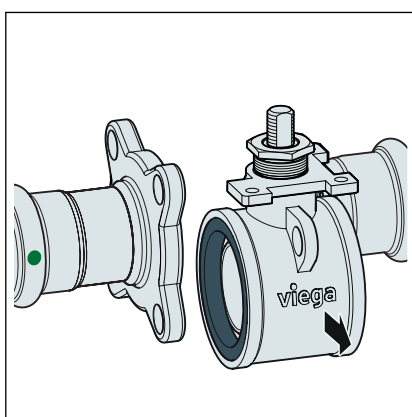
- Loosen the stuffing box using a fork spanner.



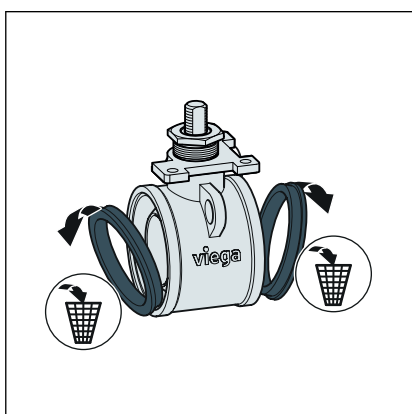
- Loosen the flange connections.



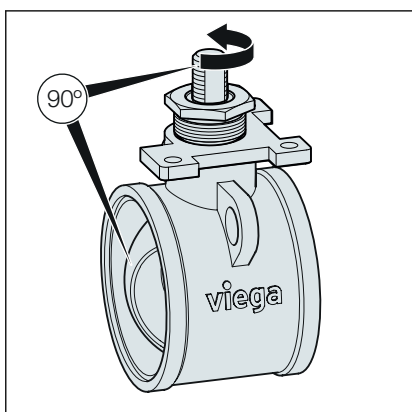
► Remove the stud bolts.



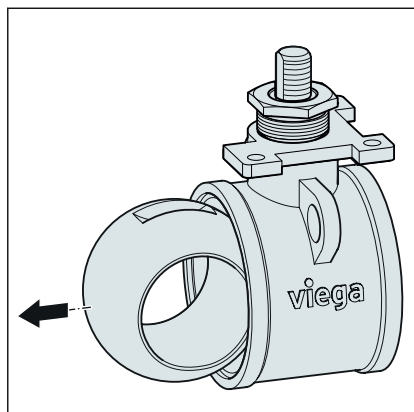
► Remove the middle part of the ball valve sideways.



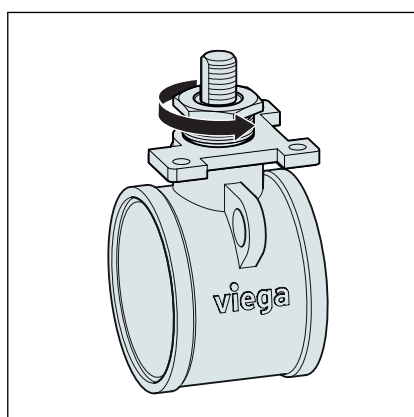
► Remove and dispose of the old PTFE seals.



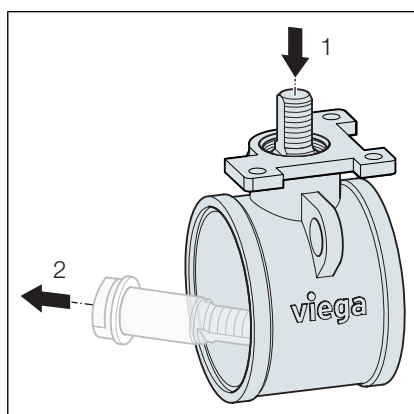
► Turn the ball valve by 90°.



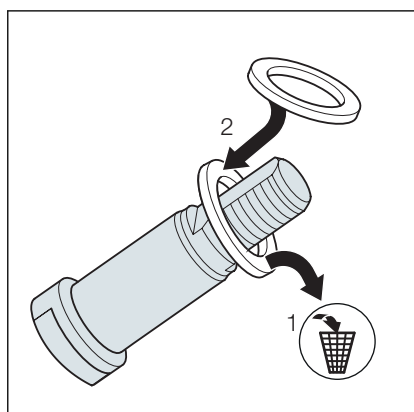
- Remove the ball.
- Clean the ball.



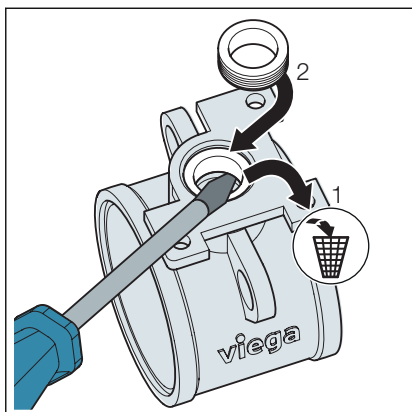
- Unscrew the stuffing box.



- Push out the selector shaft from top to bottom.



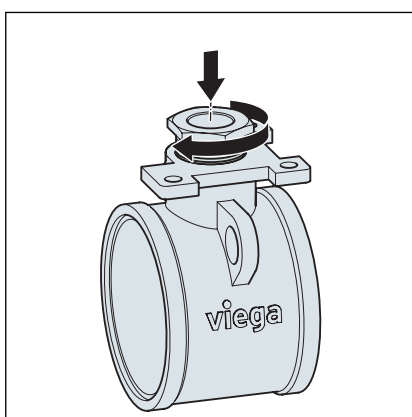
- Replace the selector shaft seal.
- Dispose of the old selector shaft seal.



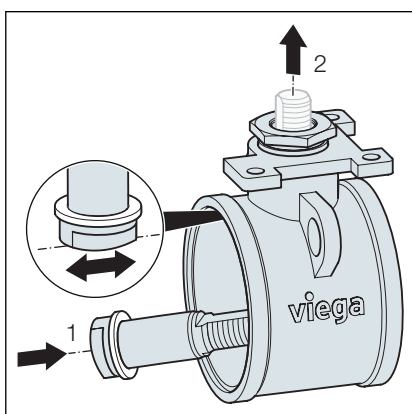
- Remove the seal using a suitable tool and replace.

NOTICE! The seal cannot be removed without being destroyed. Before you remove it, check whether a spare seal is available.

- Dispose of the old seal.

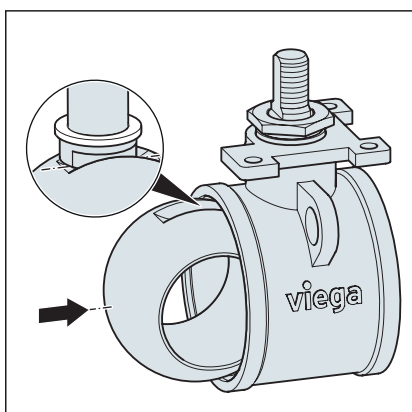


- Tighten the stuffing box by hand.

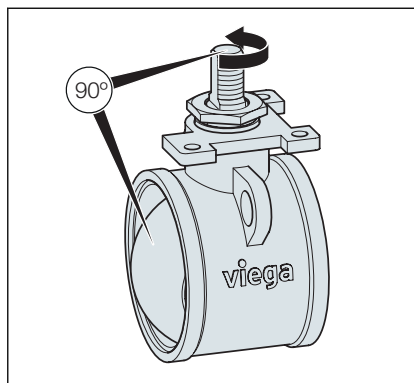


- Insert the selector shaft with the new seal from below.

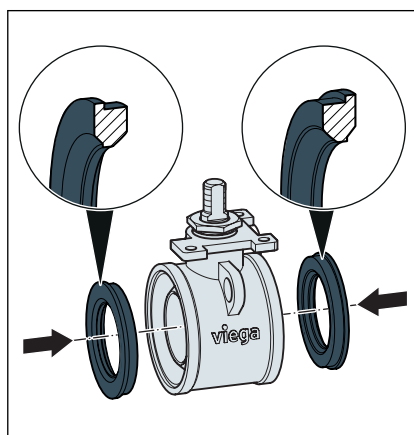
INFO! The shaft must be pointing in the flow direction.



- Re-insert the cleaned ball.

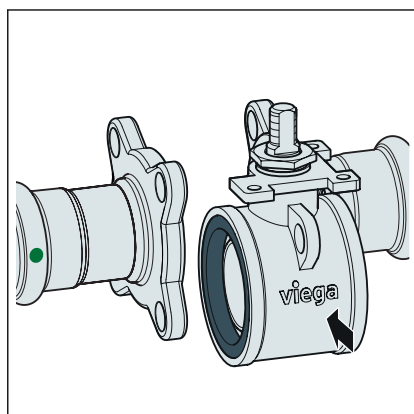


- Turn the ball by 90° (open ball valve).
- Tighten the stuffing box using a spanner.



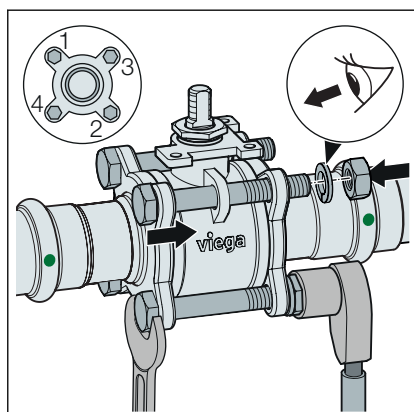
- Insert the PTFE seals into the middle part.

NOTICE! Be sure to insert all seals.



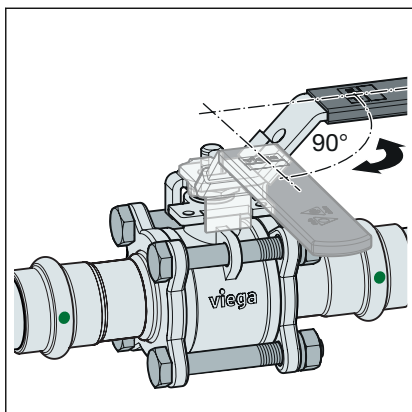
- Insert the middle part.

NOTICE! To guarantee the ball valve functions correctly, the middle part has to be assembled in the position it was in during disassembly.

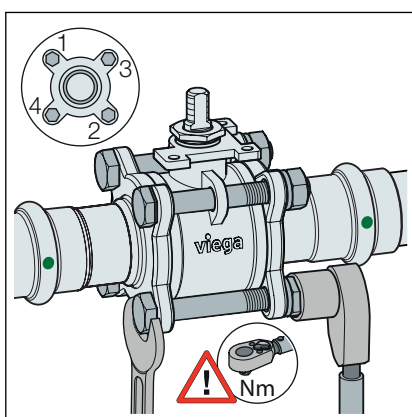


- Insert the stud bolts and tighten gently crosswise.

NOTICE! Be sure to insert the spring rings.



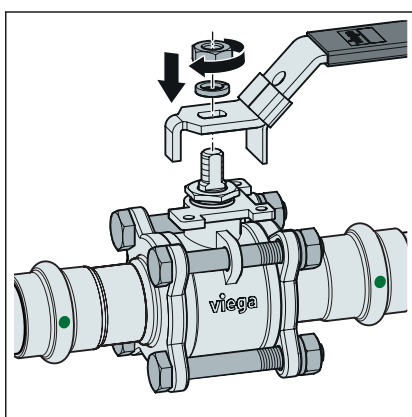
- Loosely mount the handle.
- To centre the seals and the insert, turn the ball by 90° (shut-off closed).
- Check whether flange and middle part are flush.
- Turn back the ball by 90° (shut-off open).
- Remove the handle again.



- Insert the stud bolts and tighten crosswise.
Observe the maximum torque when tightening.

Torques

Size (mm)	15	18	22	28	35	42	54
max. torque (Nm)	10	10	10	20	20	30	30



- Mount the handle.

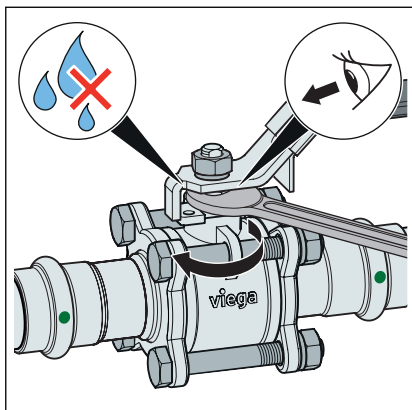
NOTICE! To guarantee the ball valve functions correctly, the actuating lever must be assembled in the position it was in during disassembly. Test the 90° rotation function after assembly.

- Perform a leakage test after replacing the middle part.

If the stuffing box leaks: Carefully tighten the stuffing box until the leak is rectified, see [Chapter 3.5.2 'Adjusting the stuffing box'](#) on page 31.

If the flange leaks: Tighten the bolts crosswise until the leak is rectified.

3.5.2 Adjusting the stuffing box



- Place the fork spanner on the stuffing box.
- Carefully tighten the stuffing box until no leak occurs.
- Test the actuation torque of the ball valve.

3.6 Disposal

Separate the product and packaging materials (e. g. paper, metal, plastic or non-ferrous metals) and dispose of in accordance with valid national legal requirements.



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