

# Stripping machine AI 01



## Operation manual

Before putting the machine into operation, read the operation manual!

Keep manual for future use.

Fabrication number

**Sample**





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When contacting the manufacturer for any information,  
please have the machine type and the fabrication number available.  
(See type plate on the machine)

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# 1 General

## 1.1 Introduction

This instruction manual contains: important notes, how to safely and appropriately use the machine. The operating manual helps you to avoid dangers, as well as reduce repair costs and down time.

By following the operation manual, you increase the product reliability and life time of the machine.

This operation manual must be available to persons operating the machine. Persons, working with the machine, must read and follow the operation manual.

This manual includes:

- ◆ Putting the machine into operation
- ◆ Operation of the machine
- ◆ Troubleshooting
- ◆ Maintenance (maintenance / service)
- ◆ Transportation

To ensure safety, this machine is only intended for use as described in this manual.

The Zoller & Fröhlich GmbH, Simoniusstr. 22, 88239 Wangen i. A., d.v.d.d. general manager Mr. Dr. Ing. Christoph Fröhlich is following called manufacturer.

## 1.2 Target group

This operating manual is designed for the normal worker.

## 1.3 Reservation of the right of modification and copyright

The copyright, as well as all rights in the event of grant or utility model registration in this operating manual remains by the manufacturer.

The listed rules, guidelines, engineer standards and so on in this operating manual are to conform to the information during the elaboration.

Regulations and drawings of technical parts may neither completely nor partly be duplicated, spread, utilized or informed to others for other unauthorized purposes (e.g. competition).

If the operator desires the regulations and drawings of technical parts outlined above, this requires expressed, written approval from the management of the manufacturer.

The manufacturer reserves the right to technical changes and improvements at any time. This applies to all data, details, notes and illustrations of this operation manual. A claim to change and improvement of already delivered tools is impossible.

This operating manual was created with reasonable care.

### 1.4 Training and instruction

- ◆ Only trained and qualified personnel are allowed to handle this machine.
- ◆ The responsibilities of the personnel operating, changing tools and maintaining this machine must be well defined.
- ◆ Only the manufacturer or authorized service workshops are entitled to repair these products.

### 1.5 Unauthorized modification and spare parts

- ◆ Modifications, mounting and reconstructions at the control can lead to unpredictable dangers.
- ◆ Any kind of modification and manipulation at the tools are forbidden. If the operator makes any modifications or manipulations of this kind, machine safety is no longer guaranteed. The manufacturer takes no liability for defects and consequential damages which occur due to the aforementioned measures.
- ◆ Use only original spare parts and authorized accessories from the manufacturer. The use of other parts excludes liability for damages every description (consequential damages, too).

### 1.6 Transport

For the transportation always use the complete original packing.



***For service and repair work, the machine must be sent in with all accessories.***

---



## 2 Safety

### 2.1 Intended use

The machine is a stripping machine. This machine was only designed for stripping insulated wires. For this reason the machine was constructed for only this exact purpose.

The intended use includes compliance to:

- ◆ All notes in the operating manual
- ◆ Documentation of the supplier products.
- ◆ All notes on maintenance

Any other use is not permitted.

The description in **paragraph 3.1 “Technical data”**, are to keep and follow as well as in the original documentation possibly the supplier products.

An abnormal use of the machine is not known by manufacturer.

For originated defects, because of an uncorrected purpose of use or by a not intended use the manufacturer takes no responsibility.

### 2.2 Prohibited use

- ◆ Removing information signs or warning signs.
- ◆ Opening the machine during operation.
- ◆ Using the machine when there are obvious visible defects or damages.
- ◆ Inserting any kind of object to the feeding funnel, which is not designed for this use.

### 2.3 Danger of the machine

The findings of the hazard analysis are that the machine is conforming to guidelines and can classify as safe.

As with any machine, risks still remain and they cannot be eliminated by construction.

See 2.8 *Remaining risks*.

### 2.4 Use risks

The user is only allowed to eliminate disorders were the cover must not remove.

Before you change the tools or spare parts, you have to unplug and disconnect the machine from the pneumatic- and power supply system.

### 2.5 Source of danger

Before performing maintenance and cleaning on the machine, the machine must be switched off from the power supply system and the pneumatic supply system (e.g. Disconnect from the power supply, switch off the fuse)



***Never remove the safety installations or put out of control by changes of the machine.***

---

### 2.6 Safety installations

The safety installations are designed to protect the worker.

The operator undertakes to do yearly a check of the safety installations.

**Cover** Should the removal of the cover be necessary, take care that the earth wire is connected after re-closing the machine.  
The removal of the cover is only to be performed by skilled workers or instruted personnel.

**Switching power supply (SELV)** The switching power supply protects from dangerous voltages.  
It is not possible for more than 60 V-AC or 110 V-DC to go through the machine.

It is not allowed in any way to remove or make changes to the machine that interferes with the safety installations.

## 2.7 Signs and Symbols

The operating manual uses the following important signs and names for safety instructions.

### 2.7.1 Warning signs

---



**Signal word!**

***This warning sign describes a possible danger.***

***The non-observance of these signs can cause injuries or property damages.***

***This sign is often used in combination with mandatory signs.***

---



***WARNING! Danger by electrical voltage!***

---



***CAUTION!***

***Warning for cutting damages of the hand.***

---

### 2.7.2 Mandatory signs



***Consider the operating manual!  
Before putting the machine into operation read the instruction manual carefully.***

---



***This sign marks important operation instruction and application instructions.  
The non-observance of the notes can produce damages of the tool and other material values from the operator.***

---



***Unplug mains switch***

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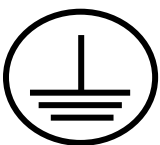
***Only use the machine in dry conditions.***

---

### 2.7.3 Information signs

#### Earth conductor

This label is placed at the earthing screw.



The protective earthing is a method, which is safeguard in a fault against dangerous touch voltage and electric shock.

The method protective earthing is done by an earth conductor.

The connection is made by a rubber connector with earth conductor contact.

The earth conductor "PE" (green/yellow insulation only in Germany) is used for this safety installation.

## 2.8 Remaining risks

With observance of all safety notes and warning information, remaining risks are still possible with operation of the tool.

This machine is state of the art and accredits safety-related rules.  
However, dangers can occur with use of the tool.

Errors which could influence the safety should be eliminated immediately, if necessary contact the manufacturer with the fabrication number.



**WARNING!**

***Electric shock risk when working with conducting parts.***

⇒ *Work on electric parts is only allowed by skilled personnel.*

---

## 2.9 Security measures at the installation location



***Internal instructions and controls should ensure that the work place and the environment are clean and clear.***

---

The machine must be installed on a stable table; an unsecure machine can create a great risk of injury.

### 2.10 Notes for the operator

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- ⇒ *The duty of the operator is to write a directive.*
  - ⇒ *The operator is to do yearly a check of the safety installations.*
  - ⇒ *Use only original fuses with declared amperage.*
- 

- ◆ Knowledge of the local regulations relating to safety and accident prevention.
- ◆ All notes on the tool have to be kept in readable condition; if necessary you have to exchange them.
- ◆ Inform the manufacturer immediately, if the machine and the application becomes unsafe.
- ◆ Change machine parts immediately, if they are not in good order and condition.
- ◆ Only use the machine for the intended use.
- ◆ Before you put the machine into operation the machine must be in a safe condition.

### 2.11 Noise hazard

The equivalent continuous weighted sound pressure level of the stripping machine AI 01 enclose  $\leq 70$  dB(A).

No ear protection is necessary for the operation of this machine.

## 3 Product description

### 3.1 Technical data

Designation	Unit
Feeding length	22 mm + stripping length
Cross section	0.05 – 6.0 mm <sup>2</sup> (30-10 AWG)
Max. outside diameter	5.1 mm
Stripping length	3 – 20 mm
Pull-off length	3 – 20 mm
Drive	Electric motor
Power supply	100 - 240 V
Frequency	50 / 60 Hz
Power consumption	45 VA
Fuse (filter-module)	2x T2AH250V
Software version	AI01 –D / 1.02
IP-Code	IP 20
Cycle time	approx. 0,5 s
Continuous sound level	≤70 dB(A)
Dimensions (wxdxh)	190 x 295 x 190 mm
Colour	RAL 5012
Weight	8.8 kg
Interface	Touch-Display

Operating environment	Unit
Transport temperature	-25°C to +55°C
Environmental temperature	-5°C to 40°C
Operating temperature	+10°C to 45°C
Max. operating height	2000m absolute altitude
Relative humidity	50% to 40°C (no condensation)
	90% to 20°C (no condensation)
Contamination level	2
Pressure safety installation	85% to 110%

### 3.2 General view of the machine



Figure 1: General view

- 1 Touch-Display
- 2 Brakes
- 3 Adjusting knob stripping length
- 4 Adjusting knob pull-off length
- 5 Feeding funnel
- 6 Stripping-waste container
- 7 Additional funnel
- 8 Filter module
- 9 Adjusting knob cross-section



## 4 Instruction manual

### 4.1 Putting into operation



**CAUTION!**


*The electrical data on the type plate must conform with the electrical power supply.*

⇒ Connect the main cable between the machine and the electrical power supply.

### 4.2 Starting the machine

Switch on the main switch on the filter module.

### 4.3 Adjustment the unit of length (mm or inch)

1. Press short the touchdisplay. (  is show)
2. Press touchdisplay and hold min. 5 sec.
3. The unit of length changes.



#### 4.4 Adjustment of the cross-section

1. Turn the adjusting knob up to the desired cross-section.
2. A further minor readjustment will depend on the quality of the wire.



*In the case of cross-section from 0.05 to 0.34 mm<sup>2</sup>, put the additional funnel in the feeding funnel.*



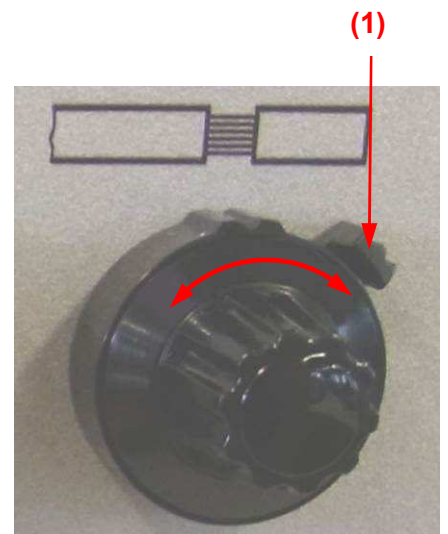
#### 4.5 Adjustment of the stripping length

- ◆ Release the brake (1) of the adjusting knob by turning counterclockwise.
- ◆ Adjust the stripping length (2) by the adjusting the knob (value in mm, approximate value)
- ◆ Lock the brake.



#### 4.6 Adjustment of the pull-off length

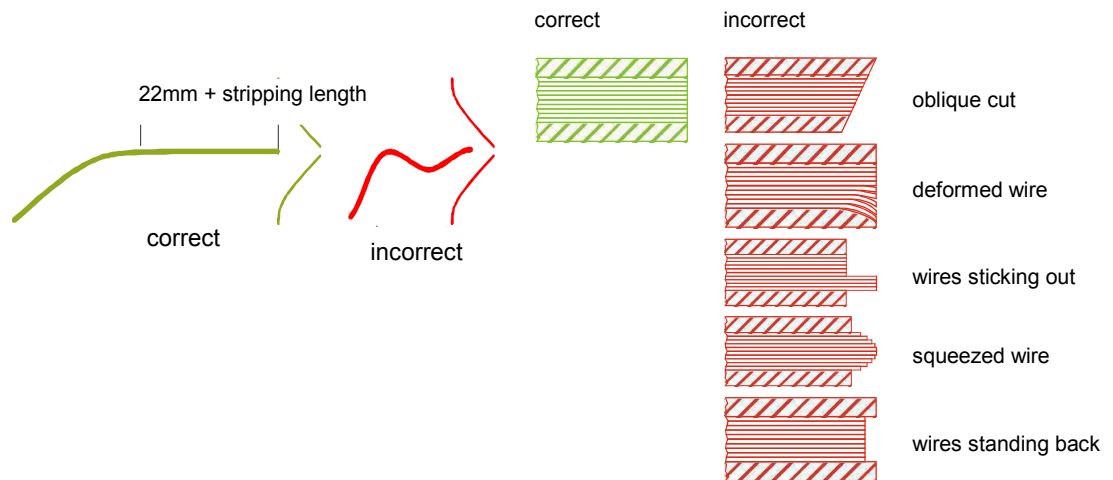
- ◆ Release the brake (1) of the adjusting knob by turning counterclockwise.
- ◆ Adjust the pull-off length (2) by the adjusting knob (value in mm, approximate value)
- ◆ Lock the brake.



## 4.7 Wire feeding



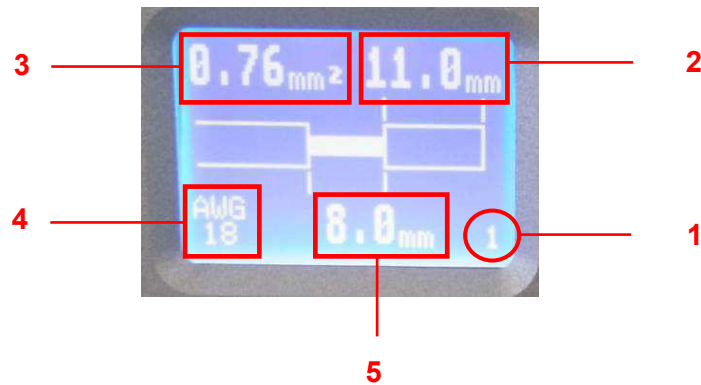
- ⇒ *The wire has to be cut off straight and may not have any bends or bows.*
- ⇒ *The wire triggers the working cycle by inserting into the feeding funnel.*



Graphic 1: Wire feeding

## 4.8 Menu

### 1. Menu “Display“ → Automatic work menu



- 1 Menu
- 2 Stripping length
- 3 Cross-section
- 4 AWG
- 5 Pull-off length

### 2. Menu “Hand“ (manual handling to remove the stripping-waste)






- ◆ Start hand cycle → press the touch display once (changes back to Menu 1 automatically)


#### Hand-Mode:

- ◆ During by switch on the machine press the touch-display and hold → Menu 2 „Hand“ will direct show flashing.
- ◆ At the hand-mode the motor can adjusted slowly at tip operation by touch the display.
- ◆ If you press the touch-display for 3 seconds you can change back to the Menu 1 “Display“.

### 3. Menu "Counter"

→ Menu 3 "choose counter" → press the touch-display for a minimum of 3 seconds.

-  Total counter
-  Day counter
-  Service counter

- ◆ Quit menu → press the touch-display once.
- ◆ Delete day counter  → press the touch-display for a minimum of 3 seconds.
- ◆ If you start the stripping cycle, the menu will quit automatically and choose menu 1.

## 5 Maintenance



**NOTE!**

**Before maintenance, the machine must be disconnected from the power supply.**

⇒ Otherwise a risk of injury threatening!

### 5.1 Empty the stripping-waste container

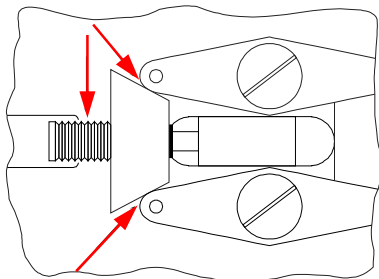
Pull out the stripping-waste container, empty it and put it back in until the stop limit.

### 5.2 Interior



**The machine has to be cleaned and oiled every 6 months or after 50,000-100,000 cycles.**

1. Detach the front-panel by releasing the screws.
2. Remove the stripping-waste and other impurities.
3. With usual commercial engine oil, oil with care the wire holding tongs (inside of the front panel) and the heads of the pressure screws (Refer to picture: Interior view).
4. Close the front-panel: push the control lever to the left, place the front-panel upon the front side of the machine by pushing the front-panel from the right to the left (position it with the pin on the right side).
5. Fasten the front-panel with the screws

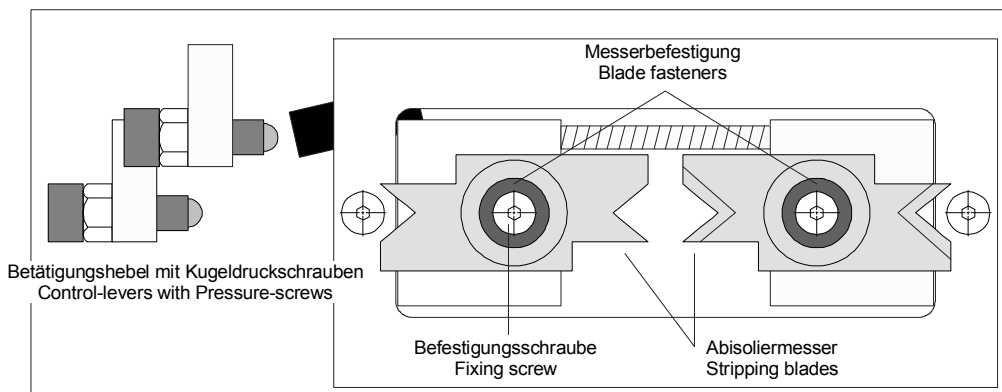


**Picture 1: Wire holding tong**

### 5.3 Stripping blades



**CAUTION!**  
**Blades are sharp.**  
**It consist the danger of cutting damages of the hand.**  
⇒ Do not touch the blade.



Picture 2: Interior view

1. Remove the front-panel by releasing the two screws.
  2. Release the fixing screws and remove the blade fasteners.
  3. Turn the stripping blades or replace them with new ones.
- 4. Close the front-panel:**
- ◆ Push the control lever to the left.
  - ◆ Place the front-panel up on the front side of the machine by pushing the front-panel from the right to the left (position with the pin on the right side)
  - ◆ Fasten the front panel with the screws.



## 6 Troubleshooting

### 6.1 The machine does not start

The electrical supply is disturbed

- ⇒ Check the main cable and the fuses

### 6.2 No start after feeding the wire

The starting sensor (S1) is blocked by stripping waste.

- ⇒ Press short once the Touch-Display „ Hand cycle“

The wire was incorrectly fed.

- ⇒ Feed the wire as described in chapter „**3.6 Wire feeding**“

### 6.3 Increasing refuse

The stripping-waste container is full

- ⇒ Empty the stripping-waste container

Knob cross section is not in the right position

- ⇒ Check the adjustment

The stripping blades are damaged or incorrectly installed.

- ⇒ Correct or change the blades.

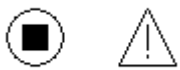
### 6.4 Error messages

Flashing error messages on the Touch-Display, to receipt press short once the touch-display.

A. The drawer is open (only by AI04)



B. Error stop switch → Stop switch does not switch or stop switch is not pushed.



C. Error start switch → Start switch is not free



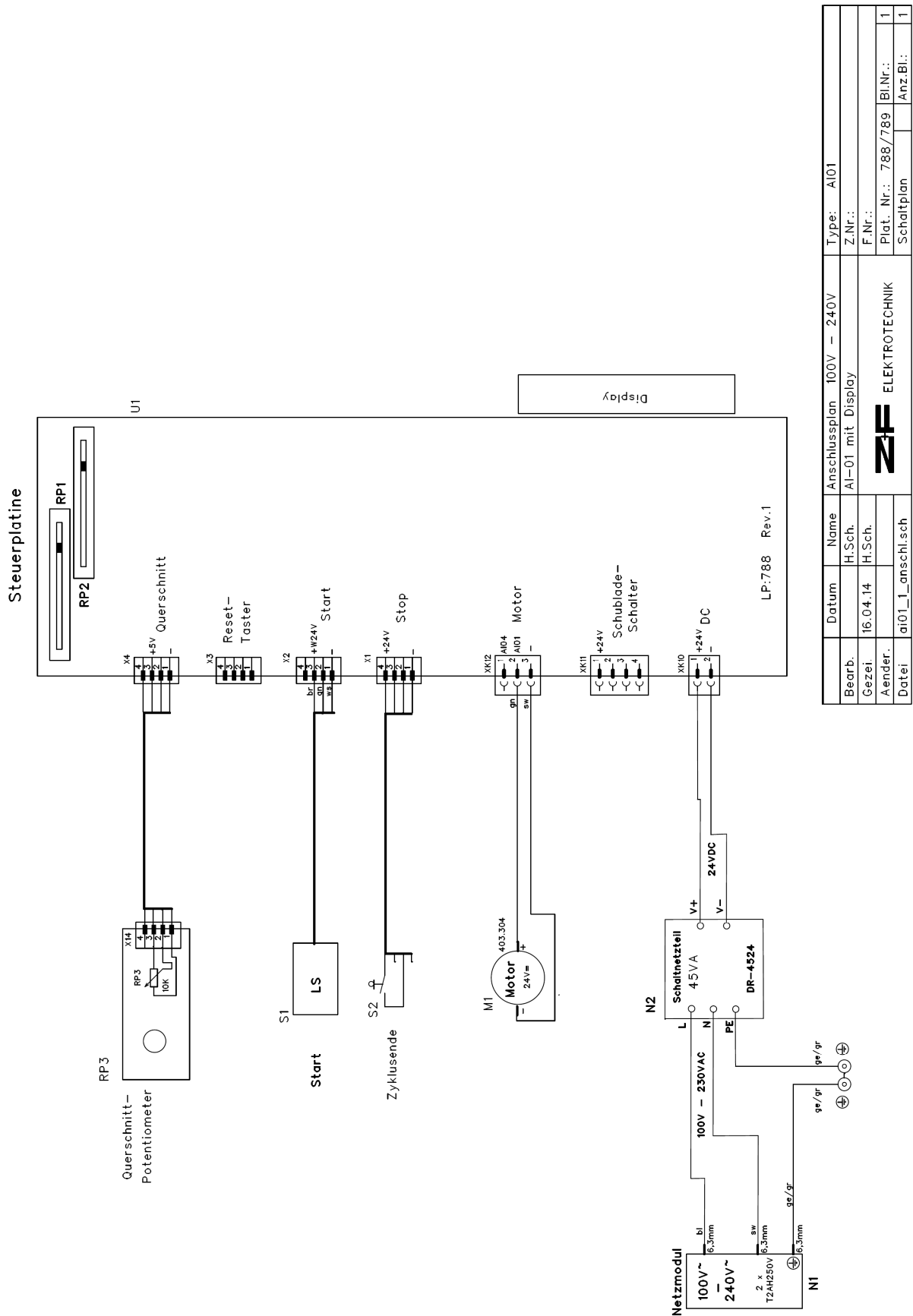
D. Error motor → motor does not drive or motor blocks (power to high)



E. Service – message → Count for service is reach.



# 7 Electrical diagram





## 8 Spare parts list

Designation	Art-No.
Driving unit	E10 AI 000674
Starting unit AI01/AI02 ( 3-20mm)	E10 AI 000670
Limit switch	E90 AI 000029
Rubber foot (small)	K10 AI 000004
Pressure screw	K10 CA 000091
Disc spring (set 32 piece)	V10 AI 000021
Adjusting knob cross section	V90 KN 000001
Adjusting knob stripping / pull off length	K90 KN 000021
Cap black	K90 KN 000022
Switch mode power supply 48W / 24V / 2A	K90 EK 000182
Line cord EU 230 V	K90 LE 000018
Line cord CH 230 V	K90 LE 000019
Line cord DK 230 V	K90 LE 000071
Line cord USA 120 V	K90 LE 000025
Fuse 2xT2AH250V	K90 FS 000046
Circuit board	K90 EK 000194
Display board	E90 AI 000020
Countersunk screw (blades)	K70 SI 000044
Blade fastener	E10 AI 000139
V-blades (set)	V10 AI 000003
Toothed belt	K10 AI 000006



## 9 Disposal



It is not allowed to dispose the machine in the domestic waste.  
The disposal of the machine should be done professional and environmental manner.







## 10 EC-declaration of conformity

### Manufacturer

Zoller+Fröhlich GmbH  
 Simoniusstraße 22  
 D-88239 Wangen im Allgäu

The manufacturer declares in sole responsibility that the product

### Stripping machine AI 01

Fabrication number: **Sample**

Year of construction: **2014**

fabricated in Wangen im Allgäu to which this declaration refers, agrees with the following standards and guidelines:

#### Guidelines:

Machinery Directive	2006/42/EC
RoHS	2011/95/EC
EMC-Directive	2004/108/EC
Low Voltage Directive	2006/95/EC

#### Harmonized engineer standards:

Safety of the machine	DIN EN ISO 12100:2011
-----------------------	-----------------------

#### Other engineer standards:

Emission:	DIN EN 61000-6-4:2011
Immunity	DIN EN 61000-6-2:2011
EMC: Flicker	DIN EN 61000-3-3:2009
EMC: Harmonic	DIN EN 61000-3 2:2011

#### Authorised representative for the compilation of the technical documentation

See adress of the manufacturer, Department TAM

Wangen im Allgäu,