Translation of the original

Operating Manual



Cutting Ring Assembly Machine / Pipe Flaring Machine

SPR-PRC-MA

To avoid injuries and damage read through this operating manual thoroughly and attentively. Keep it for further reference purposes.

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1 General Description

In this chapter, you will find information for using the operation manual and general safety instructions for handling the machine.

1.1 Notes on the Operation Manual (OM)

This Operation Manual is part of the product:

- **SPR-PRC-MA** (universal drive unit for pre assembly)

As a central part of the operator's reference material, this Operation Manual is of special importance. Heeding the instructions, data and regulations of the OM will help you to operate the machine safely and efficiently.

In reference to the illustrations and details of this Operation Manual, the machine is subject to technical alterations if these serve the purpose of improvement.

This Operation Manual may describe special equipment which is not part of your machine.

1.1.1 Design of the Operation Manual

Safety precautions are indicated by corresponding symbols and printed in ***bold italics***.

1.1.2 Working with the Operation Manual

With the help of this Operation Manual, we want you to become acquainted with the machine and so be able to operate it according to its intended application possibilities.

The Operation Manual contains important information on safe, proper and economic use of the machine. Heeding it will help you to avoid danger, reduce repair costs and non-productive time and increase the reliability and service life of the machine.

In addition to the Operation Manual, the instructions according to the national accident prevention and environmental protection regulations must be observed.

The Operation Manual has to be permanently available and in legible condition at the working site of the machine.

Any persons working with the machine or in its vicinity must read and follow the instructions of the Operation Manual. This applies to persons concerned with

- operation of the machine, including setting-up, clearing machine problems in process, disposal of waste matter collected during production, machine care, disposal of fuel and process materials
- maintenance (service, inspection, maintenance) and/or
- transport

In addition to the Operation Manual and the national regulations for accident prevention valid on the working site, the technical standard regulations for safe and proficient work demand observation.

1.2 General Safety Precautions

It is essential to heed all warnings, regulations and prohibitions.



Attention!

Respect all safety precaution and warning signs attached to the machine!

Avoid any dangerous operation that might present a risk for your safety!

Preserve all safety precaution and warning signs attached to the machine completely and in legible condition!

Keep this Operation Manual permanently handy on any working site of the machine!

Should any changes concerning the safety of the operator or the machine's functions occur, switch off the machine instantly and report to the responsible authority / person!

Pay attention to the valid accident prevention regulations of the trade association!

1.2.1 Safety Symbols and Signs



Prohibited!

This symbol can be found in places where certain actions are prohibited because of imminent danger.



Prohibited, do not put your hand in!

You find this symbol in spots where a certain risk remains and the operator should not come too close or reach in.



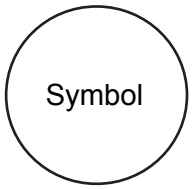
One-man working place!

The **SPR-PRC-MA** must be treated as a working place for a single operator. If the machine is operated by two persons, they run the risk of additional hazards.



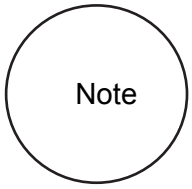
Attention!

This is a warning symbol to attract attention to objects or situations that might involve danger.



Rules!

This symbol reminds you to follow certain instructions in order to protect yourself from danger and prevent damage to property.



Note!

Ignoring this sign may lead to severe damage of property.



Caution - High Voltage!

In the event of current discharge caused by faulty structural components or cables, leave the danger area immediately and cut off the power supply.

Only electricians are allowed to install the machine and only according to the electric circuit diagram.



Risk of Getting Crushed!

Never reach into moving machine elements or facilities.

All existing protective caps and facilities must be assembled correctly.

Do not remove protective caps or facilities during machine operation.



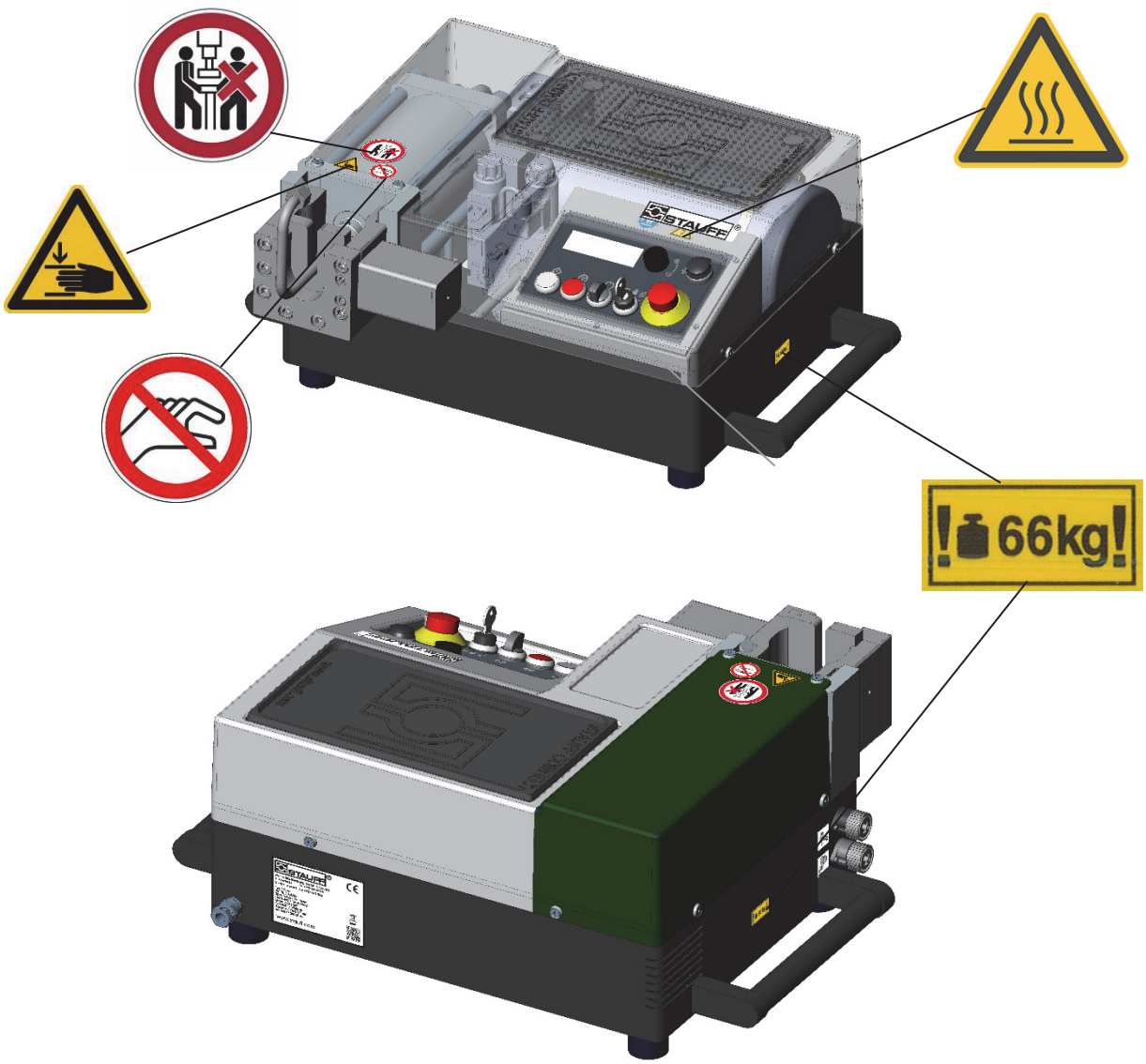
Suspended Loads!

Do not stand beneath suspended loads! You risk injury if the load falls down!



Hot surfaces!

Malfunction may cause the surface to get hot. It can cause burns.



1.2.2 Obligations of the Owner

The operator is obliged to let only persons operate the machine, who:

- are familiar with the basic safety regulations at work and accident prevention and are briefed on the proper use of the machine.

- have read the chapters concerning safety and warning directions in this Operation Manual, understood them and confirmed this with their signature.

- have been thoroughly trained and instructed; their area of responsibility for operation, setting-up, maintenance and repair should be framed clearly and precisely!

In addition to this Operation Manual, please heed the legal rules in general and other binding regulations concerning accident prevention and environmental protection and pass them on! For instance, these regulations may concern the handling of hazardous materials or making available and wearing personal protection outfits.

The safety-aware attitude of the staff must be reappraised frequently.

The operating employees must be qualified, well instructed in their field of work and familiar with handling the machine.

1.2.3 Reference to Training

Appoint well instructed staff only! Sharply define the responsibilities of the staff concerning operation, setting-up, maintenance and repair!

Personal being apprenticed, generally trained, educated or briefed in any way shall be constantly supervised by an experienced person while working with the machine!

1.2.4 Qualifications of the Employees

Before starting to work, all persons entrusted with operating the machine are obliged to

- acknowledge the basic regulations concerning safety at work and accident prevention,
- read the safety precautions and warning directions in this Operation Manual and confirm their comprehension by signature,
- wear their personal protection outfit or the equipment belonging to a specific workplace for the benefit of safety and use the necessary protection aids while working.

The defined areas of competence must be maintained.
As an example

- repair or maintenance of electric and hydraulic components of the machine shall be carried out only by qualified personnel or a trained person under the supervision of a qualified person, according to the valid technical regulations.

1.2.5 Risks of Machine Operation

The machine has been built according to state-of-the-art technology and the acknowledged safety-specific rules. Nevertheless it may pose a threat to the health and life of users or third parties; operating the machine may affect adversely the machine itself or other valuables. Because of the working stroke of the tool, an element of risk remains. In normal operation, the pipe is held in the left hand of the operator, the right hand actuates the pushbutton for the working stroke. The operator cannot reach into the working stroke range with his hand.
The SPR-PRC-MA was designed as a one-man working place; a second operator means additional risks.
The machine shall only be applied

- for its intended use
- in a safety-related sound condition.



Before starting the machine, make sure that all protective facilities and safety requirements, for instance removable protective facilities and emergency-off facilities, are available and in working order!
Any safety-related failures shall be corrected immediately!

1.2.6 Use as Intended

The basic unit of the TUBOFORM C is a universal basic adaptor for different attachments. With the cutting ring attachment, a variety of different cutting rings from 6 to 42 mm or 1/4 “ to 2 “ in diameter can be fitted up to the maximum operation pressure.
The flaring head has been laid out for 37° flared edges from 6 to 42 mm or 1/4 “ to 1 1/2 “Ø. Precision steel pipes according to EN 10305-1, Werkstoff E235+N and stainless steel tubes 1.4571 /1.4541 within the diameter range from 6 to 42 mm can be machined.
Any operation going beyond the use mentioned above is not according to regulations. **Walter Stauffenberg GmbH&Co.KG** cannot be held responsible for damage resulting from misuse.
Operation according to regulations also means

- acknowledging all rules and regulations of the Operation Manual and
- keeping the schedule for inspection and maintenance according to directions or within the period stipulated by the OM.

1.2.7 Applications Violating the Regulations

If the TUBOFORM is used in any other way than described in chapter 1.2.5, the application is not according to the intended use. Employing insufficiently qualified staff to operate the machine violates the regulations. The company **Walter Stauffenberg GmbH&Co.KG** cannot be held responsible for damage caused by noncompliant operation of the machine.
Any operations going beyond the utilisation mentioned above, e.g.:

- clamping and bending of unsuitable component part geometries
- operating the machine without its safety arrangements

is regarded as **not according to regulations**.

1.2.8 Guarantee and Legal Liability

Basically, our “general sales terms and delivery conditions” apply. These are available to the user from the date of the contract on.

Guarantee and claims on liability for damage to persons or property shall be precluded if they result from at least one of the following causes:

- misuse of the machine;
- improper assembly, starting up, operation and maintenance of the machine;
- operating the machine despite defective safety arrangements and inadequately fitted or non-functioning safety and protection systems;
- ignoring the directions of the Operation Manual concerning transportation, storage, setting-up, starting up, operation, maintenance and rigging of the machine;
- unauthorised structural alterations of the machine;
- unauthorised alterations of the machine control;
- insufficient supervision of the machine parts exposed to wear;
- carelessly performed repair works;
- disasters following the influence of alien elements and superior force.

1.2.9 Disposal

Once the service life of the unit / machine is over, the owner is responsible for the disposal at his own expenses and according to legal regulations; he releases us from the obligation of taking back any part of the machine and also from the liability towards third parties in this context.

Disposal of POL Products

Empty hydraulic oil containers, waste oil, coolants or lubricants, oil and oily cloths shall be disposed at collecting points according to the local legislation. Further information concerning POL products (i.e. quantity and type) can be found in the technical data and safety data sheets of the appendix.

Disposal of the Machine

Please heed the local accident prevention regulations!

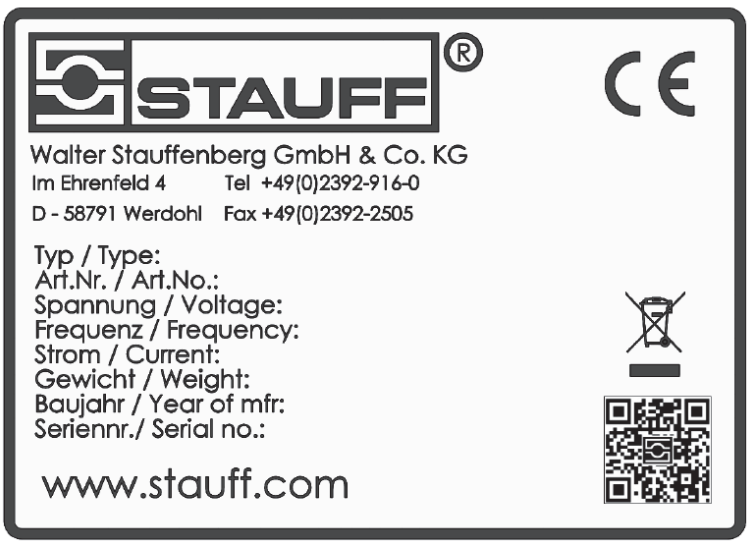
Before disassembly, the machine shall be shut down and all hydraulic oil in the machine removed.

Before disposal, the machine shall be disassembled, the materials separated and grouped as

- plastic
- non-ferrous metals
- electronic scrap
- steel.

The materials shall be disposed of according to the customary legislation.

1.2.10 Specification Plate



1.2.11 EC Conformity Declaration

EC Statement of Conformity

As envisaged under EC Machinery Directive 2006/42/EC, Annex .II 1.A

Manufacturer	**Those located in the Community with due entitlement to compile the technical documents**
Walter Stauffenberg GmbH & Co.KG Im Ehrenfeld 4 DE-58791 Werdohl	Walter Stauffenberg GmbH & Co.KG Im Ehrenfeld 4 DE-58791 Werdohl

Machine description and identification

Product/Manufactured item	SPR-PRC-MA
Type	StauffPress
Serial number	0001-…
Function	Pre-assembly of cutting rings; Flare tube ends

It is expressly stated that the machine complies with all the relevant requirements of the following EC directives

Guideline 2006/42/EC	in the version from 17.05.2006
Guideline 2014/30/EC	in the version from 26.02.2014

The low voltage directive 2014/35/EC in the version from 26.02.2014 was maintained in reference to its objective(s. Appendix I, No. 1.5.1 of the guideline 2006/42/EC).

Selection of applied harmonised standards, their source having been published in the Official Journal of the European Communities:

EN ISO 12100:2010	EN ISO 14120:2015
EN 349:1993 + A1:2008	EN ISO 13849-1:2015
EN ISO 4413:2010	EN ISO 13849-2:2012
EN ISO 13857:2008	

Werdohl, 08.12.2016

Ort, Datum

Carsten Krenz, General Manager

2 Technical Data

General Data	
Designation	**SPR-PRC-MA**
Max. sound level at the working place	app. 60 db (A)
Feed rate	6.9 mm/s
Back stroke speed	31mm/s
Feed force	173 KN
Maximal stroke	40 mm
Hydraulics	
Tank capacity	app. 3 l
Flow quantity	3.7 l/min
Pressure medium	Esso Nuto H 32 or similar quality. The maximum permissible soiling degree of the pressure fluid corresponds with grade 7 according to NAS 1638.
Operating pressure	Digitally adjustable up to 200 bar
Electrics	
Driving mechanism	Electric drive: 1.2 KW
Voltage	400V/50Hz/3phases - special voltage see identification plate
Power input	2.8 A - special voltage see identification plate
Standard for electricity	VDE
Protective system	IP 54
Connection type	5 pole 16A-CEE plug
Control voltage	24V
Limits of Application	
Operation temperature	+10 - +50° C
Storing temperature	-10 - +70° C
Relative air humidity	90% max., not condensing
Dimensions	
Weight	Basic machine: 66 kg / attachment heads 5-10 kg
Height	265 mm
Width	660 mm
Depth	515 mm

3. Transport/Erection of the Machine

3.1 Unpacking, Cleaning

- Check the machine and tools to rule out transport damage.
- Make sure that machine and tools are complete by comparing with the delivery and order notes.

3.2 Preparing the Set-Up

3.2.1 Space Requirements

The SPR-PRC-MA requires a footprint of app. 700 mm width and 550 mm depth on top of a stable rest, for instance a work bench. The height of the working place should be laid out according to ergonomic recommendations. The required space depends on the dimensions of the work pieces to be finished.

3.2.2 Surface

A solid, level, horizontal and non-slip surface is required!

3.2.3 Power Supply

5-pole CEE plug, 16 A, with interpoles for reversing rotation.
Other voltages according to regulations.

Check rotational direction and alter if required (the pump cannot build up pressure if the rotational direction is wrong).

Correction: Use a screwdriver to twist the interpoles of the mains plug by 180° (comp. **fig. 3.2**).



Attention!
Pull out the plug before beginning to work!

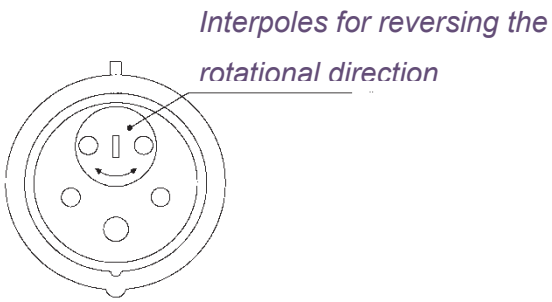


Fig. 3.2: Interpoles for altering the direction of rotation

Check direction of rotation again.

3.2.4 Establishing the Required Connections



Connect the shock-proof plugs of the machine with the power supply. Activate the machine control with the 0-1 switch.
The digital display lights up to indicate that the machine is ready. If nothing happens, the emergency-off switch might be activated. Deactivate the emergency-off switch by twisting it to the right.



Attention!
Pull out the plug after completing work!

4. Operation

4.1 Start of Operation



Activate the control of the machine with the 0-1 switch.



The pressing operation is started by actuating the button.

4.1.1 Use

The machine is assigned to its intended use only.

4.1.2 Safety Precautions



Never remove or alter any safety facilities or signs attached to the machine!
This would pose a threat to life or physical condition!



Damaged signs or safety facilities shall be replaced instantly!

The machine must stand on a level, steady and slip-proof surface!

The machine owner is obliged to lay down the tasks of the persons responsible for the correct operation of the machine!

Heed all the valid health, work and fire protection regulations when operating the machine!

Before starting, the operating staff must check the machine, making sure that it is in operational and functional order; eliminate all risks for persons or the machine!

If a dangerous situation for man or equipment arises, take the necessary steps to prevent injury or damage immediately!

Heed all safety precaution and warning signs attached to the machine!

The personnel qualified for working with the machine shall study the operation manual thoroughly prior to starting, especially the chapters on safety instructions. Once the machine has started, it will be too late! This is most important for persons who don't usually work with the machine, e. g. setting-up or maintenance staff!

Handle machines in a technically faultless condition only; use according to regulations, beware of danger, take no security risks and observe the OM! Any interference relating to safety aspects should be eliminated immediately!

Special attention must be paid towards the risk of exceeding or falling below the capacity marks indicated in chapter "Technical Data"! If the owner fails to prevent misuse of the machine, he allows for a further potential source of danger to operational safety!

Unauthorised alterations are prohibited!

Never open protective caps before pulling out the plug!

4.1.3 Emergency-Off Switch

Sudden imminent danger for man or equipment demands immediate action! Activate the emergency-off switch, marked in bright colours (red/yellow). This deactivates the drive, which can only be restarted after release of the mechanical interlock.





Make sure that all sources of danger have been cleared before releasing the emergency-off switch!

4.1.4 Safety Precautions



If it is necessary to remove protective facilities for repair and adjusting works, this shall be performed with deactivated drives and secured machine only!
After having completed the setting-up and adjusting works, be sure to replace the protection facilities and check their flawless state and serviceability!

The skilled employee responsible for initial operation is obliged to check the state of the machine, making sure it matches the nominal state described in the Operation Manual!



The machine must always comply with the technical safety requirements before any operation may be started! This is the basic prerequisite for faultless machine operation! The machine shall be ready for operation and in functional order, any risk for persons and the machine itself shall be eliminated!

It is absolutely necessary for the operating staff to be familiar with the functions of the machine and the contents of the Operation Manual! The staff is obliged to read and comprehend the Operation Manual!

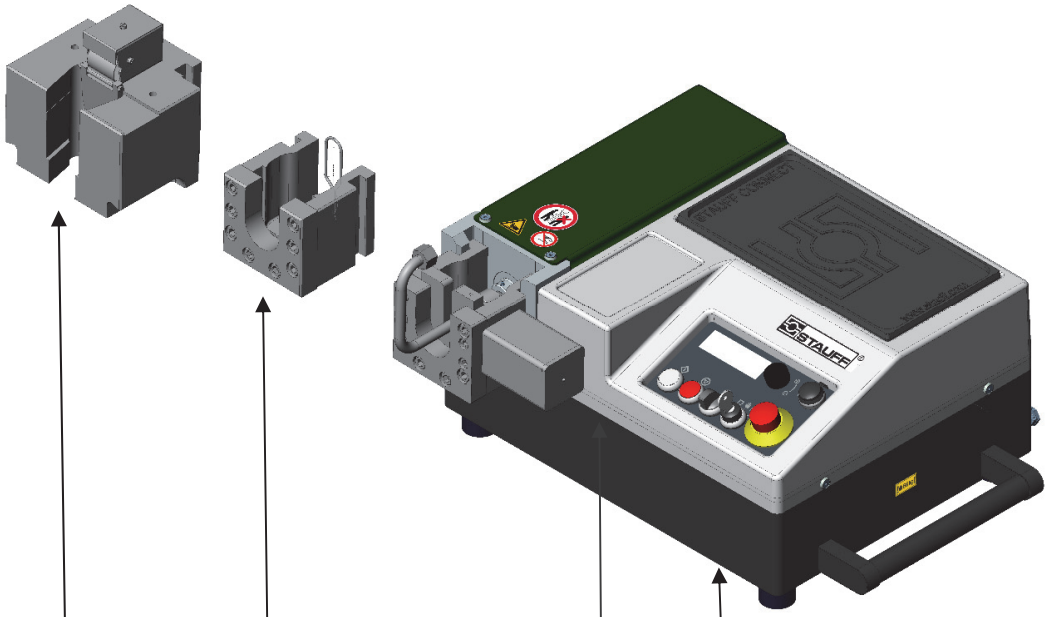
Any alterations of the control, switch gear and safety systems are prohibited!

The cooling space for the electric motor shall never be covered up or blocked!

Members of the operating staff are obliged to report to the shift leader immediately if they discover any faults, damage, accidents, interference or other irregularities!

If persons or the machine are at risk, the mandatory measures shall be taken at once!

4.2 Description of the Machine



SPR-PRC-MA Basic Unit

SPR-PRC-TH-C-MA

Presetting attachment for presetting with tool identification for metallic fittings with 24° cone

SPR-PRC-TH-C-M

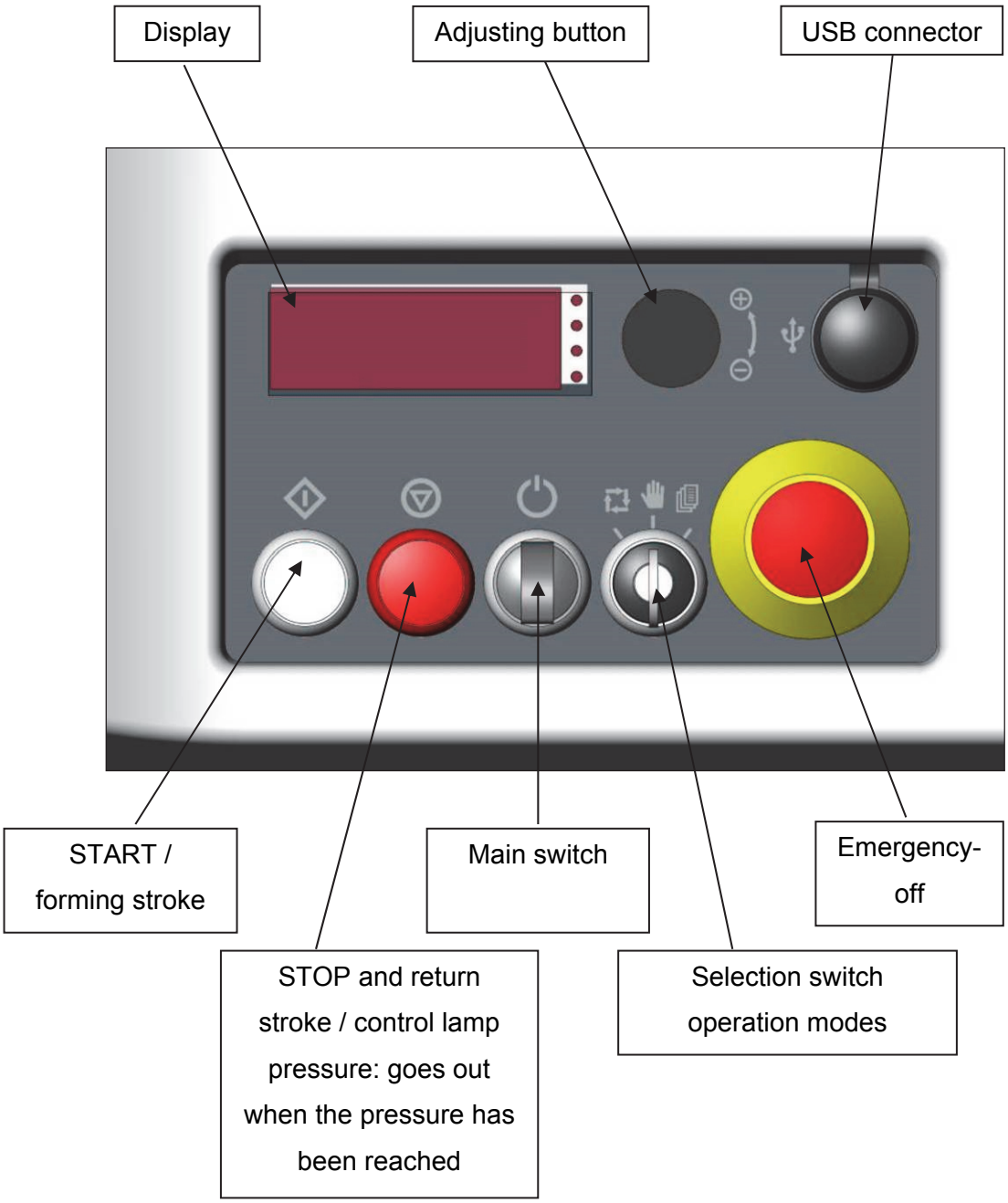
Presetting attachment for presetting for metallic fittings with 24° cone

SPR-PRC-TH-F-M

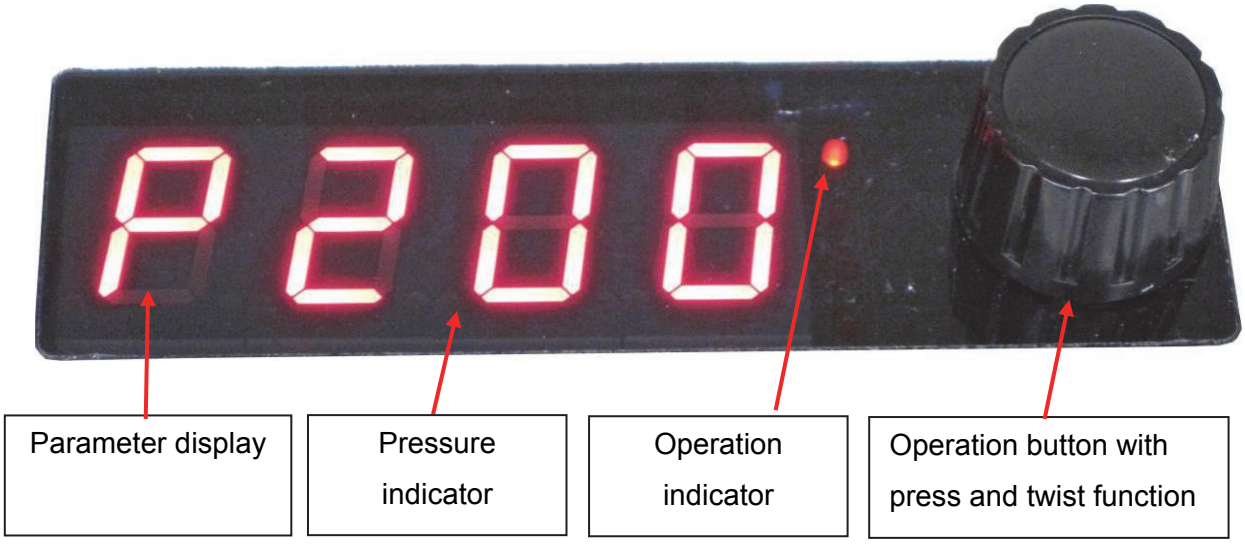
Flaring attachment for flares according to DIN EN ISO 8434-1:2008-02, - Metallic pipe fittings for fluid technology and general application - part 2: Fittings with 37° cone

4.3 Operation

4.3.1 Description of the Controls



4.3.2 Description of the Setting Parameters



Basics

The required parameter is indicated after twisting the knob. If you press the knob, the selection is actuated, the parameter variable (P, L, F, A) starts to blink. The value is set by turning the knob in the required direction in increments of ten. Changing the direction alters the intervals to increments of one. The first catch when twisting does not change the value in order to prevent accidental altering.

Parameter adjustment is stopped by pressing the button. If no further values are changed, it stops automatically after 6 seconds.

From the parameters F (back stroke) and A (absolute counter), the indicator leaps back to pressure indication by itself. The lot size counter can be displayed permanently.

Operation Mode Pressure Adjustment

Which pressure (P) you have to set can be taken from the table of values.

The piece counter (C) can be adjusted up to 999 and counts backwards.

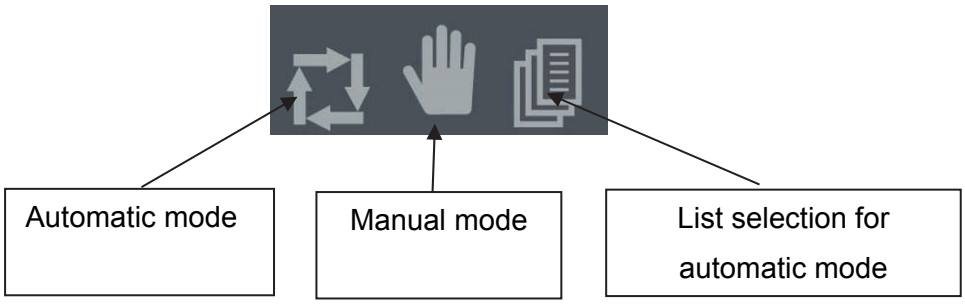
The cycle time is optimised by limiting the back stroke (F).

The absolute counter serves for maintaining the service intervals.

Operation Mode Automatic Pressure Adjustment

Via list selection (L), up to 7 programmed pressure tables which select the pressure according to the inserted presetting plate can be called up. When you select the list, the key switch must be set to "List" position.

Operation mode selection via key switch



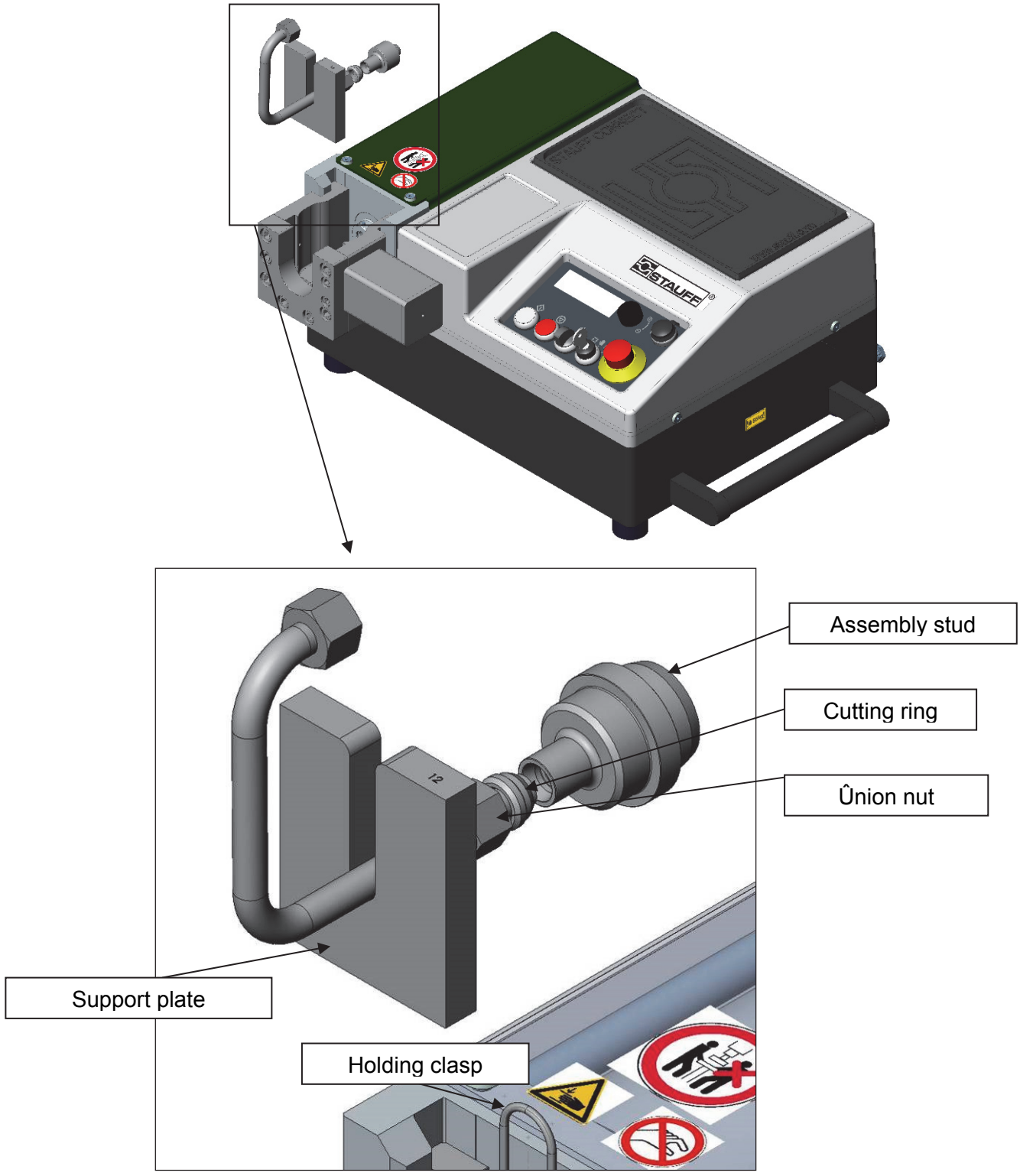
	Parameters	Adjustment range	Active in
	Presetting pressure	10-210 bar	
	Lot size	0-999	
	Return stroke of the cylinder	The way can be set from 1 to 10 (100%)	
	List selection	Depends on programming up to 7 lists	
	Absolute counter cylinder strokes in thousands (034.*000*)	Continuous counter, no setting	

Basics

After a period of 20 minutes, the display is dimmed. 60 minutes later, the display is switched off. The machine indicates that it is ready for operation when the lamp between display and adjusting button is continuously alight. Pressing the adjusting button activates the display again. If automatic pressure adjustment is deactivated, e.g. after pulling the plug, only the key position "manual mode" is active.

The assembly process can only be carried out as long as a pipe is inserted. Remove the counter-support plate or the flaring jaws for performing a working stroke without inserted pipe.
Ignoring these instructions can cause tool damage.
Never come too close to the working area when the working piston is running forward or backward!

4.3.3 Cutting Ring Presetting



Sequence of Working Steps for Cutting Ring Presetting

- The attachment SPR-PRC-TH-M oder -MA for cutting ring pre-assembly is suspended in the universal basic adaptor.
- Select assembly stud FI-MVK and support plate FI-GP according to the pipe, ring and fitting specifications. Check the presetting connection with a taper gauge.
- Insert the assembly stud FI-MVK in the piston rod and secure it with the fastening clip.
- Push the Support plate FI-GP-..-MA into the reception in front of the front plate.
- If you use SPR-PRC-TH-M: Enter the assembly pressure at the control.
  Attention: Pressure settings are just for orientation! The operator has tom proof the correct assembly.
- Lubricate the cone in the assembly stud FI-MVK
- Push Union nut and cutting ring (larger diameter first) onto the pipe which is prepared in keeping with tube and assembling preparation of the assembling instructions of the STAUFF Connect Product Catalogue
- Place the pipe with the spigot nut and cutting ring between the Support plate FI-GP and assembly stud FI-MVK. Mind the correct position of the cutting ring – the sealing head points in the direction of the presetting connection.
- Push the pipe against the stop in the presetting connection. Hold the pipe in this position. Avoid canting of long pipes by using a pipe support.
- Press the start button and hold it until the assembly operation switches off and the working piston drives back home. The piston never drives back before the preset assembly pressure has been reached. The red control lamp goes out when the assembly pressure is reached
- Remove the preset pipe from the Support plate FI-GP.
- In dangerous situations or when the machine does not switch off, please use the emergency-off switch.

4.3.4 Pipe Flaring

Always heed the following points when flaring a pipe:

1. The material quality of the pipe in process must be suitable for flaring. Recommended is seamless precision steel pipe according to EN 10305-1, material E235+N, or use stainless steel pipes 1.4571 or 1.4541.
2. The pipe or tube must be cut at right angles. Face surfaces shall be lightly deburred from within and without.
3. The inner and outer surface of the pipe must be chip and grease free around the flaring die area.
4. Flaring cone and sliding surfaces of the flaring dies need a bit of grease now and then.

Attention: The roughened surface of the flaring dies must remain absolutely oil and grease free to prevent the pipe from slipping through.

Working step sequence for flaring:

a. The attachment for pipe flaring **SPR-PRC-TH-F-M** is suspended in the universal basic adaptor. When hanging in the head, please make sure that the carrier tappet of the piston rod extends into the internal groove of the flaring cone seat.
b. Enter the flaring pressure at the control.
c. Spigot nut and sleeve are pushed onto the pipe before flaring. Make sure that the thinner part of the sleeve is facing the spigot nut.
d. Insert the flaring jaw set corresponding with the pipe size into the device.
e. Push the pipe through the flaring die bore hole until it reaches the stop plate. Avoid canting of long pipes by using a pipe support.
f. Press the push-button and hold it down until the flaring process switches off automatically. The red control lamp goes out when the flaring pressure is reached.
g. Release the button – spring force pushes the flaring cone back into its original position.

In dangerous situations or when the machine does not switch off, please use the emergency-off switch.

Working step sequence after flaring:

a. Lift the pipe out of the device with the flaring dies pointing upward.
b. Release the flaring dies by placing them into the milled-in groove of the flaring head and canting the pipe sideways.
c. Check the flare. The flared collar must be in a rectangular and centric position to the sleeve. Check the outer diameter of the flare as demanded by the fittings manufacturer.

5 Maintenance

The maintenance and inspection works listed below have to be carried out within the stipulated time schedules. Any discovered faults must be repaired immediately.

5.1 Safety Precautions



While carrying out jobs concerning operation, adjustment of production capacities, retooling or setting up of the machine and its safety facilities as well as inspection, maintenance and repair, please heed the instructions for switching the machine on or off issued in the operation manual and in the directions for maintenance works!

The machine shall be completely de-activated during maintenance and repair; it must be protected from accidental switching-on.

Make sure to tighten all screwed connections that have been unscrewed during maintenance and upkeep!

If it is necessary to disassemble parts of the panelling for equipping, maintaining or repairing the machine, take care to re-assemble them immediately after maintenance and repair!

The maintenance staff is obliged to read all safety precautions of this Operation Manual carefully before starting maintenance!

Maintenance shall be carried out by employees authorised by the owner only!

5.2 Maintenance

Change the oil after approx. 2000 operating hours. Please use an oil brand according to ISOVG32 (HLP32).
Check the complete hydraulic installation for leaks. Leaks can only be identified and located in frequently cleaned hydraulic systems.
Make sure the hydraulic hoses show no signs of damage. According to DIN 20 066 for evaluating the functionality, the specific period of usage must not exceed six years for a hose line, storing time included. The storing period shall not exceed 2 years. Therefore, replacement of the lines must be carried out in four-yearly intervals.

6 Trouble Shooting

If you have any questions relating to machine problems, please contact our service department.

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You should correct any operational faults the moment they occur in order to avoid greater damage.
Look into the operation manuals of the various unit parts for information on how to detect the source of machine trouble and eliminate it.
If you are having trouble with the control and the electric parts, please call an electrician; he can find the fault with the aid of the circuit diagrams and eliminate it.
The same goes for problems with the hydraulics; please call a specialist to find the error and rectify it.

6.1 Safety Precautions





All repair works bear an increased accident risk!
Disconnect the power plug!

While carrying out jobs concerning operation, adjustment of production capacities, retooling or setting up of the machine and its safety facilities as well as inspection, maintenance and repair, please heed the instructions for switching the machine on or off issued in the operation manual and in the directions for maintenance works!

All security facilities have to be replaced and their functions checked after carrying out any of the works mentioned above!

Wipe away any oil, fuel or cleansing agents from the machine surface, particularly from connections and screw fittings, before starting with maintenance/repair! Never use aggressive cleansing agents! Provide lint-free cleansing cloths!

Make sure to tighten all screwed connections that have been unscrewed during maintenance and upkeep! Never leave tools or maintenance materials lying around in the working area!

6.2 Behaviour during Disturbances

Disturbance	Possible cause	Clearance
The engine is not running	• supply lines are not connected	• check and connect properly, if necessary
	• the socket is dead	• call an electrician
	• emergency-off switch is activated	• de-activate after the emergency situation has been taken care of
	• on-switch is not activated	• switch on

6.3 Feedback

Let us know about any questions, suggestions or criticism you might have about your machine or this documentation:

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Many thanks for your support.