

Wedge welding machine type ProtOn WEDGE

OPERATING MANUAL



SAFETY



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



Danger of fire and explosion if the device is used incorrectly. Demonstrate the necessary caution when using the welding machine near combustible materials. Never use the device in inflammable areas.



Danger of burns

Do not touch the welding device when it is still hot. Let the device cool down.



Connect the device to a ***socket with protective earth conductor***. Any interruption of the protective earth conductor within or outside the device is dangerous! Only use extension cables with protective earth conductor and a minimum diameter of 2.5 mm².



The ***voltage rating*** stated on the nameplate must correspond to the mains voltage.

Consult your local electricity supply board if necessary.



For personal protection, the device must be connected to a ***residual current circuit breaker*** before using it on construction sites.



Do not leave the device unobserved. Heat radiation of the hot wedge device may ignite combustible materials. Heat may reach inflammable materials that are not visible or obvious.

The tool must ***not be used by children*** or people with limited physical, sensory or mental ability. Children must be supervised to prevent that they play with the tool.



Protect the device from damp and wet!

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 of 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.

INTENDED USE

The ProtOn WEDGE is a wedge welding machine for overlap welding and prefabrication of membranes for tunnel- and civil engineering applications.

Overlap	max. 120mm
Type of seam	Welding seams are produced in accordance with DVS 2225 and BAM. Other dimensions of seams are possible on request.

DESCRIPTION OF FUNCTIONS

Heating system:

The wedge temperature is stepless adjustable and electronically controlled.

Welding pressure:

The welding pressure is stepless adjustable and transmitted via a toggle lever to the pressure rollers. The equalisation of the pressure to both welded sections as well as on a welded seam without test channel is guaranteed by the swivel head. This allows T-joints to be welded without problems. During the welding process the pressure adjusts itself linearly to the change in material thickness of the geomembrane liner.

Drive:

The double drive system is stepless adjustable and electronically controlled. Therefore, the speed always stays constant.

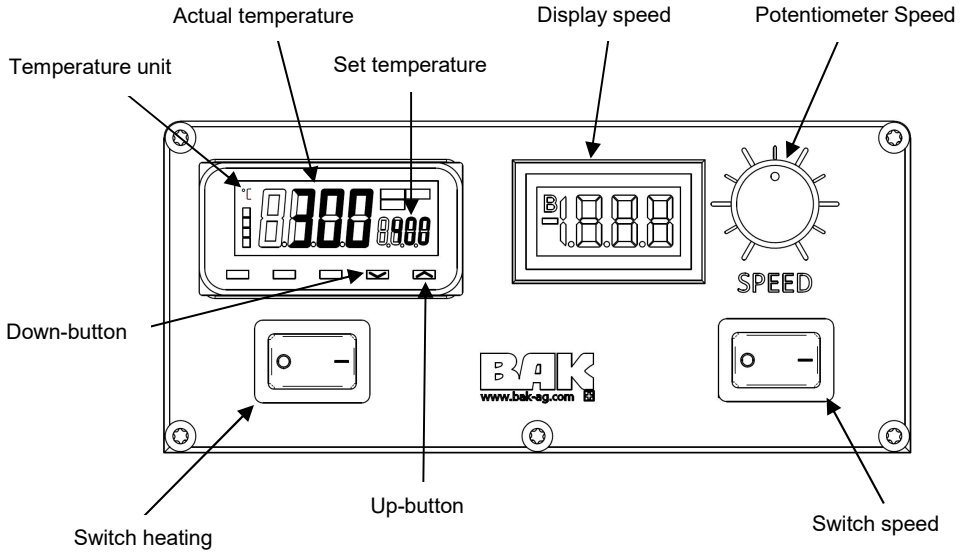
WELDING PARAMETERS

Attention:

Always do a test welding before the welding to find out the parameters.

Welding temperature

Set the welding temperature with the up- and down buttons of the temperature controller. Switch on the heat and let heat up for approx. 5 minutes.

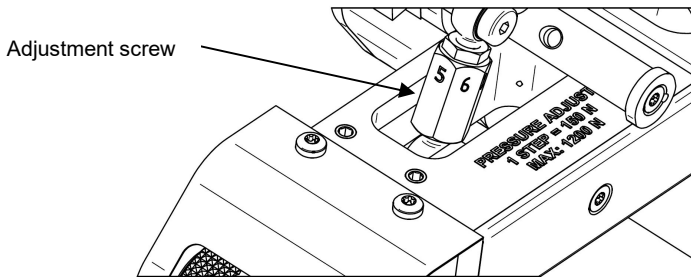


Welding speed

Set the welding speed by the potentiometer on the front panel. The set speed you can see at the drive display.

Welding pressure

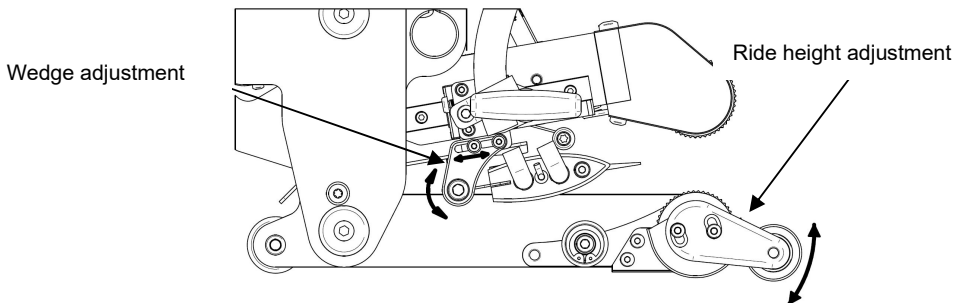
Engage and position the welding machine onto the material to be welded. Pull the toggle lever without slide the wedge to the front. By rotating the adjustment screw the drive/pressure rollers will lightly touch the material to be welded, in this way you will define the point zero N of pressure. Open the toggle lever. Set the desired pressure by rotating the adjustment screw, to every single step of rotation you will set 150N of pressure on seam.



Attention:

If the maximum welding pressure of 1200 N is exceeded, mechanical damages may occur.

The wedge and the ride height can be adjusted if necessary.



WELDING

Welding preparation

- Laying out of the material:
- Width of overlap from 60 to 120 mm
- Make sure that the surfaces of geomembrane liners, above and below, are cleaned, as well as between the overlap
- Mains supply at least 3kW (generator) supplied with an RCCB (Residual Current Circuit Breaker)

Operating conditions

- Do not run the machine if power cord or plug is damaged, damaged power cords must be changed by professional staff
- Connect the tool to the mains
- Start the tool with the main switch

Welding procedure

- Adjust the welding parameters (see page no. 5/6)
- Wait until the wedge has reached the adjusted temperature.
- Guide and position the welding machine onto the overlapped geomembrane liner or film
- Switch on the drive motor with the rocker switch.
- Slide the wedge to the front
- Push down the pressure lever
- Check the welded seam (wash/seam thickness reduction), eventually adjust the welding speed with the potentiometer
- Guide the welding machine along the overlap
- At the end of the welded seam, release the pressure lever
- Slide the wedge back wards
- Switch off device motor

ASSEMBLY

**Attention:**

Always unplug the device before working on it!

MAINTENANCE



- Clean the wedge with a wire brush at the end of welding
- Clean the drive/pressure rollers with a wire brush
- As required, treat the chain with a suitable spray
- After use, always check that the mains cable and plug are not damaged
- Should the mains cable of the tool be damaged, it must be immediately exchanged by the supplier, his customer service or another qualified person to prevent danger.

WARNING

- If the power supply cable gets damaged, it has to be replaced by the manufacturer, its customer service or by a qualified person in order to avoid danger.
- The machine must not be used by personnel (including children) with limited physical, sensory or mental capabilities or lack of experience and/or knowledge, except when supervised by a person who is responsible for their safety or when advised how to use the device by that person.
- Children must be supervised in order to ensure that they do not play with the machine.
- Because of the enormous fire danger, the operating personnel must be specially briefed and regularly instructed.
- Fire can occur if the machine is not used carefully.
- Do not leave the machine 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 machine must not be used in explosive atmospheres.
- Heat may reach inflammable materials that are not readily visible.
- There is a very significant risk of fire when the machine stops because of any disturbance and the hot wedge is still running (max. temperature of the wedge 420 °C). Therefore, special attention should be placed on the subsurface and the material to be processed.
- The welding machine must not be used on inflammable surfaces (e. g. wooden roofs and floors made of wood)
- The machine bears the protection mark IP20 and must therefore be protected from damp and rain.
- When using the machine 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.

SAFETY SYMBOLS AND STANDARDS

Existing risks are pointed out with the following warning symbols:

Risk of crushing	Risk of burns
	

The operator is responsible for the compliance with safety related standards.

Before the machine is commissioned, the operating personnel must be instructed with respect to these standards.

OPERATIONAL SAFETY

The welding machine is manufactured in accordance with the recognised rules of technology. The latest safety standards have been observed to eliminate work related risks to the life and health of the operating personnel when the machine is used in accordance with its intended use.

DANGER ZONE

The main danger zone of the welding machine is the hot wedge which can heat up to temperatures of 420 °C. It is recommended to wear heat protective gloves. There is a risk of crushing when swivelling the wedge.

GPS

A GPS tracker is built in in the automatic welding machine. In connection with the myBAK app it's possible to check where the machine is. Please be aware of the national data security laws in your country and consider those.


SIM

There is a SIM inside of the automatic welding machine. With this SIM the GPS signal is sent to the APP. The SIM has a running time of 10 years or 500MB. If used daily the data volume should be sufficient for approx. 500 working days. BAK can recharge the SIM for a small fee. Please get in touch with your BAK Partner.

MYBAK APP

Download the **myBAK-APP** in the app store from apple or in the google play store or visit the web application **www.mybak-ag.com**. Click on register new user, a form is opening up. Fill out all the blank spaces and confirm with save.

You will receive an e-mail with a link. Please confirm your e-mail by clicking on this link. From now on you can log in with your e-mail address and your password.





Log in


Welcome back. Now get in here !

Email

Password

Log in

  [Register new user](#)



Register new User

Company name

First name

New Password

Email

Last name

Confirm Password

Back **Save**

Under **myMachines** you can manage all your BAK tools that are equipped with a GPS.



Serial number: BAK-Serial number of the machine
 IMEI: IMEI of the built in GPS tracker
 Commissioning: Date of initial startup of your machine

To add a new machine, click on this button



Now fill in the serial number of your machine in the search button and click search.

New Machine

Back **Search**

The wanted machine is shown and can be added with the button link.
Important: Every serial number can only be linked to an account once.

New Machine

156156165189

Serial number
11384819

Commissioning
2020-12-28

Protocol
2020-12-28

Back

Link

myBAK <small>www.bak-ag.com</small>				
Machines				
Machines				
Serial number	ID#	Commissioning	Protocol	Action
2055999	0868450840534255	18.01.2021	18.01.2021	

With a click on symbol you open the map with the last known location of the machine. The machine will send a signal once it's plugged in and has power. After it's turned off it will send a signal for approx. 1-2 hours more.

If you have questions, comments or feedback regarding the app please contact mybak@bak-ag.com

A more detailed manual regarding the app is available upon request.

ASSISTANCE AND SUPPORT

The BAK group and its authorised service centres offer free support and assistance in the area of applications technology. Our specialists will be pleased to help you.

Customer service and orders:

BAK Technology AG
Industriestrasse 6
CH-6064 Kerns/Switzerland
Telefon: (0041) 041 661 22 50
Telefax: (0041) 041 661 22 51
E-Mail: info@bak-ag.com

ACCESSORIES

Get the best results by using BAK-accessories and spare parts. Please refer to our brochures for additional information.

SERVICE AND REPAIR

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

SHIPPING

For repairs, please return the machine 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 appropriately and must be protected from moisture. We recommend the usage of the suitable tool box.

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 the 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 2012/19/EU 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

		ProtOn WEDGE
Voltage	V	230
Frequency	Hz	50/60
Power consumption	W	900
Max. power input	A	4
Temperature	°C	20 – 420
Drive	m/min	0 – 2.5
Dimensions	mm (l x w x h)	370x435x280
Weight with 5 m cable	kg	9.5
Conformity symbol	CE	
Protection type I		
Other voltages on request.		