



EcoCut 3200

Automatic Cutting Machine

Reference Manual

Software Version 1.0x | Edition 5.0 (10-2013)

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TABLE OF CONTENTS

1	GENERAL	9
1.1	MANUFACTURER	9
1.2	MANUFACTURING DATE / PRODUCT TYPE	9
1.3	INFORMATION ABOUT THE OPERATOR'S HANDBOOK	9
1.3.1	Contents of the manual	9
1.3.2	Depository	10
1.3.3	Responsibilities	10
1.4	GENERAL SYMBOLS AND LEGEND	10
1.4.1	References and hints	10
1.4.2	Legend	11
1.5	DECLARATION OF CONFORMITY	11
1.6	LIMITATION OF LIABILITY	11
1.7	WARRANTY STATEMENTS AND POLICIES	11
1.8	COPYRIGHT PROTECTION	11
1.8.1	Trademarks	11
1.9	SPARE PARTS	12
2	SAFETY	13
2.1	WARNING NOTICES	13
2.2	GENERAL SAFETY NOTES	13
2.3	SOURCES OF DANGER / RISKS	13
2.4	INTENDED USAGE OF PRODUCT	14
2.5	SAFETY SYMBOLS	14
2.5.1	Safety symbols used in manual	14
2.5.2	Safety symbols on the product	15
2.6	MODIFICATION AND RETROFITTING	15
2.7	PERSONNEL QUALIFICATION	15
2.7.1	Personnel classification	15
2.8	PERSONAL PROTECTIVE EQUIPMENT	15
2.8.1	Eye protection	16
2.8.2	Protective clothes	16
2.8.3	Safety shoes	16
2.8.4	Snood-type cap or safety cover	16
2.9	SAFETY INSTALLATIONS	16
3	TRANSPORT / PACKAGING / STORAGE	17
3.1	TRANSPORT INSPECTION	17
3.2	UNPACKING / LOADING	17
3.3	PACKAGING	17
3.3.1	The packaging	17
3.3.2	Handling packaging material	17

3.4	INTERNAL TRANSPORTATION	18
3.5	STORAGE	18
4	PRODUCT SPECIFICATIONS	19
4.1	DIMENSIONS / WEIGHT	19
4.2	TECHNICAL SPECIFICATIONS	19
4.3	REQUIREMENTS ON THE INSTALLATION LOCATION	20
4.4	RATING PLATE	20
5	PRODUCT DESCRIPTION	23
5.1	CONCEPT	23
5.2	FRONT ELEMENTS	23
5.2.1	Operator panel	24
5.2.2	Safety cover	24
5.2.3	Roller lever	24
5.2.4	Universal wire guide	24
5.2.5	Tube- / wire cutter head	24
5.2.6	Safety switch	24
5.2.7	Wire end switch	24
5.2.8	Gap setting wheel	25
5.3	REAR / CONNECTORS	25
5.3.1	Postfeed interface (PPI, option)	25
5.3.2	RS 232 interface	26
5.3.3	HS/PF (HotStamp/Prefeeder) interface	26
5.3.4	Rating plate	26
5.3.5	Power connection	26
5.3.6	Main power switch	26
5.3.7	Fuse holder	26
5.3.8	Pedal connector	26
5.4	DANGEROUS ZONES ON THE MACHINE	26
5.4.1	Safety marking	27
5.4.2	Danger zones operating area	27
5.4.3	Danger zones rear	28
6	INSTALLATION / FIRST COMMISSIONING	29
6.1	SAFETY INSTRUCTIONS	29
6.2	POSITIONING / PUTTING INTO OPERATION	29
6.2.1	Unpacking and setting up	29
6.2.2	Setting the measuring unit and the menu language	29
7	GENERAL HANDLING / OPERATION	31
7.1	GENERAL TOPICS FOR THE OPERATION	31
7.2	SWITCHING ON	31
7.3	SWITCH OFF	31
7.4	SETUP	31
7.4.1	Loading wire	31
7.4.2	Exchange tube- /wire cutter head	32

7.4.3	Exchanging the guide of the tube cutter head	34
7.5	WORK TO BE DONE AFTER OPERATION	34
7.5.1	General maintenance	34
7.5.2	Additional maintenance work	34
8	OPERATION OF THE CONTROL SOFTWARE	35
8.1	OVERVIEW OPERATOR PANEL	35
8.1.1	Display	35
8.1.2	Keyboard	36
8.2	GENERAL	37
8.2.1	Menu structure	38
8.2.2	Input area	38
8.2.3	Entry fields	39
8.3	MAIN MENU	39
8.4	WIRE SCREENS	39
8.4.1	Wire data 1	40
8.4.2	Wire data 2	40
8.4.3	Wire marking	42
8.4.4	Wire stacker (PPI, option)	43
8.4.5	Cable coiler (PPI, option)	43
8.5	FILE MENU	43
8.5.1	New	44
8.5.2	Load	44
8.5.3	Save	45
8.5.4	Save as	45
8.6	CONFIGURATION	45
8.6.1	Devices	46
8.6.2	User	48
8.7	DIAGNOSTICS	48
8.7.1	Info	49
8.7.2	Machine	49
8.7.3	Peripheral	50
8.8	PASSWORD RESTRICTION	51
8.8.1	User level selection	52
8.8.2	Change password	52
8.8.3	Password on/off	52
8.8.4	Reset password	53
8.8.5	Access rights	53
9	OPERATION USING A MARKING DEVICE	55
9.1	INFORMATION FOR WIRE MARKING	55
9.2	INSTALLING THE WIRE MARKER UNIT	55
9.2.1	Determining the distance	55
10	DIAGNOSTICS / TROUBLESHOOTING	57
10.1	GENERAL FAULT LOCALIZATION	57
10.1.1	Safety instructions	57
10.1.2	Behavior in case of an error	57
10.2	FAULT INDICATORS	57

10.3	DRAWINGS / CIRCUIT DIAGRAMS / FLOW CHARTS	57
10.4	ERROR MESSAGES	58
10.5	WARNINGS	59
10.6	ACTIONS AFTER SOLVING ERRORS	60
11	MAINTENANCE / MAINTENANCE SCHEDULE	61
11.1	SAFETY INSTRUCTIONS	61
11.1.1	Personal protective equipment	61
11.2	CUSTOMER SERVICE	61
11.2.1	Hotline	61
11.2.2	Behavior in case of an error	61
11.3	CLASSIFICATION	61
11.3.1	Access rights	61
11.4	MAINTENANCE SCHEDULE	61
11.4.1	General	62
11.4.2	Maintenance chart	62
11.5	CIRCUIT DIAGRAMS, DRAWINGS, SPARE PART LISTS	62
11.6	SPECIFICATION OF SPARE PARTS	62
11.7	GENERAL MAINTENANCE WORK	62
11.7.1	General maintenance	63
11.8	SETTINGS	64
11.8.1	Adjusting the wire cutter blades	64
11.8.2	Configuring the machine	65
11.8.3	Setting back to factory default	65
11.9	MAINTENANCE / REPAIR WORK	66
11.9.1	General / safety	67
11.9.2	Opening the housing	67
11.9.3	Lubrication	67
11.9.4	Check / replace blades	69
11.9.5	Replacing the rollers	71
11.9.6	Replacing the cutter drive unit	71
11.9.7	Exchanging the transport belt	74
11.9.8	Exchanging mains fuses	75
12	SPARE PARTS / EXPLODED VIEW DRAWINGS	75
13	DECOMMISSIONING / DISPOSAL	77
13.1	DECOMMISSIONING	77
13.2	DISASSEMBLY / DISPOSAL	77
14	APPENDIX	79
14.1	SOFTWARE UPGRADE	79
14.1.1	Installing Iguana	79
14.1.2	Downloading upgrade file	79
14.1.3	Upgrade procedure	80
14.2	CONNECTOR HS / PF	81

14.2.1	For use with a PreFeeder	81
14.2.2	For use with a HotStamp	82
14.3	PRE-/POSTFEED INTERFACE (PPI, OPTION)	83
14.3.1	POSTFEED interface	84
14.4	BLOCK DIAGRAM	92
14.5	LUBRICATING GREASE MICROLUBE GBU-Y 131	93
	INDEX	107

GENERAL

Thank you for your trust in the *Schleuniger* technique! You have acquired a high performance *Schleuniger* product, designed and manufactured in our factory to your needs. Read through this manual with due care and attention. It contains important tips and safety instructions, which allow precise and reliable wire/cable production.

1.1 MANUFACTURER

In this Manual, *Schleuniger* AG Thun, Switzerland is referred to as manufacturer and abbreviated with „*Schleuniger*“.

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1.2 MANUFACTURING DATE / PRODUCT TYPE

See “*EG-Declaration of Conformity (Register 2)*” of the ring binder.

1.3 INFORMATION ABOUT THE OPERATOR'S HANDBOOK

- The Operator's Handbook is part of the product and contains all the relevant information necessary to operate the product efficiently and safely as intended.
- The mentioned safety notes and directions and as for the application field valid local accident prevention regulations and general safety regulations must be complied.
- If the product changes hands, the Operator's Handbook must be supplied to the new owner.
- Make sure to update any relevant safety changes and corrections to the Operator's Handbook which are available. Ask your local *Schleuniger* distributor for updates.

1.3.1 Contents of the manual

General

Each person using the product must be properly trained and have read and understood the Operator's Handbook. This is also imperative, even when the respective person has operated such a product or similar previously and where they have been trained by the manufacturer.

The Operator's Handbook is no longer valid, if any of its contents (except a Quick Start Card, where available) are removed or is changed on the data storage medium.

As Operator's Handbook we declare:

- In printed form the entire content of the folder according to the contents table.
- In electronic form, this „*Reference Manual*“, and the document „*Parts Catalog*“.

Construction

We are trying to make the operation of our products as easy as possible. To achieve this we have developed a concept for the Operator's Handbook.

The Operator's Handbook consists of at least three parts:

Quick Start Card (optional)

The Quick Start Card is available as a quick reference to take out of the ring binder. It is meant for the user (operator), which is operating the product daily. See chapter ["2.7.1 Personnel classification \(Page 15\)"](#).

Reference Manual

A detailed description for the product and all options with full explanation of all functions available and the maintenance. The Reference Manual is meant for the beginner as well as for the experienced user (qualified personnel) as a learning- and reference guide. See chapter ["2.7.1 Personnel classification \(Page 15\)"](#).

Parts catalog

A manual with the most important components of the product including the available options and the wear parts. This part of the Operator's Handbook is intended mainly for the technical specialist. See chapter ["2.7.1 Personnel classification \(Page 15\)"](#).

1.3.2 Depository

The Operator's Handbook must be available to the operating personnel at all times. Keep the Operator's Handbook in such a way that it will not become damaged, so that the contents will remain clearly legible beyond the expected lifespan of the product.









1.3.3 Responsibilities

- This Operator's Handbook must be kept near the product. It must be available to the operating personnel at all time.
- Always follow the instructions in this Operator's Handbook fully and without restraint.

1.4 GENERAL SYMBOLS AND LEGEND

1.4.1 References and hints

The listed pictograms have the following meaning in the Operator's Handbook:

	Tip: Application note and other useful information which improves the intended utilization of the product.		Info: Information which helps to operate the product efficiently and error-free.
	Magnifier: Overview diagram, introduction chapter.		Menu level: Sub-screen with indication of the screen level (viewed from main menu).
	Procedure: Important activity direction, programming example.		Figure reference: Referencing of text to picture elements in a previous figure.
	Topic: Important safety relevant reference.		Disposal: Waste that must be recycled and not be disposed of with household waste.

1.4.2 Legend

Key, button, pictogram	Commands and operating areas on the screen are in the text shown in bold, squared brackets and capital letters [KEY] .
Screen title/menu	Screen titles and menu names are represented in the text in "inverted commas".
Electric signal name	Signal names are marked in capital letters and in "INVERTED COMMAS".
Cross referencing	Cross referencing is indicated in the text in color and italics, e. g. see chapter "1.4.2 Legend (Page 11)" .
Activity direction	Activity direction (installation procedure, programming example and others) requests the user of the product to take an action. The activity direction is marked with a digit and an arrow „1»“.
Consequence of an activity direction	Descriptions and affected actions in activity directions are marked with the prefix „→“.
Measure	Measures in the manuals are given in millimeters.

1.5 DECLARATION OF CONFORMITY

See document *“EG-Declaration of Conformity (Register 2)”* of the ring binder.

1.6 LIMITATION OF LIABILITY

The content of these operating instructions was put together taking into consideration the current standards and guidelines according to the state of the technology and our many years of experience.

The manufacturer disclaims any liability for damages and accidents as a result of:

- Disregard of the instructions
- Disregard of warning notices
- Non-intended usage

1.7 WARRANTY STATEMENTS AND POLICIES

See *Schleuniger* document *„General Conditions of Sale and Delivery“*.

1.8 COPYRIGHT PROTECTION

Keep this Operator's Handbook confidentially. It is intended for the exclusive use of persons operating the product. Without written agreement, this manual shall not be made available to third parties.

The content of the Operator's Handbook in the form of text, illustrations, drawings, circuit diagrams or other presentation, is protected by copyright law of the manufacturer.

1.8.1 Trademarks

Cayman™ and *Iguana™* are trademarks of *Schleuniger*.

Windows® (XP, Vista, 7 or CE) are registered trademarks of Microsoft Corporation in USA and other countries.

All other brands or product names are trademarks or registered trademarks of their owners.

Registered trademarks are not specially marked in these instructions. However, this does not mean that they can be used freely.

For further information, see chapter "[14 Appendix \(Page 79\)](#)".

1.9 SPARE PARTS

Always order original spare parts from your local *Schleuniger* distributor.

Any modifications in design or function of the spare parts, in terms of ongoing product improvement, are subject to change without prior notification.



CAUTION

Use of unverified spare parts!

Unverified or defective spare parts may lead to damage, malfunction or complete failure of the product and may affect safety. Therefore, exclusive use of original *Schleuniger* spare parts is imperative.

SAFETY

2.1 WARNING NOTICES

The warning notices in the entire Operator's Handbook are marked with the following symbols. They are headed by a safety alert symbol and the warning word which represents the degree of endangerment.

To avoid any injuries or material damage it is essential that you read and fully understand these symbols.



DANGER

Warning notice „Danger“

This panel indicates a hazardous situation, which if not avoided, will result in death or serious injury.



WARNING

Warning notice „Warning“

This panel indicates a hazardous situation, which if not avoided, could result in death or serious injury.



CAUTION

Warning notice „Caution“

This panel indicates a hazardous situation, which if not avoided, may result in minor or moderate injury.



NOTICE

Warning notice „Property damage“

This panel indicates a hazardous situation, which if not avoided, can result in damage to property.

2.2 GENERAL SAFETY NOTES

- The product must only be operated when in good working order and condition. It must be checked for intactness prior to the start of operation.
- Never operate the product in an explosive or flammable environment.
- Only operate the product in a dry, dust-free environment.
- Before performing any maintenance or repair work, unplug the machine from the mains and/or from the air pressure supply.
- Never operate the product without connecting the earth conductor.
- Only use original *Schleuniger* equipment, especially interface connection cables (electromagnetic compatibility).
- The product must always be operated through the *Schleuniger* emergency stop link unit, if it works together with peripheral devices in a production line. Only then can a safe interruption of the complete production line during an emergency be guaranteed.
- Any lubricating grease supplied with the machine, may only be used according to the instructions given in this manual.

2.3 SOURCES OF DANGER / RISKS

With the use of technical products are dangers associated.

Dangers that could not be eliminated by design measures and also not by protection devices are residual risks. The safety instructions in this Operator's Handbook refer to the known residual risks. Should be shown additional operational risks, the operator is obliged to inform *Schleuniger* immediately.

However, the following risks remain:

- Inadequate maintenance can cause injury to the operator personnel and malfunction on the product.
- When working with a production line (PreFeeder, CableCoiler, WireStacker), in the wire/cable area by catching body parts and clothing. Always close off these areas!
- On the wire/cable exit, wires/cables are ejected with high speed. There is a danger of stab wound and concussion injury. Always close off this area!
- Risk of wire/cable blocking. Tensile forces can move to overturn machine, peripheral or bobbin and injure the operator personnel.
- The product may come down the working table due to vibration and injure the operator personnel.
- A free standing panel may fall due to vibration and injure the operator.
- Tripping, falling, slipping due to connection cables, wire residue and air hoses lying around.
- Risk of increased noise levels while working with multiple machines in the room. Arrange for noise control measures!
- Wires/cables may contain talc which can strain the work environment during wire/cable processing.
- By working with insufficient illumination in the workplace can cause injury.

2.4 INTENDED USAGE OF PRODUCT

WARNING



Only use the product according to the intended usage!

Any use of the product, which contradicts the intended use, is regarded as non-intended use. *Schleuniger* is not liable for any damages resulting from a non-intended use.

WARNING



Caution, risk of injury, property damage!

It is designed and manufactured exclusively for the following intended application:

The *EcoCut 3200* must be used only for cutting through round wires (without Kevlar fiber) and tubes (without steel fiber backing) within the given range according to the technical specifications.


Disregarding may lead to injury of the operator personnel and to property damage.

2.5 SAFETY SYMBOLS

2.5.1 Safety symbols used in manual

In this manual, safety symbols are used which alert the user to potential hazards. They will be described here in detail.

	<p>General Danger!</p>	<p>Notes and instructions with this safety symbol should be followed strictly. Disregarding may lead to injury and damage to the machine.</p>
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	Electric current!	<p>There is a danger of electric shock by contact with parts inside the machine and on the mains socket. Therefore before opening the machine always switch off the main switch and unplug it from the mains. Touching electric components can cause injury to the operator personnel.</p>
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2.5.2 Safety symbols on the product

On the product, safety symbols are attached which alert the user to potential hazards. An overview where this stickers are attached to, can be found in chapter "[5 Product description \(Page 23\)](#)".

2.6 MODIFICATION AND RETROFITTING


To avoid any dangerous situations and for an optimal performance, it is not allowed to make any modifications to, or retrofitting of the product, without explicit written permission of the manufacturer or the local *Schleuniger* distributor. Standard options and accessories supplied by *Schleuniger* are excepted.

2.7 PERSONNEL QUALIFICATION

The individual tasks may only be performed by persons listed in the respective chapter.

The product is intended to be operated by personnel older than 14 years. It is strictly forbidden to grant access to younger person.

WARNING

 **Risk of injury if operated by unqualified personnel!**
Improper handling of the machine may lead to serious injury to personnel and damage to the property.

2.7.1 Personnel classification

The following classifications in these instructions are specified for the individual activities.

Operating company

As a parent entity that is responsible for the proper use of the product and for the training and the commitment of authorized persons. It defines the mandatory competencies for its operation and authority of the authorized personnel.

Technical specialists

Due to product-specific training and mechanical and electrical skill and experience, are qualified to perform maintenance and repair work on the product.

Qualified personnel

Due to product-specific training, technical skill and work experience are qualified to install the software, to put the product into operation and to instruct the operating personnel.

Operating personnel

Is a person who has been trained and authorized by the management to operate the product safely according to the instructions. They have the ability to identify all sorts of danger and to avoid it. This includes an adequate knowledge of accident prevention and first aid procedures.

Third party

Externally called in personnel of the operating company, service technicians and staff from *Schleuniger*.

2.8 PERSONAL PROTECTIVE EQUIPMENT

While working on the product, always wear protective equipment according to the local regulations to minimize the risk of injury.

- Always wear protective equipment necessary for the work being carried out.
- Observe the safety markings for the protective equipment in the working area.

2.8.1 Eye protection



To protect the eyes from small particles produced during wire/cable stripping and cutting.

2.8.2 Protective clothes



Wear tight-fitting clothes with low tensile strength and no protruding parts. Protects from getting caught up in moving machine parts.

2.8.3 Safety shoes



To protect from heavy, falling objects or reels.

2.8.4 Snood-type cap or safety cover



To protect long hair from getting caught up in moving machine parts.

2.9 SAFETY INSTALLATIONS

The built in safety interlocks on the machine (safety, protection, monitoring) must not be removed, bypassed or changed. The safety circuits should be checked periodically. Defective safety equipments must be fixed immediately before work may be continued.

- Never operate the machine without the safety hood.
- Never operate the machine if the safety cover is open.
- The emergency stop buttons must always be accessible.
- Do not remove any safety barriers.
- Do not break in the emergency stop link between the machine and the peripheral devices.

TRANSPORT / PACKAGING / STORAGE

During unpacking, transportation or storage of the product always observe the following instructions. They contain important information to avoid injury to the operator and property damage. Take into consideration the weight of the machine during transportation and loading. See chapter "[4.2 Technical specifications \(Page 19\)](#)".



NOTICE

Damage due to improper transportation!

Transportation by unqualified personnel may lead to extensive property damage. Therefore:

- Handle with care and always observe the symbols and hints on the packaging and the product when unloading and placing on site location.
- Only use the intended transportation accessories.



The instructions in this chapter must be carried out by **qualified personnel!**

3.1 TRANSPORT INSPECTION

Check the goods immediately after receiving for completeness and loss during shipment.

For loss on the packaging during shipment, proceed as follows:

- Do not accept the delivery or only with exceptions.
- Declare loss of shipment.
- Immediately report damages on the product.



NOTICE

Claim for damages!

Report any defective part immediately after it was identified. Claim for damages.

3.2 UNPACKING / LOADING

Take out the machine carefully from the package. Remove any transport lockers, binders and foam and check for free moving of cylinders and drives (if available, read the packing instruction).



NOTICE

Remove the transport fixations!

Before use of the product, remove, if present, any marked transport fixations. For later transportation store the transport fixations.

3.3 PACKAGING

3.3.1 The packaging

Store the packaging for later use on a weatherproof location.

3.3.2 Handling packaging material

Recycle the unneeded packaging.

See chapter "[13 Decommissioning / disposal \(Page 77\)](#)".

3.4 INTERNAL TRANSPORTATION

As applicable, transport the product in the original packaging.



WARNING

Dislocation of packaging!

Danger from load dislocation. During transportation in a craft, the product may slip off and cause serious material damage. Even the craft may start skidding, which could result in an accident with incalculable consequences. Always secure the product in the craft to prevent from slipping off.

3.5 STORAGE

Store the product under the following conditions:

- Not outdoor
- Observe temperature conditions
- Observe climatically conditions

See also chapter "[4.2 Technical specifications \(Page 19\)](#)".

PRODUCT SPECIFICATIONS

This chapter among others gives an overview of the important technical specifications of the product. The technical data correspond to the theoretical values and achievable under normal conditions. Any modifications in design or function, in terms of ongoing product improvement, are subject to change without prior notification.

4.1 DIMENSIONS / WEIGHT

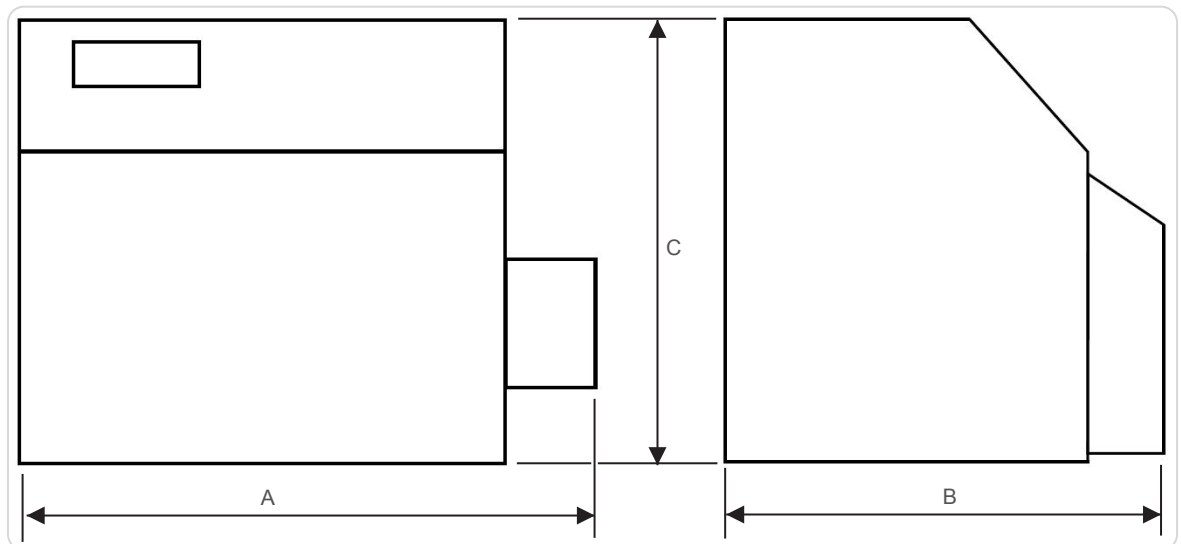


Fig. 1: Dimensions

Description		Value	Unit
Weight (net)		17	kg
Measures	Length (A)	400	mm
	Width (B)	250	mm
	Height (C)	260	mm

4.2 TECHNICAL SPECIFICATIONS

Description		Value	Unit
Limit values	Wire diameter	10	mm
	Tube diameter	12.7	mm
	Conductor cross section		
	Stranded	6 (AWG 10)	mm ²
	Solid	4 (AWG 12)	
	Feed speed	3.2	m/s
	Pulling force	50, peak 70	N
Length resolution		0.1	mm

Description		Value	Unit
Mains connection	Power connection	100/115 230/240	V
	Line frequency	50/60	Hz
	Power consumption	120	VA
Noise emission	Emission sound pressure level	<70	dB(A)
Environment	Temperature range	5-40	°C
	Relative humidity, maximum	90 @ 20 °C 50 @ 40 °C	%
	Storage and transport temperature	-25 to +55	°C
Interfaces	Prefeeders and wire marker devices, RS 232 Optional: Pre-/Postfeed interface for synchronized peripheral devices (PPI, option)		
Options	Wire cutter head Tube cutter head Guide set Transport roller rubber or diamond Exit adapter for peripheral devices Synchronized postfeed interface Pedal External emergency stop button		

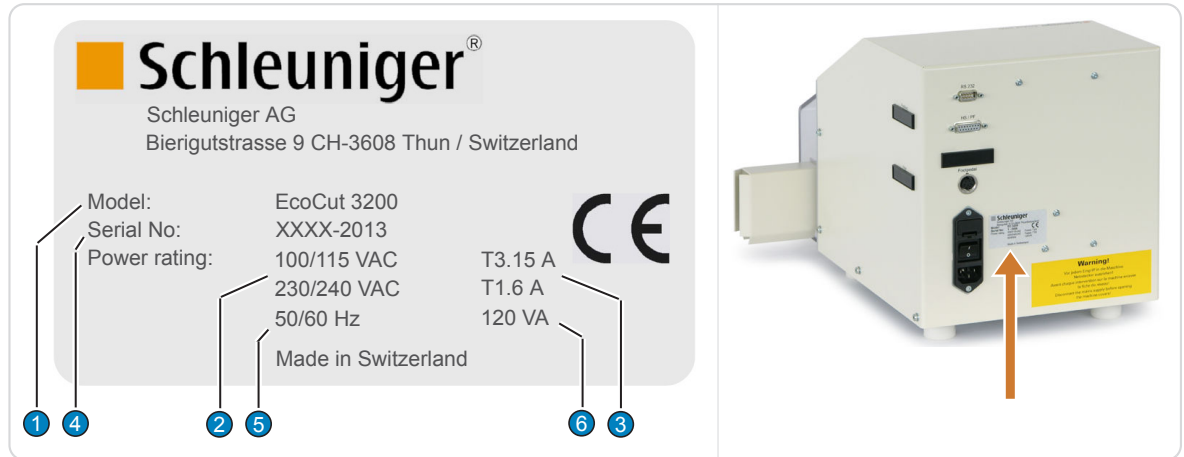
4.3 REQUIREMENTS ON THE INSTALLATION LOCATION

Place on a solid, level work floor. The machine is designed for handling on table height.

4.4 RATING PLATE

In order to ensure efficient support for our part, we ask the customer on any requests to always communicate the exact content on the rating plate.

The rating plate is situated on the rear of the machine and contains the following information:



- 1 Machine type
- 2 Permissible mains voltage
- 3 Internal fuse protection

- 4 Serial number
- 5 Mains frequency
- 6 Power consumption

PRODUCT DESCRIPTION

This chapter gives a description of product specifications, information on the limits of the product and points on the scope of delivery. The individual parts are shown and described by photographs. Further provides the product description information about the functioning and the operation modes.

5.1 CONCEPT

The electrically driven automatic cutting machine *EcoCut 3200* is the tube cutting expert of *Schleuniger*. It is made for the precise cutting of wires and tubes of any kind and can be configured according to the customers needs.

The *EcoCut 3200* is available with a tube cutter head as well as with a wire cutter head. The automatic cutting machine provides precise & reliable results. The *EcoCut 3200* may be used as a stand-alone machine as well as a host in a fully automated wire processing line. The *EcoCut 3200* is equipped with different interfaces for peripheral devices. The cutting material is fed by electrically driven rollers. The universal cutter head is driven by a motor and the cut position is monitored.

5.2 FRONT ELEMENTS

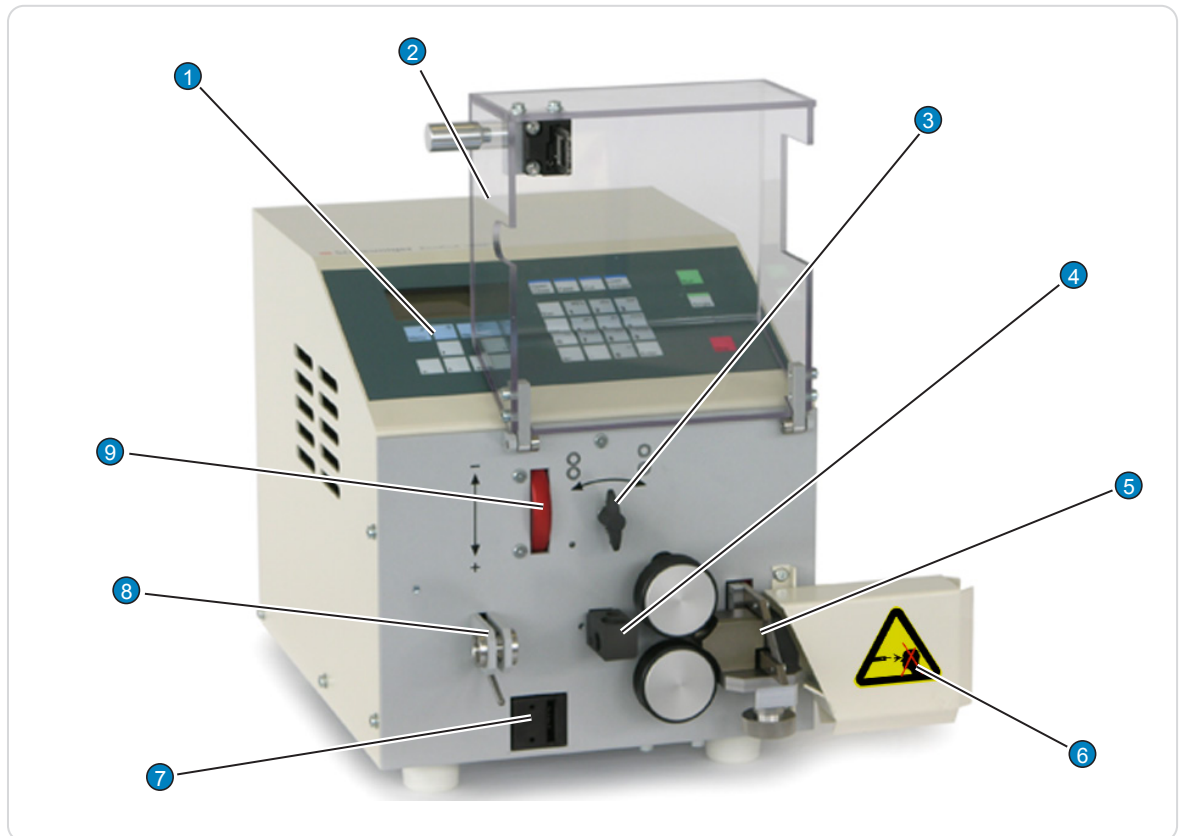


Fig. 2: Main view front

- | | |
|----------------------------|---------------------|
| 1 Operator panel | 6 Access protector |
| 2 Safety cover | 7 Safety switch |
| 3 Roller lever | 8 Wire end switch |
| 4 Universal wire guide | 9 Gap setting wheel |
| 5 Tube- / wire cutter head | |

5.2.1 Operator panel

The operating software of the *EcoCut 3200* is controlled via the operator panel.

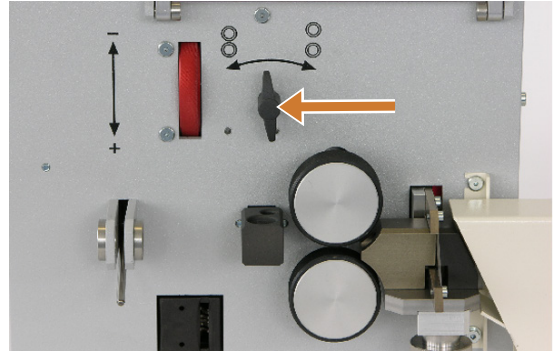
5.2.2 Safety cover

The safety cover ensures a safe and secure operation of the *EcoCut 3200*.

5.2.3 Roller lever

For loading/unloading a wire, open the rollers fully.

- By turning the wing nut clockwise, the rollers open.
- By turning the wing nut counter-clockwise, the rollers close.

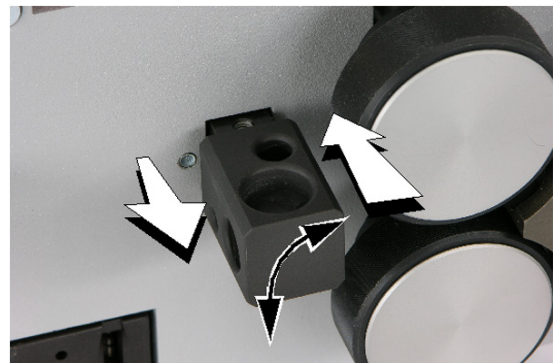


5.2.4 Universal wire guide

The wire guide is available in four different diameters:

Ø 4,0 mm, Ø 7,0 mm, Ø 10,0 mm, Ø 13.5 mm

- The guide can be moved in Y-axis.
- The guide is rotatable by 90° (in outer position only).



5.2.5 Tube- / wire cutter head

The Tube- / wire cutter head, contains the blades for cutting through the wire material. For the blade change, see chapter "[11.9.4 Check / replace blades \(Page 69\)](#)".

5.2.6 Safety switch

The safety switch is interrupted as soon as the safety cover of the *EcoCut 3200* was opened. Any drives are switched off thereby immediately.

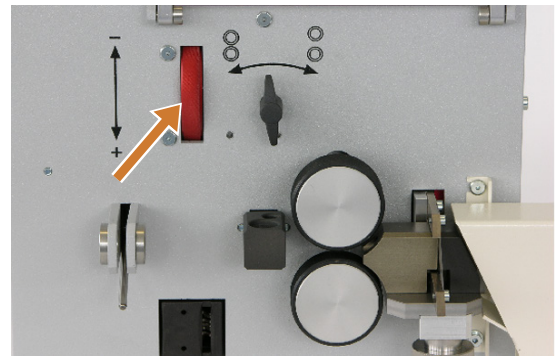
5.2.7 Wire end switch

The wire end switch checks whether a wire is inserted or the processed material is used up. If the wire end switch is in the lower position the machine can not be started. The production is interrupted as soon as the wire end switch at the wire end drops downwards.

5.2.8 Gap setting wheel

The gap setting wheel is for adjusting the opening of the feed rollers to the processed material. For standard material the gap can be set to a small value. For sensitive material, the gap must be increased.

- By turning the gap setting wheel downwards, the gap gets larger.
- By turning the gap setting wheel upwards, the gap gets smaller.



5.3 REAR / CONNECTORS



Fig. 3: Overview rear / connectors

- | | |
|---|---------------------|
| 1 Pre-/postfeed interface (PPI, option) | 6 Main power switch |
| 2 RS232 interface | 7 Fuse holder |
| 3 HotStamp/PreFeeder interface (HS/PF) | 8 Pedal connector |
| 4 Rating plate | 9 Not implemented |
| 5 Mains connection | |

5.3.1 Postfeed interface (PPI, option)

This optional interface includes the following ports for synchronized peripheral devices:

- CableCoiler 500
- CableCoiler 1300
- Coilers and stackers from third party vendors (with device specific adaptation)

See also chapter "[14.3 Pre-/postfeed interface \(PPI, option\) \(Page 84\)](#)".

5.3.2 RS 232 interface

For the connection of a PC. Therewith wire programs can be saved and reloaded to/from an external memory in future. This connector is also used for software upgrades.

5.3.3 HS/PF (HotStamp/Prefeeder) interface

To this connector a Hot stamp or a PreFeeder can be connected.

For use with a HotStamp

The interface is optimized for the *Schleuniger* peripheral devices listed below:

- HotStamp 4140
- HotStamp 4500

The *EcoCut 3200* produces a marking pulse and interrupts the device during the marking time.

For a detailed description of this interface, see chapter "[14.2.2 For use with a HotStamp \(Page 82\)](#)".

For use with a PreFeeder

The interface is optimized for the in chapter "[14.2.1 For use with a PreFeeder \(Page 81\)](#)" listed *Schleuniger* peripheral devices.

The Prefeed operation may be monitored by the *EcoCut 3200*, see also chapter "[14.2.1.2 Output „PFOUT“, Pin 14 & 15: \(Page 82\)](#)".

5.3.4 Rating plate

See "[4.4 Rating plate \(Page 21\)](#)".

5.3.5 Power connection



NOTICE

Line voltage!

The *EcoCut 3200* must only be operated with the line voltages rated on the rating plate, see chapter "[4.4 Rating plate \(Page 21\)](#)".

5.3.6 Main power switch

The *EcoCut 3200* is turned on and off on the main switch.

5.3.7 Fuse holder

The fuse holder contains the two pluggable mains fuses. For the fuse change, see chapter "[11.9.8 Exchanging mains fuses \(Page 75\)](#)".

5.3.8 Pedal connector

The cutting procedure may be started with the pedal.

5.4 DANGEROUS ZONES ON THE MACHINE

5.4.1 Safety marking


Safety markings affixed to the product, advert to possible danger situations and must be strictly observed. The safety markings must not be removed. Damaged or illegible labels must be replaced immediately.

For further information, see chapter "[5 Product description \(Page 23\)](#)".

5.4.2 Danger zones operating area




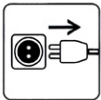
Fig. 4: Danger zones front

	<p>Processed wires escaping!</p>	<p>On the wire exit wires are fed out at high speed of the machine. Escaping wires can injure eyes, face and other parts of the body. Do not stay in this area if the machine is running.</p>
---	---	---

5.4.3 Danger zones rear



Fig. 5: Danger zones rear

 	<p>Unplug the machine from the mains!</p> <p>There is a danger of electric shock by contact with parts inside the machine and on the mains socket. Touching electric components can cause injury to the operator personnel.</p> <p>Therefore always before opening the machine:</p> <ul style="list-style-type: none"> Turn off the main switch, block against switching on again and disconnect the machine from the mains (for hard wired machines, the main switch serves as a mains disconnecter unit).
---	---

INSTALLATION / FIRST COMMISSIONING

This chapter describes the working steps for the mounting and commissioning of the machine.

6.1 SAFETY INSTRUCTIONS

The installation and commissioning instructions for the product, have to be followed. The following instructions must be followed step by step to avoid property damage on the product and to reduce the risk of injury to the personnel to an absolute minimum.



WARNING

Observe directives!

The following work must be carried out in the listed sequence. Improper usage may lead to injury to the user.

The following security relevant points have to be mentioned specially:

- This is a free-standing product.
- The machine must only be operated in a dust free and dry area.
- The electric connection must be carried out by a technical specialist and according to the local installation regulations.



The instructions in this chapter must be carried out by **qualified personnel!**

6.2 POSITIONING / PUTTING INTO OPERATION

6.2.1 Unpacking and setting up

- 1» Unpack the machine.
- 2» Remove all transportation locks (foam material pieces).
- 3» Place the machine on an even surface (*Schleuniger* rack, table, work bench etc.).
- 4» Connect the power cord.
- 5» Connect the optional pedal.
- 6» Possibly connect the PC to the RS 232 connector.



6.2.2 Setting the measuring unit and the menu language

- 1» Turn the main switch on the *EcoCut 3200* on.
- 2» **[MENU]** --> **[3]** - Configuration --> **[2]** - User.
- 3» Select the menu language / measuring unit with **[@]**, **[ENTER]**.
- 4» Back to the main menu with 2x **[MENU]**.

GENERAL HANDLING / OPERATION

The operation of the *EcoCut 3200* is described in this chapter in detail.

7.1 GENERAL TOPICS FOR THE OPERATION



The instructions in this chapter must be carried out by the **operator personnel!**

Before the daily operation a visible check on the machine must be carried out.

- Guides and blades must be held clean from wire residue and other particles.
- Wire/cable guides and the area of the blades must be cleaned with a brush and/or possibly with a vacuum cleaner, see also "[11.7.1 General maintenance \(Page 63\)](#)"

See also chapter "[5 Product description \(Page 23\)](#)".

See also chapter "[5.4 Dangerous zones on the machine \(Page 27\)](#)".

7.2 SWITCHING ON

- 1» Turn on the main switch on the rear of the machine, see "[5.3.6 Main power switch \(Page 26\)](#)"
- 2» Wait until the machine has been initialized.

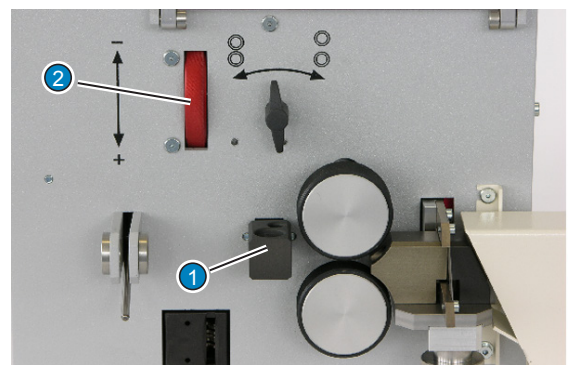
7.3 SWITCH OFF

- 1» Turn off the main switch on the *EcoCut 3200*.

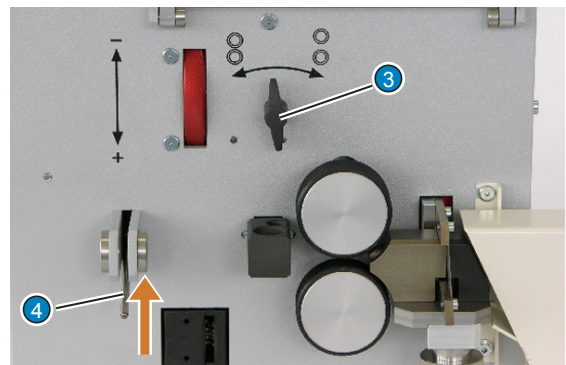
7.4 SETUP

7.4.1 Loading wire

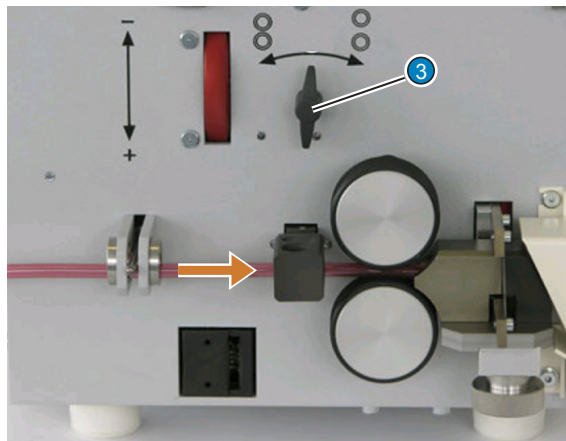
- 1» Open the safety cover.
- 2» Select the guide bushing diameter (1).
- 3» Adjust the gap (2) to the desired wire.



- 4» Open the rollers (3).
- 5» Lift up the wire end switch (4) and insert the wire.



- 6» Feed the wire by hand up to the cutter head.
- 7» Close the rollers (3).
- 8» Close the safety cover.
- 9» Switch on the machine.
- 10» **[FEED]**
- 11» **[CUT]**
- 12» Select the desired wire program as described in chapter "8.5.2 Load (Page 44)".
- 13» **[RUN]**
 - ↳ Wire will be produced according to the selected program.



7.4.2 Exchange tube- /wire cutter head

WARNING



Danger if operated by unqualified personnel!

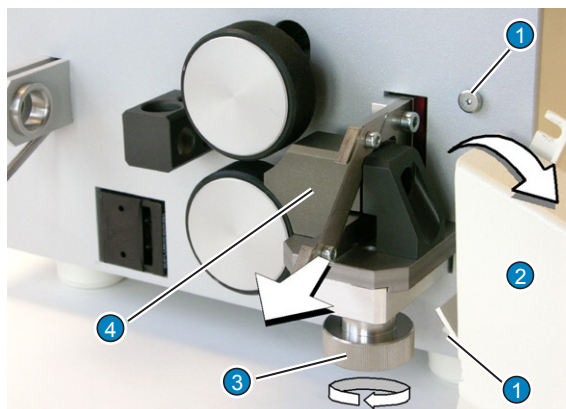
The cutter head and the guides must only be replaced by accordingly trained personnel (*Schleuniger* personnel, trained personnel on site).

- Remove the tube or the wire from the machine.
- Switch off the *EcoCut 3200* and unplug it from the mains.
- Do not touch the blades on the cutting edge, they are RAZOR SHARP!

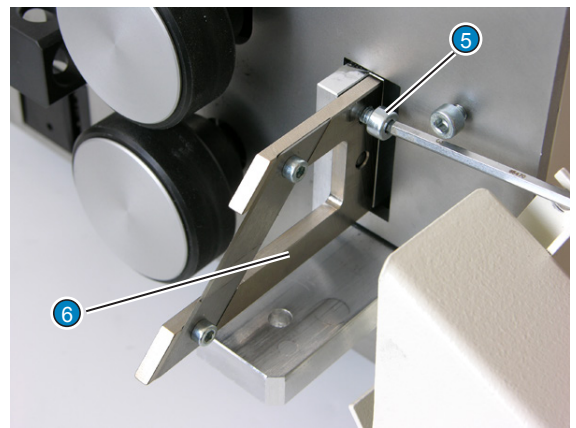
The blade must be resting in the extended position.



- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Loosen the screws (1) and swivel out the ejection chute (2).
- 4» Loosen the knurled screw (3) and remove the cutter head (4).

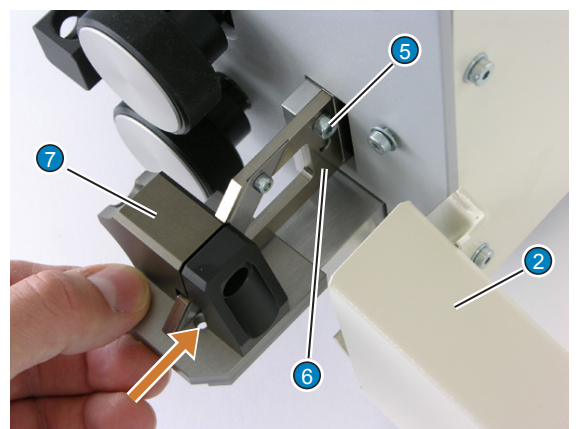


- 5» Remove the screw (5) (tube cutter head).
- 6» Slide the blade holder (6) off the bolt (tube cutter head).



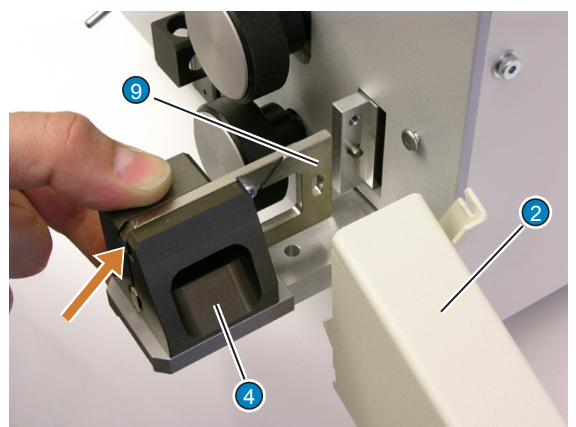
Mounting the tube cutter head

- 7» Slide the blade holder (6) onto the bolt and tighten it with the screw (5).
- 8» Slide the guide set (7) onto the centering part - flushing to the front - and tighten it with the knurled screw (3).
- 9» Swivel in the ejection channel (2) and tighten it.
- 10» Close the safety cover.



Mounting the wire cutter head

- 11» Slide the blade holder - flushing to front - into the cutter head.
- 12» Slide the blade holder (9) onto the bolt.
- 13» Slide the cutter head (4) onto the centering part - flushing to the front - and tighten it with the knurled screw (3).
- 14» Swivel in the ejection channel (2) and tighten it.
- 15» Close the safety cover.
- 16» Connect the machine to the mains and switch it on.

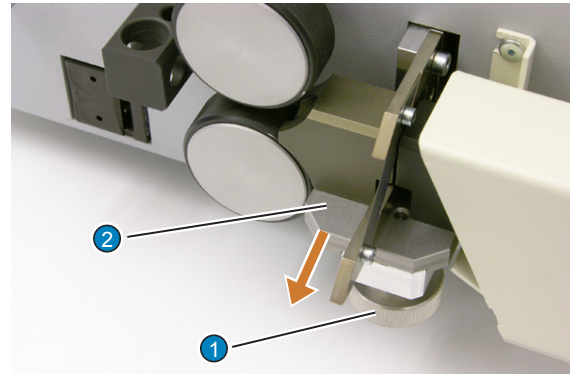


7.4.3 Exchanging the guide of the tube cutter head

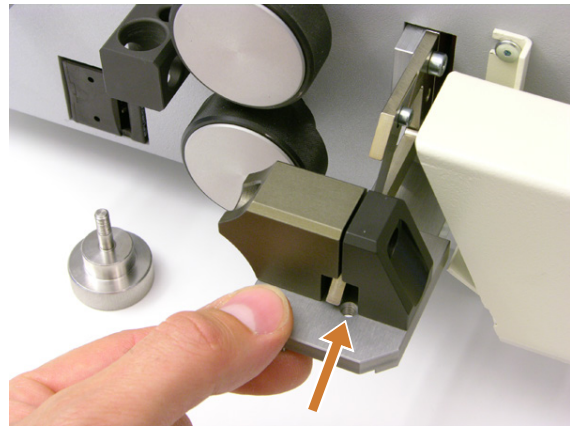
The blade must be located in the retracted position. The position of the blade can be changed by pressing the button **[CUT]**.



- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Remove the knurled screw (1).
- 4» Remove the guide set (2).



- 5» Slide the guide set with the new diameter - flushing to front - onto the centering part.
- 6» Fasten the guide set with the knurled screw.
- 7» Close the safety cover.
- 8» Connect the machine to the mains and switch it on.



7.5 WORK TO BE DONE AFTER OPERATION

7.5.1 General maintenance

- **After 1 day:** Clean the processing area.
- **After 1 week:** Clean the housing and the processing area.

7.5.2 Additional maintenance work

For further information, see chapter "[11 Maintenance / maintenance schedule \(Page 61\)](#)".

OPERATION OF THE CONTROL SOFTWARE

8.1 OVERVIEW OPERATOR PANEL

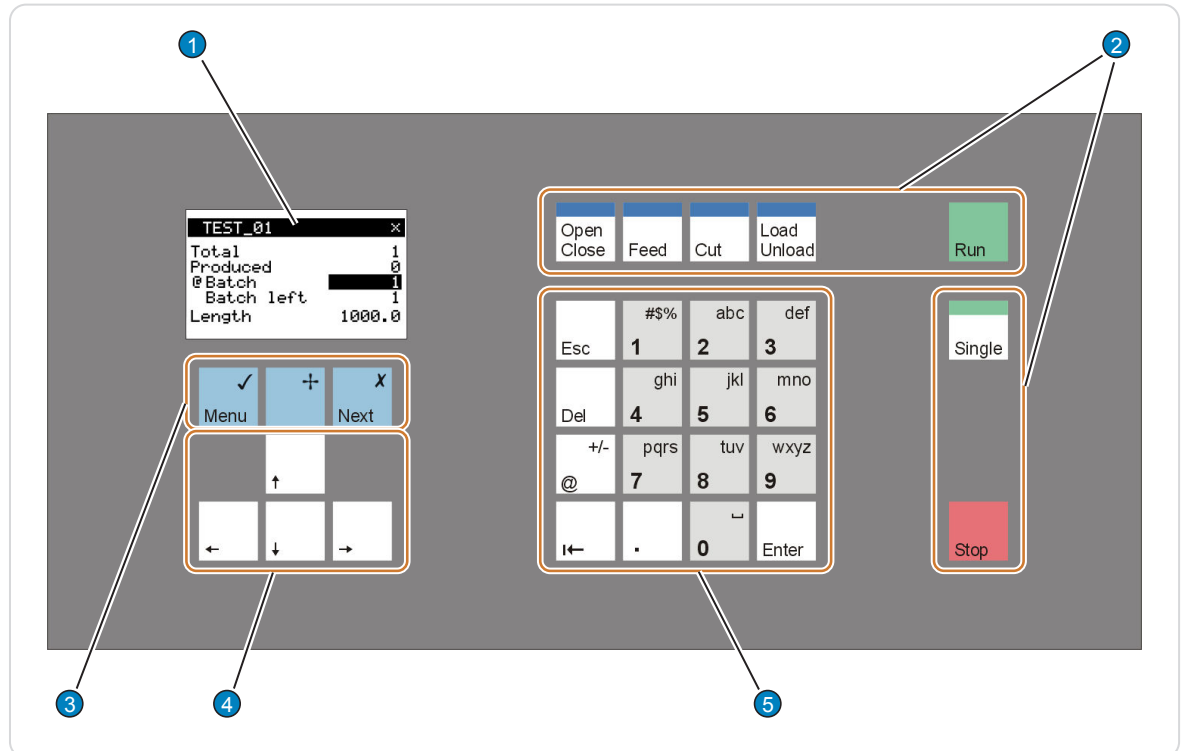
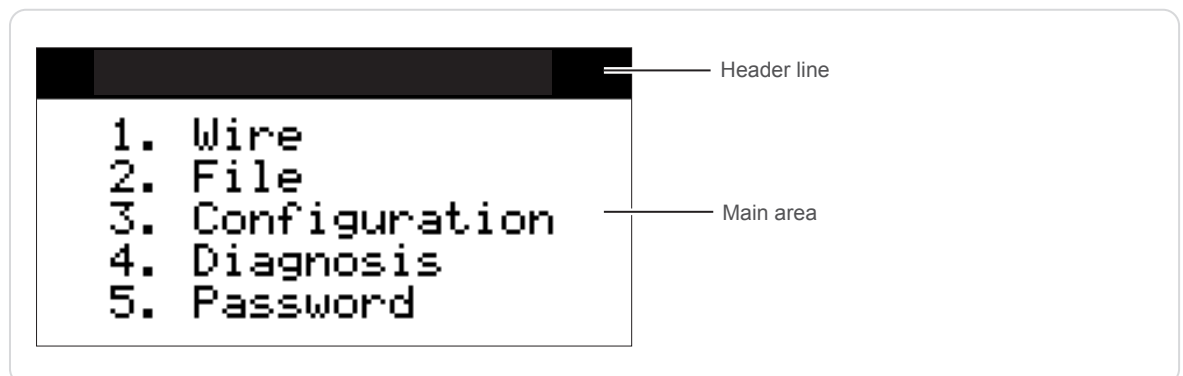


Fig. 6: Operator panel with keyboard and display

- | | |
|-------------------|-------------------------------|
| 1 Display | 4 Navigation keys |
| 2 Production keys | 5 Entry keys / numeric keypad |
| 3 Function keys | |

8.1.1 Display



Header line

The following display is shown:


- Product name, title of the corresponding menu.
- Name of the loaded wire or "?" (wire not saved) ["8.5 File menu \(Page 43\)"](#)
- An "x" on the right corner indicates, that additional screens for the same level are available.

Main area




Display of menus, parameter entries, messages.

8.1.2 Keyboard








Navigation keys

	Navigation keys: The arrow keys are used for the navigation within the lists, such as in the "File" screen (" 8.5 File menu (Page 43) ") or at the input fields (cursor).
---	--







Function keys

	Menu: This key guides level by level back to the main menu. In dialog boxes this key has the function [OK] .
	Define selection: Allows for an additional selection within the dialog boxes (instead of [OK] and [CANCEL]). Serves as an additional special function key.
	Next: This key guides to the next screen on the same level. In dialog boxes this key has the function [CANCEL] .

Production keys

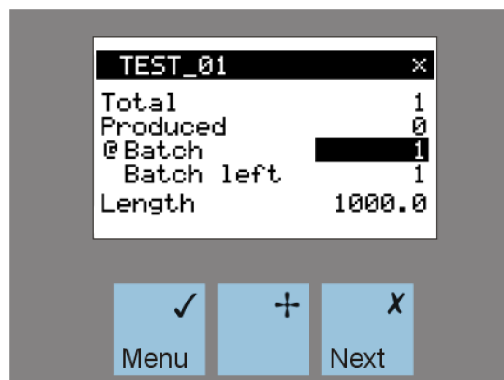
	Open/close: No function.
	Feed: Feeds the wire as long as this key is pressed.
	Cut: Performs a cutting procedure.
	Load /unload: No function.
	Start production: Starts the production of the programmed wire.
	Single wire: Produces a single wire with the programmed, current settings.
	Stop: Interrupts the production.

Entry keys

0...9	Numeric keypad: With the numeric keypad, characters and numbers can be entered in the entry fields.
	Cancel: Aborts the entry.
	Back: Confirms an entry and returns to the previous input field.
	Delete: Deletes the last entered character.
	Toggle key: Toggles between different states. In addition the leading sign with the plus/minus key and upper/lower case with characters can be switched.
	Decimal point
	Enter: Confirms an entry and jumps to the next input field.

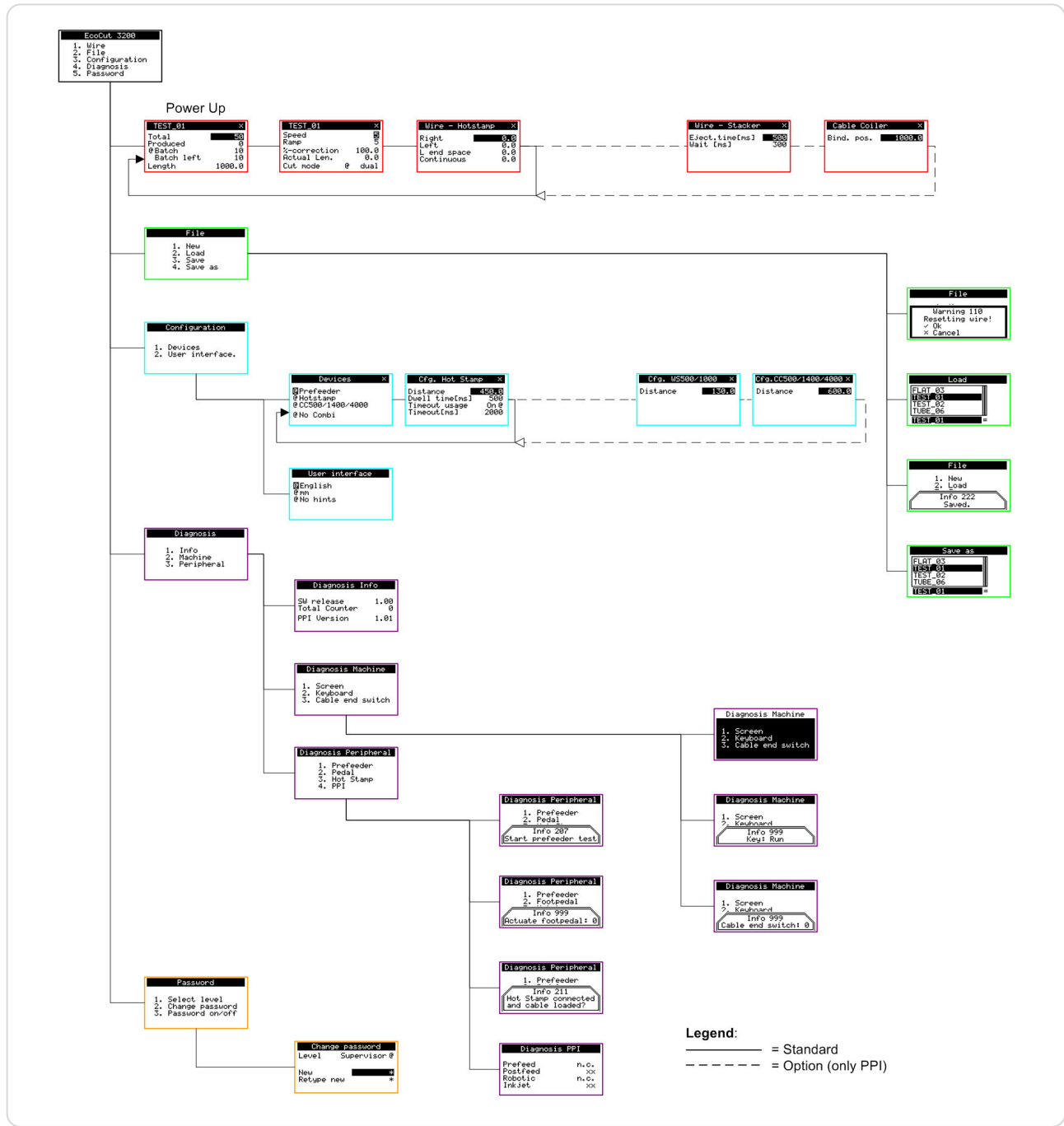
8.2 GENERAL

Below the display there are three blue keys, see chapter "8.1 Overview operator panel (Page 35)". For selecting the desired screen use **[MENU]** and **[NEXT]**. **[MENU]** returns to the screen level above. The key **[NEXT]** switches between several screens, marked with a (x) on the right of the header line, between the same level. In certain screens the function key **[+]** is used for the execution of special functions.



8.2.1 Menu structure

The software of the *EcoCut 3200* is structured in a main menu with 5 sub menus.



8.2.2 Input area

There are two types of input areas, which make up two different screen types:

- Menu screen
- Entry screen

In menu screens the indicated functions or sub menus can be selected with **[1]...[9]** according to the shown menu.

```

1. Wire
2. File
3. Configuration
4. Diagnosis
5. Password

```

In input screens use the fields for the entry of values and settings. Navigation from field to field can be carried out with the **[ENTER]/[FORWARDS]** or **[BACKWARDS]** key. The entered value is immediately saved as soon as the field was exit. If the value of an input field was changed unintentionally the former value can be reset with **[ESC]** as long as that field was not exit.

```

TEST_01
Total          50
Produced       0
@Batch        10
  Batch left   10
Length        1000.0

```

8.2.3 Entry fields

There are three types of input fields:

- Toggle fields
- Numeric fields
- Text fields

Toggle fields can be switched with **@**.

Enter the values for the numeric fields with **[0]... [9] / [.]**. Delete single characters with **[DEL]**, switch the leading sign with **[+/-]**.

```

TEST_01
Total          50
Produced       0
@Batch        10
  Batch left   10
Length        1000.0

```

Enter the values for the text fields with the **[0]...[9]** (0-9, abc - wxyz, special characters, space) / **[.]**keys. Delete single characters with **[DEL]**. To toggle between upper and lower case can be done with **[+/-]**.

```

Load
FLAT_03
TEST_01
TEST_02
TUBE_06
TEST_01 =

```

8.3 MAIN MENU

If the **[MENU]** key is pressed after switching on the machine, the main menu is shown on the display.

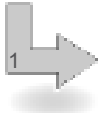
```

1. Wire
2. File
3. Configuration
4. Diagnosis
5. Password

```

8.4 WIRE SCREENS

8.4.1 Wire data 1



After switching on the *EcoCut 3200* the user automatically accesses the screen „Wire“.

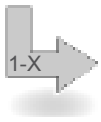
The number of wires to produce (Total), the batch (@ batch / @ batch left) with batch size and the wire length is determined here.

Press **[+]**, **[OK]** to delete the production status.

Press the key **[x]** to enter the following screens.

TEST_01		x
Total	50	
Produced	0	
@ Batch	10	
Batch left	10	
Length	1000.0	

8.4.2 Wire data 2



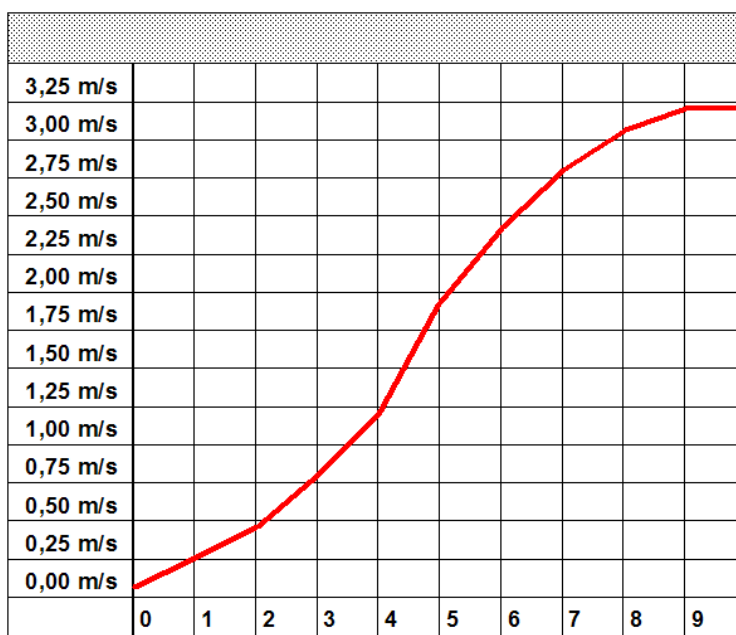
Here the speed and the ramp (acceleration) with which the wire shall be transported is determined.

TEST_01		x
Speed	5	
Ramp	5	
%-correction	100.0	
Actual Len.	0.0	
Cut mode	@ dual	

Speed

These settings change the feed speed of the rollers; whereas 0 is the smallest and 9 the largest selectable value.

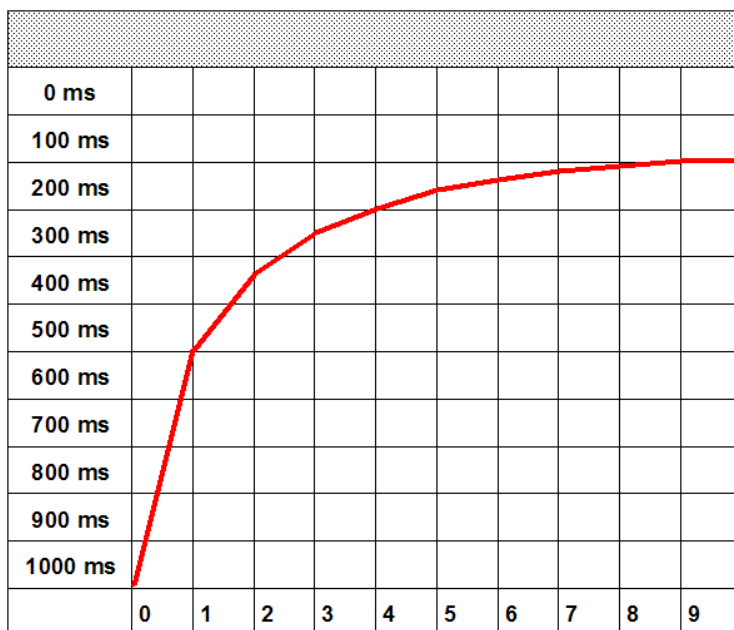
Table of speeds										
Step	0	1	2	3	4	5	6	7	8	9
m/s	0.1	0.25	0.45	0.8	1.22	1.9	2.4	2.8	3.05	3.2



Ramp (acceleration)

These settings change the ramp (acceleration) of the rollers, whereas 0 is the smallest and 9 the largest selectable value.

Table of ramps										
Step	0	1	2	3	4	5	6	7	8	9
ms	1000	500	330	250	200	165	145	125	110	100



%-correction

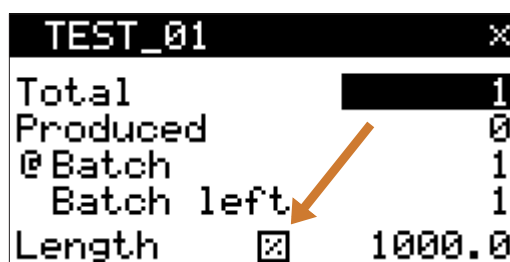
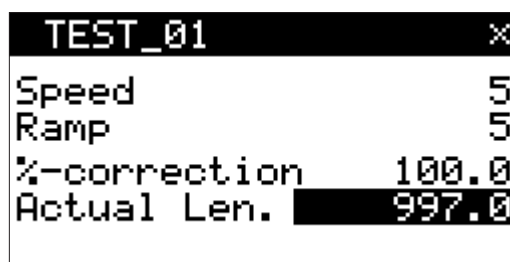
Due to the nature of the wire and the type of wire feeding length deviations may occur while processing. With the correction function, the deviation can be compensated.

With the %-correction the lengths are linearly corrected by the calculated factor. The correction factor is calculated with the following formula:

$$\text{New correction factor} = \text{old correction factor} \times \frac{\text{given value}}{\text{measured value}}$$

The %-correction can be calculated by the *EcoCut 3200*.

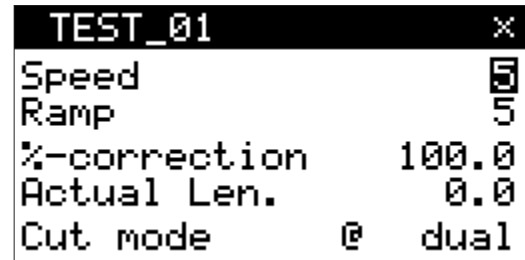
Enter the measured wire length (actual length) and press [+]. The calculated value is adopted to the %-correction field, the measured wire length is reset to 0 and marked with an "x" at the length line on the screen „Wire data 1“.



Cutter mode

The user can select between single or dual cutting mode.

- Single: The blade is cutting only in one direction. The production speed is slower.
- Dual: The blade is cutting in both directions. The production is faster.



For the production of wires use the mode „Single“.

8.4.3 Wire marking

In this screen the wire marker data is determined. This screen is only shown if the wire marker device under „Configuration - Devices“ is switched on.

See also chapter "8.6.1 Devices (Page 46)" and "9.2 Installing the wire marker unit (Page 55)".



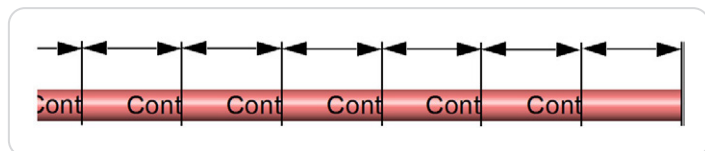
Right / left

Optionally we can choose whether to place markings on the left, the right or on both sides of the wire. Therefore the distance from the left/right wire end has to be entered.

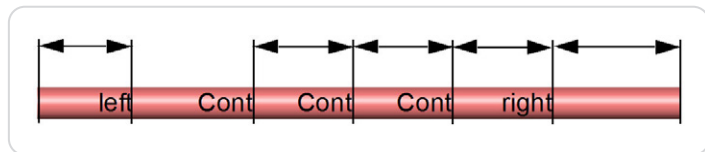


Continuous

With this setting the markings are placed along the whole wire in periodical distance.

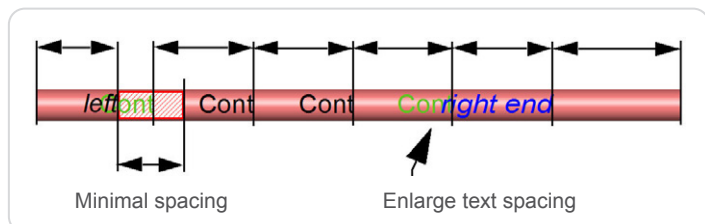


We can enter either the left and/or the right position, although a continuous marking is possible also if no value for „Left“ and „Right“ is entered.



Left end space

To ensure that a continuous marking is not placed too close together or even overlaps, the minimal spacing to the left marking can be entered here.

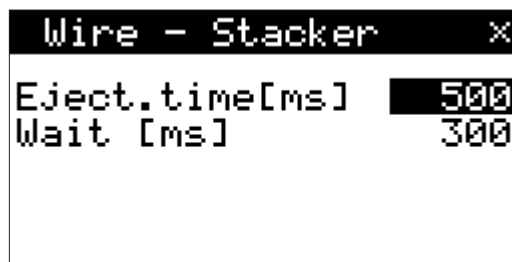


Enter enough text spacing as the text length is not taken into account with the wire marker.

8.4.4 Wire stacker (PPI, option)

In this screen the wire stacker data is determined. This screen is only shown if the wire stacker device under „Configuration - Devices“ is switched on.

See also chapter "8.6.1 Devices (Page 46)".



Ejection time [ms]

The *EcoCut 3200* activates the output „Postfeed“ during the entered time. The ejection time depends on the duration of the stacking.

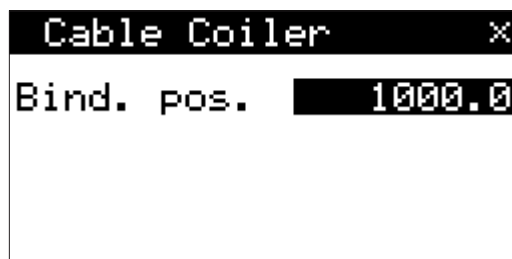
Wait (ms)

The *EcoCut 3200* waits for the entered time, until the *WS 500/1000* was moving to its home position. Subsequently the production continuous.

8.4.5 Cable coiler (PPI, option)

In this screen the cable coiler data is determined. This screen is only shown if the cable coiler device under „Configuration - Devices“ is switched on.

See also chapter "8.6.1 Devices (Page 46)".



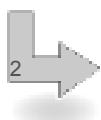
Binding position

The *EcoCut 3200* interrupts the production after the programmed "Binding position". This is shown in the „Info-Box 240“. On this position now the coiled wires can be bound or marked. Press the pedal to continue the production or [STOP] to interrupt.

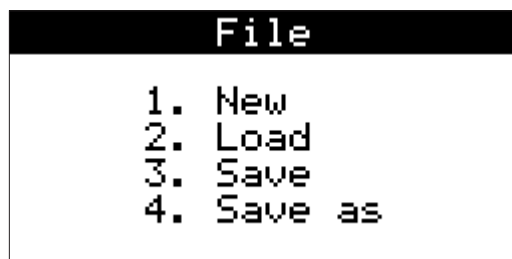


- The binding position must be longer then the distance between cutting axis and clamping pin.
- The binding position must be shorter then the wire length minus the distance cutting axis to clamping pin.

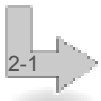
8.5 FILE MENU



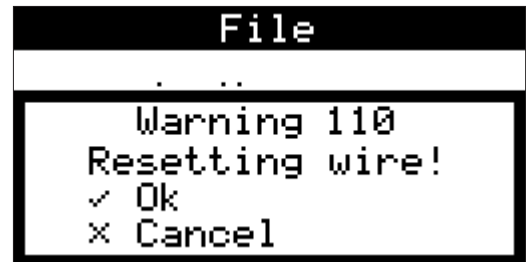
From the main menu the screen „File“ can be reached with the key [2]. At the screen „File“ you load, save or delete the wire data. The memory handles up to 100 wires.



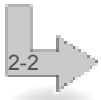
8.5.1 New



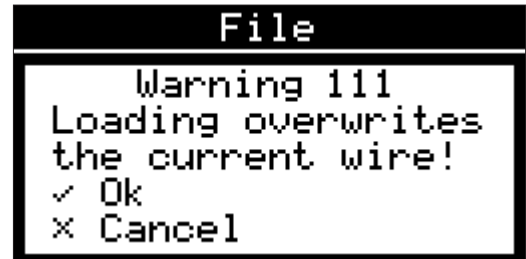
With the menu entry "1." „New“ the values of the present wire are reset to the default values. The present wire always is the one indicated on the screen „Wire“.



8.5.2 Load



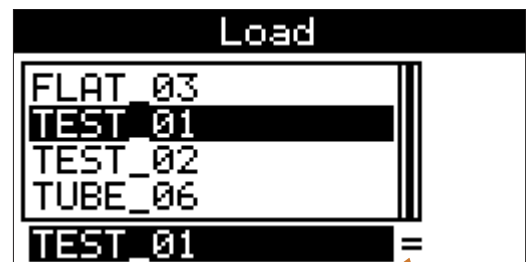
Load a saved wire. The user is asked whether to overwrite the present wire, indicated on the screen (Warning 111). This warning only appears if the present wire is different from the saved one. Once the message is confirmed with [OK] the screen „Load“ pops up.



Procedure

In the list in the upper area of the screen, the name of the wire can be selected with [UP] / [DOWN]. On the text input field below the name can be entered directly. The list selection thereby jumps to the next entry.

- With [OK] the actual wire is loaded and the software changes directly to the screen "Wire".
- With the key [+], the currently selected wire on the list is deleted, see chapter "8.5.2.3 Deleting a wire (Page 45)".
- The screen can be left with [x] without loading a wire.



Display of compatibility

Display of compatibility

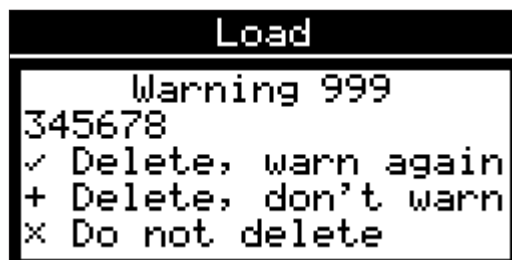
Symbol	Meaning
=	Saved and current wire data are identically.
≠	Saved and current wire data are identically. Total is different.
*	Saved and current wire data are different.

Deleting a wire

At the screen „Load“ and „Save as“, wires can be deleted by pressing the **[+]** key. The warning "999" is shown.

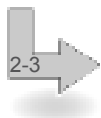
The entry is confirmed with:

- **[OK]** The wire is deleted and with further deleting procedures the warning is issued again.
- **[+]** The wire is deleted, while the warning does not appear again with further deleting procedures until this screen is exit again.
- **[x]** The wire is not deleted.



The selection **[+]** „Delete without warning“ is useful if several wires are intended to be deleted.

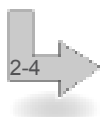
8.5.3 Save



With the menu „Save“ the loaded and edited wire can be saved. If a new, unsaved wire has to be saved by means of „Save“ the user is automatically guided to the „Save as“ screen.



8.5.4 Save as



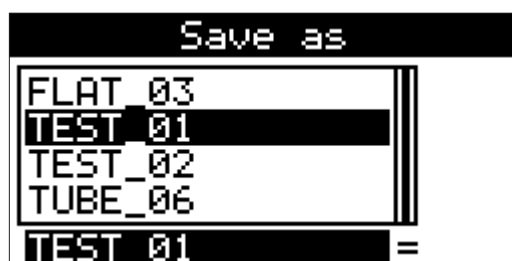
This screen operates like the screen „Load“ with the following exception:

With **[OK]** the actual wire is saved and the screen "File" is displayed again.

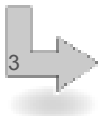
Procedure

In the list in the upper area of the screen, the name of the wire can be selected with **[UP]** / **[DOWN]**. On the text input field below the name can be entered directly or an existing name renamed. The list selection thereby jumps to the next entry.

- With **[OK]** the present wire is saved under a new name.
- With the key **[+]** delete, the currently selected wire on the list is deleted, see chapter "8.5.2.3 Deleting a wire (Page 45)".
- The screen can be left with **[x]** without loading a wire.

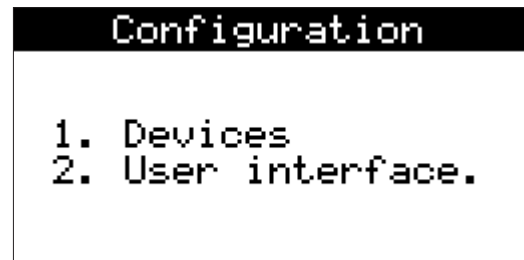


8.6 CONFIGURATION

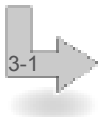


From the main menu the screen „Configuration“ can be reached with the key [3]. In the „Configuration“ screen all necessary machine settings can be carried out with the following items:

- [1] Devices
- [2] User



8.6.1 Devices



In this screen the following devices can be activated / deactivated and the "Combi" function is switched on/ off.

Feeders:

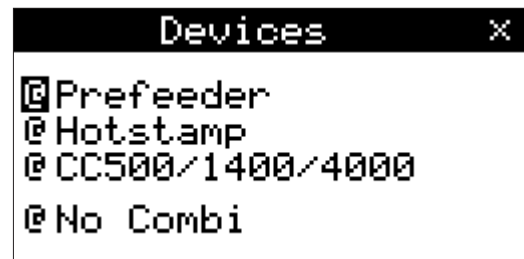
- PreFeeder

Marking devices:

- HotStamp

Post processing devices:

- WireStacker
- CableCoiler



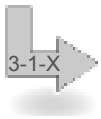
Additional screens are activated accordingly.

Combi on / no Combi

With the operation of a wire marker device the wire feeding on the *EcoCut 3200* is interrupted through the Combi input until the marking procedure is completed, see chapter "[9 Operation using a marking device \(Page 55\)](#)".

During automatic processing without a marking device, the feeding on the *EcoCut 3200* is stopped as long as the switch between pin 4-5 remains closed. The processing continues as soon as this switch is opened again. See also chapter "[14.2.2 For use with a HotStamp \(Page 82\)](#)".

Configuration HotStamp



In this screen all parameters for the wire marker device are determined. See also chapter "[9 Operation using a marking device \(Page 55\)](#)".

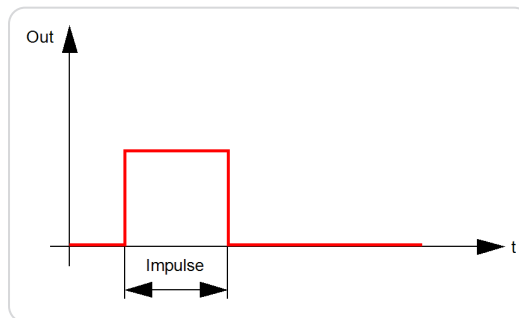


Distance

In order to correctly position the marking the distance between the two devices must be entered into the *EcoCut 3200*. See also chapter "[9.2.1 Determining the distance \(Page 55\)](#)".

Pulse duration [ms]

During the pulse duration the output of the connection on the marking device is activated. The marking time is set on the marking device. Via the input of this connection the *EcoCut 3200* is stopped during the marking process.

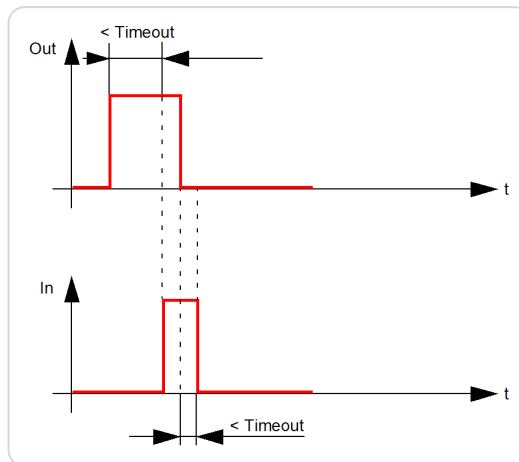


Timeout usage

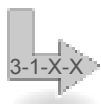
This parameter switches the "Timeout-function" on/off.

Timeout

The *EcoCut 3200* monitors, if a marking device is operating or not after startup. If the marking device does not confirm the printing for any case, an error message will appear. The duration until an error message appears is called „Timeout“ and can be set up.



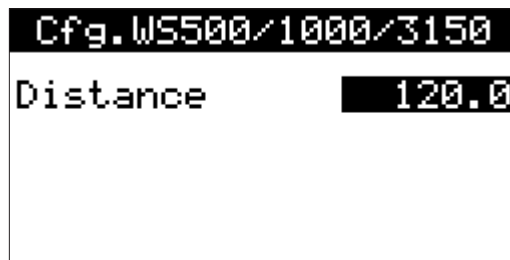
Configuration Wire stacker (PPI, option)



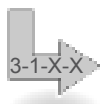
In this screen all parameters for the wire stacker device are determined. Here stackers from third party vendors (with device specific adaptation) can be configured.

Distance

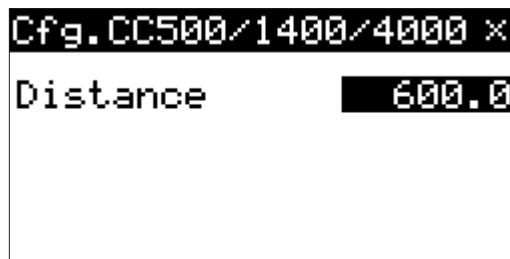
In order to correctly position the marking the distance between the two devices must be entered into the *EcoCut 3200*. For this measure the distance from the cutting axis to the adapter with a measuring tape.



Configuration CC 500 / CC 1300 (PPI, option)



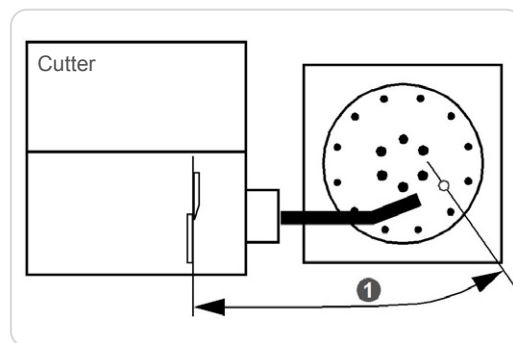
In this screen all parameters for the cable coiler device are determined. Here also coilers from third party vendors (with device specific adaptation) can be configured.



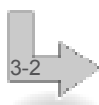
Distance

In order to take over the wire on the right position, the distance between the two devices must be entered into the *EcoCut 3200*.

For this measure the distance (1) from the cutting axis to the coiling position with a measuring tape.



8.6.2 User



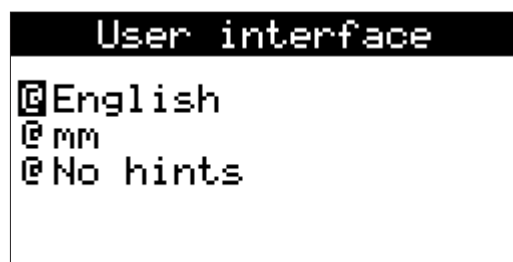
In this screen the language and the measuring unit is set. For this see chapter "6.2.2 *Setting the measuring unit and the menu language (Page 29)*".

Available language packets:

Standard	East
English	English
Deutsch	Deutsch
Italiano	Cesky
Français	Polski
Español	Magyar
Slovensky	Româna

In addition the hints are set to:

- No hints
- Important hints
- All hints

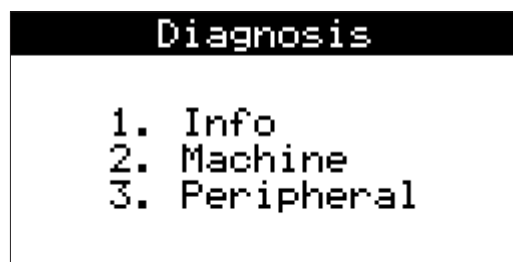


8.7 DIAGNOSTICS

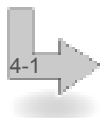


From the main menu the screen „Diagnosis“ can be reached with the key [4]. At the „Diagnosis“ screen all necessary diagnostics are made:

- [1] Info
- [2] Machine
- [3] Peripheral



8.7.1 Info

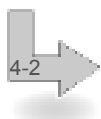


This screen contains the following information to the EcoCut 3200:

- Current software version
- The produced total wires
- Software version of the implemented optional PPI (pre-/postfeed interface)

Diagnosis Info	
SW release	1.06
Total Counter	0
PPI Version	1.01

8.7.2 Machine



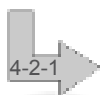
In the „Diagnosis Machine“ screen the functioning of the following components is tested:

- Screen
- Keyboard
- Wire end switch

Diagnosis Machine	
1.	Screen
2.	Keyboard
3.	Cable end switch

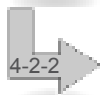
Screen

The menu item „Screen“ inverts the screen. This way the display can be checked for pixel errors.



Keyboard

Here the functioning of the keyboard is tested. Therefore press any key that is shown under "Info 999 key: ..." is displayed (in the example the key **RUN**).

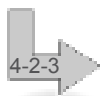


Press **MENU** to terminate the keyboard test.

Diagnosis Machine	
1.	Screen
2.	Keyboard
Info 999 Key: Run	

Wire end switch

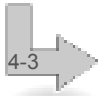
Here the functioning of the wire end switch is tested. Lifting up or releasing the wire end switch triggers a modification of the "Info 999 wire end switch":



- 0: indicates a non active cable end switch (in upper position).
- 1: indicates an active cable end switch (in lower position).

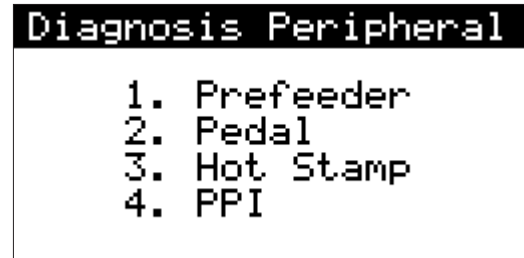
Diagnosis Machine	
1.	Screen
2.	Keyboard
Info 999 Cable end switch: 0	

8.7.3 Peripheral

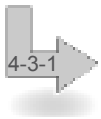


Here the functioning of the following peripheral devices is tested:

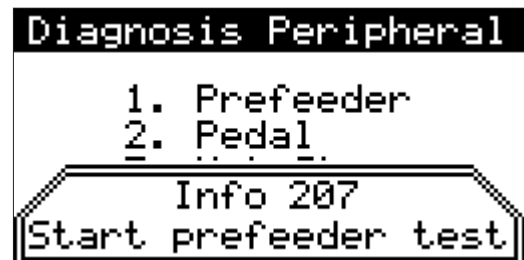
- Prefeeder
- Pedal
- Marking device
- Pre-/postfeed interface (PPI, option)



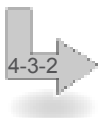
Prefeeder



Here the functioning of a connected prefeeder is tested. For this follow the instructions on the screen.

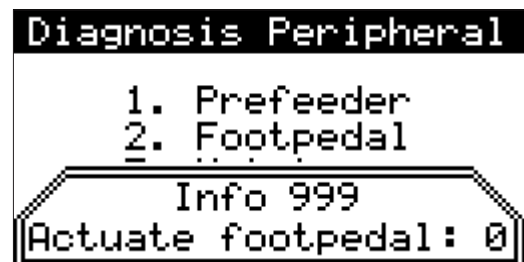


Pedal

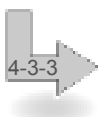


Here the functioning of a connected pedal is tested. Activating or deactivating the pedal triggers a modification of the "Info 999 actuate pedal":

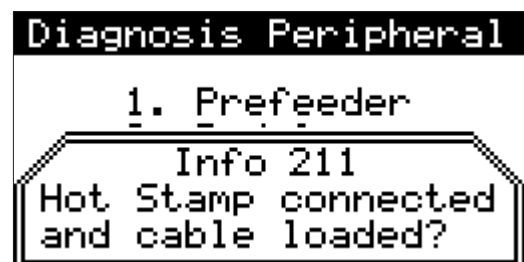
- 0: indicates a non active pedal (not actuated, as shown in the example).
- 1: indicates an active pedal (actuated).



Wire marker



Here the functioning of a connected marking device is tested. For this follow the instructions on the screen.



PPI (option)

WARNING



Danger if operated by unqualified personnel!
The diagnostic on the PPI must only be carried out by *Schleuniger* personnel or a distributor.



Here the functioning of an optional connected PPI is tested.

Preparation:

- 1» Turn the machine off
- 2» Install the interface kit
- 3» Connect the interface tester
- 4» Switch on the machine

```

Diagnosis PPI
Prefeed           n.o.
Postfeed          xx
Robotic           n.o.
```

Diagnostics with built in interface:

Start the test with the **[+]** key. The following criteria indicate an error free functioning of the interfaces. The test takes about 6 seconds:

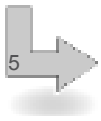
- The single red LED on the interface test print glows.
- The pair of LED on "Postfeed" flashes alternately red and green = OK.
- The relays on the test prints click hearable.

Error codes:

Error code of the interface		Meaning of the message on the display
Postfeed	Inkjet	
FF	FF	No interface built in
FF	1F	Interface built in, no test adapters connected
00	00	Interface built in correctly, all in-and outputs OK

Error codes Postfeed	Outputs defective	Inputs defective
00	all OK	all OK
01	PNP: ROUT0	PNP: RIN0, RIN1
02	PNP: ROUT0	NPN: RDETECT
04	PNP: ROUT1	PNP: RIN1
08	PNP: ROUT2	PNP: RIN2, RIN3
10	PNP: ROUT3	PNP: RIN3
20	NPN: ROUT1	NPN: RIN2
40	NPN: ROUT2	NPN: RIN2, RIN3
80	NPN: ROUT3	NPN: RIN3
FF	all defective	all defective
??	Random error code possible due to hexadecimal addition	

8.8 PASSWORD RESTRICTION



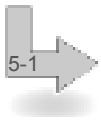
From the main menu the screen „Password“ can be reached with the key [5].

Based on the menu „Password“ the individual menus can be reached with [1]...[4], back to the main menu with [MENU].

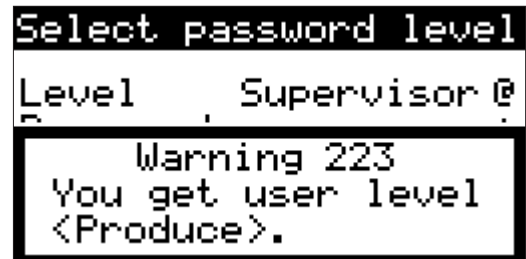
In the menu „Password“ the four user levels "Standard / Supervisor / Service / Produce" can be activated/deactivated and the access rights are determined/blocked.



8.8.1 User level selection



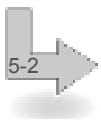
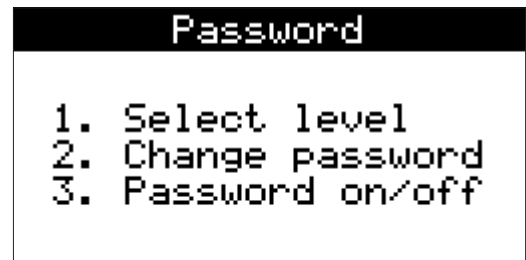
In this mode the desired user level can be activated. If this screen is left with [x] and the password is switched on, the user automatically resides in the password level "Produce".



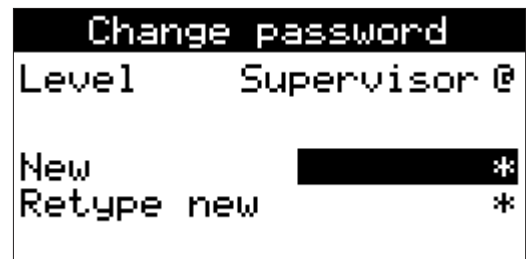
8.8.2 Change password

This screen is only shown with activated user level "Standard" or „Supervisor“.

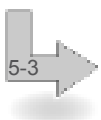
Enter a new password and repeat the entry to confirm the password.



In order to save the password, exit the screen with [OK].

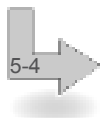


8.8.3 Password on/off



This menu item is only shown with activated user level „Supervisor“.

8.8.4 Reset password



This menu item is only shown with activated user level „Service“. This menu item resets all passwords to the factory setting.

Password

1. Select level
4. Reset Passwords

8.8.5 Access rights

Level	Restriction
Service	All rights
Supervisor (password 123)	All rights except: Configuration / change machine
Standard (password 12)	All rights except: - Configuration / change user - Configuration / change machine - Change diagnostics
Produce (no password)	All rights except: - Change configuration (only turning devices on and off is allowed) - Execute diagnostics - Delete wires in the file menu



WARNING

Danger if operated by unqualified personnel!

- Only users with password level "Supervisor" can activate the password protection.
- Once the password is deactivated, all entries can be changed.
- The standard passwords must be changed and put aside. If a password gets lost, the passwords can be reset. This is reserved for the user level "Service".

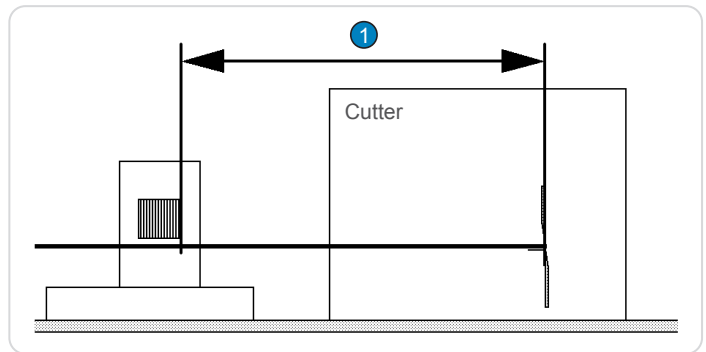
OPERATION USING A MARKING DEVICE

9.1 INFORMATION FOR WIRE MARKING

- Only program the marking when the wires are being cut accordingly or temporarily enter 0 (sample wire) in the „Marking (marker)“ menu. This way any wire loss can be held on a minimum.
- The *EcoCut 3200* automatically calculates the wire loss (waste piece) that takes place during the start of the processing. The distance between the marking device and the *EcoCut 3200* has no influence on the resulting production quantity.
- To obtain only one print enter the position „Right“ in the screen "Wire marking".
- To obtain a print in the middle of the wire, enter half the wire length in the „Right“ position.
- If the entire typeface has shifted, the distance between marking device and the *EcoCut 3200* has to be measured and reprogrammed.

9.2 INSTALLING THE WIRE MARKER UNIT

- 1» Install a HotStamp left next to the *EcoCut 3200* (see also the operating manual HotStamp). The processing axis of both devices must be aligned in the X- and Y-axis.
- 2» Plug the connecting cable into the interface „HS/PF“.
If a *Schleuniger* HotStamp device is used the connection cable is enclosed.
- 3» The distance (1) from the cutting axis (blades) of the *EcoCut 3200* to the right side of the printing wheel edge should not exceed 1 m.
- 4» Fasten the device securely. The distance should not be changed during operation (applies specially to the *EcoCut 3200*, if applicable use the original *Schleuniger* machine rack).
- 5» In order to correctly position the marking, the distance (1) between the *EcoCut 3200* and the marker device must be entered into the *EcoCut 3200*.



9.2.1 Determining the distance

Determine the distance (1) as follows:

- 1» Measure the distance (mm) with a measuring tape from the right printing wheel edge to the cutting axis.
- 2» Switch on both devices
- 3» Enter the distance in the menu "Configuration - HotStamp", see chapter "[8.6.1.2 Configuration Hot-Stamp \(Page 46\)](#)".
- 4» Choose the desired pulse duration (in ms).
↳ During the pulse duration, the output of the „HS/PF“ interface is activated.
- 5» Leave the screen.
- 6» Program a wire with a marking.



Determine the distance conveniently:

- 1» Load a wire on both devices (make sure that the wire was cut).
- 2» Carry out a test marking.

- 3» Press **[FEED]** until the marking of the wire is visible on the *EcoCut 3200* exit.
- 4» Press **[CUT]**, to eject the marked wire.
- 5» Measure the distance from wire beginning to the right edge of the marking.
- 6» Enter the distance in the menu "Configuration - HotStamp".

DIAGNOSTICS / TROUBLESHOOTING

Errors and others can occur if excessive pollution affects the guidance and blade functions.

Regular inspection and maintenance reduces the risk of unexpected faults and increases the reliability and life cycle of the machine. Maintenance work must be accomplished according to the instructions and the time intervals listed. See chapter "[11.4 Maintenance schedule \(Page 62\)](#)".

10.1 GENERAL FAULT LOCALIZATION

10.1.1 Safety instructions

General

Safety appliances must not be deactivated or removed inadvertently.

If a fault condition occurs always check first if the line power is switched on and then perform a diagnostic check.



The instructions in this chapter must be carried out by **qualified personnel!**

10.1.2 Behavior in case of an error

We advise the customer in case of a serious fault, to contact the local *Schleuniger* distributor, see "[Page 2](#)".

10.2 FAULT INDICATORS

Errors recognized by the software or the internal electronics show up on the display.



Fig. 7: Fault indicators

10.3 DRAWINGS / CIRCUIT DIAGRAMS / FLOW CHARTS

Drawings, circuit diagrams and flow charts may be helpful during trouble shooting. See chapter "[14 Appendix \(Page 79\)](#)".

10.4 ERROR MESSAGES

Error	Text	Description/action
1	Safe mode! No production possible.	Initializing could not be performed.
2	Internal error.	
3	HotStamp timeout.	HotStamp device is not responding. Message from production.
4	No feedback from HotStamp.	HotStamp device is not responding. Message from diagnosis.
5	Blade blocked! Production canceled.	No feedback from motor. The cutting procedure could not be completed fully. Blocked by too thick wires.
6	No wire! Production canceled	Wire end switch detects no wire.
7	No more memory. Delete first.	The wire memory already contains 100 wires. You have to delete existing wires to be able to save new ones.
8	Invalid name, empty or used: \\ / : * ? \" < >	File name invalid. Characters like / : * ? \" < > are not allowed.
9	File not found.	A file which is missing was entered.
10	No prefeeder connected.	Appears on diagnose if a prefeeder is being tested although none is connected.
11	No pedal detected.	Appears on diagnostic if a pedal is being tested but none is connected.
12	RAM corrupted. Machine stopped. Replace hardware.	The internal memory changed unintended. This indicates an error with the FRAM. Hardware exchange is indispensable.
13	Actual value not in range.	%-correction calculation. If the value is beyond the permitted range, the calculation is not carried out.
14	Enter correct password!	The password for the selected user level is wrong.
15	Password confirmation wrong!	While changing the password the confirmation was entered incorrectly.
16	Illegal operation for current user level.	The selected function is not allowed with the present user level.
17	Communication error to PPI	The PPI is not implemented.
18	Prefeeder blocked!	The prefeeder is not switched on or the wire entry area is blocked.

Error	Text	Description/action
19	Tow error beyond the limit.	Pulling force too high. Check the wire entry area.
20	Over temperature fault Production canceled.	Electronics on over temperature. The production is temporarily interrupted. Switch off the machine and wait for five minutes.
21	Cutting motor could not brake.	Motor control unit on error. Switch off and then on again the machine.
22	Cutting cycle not finished correctly.	Light barrier defective.
23	Cutter head could not initialize.	Light barrier defective or switching flag not mounted correctly.
24	Wire too short for cable coiler.	Program a longer wire. Wire must be longer than the offset value machine to cable coiler.
25	No encoder found.	Encoder is missing or no software program.
26	Motor switched off.	Motor ran into heavy load condition and switched off therefore. Switch off and on again the machine.

10.5 WARNINGS

Warning	Text	Explanation
000	Data changed.	You overwrite existing wire data.
102	Production finished.	If the production is completed (Total = Produce), then this message appears with a new start with [RUN] .
103	Reset production state?	The user explicitly requires to reset the production state.
104	All data will be lost! Really want to delete whole memory?	There is an option to delete the complete memory. This warning reminds you of it.
105	No more wire!	The wire end switch is activated during production. Wire still can be completed.
106	File available! Overwrite?	An already existing file name was entered.
107	Delete, warn again.	This warning is only triggered in combination. See warning 999.
108	Delete without warning message.	This warning is only triggered in combination. See warning 999.
109	Do not delete.	This warning is only triggered in combination. See warning 999.
110	Reset wire data!	Appears if „File“ --> „New“ was selected.
111	Loading overwrites the current wire!	A wire is being loaded, although the present wire was not saved. Changes are lost.

Warning	Text	Explanation
112	Unknown data format!	This message can appear after an upgrade if the file format does not match anymore. The user may return to an older version or confirm deleting all data with [MENU] .
113	Prefeeder blocked!	The prefeeder is not switched on or the wire entry area is blocked.
114	Back to factory defaults!	This resets all data to the factory setting. All wire programs are deleted.
999	Delete, warn again. Delete without warning message. Do not delete.	Appears with deletion of wire data.

10.6 ACTIONS AFTER SOLVING ERRORS

To check the correct functioning of the machine before the series production, a functional check has to be performed.

MAINTENANCE / MAINTENANCE SCHEDULE

Periodic inspection and maintenance eliminates the feasibility of unexpected errors and improves the reliability.

This chapter contains the description of general maintenance work to be done on the product, which can be carried out by qualified and trained personnel on site.

All maintenance and cleaning work apply to one-shift-operation. For work in multiple shift operation, the interval times are shorten accordingly.

11.1 SAFETY INSTRUCTIONS

11.1.1 Personal protective equipment

See chapter "[2.8 Personal protective equipment \(Page 16\)](#)".

11.2 CUSTOMER SERVICE

11.2.1 Hotline

We advise the customer in case of technical problems with the machine, to contact the local distributor first, see "<http://www.schleuniger.com>".

11.2.2 Behavior in case of an error

If problems occur, which cannot be solved by the help of this manual, the Schleuniger distributor or the technical staff of Schleuniger is ready to assist you. In such situations it is essential to provide a precise description of the matter.

- Exact machine name
- Serial number of product
- Software version (incl. language packages).
- Exact description of the error (error no. shown on the screen, if available)
- Under what circumstances has the error shown up
- What peripheral devices were connected to the machine when the error occurred
- Wire type to be produced at the time the error occurred

Soft- and hardware versions and other information can be read in the diagnostics.

11.3 CLASSIFICATION

11.3.1 Access rights

See chapter "[2.7.1 Personnel classification \(Page 15\)](#)".

11.4 MAINTENANCE SCHEDULE

11.4.1 General

The development and construction of the machine is focused on a minimal maintenance effort. Maintenance work is mainly constricted on cleaning and lubricating certain components and removing dust and debris. The listed maintenance intervals however can vary depending on the type of material produced and the environmental conditions.

It is important that the system is checked periodically to find out about the grade of dirt and abrasion.

11.4.2 Maintenance chart

Maintenance work must be accomplished according to the instructions and the time intervals listed. Generally proceed according to the following chart:

Component	Activity	Interval	Reference (Page)	Time consumed (Min.)
Housing	clean	weekly	63	2
Processing area	clean	weekly	63	2
Blade	clean/check	weekly	69	2
Drives	clean/check	weekly	68	2

11.5 CIRCUIT DIAGRAMS, DRAWINGS, SPARE PART LISTS

See chapter "[14.4 Block diagram \(Page 93\)](#)".

Document „[Parts Catalog](#)“.

11.6 SPECIFICATION OF SPARE PARTS

See document „[Parts Catalog](#)“.

11.7 GENERAL MAINTENANCE WORK

The cleaning interval depends on the type of material processed and the intensity of the application. The blade area, the wire/cable guides should be held free of waste material in order to ensure precise stripping results. Dirt and talcum residues may affect the functioning of the machine. The machine has to be checked and necessarily be cleaned.

WARNING



Electric current!

Before cleaning always switch off the main switch and unplug the product from the mains. Disregarding may lead to serious injury or death.



NOTICE

Caution, property damage!

For cleaning never use solvents! Clean the exterior casing and the plastic parts on the safety cover with a soft cloth and a usual commercial cleaning agent. Do not clean the machine with compressed air. There is a risk of stripping waste pieces to penetrate into the drives and the interior of the machine.

11.7.1 General maintenance



The instructions in this chapter must be carried out by the **operator personnel!**

Cleaning the housing



- 1» Switch off and unplug the machine from the mains supply.
- 2» Clean the cover with a soft cloth and a commercially obtainable cleaning agent.



Cleaning the interior

- 1» Open the safety cover.
- 2» Clean the processing area with a brush and/or a vacuum cleaner.
- 3» Clean the cutter head and the rollers with a brush and possibly with a vacuum cleaner.
- 4» Close the safety cover.
- 5» Connect the machine to the mains and switch it on.



11.8 SETTINGS

The machine was calibrated in the factory to your needs. After a blade replacement, the replacement of mechanical or electrical components, a re-calibration may be necessary.

To always achieve constant precise results during operation, in some special cases the machine needs to be re-calibrated after some time.



The instructions in this chapter must be carried out by a **technical specialist!**

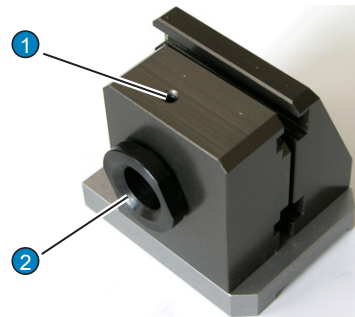
11.8.1 Adjusting the wire cutter blades

The wire cutter blades must be adjusted in the following cases:

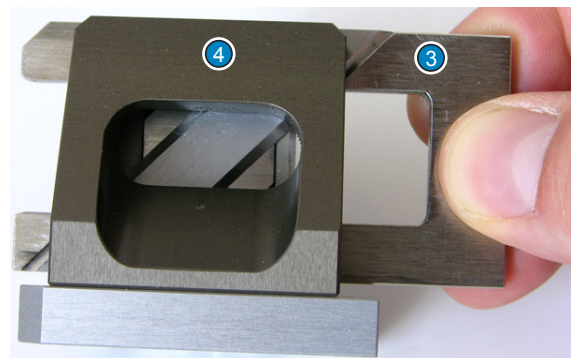
- A fixed blade has been replaced
- A fixed blade has been sharpened



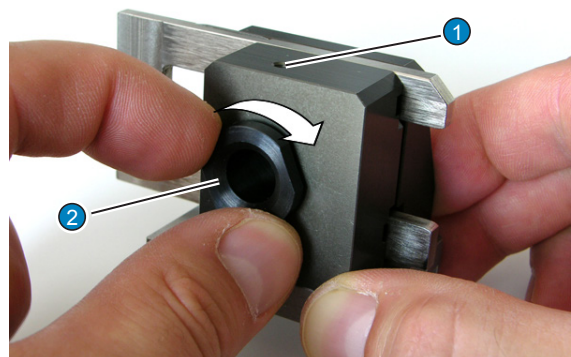
- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Remove the wire cutter head, see chapter "[11.9.4 Check / replace blades \(Page 69\)](#)".
- 4» Loosen the set screw (1) then loosen the adjusting screw (2) for some turns.



- 5» Slide the blade holder (3) into the cutter head (4) and position it centered to the guiding.



- 6» Tighten the set screw (2) carefully until a resistance is felt (the blade should be freely movable without any force applied).
- 7» Tighten the set screw (1).
- 8» Mount the wire cutter head.
- 9» Close the safety cover.
- 10» Connect the machine to the mains and switch it on.



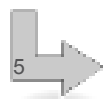
11.8.2 Configuring the machine



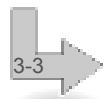
WARNING

Danger if operated by unqualified personnel!

Any changes in the screen „Configuration *EcoCut 3200*“ affects the behavior of the machine and should only be handled by experienced and trained personnel. This menu item is only accessible for persons with password level „Service“ Contact your local *Schleuniger* representative.

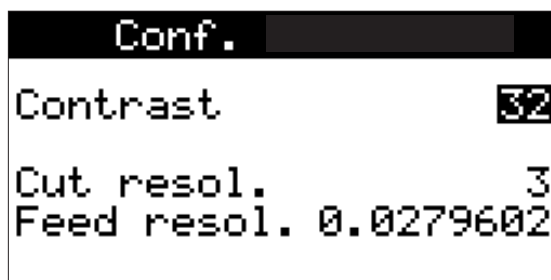


- 1» Switch on the machine.
- 2» Based on the main menu go to the menu "Password" with the key [5].
- 3» Select [1] „Level“.
- 4» With [0] select the password level "Service".
- 5» [ENTER]
- 6» Enter the "Service" password.
- 7» [ENTER]
- 8» 2 x [MENU]



- 9» From the main menu select the screen „Configuration“ with the key [3].
- 10» Press [3] "Product name" (this screen contains all the machine settings for the *EcoCut 3200*).

- **Display Contrast:** Adjusts the contrast level of the display.
- **Blade resolution:** Amount of pulses / cutter head revolutions (measured before the drive).
- **Feed resolution:** One encoder pulse corresponds to this feeding in mm or inch.



11.8.3 Setting back to factory default

If a fault condition occurs on the *EcoCut 3200* always proceed first according to chapter "[10 Diagnostics / troubleshooting \(Page 57\)](#)".

Not until a detailed labor trying to bring the *EcoCut 3200* into operation again, the option of switching the whole machine back to their factory settings may be considered.



NOTICE

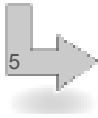
Caution property damage!

The function "Factory default" is only accessible for persons with password level „Supervisor“.

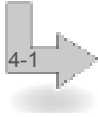
All settings are put back to their factory settings.

Caution: All wire programs are deleted!

Contact your local *Schleuniger* representative.



- 1» Switch on the machine.
- 2» Based on the main menu go to the menu "Password" with the key [5].
- 3» Select [1] „Level“.
- 4» With [@] select the password level "Supervisor".
- 5» [ENTER]
- 6» Enter password.
- 7» [ENTER]
- 8» 2 x [MENU]



- 9» Based on the main menu press the key [4] "Diagnosis".
- 10» [1]Info.
- 11» Press the following key combination, to get access to the screen "Back to factory defaults".
- 12» [SINGLE]
- 13» [DEL]
- 14» [ENTER]
- 15» [3] „f“
- 16» [2] „a“
- 17» [2] „c“
- 18» [8] „t“
- 19» [6] „o“
- 20» [7] „r“
- 21» [9] „y“

```

Diagnosis Info
SW release           1.06
Total Counter        0
PPI Version          1.01
  
```

- 22» [OK]
- 23» The machine restarts in the native state.

```

Diagnostics Info
Warning 114
Back to factory
settings?
✓ Yes
× No
  
```

11.9 MAINTENANCE / REPAIR WORK

11.9.1 General / safety



The instructions in this chapter must be carried out by a **technical specialist!**



WARNING

Electric current!

For any maintenance and repair work on the machine, it must be turned off, locked against switching on again and the power cord must be removed. Dangerous line voltage is present inside the machine and around the area of the mains socket, which can lead to serious injury or death if disregarding.



NOTICE

Caution, property damage!

After each replacement of a component, make sure that all the adjustments concerning this part are performed. Disregarding may lead to malfunction or damage to the machine.

After replacing any components, an upgrade of the software has to be carried out.

When replacing any defective components on the machine, the user must compulsorily follow the separate description if not stated in this Manual.



Before disassembly a component we recommend to make a drawing or to take a picture of the part. This is helpful, especially if the repair work takes longer.

11.9.2 Opening the housing



- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Loosen the 7 screws (1) and swivel the housing to the back.



11.9.3 Lubrication



The instructions in this chapter must be carried out by **qualified personnel!**



NOTICE

Caution, property damage!

Only use the supplied lubricant according to the available instructions. Please also consider the information about the lubricating grease in the "Appendix".

Drives

On the *EcoCut 3200* most of the drives and bearings are of a maintenance-free design. Lubricating only is necessary in exceptional cases.

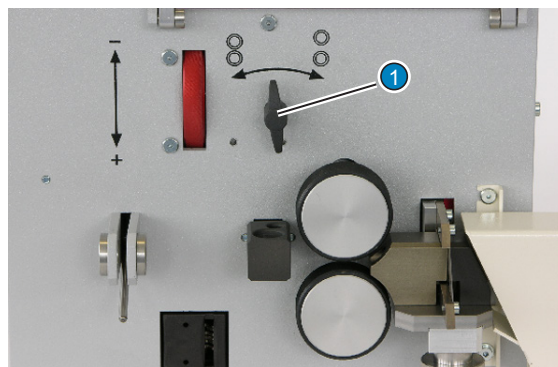
Applicable lubricating grease: Microlube GBU-Y 131

Drives

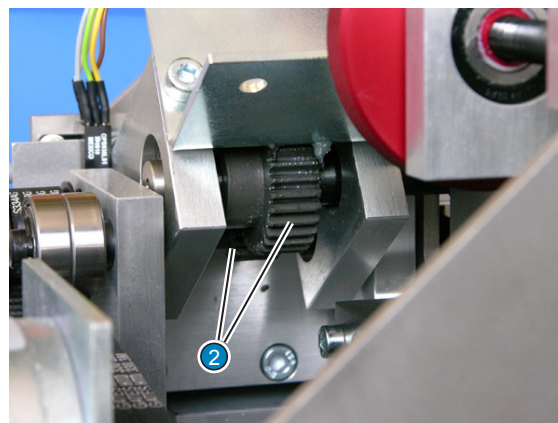


- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Open the cover of the machine, see chapter "[11.9.2 Opening the housing \(Page 67\)](#)".

- 4» Open the rollers with the roller lever (1).



- 5» Lubricate the gear wheel (2) with a brush.



- 6» Close the rollers.
- 7» Close the safety cover.
- 8» Close the housing and screw it on.
- 9» Connect the machine to the mains and switch it on.

11.9.4 Check / replace blades

If the blades are used up or the cutting edge is damaged, they must necessarily be replaced, otherwise malfunction of the machine may result:

- Improper production quality of wires

CAUTION



Dangerous line voltage!

Inadvertently start-up of the machine can lead to injury. Therefore always turn off the main switch on the product and disconnect it from the mains and from the compressed air supply to avoid the inadvertently start-up of the machine.

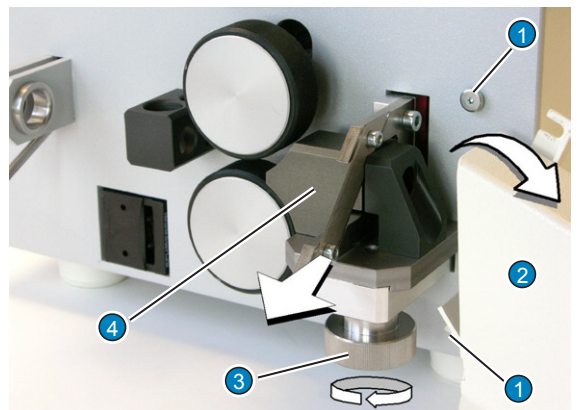
Procedure

The blade holder should be located in the extended position.

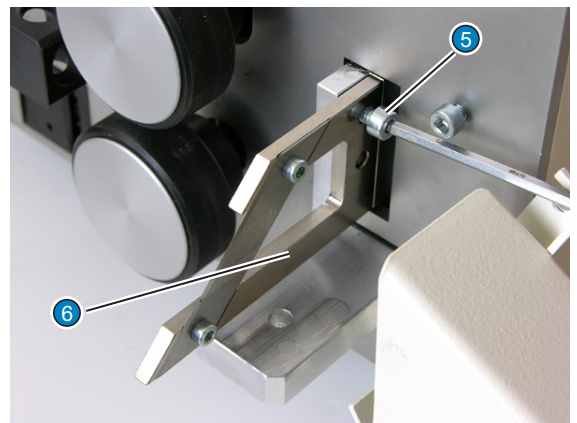
Movable blades



- 10» Switch off and unplug the machine from the mains supply.
- 11» Open the safety cover.
- 12» Loosen the screws (1) and swivel out the ejection channel (2).
- 13» Remove the knurled screw (3).
- 14» Remove the cutter head (4).



- 15» Loosen the screw (5) (tube cutter head only), slide the blade holder (6) out of the bolt and remove it.

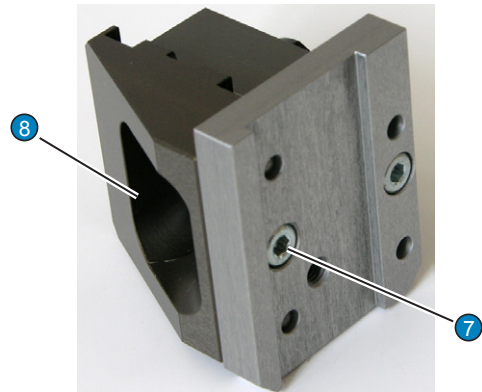


- 16» Loosen the screws.
- 17» Replace blades (**Caution:** Do not touch the blades on the cutting edge, they are RAZOR SHARP).
- 18» Tighten the screws.



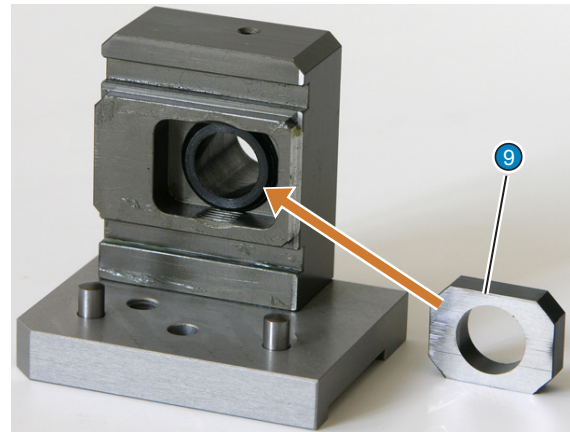
Fixed blade (wire cutter head)

19» Loosen the screw (7) and remove the wire ejection unit (8) from the guiding plate.



20» Replace the fixed blade (9) or sharpen it.

21» Mount the wire ejection unit.



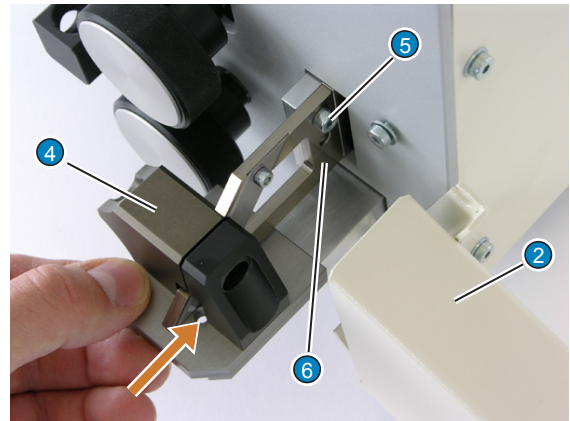
Mounting the tube cutter head

22» Slide the blade holder (6) onto the bolt and tighten it with the screw (5).

23» Slide the cutter head (4) onto the centering part - flushing to the front - and tighten it with the knurled screw (3).

24» Swivel in the ejection channel (2) and tighten it.

25» Close the safety cover.



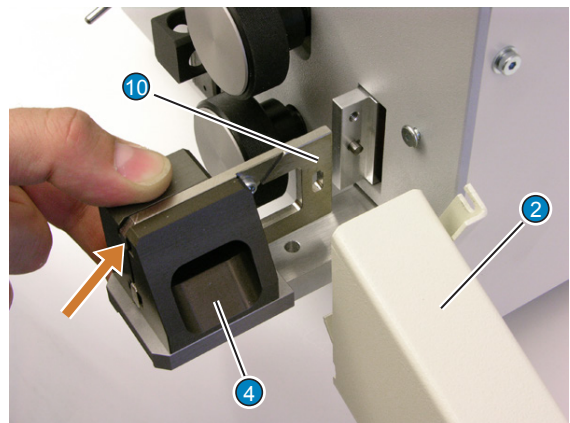
Mounting the wire cutter head

26» Slide the blade holder - flushing to front - into the Cutter head.

27» Slide the blade holder (10) onto the bolt.

28» Slide the cutter head (4) onto the centering part - flushing to the front - and tighten it with the knurled screw (3).

29» Swivel in the ejection channel (2) and tighten it.



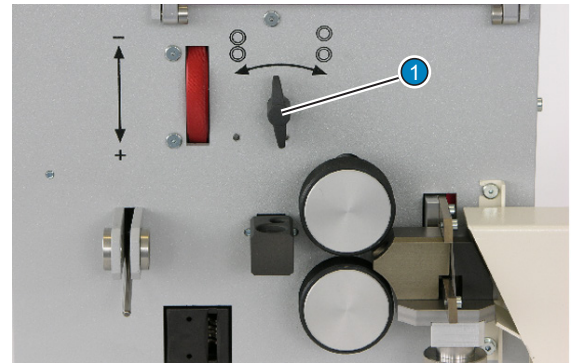
- 30» Close the safety cover.
- 31» Connect the machine to the mains and switch it on.

11.9.5 Replacing the rollers

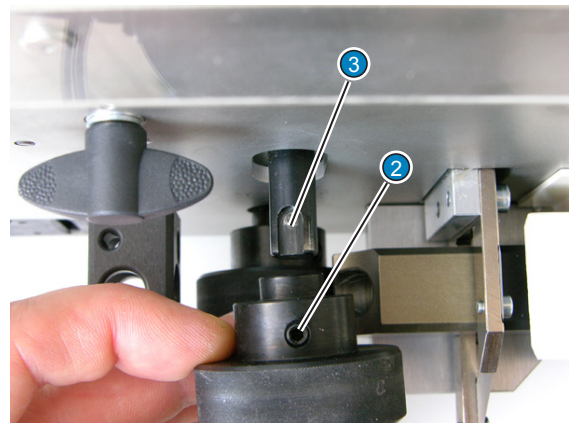
The same procedure applies for the upper and the lower roller.



- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the safety cover.
- 3» Open the rollers with the roller lever (1).



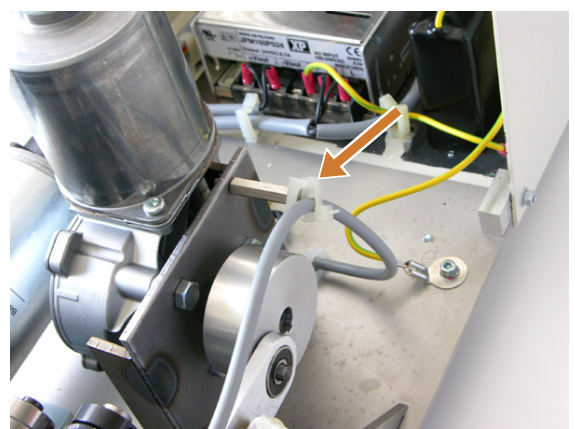
- 4» Loosen the set screw (2) and slide the roller out of the axis.
- 5» Slide the new roller or a roller with a different surface onto the axis (the set screw should be guided in the flute (3)).
- 6» Tighten the set screw (2).
- 7» Close the rollers.
- 8» Close the safety cover.
- 9» Connect the machine to the mains and switch it on.



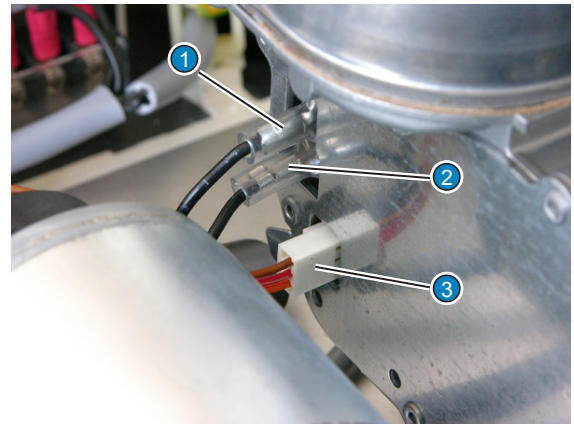
11.9.6 Replacing the cutter drive unit



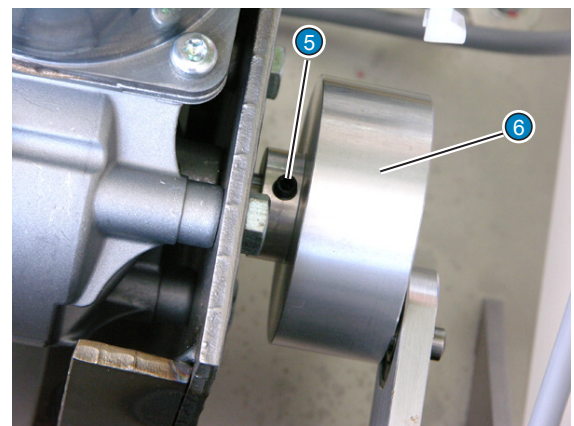
- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the housing, see chapter "[11.9.2 Opening the housing \(Page 67\)](#)".
- 3» Cut the binder.



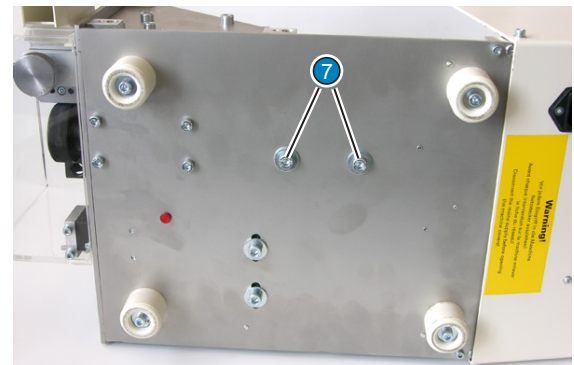
4» Unplug the connector (1), (2) and (3) from the drive unit.



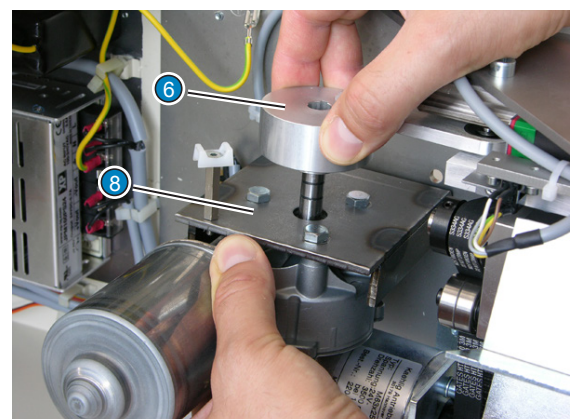
5» Loosen the set screw (5) of the eccentric (6).



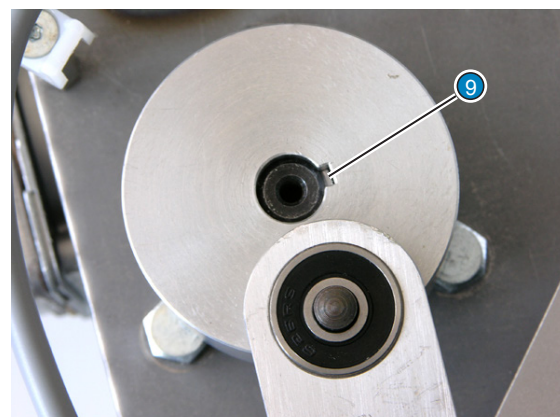
6» Put the machine to the left side.
7» Remove the screws (7).



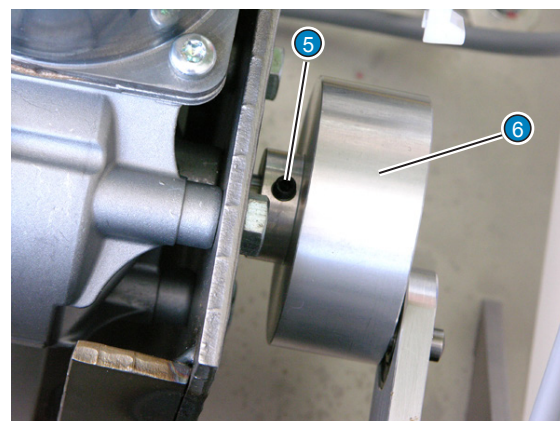
8» Slide the cutter drive out of the eccentric (6).
9» Mount the motor flange (8) and the wedge onto the new cutter drive.



- 10» Slide the new cutter drive into the eccentric.
- 11» Observe the taper key (9).
- 12» Mount the cutter head with the screws (7).
- 13» Put the machine back to its normal position.



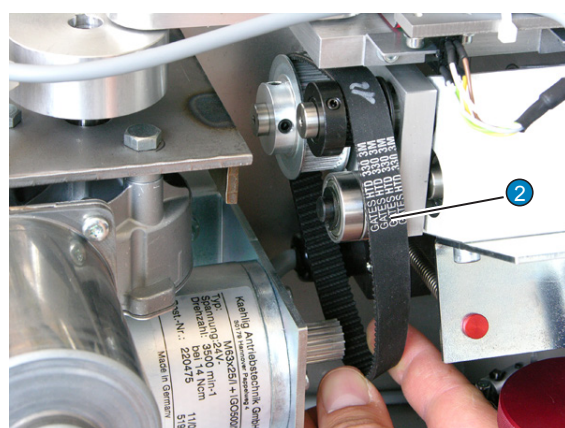
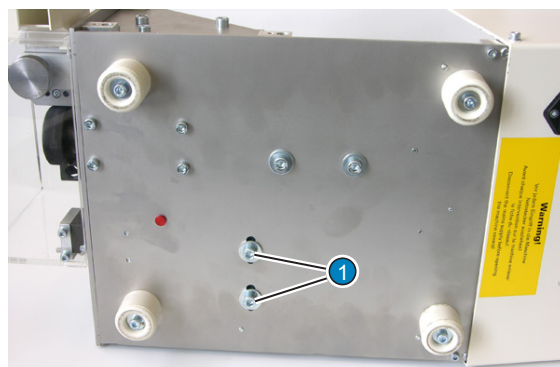
- 14» Position the eccentric onto the axis and tighten the set screw (5).
- 15» Plug in the connector (1) vertical and the connector (2) horizontal.
- 16» Connect the connector (3).
- 17» Fixate the cables with binders.
- 18» Close the housing and screw it on.
- 19» Connect the machine to the mains and switch it on.
- 20» Perform a diagnostic check.



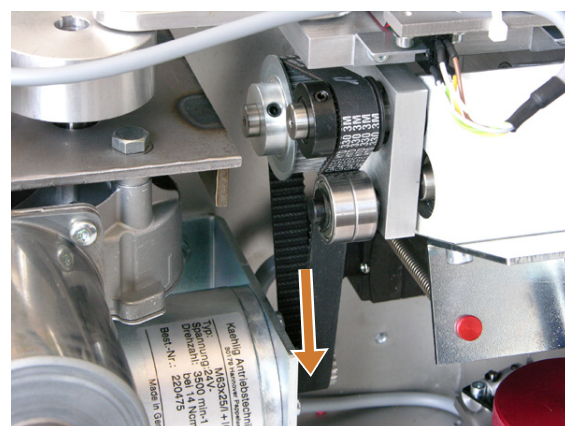
11.9.7 Exchanging the transport belt



- 1» Switch off and unplug the machine from the mains supply.
- 2» Open the housing, see chapter "[11.9.2 Opening the housing \(Page 67\)](#)".
- 3» Put the machine to the left side.
- 4» Loosen the screws (1) and release the tension to the belt (2).



- 5» Apply tension to the belt by the force of the motor and tighten the screws (1).
- 6» Put the machine back to its normal position.
- 7» Check the belt tension.
- 8» Close the housing and screw it on.
- 9» Connect the machine to the mains and switch it on.



11.9.8 Exchanging mains fuses

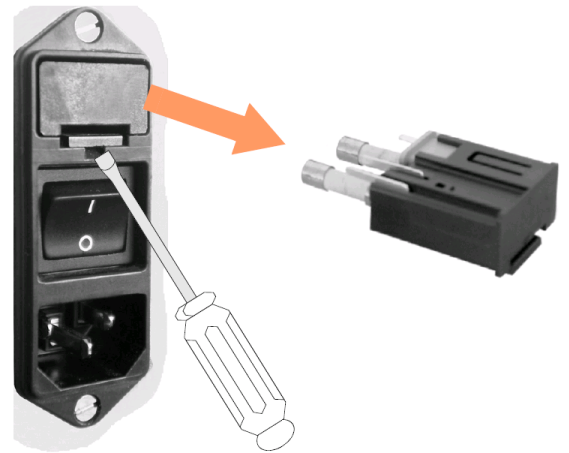


- 1» Switch off and unplug the machine from the mains supply.
- 2» Unlock the fuse holder with a screwdriver and remove it from the power supply module.
- 3» Insert the new fuses into the fuse holder slots.



On a fuse change always replace both mains fuses (same type and rating), see chapter ["4.4 Rating plate \(Page 21\)"](#).

- 4» Attach the fuse holder to the power supply module.
- 5» Connect the machine to the mains and switch it on.



SPARE PARTS / EXPLODED VIEW DRAWINGS

For original *Schleuniger* spare parts see [„Parts Catalog“](#).

DECOMMISSIONING / DISPOSAL



The instructions in this chapter must be carried out by **qualified personnel!**

13.1 DECOMMISSIONING

To decommission the machine proceed as follows:

- 1» Close the safety cover.
- 2» Switch off the main switch on the backside of the machine.
- 3» Possibly disengage the emergency stop button.
- 4» Unplug the power cord and put it away.
- 5» Remove all interface cables connected to the peripheral devices and keep them.

13.2 DISASSEMBLY / DISPOSAL



Disassemble the machine appropriately. Dispose of the disassembled parts according to the local legal requirements.

Schleuniger machines mainly consist of the following materials:

Material	Disposal
Aluminum	Scrap metal
Steel	Scrap metal
Other metal	Scrap metal
Electro material	Electronic waste
Plastics	Recycling



NOTICE

Recycle the battery according to regulations!

The battery in this product contains heavy metals which are harmful to the environment and is therefore hazardous waste. Recycle the battery!

APPENDIX

14.1 SOFTWARE UPGRADE

Here we describe how the Software of the *EcoCut 3200* is updated by means of the *Schleuniger Software „Iguana“*.

What is necessary:

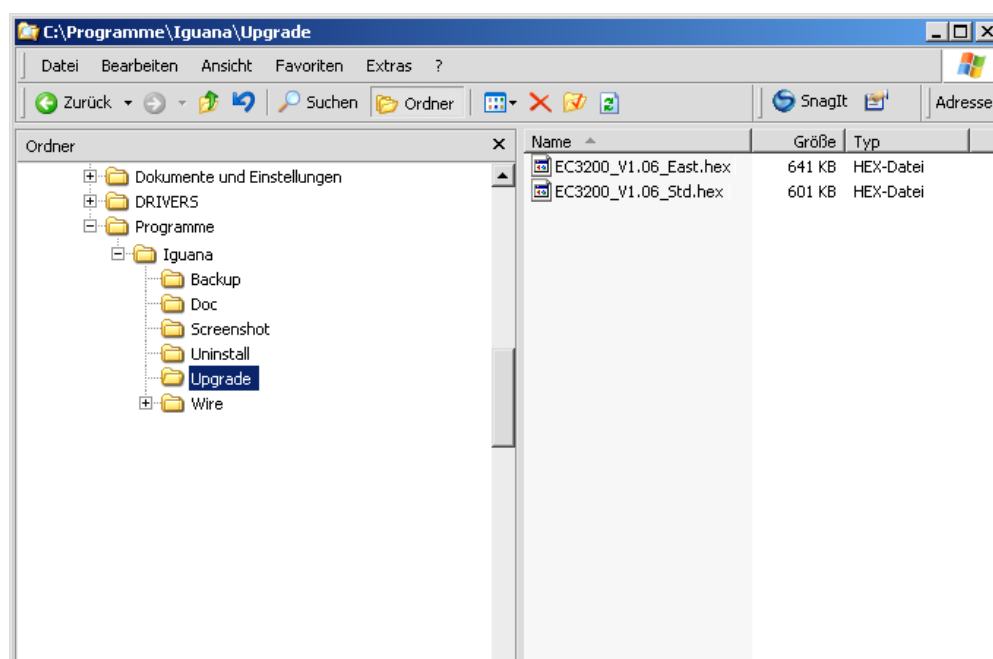
- *EcoCut 3200*
- RS-232 wire (02:01 AM, receptacle (female) both sides)
- *Schleuniger software „Iguana“*
- Upgrade files (according to product):
 - *EcoCut 3200 _VX.XX_Std.hex* (Standard-language package)
 - *EcoCut 3200 _VX.XX_East.hex* (East language package)

14.1.1 Installing *Iguana*

- Download the file *Setup_Iguana_XXX.zip* from the *Schleuniger* web page "<http://www.Schleuniger.ch>" and unpack it in a temporary folder.
- Double click on the file *Setup_Iguana_XXX.exe*. The installation of „*Iguana*“ is executed automatically.

14.1.2 Downloading upgrade file

- Download one of the following upgrade files from the secured section "<http://www.Schleuniger.ch>" (according to product).
 - *EcoCut 3200 _VX.XX_Std.zip* (Standard-language package)
 - *EcoCut 3200 _VX.XX_East.zip* (East language package)
- Save the file to the folder „Upgrade“ of the software „*Iguana*“, *C:\Programme\Iguana\Upgrade*.

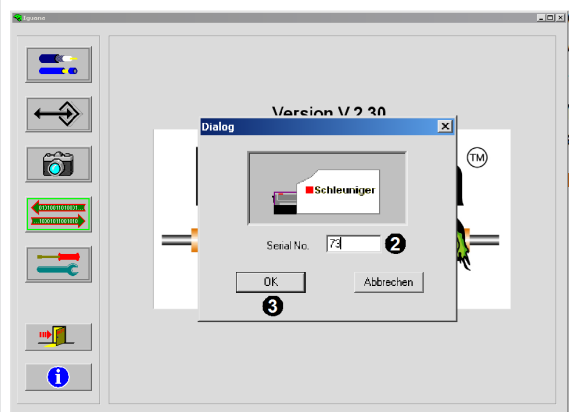


14.1.3 Upgrade procedure

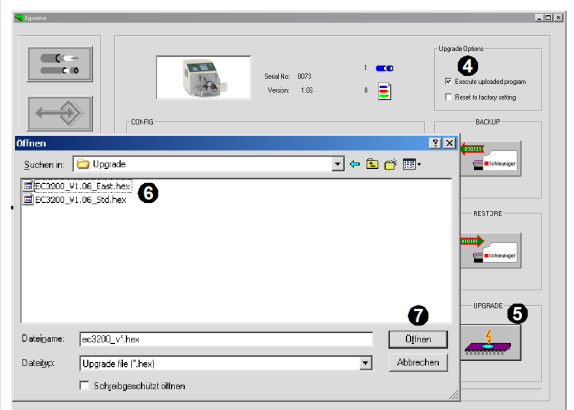
- 1» Connect the *EcoCut 3200* with the RS232 cable between the D-sub 9-pin connector and the COM-interface on the computer (PC or Notebook).
- 2» Switch on the *EcoCut 3200*.
- 3» Start the *IGUANA .exe* application.
- 4» Press the key **[DATA EXCHANGE]** (1).



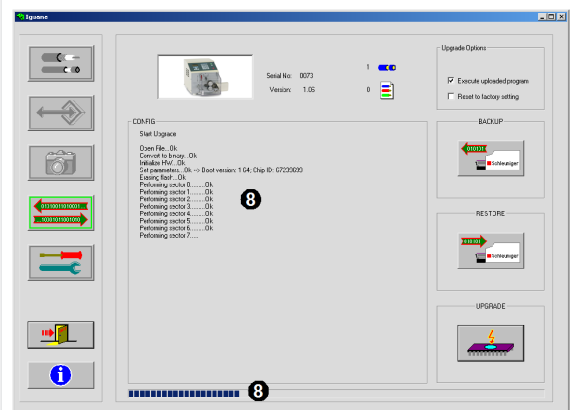
- 5» If the *EcoCut 3200* is connected to „Iguana“ the first time, a dialog box appears where the machine serial number can be entered.
- 6» Enter the machine - serial number (2) without the year.
- 7» **[OK]** (3).



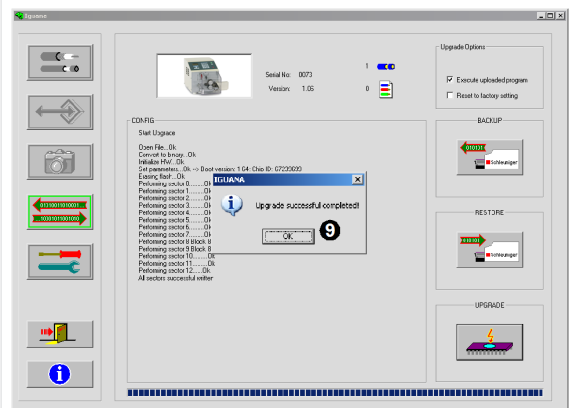
- 8» The check box „Execute uploaded program“ (4) should be activated. This enables the machine software to be started automatically after the upgrade.
- 9» **[UPGRADE]** (5).
- 10» Select the desired upgrade file from the file browser (6).
- 11» **[OPEN]** (7).



- 12» The upgrade process is started automatically. The progress is shown in the window (8).



- 13» If the info box „Upgrade successful completed!“ pops up, the upgrade process is finished.
 14» [OK] (9).
 15» The *EcoCut 3200* starts the machine software automatically.



14.2 CONNECTOR HS / PF

14.2.1 For use with a PreFeeder

With *Schleuniger* PreFeeders the appropriate connection cable is delivered with the Prefeeder. As per the following diagram, the D-sub-connector can be self-wired by a qualified technician.

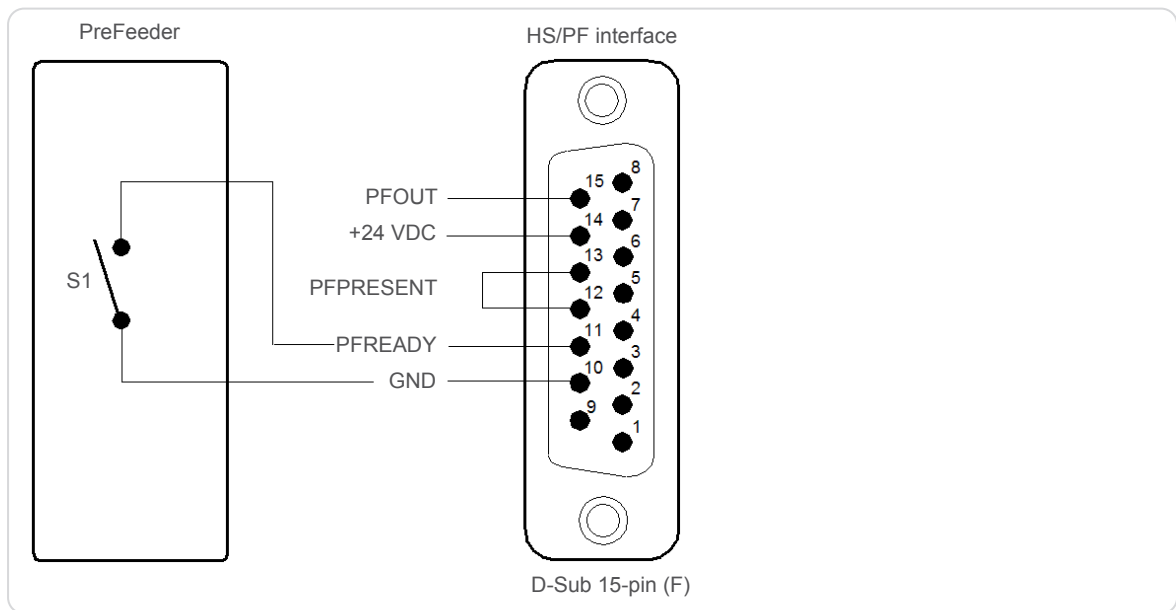


Fig. 8: Connecting a PreFeeder

Input „PFPRESENT“, Pin 10 & 11:

If the D-sub connector is plugged in and the control contact S1 closed, the machine can be started normally. By opening the contact S1 the automatic operation is interrupted and the error message "PreFeeder blocked" is shown up on the display. After closing the contact S1 again, the program can be continued with **[RUN]**.

Output „PFOUT“, Pin 14 & 15:

This output is set to open collector (ground potential) during processing. This means the output is held active. It is dimensioned for inductive loads up to 0.2 A at 24 VDC (relays, valves) and is protected against stress peaks.

14.2.2 For use with a HotStamp

The *Schleuniger* HotStamp devices are shipped with their appropriate connection cable. As per the following diagram, the D-sub-connector can be self-wired by a qualified technician.

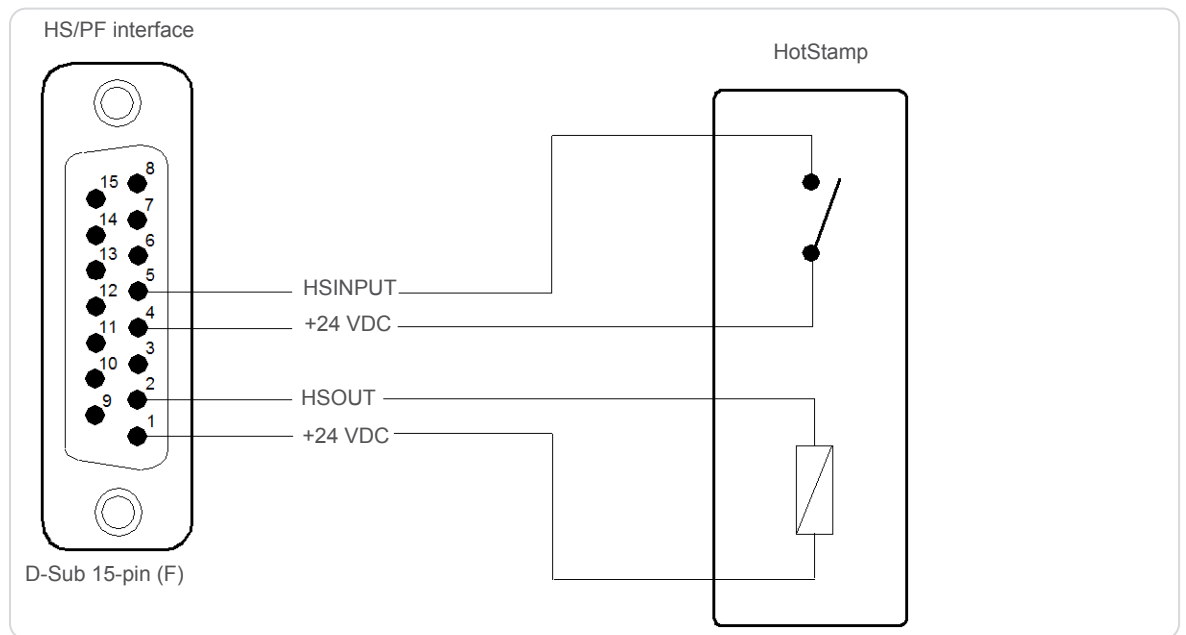


Fig. 9: Connecting a PreFeeder

Input „HSINPUT“, Pin 4 & 5:

When operating a wire marker through this input, the wire feeding on the *EcoCut 3200* is stopped until the marking process is terminated.

Output „HSOUT“, Pin 1 & 2

The wire marker is operated through this output. It is dimensioned for inductive loads up to 0.2 A at 24 VDC (relays, valves) and is protected against stress peaks.

14.3 PRE-/POSTFEED INTERFACE (PPI, OPTION)

On the postfeed connector a *Schleuniger* CableCoiler or WireStacker or a customer specific device may be hooked up, see chapter "14.3.1 POSTFEED interface (Page 84)".

NOTICE



Caution, property damage!

Basically the interface is protected against overload, short circuit, electrostatic discharge and electromagnetic interference. With inappropriate use, overload situations may occur which are not covered by the internal protection circuitry. This can lead to malfunction or even damage to the *EcoCut 3200*.

14.3.1 POSTFEED interface

POSTFEED connector

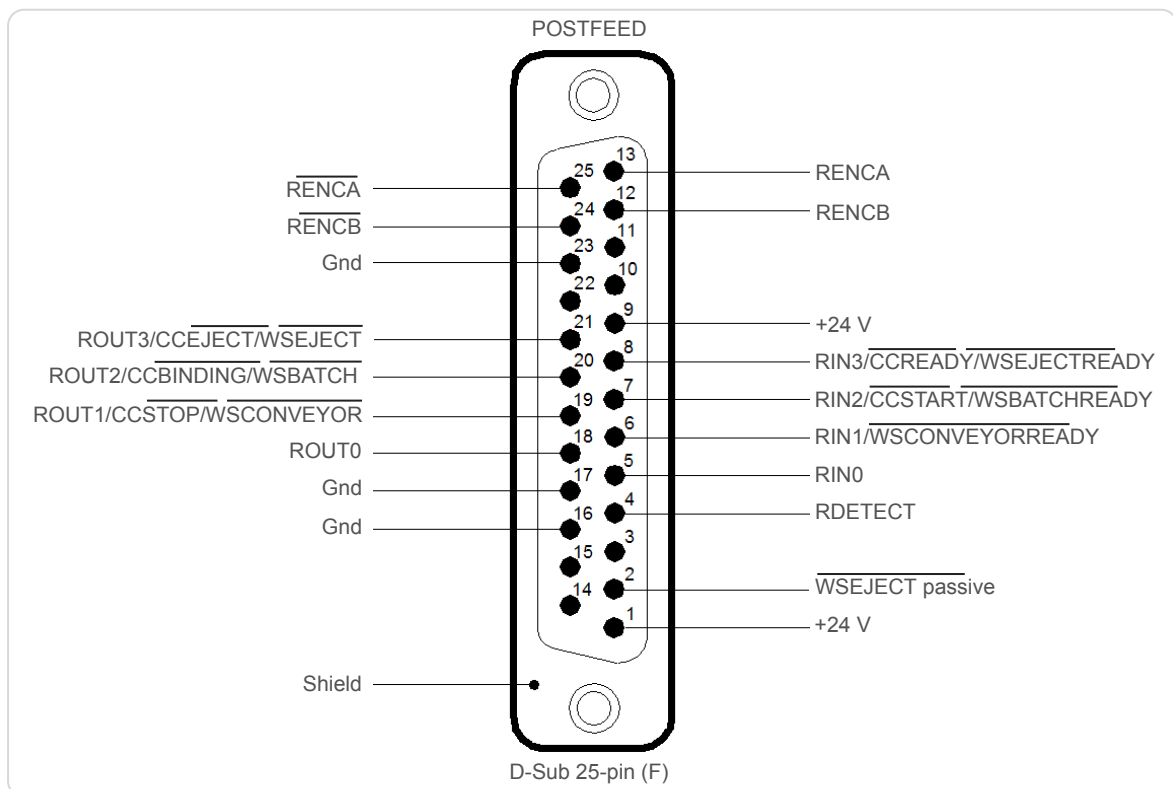


Fig. 10: Pin assignment „POSTFEED“

Pin	Description	Function	Signal type	
1	+ 24 V	-	Supply	-
2	/WSEJECT passive	Output for the ejection control of passive Wire-Stackers	Output	NPN
3	-	(not implemented)	-	-
4	RDETECT	Wire sensing	Input	NPN
5	RIN0	Multifunction input	Input	PNP

Pin	Description	Function	Signal type	
6	RIN1 /WSCONVEYOR- READY	Multifunction input Input for acknowledgment from WireStackers	Input	PNP PNP
7	RIN2 /CCSTART /WSBATCHREADY	Multifunction input Input for acknowledgment from CableCoilers Input for acknowledgment from WireStackers	Input	PNP/NPN PNP PNP
8	RIN3 /CCREADY /WSEJECTREADY	Multifunction input Input for acknowledgment from CableCoilers Input for acknowledgment from WireStackers	Input	PNP/NPN PNP PNP
9	+ 24 V	-	Supply	-
10	-	(not implemented)	-	-
11	-	(not implemented)	-	-
12	RENCB	Impulse output for feed synchronization	Output	TIA/EIA-422
13	RENCA	Impulse output for feed synchronization	Output	TIA/EIA-422
14	-	(not implemented)	-	-
15	-	(not implemented)	-	-
16	GND	-	Supply	-
17	GND	-	Supply	-
18	ROUT0	Multifunction output	Output	PNP
19	ROUT1 /CCSTOP /WSCONVEYOR	Multifunction output Output to control a cable coiler Output to control a wire stacker	Output	PNP/NPN PNP PNP
20	ROUT2 /CCBINDING /WSBATCH	Multifunction output Output to control a cable coiler Output to control a wire stacker	Output	PNP/NPN PNP PNP
21	ROUT3 /CCEJECT /WSEJECT	Multifunction output Output to control a cable coiler Output to control a wire stacker	Output	PNP/NPN PNP PNP
22	-	(not implemented)	-	-
23	GND	-	Supply	-
24	RENCB	Impulse output for feed synchronization	Output	TIA/EIA-422
25	RENCA	Impulse output for feed synchronization	Output	TIA/EIA-422

Electrical specifications of the connectors

PNP inputs

The PNP-inputs are internally protected against electro static discharge. The inputs are galvanically coupled to GND.

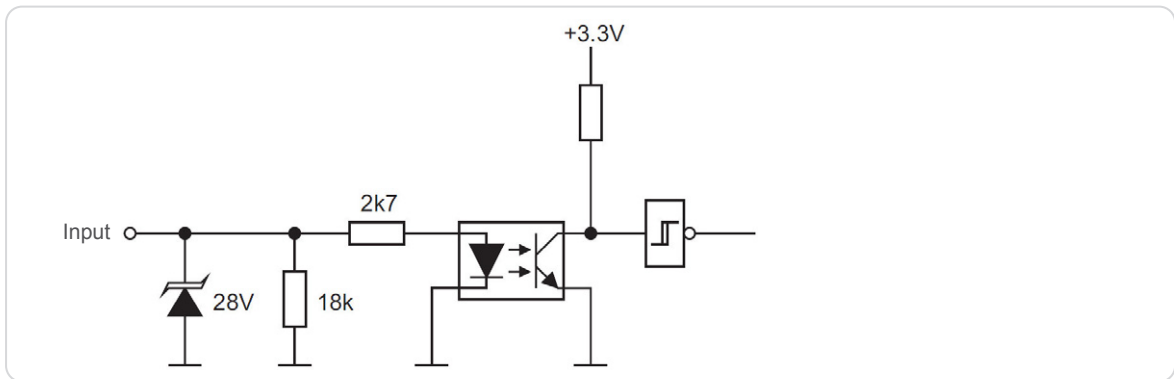


Fig. 11: Principle schematic diagram of the PNP inputs

Parameter		Max. ratings	Min.	Typ.	Max.	
Positive switching threshold	U_{IN_T+}		7.8	-	12.8	V
	I_{IN_T+}		2.3	-	3.9	mA
Negative switching threshold	U_{IN_T-}		4.8	-	8.4	V
	I_{IN_T-}		1.3	-	2.4	mA
Hysteresis	ΔI_{IN_T}		0.3	-	1.2	mA
Min. input voltage	U_{IN_MIN}	$I_{IN_MAX} \geq -1 \text{ mA}$	-0,4	-	-	V
Max. input voltage	U_{IN_MAX}	$I_{IN_MAX} \geq 10.3 \text{ mA}$	-	-	28	V
Min. pulse duration	t_{MIN}		10	-	-	ms
Impulse withstand voltage	U_{IN_SRG}	$I_{IN_SRG} \leq 1 \text{ A}$ $t_{IN_SRG} \leq 10 \mu\text{s}$	-	-	40	V

NPN inputs

The NPN inputs are internally protected against electrostatic discharge. The inputs are galvanically coupled to +24 V.

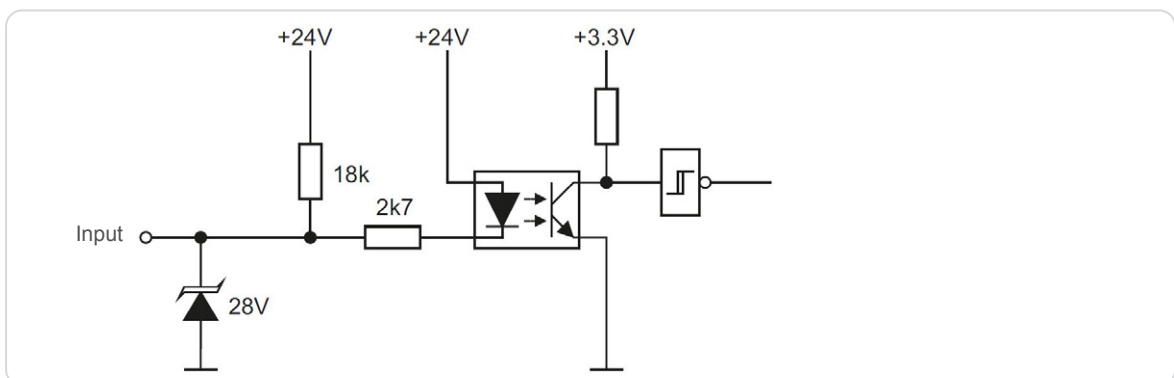


Fig. 12: Principle schematic diagram of the NPN inputs

Parameter		Max. ratings	Min.	Typ.	Max.	
Positive switching threshold	U_{IN_T+}		15.5	-	19.2	V
	I_{IN_T+}		-2,4	-	-1,3	mA
Negative switching threshold	U_{IN_T-}		11.2	-	16.2	mA
	I_{IN_T-}		-3,9	-	-2,3	
Hysteresis	ΔI_{IN_T}		0.3	-	1.2	mA
Min. input voltage	U_{IN_MIN}	$I_{IN_MAX} \geq 8.1 \text{ mA}$	-0,4	-	-	V
Max. input voltage	U_{IN_MAX}	$I_{IN_MAX} \geq -2 \text{ mA}$	-	-	28	V
Min. pulse duration	t_{MIN}		10	-	-	ms
Impulse withstand voltage	U_{IN_SRG}	$I_{IN_SRG} \leq 1 \text{ A}$ $t_{IN_SRG} \leq 10 \mu\text{s}$	-	-	40	V

PNP - Outputs

The PNP outputs are internally protected against short circuit, overload, over temperature and electrostatic discharge. The outputs are able to control ohmic and inductive loads.

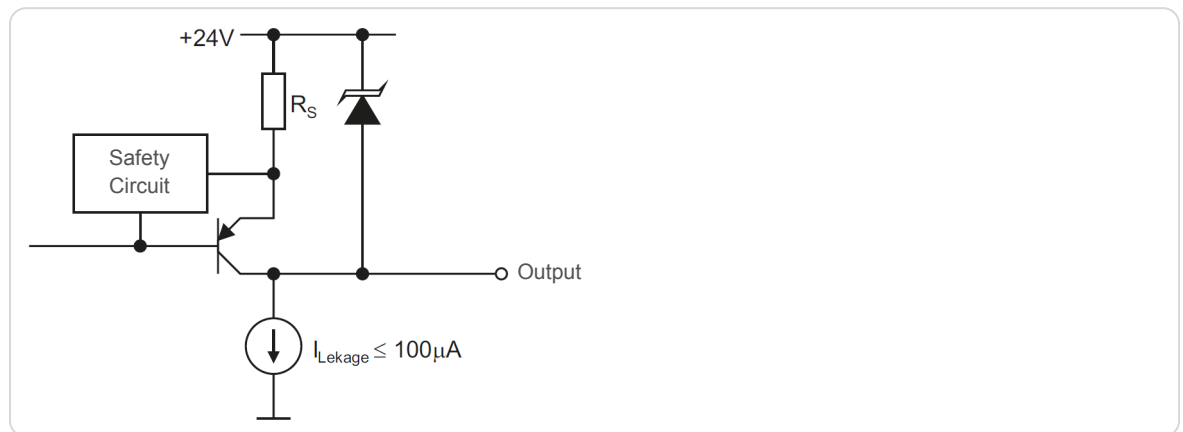


Fig. 13: Principle schematic diagram of the PNP outputs

Parameter		Max. ratings	Min.	Typ.	Max.	
Output signal	V_{OH}	$I_{OUT} \leq 500 \text{ mA}$	22.1	23.3	25.2	V
	V_{OL}	$I_{OUT} \sim 0 \text{ mA}$			1.5	V
Output current	I_{OUT}	All outputs ^a	-	-	500	mA
	I_{OUT_TOT}		-	-	1.35	A
Max. switching frequency	f_{MAX}		-	-	1000	Hz
Short circuit current ^b	I_{OUT_SC}		0.6	-	1.2	A
Response time of the short circuit protection	t_{SC}		4	-	10	ms
Impulse withstand voltage	V_{OUT_SRG}	$I_{OUT_SRG} \leq 100 \text{ mA}$ $t_{OUT_SRG} \leq 200 \mu\text{s}$	-	-	57	V

a) The sum of all the output currents of the PNP outputs must not exceed this value.

b) Switching threshold for the short circuit protection. The thermal protection may trigger early in certain circumstances.

NPN outputs

The NPN outputs are internally protected against over temperature and electrostatic discharge. Short circuit and overload protection is handled directly through the over temperature protection circuitry. The outputs are able to control ohmic and inductive loads.



Fig. 14: Principle schematic diagram of the NPN outputs

Parameter		Max. ratings	Min.	Typ.	Max.	
Output signal	V_{OH}	$I_{OUT} \sim 0 \text{ mA}$	-	-	-	V
	V_{OL}	$I_{OUT} \leq -300 \text{ mA}$	0.6	-	1.2	V
Output current	I_{OUT}	All outputs ^a	-	-	-300	mA
	I_{OUT_TOT}		-	-	-1,80	A
Max. switching frequency	f_{MAX}		-	-	1000	Hz
Short circuit current ^b	I_{OUT_SC}		-0,4	-	-1,0	A
Response time of the short circuit protection	t_{SC}		-	-	-	ms
Impulse withstand voltage	V_{OUT_SRG}	$I_{OUT_SRG} \leq 300 \text{ mA}$ $t_{OUT_SRG} \leq 100 \mu\text{s}$	-0,3	-	60	V

a) The sum of all the output currents of the NPN outputs must not exceed this value.
b) The NPN outputs are thermally protected against short circuit.

Synchronization signal

Synchronization signals are transmitted differentially according to standard ANSI TIA/EIA-422 (formerly known as RS422). The signal behavior is based on the signals of an incremental encoder. The signals are provided directly from the motor control circuit in the machine. The impulse frequency is proportional to the feed rate of the *EcoCut 3200*. The feed direction (forward / backward) can be recognized by means of the signal phasing.

The synchronizing signals of the PREFEED interface are synchronized on the left transport unit. E. g. if the left transport unit stands still, no pulses are transmitted even if the right transport unit is moving. The synchronizing signals of the "POSTFEED" interface are synchronized on the right transport unit ("LENCB", "RENCA" and "RENCA" are identical).

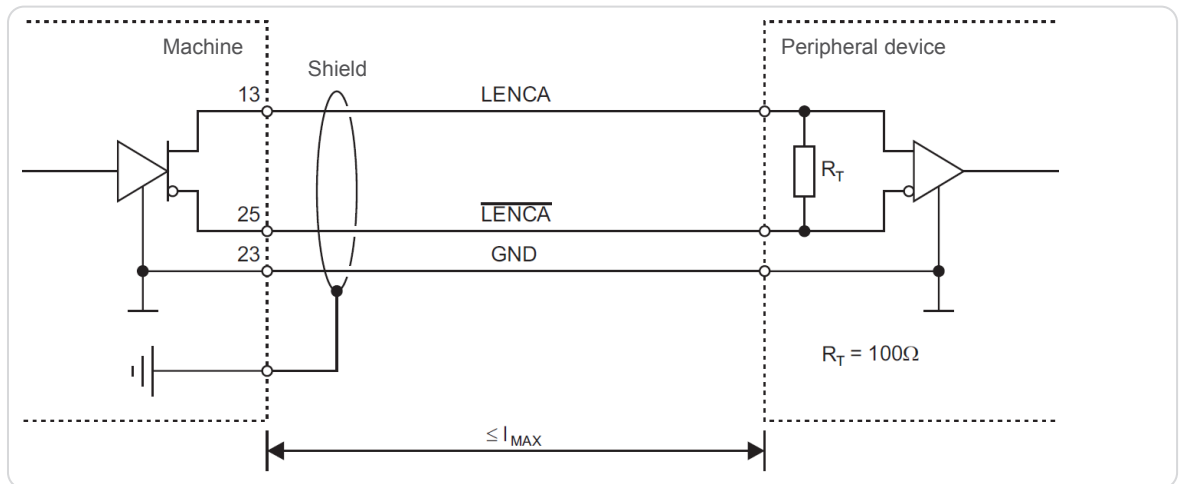


Fig. 15: Circuit diagram synchronization signal (LENCA, RENCA and RENCA are identical)

Parameter		Max. ratings	Min.	Typ.	Max.	
Output signal	V_{OH}	$R_T = 100 \Omega$	-	2.3	-	V
	V_{OL}	$R_T = 100 \Omega$	-	0.8	1.05	V
Balanced voltage	V_{OD}	$R_T = 100 \Omega$	0.95	1.5	-	V
Offset voltage ^a	V_{OC}		1.3	-	1.8	V
Output current	I_{OUT}	$R_T = 100 \Omega$	-	12	-	mA
Short circuit current ^{bc}	I_{OUT_SC}		-	-	200	mA
Impulse frequency at 1 m/s	$f_{1m/s}$	Speed = 1 m/s	-	5950	-	Hz
Impulse frequency, max.	f_{MAX}		-	-	12000	Hz
Max. transmitting distance	I_{MAX}	$R_T = 100 \Omega$	-	-	100	M

a) Offset voltage $V_{OC} = (V_{OH} + V_{OL}) / 2$

b) Short circuit against GND over a certain period may lead to permanent damaging of the output circuitry.

c) Short circuit against +24 V may lead to permanent damaging of the output circuitry.

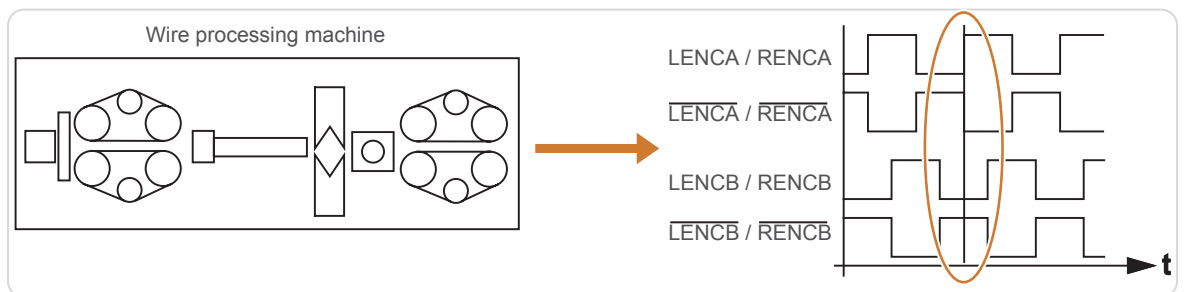


Fig. 16: Signal sequence, wire transport direction forward

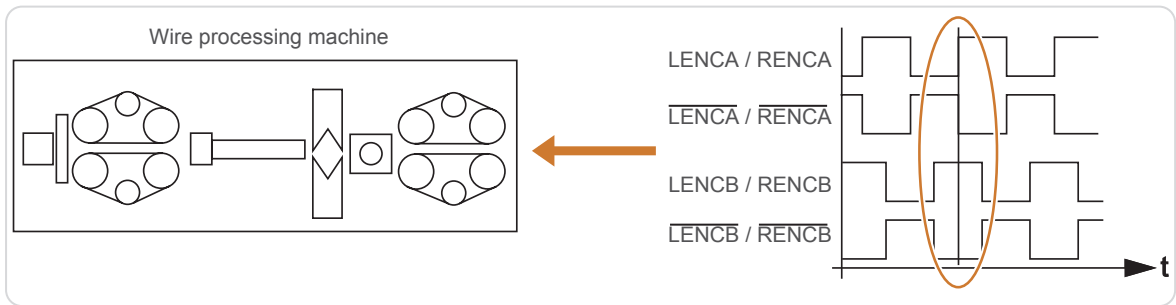


Fig. 17: Signal run, wire transport direction backward

Supply outputs

Synchronization signals are transmitted differentially according to standard ANSI TIA/EIA-422 (formerly known as RS422).

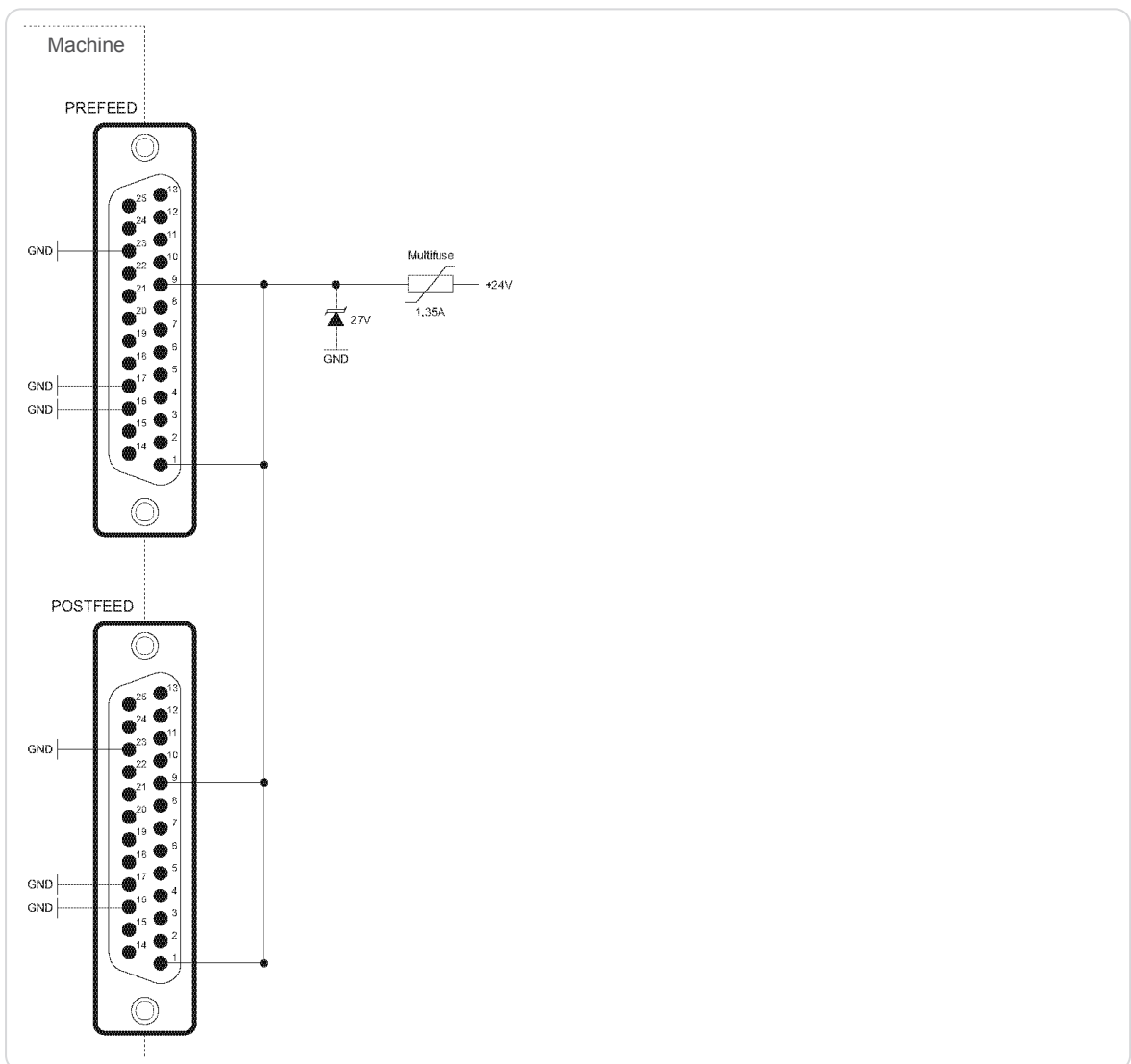


Fig. 18: Principle schematic diagram supply outputs

Parameter		Max. ratings	Min.	Typ.	Max.	
Output voltage	V_{SUPPLY}	$I_{\text{SUPPLY}} \leq 1.35 \text{ A}$	22.8	24	25.2	V
Output current ^a	I_{SUPPLY}		-	-	1.35	A
Impulse withstand voltage	$U_{\text{IN_SRG}}$	$I_{\text{IN_SRG}} \leq 1 @_{\text{IN_SRG}} \leq 10 \mu\text{s}$	-	-	40	V

a) The sum of all the output currents of all supply connections.

Protection against faults and malfunction

The +24 V outputs must not be connected to external power supplies.

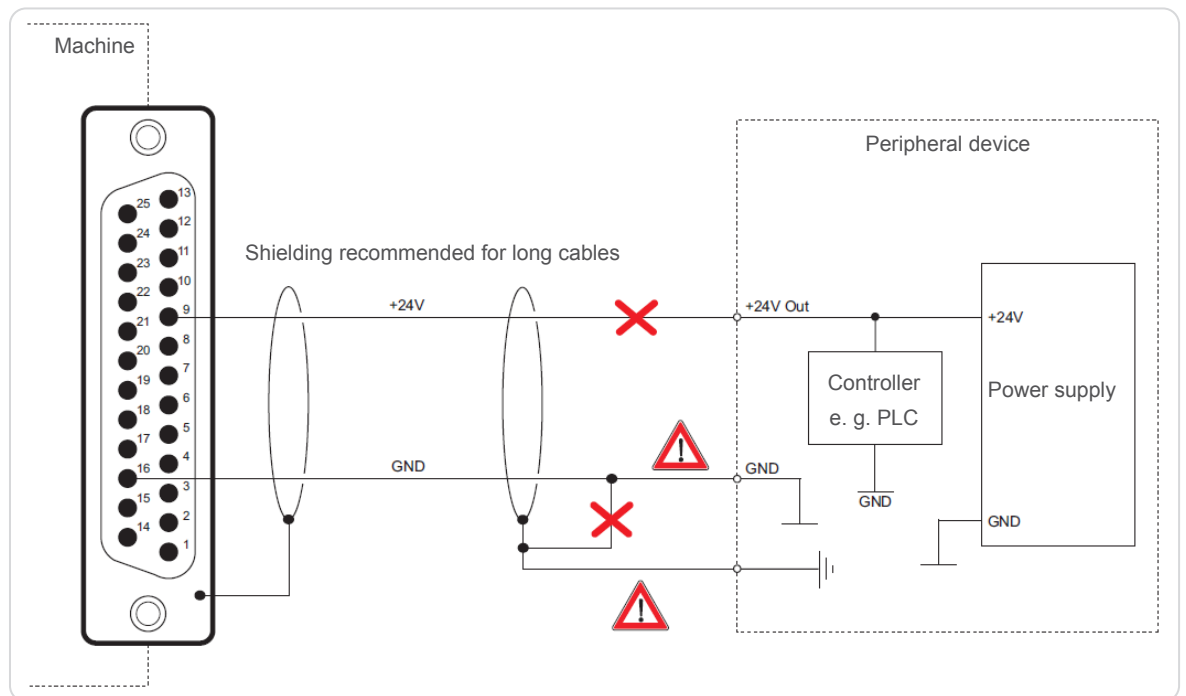


Fig. 19: Avoiding short circuit

To avoid ground loops it is recommended that the signal on the peripheral device is galvanically decoupled. This can be achieved through, e. g. relays or opto couplers (already available in most PLC's). In heavy EMV loaded areas, we recommend the use of shielded connections.

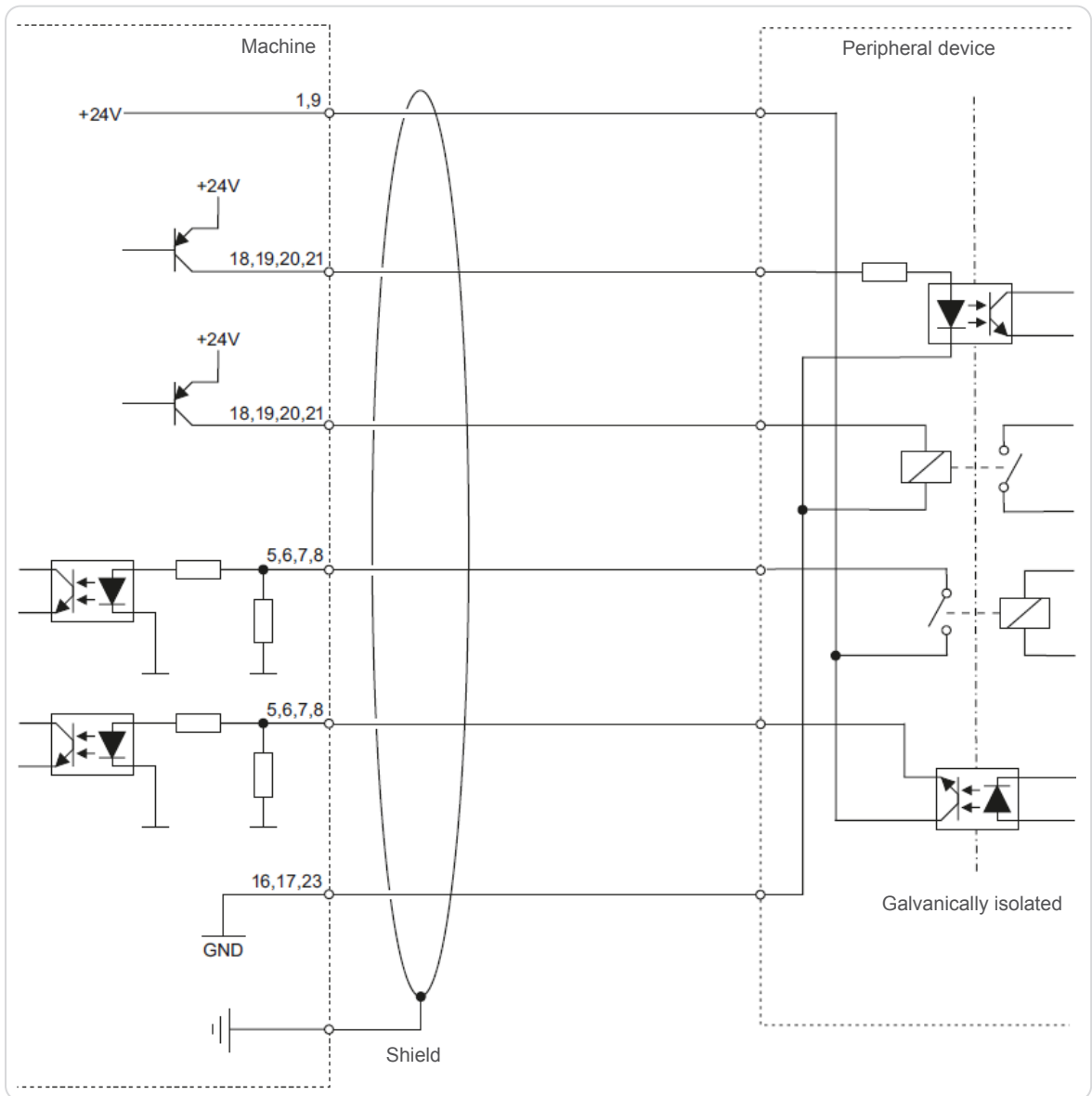


Fig. 20: Galvanically decoupled signals

For transmission of synchronizing signals, the use of shielded cables is generally recommended.

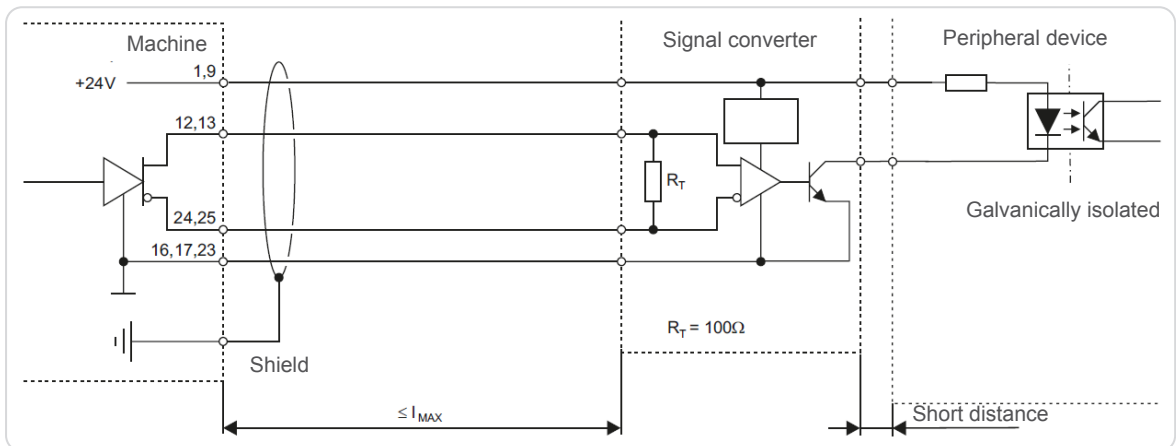
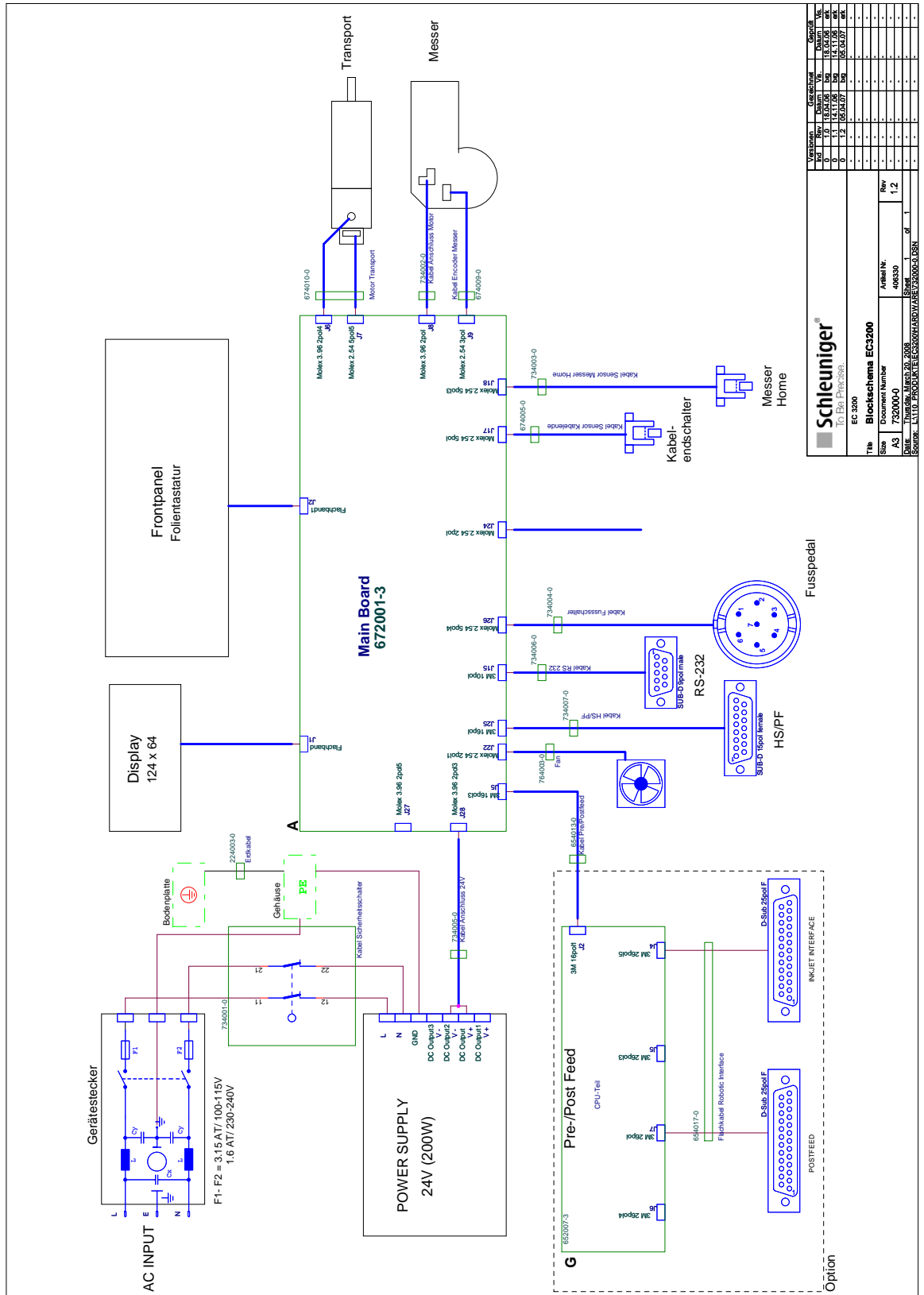


Fig. 21: Synchronization signal transmission

14.4 BLOCK DIAGRAM



Schleuniger®		To Be Prepared		Version		Created		Date	
Titel	Blockschéma EC3200	Rev.	Num.	Rev.	Num.	Rev.	Num.	Rev.	Num.
Titel	Blockschéma EC3200	Rev.	1.0	Rev.	10.06.06	Rev.	10.06.06	Rev.	10.06.06
Size	A3	Document Number	732000-0	Doc. No.	406330	Doc. No.	406330	Doc. No.	406330
Date	Thursday, March 20, 2008	Sheet	1	Sheet	1	Sheet	1	Sheet	1
Source	L:\110_PROD\TELECOM\HARDWARE\732000-0.DSN								

14.5 LUBRICATING GREASE MICROLUBE GBU-Y 131

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

SAFETY DATA SHEET

MICROLUBE GBU-Y 131



Date of printing : 2011-12-01.

Date of issue 2011-12-01

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name : MICROLUBE GBU-Y 131
 Product code : 017117
 Product description : Grease

1.2 Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

KLÜBER LUBRICATION MÜNCHEN KG
 Geisenhausenerstrasse 7
 D-81379 München
 Tel: +49 (0) 897876-0
 Fax: +49 (0) 897876-333

e-mail address of person responsible for this SDS : Material Compliance Management E-Mail: mcm@klueber.com

National contact**1.4 Emergency telephone number****Supplier**

Emergency telephone number (with hours of operation) : 0049 (0) 897876-700 (24hrs)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

Ingredients of unknown toxicity :

Ingredients of unknown ecotoxicity :

Classification according to Directive 1999/45/EC [DPD]

The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Not classified.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Version : 1

1/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 2: Hazards identification

Hazardous ingredients :
Supplemental label elements : Safety data sheet available for professional user on request.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.
Tactile warning of danger : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : Not available.
Additional warning phrases : Not available.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture
Description : barium complex soap Synthetic hydrocarbon oil mineral oil

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	EC: 270-128-1 CAS: 68411-46-1	<25	R52/53 See Section 16 for the full text of the R-phrases declared above.	Aquatic Chronic 3, H412 See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
 [2] Substance with a workplace exposure limit
 [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
 [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

Version : 1

2/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 4: First aid measures

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products : No specific data.

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Version : 1

3/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 6: Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived effect levels

No DELs available.

Predicted effect concentrations

No PECs available.

Version : 1

4/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 8: Exposure controls/personal protection**8.2 Exposure controls**

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance**

Physical state	: Paste.
Colour	: Beige.
Odour	: Characteristic.
pH	: Not available.
Melting point/freezing point	: Not available.
Initial boiling point and boiling range	: Not available.
Flash point	: Not applicable.
Flammability (solid, gas)	: Not available.
Burning time	: Not applicable.
Burning rate	: Not applicable.
Upper/lower flammability or explosive limits	: Not available.
Vapour pressure	: Not available.
Density	: 0.95 g/cm ³ [20°C]
Bulk Density	: Not available.
Solubility(ies)	: Insoluble in the following materials: cold water.
Partition coefficient: n-octanol/water	: Not available.

Version : 1

5/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 9: Physical and chemical properties

Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
Viscosity : Not available.
Explosive properties : Not available.
Oxidising properties : Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability : The product is stable.
10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid : No specific data.
10.5 Incompatible materials : No specific data.
10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Residual oils (petroleum), hydrotreated	LD50 Dermal	Rat	>5000 mg/kg	-
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary : Not available.

Acute toxicity estimates

Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Version : 1

6/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 11: Toxicological information

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Residual oils (petroleum), hydrotreated	Acute EC50 >10000 mg/l	Daphnia	48 hours
	Acute IC50 >1000 mg/l	Algae	96 hours
	Acute LC50 1000 to 5000 mg/l	Fish	96 hours
	Chronic NOEC >5000 mg/l	Fish	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

Version : 1

7/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 12: Ecological information

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.
14.6 Special precautions for user	Not available.	Not available.	Not available.
Additional information	-	-	-

Version : 1

8/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 14: Transport information

14.7 Transport in bulk : Not available.
according to Annex II of
MARPOL 73/78 and the IBC
Code

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable.
**on the manufacture,
placing on the market and
use of certain dangerous
substances, mixtures and
articles**

Other EU regulations

Europe inventory : Not determined.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

**Integrated pollution
prevention and control
list (IPPC) - Air** : Not listed

**Integrated pollution
prevention and control
list (IPPC) - Water** : Not listed

International regulations

**Chemical Weapons
Convention List Schedule I
Chemicals** : Not listed

**Chemical Weapons
Convention List Schedule II
Chemicals** : Not listed

**Chemical Weapons
Convention List Schedule III
Chemicals** : Not listed

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

☑ Indicates information that has changed from previously issued version.

**Abbreviations and
acronyms** : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No.
1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

**Full text of abbreviated H
statements** : H412 Harmful to aquatic life with long lasting effects.

**Full text of classifications
[CLP/GHS]** : Aquatic Chronic 3, H412 AQUATIC TOXICITY (CHRONIC) - Category 3

Version : 1

9/10

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

MICROLUBE GBU-Y 131

SECTION 16: Other information

Full text of abbreviated R phrases	: R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Full text of classifications [DSD/DPD]	: Not applicable.
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Date of previous issue	: 2011-12-01.
Prepared by	: Material Compliance Management +49 (0) 89 7876 1564

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Version : 1

10/10



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INDEX

A

Accident prevention regulations **9**
 Actual value not in range **58**
 Adapter **47**

B

Battery **77**
 Bearing **68**
 Binding position **43**
 Blade area **62**
 Blade
 - blocked **58**
 - check **69**

C

Classifications **15**
 Cleaning interval **62**
 Commands **11**
 Commercial cleaning agent **63**
 Commissioning **29**
 Communication error **58**
 Component **67**
 Compressed air **63**
 Connection cable **81**
 Connector
 - HotStamp **82**
 - Prefeeder **81**
 Control contact **82**
 Cross references **11**
 Cutter head **33**
 Cutting axis-clamping pin **43**
 Cutting mode **42**

D

Daily maintenance **62**
 Danger zones **27**
 Defective component **67**
 Devices **46**
 Diagnostic **57**
 Dimensions **19**
 Display **35**
 Disposal **10, 77**
 Drives **68**
 D-sub connector **81**

E

Ejection chute **32**
 Ejection time **43**
 Electrical specifications **85**
 Electromagnetic interference **84**
 Electrostatic discharge **84**

Emergency stop link **16**
 Entry keys **35**
 Entry screen **38**
 Errors **61**

F

Fault localization **57**
 Feed speed **40**
 File not found **58**
 Function keys **35**
 Fuse holder **25**

G

Gap setting wheel **23, 25**
 Ground potential **82**
 Guidelines **11**

H

Hot stamp **26**
 Hotline **61**
 HotStamp timeout **58**
 HotStamp/PreFeeder **25**

I

Iguana **79**
 Inductive load **83**
 Info **10, 48**
 Inspection **61**
 Installation regulations **29**
 Intended application **14**
 Interface connection cable **13**
 Interior **63**
 Invalid name **58**

L

Language **48**
 Liability for damage **11**
 Lubricant **67**
 Lubricating grease **13**

M

Machine name **61**
 Machine serial number **80**
 Magnifier **10**
 Main menu **39**
 Main power switch **25**
 Mains connection **25**
 Maintenance **61**
 Marking **55**
 Marking device **50**
 Marking time **26**

Measures **11, 19**
 Measuring unit **29, 48**
 Menu level **10**
 Menu screen **38**
 Motor switched off **59**

N

Navigation keys **35**
 No more memory **58**
 No pedal detected **58**
 No prefeeder **58**
 No wire **58**
 Numeric fields **39**
 Numeric keypad **35**

O

Operating personnel **10**
 Operator panel **23**
 Original spare parts **12**
 Over temperature **59**
 Overload **84**

P

Password **52**
 Pedal **25, 50**
 Peripheral **48, 50**
 Peripheral devices **26**
 Personnel older than 14 years **15**
 Pixel errors **49**
 Postfeed **25, 84**
 PPI (option) **50**
 Prefeeder **50**
 PreFeeder **26, 81**
 Prefeeder blocked **58**
 Printing wheel edge **55**
 Production keys **35**
 Protective equipment **16**

R

RAM corrupted **58**
 Ramp (acceleration) **41**
 Rating plate **21, 25**
 Re-calibration **64**
 Registered trademarks **12**
 Regular inspection **57**
 Roller lever **23**
 RS 232 **25**

S

Safety barrier **16**

Safety cover **16, 23**
 Safety hood **16**
 Safety interlocks **16**
 Safety regulations **9**
 Safety switch **23**
 Schleuniger distributor **61**
 Screen titles **11**
 Serial number **61**
 Short circuit **84**
 Signal names **11**
 Signal sequence **89**
 Software **38**
 Software upgrade **26, 79**
 Software Version **61**
 Solvent **63**
 Standards **11**
 Supervisor **53**
 Synchronization signal **88, 90**

T

Talcum **62**
 Text fields **39**
 Third parties **11**
 Tip **10**
 Toggle fields **39**
 Total wires **49**
 Tow error **59**
 Trademarks **11**
 Transport fixations **17**
 Transportation locks **29**

U

Universal wire guide **23**
 Upgrade file **79**
 User **46**
 User level **53**

W

Warning notice **13**
 Waste **10**
 Windows® **11**
 Wire end switch **23, 49**
 Wire feeding **83**
 Wire guide **24**
 Wire marker **83**
 Wire type **61**
 Wire/cable guide **62**

