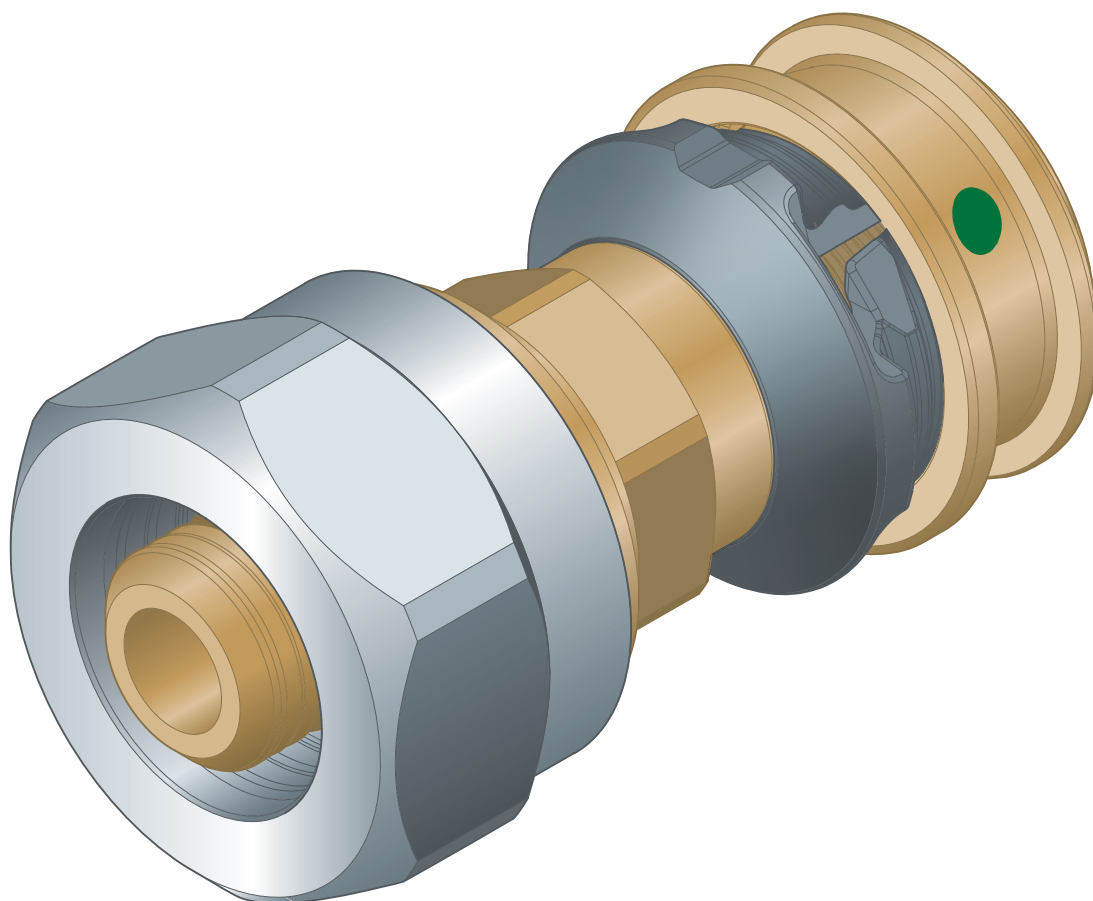


# Instructions for Use

## Raxofix adapter union



for Raxofix pipe onto pipe of another manufacturer or Viegatherm pipe

**Model**  
5313.5

**Year built (from)**  
07/2011

**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](http://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: Fields of application

Scope / Notice	Regulations applicable in Germany
Planning, execution, operation and maintenance of potable water installations	DIN EN 1717
Planning, execution, operation and maintenance of potable water installations	DIN 1988
Planning, execution, operation and maintenance of potable water installations	VDI/DVGW 6023
Planning, execution, operation and maintenance of potable water installations	Trinkwasserverordnung (TrinkwV)

**Regulations from section: Pipes**

Scope / Notice	Regulations applicable in Germany
Potable water pipelines, cold: <ul style="list-style-type: none"> <li>■ Pipe with protective pipe (grey), <i>see line 4 and 5</i></li> <li>■ Pipe with 9 mm surrounding insulation (grey), <i>see line 1</i></li> <li>■ Pipe with 13 mm surrounding insulation (grey), <i>see line 2 and 6</i></li> <li>■ Pipe with 26 mm surrounding insulation (grey), <i>see line 3</i></li> </ul>	DIN 1988–200, Table 8
Potable water pipelines, warm: <ul style="list-style-type: none"> <li>■ Pipe with protective pipe (grey), <i>see line 6</i></li> <li>■ Pipe with 13 mm surrounding insulation (grey), <i>see line 5</i></li> <li>■ Pipe with 26 mm surrounding insulation (grey), <i>see line 1</i></li> </ul>	DIN 1988–200, Table 9
Heating systems: <ul style="list-style-type: none"> <li>■ Pipe with 9 mm surrounding insulation (grey), <i>see line 7</i></li> <li>■ Pipe with 13 mm surrounding insulation (grey), <i>see line 5 and 6</i></li> <li>■ Pipe with 26 mm surrounding insulation (grey), <i>see line 1</i></li> </ul> Heating systems in floor construction: <ul style="list-style-type: none"> <li>■ Pipe with eccentric heat insulation (grey), <i>see line 1 or 7</i></li> </ul>	EnEV, Anhang 5, Table 1

**Regulations from section: Storage**

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

### 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 water installations	ZVSHK-Merkblatt: "Dichtheitsprüfungen von Trinkwasserinstallationen mit Druckluft, Inertgas oder Wasser"

### Regulations from section: Maintenance

Scope / Notice	Regulations applicable in Germany
Operation and maintenance of potable water installations	DIN EN 806-5

## 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.

### 2.2.1 Areas of use

Use is possible in the following areas among others:

- Raxofix multi-layer pipe (dimensionally stable with oxygen barrier layer)
  - Potable water installations
  - Heating systems
  - Compressed air systems

#### Potable water installation

For planning, execution, operation and maintenance of potable water installations, observe the applicable regulations, see ↗ *'Regulations from section: Fields of application'* on page 5.

#### Maintenance

Inform your customer or the operator of the potable water installation that the system has to be maintained on a regular basis, see ↗ *Chapter 3.4 'Maintenance'* on page 21.

## 2.2.2 Media

The system is suitable for the following media, amongst others:

- Raxofix multi-layer pipe (dimensionally stable with oxygen barrier layer)
  - Potable water
  - Rainwater
  - Heating water
  - Compressed air

## Operating conditions

Operating temperature max.

- Sanitary installations:  $T_D$  70 °C
- Heating installations: 80 °C

Operating pressure max.

- Sanitary installations: 1.0 MPa (10 bar)
- Heating installations: 1.0 MPa (10 bar)

## 2.3 Product description

### 2.3.1 Overview

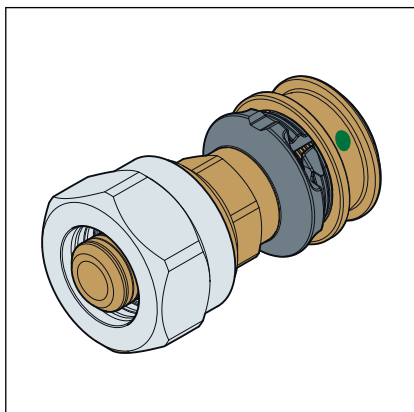


Fig. 1: 5313.5 - Adapter union

The model is only suitable for the following pipe dimensions:

d Viega Raxofix	d third party pipe
16 x 2.2	16 x 2

### 2.3.2 Pipes

Raxofix multi-layer pipes, with or without protective pipe, with various thicknesses of insulation are available in coiled bundles. Dimensionally stable multi-layer pipes are also available in 5 m lengths. The following pipes are available for the model described:

Raxofix multi-layer pipe
Dimensionally stable
With oxygen barrier layer
d 16



**Raxofix multi-layer pipe (dimensionally stable with oxygen barrier layer)**

Type of pipe	d	Areas of use
Pipe in lengths	16	Potable water installations Heating installations
Pipe without protective pipe	16	Potable water installations Heating installations
Pipe with protective pipe (grey)	16	Potable water installations <sup>1)</sup> Heating installations
Pipe with 6 mm surrounding insulation (grey)	16	Potable water installations Heating installations
Pipe with 9 mm surrounding insulation (grey)	16	Potable water and heating installations <sup>1)</sup>
Pipe with 13 mm surrounding insulation (grey)	16	Potable water and heating installations <sup>1)</sup>
Pipe with 26 mm surrounding insulation (grey)	16	Potable water and heating installations <sup>1)</sup>
Pipe with eccentric heat insulation (grey)	16	Heating pipes in floor construction, integration in the floor construction without continuous footfall sound insulation <sup>1)</sup>
Pipe with eccentric heat insulation (grey)	16	Heating pipes in floor construction, integration in the floor construction without continuous footfall sound insulation <sup>1)</sup>

<sup>1)</sup> see ↗ 'Regulations from section: Pipes' on page 6

## Laying and fixing pipes

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

For fastening the pipes on Prevista Dry Plus rail systems, Viega recommends the use of the Prevista Dry Plus piping support (model 8416). The piping support is suitable for plastic pipelines with dimensions d16 to 20.

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 distance to press connectors.
- Observe the expansion direction: Plan fixed and gliding points.

Make sure to affix the pipelines in such a way as to de-couple them from the installation body, so that they cannot transfer any structure-borne sound, resulting from thermal expansion or possible pressure surges, onto the installation body or other components.

Observe the following fixing intervals:

### Interval between the pipe clamps

d x s [mm]	Raxofix multi-layer pipes (dimensionally stable with oxygen barrier layer) [m]		Raxofix multi-layer pipes (flexible without oxygen barrier layer) [m]	
	Horizontal	Vertical	Horizontal	Vertical
16 x 2.2	1.00	1.30	0.55	0.75
20 x 2.8	1.00	1.30	0.60	0.80
25 x 2.7	1.50	1.95	-	-
32 x 3.2	2.00	2.60	-	-
40 x 3.5	2.00	2.60	-	-
50 x 4.0	2.50	3.25	-	-
63 x 4.5	2.50	3.25	-	-

### 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)

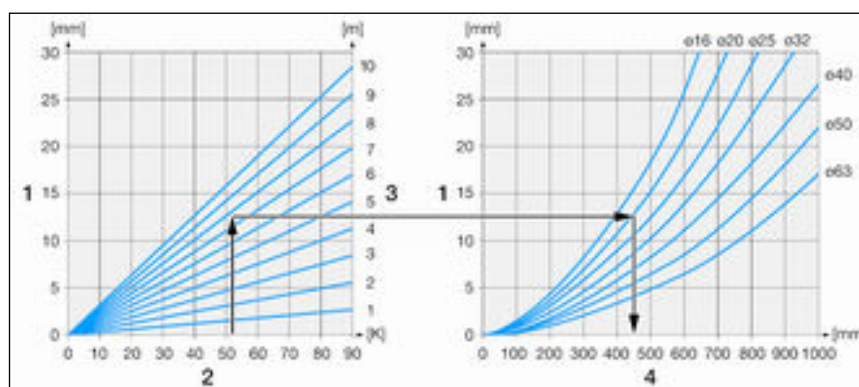
### Heat expansion co-efficients of various pipe materials

Material	Heat expansion co-efficient $\alpha$ [mm/mK]	Example: Length expansion with pipe lengths $L = 20$ m and $\Delta T = 50$ K [mm]
Raxofix multi-layer pipe (dimensionally stable with oxygen barrier layer)	0.03	30

### Length expansion and expansion bend length

Calculation example Raxofix multi-layer pipe (dimensionally stable with oxygen barrier layer):

- **Given:** Temperature difference  $\Delta\vartheta = 50$  K; Pipe length  $L = 8$  m; Pipe  $\varnothing = 20$  mm
- **Required:** Expansion bend length  $L_{BS}$
- **Calculation:**
  - Beginning in the left-hand diagram: From 50 K temperature difference on the x-axis up to the characteristic line for the 8 m pipe length.
  - Connect the intersection horizontally with the right-hand diagram up to the intersection of the characteristic line for pipe diameter 20 mm.
- **Result:** Read the value from the x-axis:  $L_{BS} = 480$  mm.



**Fig. 2: Raxofix multi-layer pipes (dimensionally stable with oxygen barrier layer) – expansion bend length**

- 1 - Length expansion  $\Delta l$  [mm]
- 2 - Temperature difference  $\Delta\vartheta$  [K]
- 3 - Pipe length  $L$  [m]
- 4 - Expansion bend length  $L_{BS}$  [mm]

### 2.3.3 Adapter union

The adapter union is suitable for the cross over from Raxofix pipes onto the pipes of other manufacturers or Viegatherm pipes.

#### SC-Contur

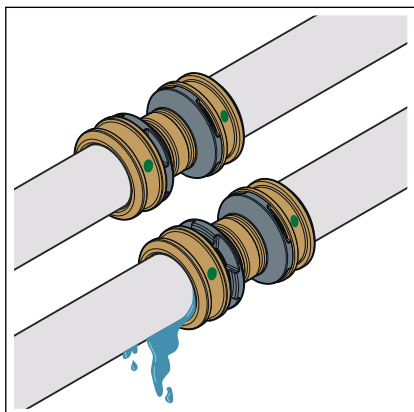


Fig. 3: SC-Contur

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 connector 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)

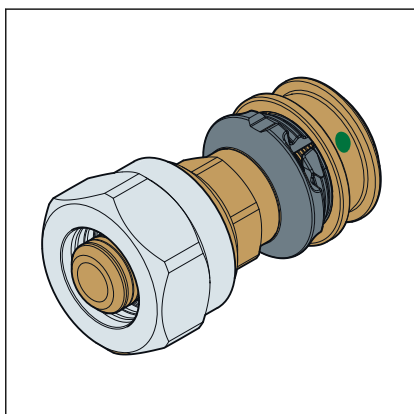
### 2.3.4 Markings on components

#### Pipe marking

The pipe markings contain important information regarding the quality and certification of the pipes. Their meaning is as follows:

- manufacturer
- system name
- pipe material
- size / wall thickness
- certification and operating temperatures

#### Marking at adapters



The green dot shows that the adapter is equipped with the SC-Contur and that the connector is suitable for potable water.

## 2.4 Information for use

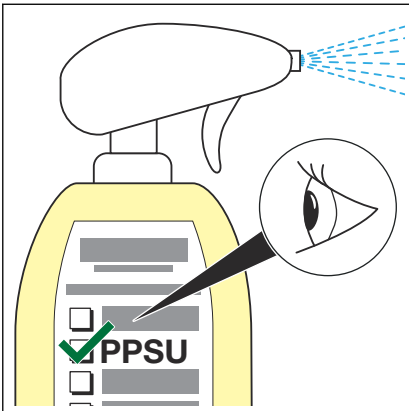
### 2.4.1 Chemical resistance



**NOTICE!**  
**Damage to material due to aggressive chemicals**

Aggressive chemicals, especially those containing solvents, may cause material damage and leaks. This may lead to water damage.

- Prevent contact between the system components and aggressive chemicals.



**NOTICE!**  
**Material damage due to impermissible leakage detection agents**

Impermissible leakage detection agents may cause material damage and leaks. This may lead to water damage.

- Use only leakage detection agents approved by the manufacturer for use on PPSU material.
- Observe the manufacturer's notes on processing.

## 3 Handling

### 3.1 Storage

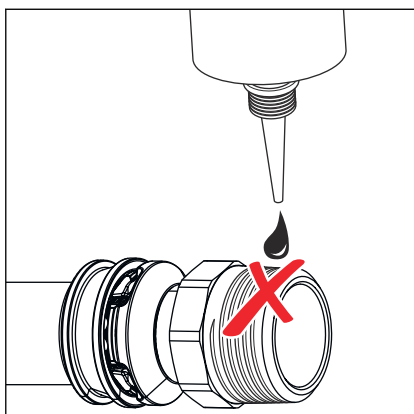
For storage, comply with the requirements specified in the applicable regulations, see ↗ *'Regulations from section: Storage' on page 6:*

- Store rods on even, clean surfaces.

Storage outside in closed, original packaging is possible for a period of up to three months. In this instance, protect the packaging from damage due to rain or high levels of humidity or UV radiation.

### 3.2 Assembly information

#### 3.2.1 Mounting instructions



#### **NOTICE!** **Material damage due to thread locker containing solvents!**

Thread lockers containing solvents can lead to material damage and leaks in plastic parts of pipe connections. This may lead to water damage.

- As a sealant, only use commercially available hemp together with thread sealing paste or certified sealing tape for potable water.
- Please contact the Viega Service Center if you have any questions.

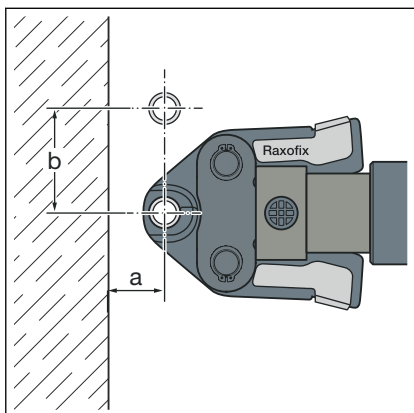
#### Checking system components

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

- Check all parts.
- Replace damaged components.
- Do not repair damaged components.

### 3.2.2 Space requirements and intervals

#### Pressing between pipelines



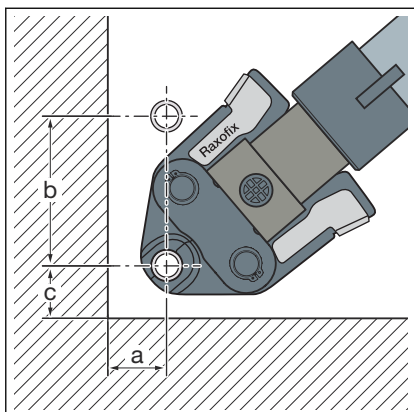
#### Space requirement type 2 (PT2), PT3-EH, PT3-AH, Pressgun 4B, 4E, 5

d	16
a [mm]	14
b [mm]	45

#### Space requirement Picco, Pressgun Picco

d	16
a [mm]	16
b [mm]	46

#### Pressing between pipe and wall



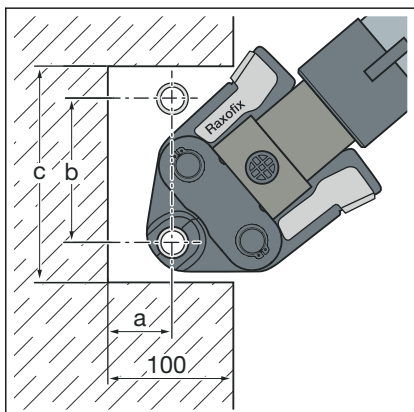
#### Space requirement type 2 (PT2), PT3-EH, PT3-AH, Pressgun 4B, 4E, 5

d	16
a [mm]	19
b [mm]	37
c [mm]	65

#### Space requirement Picco, Pressgun Picco

d	16
a [mm]	20
b [mm]	33
c [mm]	60

#### Pressing in wall slots



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

d	16
a [mm]	19
b [mm]	65
c [mm]	139

Space requirement Picco, Pressgun Picco

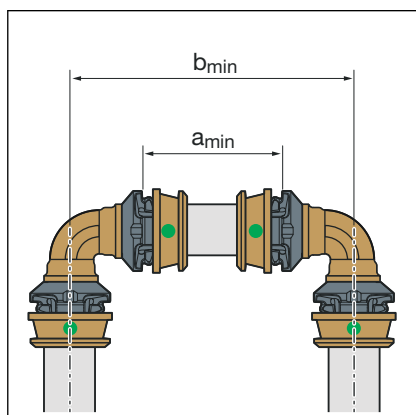
d	16
a [mm]	20
b [mm]	60
c [mm]	126

Interval between the pressings



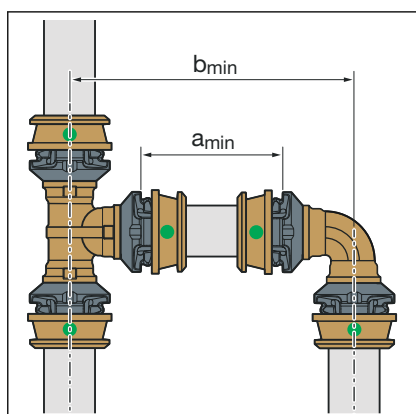
**NOTICE!**  
Leaking press connections due to pipes being too short!

Observe the specified minimum distances for two adjacent press connectors, insufficient insertion depth can lead to leakage of the pipe.



Minimum distance between elbows

d	16	20	25	32	40	50	63
a <sub>min</sub> [mm]	36	36	46	44	57	57	60
b <sub>min</sub> [mm]	83	85	107	117	150	168	185



Minimum distance between elbow and T-piece

d	16	20	25	32	40	50	63
a <sub>min</sub> [mm]	36	36	46	44	57	57	60
b <sub>min</sub> [mm]	83	86	107	116	150	164	185

Z dimensions

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



### 3.2.3 Required tools

The use of original Viega tools or equivalent tools is recommended for installation.

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

- press machine with constant pressing force
- Suitable Raxofix press jaw
- bending tool (model 5331 or 5331.2)



#### **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.

## 3.3 Assembly

### 3.3.1 Bending pipes

Raxofix multi-layer pipes in the dimensions 16–32 mm can be bent by hand with a bending radius of  $5 \times d$  or with a bending tool with the following radii:



Bending directly at the connector can lead to the pipe breaking.

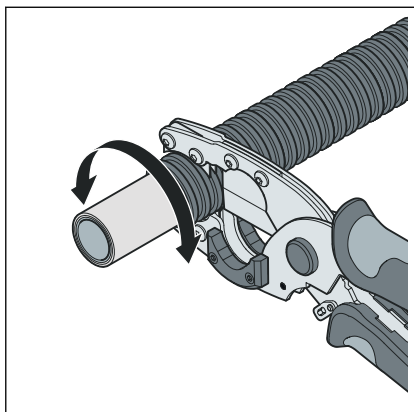
d	Bending radius x d
16	2.0

The recommended bending tools for dimension d 16 are the models 5331 and 5331.2.

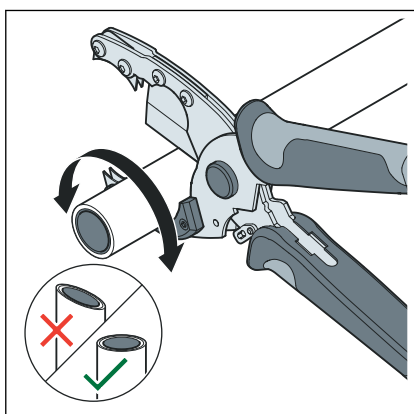
### 3.3.2 Shortening the pipes

For information about tools, also see [Chapter 3.2.3 'Required tools'](#) on page 17.

### Dimensions 16–25 mm



- Cut the protective pipe to length using the protective pipe cutter (model 5341).

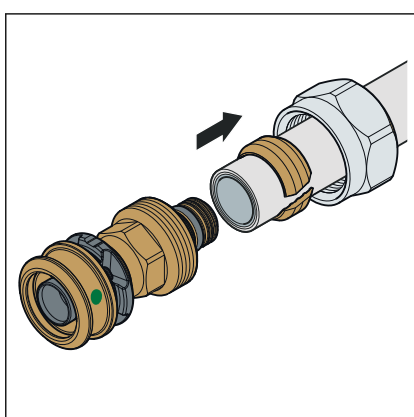


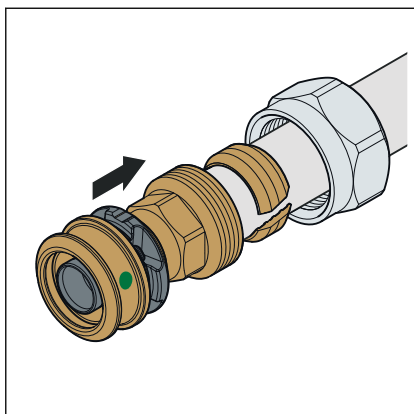
- Cut the pipe to length using a pipe shear.  
Replace worn blades (model 5341.6).  
Make sure that the cut surface is clean and straight.

### 3.3.3 Manufacturing screw connection

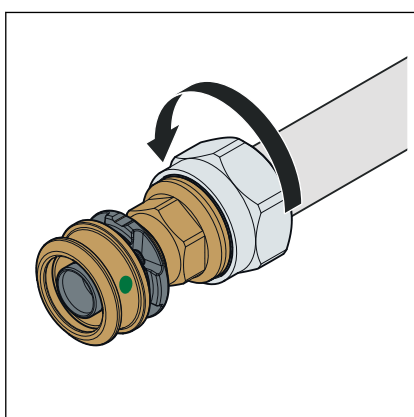
#### Requirements:

- The pipe end is not bent or damaged.
- Push the union nut and clamping ring onto the pipe.



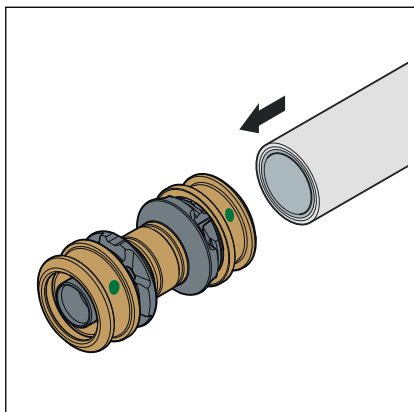


- Push the adapter coupling into the pipe. Check that the sealing element is properly positioned.

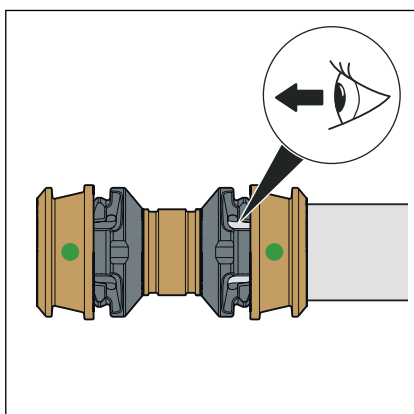


- Tighten the union nut.
- You have made the connection.

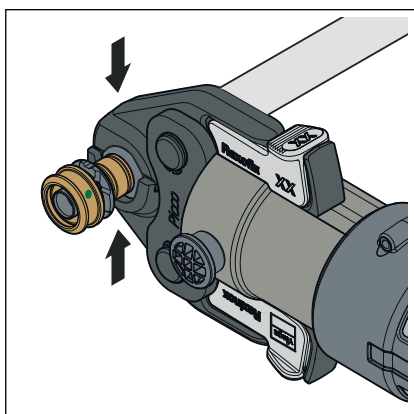
### 3.3.4 Pressing the connection



- Push the pipe into the press connector until the pipe end is visible in the inspection window.



- Check the insertion depth in the inspection window.



- Open the press jaw and place it at a right-angle onto the press connector. Carry out the pressing process.

Observe the intervals in section [Chapter 3.2.2 'Space requirements and intervals'](#) on page 15.

- ☐ Connection is pressed.

### 3.3.5 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.

Document the result.

### 3.4 Maintenance

Observe the applicable regulations for the operation and maintenance of potable water installations, see [linktarget \[Normen\\_Armaturen\\_Wartung\] doesn't exist but @y.link.required='true'](#).

Observe the applicable regulations for the operation and maintenance of potable water installations, see ↗ *'Regulations from section: Maintenance' on page 7.*

### 3.5 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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INT • 2022-08 • VPN200405

