Instruction manual

Original instructions

Manual pre-assembly device for pre-assembling cutting rings

SPR-PRC-MP

To prevent injury and damage, read this instruction manual carefully and attentively and retain it for future reference.

6010023313 Version 1

08/05/2023

Additional instructions in other languages can be downloaded from:
www.stauff.com

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1 For your safety

1.1 Intended use

The manual pre-assembly device is used for pre-assembling cutting rings from the light and heavy series onto metal tubes for outer tube diameters between 6 mm and 42 mm . A STAUFF original cutting ring FI-DS-..-W3/W5 or FI-WDDS-…-W3/W5 has to be used for this.

Any use other than the use described above is not permitted.

1.2 General safety instructions

Safety instructions help you in avoiding injuries and damage. Ensure that you have read and understood all the safety instructions in these operating instructions.

Safe working entails more that just reading the general safety instructions in this chapter. Also read and follow the specific safety instructions in each chapter affecting your work.

The following safety instructions apply in general:

- Observe the safety information on the manual pre-assembly device (Section 1.5, p. 5).
- Wear always the required personal protective equipment (Section 1.7, p. 6).

1.3 Tasks and duties of the operating company

To ensure safe operation of the machine the operating company has at least the duty …

- to define the area of use and draw up corresponding operating instructions (standard operating procedures).
- procure the respective latest version of the regulations concerning operation and to familiarise the operating personnel with these regulations.
- Instruct personnel in safe working practices and regularly check that personnel work with an awareness for safety and hazards.
- to provide the necessary personal protective equipment.
- to ensure that the safety markings attached to the machine are always complete and fully legible.

1.4 Structure of the warnings

Warning draw attention to existing residual risks that occur in individual phases of life. Graduated signal word fields indicate the level of risk.

⚠ **DANGER**	The signal word “Danger” warns of a residual risk with severe or fatal injuries.
⚠ **WARNING**	The signal word “Warning” warns of a residual risk with potentially severe or fatal injuries.
⚠ **CAUTION**	The signal word “Caution” warns of a residual risk with light or medium injuries.

1.5 Safety markings

The following safety markings are attached in a clearly visible way and are legible:

Symbol	Description	Place of assembly	Number
	Warning – hand injuries	Holding block	1

1.6 Personnel qualification

Any work on the machine is only be carried out by qualified and authorised personnel. Personnel trained in the work involved as backed up by appropriate certificates are considered to be qualified.

Qualifications

The personnel approved for particular tasks belong to the following target groups, based on the qualification:

- **Operating personnel** have been briefed in operating the manual pre-assembly device and in its function principle. They are authorised to undertake the following tasks:
  - Operating the manual pre-assembly device
  - External cleaning
  - Topping up hydraulic oil
- All work beyond the authorisation of the operating personnel has to be conducted by **the manufacturers service personnel**.

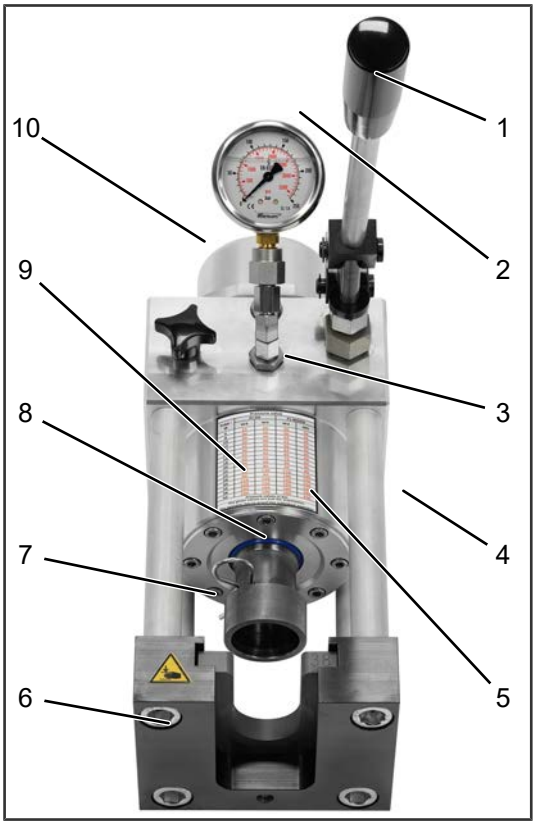
1.7 Personal protective equipment

To limit hazards during work, use the required personal protective equipment:

PPE	Life phase	Job
Safety shoes	all	all
Protective gloves	troubleshooting cleaning maintenance	• working with sharp-edged workpieces • contact with cleaning agents • contact with hydraulic oil or lubricating oil
Eye protection	troubleshooting maintenance	• working with hydraulic oil

2 Structure and function

2.1 Overview



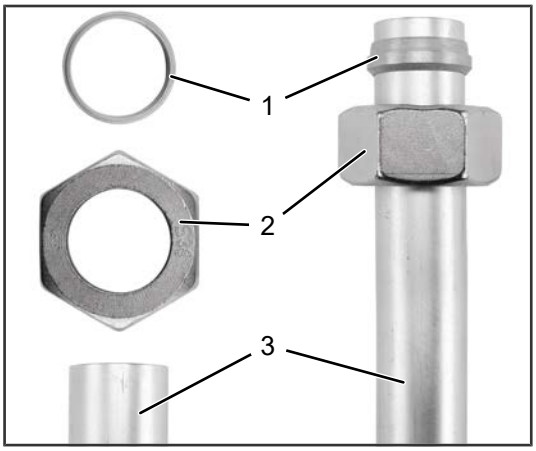
1 Pumping handle
2 Pressure gauge
3 Pressure table
4 Guide tube
5 Piston
6 Holding block
7 Counter retaining plate FI-GP
8 Assembly stud FI-MFK
9 Safety clip
10 Pressure relief screw

Fig. 1: Manual pre-assembly device

2.2 Workpiece

For pre-assembly, a union nut and cutting ring are placed on a tube.

- Outer tube diameter: 6 to 42 mm
- Union nut: FI-M
- Cutting rings type FI-DS or FI-WDDS



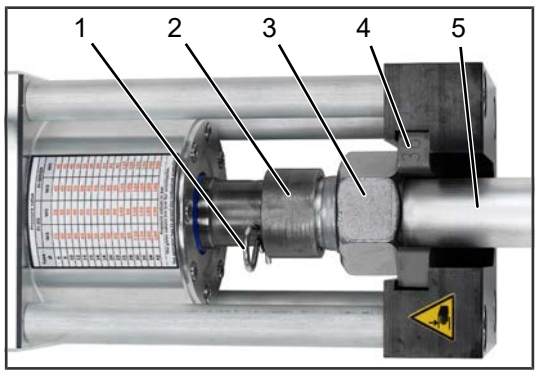
1 Cutting ring
2 Union nut
3 Tube

Fig. 2: Individual parts / installed workpiece

2.3 Function

The manual pre-assembly device hydraulically installs cutting rings on metal tubes.

The tube with the union nut and cutting ring is placed in to the counter retaining plate from above. The piston uses an assembly stud to press the cutting ring onto the metal tube once the required hydraulic pressure has been generated with the pumping handle.



1 Safety clip
2 Assembly stud
3 Union nut
4 Counter retaining plate
5 Tube

Fig. 3: Assembly layout

2.4 Technical data

General data	
Dimensions (L x H x W)	435 mm x 250 mm x 150 mm
Weight incl. hydraulic oil	15 kg
Max. operating pressure	250 bar

Operating fluids	
Hydraulic oil	Shell Tellus S2 MX32 Fill volume: 0.425 l

2.5 Nameplate

The type plate is located on the side of the manual pre-assembly device.

Fig. 4: Type plate of the manual pre-assembly device

The serial number is engraved into the housing wall below the type plate.

2.6 Pressure indicator

A pressure gauge above the pressure cylinder shows the generated pressure in the hydraulic system. The pressure table shows the required pressure for each configuration.

Fig. 5: Pressure gauge

Pressure value				
Tube - Ø	FI-DS		FI-WDDS	
	W3	W5	W3	W5
6	25	20	40	30
8	30	30	40	35
10	30	30	45	40
12	40	40	55	50
14	45	45	60	55
15	40	45	65	60
16	55	55	65	60
18	55	55	75	65
20	90	90	85	85
22	60	80	95	80
25	90	140	110	120
28	60	90	100	100
30	11	150	120	150
35	120	150	150	150
38	160	180	180	200
42	190	190	180	200
Pressure values in bar The given values are just for orientation. The operator has to proof the individual assembly!				

Fig. 6: Pressure table

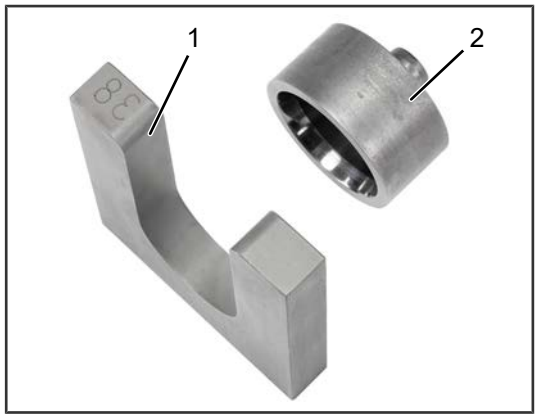
Tube - Ø:
Outer tube diameter in mm

FI-DS / FI-WDDS:
Cutting ring type

W3: Steel
W5: Stainless steel

2.7 Accessories

A counter retaining plate and an assembly stud for the respective tube diameter are required as assembly accessories.



1 Counter retaining plate
2 Assembly stud

Fig. 7: Accessories with the respective tube diameter

3 Operation

3.1 Transport and storage

The manual pre-assembly device is supplied in a green steel case that also holds the accessories. The machine should always be in the case for transport or storage to avoid damage to the machine and hazards to people.

Information on dimensions and weight is available in chapter „Technical Data“ (Section 2.4, p. 8).

3.2 Preparing the pre-assembly

Insert the assembly stud

▶ How to fit the assembly stud:

1. Select the right assembly stud for the tube. Note the differences between the light (L) and heavy (S) series.
2. Place the assembly stud in the pressure cylinder.
3. Press the safety clip into the hole with the straight end first until it is securely seated.
4. Check that the assembly stud is securely seated.

☑ The assembly stud has now been installed.

A light oil film should be applied to the assembly stud regularly (after multiple uses or after extended storage). This protect the assembly stud against wear.

Also note the safety instructions on the oil bottle!

Fig. 8: Assembly stud on the pressure cylinder

1 Insert the assembly stud.

2 Insert the safety clip.

Insert the counter retaining plate.

▶ How to install the counter retaining plate:

1. Select the right counter retaining plate for the tube diameter.
2. Push the counter retaining plate with the opening facing upwards into the mount in the holding block.

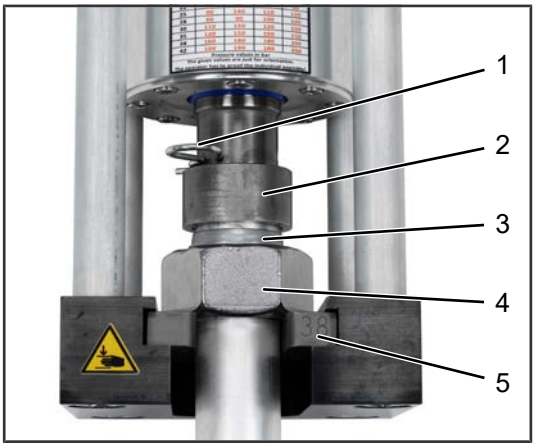
☑ The counter retaining plate has now been inserted.

Preparing the workpiece

▶ How to fit the assembly stud:

1. Slip the union nut onto the tube. The thread has to face towards the tube end.
2. Then slip the cutting ring onto the tube end. The cutting edge of the cutting ring has to face towards the tube end.
3. Place the tube into opening of the counter retaining plate from above.
4. Push the tube end into the assembly stud and press it in. The cutting ring and union nut are located between the assembly stud and counter retaining plate.
   IMPORTANT: Slightly more force is required for pressing in cutting rings of **type WDDS** due to the internal sealing ring.

☑ The workpiece has now been prepared for assembly.



1 Safety clip
2 Assembly stud
3 Cutting ring
4 Union nut
5 Counter retaining plate

Fig. 9: Preparation completed

Fit reinforcing sleeves for thin-walled tubes in keeping with the STAUFF Product Catalogue!

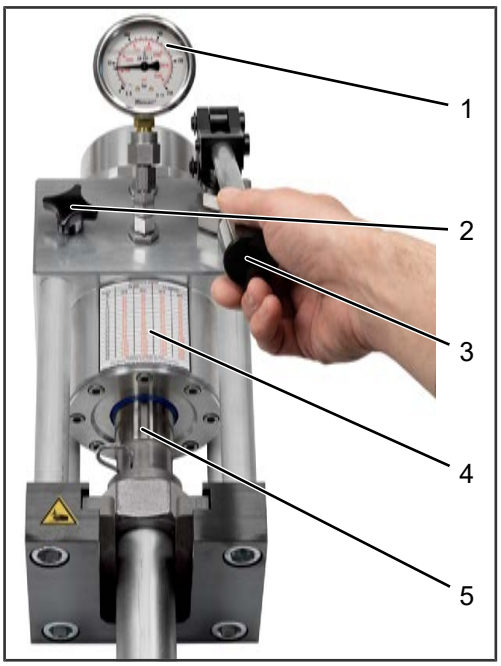
3.3 Pre-assembling the cutting ring

WARNING

Accessing during the pressing

Shearing off and crushing of fingers

► Keep fingers away from the assembling area during the operation.



1 Pressure gauge
2 Pressure relief screw
3 Pumping handle
4 Pressure table
5 Piston

Fig. 10: Pre-assembly

► How to pre-assemble the cutting ring:

1. Determine the pressure for the given configuration from the pressure table.
2. Push down the pumping handle to increase the hydraulic pressure until the pressure gauge shows the determined pressure.

The pressure cylinder initially moves out until a pressure increase occurs.

3. Slightly open the pressure relief screw.
4. Wait until the needle on the pressure gauge shows “0” again and the piston has retracted.

☑ The pre-assembly has been completed.

The assembly stud should be checked for dimensional accuracy after every 50 assembly cycles with an FI-KOL conical gauge. Worn or stretched assembly studs influence the quality of the pressed connection!

4 Maintenance and troubleshooting

4.1 Fault table

Fault	Possible reason	Troubleshooting
Pressure cylinder does not extend	Not enough hydraulic oil	Top up hydraulic oil
	Pressure build-up fails due to a leak	Leak check
	Pressure cylinder is jammed	Move pressure cylinder back and forth a few times
	Another cause	Contact the manufacturer
Hydraulic oil leaking	Leak in the hydraulic system	Contact the manufacturer

4.2 Inspection and maintenance work

The manual pre-assembly device is largely maintenance-free and will retain its functionality over the entire life cycle, provided it is handled properly. However, the following tasks should be carried out regularly:

- Before use, examine the manual pre-assembly device for any external damage.
- Cleaning the manual pre-assembly device (Section 4.3, p. 14).

4.3 Cleaning the manual pre-assembly device

The manual pre-assembly device and its components have to be cleaned after each use.

▶ How to clean the machine:

1. Use a cotton cloth to clean the surfaces.
2. Use water with a grease-dissolving, non-caustic cleaning agent. Do not allow any moisture to get into the cylinders.
3. Remove any stubborn dirt with a non-abrasive, non-caustic cleaning agent.
4. Apply corrosion protection to metal parts.

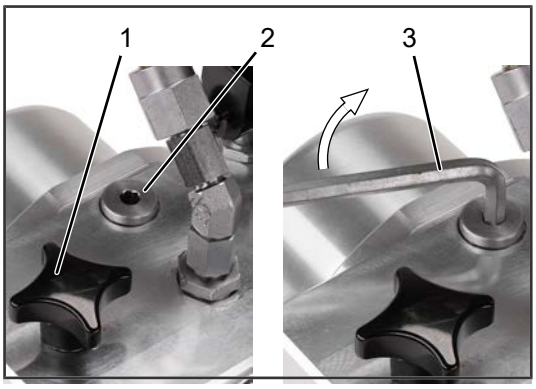
Corrosion protection

Apply a light oil film as corrosion protection to the moving machine parts after removing any stubborn dirt with a cleaning agent and after an extended downtime.

4.4 Checking and topping up the hydraulic oil

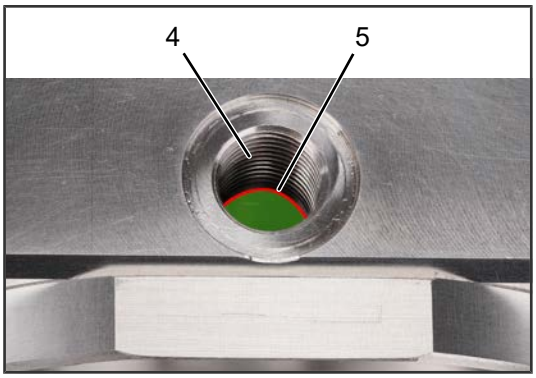
The fill level of the hydraulic oil should be checked regularly and topped up if necessary, in particular:

- after extended storage periods
- when the pressure generation decreases
- when the cylinder does not move freely



1 Pressure relief screw
2 Filler screw
3 Allen key

Fig. 11: Fill opening for hydraulic oil



4 Thread
5 Fill level

Fig. 12: Fill opening, open

Use the following hydraulic oil: Shell Tellus S2 MX32

▶ How to check the fill level of the hydraulic oil:

1. Open the pressure relief screw and fully relieve the cylinder.
2. Close the pressure relief screw.
3. Release the filler screw with an Allen key and remove it.
4. Check that the hydraulic oil fills the space up to the thread.
5. If required, top up the hydraulic oil up to the thread.
6. Close the filler screw again firmly.

☑ The hydraulic oil has now been topped up to the fill quantity of 0.425 l.

5 Disposal

Upon final dismantling, the owner has to dispose of all used materials and parts in keeping with the applicable provisions in the country where the machine was operated.

Particular care is required for disposing of materials which are hazardous to the environment, e.g.:

- plastic parts
- rubber parts
- metal parts
- operating fluids and additives

▶ How to handle substances hazardous to water:

1. Use appropriate containers to collect, store, transport and dispose of substances with water toxicity.
2. Dispose of all parts separated by materials at the appropriate disposal points.
3. Always sort by materials for recycling.

6 EC declaration of conformity

EC declaration of conformity

as per EC Machinery Directive 2006/42/EC, Appendix II 1.A (Official Journal of the European Union EU L157/24 date 09/06/2006)

Manufacturer: Walter Stauffenberg GmbH & Co. KG

Im Ehrenfeld 4, D-58791 Werdohl, Germany

Product: Manuel Cutting Ring Press

Type: SPR-PRC-MP

The manufacturer declares in own responsibility that the product is in conformity with all applicable provisions as well as all relevant essential health and safety requirements as specified in the directive 2006/42/EC on machinery (Official Journal of the EU L157/24 dated 09/06/2006).

The following harmonised standards were applied:

EN ISO 12100:2010-11	Safety of machinery - General principles for design - Risk assessment and reduction
EN ISO 4413:2010	Hydraulic fluid power – General rules and safety requirements for systems and their components

Name and address of the person authorised to compile the technical file:

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Werdohl, 5.5.2023

Carsten Krenz, General Manager

7 Declaration of Conformity UKCA

Declaration of Conformity UKCA

Manufacturer: Walter Stauffenberg GmbH & Co. KG

Im Ehrenfeld 4, D-58791 Werdohl, Germany

Product: Manuel Cutting Ring Press

Type: SPR-PRC-MP

Authorised Represantative in the UK:
STAUFF UK Ltd., 500, Carlisle Street East, Off Downgate Drive, Sheffield, S4 8BS, United Kingdom

The manufacturer declares under sole responsibility that the product complies with the following regulations:

- Supply of Machinery (Safety) Regulations 2008

The following harmonised standards were applied:

EN ISO 12100:2010-11	Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze – Risikobewertung und Risikominderung
EN ISO 4413:2010	Fluidtechnik – Allgemeine Regeln und sicherheitstechnische Anforderungen an Hydraulikanlagen und deren Bauteile

Werdohl (Germany), 5. 5. 2023

Carsten Krenz, General Manager

Keyword index

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If you have any queries, thoughts or criticism about your product or this documentation, please send them to us.