Loepfe

YARN*MASTER*® 3N1

Fitting Instruction
Savio FRS 3000

Table of Contents

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:

2006 / 42 / EC	Machinery Directive
2006 / 95 / EC	Low Voltage Directive
2004 / 108 / EC	Electromagnetic Compatibility

Service Notes

- The servicing of the equipment should only be performed by qualified personnel being familiar with all safety checks, installation and service guidelines.

- Switch-off the power of the spinning machine before servicing.

- The disconnection device of the "SE UNIT 3N1" is located inside in the "SE UNIT 3N1".

- Unplug the power connector near F1 to disconnect the "SE UNIT 3N1" from the supply.

- After servicing, close all covers before starting-up the machine.

- Fuse
– For continued protection against risk of fire, replace fuses only with the same type and rating of fuse.

- Battery
– Caution, risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

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

This yarn clearing equipment may only be installed, initiated and operated by trained personnel.
Improper operation of the equipment could cause hazards.

In accordance with 2006 / 42 / EC, 2006 / 95 / EC, 2004 / 108 / EC. Do not open any covers (cooling, fire protection, contamination, spark interference etc.)

Do not open any sensing head.

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.

Introduction

⚠ **Warning:** Switch off all the power sources from the machine and make sure it has come to a standstill before starting the installation or servicing. Follow the safety instructions in the machine's technical documentation.

About this Manual

This manual applies to the standard Loepfe 3N1 ready quality control system 1 for Savio FlexiRotorS 3000 rotor spinning frames. In this manual, quality is abbreviated as Q, foreigner fibre as FF and polypropylene as PP.
This manual has been written for software A700909 V8.08.

Parts List

LOEPFE Description Quantity Savio

LOEPFE	Description	Quantity
A280066600	SCU and Software Basic	1 per machine
A280066300	SCU and Software Full	1 per machine
A250438100	SE for 48 units Basic	1 per 2 sections
A250438000	SE for 48 units Full	1 per 2 machines
A905264100	SH for 24 Untis Basic	1 per section
A905264000	SH for 24 Untis Full	1 per machine
A589760000	Accessory cable set	1 per machine

Principle
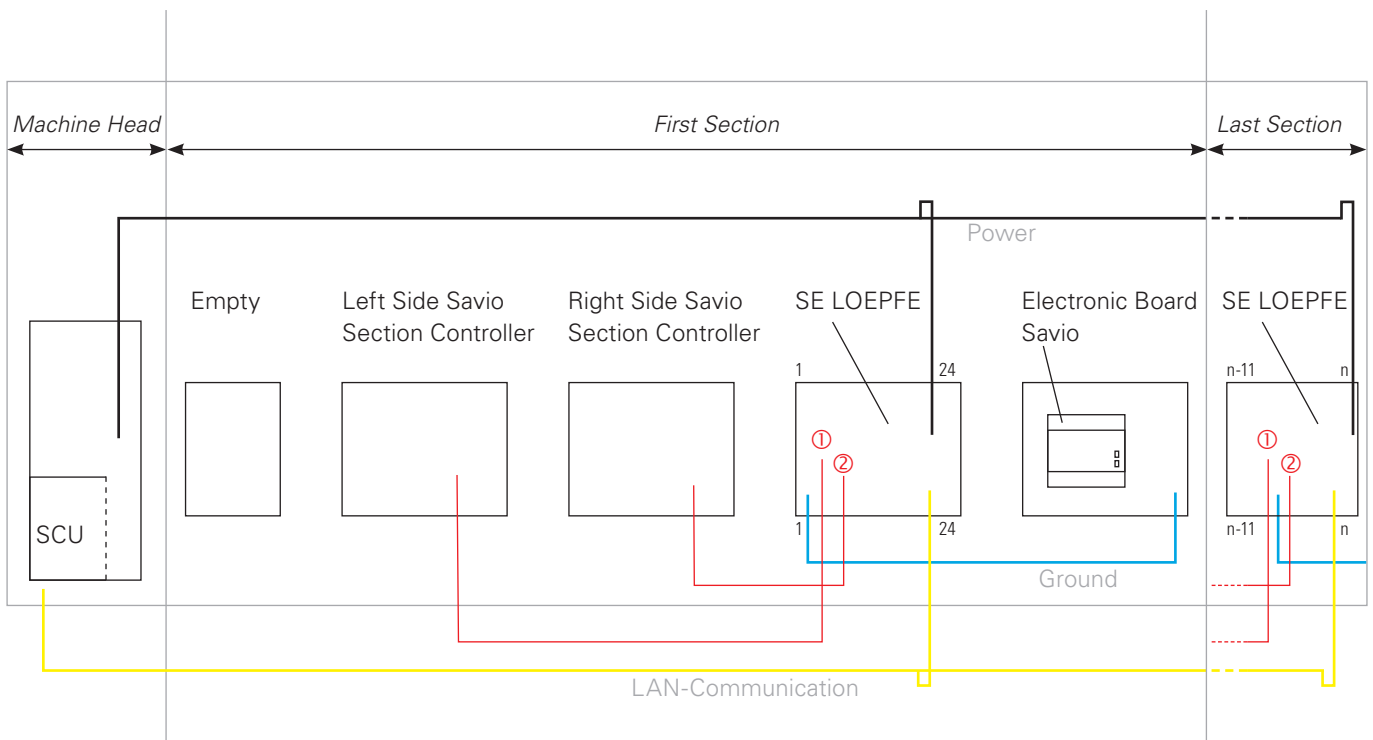
Top View

System Specifications

System

Concept	Modular, integrated in spinning System / Components individually replaceable / Power supply depends on machine type
SCU	One control station per machine / Date and time indication / Data memory in case of power failure / Bus connection to section electronic / Data connection to machine control station LAN connection to local network
Operating	Setting of the conventional clearing parameters via touch screen
Operating temperature	+0° up to +50° C
Humidity	Up to max. 95% relative humidity not condensing
Section electronic	1 Board per Section (24 Rotors)
Sensing head	1 Sensor per rotor
Range of application	For staple-spun yarn of natural, synthetic or blends

Central Unit (SCU)

SCU	Graphics-capable display backlit and, touch screen Keyboard and mouse connection via USB possible Microsoft ® Windows CE ®
Connection	24V DC SELV, +25% /-15% Max. Current: 4A / Fuse: 2xT3.15AL
	FRS3000: Up to 480 clearers can be connected
Settings / side	FRS3000: 2 different settings (each side)
Dimension	Approx. 483 x 266 x 83 mm (W x H x D)
Max. power consumption	- no lamp tree is connected: 30 Watt
	- lamp tree with lamps of 3W is connected: 45 Watt
	- lamp tree with lamps of 5W is connected: 53 Watt
Weight	Approx. 5.25 kg
Printing	Printout via USB stick

Evaluation Unit (Section Electronic)

SE-Board	24 rotors
Spinning speed	Up to 400 m/min (LOEPFE side)
Max. power supply and consumption (incl. SH)	Basic: max. 675 mA at 24V DC SELV, +25% /-15% Full: max. 750 mA at 24V DC SELV, +25% /-15% Max current: 1.1A /fuse: 1xT2AL.

Sensing Head

Basic	1 Sensor for diameter measurement integrated
Full	3 Sensor for Q/F/P measurement integrated

Yarn Count Range (Optical scanning principle)

TK Type	Limit Range Coarse	Limit Range Fine
Sensor basic/full	Nm 5	Nm 100

General Instructions

Attention
- – Make sure cables are not jammed, bent or stretched.
- – Keep cables away from hot surfaces.
- – Route cables in existing cable channels. If no cable channel is available, fix with cable ties to the machine's stationary parts and avoid moving parts to touch cables.
- – Do not block ventilation openings of SCU with cables. Allow air circulation.
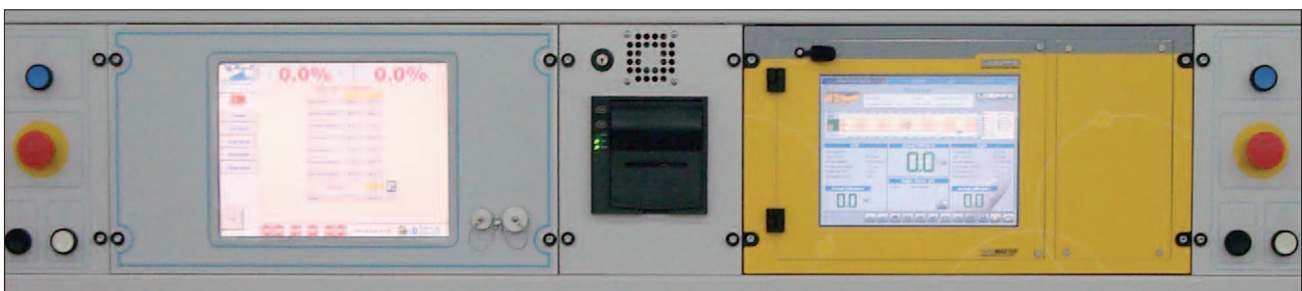
Installation

SCU

Compact Flash
(Detail)

Open SCU front door

The SCU is installed in the headstock at the right side of the Savio PC.

1. Add the SCU earth wire to the earth stud located at the right side in the SCU opening. Put the ring tongue between a spring washer and washer. (see picture below)
2. Install the SCU. Use the four screws M6×20 DIN85 and finishing washers
3. Open the SCU connections cover (4 screws) to connect the cables that are routed to the SCU backside.

Lamp Tree

Lamp tree set A589759.

1. Use ready made holes on top of the headstock.
2. Put the grommet in the cable hole.
3. Put cable through the mounting foot and grommet.
4. Mount the foot with the four screws M6x16 DIN912 at the top side and four washers M6 DIN125, four spring washers DIN6798 and four nuts DIN934 at the bottom side.
5. Fix the lamp tree in the foot.
6. Route the cable to the SCU.
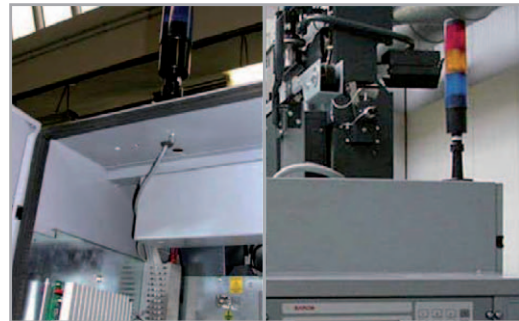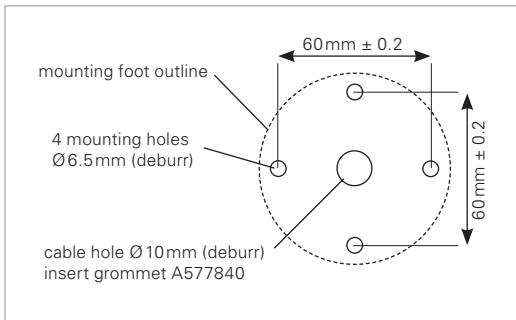
LOEPFE 3N1 device is supplied with 1 lamp tree set only.

SCU Connections
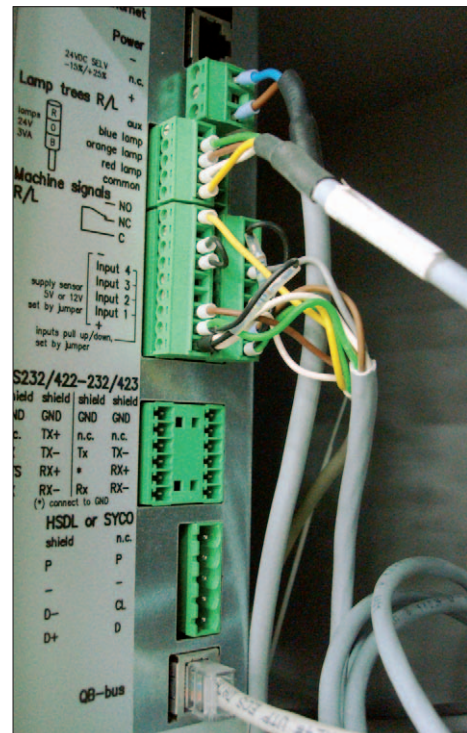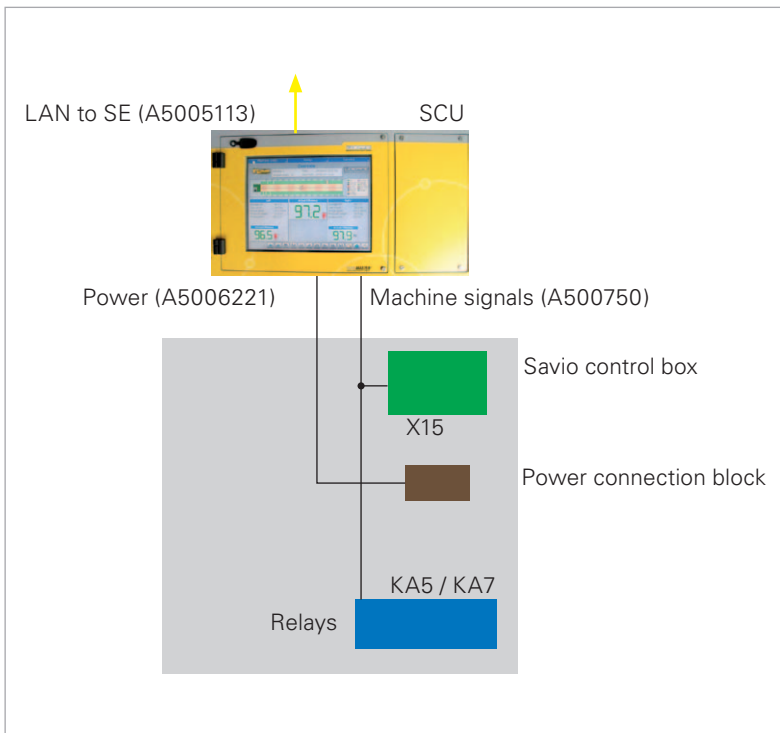
Power Cable

Cable A5006221

1. Connect the wire ends of the power cable to 24VDC of the Savio power connection block:
   – blue = negative (–) = terminal 500
   – brown = positive (+) = terminal 503

2. Route the cable to the backside of the SCU and plug in the SCU **Power** connector.

Lamp Tree

Connect the lamp tree cable to the SCU **Lamp tree R(ight)** connector.

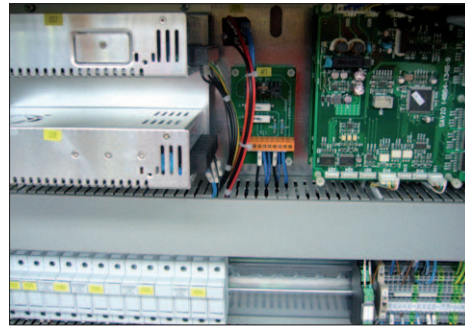| Connection (R)	Wire
aux	no connection
blue lamp	green
orange lamp	brown
red lamp	white
common	yellow

LAN Bus to SE

Parts: 1 x cable A5005113.
Plug one cable in the SCU **SE Bus** connector and route the cable in the left cable channel to the first SE Board.
KA5/KA7 give to the SCU the run/stop state of each machine side.

Cable channels
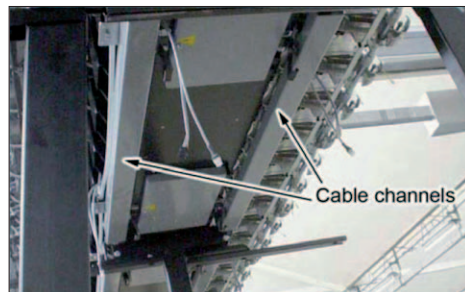
Machine Signals

Cable A500750.

1. Plug the connector labeled "right" in the SCU **Machine signals R(ight)** connector.
2. Plug the connector labeled "left" in the **Machine signals L(eft)** connector.
3. Route the cables to the Savio control box.
4. Plug "X15" in the Savio X15 connector.
5. Connect the remaining wires to the KA5 and KA7 relay contacts.
6. Close the SCU connections cover.

X15

KA5 / KA7

Wire	Relay / contact	Terminal	Side
white	KA5 / COM	562	Right (DX)
brown	KA5 / NO	563	
green	KA7 / COM	564	Left (SX)
yellow	KA7 / NO	565	
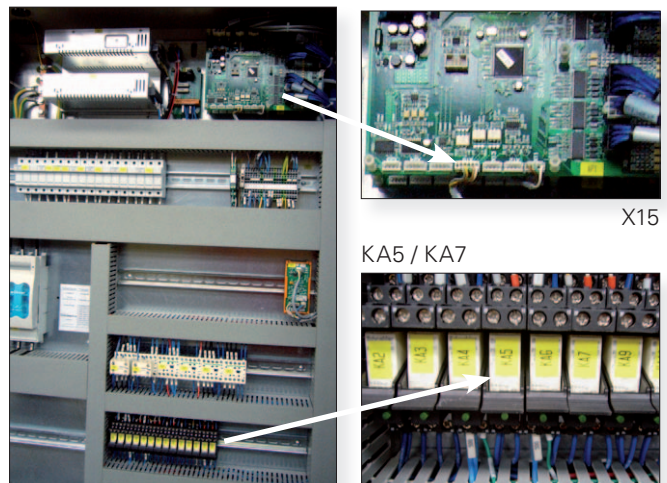
SE-Units

Preparation of the SE-Units
Parts: SE-Units A250438/A2504381, label set A579664, earth wire A5004037 and fixation parts.

1. Fix the earth wire to the SE-Unit:

- Nut DIN934 R366105
- Ring tongue
- Nut DIN934 R366105
- Washer DIN125 R367380
- Contact spacer B367380

Backside
- Washer DIN125 R367380
  Bolt M6x16 DIN933 A577501

2. Stick the largest labels on the SE Unit bottom (see figure 5, page 18).
3. Stick the smallest labels near the first and last detector connector at both sides (see figure 5, page 18).
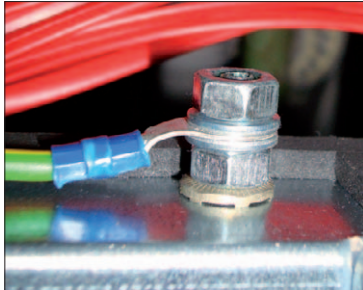4. Each machine section module has a SE -Unit: one for both machine side. Please set the right address:
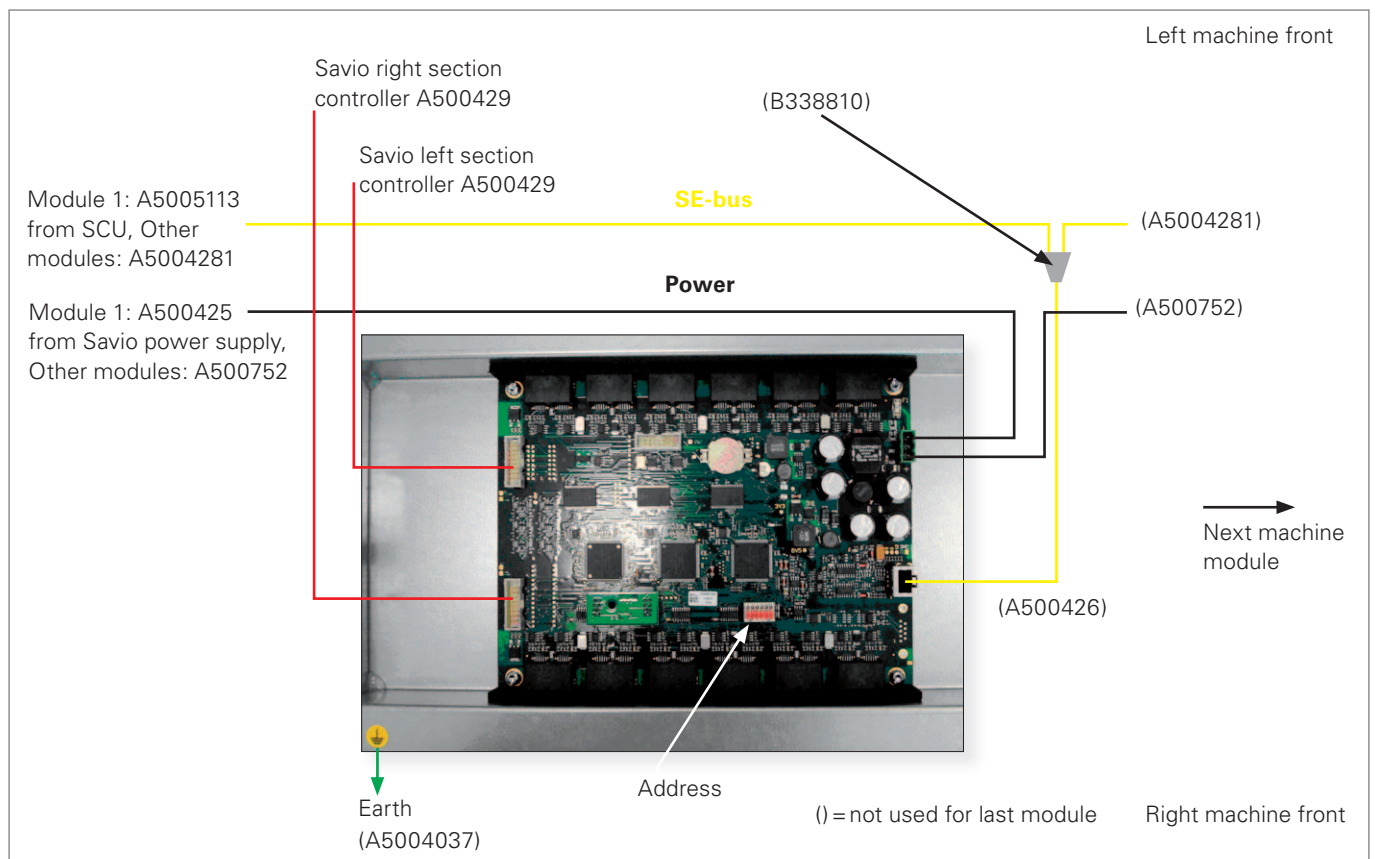
Machine module number		1	2	3	4
Detector number labels	Numbering starts near headstock	1 … 12	13 … 24	25 … 36	37 … 48
SE Label		1	2	3	4
Adress DIP-switches		1 … 12	13 … 24	25 … 36	37 … 48

Machine module number	5	6	7	8	9
Detector number labels	49 … 60	61 … 72	73 … 84	85 … 96	97 … 108
SE Label	5	6	7	8	9
Adress DIP-switches	49 … 60	61 … 72	73 … 84	85 … 96	97 … 108

Machine module number	10	11	12	13	14
Detector number labels	109 … 120	121 … 132	133 … 144	145 … 156	157 … 168
SE Label	10	11	12	13	14
Adress DIP-switches	109 … 120	121 … 132	133 … 144	145 … 156	157 … 168

Machine module number	15	16	17	18	19
Detector number labels	169 … 180	181 … 192	193 … 204	205 … 216	217 … 228
SE Label	15	16	17	18	19
Adress DIP-switches	169 … 180	181 … 192	193 … 204	205 … 216	217 … 228

Machine module number	20	21			
Detector number labels	229 … 240	241 … 252			
SE Label	20	21			
Adress DIP-switches	229 … 240	241 … 252			

DIP switch

Cabling

Overview of the cables of one machine module (1 SE Module):

Left machine front

Savio right section
controller A500429

(B338810)

Savio left section
controller A500429

Module 1: A5005113
from SCU, Other
modules: A5004281

SE-bus

(A5004281)

Power

(A500752)

Module 1: A500425
from Savio power supply,
Other modules: A500752

Next machine
module

(A500426)

Address

Earth
(A5004037)

() = not used for last module

Right machine front

Top View

Route the cables for the SE -Unit in the left cable channel.

Location of the SE-Unit

Machine Tail   Headstock

Power for First Machine Module

Parts: 1 x power cable A500425, labels "+", "−", grommets

1. Connect the wires of one power cable to the power supply
   GS14(SX) and label the wires:
   – brown wire = positive (+)
   – blue wire = negative (–)
2. Route the cable in the left cable channel to the first SE Unit
   location.
3. Put a grommet over the cable near the connector.

24Vdc line to first QB

Power for Subsequent Machine Modules

Parts: 1x power cable A500752 per SE -Unit, grommets

1. Put a grommet over both cable ends.
2. Connect the wires to the connector of the previous power
   cable.
   Match the wire colors.
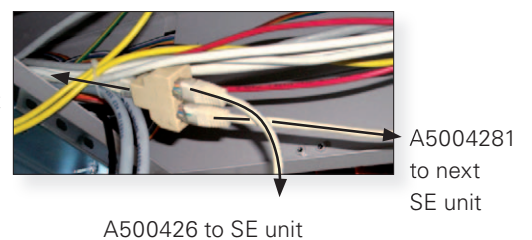3. Route the cable to the next SE-Unit location.

SE-bus

Parts per SE unit: 1x data cable A500426, 1x data cable
A5004281 and 1x T-junctions B338810.

1. Insert the SE-bus cable from the previous SE-Unit location
   for the same side in a T- junction B338810. For the SE-Unit
   in the first machine module, the cable A5005113 comes
   from the SCU.
2. Plug the short cable A500426 at the other side of the T-
   junction.
3. Plug the long cable A5004281 in the remaining T-junction
   socket and route the cable to the next SE Unit location.
   For the last SE-Unit location, no T-junction is used.

A5004281 to
previous SE unit

A5004281
to next
SE unit

A500426 to SE unit

Stop Signals

Per SE-Unit: 1 x cable A500429

1. Insert the side that is not marked "1" in the Savio section controller as shown.
2. Route the side marked "1" to the SE-Unit location.

Mounting frame

Parts: mounting frame A754542, grommets, cable ties, screws M6x25 DIN912, lock spacers DIN127.

1. Cut two grommets and put them on the data cable and stop signal cable.
2. Put all cables on the mounting frame as shown, ±40 cm of cable length in the frame. Fix the cables with the cable ties.
3. Put six grommets in the empty places.
4. Fix the mounting plate to the bottom of the machine with four screws M6x25 and four lock spacers. The grommet side should point away from the headstock
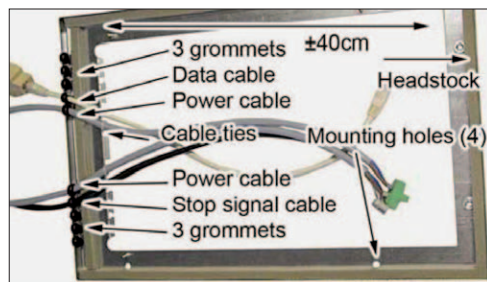
Connections

Parts: screws M6x12 DIN85

1. Hook the SE-Unit in the mounting frame.
2. Insert the connectors: power connector, SE-Bus connector and Stop Signal connector.
3. Close the SE-Unit and fix with two screws M6x12.
4. Route the SE-Unit earth wire inside the Savio section channel to reach the proper earth connection.
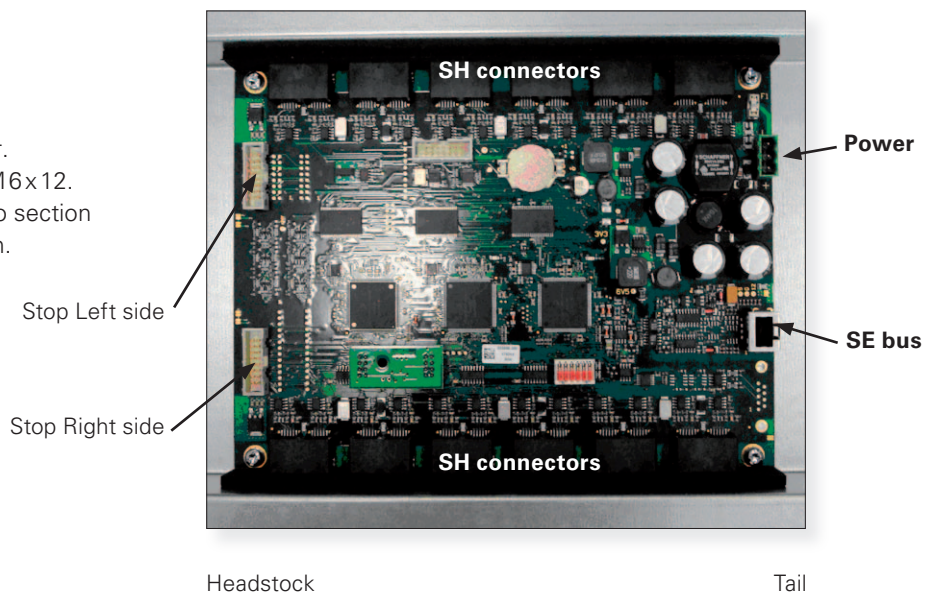
Installing and Connecting Detectors

Parts: detectors A9052641(basic) or A905264(full) with cables A5008452 (2 m) and A5008453 (3 m), screws M 114 x 16, DIN 912, washers M4 DIN125, label set A579664.

1. Mount the SH on the Savio clamp with the screw and the washer. (Figure 1)
2. Fix the SH with the screw on Savio clamp. (Figure 2)
3. Pass, as shown on Figure 4 and connect first 6 SH cable 2 m and last 6 cable 3 m per section. (Figure 5)
4. Mark the other side of SH cable with the proper detector number. (Figure 6)
5. Plug the connector in the corresponding detector number on SE-unit (Figure 6).
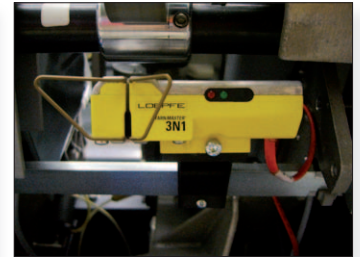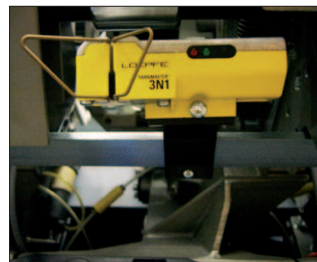

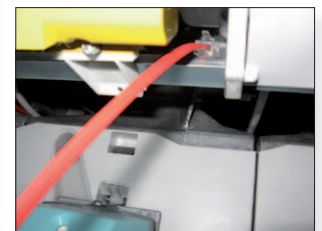Figure 1

Figure 2

Figure 3
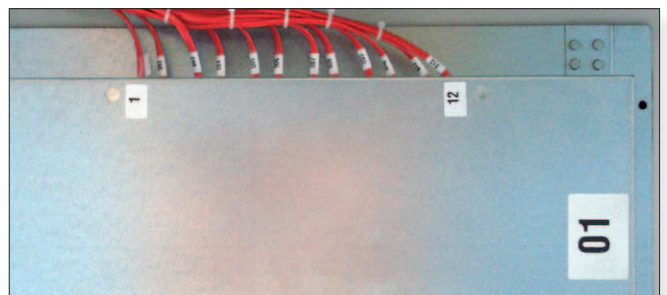

Figure 4

Figure 5

Figure 6

System Setup

Start Up

The functioning of the complete system has to be checked in any case.
After completing the installation and safety checks for the Savio machine, power on the machine and both machine sides.

1. The SCU starts up. ⇨ If not, check the SCU power connection.
2. Within one minute, the LEDs of the SH of at least the first section show a blinking light.

Settings

Caution: Touch the touch screen with bare finders only. Do not use any object or tool to touch the screen. Do not push hard on the screen, nor hit it with a heavy or sharp object. Remove the protection foil of the SCU display (touch screen).
Next table lists the settings to be done. Enter the system or user password when it is requested. The system password is known by Savio and Loepfe installers only. The default user password is "123". Save settings by pressing OK or ✔.

Setting	Where?	Do what?
Date and Time	**Setup** menu > **System Date / Time**	Select the current date, set current time and select the time zone.
Number of spindles	**Service** menu > **Machine Configuration** > **Side(s)**	Enter the number of spinning units of each machine side. *Note:* After saving the settings, the picture in the **Machine Overview** page is adapted.
Number of piecers	**Service** menu > **Machine Configuration** > **Side(s)**	Enter the mumber of piecers. *Note:* 3N1 can generate Q-reports per piecer.

Note: Other configuration settings are set in accordance with or by the customer.
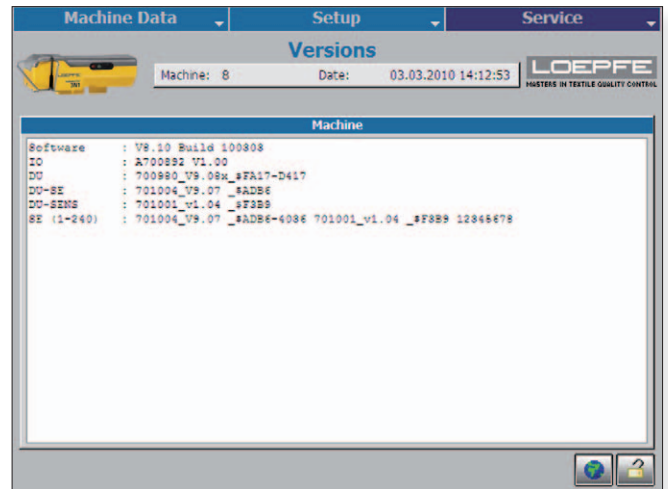
System Test

The start up check is described step by step as follows:

1. Carry out a download of the SE – Software. (see chapter Software for SE)

   Caution: During download, do not interrupt power!

2. Check all software versions. See SCU service/versions. The following should now be displayed (depending on machine model other software versions are possible):

*Software   : Vm.nn Build yymmdd

   i.   This is the software version of the user interface
   ii. It consists of a major and a minor version number
   iii. There is also a build number
   iv. → check if this version corresponds to what is required. If not, upgrade with USB stick or change CF card with correct version (see chapter SCU Software Upgrade)

*IO   : Axxxxxx Vm.nn

   i.   This is the part number and the software version for the I / O controller

*DU   : xxxxxx_Vm.nn _$HHHH-LLLL

   i.   This is the part number, the version and the checksum for the H and L part of the flash
   ii. These flashes also contain the software for the SE and the SH

*DU-QB   : xxxxxx_Vm.nn _$ssss

   i.   This is the part number, the version and the checksum for the SE software, that is contained in the DU flashes

*DU-SENS   : xxxxxx_vm.nn _$hhhh

   i.   This is the part number, the version and the checksum for the SH software, that is contained in the DU flashes

*SE (X–Y)   : xxxxxx_Vm.nn $ssss-bbbb yyyyyy_vm.nn _$hhhh 12345678

   i.   SE (X–Y): shows the start and end positions for which the data that follows are the same
   ii.   xxxxxx_Vm.nn: This is the part number and the version of the SE software that was reported by the SE processors, that process the data of positions X to Y
   iii. $ssss-bbbb : ssss is the checksum of the software; bbbb is the checksum of the bootblock
   iv.   yyyyyyvm.nn: This is the part number and the version of the SH software that was reported by the sensing heads, which acquire the data of positions 1 to 8 of each SE processor
   v. $hhhh : hhhh is the checksum of the software
   vi.   12345678 : indicates the positions for which the previous is valid. "?" means that the SH of that positions reports another checksum. "-" means that there is no response from that SH
   vii. For instance: 1?3-5678 means that SH 2 of this SE has a different checksum and SH 4 is not found or not responding

SE Board Layout
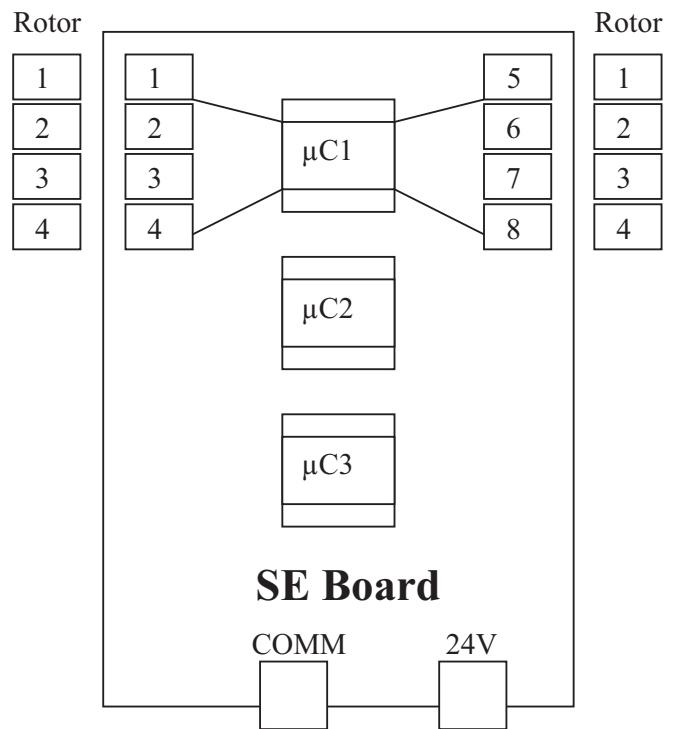
3. The full picture is important for the check. If this diverges, in particular at SE (X-X) at the last line, proceed as follows:
Remark: The different SH versions would be shown in 4 rotors at one side (or 8 rotors at both sides respectively). Exchange same individually within these groups. 1 processor on the SE is for 8 SH.

– Check all connections (LAN cable) and restart all SE boards (Power off / on).
Also test, if necessary, all cables with a tester.
– Reprogramme, if needed, the SE boards
– Exchange, if required, the SH with the wrong software. Check with exchange in the group with different SW (see version list).
– Make sure that the section electronic and the shaft, where they are fixed, is grounded.

4. Once your ready, please start the machine (Savio left and right side) and don't start before you reach the maximum speed (check on SCU overview page). Don't start with the production of the yarn.

Check the SH as follows: See SCU Service / Diagnostics / Test.

Apply Start Forced Stops and follow the entry instructions.
At least all rotors must be tested for the test. Start and follow up the LED indications at the SH, beginning with rotor 1 (test for left and right side!) They should light up sequentially. If this is not the case, check whether the cables are inverted. At Savio machine the corresponding red light should light up within a few seconds. The red light of Savio needs to be deblocked by Loepfe SCU (follow step 5). Should a LED of SH not light up at all, exchange the cable and/or the SH and recheck the function.

5. Once these tests are completed, production may be started. If the customer has not given any indications concerning the clearer setting, use the default values and start with lot change. Draw the customer's attention to the fact that the desired quality is possibly reached after several hours only (depends on the process and not on clearers). Have the quality checked by the laboratory as soon as possible. If necessary, adjust the setting.

6. Should some sensors show improper performance right in the beginning, do not put them into operation for the time being (follow chapter "Trouble Shooting")
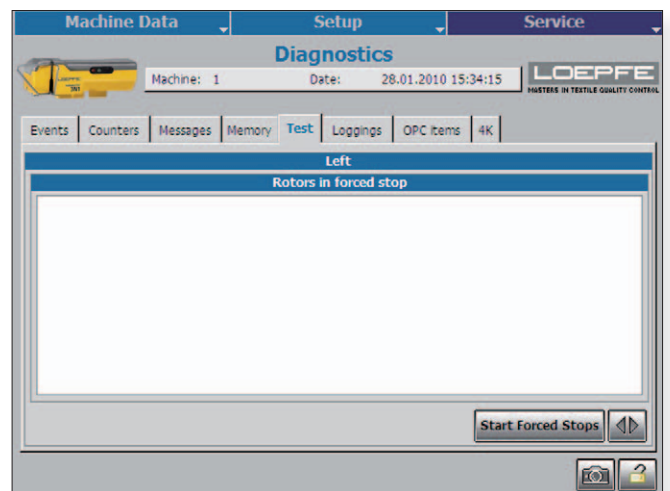
7. Check the following values in the menu after approx. 1 hour full operation:

Machine Data / Hitlist / Quality
– Reference Mean
– Actual Mean
– Dust Value
– CV%

Machine Data / Hitlist / Foreign Fiber
– Actual Value
– Std. Deviation

Machine Data / Hitlist / Polyprop
– Actual Value
– Std. Deviation

The statistic, which can be called off with the magnifier symbol, shows possible deviations from the mean value. If they are too large, clean the SH and restart with a new mean value. If it is still to large, exchange the SH (interchange control for testing).

Reference Value for Q at empty optic: actual Mean 0

Reference Value for Q at empty optic with running yarn: almost 0

Trouble Shooting

If you have any trouble with one rotor position e.g. too many cuts, use the rotor clearer data for the following action:

Make new mean: New adjusting of the current yarn. It's possible to start during production of the rotor. We recommend to Stop and clean the sensor before you start a new mean.

Force Stop: Check for communication. The rotor position will start again with production as soon as the piecing robot reaches the position.

Force Lock: for service purpose. If you need one or more position on a stop (e.g. for maintenance purpose) you should use the lock function. The lock needs to be unlocked on the overview page once you want to start production on the blocked rotors again.
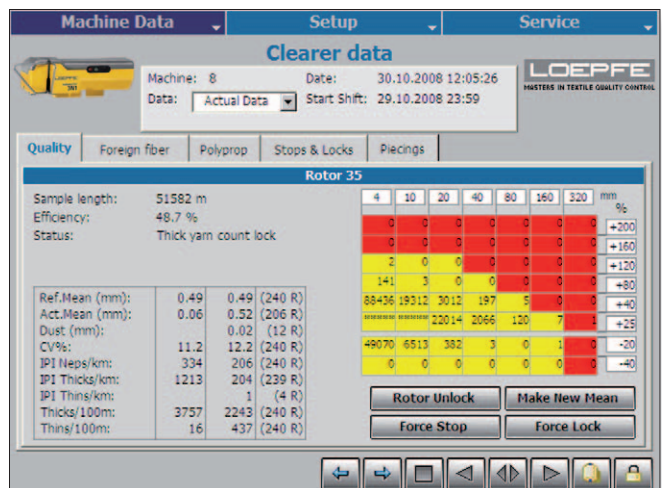
Rotor Unlock: at overview screen

A locked rotor must be inspected by qualified personnel. At least you need to clear the sensor before you start again with the yarn production. A fault or a malfunction are to be mended.
After elimination, unlock the rotor.

Use statistic for further analysis. Figure cut bad running sensors for Q, F and P are shown in Picture 1.
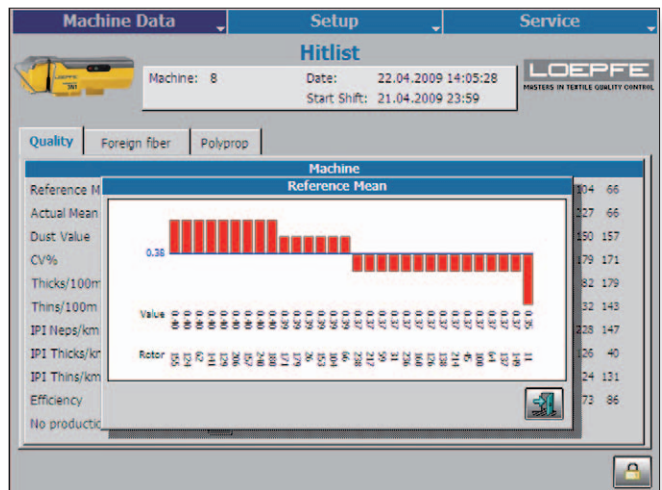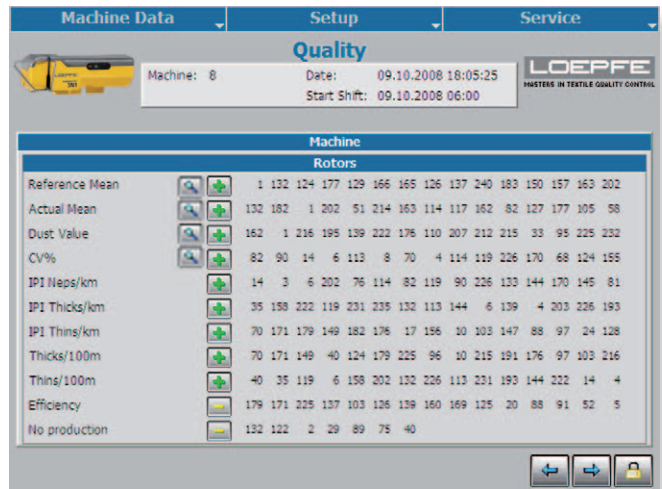
Picture 1

Service

F/P Functions enable/disable

With the YM 3N1 FP it is possible to switch the sensing heads F and P function on/off.
After changing, it is necessary to carry out a warm start. Settings: Service/Service Parameters/Other
F and P is only available with the corresponding sensor and the additional PCB (Art. No. 701000.000) on the SE.

Hardware Locks

LOEPFE YM 3N1 has a built-in diagnostic function. Technical problems are indicated by means of hardware locks.

Hardware locks can be cancelled by means of the unlock card, from the SCU or with button on sensing head. Since hardware failures of this kind can have several influences on yarn quality, they should be corrected and reset by qualified personnel only. Hardware locks should therefore be assigned to unlock card 3, which should be accessible to qualified personnel only.

A hardware alarm is indicated on the Q-sensor: Both LEDs are flashing. The type of alarm can be viewed on the SCU screen.

Fault	Description	Possible cause	Recommended action
Hardware QB lock 0	Unspecified diagnostic lock after restart of SE	A lock was present before Power Down of the SE and is restored by the SCU	Correct lock situations before Power Down of SE Reset lock and check again
Hardware QB lock 1 (*)	The SH detects no Yarn signal although the rotor is in RUN state	Yarn not/not correctly in the SH measuring slit SH lower ceramic missing SH defective	Check Yarn position and guiding Replace SH
Hardware QB lock 2	Measured Yarn signal is too low	Yarn position wrong SH lower ceramic missing SH defective	Check Yarn position and guiding Replace SH
Hardware QB lock 3	Measured Yarn signal is too high	Measuring slit obstructed by dust or lint SH defective	Remove dust or lint Replace SH
Hardware QB lock 4	Too much Run/Stop transitions in the measured Yarn signal	Maximum piecing attempts reached (default 20 per shift) Yarn position wrong SH defective	Check piecing robot and spinbox components Check and correct Replace SH
Hardware QB lock 5	No communication with YM 3N1 SH	Cable unplugged or defective SH defective SE has a defective input	Connect or replace cable Replace SH Replace SE
Hardware QB lock 6	Minimum intensity signal. (F channel)	SH has no F-function SH defective	Install correct SH Replace SH
Hardware QB lock 7	Maximum intensity signal. (F channel)	Machine is producing blended yarn SH defective	Disable F-channel of YM 3N1 Replace SH
Hardware QB lock 8	Minimum intensity signal. (P channel)	SH has no P-function SH defective	Install correct SH Replace SH
Hardware QB lock 9	Maximum intensity signal. (P channel)	Machine is producing synthetic yarn SH defective	Disable P-channel of YM 3N1 Replace SH

Notes:

(*) = Function not present on stand-alone installations

SH = Sensing Head

SE = Section Electronics

SCU = Sensors Central Unit

YM 3N1 = YarnMaster 3N1

Fuse and Battery Change SCU

Fuses

2x T3.15AL. Part number: V314103.

● The fuses are located behind the SCU front door. Disconnect SCU power before opening the SCU.

Fuses

Battery

Replacing the Battery

❗ ***Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.***

● The battery is located behind the SCU front door. Disconnect SCU power before opening the SCU.

Spare Battery SCU
BMS part number: P222004
Type of battery: Li CR 2477 3V/0.95Ah

Supplier Data:
– Renata CR2477

Replacing battery:
– The battery holder is polarity protected.
– This mains if the batteries is placed reverse, there is no risk of danger.

Replacement instruction:
– Battery is placed with the positive polarity on the top.

Effect when defect:
– Battery back-up memory stores all logged data of the last 6 shift exchanges.
– If the battery fails and the power is switched off, all logged data is lost.
– In this case, if the operator request the shift data of one of the previous 6 shifts, a warning will be displayed on the SCU screen (at this moment, this warning is not implemented yet, this will be coming later)
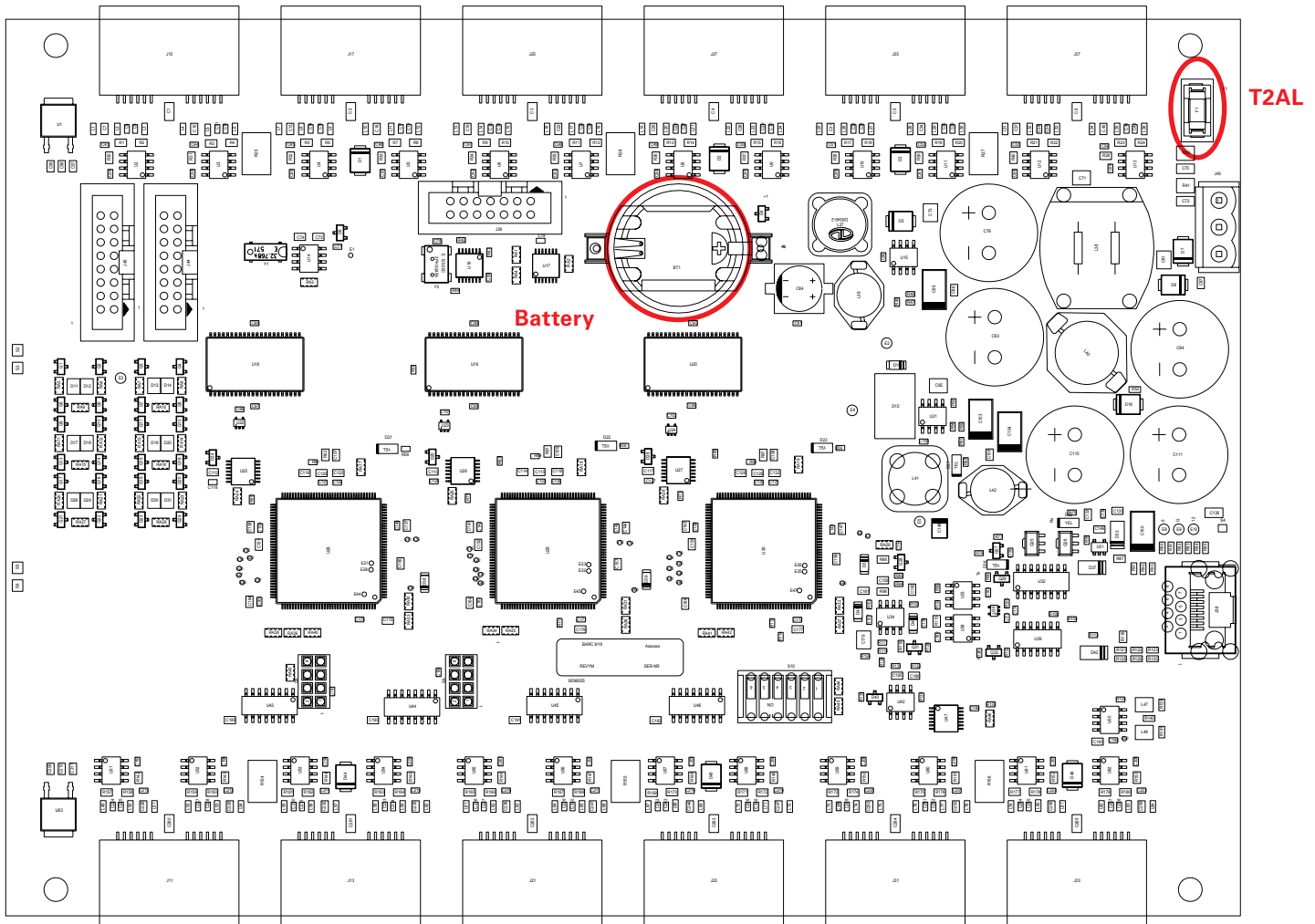
Life time battery:
– When power is switched off : 2.5 years
– When power is switched on : 10 years
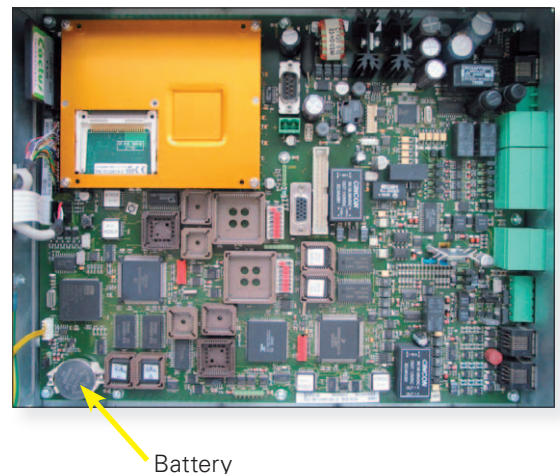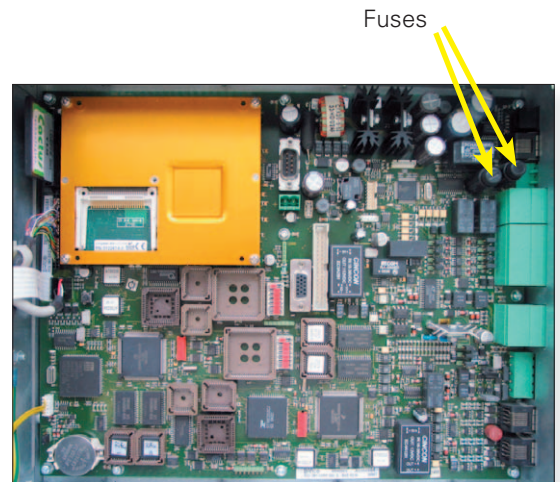
Battery

Fuse and Battery Change SE

Fuse

The input fuse (T2AL) of the 3N1Q-board
is an SMD fuse (6.1 x 2.6 x 2.6 mm) in a holder.

Spare fuse SE (Q-board)
BMS part number: A080992.900
Type of fuse: T2AL

Supplier Data:
–   LittleFuse 0452 002.L

Battery

Replacing the Battery

▌ *Caution: Risk of explosion if battery is replaced*
by an incorrect type. Dispose of used batteries
according to the instructions.

Spare battery SE (Q-board)
BMS part number: A016957.900
Type of battery: Li CR 2032 3V/0.17Ah

Supplier Data:
–   Panasonic CR2032
–   Varta 6032 101 501R
–   Duracell DL 2032
–   Renata CR2032

Replacing a SE-Board

Part number: A505668310

1. Remove the two SE-unit cover screws.
2. Unplug the power connection and then all connections.
3. Hook the unit off the mounting frame.
4. Remove the five screws and take out the board.
5. Copy the address DIP switches settings.
6. Hook the unit on the mounting frame.
7. Reinsert all connections and finally the power cable.
8. Close the SE-unit.

Note: *The software is automatically sent to the SE-Board by the SCU.*

Replacing a Detector

Part number: A905264100 (basic), A905264000 (full)

1. Lock the spinning unit.
2. Disconnect the detector cable.
3. Loosen the two nuts and washers.
4. Mount and connect the new detector.
5. Unlock the spinning unit software

Spare Part Numbers

Loepfe	Description
A016964900	Cleaning Tips
A280066600	SCU basic
A280066300	SCU full
A505668310	SE board basic
A701000000	extension print for SE (Full Version)
A905264100	Sensor basic
A905264000	Sensor full
V314103	Fuse for SCU
A080992900	Fuse for SE
P222004	Battery for SCU
A016957900	Battery for SE
045757000	USB Stick Loepfe

Software

SCU Software Upgrade

Upgrade Procedure by Means of a USB Memory Stick

1. Take the "Open End VX.XX Build XXXXXX Upgrade.exe" file from the data carrier

2. *In special case:* Rename the file "Open End VX.XX Build XXXXXX Upgrade.oxo" to "Open End VX.XX Build XXXXXX Upgrade.exe".

3. Make sure there is no "OpenEnd" directory on top of the memory stick. In case there is one, copy this temporarily to your hard disk or rename it, but remove it from the memory stick. Best Case: take an empty USB stick

4. Copy the file "Open End VX.XX Build XXXXXX Upgrade.exe" to the memory stick (on top).

5. Double-click the file "Open End VX.XX Build XXXXXX Upgrade.exe", and unzip (or extract) it. This will create a "OpenEnd" directory on top of the memory stick, containing all required files and folders for the upgrade.

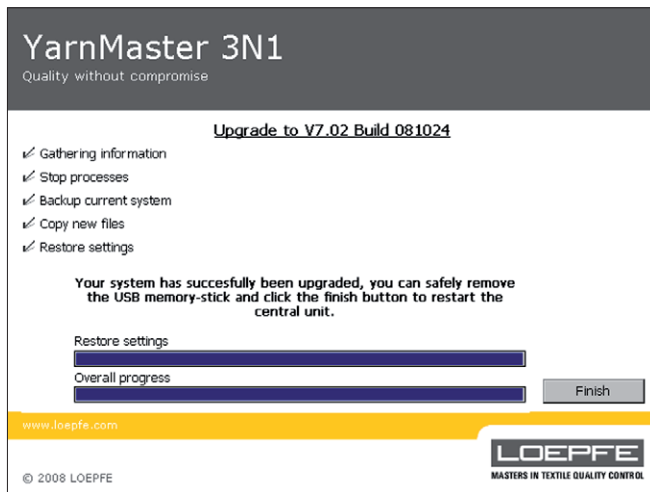6. Now, plug the memory stick into the SCU, and after 10 to 15 seconds the following screen will appear:
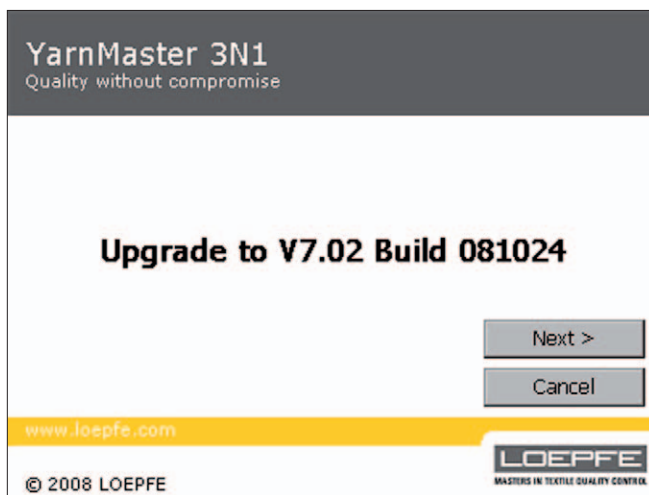
7. Click the "Next >" button, and a new screen appears:

Now, click the "Start Upgrade" button to start the upgrade.

8. At the end (all 5 steps executed), the following screen appears:

9. Now, you can unplug the memory stick from the SCU, and click the "Finish" button. The SCU will reboot with the new software version.

10. Now, you can move on to the next machine, and repeat this procedure from step 6.

!!! Start a new lot !!!
!!! No need to put in the settings again !!!
!!! There is no downgrade possible !!!

## Upgrade Procedure by Means of Changing the Compact Flash

1. Save all data (USB or note it)

2. Switch off the power of the SCU

3. Take the compact flash with the latest "Open End VX.XX Build XXXXXX " Version and interchange with the old one.

4. Switch on the power of the SCU

5. Put in all data again

!!! Start a new lot !!!
!!! Need to put in the settings again !!!
**!!! There is a downgrade possible !!!**

Software for Section Electronic (Q-Board)

Change Procedure for the 2 Flash EPROM Units

1. Stop production of the OE Spinning machine

2. Switch off the Power of the SCU

3. Open the cover of the SCU (2 screws)

4. Replace the old flash EPROM with then new one. (use a special gripper)
    L (Low) for U23, left side
    H (High) for U24, right side
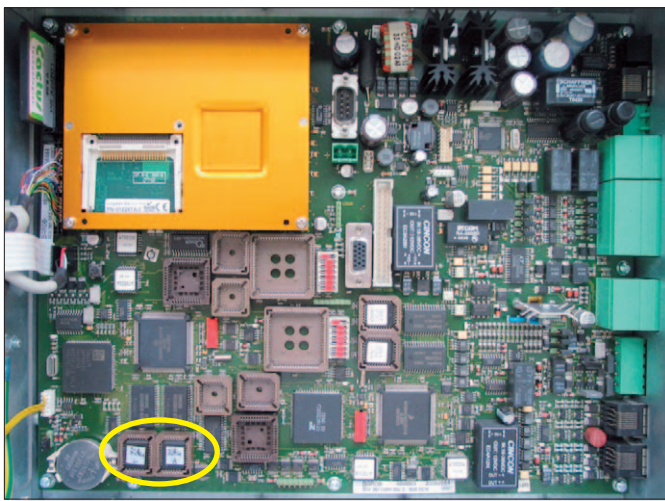
5. Switch on the Power of the SCU

6. Go to menu: service / machine configuration and press button QB program. There will be a download screen for a few minutes. The Software is going to be downloaded from the SCU to all SE-Boards during this time.
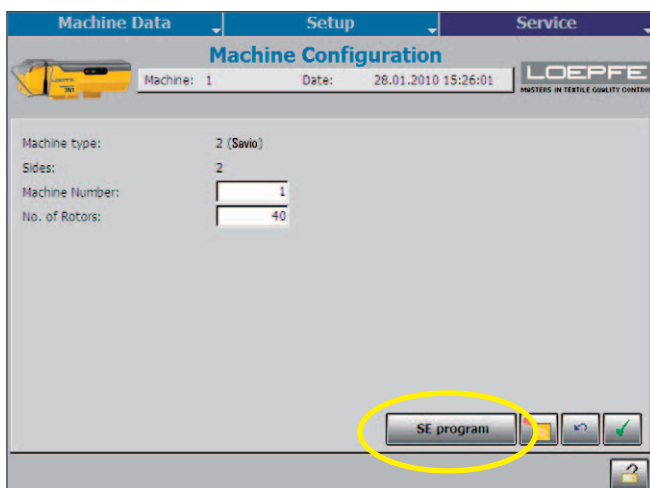
7. Force a lot change and start production again.