ESCHA

BC14

BRAID CUTTING MACHINE

Operating instructions

1. Identification data of the plant

1.1 Manufacturer address

ESCHA GmbH & Co. KG
Elberfelder Straße 32
58553 Halver
Tel.:02353 / 708-800

1.2 Emission sound pressure level / sound power level

- A-weighted emission sound pressure level at the machine:
  LpA ≤ 70 dB(A) (specification according to 1.7.4.2 of annex I of the MRL - 2006/42/EC)

2. General safety instructions

2.1 Information on the operating instructions

These operating instructions provide important information on handling the machine. A prerequisite for safe working is the observance of all specified safety instructions and instructions for action. The braid cutting machine was designed taking into account a risk assessment and, after careful selection of the harmonized standards and other technical specifications. It thus corresponds to the state of the art and enables maximum safety during operation. However, machine safety can only be implemented in operational practice if all measures required for this are taken. It is the duty of care of the operator of the machine to plan these measures and to control their execution.

In addition, the accident prevention regulations and general safety regulations applicable to the area of use of the machine must be observed.
Read the operating instructions carefully before starting any work!
It is a product component and must be kept in the immediate vicinity of the device and accessible to personnel at all times.

2.2 Limitation of liability

All information and notes in this operating manual have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience.
The manufacturer takes over no liability for damages due to:

- Failure to observe the operating instructions
- Non-intended use
- Use of untrained personnel
- Unauthorized modifications
- Technical changes
- Use of non-approved spare parts

2.3 Copyright protection

The operating instructions must be treated confidentially. It is intended exclusively for the use of persons working with the device. The provision of the operating instructions to third parties without the written consent of the manufacturer is not permitted.
NOTICE! The content details, texts, drawings, pictures and other representations are protected by copyright and are subject to the commercial property rights. Any misuse is punishable by law.

2.4 Warranty conditions

The statutory warranty provisions apply.

3. Safety

This section provides an overview of all important safety aspects for a optimal protection of the operating personnel as well as for safe and trouble-free operation.
Failure to comply with the instructions and safety information in this manual may result in considerable hazards.

3.1 Responsibility of the operator

The machine is intended for use in the commercial sector. The operator of the machine is therefore subject to the legal obligations for occupational safety. In addition to the safety instructions in the operating manual, the saftey and accident prevention and environmental protection regulations that apply must be observed.

- The operator must inform himself about the applicable occupational health and safety regulations and, in a risk assessment, additionally determine hazards that result from the special working conditions at the place of use of the machine. He must implement these in the form of operating instructions for the operation of the machine.
- During the entire period of use of the machine, the operator must check whether the operating instructions he has created correspond to the current status of the regulations and adapt them if necessary.
- The operator must clearly regulate and define the responsibilities for installation, operation, maintenance and cleaning.
- The operator must ensure that the shield cutting machine is only used as intended.
- The operator must ensure that only qualified and authorized personnel operate, maintain and repair the machine.
- The operator must ensure that all employees who handle the machine have read and understood the operating instructions.
- In addition, he must train the personnel at regular intervals and inform them about the dangers.
- The operating instructions must be available in a legible condition and complete at the place of use of the machine at all times.

- The operator is responsible for ensuring that the machine is always in technically perfect condition, therefore the following applies:
  - Maintenance must be performed regularly.
  - Defective parts must be replaced immediately.
  - Maintenance personnel must be qualified and authorized.

3.2 Operating personnel

WARNING! Risk of injury due to insufficient qualification!

Improper handling can lead to considerable personal injury and damage to property.
Therefore: Only allow special activities to be carried out by the persons designated in the respective chapters.
If in doubt, consult experts.

The following qualifications for different areas of activity are designated in the operating instructions:
Instructed person was instructed in a briefing by the operator about the tasks assigned to him and possible dangers in case of improper behavior.
Due to their professional training, knowledge and experience as well as knowledge of the relevant regulations, skilled personnel are able to carry out the work assigned to them and to recognize possible hazards independently.

3.3 Personal protective equipment / personal conduct

Do not wear rings, chains and other jewelry.

Operating the machine with jewelry can, under certain circumstances, cause damage to the cutting elements and injuries to the operator if handled incorrectly. Do not eat or drink near the machine. Operating the machine produces small metal particles that can adhere to the hands. Wash your hands after using the machine!
Do not use compressed air in the vicinity of the machine, metal particles could be thrown into the air.

3.4 Special hazards

The following section identifies the residual risks that have arisen as a result of the risk assessment.
The safety instructions listed here and the warnings in the other chapters of this manual must be observed in order to reduce health hazards and avoid dangerous situations.

Electric current

DANGER! Danger to life due to electric current!

There is an immediate danger to life when touching live parts.
Damage to the insulation or individual components can be life-threatening. Therefore:

- If the insulation is damaged, switch off the power supply immediately, disconnect the mains plug and arrange for repair.
- Do not open covers during operation.
- Work on the electrical system / components may only be carried out by qualified electricians.
- Whenever working on the electrical system / electrical components, disconnect them from the power supply / pull out the mains plug and check that they are voltage-free.

Cutting hazard

WARNING! Risk of injury from moving components!

Rotating components can cause serious injuries.
In particular, this can occur if the machine is not used as intended due to defects in the cutting unit. Therefore:

- Only operate the machine with the cables / materials described in the intended use.
- Ensure max. gap dimensions between the cutting elements.
- Do not remove the cutting plate during operation.
- Observe the stopping time: Before removing the cutting plate, make sure that no more parts are moving, disconnect the power plug.

WARNING! Danger due to uncontrolled restart!

Uncontrolled restarting can lead to serious personal injury! Therefore:

- Before switching on again, make sure that the cause of the standstill has been eliminated, all machine elements are mounted and in working order.

3.5 Safety measures during normal operation

The machine may only be operated by persons trained and authorized to do so, knowing the operating instructions and can work accordingly!

Before commissioning, check whether all machine elements attached to the machine at the factory are installed and functional. The machine may only be used as intended. Before use, check for visible damage and ensure that it is only operated in perfect condition! Report any defects found to the supervisor immediately!

3.6 Safety measures during maintenance and servicing

DANGER! Maintenance work, repairs and troubleshooting, as well as cleaning
of the machine during operation are generally prohibited. Maintenance: Moving parts such as cutting elements must be oiled with fine-mechanical oil (e.g. sewing machine oil) daily before starting work. The remaining parts are maintenance-free.

Cleaning: The machine may be cleaned with the help of a damp cloth. Avoid water coming into contact with the electrical parts. Do not use cleaning agents containing solvents for cleaning. Do not use compressed air for cleaning! Use protective goggles!

Danger of electric shock

Repair work may only be carried out when the machine is disconnected from the power supply.
For this purpose, the mains plug must be pulled out and secured.

3.7 Working on the electrical equipment
Repair work on electrical equipment of the machine may only be carried out by a trained electrician!
Check electrical equipment regularly!
Reattach loose connections!
Replace damaged lines / cables immediately!

4. Product description
4.1 Intended use
Operational safety is only guaranteed if the device is used as intended. The following application is considered to be intended use:
Cutting the braided shield of stripped cables under the following parameters:
- stripped cables
- Shield material / shield thickness: copper with Ø 0.2 mmD
- Diameter above braid: max. Ø 14 mm
- max. gap between the cutting elements: 0.01 mm
- Power supply parameters: 30 V / 1200 mA

4.2 Inadmissible use
Any use that is not explicitly listed under the intended use is considered to be unauthorized use. Improper use may result in hazards to personnel and also invalidates the manufacturer's declaration of conformity.
An improper use is, for example:
- Use of defective or damaged machine elements (e.g. broken out cutting teeth in the cutting elements)
- Machining of materials other than described
- Removal or manipulation of covers
- Operation with larger gap dimension between the cutting elements than the defined gap dimension
- Cutting insulated cables / insulation
- Operation in case of damage to cables, cords
- Operation with open electric motor housing
- Operation with a power supply unit of different ratings
- Unauthorized conversions and modifications

5. Transport / Installation
5.1 Safety
Personal Protective Equipment - The following protective equipment should be worn during all transportation operations: safety shoes

5.2 Transport and operating environment / installation area
The following mounting and connection equipment must be available at the installation site:
- 230V power connection with 16 amp fuse protection.
- Place the machine on a level surface and unpack it. A workbench or an appropriately stable base frame / work table is suitable for setting up the machine. Make sure that sufficient storage space remains in front of the machine.

Caution! Danger of crushing when lifting and setting down.
When transporting the already unpacked machine, avoid jerky movements (knocks) - Risk of damage to electronic and mechanical parts.

Appropriate illumination of the work area must be provided. There should be a minimum illuminance of 500 lux.

To eliminate the dangers of tripping:
Lay all machine connections (connection cables) in such a way that they do not cause any tripping hazards
(cable ducts, bridges, table feedthroughs, etc.)!

6. Installation and commissioning
6.1 Safety
Personnel
Installation and commissioning may only be carried out by qualified personnel.

Personal protective equipment
The following personal protective equipment should be worn during all installation and commissioning work:
- Safety shoes

6.2 Electrical installation
DANGER! The machine may only be connected electrically by trained personnel.

7. Working in accordance with safety regulations

In general, it is forbidden to remove protective devices or make them ineffective.
Caution: Danger of cutting if not used as intended, if defective cutting elements are used, etc.

Tight-fitting work clothing must be worn when working on the machine. Furthermore, protective goggles or a protective screen should be used.

- Do not wear rings, chains and other jewelry.
- Operating the machine with jewelry can, under certain circumstances, cause damage to the cutting elements if handled incorrectly.

Basically, the machine must be placed on a flat surface in such a way that it cannot fall off due to bumping, shifting, etc.

Appropriate illumination of the work area must be ensured. There should be a minimum illuminance of 500 lux.

In principle, the following working conditions - based on the various hazards - must be observed by operating and maintenance personnel when carrying out their respective work:

- When the machine is operated by operating personnel, no maintenance / maintenance work, etc. may be carried out.
- During maintenance / servicing work on the machine, etc., it must not be operated by operating personnel.

7.1 Troubleshooting, fault rectification

For troubleshooting, the machine must be switched off, possibly (depending on the fault / malfunction) the electrical supply must be switched off before starting and secured against being switched on again. Secure by pulling out the mains plug.

- Work on electrical systems / components may only be carried out by qualified electricians.
- Troubleshooting, etc. may only be performed by trained and authorized personnel.
- Rectification of the fault in compliance with all safety regulations.

7.2 Possible error sources, causes and their elimination

Motor standstill due to increased friction of the cutting elements (overheating protection):

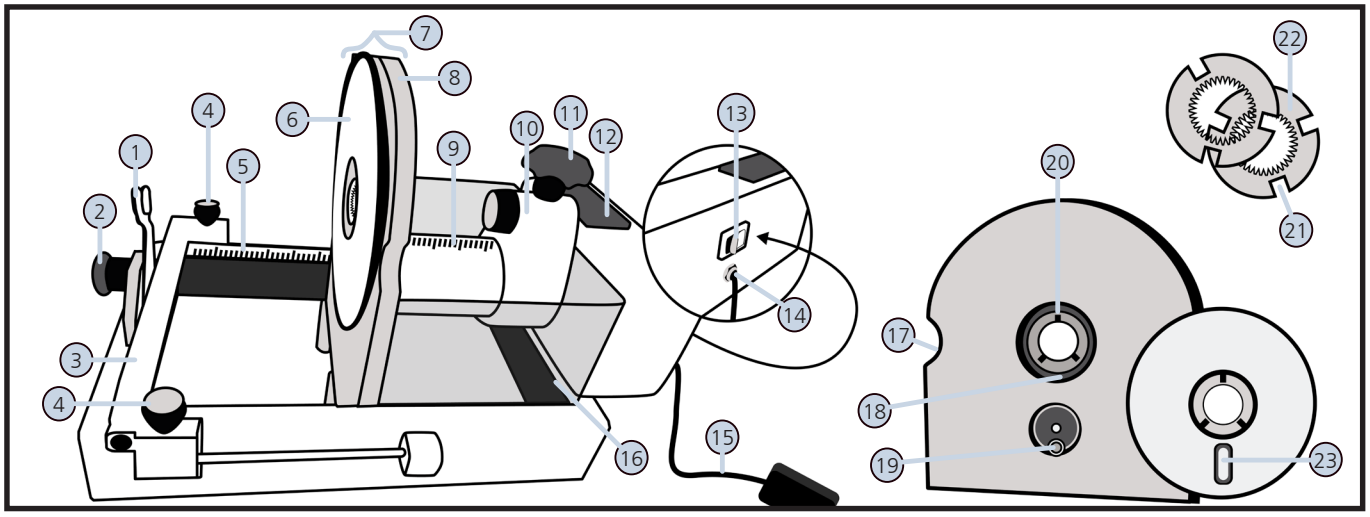
- Switching off the machine via the on / off switch
- Disconnect the machine from the mains by pulling out the mains plug / motor connection plug
- Carrying out knife cleaning (see Cleaning the machine)
- Clean and oil the contact surfaces of the cutting elements (see Cleaning the knife block)
- Oiling the cutting side of a knife with a drop of fine mechanical oil

After the machine has been cleaned and the engine has cooled down again, the machine should be ready for use again.

In case of failure / defect of the motor, contact the manufacturer of the machine. Shielding braid is not cut off correctly:

- Switching off the machine via the on / off switch
- Disconnect the machine from the mains by pulling out the mains plug / motor connection plug
- Carry out knife cleaning (see point 8.2 Cleaning the machine)
- Checking the cutting teeth in the cutting elements for „completeness, „breakage“, or similar
- Possibly replace the cutting elements if the cutting teeth are defective

8. Application



1	Cable rest	9	Linear guidance / scale rear	17	Grip recess
2	Locking bolt	10	Length stop at the rear	18	Ball bearing
3	Front length stop	11	Fixing screw	19	Cam of eccentric bearing
4	Knurled screw	12	Operating hours meter	20	Drive bars
5	Linear guide / scaling in front	13	On / Off switch	21	Knife grooves
6	Movable cutting unit	14	DC - socket 2.1mm	22	Knives
7	Cutting unit	15	Power supply	23	Eccentric guide
8	Static cutting unit	16	Waste basin		

8.1 Operation

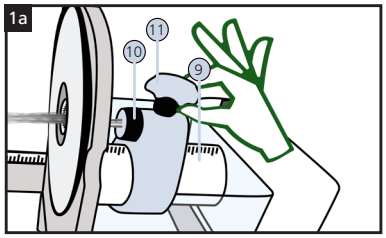
With the help of the braid cutting machine, copper shields of cables can be shortened to a requested dimension.

There are two possibilities.
On the one hand, the length of the shielding braid to be cut can be defined (see „Shield processing with rear stop **(4)**").

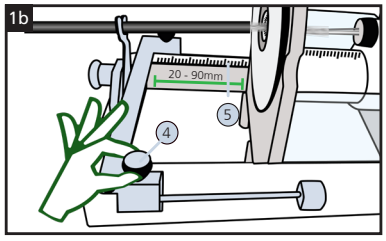
On the other hand, you can define the length of the braided screen that is to remain (see „Shield processing with front stop **(10)**").

In general, the following parameters must be observed:

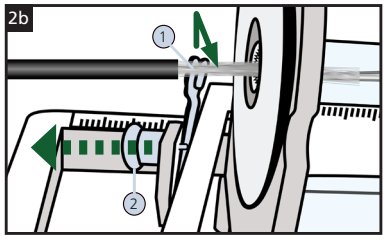
- Shielding braid must be exposed
- Shielding material: (tinned) copper
- Shield thickness: max. Ø 0.2mm
- Diameter above shielding braid: max. Ø 14mm



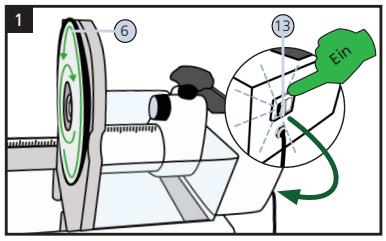
Shield processing with rear stop (4)
The length of the braided screen to be cut off is determined by the the length stop **(10)**. The corresponding dimension is set on the scale **(9)**. For adjustment use the back of the length stop, which is fixed with the fixing screw **(11)**. The maximum length can be 50mm.



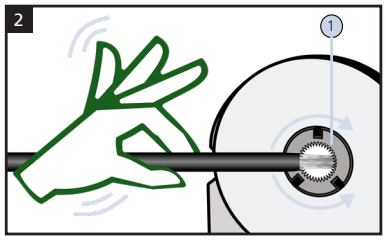
Shield processing with front stop (10)
The scaling **(5)** on the front linear guide defines the length of the remaining braided shield (range 20 to 90mm). The length is set between the end of the jacket and the end of the braided shield. For adjustment, the back of the length stop is used, which is to be fixed by means of the two knurled screws **(4)**.



The cable support **(1)** is held in the working position by a locking bolt **(2)**. By pulling the locking bolt, the cable support can be swivelled to the side when not in use.

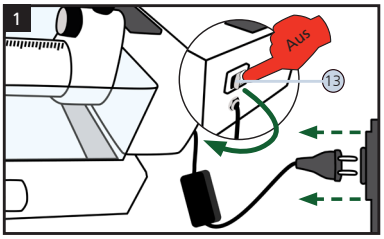


Cutting the braided screen
The motor is switched on via the on/off switch **(13)**. The movable cutting element **(6)** starts to oscillate/vibrate.



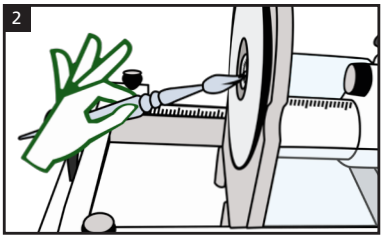
To cut the shield, guide the stripped cable through the cutting elements **(7)** up to the stop **(10)**. By moving the cable with slight pressure (clockwise and anticlockwise) along the inside blades, the braided shield is cut.

8.2 Cleaning

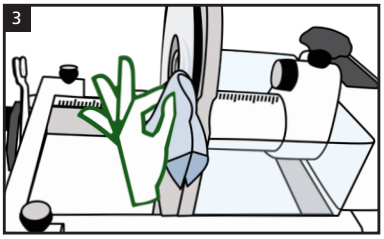


Daily cleaning

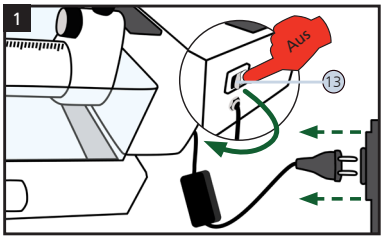
After using the machine, it must be switched off **(13)** and disconnect it from the mains supply.



Now clean the machine using a commercially available brush. Pay special attention to the spaces between the blades and all other moving parts. Make sure to clean both cutting elements thoroughly.

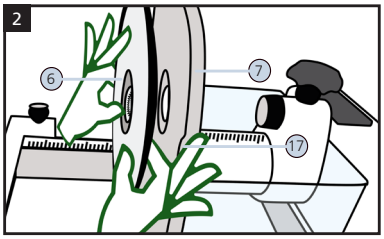


If necessary, the machine can also be cleaned with a damp cloth. Push the movable stops on the guide backwards and tilt the complete unit forwards to transport the shield braids to one side of the collection tray. Remove the braid residues from the collection tray using a hoover.

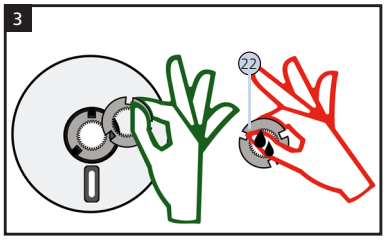


Cleaning the blade block (at least once a week)

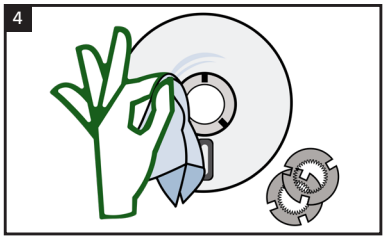
Switch the machine off using the on/off switch **(8)** and disconnect it from the mains.



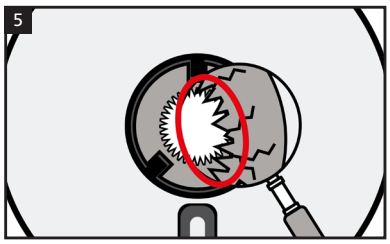
Remove the movable cutting element **(6)** of the knife block from the cutting unit **(7)** by pulling it slightly in the area of the recessed grips **(17)**.



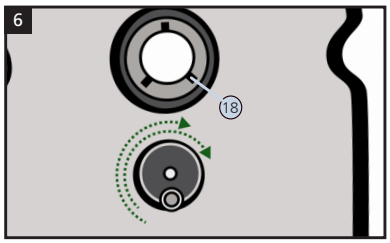
Remove the knives **(22)** from the cutting elements **(CAUTION: danger of cutting)**.



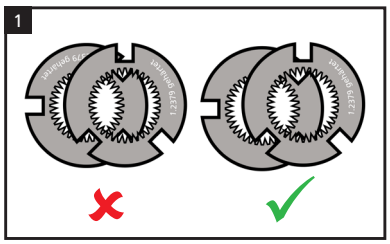
Clean the contact surfaces of the cutting unit and the blades with a clean, lint-free cloth.



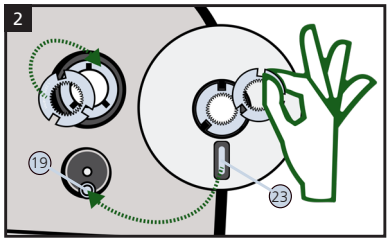
Check the knives for damages. If necessary, defective knives should be replaced.
Spare part no. 8078856.



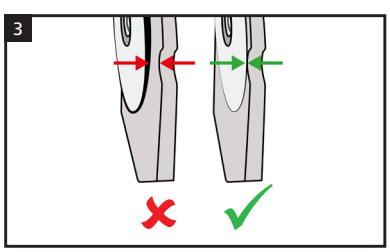
Turn the inner ring of the ball bearing **(18)** several times, to build up an even lubricating film.



Assembly after cleaning
Position one knife each in the recess of the two cutting elements. The three grooves of the knives **(21)** engage in the respective driver bars **(20)**. The flat (unlabelled) backs of the knives face each other.



The backs of the knives should be moistened with precision mechanic's oil. Now join the two cutting elements together. Make sure that there are no foreign bodies between the surfaces **(ATTENTION: danger of crushing)**. The eccentric guide **(23)** of the running disc must be positioned over the cam **(19)** of the eccentric bearing. It is recommended to set the centring cam to approx. 6 o'clock.



The cutting elements should be mounted with as few gaps as possible between them. mounted to each other.

9. Maintenance

9.1 Safety

- Maintenance and repair work may only be carried out by specially trained personnel.
- Work on electrical systems / components may only be carried out by qualified electricians.
- Any covers removed for maintenance and servicing purposes must be refastened after the work has been completed. The protective effect must be checked accordingly.
- The maximum gap dimension between the cutting elements of 0.01 mm must be ensured.

Personal protective equipment

This protective equipment should be worn during all maintenance and servicing work:

- Safety shoes

Electrical system

DANGER! Danger to life due to electric current!

There is a danger to life in the event of contact with live components. Switched on electrical components can perform uncontrolled movements and lead to severe injuries.

- Before starting work, switch off the electrical supply / disconnect the power plug and secure it against being switched on again.

To eliminate the risk of tripping:

Lay all machine connections (connection cables) so that they do not cause any tripping hazards! (Cable ducts, bridges, table feedthroughs, etc.)

9.2 General maintenance

At least once a year:

- Check power cable, power supply unit, power plug, etc. for damage and replace if defective.
- All connections must be checked for tightness and retightened if necessary.
- Adhering dirt must be removed carefully.
- If severe wear is detected, replace the appropriate parts.

10. Disposal

The BC 14 Braid cutting machine must be disposed of in accordance with the applicable guidelines and regulations (as per the Electrical and Electronic Equipment Act (ElektroG)) at the end of its service / use life.

Observe environmental protection regulations

During all work on and with the device, the legal obligations for waste avoidance and proper recycling / disposal must be complied with.

Especially during installation, repair and maintenance work, water-polluting substances such as:

- Greases and oils
- Cleaning liquids containing solvents

must not contaminate the soil or enter the sewage system!

These substances must be stored, transported, collected in suitable containers and be disposed of!

11. Take-back obligation

Customer information on the take-back of waste electrical equipment.

Simply send us an e-mail to returns@escha.net. Please let us know which item(s) it is, how much weight, what size your return will have and where we may pick up the shipment. Please provide us with the return in a transportable form.

Upon receipt of your return request, we will instruct a transport service provider of our choice to pick up the shipment from you, which will complete the process for you once the pickup has been made.

12. Declaration of conformity

We hereby declare,

ESCHA GmbH & Co KG., Elberfelder Straße 32 58553 Halver, Germany

that the machine described below

Braid cutting machine BC 14

complies with the basic safety and health requirements of the following EC directives due to its design and construction in the version placed on the market by us:

Machinery Directive	2006/42/EC
EMC Directive	2004/108/EC
RoHS Directive	2011/65/EU

If the machine is modified in a way not agreed with us, this EU declaration of conformity loses its validity.

The declaration of conformity was issued on 28.09.2023

Compliance Officer Quality
Management Representative

i.V. Achim Rudack