

Floor welding machine type SOLON

OPERATING MANUAL



SECURITY WARNING



Danger to life when opening the tool as live components and connections are exposed. Unplug the tool before opening it.



Danger of fire and explosion in case of incorrect use of the welding machine, especially near combustible materials. Never use the welding machine in hazardous or inflammable areas. Heat can reach combustible materials which are hidden. Do not point the hot air stream onto the same position for a long time.



Danger of burns

Do not touch the hot air tool when it is still hot. Let the tool cool down.



Connect the tool to a socket outlet with protective earth conductor. Any interruption of the protective earth conductor within or outside the tool is dangerous! Use only extension cables with a protective earth conductor!



The mains voltage specified on the device's plate must correspond to the mains voltage. Maintain the maximal allowed impedance $Z_{\max} = 0.301\Omega + j 0,188\Omega$. Consult your local electricity supplier if necessary.



For personal protection, we strongly recommend to connect the tool to a RCCB (Residual Current Circuit Breaker) before using it on construction sites.



The device must be supervised when in operation. The tool must not be used by children or people with limited physically, sensory or mental ability. Children must be supervised to prevent that they play with the tool.



Protect the device from damp and wet!



Danger of crushing.

IN CASE OF EMERGENCY

Unplug the tool.

Leave the danger zone.

Follow the internal rules for emergency cases.

OPERATIONAL SAFETY

The welding machine is manufactured after generally accepted rules of technology.

At the same time, the latest safety standards have been regarded, so that work related risks for life and health of the operating personnel can be eliminated when the machine is used conventionally.

WARRANTY AND LIABILITY

Warranty and liability apply from the date of purchase (documented by the invoice/delivery note) according to the currently valid general terms of business from BAK. BAK refuses to honour any warranty for devices which are not in their original condition. BAK devices may never be reconfigured and/or modified.

BAK reserves the right to deny any responsibility if this is ignored. No liability can be assumed by BAK for incorrect installation and/or use as well as natural wear and tear of components (e.g. heating elements).

Note:

This operating manual must be available to the installation and operating personnel at all times. Read these operating instructions carefully before installing and using the device.

Copyright:

This document must not be disclosed to third parties without the explicit written approval of BAK. Any forms of reproduction or copying and electronic storage are prohibited.

DESCRIPTION OF FUNCTIONS

Heating system:

The hot air temperature is stepless adjustable and electronically controlled. According to the thickness of the material the position of the nozzle can be adjusted stepless.

Welding pressure:

The welding pressure can be changed by addition or reduction of weight.

Drive:

The drive is stepless adjustable and electronically controlled. The control system is designed in a way, that the adjusted speed remains constant, independent from the load.

WARNING

- If the supply cable gets damaged, it has to be replaced by the manufacturer, the service centre or by a qualified person, to avoid danger.
- The tool must not be used by persons with just little experience and/or lacking knowledge. Except when supervised by a qualified and for their safety responsible person or when advised how to use the tool. Children must not use the tool.
- Because of the enormous fire danger the operating personnel must be specially advised and regularly instructed.
- Fire can occur, if the machine is not used carefully.
- Do not leave the device unobserved while it is in operation.
- Demonstrate the necessary caution when operating the device near inflammable materials. Do not operate on the same surface for longer periods of time.
- A fire extinguisher must always be within reach in the work area.
- The device must not be used in explosive atmospheres.
- Heat may reach inflammable materials that are not visible.
- There is a very significant risk of fire when the machine stops because of any disturbance and the hot air device is still running (max. temperature of the air flow 650 °C). Therefore, special attention should be placed on the subsurface and the material to be processed.
- The device bears the protection mark IP20 and must therefore be protected from damp and rain.
- When using the device on roofs and tables, it could fall down due to its automatic drive system. In order to avoid a fall, necessary precautions must be taken.
- Warning: danger of poisoning! While processing thermoplastics or similar material, gases occur which can be aggressive or poisonous. Avoid inhaling fumes even if they seem to be harmless. Make sure the workplace is well ventilated or wear respiratory protection.

SECURITY ADVICE

The following warning symbols show the existent risks:

Risk of crushing



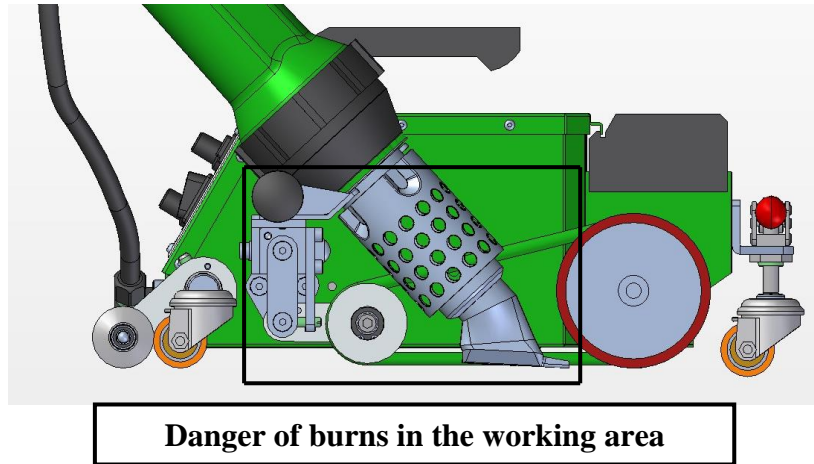
Risk of burns



The operator is responsible for the compliance of the safety related standards. Before starting up of the machine the operator must be instructed to these standards.

DANGER ZONE

The main danger zone of the welding machine is the nozzle which can be heated up to 600°C. It is suggested to wear heat protection gloves. Swivelling in the nozzle can cause crushing.



ADJUSTMENTS BEFORE USE

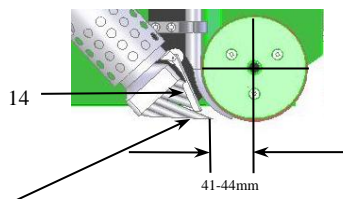
Perform adjustments only in cold condition (danger of burns).

Nozzle adjustment:

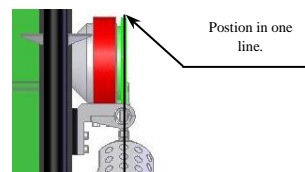
Loosen the screws on the bracket to change adjustments on the nozzle. Only make adjustments on an even ground.

It is possible to swing down the nozzle cover (14) for the preheating of the welding rod when welding sensitive materials – especially fusible wires for linoleum. (Standard – folded up).

See below drawings for the recommended adjustments:

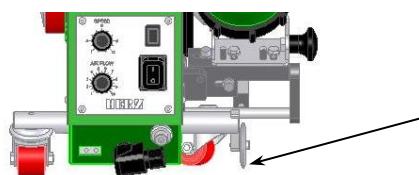


The distance between the first nozzle pipe and the ground should be 1 – 1.5mm.



Guide roller adjustment:

Bring the welding machine into the right welding position.



The guide roller must stand exactly in the cut groove and the pressure roller on the cut groove.

Background for wall switch:

- The background (wall) for the wall switch should always be even, white and not reflective, to eliminate measuring error.
- When the background is transparent a reliable interruption is not possible!

WELDING PARAMETER

Attention: Before the welding make a welding test to find out the welding parameters.

Welding temperature:

Adjust the welding temperature using the potentiometer. Pay attention to the specifications of the manufacturer of the material. Do not start with the welding before the set temperature has been achieved.

Welding speed:

Adjust the welding speed using the potentiometer.

The drive starts automatically when the nozzle is swivelled in.

According to the geomembrane liner or film and climatic influence, adjust the welding speed using the potentiometer.

Welding pressure:

The self-weight of the machine transfers the welding pressure directly onto the pressure roller.

WELDING**Operating condition:**

- Maintain the maximal allowed impedance $Z_{\max} = 0.301\Omega + j 0,188\Omega$. Consult your local electricity board if necessary.
- Check adjustment of the nozzle.
- The main supply must conform to ICE 60364 standard as well as to the national standards.
- Connect the machine to the main supply. The voltage rating stated on the tool should correspond to the mains voltage.
- When using extension cords the minimum diameter of the cable must be observed. Cord length up to 25 m, cord diameter 2.5 mm². (On 120V we recommend cord diameter 4.0mm²).

Welding procedure:

- Adjust the welding parameters.
- The welding temperature has to be reached.
- Position the welding machine on the cut groove and inlay the welding rod.
- Position the guide roller in the cut groove.
- Lower the hot air tool and move to the welding machine. The machine starts automatically.
- Guide the welding machine along the groove. Always watch the position of the guide roller.

- Lower and raise the hot air tool once the wall switch stops the machine.
- Turn off the heat with the switch on the hot air tool and allow the welding nozzle to cool down.
- Switch off the tool with the main switch.

INFORMATION AND ADVICE

The BAK-Group and their authorized Service Centres offer free advice and assistance in your application. Our experts will be pleased to assist you with your problems.

Customer service and orders:

BAK Thermoplastic Welding Technology AG
Industriestrasse 6
CH-6064 Kerns/Switzerland
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E-Mail: info@bak-ag.com

ACCESSORIES

Optimum results will be achieved when BAK- accessories and spare parts are used. Please refer to our brochures for additional information.

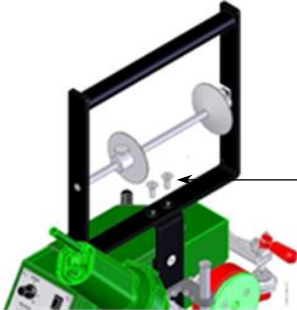
MOUNTING



ATTENTION

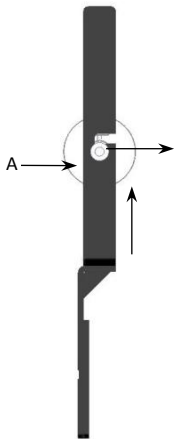
ALWAYS unplug the tool before mounting on the tool.

Mounting of the welding rod support

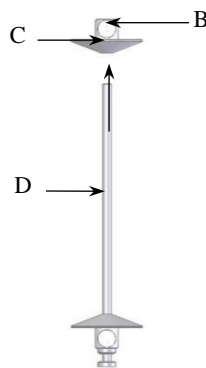


Position the welding rod support and fix it with two enclosed screws.

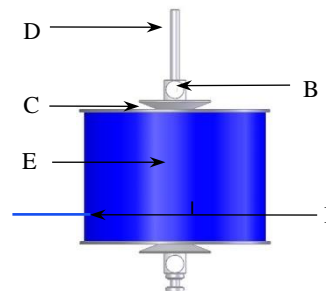
Mounting of the welding rod roll



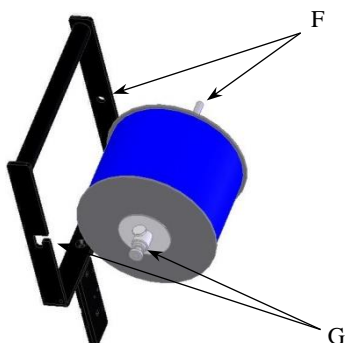
Lift and move the roller support (A) sideways to un hinge it and place it vertically.



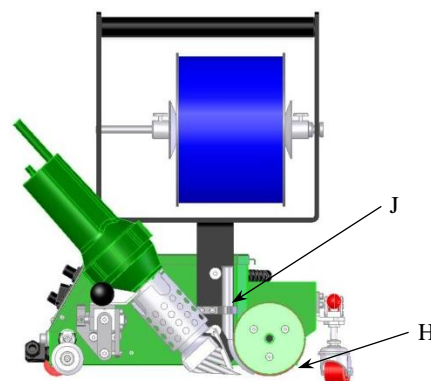
Rotate the knurled screw (B) left to loosen it. Remove the centring (C) from the surge (D).



Place the welding rod roll (E) on the surge (D) and make sure that the loose end of the welding rod (I) is left. Attach the centring (C). Hand-screw the knurled screw (B) by rotating right with light pressure on the centring (C) and the welding rod roll (E).



Place the welding rod support first in the borehole (F) and then hinge it into the holder (G).



Lace the welding rod into the guide pipe (J) and position it underneath the pressure roller (H) before welding.

MAINTENANCE

Clean the wall switch with a brush or a dry towel.



Clean the welding nozzle with a wire brush (5201330)

Check power cable and plug for electrical and mechanical damage.

SERVICE AND REPAIR

The welding machine should be checked by an authorised service centre approx. every 1000 operating hours.

Repairs have to be carried out exclusively by BAK authorised service centres.

SHIPPING

For repairs, please return the device appropriately packed for transport to your next BAK service centre.

Shipping to CUSTOMER ACCOUNT.

Technical modifications reserved. In case of doubt, consultation with BAK is required. Images and drawings may deviate from the original. Changes reserved.

TRANSPORT – HANDLING – STORAGE

Transport:

The welding machine is packed appropriate and must be protected from moisture. We recommend storing the machine in an appropriate transport case.

Handling:

The shipment must be checked if complete and for transport damage. In the event of transport damage, the defect must be confirmed in writing at the time of the delivery by the carrier. The seller must be promptly informed in writing!

Storage:

In the case of temporary storage, the welding machine should be kept packed and must be protected from moisture. In case of damage resulting from improper storage, no warranty claim will be honoured.

DISPOSAL



Power tools, accessories and packaging should be sorted for environmental friendly recycling.

Do not dispose power tools together with household waste!

Only EU countries: According to the European Directive 2002/96/EC on waste electrical and electronic equipment and its incorporation into national law, power tools that are no longer operational must be separately collected and sent to be environmental friendly recycled.

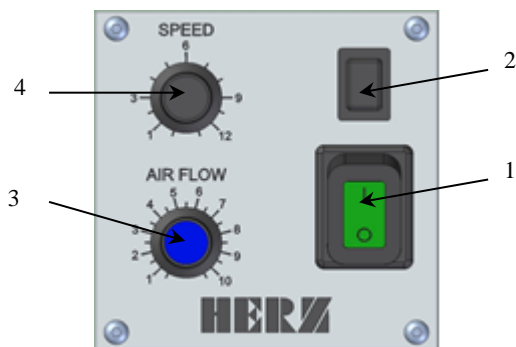
TECHNICAL DATA

Technical Data		SolOn	
Voltage	V	120	230
Frequency	Hz	50/60	
Power consumption	W	2700/3500	
Max. power input	A	22.5/15.0	
Temperature	°C	20 – 600	
Drive	m/min	0.6 – 12.0	
Max- air flow (20°C)	l/min	500	
Noise level (EN ISO 11203)	dB(A)	64	
Dimensions (mounted)	mm (LxBxH)	460 x 360 x 310	
Weight with 5m cable	kg	14	
Protection class	IP20		
CE	CE		
Protection of class 1			

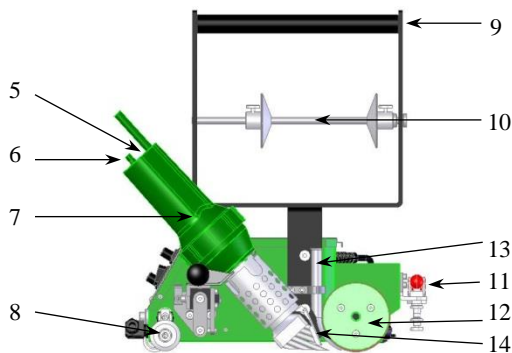
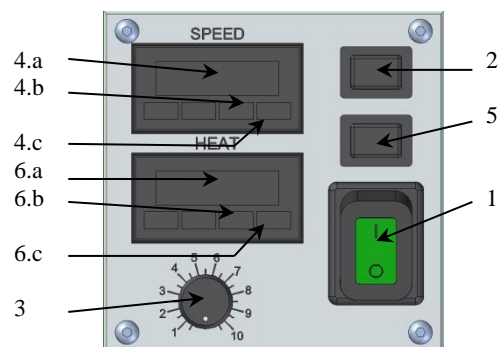
Other voltages on request.

DEVICE DESCRIPTION

Standard operating panel



Digital operating panel

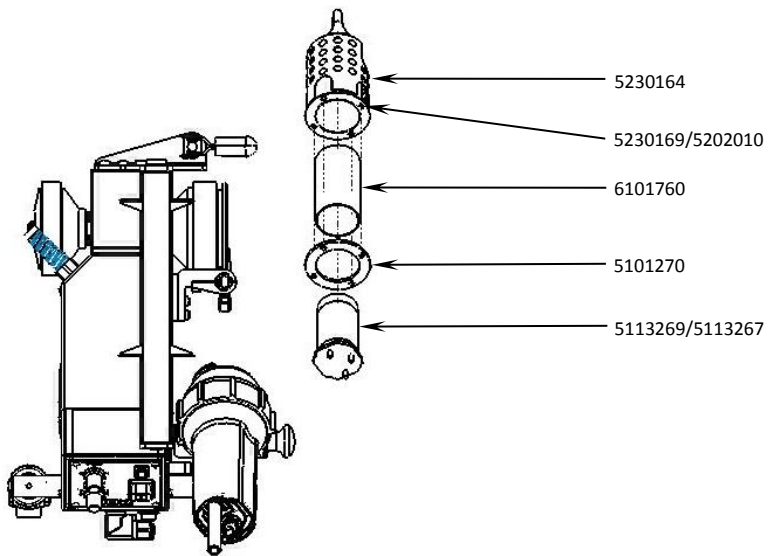


1. Main switch ON / OFF
2. Manual drive ON (only when button is pressed)
3. Air flow adjustment (50-100%)
4. Welding speed adjustment (0,6-12,5m/min)
- 4.a Welding speed adjustment (0,0-12,5m/min)
- 4.b Reduce speed
- 4.c Increase speed
5. Heating On / OFF
6. Welding temperature adjustment
- 6.a Welding temperature adjustment
- 6.b Reduce temperature
- 6.c Increase temperature
7. Hot air system
8. Guide roller
9. Carrying handle
10. Unrolling unit
11. Lifting device
12. Pressure roller
13. Guide pipe welding rod
14. Nozzle cover (only needed when welding hotmelt adhesive for linoleum)
15. Sensor wall switch

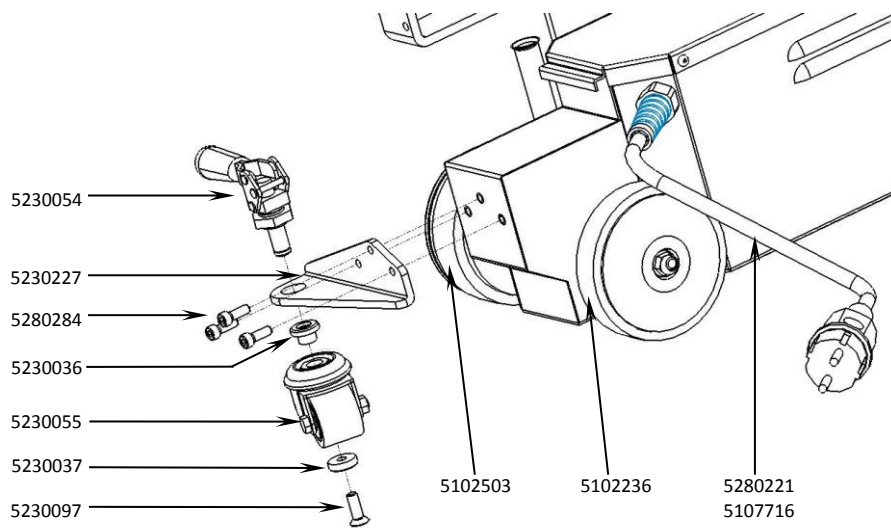
Illustrations and sketches may differ from the original device. Subject to changes without prior notice.

SPARE PARTS DRAWINGS

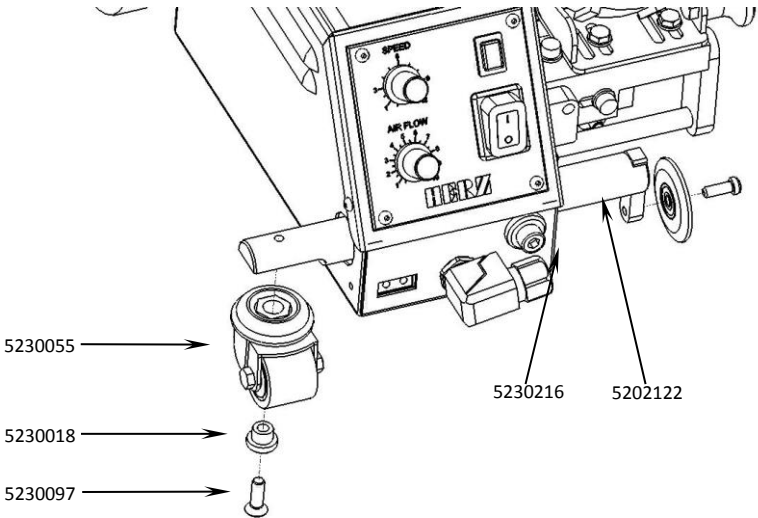
Heating element and nozzle



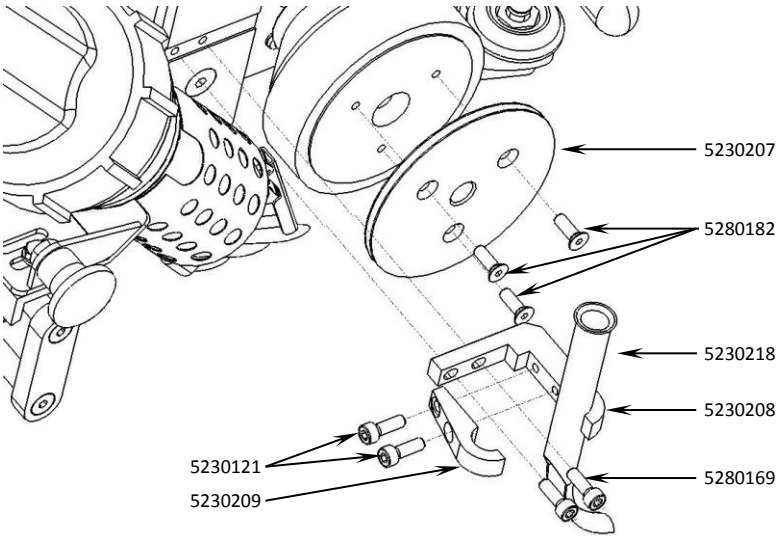
Lifting device



Guide rollers



Pressure roller



SPARE PARTS LIST

Art. no.	Description	Qty.
5230164	Floor welding nozzle Solon	1
5230169	Fillister head screw M4x16TX DIN 7985	3
5202010	Fillister head screw M4x12 Torx	1
6101760	Mica tube $\varnothing=47,6 \times 95$ mm (200/230V) Eron	1
5101270	Gasket (d=70x48x4)	1
5113267	Heating element 120V/1300+1300W with 3 pins	1
5113269	Heating element 230V/1650+1650W with 3 pins	1
5230054	Connecting rod clamp	1
5230227	Fixing angle	1
5280284	Fillister head screw M5x20	3
5230036	Centring connecting rod	1
5230055	Guide roller	2
5230037	Disc Driving rod	1
5230097	Counter sunk screw M6x20 DIN 7991	1
5102503	Silicon rubber ring 82/62x27,9mm	1
5102236	Silicon rubber ring d=82,5x62,5x22mm bottom roller	1
5280221	Power supply cord 3x1,5mm ² (230V) 5m, with Schuko plug	1
5107716	Power supply cord 3x2,5mm ² (120V) 5m, with sleeve	1
5230018	Wheel center bush	1
5230216	Guide roller Solon	1
5202122	Screw M6x16 Torx fillister head with retaining ring and nut	1
5230121	Allen head screw M5x16xDIN 912	2
5230207	Wire guide roller for Solon	1
5230208	Holder part 1 for wire guide solon	
5230209	Holder part 2 for wire guide solon	
5280182	Counter sunk screw M5x20	3
5230218	Wire guide pipe for Solon	1
5280169	Fillister head screw A2 M5x16 LK TX	2