Operating Instructions

Automatic Wedge Welder
Wedge It ECO

Serial No.:	Typenschild klein

MUNSCH Kunststoff-Schweißtechnik GmbH
Im Staudchen • D-56235 Ransbach-Baumbach
Tel.: +49 (0) 2623 898-80
Fax: +49 (0) 2623 898-85
E-Mail: info-kst@munsch.de
http://munschwelding.com
Firmensitz/Registered Office: Im Staudchen, D-56235 Ransbach-Baumbach
Registergericht/Registration Court: Amtsgericht Montabaur, HRB 3959
Geschäftsführer/Managing Director: Stefan Munsch

Introduction

Wedge It ECO, developed and manufactured by MUNSCH Kunststoff-Schweißtechnik GmbH, is a machine with an own actuator, joining thermoplastic foils and similar materials by heat and pressure. The Wedge It ECO is developed for outdoor use, but may also be used indoor.

Attention

This machine is an electromechanical unit with moveable parts, operated by high pressure. Take care in using the Wedge It Multi, especially the moveable parts (no contact with clothes, hair, bodily parts).
Crushing hazard!!!

Contents

Note: These operating instructions must always be available to the machine operators. Make sure to read them carefully before placing the unit in service.

Very important!

Switch off the heating wedge whenever the unit is out of service for prolonged periods. This will prevent heating up of the machine due to radiating heat. Otherwise some machine components may develop high surface temperatures.
Additional cooling of the heating wedge is not allowed (water, chilling agents or similar).

Technical data:

Voltage	V	***230***
Frequency	HZ	***50/60***
Heating capacity	W	***1500***
Motor rating (brushless)	W	***100***
Temperature	°C (°F)	***Max. 450 (842), infinitely variable***
Max. travel speed	m/min	***4.3, infinitely variable***
Max. welding pressure	N	***1200***
Dimensions LxWxH	mm	***380x300x320***
Weight	kg	***19.5***
Materials		***PE-HD, PE-LD, PE-C,PP, PVC (with stainless steel wedge)***
Material thicknesses	mm (mil)	***0.5-3.0 (20-120)***

Safety

	Danger to life when opening the unit due to exposure to live components. Disconnect the power supply (all poles) before opening the unit. A damaged connecting cable may cause fatal electrical shock. The rated voltage indicated on the unit type tag must match the mains voltage. If required, check with your electric utility.
	Improper use of the welding unit poses a fire and explosion hazard, especially when working in the vicinity of flammable materials and explosive gases. Not suitable for use in explosion hazard areas!!!
	Risk of burns!!! Do not touch the heating wedge when hot. Always allow unit to cool down.
	Protection Class I equipment Connect the unit only to power outlets equipped with a protective conductor. Each interruption of the protective conductor presents a hazard. Only use extension cables with the correct conductor cross-section and a protective conductor.
FI	FI switch required for personal protection.
	Unit may only be operated under observation. Heat may propagate to flammable materials outside the range of vision.
	Protect the unit from moisture and direct rainfall!

Product description

Abb. 1

1 - Actuating lever
2 - Support bracket
3 - Adjusting wheel for fine-jacking force
4 - Locking lever for 3
5 - Locking bolt for actuating lever
6 - Front panel
7 - Adjusting for hot wedge position

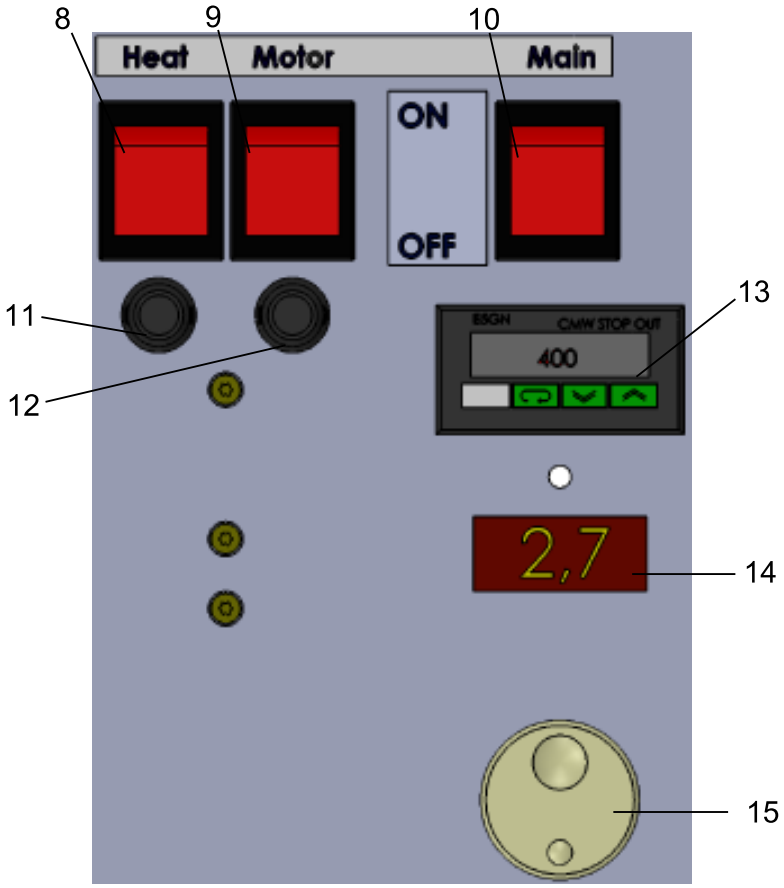


Abb. 2

8 - Switch for heating cartridges
9 - Switch for motor / speed control
10 - Mains switch
11 - Fuse for heating cartridges
12 - Fuse for motor
13 - Temperature control
14 - Display welding speed
15 - Adjustment wheel welding speed

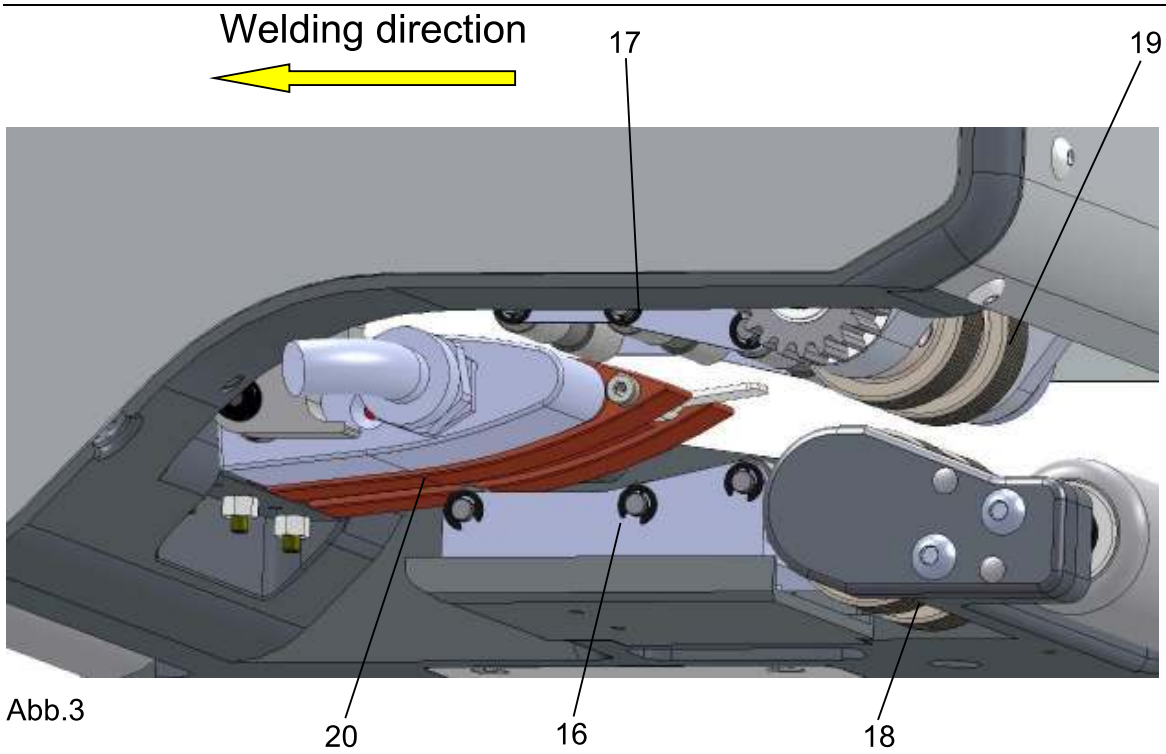


Abb.3

16 - Lower pressure rolls
17 - Upper pressure rolls
18 - Lower actuator roll
19 - Upper actuator roll
20 - Hot wedge

Function

Overlap weld with air channel

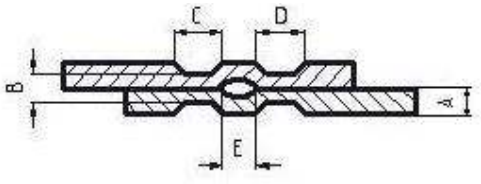


Abb.4

The Wedge It Multi produces an overlap seam with a width of 45 mm (including air channel) at an overlap of approx. 130 mm.

(Other weld widths and welding seams without air channel are possible by using different hot wedges and pressure rolls.)

A: Sheet thickness
B: Thickness of weld seam
C: Part seam 1
D: Part seam 2
E: Air channel

Preparation of the Unit

A special preparation or configuration of the working unit is not absolutely necessary. Only the working temperature and the welding speed have to be adjusted and you have to do a test welding.
The joining pressure is created automatically with a spring packet by the machine.
Take a slat out of the test welding and check it (deep injection, continuity of the welding joint, fracture behaviour). After this test, please adjust temperature and welding speed.

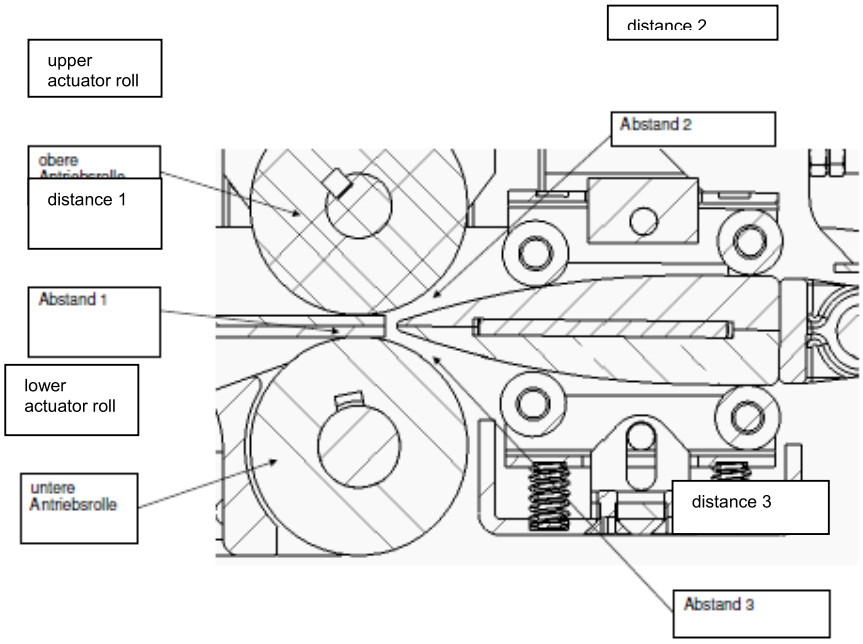


fig. 5

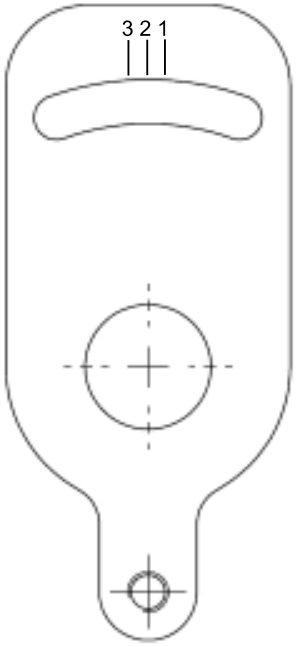


fig. 5a

After changing the material thickness, the distance of the wedge to the actuator rolls has to be checked and adjusted.
Proceed as follows:
Please cut off two stripes of 50mm width and two stripes of 20mm width from the welding material.
Put the 50mm stripes between the rolls (distance 1).
Please make sure, that the material does not project too much into the machine. Otherwise it would get in contact with the wedge. Now close the machine by pushing the actuating lever (pos. 1, fig. 1), until it snaps into the locking bolt. Loosen the screw on the hot wedge positioning (pos. 7). Set the desired thickness of the geomembrane according to the marks on the metal (fig. 5a).
Please check, whether the 20mm stripes now can easily get inserted above and below the hot wedge (distance 2 and 3) and make sure that the wedge does not get into contact with the actuator rolls.

ATTENTION!!!

If the distance between hot wedge and actuator rolls is too high, your welding will be of low quality.
If it is too low, the machine gets too high impact.

NOTE:

Before every welding procedure, check the machine for damages.
Check the actuator rolls and the hot wedge for pollution and remainders.
The welding joint must be clean in the area of the overlapping between the foils as well as above and below the foils.

When operating the unit with power supply from a generator set, make sure that the generating capacity is sufficient.

Attention!!
Never leave the unit unattended and never lay it down for prolonged periods with the heating current activated. This will cause unnecessary heat development and ultimately damage to the machine components.

Attention!!
Never allow the machine to run with the nip rollers locked in place and no material in the machine. This will destroy the nip rollers and the wedge assembly.

Temperature setting

Abb. 6

Please set the desired welding temperature on the temperature controller, using the up and down arrows.

Speed setting

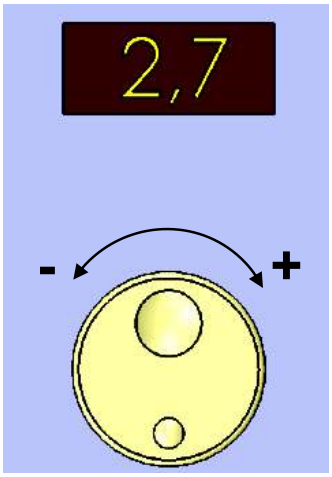


Abb. 7

Please set the desired welding speed (USA: feet/min; Rest meter/min) spinning the adjustment wheel of the speed. Confirm the setting by pushing the wheel shortly.
After reaching the set welding temperature, you can start welding.

Welding

Please put the machine into the geomembranes, start the motor and close the actuating lever. Reopen the actuating lever when reaching the end of the line.

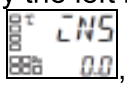
Please put the welding automate on the face looking into the travelling direction, if you stop welding or if you have reached the end of the line, to have a well heat dissipation.

Temperature alignment

If outer temperatures have changed heavily or if you have changed the wedge, it is recommendable, to check the temperature of the wedge.
Please set the desired temperature on the controller and wait until the machine has reached this temperature.
Please take a surface probe and measure the the real temperature of the wedge. Please note down the difference.
Please make a temperature alignment according to following steps.

1. Please hold down the left two buttons of the controller for at least 3 seconds.
2. Please go to Value  , using the second button from the left. Set it to „0“.
3. Please go to Value  , using the second button from the left. Set it to „1“.
4. Please hold down the left two buttons for at least 1 second.

Now all Values of the controller are unlocked!!!

5. Please press shortly the left button.
6. Please go to Value  , using the second button from the left. Change the set value by your noted difference. If the wedge is hotter than the set temperature, please higher the value (first button from the right). If the wedge is cooler than the set temperature, please lower the value (second button from the right).
7. Please press shortly the left button.
8. Please hold down the left two buttons of the controller for at least 3 seconds.
9. Please go to Value  , using the second button from the left. Set it to „2“.
10. Please go to Value  , using the second button from the left. Set it to „2“.
11. Please hold down the left two buttons for at least 1 second.

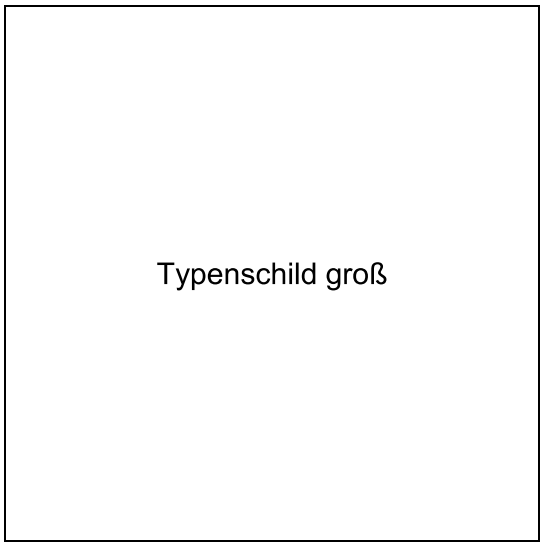
Now you can start welding.

Transport / Storage

The welding automate may only be stored and transported within the delivered transport case. Before packing the machine into its case, it has to cool down to maximum hand temperature.

Service and repair

Repairs shall be carried out exclusively by MUNSCH Kunststoff-Schweißtechnik GmbH or licensed service centres. Any warranties for units which are no longer in the original condition shall be expressly excluded. The units may not be modified and/or changed in any way whatsoever. Any liability for damage resulting from improper use or normal wear and tear of the units shall be excluded.



Date	Operating hours	Type of repair	Carried out by:

EG-Konformitätserklärung des Herstellers
nach der EG-Maschinenrichtlinie 2006/42/EG Anhang II, Nr. 1 A

EC-Declaration of Conformity by the Manufacturer
as defined by machinery directive 2006/42/EC, Annex II, No. 1 A

CE

MUNSCH Kunststoff-Schweißtechnik GmbH
Im Staudchen
D-56235 Ransbach-Baumbach
Deutschland

Mr. Johann Dausenau,
Fa. Kunststoffschweißtechnik GmbH,
is authorised to compile the technical documentation.

We hereby declare that the wedge welders

Machine type:	Wedge welder	Wedge welder	Wedge welder	Wedge welder
Type designation:	WEDGE-IT-MICRO	WEDGE-IT WEDGE-IT-PLUS	WEDGE-IT-LE	WEDGE-IT-MULTI WEDGE-IT-ECO

are in accordance with all relevant provisions of the EC Machinery Directive.

The following harmonised standards (or parts of these standards) were applied:

☒	EU Machinery Directive 2006/42/EC	☒	DIN EN 13732-1: 2008
☒	DIN EN ISO 12100: 2010	☐	

The wedge welders are in accordance with the following EC-directives:

☒	EU Low-Voltage Directive 73/23/EC	☒	EU EMC Directive 89/336/EC
☒	EN 60204-1 (VDE 0113 Part 1): 2011	☒	DIN EN 55014-1: 2012
☒	EN 61029-1 (VDE 0740 Part 500): 2010	☒	DIN EN 55014-2: 2009
☐		☒	EN 61000-4-11:2004
☐		☐	

This industrial tool complies with the aforesaid standards insofar as it is used at the contractually agreed conditions. The operator is responsible for this.

In the event of any modifications to the machine/unit or use not as intended, this declaration becomes invalid unless the manufacturer's prior written approval has expressly been given.

Stefan Munsch

Ransbach-Baumbach, 31.01.2013

Dipl.-Ing. Stefan Munsch
Managing Director