

550-767

**Gestalteter Arbeitsplatz für
Seitenairbag - Sollreißnaht
Engineered work station for
side airbag tearing seam**

Bedienanleitung / [Operating instructions](#)

Aufstellanleitung / Installation instructions

1

2



| Übersicht | Summary |
|---|--|
| <p>Bedienanleitung Aufstellanleitung</p> <p>Serviceanleitung (0791 767651)</p> <p>Bauschaltplan</p> <p>9890 550004 B</p> | <p>Operating Instructions Installation Instructions</p> <p>Service Instructions (0791 767651)</p> <p>Interconnection-diagram</p> <p>9890 550004 B</p> |

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Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

- Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
- Service (maintenance, inspection, repair) and/or
- Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediately report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanent danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.
2. Before putting into service also read the safety rules and instructions of the motor supplier.
3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.
4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.
5. Daily servicing work must be carried out only by appropriately trained persons.
6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.
7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.
8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.
9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.
10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.
11. For repairs, only replacement parts approved by us must be used.
12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.
13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).



It is absolutely necessary to respect the safety instructions marked by these signs.

Danger of bodily injuries !

Please note also the general safety instructions.



Preface and general safety instructions

Part 1: Operating Instructions, Class 550-767

(Edition: 10.2007)

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1. Product description

The DÜRKOPP ADLER class 550-767 is an engineered sewing station with the following features:

- flat-bed double-lockstitch sewing machine with underfeed, needle feed and alternating-foot overfeed.
- single-needle machine with thread cutter under the throat plate.
- apparatus slide in the base plate for the rapid change of different apparatus.
- maximum clearance of **16 mm** under the sewing feet when raised.
- stroke of alternating sewing feet adjustable to a maximum of **7 mm** by programming function.
- automatic, unpressurised oil-recirculating lubrication with sight glasses for oil level and circulation inspection, hook lubrication integral to the circulation.
- large two-piece vertical hook with bobbin-housing lift.
- safety coupling to avoid displacing or damaging the hook if the thread gets jammed in the hook track.

1

2. Designated use

The class **550—767** machine is an engineered sewing station designed for sewing light to medium-heavy material. Such material is generally made of textile fibres, but it may also be leather. It is used in the clothing industry and for domestic and motor-vehicle upholstery.

This sewing machine can also be used to produce so-called technical seams. In this case, however, the operator must assess the possible dangers which may arise (with which **DÜRKOPP ADLER AG** would be happy to assist), since such applications are on the one hand relatively unusual and, on the other, they are so varied that no single set of criteria can cover them all. The outcome of this assessment may require appropriate safety measures to be taken.

Generally only dry material may be sewn with this sewing unit. The material may be no thicker than **10 mm** when compressed by the lowered sewing feet. The material may not contain any hard objects, since if it does the machine may not be operated without an eye-protection device. No such device is currently available.

The seam is generally produced with textile-fibre sewing thread of up to gauge 11/3 NeB (cotton), 11/3 Nm (synthetic) or 11/4 Nm (covered yarn). Before using any other thread the possible dangers arising must be assessed and appropriate safety measures taken if necessary.

This sewing unit may be set up and operated only in dry, well-maintained premises. If the sewing machine is used in other premises which are not dry and well-maintained it may be necessary to take further precautions (which should be agreed in advance – see EN 60204-31: 1999).

As manufacturers of industrial sewing machines we proceed on the assumption that personnel who work on our products will have received training at least sufficient to acquaint them with all normal operations and with any hazards which these may involve.

3. Equipment

3.1 Basic equipment

The class **550—767** sewing unit is supplied with the following basic equipment:

| | |
|--------------------|---|
| RAP 13-2 | Electro-pneumatic bar tack and sewing-foot lift, foot-operated. |
| HP 13-10 | Electro-pneumatic rapid stroke adjustment by knee switch (switch and touch operation) to maximum stroke height with simultaneous stitch-rate limit. Automatic infinitely-variable stitch-rate limit as a function of the stroke height set. |
| RFW 13-3 | residual-thread monitor |
| 798 500088 | Sewing light transformer |
| 907 487519 | Mounting kit for sewing light |
| 9822 510001 | Sewing lamp (halogen) |

3.2 Additional equipment

The following additional equipment can be supplied for the ?class **550-767** sewing unit:

| | |
|--------------------|--|
| 0467 367959 | pneumatic needle-cooling unit NK 13-1 |
| 0767 590129 | Uninterruptible power supply 230 V/1000 A |
| 0767 100134 | DS 2200-1100 5 V barcode scanner for end-label recognition |
| 0767 490214 | DS 2200-1100 5 V barcode scanner for hook thread recognition |
| 0767 490224 | DS 2200-1100 5 V barcode scanner for needle thread recognition |
| 9800 330010 | Operating panel EFKA V820 |

4. Technical data

| | |
|--|--|
| Stitch type: | 301 / double lockstitch |
| Number of needles: | 1 |
| Needle system: | 134-35 |
| Needle size ¹ : | 110-170 Nm |
| Thread thicknesses ¹ | |
| - Cotton: | 12/3 NeB |
| - Synthetic sewing thread: | 11/3 Nm? |
| - Covering thread: | 11/3 Nm |
| Bobbin capacity | |
| with synthetic sewing thread | - 30/3 max. 35 m - 11/3 max. 12 m |
| Stitch rate ² | |
| - equipment with HP: | max. 3500 min ⁻¹ |
| - on delivery: | 3200 min ⁻¹ |
| Stitch length ¹ : | 0-9 mm |
| Stroke height of sewing feet: (on delivery): | max. 7 mm 6 mm |
| Clearance under sewing feet | |
| - Sewing: | 7 mm |
| - Raised: | 16 mm |
| Handwheel groove (average diameter): | 80 mm |
| Operating pressure: | 6 bar |
| Air consumption: | approx. 0.7 NI per working cycle |
| Nominal voltage: | 1~ 190-240 V, 50/60 Hz |
| Input power: | 1 kVA |
| Dimensions (including PC table): | 2100 x 1150 x 1500 mm |
| Working height : (to upper edge of table plate) | 685-1085 mm |
| Weight (head only): | approx. 60 kg |

Workplace-related emission value to DIN 45635-48-A-1-KL2:

L_c = 83 dB (A)

Stitch length: 5.0 mm, sewing-foot stroke: 1.6 mm, stitch rate: 2 500 min⁻¹
material G1 DIN 23328 4-ply

L_c = 80 dB (A)

Stitch length: 7.2 mm, sewing-foot stroke: 5.6 mm, stitch rate: 1.500 min⁻¹
material 2-ply Skai 1.6 mm 900 g/m² DIN 53352

¹ according to E No.

² depends on stitch length and stroke height of the sewing feet

5. Operation

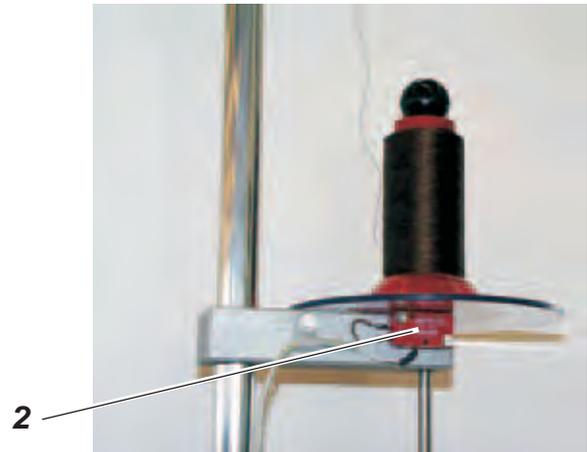
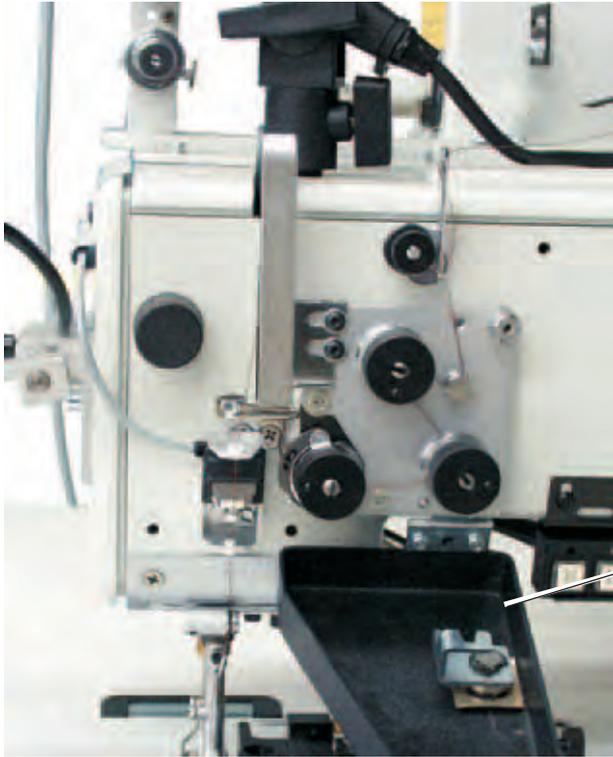
5.1 Threading the needle thread



CAUTION: DANGER OF INJURY!

Turn off the main switch!

The needle thread may only be threaded with the machine turned off.

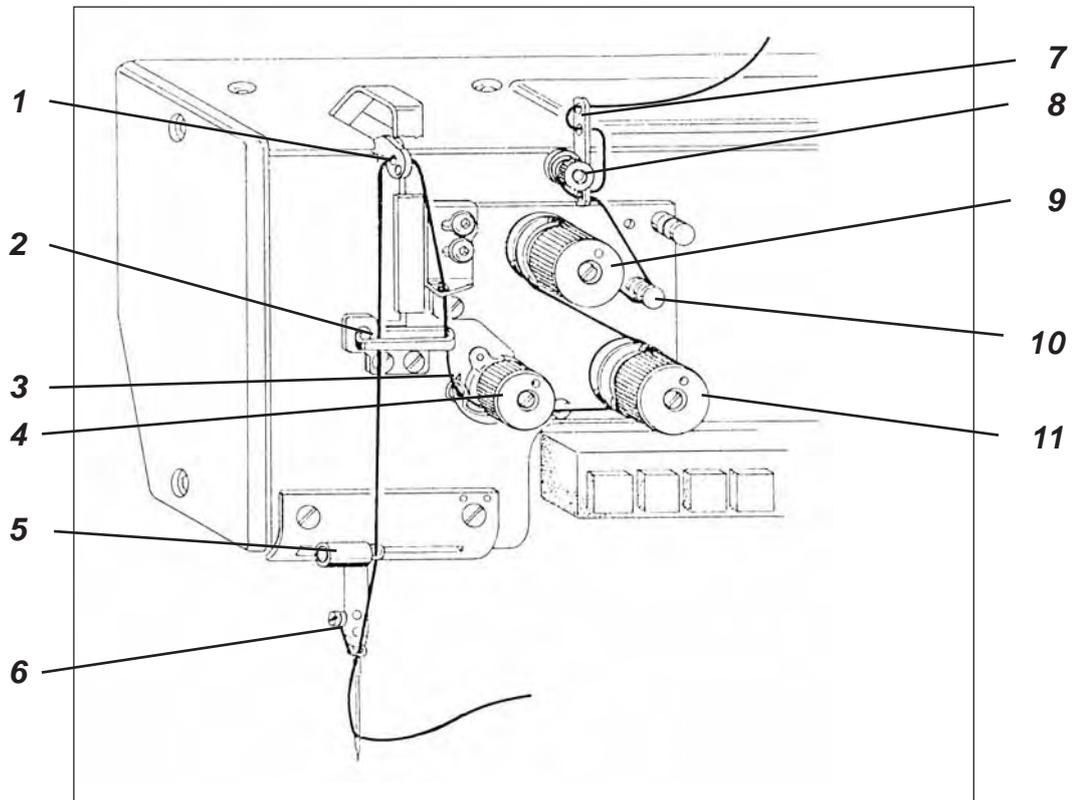


Versions with switch 2:

Before placing the needle-thread cones on the stand they must be scanned by the manual scanner. If a needle-thread bobbin is removed, this is recognised by the control via switch 2 and the scanning process is to be repeated.

Version with optional thread-barcode scanner:

- Place the thread bobbin on the stand while ensuring that the barcode of the thread bobbin can be read by the optional thread-barcode scanner.
If the barcode is not recognised by the scanner, an error message will be displayed on the monitor.
- Open and fold back cover 1.

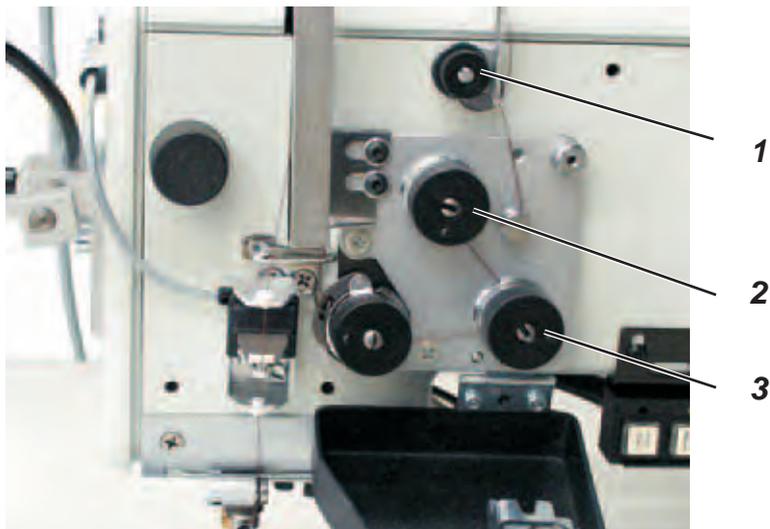


- Pass the thread through guide 7 and anti-clockwise around prethread-tensioning spring-tensioner 8. Pass the thread through guide 7 again.
- Pass the thread around guide 10 and then anti-clockwise around the main tensioner 9. Pass the thread clockwise around main tensioner 11.
- Pass the thread clockwise around the thread tensioning unit 4, past the check spring 3 and through the guide 2.
- Pass the thread through take up lever 1 and through guides 2, 5 and 6.
- Pass the thread through the needle; pull out several centimetres of thread and cut.
- Pass the needle thread through the needle from the right, pull out a few centimetres of thread and cut.

HINT

The needle thread can be threaded without opening cover 1 by tying the new needle thread to the residual needle thread and pulling it through the thread tensioner.

5.2 Adjusting the needle thread tension

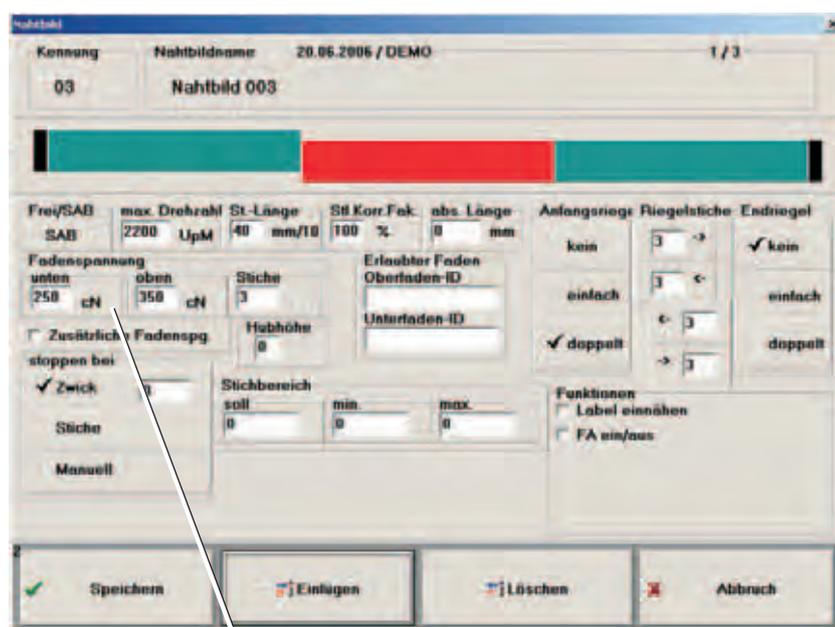


The tension must be set according to the requirements of the manufacturer of seat-covers. The cross-over point should be in the centre of the material.

- Adjust the pre-tension 1. The pre-tensioning should be set lower than at the main tensioners 2 and 3.
- Adjust the main tension 2 and 3.
- Adjust the tolerance range 4 (window) for seam monitoring via the Touch Screen Monitor.
- 0 = monitoring deactivated.

Hint

The required thread tension is set via the “ELTEX” menu. See section 6.5: Needle-thread tension tolerance range.



4

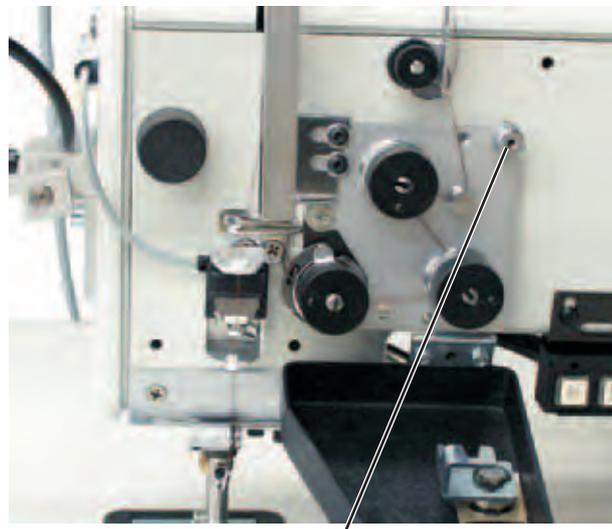
5.3 Opening the needle-thread tension

The needle-thread tension is automatically opened when the thread is cut.

- Press button 2 manually or press down the upper right-hand corner of cover 1. The needle-thread tension remains opened for as long as the button or cover is held down.



1



2

1

5.4 Winding on the hoo thread



CAUTION:

Only special bobbins suitable for this type of machine may be used!

The matt side of the bobbin



- Place the needle-thread cone onto the thread stand.
- Pass the needle thread through the thread guide on the take-up arm and through pre-tensions 1 and 2 as shown in the illustration.
- Carefully wind a few turns of thread anti-clockwise onto the reserve groove 6 of the bobbin by hand and place the bobbin on the thread stand with the ring 3 and the matt surface towards the operator.
- Swivel the bobbin-winder lever 5 against the empty bobbin.
- Enter the bobbin number via the Touch Screen Monitor. When the bobbin is full, winding is automatically stopped by the bobbin-winder lever 5.

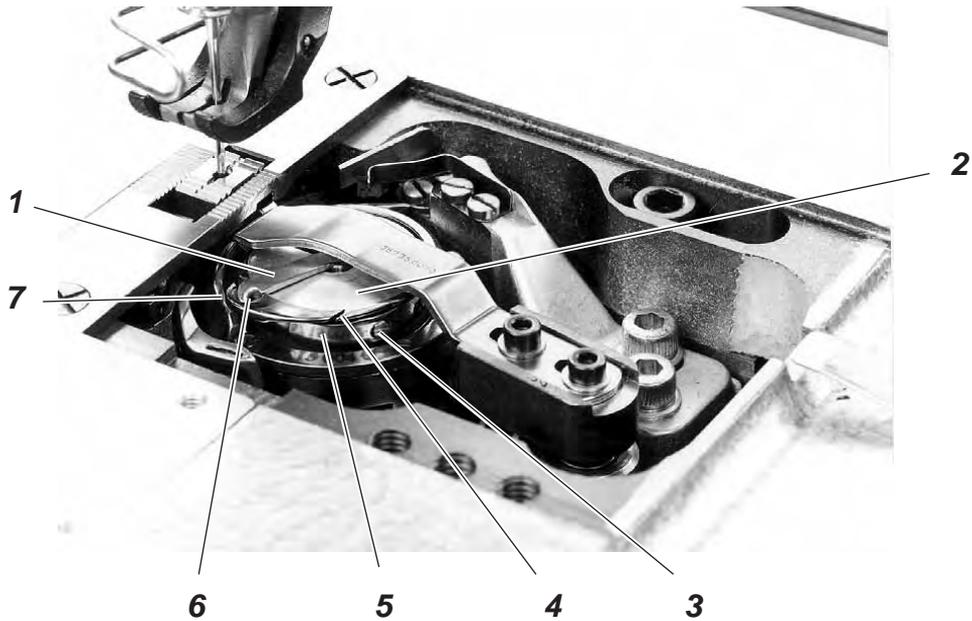
Caution!

Before you press the ENTER key, please ensure that the number entered does in fact correspond to the number engraved on the bobbin.



- Adjust pre-tensions 1 and 2.?
The thread should be wound on at as low a tension as possible.

5.5 Threading the bobbin thread



CAUTION: danger of injury!

Turn off the main switch!

The bobbin thread may only be threaded when the sewing machine is switched off.

- Raise flap 1 and remove the empty bobbin using a magnet.
- Insert bobbin 2 so that it turns anti-clockwise when the thread is drawn off.
- Pass the thread through slit 4 and pull beneath spring 5.
- Pass the thread through slit 6 and pull out approx. 3 cm of thread.
- Close flap 1 and pull the thread through the guide 6 of flap 1.
- Enter the bobbin number engraved on the bobbin 7.

CAUTION!

Before you press the ENTER key, please ensure that the number entered does in fact correspond to the number engraved on the bobbin.



5.6 Adjusting the bobbin thread tension

The bobbin thread tension must be adjusted in accordance with the required seam type.

- Adjust the tension with screw 3.

5.7 Replacing the needle



CAUTION: danger of injury!

Turn off the main switch!

The needle may only be threaded and replaced when the sewing machine is switched off.



- Turn the handwheel until the needle bar has reached its top dead centre.
- Undo screw 1.
- Remove needle.
- Insert the new needle with its channel towards the hook and push it up as far as it will go.
- Tighten screw 1.



CAUTION:

If a needle of a different thickness is fitted the settings must be altered as specified in the servicing instructions.

A thinner needle may cause faulty stitches or damage to the thread.
A thicker needle may damage the hook point itself.

5.8 Lifting and locking the sewing feet

The sewing feet can be raised mechanically or pneumatically.



1

Mechanical operation

- Swivel lever 2 downwards.

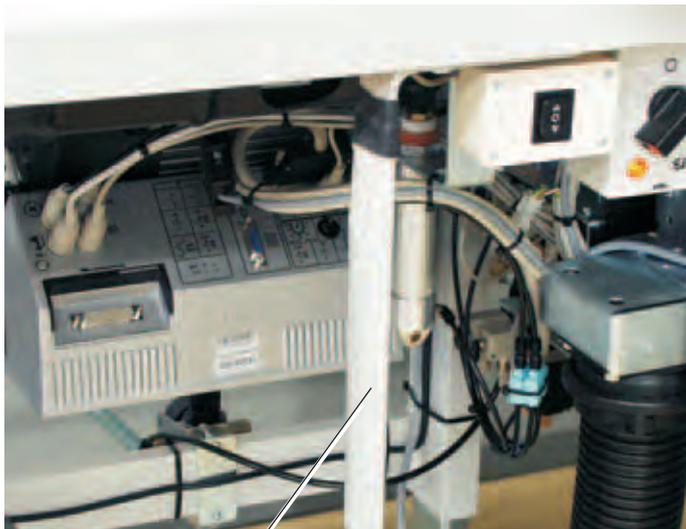
Pneumatic operation

- Push pedal 3 half-way back (first position back).

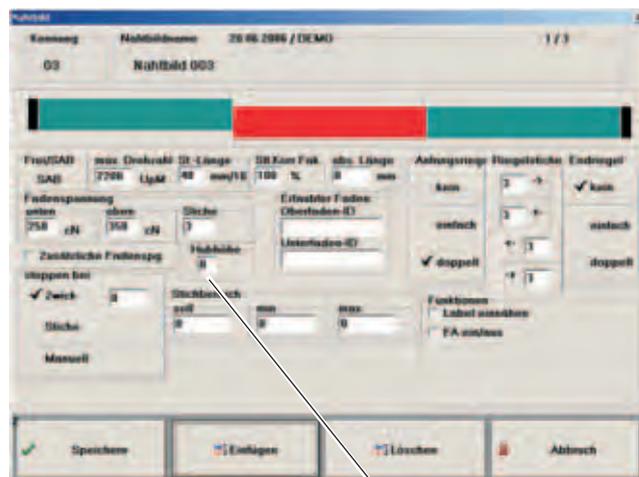
Once raised mechanically or pneumatically, the sewing feet can be secured in raised position using lever 2.

- Swivel lever 2 downwards.
The sewing feet are secured in the raised position.
- Swivel lever 2 downwards.
The sewing feet are released.

5.9 Adjusting the sewing-foot stroke



2



1

The stroke height 1 of the sewing-foot can be adjusted via the Touch Screen Monitor in the “seam types” menu in four steps (0, 1, 2, 3).

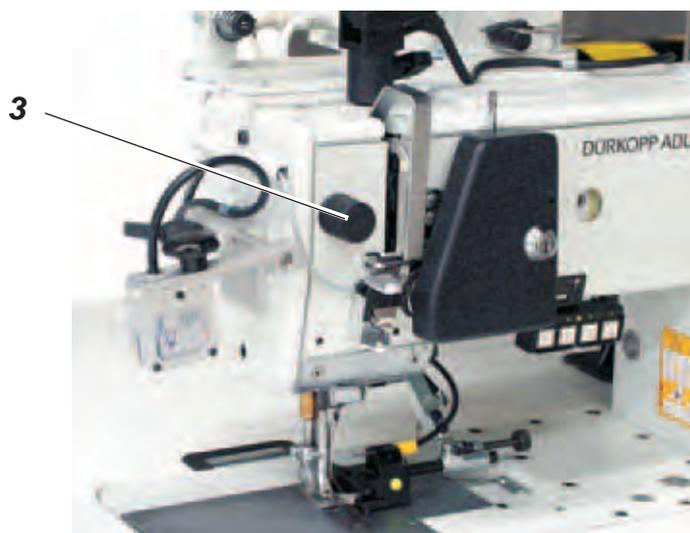
The maximum stroke can be activated during sewing in free **seam sections** with the knee switch 2.

This function is not available in documented seam sections.

HINT!

The sewing-foot stroke and stitch rate are interdependent. The control unit detects what foot-stroke has been set by means of a potentiometer and restricts the stitch rate accordingly. The values are pre-set in the control unit.

5.10 Sewing-foot pressure



3

The required sewing-foot pressure is set using rotary knob 3.

- To increase the sewing-foot pressure : turn knob 3 clockwise
- To reduce the sewing-foot pressure : turn knob 3 clockwise

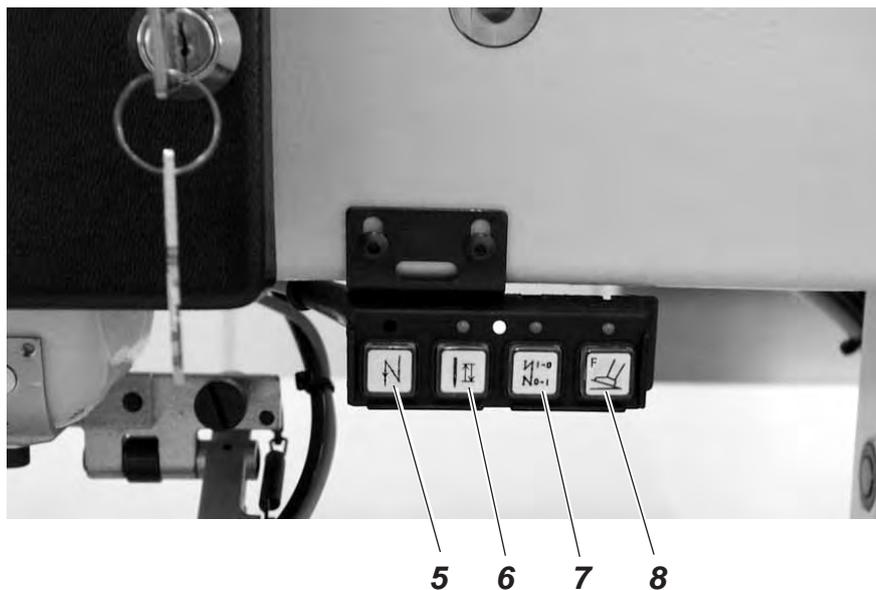
HINT!

The sewing-foot pressure can only be altered when knob 3 (clamping block) is released: see the Servicing instructions.

5.11 Adjusting the stitch length

The stitch length is adjusted in the "Seam types" menu on the Touch Screen Monitor.

5.12 Buttons on sewing arm



Button 5 = intermediate lock-stitches during sewing

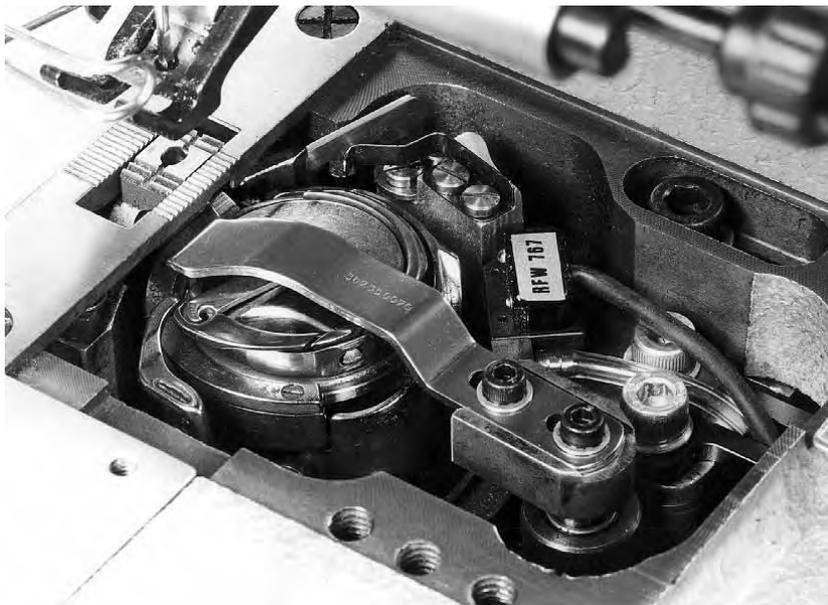
Button 6 = needle in high or low position

Button 7 = suppresses starting or finishing lock-stitches

Button 8 = authorises thread-cutting in the monitored region

- Press and hold down button 5.
An intermediate lock-stitch is sewn. The machine sews backwards for as long as the button is held down.
- Press button 6.
The needle is raised or lowered.
- Press button 7.
The next starting or finishing lock-stitch will not be sewn.
- Press button 8.
The thread can now be severed in the monitored region using the pedal. This enables the material to be removed in the event of a fault. The program issues an error message.

5.13 RFW 13–3 bobbin thread monitor



The bobbin thread monitor monitors the quantity of thread on the bobbin. A signal is issued on the PC when only a small quantity of thread remains.

The operator can finish the seam and fit a new bobbin, thus avoiding damage to the material and the need for repairs.

Function and operation of the bobbin thread monitor

If the light beam from the light barrier is reflected by surface 1 on the bobbin core during sewing, a signal is displayed on the PC and sewing is interrupted.

- Acknowledge the message on the PC screen.
- Release the pedal, then push it forwards again. The seam will be continued. The quantity of thread in reserve groove 2 of the bobbin is normally sufficient to finish it.
- At the end of the seam push the pedal back. The thread is cut.
- Terminate sewing mode on the PC with “Back”.



CAUTION: danger of injury!

Turn off the main switch!

The bobbin may only be replaced with the machine turned off!

- Replace the bobbin.
- Reactivate sewing mode on the PC with “Sew”.
A new seam can be sewn.



CAUTION:

The bobbin must be placed in position with ring 3 downwards. The area around the bobbin housing and light barrier must be cleaned of any fluff!

Hint

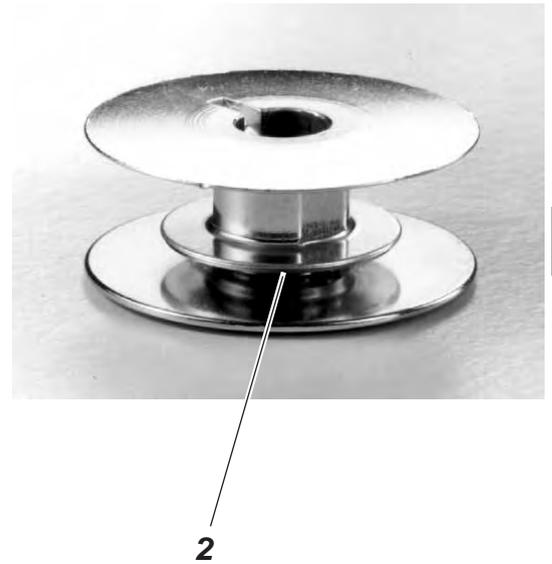
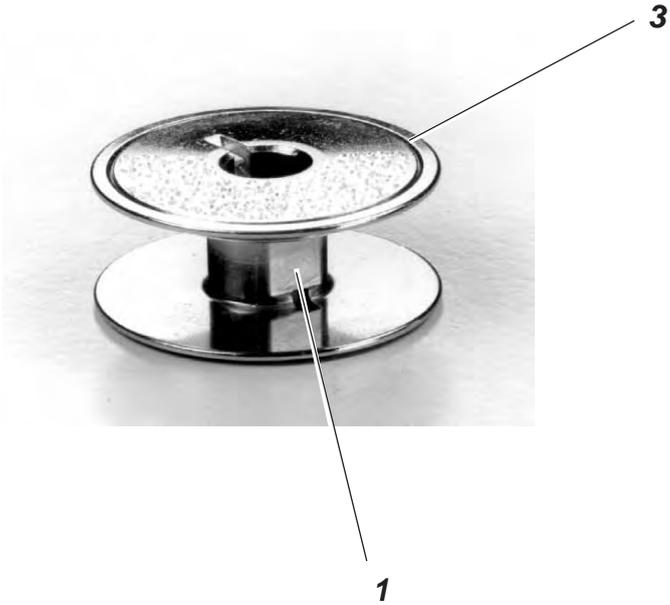
If the empty bobbin is not replaced by a full one, the signal reappears on the monitor at the end of the next seam.

- Wind on the bobbin thread.
The process is described in this Operating manual.



CAUTION:

When winding-on ring 3 must be at the front. Only wind the thread around the bobbin core by hand in the area of reserve groove 2.



5.14 HP 13–10 electro-pneumatic rapid stroke adjustment



1

The sewing-foot stroke and stitch rate are interdependent. The control unit detects what foot-stroke has been set by means of a potentiometer and restricts the speed of rotation accordingly. The values are pre-set in the control unit.

In free seam sections the maximum stroke can be activated while sewing with knee switch 1.



CAUTION: DANGER OF INJURY!

Turn off the main switch!

The sewing-foot stroke and rocker switch may only be adjusted with the machine turned off.

Setting the function of the knee switch

The function of the knee switch is activated on the motor with the parameter 138.

Activate the maximum stroke while sewing

- Press knee switch 1.
Once knee switch 1 is pressed (switch mode) the maximum sewing-foot stroke remains effective until it is switched off by pressing knee switch 1 again (stop mode).

6. Operation of the rupture-seam visualisation facility

The program is operated by touching the appropriate field on the Touch Screen Monitor 1.

Access to the program is protected by three security levels (depending on the security level, not all the fields in the basic screen are available).



1

6.1 Access to the system



- The operator is identified by a magnetic bar code card 4. This allows all the operator's data, including his security level, to be stored and directly communicated to the system.
- The manual scanner 3 is used to scan in – i.e. read into the system – the yarns that are to be used and the pieces that are to be sewn.

Logging onto the system

- The operator logs on by wiping his bar code card 4 through the magnetic-card reader 2.

Logging on without a bar code card

- The operator can also log on manually as follows:
- Press the “Access” field.

Dürkopp Adler AG
Sollreißnaht-Visualisierung
yesterday today tomorrow

Datum: 08.06.2006
Zeit: 09:04:38
Name: E-M
Personal-Nummer: 90000000
Sicherheitsstufe: 0

Anmelden Abmelden Neu Löschen Bed. anz. Abbruch

- Press the “Access” field.
- Enter name and password.

Logging off

- To log off from the system, press the “Log off” field.

Dürkopp Adler AG
Sollreißnaht-Visualisierung
yesterday today tomorrow

Datum: 08.06.2006
Zeit: 09:04:38
Name: E-M
Personal-Nummer: 90000000
Sicherheitsstufe: 0

Anmelden Abmelden Neu Löschen Bed. anz. Abbruch

Hint

Users with security level “0” are automatically logged off after two minutes of inactivity.

Registering a new operator or a new bar code card

Before a new operator can work on the sewing unit he must be registered with the system. The registering person must have at least security level 2.

- Log on to the system.
- Press the "Access" field.
- Press the "Access" field.

Neuen Bediener einrichten

| Bediener | | Sicherheitsst |
|------------------|-------|------------------------|
| Name | | 0 |
| Personal-Nummer | 12345 | ✓ 1 |
| | | 2 |
| Paßwort | **** | Paßwort (Wiederholung) |
| | **** | |
| Identitätsnummer | | |
| | | |

3

OK Speichern Abbruch

- Enter the name of the new operator and state his security level.
- Enter a personnel number if appropriate.
- Enter password
- Confirm password.
- Wipe the bar code card through the magnetic card reader.
- Press the "OK" field.
- Press the "Save" field.

HINT

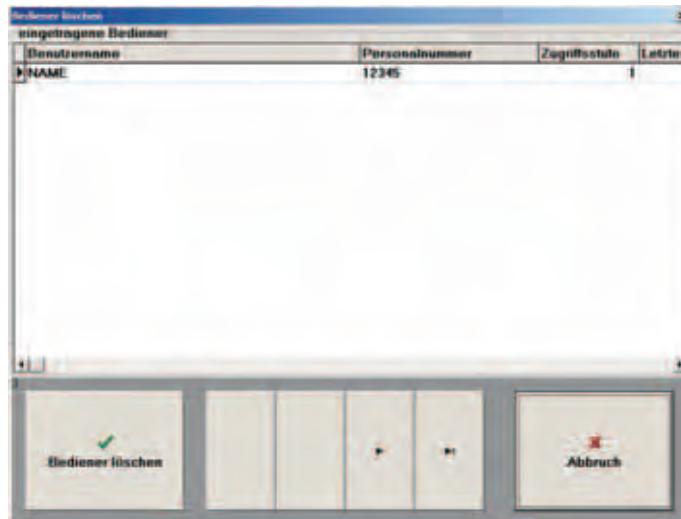
Each operator can be allocated only one bar code card.

If a bar code card is re-registered, the old entries of the corresponding operator are erased.

Deleting an operator

In order to carry out this operation the user must have security level 2.

- Log on to the system.
- Press the “Access” field.
- Press the “Delete” field.



- Select the operator concerned.
- Press the “Delete operator” field.
The operator’s details will be deleted.

6.1.1 Advice for the production begin

Check imperatively the system date (see Part 2, chapter 2.2.1).



ATTENTION !

Never change neither the date nor the time when the machine is in operation.

A corresponding warning notice will be displayed on the monitor.

A non-observance of the above will lead to the following consequences:

- Any reversing of the date setting will generate a duplicate in the database.

HINT

In this way it is no longer possible to identify clearly any completed seams.

- Any reversing of the time setting will generate a duplicate in the database.

HINT

In this way it is no longer possible to identify clearly any completed seams.

6.2 Seam-type function

- The "Seam types" field enables new seam types to be created and existing seam types to be edited or deleted.



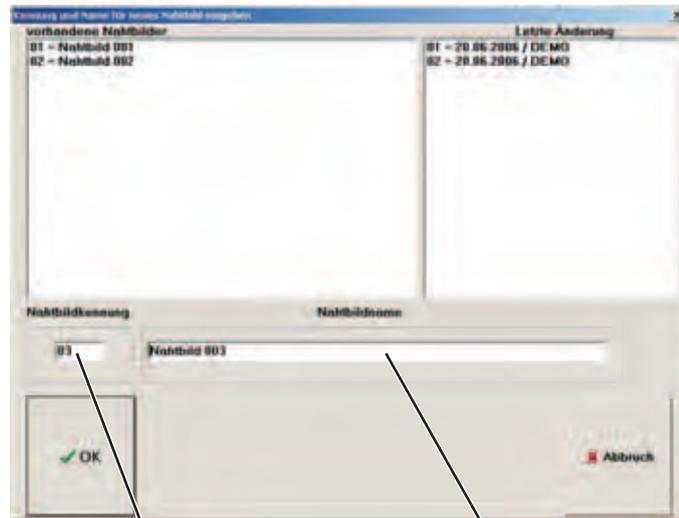
1

6.2.1 Creating a new seam type

- Press the "New seam type" field.
A list of available seam types with their alteration status is displayed.



- Enter a two-digit or three-digit seam-type code.
Three-digit seam-types may be created with the software version 550-767A07 and later.



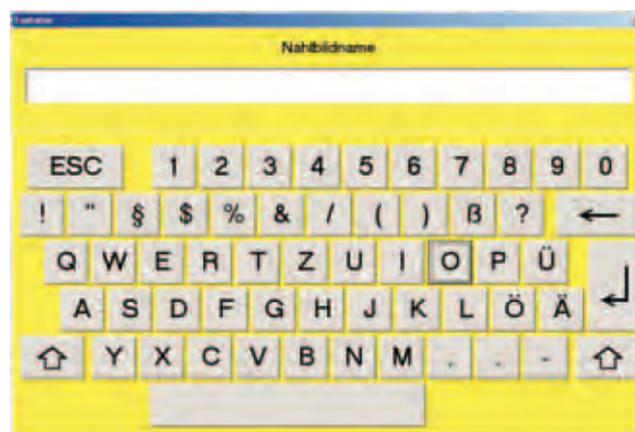
2

1

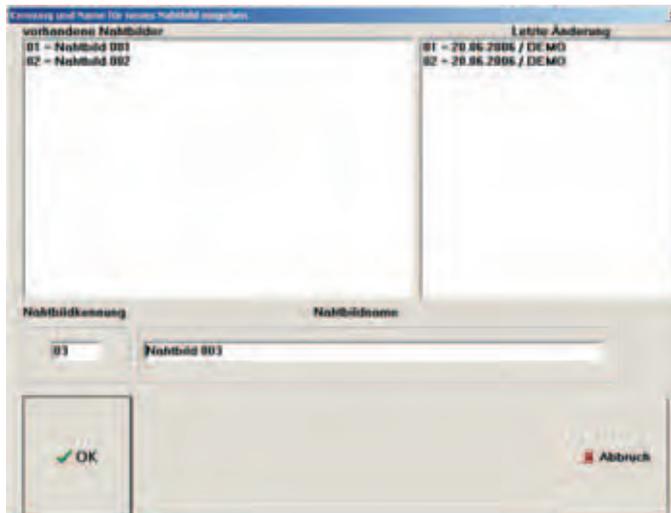
- Touch "Seam-type code" field 2.
The following entry mask is displayed.



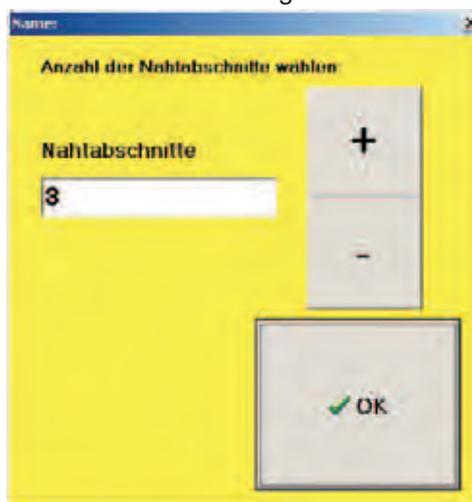
- Enter the seam-type code.
- Press the "Return" button.
- Touch "Seam-type name" field 1.
The following entry mask is displayed.



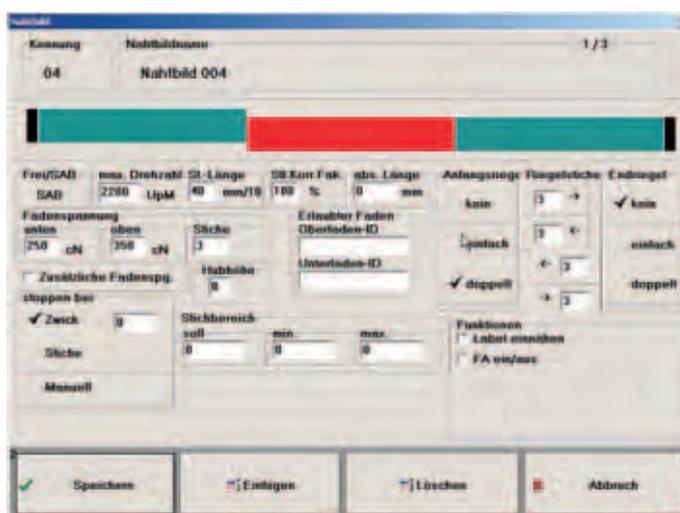
- Enter a seam-type name.
- Press the "Return" button.
A list of available seam types with their alteration status is displayed.



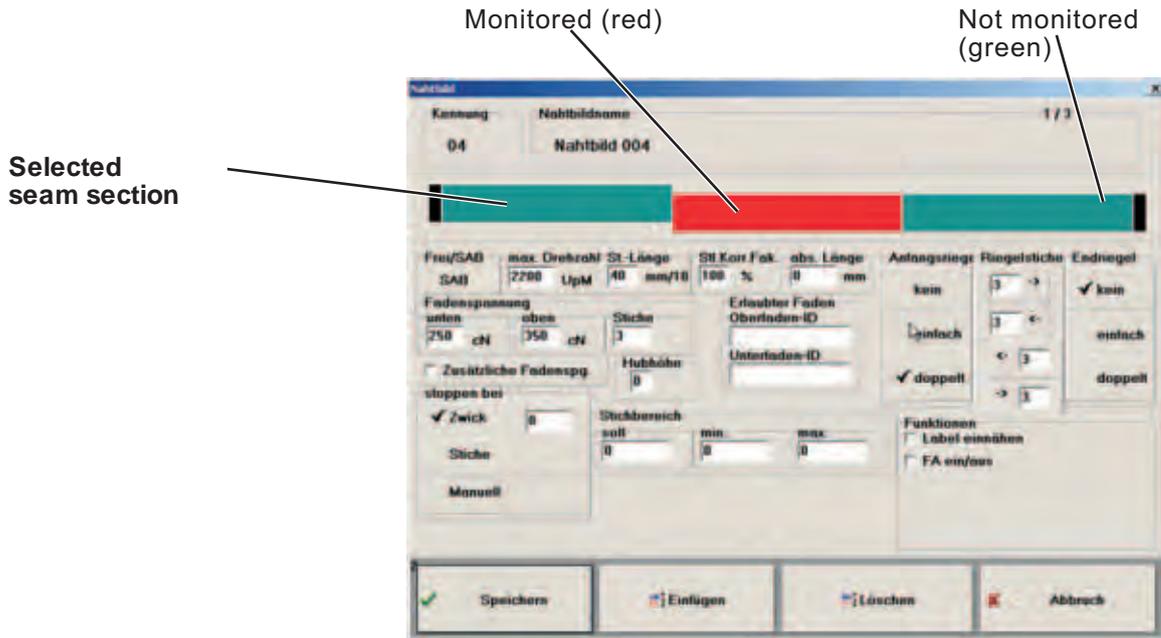
- Press the “OK” field.
- The screen containing the seam sections box is displayed.



- Select number of seam sections, e.g. 3.
- Press the “OK” field.
- The new seam type screen is displayed.



- Select the individual seam sections by clicking on them and enter the appropriate seam parameters.



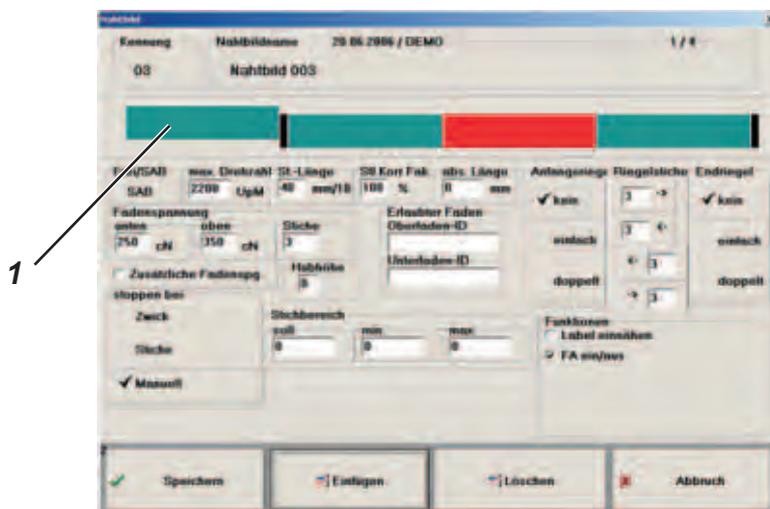
- When the seam parameters for all seam sections have been set, press the “Save seam-types” field.

Inserting a seam section

- Select a seam section in front of which a new section is to be inserted.
- Press the “Insert” field. The following screen is displayed.

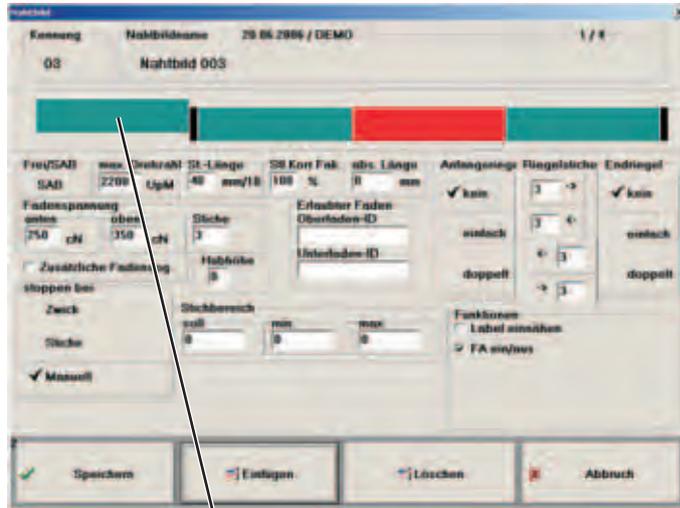


- Press the “OK” field. The screen containing the inserted seam type 1 is displayed.



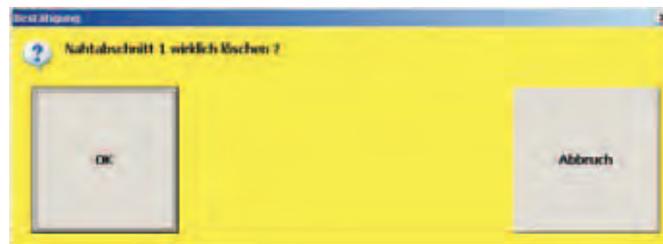
- Click the new seam section field to select and enter the appropriate seam parameters.
- When the seam parameters have been set, press the “Save seam-types” field.

Deleting a seam section

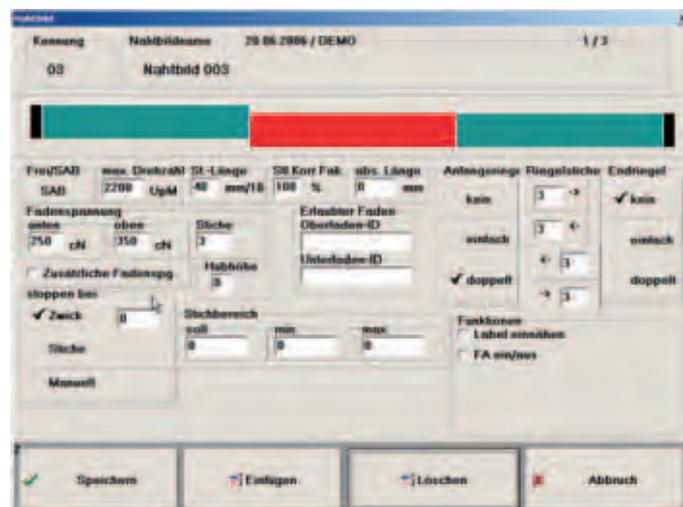


1

- Touch the seam section to be deleted. For example: Seam section 1.
- Press the “Delete” field. The following screen is displayed.



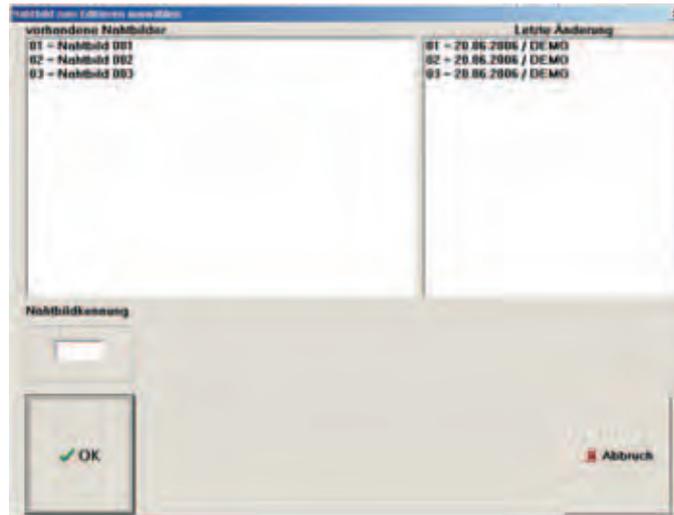
- Press the “OK” field. The new seam type screen is displayed.



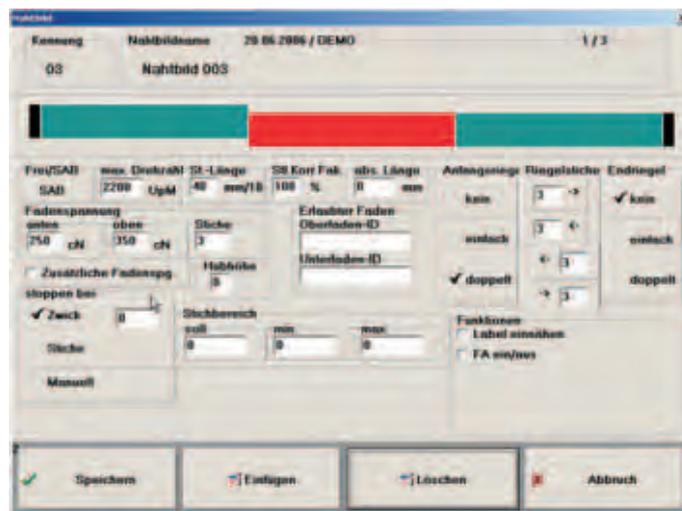
1

6.2.2 Edit seam type

- Press the “Edit seam type” field.
A list of available seam types with their alteration status is displayed.



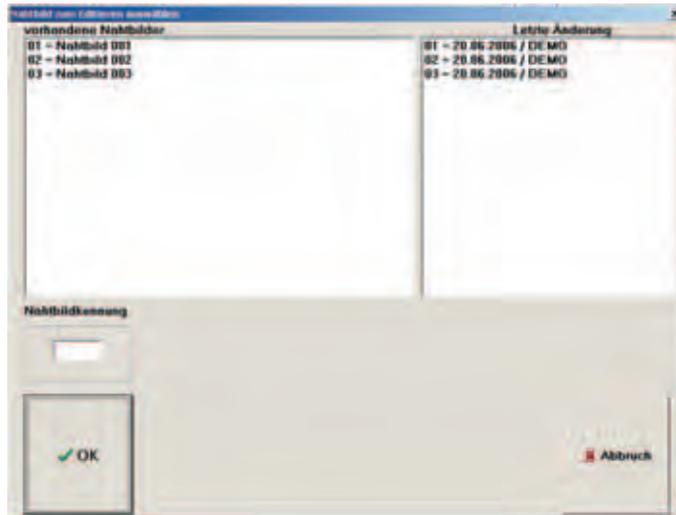
- From the list of seam types select the one that is to be edited by clicking on the “Seam-type code” field.
- Press the “OK” field.
The new seam type screen is displayed.



- Call the individual seam sections and make the necessary changes.
- Press the “Save” field.

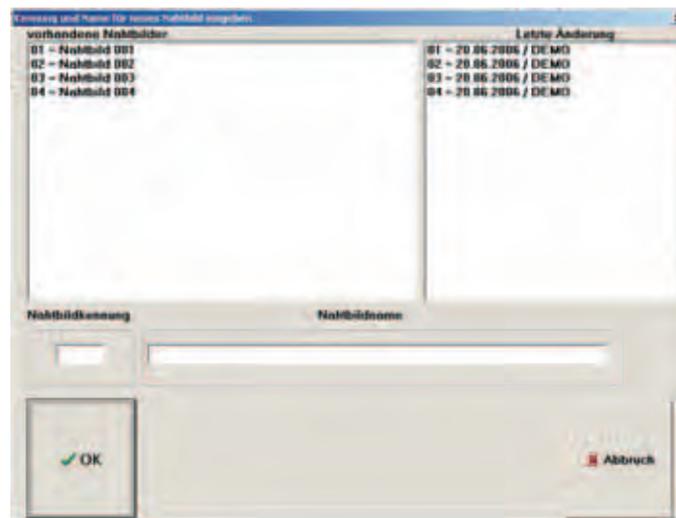
6.2.3 Copy seam type

- Press the “Copy seam type” field.
A list of available seam types with their alteration status is displayed.



- From the list of seam types select the one that is to be copied by clicking on the “Seam-type code” field.
For example: Seam type 04.
The following screen is displayed:

1



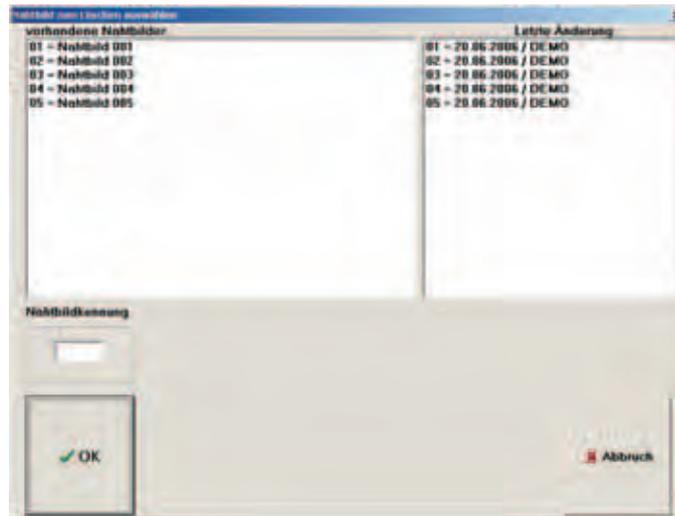
- Touch the “Seam-type code” field.
- Enter the new seam-type code.
For example: 05
- Press the “Return” button.
- Touch the “Seam-type name” field and type the new name.
- Press the “OK” field.
The following window is displayed:



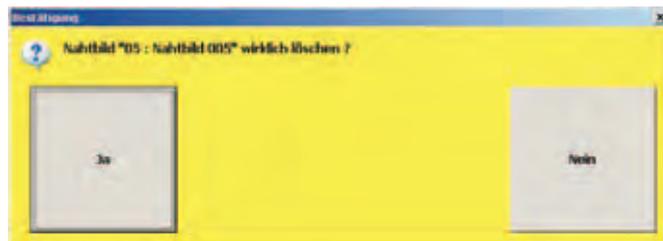
- Press the “OK” field.
Seam-type 4 was copied and saved as the new seam type 5.

6.2.4 Delete seam type

- Press the “Delete seam types” field.
A list of available seam types with their alteration status is displayed.



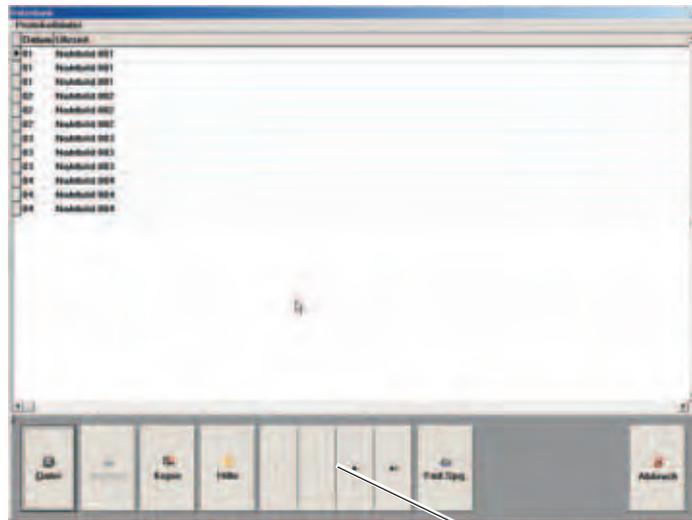
- From the list of seam types select the one that is to be deleted by clicking on the “Seam-type code” field.
For example: 05 for seam type 5.
- Press the “OK” field.
A confirmation prompt is displayed.



- Click “Yes” to confirm the prompt.
The seam type 05 will be deleted.

6.3 Database function

Completed seams are recorded and the data filed in a database. The “database” field enables these recorded files to be displayed, printed and copied.



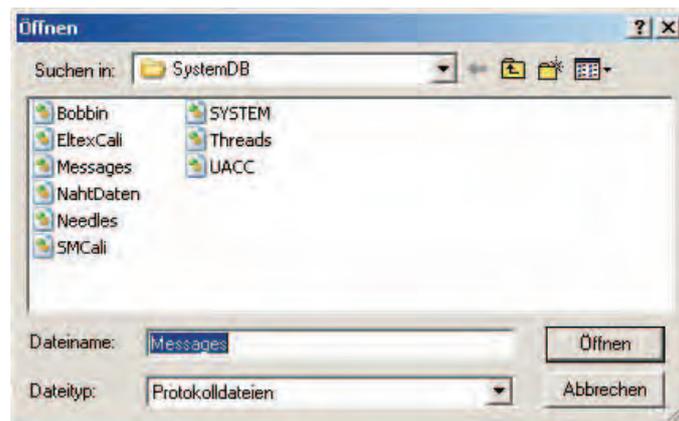
1

- The required files are selected using the fields 1.

“File” field

A record file is filed every day. It is possible to retrieve and display these files via the “file” field

- Press the “File” field.
The following dialog box is displayed:



- Select the required record file and click “Open”.

“Print” field

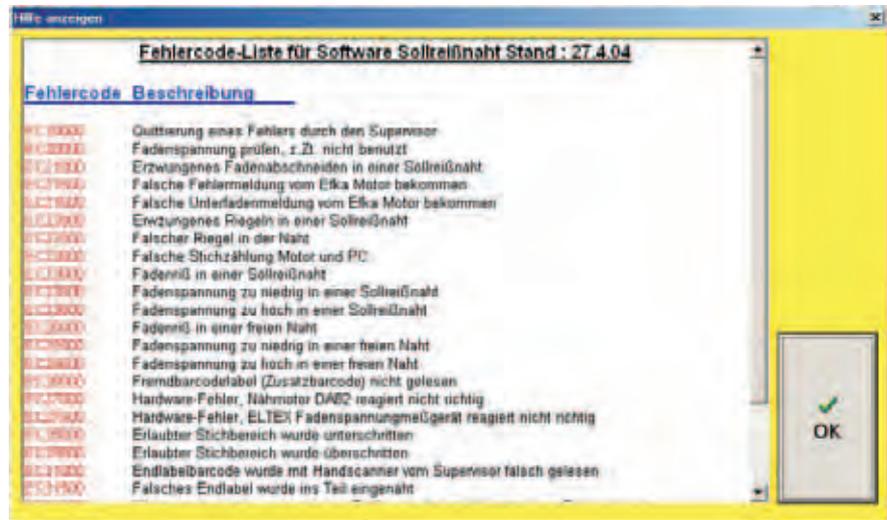
If a printer is connected the selected record file can be printed out using the “Print” field.

“Copy” field

The selected day file is copied into a designated directory.

“Help” field

A list of error codes is displayed (see 6.6).

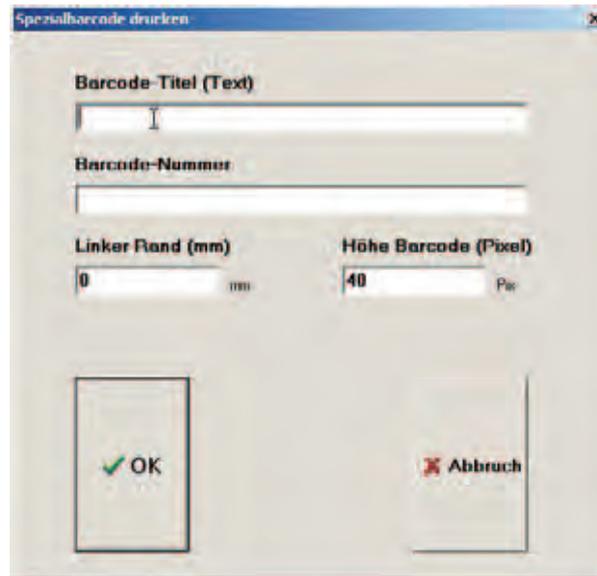


“Thread tension” field

File for displaying thread-tension values of each stitch of documented seam sections.

“Print BC Label” field

When this function is activated a barcode label is printed out by the label printer.



“Backup record database” field

When this function is activated all database records of the work-station are stored under the appropriate machine number.

The data are transferred to the ZIP drive.

“Load data” field

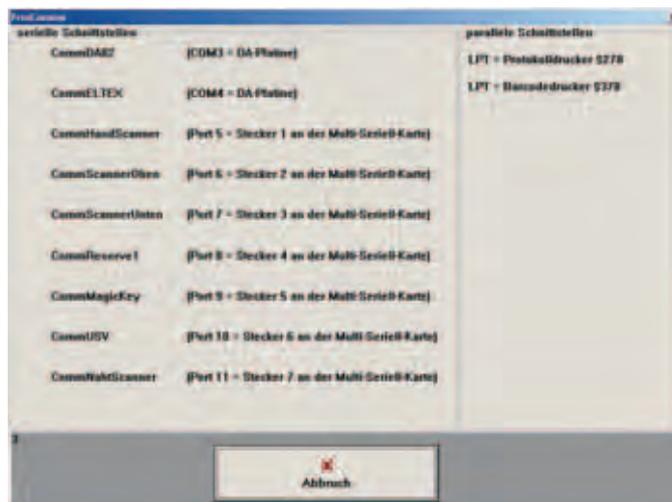
Back-up files are loaded from diskette.

“Copy dump files” field

When this function is activated all dump are saved to diskette.

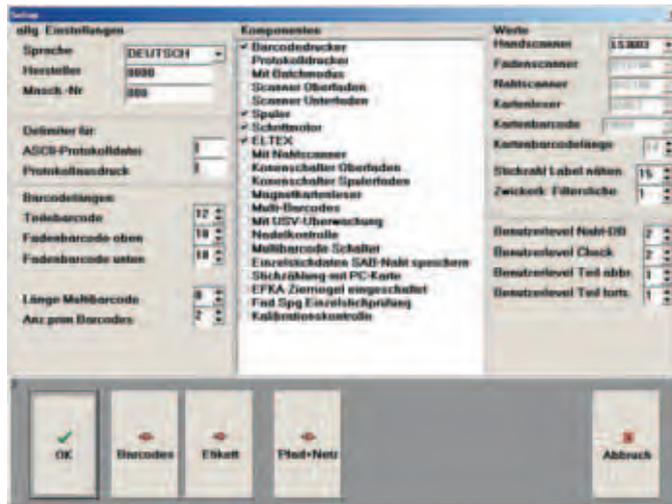
“Connections” field

When this function is activated the computer’s connections are listed.



“Setup” field

When this function is activated system settings can be entered.



“General settings”

When this function is activated the language is selected, code numbers for manufacturers and sewing unit are attributed, relevant barcode digits determined and the employed EFKA software is selected.

“Components”

Here the used working materials or functions are activated or deactivated.

“Values”

When this function is activated the scanners are selected, the barcode type for the card-reader is defined and the desired number of barcode digits adjusted.

When the function “Sew label separately” is activated in the field “Components”, the number of stitches for the additional seam can be set via the function “Number of stitches of label sewing”.

In order to avoid that each thread passing through the light barrier simulates a nick mark <M>[2 or 3 stitches], the response behaviour of the light barrier can be manipulated via the function “Nick-mark identification filter stitches”. When setting the value 2, the size of the nick mark must comprise two stitches in order to be identified as such.

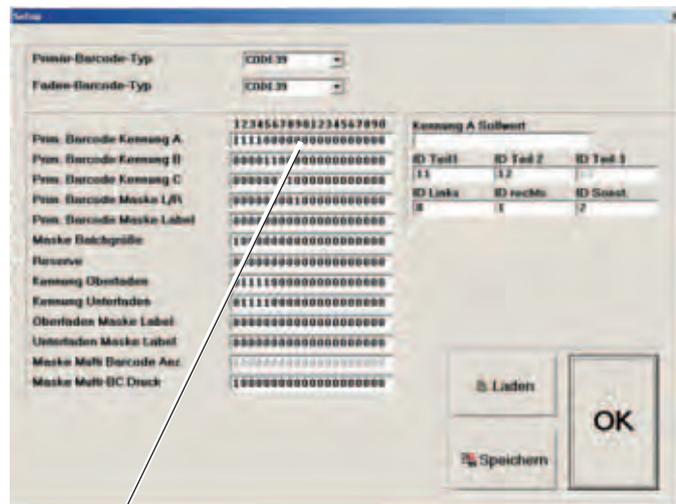
Authorization for access to the system can be influenced by changing the user level. The set values indicate the safety levels which are at the very least required for executing the programme function.

In the field “Lot size” the number of sewing procedures, which should be released by a one-time scanning-in of the input barcodes, can be set.

“Barcode” field

Barcode definitions can be modified, saved or loaded via the “Barcode” field.

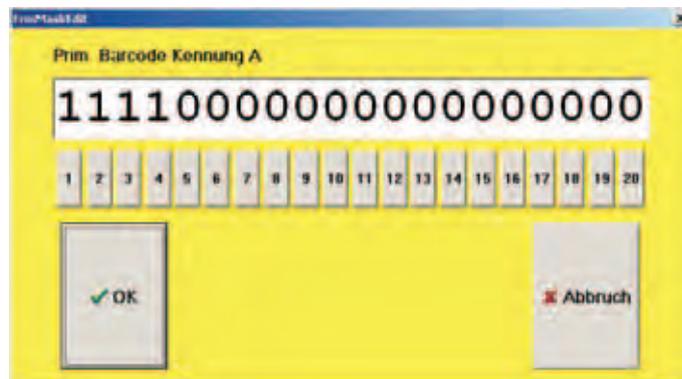
Masks are placed to determine the relevant barcode digits.



1

Changing a barcode definition

- Touch the corresponding barcode line 1. The following entry mask is displayed.

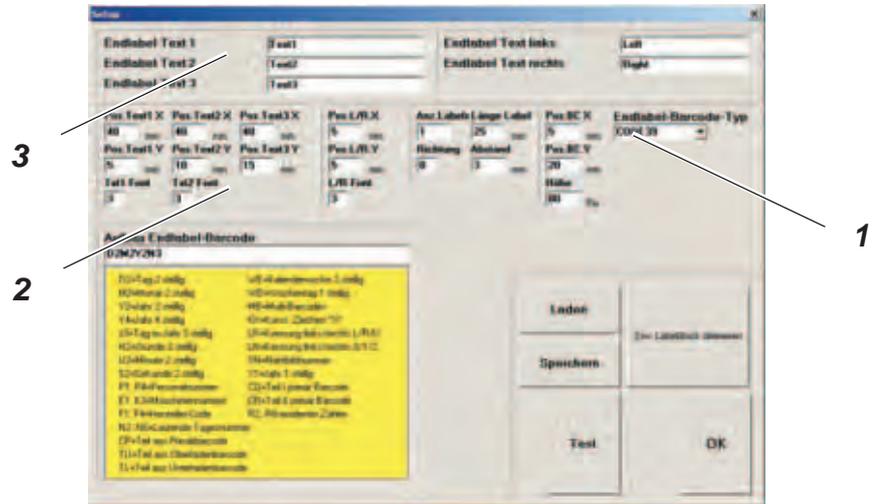


- Type the barcode definition.
- Press the “OK” field. The new definition is accepted.
- Press the “Save” field.

“Label” field

The layout of the end label can be defined via the “Layout” field. Which barcode information is to be printed is determined here.

Additional information to be printed on the end label can be defined via the “Define additional label information” field.



1 Setting the end-label barcode type

See section 6.7.

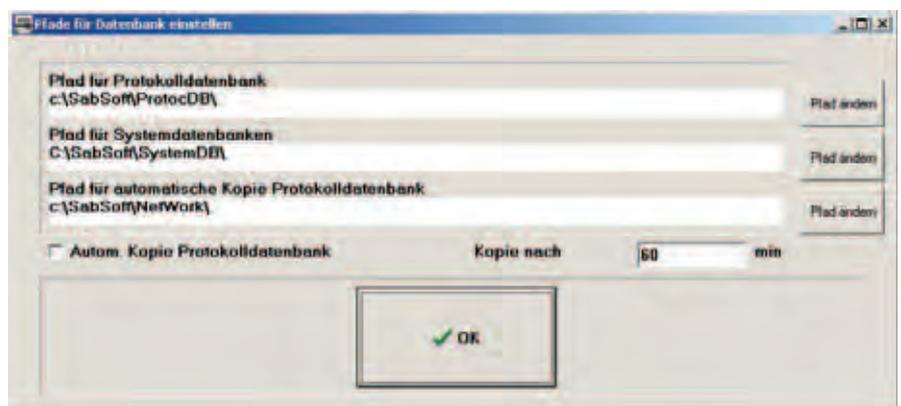
2 Setting the end-label layout

See section 6.8.

3 Determining the text to be printed out

“Path+Net” field

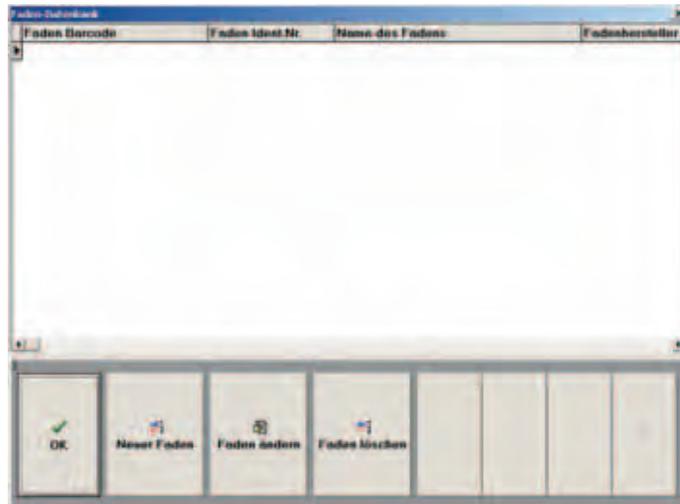
The function of the “Path+Net” field is to specify the paths to be used when saving the record database and system databases, as well as the interval between automatic saves.



“Yarns” field

When this function is activated a database containing the yarns designated for use with the system is displayed.

New yarns can be entered, and existing yarns edited or deleted.



HINT

When a new yarn is entered its identity no. must be entered. This number, which consists of predetermined digits of the thread barcode, enables the system to recognise the yarn.

Registering new yarn

- Touch the “New yarn” field.
The ‘yarn database editor’ opens.

- Type the yarn barcode.
- or
- scan-in the yarn barcode.

- Touch the "Scan" field.
The following screen is displayed:



- Scan-in the yarn barcode using the hand-held scanner.
- Press the "OK" field".
The new yarn barcode is accepted.
- Enter further yarn data and press the "OK" field to confirm entries.

1

"Change yarn" field

The selected yarn can be changed once this function has been activated.

"Delete yarn" field

The selected yarn can be deleted once this function has been activated.

“SM-Kali” and “ELTEX-Kali” fields

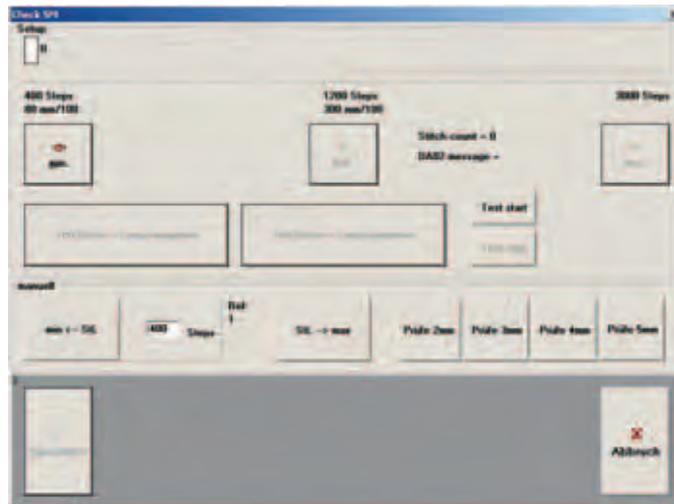
If the component “Calibration check” is activated in the set-up, the user will be asked at certain times to check and possibly calibrate the settings for the step motor and the ELTEX-thread-tension measuring device.

Both activities will be recorded in the ELTEX and the step-motor calibration database.

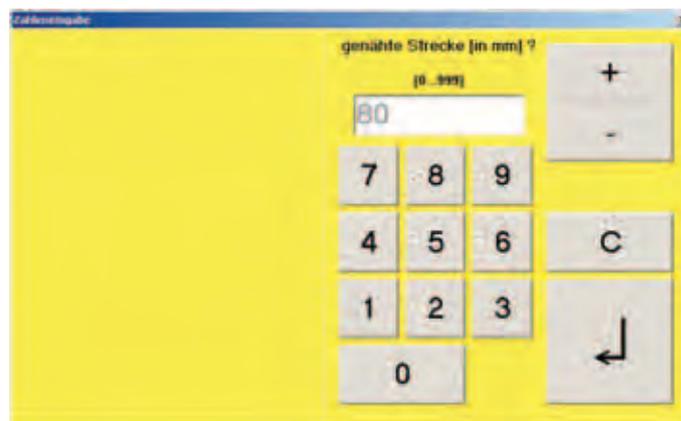
See section 6.5: Needle-thread tension tolerance range.

“SM” field

After activating the function, the adjustment of the stitch length can be calibrated and verified.

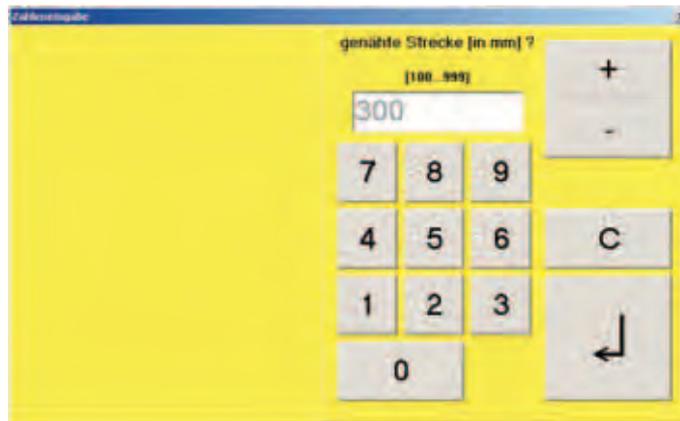


- Press the “Min.” field.
The step motor moves to the shortest stitch length.
- Press “Enter 100 stitches+length” field.
The following window is displayed.



- Sew test seam.
100 stitches will be sewn.
- Measure stretch.
- Enter the value for the measured stretch, then press the field “8” to confirm.

- Press the "Ref." field.
The step motor will move to an average stitch length.
- Press "Enter 100 stitches+length" field.
The following window is displayed.



- Sew test seam.
100 stitches will be sewn.
- Measure stretch.
- Enter the value for the measured stretch, then press the field "8" to confirm.
- Press the "Save" field.
Calibration will be terminated.

Calibration of the step motor is carried out on thin paper. Since the actual stitch length shortens in relation to an increasing thickness of the material, a correction factor can be set in the seam display, which will take into account the thickness of the sewing material.

“E/A” field

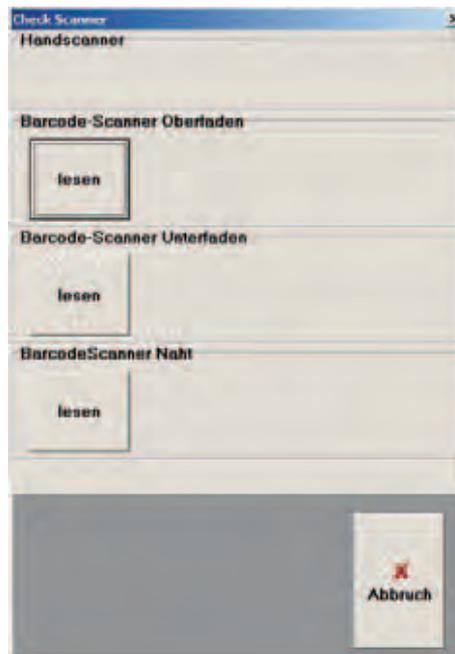
When this function is activated system inputs and outputs can be tested.



“Scanner” field

When this function is activated the barcode-scanner can be tested.

1



“EFKA” field

This function allows all of the functions of the EFKA d.c. motor to be checked.

The settings made, e.g. initial lock-stitches, final lock-stitches, speed, stitch length, etc., will be transmitted to the control unit by pressing the “Transmit” key and one seam will be released.

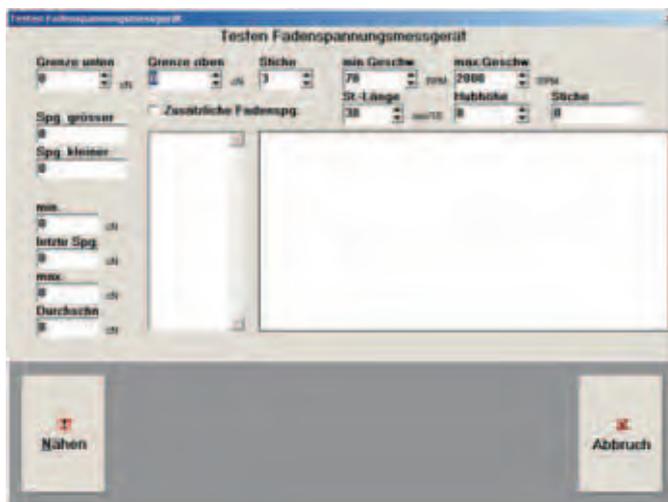


HINT

Entries can only be made via an external operating panel of the type V810 or V820.

“ELTEX” field

This function is for setting the thread tension in considering pre-set tolerance limits, sewing speed, lifting height and stitch length. See **section 6.5: Needle-thread tension tolerance range.**



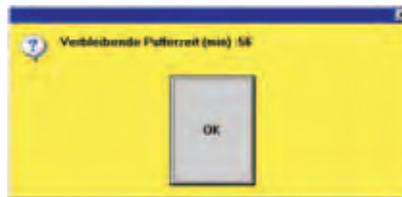
Uninterruptible power supply function

The emergency power supply enables the integrated sewing unit to continue in operation for up to 30 minutes even in the event of a power failure.

- If the mains supply fails, a warning message is displayed on the monitor.



- Once this message has been acknowledged, an indication of how long operation can continue with the buffered energy is displayed.



- Shortly before the buffered energy runs out the operator is prompted to shutdown the PC. If this is not done manually, it is carried out automatically in order to avoid the loss of stored data.

“Abort” function

The “Back” function enables the user to return to the “Rupture-seam visualisation” menu.

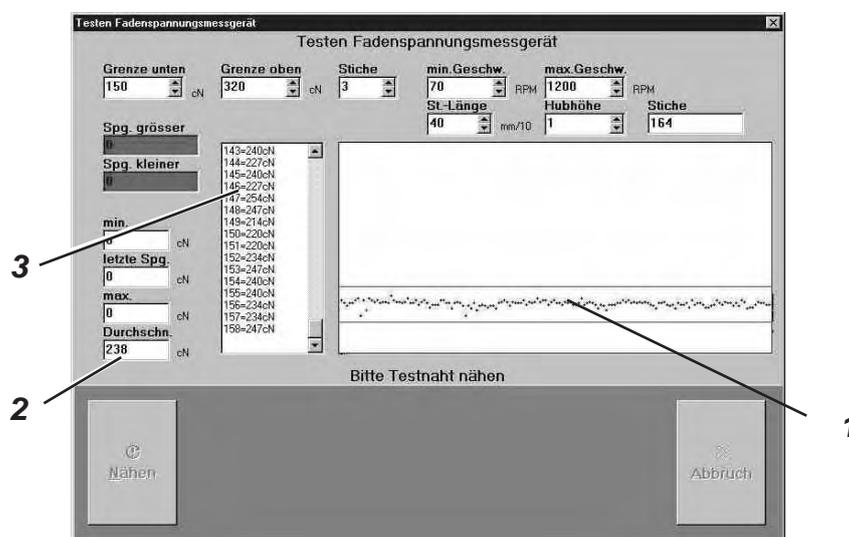
6.5 Needle-thread tension tolerance range

In monitored seam ranges, the needle-thread tension values are compared during operations with a pre-set tolerance range. If these values deviate from the tolerance range more often than they should, the seam is designated as a bad seam.

Adjusting the thread tension to within the tolerance range

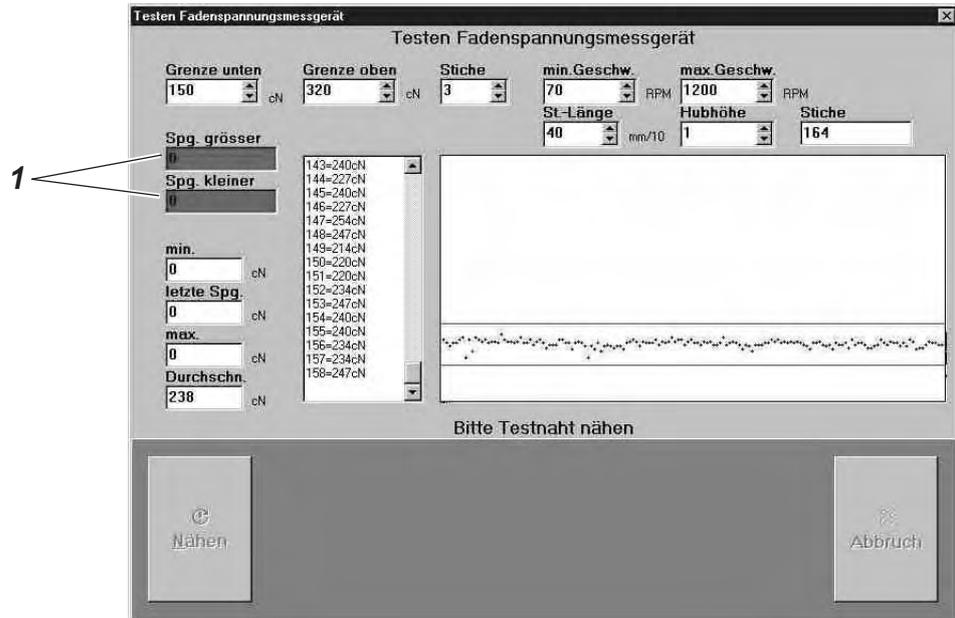
The needle-thread tension value is affected by many factors such as sewing speed, material, sewing yarn, seam range etc. The upper and lower needle-thread tension limits can be set via the “ELTEX” function.

- Press the “Check” field in the “Thread-tension measuring device” window.
- Press the “ELTEX” field.



- Enter the appropriate values of the rupture seam in both the “Lower limit” and “Upper limit” fields. The entered tolerance range is indicated in window 2 within two lines.
- Enter the values for minimum and maximum speed.
- Enter stitch length and stroke height.
- Press the “Sew” field.
- Carry out a test seam with thread-cutting. The adjusted upper-thread tension is displayed in window 1. It must be within the two lines indicating upper and lower tension.
- Adjust the upper-thread tension, press the “Sew” field and sew another test seam.
- Check the needle-thread tension in window 1.
- The needle-thread tension values of each individual stitch are displayed in field 3.
- The average thread tension value calculated is displayed in the “Average” field 2.

- Carry out another test seam.
On completion of the seam, the fields 1 must still be displayed in green, otherwise the entries must be adjusted once more.



1

HINT

It is recommended that the ELTEX device be recalibrated regularly once a year by the manufacturer.

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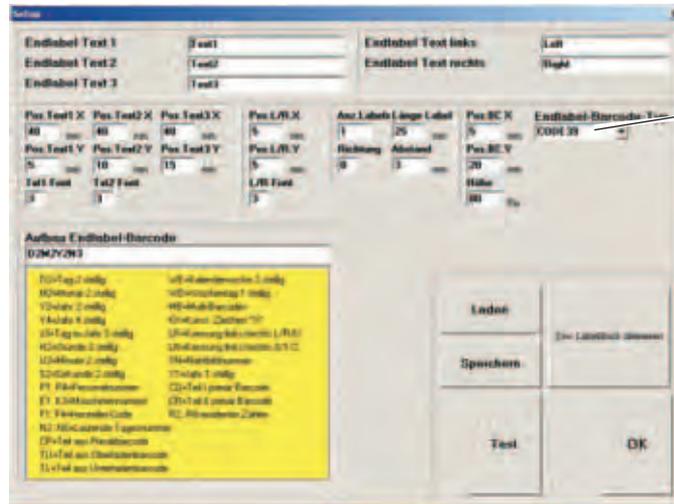
6.6 Error codes

| | |
|-------------------|---|
| EC10000 | fault clearance by supervisor |
| EC20000 | check thread tensioner (not in use at present) |
| EC21000 | forced thread-cutting in a rupture seam |
| EC21500 | Received wrong error message from Efka motor |
| EC21600 | Received hook thread message from Efka motor |
| EC22000 | forced bar-tacks in a rupture seam |
| EC22500 | wrong bar-tacking in the seam |
| EC22600 | wrong stitch count, motor and PC |
| EC23000 | thread break in a rupture seam |
| EC23500 | thread tension too low in a rupture seam |
| EC23600 | thread tension too high in a rupture seam |
| EC25000 | thread break in a free seam |
| EC25500 | thread tension too low in a free seam |
| EC25600 | thread tension too high in a free seam |
| EC26000 | unknown barcode label (supplementary barcode) not read |
| EC27000 | hardware fault, DA82 sewing motor not responding properly |
| EC27500 | hardware fault, ELTEX thread-tension measuring device not responding properly |
| EC28000 | below permitted stitch range |
| EC28000 | above permitted stitch range |
| EC31000 | end-label barcode misread by supervisor using manual scanner |
| EC31500 | wrong end label sewn into piece |
| EC32000 | a bobbin containing a prohibited thread was inserted during sewing |
| EC33000 | barcode printer not ready |
| ECxxxxxACK | error "xxxxx" confirmed by supervisor |
| ECxxxxxCNT | Supervisor has released the piece for further processing despite error 'xxxxx' |

6.7 Setting the end-label barcodes

The operator must have security level 2 in order to carry out changes in the barcode labelling system.

- Log on to the system.
- Activate “Check” function
- Activate “Setup” function
- Activate “Label” function



The structure of the end-label barcode is displayed in field 1.
The significance of the predefined codes is as follows:

| | | |
|-----------|---|-------------------------|
| D2 | current day (two-digit); | e.g.: 9. 9 June = 09 |
| M2 | current month (two-digit); | e.g.: 9. 9 June = 06 |
| Y2 | current year (two-digit); | e.g.: 1999 = 99 |
| Y4 | current year (four-digit); | e.g.: 1999 = 1999 |
| J3 | number of days in year (three-digit); | e.g.: 20 February = 051 |
| H2 | current hour (two-digit); | e.g.: 8:52:13 = 08 |
| U2 | current minute (two-digit); | e.g.: 8:52:13 = 52 |
| S2 | current second (two-digit); | e.g.: 8:52:13 = 13 |
| P1 | current personnel number (one-digit); | e.g.: 1234 = 1 |
| P2 | current personnel number (two-digit); | e.g.: 1234 = 12 |
| P3 | current personnel number (three-digit); | e.g.: 1234 = 123 |
| P4 | current personnel number (four-digit); | e.g.: 1234 = 1234 |
| E1 | current machine number (one-digit); | e.g.: 567 = 5 |
| E2 | current machine number (two-digit); | e.g.: 567 = 56 |
| E3 | current machine number (three-digit); | e.g.: 567 = 567 |
| F1 | manufacturer code (one-digit); | e.g.: 1357 = 1 |
| F2 | manufacturer code (two-digit); | e.g.: 1357 = 13 |
| F3 | manufacturer code (three-digit); | e.g.: 1357 = 135 |
| F4 | manufacturer code (four-digit); | e.g.: 1357 = 1357 |
| N2 | daily number of pieces (two-digit); | e.g.: 1234 = 34 |
| N3 | daily number of pieces (three-digit); | e.g.: 1234 = 234 |
| N4 | daily number of pieces (four-digit); | e.g.: 1234 = 1234 |

| | |
|---------------|---|
| N5 | daily number of pieces (five-digit); e.g.: 12345 = 12345 |
| N6 | daily number of pieces (six-digit); e.g.: 123456 = 123456 |
| CP | the number of digits and the coding are defined by the mask specified under "Prim. barcode mask label". 1 = digit is accepted; 0 = digit is ignored. |
| TU | the number of digits and the coding are defined by the mask specified under "Needle-thread mask label". 1 = digit is accepted; 0 = digit is ignored. |
| TU | the number of digits and the coding are defined by the mask specified under "hook-thread mask label". 1 = digit is accepted; 0 = digit is ignored. |
| WE | calendar week (1 – 53) |
| WD | weekday from 1 = Sunday to 7 = Saturday |
| MB | element of multi-barcode |
| KX | constant sign |
| LR | Identifier left/right/L/R/U |
| LN | Identifier left/right 0/1/2 |
| SN | Screen type number |
| Y1 | Year 1-digit |
| CQ | Part I primary barcode |
| CR | Part II primary barcode |
| R2..R8 | Resident counter |

In accordance with the end-label barcode structure in field 1 the following information is displayed in the endlabel barcode:

- number of days in year (J3)
- current year in two-digit display(Y2)
- Three-digit part number (N3)
- three-digit display of personnel number (P3)
- Three-digit machine number (E3)
- Three-digit manufacturer code (F3)

Extended label printing (EXTLabel.txt)

This option allows the information compiled on the list to be printed additionally on the end label.

The desired information is placed on the end label by means of a defined programme line.

When the extended label-print is activated, the information will always be printed on the specified places, independent of the loaded barcode set-up file.

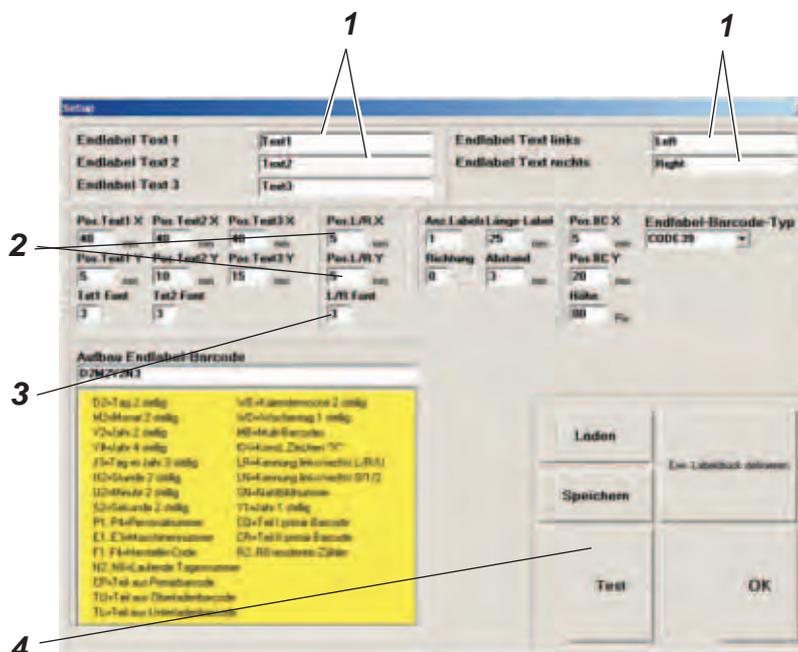
```
*
* 550-767
* This is the extended label printing set-up file
* for customer specific printing.
*
* Format of the control lines:
* _____
* POSX, POSY, FONT, DESCRIBING TEXT, INFO-CODE
* Each line, which has a "*" as first character is
* ignored.
*
* Available Info-Codes:
* _____
* MB1 - MB9 : scanned multi barcodes 1 - 9
* ONM : operator name
* OPN : operator personel number
* FAB : manufacturer code
* MAC : machine number
* TRN : needle thread barcode
* TRB : bobbin thread barcode
* DPC : daily piece number
* ERC : actual error code
* SNM : seam record name
* SRN : seam record number 00-99
* DAT : date
* TIM : time
* BON : bobbin number
* PB1,PB2,PB3: parts barcode 1,2,3
* SRT : text from the seam record
* CYN : cycle number
* JDY : Julean day with three digits
* YR2 : actual year with last two digits
* YR4 : actual year with lastfour digits
* DAY : actual day with two digits
* MON : actual month with two digits
* DNF : daily piece count formatted four digits
*
```

```
54,14,2, ,DNF
61,14,2, , MAC
65,14,2, , YR2
69,14,2, , JDY
```

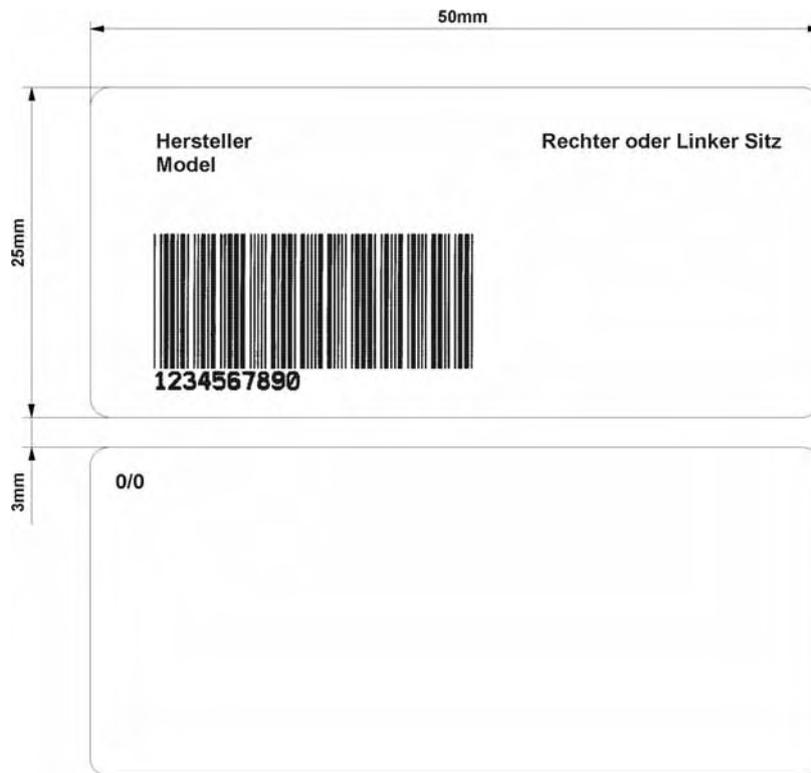
6.8 Setting the end-label layout

The operator must have security level 2 in order to carry out changes in the barcode labelling system.

- Log on to the system.
- Activate “Check” function
- Activate “Setup” function
- Activate “Label” function



- Enter the required height of the label in the “Label length” field.
e.g.: 25 mm
- Enter the gap between labels in the “Gap” field.
e.g.: 3 mm
- Enter the required label texts in fields 1,
e.g.:
end-label text 1 = manufacturer
end-label text 2 = model
end-label text left = left-hand seat
end-label text right = right-hand seat
- Set the origin for the text coordinates in fields 2.
- Set the position of end-label text 1 in the “Pos. text 1 X” and “Pos. text 1 Y” fields.
- Set the position of end-label text 2 in the “Pos. text 2 X” and “Pos. text 2 Y” fields.
- Set the position of the barcode in the “Pos. BC X” and “Pos. BC Y” fields.
- The required font can be set in field 3.
- To print the label, press button 4 prints out the label.



6.9 Adjusting barcode definitions

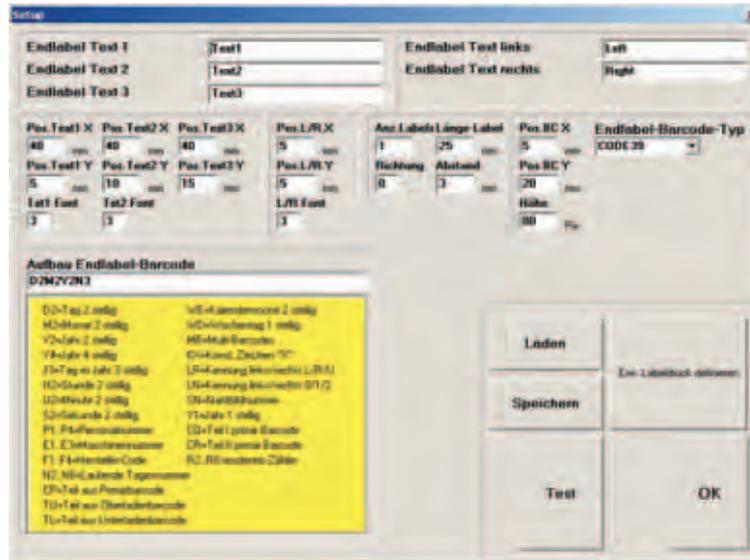
The operator must have security level 2 in order to carry out changes in the barcode labelling system.

- Log on to the system.
- Activate "Check" function
- Activate "Setup" function
- Activate the "Extended" function.
- Select the required type in the "Primary barcode type" field. This barcode is read into the system by the manual scanner.
- Select the required type in the "Thread-barcode type" field. The selection applies to both the upper and hook threads.
- Select the required type in the "End-label barcode type" field.
- Masks can be set in the "Primary-barcode identifier A" (material and colour barcode), "Primary-barcode identifier B" (upper and lower piece barcode), "Primary-barcode identifier C" (stitch type barcode) and "Primary-barcode mask L/R" (left and right-piece barcode) fields to pass on system-relevant information (entry: "1") or ignore unimportant information (entry: "0").

E.g.:

- Primary barcode:
(scanned in by manual scanner)
11112233001234567890
- Primary-barcode identifier in the “Primary- barcode identifier A” field (material and colour barcode):
11110000000000000000
- ID number:
1111

If only pieces with the ID number “1111” are to be processed, this number can be entered in the “Identifier A set value” field. If pieces with various different ID numbers are to be processed, the “Identifier A set value” field must remain blank.



- The “Primary-barcode identifier B” field determines the piece type, i.e. whether it is an upper, middle or lower piece.

E.g.:

- Primary barcode:
(scanned in by manual scanner)
11112233001234567890
- Primary-barcode identifier in the “Primary- barcode identifier B”:
00001100000000000000
- ID number:
22
- The ID number must be defined in one of the “ID part 1”, “ID part 2” and “ID part 3” fields. It is impossible to enter the same ID number in more than one field.

- Sewing parameters are set with the “Primary-barcode identifier C” field.

E.g.:

- Primary barcode:
(scanned in by manual scanner)
11112233001234567890
- Primary-barcode identifier in the “Primary- barcode identifier C”:
00000110000000000000
- ID number:
33

The ID number is used to retrieve the parameters from the database (here: stitch type with ID number 33).

HINT

From the software version 550-767A07 onwards, 3-digit seam displays can be generated. It should be remembered that with identifier C three digits have to be occupied and that the 2-digit seam displays are no longer available.

Three-digit seam displays shall be provided with a seam-display identification between 100 and 999 (identifications between 001 and 099 are not permitted).

- The “Prim. barcode mask L/R” field determines whether it is a right or left-hand seat.

E.g.:

- Primary barcode:
(scanned in by manual scanner)
11112233001234567890
 - Primary-barcode identifier in the “Primary- barcode mask L/R” field:
00000000110000000000
 - ID number:
00
- The ID number must be defined in the “ID left” or “ID right” fields.

Example with two pieces:

| | |
|-----------------------------------|----------------------|
| 11112233001234567890 | 11112333001234567890 |
| “Primary -barcode identifier A”: | |
| 11110000000000000000 | 11110000000000000000 |
| ID number: | |
| 1111 | 1111 |
| The ID numbers are the same = OK. | |

| | |
|--|----------------------|
| 11112233001234567890 | 11112333001234567890 |
| “Primary -barcode identifier B”: | |
| 00001100000000000000 | 00001100000000000000 |
| ID number: | |
| 22 | 23 |
| The ID numbers are different = OK. The piece with ID number 22 is the upper layer, ID number 23 is the lower layer. | |

| | |
|---|----------------------|
| 11112233001234567890 | 11112333001234567890 |
| “Primary -barcode identifier C”: | |
| 00000011000000000000 | 00000011000000000000 |
| ID number: | |
| 33 | 33 |
| The ID numbers are the same = OK. The sewing parameters no. 33 are read from the database. | |

11112233001234567890

11112333001234567890

“Primary barcode mask L/R” field:

00000000110000000000

00000000110000000000

ID number:

00

00

The ID numbers are the same = OK

A right-hand seat is sewn.

The text for a right-hand seat is printed on the end label.

- Via the “Primary-barcode mask label” field, information from the initial barcode can be printed on the end label.

- How many additional barcodes (multi-barcode) shall be scanned in and stored is determined via the “Multi-barcode mask number” field.
The desired number will be realized by selecting the appropriate digits of the primary barcode.

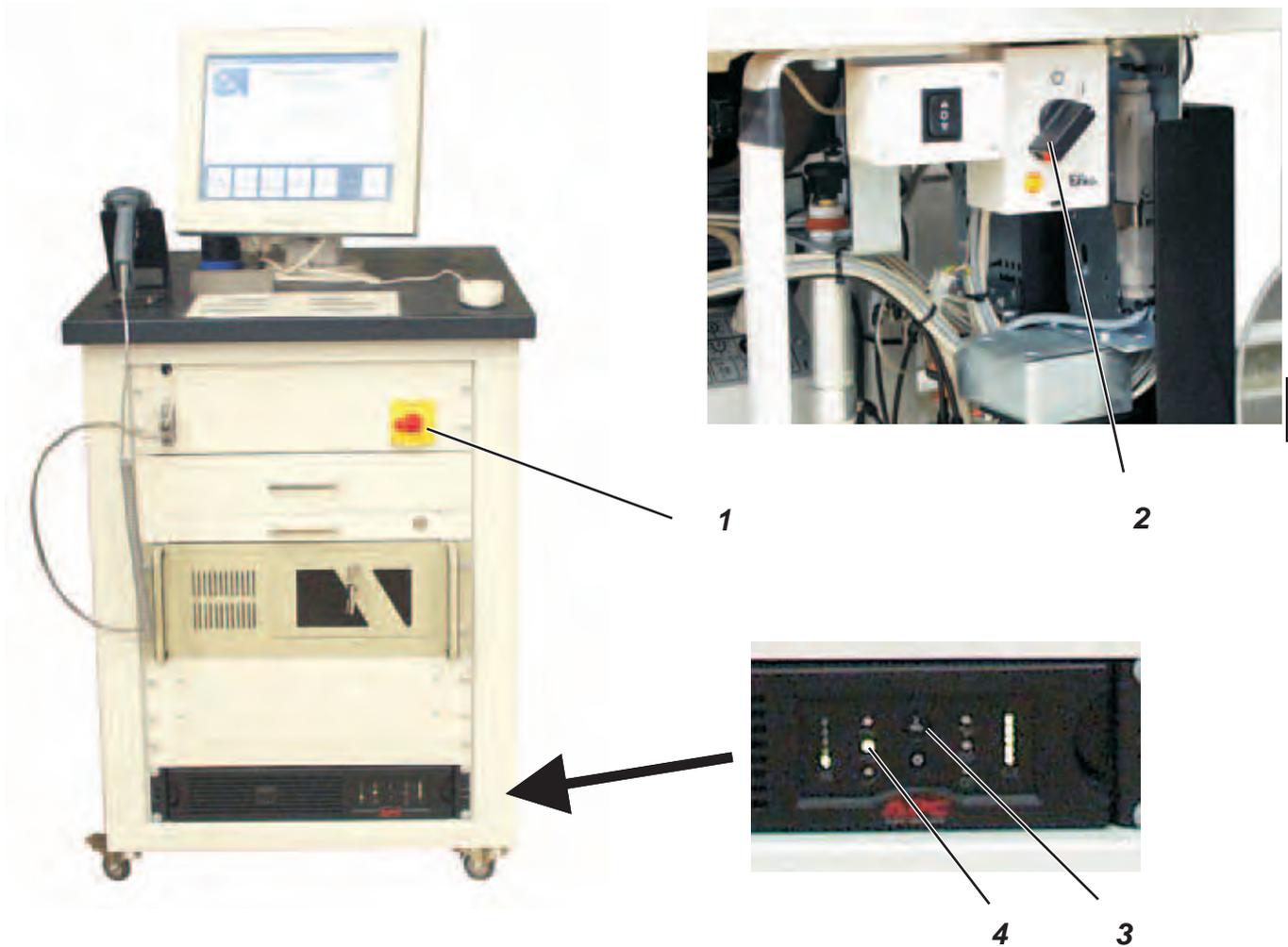
- Information from the multi-barcode can be printed on the end-label via the “Multi-BC Print Mask” field
(refer to “MB” information code, section 6.7).

7. Sewing



CAUTION:

Sewing may only be carried out on a fully-assembled sewing unit with all protective devices fitted!

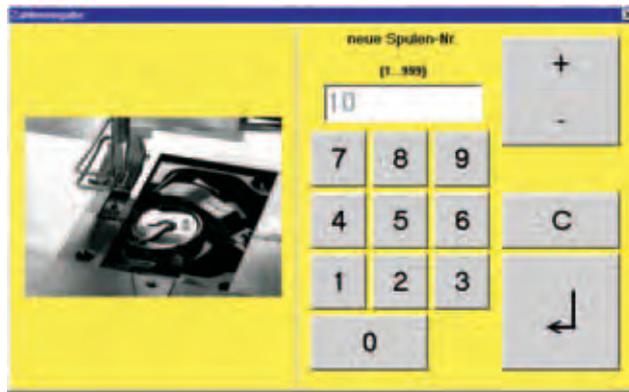


Switching on the sewing unit

- Press button 3 (lamp 4 flashes)
- = Wait until lamp 4 lights up.
- Turn on main switches 1 and 2.
Windows is loaded and the program "Soll.exe" activated.
The sewing unit is tested and initialised.
- Scan in the needle-thread cone if appropriate.
- Scan in the hook-thread cone if appropriate.



- Enter the bobbin number (engraved on the bobbin).



Logging onto the system

- The operator logs on by wiping his bar code card through the magnetic-card reader.
- The operator can also log on manually as follows:
- Press the “Access” field.
- Press the “Log on” field.
- Enter name and password.



Sewing can only begin if the system start and scanning of the needle-thread cone, hook-thread cone and bobbin were faultless. Failing this the system is not ready for sewing, and an error message will be displayed.

Sewing

- Press the "Sewing" field.
- Scan in the pieces to be sewn.
Up to nine (9) more barcodes can be defined in advance.
All previously defined barcodes must be read in.



- The seam ranges can be sewn.
Odd-numbered seam ranges are unmonitored, the diode on the stop lights up green. In the even-numbered (monitored) seam ranges the diode lights up red.
- If an error occurs in a monitored seam section an error message is displayed.



- Sewing is blocked to operators with security level 0.
- Users with security level 1 or 2 can remove the block by logging onto the system by means of the magnetic card and then pressing the "Continue" field.

7.1 Label scanner (optional)

A label scanner 1 can be fitted to the head of the sewing unit as an optional extra.



1



- At the end of the seam the scanner checks whether the correct barcode label has been sewn on.
- If the label is not recognised a reminder appears, followed by this warning:



- Users with security level 1 or 2 can scan-in the label manually after the seam end or print out a new label.



8. Maintenance



CAUTION: DANGER OF INJURY!

Turn off the main switch.

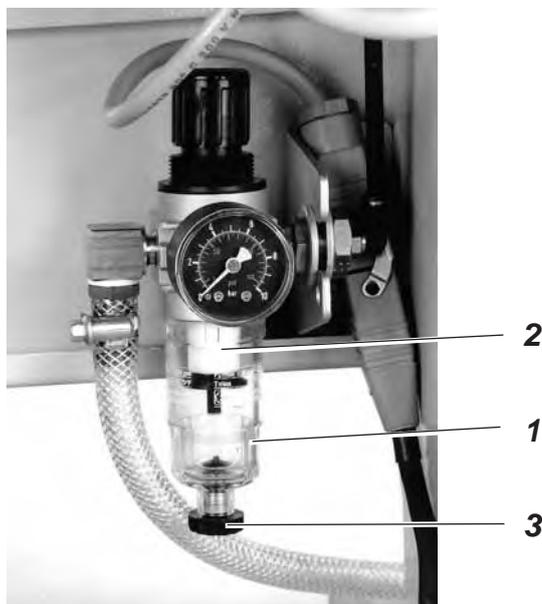
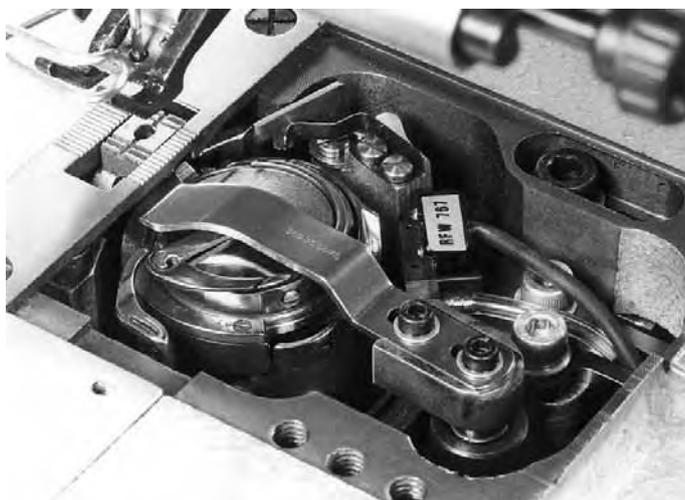
Maintenance of the sewing unit may only be undertaken with the machine turned off!

8.1 Cleaning

HINT

A clean sewing unit is a trouble-free sewing unit!

- Clean the hook area, thread cutter, needle plate, feeder and sewing head every day to remove fluff, fragments of yarn and other cutting waste!
- Clean the oil collector daily!



Check the water level in the pressure regulator every day. The water level must not rise as far as filter insert 2. After screwing in drain screw 3 blow out the water from the water separator 1 under pressure.

8.2 Oiling



CAUTION: DANGER OF INJURY!

Oil can cause skin eruptions.

Avoid protracted contact with the skin.

In the event of contact, thoroughly wash the affected area!



CAUTION:

The handling and disposal of mineral oils is subject to legal regulation.

Deliver used oil to an authorised collection point!

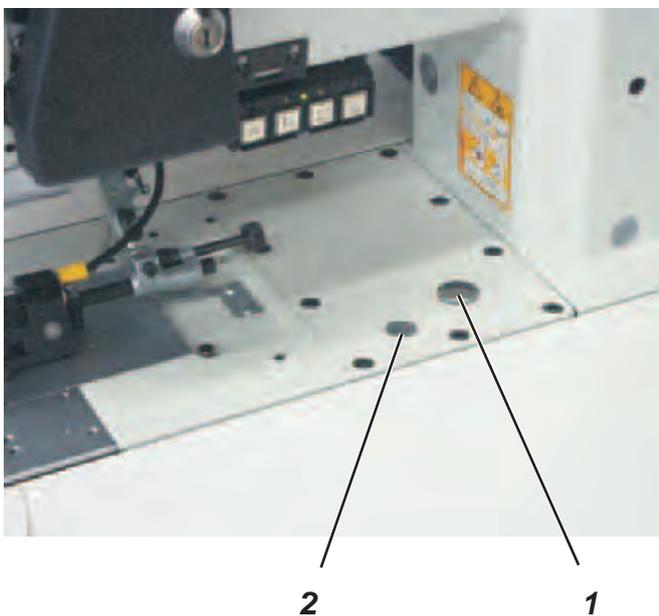
Protect your environment: take care not to spill oil!

Top up the oil reservoir using **DA-10** lubricating oil or an equivalent oil with the following specification only:

- Viscosity at 40°C: 10 mm²/s
- Flashpoint: 150°C

DA-10 This oil is available from **DÜRKOPP ADLER AG** retail outlets under the following part numbers:

| | |
|--------------------|-------------|
| 250-ml container: | 9047 000011 |
| 1-litre container: | 9047 000012 |
| 2-litre container: | 9047 000013 |
| 5-litre container: | 9047 000014 |



- Unscrew the oil-filler cap 2 and top up with oil.
- Check the oil level at sight glass 1.
The oil level must be between “**EMPTY**” und “**FULL**”.
- Replace oil-filler cap 2.
- Remove any oil which has overflowed into the oil collector.