

# **YARNMASTER® 3N1**

**Fitting Instruction  
Schlafhorst ACO 240**



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03. 2012 / Version 1.0.0



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# Safety Instructions


## Norms and Regulations

The LOEPFE YarnMaster® 3N1 yarn clearing system is a product which has been inspected for technical safety. It complies with the following directives:

98 / 37 / EEC	Machinery Directive
2006 / 95 / EC	Low Voltage Directive
2004 / 108 / EC	Electromagnetic Compatibility

## Instruction Manual

To prevent faults and operating errors, we recommend to carefully read this Instruction Manual and to carefully follow the instructions given.

 **Indicates warnings which, if not properly observed, could harm your health, impair the functioning of the equipment or the security of your data.**

**Note:** *The screen representations in this manual serve as illustration only. They should not be used as setting examples!*

A copy of this Instruction Manual must be kept easily accessible near the machine.

## Liability

The manufacturer assumes no liability for damage caused by:

- Noncompliance with the safety, operating and maintenance instructions contained in this Manual.
- The use of spare parts/non-OEM parts/conversion parts not supplied by us.
- Unauthorized conversion and modification of the yarn clearer.
- Normal wear.

## Operational Notes



The installation of the equipment should only be performed by qualified personnel being familiar with all safety checks, installation and service guidelines. Improper operation of the equipment could cause hazards.



In accordance with 98 / 37 / EEC, 2006 / 95 / EC, 2004 / 108 / EC. Do not open any covers (cooling, fire protection, contamination, spark interference etc.)



**Electronic components and assemblies (printed circuit boards) are endangered by electrostatic charges!** Beware of touching the soldered connectors, pin contacts before they have been discharged statically. Hold the units at the periphery only.



**Upgrade works must be carried out with switched off mains switch only. Failing to observe this warning may lead to death or severe injuries!**



This yarn clearer system must be connected to the power supply only after installation of all front panels, plug-in boards and provided covers, in particular of the central unit.



Connect the supply input of the Q-UNIT 3N1 to a 24Vdc SELV supply, that is switched off if the machine is switched off, or if the emergency button is pushed. Make the earth connections.



Unit specifications see last page.



## Fitting 3N1

Basic situation is a machine without any clearer system.

If there is one fitted to the machine, it must be removed before installing 3N1

### Time instructions (based on 240 Rotors)

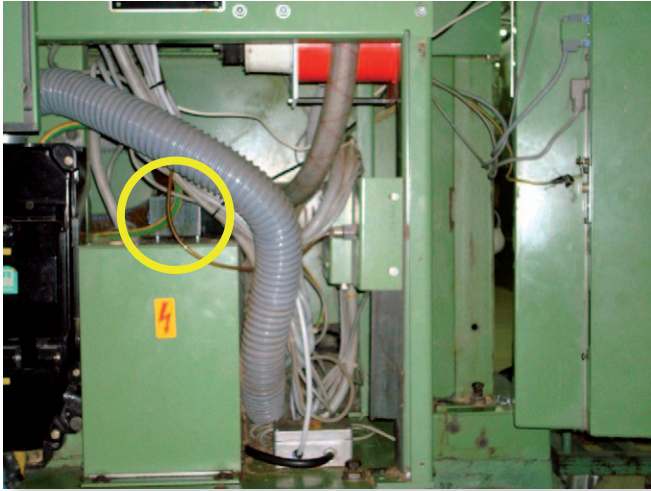
<b>Time for</b>	<b>Approx. man hours</b>
Deinstallation of old system	14
Installation of 3N1 (full and basic)	36
<b>Time for:</b>	<b>Hours</b>
Start up	5
Time for: (only one time)	Hours
Teaching	8

Work on Informator:

Usually this should be done by the ACO responsible person in the mill.  
Print or save report with all data.

**Note: Start up and checks in the Diagnosis**

## Preparation of Major Cabling

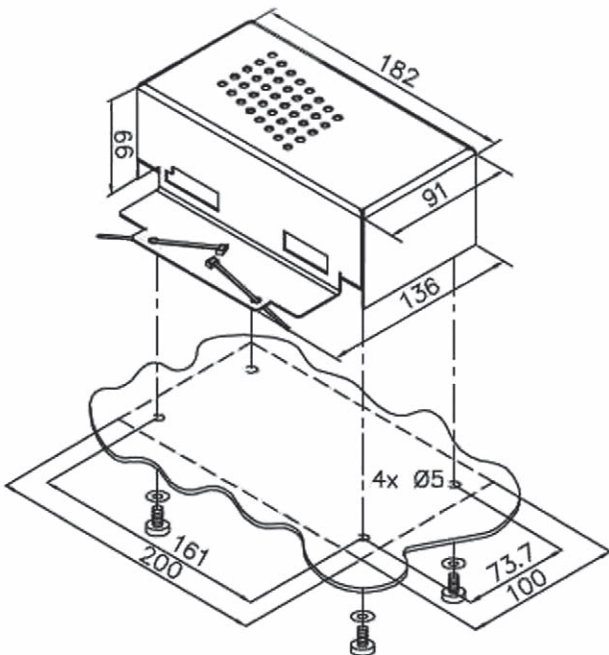


Cabling SCU Front

### SCU Side

- Power supply 24 V
- Ground
- 4K
- LAN to Q-Board

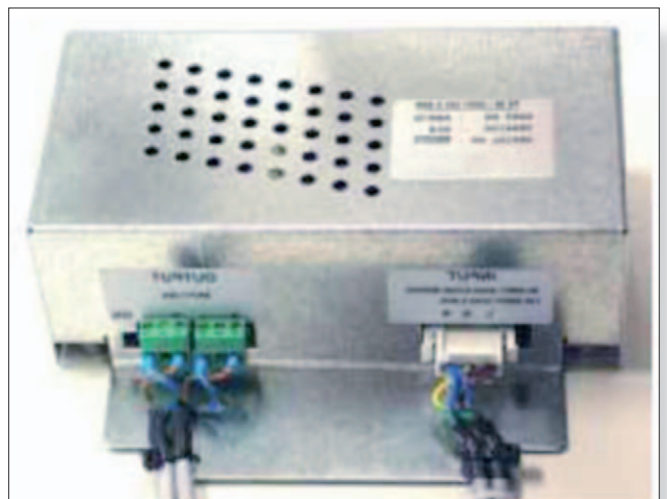
The power supply must be installed by an electrician



- 4x spring washer M4 DIN6798
- 4x screw M4x10 DIN7985

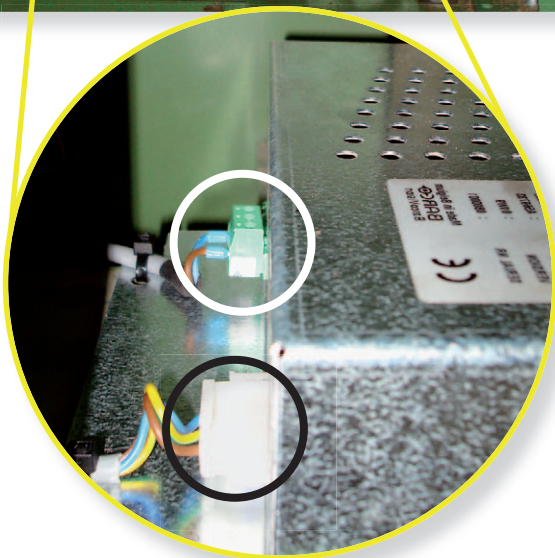
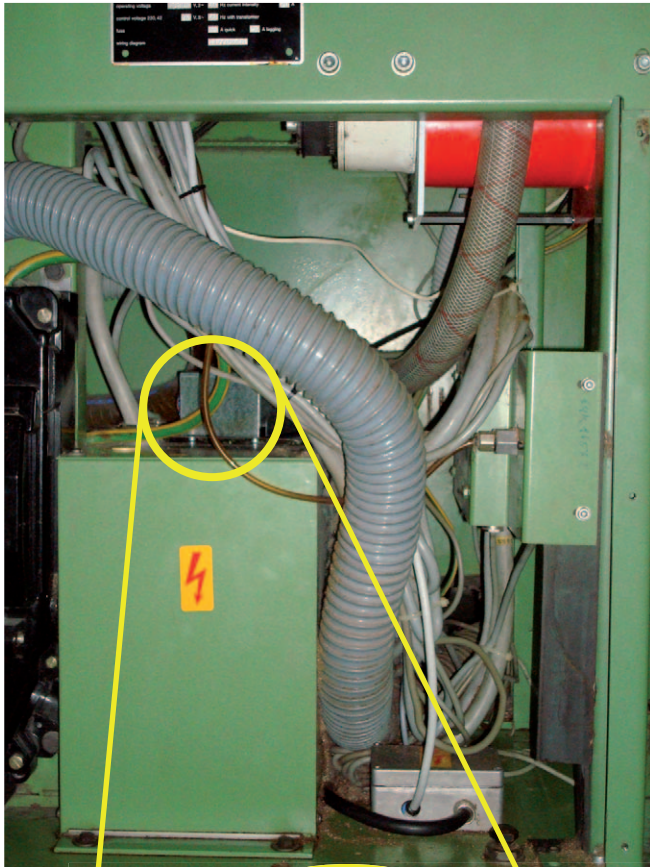
Power Supply mounting

1. Drill 4 holes  $\text{\O} 5\text{mm}$  and deburr.
2. Install the power supply as shown. Mounting parts and cable ties are provided
3. Fix the power input and power output cables with the cable ties to the power supply, as shown.
4. Make sure that the cables are tied at the cable mantle and not at the wires.



Power Supply connections

## Power Supply Connection

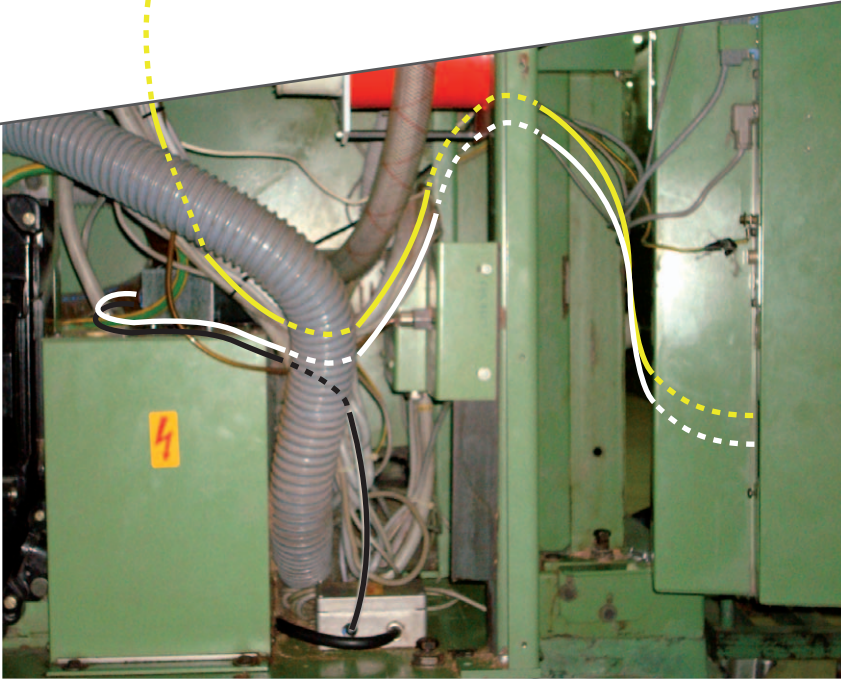
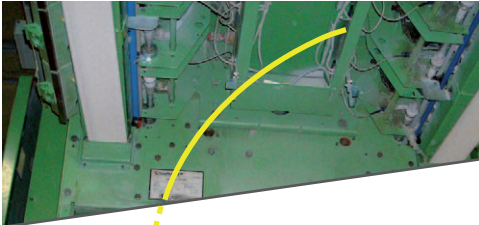


Black: Power supply from machine or external

White: Power supply for SCU: 24V (30W), only use one of the outputs!!

Power: To be connected with an external power supply or have it connected to the machine electronics by an electrician. Power from Schlafhorst's control unit.

## LAN to Q-Board



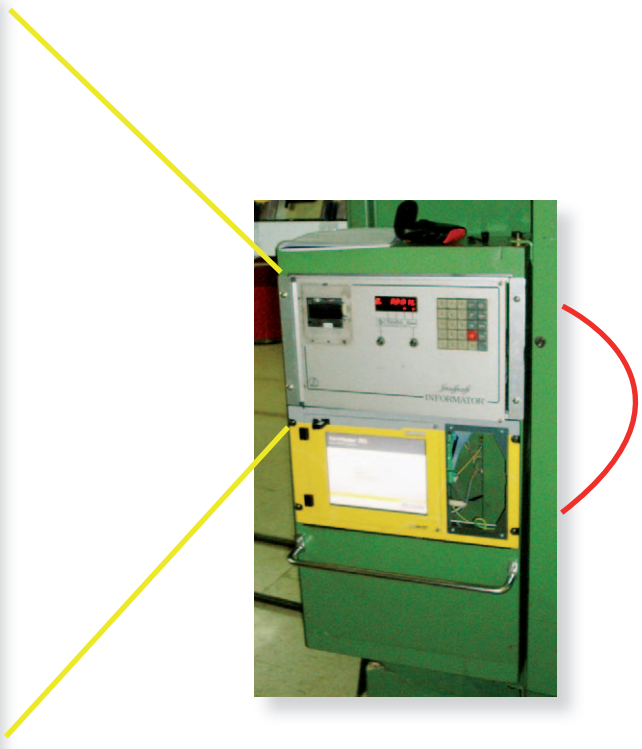
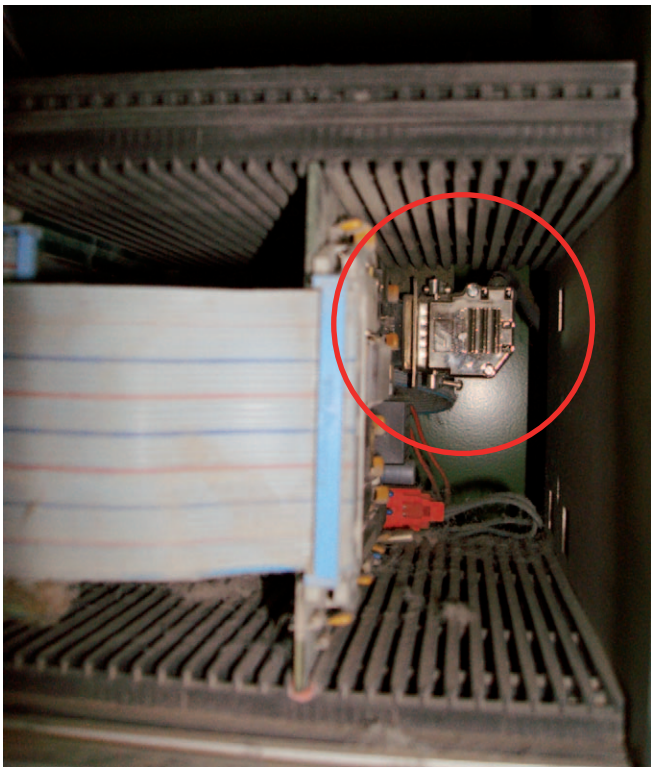
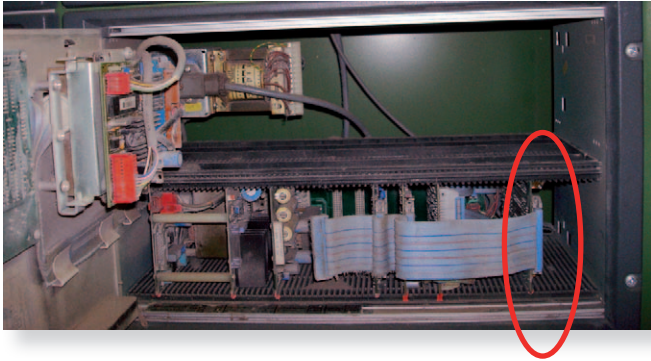
Yellow: LAN to Q- Board  
Red: 4K cable to 4K card at Schlafhorst Informator  
Blue: Ground: to housing (or somewhere else with an assured ground)  
White: power cable for power supply, front side as installed.  
Black: power supply from machine or external.

Remove the cover:  
Use the cable track to fit the cable before you feed it into the cable channel (above). This cable goes directly to the first SE Board (long LAN cable)

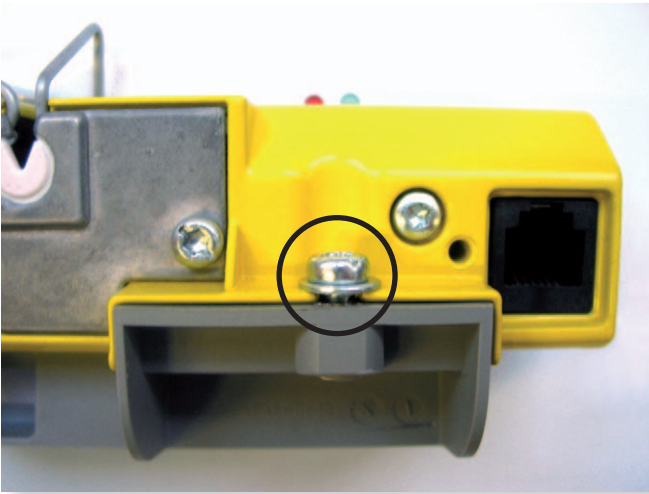
Connect the 4K cable to the interface in the Informator.

### Connection 4K to SCU

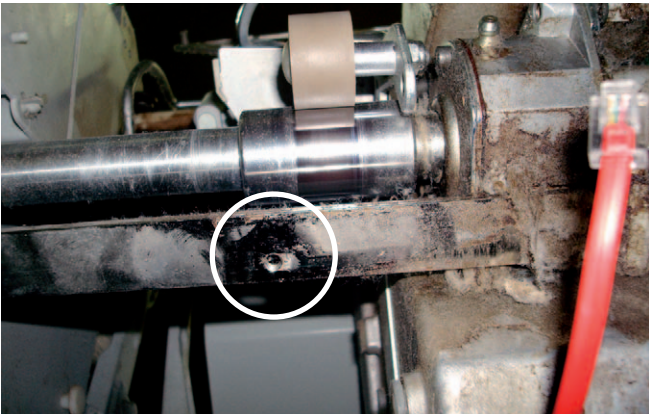
Red: 4K  
4K cable to 4K card (inside of the Informator)  
The card is written down.



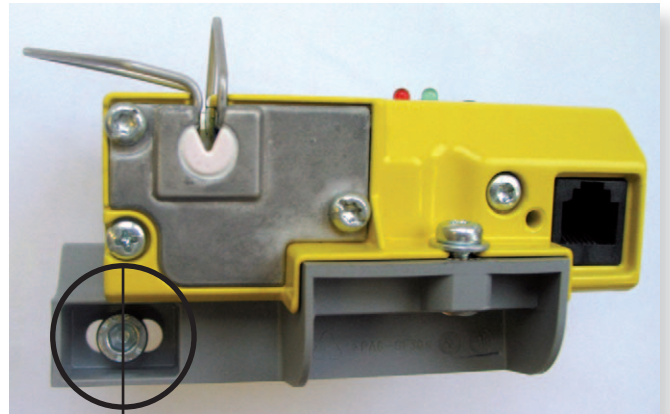
## Fitting of Sensors



Prepare the sensors and screw the mounting piece to the sensor.

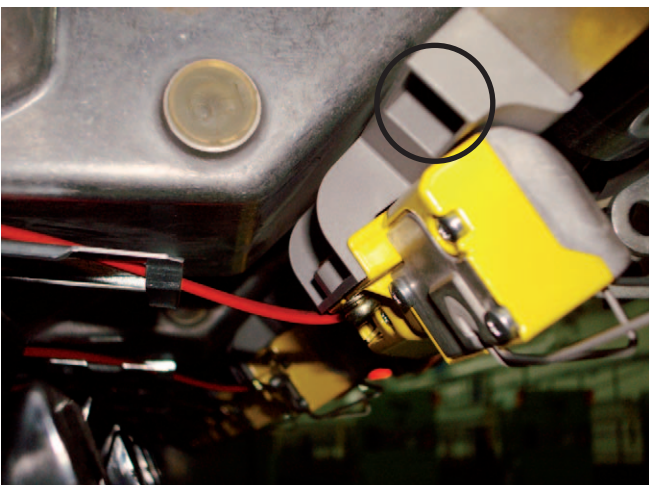


Picture 1



Picture 2

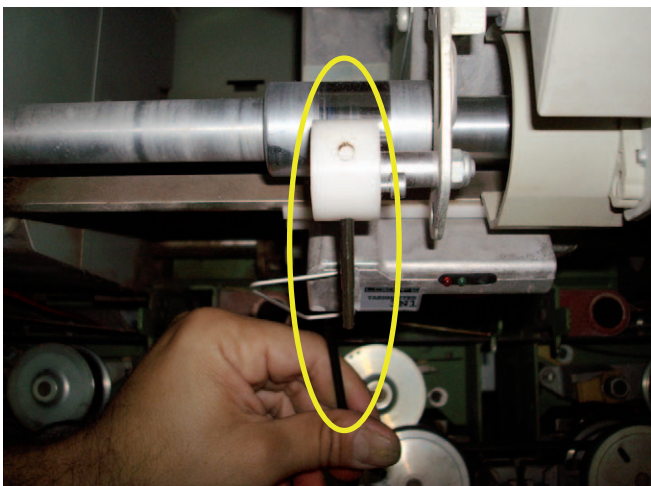
Screw the sensing head into the existing hole of the bar (Picture 1) and position it in the middle of the hole of the mounting piece (Picture 2). It is necessary to do it in this way to be able to make a readjustment.





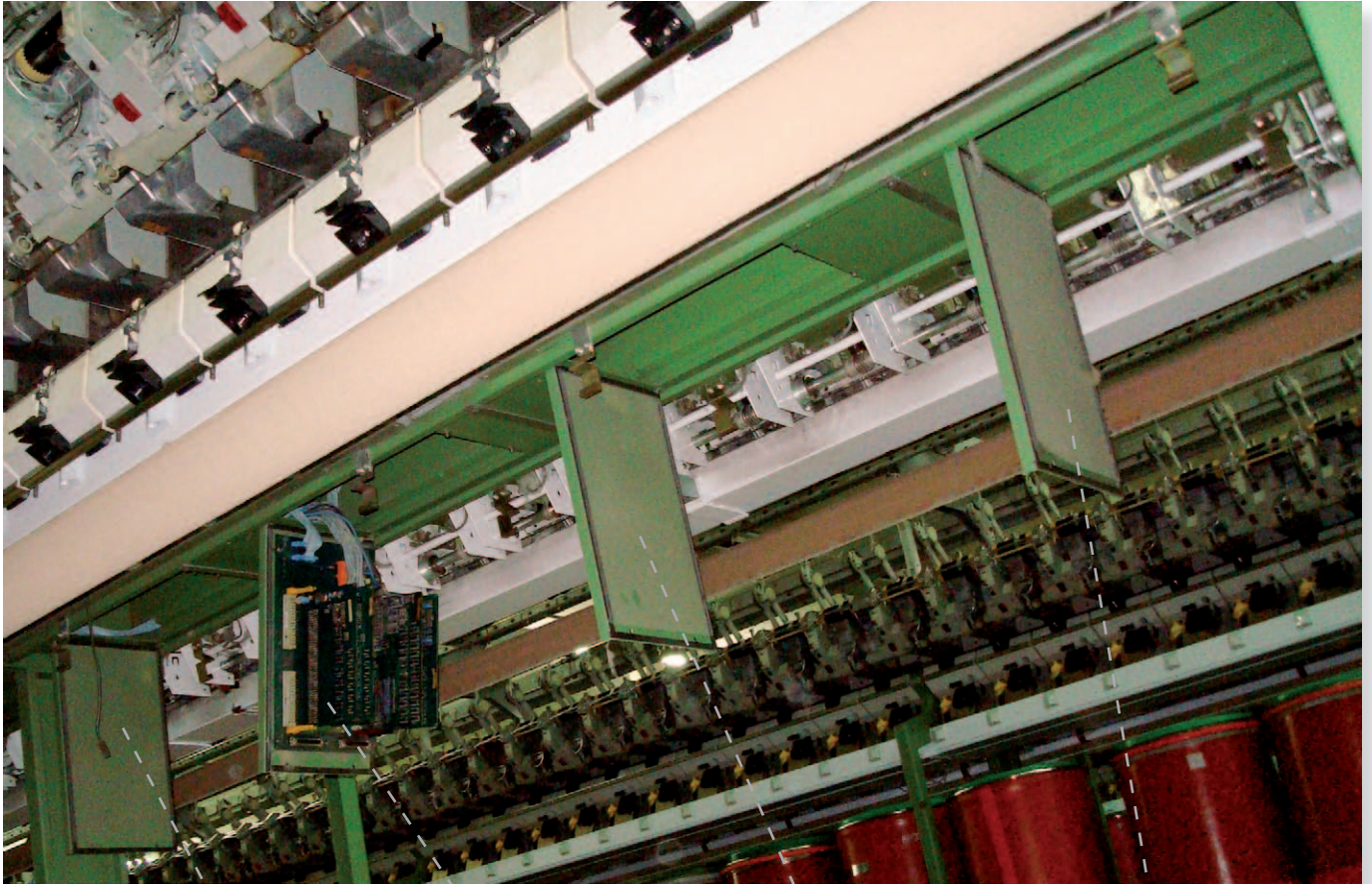
At least: the measuring slit should be in the range of the press roller. (Picture)

If this is not so, the metal bar with with screwed on sensor should be slided. This should be done by the mill mechanics. To do this the adjusting parts for the sensor should be used, if available.

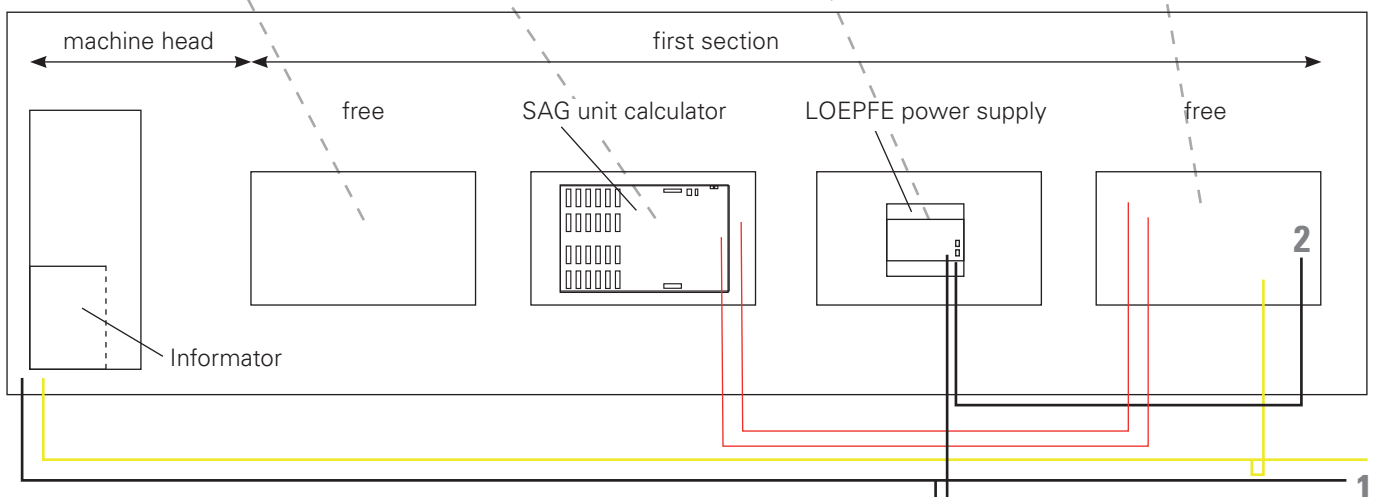


*Adjustment*

## Cabling of the Section Electronic (SE)



View from below



**1** Main powerline (from machine or external line) Specification see power supply unit

Black: **1/2** Power supply 24V for SE

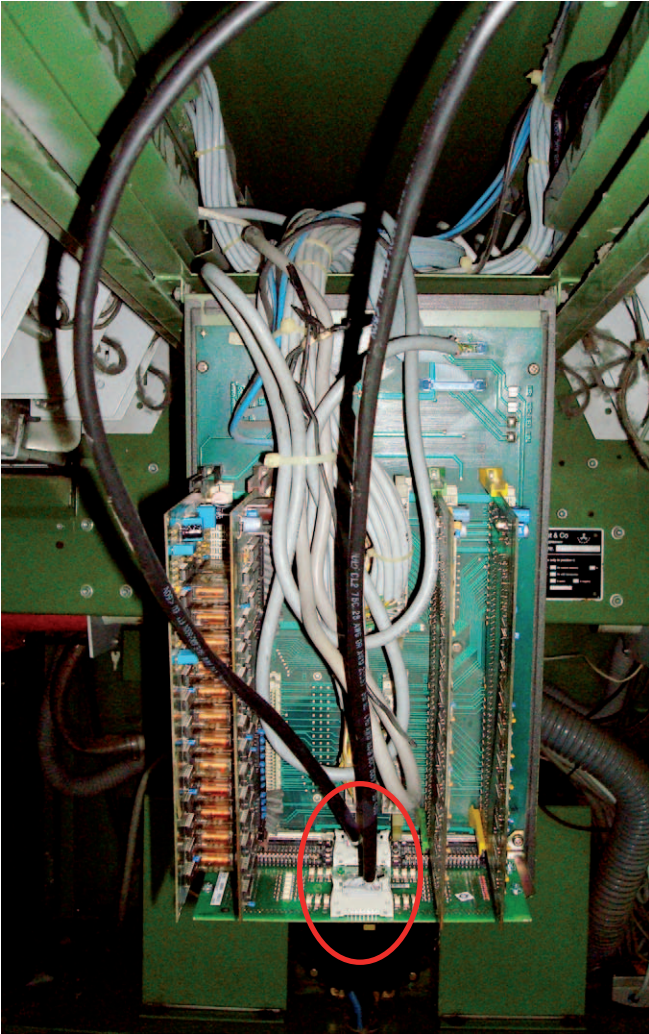
Yellow: LAN to SE-boards (splitter on each section)

Red: Start / Stop cable IF to connect the SAG)

For exact cabling see the following description. Before starting with the cabling the sensors should be fitted!



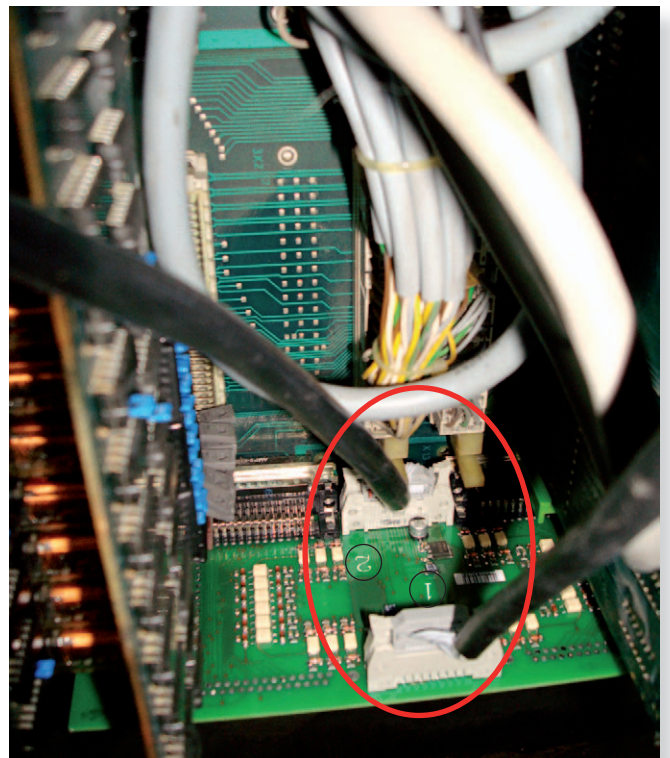
## Connections to SAG



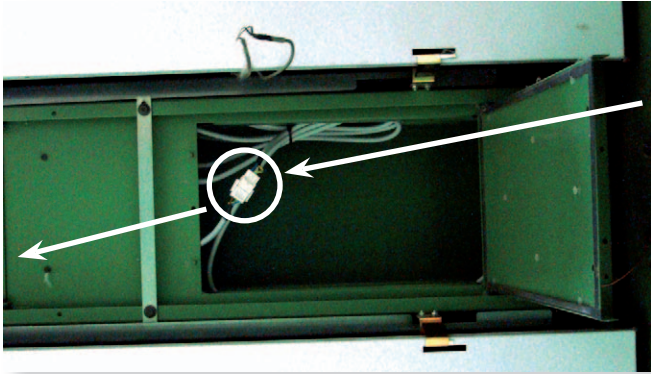
Red: Q-Stop cable, each for one side (12 rotors)

The SAG board requires an Interface print. It can be simply plugged on.

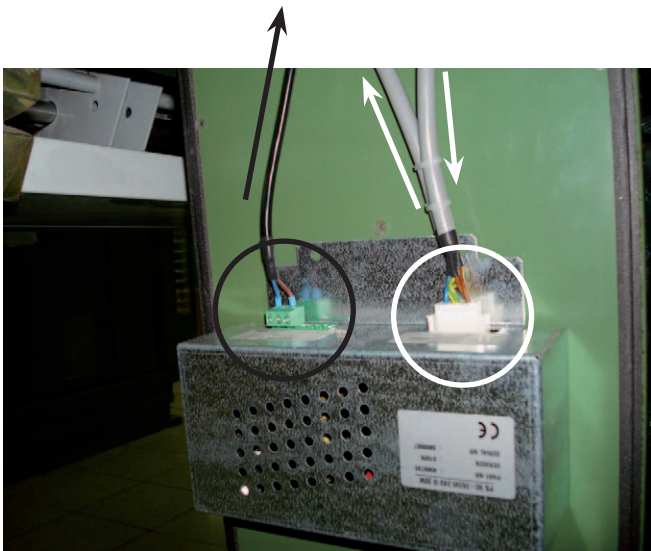
Position 1 to connector lower connector on the SE-Board  
 Position 2 to connector superior connector on the SE-Board  
 (top connector)



## Power Supply for SE



The power supply must be installed separately. The conductor is looped in in series. The main conductor can be powered by Schlafhorst or externally. A first cable is laid from this power supply up to the first empty shaft door. There it is connected to the serial line, which must be laid into the shafts.

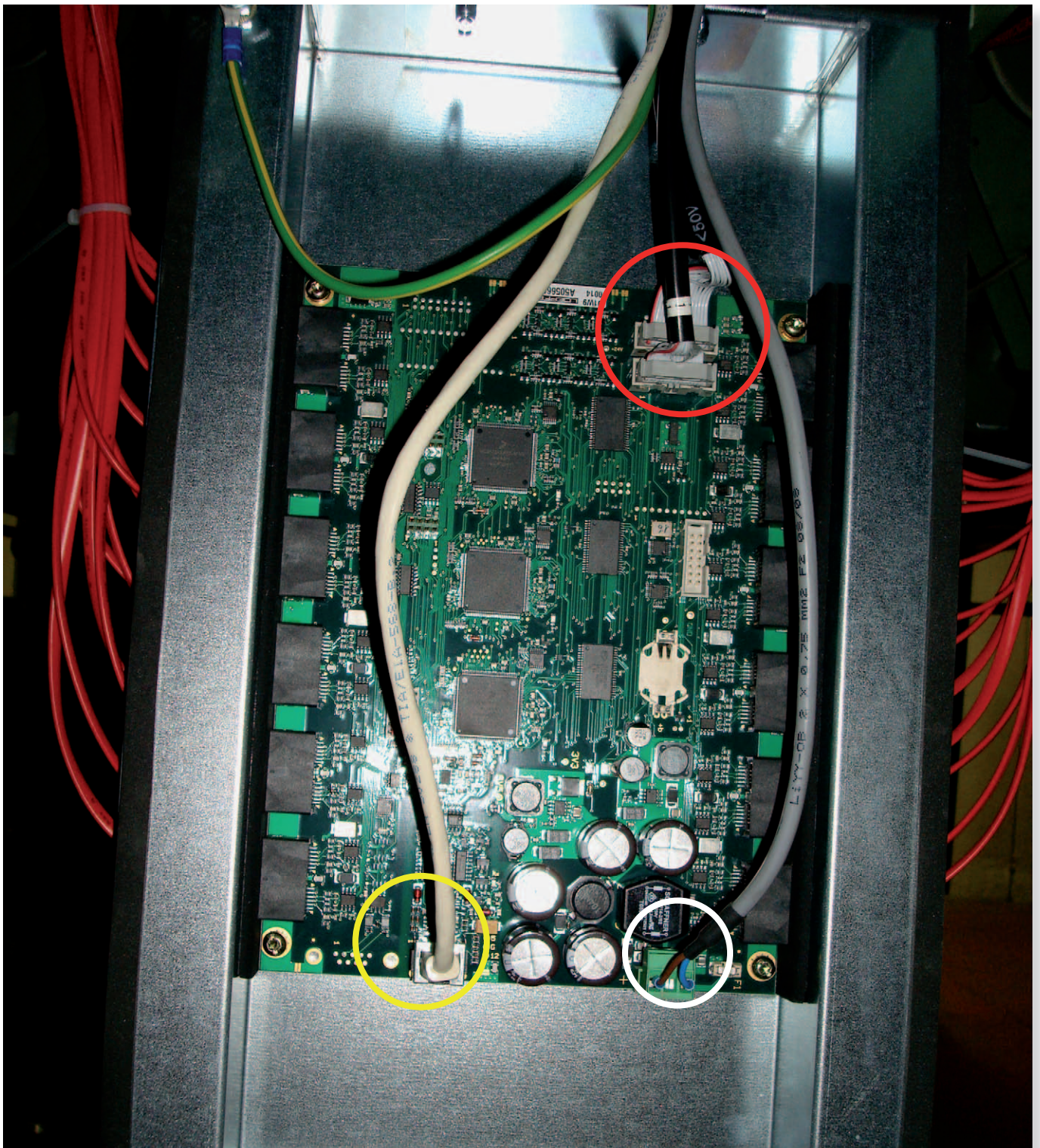


The transformer must be screwed onto the empty shaft cover (see drawing page 10).

Black; Power supply to SE  
White: Main power line from machine or external.



## Q-Board Connections



Red: Stop cable:  
Lower for SAG Board IF connector number 1  
Superior for SAG Board IF connector number 2

White: Power supply 24 V from SAG

Yellow: LAN to SCU, is splitted by each section see the following picture

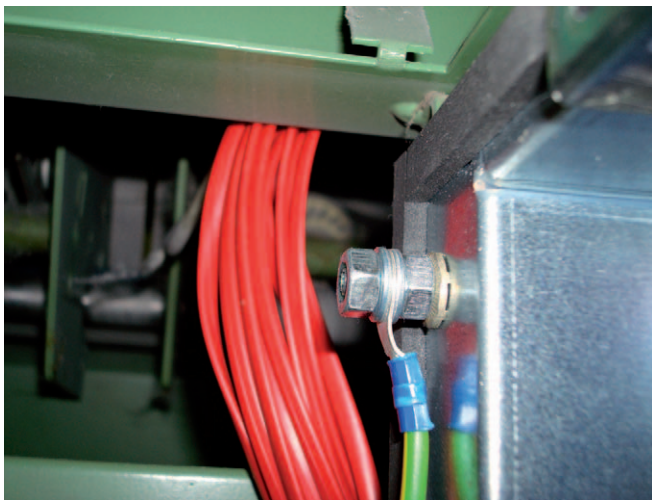


Output for next section (if last, empty)

Input from SCU or last Q-Board

LAN for Q-Board

## Earthing of SE-Board

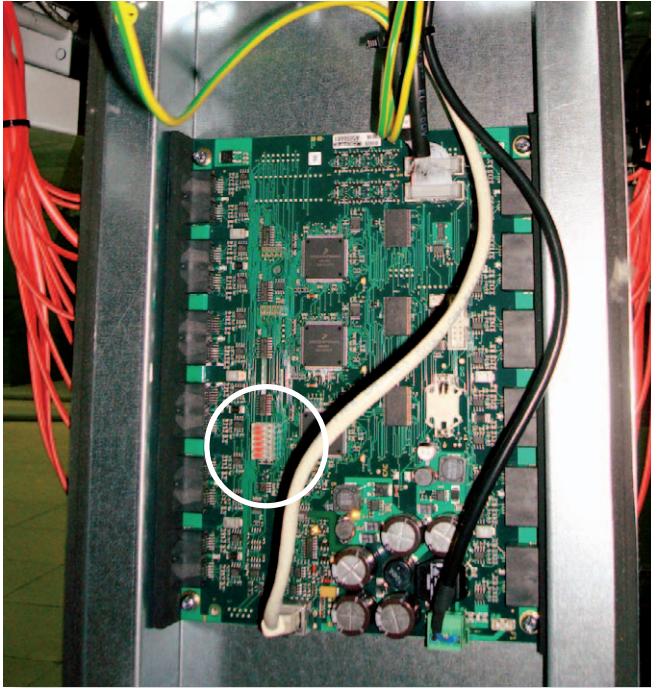


The screw must be screwed onto the Q-Board at the upper left side, as illustrated.



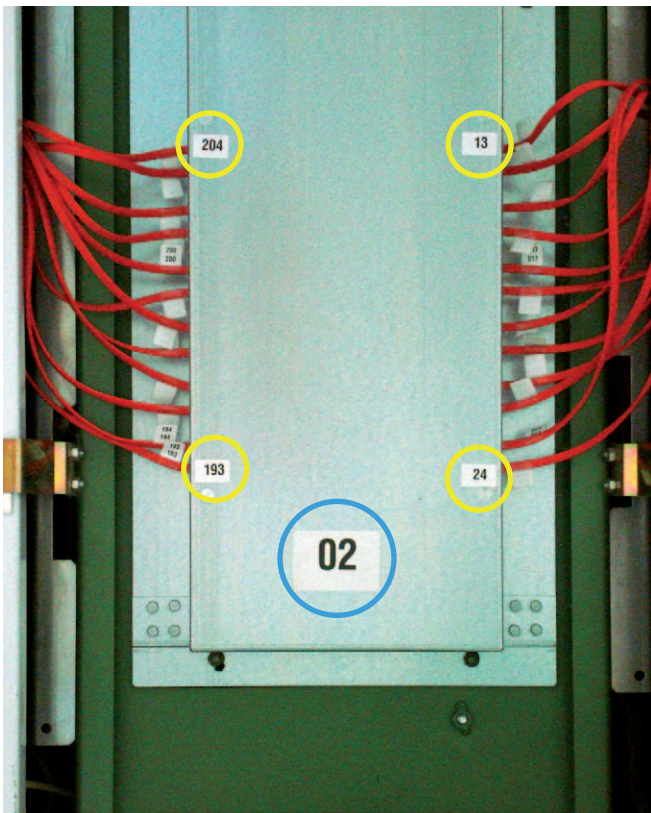
The earthing is assured by the cable channel. Above the opening at the end of the section there is a screw, which can be used for this purpose. The ground wire can simply be laid along the side panel.

## SE Address



Set the right address on the switch of the SE. Address sticker is on the SE case.

## Labeling of SE-Board

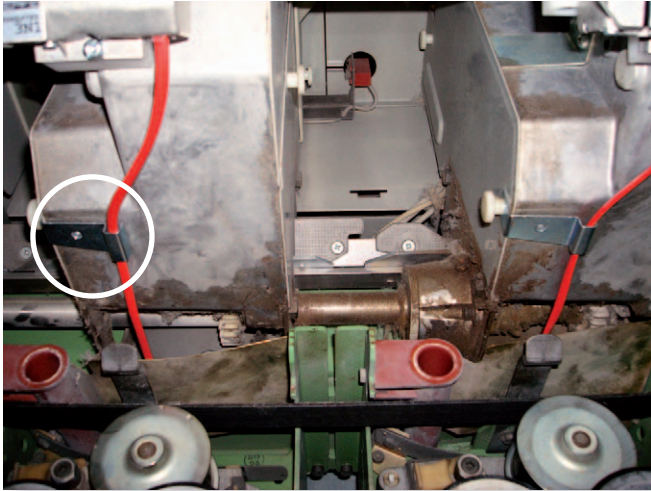


The labelling is to be done by the fitter. As soon as the Q-Boards are placed the attached stickers must be fixed. This marking serves for a correct cabling and helps in case of exchange.

Blue: SE-Board number

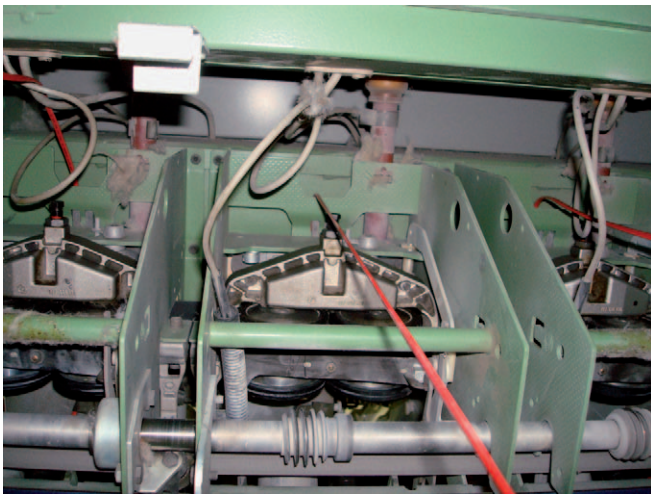
Yellow: first and last rotor number on each side.

## Sensor Cables

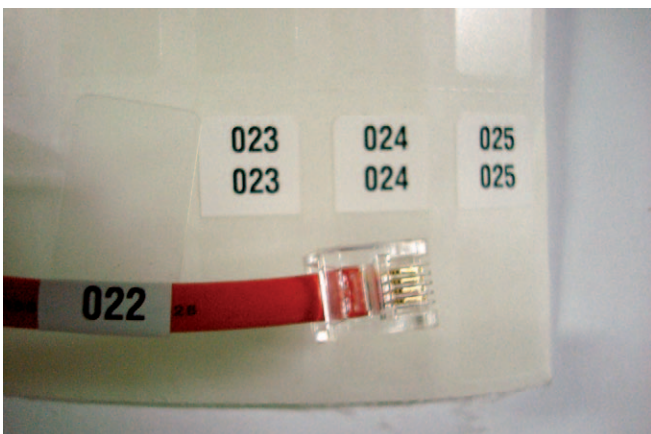


On each machine side:  
 6 cables, length 3 m (SCU side, longest way to Q-Board)  
 6 cables, length 2 m (shorter way to Q-Board)

Cable from the sensor to the inside of the machine. Use the support (different types available).



Inside (view of the backside of the rotor)

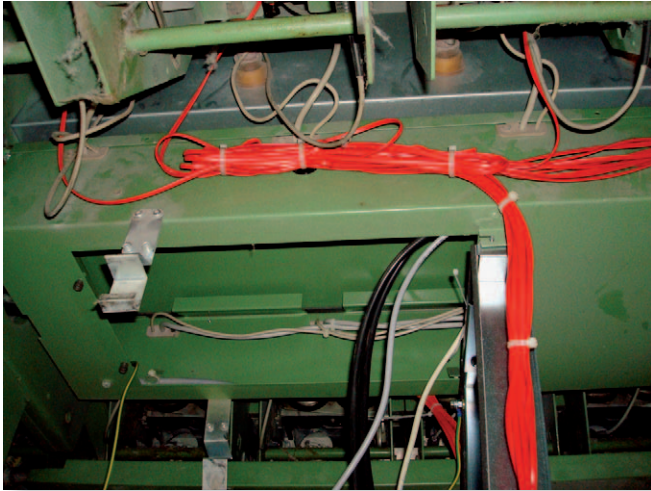


Labling of sensor cable (hanging end!!), when the cable is plugged into the sensor and led to the inside.

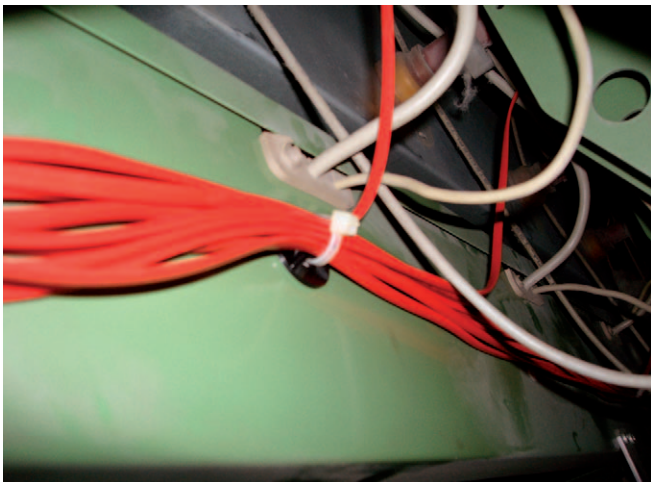
Use the Rotor number as a help!!!

### Option 1: Tie-Wraps

Fit the cable with tie-wraps or with cable channels (depends on the machine and on the preinstallation)  
And connect to the right connector of the SE-board

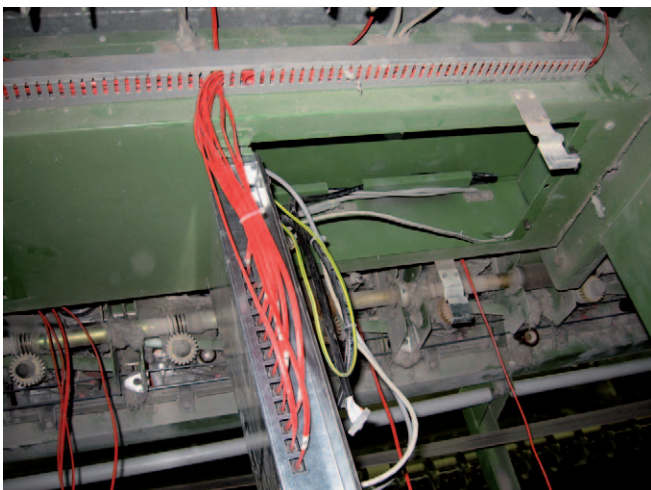


Affix the tie-wraps on a mounting. Before affixing the mounting, clean the place very properly (rotor position 3 / 6 / 9 / 11, starts from the section beginning).



### Option 2: Cable Channels

For both sensor cable layings an orderly laying is necessary to avoid unnecessary loops.





# Specifications

## (Section Electronic)

**A905262: Q-UNIT 3N1 ACO FP => Full clearer**

**A9052621: Q-UNIT 3N1 ACO BASIC => Basic clearer**

**A905265: Q-UNIT 3N1 ACO240/STD FP = Full clearer**

**A9052651: Q-UNIT 3N1 ACO240/STD BASIC => Basic clearer**

- Unit
  - supply voltage : 24Vdc SELV
  - supply voltage range : -15% / +25% (including ripple)
  - supply current : 1.1A<sub>dc</sub>
  - Fuse : T2AL
  - Temperature range : 5 – 50°C non condensing
- Output stop signals
  - Auxiliary supply stop signals : pin10/J44 and pin10/J45
    - Output voltage : 12V +/- 5%
    - Maximum output current : 100mA / connector
  - High side outputs : J48, J49
    - Type of output : open collector
    - number of outputs : 2 x 12 outputs
    - Max. output current / output : 5mA
    - Max. output voltage if output is active : Supply voltage
    - Min. output voltage if output is active : Supply voltage - 1.5V
  - Low side outputs : J44, J45 or J53, J54
    - Type of output : open collector
    - number of outputs : 2 x 12 outputs
    - Max. output current / output : 30mA
    - Max. output voltage if output is active : 1.5V
    - Min. output voltage if output is active : 0V
    - Max. output sustaining voltage : Supply voltage
    - Internal pull-up resistor : 10K $\Omega$  / output to supply voltage



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