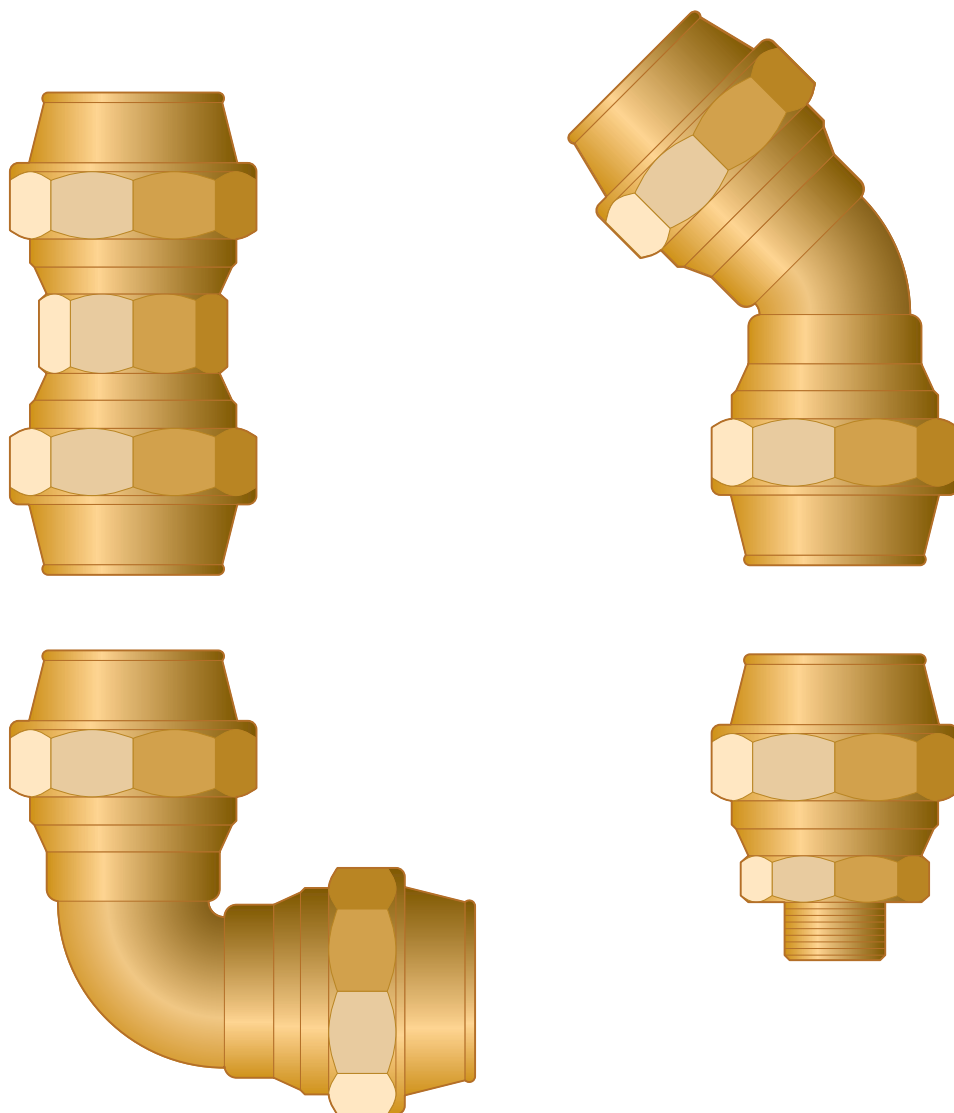


## Instructions for Use

# Maxiplex



Clamp connector system made of gunmetal/silicon bronze for underground PE-HD and PE-X pipes

**System**  
Maxiplex

**Year built (from)**  
01/1994

**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 utility and pipeline construction companies and their technical professionals.

Only specialist companies which can prove they are qualified in accordance with the applicable directives may be engaged for the construction of gas and potable water house service connections, see  'Regulations from section: Target group' on page 5.

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.

In addition, the applicable regulations must be observed for potable water house service connections, see  'Regulations from section: Target group' on page 5.

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: Target group

Scope / Notice	Regulations applicable in Germany
Qualification of specialist companies	DVGW-Arbeitsblatt GW 301
Qualification and requirements in the potable water supplier	DVGW-Arbeitsblatt W 1000

#### Regulations from section: Application areas

Scope / Notice	Regulations applicable in Germany
Planning, execution, operation and maintenance of potable water house service connections	DIN EN 805
Planning, execution, operation and maintenance of potable water house service connections	DVGW-Arbeitsblatt W 400-1
Planning, execution, operation and maintenance of potable water house service connections	DVGW-Arbeitsblatt W 400-2
Planning, execution, operation and maintenance of potable water house service connections	DVGW-Arbeitsblatt W 400-3

#### Regulations from section: Media

Scope / Notice	Regulations applicable in Germany
Suitability for potable water	Trinkwasserverordnung (TrinkwV)

**Regulations from section: Pipes**

Scope / Notice	Regulations applicable in Germany
Permitted types of pipes (PE) – potable water supply	DIN EN 12201
Permitted use with piping materials in potable water installations (PE-HD)	DIN 8074/75
Permitted types of pipes (PE) – potable water supply / gas supply	DVGW-Arbeitsblatt GW 335-A2
Permitted types of pipes (PE-X) – potable water supply / gas supply	DIN 16893
Types of pipes (PE-X) – potable water supply	DVGW-Arbeitsblatt GW 335-A3
Permitted types of pipes (PVC-U) – potable water supply	DIN 8061/62
Permitted types of pipes (PVC-U) – potable water supply	DIN EN ISO 1452-1-5
Permitted types of pipes (PVC-U) – potable water supply	DVGW worksheet GW 335-A1

**Regulations from section: Corrosion**

Scope / Notice	Regulations applicable in Germany
(Subsequent) corrosion protection for underground installation	DIN 30672

**Regulations from section: Transport**

Scope / Notice	Regulations applicable in Germany
Transport	Einbauhinweise A 1465 - Pressure pipelines

**Regulations from section: Storage**

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

### Regulations from section: Notes on mounting

Scope / Notice	Regulations applicable in Germany
Threshold values for ovalities	DIN 12201-2, Table 1

### Regulations from section: Leakage test

Scope / Notice	Regulations applicable in Germany
Leakage test before commissioning the connection line	DVGW-Arbeitsblatt W 400-2
Leakage test before commissioning the connection line	DIN EN 805

## 2.2 Intended use



Agree the use of the system for areas of application and media other than those described with Viega.

### 2.2.1 Areas of application

The system is intended for use in potable water supply.

#### Potable water installation

For planning, execution and operation of potable water house service connections, observe the applicable regulations, see ↗ 'Regulations from section: Application areas' on page 5.

### 2.2.2 Media

The system is suitable for the following media, see ↗ 'Regulations from section: Media' on page 5:

- Potable water

The max. operating pressure and the max. operating temperature depend on the type of pipe used and the specific application.

Potable water

- Operating temperature  $T_{\max} = 25 \text{ °C}$
- Operating pressure  $p_{\max} = 1.6 \text{ MPa (16 bar)}$

## 2.3 Product description

### 2.3.1 Overview

The pipeline system consists of clamp connectors for underground PE-HD and PE-X pipes.

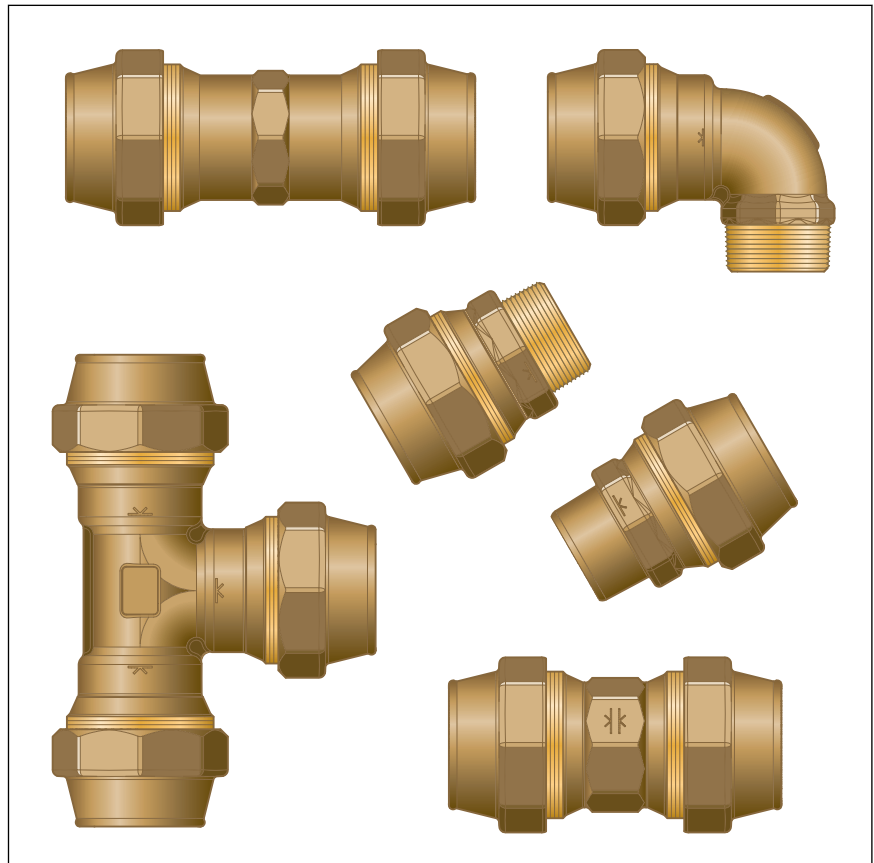


Fig. 1: Maxiplex – Overview

The system components are available in the following dimensions:  
d 20 / 25 / 32 / 40 / 50 / 63.

### 2.3.2 Pipes

Only the following plastic pipes may be used for installations with Maxiplex components:

#### Permitted types of pipes – potable water supply

Type of pipe <sup>1)</sup>	PE 80
	PE 100
	PE 100 RC

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

<sup>2)</sup> When using with PVC-U pipes, the clamping ring must be exchanged for a clamping ring made of gunmetal/silicon bronze (model 9050).



	PE-X
	PVC-U <sup>2)</sup>

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

<sup>2)</sup> When using with PVC-U pipes, the clamping ring must be exchanged for a clamping ring made of gunmetal/silicon bronze (model 9050).

### 2.3.3 Clamp connector

Clamp connectors are available in a number of shapes. An overview of the clamp connector suitable for the system can be found in the catalogue.

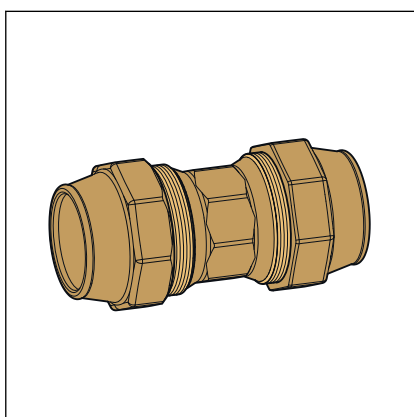


Fig. 2: clamping connector

Maxiplex clamp connectors are delivered ready-to-fit. There is a sealing element, a pressure ring and a clamping ring in the connector. The connectors are equipped with a fibre-glass reinforced clamping ring for a longitudinal force resistant connection.

### 2.3.4 Sealing elements

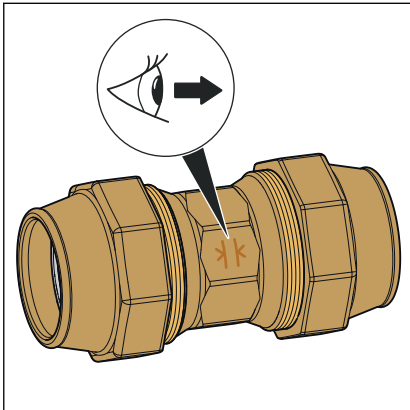
The clamp connectors are factory-fitted with EPDM sealing elements.

#### Area of use of the EPDM sealing element

Area of application	Potable water	Compressed air	Geothermal energy
Operating temperature [T <sub>max.</sub> ]	25 °C	—	-10 – 25 °C
Operating pressure [P <sub>max.</sub> ]	1.6 MPa (16 bar)	1.0 MPa (10 bar)	0.6 MPa (6 bar)
Comments	—	dry, oil content < 25 mg / m <sup>3</sup>	maximum 50 % glycol level in total water content

## 2.3.5 Markings on components

### Markings on clamp connectors



Maxiplex clamp connectors are marked with an indicator to determine the insertion depth.

Fig. 3: Marking of the insertion depth

## 2.4 Information for use

### 2.4.1 Corrosion

Due to a lower probability of corrosion in the case of laying in the ground and in contact with ground and surface waters with pH-values between 6 and 8, corrosion protection is not required. Soils containing ammoniac require corrosion protection in acc. with the pertinent guidelines, see ↪ *'Regulations from section: Corrosion'* on page 6.

Only components and supplies (e. g. sealant) that have been awarded a DVGW test symbol may be used.

## 3 Handling

### 3.1 Transport



Protect the clamp connectors from contamination until use.

For transport, comply with the requirements specified in the applicable regulations, see [↗ 'Regulations from section: Transport' on page 6](#)

### 3.2 Storage



Protect the clamp connectors from contamination until use.

For storage, comply with the requirements specified in the applicable regulations, see [↗ 'Regulations from section: Storage' on page 6:](#)

- Avoid strong sunlight and heating.
- In addition, observe the instructions provided by the pipe manufacturer.

### 3.3 Assembly information

#### 3.3.1 Mounting instructions

##### Checking system components

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

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

Inspect pipes visually for the following damage before installation:

- Ovalities: threshold values must not be exceeded, see [↗ 'Regulations from section: Notes on mounting' on page 7.](#)
- Dents
- Cracks

- Grooves on the exterior (maximum depth 10 % of nominal wall thickness)
- damaged pipe ends

Only process the sections of the pipes, which do not exhibit these features.

**Multiple use**

Exchange the clamping ring before each application if the connector is used more than once. If the pressure ring or the sealing element is damaged, exchange these as well.

**3.3.2 Permitted exchange of sealing elements**



**Important instruction**

With their material-specific qualities, sealing elements in clamp connectors 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.

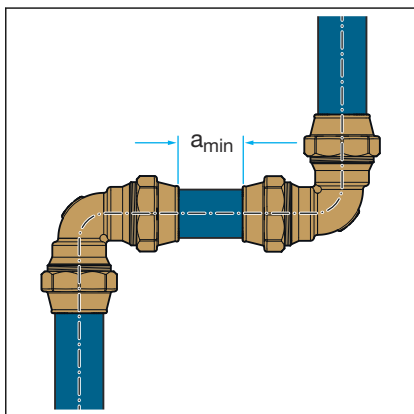
The exchange of a sealing element is generally permitted. The sealing element must be exchanged for a designated spare part for the intended application ↪ *Chapter 2.3.4 'Sealing elements' on page 9*. The use of other sealing elements is not permitted.

Exchanging a sealing element is permitted in the following situations:

- if the sealing element in the clamp connector is obviously damaged and should be exchanged for a Viega spare sealing element made of the same material

**3.3.3 Space requirements and intervals**

**Distance between the clamp connectors**



Minimum distance with d 20–63

d	a <sub>min</sub> [mm]
20	10
25	10
32	10
40	10
50	10
63	10

**Z dimensions**

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

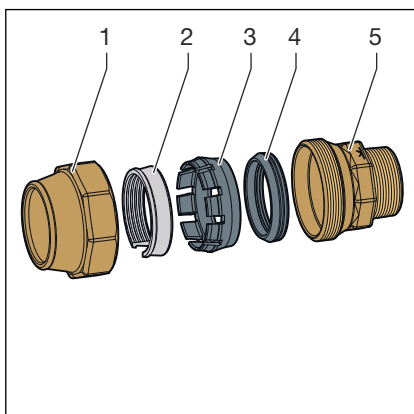
**3.3.4 Required tools**

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

- pipe cutter, pipe shear or saw
- deburrer and coloured pen for marking
- Pipe pliers

**3.4 Assembly**

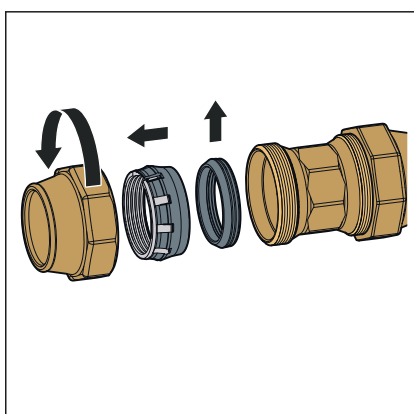
**3.4.1 Replacing the sealing element**



- 1 - Union nut
- 2 - clamping ring
- 3 - pressure ring
- 4 - sealing element
- 5 - connection piece

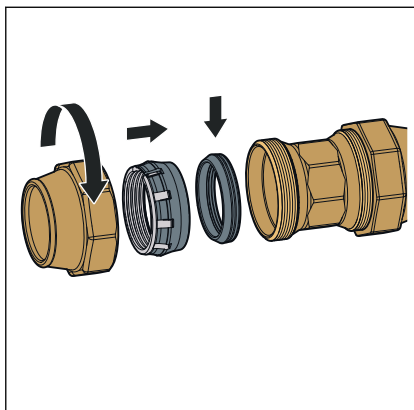
**Fig. 4: Components of the clamp connector**

**Removing the sealing element**



- Unscrew the union nut.
- Remove the clamping ring from the clamp connector.
- Remove the sealing element from the clamp connector.

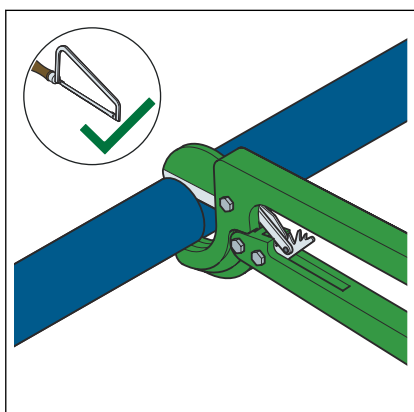
### Inserting the sealing element



- Insert a new, undamaged sealing element into the clamp connector.
- Insert the clamping ring and the pressure ring into the clamp connector.
- Screw on the union nut.

### 3.4.2 Shortening the pipes

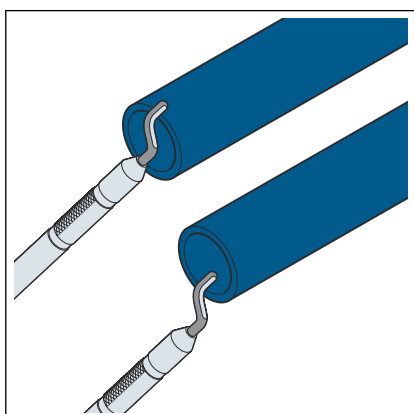
For information about tools, also see [Chapter 3.3.4 'Required tools'](#) on page 13.



- Cut the pipe to length at right-angles using a pipe shear, pipe cutter or saw.

### 3.4.3 Deburring the pipes

The pipe ends must be thoroughly deburred internally and externally if shortened using a saw.

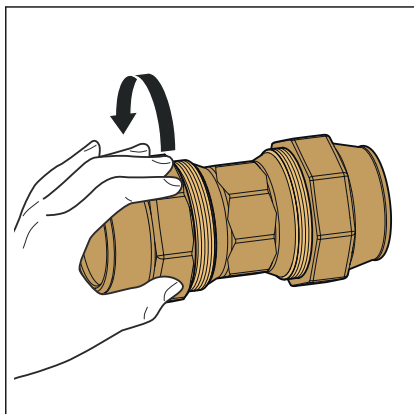
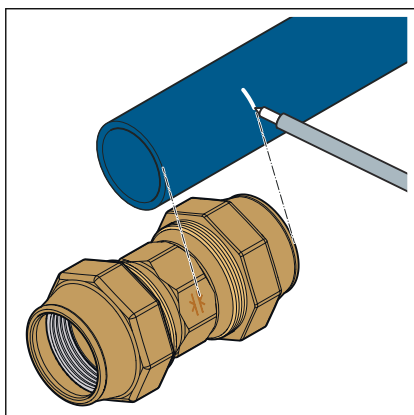


- Deburr the inside and outside of the pipe.
- When using protective jacket pipe, remove the protective jacket according to the manufacturer's instructions.

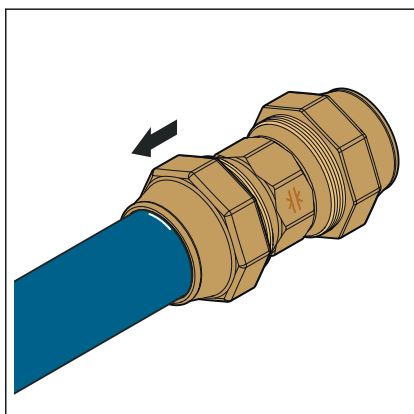
### 3.4.4 Screwing the connection together

**Requirements:**

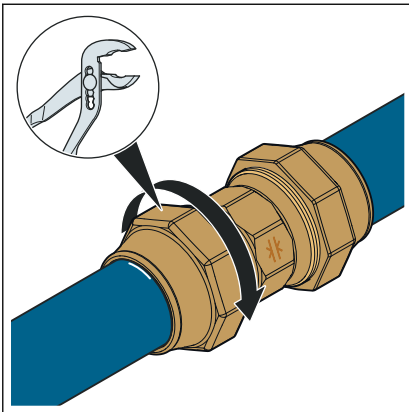
- The pipe end is not bent or damaged.
- The pipe is deburred.
- The protective coating of the protective coating pipe is removed.
- The mounting instruction is removed from the connector.
- The proper sealing element for the corresponding application is in the clamp connector.  
EPDM = potable water
- Sealing element, clamping ring and pressure ring are undamaged.
- A marking is to be found on the clamp connector. Mark the insertion depth with the help of the marking on the pipe.



- Loosen the union nut.



- Push the clamp connector up to the marked insertion depth on the pipe.



- Tighten the union nut up to the end of the thread.
- You have made the connection.

### 3.4.5 Leakage test

Perform a leakage test according to the applicable regulations before commissioning the connection line, see [🔗 'Regulations from section: Leakage test' on page 7.](#)

Carry out the test on a house service connection that is finished but not yet covered. The result of the leakage test must be documented as proof of the safety of the pipeline.

## 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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