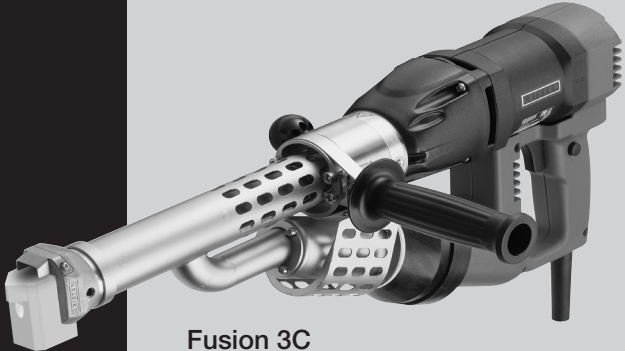
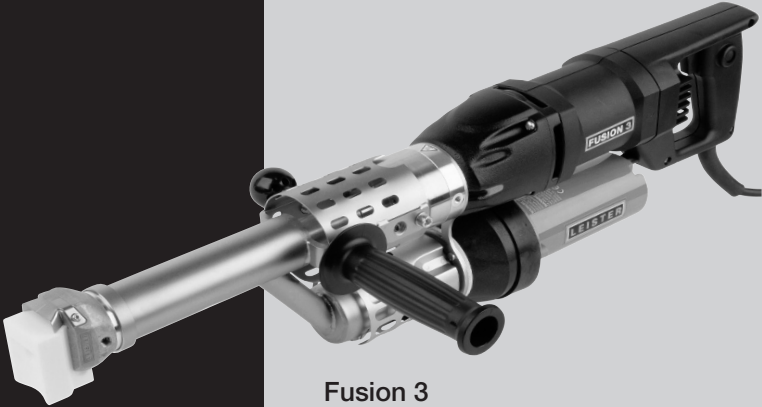


FUSION 2/3C/3



Fusion 3C



Fusion 3



Fusion 2



Please read operating instructions carefully before use and keep for further reference.

Leister FUSION 2/3C/3 Extrusion Welder

Application

Welding PE and PP thermoplastics for applications in

- container engineering
- pipeline construction
- plastic fabrication
- landfill sites and abandoned polluted areas



Warning



DANGER!

Danger when opening up the tool, as live components and connections are exposed. Therefore, before opening it, unplug the tool to ensure disconnection from the mains. Electronically conductive material (eg PE-EL) must not be welded.



Incorrect use of the hand extruder (eg overheating of the material) can present a **fire and explosion hazard**, especially near combustible materials and explosive gases.



Danger – can cause burns! Do not touch bare metal parts and emerging material while hot. Allow the device to cool. Do not direct stream of hot air or emerging material towards people or animals.



Caution



The **voltage rating** stated on the tool must correspond to the mains voltage. If power failure occurs, the hot air blower switch and drive must be switched off (release locking device).



For personal protection on building sites we **strongly recommend** the tool be connected to a **RCCB (Residual Current Circuit Breaker)** .



The tool must be operated **under supervision**. Heat can ignite flammable materials which are not in view. The machine may only be used by **qualified specialists** or under their supervision. Children are not authorized to use this machine.



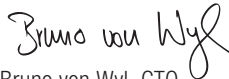
Protect tool from **damp** and **wet**.

Conformity

Leister Technologies AG, Galileo-Strasse 10, CH-6056 Kaegiswil/Switzerland confirms that these products, in the versions as brought into circulation through us, fulfil the requirements of the following EC directives.

EC directive(s): 2006/42, 2011/65, 2014/30, 2014/35
 Harmonized Standards: EN ISO 12100, EN 55014-1, EN 55014-2, EN 61000-6-2, EN 61000-3-2, EN 61000-3-3, EN 62233, EN 60335-1, EN 60335-2-45, EN 50581

Kaegiswil, 31.10.2018


 Bruno von Wyl, CTO


 Christoph Baumgartner, GM

Disposal



Electrical equipment, accessories and packaging should be recycled in an environmentally friendly way. **For EU countries only:** Do not dispose of electrical equipment with household refuse!

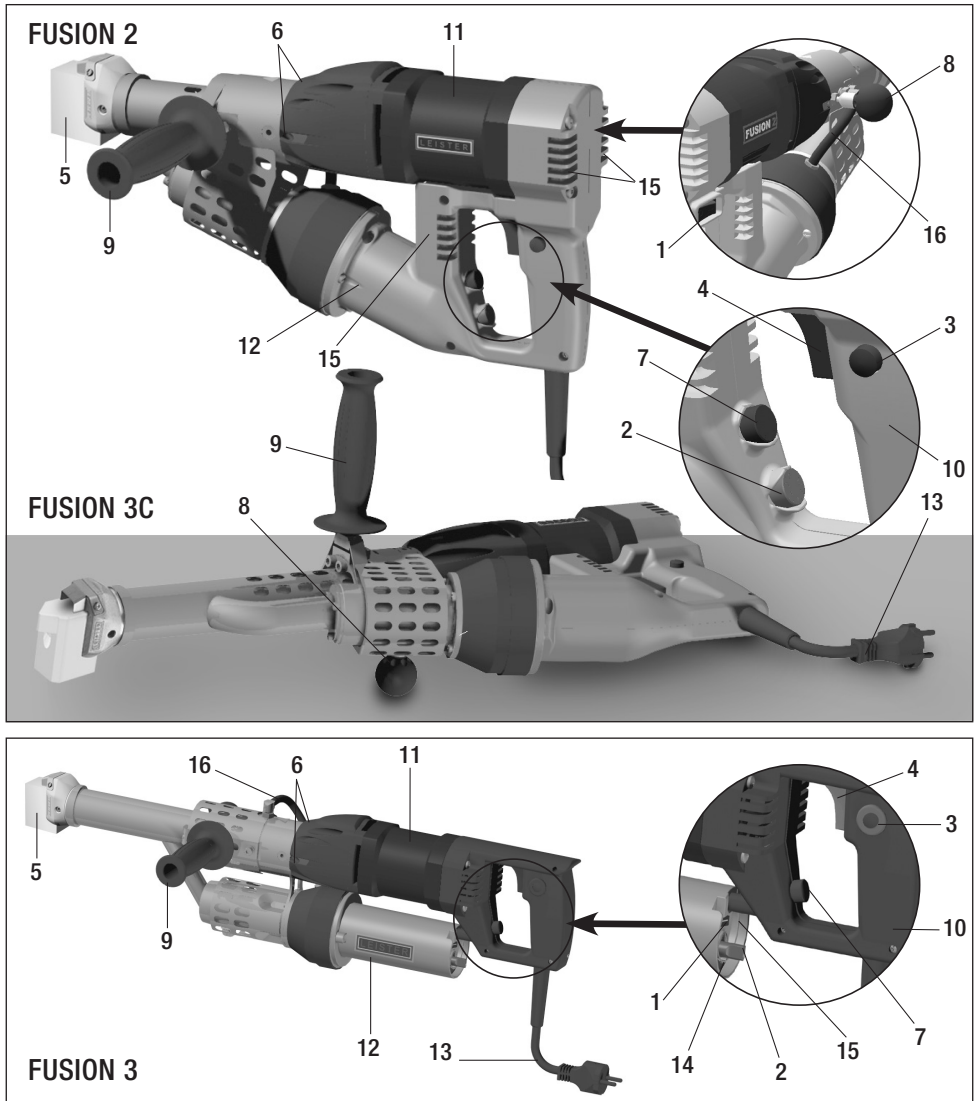
Technical Data

		FUSION 2			FUSION 3C		FUSION 3
Voltage	V~	230	220	120	230	220	230
Mains voltage is not reversible							
Power consumption	W	2800	2600	2800	3200	3000	3500
Frequency	Hz	50/60	60	50/60	50/60	60	50/60
Air flow (20°C)	l/min	ca. 300			ca. 300		ca. 300
Air temperature	°C	max. 340			max. 350		max. 350
Plasticizer temperature	°C	max. 300			max. 320		max. 320
Vibration acceleration	ah (m/s ²)	< 2.5 (K = 1.5 m/s ²)			< 2.5 (K = 1.5 m/s ²)		< 2.5 (K = 1.5 m/s ²)
Size L × W × H (without welding shoe)	mm	450 × 98 × 225			588 × 98 × 225		690 × 98 × 187
Weight	kg	5.9			6.9		7.2
without Power supply cord							
Mark of conformity		CE	CE/ℓ	CE	CE	CE/ℓ	CE
Protection class II		□	□	□	□	□	□

	FUSION 2 Ø 4 mm	FUSION 3C Ø 3 / Ø 4 mm	FUSION 3C Ø 4 / Ø 5 mm	FUSION 3 Ø 3 / Ø 4 mm	FUSION 3 Ø 4 / Ø 5 mm
Welding rod mm (in accordance with DVS 2211)	Ø 4 ± 0.3	Ø 3 / Ø 4 ± 0.3	Ø 4 / Ø 5 ± 0.3	Ø 3 / Ø 4 ± 0.3	Ø 4 / Ø 5 ± 0.3
Ø 3; Welding output [kg/h] (Average values at 50 Hz)		PE 2.0–2.5 PP 1.8–2.3		PE 2.0–2.5 PP 1.8–2.3	
Ø 4; Welding output [kg/h] (Average values at 50 Hz)	PE 1.3–1.8 PP 1.3–1.8	PE 2.7–3.6 PP 2.5–3.4	PE 2.1–2.6 PP 1.8–2.4	PE 2.7–3.6 PP 2.5–3.4	PE 2.1–2.6 PP 1.8–2.4
Ø 5; Welding output [kg/h] (Average values at 50 Hz)			PE 2.7–3.6 PP 2.5–3.4		PE 2.7–3.6 PP 2.5–3.4

Technical data and specifications are subject to change without prior notice.

Description of tool



- | | |
|---|----------------------|
| 1 Hot air blower switch | 10 Tool handle |
| 2 Air temperature potentiometer | 11 Drive unit |
| 3 Locking device drive on/off switch | 12 Hot air blower |
| 4 Drive on/off switch | 13 Power supply cord |
| 5 Welding shoe | 14 Air slide |
| 6 Welding rod opening | 15 Air inlet |
| 7 Extrusion rate regulation potentiometer | 16 Air hose |
| 8 Tool rest | |
| 9 Handle | |

Preparation for welding

- The **tool rest (8)** or **handle (9)** can alternatively be mounted left or right of the tool.
- Before putting into operation, check **power supply cord (13)** and connector as well as extension cable for electrical and mechanical damages.
- When using an extension cable, take care to ensure the minimum cable cross-section:

Length [m]	Minimum cross-section (at ~230V) [mm ²]
up to 19	2.5
20-50	4.0

- Extension cables must be approved for the place of work (e.g. outdoors) and labelled accordingly.
- If a generator is used to supply electricity, the rated power of the generator must be 2x the rated power of the hand extruder.



The hand extruder must not be operated in inflammable environments or where explosion hazards exist. Ensure stable positioning during operation. The connecting cable and the welding rod must remain unimpeded and must not hinder the user or others during operation.

Welding rod



Welding rod, PE / PP Ø 3 or Ø 4 mm

– Only use for the hand extruder without labeling (see picture A).

Welding rod, PE / PP Ø 4 or Ø 5 mm

– Only use for the hand extruder with labeling (see picture B).



Switching on

- Connect the hand extruder to the mains supply.
- Switch on the tool at the **hot air blower switch (1)**.
- Adjust the hot air temperature at the **air temperature potentiometer (2)**.
- The operating temperature is reached after approximately 10 minutes

Starting protection

The tool is equipped with current overload protection. The drive switches off automatically if current consumption is too high. The drive can for example not be started, or only for a brief time, if the material in the screw is insufficiently plastized.

Overheating protection

If the drive overheats as a result of external influences or if the melting temperature of the material in the screw is too low, the internal temperature protection switches off the drive. The overheating protection switches on again automatically once the drive has cooled down.

Starting the welding process

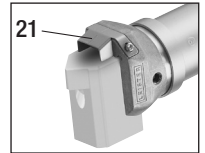
- Fit the required **welding shoe (5)** according to the paragraph „Change of welding shoe” (see page 15).
- Welding can begin once the operating temperature has been attained. Operate the **drive on/off switch (4)** for this purpose. Operate the tool only when feeding welding rod.
- Feed welding rod into the **welding rod opening (6)** (see chapter welding rod) and allow a small amount plasti-zised material to escape.



CAUTION! Never feed welding rod into both welding rod openings at the same time! (see page 13 «Starting protection»).

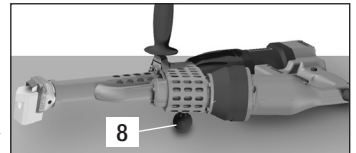
The welding rod fed must therefore be clean and dry.

- The extrusion rate can be changed using the **extrusion rate regulation potentiometer (7)** dependent on the seam geometry and the choice of material.
- Interrupt material extrusion using the **drive on/off switch (4)**.
- Direct the **pre-heating nozzle (21)** to the welding zone.
- Pre-warm the welding zone with back and forth movements.
- Position the tool on the prepared welding zone and operate the **drive on/off switch (4)**.
- Carry out test welding and analyse.
- Adjust the hot air temperature using the **air temperature potentiometer (2)** and the extrusion rate with the **extrusion rate regulation potentiometer (7)** as required.
- In case of a prolonged welding process, the **drive on/off switch (4)** can be held in the active state with the **locking device (3)**.
- The welding rod is pulled in through the **welding rod opening (6)** automatically after starting. The welding rod pull - in must not be impeded.



Switching off

- Release the **locking device (3)** by briefly pressing the **drive on/off switch (4)** and then letting go. Remove welding material from the welding shoe in order to avoid damage on the welding shoe when starting the next time.
- The tool must only be laid down on the **tool rest (8)**.



Use a fireproof base.



The hot air jet must not be directed towards persons and objects.

- The **air temperature potentiometer (2)** to „0“. Let the tool cool down.
- Switch off at the **hot air blower switch (1)**.

Checking the temperature of the extruded material and the pre-heating temperature

- The temperatures of the extruded material and the hot air jet are to be checked at regular intervals when carrying out welding work over an extended period:
Fast display electronic temperature measuring devices with the appropriate temperature probes have to be used. The highest temperature in the hot air jet between the nozzle outlet plane and a depth of 5 mm is to be determined. The measurement probe must be inserted in the welding shoe in the middle of the extruded material to measure its temperature.

Changing the welding shoe

- The welding shoe must only be changed when the tool has attained its operating temperature.



Danger of getting burned!



Work with temperature resistant gloves only.



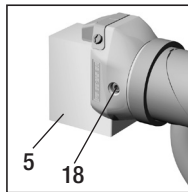
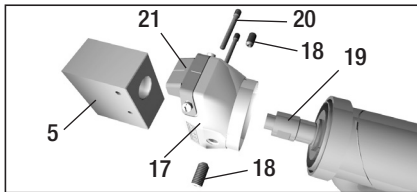
Switch off the hot tool and disconnect it from the mains supply.

• Disassembly

- Remove the **welding shoe (5)** with the **welding shoe holder (17)** by unfastening the **clamp screws (18)** from the **extruder nozzle (19)**.
- Every time the welding shoe is changed, clean the **extruder nozzle (19)** of welding residue and make sure that it is screwed in tightly.
- Remove **welding shoe (5)** from the **welding shoe holder (17)** by unfastening the **fastening screws (20)**.

• Assembly

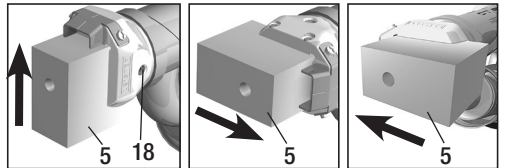
- Fasten a **welding shoe (5)**, appropriate to the welding seam, onto the **welding shoe holder (17)** with **fastening screws (20)**.
- The **welding shoe (5)** and **welding shoe holder (17)** must be tightened properly with the **clamp screws (18)**



- 5 Welding shoe
- 17 Welding shoe holder
- 18 Clamp screws
- 19 Extruder nozzle
- 20 Fastening screw
- 21 Pre - heating nozzle

Welding direction

- The **welding shoe (5)** can be turned infinitely to the desired welding direction by loosening the **clamp screws (18)**.
- The **clamp screws (18)** must be tightened well again afterwards.



Accessoires

- Only Leister accessories must be used.

Maintenance

- In case of soiling clean the **air inlet (15)** on the hot air blower with a brush.
- Clean the **extruder nozzle (19)** each time the welding shoe is replaced and remove any welding deposits (see page 15).
- Check power supply cord and plug for electrical and mechanical damage.
- Regularly clean the **air hose (16)**.

Service and Repairs

- Have the state of the carbon brushes of the drive and hot air blower checked by your service centre after ca. 250 hours of operation. The drive and the hot air blower switch off automatically once the minimum carbon length has been reached.
Operating time; Drive ca. 300 hours (brushes)
 Hot air blowers ca. 1000 hours (brushes)
- Repairs should only be carried out by authorized **Leister Service Centres**. They guarantee a specialised and reliable **Repair Service within 24 hours** using original spare parts in accordance with the circuit diagram and spare parts list.

Warranty

- For this tool, we generally provide a warranty in accordance with the statutory/country-specific regulations from the date of purchase (verified by invoice or delivery document). Damage that has occurred will be corrected by replacement or repair. Heating elements are excluded from this warranty.
- Additional claims shall be excluded, subject to statutory regulations.
- Damage caused by normal wear, overloading or improper handling is excluded from the guarantee.
- Guarantee claims will be rejected for tools that have been altered or changed by the purchaser.



© Copyright by Leister

Your authorised Service Centre is:



Allied Power Tools

12/ 76 Rusdale St, Knoxfield VIC 3180 Australia

T: + 61 3 9764 2911

E: sales@alliedpowertools.com.au

W: www.alliedpowertools.com.au