

# Operating instructions

UNITOP and UNITOP 250 clamping unit



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# 1. About this document

## 1.1. Objective and target group of these instructions

These instructions describe all the necessary work steps and precautionary measures which must be implemented in order to ensure safe and professional handling of the product and/or assembly.

These instructions are intended for the following target group:

- Trained fitters
- Operators and/or owners

## 1.2. About these operating instructions

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### **i** INFO

- Read these operating instructions carefully before assembly and use.
  - Observe all applicable documents.
  - The operator must keep these operating instructions for the lifetime of the product.
  - Follow the described sequence of operations.
- 

## 1.3. Symbols used

The following marks and symbols are utilised in this document:

### **⚠ DANGER**

This warning information describes an imminent danger.

- ▶ Non-compliance will lead to death or serious injuries.

### **⚠ WARNING**

This warning information describes a possible imminent danger.

- ▶ Non-compliance can lead to death or serious injuries.

## **⚠ CAUTION**

This warning information describes a possible imminent danger.

- ▶ Non-compliance can lead to slight or minor injuries.

## **HINT**

This warning describes a danger which can lead to property damage.

- ▶ Measures to prevent property damage will be described here.

## **i INFO**

This note provides information about the following subjects:

- Application tips
- Further information

### **1.4. Applicable relevant documents**

The following documents also apply in connection with these operating instructions:

- Assembly instructions for FRIALEN Safety Fittings and the FRIAFIT Sewage System,
- FRIATOOLS operating instructions for drilling equipment FWAB/FWAB ASA,
- Operating instructions for fusion units, e.g. operating instructions for the FRIAMAT range from Aliaxis Deutschland GmbH,
- Technical data sheets issued by Aliaxis Deutschland GmbH
- Brief instructions and product information supplied with the product.

### **1.5. Updates to these instructions**

The technical information contained in these operating instructions is reviewed regularly to make sure it is up to date. The date of the last revision is specified on the document. Updated instructions are available online at <http://www.aliaxis.de/en/services/downloads>

We would also be pleased to send you a printed version.

## 2. Safety

### 2.1. Intended use

The UNITOP and UNITOP 250 clamping units are used to process the FRIALEN outlet spigot universal **SA UNI** and the FRIAFIT spigot saddle with outlet spigot **ASA UNI** in the following dimensions.

<b>FRIALEN saddle with outlet spigot universal SA UNI with outlet d 90 - d 160</b>		
<b>Main pipe d<sub>1</sub></b>	<b>Outlet d<sub>2</sub></b>	<b>Art. no.</b>
250 – 280	90	616553
250 – 280	110	616554
250 – 280	125	616555
250 – 280	160	616556
315 – 400	90	616557
315 – 400	110	616558
315 – 400	125	616559
315 – 400	160	616560
450 – 900	90	616561
450 – 900	110	616562
450 – 900	125	616563
450 – 900	160	616564

<b>FRIALEN saddle with outlet spigot universal SA UNI with outlet d 225 - d 250</b>		
<b>Main pipe d<sub>1</sub></b>	<b>Outlet d<sub>2</sub></b>	<b>Art. no.</b>
315 – 355	225	617224
315 – 355	250	617225
400 – 450	225	617226
400 – 450	250	617227
500 – 630	225	617228
500 – 630	250	617229
710 – 900	225	617230
710 – 900	250	617231
1000 – 1200	225	617232

FRIALEN saddle with outlet spigot universal SA UNI with outlet d 225 - d 250		
1000 - 1200	250	617233

FRIAFIT spigot saddle with outlet spigot ASA UNI		
Main pipe d <sub>1</sub>	Outlet spigot d <sub>2</sub>	Art. no.
630 - 900	160	682639

Tensioning belts, lower belt, clamping plate and clamping unit must not be used for any other purpose or separately from the unit itself. Any replacements, particularly the tensioning belts and the lower belt are only permitted with original parts from Aliaxis Deutschland GmbH.

Intended use also includes compliance with all the information in these operating instructions. Any deviation from the intended use is not permitted!

For specific applications, queries or in the event of deviating applications, please contact our Hotline, telephone +49 (0) 621 486-1486.

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## **i** INFO

Please also contact our Hotline if you are tapping under operating pressure.

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## **2.2. Note on pipes that are not underground**

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### **i** INFO

Please contact the Aliaxis Deutschland GmbH Hotline, telephone +49 621 486-1486, for pipes that are not underground.

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These operating instructions essentially describe the technical requirements for the underground installation of PE pipes. An extended application scope (e.g. in the industrial sector) requires specific knowledge for planning, design, execution, assembly and installation.

In addition to individual load cases, the special project planning and design principles for industrial pipes or pipelines (e.g. DVS 2210-1 et seq.) must be observed at all times.

Deviations could result in a reduced service life for the pipe system with spontaneous failure, breakage and leakage.

## **2.3. Personnel qualifications**

All persons involved in the processing and use as intended must meet the following requirements:

- They must have received training or instruction in how to assemble and install the products or tools.
- They must have read and understood these instructions and other applicable documents.

## 2.4. Obligations of the owner or operator

All persons who are involved in the commissioning, operation, servicing and maintenance and the intended use of the UNITOP and UNITOP 250 clamping units must always:

- be suitably qualified and
- ensure strict compliance with these operating instructions.

These operating instructions must be always readily accessible to the operator and should ideally be stored in the transport box.

Always observe the valid accident prevention regulations, environmental regulations and legal rules, the relevant safety provisions, regulations and conditions and any country-specific standards, laws and directives when using the unit as intended.

## 2.5. Structural alterations to the product

Alterations, additions or conversions must never be carried out on the unit without the prior approval of Aliaxis Deutschland GmbH.

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## **i** INFO

Only use original spare parts from Aliaxis Deutschland GmbH.

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## 3. Processing information

### 3.1. Pressure-bearing capacity

The FRIALEN saddle with outlet spigot universal **SA UNI** is marked and applicable with respect to pressure bearing capacity in accordance with the following table and may only be used on PE pipe systems in the gas and drinking water supply.

Maximum operating pressure (in bar)		
SDR - level	Water	Gas
17	10 bar	5 bar
11	16 bar	10 bar

The FRIAFIT spigot saddle with outlet spigot **ASA UNI** may only be used on PE pipe systems with a maximum operating pressure of 2.5 bar water / sewage.

Always consider any reduction factors e.g. at operating temperatures > 20 °C.

---

## **i** INFO

Please contact our Hotline if the operating conditions differ.

---

### **3.2. Environmental, storage and processing conditions**

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## **i** INFO

Never process components that have been stored incorrectly, as this could result in a leaking fusion joint.

---

#### **Storage conditions:**

- In closed rooms or containers (e.g. in cardboard boxes)
- Protect from UV radiation
- Protect against the effects of weather such as moisture and frost
- Storage temperatures: up to +50 °C

Under these prerequisites, a storage capability and processing life of more than ten years can therefore be assumed.

#### **Processing conditions:**

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## **i** INFO

The pipes and moulded parts must always be at an even temperature level during processing.

---

- Permissible application range -10°C to +45°C
  - > 0°C for PE-LD pipes
  - A melt flow rate MFR 190/5 in the range from 0.2 to 1.7 g/10 mins applies to PE pipes.
  - Processing possible with pipes of raw material types PE 63, PE 80, PE 100 and PE 100 RC
  - Processing with pipes of raw material type PE-Xa on request
- 

## **i** INFO

Fusion with other pipe materials, e.g. PP, PVC etc. is not possible.

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## 4. Product description UNITOP and UNITOP 250 clamping unit

### 4.1. Scope of delivery for the UNITOP clamping unit

The UNITOP clamping unit comprises the following components:

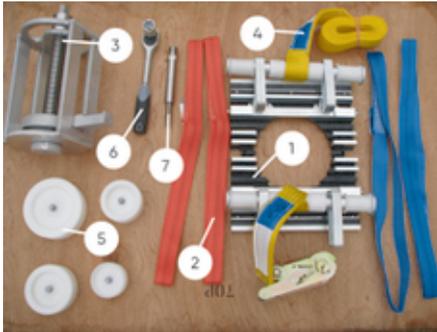


Image 1:

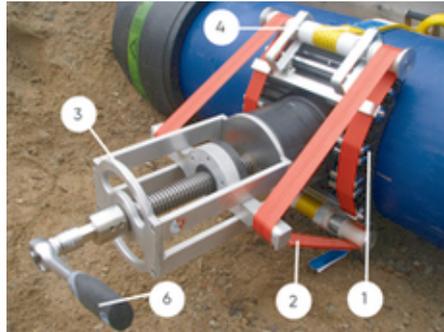


Image 2:

1. Clamping plate
2. Tensioning belts (respectively 2 pcs colour = BLUE / respectively 2 pcs colour = RED)
3. Clamping unit
4. Lower belt
5. Adapter for
  - a. SA UNI for outlet spigots d 90, d 110, d 125 and d 160
  - b. ASA UNI for outlet spigot d 160 (not included in the scope of delivery and must be ordered separately, order no. 613839)
6. Ratchet
7. Pressure test adapter FWDPA-SA (optional, order no. 613596)

### 4.2. Scope of delivery for the UNITOP 250 clamping unit

The UNITOP 250 clamping unit comprises the following components:

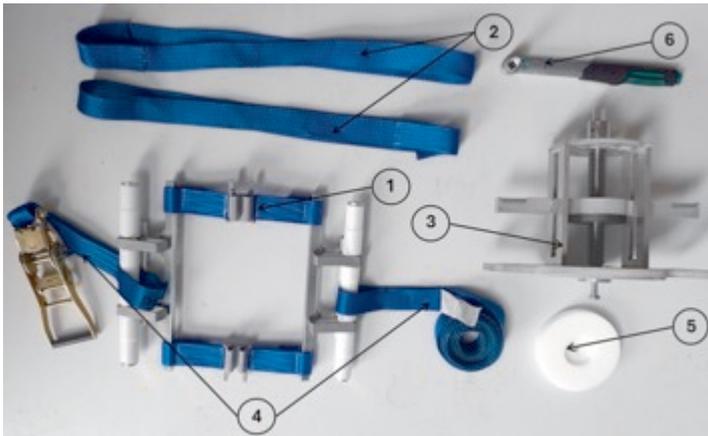


Image 3:

1. Clamping mat
2. Tensioning belts
3. Clamping unit
4. Lower belt
5. Adapter for
  - a. SA UNI for outlet spigot d 225
  - b. SA UNI for outlet spigot d 250
6. Torque wrench
7. Pressure test adapter FWDPA-SA (optional, order no. 613596, not shown in image)

## 5. Assembly of the UNITOP and UNITOP 250 clamping unit

### **i** INFO

Always inspect the good condition of the equipment for wear and damage before assembly. Worn or damaged components, in particular the tensioning belts, must be replaced!

Please ensure you are in a stable position during assembly (do not use aids such as boxes, etc. and do not sit on pipes)!

Personal protective equipment, e.g. safety shoes, helmet and work gloves must be worn.

### 5.1. Preparatory work

Prepare the fusion joint in accordance with the following work steps (e.g. remove oxide layer, clean the fusion zone).

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## **i** INFO

Users must observe the sequence of work steps at all times.

---

## **i** INFO

When tapping the pipe under operating pressure, the FRIALEN saddle with outlet spigot universal SA UNI must be modified before it is mounted on the pipe. Please refer to chapter 10. [Tapping the pipe \(under pressure\), P.40.](#)

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### 5.1.1. Cleaning the pipe



Image 4:

- Remove dirt and dust from the pipe in the area of the fusion zone.
- Cleaning material: absorbent, non-linting and not dyed paper.

### 5.1.2. Measure and mark the fusion zone



Image 5:

Measure the pipe surface to be covered by the saddle and mark it with a FRIALEN-/FRIAFIT marker.

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## **i** INFO

We recommend adding an additional processing area of approx. +5 mm to the fusion zone. After the fusion process, this is evidence that the oxide layer has been properly removed.

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### 5.1.3. Applying marking lines



Image 6:

Applying marking (control) lines is recommended to ensure that the entire surface has been scraped and with no gaps.

Any areas that have not been scraped when preparing the surface must be reworked.

### 5.1.4. Removing the oxide layer



Image 7:

Use a (rotary) scraper tool, e.g. a FRIATOOLS scraper chain FWSK to fully remove the oxide layer that has formed on the surface of PE pipes or PE outlet spigots during storage immediately before mounting the SA UNI or ASA UNI saddle component.

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## **i** INFO

Leaks in the fusion joint could occur if the oxide layer is not completely removed.

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## **I** INFO

Do not file or sand the pipe, as impurities may be ground into the pipe.

### 5.1.5. Cleaning the fusion zones

#### **⚠ CAUTION**

##### **Skin contact with cleaning agent**

Degreasing the skin, dehydration

- ▶ Always wear protective gloves.
- ▶ Utilise in metered quantities.
- ▶ Follow the manufacturer's safety instructions.



Image 8:



Image 9:

The surfaces

- of the pipe to be fused and
- the inner surface of the saddle component

must always be completely clean, dry and free of grease.

Clean these surfaces immediately before assembly or installation and after oxide layer removal with a suitable cleaning agent and only with absorbent, lint-free and non-dyed paper.

We recommend PE cleaning agents which have been certified in accordance with the DVGW-VP 603 testing basis e.g. AHK cleaner.

## **i** INFO

If cleaning agents containing alcohol are utilised, then the alcohol content must be at least 99.8 % in accordance with DVGW-VP 603.

When cleaning, avoid rubbing soiling from the unscraped pipe surface from entering the fusion zone. The cleaning agent must have totally evaporated before starting the fusion process. Avoid touching the cleaned fusion zone with your hand. Moisture, e.g. from dew or frost, in the area of the joining surface must be removed using the appropriate means.

### **5.2. Assembling the UNITOP clamping unit**

#### **5.2.1. Pre-assemble the SA UNI / ASA UNI saddle component on the pipe**

## **⚠ CAUTION**

### **Crush hazard when clamping**

Injuries to the hand

- ▶ Do not reach under the belt or clamping plate during pre-assembly.
- ▶ Ensure that the belt is in the correct position.
- ▶ Ensure that you use the belt ratchet correctly ⇒ the belt is under tension.
- ▶ After pre-assembly, lock the ratchet clamping lever in the closed position.



Image 10:



Position the clamping plate on the SA UNI or ASA UNI saddle component.

Image 11:

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## **i** INFO

Ensure that the SA UNI or ASA UNI saddle component is resting on a clean and dry surface.

---



Place the SA UNI or ASA UNI saddle component with the pre-assembled clamping plate on the prepared pipe surface.

Image 12:

The lower belt is attached to the clamping bars of the clamping plate. Loop the lower belt around the pipe and insert the loose end of the lower belt into the belt ratchet. Use the belt ratchet to pre-position the saddle with outlet spigot universal SA UNI or the spigot saddle with outlet spigot ASA UNI on the pipe.

---

## **i** INFO

Only use the ratchet to tighten the lower belt hand-tight!  
The SA UNI or ASA UNI saddle component is first pre-assembled, and clamping takes place in the next work step.

---

During pre-assembly, ensure that the lower belt is not twisted and is positioned centrally within the guides of the tensioning bars.

### **5.2.2. Assembly of the clamping unit**

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## **i** INFO

Select the correct adapter for the outlet spigot of the SA UNI or ASA UNI saddle component and screw it securely onto the clamping unit. Ensure that the crossbar of the clamping unit is in the front end position before installing the clamping unit.

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Image 13:

The adapter for the ASA UNI outlet spigot d 160 is not included in the scope of the delivery of the UNITOP clamping unit and must be ordered separately (order no. 613839).



Image 14:

Selection of the upper tensioning belts (red or blue) in accordance with the dimension range of the main pipe  $d_1$ .

See table below.

Thread both tensioning belts into the mounting points of the clamping bars on the clamping plate.

<b>FRIALEN saddle with outlet spigot universal SA UNI for main pipe <math>d_1</math></b>	<b>Colour of upper Tensioning belts</b>
250 - 280	Blue
315 - 400	Red
450 - 900	Red

<b>FRIAFIT spigot saddle with outlet spigot ASA UNI for main pipe <math>d_1</math></b>	<b>Colour of upper Tensioning belts</b>
630 - 900	Red

Mount the clamping unit on the outlet of the SA UNI or ASA UNI.



Image 15:

To do this, the clamping unit with mounted adapter must be inserted into the outlet of the SA UNI or ASA UNI.

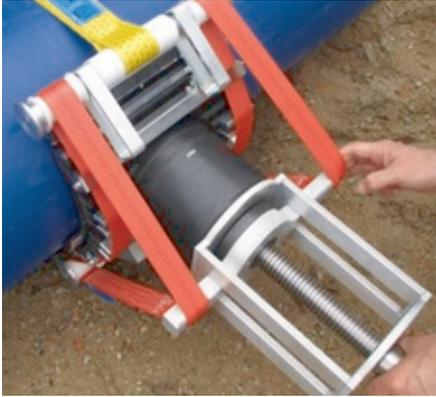


Image 16:

Hold the clamping unit securely in this position; it is vital to achieve the correct alignment of the clamping unit to the SA UNI or the ASA UNI.

Place both tensioning belts around the crossbar.

The clamping unit, clamping plate and the SA UNI or ASA UNI must now be securely positioned on the pipe.



Image 17:

Ensure that the UNITOP clamping unit, the SA UNI or ASA UNI saddle component and the tensioning belts are aligned vertically and straight. If necessary, correct the position of the SA UNI or ASA UNI on the pipe.

---

## **i** INFO

If necessary, secure the position of the saddle with outlet spigot universal SA UNI or spigot saddle with outlet spigot ASA UNI against unintentional slipping.

---

### 5.2.3. Operating the clamping unit

#### ⚠ CAUTION

##### The belts are under tension

Injuries to the body or face

Observe the general safety guidelines, such as

- ▶ Regular inspections of the belts, particularly before each assembly,
- ▶ Ensure the correct belt installation,
- ▶ Replace of worn and old belts,
- ▶ Only use belts approved by the manufacturer,
- ▶ Maintain a safe distance when operating the clamping unit,
- ▶ Use personal protective equipment such as gloves or a safety helmet.

#### ⚠ CAUTION

##### Operating the clamping unit

Crush hazard

Do not reach under the clamping plate or the saddle component when the clamping unit is in operation.

#### ℹ INFO



Image 18:

The following must be observed before operating the clamping unit:

Make sure that the tensioning belts are positioned correctly, they must be positioned centrally within the guides of the clamping bar on the clamping plate and the crossbar on the clamping unit.

The tensioning belts must not be twisted when mounted. After mounting the UNITOP clamping unit on the pipe, check the correct position of the SA UNI or ASA UNI saddle component.

The assembly should look as shown in the illustration.

Clamp the saddle with outlet spigot universal SA UNI or the spigot saddle with outlet spigot ASA UNI onto the pipe.



Image 19:

To do this, place the ratchet with the nut on the wrench flat of the threaded spindle. Turn clockwise (i.e. to the right) until the saddle with outlet spigot universal SA UNI or the spigot saddle with outlet spigot ASA UNI rests on the pipe surface **with no gaps**.

Then remove the ratchet and place it back in the transport box.



Image 20:

Ensure the SA UNI or ASA UNI saddle component is positioned on the pipe surface with no gaps!

When installing, make sure that the contact pin of the SA UNI or ASA UNI saddle component is in the designated recess in the clamping plate.

---

## **i** INFO

When operating the clamping unit, do not use an extension on the ratchet, as this may damage the unit.

---

### 5.3. Assembling the UNITOP 250 clamping unit

#### 5.3.1. Pre-assemble the SA UNI 225 / 250 saddle component on the pipe

## ⚠ CAUTION

### Crush hazard when clamping

Injuries to the hand

- ▶ Do not reach under the belt or clamping plate during pre-assembly.
- ▶ Ensure that the belt is in the correct position.
- ▶ Ensure that you use the belt ratchet correctly ⇒ the belt is under tension.
- ▶ After pre-assembly, lock the ratchet clamping lever in the closed position.

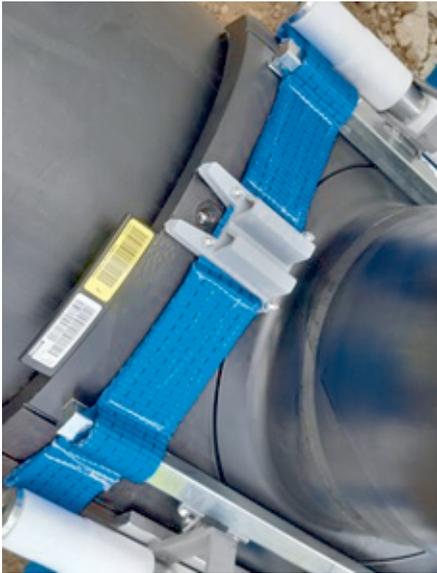


Image 21:



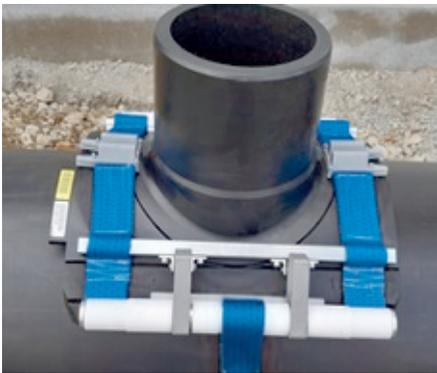
Image 22:

Place the SA UNI 225 / 250 saddle component on the prepared pipe surface and then guide the clamping mat via the outlet of the SA UNI saddle component.



The clamping mat must rest correctly on the saddle and the crown stop must be positioned flush with the outer edge of the saddle.

Image 23:



During pre-assembly, ensure that the lower belt is not twisted and is positioned centrally within the guides of the tensioning bars.

Image 24:

The lower belt is attached to the clamping bars of the clamping mat. Loop the lower belt around the pipe and insert the loose end of the lower belt into the belt ratchet. Operate the belt ratchet to (pre-)position the saddle with outlet spigot universal SA UNI on the pipe.

---

## **i** INFO

The saddle with outlet spigot universal SA UNI must be firmly clamped (hand-) tight onto the pipe. The saddle is first pre-assembled, and clamping takes place in the next work step.

---

### 5.3.2. Assembly of the clamping unit

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## **i** INFO

Select the correct adapter for the outlet spigot d 225 or d 250 of the saddle component SA UNI and screw it firmly onto the clamping unit. Ensure that the crossbar of the clamping unit is in the front end position before installing the clamping unit.

---



Image 25:

Mount the clamping unit on the outlet of the SA UNI.

To do this, the clamping unit with mounted adapter must be inserted into the outlet of the SA UNI.



Image 26:

Hold the clamping unit firmly in this position, it is vital to achieve the correct alignment of the clamping unit to the SA UNI.

Place both tensioning belts around the crossbar. The clamping unit, clamping mat and the SA UNI must now be securely positioned on the pipe.



Image 27:

Ensure that the UNITOP 250 clamping unit, the SA UNI saddle component and the tensioning belts are aligned vertically and straight. If necessary, correct the position of the SA UNI on the pipe.



When mounting the tensioning belt, make sure that the belt seam is positioned above the crown stop, as this will ensure uniform clamping.

Image 28:

### 5.3.3. Operating the clamping unit

#### **⚠ CAUTION**

##### **The belts are under tension**

Injuries to the body or face

Observe the general safety guidelines, such as

- ▶ Regular inspections of the belts, particularly before each assembly,
- ▶ Ensure the correct belt installation,
- ▶ Replace of worn and old belts,
- ▶ Only use belts approved by the manufacturer,
- ▶ Maintain a safe distance when operating the clamping unit,
- ▶ Use personal protective equipment such as gloves or a safety helmet.

#### **⚠ CAUTION**

##### **Operating the clamping unit**

Crush hazard

Do not reach under the clamping plate or the saddle component when the clamping unit is in operation.



Image 29:

The following must be observed before operating the clamping unit:

Make sure that the tensioning belts are positioned correctly, they must be positioned centrally within the guides of the clamping bar on the clamping mat and the crossbar on the clamping unit.

The tensioning belts must not be twisted when mounted. After mounting the UNITOP 250 clamping unit on the pipe, check the correct position of the SA UNI saddle component.

The assembly should look as shown in the illustration.

Clamp the saddle with outlet spigot universal SA UNI onto the pipe.



Image 30:

To do this, place the ratchet with the nut on the wrench flat of the threaded spindle. Turn clockwise (i.e. to the right) until the saddle with outlet spigot universal SA UNI rests on the pipe surface **with no gaps** and a "crack" sound can be clearly heard on the ratchet.

The "crack" is the acoustic signal that the saddle with outlet spigot SA UNI has reached the optimal position on the pipe surface.

Then remove the ratchet and place it back in the transport box.

---

## **i** INFO

When operating the clamping unit, do not use an extension on the ratchet, as this may damage the unit.

---

## 5.4. Carrying out the fusion process

### ⚠ CAUTION

#### Plastic melt escaping during the fusing process

Burns on the skin

Always maintain a distance of one metre from the fusing site during the fusion process for general safety reasons.

### ℹ INFO

Always observe the operating instructions of the fusion unit manufacturer, e.g. FRIAMAT fusion unit from Aliaxis Deutschland GmbH or similar.

### ℹ INFO

Before the fusion process, ensure and, if necessary, adjust the correct alignment of the clamping unit and that the contact of the saddle on the pipe has no gaps! If necessary, re-tighten the saddle.



Image 31:

Use the contact pins on the SA UNI or ASA UNI saddle component to plug the fusion cable into the fusion pins. The fusion plug socket must be plugged into the contact pins of the saddle component to the full extent, i.e. over the entire internal contact length. Ensure that the fusion cable is under no strain or tension.

### ℹ INFO

#### When using the UNITOP clamping unit (not required for UNITOP 250):

If your fusion unit has straight fusion sockets, you will also need an elbow adapter ADWL (order no. 613241). FRIAMAT fusion units are already equipped with elbow adapters as standard.



Image 32:

For the saddle with outlet spigot universal SA UNI with outlet spigot d 225 and d 250 there is a barcode sticker for pre-heating (yellow barcode sticker) on the component in addition to the barcode sticker (white barcode sticker) with the fusion and traceability barcode.

## **i** INFO

### **Pre-heat SA UNI 225 / 250 before starting the fusion process.**

Please also refer to the FRIALEN Safety Fittings assembly instructions for information on the pre-heating and fusion process steps. Current instructions are available online at <https://www.aliaxis.de/en/downloads>



Image 33:

The fusion parameters are contained in the (upper) barcode, which is attached to the barcode sticker on the saddle component.

The lower barcode on the barcode sticker contains the data for the component traceability. Read only if the component traceability will be used.



Image 34:

The fusion parameters are read into the fusion unit with a reading wand or a hand-held scanner.



Image 35:

After reading the fusion barcode, the data on the fusion unit display must be compared with the data from the saddle component. Start the fusion process if both sets of data match. The fusion unit automatically monitors the fusion process and thereby regulates the power input within set parameters.

---

## **i** INFO

The indicator provides data on the fusion sequence being executed. However, the correct fusion sequence is only indicated by the fusion unit.

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### 5.4.1. Designation marking of the fusion joint



Image 36:

After fusing has been completed, the actual fusing time achieved must be compared with the target fusing time on the fusion unit and noted on the pipe or the saddle component with a marker.

---

## **i** INFO

This marking procedure ensures that no fusion site is overlooked.

---

## **i** INFO

Once the fusion time has elapsed, the fusion cable can be removed from the fusion fitting.

### 5.4.2. Fusion on pipes carrying media

When fusing the SA UNI or ASA UNI saddle components onto pipes carrying media, the following operating pressures must not be exceeded during the fusion process and until complete cooling has been achieved:

- Saddle with outlet spigot universal SA UNI

Pipe material	PE 80		PE 100	
<b>Maximum operating pressure (in bar)</b>				
SDR - level	Water	Gas	Water	Gas
17	8	2	10	5
11	12.5	5	16	10

- Spigot saddle with outlet spigot ASA UNI

Pipe material	PE 80	PE 100
<b>Maximum operating pressure (in bar)</b>		
SDR - level	Water/Sewage	Water/Sewage
17	2	2.5

### 5.4.3. Observe the cooling time

Do not dismantle the UNITOP or UNITOP 250 clamping unit until the cooling time CT (see table) has elapsed.

d <sub>1</sub>	d <sub>2</sub>	<b>SA UNI: Cooling time in minutes after the end of the fusion time until...</b>	
		... dismantling the UNITOP clamping unit. Tapping of unpressurised pipes possible (without pressure test).	... for pressure testing via the outlet spigot (CT on barcode). Tapping and drilling pipes under operating pressure.
250-280	90-160	20	60
315-400	90-160	20	60
450-900	90-160	20	60
315-355	225-250	20	60

d <sub>1</sub>	d <sub>2</sub>	SA UNI: Cooling time in minutes after the end of the fusion time until...	
400-450	225-250	20	60
500-630	225-250	20	60
710-900	225-250	20	60
1000-1200	225-250	20	60

d <sub>1</sub>	d <sub>2</sub>	ASA UNI: Cooling time in minutes after the end of the fusion time until...
		... dismantling the UNITOP clamping unit. Tapping of unpressurised pipes (pressure test not possible).
630-900	160	20

## **i** INFO

The cooling time CT is indicated on the barcode of the SA UNI or ASA UNI saddle components.

## **i** INFO

Failure to comply with the stated cooling and clamping times could result in a leaking fusion joint.

## 6. Dismantling the UNITOP clamping unit

### **⚠ CAUTION**

#### **Risk of injury caused by dismantling the clamping unit.**

Injuries to the hand and/or upper body caused by tensioned belts. Incorrect installation or failure may cause a recoil when loosening the ratchet locking mechanism

- ▶ of the belt or
- ▶ the belt ratchet.

Maintain a safe distance of roughly an arm's length when releasing the locking mechanism.



Image 37:

Turn the ratchet counterclockwise to loosen the spindle nut. Turn until the crossbar is in the lower position.

Secure the clamping unit to prevent it from falling.

Then release the tensioning belts from the crossbar.

---

## **i** INFO

Secure the clamping unit to prevent it from falling when releasing the spindle nut.

---



Image 38:

Then dismantle the clamping unit from the outlet of the SA UNI or ASA UNI saddle components. To do this, remove the clamping unit from the SA UNI or ASA UNI outlet and place the clamping unit back in the transport box.



Image 39:

Open the belt ratchet to loosen the lower belt on the pipe, the clamping plate can then be removed via the outlet of the SA UNI or ASA UNI saddle components.

Then place the clamping plate back in the transport box.

## 7. Dismantling the UNITOP 250 clamping unit

### ▲ CAUTION

#### **Risk of injury caused by dismantling the clamping unit.**

Injuries to the hand and/or upper body caused by tensioned belts.

Incorrect installation or failure may cause a recoil when loosening the ratchet locking mechanism

- ▶ of the belt or
- ▶ the belt ratchet.

Maintain a safe distance of roughly an arm's length when releasing the locking mechanism.



Image 40:

Turn the ratchet counterclockwise to loosen the spindle nut. Turn until the crossbar is in the lower position.

Secure the clamping unit to prevent it from falling.

---

## **i** INFO

Secure the clamping unit to prevent it from falling when releasing the spindle nut.

---



Image 41:

Then release the tensioning belts from the crossbar.



Image 42:

Then dismantle the clamping unit from the outlet of the SA UNI 225 / 250 saddle component. To do this, remove the clamping unit from the SA UNI 225 / 250 outlet and place the clamping unit back in the transport box.



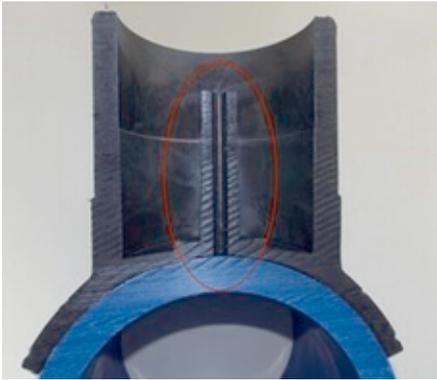
Image 43:

Open the belt ratchet to loosen the lower belt on the pipe, the clamping mat can then be removed via the outlet of the SA UNI 225 / 250 saddle component.

Then place the clamping mat back in the transport box.

## 8. Pressure test

Before tapping the main pipe, pressure test the saddle fusion on the saddle with outlet spigot universal SA UNI. Use the pressure test adapter FWDPA SA (order no. 613596) to do this.



The saddle with outlet spigot universal SA UNI has a test connection to attach a pressure test device.

Image 44:

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## **i** INFO

It is not possible to pressure test the saddle fusion with the FRIAFIT spigot saddle with outlet spigot ASA UNI. The spigot saddle with outlet spigot ASA UNI has no test connection.

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Saddle with outlet spigot universal SA UNI with test connection.

Image 45:



Image 46:

Screw the pressure test adapter clockwise into the test connection of the SA UNI.

The face side of the pressure test adapter must be located flush with the test connection.

Avoid over-tightening the thread when screwing in the pressure test adapter.

Please note that it may not be possible to perform the pressure test if the thread is overtightened

The FWDPA SA pressure test adapter is equipped with a 1/2" external thread for connecting a pressure test adapter e.g. via a commercially available plug-in coupling.



Image 47:

Connect the pressure test adapter to a pressure test device, e.g. a hand pump with a pressure gauge to check the test pressure.

Execute the pressure test.

Parameters for the leak test

Test pressure in bar	Max. Test duration in minutes	Test media
10	10	Water

*Other values can be provided on request. Reduction factors must always be considered for temperatures > 23 °C.*

## 9. Tapping the pipe (unpressurised)

### ⚠ DANGER

#### **Explosive and/or health-threatening gas mixtures**

Injuries caused by explosion and/or inhalation of hazardous gas mixtures (e.g. residual gas, decomposing digester gas).

Always ensure that the pipe is depressurised and completely empty before any tapping.

### ⚠ DANGER

#### **Escaping medium (e.g. residual water) in the drilling machine.**

Electric shock.

Always ensure that the pipe is completely empty and that there is no medium located in the area of the pipe bottom before tapping.

### ⚠ CAUTION

#### **Carbide cutting edges on the hole saw**

A danger of injury to the hands exists when removing the drill core, PE plate, metal shavings and the chips.

Always wear protective gloves.



Image 48:

Tapping must be carried out with the FRIATOOLS drilling equipment FWAB under no operating pressure, and with the pipes completely drained.

Please always observe the operating instructions for the FRIATOOLS drilling equipment FWAB.



Image 49:

The tapping of the PE pipe takes place in two steps:

1. In the first step, drill out the inner plate of the saddle with outlet spigot universal SA UNI including the test connection. Utilise a suitable hole saw **without** the centre drill for this.
2. In the second step, mount the centre drill and, after repositioning the hole saw, insert the hole saw with the centre drill centrally and vertically into the outlet and drill through the pipe wall.

## **i** INFO

### **Observe the cooling times:**

The saddle may separate from the pipe if the cooling time is not observed. A permanently secure fusion joint cannot be guaranteed.

Always deburr the cut edge after tapping is completed and remove the drill core and any shavings from the hole saw. If necessary, also remove shavings which may have entered the pipe.

## 10. Tapping the pipe (under pressure)

### **▲ CAUTION**

#### **Carbide cutting edges on the hole saw**

A danger of injury to the hands exists when removing the drill core, PE plate, metal shavings and the chips.

Always wear protective gloves.

### **HINT**

#### **Incorrect handling of the drilling or tapping equipment**

Leaking pipes

Pipes can be tapped under working pressure by utilising the external tapping equipment and a shut-off unit (e.g. from Hütz und Baumgarten). Please contact our hotline (Tel. +49 621 486-1486) or your local technical, specialist advisor in advance for technical application support.

Always observe the manufacturer's specifications for tapping pipe which is still under operating pressure.

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## **i** INFO

When tapping under operating pressure, the following preparatory work must be carried out on the saddle with outlet spigot universal SA UNI.

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Image 50:

The test connection must be removed before mounting the SA UNI on the pipe.

Drill out the test connection with a drill (hole saw d 50mm to d 65mm).



Image 51:

Saddle with outlet spigot universal SA UNI with drilled out test connection.

Deburr the cut edge on the saddle surface of the SA UNI (e.g. with a hand scraper tool).

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## **i** INFO

For information about the drill and drilling equipment, please contact our Hotline (tel. +49 621 486-1486).

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Image 52:

External drilling equipment (e.g. from Hütz und Baumgarten) is required for tapping a pipe which is still under operating pressure, which uses a shut-off unit (e.g. FRIALOC) to enable the procedure.

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## **i** INFO

The manufacturer's specifications for tapping pipes under operating pressure must be strictly observed.

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Image 53:

The drill core, PE swarf and the PE plate which has been drilled out are trapped in the milling unit after tapping has been executed correctly. These will be expelled by the ejector.

# 11. Care, maintenance and service

## 11.1. Instructions for care, servicing and maintenance

- All the components of the UNITOP and UNITOP 250 clamping units must be cleaned regularly to remove dirt and deposits. Always utilise a commercially available cleaner for this – do not use an aggressive cleaning agent.
- The UNITOP and UNITOP 250 clamping units must be stored in a clean and dry condition. Always store it in the dry transport box after every application.
- Keep the handles and gripping surfaces dry, clean and free of oil and grease. Slippery handles and gripping surfaces will prevent safe handling of the tool.
- Only use the clamping unit with the tensioning and lower belts that are specifically designed for the unit. The use of other tensioning and lower belts that have not been approved by the manufacturer Aliaxis Deutschland GmbH may pose a risk of injury and is not permitted.
- Do not use a damaged or modified clamping unit. Damaged or modified clamping units may behave unpredictably and pose a risk of injury.
- The tensioning belts must be inspected at regular intervals. Worn and/or damaged tensioning belts must always be replaced.
- Never utilise aggressive cleaning agents to clean the tensioning belts to prevent damaging them.
- Alterations, additions or conversions must never be carried out on the unit without the prior, express approval of Aliaxis Deutschland GmbH.

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### **i** INFO

Careful handling of the UNITOP and UNITOP 250 clamping units will avoid unnecessary repairs and downtime. A regular, annual test and inspection for functional safety is recommended as a service from the service department of Aliaxis Deutschland GmbH or our service stations.

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## 11.2. Maintenance, testing and inspection intervals

What?	When?	Who?
Clean the clamping unit and all components to remove dirt and deposits	daily	Operator
Check the tensioning and lower belts and clean or replace them if necessary	before every use	Operator
Inspect for any damage	daily	Operator
Inspect and test function	before every use	Operator

What?	When?	Who?
Device maintenance for the clamping unit	recommended annually	Aliaxis Deutschland GmbH or authorised service stations

### 11.3. Authorised service stations

#### Aliaxis Deutschland GmbH

Steinzeugstraße 50

68229 Mannheim

Service Hotline for Device Technology Tel.: +49 621 486-1533

A current overview of service stations is available at <https://www.aliaxis.de/en/services/tools-service>

For international service stations, please contact our Service Hotline for Technology on +49 621 486-1533

## 12. Warranty

The warranty period is 1 year. This period does not apply to parts which may wear out prematurely due to the environment (sand, soil, corrosive substances and similar).

Warranty claims and liability claims for personal injury and damage to property are always excluded if they are due to one or more of the following causes:

- Improper or unintended use of the UNITOP or UNITOP 250 clamping unit,
- Structural modifications to the clamping unit that have not been approved by Aliaxis Deutschland GmbH in accordance with section 2.3,
- Improper handling and improper transport,
- Improperly performed servicing, maintenance work or repair work,
- Damage arising from the use of parts or accessories not purchased from an authorised dealer or approved by the manufacturer Aliaxis Deutschland GmbH,
- Non-compliance with the information in these operating instructions and other applicable documents and/or
- Use of worn functional parts.

**Aliaxis Deutschland GmbH**

Infrastructure  
Steinzeugstraße 50  
68229 Mannheim  
Tel +49 621 486-2828  
Fax +49 621 486-1598  
info.de@alixis.com  
www.alixis.de

