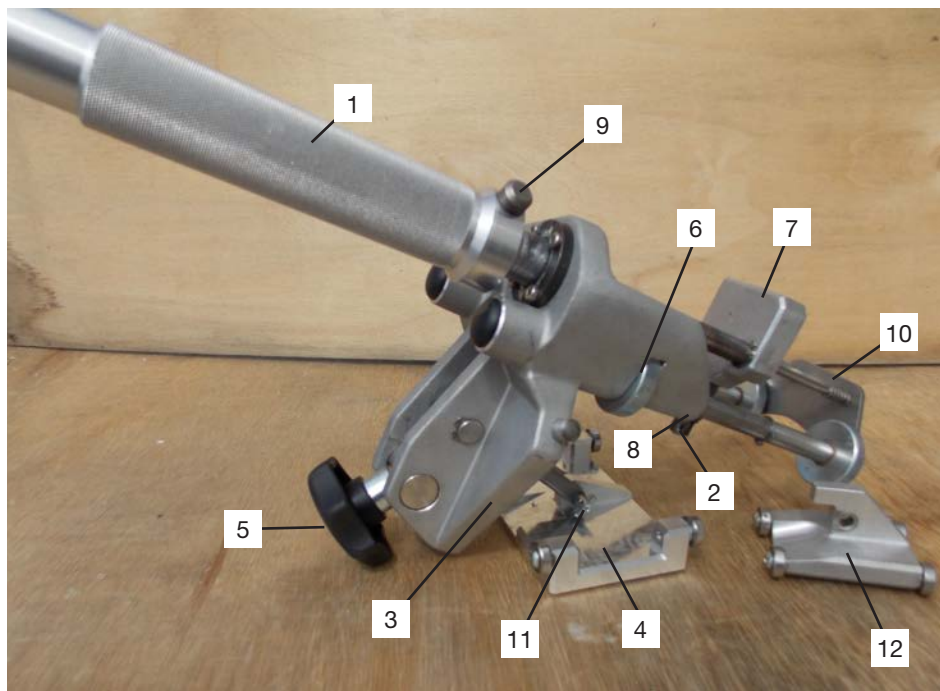




# Bedienungsanleitung Operating instruction

Schälgerät FWGS 400  
Scraper Tool FWGS 400







- 1 Roller handle
- 2 Scraper blade 2-edged
- 3 Front plate
- 4 Clamping carriage d 250 - 400 (10"IPS -14"IPS)
- 5 Star handle
- 6 Guide rollers
- 7 Blade housing
- 8 Blade holder
- 9 Quick release button
- 10 End plate
- 11 Folding nose pin
- 12 Clamping carriage d 75 - 225 (3"IPS - 8"IPS)

fig. 1

# 1. Preliminary notes

## 1.1 Safety notes and hints

In these operating instructions, the following symbols with warnings are used:

Symbol	Meaning
	Danger to people. Failure to comply can result in minor or moderate injury.
	Danger to objects. Failure to comply can result in objects damage.

## 1.2 Designated use

The scraper tool FWSG 400 serves the processing of pipes made of PE 80, PE 100, PE 100-RC and PE-Xa in the dimensions d 75 to d 400 (3" – 14"). It is a precision tool and is suitable for the oxide layer as preparation for an electrofusion joint which forms on the surface of PE pipes during their storage. The design of the FWSG 400 allows scraping of the pipe surface along the half length of the coupler, especially in confined spaces and at FRIALEN XL spigot fittings.

The service life depends on the frequency of use and the external influences during use and/or the storage or transport of the tool. These operating instructions apply in connection with the FRIALEN assembly instructions.

### NOTICE

**Because the minimum extension of the scraper tool FWSG 400 is L = 136 mm, the following saddle parts and fittings can't be scraped in the dimensions listed below. See following table 1.**

Bauteile / Dimension Abgang	d 90	d 110	d 125	d 160	d 180	d 225
SA	x	x	x	x	x	x
SA TL	x					
SA UNI	x	x	x	x		
T RED XL		x	x	x	x	x
WS11		x	x	x	x	x
FLR		x	x	x	x	
EFL	x	x	x	x	x	

Tabelle 1

**NOTICE****Before any fusion, a scraping has to be performed in any case!**

Leaking fusion joints may result if the oxide layer is not removed completely.

## 2. Safety

### 2.1 Functional safety

The scraper tool FWSG 400 is subject to the quality management pursuant to DIN EN ISO 9001:2008 and is checked for its functional safety before any delivery.

### 2.2 Obligations of the operator

All persons involved in commissioning, operation, maintenance and repair of the scraper tool FWSG 400 must:

- be correspondingly qualified, and
- strictly observe these operating instructions.

The operating instructions must always be kept at the place of use of the tool (transport box recommended). The instructions must be available to the operator any time.

With regard to the intended use, please observe the accident prevention regulations, environmental regulations and statutory rules, as well as the relevant safety regulations and all local standards, laws and regulations.

### 2.3 Structural changes

No modifications, attachments or alterations on the scraper tool FWSG 400 may be performed without approval by Aliaxis Deutschland GmbH.

### 3. Preparation of scraping

- Remove any dirt such as sand and soil from the pipe surface to be scraped (e.g. using a clean, fat-free cloth).

#### NOTICE

**If the pipe surface to be scraped is not cleaned, the scraper blade wears prematurely!**

- Determine the area to be scraped = the insertion depth + 5 mm.
- Mark the area to be scraped with a FRIALEN marker pen using wavy lines (this is for you to determine whether pipe has been scraped evenly).

### 4. Assembly of the scraper tool

#### 4.1 Selection of clamping carriage

- d 75 - d 225 (3" IPS - 8" IPS) -> Small clamping carriage **(12)**
- d 250 - d 400 (10" IPS - 14" IPS) -> Large clamping carriage **(4)**

#### 4.2 Changing the clamping carriage

- Move the clamping carriage to the lower position
- The folding nose is in closed position (fig. 2a)
- Unlock the folding nose on the bolt by bringing the nose into axial position (fig. 2b)
- Pull out the bolt axially
- Remove the currently installed clamping carriage
- Insert new clamping carriage
- Insert bolt
- Lock the folding nose on the bolt



fig. 2a



fig. 2b

### 4.3 Adjustment and assembly of the scraper tool

- Place scraper blade **(2)** in protective position:
  - Press release button **(9)** and bring blade housing **(7)** close to the front plate (fig. 3).
  - Remove the blade protection cap.
- Place clamping carriage **(4)** into lower position:
  - Lower the clamping carriage **(4)** by turning the star handle (fig.4).

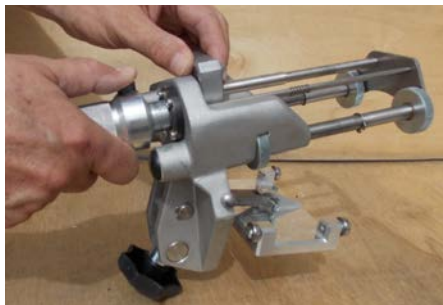


fig. 3



fig. 4

- Adjust the blade housing **(7)** to the required scraping length:
  - pull out telescopic rods up to the end position. Press the release button **(9)** on roller handle and roughly adjust the blade housing **(7)** to the relevant dimensioning marking (fig. 5).



fig. 5

#### NOTICE

##### Damage of the scraper blade!

Do not allow the scraper blade **(2)** to butt at the clamping carriage **(4)**.

- Mounting the scraper tool:
  - Scraper tool must be guided across the pipe in such a way that the clamping carriage (4) is situated inside the pipe and the scraper blade (2) is on the pipe surface (fig. 6). The front plate (3) must be flush with the front edge of the pipe.
- Adjust scraping length:
  - Press the release button all the way down and adjust the knife holder to the marking of the insertion depth on the pipe end /outlet.



fig. 6

### NOTICE

#### Damage of the scraper blade!

Do not allow the scraper blade (2) to butt at the clamping carriage (4).

- Locking of clamping:
  - Tighten the star handle (5) (fig. 7) until all four guide rollers (6) rest on the surface of the pipe or spigot fitting.



fig. 7



fig. 8

## 5. Scraping of pipe surface

- Turn the tool clockwise around the end of the pipe by the roller handle **(1)**.
- Turn it steadily until the pipe surface is scraped up to the mark (fig. 8).

### CAUTION

#### **Risk of injury during scraping process!**

Keep hands off the pipe.

### NOTICE

**Press the scraper tool against the end of the pipe while scraping in order to avoid tilting of the tool in axial direction.**

- The swarf is to be removed manually.

## 6. Disassembly of the scraper tool

- Release the star handle **(5)** by turning it anti-clockwise.
- Pull the scraper tool off the pipe end.
- After use, store the tool in the transport box.

### CAUTION

#### **Risk of injury at the blade!**

The blade housing **(7)** must be brought up to the front plate **(3)** on completion of the work, in order to prevent any injuries.

### NOTICE

#### **Damage of the blade!**

The blade housing **(7)** must be brought up to the front plate **(3)** on completion of the work, in order to prevent damage to the scraper blade.



## 7. Inspection of the scraping result

Inspect the scraping result, i.e. the swarf must be completely removed and the markings applied before with the FRIALEN marker may no longer be visible.

For bundled coil pipes control the scraping result with regard to the swarf thickness or remained marks on the pipe very carefully.

The scraper blade **(2)** is adjusted for a swarf thickness of 0,25-0,35 mm (approx. 0.0098- 0.0138 inches). For the scraping of FRIALEN safety fittings the wear limit is max. 0,5 mm and must not be exceeded. Please note differing requirements of other fitting manufacturers.

If the marker lines are not completely removed, the scraping process should be repeated.

An abrasion of the blade can enlarge the swarf thickness inadmissibly. This abrasion occurs because of multiple usage and outside influences (sand, soil etc.). Therefore the strength of the swarf must be measured regularly - e.g. with a calliper gauge. Scraper blades are worn parts and have to be replaced (see chapter 8).

### **NOTICE**

**An incomplete scraping or a differing swarf thickness may result in a leaking fusion joint.**

## 8. Replacement of blade



**CAUTION**

**Risk of injury at the blade!**

### NOTICE

**Please note when replacing the blade that only blades dyed white may be used!**

- Release the TORX screw with the TORX spanner supplied.
- Remove the blade and clean the supporting surface carefully.
- Insert a new blade or to use the second cutting edge, turn it 180°.
- Tighten the TORX screw with the TORX spanner.

Article	Order-No.
FWSGE 14 / spare scraper blade	613335

## 9. Notes on care and maintenance

Your scraper tool FWSG 400 is a precision tool. Please thus observe the notes on care and maintenance. All component parts are to be regularly cleaned of dirt and deposits.

### NOTICE

#### Your expense!

Careful handling of the equipment will prevent unnecessary repairs and downtimes. Regular annual safety checks by Aliaxis Deutschland GmbH are recommended.

The scraper tool FWSG 400 must be kept clean and dry. After use, the tool is always to be stored in the dry transport box.

Rollers must be treated regularly using oil-based maintenance spray supplied in the transport box.

Those parts which have come into contact with the pipe during use may not be treated using the oil based maintenance spray. Should this accidentally occur, these parts must be cleaned using standard cold cleaning agents.

## NOTICE

**Oil may not come into contact with the pipe surface to be scraped!**

Article	Order-No.
<b>FRIATEC</b> maintenance spray*	613301

\*Please observe safety and application instructions on agent container.

## 10. Warranty

The warranty is granted for 1 year.

Excluded from this are parts which prematurely wear because of the environment (sand, earth, corrosion-promoting materials and similar).

Warranty and liability claims in the event of injuries to persons and damages to property shall be excluded if they are the result of one or several of the following causes:

- use of scraper tool FWSG 400 and the plunger not according to its intended use,
- structural modifications not approved by Aliaxis Deutschland GmbH according to item 2.3.,
- improper handling and improper transport,
- improperly performed maintenance and repair work,
- non-observance of notes in these operating instructions, and/or
- use of worn work functional parts or of a damaged scraper tool FWSG 400.

## 11. Update of these operating instructions

These technical statements are regularly checked for their up-to-dateness. The date of the last revision is stated on each page. For an updated version of the operating instructions, please visit our website [www.friatools.com](http://www.friatools.com) on the Internet. You will find the "Download" page on the navigation bar. This page contains our updated operating instructions as pdf documents. We would also be pleased to mail them to you on request.