

Automatic wedge welding machine type COMON

OPERATING MANUAL



SAFETY

**Danger to life**

Unplug the tool before opening it as live components and connections are exposed.



Danger of fire and explosion in case of incorrect use of the hot wedge welder, especially near combustible materials and/or explosive gases.

**Danger of burns**

Do not touch the hot wedge when hot, allow the tool to 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 **voltage rating** stated on the tool should correspond to the mains voltage.



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



Do not leave the tool unobserved. 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!

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.

INTENDED USE

The COMON is an automatic hot wedge welding machine for overlap welding and for manufacturing of films and geomembrane liners in tunnels as well as in earthwork and civil engineering.

Heating system:

The wedge temperature is stepless adjustable and electronically controlled. According to the material thickness the hot wedge position can be adjusted stepless as required.

Welding speed:

A double drive (upper and lower), which is stepless adjustable and electronically controlled. The control system is designed in such a way, that the adjusted speed remains constant independently of the load.

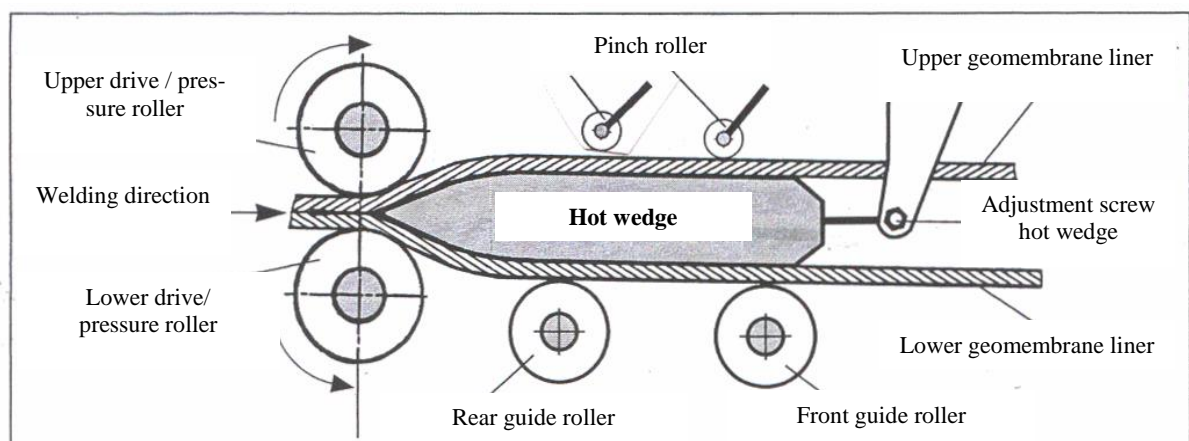
Welding pressure:

The welding pressure is transmitted via a toggle lever to the pressure rollers.

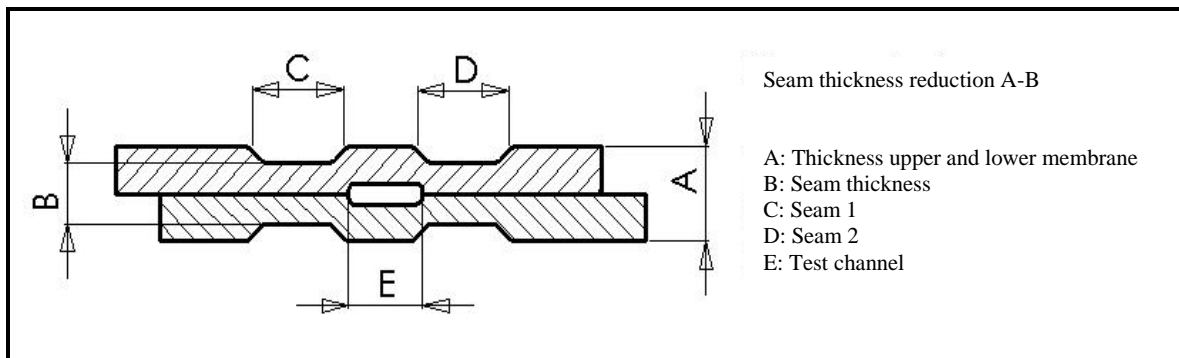
The equalisation of the pressure to both welded sections (L1 and L2) as well as on a welded seam without test channel is guaranteed by the swivel head. This allows T-joints to be welded without problems. During the welding process the pressure adjusts itself linearly to the change in material thickness of the geomembrane liner.

- **Overlap** max. 140mm
- **Type of seam** Welding seams are produced in accordance with DVS 2225 part I. Other dimensions of seams are possible on request.
- **Type of wedge** In standard version the COMON is supplied with a copper wedge for welding of PE and PP, on request it is possible to get it with a universal ceramic wedge for all different kinds of material.

Cutaway model of wedge-drive system:



Cutaway model of a test channel with overlap welding according to DVS 2225



WELDING PARAMETERS

Welding temperature

Set the welding temperature with the UP – DOWN keys of the temperature controller positioned on the left of the front panel. The switch ON - OFF of the heating is positioned under the temperature controller. Do not start to weld before the actual temperature corresponds to the set value. An alarm signal (AL) will be shown in the lower right corner of the display if the actual temperature is lower as the set value; in this case the motor cannot be started or, if in function, will stop automatically.

Welding speed

Set the welding speed by the potentiometer on the front panel, the motor can be switched on and off by the switch near the potentiometer. The speed shown on the display corresponds to the actual welding speed.

Welding pressure

Engage and position the welding tool onto the material to be welded.

Pull the toggle lever without engaging the hot wedge. 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 (0) N of pressure. Unhook the toggle lever for the locking mechanism and open the toggle lever. Set the desired pressure by rotating the adjustment screw, to every single step of rotation you will set 90N of pressure on seam. Then lock the desired pressure with the locking screw.

➔ **If the maximum welding pressure (1400 N) is exceeded, mechanical damages may occur.**

WELDING

Welding preparation

- Laying of material:
 - Width of overlap from 80 to 140 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

- Connect the tool to the mains
- Start the tool with the main switch/level

Welding procedure

- Adjust the welding parameters (see page no. 4)
- 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 foreseen switch.
- Engage the hot wedge onto the overlapped geomembrane liner or film.
- Push down the toggle lever to obtain the blockade.
- Check the welded seam (wash/seam thickness reduction). Eventually adjust the welding speed with the potentiometer.
- Drive / adjust the direction of the welding machine with the guide handle so that the minimum overlap is guaranteed
- 1cm before the end of the welded seam release the pressure lever, pull back the hot wedge and switch off the motor with the switch.

ADJUSTING THE HOT WEDGE

The hot wedge can be adjusted depending on the material thickness.

- By cold wedge, engage the welding machine onto the geomembrane to be welded.
- Engage the wedge onto the geomembrane.
- Lower the pressure lever after the needed pressure has been adjusted.
- Remove the lower part of the chain housing.
- Loosen the hexagon cap screw which is inside the chain housing.
- Loosen the hexagon cap screw of the rear roller guide.
- Adjust the rear roller guide to the correct height. The distance between the rear roller guide and the wedge should be the same like the thickness of material to be welded.
- Tighten the hexagon cap screw of the rear roller guide.
- Loosen the adjustment screw of the wedge. The wedge equalizes automatically to the thickness of the material to be welded.
- Tighten the adjustment screw of the hot wedge.
- Adjust the front guide roller to the correct height. The distance between the inserted material and the front guide roller should be approx. 1mm.
- Tighten the hexagon cap screw in the chain housing keeping blocked the correspondent screw of guide roller.
- Assemble chain guard lower part.
- Unhook the pressure lever and move the wedge back.
- Check that all the screws are well tight and proceed with a welding test.

MAINTENANCE

- Clean the hot wedge with a wire brush (5201330) at the end of a working day.
- 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.

WARNING NOTICE

If you are not using the machine for a longer period of time, switch off the heat. Otherwise, some parts can be heated up to more than 70°C.

Never cool down the wedge with water, cooling spray, etc.

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 Thermoplastic Welding 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.

Further information can be found in our brochures.

SERVICE AND REPAIR

Repairs should only be carried out by authorized BAK service centres. These guarantee a professional and reliable 24-hour repair service with original spare parts. A heating element can be changed by qualified personal.

If the mains connection of the device is damaged, it should be replaced by the manufacturer, from an authorized BAK service centre or a qualified person to avoid danger.

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 appropriately and must be protected from moisture.

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 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		ComOn
Voltage	VAC	230
Frequency	Hz	50 / 60
Power consumption	W	1700
Temperature	°C	20 – 420
Drive	m/min	0.8 – 5.0
Welding pressure	N	1400
Weight	kg	14
Size LxWxH	Mm (LxBxH)	460 x 300 x 330
CE	CE	
Protection of class 1		