

## Operating and installation manual Accessories



**"ER" series coupling ring**  
**"RED" series adapter piece**  
for flange connection

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Read instructions carefully before use.

The operating and installation manual must always be available at the usage location of the system.

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## 1.0 Explanation of the symbols



**DANGER!**  
**Danger to life!**

- This symbol, in conjunction with the signal word "Danger", indicates a dangerous situation that directly results in death or serious injury.



**WARNING!**  
**Serious injuries!**

- This symbol, in conjunction with the signal word "Warning", indicates a dangerous situation that could result in death or serious injury.



**CAUTION!**  
**Minor to moderate injuries!**

- This symbol, in conjunction with the signal word "caution", indicates a dangerous situation that may result in minor to moderate injury.



**ATTENTION!**  
**Property damage!**

- This symbol, in conjunction with the signal word "Caution", indicates a situation that may result in property damage and environmental damage.



**NOTE!**

- Supplementary information on the operation of the product.

## 2.0 Safety

The manufacturer assumes no liability for damage in the following cases:

- Mounting or connection errors.
- Damage to the product due to mechanical influences.
- Modification of the product without the express permission of the manufacturer.
- Application outside the intended use.
- Welding work of any kind.
- Installation of fittings, components and devices not included in the scope of delivery and not approved by the manufacturer.

### 2.1 General safety

- Accident prevention regulations must be observed.
- All work on the product must be carried out with suitable PPE only.
- If the product or its paintwork is visibly damaged, it must not be put into service.
- All work on the product must be carried out by qualified experts only.
- Depressurise the coupling ring / adapter piece before carrying out any work, and safeguard it from being switched on again.  
Furthermore, a closed and secure media supply must be ensured!
- Do not mount or mechanically load the coupling ring / adapter piece.
- Non-permissibly high pressures (test pressures) lead to internal and external damage.
- Safely evacuate leaks of hazardous media (e.g. explosive, toxic, hot) in order to avoid danger to persons and the environment. Comply with legal provisions.
- During operation, there may be risks of noise and vibration, it should be avoided that persons stand in the immediate vicinity.
- The product must be protected against environmental and weather influences, e.g. harmful insects, mould, moisture, corrosion, icing, UV radiation, toxic/corrosive solutions/liquids.

## 2.2 Safety during operation in potentially explosive atmospheres (optional)

- The product is not covered by Directive 2014/34/EU as it does not have its own potential ignition source.
- In order to avoid critical static charging, plastic attachments, plastic-coated parts (e.g. painted pipe sections) and all other non-conductive materials must not be subjected to processes that cause very high levels of charging.
- All cleaning must be carried out manually using a damp cloth.
- Safe use is only guaranteed and permissible if the documentation is complied with.
- The temperature of the medium must not exceed the maximum temperature of the specified temperature class.
- The temperature classes specified in the system must be observed for heated coupling rings / adapter pieces.
- Coupling rings / adapter pieces of these series must be grounded→, see point 10.2.
- Any change to the product requires consultation with the manufacturer.  
Unauthorized changes can result in ignition hazards.

## 2.3 Associated accompanying documentation

Document	Document number
Data sheet coupling ring	131.000.028
Data sheet adapter piece	131.000.029

## 3.0 Target group

This operating and installation manual contains the essential information and instructions for the safe operation of coupling rings / adapter pieces. It is intended for qualified personnel in installation companies who are familiar with the applicable guidelines and safety precautions for the construction of pipe systems.

## 4.0 Scope of delivery



### NOTE!

- It must be checked that the goods are complete and free of defects as soon as they are received. Damage to the product or the packaging must be reported to the shipping company immediately.
- Coupling ring / adapter piece with locking screws and protective conductor terminal for equipotential bonding.
- Operating and installation manual

## 5.0 Intended use

The "ER" series of coupling rings and the "RED" series of adapter pieces are used as connecting elements for installation in pipe systems between two flanges and for the integration of fittings, measuring and monitoring devices, as well as filling and venting valves.

In addition, the "RED" series adapter pieces reduce the media flow from one nominal diameter to another.

The coupling rings / adapter pieces manufactured by UNI-Geräte are subject to quality assurance in accordance with Module H of the Pressure Equipment Directive 2014/68/EU (*insofar as these fall within the scope of application*).

The coupling rings / adapter pieces are suitable for the following media:

- Gases according to gas families as per DIN EN 437
- Neutral gases
- Aggressive gases such as bio, sewage or landfill gas  
(Only as a variant with a corresponding material design)
- Liquid fuels and neutral fluids

Operational safety is only guaranteed if used in accordance with the intended purpose.

**The application limits specified on the type plate must be observed.**

## 6.0 Technical data

The technical information can be found on the type plate and in the documentation.

## 7.0 Technical description

The "ER" series coupling rings and the "RED" series adapter pieces are fitting pieces for installation in piping systems.

These products also offer connection options for various components and branches, e.g. for monitoring process parameters.

The "RED" series adapter pieces are also used to reduce nominal diameters.

The service life of the products is 20 years.

Improper handling, corrosive environments and flow media can reduce the service life considerably.

### 7.1 Function

In the process, the "ER" series coupling rings and the "RED" series adapter pieces guide the medium to various possible components and branches, thus offering the possibilities, for example, for monitoring process parameters.

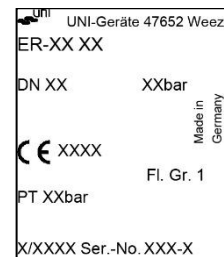
In addition, the adapter pieces reduce the flow rate of the medium from one nominal diameter to another due to their design.

### 7.2 Marking:

The type plate on the product contains the following information:

- Manufacturer
- Type
- Nominal size (DN)
- Pressure information
- CE mark and notified body number
- Fluid group
- Test pressure (PT)
- Year of construction (month/year)
- Serial No.

Example:



## 8.0 Transport

The transport & packaging instructions must be observed and adhered to.



### **WARNING!**

#### **Risk of injury when unpacking!**

There is a risk of injury due to the size and weight of the packaging.

- Remove the packaging with at least 2 persons.



### **DANGER!**

#### **Danger of crushing and collision during lifting and transport!**

Due to the weight, there is an increased risk of injury during transport.

- Have trained personnel transport them.
- Transport in a pressure-free state.
- Use approved / tested lifting gear.
- Use lifting equipment with a minimum load capacity greater than the weight of the component to be lifted.
- Always maintain a safe distance from raised and moved components.
- Never step under suspended loads.
- Never place on attachments.



**ATTENTION!**

**Damage to property caused by improper transport!**

The coupling rings / adapter pieces can be damaged during transport due to mechanical influences.

- Protect against shocks, blows or vibration during transport.
- Never use attachments for lifting.



**ATTENTION!**

**Property damage due to incorrect ambient temperature!**

Excessive or low ambient temperatures can distort the coupling rings / adapter pieces or damage the paint.

- Only transport at ambient temperatures according to the type plate.

1. Fasten the coupling rings / adapter pieces through the process connection with a belt only. If possible, transport in the delivered transport box or on a pallet with a soft surface.
2. Place on level ground.

## 9.0 Storage

Store under the following conditions:

- Ambient temperature: according to the type plate
- Dry and dirt-free.
- Humidity max. 40%
- Protect from environmental and weather influences, e.g. harmful insects, mould, moisture, corrosion, icing, UV radiation, toxic/corrosive solutions/liquids.
- Unpressurised state
- Keep all openings closed until installation takes place.
- Do not damage the sealing surfaces.
- Storage duration: max. 12 months



**ATTENTION!**

**Property damage due to excessive storage!**

Sealing elements can become brittle due to excessive storage.

- If coupling rings / adapter pieces are stored for longer than one year, we recommend checking the seals before commissioning and replacing them if necessary.



**NOTE!**

- Recommended storage: In undamaged original packaging at a constant room temperature in locations that are dry, dust-free and protected from light. Damage to the original packaging must be avoided.

## 10.0 Installation

### 10.1 Installation instructions

- Visual inspection: Correspondence of technical data, type plate, test certificate etc.
- During installation, make sure that the type plate is visible, that all future maintenance and servicing work can be carried out and that operability is ensured.
- Observe the information signs.
- Check external conditions (transport damage, loose fasteners, etc.)
- Observe operating and installation manual / documentation.
- Protect the product against dirt and weathering influences →, see point 2.1.
- Tension-free installation in the intended pipeline system.
- The product must not be used as a fixed point. The product is supported by the pipeline system.
- Coupling ring: The installation position of the product is arbitrary / adapter piece: Installation only in the specified flow direction.
- The required tightening torques for integration/installation in the pipeline system are determined by the flange/seal combination selected by the plant planner and the selected connecting elements (e.g. screws).



**NOTE!**

- The manufacturer must be contacted immediately in the event of deviations!

## 10.2 Assemble the product

1. Align the product.
2. Inspect the interior of the product and pipeline system and clean it of foreign particles if necessary.
3. Centre the seals between the connecting flanges. The connecting flanges must be aligned.
4. Tighten the flange screw connections. Observe the tightening torques.
5. Connection to the equipotential bonding of the entire system via the existing protective conductor terminal by qualified personnel.
6. Depending on the application, loosen the locking screws and install components or branches.

## 11.0 Commissioning

### 11.1 Preparation for commissioning

Prior to initial commissioning, a leak test must be carried out in the installed condition.



**DANGER!**

**Danger due to leaking pipeline system and lack of protective devices!**

Operation of an incorrectly or improperly installed pipeline system can result in life-threatening injury from leaking media and pressure hazards.

- Make sure that all work is complete.
- Make sure all protective devices are installed and intact.
- Make sure that the piping system is free of dirt.



**DANGER!**

**Danger due to impermissibly high pressure!**

Pressurisation with impermissible (test) pressures can result in life-threatening injury from leaking media and pressure hazards.

- Ensure that all usage limits are adhered to.

**Verification:**

1. Of the correct installation.
2. Of the equipotential bonding.
3. Measures for explosion protection, if available, → see also point 2.2.

### 11.2 Leak test

- Perform a leak test.

### 11.3 Commissioning

After a leak test has been carried out, the system can be commissioned by qualified personnel only.

## 12.0 Decommissioning

- Depressurise the coupling ring / adapter piece and secure it against being switched on again.



**NOTE!**

- Drain the operating medium into a safe area.



**WARNING!**

**Risk of injury due to flow media!**

There is a risk of injury in the event of contact with flow media or its residues.

- Prior to work, e.g. maintenance, servicing or disassembly of coupling rings / adapter pieces, a flushing and decontamination procedure must be carried out when decommissioning.

## 13.0 Maintenance / servicing



### NOTE!

- Decommissioning must be completed.
- Flushing and decontamination process must have been performed.



### NOTE!

- Only original spare parts authorised by the manufacturer may be used.

### 13.1 Maintenance intervals

Coupling rings / adapter pieces must be visually inspected at regular intervals and checked for external tightness.

The intervals for regular inspections must be determined by the system operator in accordance with the operating conditions.

Coupling rings / adapter pieces are maintenance-free.

### 13.2 Maintenance by the plant operator

#### • Visual inspection

Check the coupling rings / adapter pieces for obvious damage, corrosion and contamination.

#### • Leak test

Check the coupling rings / adapter pieces for external leaks.

#### • Maintenance / cleaning work

Cleaning work must be carried out as required.

Special requirements for cleaning in potentially explosive atmospheres must be observed.

→ see also point 2.2.



### DANGER!

#### Risk of explosion from using the wrong lubricants and sealing materials!

Flow media can undergo a chemical reaction with unsuitable lubricants or sealing materials and explode.

- For specific applications such as oxygen, use only approved lubricants and suitable sealing materials (BAM approval).



### ATTENTION!

#### Damage to property due to dirty surfaces!

Dirty surfaces can cause parts of the coupling rings / adapter pieces to be damaged.

- Place all parts on a clean surface.



### CAUTION!

#### Risk of burns from hot/cold surfaces!

There is a risk of hot/cold surfaces during operation.

- When working, make sure that hot/cold surfaces are aligned with the ambient temperature.



### NOTE!

- Perform a leak test after any maintenance work.

### 13.3 Maintenance by the manufacturer

If maintenance or servicing work is to be performed by the manufacturer, perform the following steps before delivery:

1. Clean the coupling ring / adapter piece of substances that are harmful to health or the environment.
2. Complete the decontamination declaration (available on the homepage) and attach it to the packaging of the coupling rings / adapter pieces.



## 14.0 Disassembly



### NOTE!

- Decommissioning must be completed.
- Flushing and decontamination process must have been performed.



### DANGER!

#### Risk of crushing and collision during disassembly!

Due to the weight, there is an increased risk of injury during disassembly.

- When dismantling, intercept or support the coupling ring / adapter piece.

1. Close interfaces to adjacent piping systems, e.g. by means of a plug-in washer, blind flange.
2. Disconnect possible components or branches.
3. Dismantling from the piping system.

## 15.0 Troubleshooting

1. In the event of malfunctions, check the coupling rings / adapter pieces for correct installation.
2. If the coupling rings / adapter pieces have been correctly installed, use the troubleshooting chart.
3. If the problem persists, contact the manufacturer.

### 15.1 Troubleshooting plan

Faults	Troubleshooting	Possible cause of fault	Fault remedying instructions
No external leak tightness	Locking screws	Screw connection loosened, Seals damaged	Tighten the screw connection according to the specified tightening torque or replace the seal.
	Fasteners		
	Pipeline		
No flow	Pipeline	Blockage in pipeline system	Check pipeline system

## 16.0 Disposal

- Disassemble the product and dispose of it in individual parts.



### ATTENTION!

#### Environmental damage!

Residues of flow media or lubricants can cause environmental damage.

- Disposal only through specialized companies.

## 17.0 Warranty and information

Failure to comply with the operating and installation manual, as well as non-compliance with the documentation, leads to risk to persons and the environment and to the forfeiture of warranty claims.

Changes of any kind are prohibited or require approval by the manufacturer.

The Contractor assumes no liability for the functionality of the coupling rings / adapter pieces in the overall system or the end customer's overall system.

Information is contained in the relevant documentation or is available at the address on the cover page and back page.

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## PROMISING VALVOLUTIONS

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