

STOLL

THE RIGHT WAY TO KNIT

Operating instructions

	Type	Computer type	Component type
CMS 730 T	586	OKC	000 - 004
CMS 530 T	585	OKC	000 - 004



Date: 2008-06-27

Software-Version: V_OKC_001.007.00x_STOLL

H. STOLL GmbH & Co. KG, Stollweg 1, D-72760 Reutlingen, Germany

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- (3) This terms and the legal relations between the licensor and the licensee are subject to German law exclusively.
- (4) Place of fulfilment and jurisdiction in business transactions with businessmen is D-Reutlingen / Germany.

Installation of the programs

The exact installation instructions for the software are contained in the manual.

Software license for Windows XP

The license number is located on the left or on the right control cabinet.

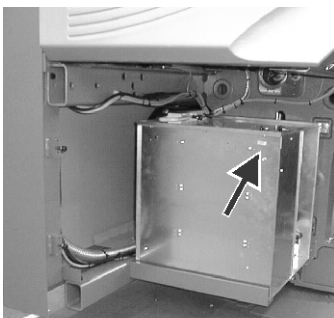


Fig. 1 Software license for Windows XP on the left control cabinet

Survey

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STOLL

THE RIGHT WAY TO KNIT

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1 About this document

This chapter contains information on:

- Function of this document ([see page 1-1](#))
- Target groups of this document ([see page 1-1](#))
- Information in this document ([see page 1-2](#))
- Symbols in this document ([see page 1-3](#))

1.1 Function of this document

This document explains how to operate your knitting machine.

It contains information on:

- Operation
- Maintenance in normal operation
- Elimination of malfunctions
- Maintenance
- Troubleshooting

1.2 Target groups of this document

The individual chapters of this document are directed at persons with different tasks and qualifications:

Target groups and qualifications	Chapter
All persons: Knowledge on the applicable safety guidelines for the workplace	1 About this document 2 Description of knitting machine
Operators: Knowledge of the basic principles of flat knitting	All of the above chapters 3 Producing with the knitting machine 4 Adjust the knitting machine 5 Maintenance of the knitting machine 6 Repairing the knitting machine
Technicians: Knowledge of the current electrotechnical safety guidelines and completed professional training in the field of textile mechanics	All chapters

Tab. 1-1 Allocation of target groups and chapters

1.3 Information in this document

This document contains all information on assembly, operation, servicing and maintenance of the knitting machine.

Additional information is provided by the following separate documents:

Document	Information contained
Spare Parts Catalog	Illustration of all spare parts with their order numbers
Manual for the STOLL pattern preparation unit	Using the STOLL pattern preparation unit
Programming manual	Writing knitting programs with SINTRAL
STIXX Instructions	Special equipment for measuring and controlling the stitch length
Stoll-knit report 2 (SKR2)	Software for operating and machine data acquisition
Order Management Software (OMS)	Software for the distribution, control and management of knitting orders

Tab. 1-2 Overview of the documents for the knitting machine and STOLL pattern preparation unit

Additional information is provided by:

- The STOLL branch office or STOLL dealer in your country
- The STOLL helpline:
 - Tel: +49-(0)7121-313-450
 - Fax: +49-(0)7121-313-455
- E-mail: helpline@stoll.com
- Internet: <http://www.stoll.com>
- Training courses at the STOLL training centers

Type plate Some information and descriptions depend on the component and computer type. There may be differences in the design depending on the date of manufacture of the machine. The type plate and the table which is located on the title page of these instructions indicate which machine model is concerned.

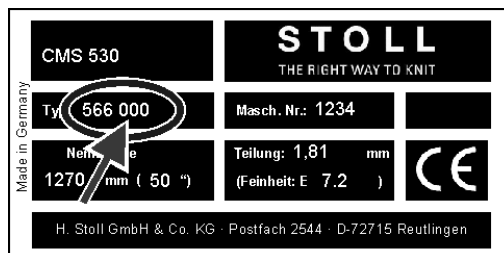


Fig. 1-1 Machine type plate

The second column of numbers in the "Typ" field indicates the component type. In the above example the machine concerned is the component type "000".

1.4 Symbols in this document

Some information in this document are marked with special symbols to make it easier to access this information quickly.

- ★ The additional equipment of your machine can deviate from this description depending on the machine type (type of machine, scope of supply, special equipment).



Background information is provided here.



Tips for optimal procedure are provided here.



DANGER

A warning is given here!

A warning protects you from death or injury and the knitting machine from serious damage.

→ Always read warnings carefully and observe them exactly.

1. Carry out first action.
2. Carry out second action.
3. Carry out third action.

- or -

→ Carry out one-step action.



If something fails to function properly:

Information on the possible causes is provided here.

→ To solve the problem, carry out the action described here.

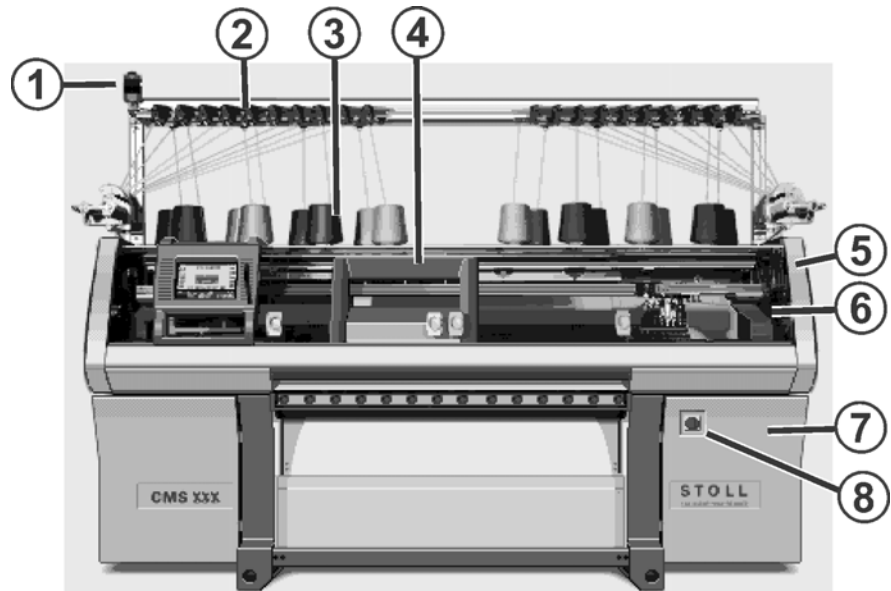
2 Description of knitting machine

This chapter contains information on:

- Components of the knitting machine ([see page 2-2](#))
- Yarn guide ([see page 2-7](#))
- Carriage ([see page 2-16](#))
- Knitting system ([see page 2-18](#))
- Control devices ([see page 2-21](#))
- Needle beds ([see page 2-23](#))
- Display and operating elements ([see page 2-35](#))

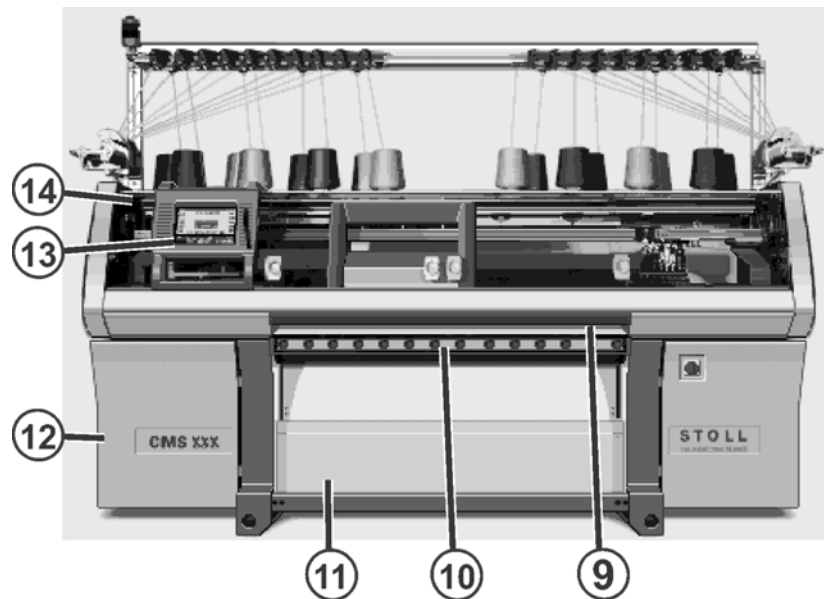
2.1 Components of the knitting machine

2.1.1 Front side



	Designation	Explanation
1	Signal light	It displays the operating condition of the knitting machine (green, yellow)
2	Yarn control device	Tensions and monitors the thread.
3	Bobbin board	The yarn bobbins are stopped on it.
4	Carriage	It moves over the needle beds. It controls the work positions of each yarn carrier and each and every needle in the needle bed.
5	Protective hood (left, right)	The reversing point of the carriage is secured with the safety cover.
6	Cover hoods	The entire stroke of the carriage is secured with a safety cover. You have to forbid everyone from reaching out into the running machine.
7	Control (right-hand side of the machine)	It controls the carriage run and the racking of the needle bed.
8	Main switch	Switching on and off of the machine. Emergency stop switch.

Tab. 2-1 Overview Machine-Element 1



	Designation	Explanation
9	Engaging rod	It activates and stops the carriage run.
10	Fabric take-down (main take-down, auxiliary take-down, comb take-down)	<p>Main take-down: Pulls the stitches away from the needle downwards in the fabric tray.</p> <p>Auxiliary take-down: Grasps the fabric directly under the needle bed.</p> <p>Take-down comb: With the comb take-down fabrics are automatically started and press off after completion.</p>
11	Fabric collection chamber	The take-down roller guides the finished fabric into the fabric collection chamber. There the fabric is protected from soiling.
12	Control (left-hand side of the machine)	<p>It controls the knitting sequence</p> <p>It saves the data of the knitting program.</p> <p>It controls the needle selection and the motors in the carriage.</p>
13	Touch screen	The touch screen enables communication with the machine control
14	USB connection	<p>Connection for a removable data carrier, containing knitting programs, operating systems and machine data.</p> <p>Recommendations: Use USB Memory Stick. Also possible: Floppy disk drive, CD drive, DVD drive, external hard disk.</p>

Tab. 2-2 Overview Machine-Element 2

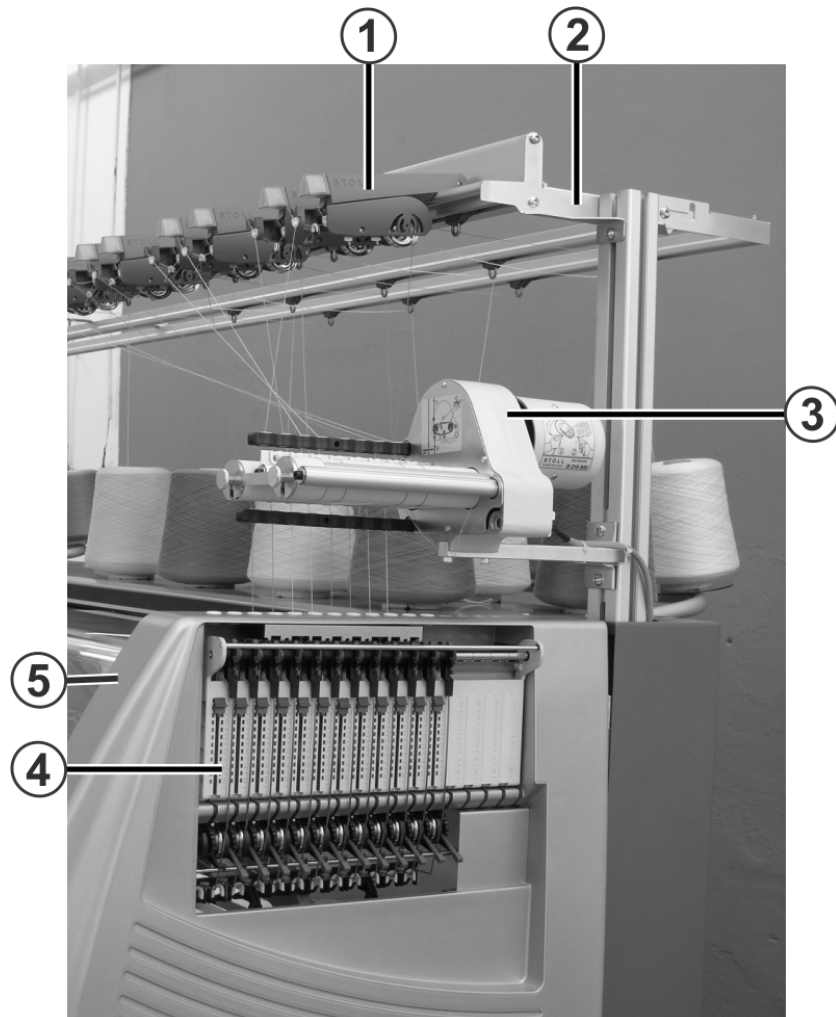
Inner side



	Designation	Explanation
1	Carriage	It moves over the needle beds. It controls the work positions of each yarn carrier and each and every needle in the needle bed.
2	Needle bed	Every machine has a front and a rear needle bed. There are grooves in the needle bed which are run by needles.
3	Thread clamp and cutting device (left, right)	The thread clamping and cutting device holds the thread of a yarn carrier not used for knitting at the moment.
4	Yarn carrier	It gets pulled by the carriage over the needle bed and leads the thread into the needle.
5	Yarn carrier rail	Four rails are attached to the upper part of the needle bed. The yarn carrier glides on this rail.
6	Additional beds	The additional beds are attached to the upper part of the needle bed. They reduce the necessary carriage movements when the fabric is narrowed.

Tab. 2-3 Overview Machine-Element 3

2.1.2 Lateral view (right)

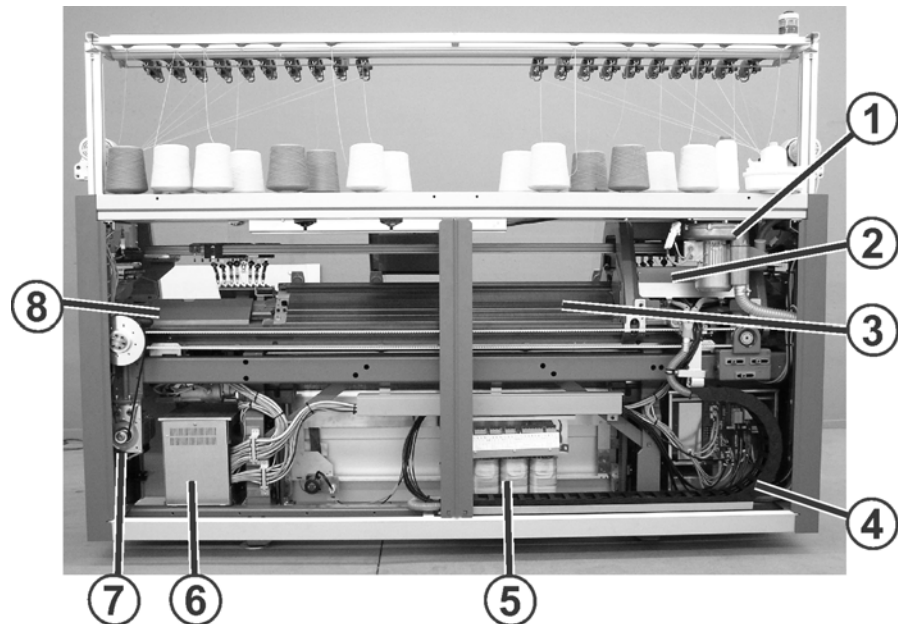


	Designation	Explanation
1	Yarn control device	Tensions and monitors the thread.
2	Yarn feeding and control device	On this the yarn control devices and the friction feed wheels are mounted.
3	Friction feed wheel	It pulls the thread from the bobbin and feeds it to the yarn carrier with a constant tension.
4	Lateral yarn tensioner	It monitors and tensions the thread.
5	Protective hood (left, right)	The reversing point of the carriage is secured with the safety cover.

Tab. 2-4 Overview Machine-Element 4

2.1 Components of the knitting machine

2.1.3 Rear side



	Designation	Explanation
1	Fluff absorption	The fluff absorption removes the yarn lint from the upper area of the needle beds.
2	Carriage	It moves over the needle beds. It controls the work positions of each yarn carrier and each and every needle in the needle bed.
3	Rear needle bed	Every machine has a front and a rear needle bed. There are grooves in the needle bed which are run by needles.
4	Trailing cable (energy chain)	The cables for the carriage that travels hence and forth are fed alongwith in the energy chain.
5	Transformer (Fuses)	The knitting machine can be operated with various mains voltages.
6	Control (right-hand side of the machine)	It controls the carriage run and the racking of the needle bed.
7	Main drive	The carriage assembly is driven by the drive motor via a toothed belt
8	Racking device	Racks the rear needle bed laterally.

Tab. 2-5 Overview Machine-Element 5

2.2 Yarn guide

The yarn guide has the following tasks:

- Guiding knitting yarn
 - from the bobbin to the yarn carrier
 - as friction-free as possible
 - without the threads touching or crossing over each other
- Controlling knitting yarn for
 - thread end
 - Thread breakage
 - Knots
- Controlling yarn tension
- Preventing sagging threads with yarn tensioning

2.2.1 Thread lines

Various thread lines are provided for threading up the yarn on the knitting machine. The optimal thread line depends on the yarn and pattern.

Yarn	Thread line
Seldom used threads, e.g. elastic yarns	Thread line 1
Seldom used threads, e.g. draw separation threads	Thread line 2
Frequently used threads	Simple patterns: Thread line 2 Difficult patterns: Thread line 3
Difficult-to-process threads	Thread line 3
Equally long fabrics	Thread line 4

Tab. 2-6 Determining the thread line

The following pictures show the four possible thread lines.

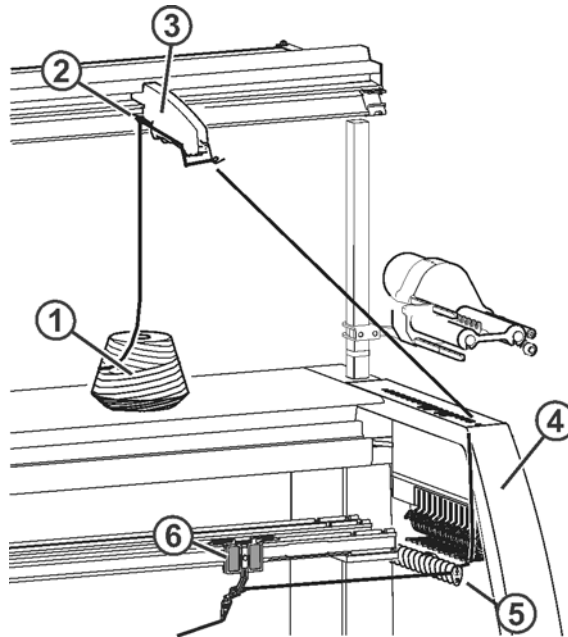


Fig. 2-1 Thread line 1

- | | |
|-----------------------|--------------------|
| 1 Bobbin | 4 Safety cover |
| 2 Yarn guide bracket | 5 Thread deflector |
| 3 Yarn control device | 6 Yarn carrier |

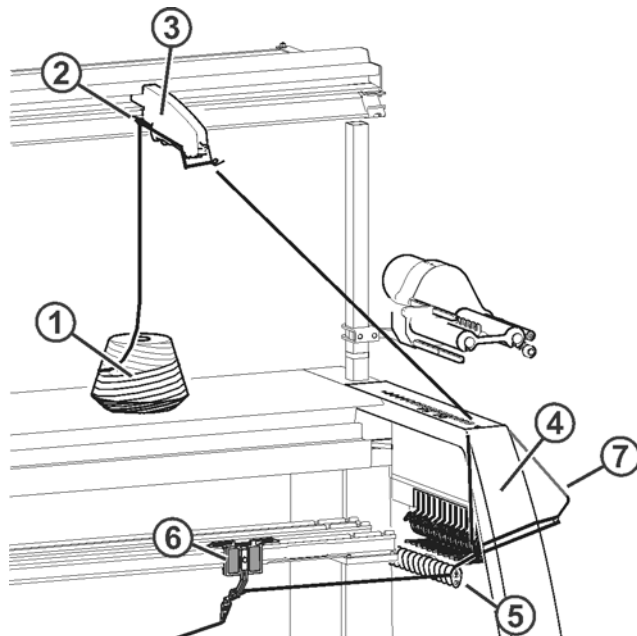


Fig. 2-2 Thread line 2

- | | |
|-----------------------|-----------------------|
| 1 Bobbin | 5 Thread deflector |
| 2 Yarn guide bracket | 6 Yarn carrier |
| 3 Yarn control device | 7 Side yarn tensioner |
| 4 Safety cover | |

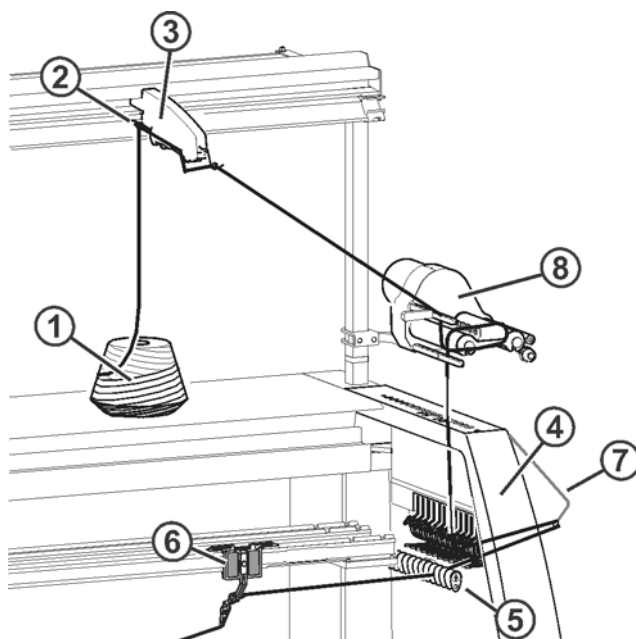


Fig. 2-3 Thread line 3

- | | |
|-----------------------|-----------------------|
| 1 Bobbin | 5 Thread deflector |
| 2 Yarn guide bracket | 6 Yarn carrier |
| 3 Yarn control device | 7 Side yarn tensioner |
| 4 Safety cover | 8 Friction feed wheel |

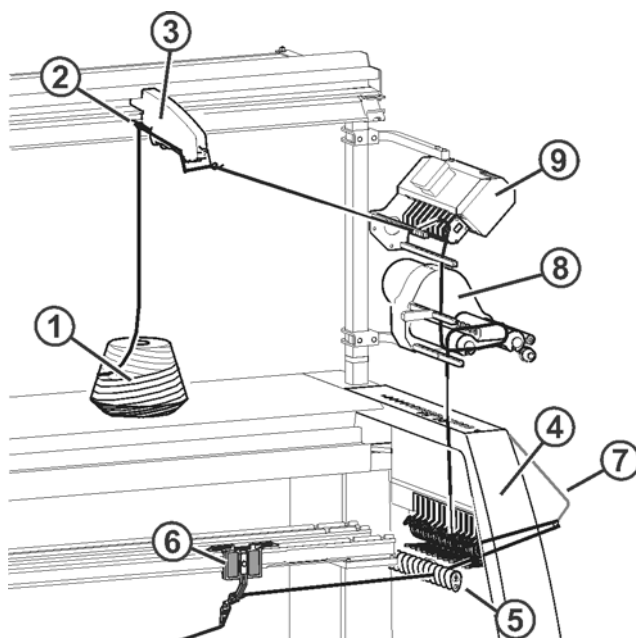


Fig. 2-4 Thread line 4

- | | |
|-----------------------|-----------------------|
| 1 Bobbin | 6 Yarn carrier |
| 2 Yarn guide bracket | 7 Side yarn tensioner |
| 3 Yarn control device | 8 Friction feed wheel |
| 4 Safety cover | 9 STIXX device |
| 5 Thread deflector | |

2.2.2 Yarn control device

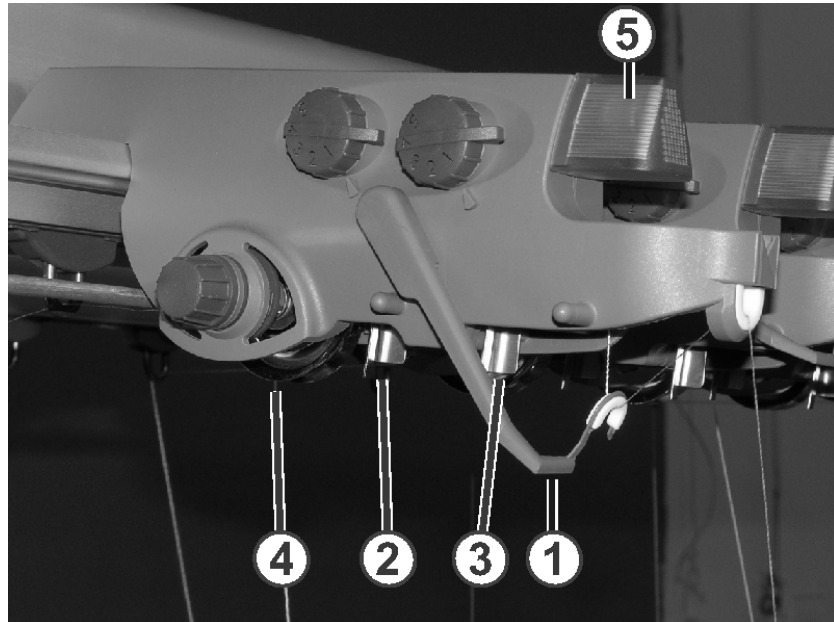


Fig. 2-5 Yarn control device

- | | |
|---------------------------------|---------------------|
| 1 Thread break control | 4 Thread brake disc |
| 2 Knot detector for large knots | 5 LED |
| 3 Knot detector for small knots | |

The elements of the yarn control device can individually be adjusted to the yarn being processed.

The thread break control (1) monitors the thread ends and switches off the machine in case of a thread breakage or end. The error is indicated by the LED (5) on the yarn control device, the signal lamp and on the touch screen.

In the case of large knots in the yarn, the knot detector switches off the knitting machine. The error is indicated by the LED (5) on the yarn control device, the signal lamp and on the touch screen.

In the case of small knots in the yarn, the machine knits a programmed number of rows at reduced speed.

The thread brake setting (4) regulates the yarn tension and prevents the thread from hanging through.

2.2.3 Lateral yarn guide

The friction feed wheel, the active thread clamp, the lateral yarn tensioner and the permanent brake work together.



Fig. 2-6 Lateral yarn guide

- | | | | |
|---|---------------------|---|---------------------|
| 1 | Friction feed wheel | 3 | Side yarn tensioner |
| 2 | Active thread clamp | 4 | Permanent brake |

Friction feed wheel The friction rollers of the friction feed wheel (1) reduce the yarn tension. The friction feed wheel is inserted for almost all guages. It is not inserted only for the guages E 16, E 18 and E 9.2 , the storage feed wheel is used.SFE.

Storage feed wheel SFE The feed wheel serves for intermediate storage of the thread. The cylindrical coiling and the separately positioned thread layers offer a more even thread tension when yarn is being drawn off than when drawing off the bobbin. Peaks in tension are caught up and compensated by the feed wheel.

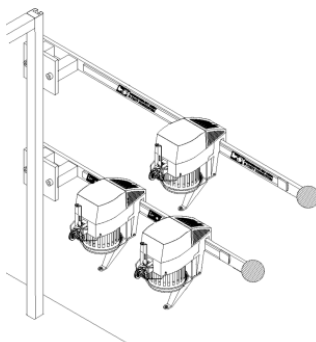


Fig. 2-7 Storage feed wheel SFE

According to use up to 5 feed wheels can be inserted on each machine side.

Active thread clamp

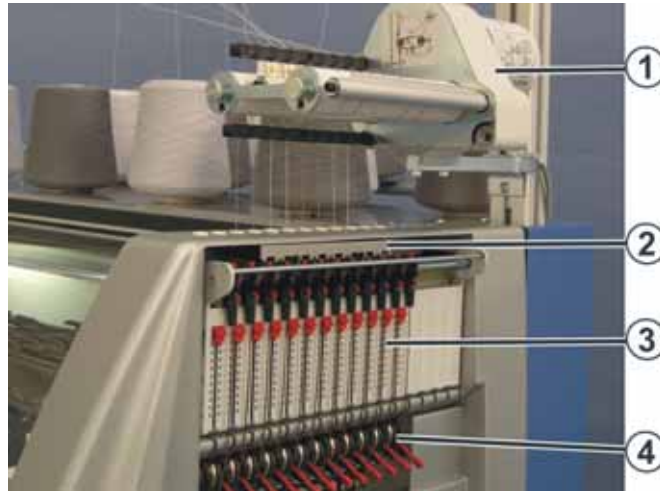


Fig. 2-8 Lateral yarn guide

- | | |
|-----------------------|-----------------------|
| 1 Friction feed wheel | 3 Side yarn tensioner |
| 2 Active thread clamp | 4 Permanent brake |

The active thread clamp is found under the friction feed wheel. It is integrated in the lateral safety cover. The thread clamp is positioned in such a manner that each track of the friction feed wheel is arranged corresponding to a track of the thread clamp. In all there are 8 tracks available.

In the case of a friction feed wheel sometimes a problem appears: When a thread is not knitted over a longer period of time it is possible that the friction feed wheel releases some threads because of the friction and thereby the lateral yarn tensioner swivels so much outwards that the machine stops. This hinders the thread clamp. If the yarn tensioner swivels over the angle by approx. 45 degree, the clamp closes automatically. If the thread is knitted again the yarn tensioner swivels inwards and the clamp is opened.

Side yarn tensioner The lateral yarn tensioner has two tasks:

Function	Description
Control the thread	Switch off the knitting machine in case of a thread break or thread end.
Tension the thread	When the yarn carrier moves on the yarn tensioner, it can hold the threads that are not yet being knitted in a tensioned state. The yarn tensioner swivels and holds the threads tensioned.

In the case of a thread breakage the side yarn tensioner swivels outwards and switches off the knitting machine. On the upper end of the yarn tensioner a magnet is fixed that releases a contact in the lateral safety cover without touching it.

2.2.4 Thread clamping and cutting device

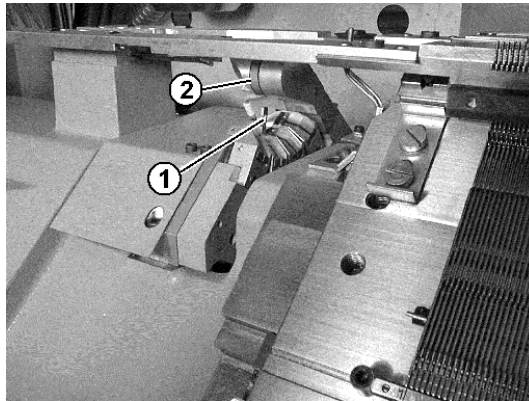


Fig. 2-9 Thread clamping and cutting device

- 1 Clamping devices
- 2 Catch hook

The thread clamping and cutting devices are mounted on the left and right next to the needle bed. Each one works with eight clamping devices (1).

The thread clamping and cutting device holds the thread of a yarn carrier not used for knitting at the moment. When changing colors, a yarn carrier no longer used is parked behind a clamping device. The catch hook (2) pulls the thread downward. Then the thread is clamped and cut off. When the yarn carrier is used again, the clamp opens after knitting a few rows and the yarn end is released. The number of rows knitted until the clamping device opens up, is programmed in the knitting program.

Yarn guide system

On the left and right side of the needle bed is the yarn guide system. It works together with the thread clamping and cutting device. The yarn guide system comprises of two yarn carrier bows and the thread clamp.

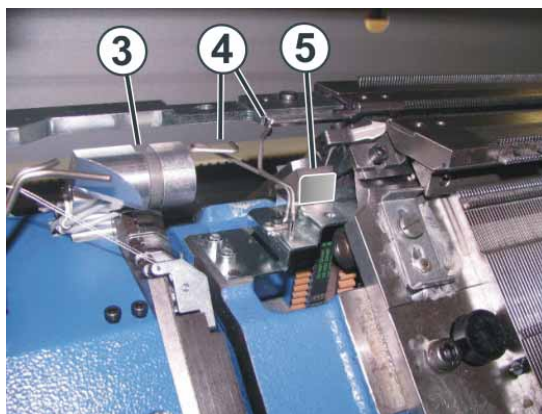


Fig. 2-10 Yarn guide system

- 3 Thread clamping and cutting device
- 4 Yarn carrier bow
- 5 Thread clamp

It has the following tasks:

- **Yarn carrier bow:** When the yarn carrier moves in the clamping and cutting position, the thread is held securely by the thread clamping and cutting device.

When the yarn carrier is used again, a bow holds the thread deep so that it can be securely grasped by the needle also when the yarn carrier was stopped outside the thread clamping and cutting device.

- **Thread clamp:** If the yarn carrier is used again, then the thread is inserted in the thread clamp. It holds the thread firmly so long till it gets pulled from the clamp by the tensile force of the fabric. The thread clamp prevents the thread ends getting caught by the rollers of the auxiliary take-down and winding themselves around the rollers. The column width (clamping force) of the thread brake is adjustable through a screw.

2.2.5 Intarsia yarn carrier (special equipment) *

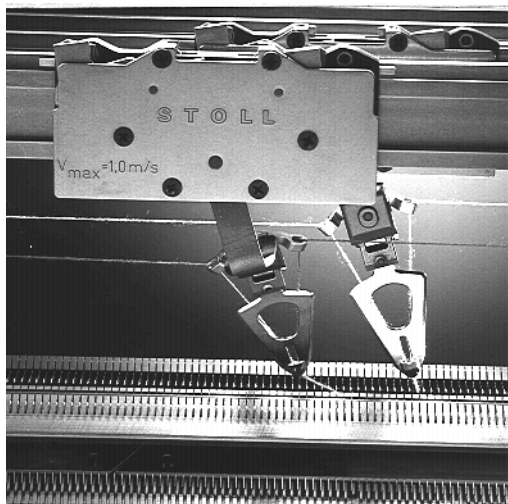


Fig. 2-11 Intarsia yarn carrier

Intarsia yarn carriers can be installed to produce intarsia patterns.

Further information:

- Symbols in this document ([see page 1-3](#))

2.2.6 Plating yarn carriers *

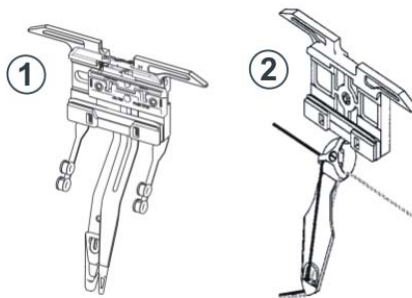


Fig. 2-12 Plating yarn carrier

- | | | |
|---|----------------------------|------------|
| 1 | Double bow yarn carrier | E 5 - E 18 |
| 2 | Double eyelet yarn carrier | E 3 - E 4 |

Plating yarn carriers can be built-in for plating.

Further information:

- Symbols in this document ([see page 1-3](#))
- Special equipment ([see page 9-1](#))

2.3 Carriage

2.3.1 Drive, speed and operating path



Fig. 2-13 Carriage

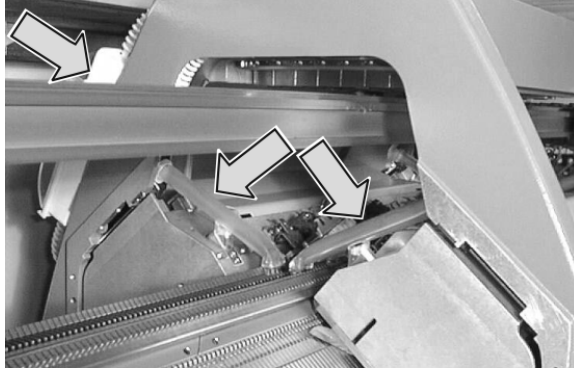
The carriage assembly is driven by the drive motor via a toothed belt. The speed is infinitely programmable, and can therefore be adapted to the yarn material, pattern and working step.

Limit switches control the path of the carriage assembly. If the carriage assembly moves too far outward, the limit switch stops the knitting machine.

The operating path of the carriage is controlled by the knitting program and may differ for each knitting or transfer row. The carriage assembly reverses when the last working needle leaves the system.

2.3.2 Suction device and cleaning row

Suction



Fluff absorption and lint container (from component type 001 on)

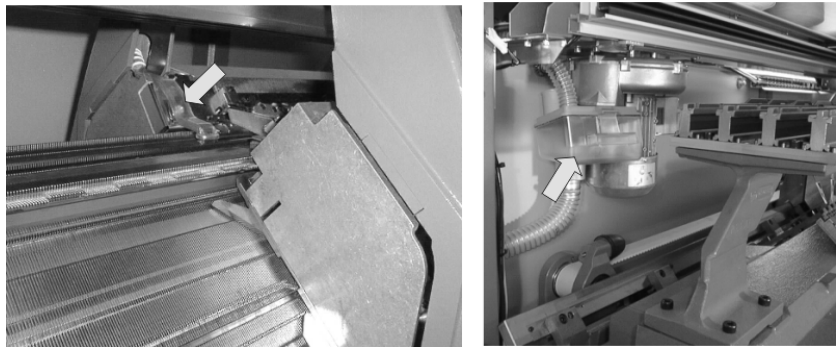


Fig. 2-14 Fluff absorption and lint container (component type 000)

The suction removes the yarn lint from the upper area of the needle beds. The fluff is collected in a container.

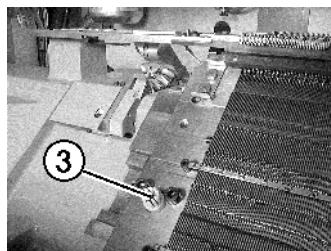


Fig. 2-15 Brushes for cleaning the selection systems

After a programmable number of knitting rows, the carriage assembly carries out a cleaning row over the entire needle bed during which the lint is extracted from the needle bed. Brushes (3) are mounted outside on the needle bed which clean the selection systems during the cleaning row.

Further information:

- Switching units on and off ([see page 1-3](#))

2.4 Knitting system

2.4.1 Needle paths and design

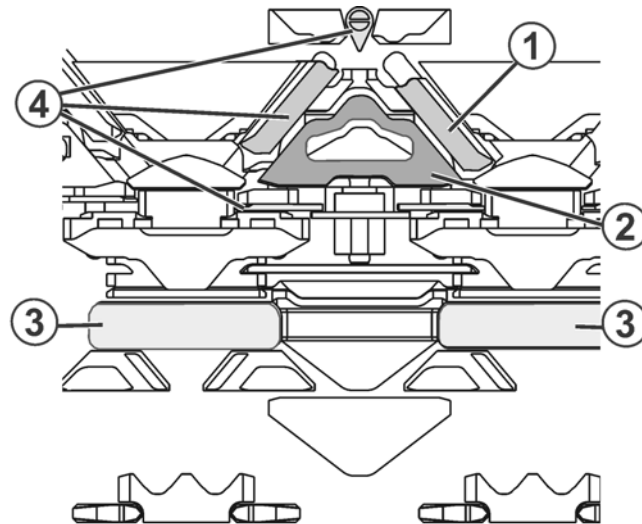


Fig. 2-16 Knitting system

- | | | | |
|---|-------------|---|------------------|
| 1 | Stitch cam | 3 | Selection system |
| 2 | Raising cam | 4 | movable cams |

Each knitting system can knit using the three-way technique without limitation.

Each needle can be controlled in seven positions:

- Stitch
- Tuck
- out of operation
- Transfer
- Take-over
- Split - stitch/transfer
- Split - stitch/take-over

This results in the following possibilities during stitch formation:

- Stitch
- Tuck
- out of operation
- Transfer of stitches and tuck loops from the front to the rear needle bed or vice-versa, even simultaneously in both directions

The selection system only selects the needles which knit a stitch or tuck, transfer or split-stitch. All other needles are not selected and do not sink the stitches.

2.4.2 Raising cams

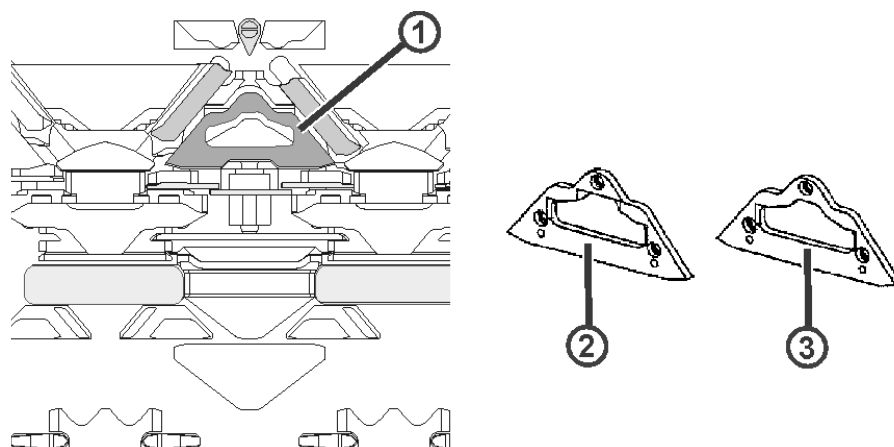


Fig. 2-17 Raising cams

- 1 Position of raising cam
- 2 Raising cam for transfer
- 3 Raising cam for split-stitch

There are two different raising cams for transfer and split-stitch. When the knitting machine is shipped, the raising cams for transfer (2) are built-in. The raising cams for split-stitch (3) are contained in the accessories.



The raising cam for split-stitch (3) can also be used for normal transfer patterns. In the case of particularly delicate yarns, the raising cam for transfer (2) should be used so that the yarn does not tear while transferring the stitches and no dropped stitches result.

2.4.3 Holding-down function

The holding-down jacks hold down the fabric when the needles for stitch formation are driven out. The holding-down jacks are motor-controlled.

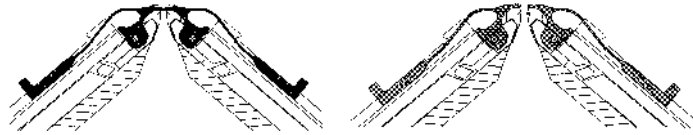


Fig. 2-18 Holding down jacks (left: closed, right: open)

The closing position of the holding-down jacks can be adjusted with the knitting program.

2.4.4 Step motor for adjusting the stitch tension

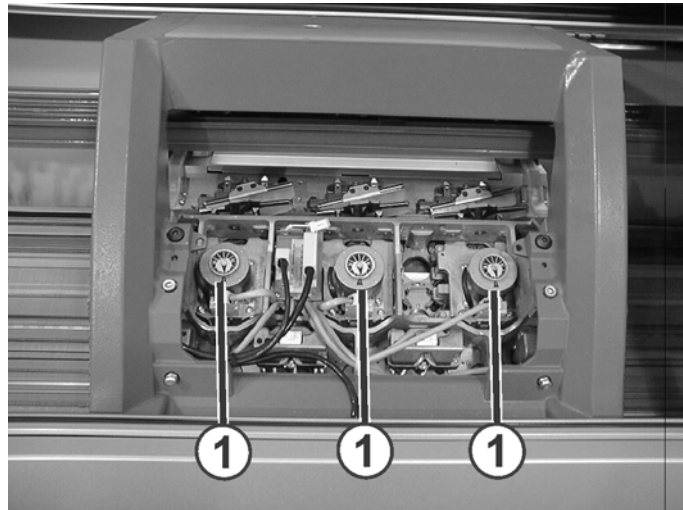


Fig. 2-19 Step motor for adjusting the stitch tension

A step motor (1) on each knitting system adjusts the stitch tension. The step motor is controlled by the knitting program.

The stitch tension can individually be adjusted

- for individual areas in the fabric which are subjected to particular loading, e.g. narrowing edges or pattern motifs
- for individual stitch cams
- for different yarns (yarn count correction)

During knitting, changes can also be made via the touch screen.

2.5 Control devices

2.5.1 Impulse giver

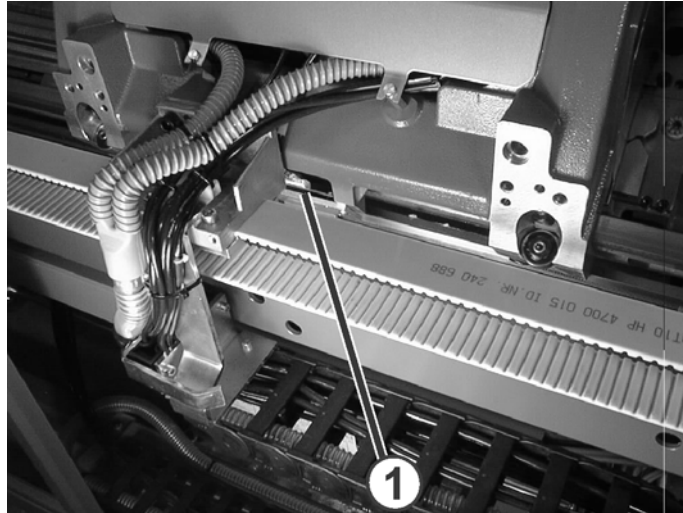


Fig. 2-20 Impulse giver

The impulse giver (1) scans the grooves and trick walls on the impulse giver rail on the guide rail for the carriage. It recognizes the position of the carriage assembly and specifies the time for the selection of the selection jacks by the selection system.

2.5.2 Stop resistance

If the power consumption of the drive motor differs from a stored value, the knitting machine is stopped. The reason for a higher power consumption may, for example, be a sticky needle.

2.5.3 Shock stop

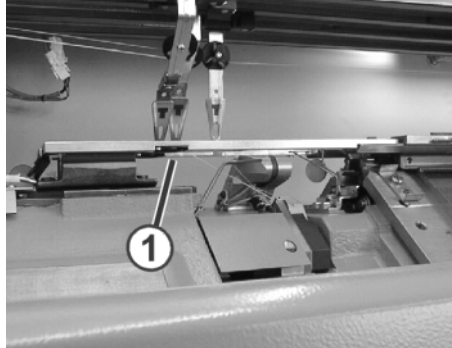


Fig. 2-21 Shock stop for additional beds

In the case of an impact on the needle bed or the additional bed, e.g. in the case of needle breakage, the piezo-electric shock stop switches off the knitting machine. The piezo-electric shock stop is located below the needle beds. On the additional beds the piezo-electric shock stop (1) is located below the connections.

2.5.4 Needle detector

The needle detector (1) checks the height of the fabric in the needle area.

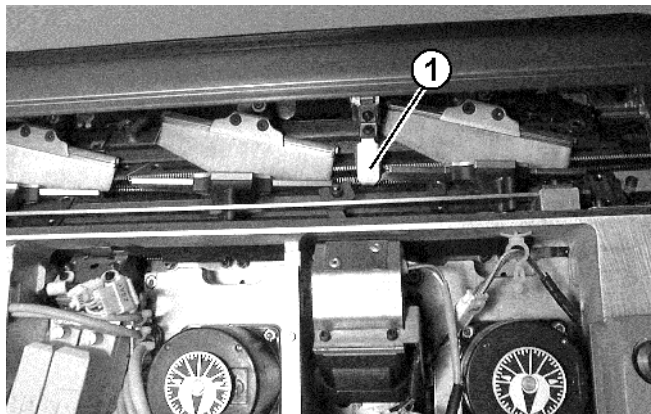


Fig. 2-22 Needle detector

The needle detector (1) on the rear cam box automatically switches off the machine in case of needle breakage.

If needles are defective (e.g. latch breakage), there is a danger of the fabric not being taken down downward and gathering in the needle area. To prevent major damage, the machine is stopped.

2.6 Needle beds

2.6.1 Design

The rear needle bed can be racked to the side with the racking device.

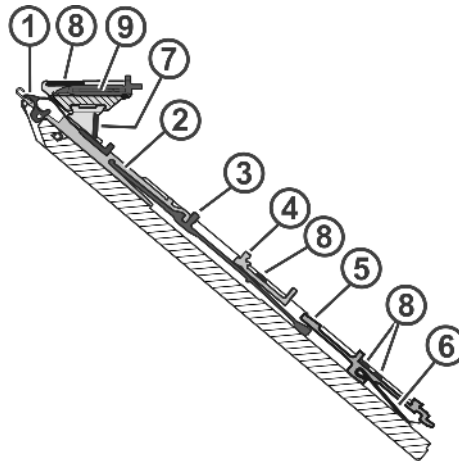


Fig. 2-23 Needle bed

- | | | | |
|---|---------------------|---|---------------|
| 1 | Holding-down jack | 6 | Needle |
| 2 | Needle | 7 | Coupling part |
| 3 | Coupling part | 8 | Cover rail |
| 4 | Intermediate slider | 9 | Transfer part |
| 5 | Selection jack | | |

The moveable parts (2) till (6) are fixed by multiple rails in the needle bed. To replace a part, the corresponding rail must be pulled to the side with the extraction hook. This takes place with the help of the extraction hook. It is included in the accessories.

2.6.2 Racking device (CMS 530 T)

The front needle bed is permanently screwed to the needle bed carrier. The rear needle bed can laterally be racked relative to the front needle bed. The additional beds can also be racked.

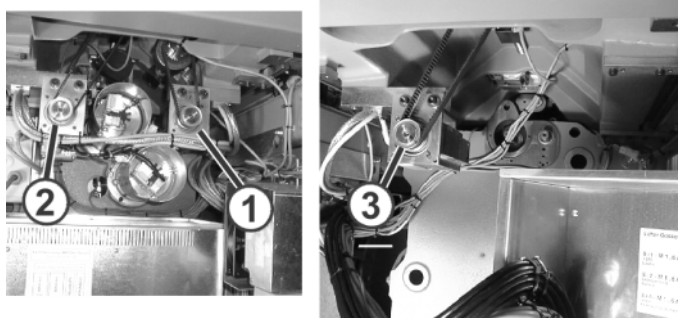


Fig. 2-24 Racking motors

- 1 rear needle bed 3 left additional beds
 2 right additional beds

The racking motors are located below the needle bed support. They rack the rear needle bed or the left and right additional beds to the side. The racking motors are controlled by the knitting program. The racking movement is infinitely programmable.

Further information:

- Additional beds ([see page 2-27](#))

Racking course

The racking course of the rear needle bed may be up to 4 inches (approx. 10 cm). Depending on the machine gauge, this is a maximum racking course over 20 to 56 needles. The racking course for the additional beds may be up to 2 inches (approx. 5 cm). Depending on the machine gauge, this is a maximum racking course over 10 to 28 needles.

Machine gauge	Maximum racking course of rear needle bed	Maximum racking course of the additional beds
E 14	56 needles	28 needles
E 12	48 needles	24 needles
E 10	40 needles	20 needles
E 8	32 needles	16 needles
E 7	28 needles	14 needles
E 5	20 needles	10 needles

Tab. 2-7 Maximum racking course in dependence on the machine gauge

Transfer with needle beds	During transfer the rear needle bed is racked until the needles of the front and rear needle beds almost touch. The needle dips into the pelerine spring of the needle opposite.
OVERRACKING	The overracking mechanism pre-stretches the stitches prior to transfer so, that they are somewhat enlarged. Then the needle bed is reset to the programmed racking. As a result, the stitches are also transferred very reliably even at a high carriage speed. The overracking mechanism can be adjusted in the knitting program.
Compensation of different stitch length forces	A measuring device controls the exact position of the needle bed. If the tensile force of the stitches decreases during transfer, as several stitches have already been transferred, the racking motor adjusts automatically so that all stitches have the same transfer conditions.
Slow racking	To protect the yarn, the needle beds can be racked very slowly. The carriage assembly then waits at the reversing point until the needle beds are racked.

2.6.3 Racking device (CMS 730 T)

The front needle bed is permanently screwed to the needle bed carrier. The rear needle bed can laterally be racked relative to the front needle bed. The additional beds can also be racked.

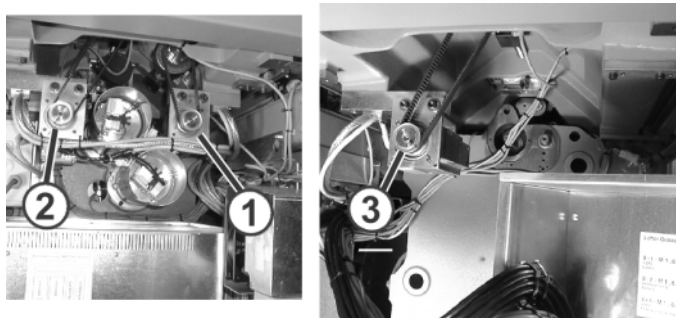


Fig. 2-25 Racking motors

right machine side

left machine side

1 rear needle bed

3 rear additional bed

2 front additional bed

The racking motors are located below the needle bed support. They rack the rear needle bed or the front and rear additional beds to the side. The racking motors are controlled by the knitting program. The racking movement is infinitely programmable.

Further information:

- Additional beds ([see page 2-27](#))

Racking course

The racking course of the rear needle bed may be up to 4 inches (approx. 10 cm). Depending on the machine gauge, this is a maximum racking course over 20 to 56 needles. The racking course for the additional beds may be up to 2 inches (approx. 5 cm). Depending on the machine gauge, this is a maximum racking course over 10 to 28 needles.

Gauge	Maximum racking course of rear needle bed	Maximum racking course of the additional beds
E 14 (E 7.2)	56 needles	28 needles
E 12 (E 6.2)	48 needles	24 needles
E 10	40 needles	20 needles
E 8	32 needles	16 needles
E 7	28 needles	14 needles
E 5	20 needles	10 needles

Tab. 2-8 Maximum racking course in dependence on the machine gauge

Transfer with needle beds	During transfer the rear needle bed is racked until the needles of the front and rear needle beds almost touch. The needle dips into the pelerine spring of the needle opposite.
OVERRACKING	The overracking mechanism pre-stretches the stitches prior to transfer so, that they are somewhat enlarged. Then the needle bed is reset to the programmed racking. As a result, the stitches are also transferred very reliably even at a high carriage speed. The overracking mechanism can be adjusted in the knitting program.
Compensation of different stitch length forces	A measuring device controls the exact position of the needle bed. If the tensile force of the stitches decreases during transfer, as several stitches have already been transferred, the racking motor adjusts automatically so that all stitches have the same transfer conditions.
Slow racking	To protect the yarn, the needle beds can be racked very slowly. The carriage assembly then waits at the reversing point until the needle beds are racked.

2.7 Additional beds

CMS 530 T The additional beds of the CMS 530 T are divided in the center.

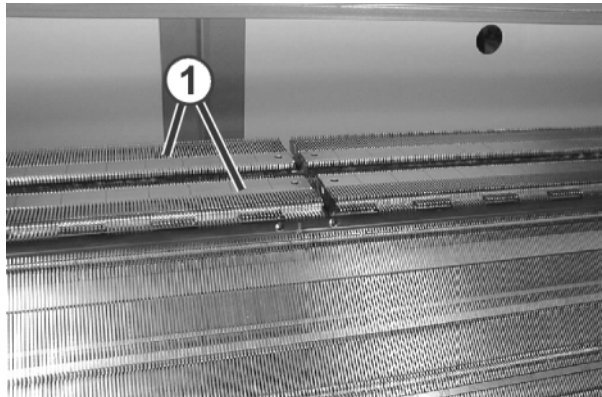


Fig. 2-26 Divided additional beds

The left-hand sides of the front and rear additional beds (1) are permanently connected to each other, as is the right-hand side. Each side can be offset independently of the other.

This has the following advantages:

- efficient narrowing sequences with opposing narrowing, for example with a V-neck
- reduction of the necessary carriage strokes with narrowing, especially with a double jersey fabric



If the additional bed has not been used for a longer period of time, the transfer parts may be soiled. For this reason, check the transfer parts for smooth movement before starting production.

➔ If the transfer parts do not move smoothly, clean the additional beds thoroughly.

Further information:

- Cleaning additional bed thoroughly ([see page 5-20](#))

2.7.1 Additional cam

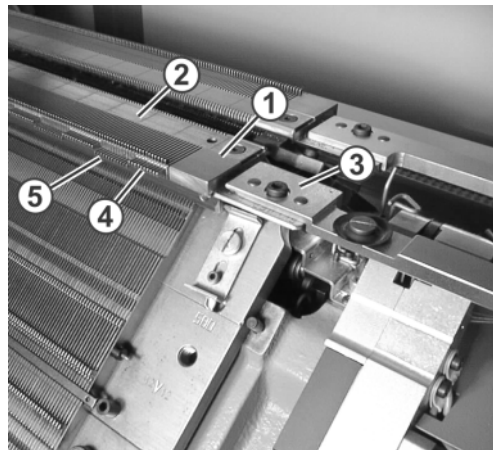


Fig. 2-27 Additional bed

- | | | | |
|---|---------------------------|---|---------------------------|
| 1 | Additional bed | 4 | Transfer part top butt |
| 2 | Cover rail | 5 | Transfer part bottom butt |
| 3 | Connecting additional bed | | |

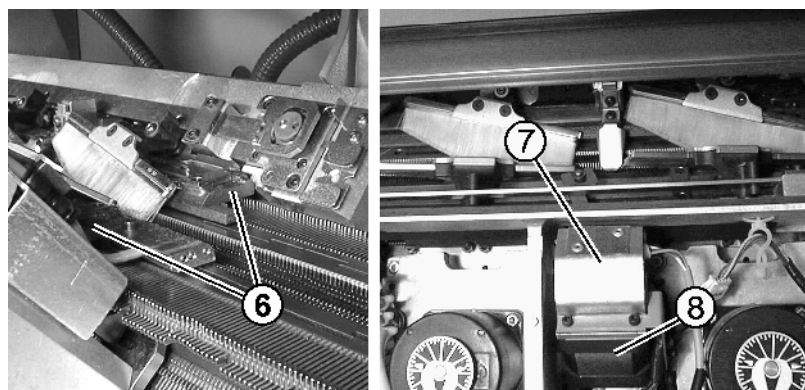


Fig. 2-28 Additional cam

The transfer parts in the additional bed (1) are selected with the selection block (7) and moved with the additional cam (6). At the carriage reversal point the additional cam is switched over by the additional cam motor (8).

2.7.2 Transfer methods with additional beds

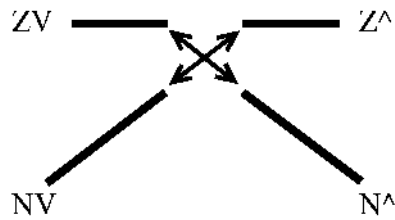


Fig. 2-29 Transfer methods

Transfer methods	from	to
1	rear needle bed (N^A)	front additional bed (ZV)
2	front additional bed (ZV)	rear needle bed (N^A)
3	front needle bed (NV)	rear additional bed (Z^A)
4	rear additional bed (Z^A)	front needle bed (NV)

Tab. 2-9 Transfer methods with additional beds

A transfer with additional beds always consists of two consecutive strokes:

- 1. Stroke: Transferring from the needle bed to the additional bed in last system (S3)
- 2. Stroke: Transferring back from the additional bed to the needle bed in the first system (S1)

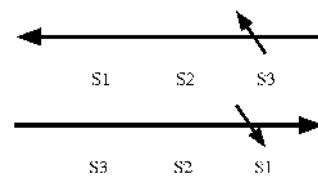


Fig. 2-30 Transfer top: 1. Stroke to the left; bottom: 2. Stroke to the right

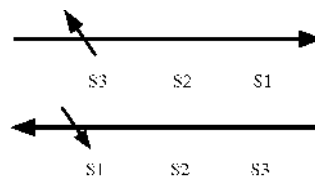


Fig. 2-31 Transfer top: 1. Stroke to the right; bottom: 2. Stroke to the left

2.8 Fabric take-down

The fabric take-down consists of three units:

- Main take-down
- Auxiliary take-down
- Take-down comb

Each unit is driven by a separate motor. The motor can individually be adapted to the knitting situation.

2.8.1 Main take-down

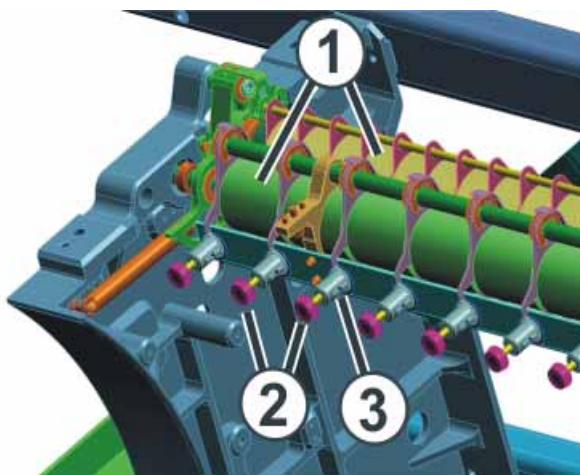


Fig. 2-32 Main take-down

- 1 Take-down rollers
- 2 Knurled screws
- 3 Scale

A motor drives the take-down rollers (1). The take-down rollers guide the finished fabric into the fabric collection chamber. There the fabric is protected from soiling.

Take-down tension	<p>The take-down tension consists of:</p> <ul style="list-style-type: none">■ Pretensioning when the carriage assembly is at the reversing point■ Take-down tension during knitting <p>Both tensions are independently set of each other. The optimum value for the take-down tension is dependent on the working width, yarn material and pattern.</p> <p>The pressure of the take-down rollers (1) is individually adjusted with the knurled screws (2). The regulation acts on two take-down rollers. A scale (3) simplifies the adjustment of the take-down roller.</p>
Premature wear of the take-down roller	<p>The roller rubber of the take-down roller (1) is prematurely worn by:</p> <ul style="list-style-type: none">■ Fabric take-down values too high (roller spins)■ Contact pressure too high■ Yarns harmful to rubber, e.g. abrasive, sanding yarns or yarn finishes such as greases or oils■ UV radiation■ Cleaning agents harmful to rubber, e. g. ether or fuels. <p>Recommendation: Use cleaning petrol for cleaning</p>

2.8.2 Auxiliary take-down

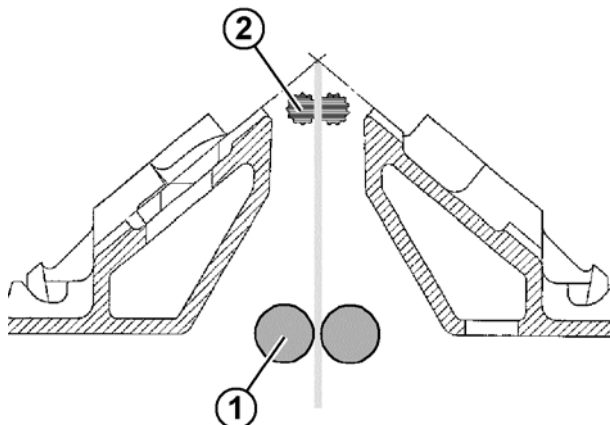


Fig. 2-33 Auxiliary take-down

- 1 Main take-down
- 2 Auxiliary take-down

The auxiliary take-down grasps the fabric directly under the needle bed.

The auxiliary take down supports:

- Stitch formation
- Adjustment of the fabric take-down to requirements typical of the fabric
- Narrowing or widening

If the fabric is only taken down with the main take-down, the rollers of the auxiliary take-down are pivoted apart.

The take-down force and the take-down speed are programmable.

2.8.3 Take-down comb

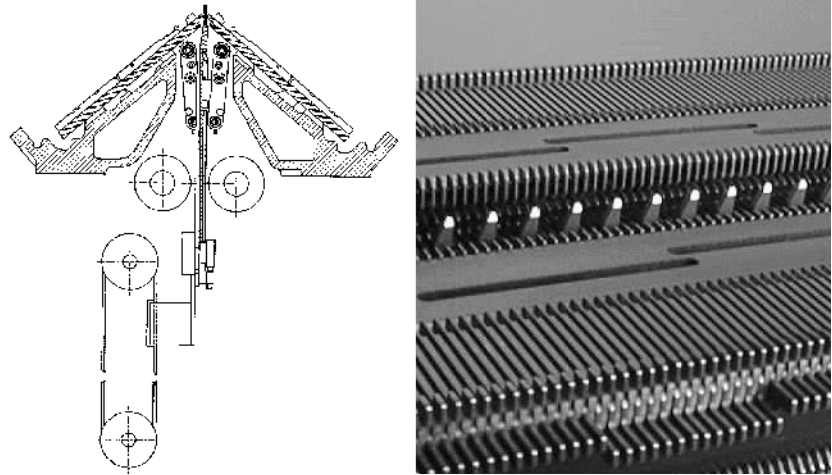


Fig. 2-34 Take-down comb

With the take-down comb fabric pieces are automatically started and press off after completion.

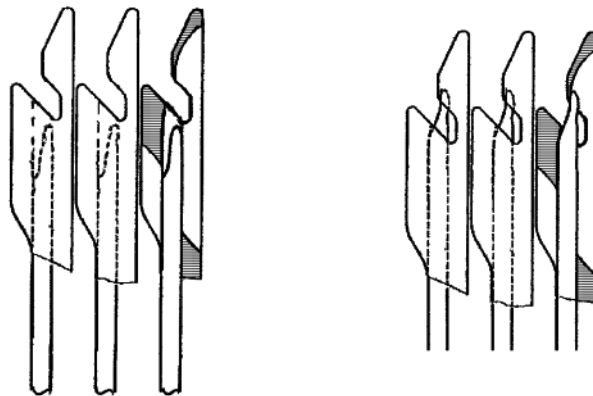


Fig. 2-35 Comb hooks of take-down comb with sliders (left open, right closed)

When starting a new knitted panel, a net course is knitted with the elastic thread (comb thread). The main and auxiliary take-down open and the take-down comb moves upward. The sliders open the holding-down recesses on the comb hooks.

The comb thread is automatically laid in the holding-down recesses and the sliders close the holding-down recesses again.

After two stitch rows, the draw thread is inserted and the knitting machine begins with the fully fashioned article. The take-down comb adopts the settings of the main take-down and pulls the fabric off downward.

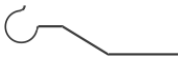
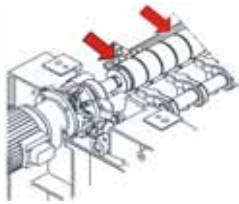

2.8 Fabric take-down

As soon as the comb hooks are below the main take-down, the take-down rollers close and the fabric is transferred to the fabric take-down. The sliders open the holding-down recesses on the comb hooks. The take-down comb releases the fabric and moves into the basic position.

The sliders can open the comb hooks at any point. Therefore, short shape parts, e. g. collars or trimmings, can only be taken down by the take-down comb. They are knitted without the main or auxiliary take-down.

2.8.4 Control devices

The following parameters are controlled on the fabric take-down:

Parameter	Control
Speed of the take-down roller	The rotating speed of the take-down rollers is constantly measured. If the deviation from the upper or lower limit is too large, the knitting machine stops. The limit values are infinitely programmable.
Wrapping around loose threads (1) 	Four thread deflectors (accessory) prevent loose threads from wrapping around the fabric take-down rollers.
Wrapping around of fabric (1) 	A winding plate prevents the fabric from wrapping around the fabric take-down rollers. If the fabric nevertheless wraps around, the knitting machine stops.
Throwing off of fabric (1) 	Four fabric sensors (accessory) scan the fabric between the needle bed and the fabric take-down. They can be moved as desired over the entire working width. If the fabric is ejected, the knitting machine stops.

Tab. 2-10 Control devices on the fabric take-down
(1) not in the case of machines with take-down comb

Further information:

- Adjusting sensor mechanism ([see page 4-54](#))

2.9 Display and operating elements

2.9.1 Main switch



Fig. 2-36 Main switch

The main switch (1) is located on the front of the machine above the right control cabinet.

In position "1 - On" the main switch is switched on, in position "0 - Off" it is switched off.

Switch-off process When the main switch is turned from "1" to "0", the machine is immediately switched off. Dangerous movements are immediately stopped. However, the machine data are not lost, as they are saved with a battery. This takes approx. 60 seconds. In the process, messages appear on the touch screen. Once the process has been completed, the touch screen becomes dark and a signal sounds.

Even with the main switch switched off, the customer building mains supply still carries current with extremely high voltage. The building mains supply must be disconnected before working on the main switch unit.

Emergency Stop The main switch is also the emergency stop switch.

The main switch can be locked during maintenance and service work. This prevents the main switch from being switched on accidentally.

2.9.2 Engaging rod

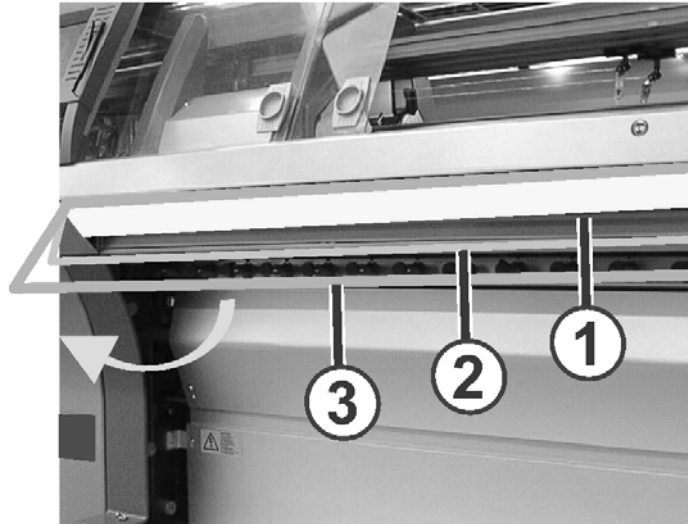


Fig. 2-37 Engaging rod

- 1 Carriage assembly stopped
- 2 Reduced speed
- 3 Normal speed

The carriage assembly, and therefore also knitting, is started and stopped with the engaging rod. The engaging rod can be moved into three positions.

Please observe in position 3:

- 1. When the cover hoods are closed, the engaging rod is held by a magnet (production at normal speed).



DANGER

Danger by parts of needles which have broken off!
Danger of injury to eyes by parts of needles.

→ Wear safety glasses.

- 2. When the safety covers are open (e.g. during set-up and checking activities) the engaging rod is not held by a magnet and must be held by hand in Position 3. If the engaging rod is released, it immediately falls into position 1 and stops the machine (dead man's switch in accordance with EN 11 111). The maximum carriage speed with open safety covers can be set.

Further information:

- Setting machine parameters ([see page 4-57](#))

2.9.3 Signal lamp



Fig. 2-38 Signal lamp

The signal lamp (1) indicates the operating status of the knitting machine.

Model: single flame-signal
lamp (green)

Color	Status of the knitting machine
green	Knitting machine is producing
green (flashes, slowly)	Knitting machine is stopped with engaging rod
green (flashes, fast)	Knitting machine is not producing, as an error has occurred during knitting
off	Main switch is off

Model: two-flame-signal
lamp (green, yellow)

Color	Status of the knitting machine
green	Knitting machine is producing
green (flashes)	Knitting machine is stopped with engaging rod
yellow	Knitting machine is not producing, as an error has occurred during knitting
green, yellow	Both lamps light up during the shutdown process. Duration is approximately 60 seconds - from switching off main switch until machine is completely shut down.
off	Main switch is off

Tab. 2-11 Signal lamp colors

2.9.4 Input unit



Fig. 2-39 Input unit

The input unit (1) enables communication with the machine control:

- Display of operating data
- Calling up help information
- Changing machine settings and pattern data
- Entry of commands

The input unit can be moved over the entire width of the needle bed.

To carry out a function, tap one of the symbols (keys) on the touch screen. We recommend using the touch pen (2) to prevent the touch screen from becoming dirty or damaged.

2.9.5 User interface

Design of the user interface



Fig. 2-40 Design of the user interface



Do not touch the touch screen with sharp objects and do not subject it to direct sunlight, which will destroy the picture tubes.

The user interface displays information on the current operating situation. It is always divided into three areas:

- Upper area (1)
 - Menu
 - Input and output of information
- Middle area (2)
 - Status display
 - Additional input elements
 - Selection elements
- Lower area (3)
 - Function keys

Functions of user interface The following is possible on the touch screen:

- Calling up pages, menus and input masks
- Calling up help information
- Displaying the operating data of the knitting machine
- Accessing the functions of the knitting machine
- Inputting values for controlling the knitting machine
- Editing the knitting program

These functions are called up with the following keys and elements:

- Function keys
- Input elements






















Function keys In the following sections two groups of functions keys are shown:

- Standard function keys; these are displayed in standard configuration
- Additional function keys; these can be called up with a switchover key

Function keys in the main menu


















Fig. 2-41 Function keys in the "Main menu"

Key	Function	Key	Function
	Read in/store data		Edit the knitting program
	Carriage speed		Racking correction
	Setting up a pattern		Machine start
	Machine stop		Changeable monitoring
	Cycle counters & counters		Manual interventions
	Take-down comb		Fabric take-down
	SEN areas		Stitch tension
	Yarn carrier		Clamp/Cut
	Service		Machine settings
	Order menu		Sequence knitting (see programming manual)
	STIXX (special equipment with its own instructions)		

Tab. 2-12 Function keys in the "Main menu"

Standard function keys

Key	Function
	Switch back to "Main menu"
	Switch back to previous page
	Switch to next page
	Call help
	Switch back to previous help page
	List of last messages and information
	Confirm input
	Call command line and output window for direct commands
	Order menu: Reset counter of already knitted panels to "0"
	Switch over to 100 % of programmed carriage speed
	Switch over to 75 % of programmed carriage speed
	Switch over to status line
	Switch over to selection/input elements
	Confirm message
	Switch over to "additional function keys"




Tab. 2-13 Standard function keys

Additional function keys

The additional function keys can be called up from any window with the "Additional function keys" key.

These additional function keys are described in the accompanying chapters.









The following additional function keys are displayed in all windows.

Key	Function
	Call up input window for a direct sintral command. This is carried out within a menu or window, i.e. you do not need to leave the menu or call up the "Direct command" window.
	Edit the knitting program
	Switch over to standard function keys








Tab. 2-14 Additional function keys in all windows

- Input elements In the following sections three groups of input elements are shown:
- Standard input elements; these are displayed when an input field is activated by briefly touching in
 - Selection elements; these are displayed when a selection field is activated by briefly touching it
 - Virtual keyboard; this can be displayed for inputs

Standard input elements









Element	Function
	Reduce value by one step
	Increase value by one step
	Undo a change, the last value saved is displayed again.
	Undo a change, the previous value is displayed again.
	Confirm input, save changes, end setting process
	Delete character to left of cursor
	Position the cursor at the start of the line
	Position the cursor at the end of the line

Tab. 2-15 Standard input elements

Element	Function
	Only one switch can be active at a time
	Position switch (on/off)
	Check box (on/off)
	Arrow switch (left/right) or (up/down)
	Linear regulator
	Reduce current value by one step
	Increase current value by one step

Tab. 2-16 Switches and linear regulators

Selection elements

Element	Function
	Fold open selection field
	Fold closed selection field
	Move cursor: up one line
	Move cursor: down one line
	Move cursor: one character to left
	Move cursor: one character to right
	Move cursor: to first input of selection field
	Move cursor: to last input of selection field

Tab. 2-17 Selection elements






Virtual keyboard

To input letters and numbers, the virtual keyboard can be displayed. Either a number block appears for inputting numbers or an alphanumeric keyboard appears for entering letters and numbers.

The virtual keyboard contains three switchover keys:

- SHIFT key
- CPS LCK key
- CTRL key

To use a switchover key, e.g. to enter a special character, first press the switchover key and then the key with the special character. To return to normal characters, press the switchover key again.

Key	Function
	Switch on virtual keyboard
	Switch off virtual keyboard
	SHIFT key: switch over between uppercase and lowercase letters and between numbers and special characters
	CPS LCK key: switch over between uppercase and lowercase letters; the setting of numbers or special characters is maintained
	CTRL key: switch over to function keys F1 to F10 and keyboard codes (short cuts)

Tab. 2-18 Switchover keys

3 Producing with the knitting machine

This chapter contains information on:

- Preparing production and shift changes ([see page 3-1](#))
- Threading up yarn ([see page 3-11](#))
- Production ([see page 3-18](#))
- Producing with knitting orders (order menu) ([see page 3-32](#))
- Eliminating errors in the fabric ([see page 3-37](#))
- Starting machine after a fault * ([see page 3-43](#))

3.1 Preparing production and shift changes

This chapter contains information on:

- Reading in files, libraries and pattern folders ([see page 3-2](#))
- Entering piece number or number of revolutions ([see page 3-6](#))
- Configuring automatic machine switching off ([see page 3-7](#))
- Setting touch screen ([see page 3-8](#))

3.1.1 Reading in files, libraries and pattern folders

Files (Sintral, jacquard, setup), libraries (Auto -SINTRAL) and pattern folders can be read in from the following sources (data carriers):

- Removable data carrier (on the USB socket)
for example: USB-Memory-Stick, floppy disk drive, CD drive, DVD drive, external hard drive
- Hard disk of the computer in the knitting machine
- Online
- Network drive



WARNING

Computer viruses!




Loss of data or production. Computer viruses can creep into the machine through unscanned data via USB port or network.

→ Bring in only virus free data on to the knitting machine.

The socket for the USB-Memory-Stick is located on the left-hand side of the machine above the cover hood.

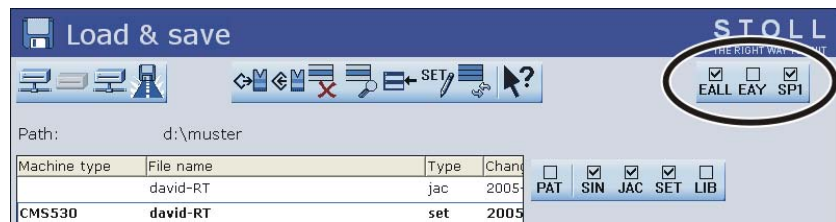


Fig. 3-1 USB-socket

Key	Function
	Call up the "Load & save" window
	"Load" selected file and accompanying pattern elements
	Call up the "main menu"

Tab. 3-1 Keys for reading in one knitting program







Always set these settings before reading in:



Key	Function
EALL	Delete previous pattern
EAY	Delete all yarn carrier positions
SP1	After the pattern is loaded, the function is automatically executed "Start Program from Line 1". This means that you must not take the "detour" over the window "Machine start" in order to start the knitting program with the key "SP from Line 1".



The "Activate EALL" function is only executed when a Sintral file is loaded. Not only the entire previous pattern (Sin, Jac, Set) is deleted from memory, but also the contents of cycle counters, counters and NP values are reset to their basic position.

Keys	Function
 	Activate or deactivate "EALL selection"
 	Activate or deactivate "EAY selection"
 	"SP1" to be switched on and off

Tab. 3-2 Keys for the selection "EALL", "EAY" and "SP1"

3.1 Preparing production and shift changes

Read in knitting program:

1. Call up the "Load & save" window from the "Main menu".

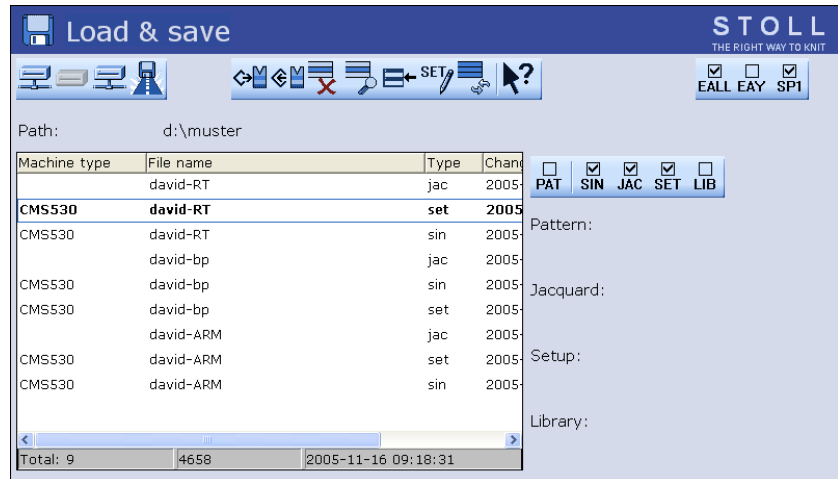


Fig. 3-2 "Load & save" window

2. Set the desired path with one of the "Direct pattern folder selection" keys.
 3. Use the PAT/SIN/JAC/SET/LIB keys to select whether the entire pattern of the current machine (PAT) or individual file types are to be listed.
 4. Select a file from the file list by tapping it.
 5. Tap the "Load" key.
 6. For the following prompt, tap "1" to confirm
- or -
- ➔ Tap the key "0" to cancel.
7. Call up "Main menu".



If the SINTRAL editor window is open:

The knitting program loaded contains an error.

➔ Eliminate the error

"Invalid character" error
message

Check the knitting program for special or foreign language characters.
Only the characters of the ASCII character set may be used.



!	"	#	\$	%	&	'	()	*	+	,	-	.	/
0	1	2	3	4	5	6	7	8	9	:	;	<	=	>
?	@	A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z	[\
]	^	_	`	a	b	c	d	e	f	g	h	i	j	k
l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
{		}	~											

Fig. 3-3 ASCII character set

Further information:

- KnitLAN connection ([see page 4-135](#))
- Select the current folder ([see page 4-119](#))
- Working with files, libraries and pattern folders ([see page 4-108](#))
- Go to help in function and error list ([see page 4-130](#))

3.1.2 Entering piece number or number of revolutions

Key	Function
	Call up "Cycle counters & counters" window
	Call up the "main menu"

Tab. 3-3 Keys for entering the piece number or number of revolutions

Enter piece number or number of revolutions:

1. Call up the "Cycle counters & counters " window from the "Main menu".

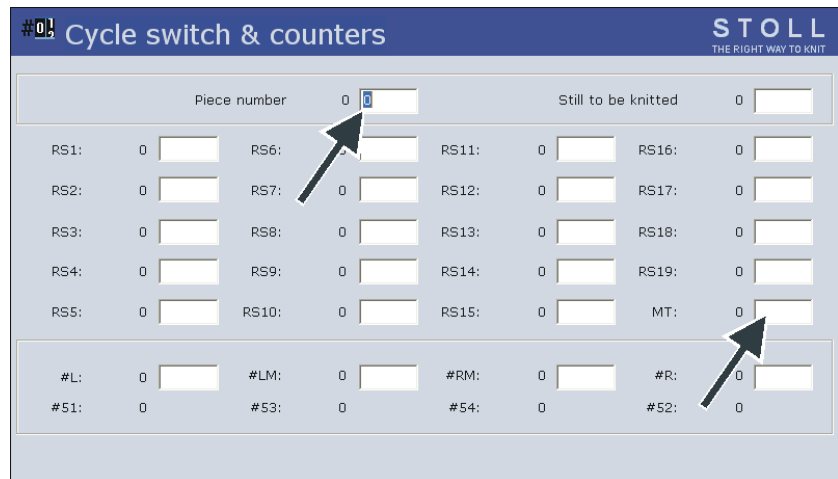


Fig. 3-4 "Cycle counters & counters" window

2. If you produce pieces, enter the "piece number".

- or -

- ➔ If you produce yard goods, set the maximum number of revolutions with the "MT" counter to define the length of the fabric.

3. Call up "Main menu".

3.1.3 Configure automatic machine switching off

When the machine switches off, the main switch moves from "1" to "0".

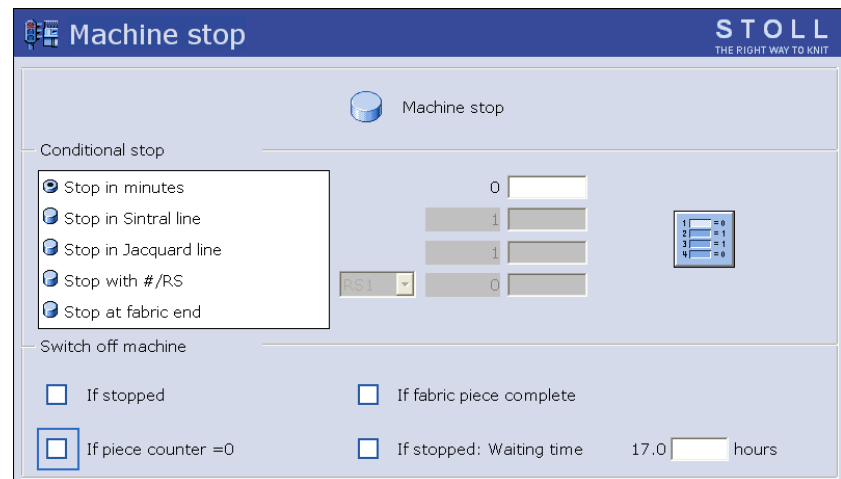




Fig. 3-5 "Machine stop" window

Switch in field "Switch off machine"	Machine switches off automatically
"If stopped"	Each time machine stops
"When piece counter = 0"	After completing the set number of pieces
"If fabric piece is complete"	after completing the current fabric
"If stopped: Waiting time"	If the machine has stopped, after completion of the adjusted time (in hours) the main switch gets switched off automatically.

Fig. 3-6 Configuration of the automatic switching off in the "Machine stop" window

Key	Function
	Call up "Machine stop" window
	Call up the "Main menu"

Tab. 3-4 Keys for configuring the automatic machine switching off

Configure automatic machine switching off:

1. Call up the "Machine stop" from the window "Main menu".
2. Set the switches to "0" or "1" in the "Switch off machine" field.
3. Call up "Main menu".

3.1 Preparing production and shift changes





While switching off the main switch, the fabric remains tensioned in the fabric take-down. This can lead to a visible stretching on a delicate fabric. To prevent this, the fabric take-down can be released.

Further information:

- Setting machine parameters ([see page 4-57](#))

3.1.4 Setting touch screen

Calibrating touch screen The calibration is particularly important when persons of different heights work at the same machine. In the case of different viewing angles, the position of the keys may change. So that you always press the proper keys, calibrate the touch screen at the beginning of your shift.

Key	Function
	Call up the "Service" menu
	Call up the "Set touch screen" window.
	"Calibrate" key
	Call up the "main menu"

Tab. 3-5 Keys for calibrating the touch screen

Calibrating the touch screen:



CAUTION

Incorrect adjustment of the touch screen!

Permanent incorrect adjustment: If you adjust the touch screen incorrectly, the keys at the edge of the screen will no longer be accessible. The program can only be readjusted with a keyboard (STOLL helpline).

→ During calibration, touch the touch screen within the target circles only!

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Set the touch screen" window from the "Service" menu.

The "Set touch screen" window appears.

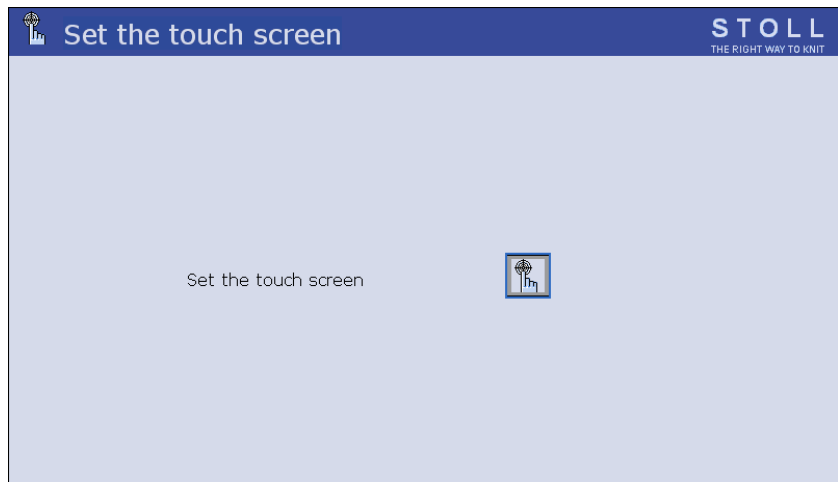


Fig. 3-7 The "Set touch screen" window appears.

3. Tap the "Calibrate" key.
The setting window appears. A target circle is located on the upper, left-hand side.

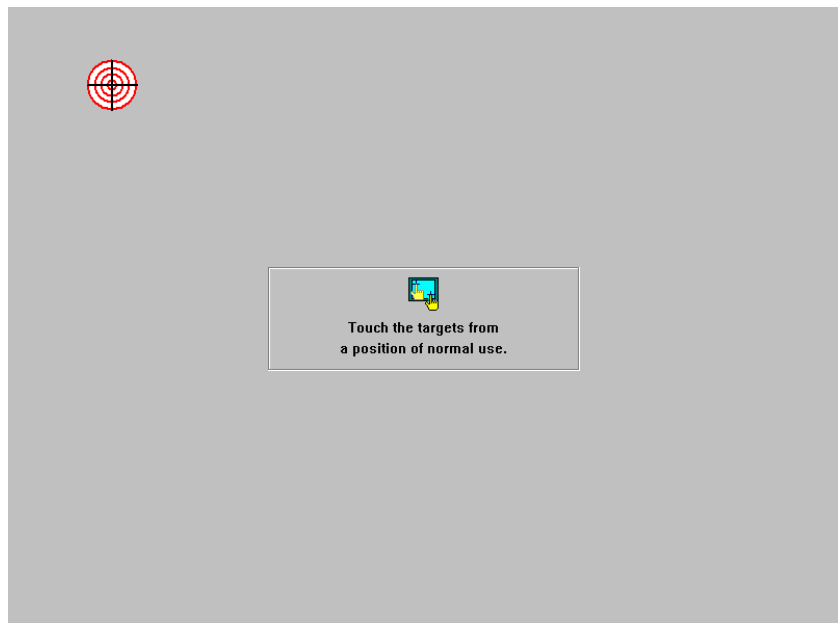


Fig. 3-8 Setting window with target circle

4. Tap exactly on the target circle.
A second target circle appears on the lower right-hand side.
5. Tap exactly on the target circle.
A third target circle appears on the upper, right-hand side.
6. Tap exactly on the target circle.
A message box appears. The request in the message box is not important, as there is no mouse cursor here.
7. Press on the "Yes" key.
8. Call up "Main menu".

Set screen brightness

Two key buttons for brightness setting are located on the rear of the input unit.

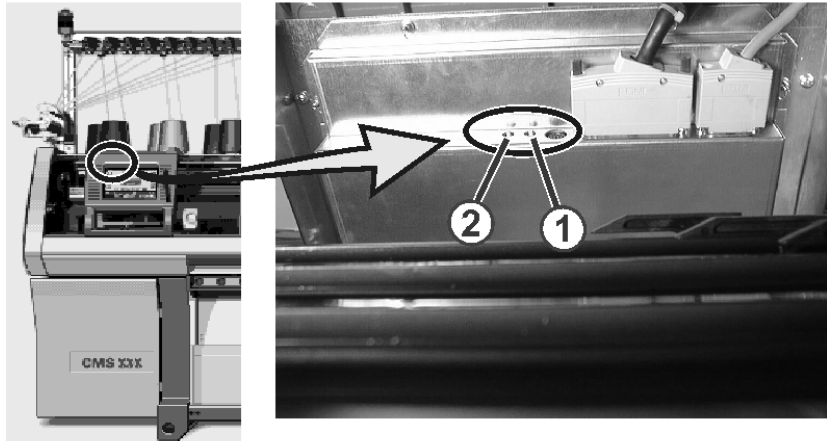


Fig. 3-9 Adjusting screen brightness

The screen display is set brighter with button (1) and darker with button (2).




3.2 Threading up yarn

Various thread lines are provided for threading up the yarn on the knitting machine. The optimal thread line depends on the yarn and pattern.

Further information:

- Thread lines ([see page 2-7](#))

3.2.1 Calling up yarn carrier assignment

Key	Function
	Call up "Machine start" window
	Call up the "Main menu"
	Call up the "Yarn carrier" window

Tab. 3-6 Keys for calling up the assignment of the yarn carriers

Calling up yarn carrier assignment:

1. Call up the "Machine start" window from the "Main menu".

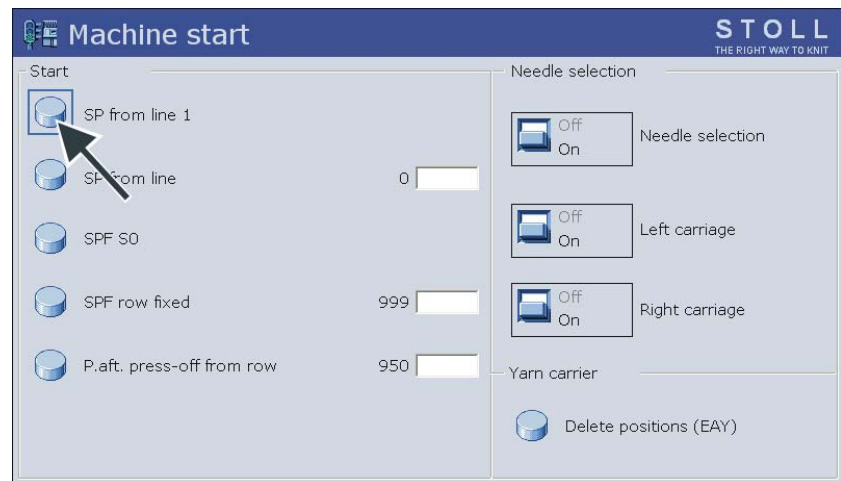


Fig. 3-10 Window "Machine start"

2. Type key "SP from Line 1".
The computer searches in the knitting program to see which yarn carriers are required.
3. Call up "Main menu".
4. Call up the "Yarn carrier" window.

3.2 Threading up yarn

Yarn carrier													STOLL	
Y	SEN	Y ₁ =n	O/I	YG	YP	Ka	Kb	K<I>a	K<I>b	Type	I<>	MSEC	V	Ua
1A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1D	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2D	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5

Fig. 3-11 Assignment yarn carrier in "Yarn carrier" window

5. Call up "Main menu".

3.2.2 Putting up bobbins

When the threads of several bobbins are led to one yarn carrier, supply approximately the same number of threads to the yarn carrier from each side.

➔ Put up the bobbins on the knitting machine or on the additional bobbin board.

3.2.3 Threading threads through yarn guide bracket

1. Push the yarn guide brackets to the side so that a yarn guide bracket hangs over each bobbin.
2. Thread each thread through a yarn guide bracket.

3.2.4 Threading threads through yarn control device

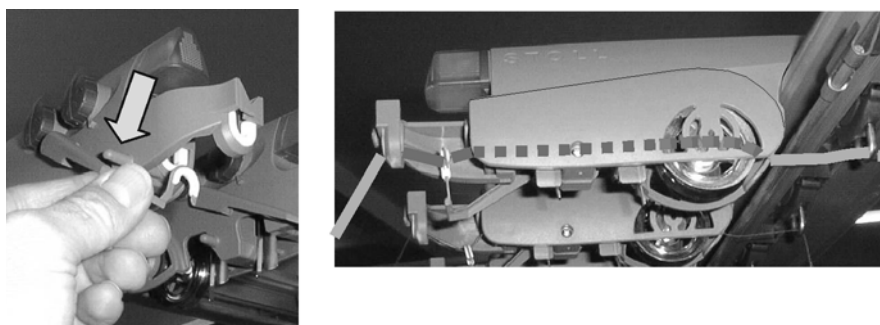


Fig. 3-12 Path of the thread through the yarn control device

1. Bring Thread break control in work position.
Pull thread break control a little towards left till it is not held by the stopping cam anymore.
2. Thread each thread through a yarn control device as shown in the picture.

3.2.5 Threading threads through STIXX device *

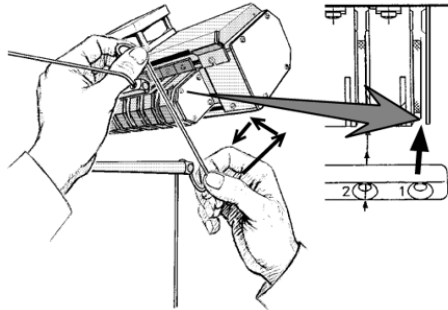


Fig. 3-13 Path of the thread through the STIXX device

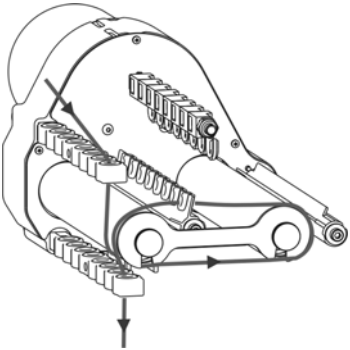
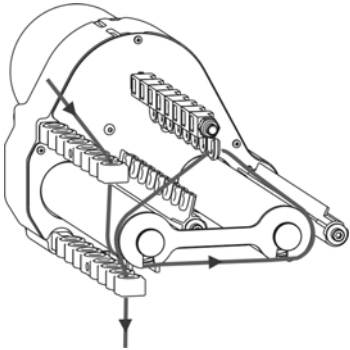
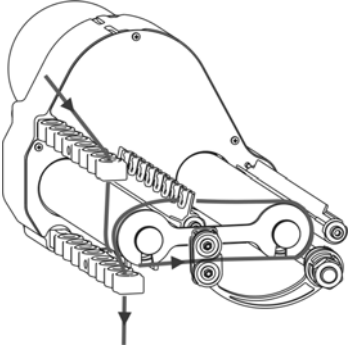
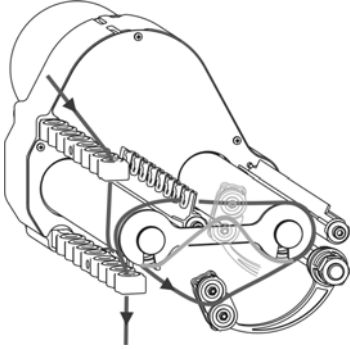
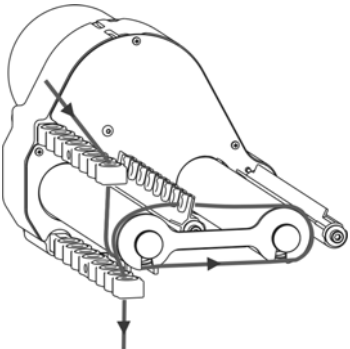
- ➔ Push thread upward with both hands through the threading gap and lay it around the measuring wheel.

Further information:

- Symbols in this document ([see page 1-3](#))

3.2.6 Threading threads into friction feed wheel

Depending on machine model and component type, there are different models of friction feed wheels.

	Run of yarn	
1	 <p>Default setting</p>	 <p>Insufficient yarn delivery</p>
2	 <p>Default setting</p>	 <p>Greater yarn delivery (grey) Insufficient yarn delivery (black)</p>
3		

Further information:

- Adjusting yarn delivery on friction feed wheel * ([see page 4-14](#))

3.2.7 Threading threads through safety cover



Make sure that you thread the thread vertically through the lateral safety hood

1. Bring the Lateral yarn tensioner in still position (anchoring) Thereby the active thread clamp is opened.
2. Thread the threads through one of the eyes (1) on the lateral safety hood.
Use Eyelet number 3 to 10 when the thread is coming from the friction feed wheel. So the clamp positions of the active thread clamp are positioned exactly under it.
Use Eyelet number 1 and 2 or from eyelet no. 11: for the thread if you working without the feed wheel

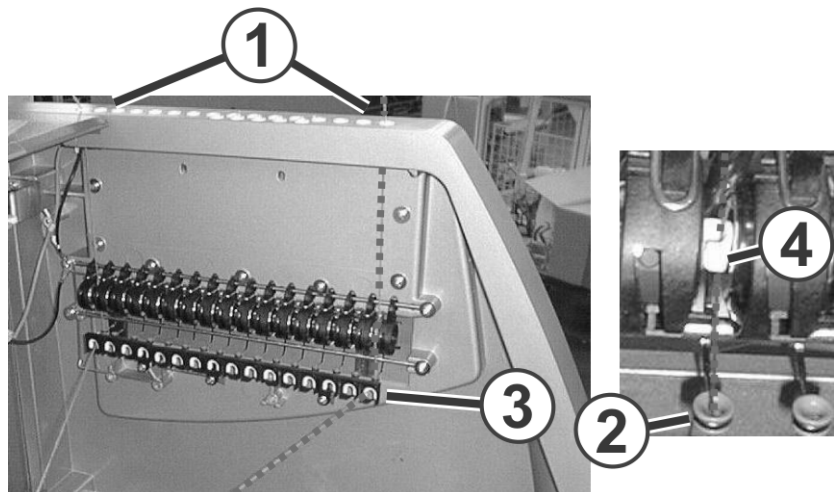


Fig. 3-14 Path of the thread through the lateral safety hood

3. Thread the thread vertically downwards in the eyelet (2) above the permanent brake. For quicker orientation a vertically running riffl is attached in the safety hood.
4. Thread the threads in the eyelet (3) of the lateral yarn tensioner.
5. Feed the threads through the thread deflector (4) to the yarn carrier.
6. Bring lateral yarn tensioner in work position.
7. Pull the thread between the brake setting of the permanent brake.

3.2.8 Threading threads into yarn carrier

→ Thread the threads into the respective next eyelet on the yarn carrier.

If several yarn carriers of a track are used and the threads are fed to the yarn carriers from the same side:

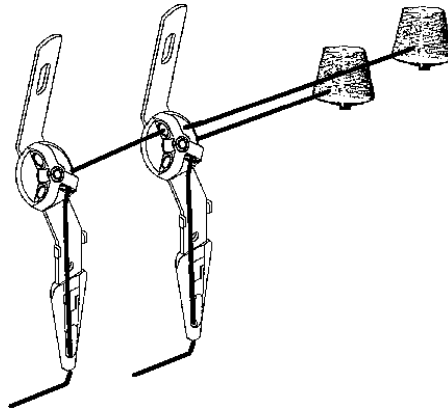


Fig. 3-15 Threading into several yarn carriers of one track

→ Thread in the threads as shown in the picture above.

If multiple bobbins are used for a yarn carrier:

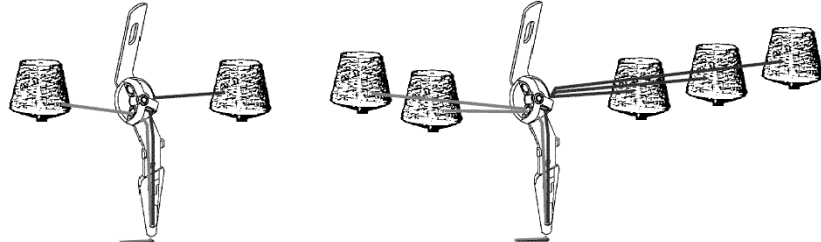



Fig. 3-16 Threading-in for multiple bobbins

→ Threading in of threads from left and right Make sure that almost the same number of threads are used from left and right.

3.2.9 Threading in thread clamping and cutting device

Key	Function
	Call up "Clamping & cutting" window

Tab. 3-7 Key for threading in thread clamping and cutting device

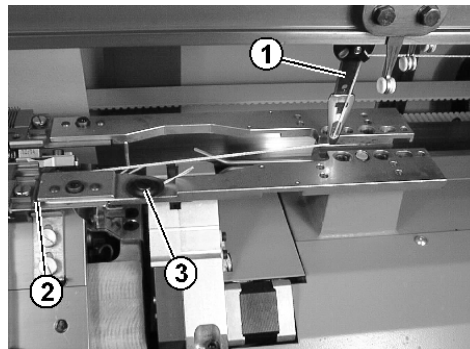


Fig. 3-17 Threading in thread

1. Take thread from yarn carrier (1) and lay in threading notch (2).
2. Pull through thread further until under plate of thread clamp (3).
3. Call up "Clamping & cutting" window.

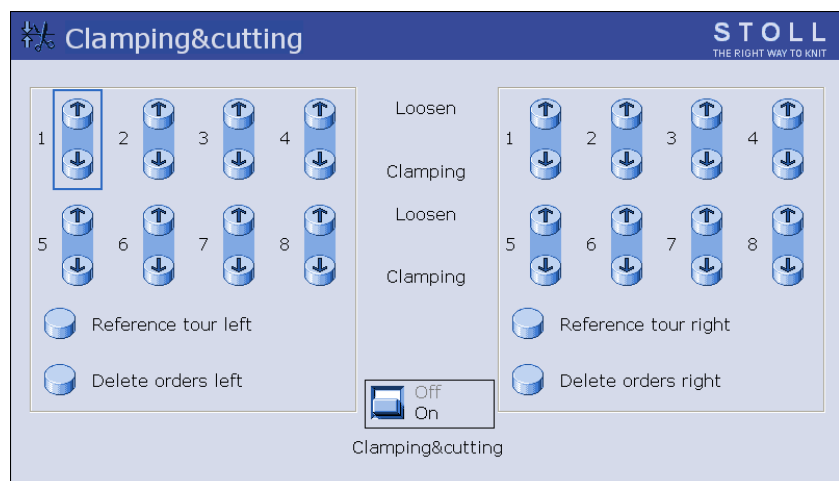


Fig. 3-18 "Clamping & cutting" window

4. Press the key of the corresponding clamping point in the "Clamping" line.
The thread is laid in the thread clamping and cutting device and held in place.
5. Repeat the process for each required thread separately.

Further information:




- Automatic staggering and clamping of yarn carriers ([see page 4-10](#))

3.3 Production

This chapter contains information on:

- Starting machine ([see page 3-18](#))
- Calling up report and shift counters ([see page 3-19](#))
- Stopping machine ([see page 3-23](#))
- Monitoring the running time ([see page 3-24](#))
- Measuring the running time ([see page 3-30](#))

3.3.1 Starting machine

Key	Function
	Call up "Machine start" window
	Call up "Additional function keys"
	Call up the "Changeable monitoring" menu

Tab. 3-8 Keys for starting the machine

1. Call up the "Machine start" window from the "Main menu".

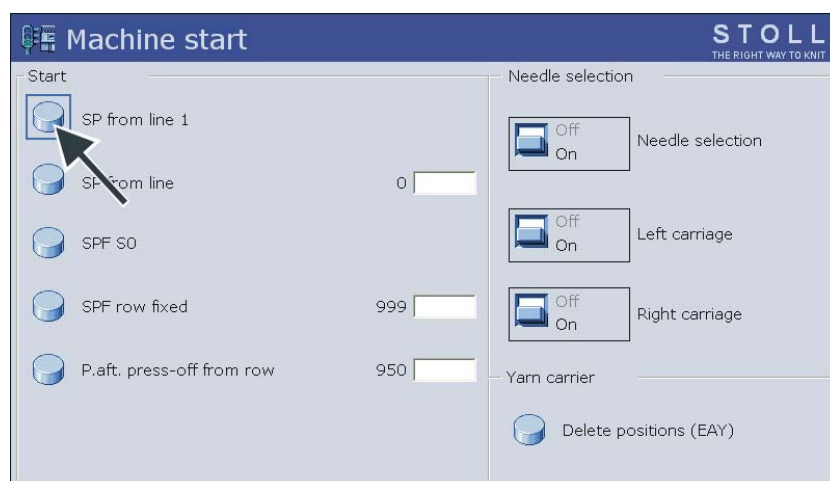


Fig. 3-19 Window "Machine start"

2. In the space "Start" type on the key "SP from Line 1".
3. Call up "Additional function keys".
4. Call up the "Changeable Monitoring" window.
Machine data and the program sequence are displayed in the "Changeable Monitoring" window during production.

5. Start the machine with the engaging rod.

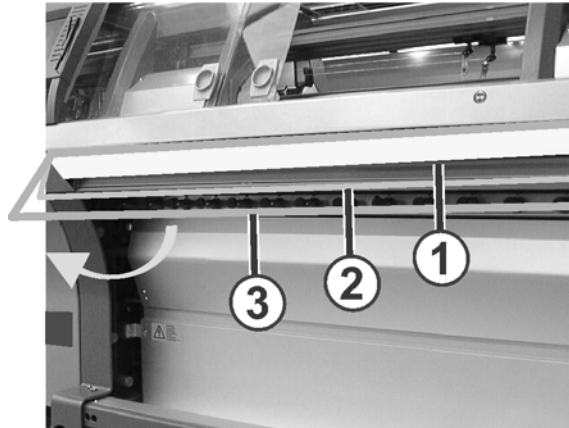


Fig. 3-20 Engaging rod

- 1 Carriage assembly stopped
- 2 Reduced speed
- 3 Normal speed

Further information:

- Configuring monitoring ([see page 4-31](#))

3.3.2 Calling up report and shift counters

The control collects all operating data recorded since the operating system was first read in and since the current knitting program was started. These data help you optimize the performance and loading of the knitting machine.

Report The individual types of operating data (1) are listed on the left side. The left table (2) shows the consecutive listing of all data which have resulted after reading in the operating system. The data of this table cannot be deleted. The data of the right table (3) can be deleted with the "Report0" key.






The production data can be listed during a certain period of time. This may consist of part of a shift, day or week.

Report		STOLL			
15.11.2005 14:00 david-ARM		Report0			
		F	%	H	M
SIN		0		37	18
RUN *		0	100.00	37	18
V=V		0	0.00	0	0
/-\		0	0.00	0	0
000		0	0.00	0	0
>!		0	0.00	0	0
-/)		0	0.00	0	0
%		0	0.00	0	0
PR		0	0.00	0	0
MS~		0	0.00	0	0
->/		0	0.00	0	0
V[]		0	0.00	0	0
#<>					0
#ML					0
ST					0

Fig. 3-21 "Report" window

Designation	Data shown
"F"	No. of errors or No. of stop motions
"%", "H", "M"	Percent, hours, minutes
"SIN"	Operating time of control (SINTRAL)
"RUN"	Time of production
"V=V"	Stop switching off at engaging rod
"/-"	Stop yarn control device, yarn feed
"000"	Stop piece counter
">!"	Stop stop resistance
"-/)"	Stop position needle sensor
"%"	Stop fabric take-down
"PR"	Stop programming
"MS~"	Machine stop or brief power failure
"->/"	Stop shock stop
"V[]"	Racking error
"#<>"	Total number of strokes
"#ML"	Number of strokes at reduced speed
"ST"	Number of produced fabric pieces

Tab. 3-9 Data in the "Report" window Key

Key	Function
	Call up the "Service" menu
	Call up "Statistics" menu
	Call up "Report" window
	Save report
	Call up the "main menu"

Tab. 3-10 Keys for calling up the report

Call up report or save to USB-Memory-Stick:

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Statistics" menu.
3. Call up the "Report" window.
4. To delete the operating data in the report, tap the "Report0" key.

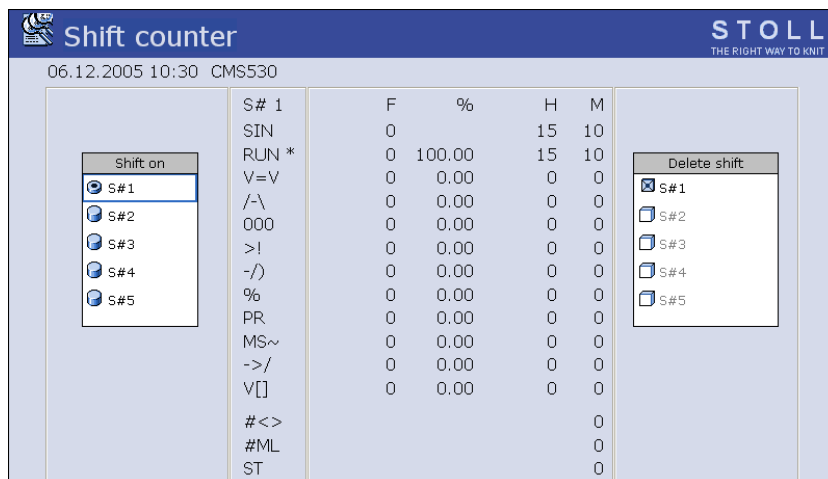
- or -

- ➔ To save the operating data, tap the "Save Report" key.
The data is saved to the selected data carrier with the STOLL machine number (e. g. "5320081234.rep").
5. Call up "Main menu".

Further information:





- Copying service data ([see page 4-61](#))

Shift counter A total of five shift counters are available. A complete report is generated for each shift. The table has the same structure as the report. Column "F" shows the number of stop motions during the shift.



S#	F	%	H	M
SIN	0		15	10
RUN *	0	100.00	15	10
V=V	0	0.00	0	0
/-\	0	0.00	0	0
000	0	0.00	0	0
>	0	0.00	0	0
-/)	0	0.00	0	0
%	0	0.00	0	0
PR	0	0.00	0	0
MS~	0	0.00	0	0
->/	0	0.00	0	0
V[]	0	0.00	0	0
#<>				0
#ML				0
ST				0

Fig. 3-22 "Shift counter" window

Key	Function
	Call up the "Service" menu
	Call up "Statistics" menu
	Call up "Shift counter" window
	Call up the "main menu"

Tab. 3-11 Keys for calling up the shift counter





Call up shift counter:

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Statistics" menu.
3. Call up "Shift counter" window.
4. To activate a shift, tap the corresponding key in the "Shift On" field.
5. If data of an earlier shift are displayed, tap the corresponding key in the "Delete shift" field (reset shift counter).
6. Call up "Main menu".

3.3.3 Stopping machine

The knitting machine can be stopped in the following ways:

- Disengage the engaging rod
- Actuate the stop motion device, e.g. open a cover
- Activate emergency stop
- Stop the machine in the "Machine stop" window

Key	Function
	Call up the "Main menu"
	Call up "Machine stop" window
	Resetting the conditions to standard values (Reset).
	End setting process and save changes

Tab. 3-12 Keys for stopping the knitting machine

Stop the knitting machine in the "Machine stop" window:

1. Call up the "Machine stop" from the window "Main menu".

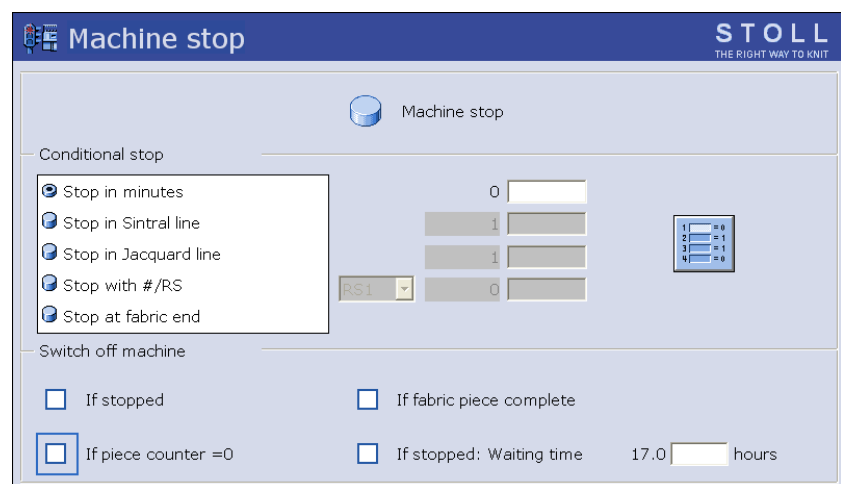


Fig. 3-23 "Machine stop" window

2. If the knitting machine is to stop at the next reversing point of the carriage assembly, tap the key "Machine stop".

3. If the knitting machine is to stop when a certain condition is fulfilled, select a condition in the field "Conditional stop".
- | | |
|-----------------------|---|
| Stop in minutes | Remaining running time in minutes |
| Stop in sintral line | When the set sintral line is reached |
| Stop in jacquard line | When the set jacquard line is reached |
| Stop with #/RS | When the counter or cycle counter has reached the set value |
| Stop at fabric end | When the fabric is knitted completely |
4. Enter corresponding value for the condition. Confirm setting.



When a conditional stop is activated, a stop icon is displayed in the status line.

3.3.4 Monitoring the running time



In order to display the window "Running time control" it must be activated in the window "Knit report configuration". (BootOkc --> Restart and configuration --> Knit report configuration --> Additional function keys)

The running times of sequence lists, sequences or orders, their individual elements or individual patterns are recorded and displayed in the "Running time control" window.

This adds extensive knitting process data to the commands "MIN", "MINSEQ" and "MINSEQEL":

- Display of the running time of a pattern (sequence, sequence element, order).
The current, last, minimum, maximum and average running times are displayed respectively.
- Display of the probable remaining running time of a pattern (sequence, sequence element, order).
- Display of the number of pieces that have been knitted and are still to be knitted.
- Display of the running time with or without loading and standing times.








Key	Function
	Call up the "Service" window
	Call up "Statistics" window
	Call up the "Running time control" window
	Call up the "Running time data sequence" window or the "Running time data pattern" window
	Call up "Storage of running time data" window.
	Returning to the previous window
	Call up the "Main menu" window

Fig. 3-24 Keys for the "Running time control" window

Open the "Running time control" window

1. Call up the "Service" window in the "Main menu".
2. Call up the "Running time control" window in the "Service" window.

The "Running time control" window can alternatively be called up by using the additional functions keys in the "Sequence menu" or "Sequence list" window.

Fig. 3-25 "Running time control" window

Field/ Key	Meaning	
1	Total running time	Display of the estimated total running time of the sequence, sequence list or pattern.
2	Gross	Display of the total production time including loading and standing times as well as manual interventions.
	Net	Display of the pure machine running time from "SP" (Start Program) to "piece finished".
3/4	No.	Current number.
	Sequence/ sequence element name	Name of the sequence, of the order or the sequence element names or individual patterns.
	Current	Previous time of the current sequence of the order or of the sequence element or pattern.
	Last	Running time of the last knitted sequence of the order or of the sequence element or pattern.
	Min.	Minimum running time of the sequence of the order or of the sequence element or pattern.
	Max.	Maximum running time of the sequence of the order or of the sequence element or pattern.
	Ø	Average running time of the sequence of the order or of the sequence element or pattern.
	Pieces	Amount of sequences or orders or of the sequence elements or patterns already knitted.
	Total	Amount of the total sequences or orders or of the sequence elements or patterns.

Tab. 3-13 Meaning of the elements in the "Running time control" window.

Functional description for the "Storage of running time data" window:

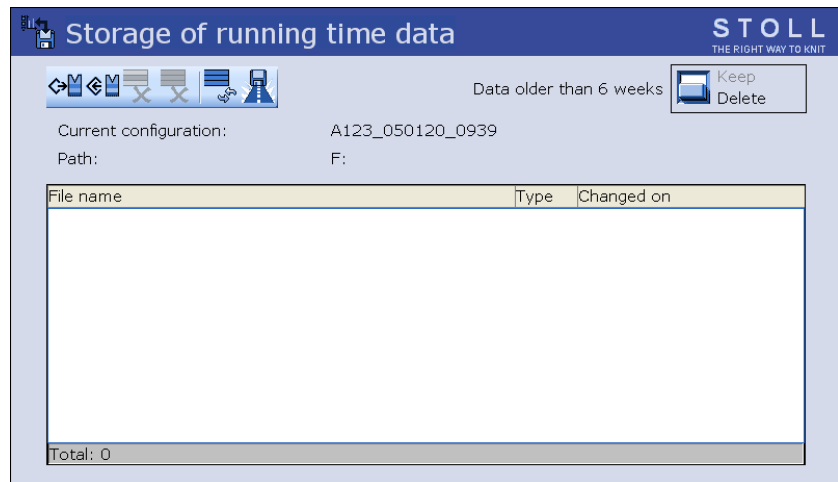








Fig. 3-26 "Storage of running time data" window

Key	Meaning
	"Load" selected file and accompanying data
	"Save" selected file in the current folder
	"Delete file" that was selected
	delete all files
	"Update" : Re-determine the contents of the current folder
	"Select current folder": Dialog box for selecting the current storage folder
Data older than 6 weeks	<p>Delete (activated by default) The data are deleted automatically when they get older than 6 weeks. This saves storage space. Keep: The files are not deleted.</p>

Tab. 3-14 Keys in the "Storage of running time data" window

1. Call up the "Service" window in the "Main menu".
2. Call up the "Running time control" window in the "Service" window.
3. Call up "Additional function keys".
4. Call up "Storage of running time data" window
5. Select the desired path with the key "Current folder selection"
6. Select file.
7. Select action (load, save, delete).
8. If an additional prompt appears, tap the key "1" to confirm.

- or -

➔ Tap the key "0" to cancel.

Functional description for the "Running time data sequence" or "Running time data pattern" window:



Depending on the marking in the "Running time control" window either the "Running time data sequence" window is displayed for the selected sequence or the "Running time data pattern" window is displayed for a sequence element or individual pattern.

Gross running times are displayed in this window.

Run.time piece	No.	Date	Start	Complete	Running time

Fig. 3-27 "Running time data sequence" ("Running time data pattern") window

Entry	Meaning
Name	Name of the sequence, of the sequence element or pattern
Remaining running time	Estimated remaining running time in the format mmm:ss
End time	Estimated end time (date, time), only possible after a run-through
Running time piece	At sequence: Longest and shortest run-through time of the sequence At sequence element/pattern: Longest and shortest run-through time of the piece
No.	Number of the sequence, sequence element or of the piece
Date	Creation date
Start	Starting time
Finished	Completion moment
Running time	Running time in hhh.mm

Tab. 3-15 Keys in the "Running time data sequence" window or the "Running time data pattern" window

1. Call up the "Service" window in the "Main menu".
2. Call up the "Running time control" window in the "Service" window.
3. Select sequence, sequence element or pattern.
4. Call up "Additional function keys".
5. Call up the "Running time data sequence" window or the "Running time data pattern" window.
The "Running time data sequence" or "Running time data pattern" window is displayed with the associated data.
6. Close the window by using the "Return to previous window" key.

Further information:

- Carrying out restart with machine configuration ([see page 7-37](#))

3.3.5 Measuring the running time



In order to display the window "Running time control" it must be activated in the window "Knit report configuration". (BootOkc --> Restart and configuration --> Knit report configuration --> Additional function keys)

In the window "Measurements of running time" manual measurements of running time can be carried out (Stop watch function). The functions Start, Stop and backup are deleted with the additional function keys.



Fig. 3-28 "Measurement of running time" window








Key	Function
	Call up the "Service" window
	Call up "Statistics" window
	Call up "Measurement of running time" window
	Start measurement of running time (Start)
	Stop measurement of running time (Stop)
	Set display at "0" (Reset)
	Call up the "Main menu" window

Fig. 3-29 Keys for the "Measurement of running time" window

Stopping the running time:

- A pattern file has to be loaded (1).

1. If necessary set display with "Reset" at "0" .

2. Tap on "Start" .

The time that has passed since "Start" was activated is shown in the "Running time" (2) field in the format hh:mm.ss.

3. Starting the knitting process

4. After the knitting process has been completed, touch "Stop".

The stopped time is displayed in the "Running time" (2) field.

Further information:

- Carrying out restart with machine configuration ([see page 7-37](#))

3.4 Producing with knitting orders (order menu)

This chapter contains information on:

- Creating and managing order menu ([see page 3-32](#))
- Setting or changing counters for order menu ([see page 3-34](#))
- Save/load order menu ([see page 3-35](#))

3.4.1 Creating and managing order menu

With the order menu the different making-up sizes of an article (knitting program) are summarized in a list and worked through sequentially. The quantity and the cycle counters are specified for each making-up size.

A knitting order (line) is processed until the number of pieces in the "ST1" and "ST2" columns are the same. The machine automatically switches over to the next size and produces the set number of pieces. Knitting is carried out line by line from top to bottom.

No.	Name	ST1	ST2	RS1	RS2	RS3	RS4	RS18	RS19	#50	#51	#52
1	SIZE-50	36	0	8	56	0	0	0	0	0	1	450
2	SIZE-48	36	0	8	56	0	0	0	0	0	1	450
3	SIZE-46	30	0	6	52	0	0	0	0	0	1	405
4		0	0	0	0	0	0	0	0	0	0	0
5		0	0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0	0









1

Start line 1

Fig. 3-30 "Order menu" window

Column	Data shown
1	current order number
2	Order name
3 ("ST1")	No. of pieces to be produced
4 ("ST2")	No. of pieces already produced
5 to 11	Cycle counters and counter
12 ("#51")	Left border
13 ("#52")	Right border

Tab. 3-16 Data in the "Order menu" window

Key	Function
	Call up "Order menu" window
	Confirm entries
	Call up "Additional function keys"
	Reset values in "ST2" column (counter for the pieces already produced) to "0"
	delete all information in the order menu
	"Copy line" contents
	"Insert line" contents
	"Activate knitting order"

Tab. 3-17 Keys for processing the "Order menu"

Edit the order menu:

1. Call up the "Order menu" window from the "Main menu".
 2. Tap a line to be processed.
The line appears at the bottom edge of the window.
 3. Tap the fields of the selected line and enter the desired values and name.
- or -**
- ➔ Call up "Additional function keys", copy contents of a line and insert it at desired location again.
 4. Confirm the entries.
 5. Call up the "additional function keys" and activate the "knitting order".
If the order is active, "ORDER" appears in the status line.





Fig. 3-31 Status line with active knitting order



Missing pieces of an order can be knitted afterward by changing "ST2". When the last order is carried out, a check is performed to determine whether any parts are still to be knitted. The machine will not stop until all orders have been completed.

3.4.2 Setting or changing counters for order menu

With counters the knitting of different parts or sizes in the SINTRAL program can be controlled from a program.

Key	Function
	Call up "Order menu" window
	End setting process and save changes

Tab. 3-18 Keys for setting the counters

Use another cycle counter or counter:



Do not use the counters "#1" to "#39", as they are set to "0" during start-up!

1. Call up the "Order menu" window from the "Main menu".
The "Order menu" window appears.
2. Tap the desired column (cycle counter or counter) in the header of the table.
The setting window appears.

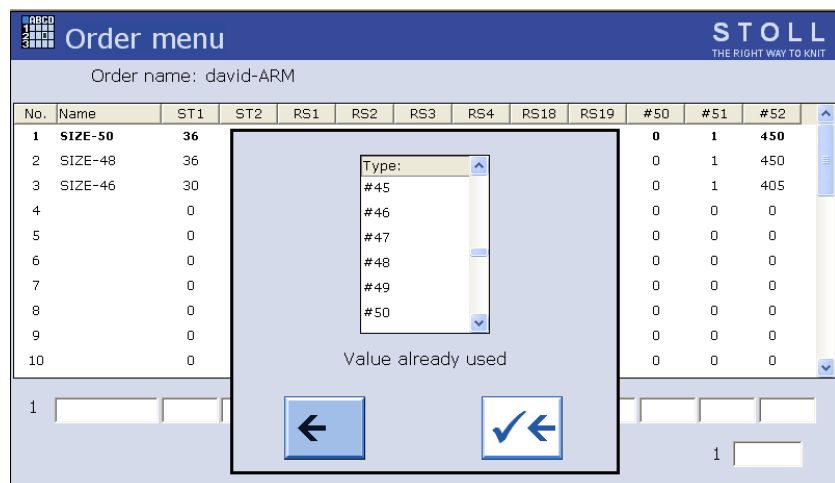


Fig. 3-32 Setting window for changing cycle counters and counters




3. Assign a cycle counter or a counter.
4. Confirm the entries.
5. The "Order menu" appears again.



The values of the cycle counters and counters are copied from the machine at the beginning of an order. If they are modified during knitting, they will take effect starting with the next piece.

3.4.3 Save/load order menu

The information in the order menu can be saved, loaded and deleted in the "Catalog order data" window.

Key	Function
	Call up "Order menu" window
	Call up "Additional function keys"
	Call up the "Catalog order data" window

Tab. 3-19 Keys for the "Catalog order data" window

Functional description for working in the "Catalog order data":

1. Call up the "Order menu" window from the "Main menu".
2. Call up "Additional function keys".
3. Call up the "Catalog order data" window.

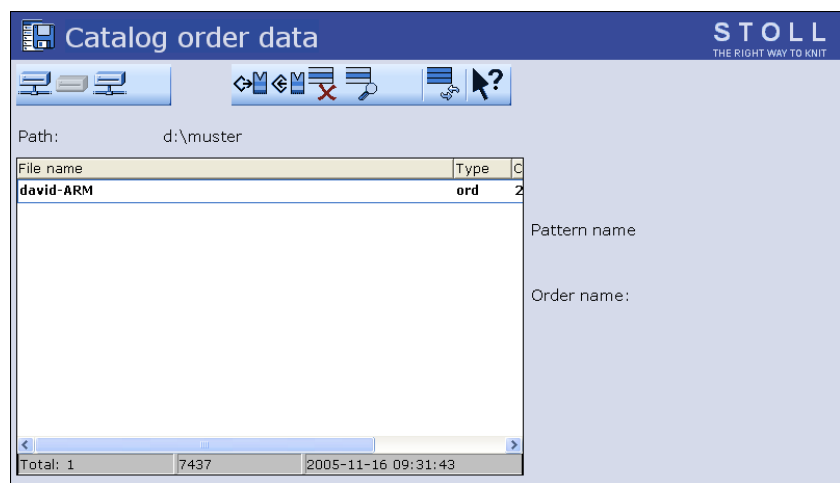


Fig. 3-33 "Catalog order data" window

4. Set the desired path with one of the "Direct selection folder" keys.
 5. Select file.
 6. Select action.
 7. If an additional prompt appears, tap "1" to confirm
- or -
- ➔ Tap the key "0" to cancel.
8. Call up "Main menu".

3.4 Producing with knitting orders (order menu)

Actions in "Catalog order data" window

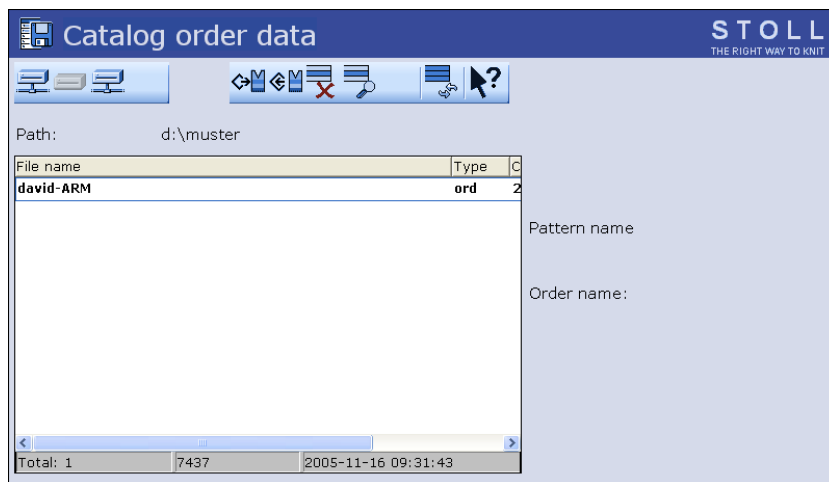













Fig. 3-34 "Catalog order data" window

Key	Function
 	"Direct folder selection": predefined folder selection
 	
	
	"Load" selected file and accompanying pattern elements
	save selected pattern parts in the current folder ""
	"Delete file" which is selected
	"Display file" which is selected
	"Update" : Refresh the contents of the folder
	Call up "Direct help" for the next pressed key




Tab. 3-20 Keys in "Catalog order data" window

Further information:

- Select the current folder ([see page 4-119](#))
- Displaying file in pattern editor ([see page 4-112](#))

3.5 Eliminating errors in the fabric

If the fabric piece is not to be completed properly, two options in the "Machine start" window can be used.



Key	Function
	Call up "Additional function keys"
	The cycle currently being knitted is aborted and the other cycles will be knitted as programmed.
	<p>The machine automatically begins with a new fabric piece if the following conditions are met:</p> <ul style="list-style-type: none"> The racking device is in the basic position The yarn carriers are in starting position The carriage direction allows beginning again. <p>As long as these conditions are not met, cycles will only be knitted once.</p>

Tab. 3-21 Keys to interrupt a knitted panel

This chapter contains information on:

- Beginning again after pressing off fabric ([see page 3-38](#))
- Threading thread into yarn carrier ([see page 3-41](#))
- Removing fabric winding around fabric take-down ([see page 3-42](#))

3.5.1 Beginning again after pressing off fabric

Key	Function
	Call up "Machine start" window
	Confirm entries

Tab. 3-22 Keys for beginning again after pressing off fabric

For machines without a take-down comb

After fabric ejection, a problem arises where stitches are pressed off and therefore further knitting is not possible. To be able to continue, we recommend to call up the "Picking up after pressing off" function. It allows you to begin knitting even without fabric.

Normally, each knitting program includes the "Picking up after pressing off" function. With older knitting programs, the function is found from line 950 on. With the pattern workstation M1, it is activated via "#90".

The machine detects which pattern workstation was used to generate the pattern. A knitting program of M1 contains the ID "<M1>" on line 1. Likewise, program point "P.aft. press-off" in the "Machine start" window is adapted automatically.

"Picking up after pressing off" function in older knitting programs (e. g. SIRIX)

1. If threads are broken, thread them up again.
2. Call up "Machine start" window.
3. Call up the "Picking up after pressing off" function. Tap the "P.aft. press-off from row" key for this purpose.

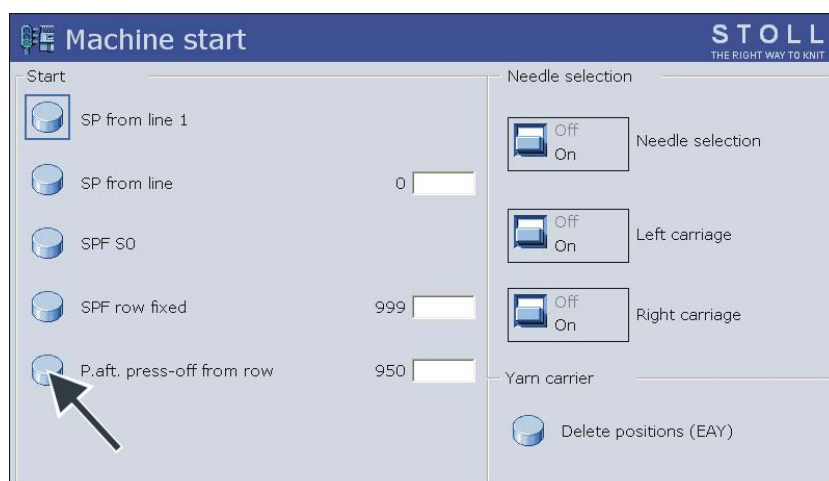


Fig. 3-35 Call up "Machine start" window

4. Start the machine with the engaging rod.



If you notice defective needles while picking up after pressing off:

→ Stop picking up after pressing off and replace the defective needles.

5. When the fabric is long enough to be placed in the main take-down, stop the machine with the engaging rod.
6. Open the main take-down, place the fabric in the main take-down and close the main take-down.
7. To start the knitting program, tap the key "SP from line 1".
8. Start the machine with the engaging rod.

"Picking up after pressing off" function with an M1 pattern

Requirements:

- The knitting program has been generated on M1
- When the pattern is generated, the "P.aft.press-off" menu point is activated

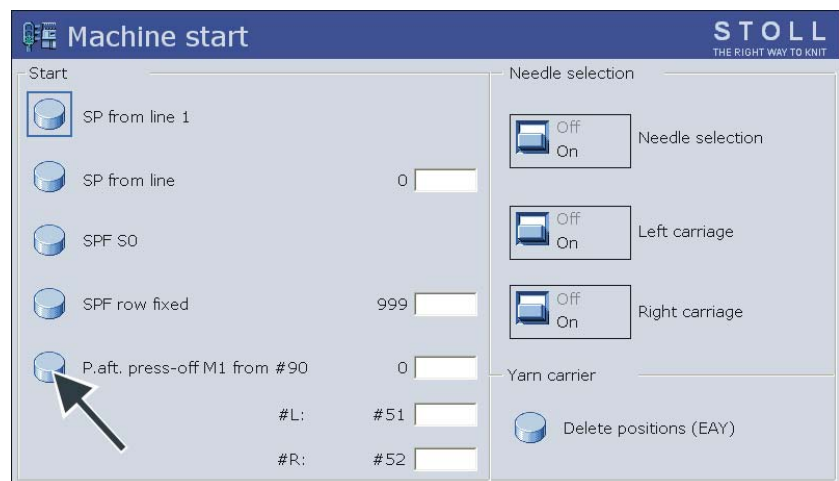


Fig. 3-36 Call up "Machine start" window

Setting	Function
#90=0	"Picking up after pressing off" function is deactivated
#90=1	"Picking up after pressing off" function is activated. A specific row number (gauge x 4) is knitted, depending on the gauge of the machine. A total of 40 knitting rows are processed for a machine of gauge E 10.
#90=n	If this is too many knitting rows, "#90" can be set to another number. Two knitting rows, similar to the "Picking up after pressing off" function, are repeated as often as "#90" is set. Example: #90=15. A total of 30 knitting rows (2 x 15) are processed.
#L, #R	Setting the fabric width for the "Picking up after pressing off" function. Default setting: Starting width (#L=#51, #R=#52)

1. If threads are broken, thread them up again.

3.5 Eliminating errors in the fabric

2. Call up "Machine start" window.
3. Call up the "Picking up after pressing off" function. Tap the "P.aft. press-off M1 from row" key for this purpose.
4. Tap the input fields. Enter values and confirm entries.
5. Start the machine with the engaging rod.



If you notice defective needles while picking up after pressing off:



➔ Stop picking up after pressing off and replace the defective needles.

6. When the set number of knitting rows has been processed, the machine stops automatically.
The "Place fabric in fabric take-down" message appears.
7. When the fabric is long enough to be placed in the main take-down, open the main take-down, place the fabric in the main take-down and close main take-down.
8. If the fabric cannot yet be placed in the main take-down, repeat points 2 through 8.
9. Start the machine with the engaging rod. The knitting program is started automatically.

Further information:

- Threading up yarn ([see page 3-11](#))

3.5.2 Threading thread into yarn carrier

Key	Function
	Call up "Manual interventions" window
	Call up "Machine start" window


Tab. 3-23 Keys for threading thread into yarn carrier

1. Call up "Manual interventions" window
2. Tap the "YC bolts Up" key.
3. Note the position of the yarn carriers, push the yarn carriers under the carriage and thread in.
4. Push the yarn carriers into their previous position again.
5. Tap the "YC bolts Bottom" key.
6. To move the carriage assembly slowly, pull the engaging rod slightly toward the front.
7. When knitting slowly, make sure that the thread is laid in the needles.
8. To continue knitting, start the machine with the engaging rod.

- or -

- ➔ If the fabric is defective, call up the "Machine start" window and tap the "SP from line 1" to knit the fabric again.

3.5.3 Removing fabric winding around fabric take-down

Key	Function
	Call up "Take-down" window

Tab. 3-24 Key for removing fabric winding around fabric take-down

Fabric winding in main take-down

1. To remove the fabric winding, call up the "Take-down" window.

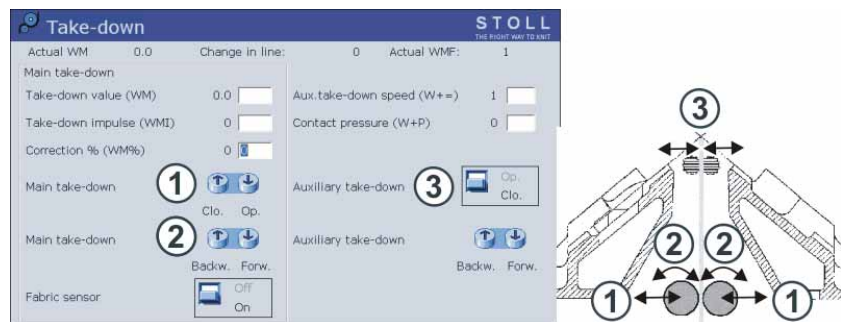


Fig. 3-37 "Take-down" window

2. Tap the "Main take-down Op." key (1).
 3. Pull the fabric smooth and free the take-down rollers from loose threads and fabric remainders
- or -
- ➔ Press the "Main take-down backw." key (2) until the fabric winding can be removed.
 4. Tap the "Main take-down Clo." key to close the main take-down.
 5. To continue knitting, start the machine with the engaging rod.

Fabric winding in auxiliary take-down



1. To remove the fabric winding, call up the "Take-down" window.
2. Remove needle bed or position it at an angle
3. Tap the "Auxiliary take-down Op." key (3).
4. Press the "Auxiliary take-down backw." key until the fabric winding can be removed.
5. Free the take-down rollers from loose threads and fabric remainders.
6. To close the auxiliary take-down, tap the "Auxiliary take-down Clo." key.
7. Screw on the needle bed again tight.
8. To continue knitting, start the machine with the engaging rod.

Further information:

- Remove needle bed or position it at an angle ([see page 6-12](#))

3.6 Starting machine after a fault *

The knitting machine control constantly controls the yarn, the fabric, all movable parts of machine, the motors and the electronic components. If an error occurs, the machine stops. The signal light glows yellow, a pictograph appears on the touch screen and a horn goes off. The most common error causes are shown in the pictographs on the touch screen. If an error occurs, one pictograph appears, and in the case of several errors the corresponding pictographs appear consecutively. Errors which occur seldom (e. g. hardware errors) are shown with a common pictograph.

Key	Function
	"Information on error remedies" A big and a small mark appear alternatively
	Confirm error message

Tab. 3-25 Keys for starting machine after a fault

Start the machine after a fault:

- To get detailed information on an error, tap the pictograph.
The "Current messages" window appears. If the error can be remedied by changing the settings, a function key appears in the middle of the lower screen bar.

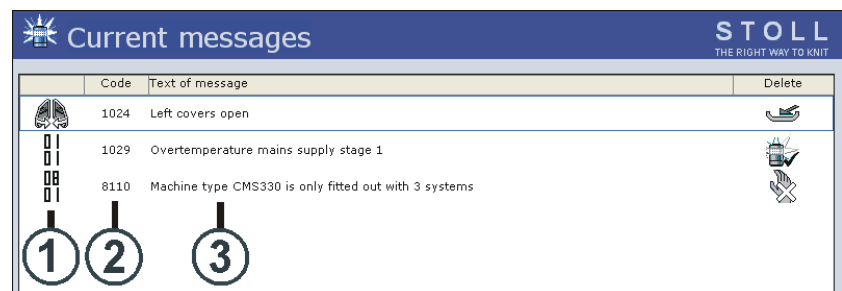


Fig. 3-38 "Current messages" window.

- | | | | |
|---|------------|---|--------------|
| 1 | Pictograph | 3 | Message text |
| 2 | Error code | | |

3.6 Starting machine after a fault *

2. To change the settings, tap the function key in the middle of the bottom line of the screen and eliminate the error.

- or -

- If additional information is required, tap the desired error message and the "Information on bug fixing" button.

The possible error causes and their correction will be displayed.

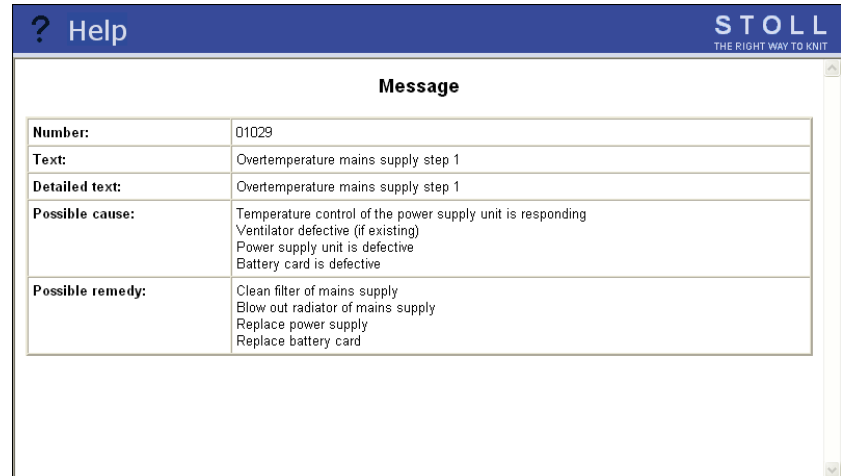


Fig. 3-39 Further information about an error message

3. Eliminate the error.
4. Confirm the error message.
5. To continue knitting, start the machine with the engaging rod.

Further information:





6. Symbols in this document ([see page 1-3](#))

3.6.1 Message and tip history

Message history If an error occurs, it is not only displayed in the "Current messages" window, it is also written into an additional memory. The error messages for the respective day are saved in this memory.

A new memory is automatically selected for each day. There are a total of seven memories so that the error messages of the last 7 days are available. As a result, you can create an overview of which error messages have occurred over the past several days.

When switching off the machine main switch, the error messages currently present in the "Current messages" window are deleted, however the daily memories with the error messages are not cleared.

Key	Function
	Call up "Info" window
	Call up "Additional function keys"
	Display message history
	Key for daily message history (the key for the message history of the past day is shown in the picture)

Tab. 3-26 Keys for viewing history of error messages

Display message history:

1. Call up "Info" window.
2. Call up "Additional function keys".
3. Display message history.

3.6 Starting machine after a fault *

4. Call up "Additional function keys".
A list of the keys of the message histories appears.

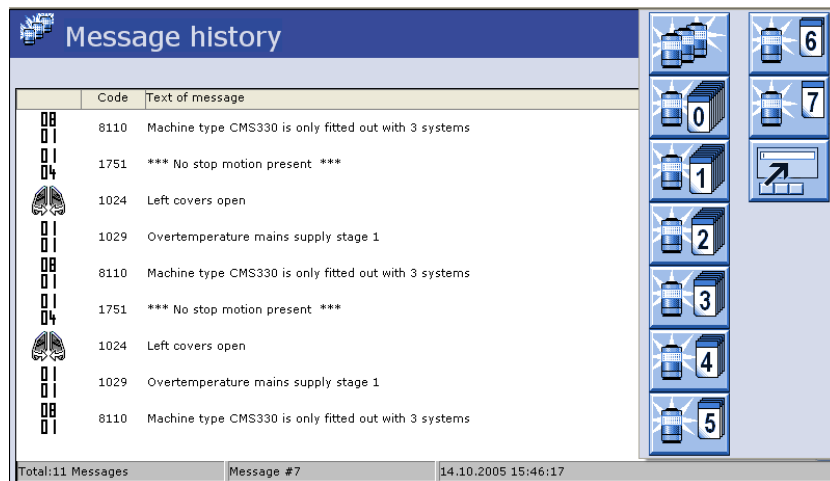






Fig. 3-40 List of message histories

5. Call up the desired daily history.

Tip history

The tips for the error messages are also saved. As with the message history, there are seven daily memories so that the tips of the last 7 days are available. As a result, you can create an overview of which tips have occurred over the past several days.

Key	Function
	Call up "Info" window
	Call up "Additional function keys"
	Display tip history
	Key for daily tip history (the key for the tip history of the past day is shown in the picture)






Tab. 3-27 Keys for displaying tip history

Display tip history:

1. Call up "Info" window.
2. Call up "Additional function keys".
3. Display tip history.
4. Call up "Additional function keys".
A list of the keys of the tip histories appears.
5. Call up the desired daily history.

3.6.2 Suppressing error messages

If, for example, a change is made to a knitting program and an error message is present, the knitting program or other windows are covered by the current error message. This may interrupt your work. To prevent this from happening, the error messages can be suppressed. Only the display on the touch screen is suppressed, not the stoppage of the knitting machine.

Key	Function
	Call up "Additional function keys"
	Suppress error messages ("activate Setting-up operation")
	Returning to the previous window
	"Setting-up operation active" symbol
	Activate error messages again ("deactivate Setting-up operation")

Tab. 3-28 Keys for suppressing error messages

Suppressing error messages

1. If an error message is displayed, call up the "Additional function keys" button.

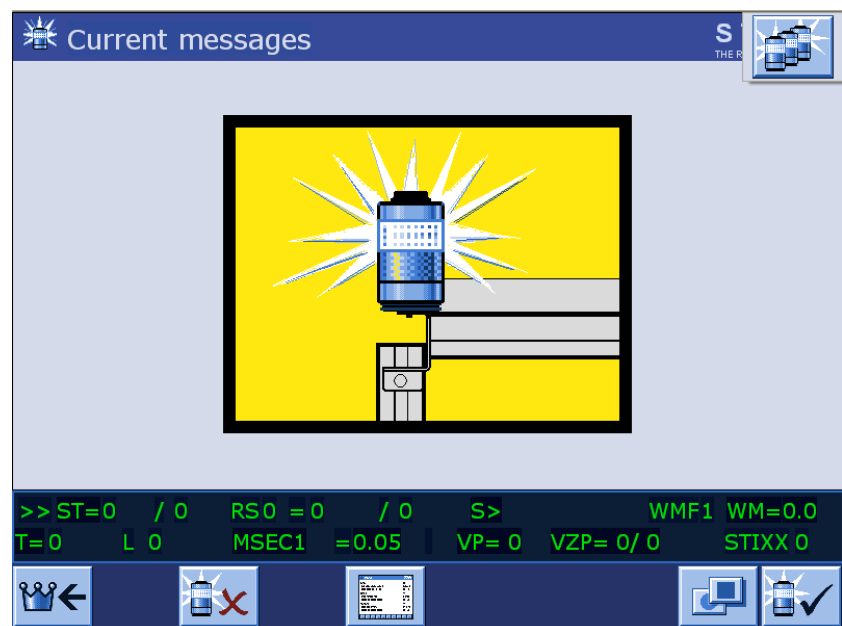


Fig. 3-41 Suppressing error messages

3.6 Starting machine after a fault *

2. Tap the "Suppress error message" key.
The "Setting-up operation" message appears. The error messages are suppressed until this is changed back. You are automatically brought back to the previous window and can continue working.
3. As a reminder that the error messages are being suppressed, the "Setting-up operation active" symbol appears in the upper right corner of each window.
4. The currently active and suppressed error messages can be viewed.
Tap the "Setting-up operation active" symbol for this.

Enabling suppressed error messages again

1. Touch "Setting-up operation active" symbol.
2. Call up "Additional function keys".
3. Tap the "Enable error messages again" key.

Automatic enabling

If there are no more stop motions, set-up mode is deactivated automatically.

4 Adjust the knitting machine

This chapter contains information on:

- Basic settings ([see page 4-1](#))
- Advanced adjustments ([see page 4-49](#))
- Working with files ([see page 4-98](#))
- Working with the Sintral editor ([see page 4-124](#))
- Editing the setup file ([see page 4-131](#))
- KnitLAN connection ([see page 4-135](#))
- Defining user profile ([see page 4-138](#))

4.1 Basic settings

This chapter contains the adjustment instructions and other information on:

- Adjusting carriage speed ([see page 4-2](#))
- Setting stitch tension ([see page 4-4](#))
- Setting and staggering yarn carriers ([see page 4-6](#))
- Adjust yarn tension ([see page 4-12](#))
- Adjusting yarn delivery on friction feed wheel ([see page 4-14](#))
- Setting storage feed wheel SFE ([see page 4-16](#))
- Adjusting knitting areas ([see page 4-17](#))
- Adjusting take-down ([see page 4-18](#))
- Setting cycle counter and piece number ([see page 4-23](#))
- Adjusting the shape counters ([see page 4-24](#))
- Setting counters ([see page 4-26](#))
- Switching lighting on and off ([see page 4-27](#))
- Set value for releasing thread clamp ([see page 4-28](#))
- Configuration tool bar ([see page 4-29](#))
- Configuring monitoring ([see page 4-31](#))
- Setting up a pattern ([see page 4-35](#))
- Racking correction (CMS 530 T) ([see page 4-43](#))
- Racking correction (CMS 730 T) ([see page 4-46](#))

4.1.1 Adjusting carriage speed




Different carriage speeds can be entered for different knitting situations. The indirect carriage speed only becomes effective when it is slower than the normal speed.

Carriage speed		STOLL THE RIGHT WAY TO KNIT	
Normal MSEC	0.05	0.05	
Intarsia MSEC I	0.05	MSECNPJ	0.05
Knot selectable MSEC K	0.00	for	1 Row(s)
MSECC	0.00		
MSEC0 (Empty row)	0.00	MSEC5	0.05
MSEC1 (Transfer)	0.00	MSEC6	0.05
MSEC2	0.05	MSEC7	0.05
MSEC3	0.05	MSEC8	0.05
MSEC4	0.05	MSEC9	0.05

Fig. 4-1 "Carriage speed" window

Input field	Meaning	Input values	Step width
"Normal MSEC"	Carriage speed for normal yarn carriers	0.05 to 1.20 m/s	0.05
"Intarsia MSEC I"	Carriage speed with intarsia yarn carriers	0.05 to 1.00 m/s	0.05
"Knot selectable MSEC K"	Carriage speed after small knots	0.05 to 1.20 m/s	0.05
"for row(s)"	Number of rows with reduced carriage speed after small knots	1 to 12 rows	1
"MSECC"	Carriage speed outside the needle bed, when the yarn carrier is brought into the clamp or taken out of the clamp.	0.05 to 0.50 m/s	0.05
"MSECNPJ=n"	Display of the carriage speed with NPJ		
"MSEC0=n"	Indirect carriage speed "n" with empty rows ("S0")	"n" = 0.05 to 1.40 m/s	0.05
"MSEC1=n"	Indirect carriage speed "n" with transfer rows	"n" = 0.05 to 1.20 m/s	0.05
"MSEC2=n" to "MSEC9=n"	Indirect carriage speed "n" with knitting rows	"n" = 0.05 to 1.20 m/s	0.05

Tab. 4-1 Input fields in "Carriage speed" window

Key	Function
	Call up "Carriage speed" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-2 Keys for entering the carriage speed

Adjusting the carriage speed:

1. Call up the "Carriage speed" window.
2. Tap the input fields for the carriage speed and enter the desired values.
3. Confirm the entries.
4. Call up "Main menu".

4.1.2 Setting stitch tension

The stitch tension, and therefore the stitch size are dependent on the take-down cam values. It is possible to specify either the stitch tension as an absolute value or the stitch length.

Fig. 4-2 "Stitch length" window during tandem operation

Input fields	Meaning
"NP#"	Stitch cam value (NP1-NP 100). Step width: 0.05. Call up NP31-NP100 with the help of the additional function keys.
"NPK"	Stitch cam correction value for all stitch cam positions. Step width: 0.05.
"NPR <<"	With tandem operation: Stitch cam correction values (front - back) from right to left carriage. Step width: 0.05. Carriage direction to the left.
"NPR >>"	With tandem operation: Stitch cam correction values (front - back) from right to left carriage. Step width: 0.05. Carriage direction to the right.
"NP value"	Adjusting stitch tension in NP values
"(mm)"	Setting the yarn length per stitch

Tab. 4-3 Input fields for setting the stitch tension

Key	Function
	Call up "Stitch length" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-4 Keys for adjusting the stitch tension

Setting stitch tension:









1. Call up the "Stitch length" window.
 2. Set the switch in the "NP value/(mm)" field to "NP value" or "(mm)".
 3. Tap the input fields for the take-down cam values and enter the NP values.
- or -**
- ➔ Tap the input fields for the take-down cam values and enter the yarn length per stitch in mm.
 4. Confirm the entries.
 5. Call up "Main menu".
 - ➔ To change all needle sinker values by the same value, tap the "NPK" input field, enter the take-down cam correction value and confirm the entries.

Further information:


- Stitch tension range ([see page 8-1](#))
- Stitch length ([see page 8-2](#))

4.1.3 Setting and staggering yarn carriers

Adjusting yarn carriers

Key	Function
	Call up the "Yarn carrier" window
	Call up the "Adjusting yarn carriers" window
	Call up "Additional function keys"
	Call up desired knitting area
	Confirm entries
	Save changes and end setting process
	End setting process without saving changes
	Call up the "Main menu"

Tab. 4-5 Keys for adjusting the yarn carriers




Yarn carrier

STOLL

THE RIGHT WAY TO KNIT

Y	SEN	Y:=n	0/1	YG	YP	Ka	Kb	K<I>a	K<I>b	Type	I<>	MSEC	V	Ua
1A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
1D	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
2D	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3A	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3B	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5
3C	1	A	1	1	1	0.0	0.0			N		0.00	0	14.5



1A

YDF

7

Yarn carrier at needle bed border (EAY!)

Fig. 4-3 "Yarn carrier" window

Column	Data shown
Y	Specification of yarn carrier
SEN	Specification of SEN area in which yarn carrier works
Y: =n	Specification of yarn type
0/1	Activate/deactivate yarn type
YG	Basic yarn carrier setting for needle. . .
YP	Current yarn carrier position for needle. . .
Ka	Yarn carrier correction value a (left) with selected knitting. Value range: -120...0...120 . Step width: 0.5=1/32 inch=0.8 mm
KB	Yarn carrier correction value b (right) with selected knitting. Value range: -120...0...120 . Step width: 0.5=1/32 inch=0.8 mm
K<l>a	Intarsia yarn carrier correction value a (left) for swiveled yarn carrier. Value range: -120...0...120 . Step width: 0.5=1/32 inch=0.8 mm
K<l>b	Intarsia yarn carrier correction value b (right) for swiveled yarn carrier. Value range: -120...0...120 . Step width: 0.5=1/32 inch=0.8 mm
Type	Display of the yarn carrier type: Normal yarn carrier (N), plating yarn carrier (P), double bow yarn carrier (PA), intarsia yarn carrier (I)
I<>	Swivel direction of intarsia yarn carrier
MSEC	Carriage speed when this yarn carrier is used (technical fabrics)
V	Number of selvedge needles until first knitting needle (technical fabrics)
Ua	Adjust the mesh width a (left) (Plating with normal yarn carriers)
Ub	Adjust the mesh width b (right) (Plating with normal yarn carriers)
Ba	Yarn carrier brake value a (left)
Bb	Yarn carrier brake value b (right)
YDF	Additional distance of yarn carrier from fabric selvedge when knitting fully fashion. Value range: 1-20 needles.

Tab. 4-6 Data in the "Yarn carrier" window

Adjusting yarn carriers:






1. Call up the "Yarn carrier" window.
In the default setting the yarn carriers are displayed in all knitting areas (SEN areas).
2. If only the yarn carriers of a certain SEN area are to be displayed, then call up "additional function keys" and tap the desired SEN area.

3. Tap a line (yarn carrier) to be processed.
The number of the yarn carrier appears at the bottom edge of the window, on the right of the "Adjusting yarn carriers" key.
4. Tap the "Adjusting yarn carriers" key.

Fig. 4-4 "Adjusting yarn carriers" window

5. Tap the fields of the selected line in the "Adjusting yarn carriers" window and enter the values.
6. Save changes and end setting process.
7. Call up "Main menu".

Staggering yarn carriers

Key	Function
	Call up the "Yarn carrier" window
	Call up "Additional function keys"
	Call up "YC staggering" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-7 Keys for staggering the yarn carriers

Stagger the yarn carriers:

1. Call up the "Yarn carrier" window.
2. Call up "Additional function keys".
3. Call up the "YC staggering" window.

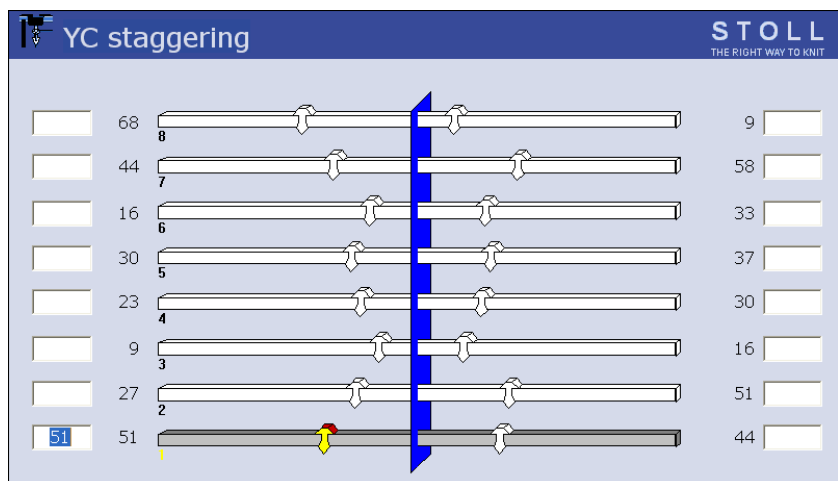


Fig. 4-5 "YC staggering" window





4. Tap the input fields next to the yarn carriers and enter the desired values.
Value range: 0-160. Step width: $0.5 = 1/32$ inch = 0,8 mm
5. Confirm the entries.
6. Call up "Main menu".

4.1 Basic settings

Automatic staggering and clamping of yarn carriers

During a pattern change the yarn carriers can be staggered and the threads can be clamped automatically.

Condition: The command "S0Y" is contained in the knitting program.

Key	Function
	Call up "Clamping & cutting" window
	Call up "Machine start" window
	Call up "Additional function keys"
	Display button "Automatic staggering of yarn carriers"

Tab. 4-8 Key for automatic staggering of the yarn carriers

1. Position all yarn carriers (including those of the previous pattern) by hand on both sides of the machine between the needle bed and clamping and cutting device.



Fig. 4-6 Moving yarn carriers

2. If threads are clamped in the clamping and cutting device, release these threads. Display the "Clamping & cutting" window to do this.

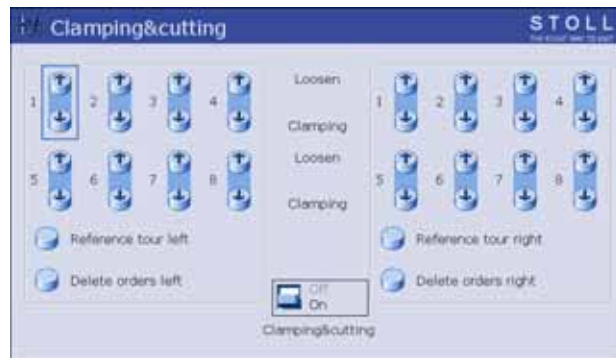


Fig. 4-7 "Clamping & cutting" window

3. Press the key of the corresponding clamping point in the "Loosen" line. The thread is released.
4. Repeat the process for all clamped threads. Make sure that the thread residues are removed.
5. Make sure that all yarn carriers are positioned before the clamping and cutting device (1).

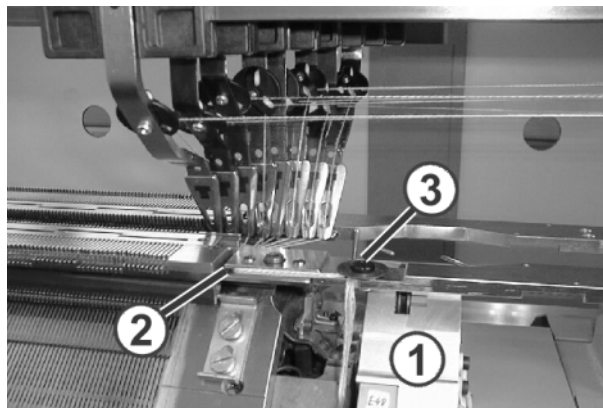


Fig. 4-8 Threading in thread

6. Take all threads of the yarn carriers and lay them in the threading notch (2).
7. Pull through the threads further until they are under the plate of the thread clamp (3).
8. Call up the "Machine start" window from the "Main menu".
9. Call up "Additional function keys".
10. Tap display button "Automatic staggering of yarn carriers".
11. In the space "Start" type on the key "SP from Line 1".
The computer searches in the knitting program to see which yarn carriers are required.
12. Start the machine with the engaging rod.

As soon as the line with the command "SOY" has been processed, all yarn carriers are automatically staggered and clamped in accordance with the yarn carrier home position.

4.1.4 Adjust yarn tension

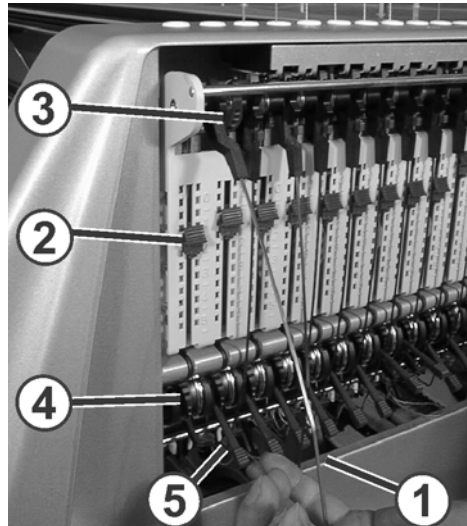


Fig. 4-9 Adjustment of yarn tension

The adjustment of yarn tension is done in the following sequence:

1. Lateral yarn tensioner: Adjusting the return force on the linear regulator (2)
2. Open permanent brakes
3. Adjusting yarn control device
4. Adjusting permanent brakes
5. Lateral yarn tensioner: Adjust the slack take-up path on the lock segment (3)



This sequence should help you to find the optimal adjustment of the yarn tension. Depending upon the type of fabric and the yarn characteristics it is possible that you may have to change the adjustments many times before you find the optimal adjustment.

These adjustments are the easiest to undertake while the machine is knitting.

Make sure that the braking and restoring force on all elements is set at the lowest possible.

Set restoring force

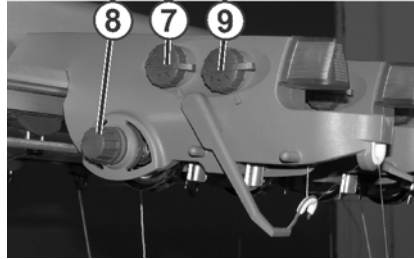
1. Remove lateral yarn tensioner (1) from the stay.
2. Linear regulator (2) is to be set in a manner that the lateral yarn tensioner has enough strength to hold the thread tensioned always.
3. Control the setting while the machine is knitting.
In this case the thread must not sag rather it should always be tensioned by the yarn tensioner.

Open permanent brakes

- ➔ Push lever (5) of the permanent brake (4) in the lowest position.

Adjusting yarn control device

1. Thread brake (8) to be adjusted in such a manner that the thread break control does not move too much underneath such that the stop impulse gets released.



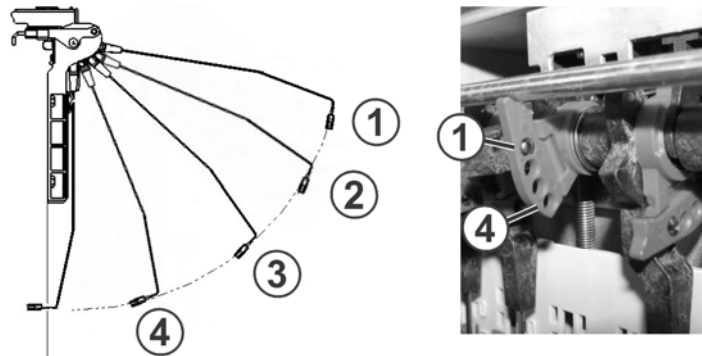
2. Adjust knot detectors for large knots (7) and for small knots (9) depending on yarn thickness and knots in such a way that they are triggered by an undesirable knot size.

Adjusting permanent brakes

- Permanent brake (4) to be set in such a manner that the lateral yarn tensioner swivels very little (approx.. 25 degree), when the yarn carrier has achieved it's left or right stop position.
- If a thread loop is formed between the friction feed wheel and the permanent brake (on the inner side of the lateral security cover) then the thread brake on the thread control unit should be set a little stronger and the permanent brake should be set a little weaker.

Set the maximum slack take-up path of the yarn tensioner

If desired the maximum slack take-up path of the yarn tensioner can be set from 80 to 35 degree. This will be set with the lock segment (3). It has four grid positions.



Position	max. angle	Explanation
1	80	Basic setting of the lock segment Active thread clamp in action Largest slack take-up path
2	65	Active thread clamp in action
3	50	Active thread clamp in action
4	35	Active thread clamp out of action Smallest slack take-up path

4.1.5 Adjusting yarn delivery on friction feed wheel

The friction rollers have a constant peripheral speed and feed the maximum amount of thread consumed by the knitting machine. To adjust the yarn delivery to the actual consumption, the winding angle of the thread is modified. If the winding angle is enlarged, then the friction force increases and the friction feed wheel delivers more thread. The friction feed wheel should always feed somewhat more thread than the yarn carriers consume.

Depending on machine model and component type, there are different models of friction feed wheels.

Model 1

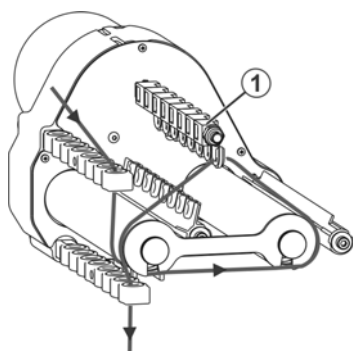


Fig. 4-10 Adjusting the yarn delivery on the friction feed wheel

➔ If the yarn delivery is to be reduced, then lead the yarn through the eyelet (1).

Model 2

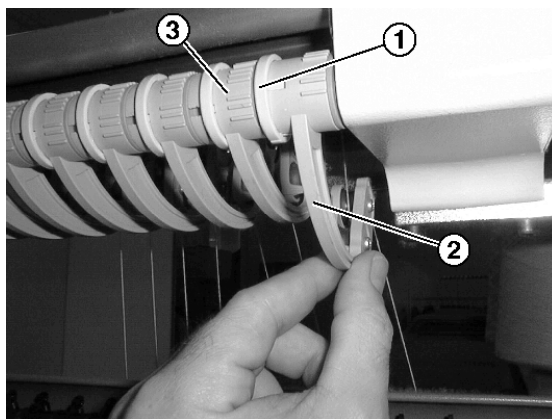


Fig. 4-11 Adjusting the yarn delivery on the friction feed wheel

Adjusting the yarn delivery:

1. Push the fixing device (1) toward the front.
2. If the yarn delivery is to be increased, turn the swivel bow (2) upward.
- or -
- ➔ If the yarn delivery is to be reduced, turn the swivel bow (2) downward.
3. Push the fixing device (1) toward the rear.
4. Switch on the knitting machine and start knitting.

5. Check the yarn delivery.
6. Set all swivel bows consecutively with the scale (3) as described in steps 1 to 5.

For very coarse yarn (valid for all models)

The distance between stop motion rail and friction roller is too small so that the yarn comes into contact with the stop motion rail and releases a stop impulse, then the machine stops.

Modify the distance:

1. Remove the screw (5) and the stop motion rail (4).

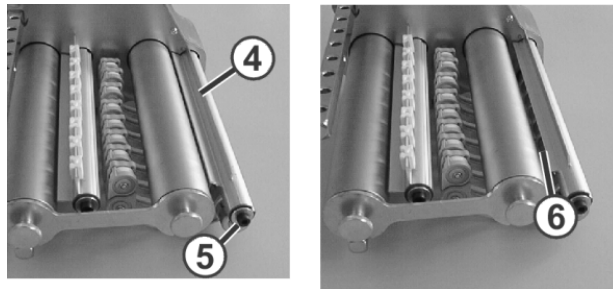


Fig. 4-12 Set the distance between stop motion rail and friction roller

2. Turn the stop motion rail by 180 degrees and assembly it again.

A bigger distance (6) is between the stop motion rail and the friction roller.

Further information:

- Symbols in this document ([see page 1-3](#))
- Threading threads into friction feed wheel ([see page 3-14](#))

4.1.6 Setting storage feed wheel SFE

The yarn tension is set at the outgoing of the feed wheel with the brake rings "1". The Stoll company recommends the following assembly:

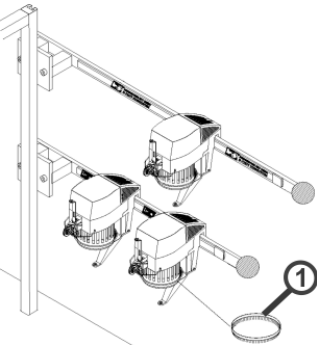


Fig. 4-13 Storage feed wheel SFE




Gauge	Quantity	Colour of brake rings
E 16-18	1	red
E 9.2	2	red

Tab. 4-9 Assembly of brake rings

You will find further information on the storage feed wheel SFE in the operating instructions which are enclosed.

4.1.7 Adjusting knitting areas

In the SINTRAL program up to four knitting areas (SEN areas) can be defined and switched on and off separately. If the knitting areas are not defined in the SINTRAL program, they can be adjusted in the "Knitting areas" window.

Key	Function
	Call up "Knitting areas" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-10 Keys for adjusting the knitting areas

1. Call up the "Knitting areas" window.

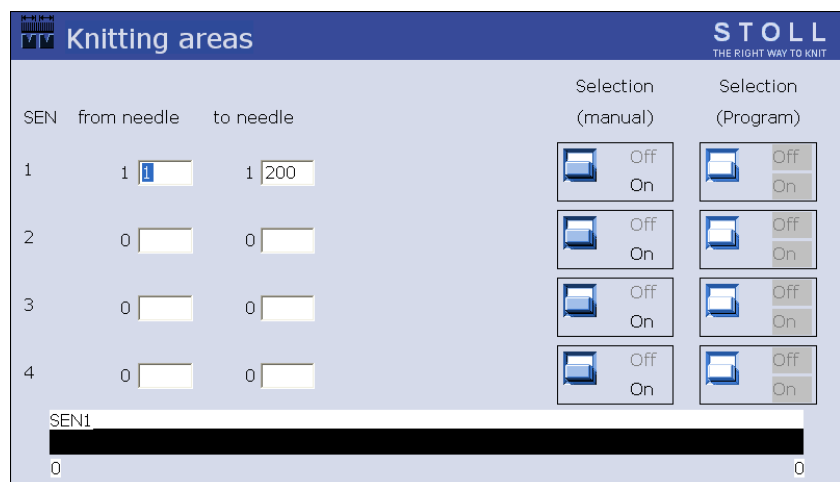





Fig. 4-14 "Knitting areas" window

2. Assign each knitting area ("SEN") a needle area.
3. Confirm the entries.
The assigned areas are graphically shown.
4. To switch individual knitting areas on or off, tap the switch in the "Selection (manual)" column.
5. Call up "Main menu".

4.1.8 Adjusting take-down

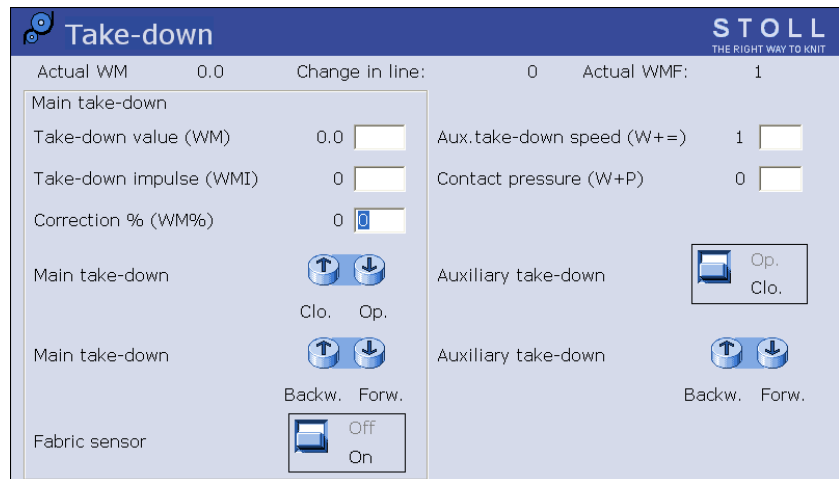
Adjusting fabric take-down values

Key	Function
	Call up "Take-down" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-11 Keys for adjusting the fabric take-down values

Adjusting the fabric take-down values:

1. Call up the "Take-down" window.
The current fabric take-down values are shown.



The screenshot shows the "Take-down" window with the following settings:





- Actual WM: 0.0
- Change in line: 0
- Actual WMF: 1
- Main take-down: Take-down value (WM) 0.0, Take-down impulse (WMI) 0, Correction % (WM%) 0
- Main take-down: Clo. Op. (with up/down arrows)
- Main take-down: Backw. Forw. (with left/right arrows)
- Fabric sensor: Off/On (with a sensor icon)
- Aux. take-down speed (W+=) 1
- Contact pressure (W+P) 0
- Auxiliary take-down: Op. Clo. (with a sensor icon)
- Auxiliary take-down: Backw. Forw. (with left/right arrows)

Fig. 4-15 "Take-down" window

2. To enter the fabric take-down values, tap the input fields and enter the desired values.
3. Confirm the entries.

Adjusting fabric take-down control

During production, the control of knitting machine compares the current values with threshold values. If a threshold value is exceeded, the knitting machine stops and displays a malfunction.

Key	Function
	Call up "Additional function keys"
	Call up "Fabric take down control" window
	Confirm entries
	Return to "Take-down" window

Tab. 4-12 Keys for adjusting fabric take-down control

Adjusting fabric take-down control:

1. Call up the "additional function keys" in the "Take-down" window.
2. Call up the "Fab. take-down control" window.

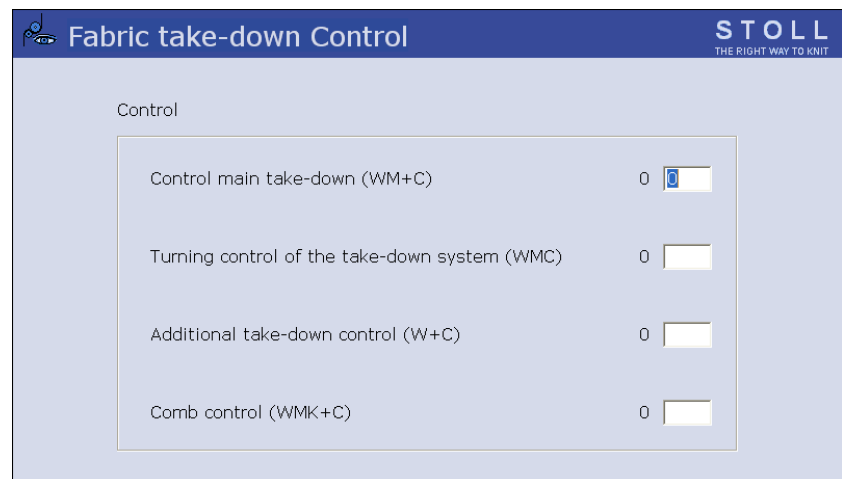










Fig. 4-16 "Fabric take-down control" window

3. Enter the threshold values.
4. Confirm the entries.
5. Return to the "Take-down" window.

4.1 Basic settings

Processing fabric take-down menu

The fabric take-down commands which concern a knitting situation are combined in one function in the fabric take-down menu (WMF menu). You will find a detailed description of the fabric take-down menu in the programming manual (Chap. 2.18.1).

Key	Function
	Call up "Additional function keys"
	Call up "WMF menu" window
	Delete all information in the fabric take-down menu
	"Copy line" contents
	"Insert line" contents
	Confirm entries
	Return to "Take-down" window
	Call up the "Main menu"

Tab. 4-13 Keys for adjusting the fabric take-down menu

Adjusting fabric take-down menu:

1. Call up the "additional function keys" in the "Take-down" window.
2. Call up the "WMF menu" window.

WM		FF Needles											
WMF	Min	Max	Min	Max	WMI	WM^	WMC	W+C	WM+C	WMK+C	W+=	W+P	Comment
1	0.0	0.0	0	0	0	0	0		0	0			
2	0.0	0.0	0	0	0	0	0		0	0			
3	0.0	0.0	0	0	0	0	0		0	0			
4	0.0	0.0	0	0	0	0	0		0	0			
5	0.0	0.0	0	0	0	0	0		0	0			
6	0.0	0.0	0	0	0	0	0		0	0			
7	0.0	0.0	0	0	0	0	0		0	0			
8	0.0	0.0	0	0	0	0	0		0	0			

1

Active WMF: 1

Fig. 4-17 "WMF menu" window

3. Tap a line to be processed.
The line appears at the bottom edge of the window.
 4. Tap the fields of the selected line and enter the desired values.
- or -**
- ➔ Copy contents of a line and insert at desired location again.
5. Confirm the entries.
 6. Return to the "Take-down" window.

Save fabric take-down menu

The data of the fabric take-down menu is part of the setup file. If changes have been made in the fabric take-down menu, they are saved in the setup file.




Further information:

- Working with files, libraries and pattern folders ([see page 4-108](#))

4.1 Basic settings

Control take-down comb

It is always only possible to carry out one comb function.

Key	Function
	Call up "Additional function keys"
	Call up "Comb" window
	Return to "Take-down" window

Tab. 4-14 Keys for controlling take-down comb

Control take-down comb:

1. Call up the "additional function keys" in the "Take-down" window.
2. Call up the "Comb" window.

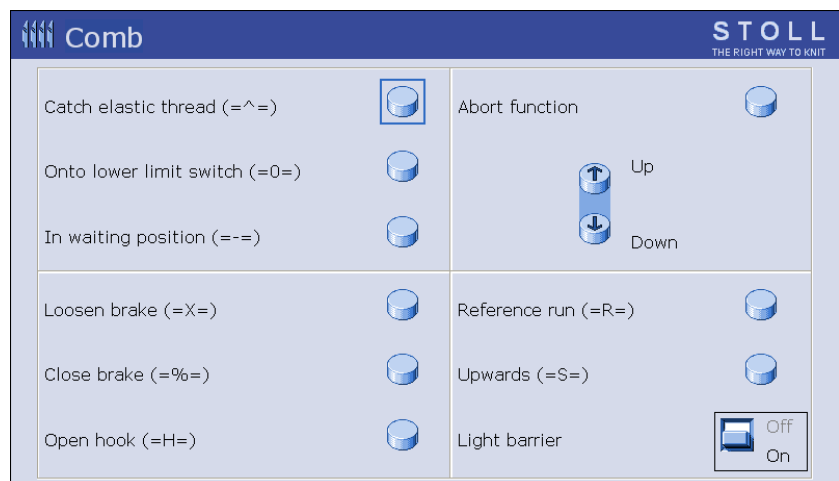





Fig. 4-18 "Comb" window

3. To activate a function, touch a key.
4. Return to the "Take-down" window.

4.1.9 Setting cycle counter and piece number

The cycle counter specifies how often a pattern section is to be repeated. Which cycle counter controls which pattern section is defined in the knitting program.

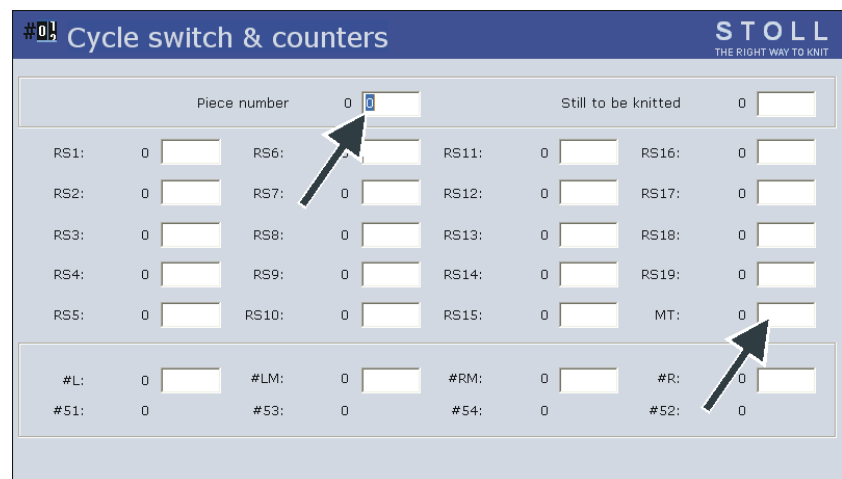
The piece number specifies how many pieces are to be knitted. During production, the piece number is decreased by "1" as soon as a complete piece has been produced.

Key	Function
	Call up "Cycle counters & counters" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-15 Keys for adjusting the cycle counter and the piece number

Setting cycle counter and piece number:

1. Call up the "Cycle counters & counters" window.








The screenshot shows the "Cycle switch & counters" window. At the top, there's a title bar with "#01 Cycle switch & counters" and the "STOLL THE RIGHT WAY TO KNIT" logo. Below the title bar, there are two main sections. The first section has a "Piece number" field set to "01" and a "Still to be knitted" field set to "0". The second section contains a grid of cycle counter fields labeled RS1 through RS19 and MT, each with a value of "0". At the bottom, there are four more fields labeled #L, #LM, #RM, and #R, each with a value of "0", and four more fields labeled #51, #53, #54, and #52, each with a value of "0". Arrows point to the "Piece number" field and the "MT" field.

Fig. 4-19 "Cycle counters & counters" window

2. Set the cycle counters "RS1" to "RS19".
3. Adjust the piece number.
4. Confirm the entries.
5. Call up "Main menu".

4.1.10 Adjusting the shape counters

During fully-fashion knitting the fabric selvages are controlled by selvedge counters. When the values of the shape counters changes, then the fabric becomes broader or narrower. The alteration in the fabric width is mentioned in the knitting program. The shape counters should be changed manually only in exceptional cases, for example during designing.

Key	Function
	Call up "Cycle counters & counters" window
	Call up "Additional function keys"
	"Adjusting the shape counters " call-up.
	Confirm entries
	Call up the "Main menu"

Tab. 4-16 Keys for adjusting the shape counters

Adjusting the shape counters

1. Call up the "Cycle counters & counters" window.
2. Call up "Additional function keys".
3. "Adjusting the shape counters" call-up.

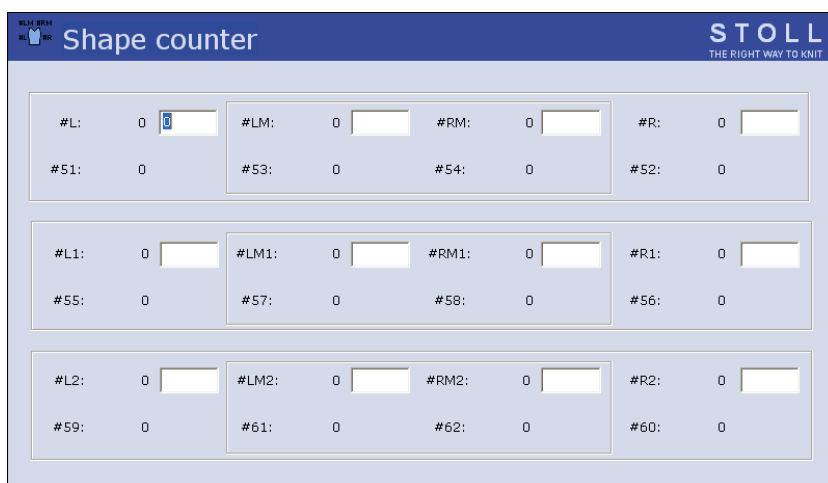
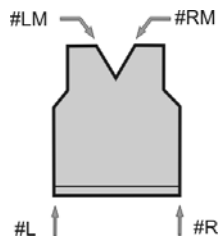
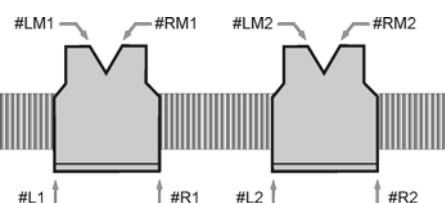


Fig. 4-20 "Shape counters" window

4. Set the counters to the desired value.
5. Confirm the entries.

6. Call up "Main menu".





In the case of single-piece knitting, upto 4 shape counters can be used, in the case of double-piece knitting upto 8 shape counters.

		Shape counter	Counters for the start-width
single-piece		#L	#51
		#R	#52
		#LM	#53
		#RM	#54
double-piece		#L1	#55
		#R1	#56
		#LM1	#57
		#RM1	#58
		#L2	#59
		#R2	#60
		#LM2	#61
		#RM2	#62

The counters for start-width can be changed only in the knitting program or in the pattern preparation unit.

4.1.11 Setting counters

In addition to the piece counter and the cycle counters, there are also other counters. On the one hand, they can be used in the knitting program, e.g. to request conditions. On the other hand, they indicate various machine states, see Programming Manual, Chapter 4.4.






Key	Function
	Call up "Cycle counters & counters" window
	Call up "Additional function keys"
	Call up desired counter group
	Call up the "Main menu"

Tab. 4-17 Keys for setting the counters

Setting counters:

1. Call up the "Cycle counters & counters" window.
2. Call up "Additional function keys".
3. Tap the key for the desired counter group.
4. Set counter to the desired value.
5. Call up "Main menu".

4.1.12 Switching lighting on and off

Key	Function
	Call up "Machine start" window
	Call up "Additional function keys"
	Switch on lighting
	Switch off lighting
	Call up the "Main menu"

Tab. 4-18 Keys for switching the lighting on and off

Switch the lighting on and off:

1. Call up "Machine start" window.
2. Call up "Additional function keys".
3. Switch on the lighting.

- or -

- ➔ Switch off the lighting.
4. Call up "Main menu".

4.1.13 Set value for releasing thread clamp

The thread clamping and cutting device holds the thread of a yarn carrier not used for knitting at the moment. When the yarn carrier is used again, the clamp opens after knitting a few rows and the yarn end is released. In the default setting the clamp is released after 19 knitting rows. This value can be set individually for each yarn carrier in the "Release clamps" window.

Fig. 4-21 "Release clamps" window

Key	Function
	Call up "Release clamps" window
	Confirm entries
	Call up the "Main menu"

Tab. 4-19 Keys for entering the value for releasing thread clamp

Set value for releasing thread clamp:

1. Call up the "Release clamps" window from the "Main menu".
2. Tap the input field of the corresponding yarn carrier and enter a value. In the default setting the value "20" which corresponds to 19 knitting rows (value - 1) is set.
3. Confirm the entries.
4. Call up "Main menu".

4.1.14 Configuration tool bar

The configurable tool bar allows you to jump directly to the individual windows without having to take the "Detour" through the main menu or using the "Additional functions" key. The tool bar is the headline or title bar of a window. You can include the symbols of those windows which you use most often in the tool bar.

The symbols can be called up in any window. To do so, tap the symbol on the top left of the title bar and the symbols are displayed. (Exception: Tap the "Go to mask" key in the SINTRAL editor.) To close the symbols again, tap the empty field next to them.

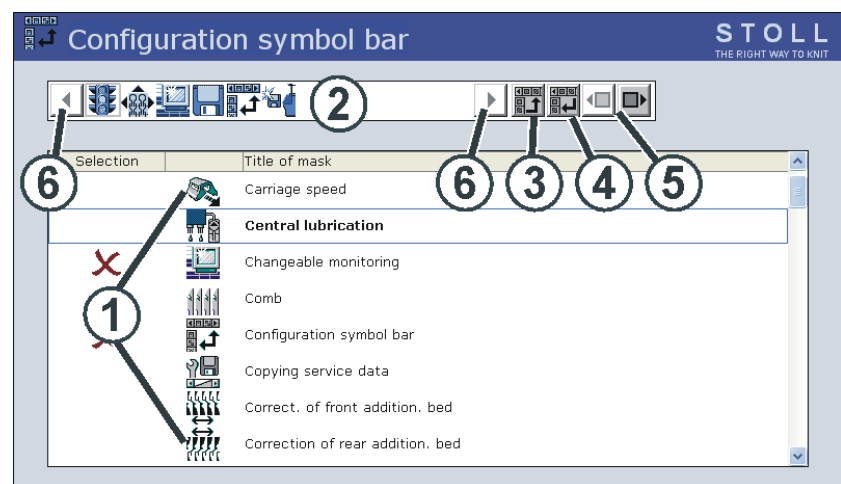





Fig. 4-22 Window "Configuration tool bar"

Field/ Key	Function
1	List of the windows which can be selected for the tool bar.
2	The tool bar contains the symbols of the selected windows. In the above figure the carriage speed has been selected.
3	Key used to set a symbol in the tool bar (2).
4	Key used to remove a symbol from the tool bar (2).
5	Change the position of a symbol in the tool bar (2). To do so, tap the symbol in the tool bar and use the corresponding key to move it forwards or backwards.
6	If there are more than 11 symbols in the tool bar, the display can be moved to the left or right by means of the arrow keys.

4.1 Basic settings

Key	Function
	Call up the "Service" window
	Call up "Configuration tool bar" window
	Call up the "Main menu"

Tab. 4-20 Keys for configuring the tool bar

Configuring tool bar:

1. Call up the "Service" window.
2. Call up "Configuration tool bar" window.
3. Tap the desired symbol (1).
4. Press the key (3).

- or -








- ➔ Double-click on the symbol.

The symbol is displayed in the tool bar (2). The character "X" before the symbol indicates that the symbol has been selected from the list (1) for the tool bar.

5. Call up "Main menu".

4.1 Basic settings

Linking a field to a value

Key	Function
	Call up the "Changeable monitoring" window.
	Call up "Additional function keys"
	"Automatic Configuration"
	"Clear all fields" (reset)
	End setting process and save changes
	End setting process without saving changes
	Call up the "Main menu"

Tab. 4-21 Keys for linking a field

Linking a field to a value:

1. Call up the "Changeable monitoring" window from the "Main menu".
2. Tap a white field with a frame. The setting window appears.

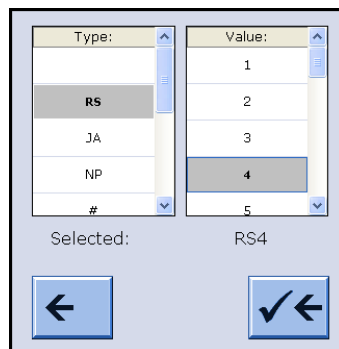












Fig. 4-24 Window for linking a field

3. Select the type of the value in the left column.
4. Select the value in the right column.
The selected value is displayed in the lower line.
5. Confirm the entries.
6. If necessary, link further fields to a value.
7. Call up "Main menu".



If only one value is to be deleted, select the empty (white) field above "RS".

Activating the function block Various function blocks can furthermore be displayed for the configurable values. The selected function blocks are positioned at fixed positions over the existing fields. They do not delete these, but just cover them, so that the fields are visible again when the function block is deactivated.

Key	Function
	Call up the "Changeable monitoring" window.
	Call up "Additional function keys"
	Activate and de-activate the "Stitch tension" function block
	Activate and de-activate the "SEN area" function block
	Activate and de-activate the "Yarn carrier" function block
	Activate and de-activate the "Function name" function block
	Activate and de-activate the "Fabric take-down values" function block (Can only be activated, if the "STIXX" function block is deactivated.)
	Activate and de-activate the "Sintral print line" function block
	Activate and de-activate the "STIXX" function block (Can only be activated, if the "Fabric take-down values" function block is deactivated.)
	Call up the "Main menu"





Tab. 4-22 Keys for activating a function block

1. Call up the "Changeable monitoring" window from the "Main menu".
2. Call up "Additional function keys".
3. Activate the desired function blocks.
4. Call up "Main menu".

4.1 Basic settings

 Saving, loading, deleting
 settings ...

The configuration carried out by you can be saved, loaded and deleted.

Key	Function
	Call up the "Changeable monitoring" window.
	Call up "Additional function keys"
	Call up "Monitoring deposit" window.
	Call up the "Main menu"

Tab. 4-23 Keys for calling up the "Monitoring deposit" window

1. Call up the "Changeable monitoring" window from the "Main menu".
2. Call up "Additional function keys".
3. Call up "Monitoring deposit" window

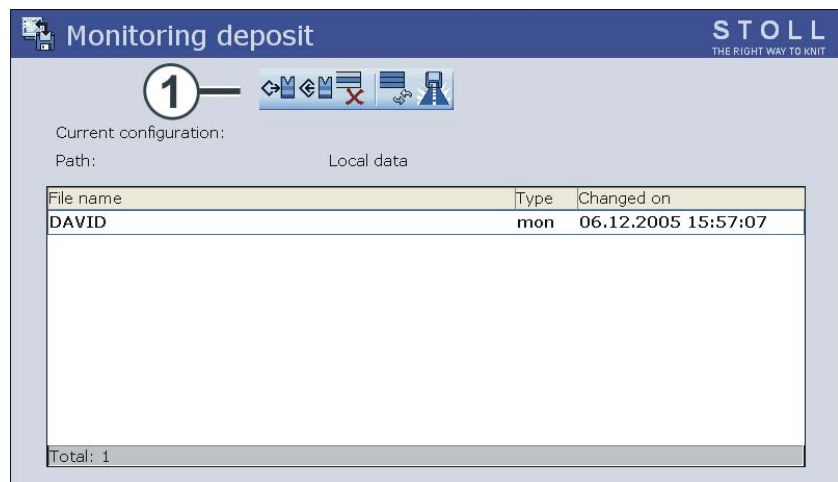



Fig. 4-25 "Monitoring deposit" window

4. Select the desired program point (1) (loading, saving, deleting ...).
5. Call up "Main menu".

4.1.16 Setting up a pattern

This menu can be used for fine adjustment of a pattern at the knitting machine. While the machine is knitting, the corresponding data of the knitting program are displayed for every carriage stroke. If required, changes can be carried out directly in this menu via setting windows, or the corresponding menu opens up for your input. To do so, tap the corresponding field.

Key	Function
	Call up the "Setting up the pattern" menu

Tab. 4-24 Key for calling up the "Setting up the pattern" menu

The window is structured into various areas:

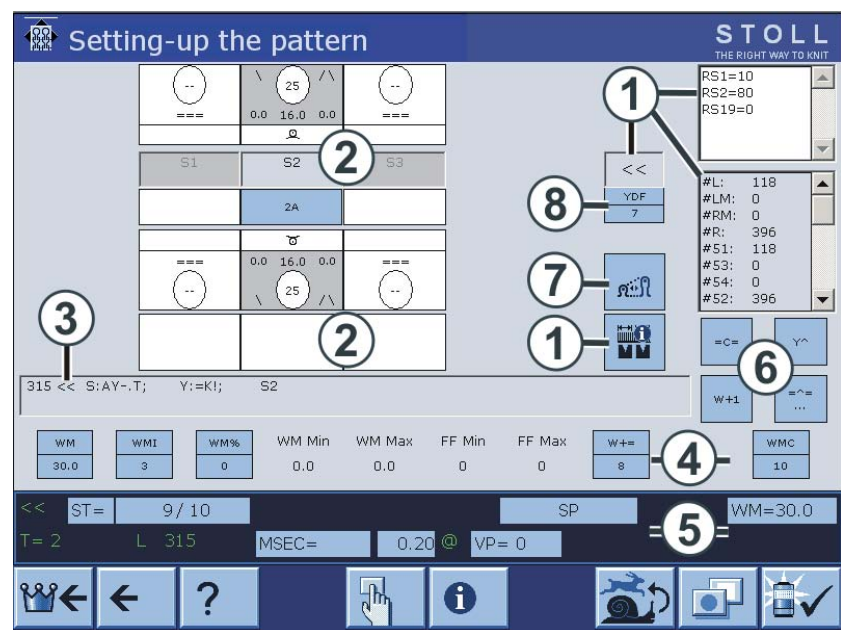


Fig. 4-26 "Setting-up the pattern" window

Area	Explanation
1	Display of: Carriage direction, cycle counters, SEN area, coupling width (for tandem machine), counters. The active cycle counter is highlighted. The values cannot be modified.
2	Setting up of the knitting systems: Needle action, stitch tension, yarn carrier, jacquard line.
3	Current Sintral line
4	Fabric take-down values or fabric take-down function
5	Status line: Here the individual values can be changed or the corresponding setting menu called up.

4.1 Basic settings

Area	Explanation
6	Actions for yarn carrier plunger, fabric take-down, take-down comb and auxiliary take-down
7	Call up "Stitch length" window
8	Additional yarn carrier distance during fully fashion knitting

Changing a value The values are changed by means of a virtual keyboard. If a value can be changed, a keyboard bar which allows a value to be entered, is displayed in the title bar of the menu.



Fig. 4-27 Numerical keyboard

Element	Function
	End setting process without saving changes
	Undo a change, the previous value is displayed again.
	End setting process and save changes

Tab. 4-25 Input elements

Changing a value:

1. Tap the corresponding field. The setting window appears, for example:

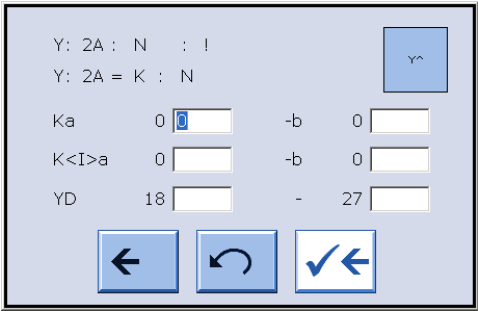


Fig. 4-28 "Yarn carrier" window

2. The keyboard bar appears in the title bar. Use it to carry out the changes.
3. Confirm the input.

Setting up of the knitting systems

The stitch tension, needle action, yarn carrier and jacquard line are displayed for every knitting system. The corresponding menu is opened if the yarn carrier, stitch tension or jacquard line is touched.

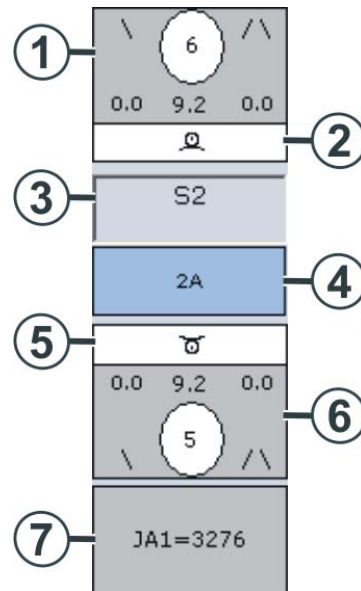


Fig. 4-29 "Change NP value" window

Area	Display	Modify
1	Stitch tension (rear knitting system)	Value can be changed at indirect specification (NP6=9.2)
2	Needle action (rear knitting system)	
3	Number of the knitting system	
4	Yarn carrier	Yarn carrier correction Yarn carrier stopping position
5	Needle action (front knitting system)	
6	Stitch tension (front knitting system)	Value can be changed at indirect specification (NP5=9.2)
7		Jacquard line

4.1 Basic settings

Stitch tension Not only the value of the stitch tension is displayed, but also the type of specification.

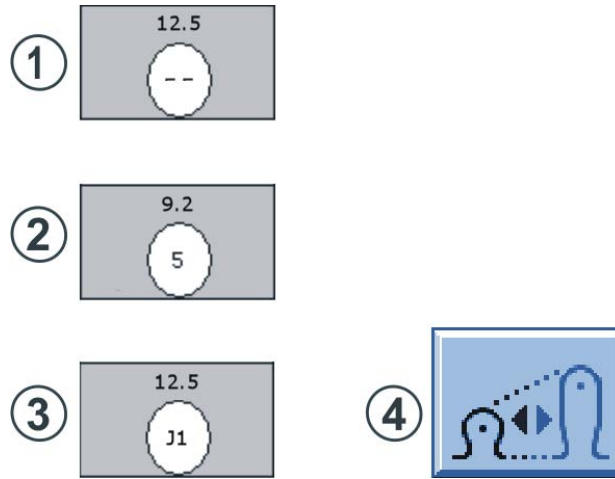































Fig. 4-30 "Display of the stitch tension" window

Type	Explanation	Setting possibility
1	Direct specification: "-" (NP=12.5)	
2	Indirect specification: "5" (NP5=9.2)	Value can be changed
3	Jacquard-controlled stitch tension: "J1" (NPJ1=12.5). Depiction at flexible stitch: J1!	
4	Change the stitch tension	The "Stitch length" window appears. All the values can be changed.

Symbols for the needle actions

The needle actions are represented by symbols so that you know immediately which needle action is being carried out in one knitting system.

Symbol	Meaning	Symbol	Meaning
	Do not knit		Front stitch
	Rear stitch		Front tuck
	Rear tuck		Cast off
	Transfer forwards		Transfer to rear
	Transfer to the front and rear		Split-stitch to the front
	Split-stitch to the rear		Split-stitch to the front and rear
	Split-stitch to the front, stitch to the rear		Split-stitch to the rear, stitch to the front
	Stitch to the front, tuck to the front		Stitch to the rear, tuck to the rear
	Stitch to the front, tuck to the front, do not knit		Stitch to the rear, tuck to the rear, do not knit
	Transfer to the front, press off to the rear		Transfer to the rear, press off to the front
	Transfer to the front and rear, press off to the front and rear		Cast off, tuck to the front (after-pressing)
	Cast off, tuck to the rear (after-pressing)		Transfer with additional bed to the front
	Transfer with additional bed to the rear		Transfer with additional bed to the front and rear
	Transfer with additional bed to the front, transfer to the front and rear		Transfer with additional bed to the rear, knit to the front
	Transfer with additional bed to the rear, knit to the rear		

Tab. 4-26 Symbols of the needle actions

Yarn carrier If this field is touched, the "Yarn carrier" window opens up.

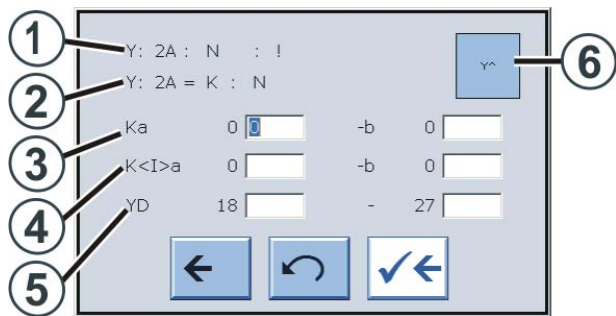


Fig. 4-31 "Yarn carrier" window

Area	Explanation
1	Display of the current yarn carrier instruction. After this information (End character " : ") further information is available about this yarn carrier: N = Normal yarn carrier I = Intarsia yarn carrier S = Selected H = Home C = Yarn carrier is clamped and cut off ! = Yard carrier is stopped outside the SEN area PA = Plating yarn carrier (double bow) P = Plating yarn carrier (double eyelet) < = Intarsia yarn carrier swivels to the left > = Intarsia yarn carrier swivels to the right
2	Definition of the yarn carrier (display only)
3	Yarn carrier correction with an application (selected knitting) at the left or right edge.
4	Correction for swiveled Intarsia yarn carrier on the left and on the right edge.
5	Yarn carrier stopping position at the left or right fabric selvedge.
6	Activate or de-activate the yarn carrier plunger.

Jacquard line If this field is touched, the "Sintral editor" window opens up. The cursor is automatically positioned before the current jacquard line. The jacquard is displayed by default as compressed.



If the jacquard is unpacked, then depicted uncompressed and the jacquard line exceeds 1,200 characters, it can no longer be displayed. An error message indicates this condition.

Window with selection possibilities

Actions can be selected in the following windows:

- Comb actions
- Fabric take-down, auxiliary take-down and yarn carrier plunger
- Status line
- Sintral line

Comb actions

Various actions for the take-down comb can be selected by tapping the key (1).

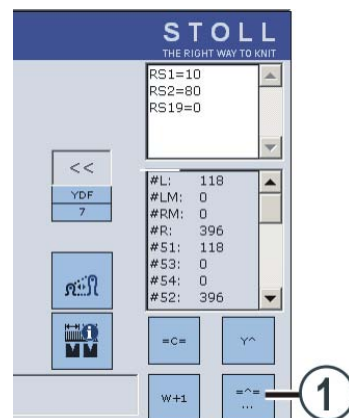


Fig. 4-32 "Comb actions" window

The "Select comb actions" window appears.

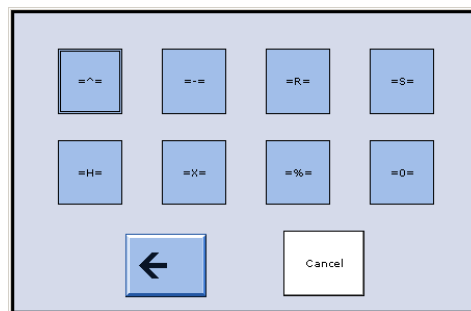


Fig. 4-33 "Select comb actions" window

Key	Explanation
= ^ =	Take-down comb upwards, grip elastic yarn
= - =	Take-down comb in waiting position
= R =	Take-down comb reference run
= S =	Take-down comb at upper limit switch
= H =	Open the comb hook
= X =	Open the comb brake
= % =	Close the comb brake
= 0 =	Take-down comb at lower limit switch
Cancel	This key can be used to abort an action as long as it is being carried out.

4.1 Basic settings

Actions for fabric take-down, auxiliary take-down, yarn carrier plunger

The keys (1) can be used to select actions for the fabric take-down, auxiliary take-down and the yarn carrier plungers. The possible action is always displayed on the key.

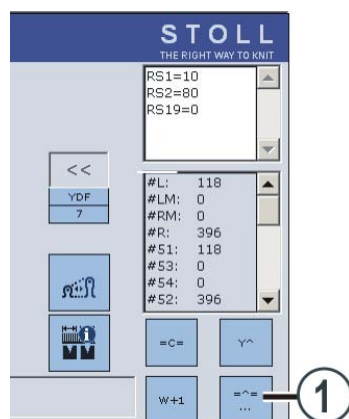


Fig. 4-34 "Actions for fabric take-down, ..." window

Key	Explanation
= C =	Close fabric take-down
= W =	Open fabric take-down
Y^	De-activate all the yarn carrier plungers
Yv	Activate all the yarn carrier plungers
W+1	Close auxiliary take-down
W+0	Open auxiliary take-down

Status line The elements displayed in gray in the status bar can be selected. To do so, tap one of the gray fields.

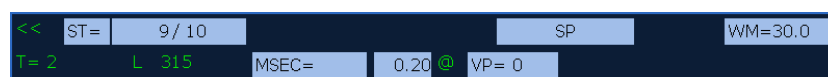


Fig. 4-35 "Status bar" window



At some elements the gray field is divided. This means: If the front field is touched, the complete setting menu for this element appears. If the rear part of the gray field is touched, the window for changing the value appears.

Sintral line If this field is touched, the "Sintral editor" window opens up. The cursor is automatically positioned before the current Sintral line.

4.1.17 racking correction (CMS 530 T)

To achieve the optimum transfer position even with different stitch lengths, the racking specification can be provided with a correction. When creating the knitting program, the value for the correction is usually provided with a "?", see Programming Manual, Chapter 2.16.

During knitting, the machine automatically stops in the reversing position before the line with the correction specification is knitted. Now the optimum value can be entered.

Key	Function
	Call up the "Racking correction" window
	Confirm entries

Tab. 4-27 Button for calling up the "Racking correction" window

Set racking correction value
for the rear needle bed

1. Call up the "Racking correction" window from the "Main menu".

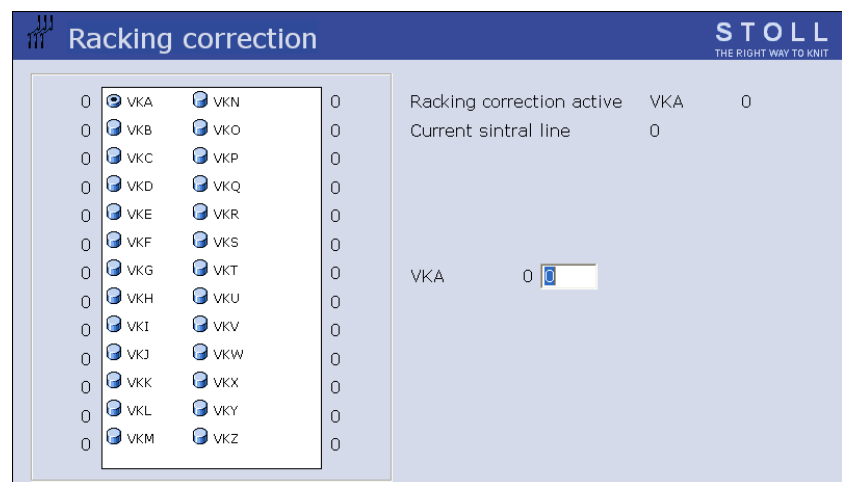







Fig. 4-36 "Racking correction" window

2. To change a racking correction value, tap the corresponding key and enter the value in the input field.
3. Confirm the input.

4.1 Basic settings

 Set racking correction value
 for the additional beds

Key	Function
	Call up the "Racking correction" window
	Call up "Additional function keys"
	Call up the "Racking correction left" window
	Call up the "Racking correction right" window
	Confirm entries

Tab. 4-28 Keys for calling up the additional beds

1. Call up the "Racking correction" window from the "Main menu".
2. Call up "Additional function keys".

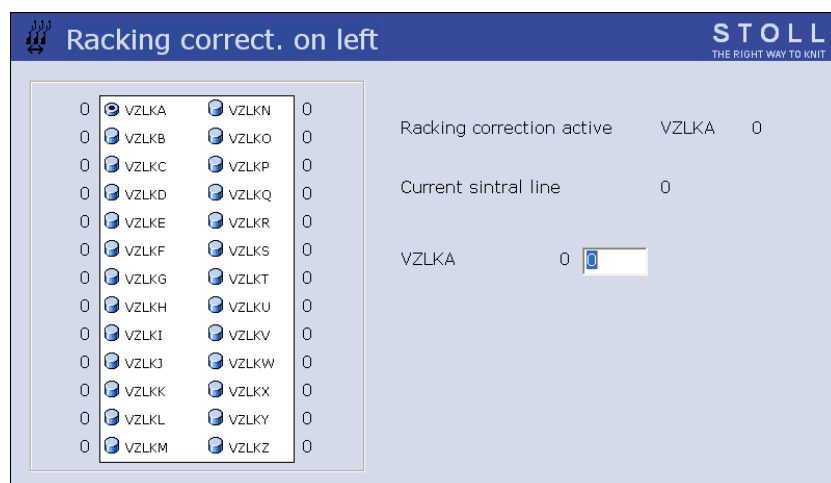


Fig. 4-37 "Racking correction left" window





3. Call up the "Racking correction left" window.
- or -
- Call up the "Racking correction right" window.
4. To change a racking correction value, tap the corresponding key and enter the value in the input field.
5. Confirm the input.



Racking corrections are only possible when there is sufficient space at the connecting point of the two additional bed halves.

Saving/reading in racking corrections

The racking corrections are not only pattern-dependent, but also machine-dependent. As a result, these settings can be saved on the hard disk or copied back from it.

Key	Function
	Call up "Additional function keys"
	Delete all racking corrections
	Save racking corrections on hard disk
	Copy back racking corrections from hard disk to machine memory



Tab. 4-29 Buttons for saving/reading in racking corrections

1. Call up the "Additional function key" in the "Racking correction" window.
2. Tap desired key.

4.1.18 racking correction (CMS 730 T)

To achieve the optimum transfer position even with different stitch lengths, the racking specification can be provided with a correction. When creating the knitting program, the value for the correction is usually provided with a "?", see Programming Manual, Chapter 2.16.

During knitting, the machine automatically stops in the reversing position before the line with the correction specification is knitted. Now the optimum value can be entered.

Key	Function
	Call up the "Racking correction" window
	Confirm entries

Tab. 4-30 Button for calling up the "Racking correction" window

Set racking correction value
for the rear needle bed

1. Call up the "Racking correction" window from the "Main menu".

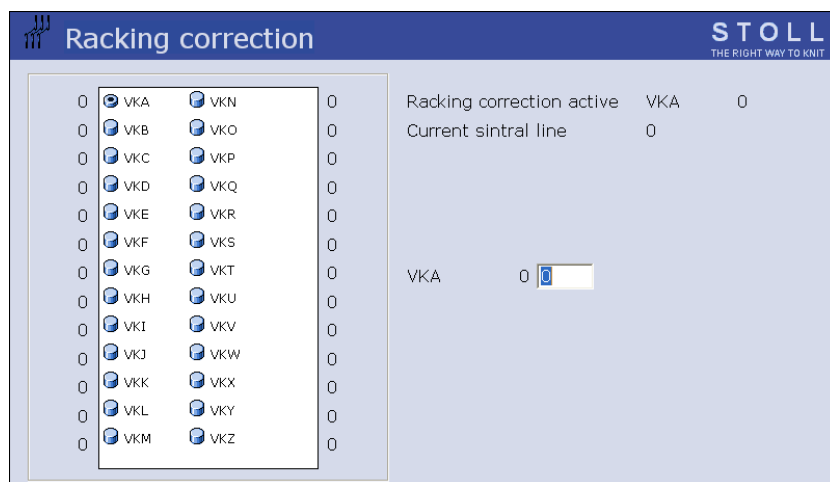







Fig. 4-38 "Racking correction" window

2. To change a racking correction value, tap the corresponding key and enter the value in the input field.
3. Confirm the input.

Set racking correction value
for the additional beds

Key	Function
	Call up the "Racking correction" window
	Call up "Additional function keys"
	Call up the "Correct. of front addition. bed" window
	Call up the "Correction of rear addition. bed" window
	Confirm entries

Tab. 4-31 Keys for calling up the additional beds

1. Call up the "Racking correction" window from the "Main menu".
2. Call up "Additional function keys".

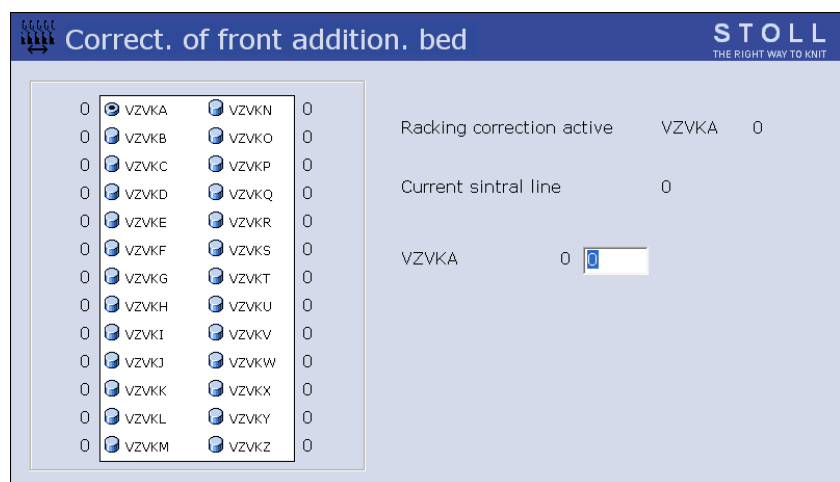






Fig. 4-39 Call up the "Correct. of front addition. bed" window

3. Call up the "Correct. of front addition. bed" window
- or -
- Call up the "Correction of rear addition. bed" window
4. To change a racking correction value, tap the corresponding key and enter the value in the input field.
5. Confirm the input.

4.1 Basic settings

Saving/reading in racking corrections

The racking corrections are not only pattern-dependent, but also machine-dependent. As a result, these settings can be saved on the hard disk or copied back from it.

Key	Function
	Call up "Additional function keys"
	Delete all racking corrections
	Save racking corrections on hard disk
	Copy back racking corrections from hard disk to machine memory

Tab. 4-32 Buttons for saving/reading in racking corrections


1. Call up the "Additional function key" in the "Racking correction" window.
2. Tap desired key.

4.2 Advanced adjustments

This chapter contains information on:

- Switching units on and off ([see page 4-50](#))
- Setting language ([see page 4-52](#))
- Adjusting sensor mechanism ([see page 4-54](#))
- Setting needle bed parameters ([see page 4-56](#))
- Setting machine parameters ([see page 4-57](#))
- Setting switch-off time when a power failure occurs ([see page 4-59](#))
- Copying service data ([see page 4-61](#))
- Carrying out reference run ([see page 4-63](#))
- Adjusting racking (CMS 530 T) ([see page 4-66](#))
- Adjusting racking (CMS 730 T) ([see page 4-75](#))
- Correcting position of stitch cams ([see page 4-84](#))
- Adjusting needle brushes ([see page 4-86](#))
- Adjust thread clamp ([see page 4-87](#))
- Adjusting needle detector ([see page 4-88](#))
- Adjusting yarn carriers ([see page 4-88](#))
- Adjusting yarn carrier limiters ([see page 4-90](#))
- Adjusting yarn carrier guide ([see page 4-91](#))
- Adjusting the brushes of the central lubrication ([see page 4-92](#))
- Adjusting intarsia yarn carrier ([see page 4-92](#))
- Shifting intarsia yarn carrier in area of carriage assembly ([see page 4-94](#))
- Adjusting the stopping point of an intarsia yarn carrier ([see page 4-94](#))
- Adjusting plating yarn carrier ([see page 4-97](#))

4.2.1 Switching units on and off

Key	Function
	Call up "Machine settings" window

Tab. 4-33 Keys for calling up the "Machine settings" window

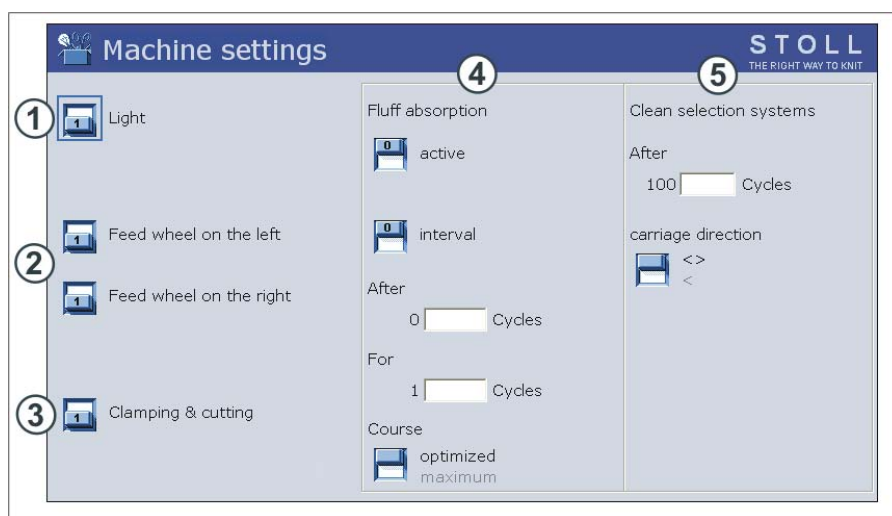


Fig. 4-40 "Machine settings" window

	Explanation
1	Switch lighting in machine room on and off
2	Switching right or left feed wheel on or off. If the feed wheel is not required, we recommend switching it off. This saves energy.
3	Switch thread clamping and cutting device on or off. If the knitting program contains clamping and cutting commands, the thread clamping and cutting device must be switched on ("1"). If the knitting program does not contain clamping and cutting commands, it must be switched off ("0"). This must correctly be adjusted, as otherwise an error message occurs and the machine cannot be started.









	Explanation	
4	Switch fluff absorption on or off. The needle beds in the knitting area are vacuumed off with the fluff absorption automatically. This does not interrupt ongoing knitting. We recommend switching on the fluff absorption permanently.	
	Interval	Periodic switch on and off of the suction device. After n courses: Number of courses without suction (1 course = 2 rows) For n courses: Number of courses with suction
	Stroke	"optimised": The cleaning row is carried out only in SEN area. "maximum": The cleaning row is carried out over the entire needle bed.
5	Clean the selection systems. Brushes are attached at the side of the needle bed. The carriage runs so far outwards that the brushes clean the selection systems, suction and cleaning row. This does not interrupt ongoing knitting.	
	After n courses	Number of courses till the selection systems get cleaned (1 course = 2 rows)
	Carriage direction	"< >": to left and right "< >": to left only

Further information:

Suction device and cleaning row ([see page 2-17](#))

4.2.2 Setting language

The windows and the messages on the touch screen can be displayed in different languages.

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Language" window
	Tap the "Select Path" key.
	Confirm input
	Save changes and end setting process
	End setting process without saving changes
	Call up the "Main menu"

Tab. 4-34 Keys for setting the language

Setting language:

1. Call up the "Service" menu.
2. Call up the "Basic settings" menu.
3. Call up the "Language" window.

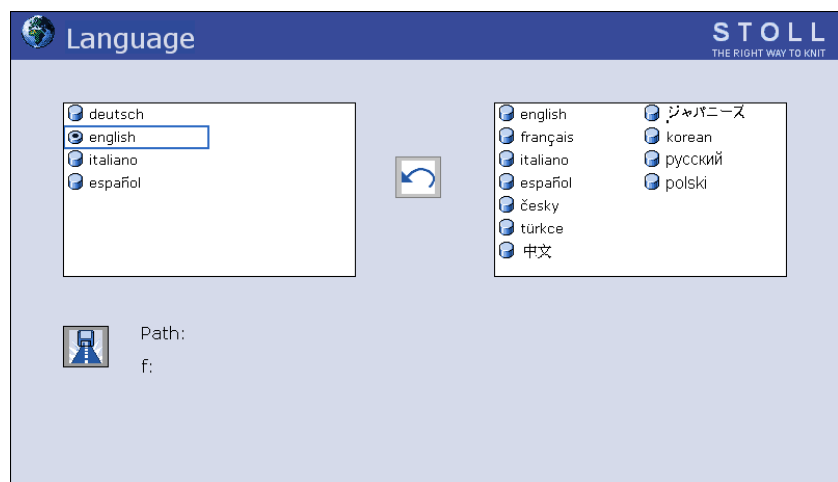


Fig. 4-41 "Language" window

4. Select a language present in the machine from the column on the left.

Confirm the input.

5. If the language has not been loaded yet, it must be reloaded now. The languages are, for example, saved on a floppy disk, the USB Memory Stick or the M1. To select the storage location, the corresponding source directory must be selected. Tap the "Select path" key. Select the new path. Save changes and end setting process.
6. Select the language in the right column. If the language is loaded, it appears in the column on the left. Repeat Step 4.
7. Call up the "Main menu".

4.2.3 Adjusting sensor mechanism *

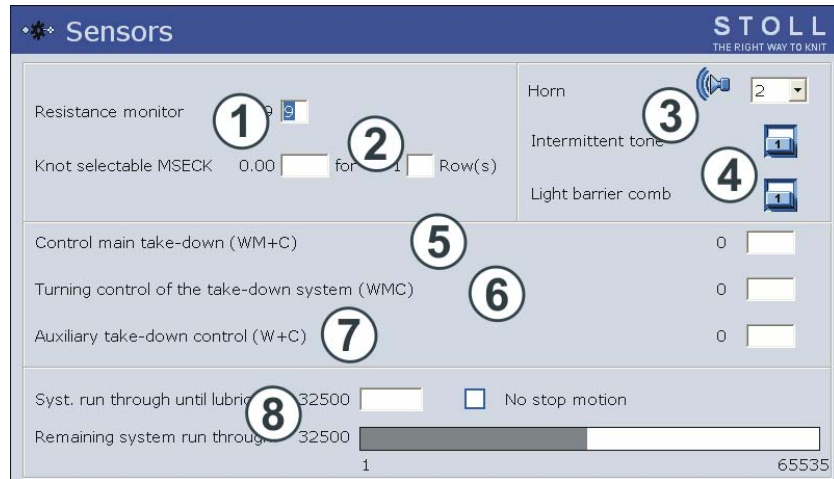







Fig. 4-42 "Sensors" window

Field	Data shown
1	Stop resistance Value range: 1-32, 1=not sensitive, 32=very sensitive
2	Carriage speed after small knots
3	Activation/deactivation of the horn and selection of the volume in three stages: 0=off, 1=low, 2=moderate, 3=loud Intermittent tone Switching on and off of intermittent tone for the horn.
4	If the take-down comb moves upward for fabric transfer, a light barrier checks whether the previously produced knitted panel has completely been ejected.
5	Monitoring of main take-down. If the fabric take-down roller has not turned after "n" (0-100) knitting rows, a stop motion is carried out (0=monitoring off).
6	Monitoring of main take-down. If the roller turns too quickly, a stop motion is carried out (e.g. when the fabric is ejected). Value range: 1-32, 1=not sensitive, 32=very sensitive
7	Monitoring of auxiliary take-down. If the auxiliary take-down has not turned after "n" (0-100) knitting rows, a stop motion is carried out (0=monitoring off).
8	Setting lubricating interval for needle bed

Key	Function
	Call up "Machine settings" window
	Call up "Additional function keys"
	Call up "Sensors" window
	Confirm input
	Call up the "Main menu"

Tab. 4-35 Keys for adjusting the sensors

Adjusting sensors:


1. Call up "Machine settings" window.
2. Call up "Additional function keys".
3. Call up the "Sensors" window.
4. Enter the value on the appropriate line.
5. Confirm the input.
6. Call up "Main menu".

Further information:

- Stop resistance ([see page 2-21](#))
- Adjusting carriage speed ([see page 4-2](#))
- Setting lubricating interval for needle bed ([see page 5-30](#))
- Symbols in this document ([see page 1-3](#))

4.2.4 Setting needle bed parameters

The needle bed parameters are used to make the needle-bed-specific settings. They serve for the fine adjustment of the needle beds. The needle bed parameters always remain saved, even when the operating system is read in again.

 Needle bed parameters

STOLL
THE RIGHT WAY TO KNIT

Selection displacement vl 0 bl 0 fr 0 br 0

1

Racking ground correction (VGK) 0

2

Racking ground correct. left (VZLGK) on the right (VZRGK) 0

3

Racking position correction (VPK) 0

4

Piezo at the front 20 Back 20






Piezo Additional needle bed at the 20 Back 20

Piezo Addit. needle bed on left at front 20 Back 20

Piezo Addit. needle bed on right at front 20 Back 20

Fig. 4-43 "Needle bed parameters" window

Field	Data shown
1	Racking basic correction (VGK)
2	Racking basic correction additional beds
3	Racking position correction (VPK)
4	Shock stop for the front and rear needle beds and additional bed. Value range: 1-32, 1=not sensitive, 32=very sensitive

Key	Function
	Confirm input
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Needle bed parameters" window.
	Call up the "Main menu"

Tab. 4-36 Keys for setting the needle bed parameters

Setting needle bed parameters:

1. Call up "Main menu".
2. Call up the "Service" menu.
3. Call up "Basic Settings" menu.
4. Call up the "Needle bed parameters" window.
5. Enter the value on the appropriate line.
6. Confirm the input.
7. Call up the "Main menu".
8. Save the change in the machine settings on the USB-Memory-Stick.

Further information:

- Adjusting racking (CMS 730 T) ([see page 4-75](#))
- Shock stop ([see page 2-22](#))
- Save all machine data on the USB-Memory-Stick ([see page 7-18](#))






4.2.5 Setting machine parameters

The machine parameters are used to make the machine-specific settings. They serve for the fine adjustment of the machine. The machine parameters always remain saved, even when the operating system is read in again.

Machine parameters		STOLL THE RIGHT WAY TO KNIT	
Correction take-down (WAK)	31	Corr.comb take-down (WKK)	31
Comb adj. position (ACV)	0		
<input type="checkbox"/> Release fabric take-down when switching	1		
Slow rows after machine stop	0	2	
Holding-down jack amplit. correct. in front	0	Back	0
Holding-down jack posit. in front	0	Back	0
<input checked="" type="checkbox"/> Slow course when covers are open	3	MSECCO	0.00

Fig. 4-44 "Machine parameters" window

Field	Data shown
1	Relieve fabric take-down when switching off the main switch. With a delicate fabric no stitch elongations then occur.
2	Following a machine stop the machine runs for several rows at reduced speed. Value range: 0-6, 0=off
3	Maximale Schlittengeschwindigkeit bei offenen Abdeckhauben, wenn die Einrückstange in Position 3 gehalten wird. Value range in input field "MSECCO": 0.00 to 0.20 m/s, standard: 0.05, step width: 0.05, 0.00=carriage does not move.

Key	Function
	Confirm input
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up "Machine parameters" window
	Call up the "Main menu"

Tab. 4-37 Keys for setting the machine parameters

Set machine parameters:

1. Call up "Main menu".
2. Call up the "Service" menu.
3. Call up "Basic Settings" menu.
4. Call up the "Machine parameters" window.
5. Enter the value on the appropriate line.
6. Confirm the input.
7. Call up the "Main menu".
8. Save the change in the machine adjustments on the USB-Memory-Stick.

Further information:

- Engaging rod ([see page 2-36](#))
- Save all machine data on the USB-Memory-Stick ([see page 7-18](#))

4.2.6 Setting switch-off time when a power failure occurs

The machine is immediately stopped when a power failure (longer than 45 milliseconds) occurs. The knitting program, operating system and the machine-specific data are not lost. The battery card (with the accumulators) ensures this. A pictograph indicating the power failure appears on the touch screen.



Fig. 4-45 "Power failure" pictograph



DANGER










High voltage!

Electrical shock may cause death or serious injuries.

→ Even in the case of power failure, do not work on the electrical system of the machine without interrupting the power supply .

→ Set the main switch to "0".

Longer power failure	<p>If the power failure lasts more than 30 seconds (default setting), the computer of the knitting machine is automatically shut down. The time until the computer shuts down can be set from 2 to 180 seconds.</p> <p>If you are sure that the power failure has been in effect for a longer period of time, you can switch off the main switch with "Switch off main switch".</p> <p>The set time always remain saved, even when the operating system is read in again.</p>
Shorter power failure	<p>If the power supply is restored within the set time, confirm the power failure message with the "Confirm message" key. To continue knitting, start the machine with the engaging rod.</p>
Conditions	<p>If the battery voltage is too low ("Battery voltage low" message appears), it is not possible to extend the power failure time.</p> <p>If a STIXX device is used with the machine, a check is automatically performed to determine which device it is. With a new STIXX device (ID No. 236 275), extension of the power failure time is possible. This is not possible with an older device, as the STIXX correction values cannot be saved and are therefore lost during a power failure. The power failure time is automatically reduced to 2 seconds. If a higher time is set, a message appears stating that this is not possible.</p>

Key	Function
	Confirm message
	Switch off main switch
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up "Machine parameters" window
	Call up "Additional function keys"
	Call up the "Machine parameters 2" window.
	Confirm input
	Call up the "Main menu"

Tab. 4-38 Keys for adjusting the power failure time

Set power failure time:

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Machine parameters" window from the "Basic settings" menu.
3. Call up "Additional function keys".
4. Call up the "Machine parameters 2" window.



Fig. 4-46 "Machine parameters 2" window

5. Enter the desired time.
6. Confirm the input.
7. Call up "Main menu".

4.2.7 Copying service data

With this menu the service data can be copied on a data carrier.

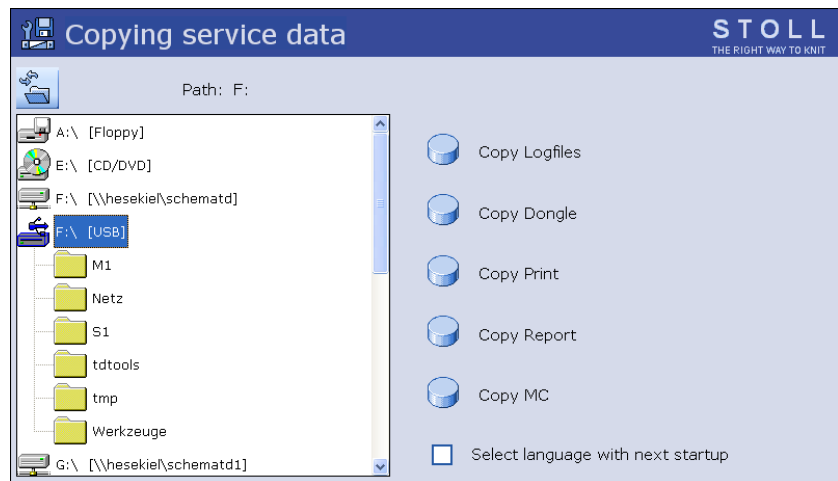





Fig. 4-47 "Copy service data" window

Designation	Explanation
Copy Logfiles	If the machine computer has serious problems, e.g. . it does not react to any inputs or the program crashes any longer, the cause is very important for Stoll. The computer saves the data up to the fault internally in so-called "Logfiles". These files can be saved and sent to the Stoll helpline so that Stoll can carry out an exact error diagnosis.
Copy Dongle	The machine settings do not only contain the machine data, but also the machine options, the machine configuration, the report and other internal control information. It is important to back up the data, e.g. when the hard disk is replaced.
Copy Print	For the Stoll technician only
Copy Report	The operating data are saved with the STOLL machine number.
Copy Mc	The machine data include the machine-specific settings (correction values).
Select language with next startup	The language selection appears when switching on the machine again. After switching on the machine, the setting is reset.

Key	Function
	Call up the "Service" menu
	Call up "Copy service data" window
	Call up the "Main menu"

Tab. 4-39 Keys for copying the service data

Copy service data:

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Copy service data" window.
3. Select the desired data carrier e.g. USB-Memory-Stick (Drive F:).
4. Tap the desired key.
The data are saved.
5. Call up "Main menu".

Further information:











- Calling up report and shift counters ([see page 3-19](#))
- Load/save machine data ([see page 7-16](#))

4.2.8 Carrying out reference run

Following all repair and conversion work on the carriage assembly or on the needle bed, a reference run must be carried out.

The reference run is carried out with the following steps:

- Calling up and noting the machine data
- Carrying out the reference run
- Calling up and correcting the machine data
- Loading the knitting program and determining the racking reference data

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Returning to the previous window
	Call up "Machine parameters" window
	Call up the "Needle bed parameters" window.
	Call up "NPK values" window
	Call up "Needle selection" window
	Call up "Reference runs" window
	Call up the "Main menu"
	Call up "Machine start" window

Tab. 4-40 Keys for carrying out a reference run

Call up and note machine data

1. Call up the "Service" menu.
2. Call up "Basic Settings" menu.
3. Call up the "Machine parameters" window.

4. Compare the displayed values with the values on the machine data sheet. If necessary, correct the values on the machine data sheet.
5. Switch back to the previous window.
6. Call up the "Needle bed parameters" window.
7. Compare the displayed values with the values on the machine data sheet. If necessary, correct the values on the machine data sheet.
8. Switch back to the previous window.
9. Call up the "NPK values" window.
10. Compare the displayed values with the values on the machine data sheet. If necessary, correct the values on the machine data sheet.
11. Switch back to the previous window.
12. Call up the "Needle selection" window.
13. Compare the displayed values with the values on the machine data sheet. If necessary, correct the values on the machine data sheet.
14. Call up "Main menu".

Carrying out reference run

1. If the racking device is not in the basic position, press off the stitches of a needle bed.
2. Call up the "Service" menu.
3. Call up the "Reference runs" window.
4. If the carriage assembly is stopped in the left reversing position, tap the "SR!>" key.

- or -

➔ If the carriage assembly is stopped in the right reversing position, tap the "SR!<" key.
5. Start the machine with the engaging rod.
The carriage assembly carries out a reference run and stops when it has read in the reference data.
6. Press the engaging rod downward.
7. To stop the carriage assembly on the left-hand side outside the needle bed, tap the "S<" or "S>" key and start the machine with the engaging rod.
8. To move the carriage assembly a few centimeters to the right, tap the "S>" key, start the machine with the engaging rod and stop it again immediately. The carriage assembly must still be positioned outside the needle space.
9. Switch back to the previous window.

Calling up and correcting
machine data

1. Call up the "Basic settings" menu.
2. Call up the "Machine parameters" window.
3. Compare the displayed values with the Stoll-values on the machine data sheet and if necessary correct the values in the window "Machine-Parameter" and confirm them.
4. Switch back to the previous window.
5. Call up the "Needle bed parameters" window.
6. Compare the displayed values with the values on the machine data sheet. If necessary, correct the values on the machine data sheet.
7. Switch back to the previous window.
8. Call up the "NPK values" window.
9. Compare the displayed values with the target values on the machine data sheet. If necessary, correct the values in the "NPK values" window and confirm them.
10. Switch back to the previous window.
11. Call up the "Needle selection" window.
12. Compare the displayed values with the target values on the machine data sheet. If necessary, correct the values in the "needle selection" window and confirm them.
13. Call up the "Main menu".

Read in knitting program and
determine racking reference
data

1. Read in the knitting program.
2. Call up the "Machine start" window.
3. Tap on the key "SP from line 1"
4. Start the machine with the engaging rod.
The carriage assembly moves slowly and stops in the right reversing position.
5. Wait until the message "Racking finished" appears on the touch screen.
6. To switch on the needle selection, tap the needle selection "On" key in the "Machine start" window.

The reference run is complete, the machine is ready to knit.

Further information:

- Reading in files, libraries and pattern folders ([see page 3-2](#))

4.2.9 Adjusting racking (CMS 530 T)

This chapter contains information on:

- Basic position of needle beds and additional beds ([see page 4-66](#))
- Setting racking position correction VPK at the back ([see page 4-67](#))
- Setting racking basic correction VGK at the back ([see page 4-69](#))
- Adjusting racking correction of the left additional beds ([see page 4-71](#))
- Adjusting racking correction of the right additional beds ([see page 4-73](#))

Basic position of needle beds and additional beds

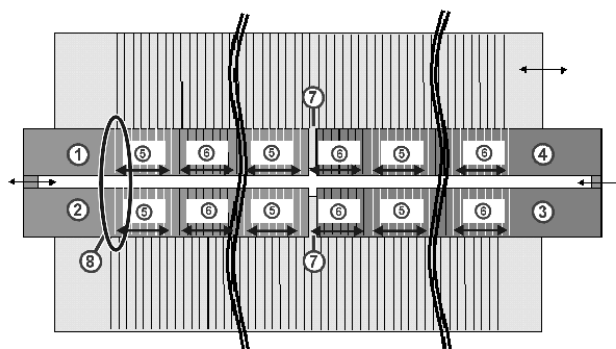


Fig. 4-48 Basic position of needle beds relative to additional beds

- | | |
|------------------------------|--|
| 1 back left additional bed | 5 1 inch transfer parts bottom butt |
| 2 front left additional bed | 6 1 inch transfer parts top butt |
| 3 front right additional bed | 7 no missing transfer part between additional bed (2) and (3) or (1) and (4) |
| 4 rear right additional bed | 8 Basic position |





The following applies for the basic position of the additional beds:

- The additional beds are positioned groove on groove. The additional bed (1) can be set over an adjustment screw on the connection to the additional bed (2) exactly the additional bed (3) to the additional bed (4).
- The tips of the opposing transfer parts meet each other exactly.

For checking and fine adjustment, the transfer position from the back additional bed (Z[^]) to the front needle bed (NV) can be checked with a knitting program.

Setting racking position
correction VPK at the back

With the "Racking position correction (VPK)" the rear needle bed is aligned exactly with the front needle bed and front additional bed. The VPK always remains saved, even if the operating system is imported again.

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Needle bed parameters" window.
	Call up the "Main menu"

Tab. 4-41 Buttons for adjusting VPK

Adjusting VPK:

1. Program an empty row with transfer racking and fix the knitting indication.
2. Push up two opposite needles in the center of the needle bed.
3. Check whether the needle hook of the front needle dips into the pelerine spring of the rear needle.
4. If this is not the case: Push back needles and correct racking device.
5. Call up "Main menu".
6. Call up the "Service" menu.
7. Call up "Basic Settings" menu.

8. Call up the "Needle bed parameters" window.

Needle bed parameters		STOLL	
Selection displacement	vl	0	bl
		0	fr
		0	br
		0	
Racking ground correction (VGK)		0	
Racking ground correct. left (VZLGK)		0	
	on the right (VZRGK)	0	
Racking position correction (VPK)		0	
Piezo at the front	20	Back	20
Piezo Addit. needle bed on left at front	20	Back	20
Piezo Addit. needle bed on right at front	20	Back	20

Fig. 4-49 "Needle bed parameters" window

9. Correct the value in the "Racking position correction (VPK)" line.
10. Repeat steps 2 to 9 until the needle hook of the front needle dips into the pelerine spring of the rear needle.
11. Enter the value of the "Racking position correction (VPK)" in the machine data sheet.
12. Call up the "Main menu".
13. Save the machine data on the hard disk.

Further information:

- Helpful knitting rows ([see page 6-4](#))

Setting racking basic correction VGK at the back








The "basic racking correction (VGK)" must be adjusted after changing part of the racking device, e.g. of racking motor or racking belt. The VGK always remains saved, even if the operating system is imported again.

So that the racking is referenced, an adjustment reference run (V<REFJ) must be carried out.

The VGK must be set so that the basic position of the rear needle bed relative to the front needle bed and front additional bed is given.

Formula for calculating the correction value nn: current deviation x 10 x 9

The current difference is 0.6 mm to the left. The correction value nn is $0.6 \times 10 \times 9 = 54$. The value must be corrected to the right with the "VGK>54" command.

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Needle bed parameters" window.
	Confirm input
	Call up the "Main menu"
	Call up the "Direct commands" window
	Confirm input

Tab. 4-42 Buttons for adjusting VGK

Adjusting VGK:

1. Call up "Main menu".
2. Call up the "Service" menu.
3. Call up "Basic Settings" menu.

4. Call up the "Needle bed parameters" window.

Needle bed parameters		STOLL	
Selection displacement	vl	0	bl
		0	fr
		0	br
		0	
Racking ground correction (VGK)		0	
Racking ground correct. left (VZLGK)		0	on the right (VZRGK)
			0
Racking position correction (VPK)		0	
Piezo at the front		20	Back
			20
Piezo Addit. needle bed on left at front		20	Back
			20

Fig. 4-50 "Needle bed parameters" window







5. In the "Racking position correction (VPK)" line, enter the value "0" and confirm it.
6. Program an empty row and fix the knitting indication.
7. Call up the "Direct commands" window.
8. Input the command "V>REF" and confirm it.
The needle bed moves.
9. Check the needle bed position, enter transfer row if necessary and recheck the needle bed position.
10. If the needle bed position is not OK: Calculate the correction value nn.
11. Input the command "VGK>nn" for a correction to the right and confirm the input.
- or -
- ➔ Input the command "VGK<nn" for a correction to the left and confirm the input.
12. Check the needle bed position.
13. If the needle bed position is not OK, repeat steps 11 to 12.
14. Call up the "Main menu".
15. Call up the "Service" menu.
16. Call up the "Basic settings" menu.
17. Call up the "Needle bed parameters" window.
18. Enter the value of the "Basic racking correction (VGK)" in the machine data sheet.
19. Call up the "Main menu".
20. Adjust the "Racking position correction (VPK)".
21. Save the machine data on the hard disk.

Further information:

- Helpful knitting rows ([see page 6-4](#))

Adjusting racking correction
of the left additional beds

With this racking correction the left additional beds are aligned exactly relative to the rear needle bed. The correction value always remains saved, even when the operating system is read in again.

Key	Function
	Call up the "Service" menu
	Call up the "Service Racking" window
	Call up "Additional function keys"
	Call up the "Service Racking left" window
	Confirm input
	Call up the "Main menu"

Tab. 4-43 Buttons for adjusting the racking correction of the left additional beds

Set correction value:

1. Check whether the basic position of the additional beds is correct.
2. Program an empty row with transfer racking "Back additional bed - front needle bed" and fix the knitting indication.
3. Push up a needle in the center of the left half of the rear needle bed and push a transfer part into the transfer position on the front additional bed.
4. Check whether the transfer position is correct.



Fig. 4-51 Transfer position of transfer part and needle hook

A CMS 530 T: E 10-14

B CMS 530 T: E 7-8

It is correct when the needle hook penetrates exactly between the two blades of the transfer part

It is correct when the needle hook penetrates exactly between the tip of the transfer part and the pelerine spring

5. If this is not the case: Push back the needle and transfer part and correct the racking device.

6. Call up the "Service" menu from the "Main menu".
7. Call up the "Service Racking" window.
8. Call up "Additional function keys".
9. Call up the "Service Racking left" window.

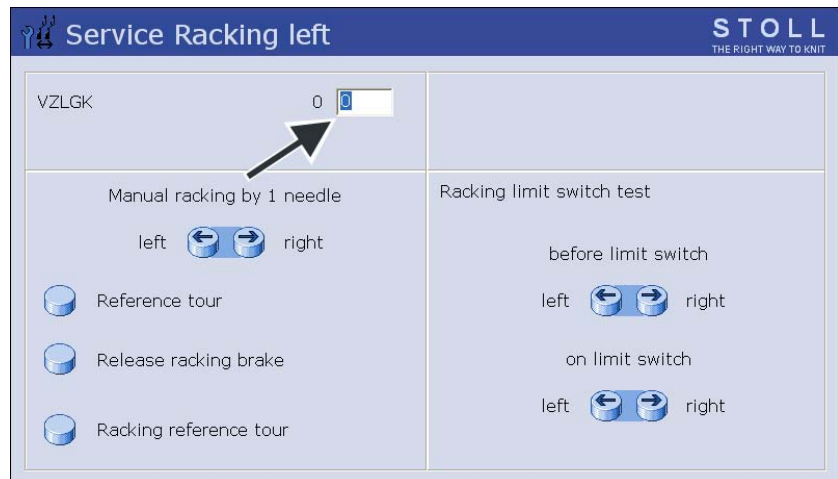


Fig. 4-52 "Service Racking left" window







10. Enter the correction value for the position of left additional beds in the line "VZLGK".
11. Confirm the input.
12. Repeat steps 2 to 10 until the transfer position is correct.
13. Program an empty row with transfer racking "Front additional bed - rear needle bed" and fix the knitting indication.
14. Repeat steps 2 to 10 until the transfer position is correct.
15. Call up the "Main menu".
16. Save the machine data on the hard disk.

Further information:

- Basic position of needle beds and additional beds ([see page 4-66](#))
- Helpful knitting rows ([see page 6-4](#))

Adjusting racking correction
of the right additional beds

With this racking correction the right additional beds are aligned exactly relative to the rear needle bed. The correction value always remains saved, even when the operating system is read in again.

Key	Function
	Call up the "Service" menu
	Call up the "Service Racking" window
	Call up "Additional function keys"
	Call up the "Service Racking right" window
	Confirm input
	Call up the "Main menu"

Tab. 4-44 Buttons for adjusting the racking correction of the right additional beds

Set correction value:

1. Check whether the basic position of the additional beds is correct.
2. Program an empty row with transfer racking "Back additional bed - front needle bed" and fix the knitting indication.
3. Push up a needle in the center of the right half of the rear needle bed and push a transfer part into the transfer position on the front additional bed.
4. Check whether the transfer position is correct.



Fig. 4-53 Transfer position of transfer part and needle hook

A CMS 530 T: E 10-14

B CMS 530 T: E 7-8

It is correct when the needle hook penetrates exactly between the two blades of the transfer part

It is correct when the needle hook penetrates exactly between the tip of the transfer part and the pelerine spring

5. If this is not the case: Push back the needle and transfer part and correct the racking device.

6. Call up the "Service" menu from the "Main menu".
7. Call up the "Service Racking" window.
8. Call up "Additional function keys".
9. Call up the "Service Racking right" window.

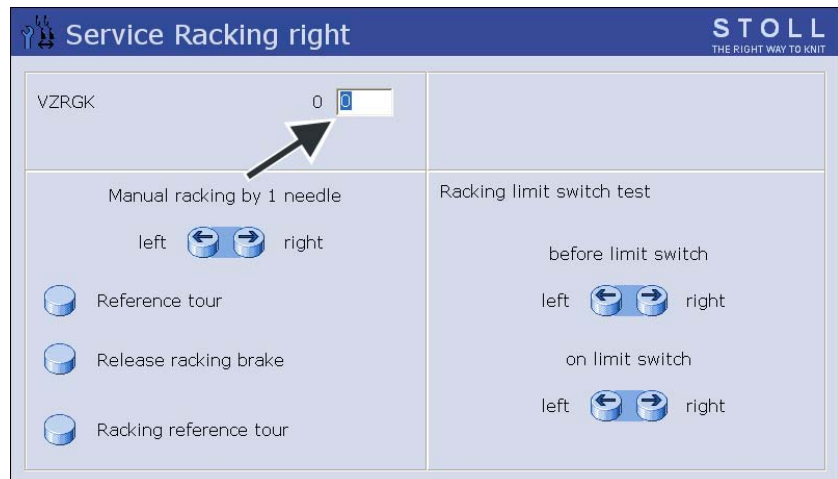


Fig. 4-54 "Service Racking right" window

10. Enter the correction value for the position of right additional beds in the line "VZRGK" .
11. Confirm the input.
12. Repeat steps 2 to 10 until the transfer position is correct.
13. Program an empty row with transfer racking "Front additional bed - rear needle bed" and fix the knitting indication.
14. Repeat steps 2 to 10 until the transfer position is correct.
15. Call up the "Main menu".
16. Save the machine data on the hard disk.

Further information:

- Basic position of needle beds and additional beds ([see page 4-66](#))
- Helpful knitting rows ([see page 6-4](#))

4.2.10 Adjusting racking (CMS 730 T)

This chapter contains information on:

- Basic position of needle beds and additional beds ([see page 4-75](#))
- Setting racking position correction VPK at the back ([see page 4-76](#))
- Setting racking basic correction VGK at the back ([see page 4-78](#))
- Adjusting racking correction of front additional bed ([see page 4-80](#))
- Adjusting racking correction of rear additional bed ([see page 4-82](#))

Basic position of needle beds and additional beds

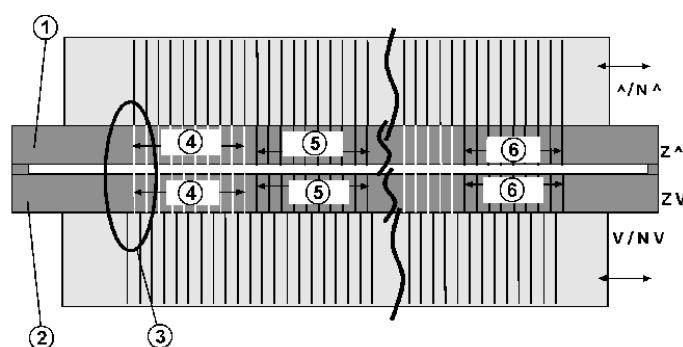


Fig. 4-55 Basic position of needle beds relative to additional beds

- | | | | |
|---|----------------------|---|-----------------------------------|
| 1 | rear additional bed | 4 | 1 inch transfer parts bottom butt |
| 2 | front additional bed | 5 | 1 inch transfer parts top butt |
| 3 | Basic position | 6 | 1 inch transfer parts top butt |

The following applies for the basic position of the additional beds:

- The additional beds are positioned groove on groove. The additional bed (1) can be adjusted with an adjustment screw on the connection to additional bed (2).
- The tips of the opposing transfer parts meet each other exactly.





For checking and fine adjustment, the transfer position from the back additional bed (Z^A) to the front needle bed (NV) can be checked with a knitting program.

Further information:

- Helpful knitting rows ([see page 6-4](#))

Setting racking position
correction VPK at the back

With the "Racking position correction (VPK)" the rear needle bed is aligned exactly with the front needle bed and front additional bed. The VPK always remains saved, even if the operating system is imported again.

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Needle bed parameters" window.
	Call up the "Main menu"

Tab. 4-45 Buttons for adjusting VPK

Adjusting VPK:

1. Program an empty row with transfer racking and fix the knitting indication.
2. Push up two opposite needles in the center of the needle bed.
3. Check whether the needle hook of the front needle dips into the pelerine spring of the rear needle.
4. If this is not the case: Push back needles and correct racking device.
5. Call up "Main menu".
6. Call up the "Service" menu.
7. Call up "Basic Settings" menu.

8. Call up the "Needle bed parameters" window.

Needle bed parameters			
Selection displacement vl 0 bl 0 fr 0 br 0			
Racking ground correction (VGK)	0		
Racking ground correct. left (VZLGK)	0	on the right (VZRGK)	0
Racking position correction (VPK)	0		
Piezo at the front	20	Back	20
Piezo Additional needle bed at the front	20	Back	20
Piezo Addit. needle bed on left at front	20	Back	20
Piezo Addit. needle bed on right at front	20	Back	20

Fig. 4-56 "Needle bed parameters" window

9. Correct the value in the "Racking position correction (VPK)" line.
10. Repeat steps 2 to 9 until the needle hook of the front needle dips into the pelerine spring of the rear needle.
11. Enter the value of the "Racking position correction (VPK)" in the machine data sheet.
12. Call up the "Main menu".
13. Save the machine data on the hard disk.

Further information:

- Helpful knitting rows ([see page 6-4](#))

4.2 Advanced adjustments

Setting racking basic correction VGK at the back








The "basic racking correction (VGK)" must be adjusted after changing part of the racking device, e.g. of racking motor or racking belt. During installation, make sure that the front and rear needle beds are opposite each other. The VGK always remains saved, even if the operating system is imported again.

So that the racking is referenced, an adjustment reference run (V<REFJ) must be carried out.

The VGK must be set so that the basic position of the rear needle bed relative to the front needle bed and front additional bed is given.

Formula for calculating the correction value nn: current deviation x 10 x 9

The current difference is 0.6 mm to the left. The correction value nn is $0.6 \times 10 \times 9 = 54$. The value must be corrected to the right with the "VGK>54" command.

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up the "Needle bed parameters" window.
	Confirm input
	Call up the "Main menu"
	Call up the "Direct commands" window
	Confirm input

Tab. 4-46 Buttons for adjusting VGK

Adjusting VGK:

1. Call up "Main menu".
2. Call up the "Service" menu.
3. Call up "Basic Settings" menu.

4. Call up the "Needle bed parameters" window.

Fig. 4-57 "Needle bed parameters" window

5. In the "Racking position correction (VPK)" line, enter the value "0" and confirm it.
6. Program an empty row with half racking and fix the knitting indication.
7. Call up the "Direct commands" window.
8. Input the command "V>REF" and confirm it.
The needle bed moves.
9. Check the needle bed position, enter transfer row if necessary and recheck the needle bed position.
10. If the needle bed position is not OK: Calculate the correction value nn.
11. Input the command "VGK>nn" for a correction to the right and confirm the input.
- or -
- ➔ Input the command "VGK<nn" for a correction to the left and confirm the input.
12. Check the needle bed position.
13. If the needle bed position is not OK, repeat steps 11 and 12.
14. Call up the "Main menu".
15. Call up the "Service" menu.
16. Call up the "Basic settings" menu.
17. Call up the "Needle bed parameters" window.
18. Enter the value of the "Basic racking correction (VGK)" in the machine data sheet.
19. Call up the "Main menu".
20. Adjust the "Racking position correction (VPK)".
21. Save the machine data on the hard disk.







Further information:

- Helpful knitting rows ([see page 6-4](#))

4.2 Advanced adjustments

Adjusting racking correction
of front additional bed

With this racking correction the front additional bed is aligned exactly relative to the rear needle bed. The correction value always remains saved, even when the operating system is read in again.

Key	Function
	Call up the "Service" menu
	Call up the "Service Racking" window
	Call up "Additional function keys"
	Call up the "Service front additional bed" window
	Confirm input
	Call up the "Main menu"

Tab. 4-47 Keys for adjusting racking correction of front additional bed

Set correction value:

1. Check whether the basic position of the additional beds is correct.
2. Program an empty row with transfer racking "Front additional bed - rear needle bed" and fix the knitting indication.
3. Push up a needle in the center of the rear needle bed and push a transfer part into the transfer position on the front additional bed.
4. Check whether the transfer position is correct.



Fig. 4-58 Transfer position of transfer part and needle hook

It is correct when the needle hook penetrates exactly between the two blades of the transfer part

5. If this is not the case: Push back the needle and transfer part and correct the racking device.
6. Call up the "Service" menu from the "Main menu".
7. Call up the "Service Racking" window.

8. Call up "Additional function keys".
9. Call up the "Service front additional bed" window

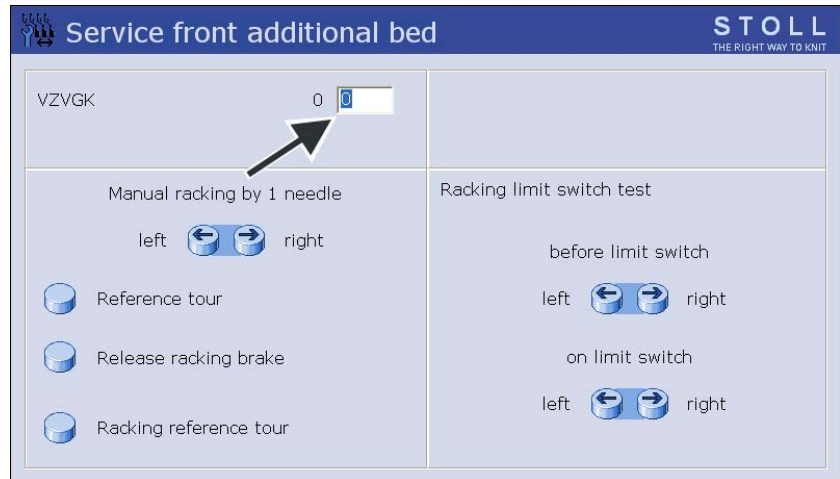


Fig. 4-59 Window "Service front additional bed"

10. Enter the correction value for the position of front additional bed in the line "VZVGK" .
11. Confirm the input.
12. Repeat steps 2 to 10 until the transfer position is correct.
13. Call up the "Main menu".
14. Save the machine data on the hard disk.







Further information:

- Basic position of needle beds and additional beds ([see page 4-75](#))
- Helpful knitting rows ([see page 6-4](#))

4.2 Advanced adjustments

Adjusting racking correction
of rear additional bed

With this racking correction the rear additional bed is aligned exactly relative to the front needle bed. The correction value always remains saved, even when the operating system is read in again.

Key	Function
	Call up the "Service" menu
	Call up the "Service Racking" window
	Call up "Additional function keys"
	Call up the "Service rear additional bed" window
	Confirm input
	Call up the "Main menu"

Tab. 4-48 Keys for adjusting racking correction of rear additional bed

Set correction value:

1. Check whether the basic position of the additional beds is correct.
2. Program an empty row with transfer racking "Back additional bed - front needle bed" and fix the knitting indication.
3. Push up a needle in the center of the rear needle bed and push a transfer part into the transfer position on the front additional bed.
4. Check whether the transfer position is correct.



Fig. 4-60 Transfer position of transfer part and needle hook

It is correct when the needle hook
penetrates exactly between the
two blades of the transfer part

5. If this is not the case: Push back the needle and transfer part and correct the racking device.
6. Call up the "Service" menu from the "Main menu".
7. Call up the "Service Racking" window.

8. Call up "Additional function keys".
9. Call up the "Service rear additional bed" window.

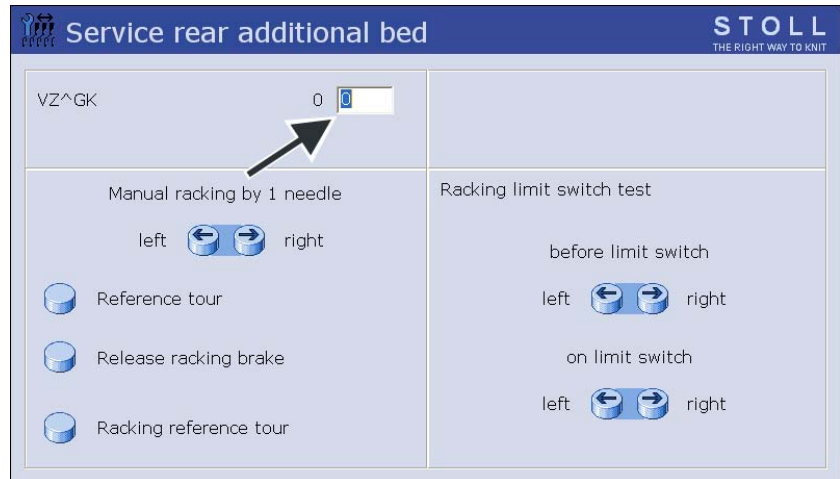


Fig. 4-61 Window "Service rear additional bed"

10. Enter the correction value for the position of back additional bed in the line "VZ^GK".
11. Confirm the input.
12. Repeat steps 2 to 10 until the transfer position is correct.
13. Call up the "Main menu".
14. Save the machine data on the hard disk.

Further information:

- Basic position of needle beds and additional beds ([see page 4-75](#))
- Helpful knitting rows ([see page 6-4](#))

4.2.11 Correcting position of stitch cams

Each take-down cam can be corrected for each carriage direction

- for knitting
- for knitting with split technique

Reduce stitch tension: Value without sign or with "+" sign

Increase stitch tension: Value with "-" sign

The second take-down cam of a system is always corrected, as only it is active.

The stitch cams are numbered consecutively from left to right, regardless of the carriage direction.

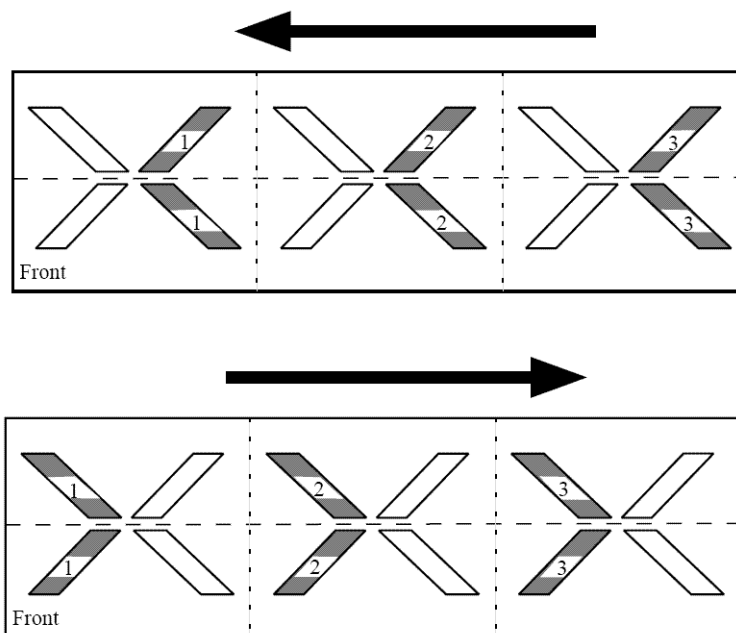









Fig. 4-62 Numbering of stitch cams for a 3-system machine

	Meaning
System 1-n	Number of knitting system counted from left to right
<<	Carriage direction to the left
>>	Carriage direction to the right
n.n	Correction value for knitting
\$ n.n	Correction value for knitting with split technique

Tab. 4-49 Meaning of displays in NPK values window

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up "NPK values" window
	Reduce current value by one step
	Increase current value by one step
	End the setting process and save the changed values.
	Call up the "Main menu"

Tab. 4-50 Keys for correction of stitch cam position (NPK value)

Correct position of stitch cams:

1. Call up the "Service" menu.
2. Call up the "Basic settings" menu.
3. Call up the "NPK values" window.
4. Change the NPK values for knitting and for knitting with split stitch and confirm the changes.
5. Call up the "Main menu".

4.2.12 Adjusting needle brushes

The needle brushes must be adjusted when malfunctions occur during stitch formation, e.g. drop stitches.

The needle brushes open the needle latches for laying in the thread. They are swivel-mounted so, that they are always inclined in the direction of travel of the carriage assembly.

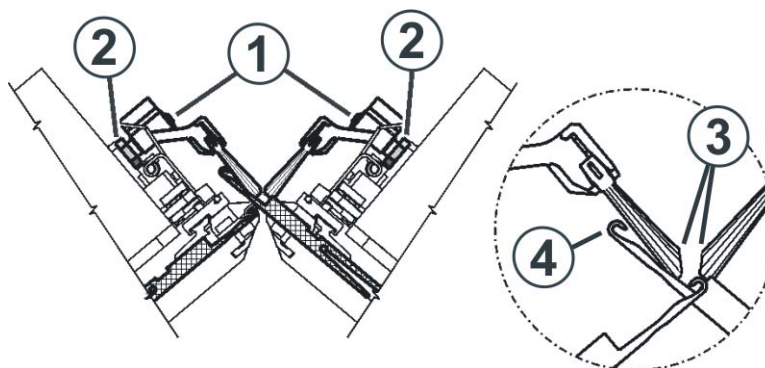



Fig. 4-63 Inclination of needle brushes

The needle brushes are correctly adjusted when

- the brushes project an equal distance over both sides of the holder. The markings on the brush are visible on both sides.
- the canted surfaces (3) opposite each other
- the brushes do not touch the needle hooks of the fully raised needles (RR). The distance (4) is to be 0.5 mm to 1 mm.

Key	Function
	Call up "Manual interventions" window

Tab. 4-51 Key for calling up "Manual interventions" window

Adjusting needle brushes:

1. Release hexagon nut (2).
2. Adjusting needle brush at screw (1).
3. Retighten hexagon nut (2).
4. Adjust needle brushes on all systems.
5. Call up "Manual interventions" window.
6. Move carriage assembly at low speed. To do this, press "Jog" button and check adjustment of needle brushes.

4.2.13 Adjust thread clamp

The thread clamp comprises of a plate spring that presses against a clamp. The thread clamp can take upto a specific number of threads. If this is exceeded the other threads are not clamped. In order to avoid this, the gap width (clamping force) of the clamping plate is adjustable.

The optimal column width is dependent on:

- the gauge of the machine
- the thickness of the inserted threads
- the number of threads that are clamped

Adjust thread clamp:

1. Release the screw (1) on the clamping piece.

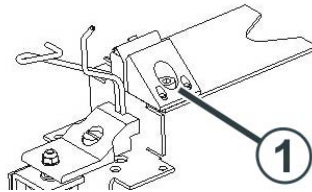


Fig. 4-64 Adjust the thread clamp

2. Adjusting gap width. For this purpose, set the position of the clamp with a feeler gauge (standard setting: $0.1 \text{ mm} \pm 0.05$).
3. Tighten the screw (1).
4. Control the setting while the machine is knitting.

Setting	Explanation
correct	When the thread clamp holds all threads securely in the clamp, till they get pulled from the clamp by the tensile force of the fabric.
false	The thread jumps on the needle bed and creates interruptions.

4.2.14 Adjusting needle detector

The needle detector is correctly adjusted when

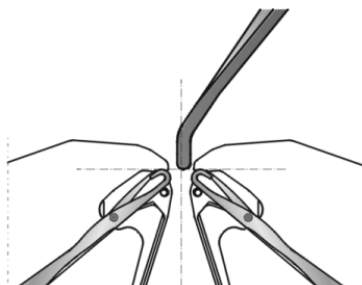


Fig. 4-65 Adjusting the needle detector

- it is near the holding-down jacks of the rear needle bed, however does not tap them
- the lower end of the needle detector is at the level of the needle hooks



CAUTION

Damage to the needle detector!

If several yarn carriers are stopped at the same place, the needle detector will be damaged, as the yarn carriers cannot avoid the needle detector.

→ Always stagger yarn carriers.

→ Staggering yarn carriers.


Further information:

- Setting and staggering yarn carriers ([see page 4-6](#))

4.2.15 Adjusting yarn carriers

The yarn carriers are correctly adjusted when

- the distance between the cam center of the knitting system and the yarn carrier in each system is identical in both carriage directions
- the thread is laid on the open latch at exactly the same point by each yarn carrier for both selvedge needles
- the yarn carrier tips exactly move between the needle beds in the needle cross and the distance between yarn carriers and the closed needle latch is 0.5 mm to 1.0 mm
- the yarn carriers of the track 1 and 8 are also set 0.5 higher so that they do not touch the yarn carrier limiters (3)

Key	Function
	Call up "Manual interventions" window

Tab. 4-52 Key for calling up "Manual interventions" window

Adjusting yarn carriers:

1. Remove needle brushes by releasing screws (1).

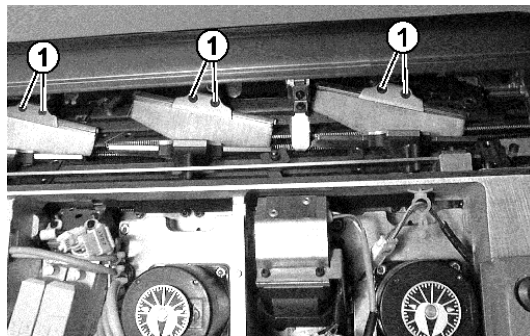


Fig. 4-66 Screws of needle brushes

2. Stop carriage assembly in needle area.

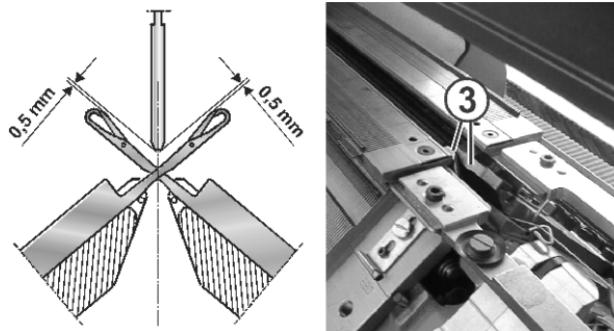


Fig. 4-67 Adjusting yarn carriers

3. Adjust yarn carriers if necessary. When doing so, the carriage assembly must be stopped in the needle area.
4. Call up "Manual interventions" window.
5. Move carriage assembly at low speed. To do this, press "Jog" button and check adjustment of yarn carriers.

4.2.16 Adjusting yarn carrier limiters

The yarn carrier limiters are adjusted so that they can be staggered offset after the thread clamping and cutting device.

Adjusting yarn carrier limiters:

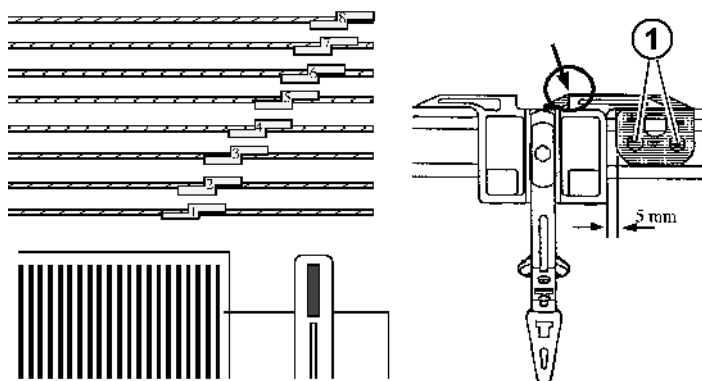


Fig. 4-68 Adjusting yarn carrier limiters

1. Release screws (1) .
2. Move the yarn carrier limiters.
3. Retighten the screws (1).

4.2.17 Adjusting yarn carrier guide

The yarn carrier guide must be adjusted if the yarn carrier can be lifted from the yarn carrier rail or a yarn carrier plunger is not put out of action.

Adjusting yarn carrier guide:

1. To check whether the yarn carrier can be lifted from the yarn carrier rail, take the left and right-hand sides of the yarn carrier housing in both hands and move the yarn carrier housing upward and downward.

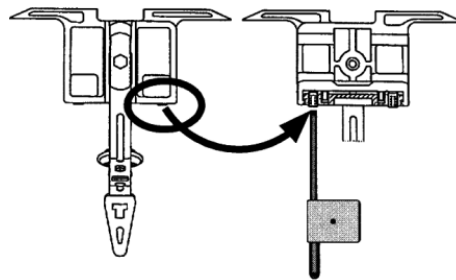


Fig. 4-69 Adjusting yarn carrier guide

2. If necessary push the setting key inwards with the adjusting key from the accessories till the yarn carrier cannot be raised erect any more.
3. Turn the setting key back by one-eighth of a turn.

4.2.18 Adjusting the brushes of the central lubrication

The brushes have been adjusted correctly if they touch the working butts lightly.

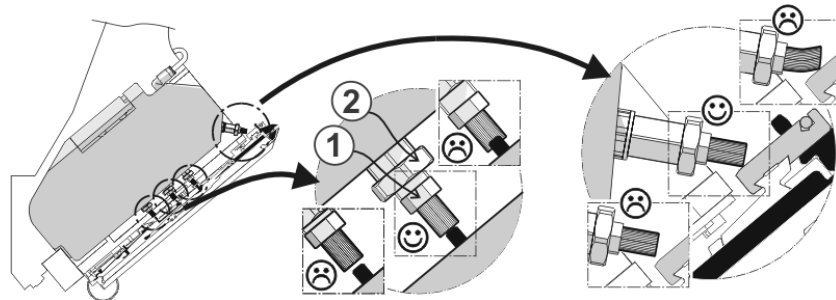


Fig. 4-70 Brushes of the central lubrication

Adjusting the brushes of the central lubrication:

1. Release hexagon nut (2).
2. Adjust brushes on hexagon nut (1).
3. Retighten hexagon nut (2).
4. Adjust all brushes.

4.2.19 Adjusting intarsia yarn carrier

The yarn carriers are correctly adjusted when

- an unswiveled yarn carrier passes by a swiveled yarn carrier
- the distance between the cam center of the knitting system and the yarn carrier in each system is identical in both carriage directions
- the thread is laid on the open latch at exactly the same point by each yarn carrier for both selvedge needles
- the yarn carrier tips exactly move between the needle beds in the needle cross and the distance between yarn carriers and the closed needle latch is 0.5 mm to 1.0 mm
- the yarn carrier in the clamping and cutting area does not tap the cutting needle located in the working position
- the yarn carriers of the track 1 and 8 are also set 0.5 higher so that they do not touch the yarn carrier limiters (3)

Adjust intarsia yarn carrier:

1. Remove needle brushes by releasing screws (1).

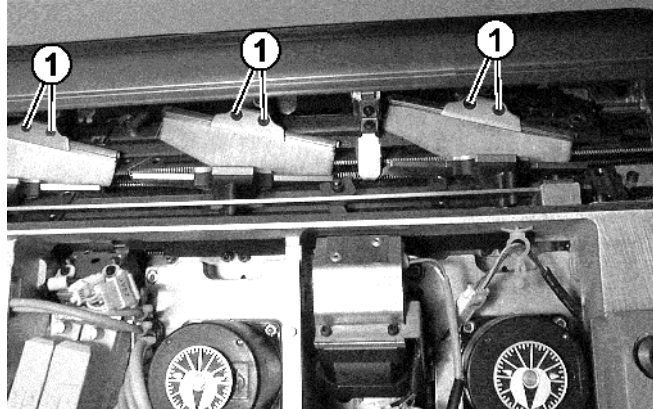


Fig. 4-71 Screws of needle brushes

2. Stop carriage assembly in needle area.

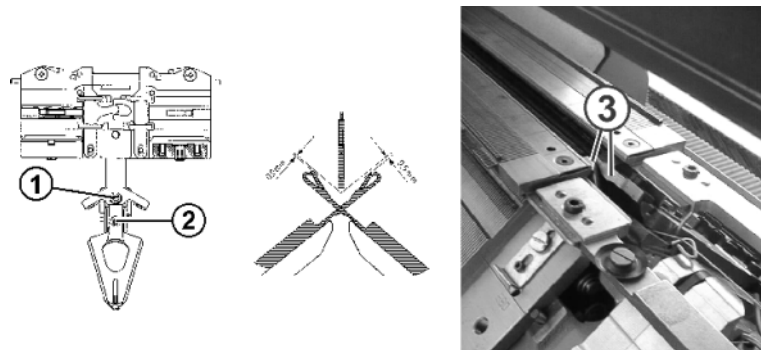


Fig. 4-72 Adjusting intarsia yarn carriers

3. To adjust the height of the yarn carrier, release the screw (1).
4. Adjust the height of the yarn carrier and retighten the screw (1).
5. To adjust the position of the yarn carrier head relative to the needle beds, release the screw (2).
6. Adjust the position of the yarn carrier head relative to the needle beds, retighten the screw (2) and coat it with a screw locking compound (e. g. LOCTITE 221).

4.2.20 Shifting intarsia yarn carrier in area of carriage assembly

Intarsia yarn carriers located in the area of the carriage assembly cannot be shifted by hand. They are shifted with the shifting device from the accessories.

Shift yarn carriers in area of carriage assembly:

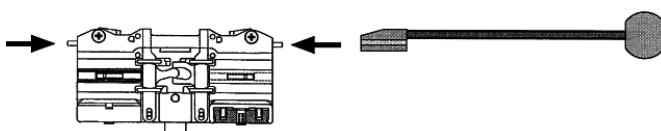


Fig. 4-73 Shifting device

- Press the lifters inward with the shifting device from the accessories and shift one or more yarn carriers out of the area of the carriage assembly.

4.2.21 Adjusting the stopping point of an intarsia yarn carrier

As soon as an intarsia yarn carrier reaches the end of its working area during knitting, the driver is lifted out of the yarn carrier. The yarn carrier is braked and swivels back into its color field. In the process, it is to stop approx. 1 to 2 needles from the edge of its color field.

The following reasons may cause the yarn carrier not to be stopped in the correct position:

- the inner surface of the yarn carrier rail is oily or greasy
- the stopping time of the yarn carrier is not set correctly
- the pressure plates are worn

Check yarn carrier rail




- Make sure that the yarn carrier rail is oil and grease-free, and clean it if necessary.



If the yarn carrier is not stopped in the correct position:

- Correct the stopping point of the yarn carriers.

Correct the stopping point of the yarn carriers

Key	Function
	Call up the "Yarn carrier" window
	Confirm changes
	Call up the "Main menu"

Tab. 4-53 Keys for correcting the stopping point

1. Call up the "Yarn carrier" window.
2. Enter the yarn carrier correction value.
3. Confirm the changes.
4. Call up "Main menu".



If the yarn carrier is not stopped in the correct position:

➔ Turn over or replace the pressure plate.

Further information:

- Setting and staggering yarn carriers [\(see page 4-6\)](#)

Turn over or replace the pressure plates

1. Remove the yarn carrier.

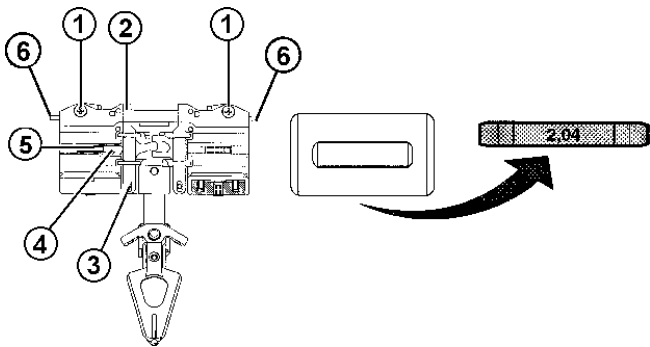


Fig. 4-74 Removing pressure plate

2. Release but do not remove the screws (1).
3. Lift the clamping lever (2) out of the locating screw (3) and remove it. When doing this, make sure that the spring pin (5) remains in the housing (4).
4. Check whether the thickness designation 2.04 or 2.06 is visible on the built-in pressure plate.
5. Remove the pressure plate from the clamping lever.



CAUTION

Complicated adjustment work is required when replacing the pressure plates!

If the various thicknesses and positions of the pressure plates are interchanged, complicated adjustment work is required to set the stopping point of the yarn carrier correctly.

→ Do not interchange the various thicknesses and positions of the pressure plates!

6. If the marking 2.04 or 2.06 was visible on the built-in pressure plate, turn over the pressure plate and reinsert it.

- or -

→ If the marking 2.04 or 2.06 was not visible on the built-in pressure plate, insert a new pressure plate of the same thickness with the marking facing upward.

7. Press the spring pin (4) into the spring part (5) and insert the clamping lever (2).

8. Tighten the screws (1).

9. Make sure that the lifter (6) moves smoothly.

Further information:

■ Replacing yarn carrier ([see page 6-36](#))

4.2.22 Adjusting plating yarn carrier

Note the following items when working with this yarn carrier:

1. Set yarn carrier as deep as possible.
2. Basic thread into the oblong hole (1).

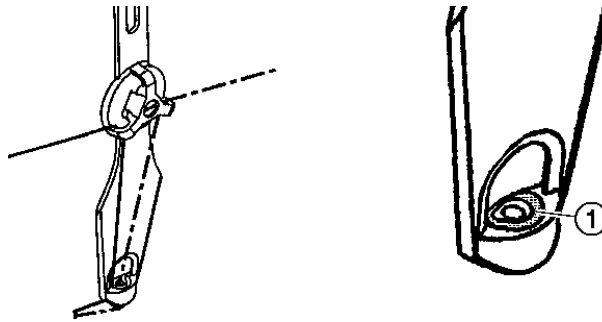


Fig. 4-75 Oblong hole of plating yarn carrier

3. Set the thread tension of the ground thread somewhat higher than for the plating thread.



Define the yarn carrier as a plating yarn carrier in the knitting program (e.g.: "Y-3A:P;"). The specification is important for yarn carrier checking. The command takes the larger width of the plating yarn carrier feeder when positioning the yarn carrier.

4.3 Working with files



WARNING

Computer viruses!

Loss of data or production. Computer viruses can creep into the machine through unscanned data via USB port or network.

→ Bring in only virus free data on to the knitting machine.


This chapter contains information on:

- Help on working in the windows ([see page 4-98](#))
- File manager ([see page 4-104](#))
- Working with files, libraries and pattern folders ([see page 4-108](#))
- Displaying file in pattern editor ([see page 4-112](#))
- Deleting knitting memory ([see page 4-114](#))
- Copying files ([see page 4-116](#))
- Select the current folder ([see page 4-119](#))
- Carrying program test ([see page 4-122](#))

4.3.1 Help on working in the windows

The following help items should be heeded so that you may work in the various windows.

Call up direct help

Key	Function
	Call up "Direct help" for the next pressed key

Tab. 4-54 "Direct help" key

→ To receive direct help on a specific key in the menu, first tap the "direct help" key and then the key for which you want help.

Positioning cursor

The text is entered at the point at which the cursor (insert mark) is located.

→ To move the cursor to a certain position, touch that position.

Marking text A word or a text block is marked for being copied, moved or deleted.

→ To mark a word, tap the word twice.

→ To mark a line, tap the line three times.



→ To mark a text block, pull your finger from the starting position to the end position.

- or -

On the 1st level of the SINTRAL editor, use both keys "Set beginning of a marking" and "Set end of a marking".

Deactivating marking → To cancel a marking, touch any spot.

Set/deactivate write protection

Key	Function
	"Activate write protection" : Activate write protection of selected file
	"Deactivate write protection" : Deactivate write protection of the selected file



Tab. 4-55 "Activate write protection" and "Deactivate write protection" key

→ If a write-protected file is loaded, the information "Write protection" appears in the status line of the SINTRAL editor.

Entry in selection window Selection windows are opened when some keys are selected. The following input is possible:

- a text can be entered with the virtual keyboard
- a selection occurs manually by tapping a key



The entries must be confirmed by the "Confirm input" key.

Key	Function	Key	Function
	Return to the 1st level in the SINTRAL editor		Confirm input and run in the SINTRAL editor

Tab. 4-56 Function keys in the selection windows

Call up "Find" selection window

The corresponding location is sought when you enter line numbers or text and select the keys.

Key	Function
	"Find" a certain term
	"Continue" : Continue searching for a certain term

Tab. 4-57 "Find" and "Continue" keys

1. Call up the "Find" selection window with the "Find" key.
The "Search for" window appears.

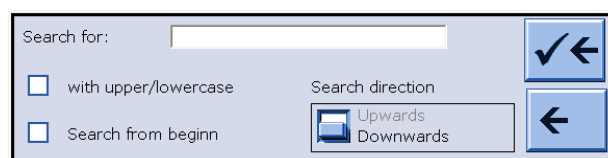


Fig. 4-76 "Find" selection window

2. Enter the line number or text to be searched for with the virtual keyboard.
3. Select options for uppercase/lowercase letters and the search direction.
4. To start the "Search from begin", select the "Yes" key.
- or -
→ Select the "No" key if you only want to search from here.
5. To activate the search, tap the top arrow key,
- or -
→ To exit the window, tap the bottom arrow key.
6. To find other instances of the text, tap the "Continue" key,
- or -
→ To start the next search, enter a new line number or text with the virtual keyboard.




If the message "Search title not found" appears:

Either the text searched for is not contained in the knitting program or the options are not set correctly.

- Check the text entered.
- Change the search direction.

Call up "Replace" selection window This is replaced in the loaded file by entering line numbers and commands and selecting the keys.

Key	Function
	Search for a certain term and "Replace" it by a new one

Tab. 4-58 "Replace" key

1. Call up the "Replace" selection window. Answer the safety prompt. The "Replace by" window appears.

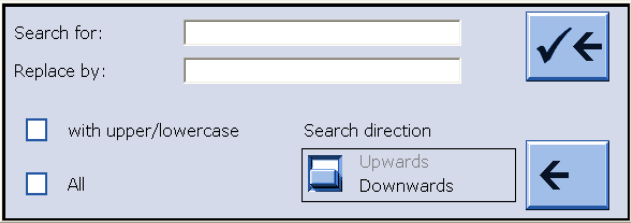


Fig. 4-77 "Replace" selection window

2. Enter the text to be replaced via "Search for" with the virtual keyboard.
3. Enter the text to be inserted via "Replace by" with the virtual keyboard.
4. Selecting the "All" key, the text (without prompt in Item 7) is replaced throughout the entire file.
5. Select options for uppercase/lowercase letters and the search direction.
6. To activate the search, tap the top arrow key,
- or -
➔ To exit the window, tap the bottom arrow key.



If the message "Search title not found" appears:


Either the text searched for is not contained in the knitting program or the options are not set correctly.

- ➔ Check the text entered.
- ➔ Change the search direction.

- 7. Answer the question in the newly opened selection window. Press the key "1" to confirm.
- or -
- ➔ For repeated prompting, press the "0" key if the term is only to be replaced once.
- or -
- ➔ Press the "ESC" key to cancel.

Call up "Go to" selection window

You can jump to the corresponding point in the loaded file by entering line numbers or names and selecting the keys.

Key	Function
	Carry out "Go to" a certain position

Tab. 4-59 "Go to" key

- 1. Call up the "Go to" selection window with the "Go to" key. The "Go to" window appears.

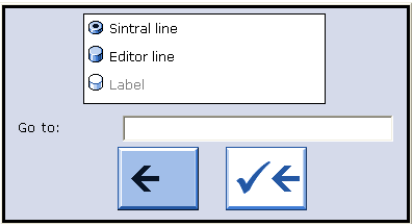


Fig. 4-78 Selection window for "Go to" function key

- 2. Enter the line number or name to be searched for with the virtual keyboard.
- 3. To go to Sintral line numbers, tap the "Sintral line" key,
- or -
➔ To execute a real line jump, tap the "Editor line" key,
- or -
➔ To jump to the named line, tap the "Label" key.
- 4. To activate the search, tap the right arrow key,
- or -
➔ To exit the window, tap the left arrow key.






Automatic calling of virtual keyboard

The virtual keyboard is automatically activated when various function keys are selected. Either a number block appears for inputting numbers or an alphanumeric keyboard appears for entering letters and numbers.

The virtual keyboard contains three switchover keys:

- SHIFT key
- CPS LCK key
- CTRL key

To use a switchover key, e.g. to enter a special character, first press the switchover key and then the key with the special character. To return to normal characters, press the switchover key again.

Key	Function
	Switch on virtual keyboard
	Switch off virtual keyboard
	SHIFT key: switch over between uppercase and lowercase letters and between numbers and special characters
	CPS LCK key: switch over between uppercase and lowercase letters; the setting of numbers or special characters is maintained
	CTRL key: switch over to function keys F1 to F10 and keyboard codes (short cuts)

Tab. 4-60 Switchover keys

4.3.2 File manager

Files and folders (directories and images) are managed in "File -Manager" window.

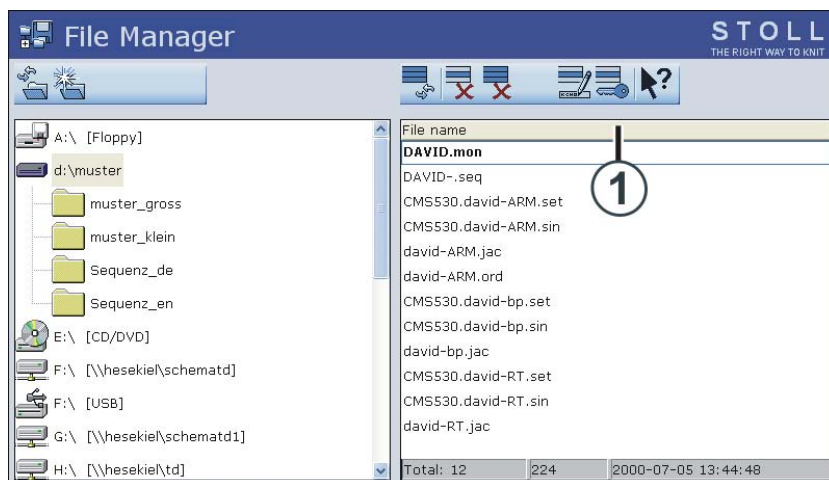


Fig. 4-79 "File manager" window

All actions pertaining to folders are mentioned on the left-hand side. A new folder can be created, for example.

You have access to the following data carriers:

- USB Memory Stick
- Hard disk of the computer in the knitting machine
- Online
- Network

On the right hand-side the files from the selected folders are displayed. This list of files appears in alphabetical order (standard setting), and the number of existing files is displayed on the status line (Total:) of the list.

Setting the sort sequence

The sort sequence can individually be adjusted. To do so, click on the header (1). Select and confirm the sort sequence in the "Sort by" window.

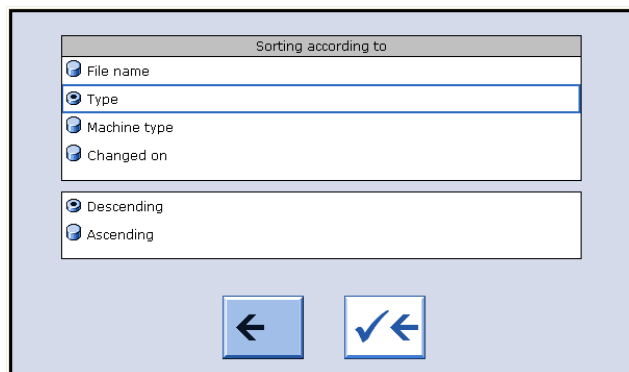






Fig. 4-80 Setting the sort criteria

Key	Function
	Call up the "Load & save" window
	Call up "Additional function keys"
	Call up "File manager" window
	Call up the "Main menu"

Tab. 4-61 Keys for the "File manager" window

Call up "File manager" window:

1. Call up the "Load & save" window from the "Main menu".
2. Call up "Additional function keys".
3. Call up "File manager" window.

Actions in the "File manager"
window

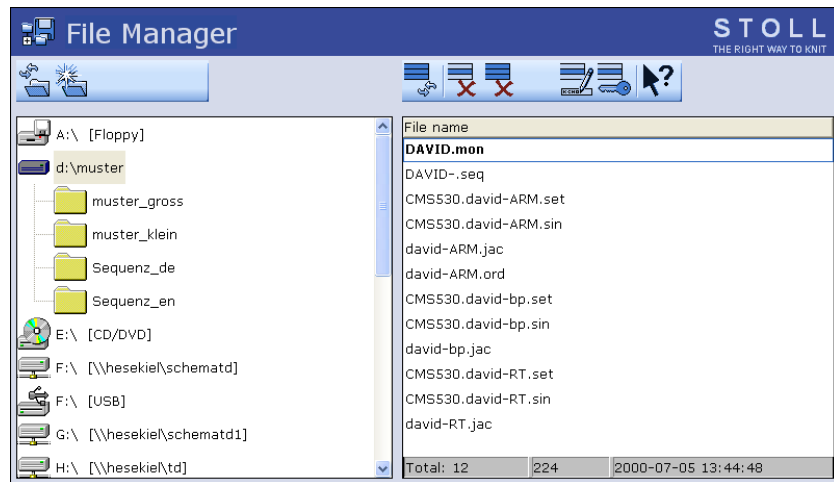















Fig. 4-81 "File manager" window

Key	Function	Key	Function
	"Update" : Refresh the contents of all the folders		"Delete all": Delete all files in the selected folder
	"Create folder": Create folder in the selected directory		"Display file" which is selected
	"Copy folder": Copy the selected folder, including contents to a target folder		"Rename file" : Change name of selected file
	"Delete folder": Delete the selected folder including contents		"Activate write protection" : Activate write protection of selected file
	"Rename folder": Change the name of the selected folder		"Deactivate write protection" : Deactivate write protection of the selected file
	"Update" : Refresh the contents of the folder		Call up "Direct help" for the next pressed key
	"Delete file" which is selected		

Tab. 4-62 Keys in the "File manager" window

Call up the Selection window
"Create folder"

With the selection of a drive or a folder in the list on the left-hand side, the key "Create folder " appears.

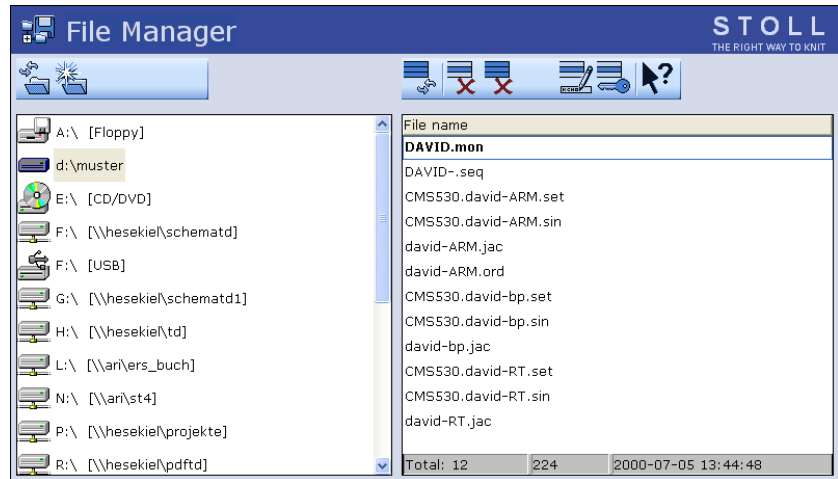


Fig. 4-82 "Create folder"key in window "File-Manager"

1. Tap the desired folder in the list on the left in which the new folder is to be created
2. Call up the Selection window with the key "Create folder".
The window "Create new folder" appears

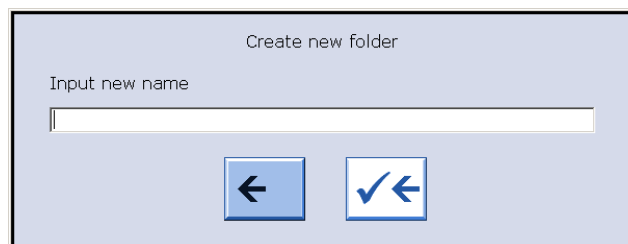


Fig. 4-83 Selection window "Create new folder"

3. Enter the name of the new folder with the virtual keyboard.
4. To save the new folder, tap the right arrow key.

- or -

➔ To exit the window, tap the left arrow key.

Further information:

- KnitLAN connection ([see page 4-135](#))
- Select the current folder ([see page 4-119](#))

4.3.3 Working with files, libraries and pattern folders

Working with files (Sintral, jacquard, setup), libraries (Auto-Sintral) and pattern folders occurs in the "Load & Save".



The file list is divided into machine type, file name, type and changed_on: Sorting is possible in each of the four columns by pressing the column header. In the status line of the list, the number of existing files (total:), the file size and the date/time of the last change to the selected file are displayed.

You have access to the following data carriers:

- Removable data carrier (on the USB socket)
for example: USB-Memory-Stick, floppy disk drive, CD drive, DVD drive, external hard drive
- Hard disk of the computer in the knitting machine
- Online
- Network drive



If "EALL" is activated when loading, the previously loaded pattern is completely deleted.

Keys	Function
	Call up the "Load & save" window
	Call up the "Main menu"

Tab. 4-63 Keys for "Load & Save" window

Work with files and pattern folders:



WARNING

Data loss!

Files and folders might be deleted accidentally if you do not proceed carefully!

➔ Create a back-up copy of each folder!

1. Call up the "Load & save" window from the "Main menu".

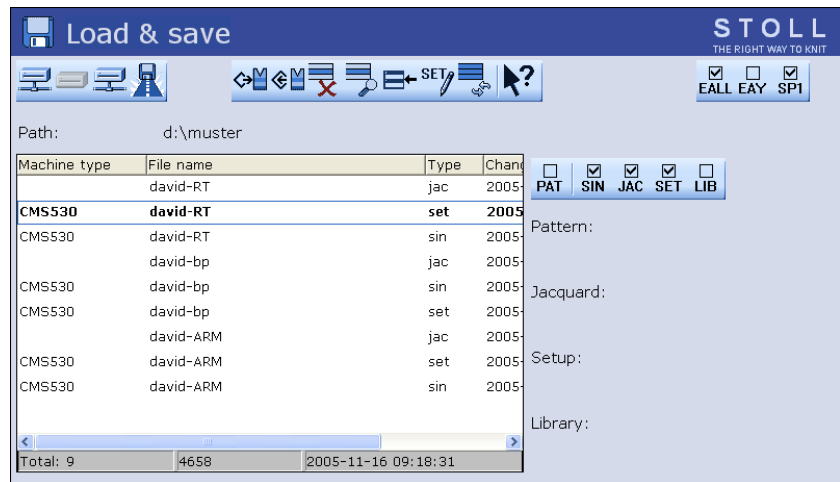


Fig. 4-84 "Load & save" window

2. Set the desired path with one of the "Direct pattern folder selection" keys.
 3. Use the PAT/SIN/JAC/SET/LIB keys to select whether the entire pattern of the current machine (PAT) or individual file types are to be listed.
 4. Select file.
 5. Select action.
 6. If an additional prompt appears, tap "1" to confirm
- or -
- ➔ Tap the key "0" to cancel.
7. Call up "Main menu".

4.3 Working with files

Actions in "Load & Save"
window

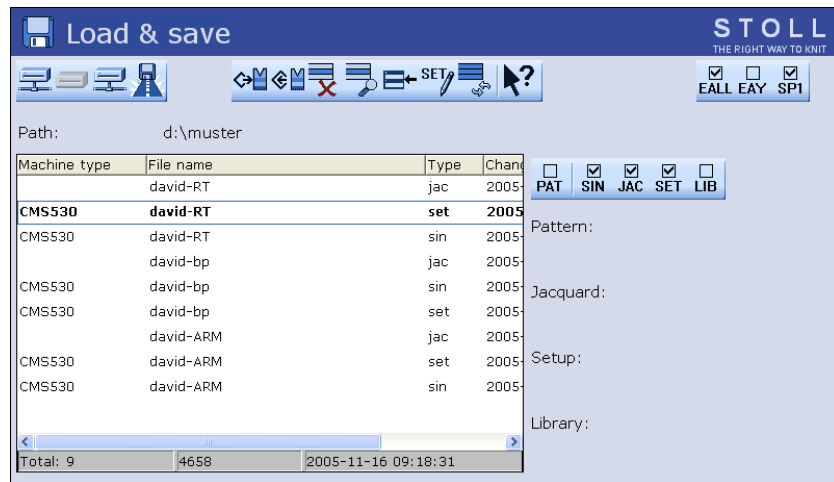






























Fig. 4-85 "Load & save" window

Key	Function
 	"Direct folder selection ": predefined folder selection
 	"Current folder selection": Open the dialog box for definition of the current folder
	"Load" selected file and accompanying pattern elements
	save selected pattern parts in the current folder ""
	"Delete file" which is selected
	"Display file" which is selected
	"Add"selected file and accompanying pattern elements to pattern already loaded

Key	Function
	Editing the setup data
	"Update" : Refresh the contents of the folder
	Call up "Direct help" for the next pressed key
 	Activate or deactivate "Entire pattern selection"
 	Activate or deactivate "Sintral selection"
 	Activate or deactivate "Jacquard selection"
 	Activate or deactivate "Setup selection"
 	Activate or deactivate "Library selection"
 	Activate or deactivate "EALL selection"
 	Activate or deactivate "EAY selection"
 	"Selection SP1" to be switched on and off




Tab. 4-64 Keys in "Load & Save" window

Further information:

- KnitLAN connection ([see page 4-135](#))
- Select the current folder ([see page 4-119](#))
- Copying files ([see page 4-116](#))
- Displaying file in pattern editor ([see page 4-112](#))
- Editing the setup file ([see page 4-131](#))

4.3.4 Displaying file in pattern editor

The selected file from the "Load & Save" window is displayed in the "Pattern editor" window (preview).

Key	Function
	Call up the "Load & save" window
	Touch "Display file"
	The "Pattern editor" window is open

Tab. 4-65 Keys for the "Pattern editor" window

Displaying file in pattern editor:

1. Call up the "Load & save" window from the "Main menu".
2. Select the file to be viewed in the file list.
3. Tap the "Display file" key.
4. The "Pattern editor" window is open.

Actions in the "Pattern editor" window

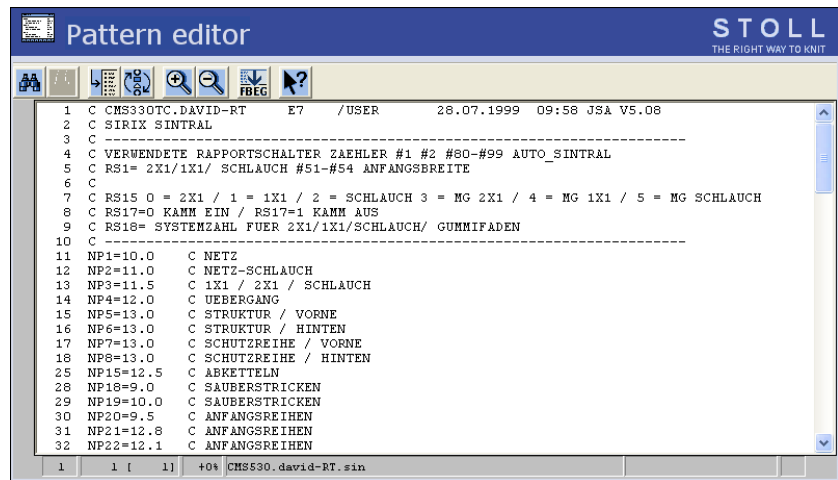






Fig. 4-86 "Pattern editor" window

Key	Function
	"Find" a certain term
	"Continue" : Continue searching for a certain term
	Carry out "Go to" a certain position
	Carry out "Go directly to" accompanying mark (e.g. from FBEG to FEND)
	"Enlarge": Display text enlarged
	"Reduce": Display text reduced
	"Function list": Activate/deactivate display of the functions of the pattern
	Call up "Direct help" for the next pressed key

Tab. 4-66 Keys in the "Pattern editor" window

4.3.5 Deleting knitting memory

The current knitting pattern with which your knitting machine works is saved in the knitting memory. When you delete the knitting memory, this has no influence on the saved patterns and files on the data carriers.

Key	Function
	Call up the "Load & save" window
	Call up "Additional function keys"
	Call up "Delete knitting memory"
	Call up the "Main menu"

Tab. 4-67 Keys for deleting the knitting memory

Delete knitting memory:

1. Call up the "Load & save" window.

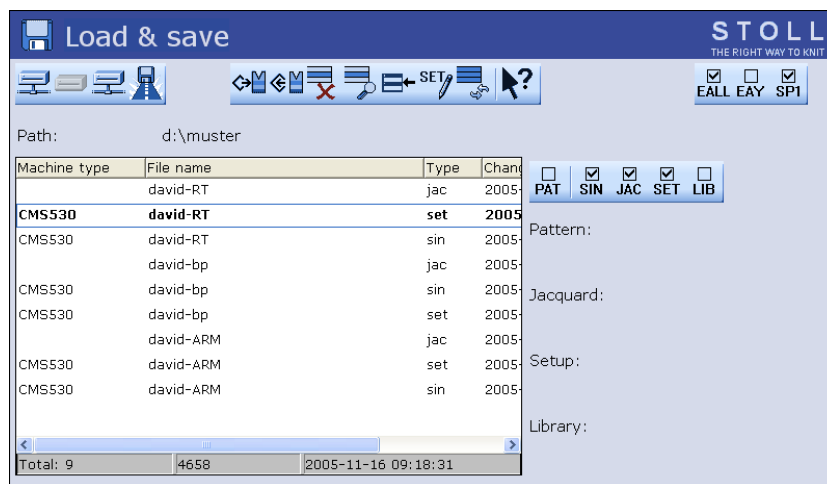


Fig. 4-87 "Load & save" window

2. Call up "Additional function keys".
3. Call up "Delete knitting memory".
4. Call up "Main menu".



If the "EALL" key is not selected, individual files (sin, jac or Autosintrial) of the knitting memory can be deleted.

Delete individual files in the knitting memory:

1. Call up the "Load & save" window.

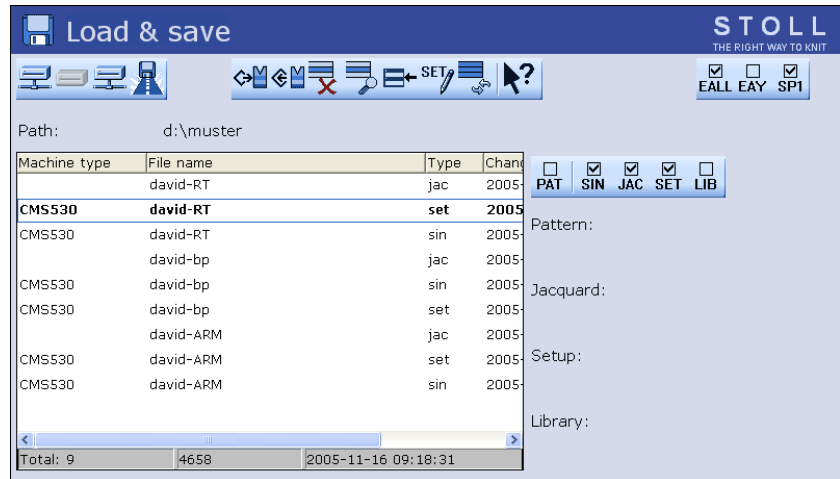





Fig. 4-88 "Load & save" window

2. Select the file via the SIN or JAC key.
3. Call up "Additional function keys".
4. Call up "Delete knitting memory".
5. Call up "Main menu".

4.3.6 Copying files

Files are copied from one drive to another in the "Copying catalogue" window. This list of files appears in alphabetical order, and the number of existing files is displayed on the status line (Total:)) of the list.

In the following example, the files are copied from the hard disk to the USB-Memory-Stick (backup copy).

Key	Function
	Call up the "Load & save" window
	Call up "Additional function keys"
	Call up the "Copying catalogue" window

Tab. 4-68 Keys in the "Copying catalogue" window

Copy file from the Harddisk to the USB-Memory-Stick :

1. Insert the USB-Memory-Stick in the USB-socket.
2. Call up the "Load & save" window from the "Main menu".
3. Call up "Additional function keys".
4. Call up the "Copying catalogue" window.

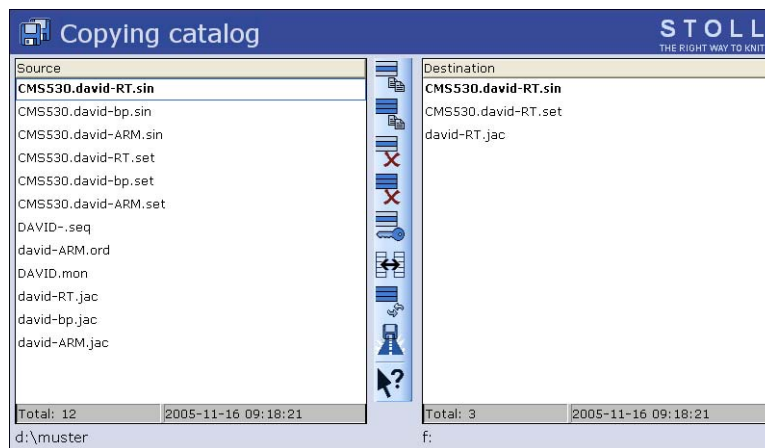


Fig. 4-89 Path specification in the "Copying catalogue" window

5. Check whether the path in the "Source" and "Target" lists is correctly displayed. The path is displayed at the end of each list.
6. If this is not so, change the path with the "Select current folder" key.
7. Tap the desired file in the left-hand list ("Source").
8. Tap the "Copy file" key.
When the file is copied, it appears in the right list ("Target").
9. To copy other files, repeat steps 7 and 8.

Actions in "Copying catalogue" window

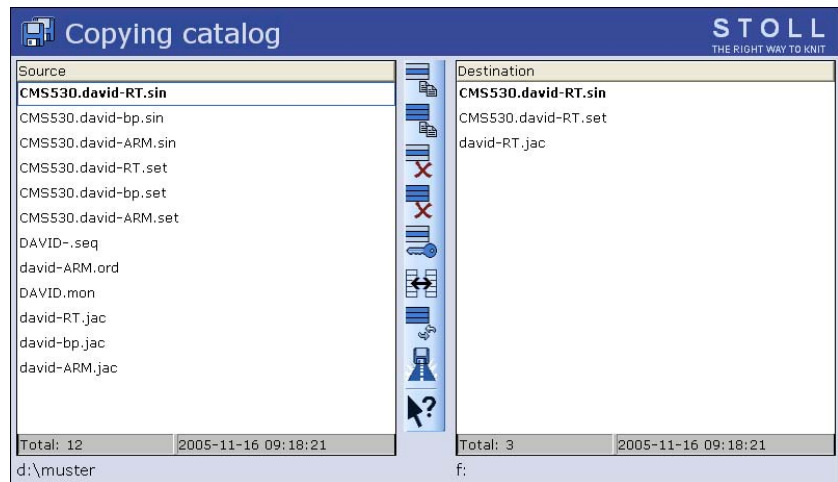












Fig. 4-90 Path specification in the "Copying catalogue" window

Key	Function	Key	Function
	"Copying a file": copy file selected in source to target		"Deactivate write protection" : Deactivate write protection of the selected file
	"Copy all": Copy all files from source to target		"Current folder selection": Open the dialog box for definition of the current folder
	"Delete file" which is selected		Call up "Direct help" for the next pressed key
	"Delete all": Delete all files in the selected folder		"Change content": Contents of source and target to be exchanged left is always source, right is the target
	"Activate write protection" : Activate write protection of selected file		"Update" : Refresh the contents of the folder

Tab. 4-69 Keys in the "Copying catalogue" window

Execute the action:

1. Tap the list for which the action is to be carried out.
2. Tap desired key.
3. To carry out additional actions, repeat steps 1 and 2.

Setting the sort sequence The sort sequence can individually be adjusted. To do so, click on the header (1).

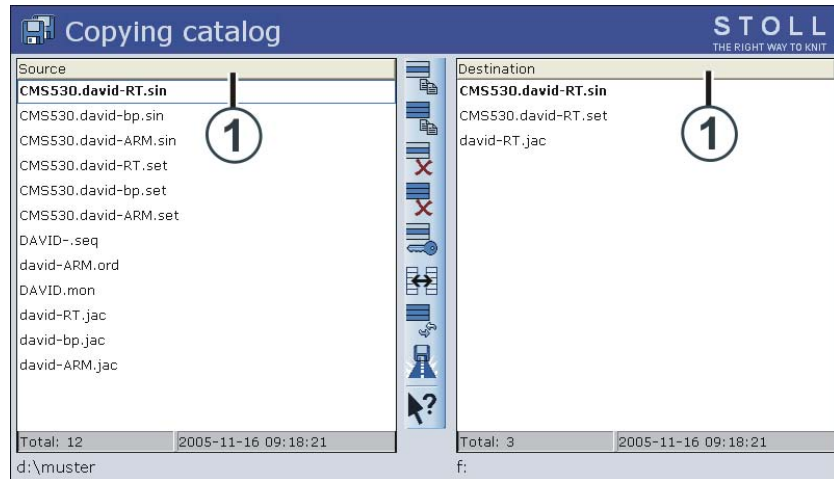


Fig. 4-91 "Copying catalogue" window

Select and confirm the sort sequence in the "Sort by" window.

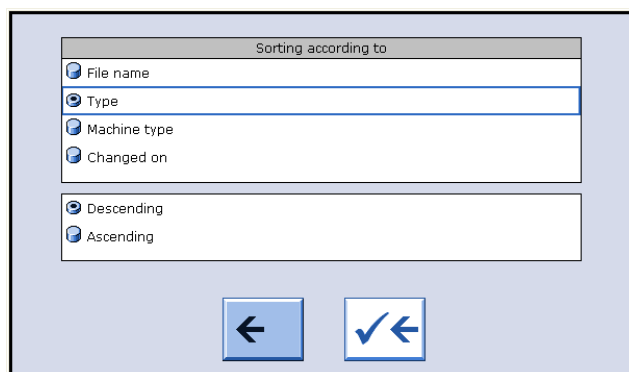


Fig. 4-92 Setting the sort criteria

Further information:

- Select the current folder ([see page 4-119](#))

4.3.7 Select the current folder




General information Pattern files can be saved to various drives (memory locations) of the knitting machine or to another computer on the network.

To read a file into the knitting machine from another drive, the entire path must be specified. By path, we mean the specification of where the file is located, for example on a drive of the M1.

A path contains the following information:

1. Drive letter (or Computer name) (e.g. .: "D:" or "\\SERVER01")
2. Specification of the subdirectories (e.g.. .: "\\PATTERN" or "StollM1\Extract")

Default setting Following drives are set by default in the keys of "Direct folder selection" :











Key	Drive	Explanation
	F:\	USB Memory Stick
	D:\	Fixed disk
	Name:\	Network drive

Tab. 4-70 Default settings of the drives

Select the current folder The selection of the patterns from the "Load & Save" window is applied in the "Catalog order data ", "Catalog Sequence data" and "Catalog Sequence lists" windows.

(Exception: The specification in the "Copying catalogue" window is only effective for this window.)

With the key "Select current folder" one can specify the drive to which the three keys "Direct folder selection" are linked.

Key	Function
	Call up the "Load & save" window
     	Tap "Direct folder selection" key The symbols of the 3 keys "Direct folder selection" are adapted based on the linked drive: USB Memory Stick Hard disk Network drive KNITLAN CD-Drive (on the USB-socket) Disk drive (on the USB socket)
	Tap "Select current folder" key.
	End setting process and save changes
	End setting process without saving changes

Tab. 4-71 Keys for changing a path

Change the path of "Direct folder selection" key:

1. Call up the "Load & save" window from the "Main menu".
2. Tap "Direct folder selection" key for which the path is to be changed.
3. Tap on the key "Current folder selection".
The input window "Select new folder " appears..

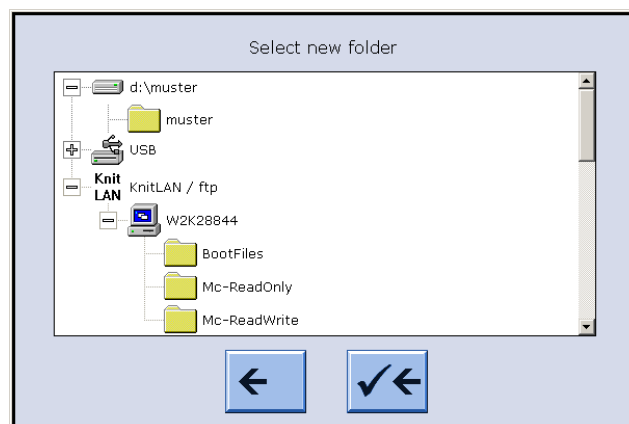


Fig. 4-93 Window "Select new folder"

4. Select the new path.
5. End setting process and save changes.

6. In the "Load & Save" window, the display of the key "Direct folder selection" is adapted to the new path. The path is indicated below it.

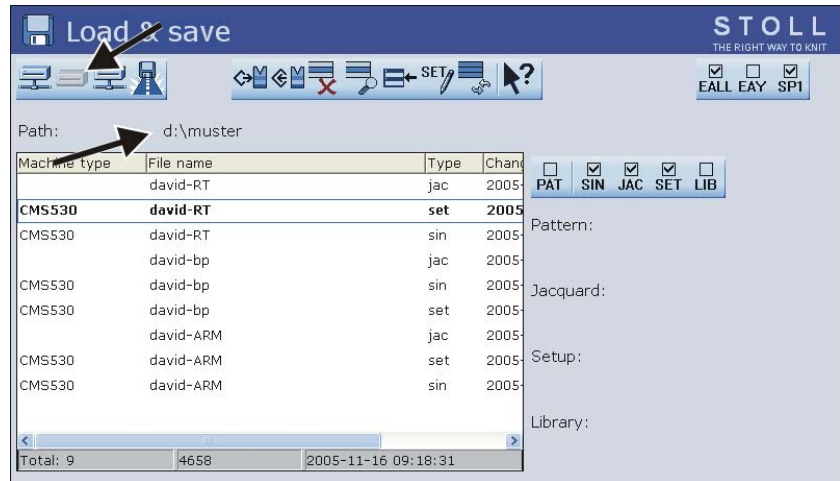








Fig. 4-94 Display of the set path

4.3.8 Carrying program test

A program test is performed with the loaded file from the "Load & Save" window in the "TP" window.

During the program test, the pattern is displayed in the upper area and the TP messages in the lower area. The window size of both areas can be changed.

Key	Function
	Call up the "Load & save" window
	Touch "Load"
	Call up the "Main menu"
	Call up "Editor" window
	Call up "Additional function keys"
	Call up "Program test" window

Tab. 4-72 Keys for the "Program test" window

Call up "Program test" window:

1. Call up the "Load & save" window from the "Main menu".
2. Load the file, for which a test program is to be carried out, into the knitting memory with the "Load" key.
3. Call up "Main menu".
4. Call up "Editor" window.
5. Call up "additional function keys".
6. Call up "Program test" window.

Actions in "Program test"
window

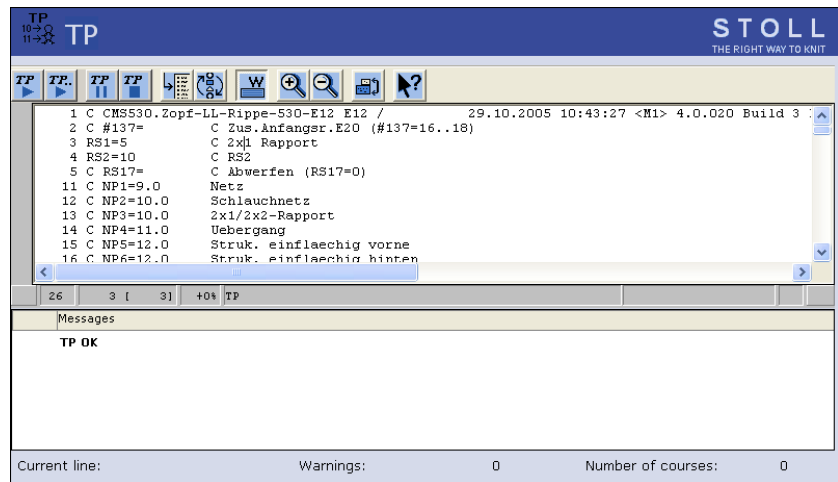













Fig. 4-95 "Program test" window

Key	Function
	"Start program test": Start program test from 1st line
	"Start program test": Start program test from a specific line
	"Interrupt program test": Interrupt and restart program test
	"End program test"
	Carry out "Go to" a certain position
	Carry out "Go directly to" accompanying mark (e.g. from FBEG to FEND)
	"Display warning" : Activate/deactivate depiction of warnings during a program test
	"Enlarge": Display text enlarged
	"Reduce": Display text reduced

Key	Function
	"Change sizes" : Change window size of pattern and error output
	Call up "Direct help" for the next pressed key

Tab. 4-73 Keys in the "Program test" window


4.4 Working with the Sintral editor

Minor changes or additions to the knitting programs are processed with the SINTRAL editor. To be able to process a knitting program with the SINTRAL editor, the knitting machine must be stopped. The knitting program can only be displayed while the machine is running.

Further information:

- Help on working in the windows ([see page 4-98](#))

4.4.1 Activating Sintral editor

Key	Function
	Call up SINTRAL editor window

Tab. 4-74 Key for SINTRAL editor window

→ Call up SINTRAL editor.

The window of the first level in the SINTRAL editor appears. The file currently loaded is shown in this window.

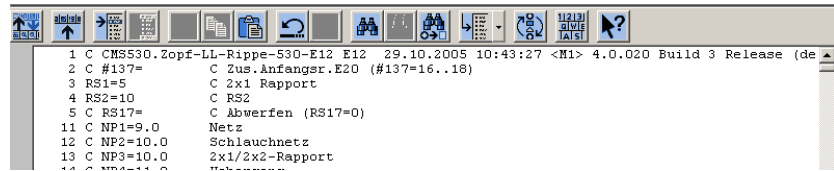


Fig. 4-96 Window of the first level in the SINTRAL editor

Key	Function	Key	Function
	"Switch over toolbar" : Switch over toolbar to second level		"Find" a certain term
	Display toolbar for "Go to mask"		"Continue" : Continue searching for a certain term
	"Start of marking" : Set the beginning of a marking. Any existing marking is deleted		Search for a certain term and "Replace" it by a new one
	"End of marking" : Set the end of a marking		Carry out "Go to" a certain position
	"Cut" marked area		"Go to" submenu is opened
	"Copy" marked area		Carry out "Go directly to" accompanying mark (e.g. from FBEG to FEND)
	"Insert" copied or cut-out area again		Activate and deactivate display of "Keyboard"
	Carry out multi-step "Undo"		Call up "Direct help" for the next pressed key
	"Redo" multi-step undo		

Tab. 4-75 Keys of the first level in the SINTRAL editor

4.4 Working with the Sintral editor

Second level of SINTRAL editor

Pressing the "Switch over toolbar" key, the window goes to the second level of the SINTRAL editor.

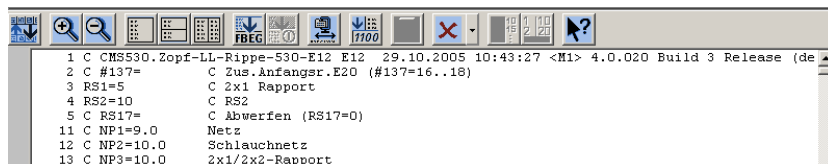



Fig. 4-97 Window of the second level in the SINTRAL editor

Key	Function	Key	Function
	"Switch over toolbar" : Switch over toolbar to first level		"Pack and unpack jacquard": Pack or unpack selected jacquard lines
	"Enlarge": Display text enlarged		"Set start of jacquard": Set start of jacquard on current line
	"Reduce": Display text reduced		Switch over between current pattern and "Auto-Sintral"
	"Remove split window": Remove tile window (horizontally or vertically)		"Delete all": Delete entire pattern
	"Split window horizontally": Tile window horizontally		"Delete" submenu is opened
	"Split window vertically": Tile window vertically		"Sort" marked area ascendingly by line numbers
	"Function list": Activate/deactivate display of the functions of the pattern		"Renumber": Reassign line numbers in the marked area
	Activate and deactivate display of Sintral "error messages"		Call up "Direct help" for the next pressed key

Tab. 4-76 Additional keys of the second level of the SINTRAL editor

"Auto-Sintral" function key To activate this key, "Auto-Sintral" must be loaded. In the editor now one can switch between the currently loaded pattern and "Auto-Sintral"

Key	Function
	Switch over between current pattern and "Auto-Sintral"

Tab. 4-77 "Auto-Sintral" key

"Split window horizontally" function key This function makes two editors available which work independently of one another. When opening, the jacquard is jumped to in the lower editor. The size of the division is changed via both arrow keys on the left or right-hand sides at the bottom edge of the screen.

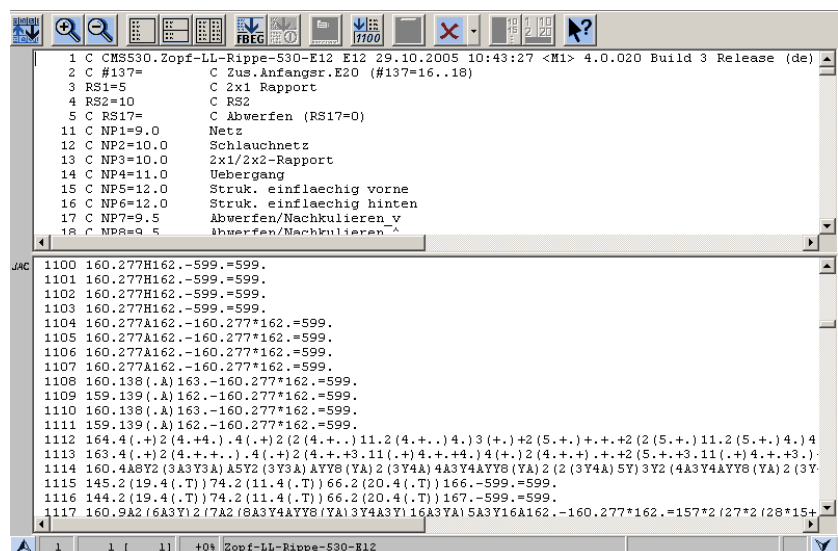




Fig. 4-98 Window for the function "Split window horizontally"

Key	Function	Key	Function
	Enlarge lower division		Enlarge upper division

Tab. 4-78 Function keys for the function "Split window horizontally"

"Split window vertically"
function key

This function makes two editors available, which both always show the same lines. Vertical scrolling in one editor changes the second editor simultaneously. Horizontal scrolling only changes one editor, and the start of a long line can be displayed in the left editor and the rest on the right one. Selections will immediately be copied in the other editor. The size of the division is changed via both arrow keys on the left or right-hand sides at the bottom edge of the screen.

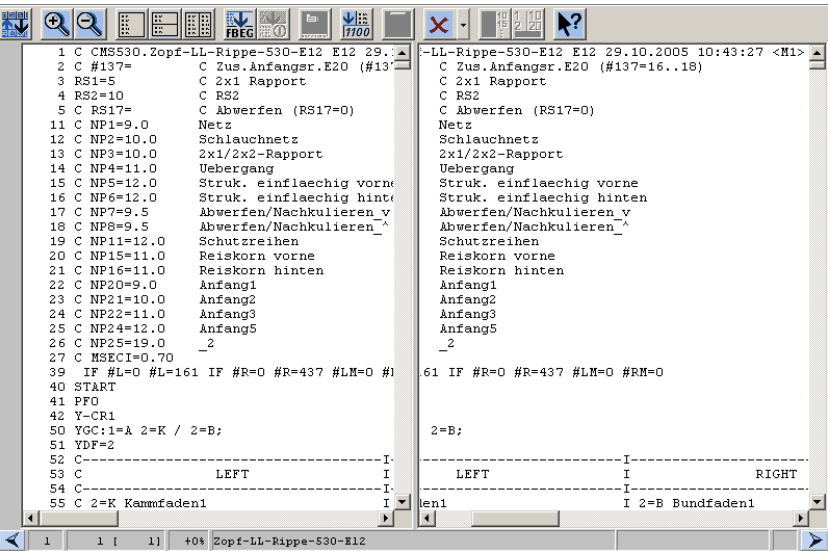




Fig. 4-99 Window for the function "Split window vertically"

Key	Function	Key	Function
	Enlarge right division		Enlarge left division

Tab. 4-79 Function keys for the function "Split window vertically"

Call up "Go to" submenu Press the arrow key next to the "Go to" key. You can jump to the start or the end of the file / line using this submenu.

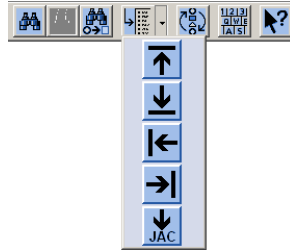







Fig. 4-100 Window "Go to" submenu

Key	Function	Key	Function
	Go to the start of the file		Go to the start of the line
	Go to the end of the file		Go to the end of the line
	Go to the begin of jacquard		

Tab. 4-80 Function keys in "Go to" submenu

Call up Delete submenu Press the arrow key next to the "Delete" key. Sintral, jacquard or a line from the loaded file can be deleted via this submenu.

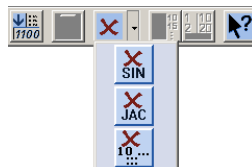







Fig. 4-101 Window "Delete" submenu

Key	Function	Key	Function
	Delete Sintral from file		Delete specified line from file
	Delete jacquard from file		

Tab. 4-81 Function keys in "Delete" submenu

4.4.2 Go to help in function and error list

After loading and checking a file, the accompanying functions and error messages can be displayed in the "SINTRAL editor". You can jump in these lists using the following keys.

Key	Function
	"Go to help for next"
	"Go to help for previous"

Tab. 4-82 Keys for go to help

➔ To jump to the next function / to the next error in the knitting program, tap the "Go to help for next" key.

- or -

➔ To jump to the previous function / to the previous error in the knitting program, press the "Go to help for previous" key.

4.5 Editing the setup file

The Setup data editor allows setup data to be edited without loading them into the machine beforehand. It is thus possible to edit another setup file while the machine is knitting a pattern. Each group of setup data has its own tab with the corresponding input fields in the "Setup data editor" window.



If no STIXX device is connected to the machine, the "STIXX" and "STIXX3" tabs are not displayed although the setup file contains STIXX data. The STIXX data cannot be edited.

When the setup data are saved, existing STIXX data (that are not displayed) are also saved.

The following events can prevent a correct storage of the setup data:

- The setup file is write-protected.
This is displayed by a tip. The write protection can be deactivated by the additional function key "Deactivate write protection".
- Limits do not match.
The limit values of the entered setup data are compared with the data of the current machine and checked.
Conflicts may therefore arise if a setup file of a different machine is being edited on the machine (NPmm values are gauge-dependent).
- The tabs "NP1..50", "NP51..100", "WMF" and "MSEC" can contain empty input fields.
This is due to the fact that the M1 only stores the used NP, WMF and MSEC data in the setup data.
When the data are saved from the setup data editor, only the used NP, WMF and MSEC data are then saved correspondingly in the setup file.








Key	Function
	Call up the "Load & save" window
	Activate the "Setup selection" key
	Call up the "Setup data editor" window
	Call up "Additional function keys"
	"Activate write protection" key
	"Deactivate write protection" key
	Call up the "Main menu" window

Fig. 4-102 Keys for the "Setup data editor" window

Activating the Setup data editor

1. Call up the "Load & save" window.

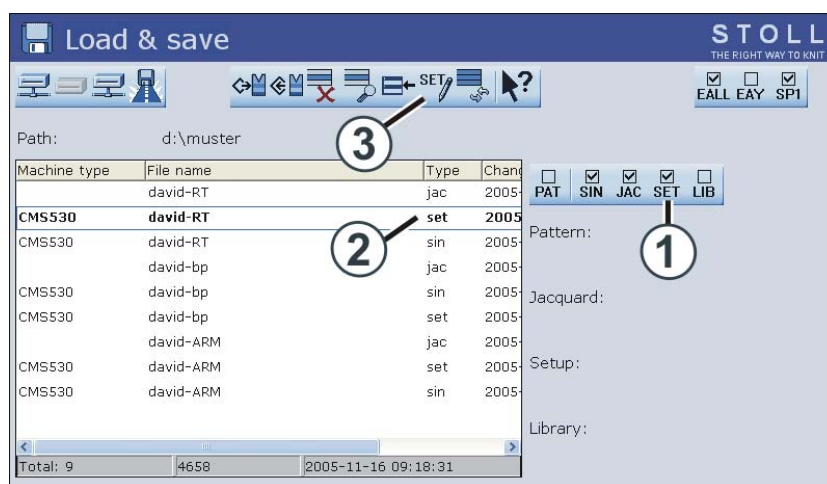


Fig. 4-103 "Load & save" window

2. Activate the "Setup selection" key (1).
3. Select the desired setup file (2).
The "Setup data editor" key is displayed (3).
4. Tap the "Setup data editor" key (3).

The "Setup data editor" window is open.

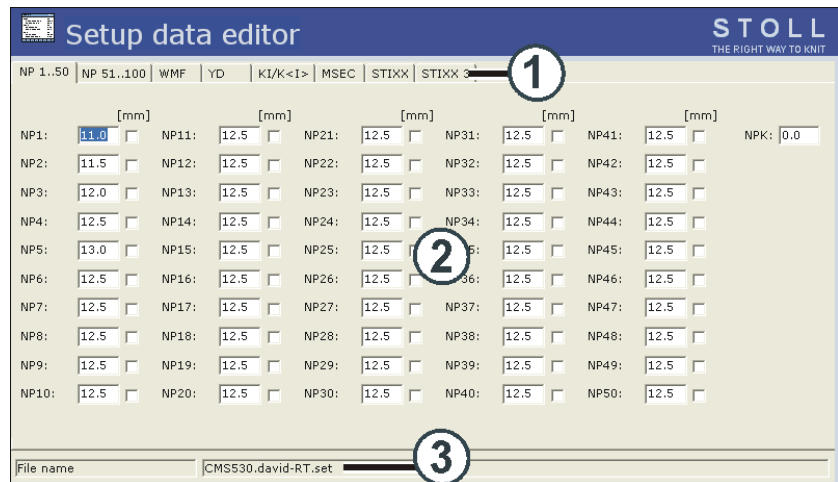


Fig. 4-104 "Setup data editor" window

- 1 Total of 8 tabs:
The STIXX and STIXX3 tabs are only displayed if a STIXX device is connected.
- 2 Working area:
changes, depending on the selected card.
- 3 Status bar:
with the file name of the loaded setup file.

The "Setup data editor" window contains a maximum of 8 tabs:

Card	Meaning
NP 1.0.50	Stitch cam position with index 1 to 50
NP 51..100	Stitch cam position with index 51 to 100
WMF	Specifications for the fabric take-down value
YD	Distance of the yarn carrier from the fabric selvedge
KI/K<I>	Correction value of yarn carriers in fabric area
MSEC	Specifications for the carriage speed in m/sec
STIXX	Specifications for the STIXX yarn length measuring device (STIXX menu)
STIXX3	Specifications for the STIXX yarn length measuring device (STIXX3 menu)

Fig. 4-105 Tabs in the "Setup data editor" window

Working with the setup data editor

- The Setup data editor window is open.

Set/deactivate write protection:

1. Call up "Additional function keys".
2. Tap the "Activate write protection" key in order to activate the write protection.

- or -

- ➔ Tap the "Deactivate write protection" key in order to deactivate the write protection.

Editing the setup file:

1. Tap the tab to be edited.
2. Select the desired field.
3. Overwrite the value.
4. Confirm the input.
5. Repeat steps 1 or 2 to 4 for further entries.

- or -

- ➔ Call up the "Main menu" window.

4.6 KnitLAN connection

The KNITLAN connection helps in the transmission of data and patterns between the machine and a M1 or a FTP-Server (FTP = File Transfer Protocol, network protocol for data transmission).

The KNITLAN connection takes the place of the previous online program. In this chapter the adjustment of KNITLAN connection has been described. The selection of computer for "My network" has been described in the MCNET2 manual.









The KNITLAN connection can be used for:

- Transmitting knitting programs
- Production monitoring
- Machine data acquisition

Requirements:

- Machine and M1 are networked
- Operating system of the machine: V 1.2 (or higher)
- Software version of M1: V 3.9 (or higher)

Adjust KnitLAN connection

Key	Function
	Call up the "Service" menu
	Call up "Basic settings" menu
	Call up window "Network configuration"
	Opens the substructure of the marked network.
	Closes the substructure of the marked network.
	Transfers the selected computer in the field "KnitLAN / ftp"
	Deletes the selected computer
	Call up the "Main menu"

Tab. 4-83 Keys for adjusting the KNITLAN connection

1. Call up the "Service" menu.
2. Call up the "Basic settings" menu.

3. Call up window "Network configuration".

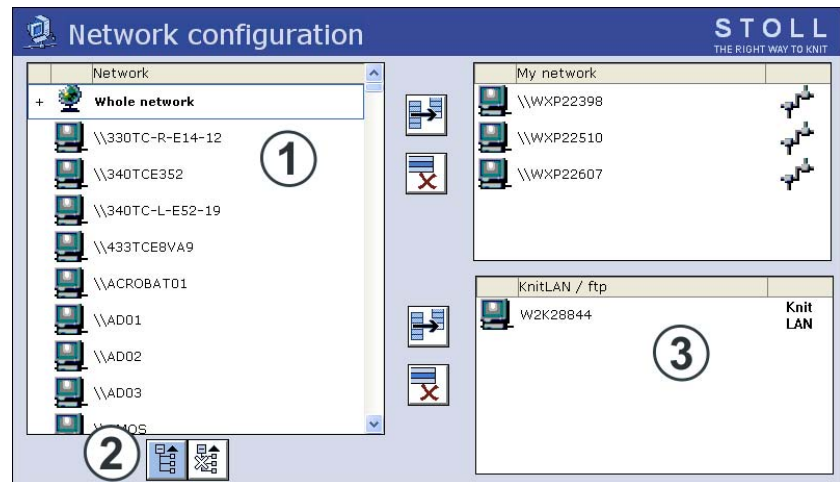
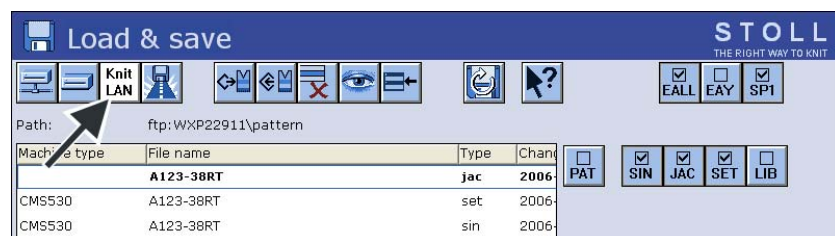


Fig. 4-106 Window "Network configuration"

- 1 Display of the network environment in which the machine is included.
 - 2 Opens the substructure of the marked network.
 - 3 Computer that is used for KnitLAN (e.g. patterning units) or computer on which a FTP server is attached.
FTP = File transfer protocol (network protocol for data transmission).
4. From the entire network (1) select the computer of M1.
If only the entire network is displayed, then with the key (2) open the substructure.
 5. Transfer the selected computer to the field "KnitLAN / ftp" (3).
 6. If another computer needs to be selected, repeat steps 4 and 5.
 7. Call up the "Main menu".



You can lay the KNITLAN connection on one of the keys of "Direct folder selection". The key is indicated with the symbol "KnitLAN". In the selection field see the contents of the folder on M1.



Working at the M1:

1. So that the KnitLAN connection from M1 to OKC machines works, the access to KnitLAN directories ("D:\Stoll\M1\KnitLAN\Bootfiles" and "Mc-ReadWrite") must be shared.
Select directory, call up context menu, activate properties, tab release and folder
2. You must call up Firewall settings in the Windows Firewall and allow the Stoll FTP service as an exception. (Start -> Control Panel -> Windows Firewall > Tab: exceptions).
You will find the program "Stoll FTP-Service" under the installation path of the M1 (e.g. "C:\Program Files\Stoll\M1\Bin\ftpservice.exe").

Further information:

- Select the current folder ([see page 4-119](#))

4.7 Defining user profile

In the standard configuration each knitting machine user can open and make changes to any window of the user interface. However, in some cases this is not desirable and not every user is to be able to change data and machine settings. This can be set with the "User Profile" window. In this window, rights as to which changes may be carried out and which may not, can be assigned to a user or a user group. If a window is blocked, it can be called up and the data viewed, however changes are not possible (exception: the password is known to the user and he/she can enable the window).

The operating elements in a blocked window are shown on a light gray background.

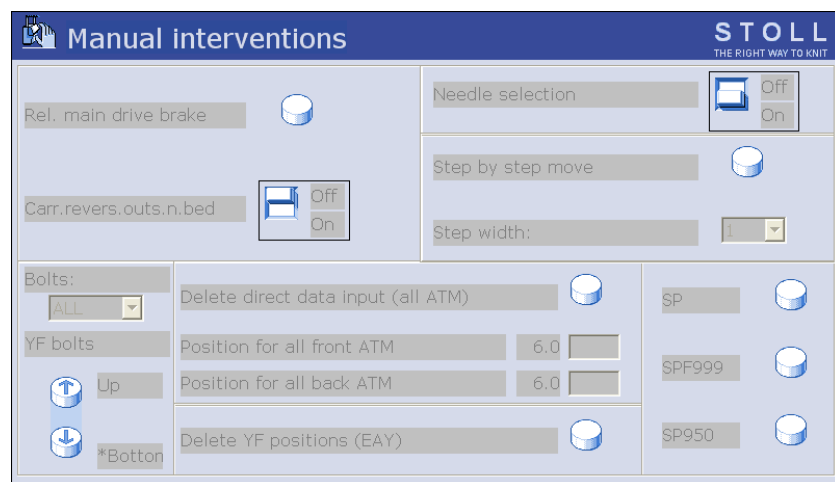


Fig. 4-107 Blocked window "Manual interventions"

The assignment of the rights is reserved for an authorized person and protected by a password.

Any number of user profiles can be defined, for example for:

- Knitters
- Personnel of the night shift
- Setup personnel (technicians)
- Foremen/Forewomen

**CAUTION**

The window is protected by a password!

When calling up a window, a password is always requested. This serves the purpose of security so that no unauthorized persons have access to this window.

- The password must remain secret.
 - Uppercase and lowercase letters can be used in a password.
-
- Note the password and keep it in a safe place.



If the password is lost, the Stoll Helpline can help with a special password.

The "User Profile" window

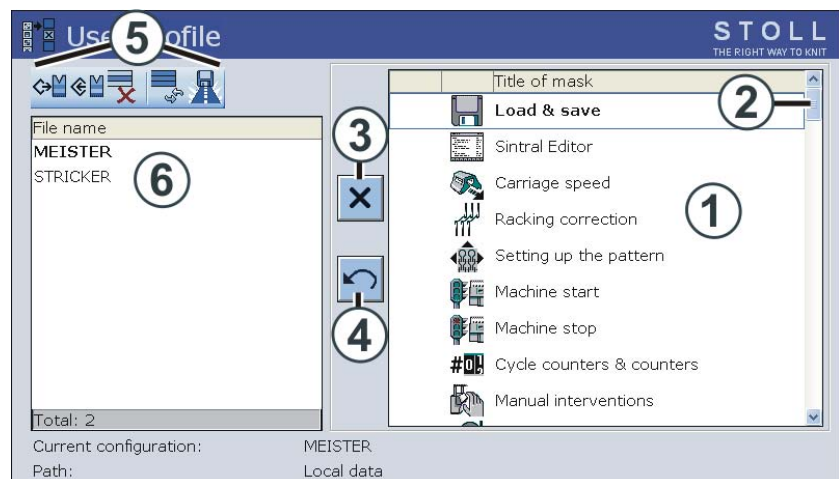












Fig. 4-108 "User Profile" window

Field	Function
1	Selection list of the windows to be enabled or blocked. It is possible to scroll down/up in the selection list with the scroll bar (2). Additional windows are then available for selection.
3	Switch for blocking or enabling a window
4	Reset all changes
5	Operations for the selected user profile
6	Select or define user profile

4.7 Defining user profile

Defining user profile

Key	Function
	Call up the "Service" window
	Call up "User Profile" window
	Confirm password
	Return to previous window (cancel process)
	Block window
	Enable window
	Call up "Additional function keys"
	Enable all windows
	Block all windows
	Call up the "Main menu"

Tab. 4-84 Keys for defining "User profile"

Defining user profile:

1. Call up the "Service" window.
2. Call up "User Profile" window.

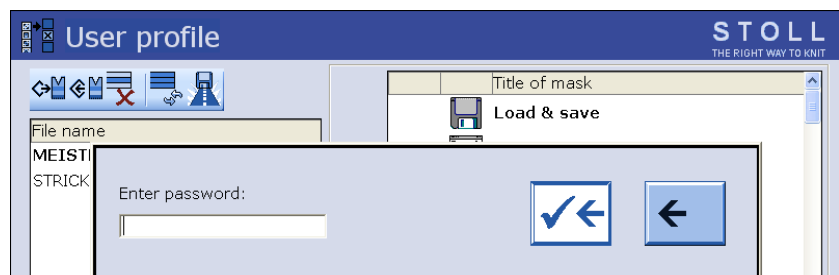


Fig. 4-109 Entering password

3. Enter and confirm the password with the keyboard. In the standard configuration, the first password is "MASK.ACCESS". It is written in uppercase letters and without quotation marks.

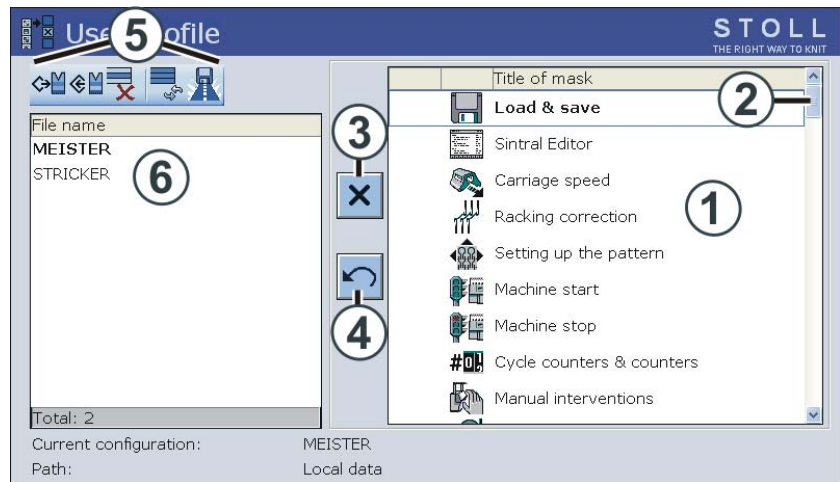


Fig. 4-110 "User Profile" window






4. Block window: Tap the corresponding window in the selection list (1) and Tap the "Block window" switch (3).
- or -
- ➔ Tap the corresponding window in the selection list with a double click.
5. Enable window: If a window is blocked, then enable it again with a double click.
- or -
- ➔ Tap the switch (3).
6. Only enable a few windows: First block all windows ("Additional function keys" key and "Block all windows" key) and then enable the few windows again.
7. Enable all windows: Tap the "Additional function keys" key and enable all windows again with the "Enable all windows" key.
8. Give a name to the user profile and save it.
9. Define another user profile if necessary.
10. For the user profile to become effective, it must be activated with the "Load" key.
11. Call up "Main menu".

4.7 Defining user profile

Saving, loading, deleting
user profiles ...

The user profile can be saved, loaded and deleted.

So that the same user profiles are active on all knitting machines, save the user profiles to USB -Memory-Stick or a network drive and load them in each machine.

Key	Function
	Call up the "Service" window
	Call up "User Profile" window
	Confirm password
	Confirm selection
	Call up the "Main menu"

Tab. 4-85 Keys for "Saving, loading, exporting user profile ..."

Saving, loading, deleting user profiles ...:

1. Call up the "Service" window.
2. Call up "User Profile" window.

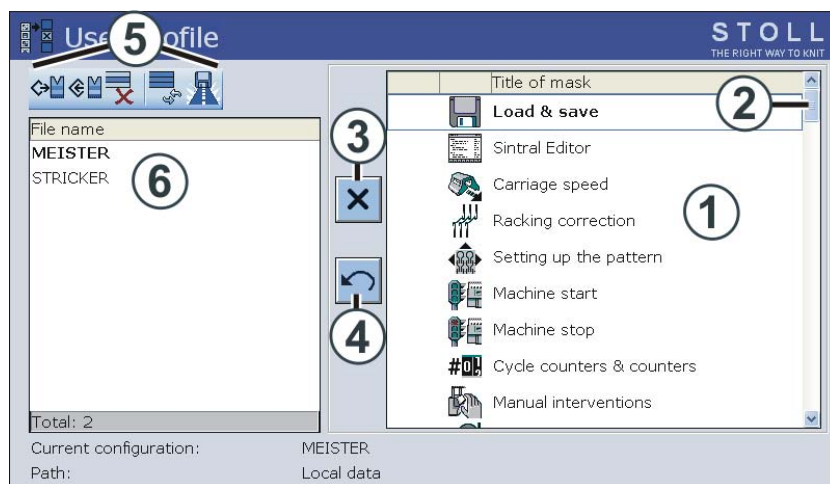







Fig. 4-111 "User Profile" window

3. Enter and confirm the password with the keyboard.
4. Select the desired program point (5) (loading, saving, deleting ...).
5. Select a user profile. Tap the desired user profile in the field (6).
6. Confirm the selection.
7. If additional user profiles are to be called up, repeat the steps 4 to 6.
8. Call up "Main menu".

Enabling blocked window During production it may be necessary to open a blocked window and carry out a change or action. Or you find that it is necessary for this window to be enabled for the active user. Naturally, this is only possible for a person who knows the password.

Key	Function
	Call up "Additional function keys"
	Tap "Password"
	Confirm password
	Return to previous window (cancel process)
	Call up "User Profile" window

Tab. 4-86 Keys for "Enabling blocked window"

Enabling blocked window:

1. Display the "additional function keys" in the blocked window.
2. Tap the "Password" key.
3. Enter the password with the keyboard.

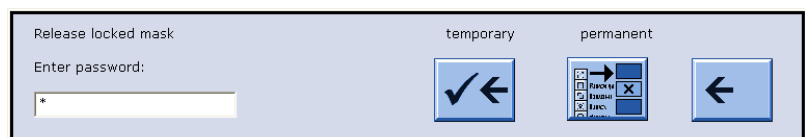


Fig. 4-112 "Enabling blocked window" window







4. Enable window once by tapping the "Confirm password" key.

- or -

- Change the user profile by tapping the "User profile" key.

Change password From time to time you should change the password to be sure that it has not become known. Carry out this activity on all knitting machines.

If the knitting machine is connected with the STOLL-pattern preparation unit, the password can be changed simultaneously on all the knitting machines with the help of Online-Connection (see Section."Online-Commands" at the end of this chapter).

Key	Function
	Call up the "Service" window
	Call up "User Profile" window
	Confirm password
	Call up "Additional function keys"
	"Change password"
	Call up the "Main menu"

Tab. 4-87 Keys for "Change password"

Change password:

1. Call up the "Service" window.
2. Call up "User Profile" window.
3. Enter and confirm the password with the keyboard.
4. Call up "Additional function keys"
5. Tap the "Change password" key.



Fig. 4-113 "Change password" window

6. Type in the new password in the top line.
7. Type in the new password again in the bottom line.
8. Confirm the password.
9. Call up "Main menu".

Examples of how a user profile can be specified

Example 1:

The machine settings are to be blocked. To do this, block the four windows in the selection list.

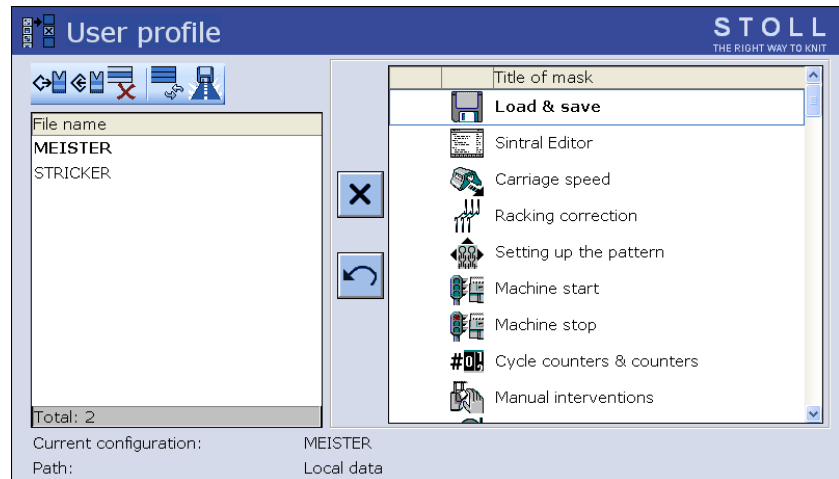


Fig. 4-114 "User Profile" window

Example 2:

When beginning work with user profiles, there is an uncertainty as to which windows are required for daily work and which are not. We suggest using the following procedure:

1. First block all windows.
2. The knitter begins working with the machine.
3. If it is necessary to change something in a window, the knitter reports this and the window is enabled in the user profile.
4. Save the user profile.
5. Continue this step-by-step determination of the user profile for a certain period of time. This may, for example, be for a working day or a week.

4.7 Defining user profile

Online commands If the knitting machine is connected with the STOLL-pattern preparation unit, the password and the user profile can be changed simultaneously on all the machines with the help of the Online-Connection. The condition is that the password is written in uppercase letters.

Commands	Function
setuserlevel Password User profile name Example: The password is "JOE", the user profile is "david". The complete command is: setuserlevel JOE david	Activate the same user profile on all knitting machines
setulword OldPassword NewPassword Example: The old password is "JOE", the new one is "JOHN". The complete command is: setuppassword JOE JOHN	Activate the same password on all knitting machines

Tab. 4-88 Commands for activating user profile and password

To enter the commands on the pattern preparation unit the following steps are necessary:

1. Programm "Online" aktivieren.
2. Select the "Display call-round ->" program point in the "NET" program. The "call-round" window appears.
3. Type in the corresponding command and confirm.

5 Maintenance of the knitting machine

This chapter contains information on:

- Minimizing wear ([see page 5-1](#))
- Cleaning knitting machine ([see page 5-3](#))
- Lubricate knitting machine ([see page 5-28](#))

5.1 Minimizing wear

All parts of the knitting machine have carefully been selected and checked by STOLL. Nevertheless, they are subject to wear due to wear. You can keep the wear to a minimum if you lubricate, clean and check the machine regularly.

The following table contains an overview of the wearing parts and the possible causes for excessive wear.

Wearing part	Possible causes of increased wear
Fabric take-down rollers	Excessive fabric take-down values Contact pressure too high/low Yarns harmful to rubber, e.g. abrasive, sanding yarns or yarn finishes such as greases or oils UV radiation (including direct sunlight) Cleaning agents harmful to rubber, e. g. ether or fuels. Recommendation: Use cleaning petrol for cleaning.
Needle brushes, brushes of the central lubrication	Incorrect adjustment
Feed wheel rollers	Sanding yarn Allowing the feed wheel to run unnecessarily
Needle bed elements, cams	Excessive fabric take-down values Yarn too thick Insufficient lubrication Insufficient cleaning
Yarn guiding parts (deflections, yarn control device, etc.)	Sanding yarn
Yarn carrier, yarn carrier slide block	Insufficient lubrication Sanding yarn
Yarn carrier magnet	Magnet may not come into contact with grease or oil

5.1 Minimizing wear

Wearing part	Possible causes of increased wear
Belt on auxiliary take-down	Following a malfunction on the auxiliary take-down (fabric winding device), the residual threads were not removed carefully
Belts (drive, racking, take-down comb, auxiliary take-down)	Belt tension too high: Danger of bearing damage (adjustment with measuring device by Stoll technician) Belt tension too low: Danger of position errors (racking, auxiliary take-down)
Blade of the thread clamping and cutting device	Yarn too thick Sanding yarn
Energy chain trailing cable	Heavy soiling Laying down of objects Damage to set-down gutter Not moved into position carefully after work at the rear of the machine

Tab. 5-1 Wearing parts

Further information:

- Adjusting needle brushes ([see page 4-86](#))
- Yarn table ([see page 8-5](#))
- Lubricate knitting machine ([see page 5-28](#))
- Cleaning knitting machine ([see page 5-3](#))

5.2 Cleaning knitting machine

To retain the operability of the knitting machine and ensure the quality of the fabric, the knitting machine must be cleaned regularly.

Cleaning interval	Cleaning work
if necessary	Cleaning the touch screen
6 to 24 operating hours	Cleaning vacuum device and lint container
daily	Vacuuming off knitting machine Cleaning needle bed Cleaning additional bed Cleaning the thread clamps Cleaning the permanent brakes Clean the friction feed wheel
100 operating hours	CMS 530 T: Cleaning connection point of additional beds
100 operating hours	Cleaning main drive ventilator
monthly	Cleaning ventilator and radiators in right control unit Cleaning filter mat of power supply
2 months	Quick cleaning of the thread clamping and cutting device
3 to 6 months	Cleaning needle bed thoroughly Cleaning additional bed thoroughly Clean transport segment
6 months	Cleaning knitting systems Clean thread clamping and cutting device thoroughly

Tab. 5-2 Cleaning plan

We recommend the use of following cleaning agent:

Cleaning agent	Cleaning work
Cloth, suction, compressed air	on the entire knitting machine
Special cleaning agent for Plexi glass (Note the Manufacturer's instructions)	Touch-Screen and Cover hoods
Cleaning petrol (Note the manufacturer's instructions)	Roller rubber of the take-down roller

Tab. 5-3 Cleaning agent

5.2 Cleaning knitting machine



Plastics, in particular the transparent cover hoods, may not be cleaned with alcohol or spirit, but instead only with a special cleaning agent for plexiglas.





Do not remove metallic parts and fragments ((e.g.. . broken needle latch or hook) with a magnetic tool. There is a danger that the needle bed or cams can be magnetized, leading to incorrect selection.

- Cleaning the touch screen ([see page 5-5](#))
- Cleaning vacuum device and lint container ([see page 5-6](#))
- Vacuuming off knitting machine ([see page 5-8](#))
- Cleaning needle bed ([see page 5-9](#))
- Cleaning additional bed ([see page 5-10](#))
- Clean the active thread clamp ([see page 5-10](#))
- Cleaning the permanent brakes ([see page 5-11](#))
- Cleaning connection point of additional beds ([see page 5-12](#))
- Cleaning main drive ventilator ([see page 5-14](#))
- Cleaning ventilator and radiators in right control unit ([see page 5-15](#))
- Cleaning filter mat of power supply ([see page 5-15](#))
- Cleaning thread clamping and cutting device ([see page 5-16](#))
- Cleaning needle bed thoroughly ([see page 5-18](#))
- Cleaning additional bed thoroughly ([see page 5-20](#))
- Clean transport segment ([see page 5-21](#))
- Cleaning knitting systems ([see page 5-23](#))
- Cleaning thread clamping and cutting device thoroughly ([see page 5-24](#))

5.2.1 Cleaning the touch screen

Use a clean, soft cloth for cleaning. If heavy soiling is present, use a cleaning agent suitable for plexiglas. To prevent menus and function keys from being activated when cleaning, two options are available:

- Disconnect machine main switch
- Deactivate touch screen using the "Block input" key

Key	Function
	Call up the "Service" menu
	"Block input" key

Tab. 5-4 Keys for cleaning the touch screen

Cleaning the touch screen:

1. Call up the "Service" menu from the "Main menu".
2. Tap the "Block input" key.
3. Clean the touch screen.
4. Reactivate the screen again after cleaning. For this purpose, trigger a manual stop, e.g. by pushing open a cover over the needle bed.

5.2.2 Cleaning vacuum device and lint container *

from component type 001 on

1. Stop knitting machine when carriage is located on right half of needle bed.
2. Slide on cover hood over needle bed.
3. Push locking of lint container inwards and pull away container upwards.

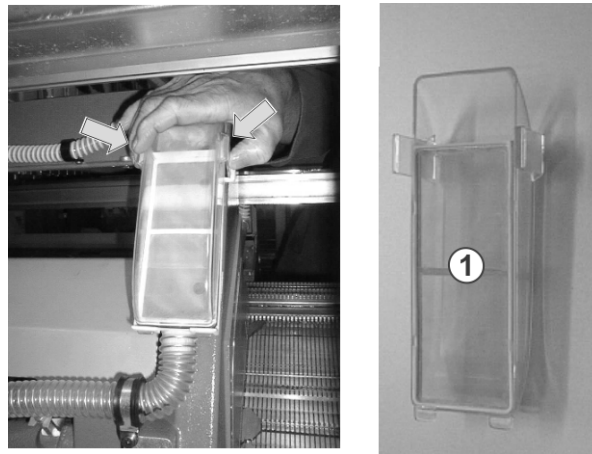


Fig. 5-1 Lint container and filter

4. Empty the lint container.
5. Clean filter (1) of lint container.
6. Reinstall the lint container.
7. Remove left rear panel segment.
8. Clean motor cover.

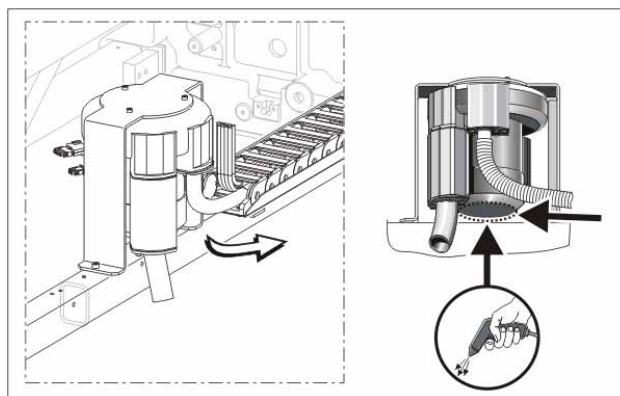


Fig. 5-2 Cleaning motor cover

9. Remove the suction tube (2) on the carriage and blow it out with compressed air.
For doing this, raise oil jet (3) so far, that fixing clip is pulled out from carriage.
Raise suction tube at the rear end (4) until there is no connection to hose anymore.

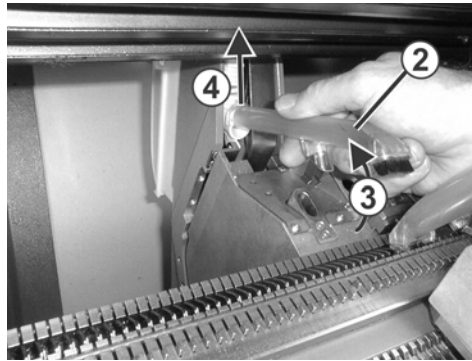


Fig. 5-3 Suction tube

Component type 000

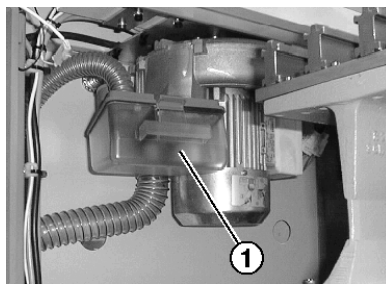


Fig. 5-4 Lint container of vacuum device

1. Stop the knitting machine.
2. Push open the left cover over the needle bed.
3. Push the lock of the lint container (1) toward the rear and pull away the container downward.
4. Empty the lint container.
5. Clean the filter (2) in the lint container and the filter (3) at the vacuum device.

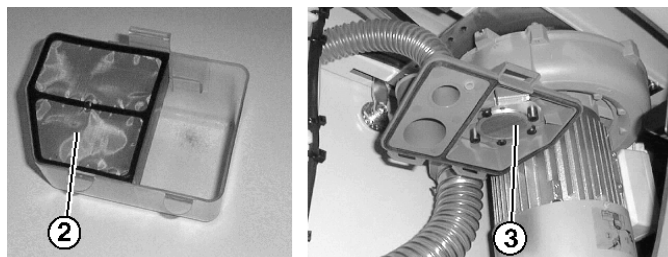


Fig. 5-5 Lint container and filter

6. Reinstall the lint container.

7. Clean motor cover.

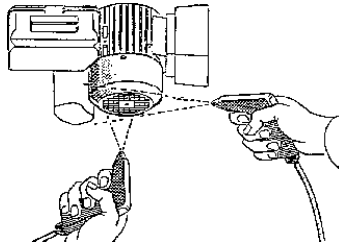


Fig. 5-6 Cleaning motor cover

8. Remove the suction tube (4) on the carriage and blow it out with compressed air

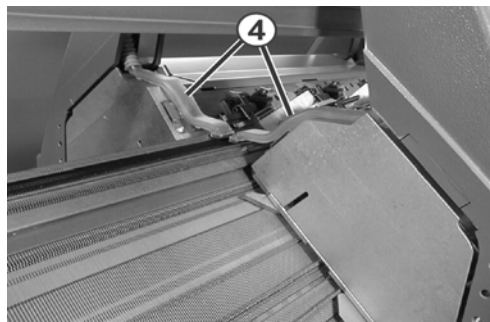


Fig. 5-7 Suction tube

Further information:

- Symbols in this document ([see page 1-3](#))

5.2.3 Vacuuming off knitting machine



In order to avoid any dust being deposited on the inaccessible points of the machine, we recommend that the dust should be vacuum cleaned and the machine not to be cleaned by compressed air.



WARNING

Damage to the needles!

The spring-mounted needle latches will be damaged if the needles are blown out with compressed air.

➔ Always vacuum lint and dust off the needles, never blow them out.

1. Stop the knitting machine.
2. Vacuum lint and dust off the knitting machine.

5.2.4 Cleaning needle bed

The pelerine springs of the needles should be cleaned daily, however at least once a week. The entire needle bed is cleaned every 12 to 26 weeks.

Clean needle beds:

1. Transfer all stitches to the rear needle bed.
2. Push open all covers over the needle bed.

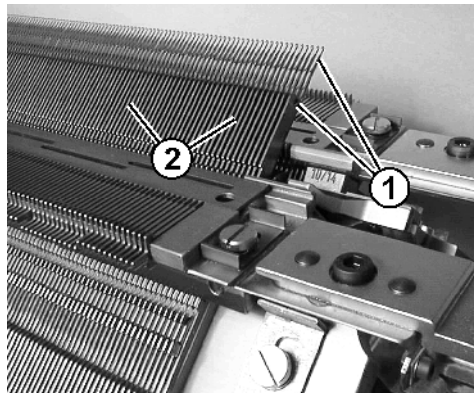


Fig. 5-8 Cleaning needle bed

3. Push up all needles of the front needle bed completely.
4. Vacuum off dirt in the area of the needle hook/pelerine spring (1) and in the area of the needle bed (2).
5. Close all covers over the needle bed again.
6. Transfer all stitches to the front needle bed and clean the rear needle bed in exactly the same manner.

Further information:

- Helpful knitting rows ([see page 6-4](#))
- Cleaning needle bed thoroughly ([see page 5-18](#))

5.2.5 Cleaning additional bed

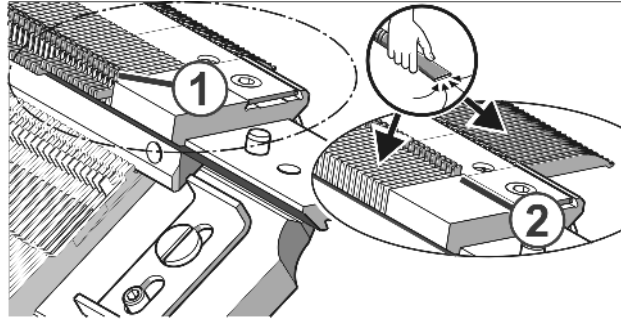


Fig. 5-9 Additional bed

1. Stop the carriage assembly into the reversing position.
2. Push the transfer parts (1) of the front additional bed into the front position (2).
3. Vacuum off the dirt in the area of the transfer parts and the additional bed.
4. Push the transfer parts into the basic position again.
5. Proceed in the same manner for the rear additional bed.

5.2.6 Clean the active thread clamp

1. Bring the lateral yarn tensioner in still position. Thereby the active thread clamp is open.

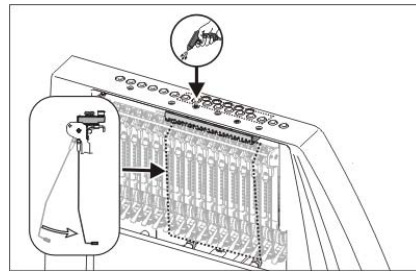


Fig. 5-10 Cleaning the active thread clamp

2. Blow the eyelets in the lateral safety hood by compressed air.

5.2.7 Cleaning the permanent brakes

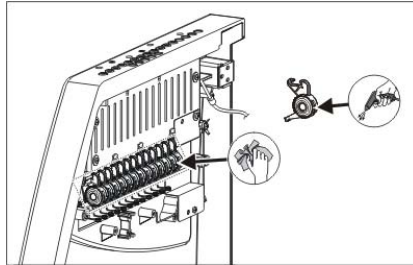


Fig. 5-11 Cleaning the permanent brake

➔ Clean both the brake settings of each permanent brake with a cloth

In case it is very dirty, then the permanent brake can be dismantled and can be blown out with compressed air.

1. Pull the adjusting lever of the permanent brake outwards and simultaneously press the lug of the permanent brake on the inner side of the safety hood.
The permanent brake flaps underneath.
2. Blow out the permanent brake with the compressed air.

5.2.8 Clean the friction feed wheel

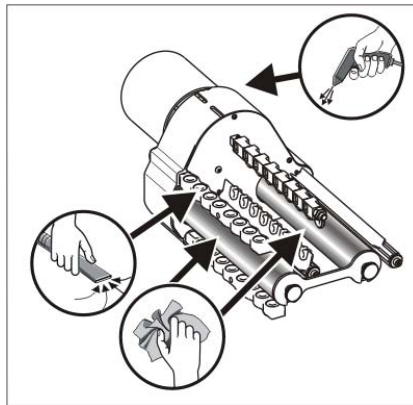







Fig. 5-12 Cleaning the friction feed wheel

1. Suck in the lint and dust from the friction feed wheel.
2. Remove dirt (e. g. paraffin) from the friction rollers.

5.2.9 Cleaning connection point of additional beds

With CMS 530 T The connection point of the additional beds should be cleaned every 100 operating hours. To do this, both additional bed halves must be moved to the side.

Key	Function
	Call up the "Service" menu
	Call up the "Service Racking" window
	Call up "Additional function keys"
	Call up the "Service Racking left" window
	Call up the "Main menu"

Tab. 5-5 Buttons for cleaning the connection point

1. Call up the "Service" menu from the "Main menu".
2. Call up the "Service Racking" window.
3. Call up "Additional function keys".
4. Call up the "Service Racking left" window.

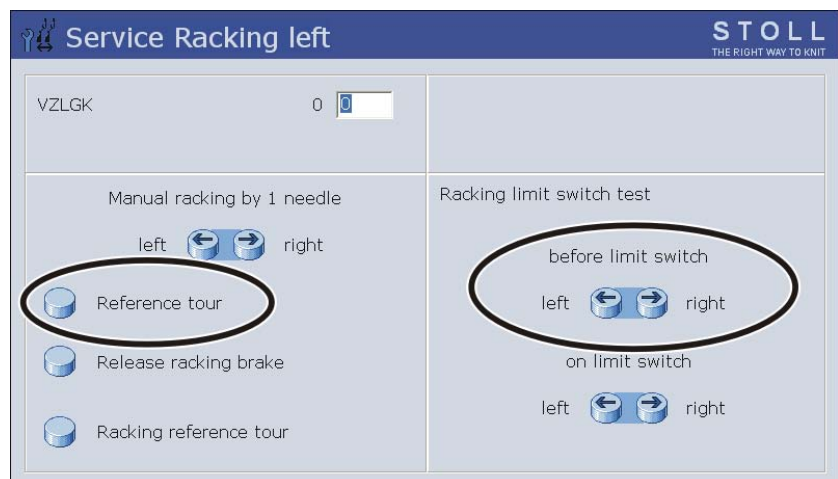


Fig. 5-13 "Service Racking left" window

5. Tap the button "before limit switch - left",
- or -
→ Tap the button "before limit switch - right".
The left or right additional bed halves are moved outward.
6. Remove dirt in the area of the connection point with a paintbrush and vacuum off.

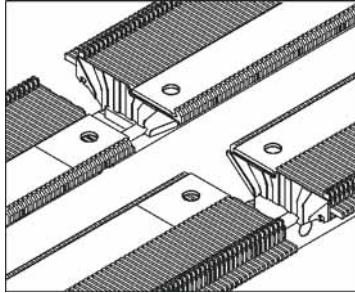


Fig. 5-14 Clean connection point



DANGER

Automatic movement of the additional beds!

Danger of injury at the connection point of the additional beds.

- Make sure that no persons reach into the area of the additional beds.

7. Deactivate the cleaning position. To do this, touch "reference run" in the "Service Racking left" window and confirm input.
The additional beds automatically carry out a reference run.
8. Call up "Main menu".

5.2.10 Cleaning main drive ventilator

1. Switch off the machine and wait until the machine is currentless.
2. Swing open the cover on the right control unit.

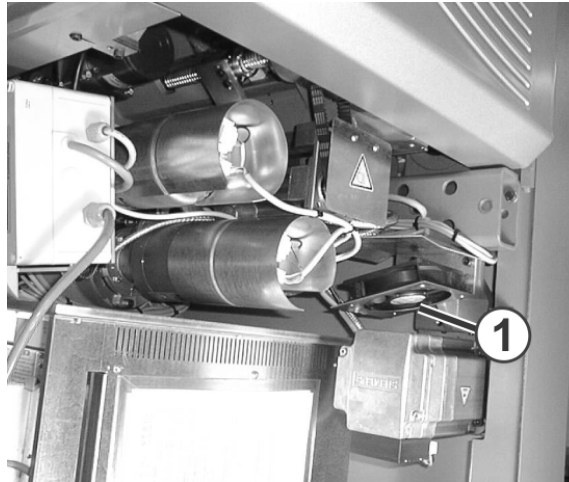


Fig. 5-15 Main drive ventilator

3. Clean ventilator (1).
4. Swing in the cover on the right control unit.
5. Switch on the machine.



The control checks the motor temperature when switching on machine main switch. The ventilator only runs at higher motor temperature.

5.2.11 Cleaning ventilator and radiators in right control unit

1. Switch off the machine and wait until the machine is currentless.
2. Swing open the cover on the right control unit.

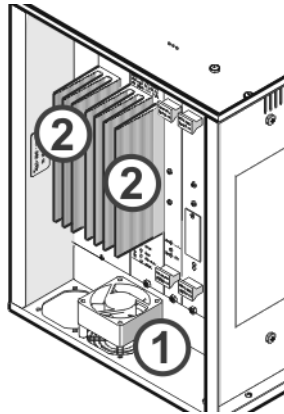


Fig. 5-16 Control unit

3. Vacuum off and blow out the ventilator (1) and radiator (2).
4. Swing in the cover on the right control unit.
5. Switch on the machine.



The ventilator is temperature-controlled.

5.2.12 Cleaning filter mat of power supply

1. Swing open the cover on the left control unit.

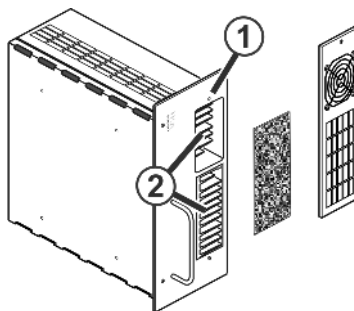







Fig. 5-17 Ventilator power supply

2. Remove screw (1) and hinge down the housing toward the front.
3. Remove filter mat and blow it out with compressed air.
4. If heavy soiling is present, vacuum off and blow out the radiator (2)
5. Replace filter mat.
6. Swing in the cover on the left control unit.

5.2.13 Cleaning thread clamping and cutting device

The thread clamping and cutting device and the clamping pinion should be cleaned every 2 months. The more often cleaning is carried out, the less dirt will work into the thread clamping and cutting device.

Cleaning can be carried out while installed on the knitting machine.

Key	Function
	Call up "Clamping & cutting" window
	Call up "Additional function keys"
	Call up "Motor correction values" window
	Confirm input
	Call up the "Main menu"

Tab. 5-6 Keys for cleaning thread clamping and cutting device

1. Call up the "Clamping & cutting" window in the main menu.
2. Call up "Additional function keys".
3. Call up "Motor correction values" window.

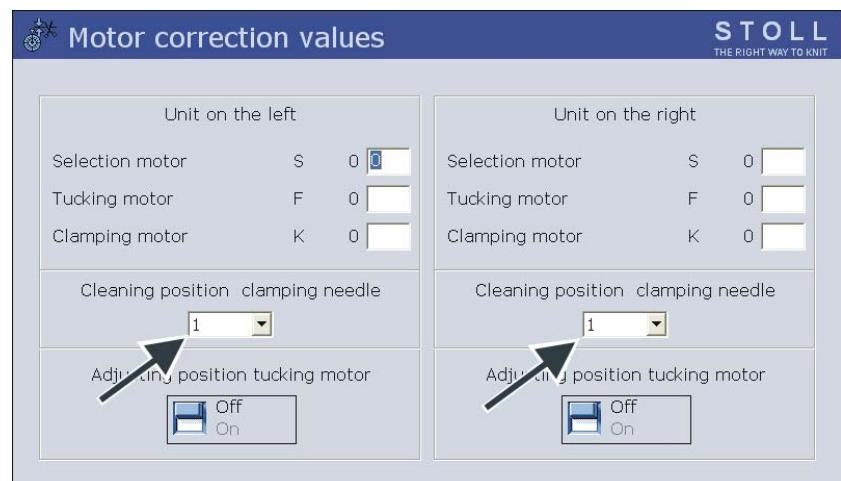


Fig. 5-18 "Motor correction values" window

4. Move the clamping and cutting needles into the cleaning position by entering the desired needle for "Cleaning position of clamping needle" and confirm the input.
The needle moves upward into the cleaning position.

5. Remove any dirt on the clamping and cutting needles 1 to 8 thoroughly.

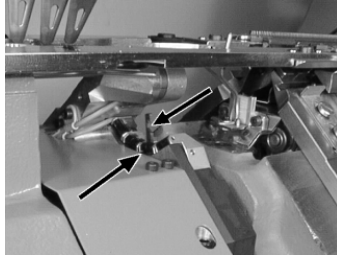


Fig. 5-19 Clamping pinion

6. Remove any dirt on clamping pinions 1 to 8. Make sure that the clamping pinion is cleaned around its entire circumference. To do this, the clamping and cutting needle can be pulled upward slightly.
7. Clean the clamping pinion and finish by pressing in the needle slightly.
8. Deactivate the cleaning position. To do this, set the "Cleaning position for clamping needle" to "off" and confirm the input.
The clamping and cutting needle automatically carries out a reference run.
9. Put the clamping and cutting unit into operation again.
10. Call up "Main menu".

Further information:

- Threading in thread clamping and cutting device ([see page 3-17](#))

5.2.14 Cleaning needle bed thoroughly

The needle bed is cleaned daily by the operator. In addition, it must be cleaned thoroughly every 12 to 26 weeks.



If the needle bed is not cleaned thoroughly and carefully, a non-uniform stitch appearance results during production due to needles that do not run smoothly, and the operation of the machine can no longer be ensured.

Thorough cleaning of needle bed:

- No fabric may be hanging on the needle bed.
 - The required tools (groove cleaner and extraction hook) are included with the accessories.
1. Remove linking of additional beds (1) on both sides of machine by releasing screws (2). Use the special hexagon screwdriver from the accessories for this purpose.

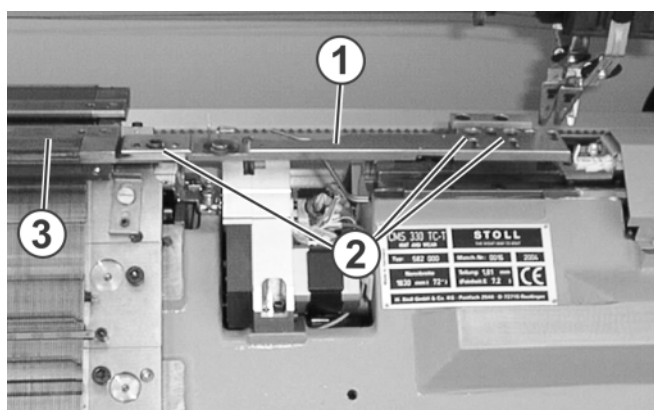


Fig. 5-20 Removing additional beds

2. Move additional beds (3) approx. 10 cm to side and remove upward.
3. Push the locking plate (4) downward.

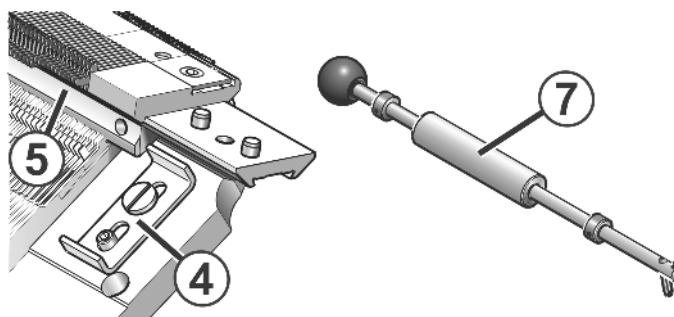


Fig. 5-21 Thorough cleaning of needle bed

4. Remove all needle rails (5) with the extraction hook (7).

5. Remove needles, coupling part, intermediate slider and selection jacks.

**WARNING**

Dirt-caked needle channels due to oil or cleaning agent!

When the needle channels are cleaned with oil or cleaning agent, the dirt swells up and clogs the needle channels.

- ➔ Do not clean needle channels with oil or cleaning agent.
- ➔ Push dirt out of needle channels and blow out needle channels with compressed air.

6. Push dirt out of needle channels with groove cleaner (6).

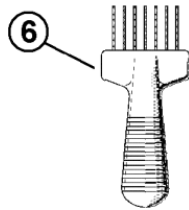


Fig. 5-22 Groove cleaner

7. Clean groove for pelerine spring of needle.
8. Blow out dirt with compressed air from the needle bed.
9. Make sure needles, coupling part, intermediate slider and selection jacks are undamaged.
10. Clean needles, coupling part, intermediate slider and selection jacks with oil or diesel fuel.
11. Reassembly needle bed.
12. Lubricate needles, coupling part, intermediate slider and selection jacks. If a central lubrication is installed, then use the setting "Initial lubrication" for approx. 15 minutes.

Further information:

- Cleaning needle bed ([see page 5-9](#))
- Lubricating interval ([see page 5-29](#))

5.2.15 Cleaning additional bed thoroughly

The additional bed is cleaned daily by the operator. In addition, it must be cleaned thoroughly every 12 to 26 weeks.

Insertion regulation for transfer parts

On the left machine side, knitting begins at the bottom in the rear and front additional bed with 1 inch transfer parts with a selection butt, then 1 inch top transfer parts etc.

Thorough clean of the additional bed:



Use extraction hook with black spherical handle only.

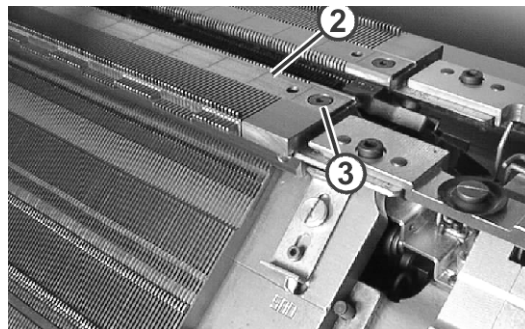


Fig. 5-23 Additional bed

1. Remove the additional bed.
2. Remove the screw (3).
3. Remove the cover rail (2) with the extraction hook.
4. Remove transfer parts.
5. Push dirt out of the needle with the groove cleaner.
6. Blow out the additional bed with compressed air.
7. Clean the transfer parts with oil or diesel fuel.
8. Insert the transfer parts in the right inch progression (see insertion regulations for transfer parts).
9. Place transfer parts in the basic position (rear position).
10. Guide in the cover rail.
11. Tighten the screw (3).
12. Mount the additional bed.

Further information:

- Cleaning needle bed ([see page 5-9](#))
- Remove needle bed or position it at an angle ([see page 6-12](#))

5.2.16 Clean transport segment

If the transport segment is sticky, the error message "(F) Motor reference fault" appears on the display. Check whether a thread has wrapped itself around the transport segment.

1. Place carriage on opposite side.
2. Remove the screws (1).

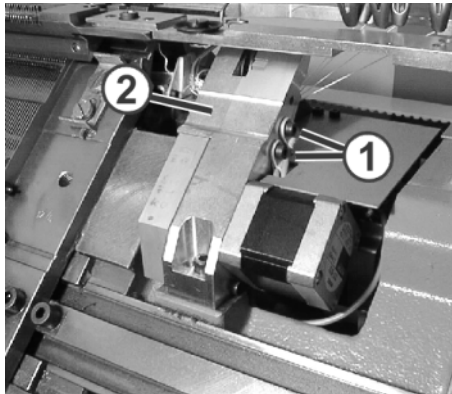


Fig. 5-24 Screws of the finger support

3. Remove the finger support (2).
4. Remove the thread residues from the intermediate shaft (3) and the gearwheel of the transport segment (4). Remove the winding guard (5) if necessary.

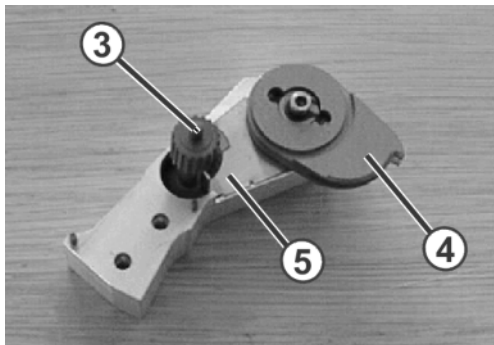


Fig. 5-25 Finger support elements

Installing the finger support:

1. Turn the transport segment (4) into the basic position.



Fig. 5-26 Basic position of transport segment

2. Tension toothed belt. To do this, push the toothed belt slightly upward.

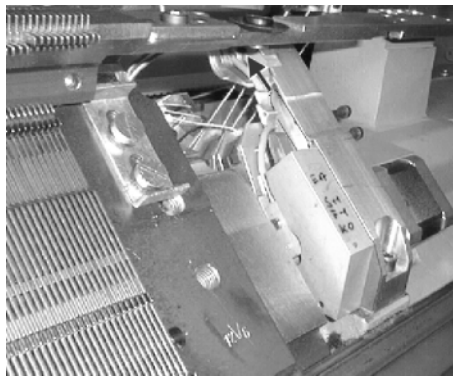


Fig. 5-27 Tensioning toothed belt in direction of arrow

3. Carefully insert the finger support and tighten the screws (1).

5.2.17 Cleaning knitting systems

1. Stop the knitting machine.
2. Move the carriage assembly into the left reversing position.
3. Set the main switch to "0" and wait until the touch screen is switched off.
4. Remove the carriage part.



WARNING

Damage to the knitting systems!

Dirt will be blown into the guides of the movable parts and the knitting systems will be damaged if they are blown out with compressed air.

→ Always vacuum off the knitting systems, never blow them out.

5. Vacuum off the knitting systems and selection systems.



WARNING

Damage to the selection systems and impulse givers!

The selection systems and impulse givers will be damaged if they are cleaned with acetone or trichlorethylene (Tri).

→ Clean the selection systems and impulse givers with a clean cloth.

6. Clean the selection systems and impulse givers with a clean cloth.
7. Check the cams for wear and damage.
8. Apply oil to the cams with a brush.
9. Set the carriage part on the needle bed again.
10. Repeat step 4 to 9 for all carriage parts.
11. Set the main switch to "1".

The carriage assembly position is referenced again.

Further information:

- Removing and mounting carriage part ([see page 6-20](#))

5.2.18 Cleaning thread clamping and cutting device thoroughly

The intensive cleaning of the thread clamping and cutting device must be carried out approx. every 6 months. This includes the following cleaning and maintenance work:

- Brushing or blowing out the clamping and cutting needles
- Brushing or blowing out the clamping pinions
- Blowing out the crankcase
- Blowing out the connecting rod slide and check in the drive rockers for smooth movement
- Blowing out the guide plate for the connecting rod slide
- Cleaning the finger support and the intermediate shaft

To carry out the intensive cleaning, the thread clamping and cutting device must be removed and partially dismantled.

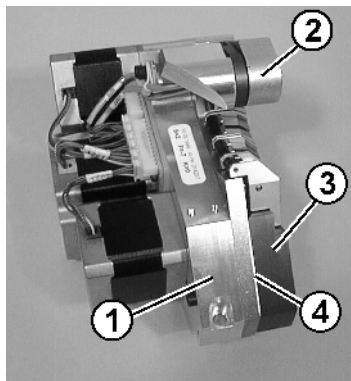


Fig. 5-28 Housing of thread clamping and cutting device

- | | |
|------------------|----------------------|
| 1 Crankcase | 3 Selector housing |
| 2 Finger support | 4 Intermediate plate |

Further information:

- Dismantling thread clamping and cutting device ([see page 6-33](#))

Dismantle thread clamping
and cutting device

1. Remove screws (5).

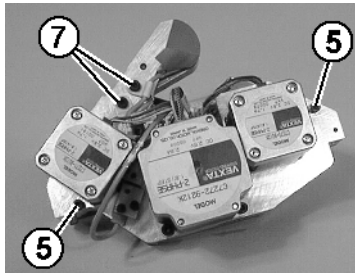


Fig. 5-29 Thread clamping and cutting device

2. Remove the sensor screw (6).

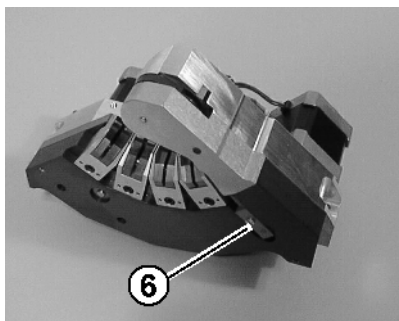


Fig. 5-30 Sensor screw

3. Take the selector housing (3) off the crankcase (1).
4. Remove screws (7).
5. Take the finger support (2) off the crankcase (1).

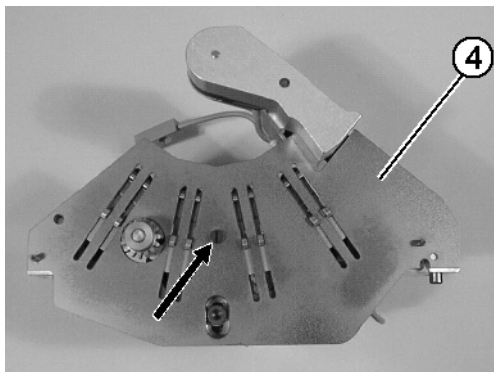


Fig. 5-31 Intermediate plate

6. Intermediate plate Take the intermediate plate (4) off the crankcase (1).

Cleaning and maintenance

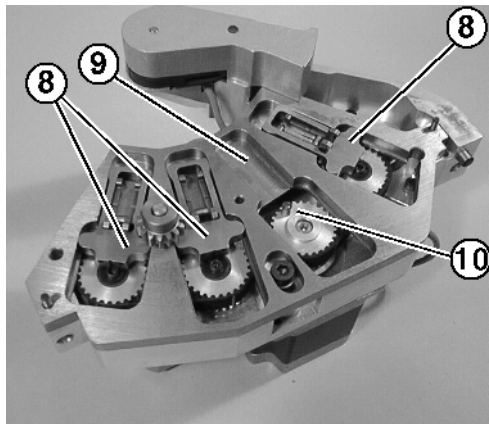


Fig. 5-32 Crankcase

1. Remove the connecting rod slide (8) from the guide plate (9).
2. Remove the crank journal sleeves (10).
3. Blow out the crankcase (1).
4. Blow out the connecting rod slide (8) and check the rockers for smooth movement.
5. Blow out the guide plate for the connecting rod slide (8).
6. Lightly oil the slideways (9) for the connecting rod slide (8).
7. Lightly oil the crank journal sleeves (10) and place them on the lock washer pins.
8. Lay the connecting rod slide (8) in the guide plate while making sure that the cross groove of the connecting rod slide is positioned on the crank journal sleeves (10) on the toothed washer.

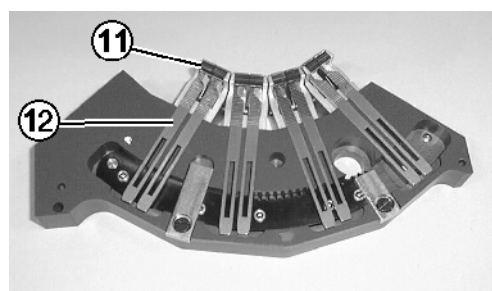


Fig. 5-33 Selector housing

9. Always blow and brush out the clamping and cutting needles (12), but do not remove if possible.
10. Always blow or brush out the clamping pinion (11).
11. Blow out the selector housing (3).
12. Lightly oil the slideways of the clamping and cutting needles.

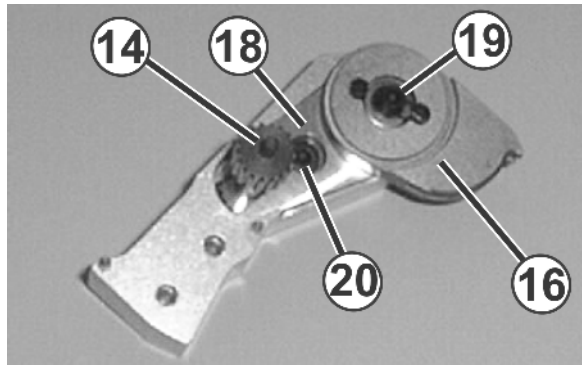


Fig. 5-34 Finger support

13. Blow out the finger supports (2) and intermediate shaft (14).
14. Remove the thread residues from the intermediate shaft (14) and the gearwheel of the transport segment (16).
15. Remove housing (18). For this, remove screws (19) and (20).
16. Clean the intermediate plate thoroughly(4).

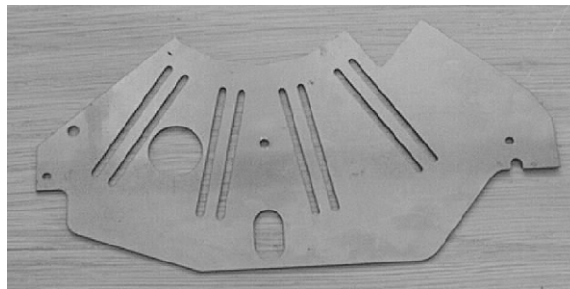


Fig. 5-35 Intermediate plate

Install thread clamping and
cutting device:

1. Lightly oil the front and rear of the intermediate plate (4).
2. Screw the intermediate plate (4) onto the crakecase (1).
3. Position the finger support (2).
4. Position the selector housing (3) on the crankcase (1) over the two setting pins. When doing so, the sensor cable must be laid into the notch on the crankcase (1) between the blade holder (13) and the finger support (2).
5. Screw on both cases with the screws (5) tight.
6. Only slightly tighten (0.5 Nm) the sensor with the screw (6).
7. Screw on the finger support (2) and the securing clips of the sensor cable with the screws (7) tight. In the process the sensor cable must be strain-relieved from the securing clip to the sensor.

5.3 Lubricate knitting machine

This chapter contains information on:

- Lubricating interval ([see page 5-29](#))
- Setting lubricating interval for needle bed ([see page 5-30](#))
- Oiling needle bed ([see page 5-31](#))
- Restarting lubricating interval ([see page 5-31](#))
- Oiling butts of holding-down jack and transfer parts ([see page 5-32](#))
- Oiling yarn carrier rods ([see page 5-32](#))
- Oiling carriage guide bar ([see page 5-33](#))
- Greasing impulse giver rails ([see page 5-33](#))
- Greasing butts of the coupling parts and intermediate sliders ([see page 5-34](#))
- Oiling hinges of needle latches ([see page 5-34](#))
- Greasing yarn carrier rods ([see page 5-35](#))
- Greasing racking device ([see page 5-36](#))
- Greasing control slide, brush control and additional cam ([see page 5-37](#))
- Greasing driver butts of holding-down jack and transfer parts ([see page 5-37](#))
- Greasing adjustment pieces ([see page 5-38](#))

5.3.1 Lubricating interval

To retain the operability of the knitting machine and ensure the quality of the fabric, the knitting machine must regularly be lubricated.

Lubricating interval	Lubricating work
adjustable Recommendation: Every 6 - 10 operating hours; select shorter interval if necessary	Oiling the needle bed without central lubrication Oil the holding-down jack and the transfer parts
10 operating hours	Oiling the yarn carrier rods
100 operating hours	Oiling the carriage guide bar, greasing the impulse giver rails, greasing the carriage guide, greasing the coupling parts and the intermediate sliders, greasing the control slider, brush control and additional cam, greasing the driver butts of the holding-down jack and transfer parts, oiling the needle latch hinges, greasing the yarn carrier rods
6 months	Greasing the racking device, greasing the adjustment pieces

Tab. 5-7 Lubricating schedule



Only the named lubricants or others recommended by STOLL may be used. Other lubricants may damage the machine, e.g. due to insufficient lubricating action, rust on metal parts or damage to the electrical cable insulation and the plastic parts. We point out here that failure to observe this, will void our warranty services.

Oil Use only the oil SILVERTEX T46 (ID No. 230 614) found with the accessories of the machine.

Grease Use only the greases found with the accessories of the machine or those listed in the lubricating schedule.






- Grease from STOLL - ID No. 5 351
- We recommend grease OKS 270, ID No. 229 372, especially for the carriage guide



In the first weeks after setting up the knitting machine, select shorter lubricating intervals.

5.3.2 Setting lubricating interval for needle bed

Between 1 and 65,535 revolutions can be set for the needle bed as a lubricating interval. A mean value for a three-system machine is 25,000 revolutions. However, this value is highly dependent on: Machine speed, temperature and number of knitting systems. We recommend: Selecting a shorter lubricating interval instead of a longer one. After the lubricating interval expires, a message appears stating that the needle bed must be oiled.

Key	Function
	Call up "Machine settings" window
	Call up "Additional function keys"
	Call up "Sensors" window
	Confirm input
	Call up the "Main menu"

Tab. 5-8 Keys for setting the lubricating interval

Set lubricating interval:

1. Call up "Machine settings" window.
2. Call up "Additional function keys".
3. Call up the "Sensors" window.

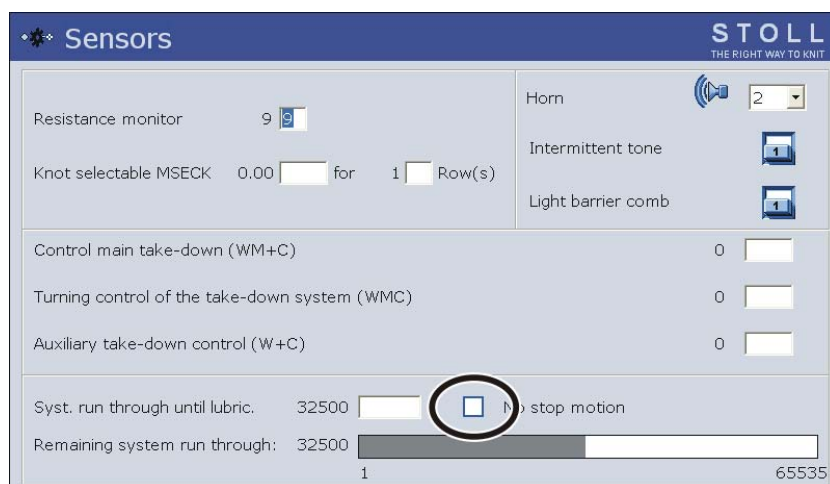


Fig. 5-36 "Sensors" window

4. Input "Syst. run through until lubric.".
5. If the machine is to be stopped after reaching the system run-throughs, then deactivate the check box.

6. Confirm the input.
7. Call up "Main menu".

5.3.3 Oiling needle bed

When the lubricating interval for the needle bed expires, a message appears stating that the needle bed must be oiled. Then the lubricating interval must be restarted.



Fig. 5-37 "Lubricate needle bed (OIL)" pictograph

1. Apply oil with a brush or spray bottle.

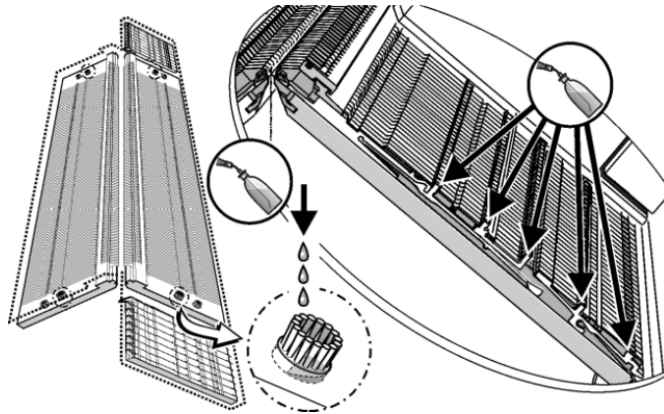


Fig. 5-38 Oiling needle bed

2. Brushes are attached at the side of the needle bed. Put some oil in the upper brush so that the cams near the coupling parts are oiled.

5.3.4 Restarting lubricating interval

1. Tap display for "Lubricate needle bed" message.
The "Current message" window appears.
2. Tap "624 Lubricate needle bed (OIL)" message.
The message is marked with a frame. The function key for opening the "Sensors" window appears at the bottom of the touch screen.
3. Call up the "Sensors" window.
4. Input "Syst. run through until lubricic."
5. Confirm the input.
6. Call up "Main menu".

5.3.5 Oiling butts of holding-down jack and transfer parts

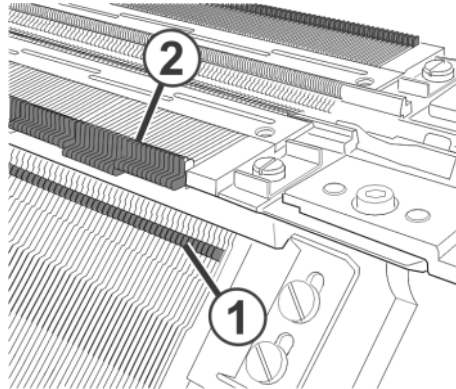


Fig. 5-39 Oil the butts of the holding-down jack (1) and the transfer parts (2)



WARNING

If a spray gun is used for oiling, too much oil may be applied!
The suction tube becomes clogged.

- Do not use a spray gun for oiling.
- Apply oil to the butts of the holding-down jack (1) and the upper butts of the transfer parts (2) with a brush.

5.3.6 Oiling yarn carrier rods

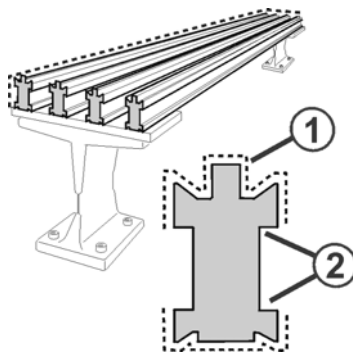


Fig. 5-40 Oiling the yarn carrier rods

1. Use a brush or a spray bottle to apply oil to the yarn carrier rods (1).
2. If intarsia yarn carriers are used, wipe off the oil with a cloth until the notch on the yarn carrier rod (2) is only coated with a residual lubricating film.

5.3.7 Oiling carriage guide bar

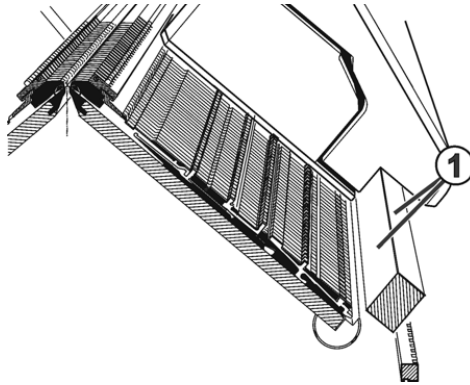


Fig. 5-41 Oiling the carriage guide bar

→ Use a cloth to apply oil to the carriage guide bar (1).

5.3.8 Greasing impulse giver rails

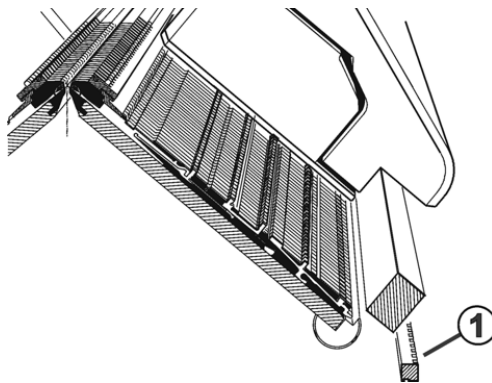


Fig. 5-42 Greasing the impulse giver rails

→ Use a brush to apply grease to the impulse giver rails (1).



Component type 002:

The front impulse giver rail does not exist for the gauges E 5, E 7, E 8.

5.3.9 Greasing butts of the coupling parts and intermediate sliders

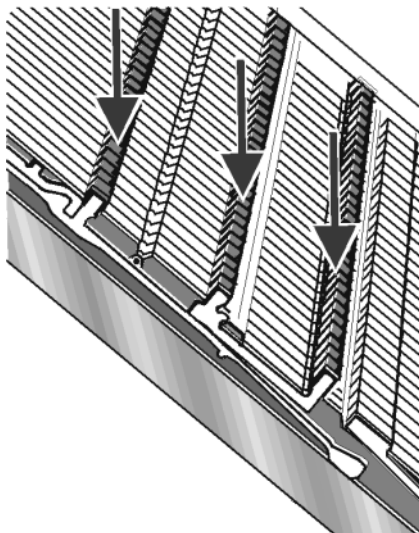


Fig. 5-43 Greasing the butts of the coupling part and intermediate sliders

- Use a brush to apply grease to the butts of the coupling parts and intermediate sliders.

5.3.10 Oiling hinges of needle latches

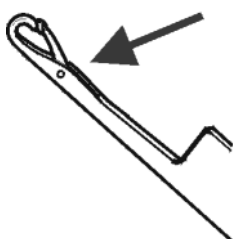


Fig. 5-44 Oiling hinges of needle latches

1. Use a brush to apply oil to the needle latch hinges.
2. Knit with residual yarn until oil lines no longer occur in the fabric.

5.3.11 Greasing yarn carrier rods

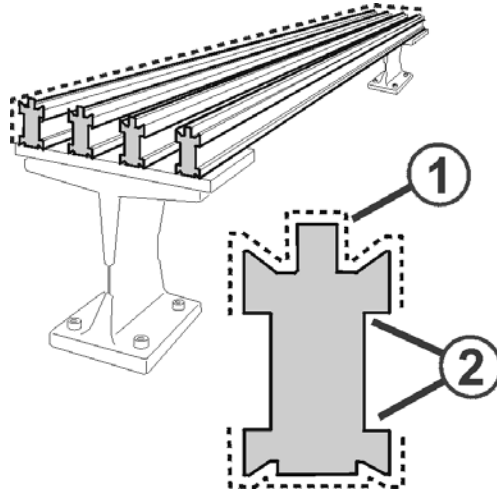


Fig. 5-45 Greasing the yarn carrier rods

1. Use a brush to apply grease to the yarn carrier rods (1).
2. If intarsia yarn carriers are used, wipe off the grease with a cloth until the notch on the yarn carrier rod (2) is only coated with a residual lubricating film.

5.3.12 Greasing racking device

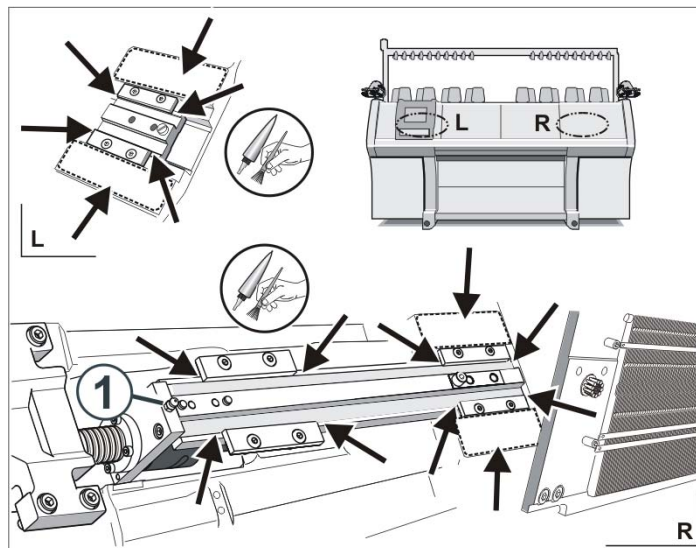


Fig. 5-46 Greasing racking device

1. Position the rear needle bed at an angle.
2. Remove the cover over the racking spindle.
3. Apply grease to the racking strip and to the sliding guidance with a brush.
4. Grease the lubricating nipple (1) with a grease gun (KLUEBER Staburags NBU 12/300 KP, Ident. no. 231 191).

Grease the racking device of the additional beds

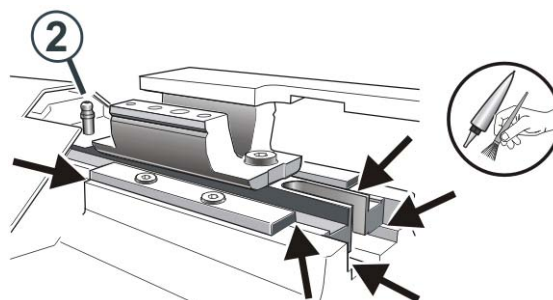


Fig. 5-47 Grease the racking device of the additional beds

1. Remove the cover of the racking device on the right-hand side of the needle bed.
2. Apply grease to the racking strip and to the sliding guidance with a brush.
3. Grease the lubricating nipple (2) with a grease gun (KLUEBER Staburags NBU 12/300 KP, Ident. no. 231 191).
4. Repeat the workings on the left-hand side of the needle bed.

Further information:

- Remove needle bed or position it at an angle ([see page 6-12](#))

5.3.13 Greasing control slide, brush control and additional cam

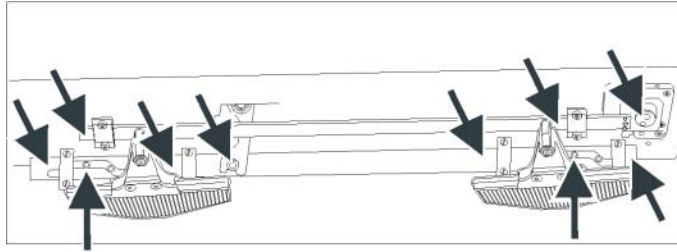


Fig. 5-48 Greasing control slide, brush control and additional cam

➔ Apply grease to the control slide, brush control and additional cam with a brush.

5.3.14 Greasing driver butts of holding-down jack and transfer parts

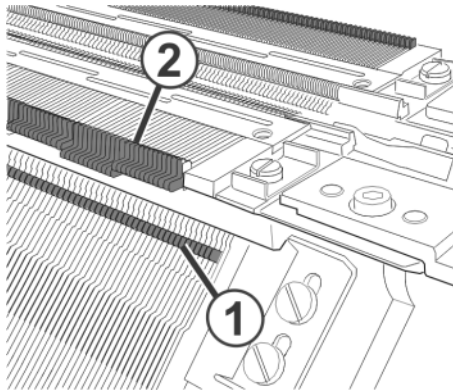


Fig. 5-49 Greasing driver butts and transfer parts

➔ Apply grease to the driver butts of the holding-down jack (1) and the transfer parts (2) with a brush.

5.3.15 Greasing adjustment pieces

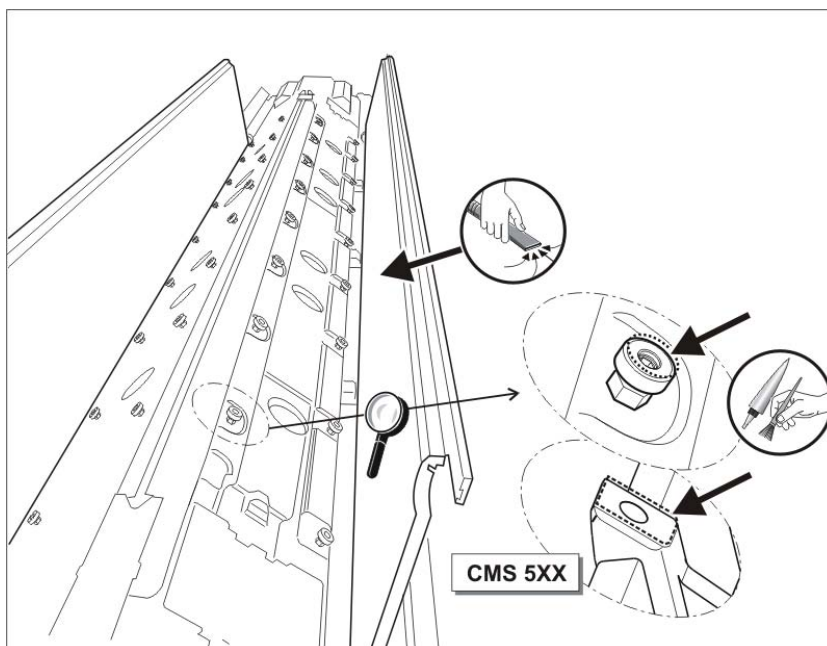


Fig. 5-50 Greasing the adjustment pieces

1. Position the needle beds at an angle.
2. Vacuum off lint and dust.
3. Apply grease to adjustment pieces with a brush.

Further information:

- Remove needle bed or position it at an angle ([see page 6-12](#))

6 Repairing the knitting machine

This chapter contains information on:

- Supplementary activities during repairing ([see page 6-1](#))
- Helpful knitting rows ([see page 6-4](#))
- Replacing parts ([see page 6-6](#))
- Eliminating malfunctions in electronics system ([see page 6-41](#))
- Checking fuses ([see page 6-47](#))

6.1 Supplementary activities during repairing





This chapter contains information on:

- Switching power supply 40 V off and on ([see page 6-1](#))
- Central lubrication - mounting and working position ([see page 6-3](#))

6.1.1 Switching power supply 40 V off and on

The power supply of the carriage (step motors, selection systems, yarn carrier plungers) can be switched off for assembly work. This eliminates the switching off and on of the main machine switch and thereby the wait time until the computer of the knitting machine has shut down and rebooted.

The machine cannot be started with the engaging rod when the power supply is switched off.

Key	Function
	Call up the "Service" menu
	Call up window "Manual interventions Service"
	Confirm message
	Call up the "Main menu"

Tab. 6-1 Keys for switching power supply 40 V off / on

Switch power supply off and on again:

1. Call up the "Service" menu from the "Main menu".
2. Call up from "Service" window "Manual interventions Service".

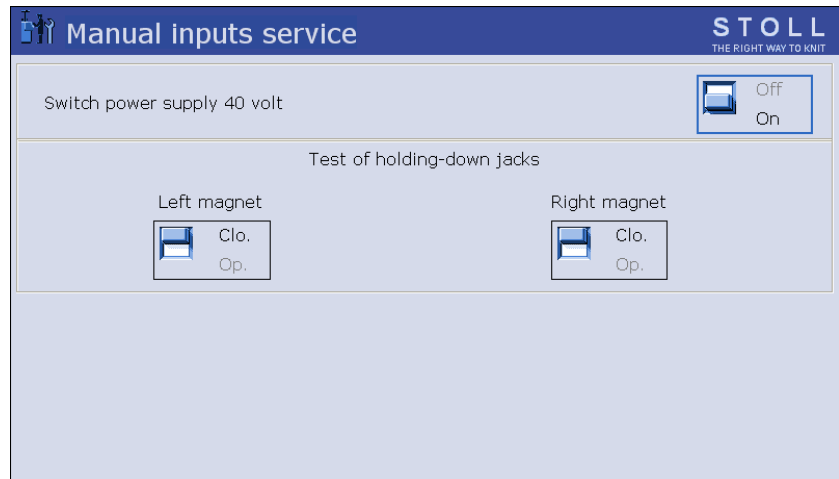


Fig. 6-1 Window "Manual interventions Service"

3. Tap the "Off" switch if the power supply is to be switched off. Answer the message "Switch off?" with "Yes".

- or -

- ➔ Tap the "On" switch if the power supply is to be switched on. Tap the "Confirm message" key. The machine is ready for operation.
4. Call up "Main menu".

6.1.2 Central lubrication - mounting and working position

Only on machines with central lubrication

The central lubrication can be swiveled upward for mounting activities, e.g. to remove the carriage part.

Mounting position

Swivel central lubrication into mounting position:

1. Swivel central lubrication upward (approx. 100 degrees).

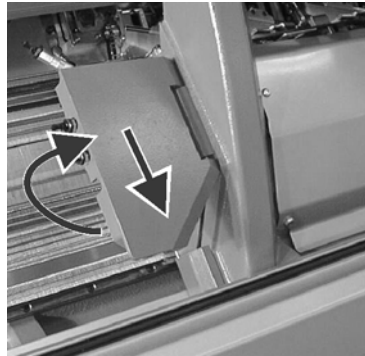


Fig. 6-2 Mounting position of central lubrication

2. Move central lubrication downward somewhat until it stops.

Working position

Swivel central lubrication into working position:



DANGER

Central lubrication in mounting position!

If the machine is started and the carriage moves outward, the side safety cover could be thrown open.

→ Swivel central lubrication into working position.

1. Move central lubrication upward somewhat until the lock is released.

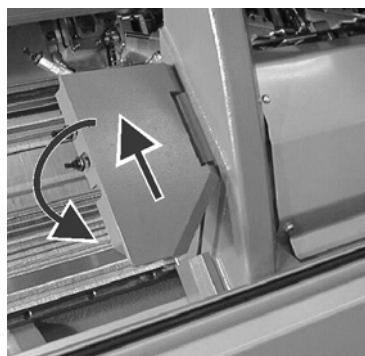






Fig. 6-3 Swiveling central lubrication into working position




2. Swivel central lubrication downward until it touches the carriage.

6.2 Helpful knitting rows

When carrying out cleaning, adjustments and repair work, it is helpful to set a certain knitting situation immediately. The following table lists the knitting specifications mentioned in the instruction manual.

		Knitting specifications
Empty row		< > S0 W0 Or: Tap in window "Machine start" on the key "SPF S0".
Empty row with transfer racking		< > VU S0 W0
Empty row with half racking		< > V# S0 W0
Transfer row to the rear (R = all needles)		< > S:U^SR; S1
Transfer row to the front		< > S:UVSR; S1
Transferring from front needle bed to rear additional bed		< > S:UNVZ^SR; S3
Transferring from rear additional bed to front needle bed		< > S:UZ^NVSR; S1
Transferring from rear needle bed to front additional bed		< > S:UN^ZVSR; S3
Transferring from front additional bed to rear needle bed		< > S:UZVN^SR; S1

Tab. 6-2 Knitting specifications

Key	Function
	Activating SINTRAL editor
	Call up "Machine start" window
	Call up the "Main menu"

Tab. 6-3 Keys for entering a knitting row

Enter and fix a knitting row:

1. Park the carriage just after the left reversing position.
2. Call up SINTRAL editor.

3. Position the cursor accordingly (e.g. on line 998) in the Sintral program.
4. Enter the knitting row using the virtual keyboard.
For example, you may want to enter a transfer row to the rear on line 998. The specifications are as follows: 998 < > S:U^SR; S1
5. Confirm input and return to the "Main menu".
6. Call up the "Machine start" window.
7. In the line "SPF-row fixed" tap on the space "line: 999" tap and enter the line number "998".

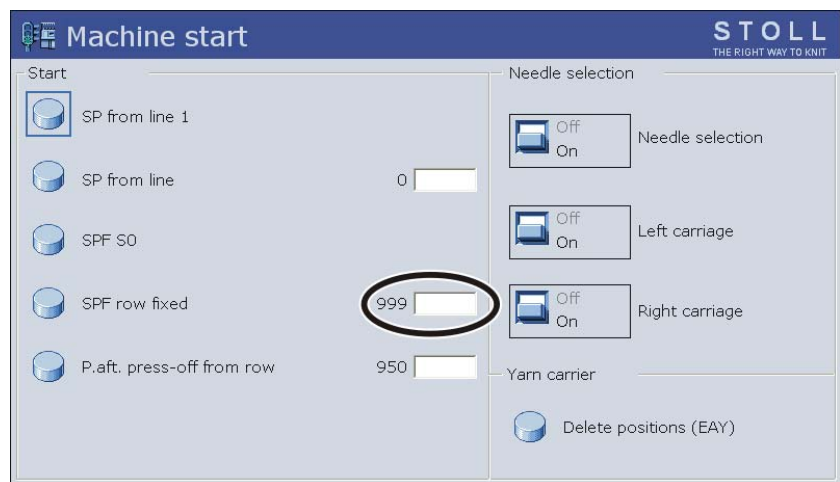


Fig. 6-4 Window "Machine start"

8. Fix this line by tapping the "SPF row fixed" key and engaging the machine.
The knitting specification is carried out after the next reverse.
9. Stop the carriage if it is in the left reverse again.
10. Carry out work on the knitting machine.
11. To resume production tap in the window "Machine start" on the key "SP from line 1" and engage the machine.

Adjustment work on the additional beds

Adjustment work on the additional beds is carried out in almost the same manner as with the sequence listed above. Note the changes.

- In step 4: Two knitting rows are required; one for the transfer to the additional bed and the other for transferring back to the needle bed again. Example:
 - 997 < > S:UNVZ^SR; S3
 - 998 < > S:UZ^NVS; S1
- In steps 7 and 8: First fix the line 997. Engage the machine. Stop the carriage if it is in the left reverse again. Then fix the line 998. Engage the machine. Stop the carriage if it is located just after the right reverse. Carry out adjustment work.
- To resume production, engage the machine and carry out steps 9 and 11.



An empty row is entered on line 999 in a STOLL knitting program.



For the first 2 knitting rows after "SPF", the carriage moves over the entire needle bed.

6.3 Replacing parts

This chapter contains information on:

- Replacing needle and coupling part ([see page 6-7](#))
- Replacing intermediate slider ([see page 6-8](#))
- Changing selection jack ([see page 6-8](#))
- Replacing transfer parts in additional bed ([see page 6-9](#))
- Replacing holding-down jack ([see page 6-10](#))
- Remove needle bed or position it at an angle ([see page 6-12](#))
- Repairing needle bed and additional bed ([see page 6-16](#))
- Removing and mounting carriage part ([see page 6-20](#))
- Removing cam plate ([see page 6-29](#))
- Removing and mounting step motor ([see page 6-30](#))
- Replacement of the gear racks in the step motor ([see page 6-31](#))
- Dismantling thread clamping and cutting device ([see page 6-33](#))
- Replacing yarn carrier ([see page 6-36](#))
- Using intarsia yarn carriers * ([see page 6-36](#))
- Replacing yarn control device ([see page 6-38](#))
- Replacing drive belts and friction roller of friction feed wheel ([see page 6-39](#))

6.3.1 Replacing needle and coupling part

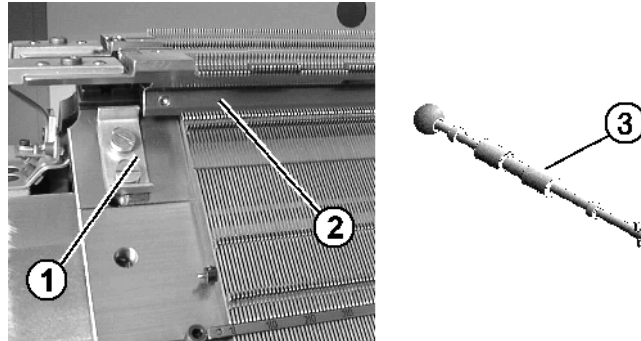


Fig. 6-5 Needle rail and extraction hook

1. Push the locking plate (1) downward.
2. Pull-out the needle rail (2) with the extraction hook (3).

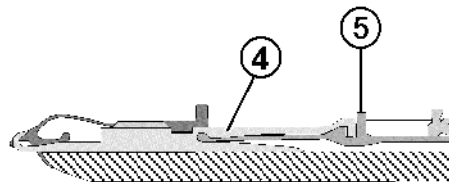


Fig. 6-6 Needle and coupling part

3. Pull the needle (4) upward; this also pulls out the coupling part (5).
4. When the butt of the coupling part (5) contacts the additional bed, press the coupling part downward. Pull the needle and coupling part upward.
5. Assemble the new needle and coupling part.
6. To mount the new needle and coupling part, push the butt of the coupling part through into the needle bed under the jack bed. While doing so, make sure that the needle is guided in above the knock-over wire.
7. Push back the needle rail (2) and push the locking plate (1) upward.
8. Move the locking plates (1) on the left and right into the locked upper position.

6.3.2 Replacing intermediate slider

To change the intermediate slider, you need a small pair of pliers.

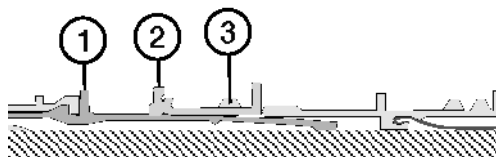


Fig. 6-7 Changing the intermediate slider

1. Push the needle and coupling part (1) upward.
2. Push the intermediate slider (2) until the lower butt bumps into the cover rail (3).
3. Pull the upper butt of the intermediate slider out of the needle bed while pressing the lower butt into the needle bed and under the cover rail.
4. Install the new intermediate slider in the reverse order.
5. Slide the needle and coupling part into the basic position.

6.3.3 Changing selection jack

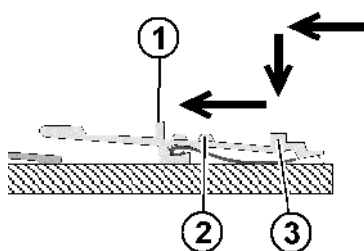


Fig. 6-8 Changing selection jack

1. Push the needle with the coupling part upward.
2. Push the intermediate slider (2) until the lower butt bumps into the spring wedge (3).
3. Push the selection jack (1) upward until it bumps into the cover rail (2).
4. Press the butt (3) of the selection jack into the needle bed while at the same time sliding the selection jack further upward.
5. Remove the selection jack.
6. Install the new selection jack in the reverse order.
7. Remount the intermediate slider.
8. Slide the needle and the coupling part into the basic position.

Further information:

- Replacing intermediate slider ([see page 6-8](#))

6.3.4 Replacing transfer parts in additional bed

The insertion guidelines apply when replacing the transfer parts in the additional bed.

Insertion regulation for transfer parts

On the left side of the machine, begin in the rear and front additional bed with 1 inch transfer parts with a selection butt at the bottom, then move to the 1 inch transfer parts with a selection butt at the top etc.

Depending on the machine model, type and gauge, there are different additional beds, and therefore two different ways of changing the transfer parts:

Machine type	Component type	E 7-8	E 10-14
CMS 330 TC-R	all	Type B	Type A
CMS 330 TC-T	all		Type A

Type A

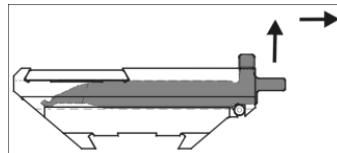


Fig. 6-9 Additional bed

1. Raise transfer part and pull out.
2. Replace the transfer part while observing the insertion guidelines.

Type B



Use pull-out hook with black spherical handle only.

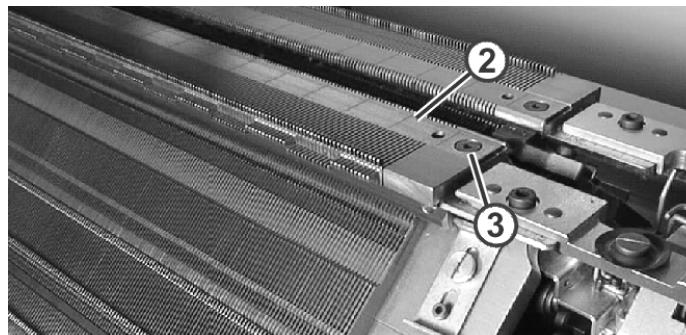


Fig. 6-10 Additional bed

1. Remove the screw (3).
2. Remove the cover rail (2) with the pull-out hook.
3. Replace the transfer part while observing the insertion guidelines.
4. Push in the cover rail again.
5. Tighten the screw (3).

6.3.5 Replacing holding-down jack

1. Transfer all stitches of the needle bed in which the jack is replaced to the other needle bed.
2. Stop the carriage assembly in the left reversing position.

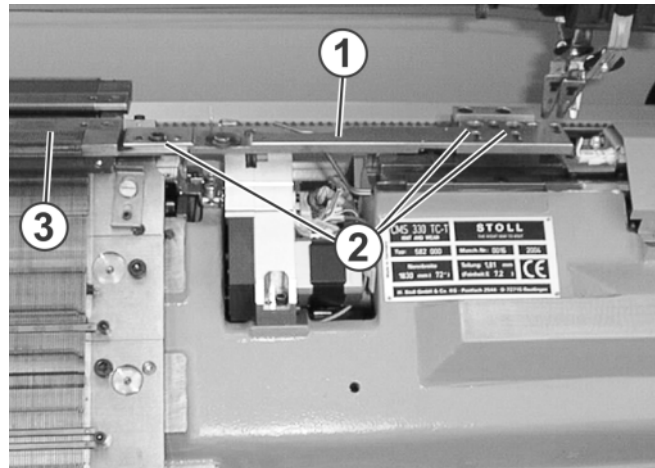


Fig. 6-11 Removing the connections

3. Remove the connections (1) on the left and right-hand sides of the machine. To do this, use the special hexagon screwdriver from the accessories and remove screws (2).
4. Move additional bed (3) approx. 10 cm to side and remove upward.

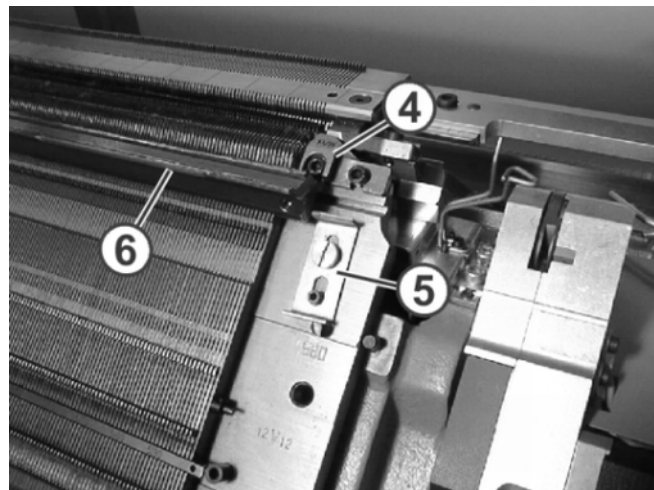


Fig. 6-12 Replacing a jack

5. Remove the yarn carrier limiter (4) on both sides of the machine.
6. Push the locking plate (5) downward.
7. Pull out the needle rail (6) with the extraction hook until the repair point is free.

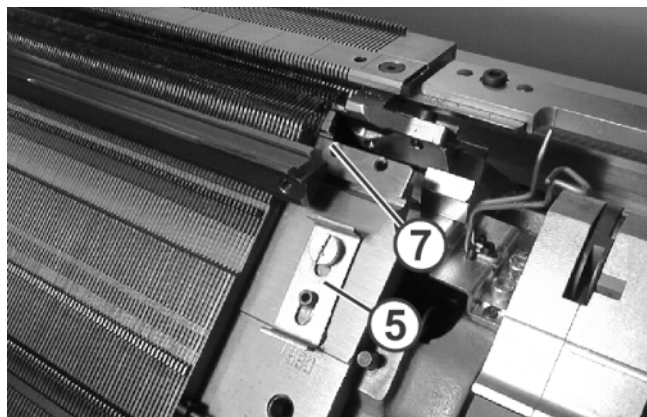


Fig. 6-13 Wire as jack holder

8. Pull out the wire (7) up to the point of repair. When doing so, always guide in the replacement wire from the accessories after it from the other side of the machine so that the jacks do not fall out of the needle bed.
9. Remove the holding-down jack upward.
10. Insert a new holding-down jack while ensuring the proper position relative to the needle and knock-over bit.
11. Assemble the needle bed in the reverse order.
12. When mounting the connection, make sure that the stop edge (8) contacts the pin (9).

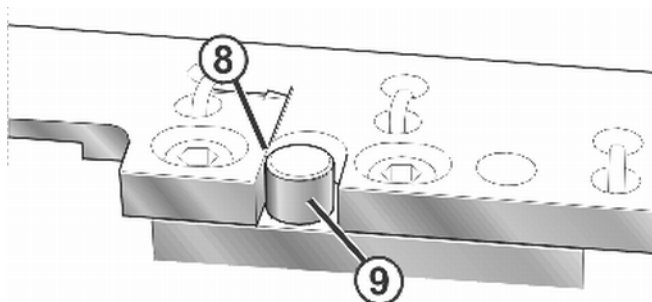


Fig. 6-14 Positioning connection

**DANGER**

Safety plate not closed!
Damage to needles and machine.

- ➔ Close safety plate (5) on the left and right-hand sides of the machine, as well as on both needle beds.

13. Push the locking plate (5) upward.


Further information:

- Helpful knitting rows ([see page 6-4](#))

6.3.6 Remove needle bed or position it at an angle

This chapter contains instructions on:

- Loosening needle bed
- Removing needle bed
- Positioning the needle bed at an angle
- Screwing on the needle bed tight

Key	Function
	Call up "Manual interventions" window

Tab. 6-4 Key for calling up "Manual interventions" window

Loosening needle bed

Valid for:

Component type 002	CMS 530 T	CMS 730 T
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1. Transfer all stitches of the needle bed to be removed or positioned vertically to the other needle bed.
2. When the carriage assembly is in the left reversing position, stop the machine with the engaging rod. If a central lubrication is present, the carriage must be in the left reversing position.
3. Tap the "Rel. drive brake" key in the "Manual interventions" window and slide the carriage assembly to the left up to the stop.

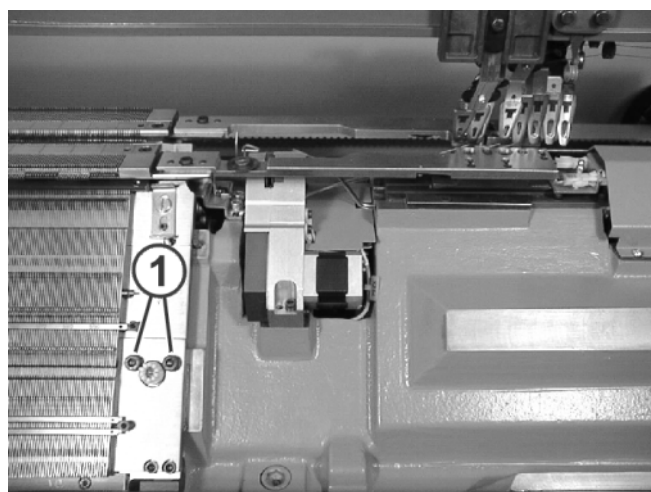


Fig. 6-15 Loosening needle bed

4. Remove two screws (1) on each side of the machine.

5. Loosen the rear needle bed for gauge E 10 -E 18: Remove the screws (2). Push the connection (3) to the side. While doing so, the impulse giver rail is pushed to the side.

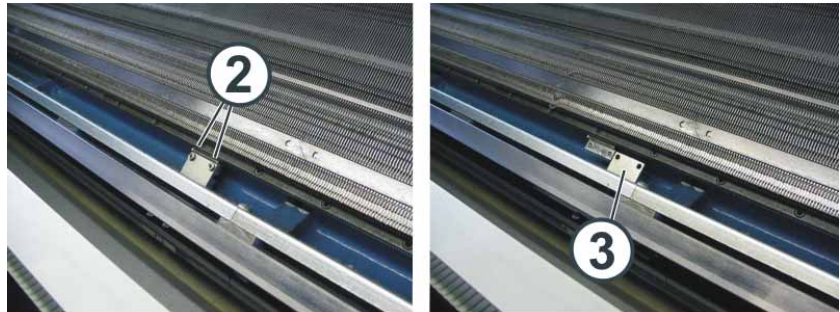


Fig. 6-16 Link of the impulse giver rail

Further information:

- Helpful knitting rows ([see page 6-4](#))

Loosening needle bed

Valid for:

Component type 000 - 001

CMS 530 T

CMS 730 T

1. Transfer all stitches of the needle bed to be removed or positioned vertically to the other needle bed.
2. When the carriage assembly is in the left reversing position, stop the machine with the engaging rod. If a central lubrication is present, the carriage must be in the left reversing position.
3. Tap the "Rel. drive brake" key in the "Manual interventions" window and slide the carriage assembly to the left up to the stop.

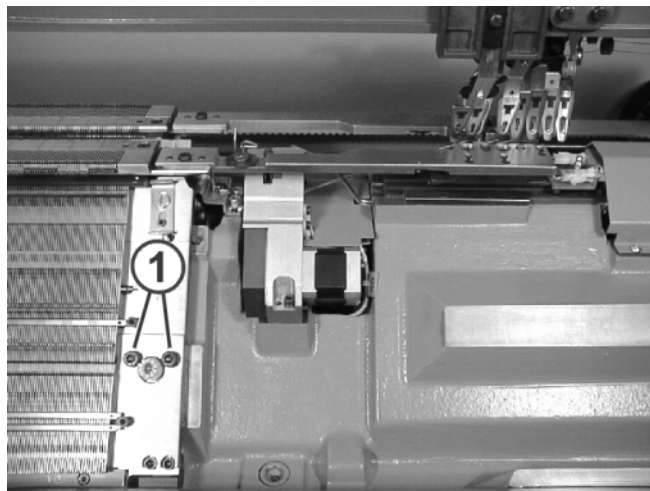


Fig. 6-17 Loosening needle bed

4. Remove two screws (1) on each side of the machine.

5. Rear needle bed: Remove the screws (2). Push the connection (3) to the side. While doing so, the impulse giver rail is pushed to the side.

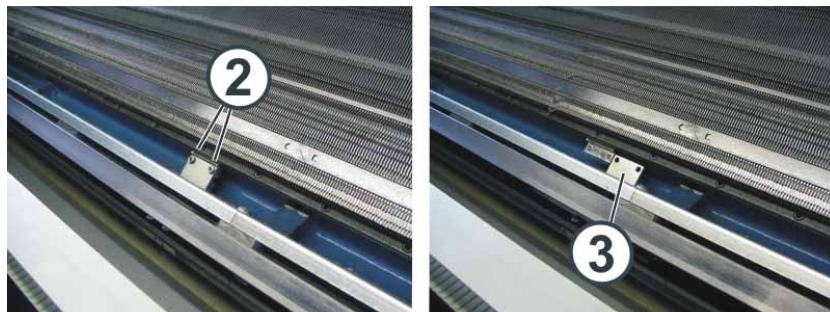


Fig. 6-18 Link of the impulse giver rail

Further information:

- Helpful knitting rows ([see page 6-4](#))

Removing additional bed

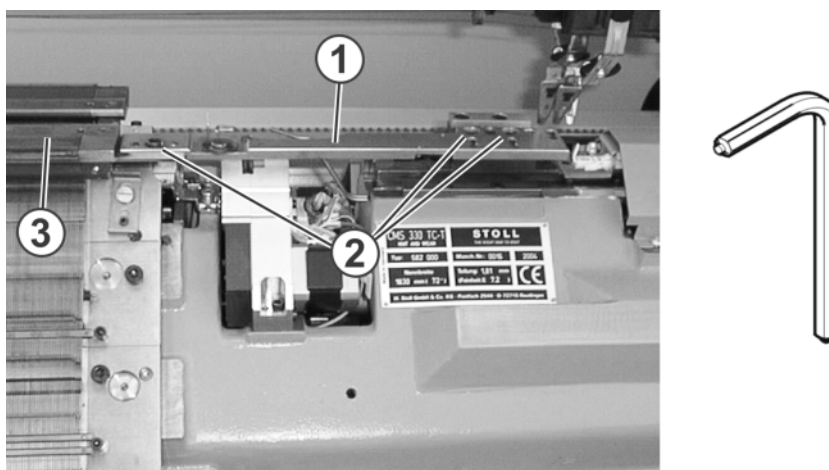


Fig. 6-19 Removing additional beds

1. Remove linking of additional beds (1) on both sides of machine by releasing screws (2).
Use the special hexagon screwdriver from the accessories for this purpose.
2. Move additional beds (3) approx. 10 cm to side and remove upward.

Remove needle bed or
position it at an angle

- ➔ Front needle bed Swivel towards the front carefully and lean it against the machine covering
- ➔ Rear needle bed: Remove the needle bed from the machine with two persons.

Screwing on needle bed
tight

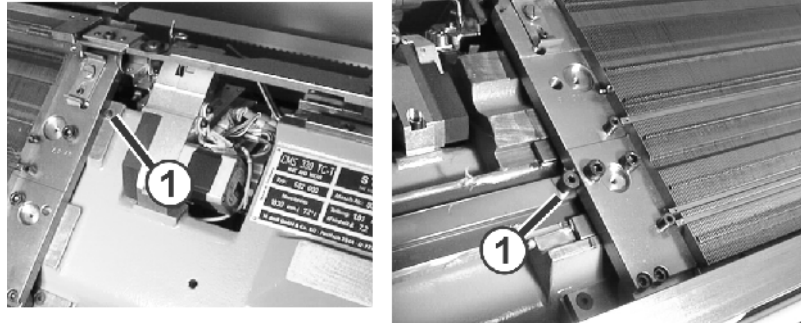


Fig. 6-20 Installing front and rear needle beds

1. Reinstall needle bed in reverse order while making sure that needle bed contacts pin (1).
2. Install additional bed.
3. When mounting the connection, make sure that the stop edge (8) contacts the pin (9).

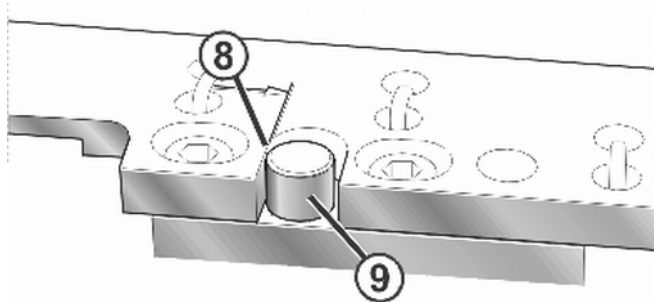


Fig. 6-21 Positioning connection

6.3.7 Repairing needle bed and additional bed

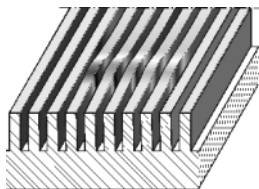


Fig. 6-22 Damaged needle bed

If the carriage is blocked, the needle bed may be damaged. This means that the movable parts (needles, coupling part, intermediate slider and selection jack) do not move smoothly or are blocked. This damage must be eliminated carefully and conscientiously before the machine is started up again. If it is not, a risk of the carriage blocking again immediately and damaging the needle bed again is present.

When performing repairs, the needle bed types must be determined. There are two different versions: milled and combined needle beds. The additional beds are always milled.

Needle bed	Description
milled	The grooves for the movable parts are milled out of the needle bed.
combined	The needle bed is composed of individual stays. They are inserted into a basic plate and screwed down.



Repairs must be carried out very carefully and without the use of force.

- milled needle bed
1. If the carriage blocks, then separate the connection of the carriage part to the carriage. Move carriage to the next reversal point. Lift carriage part from needle bed. Check cams for damage and remove broken working butts from the movable parts.
 2. Find the channel chisel and channel file accessories.
 3. Remove the movable parts (needle, coupling part etc.) at the point of damage.
 4. Set damaged stays into a vertical position again using the channel chisel and straighten them. The chisel may only be struck with light hammer blows in the damaged groove. Do not strike the chisel in too deep, as the needle bed foundation will be damaged.

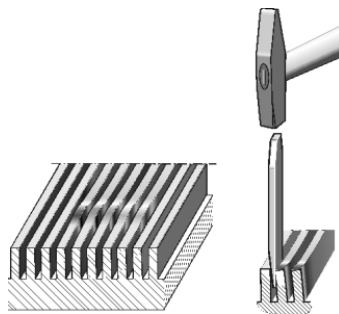


Fig. 6-23 Positioning stays vertically

5. Take a needle or selection jack from this machine and place it into the repaired groove. Push the needle up and down in the groove. If it moves easily, check whether the movable parts of the neighboring grooves move easily as well.
6. If this is not the case, repeat steps 4 and 5.
7. Do this for all damaged grooves. The grooves to the left and right of the point of damage must move easily as well.
8. If the damaged stays are bent upward, knock them even (smooth) again using the channel chisel.

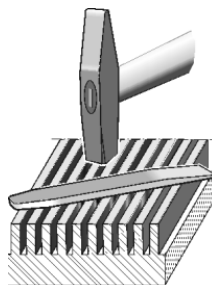


Fig. 6-24 Smoothing surface

9. Check whether the needle bed elements move easily in the grooves. Repeat Step 5.

**CAUTION**

The needle bed may be damaged if the channel file is used improperly!

If too much of a stay is filed off, the needle bed is defective at this point and can only be repaired by a Stoll technician.

- Use the channel file for the removal of burrs only.
- The grooves must be cleaned carefully after the channel file is used.

10. Check whether the edges of the damaged stays have burrs. If this is the case, then remove them with the channel file carefully.

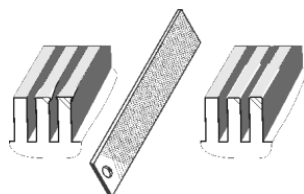


Fig. 6-25 Removing burrs

11. Check whether the needle bed elements move easily in the grooves. Repeat Step 5.
12. If everything is in order, polish the needle bed with the channel file carefully. Place the channel file flat on the needle bed and lightly move it back and forth perpendicular to the needle channel.
13. The metal debris must be removed from the needle channels. For this purpose, clean the area of repair with a brush.
14. If everything is in order, reinsert the movable parts into the needle bed.

Further information:

- Removing and mounting carriage part ([see page 6-20](#))
- Replacing needle and coupling part ([see page 6-7](#))
- Replacing intermediate slider ([see page 6-8](#))
- Changing selection jack ([see page 6-8](#))

Combined needle bed If a stay of a combined needle bed is slightly damaged, it can be repaired as described above. It must be replaced if it is heavily damaged, though.

1. If the carriage blocks, then separate the connection of the carriage part to the carriage. Move carriage to the next reversal point. Lift carriage part from needle bed. Check cams for damage and remove broken working butts from the movable parts.
2. Remove needle bed. Place the needle bed on a level surface (e.g. workbench or table).
3. Remove the movable parts (needle, coupling part etc.) at the point of damage.
4. Remove the holding-down jacks at the point of damage.
5. Remove safety device and pull out wire (1).

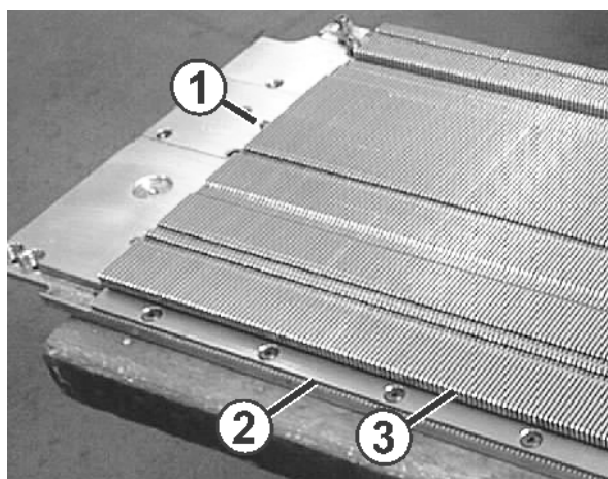


Fig. 6-26 Repairing a combined needle bed

6. Remove the bar (2) at the point of damage.
7. Lift the damaged stay at the rear end (3) and pull it out toward the rear carefully.
8. Remove the debris near the removed stay.
9. Spare stays are found among the machine accessories. Use a new stay from the accessories.
10. Reassemble the needle bed in the reverse order. Tighten the screws used to fasten the strip (2) to a torque of 2.6 Nm. Return the needle bed to the machine.

Further information:

- Removing and mounting carriage part ([see page 6-20](#))
- Remove needle bed or position it at an angle ([see page 6-12](#))
- Replacing holding-down jack ([see page 6-10](#))
- Replacing needle and coupling part ([see page 6-7](#))
- Replacing intermediate slider ([see page 6-8](#))
- Changing selection jack ([see page 6-8](#))

6.3.8 Removing and mounting carriage part

Removing carriage part The carriage assembly is removed when:

- The cams must be replaced
- If a carriage part is blocked, it is separated (separating point) with the integrated device.

The carriage assembly is stopped (support surface) outside the needle bed and the carriage part is lowered again.

The carriage part may not be moved in the raised state due to damage to the transfer parts in the additional bed and selection of the additional bed.

This chapter contains information on:

- Remove the carriage part to replace the cams ([see page 6-20](#))
- Remove the carriage part when the carriage assembly is blocked in the needle bed ([see page 6-23](#))
- Assembling carriage part and carriage assembly ([see page 6-27](#))

Remove the carriage part to
replace the cams

1. If a central lubrication is present, swivel it into mounting position.
2. Move the carriage assembly outward up to the support surface.
3. Switch off 40 V power supply.

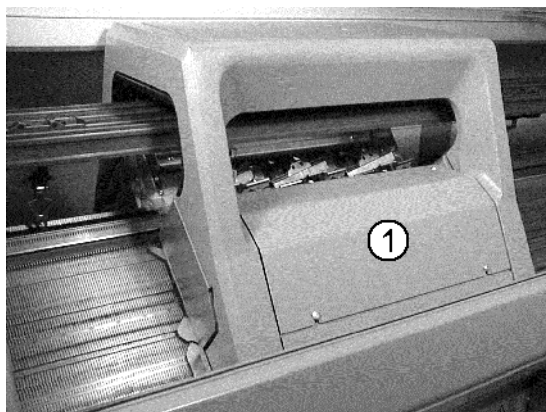


Fig. 6-27 Cover of carriage assembly

4. Remove the cover (1) of the carriage assembly.

5. If the rear carriage part is removed, the needle detector is to be removed as well.

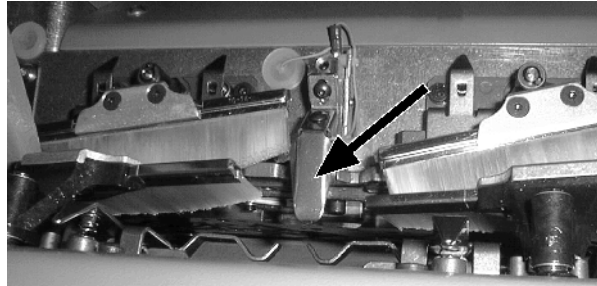


Fig. 6-28 Needle detector

6. Mark the position of the needle detector so that it can be reassembled in the same position.

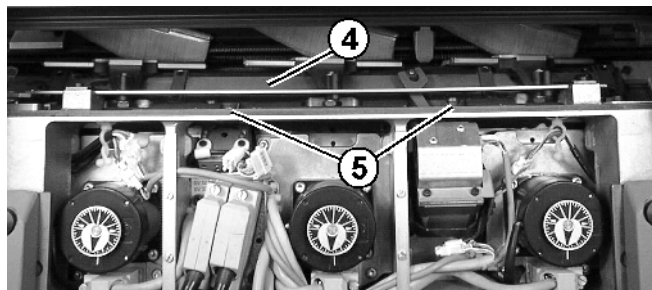


Fig. 6-29 Removing additional cam

7. Dismantle both screws (5) and remove additional cam (4).
8. Remove the suction tube on the carriage assembly.

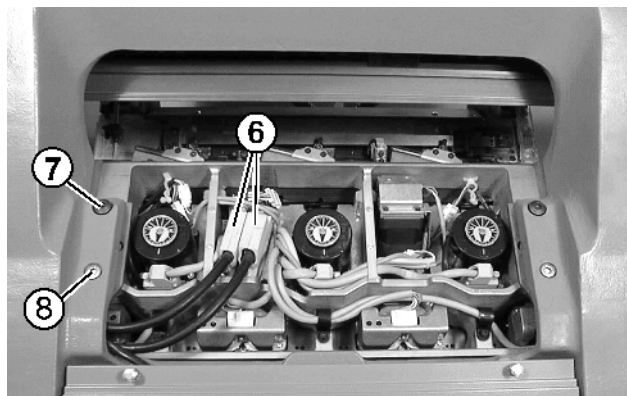


Fig. 6-30 Opened carriage assembly

9. Release the screws on the plugs (6) and pull out the plugs.
10. Unscrew the shoulder screws (7) and screws (8) on the left and right-hand sides.

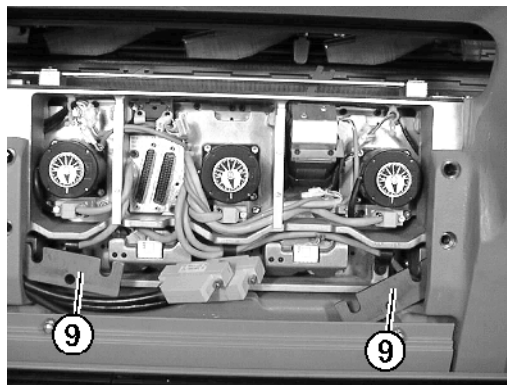


Fig. 6-31 Left and right swiveling plates

11. Swivel left and right swiveling plates (9) inward.
12. Push away the carriage assembly.



If the carriage assembly is blocked:

The drive brake has automatically closed.

- Release the drive brake again and continue pushing the carriage assembly in the original direction.

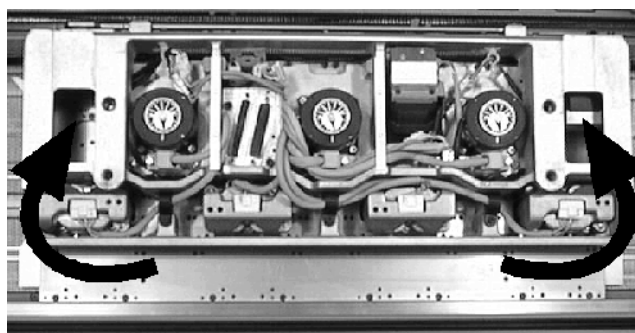


Fig. 6-32 Removing carriage part

13. First lift the carriage part at the bottom (on the carriage guide bar), then lift it off the support surface.

- or -


- Open the side cover hood and first lift the carriage part at the bottom (on the carriage guide bar), then lift it off the support surface and lift it out to the side.

14. To replace the cams, turn the cam plate upward.

Further information:

- Central lubrication - mounting and working position ([see page 6-3](#))
- Switching power supply 40 V off and on ([see page 6-1](#))
- Removing cam plate ([see page 6-29](#))

Remove the carriage part
when the carriage assembly
is blocked in the needle bed

Key	Function
	Call up "Manual interventions" window

Tab. 6-5 Key for calling up "Manual interventions" window



WARNING

Damage to the transfer parts in the additional bed!
Transfer parts in the additional bed can be damaged if the carriage
assembly and carriage part are not separated.

→ Completely separate the carriage assembly and carriage part.

1. Call up "Manual interventions" window.
2. To switch off the needle selection, set the "Needle selection" switch to "Off".
3. To switch off all yarn carriers, tap the "YC bolt Up" key.
4. Push all yarn carriers outward.
5. If a central lubrication is present, swivel it into mounting position.
6. Switch off 40 V power supply.

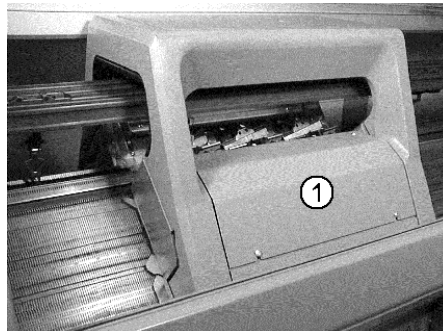


Fig. 6-33 Cover of carriage assembly

7. Remove the cover (1) of the carriage assembly.
8. If the rear carriage part is removed, the needle detector is to be removed as well.

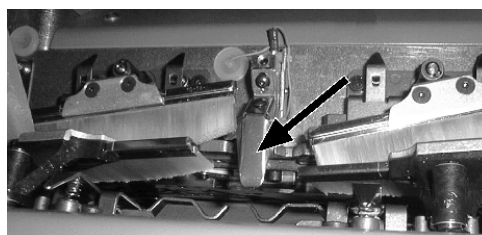


Fig. 6-34 Needle detector

9. Mark the position of the needle detector so that it can be reassembled in the same position.

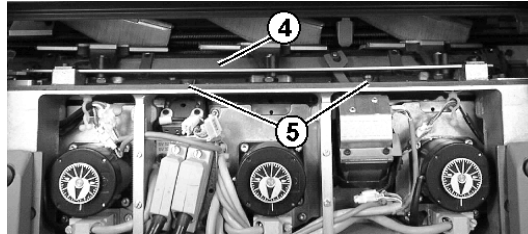


Fig. 6-35 Removing additional cam

10. Dismantle both screws (5) and remove additional cam (4).
11. Remove the suction tube on the carriage assembly.

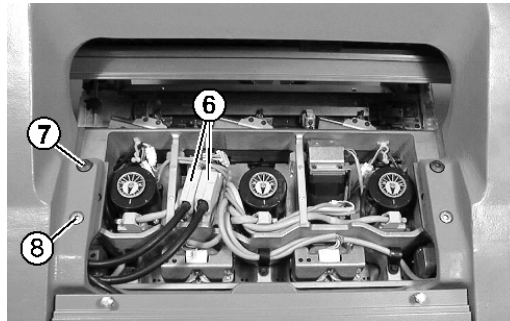


Fig. 6-36 Opened carriage assembly

12. Release the screws on the plugs (6) and pull out the plugs.
13. Unscrew the shoulder screws (7) and screws (8) on the left and right-hand sides.
14. Swivel left and right swiveling plates (9) inward.

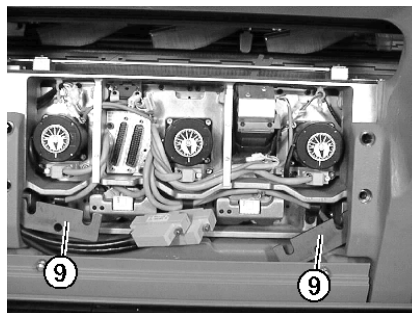


Fig. 6-37 Left and right swiveling plates

15. To release the drive brake, tap the "Rel. drive brake" key.

**WARNING**

Damage to needles and knitting system!

There are still needles in the knitting system. If the direction is changed when moving the carriage assembly, the needles and knitting system will be damaged.

→ Never change the pushing direction of the carriage assembly.

16. Push away the carriage assembly.



If the carriage assembly is blocked:

The drive brake has automatically closed again.

→ Release the drive brake again and continue pushing the carriage assembly in the original direction.

**WARNING**

Damage to the transfer parts in the additional bed!

Transfer parts in the additional bed can be damaged when moving with the carriage part raised.

→ First completely disconnect the carriage part from the carriage assembly, then remove from the needle bed.

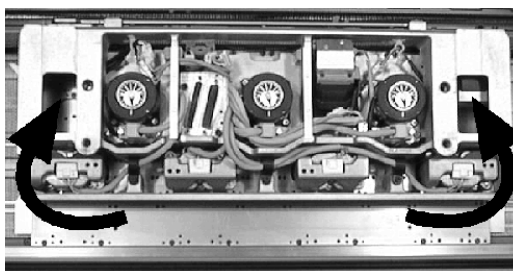


Fig. 6-38 Removing carriage part

17. First lift the carriage part at the bottom (on the carriage guide bar), then lift it off the needle bed.



If the carriage assembly is blocked:

The drive brake has automatically closed again.

- Release the drive brake again and continue pushing the carriage assembly in the original direction.



WARNING

Damage to the transfer parts in the additional bed!

Transfer parts in the additional bed can be damaged when moving with the carriage part raised.

- First completely disconnect the carriage part from the carriage assembly, then remove from the needle bed.

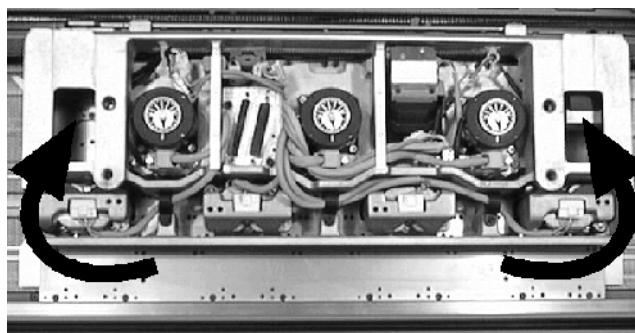


Fig. 6-39 Removing carriage part

18. First lift the carriage part at the bottom (on the carriage guide bar), then lift it off the needle bed.







Do not remove metallic parts and fragments (e.g. broken needle latch or hook) with a magnetic tool. There is a danger that the needle bed or cams can be magnetized, leading to incorrect selection.

Further information:

- Central lubrication - mounting and working position ([see page 6-3](#))
- Switching power supply 40 V off and on ([see page 6-1](#))

Assembling carriage part
and carriage assembly

Key	Function
	Call up "Manual interventions" window
	Confirm the repair
	Call up "Machine start" window
	Call up the "Main menu"

Tab. 6-6 Keys for assembling carriage part and carriage assembly

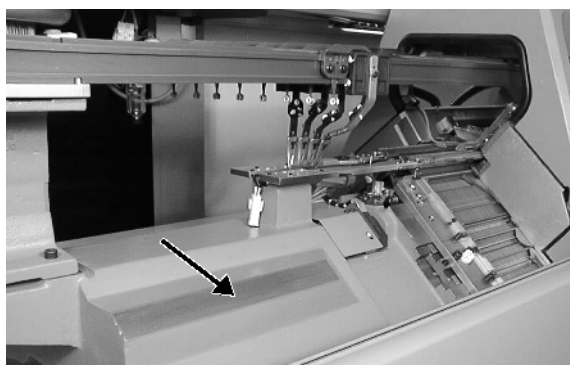


Fig. 6-40 Left support surface for carriage part

1. Mount the carriage part on the left or right outside the needle bed in such a way that it contacts the support surface.
2. Switch on 40 V.
3. Call up "Manual interventions" window.
4. To release the drive brake, tap the "Rel. drive brake" key.
5. Push the carriage assembly directly over the carriage part.
6. Switch off 40 V power supply.

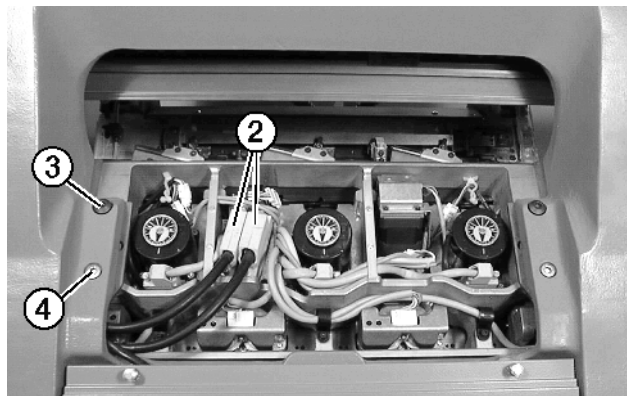


Fig. 6-41 Fastening carriage assembly on carriage part

7. Screw in the shoulder screws (3) until the carriage assembly is raised somewhat.
8. Swivel the left and right swiveling plates outward below the carriage assembly.
9. Tighten both shoulder screws (3) for fastening the carriage assembly.
10. Tighten screws (4) evenly.
11. Plug in the plugs (2) while watching the plug coding.
12. Tighten the safety screws on the plugs.
13. Install the additional cam.
14. Place the yarn carriers in their starting positions.
15. Mount the carriage assembly cover.
16. Mount the suction tube on the carriage assembly.
17. If a central lubrication is present, swivel it into working position.
18. Switch on 40 V power supply.
19. Call up "Main menu".
20. Call up "Machine start" window.
21. Tap the "SPF row fixed" key.
22. Start the machine with the engaging rod.
23. Only if the carriage assembly was blocked: If the carriage stops after the left reversal point, set the needle selection to "On" in the "Machine start" window.
24. To start production, tap in window "Machine start" on the key "SP from line 1".

Further information:

- Switching power supply 40 V off and on ([see page 6-1](#))
- Central lubrication - mounting and working position ([see page 6-3](#))

6.3.9 Removing cam plate

The cam plate is removed:

- for cleaning and checking cams
- for replacing step motors
- for replacing cams

1. Switch off 40 V power supply.
2. Remove the carriage part.

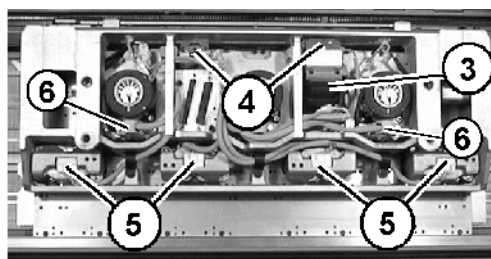


Fig. 6-42 Plugs of the selection systems

3. Disconnect the plugs of the additional cam motor (3), selection block for the additional bed (4), selection systems (5) and motors (6).
 4. Turn carriage part so that the cam plate lies on top.
 5. Cleaning and checking cams.
- or -
- Replacing step motors.
- or -
- Replacing defective cams.
6. Place carriage part on support surface and assembly with carriage assembly.

Further information:

- Switching power supply 40 V off and on ([see page 6-1](#))
- Removing and mounting carriage part ([see page 6-20](#))

6.3.10 Removing and mounting step motor

Each knitting system contains a step motor which controls the stitch cam position.

1. Remove the cam plate.

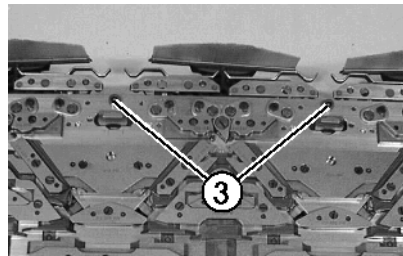


Fig. 6-43 Screws for cast body on cam plate

2. Remove the screws (3).
3. Turn over the carriage part so that the cam plate is located at the bottom, making sure that the cam plate and the carriage part (cast body) do not separate.
4. Remove carriage part (cast body).

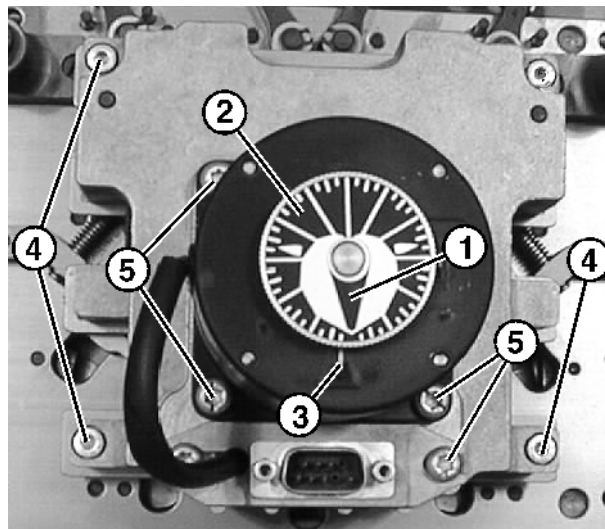


Fig. 6-44 Removing step motor

5. Move defective step motor into basic position: Turn the scale (2) until the pointer (1) is positioned exactly on the zero point (3).



DANGER

Adjusting screws!

If adjusting screws are released, the step motor must be readjusted at STOLL.

→ Do not release any adjusting screws (5).

6. Remove the screws (4).

7. Take off the defective step motor.
8. Adjust the new step motor.
9. Step motor basic position: Turn the scale (2) until the pointer (1) is positioned exactly on the zero point (3).
10. Mount the step motor.
11. Screw on the screws (4) tight.
12. Reassemble the cam plate and carriage part in the reverse order.

Further information:

- Removing cam plate ([see page 6-29](#))

6.3.11 Replacement of the gear racks in the step motor

Replacing gear racks:

1. Take off the step motor.
2. Turn positioning disk (7) to the basic position (6).

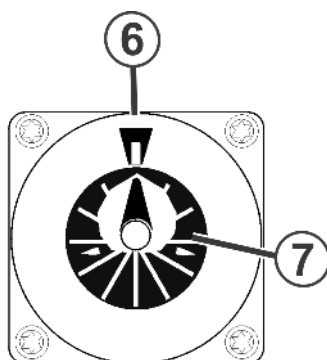


Fig. 6-45 Step motor basic position

3. Set at the back the left pin of the lower gear rack guide.

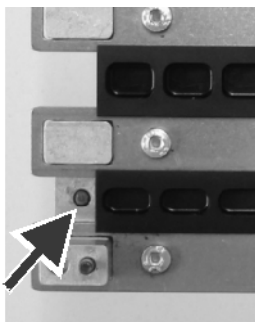


Fig. 6-46 Pin of gear rack guide

4. Push lower gear rack manually to the left until all gear racks can be removed.
5. Replacing defective gear rack.

6. Set the built-in position. For this purpose, turn the serrated lock washer (1) in such a way that the right edge is positioned somewhat in front of the light barrier (2). (visually expressed: if this setting were on a clock, the time would be: 11:58)

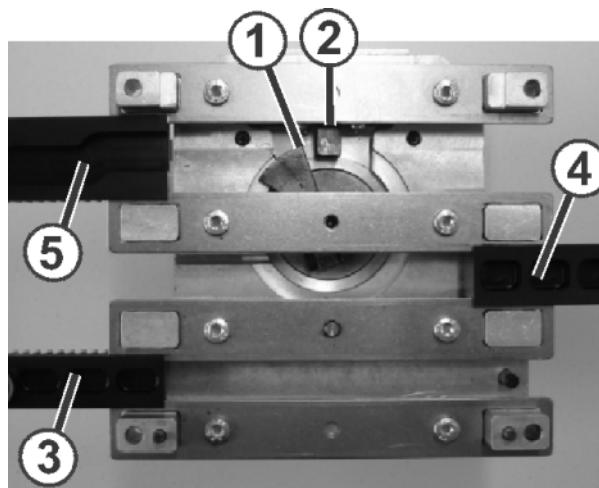


Fig. 6-47 Built-in position

7. In this built-in position, push in the gear rack (3) from the left until light resistance can be felt.
The gear rack contacts the pinion.
8. Push in gear rack (5) as well.
9. Push in gear rack (4) from the right until light resistance can be felt.
The gear rack contacts the pinion.
10. Push gear racks (3) and (4) inward evenly.
Gear rack (5) is automatically pulled inward when gear rack (4) is pushed.
11. Check whether the gear racks are positioned correctly. For this purpose, turn the positioning disk (7) to the basic position (6).
12. The gear racks must be aligned.

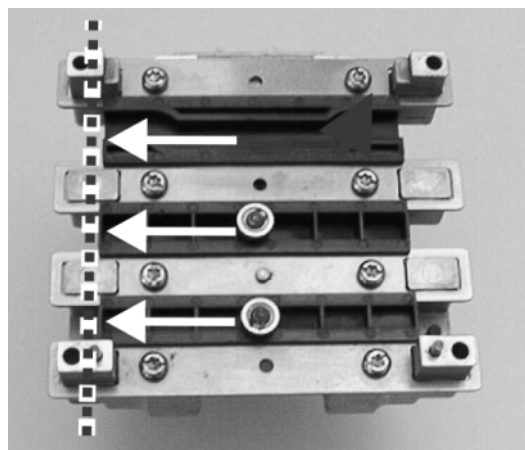


Fig. 6-48 Monitoring of built-in position





13. If this is not the case, repeat steps 3 till 11.
14. Move pin of the lower gear rack guide at the back to the basic position.
15. Replacement of the gear racks is complete.

Further information:

- Removing and mounting step motor ([see page 6-30](#))

6.3.12 Dismantling thread clamping and cutting device

In case of a malfunction in the thread clamping and cutting device, the device must be replaced or removed and cleaned.

Key	Function
	Call up the "Main menu"
	Call up "Clamping & cutting" window
	Call up "Motor correction values" window
	Confirm input

Tab. 6-7 Keys for removing thread clamping and cutting device

1. Place carriage on opposite side.
2. Switch off main switch and wait until machine is currentless.

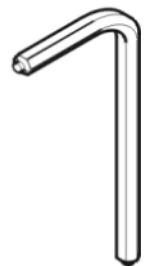
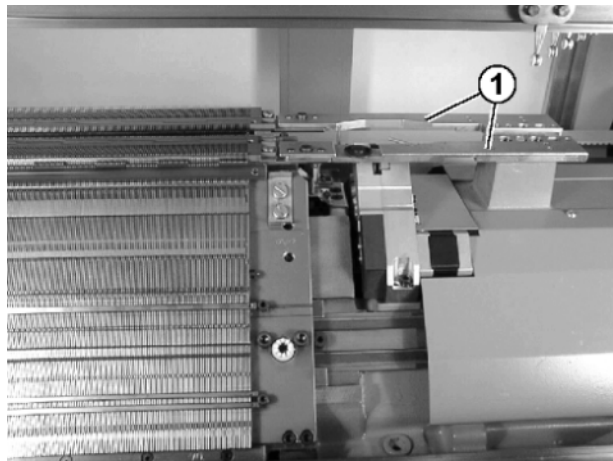


Fig. 6-49 Linking additional bed

3. Remove link (1) at front and back. Use the special hexagon screwdriver from the accessories for this purpose.

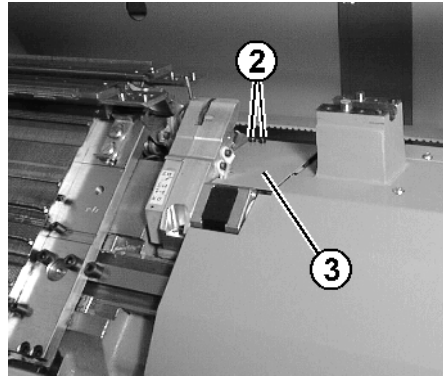


Fig. 6-50 Cover of thread clamping and cutting device

4. Remove cover (3) by removing screws (2).

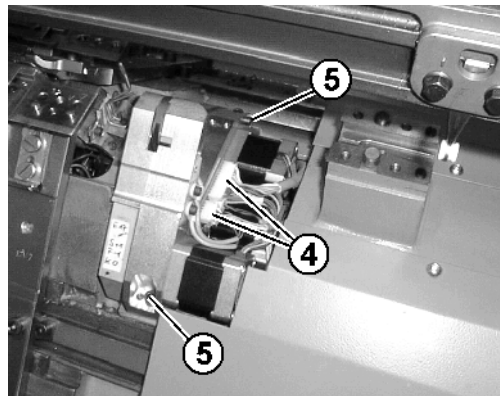


Fig. 6-51 Cable and screws of thread clamping and cutting device

5. Disconnect both plugs (4).
6. Remove the screws (5).
7. Take out thread clamping and cutting device.
8. Install new thread clamping and cutting device.

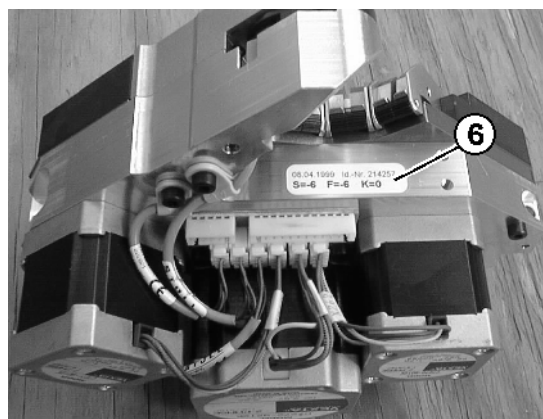


Fig. 6-52 Sticker with correction values

9. Read off and note correction values (6) of new thread clamping and cutting device.

10. Enter the motor correction values of the new device in the machine book.
11. Mount cover (3).
12. Switch on main switch.
13. Call up "Main menu".
14. Call up "Clamping & cutting" window.
15. Call up "Motor correction values" window.
16. Enter the noted correction values for the new unit and confirm.

Fig. 6-53 "Motor correction values" window



If the thread clamping and cutting device must be replaced, and no new one is available, this must be reported to the control. To do this, carry out a "Restart with machine configuration" and deactivate the missing thread clamping and cutting device in the "Machine options" window. If it is not done, the machine cannot continue knitting. In the knitting program no clamping and cutting commands may be specified for the missing thread clamping and cutting device, as otherwise an error message will be output and the machine cannot be started.

➔ Carrying out "Restart with machine configuration"

Further information:

- Carrying out restart with machine configuration ([see page 7-37](#))

6.3.13 Replacing yarn carrier



When replacing the yarn carrier bow, ensure that the punch mark is located on the inside when mounting shim (2).

1. Stop the carriage assembly into the left reversing position.

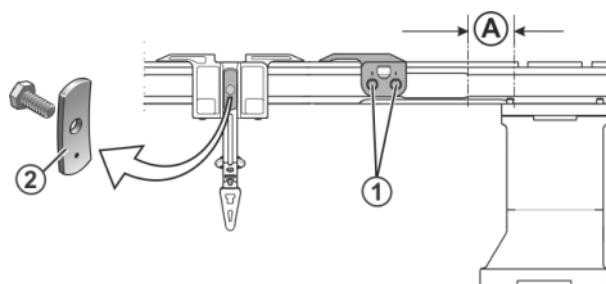


Fig. 6-54 Screws of the yarn carrier limiter

2. Release the screws (1) of the yarn carrier limiter.
3. To remove the yarn carrier limiters, turn the screws (1). The yarn carrier limiters can be removed and mounted in any position.
4. Shift yarn carrier to the right or left to replacement point (A) and remove it.
5. Place new yarn carriers on the rails.
6. Place the yarn carrier limiters of yarn carriers on the rails, position them in a staggered way and screw them on tight.

6.3.14 Using intarsia yarn carriers

Normal and intarsia yarn carriers can be used side by side.

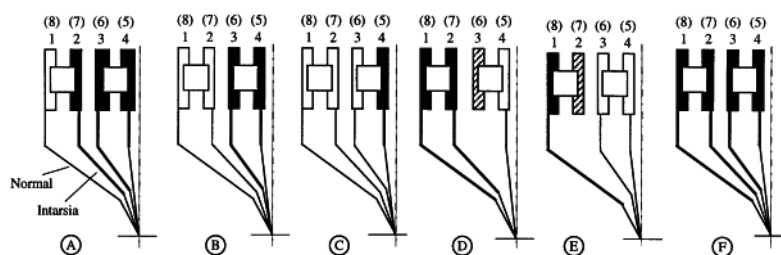


Fig. 6-55 Possible combinations for normal and intarsia yarn carriers.
Each combination can be used with itself or with another combination.

Assembling intarsia yarn carriers:

1. Stop the carriage assembly into the left reversing position.

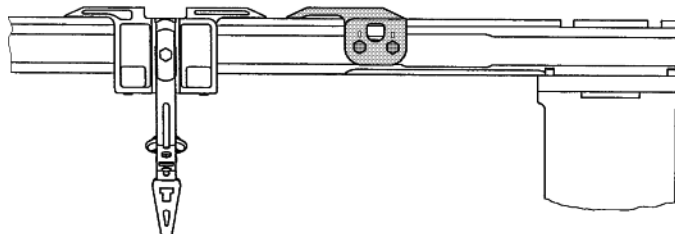


Fig. 6-56 Yarn carrier limiter and thread deflector

2. Release the screws of the yarn carrier limiter.
3. To remove the yarn carrier limiters, turn the screws. This enables the yarn carrier limiters to be removed and mounted in any position.
4. Push the normal yarn carrier to the right and remove it.

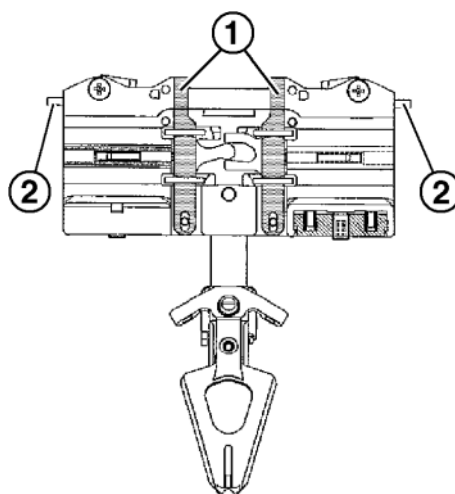


Fig. 6-57 Intarsia yarn carrier

5. Mount the intarsia yarn carriers and push them into their starting positions. To do this, press the clamp (1) outward or the lifter (2) inward.

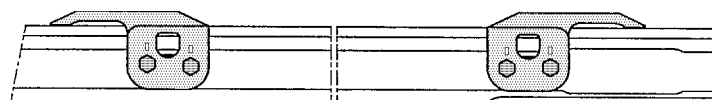


Fig. 6-58 Yarn carrier limiter

6. Place the yarn carrier limiter on the rails so that the ramp faces outward.
7. Position the yarn carrier limiters of yarn carriers in a staggered way and screw them on tight.

6.3.15 Replacing yarn control device

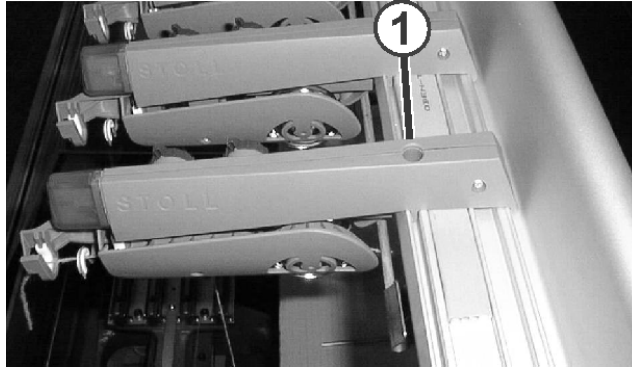


Fig. 6-59 Dismantling a yarn control device

1. Mark the position of the old yarn control device
2. Remove the screw (1).
3. Lift the yarn control device in the front such till the contact pins are free. Push the yarn control device in the rear and remove.
4. Set the new yarn control device exactly on the position (Marking) of the old yarn control device.

- or -

- ➔ Mount an additional yarn control device at a distance of 90 mm (minimum 75 mm).from the next yarn control device.
5. Hook in the new yarn control device in the rear guide rail. Push the yarn control device in the front and press it downwards simultaneously.
6. Push the yarn control device in the front and screw it firmly in with the screw (1.)

6.3.16 Replacing drive belts and friction roller of friction feed wheel

The drive belts and the friction roller of the friction feed wheel are replaced with the following steps:

- Preparations
- Replace the drive belt
- Change the position of the friction roller
- Replacing the friction roller

Preparations 1. Remove the lug (1) by releasing the knurled screws somewhat.

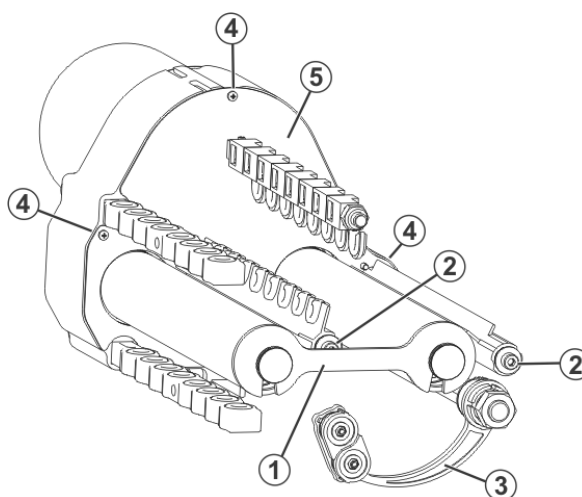


Fig. 6-60 Friction feed wheel

2. Remove screws (2) and take off the stop motion rails.
3. Release the couplings of the arms (3) so that they can swing downward.
4. Remove the screws (4) and take off the housing cover (5).

Replace the drive belt 1. Turn the ribbed V-belt pulley (6) by hand until both Allen screws can be released through the holes (7).

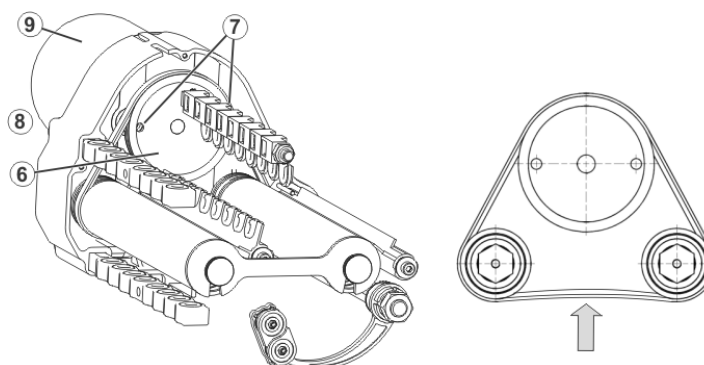


Fig. 6-61 Drive belt

2. Remove the belt (8).

6.3 Replacing parts

3. Mount the new belt in such a way that it runs in the grooves of the drive pulley.
4. Press the motor (9) upward and tighten the screws of holes (7).
5. Check the belt tension.

The belt can be pushed through by approx. 2 to 4 mm when light pressure is applied.

Change the position of the friction roller

The surface of the friction roller is worn over the course of time by the yarn. Then the friction roller does not need to be replaced immediately, but its position can be shifted by 11 mm. This doubles its service life.

1. Remove the screws (12).

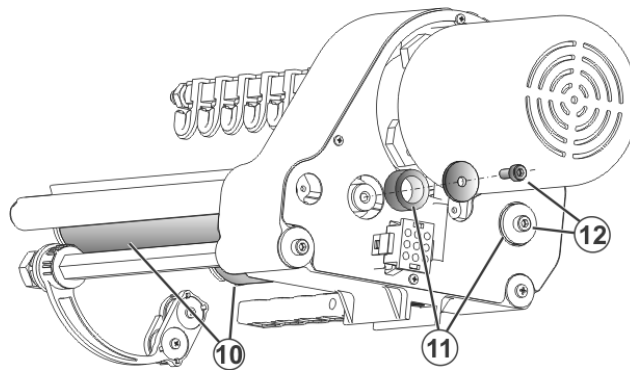


Fig. 6-62 Screws for friction rollers

2. Remove the spacer (11).
3. Take off both friction rollers (10).
4. To assemble: Push the spacer (11) onto the axis of the friction roller (10)
5. Reinstall the friction rollers (10).
6. Retighten the screws (12) without the spacers.

Replacing the friction roller

1. Remove the screws (12).
2. Take off the friction rollers (10).
3. Lay down the new friction roller.
4. Tighten the screws (12).

6.4 Eliminating malfunctions in electronics system

This chapter contains information on:

- Overview of the electronic control unit ([see page 6-42](#))
- Power supply unit ([see page 6-44](#))
- Control of yarn carrier magnets ([see page 6-45](#))
- Replacing electronic card ([see page 6-46](#))

6.4 Eliminating malfunctions in electronics system

6.4.1 Overview of the electronic control unit

The machine control is located in the left and right control cabinet under the covers. The card for controlling the yarn carrier magnets is located in the carriage.

Left control cabinet

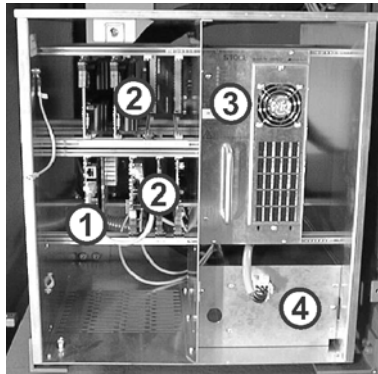


Fig. 6-63 Left control cabinet

- | | |
|-------------------------------|-------------------------------|
| 1 Industrial PC and hard disk | 3 Power supply unit with LEDs |
| 2 Electronic cards | 4 Battery |

Card	Function
849	Controlling the selection for the additional beds.
976	Controlling the input unit and the touch screen. Controlling hard disk. The hard disk is integrated on the card.
966	Main computer; collecting all messages from the other cards. Output of instructions to the other cards. Control of the knitting sequence. Controlling the carriage (main drive) and the racking position of the rear needle bed.
965	Monitoring of the carriage assembly positions. Actuation of the selection systems and the step motors. Forwarding of the information to the card 943.
951	Checking the charging state of the batteries. Activating charging. Controlling horn, lighting, piezo elements, and central lubrication.
943	Motor driver of the step motors of the stitch cams. Cooperation with the card 920.
946	Controlling the motors: Needle brushes, holding-down jacks, additional cam and thread clamping and cutting devices.

Tab. 6-8 Electronic cards

Right control cabinet

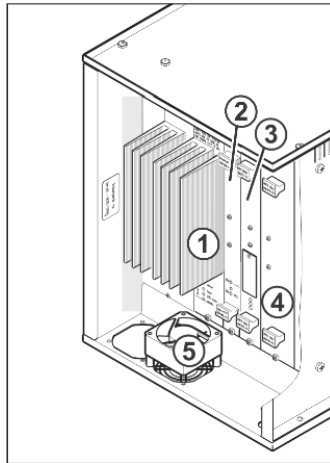


Fig. 6-64 Right control cabinet

- | | | | |
|---|--------------------------------|---|----------------|
| 1 | Drive and racking control unit | 4 | Capacitor card |
| 2 | Relay card, fuse for (1) | 5 | Ventilator |
| 3 | Fabric take-down card | | |

Card	Function
954	Controlling the drive and racking motor. Passing on the error messages from the motors to card 966.
953	<p>The relay card ensures that the machine cannot be started as long as an error is present.</p> <p>Switching off main switch:</p> <ul style="list-style-type: none"> - if the automatic switching off of the machine is activated - in case of extreme overvoltage - if the servos are not ready for operation <p>Controlling the feed wheel, fluff absorption and fault lamp.</p> <p>Ballast fuse for servo drive and racking.</p>
929	Controlling the fabric take-down motors (main take-down, auxiliary take-down, comb, contact motor). Passing on the error messages from the fabric take-down motors to card 927.
936	Motor capacitors for fabric take-down motors (for needle bed widths 72" and 84")
948	Motor capacitors for fabric take-down motors (for needle bed widths 50" and 96")

Tab. 6-9 Electronic cards

Further information:

- Configuring automatic machine switching off ([see page 3-7](#))

6.4.2 Power supply unit

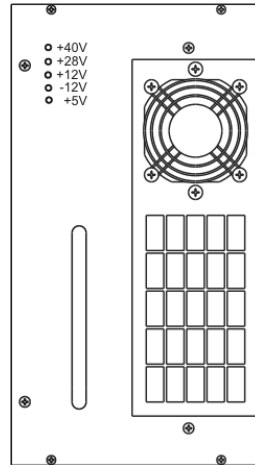


Fig. 6-65 Power supply unit

The LEDs on the power supply unit indicate which voltages are generated and at which voltage an error occurs. While switching on the main switch, the lower three LEDs light up immediately, and the +28 V approx. 1 second later, followed by the +40 V. The order in which the LEDs light up when switching on may provide information on malfunction causes.

6.4.3 Control of yarn carrier magnets

Each knitting system has got an electronic card (1) for controlling yarn carrier magnets.

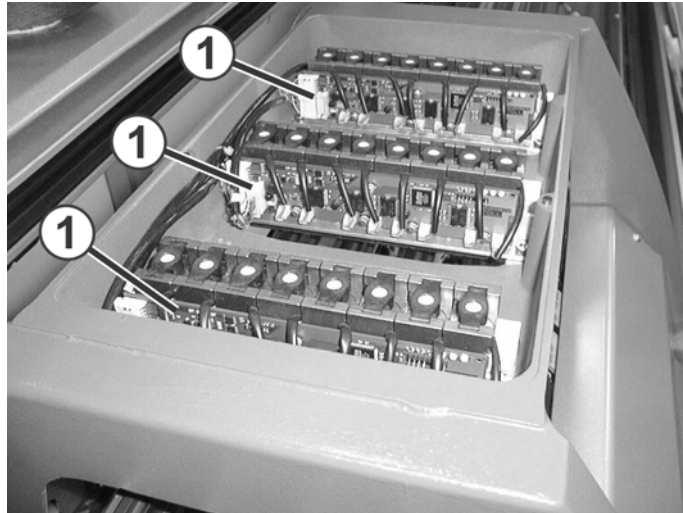


Fig. 6-66 Electronic cards for controlling yarn carrier magnets

Card	Function
960	Activating of the yarn carrier magnets after the time for switching the yarn carrier magnets has been announced by the card 966.

Electronic cards

6.4.4 Replacing electronic card

1. Set main switch to "0" and wait until the LEDs on the power supply unit go out (approx. 60 seconds).
2. Open the cover of the left control cabinet.



CAUTION

An electronic card can be destroyed by electrostatic charge!
If you touch a card while you are electrostatically charged, the card will be destroyed.

- First discharge yourself by touching "ground", e.g. a water pipe or the machine frame, then touch a card.
 - Only touch cards on the edge or the front side.
-



CAUTION

The electronic cards can be damaged by damage to the pins on the rear of the card!
If the pins of the cards are bent or broken off at the rear, new cards must be used.

- When replacing the cards, make sure that the pins are not damaged.
-

3. Remove the card.
4. Plug in the new card.
5. Close the cover of the left control cabinet.
6. Set the main switch to "1" and acknowledge the error remedy.

6.5 Checking fuses



DANGER

High voltage!

Electrical shock may cause death or serious injuries.

→ Set the main switch to "0" and wait until the touch screen is dark and an alarm signal sounds.

1. Set the main switch to "0".
2. Wait until the touch screen is dark and an alarm signal sounds.

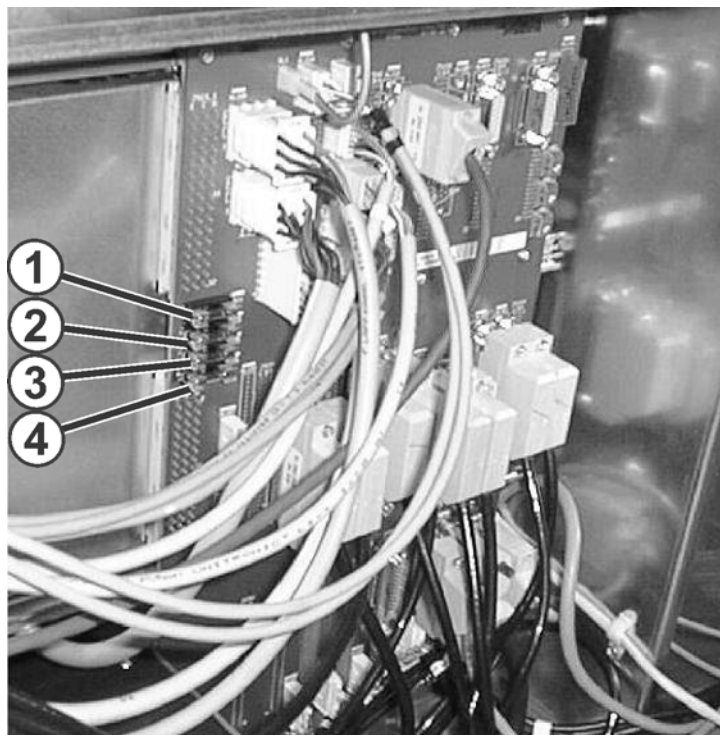


Fig. 6-67 Fuses at rear of left control unit

- | | |
|--|--|
| 1 28 V (stop motions) (1A, slow-blowing) | 3 Yarn control device (1A, slow-blowing) |
| 2 STIXX (1A, slow-blowing) | 4 Battery charging (1AT) |

3. Check fuses (1) to (4) at the rear of the left control unit.

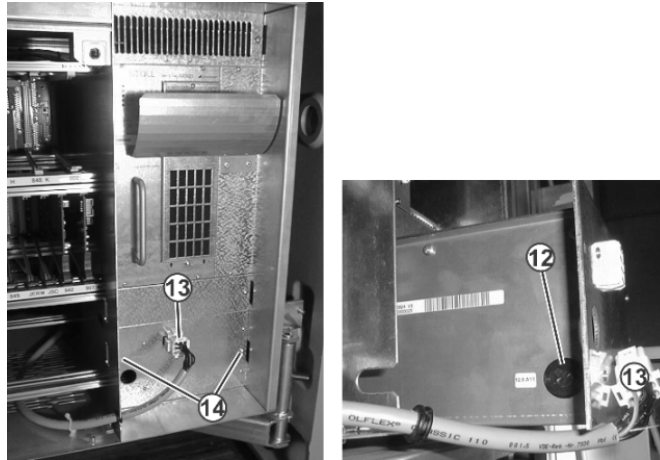


Fig. 6-68 Battery fuse (12) below the power supply unit

4. Check fuse (12) on the left control unit. For this purpose, pull out plug (13), remove both screws (14) and pull out battery insert.



DANGER

Burning risk!
Injuries by hot parts.

- Watch out not to touch the resistors (6) when pulling out the board. The resistors can get very hot.

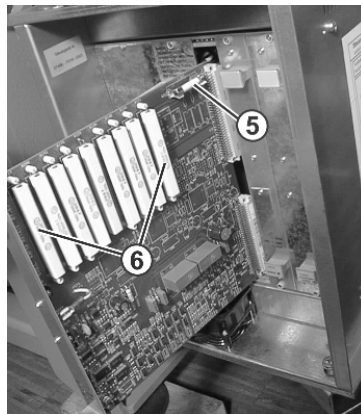


Fig. 6-69 Ballast fuse (5) for servo drive and racking on right control unit

5. Check fuse (5) on the right control unit. For this purpose, remove the screws at the top and bottom and pull out the board.

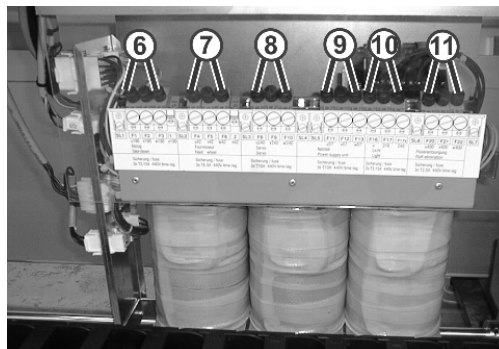


Fig. 6-70 Fuses on transformer at the rear of the machine

6	F1-F3: Fabric take-down	10	F16-F17: Lighting
7	F4-F6: Friction feed wheel	11	F20-F22: Fluff absorption
8	F8-F10: Servos	11	F20: Central lubrication
9	F11-F13: Power supply unit		

6. Check fuses (6) to (11) on the transformer on the rear of the machine.



Fuse is defective.

- ➔ Use a replacement fuse from the accessories. Use only a fuse with the same specifications
 Specifications of the fuse: see sticker (impression) or circuit diagram.
 The circuit diagram is located in the spare parts catalogue which has been delivered with this machine.
-

7 Software - Installation and basic settings

In this chapter the description of how can one install and set the Stoll-Operating system is given.

It is important thereby that one gets to know the boot process (the booting of Software and the activation of control) on the knitting machine

One has to engage in this booting process during installation and the setting of the Stoll-Operating system.

Thereby call up various windows e.g. the window "Basic Settings Menu". For the setting of the Stoll-Operating system more windows are opened in which the changes can be made.

If your knitting machines are interconnected or are connected with a pattern unit, you can configure the Online-Connection.



Save the machine data against any data losses before every installation of Stoll-Operating system or before any changes in the configuration.

This chapter contains information on:

- Boot process ([see page 7-2](#))
- Load/save machine data ([see page 7-16](#))
- Save all machine data on the USB-Memory-Stick ([see page 7-18](#))
- Install the Stoll-Operating system ([see page 7-19](#))

7.1 Boot process

The following figure shows a schematic representation of the boot process of the knitting machine (with control OKC).

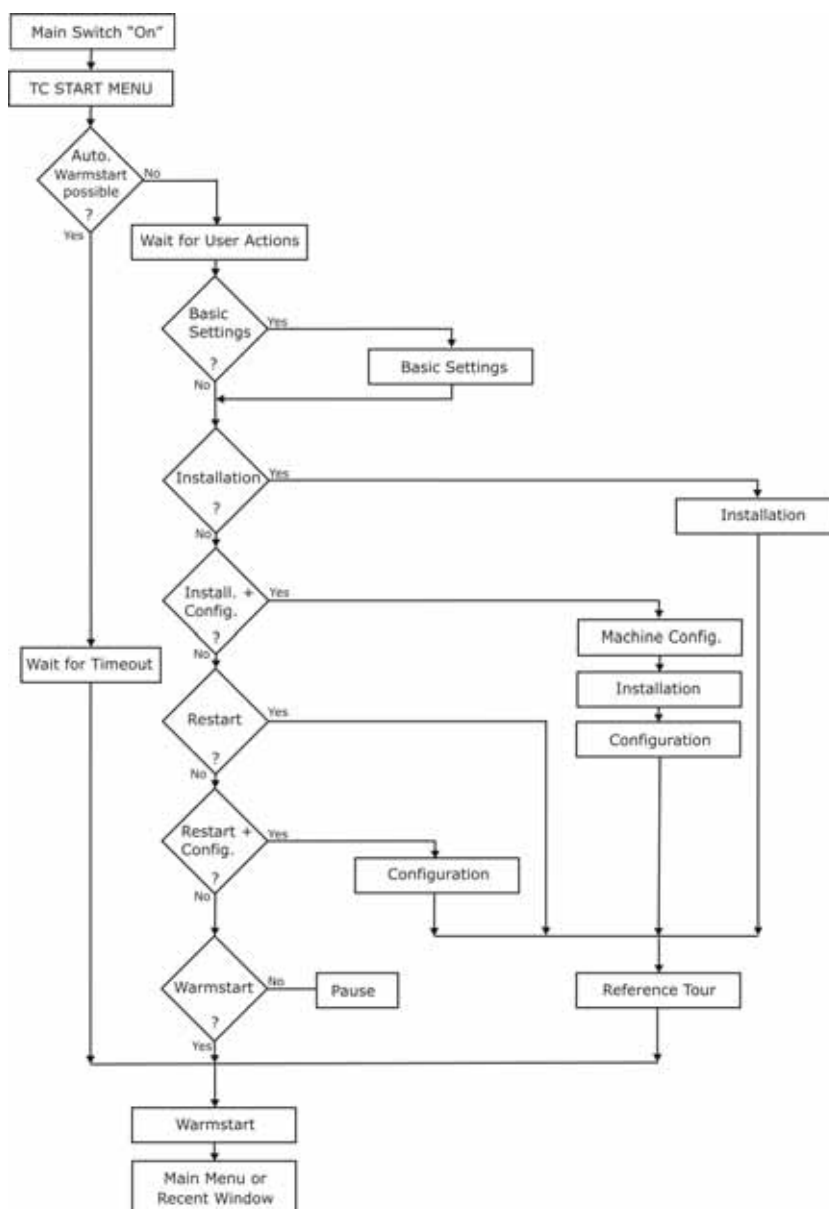


Fig. 7-1 Schematic representation of the Boot process

Description of the Boot process

After switching on of the knitting machine (main switch "1") windows XP gets started. The opening screen is displayed on the touch screen.

Thereafter the individual control components start their boot programs i.e. the different drivers and the applications of the System Control Unit (SCU) are loaded.

During this time, the following window is displayed on the touch screen:

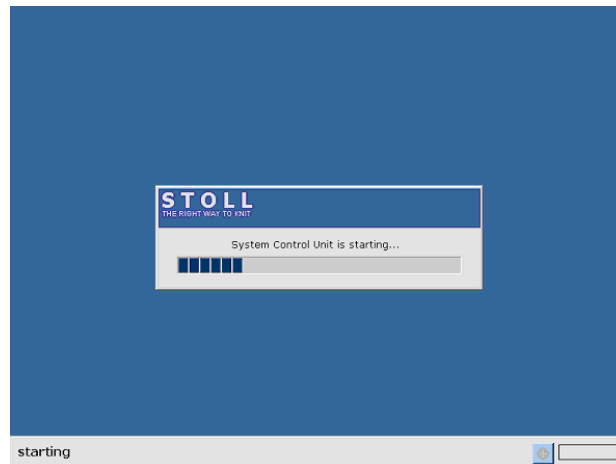


Fig. 7-2 Start the System Control Unit (SCU)

If this process is closed, then the window "BootOkc" is displayed.

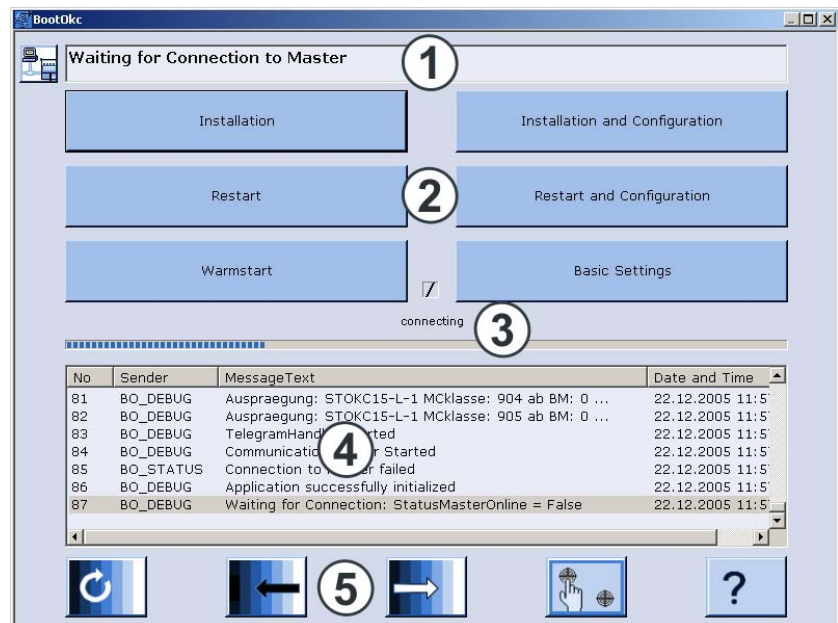


Fig. 7-3 "BootOkc" window

- 1 Symbol and status bar show the connection status.
- 2 Keys for carrying out definite actions.
- 3 Activity and progress display show the present progress of the boot process.
- 4 Lists that number the status and error messages and show the date and time. Further debug information can be connected to, if needed. This information is also saved in a log file and can be copied with "Copy Logfiles", if needed.
- 5 Keys for setting the touch screen.

7.1 Boot process

First of all only the keys "Installation" and "Installation and Configuration" and "Basic Settings" are released. As soon as the connection to control is made more keys are released based on the Control information.

If a warmstart is possible then this is automatically carried out after a waiting time that can be set (Basic setting: 30 Seconds)

Thereafter, the main menu and the last opened window are displayed.



Fig. 7-4 Main menu

The knitting machine is now ready to knit.

Interrupt Warmstart The warmstart of the knitting machine can be interrupted. This happens by tapping the keys in the window "BootOkc".


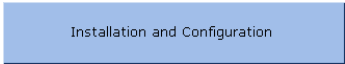



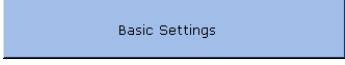




Key	Meaning
	Start the installation process of a Stoll-Operating system The storage location of the Stoll-Operating system can be selected in the window "Basic Settings"
	Start the installation process of a Stoll-Operating system including configuration of the Software. The storage location of the Stoll-Operating system can be selected in the window "Basic Settings"
	Starts the Software anew (Reboot).
	Starts the Software anew (Reboot) with configuration of the Software.inclusive
	Carries out a manual warmstart
	Calls up the window "Basic Settings Menu"
	Set the screen brightness infinite
	Set Screen brightness one step darker
	Set the screen one step brighter
	Calibrating Touch-Screen

Fig. 7-5 Possibilities for interrupting a Warmstart

Further information:

- Setting touch screen ([see page 3-8](#))

7.1.1 Basic Settings

Call up window "Basic Settings Menu":

- The knitting machine is switched off.
- 1. Set the main switch to "1".
The window "BootOkc" is displayed.
- 2. Type in within the waiting time for the warm start on the key "Basic Settings".
The window "Basic Settings Menu" is displayed.

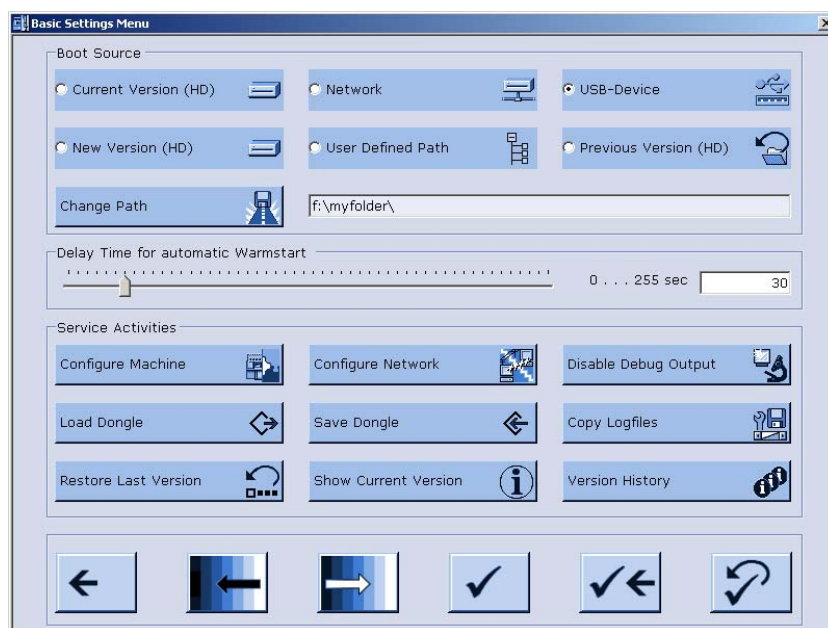


Fig. 7-6 Window "Basic Settings Menu"

Area	Explanation
Boot Source	Keys for selecting a source for the installation data.
Delay Time for automatic warm start	Enter the waiting time till the automatic warm start.
Service Activities	Keys for service purposes.

Tab. 7-1 Areas of the window "Basic Settings Menu"

Select the source of the
installation data (Boot
Source)

In the area "Boot Source" of the window "Basic Settings Menu" ascertain the source from where the installation of the Stoll operating system is done.

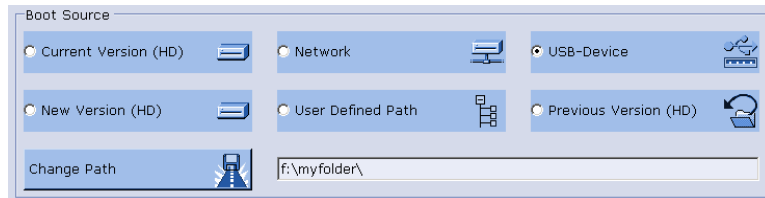


Fig. 7-7 Selection of the source in window "Basic Settings Menu"

Key	Explanation
Current Version (HD)	Renewed installation of the existing version.
New Version (HD)	Installation of a new version.
Previous Version (HD)	Installation of the previous version.
Network	Installation of a version from a network drive.
USB Device	Installation of a version from a device which is connected to the USB socket.
User Defined Path	Installation of a version from a user-defined storage location.
Change Path	Key for selection of a storage location.

Tab. 7-2 Keys in the area "Boot Source" of the window "Basic Settings Menu"

Set waiting time until warm
start

In this area of the window "Basic Settings Menu", the waiting time that is spent in between the display of the window "BootOkc" and the automatic warm start (display of the main menu) is entered.



Fig. 7-8 Waiting time for warm start in the window "Basic Settings Menu"



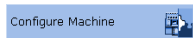
The waiting time can be interrupted at anytime by pressing any key in the window "Basic Settings".

Set waiting time:

1. Pull the slide to the desired position.
The waiting time is displayed in the input field.
2. Confirm the input.

7.1 Boot process

Configure machine



Defined by the concept of control OKC some basic information about the machine should be known right from the start. Enter this information in the window "Machine Configuration".

- Tap on the key "Configure Machine".
The window "Machine Configuration" is displayed.

Fig. 7-9 Window "Machine Configuration"

Designation	Description
Machine Classification	Enter the machine classification.
Component Type	Enter the component type.
Controller Characteristic	Name of control. Is derived from the machine classification and the component type.
Date	Date of entry.
Time	Time of entry.

Tab. 7-3 Components of the window "Machine Configuration"

Enter the machine classification and the component type:

1. In the list field "Machine Classification" select the machine classification.
2. In the list field "Component Type", select the component type.
In the field "Controller Characteristic" the controller type is displayed.
3. Confirm the input.

Enter the date and time:

1. In the list field "Date" enter current date.
2. In the list field "Time" enter current time.
3. Confirm the input.

Configure network



If you wish to connect the knitting machine with another knitting machine or a pattern unit, you must set up and switch on the network on the knitting machine. The window "Network Configuration" can be used.

→ Tap on the key "Configure Network".

The window "Network Configuration" is displayed.

Fig. 7-10 Window "Network Configuration"

In this window all the necessary network parameters are entered. The values are entered with the internal keyboard (screen keyboard) or with an external keyboard.

Designation	Description
Computer name	The input of a (machine) name is necessary in order to enable the other network users an access to this machine. This machine is identified with this name in the network. Descriptions to this machine are given in the field "Description".
Workgroup	All knitting machines should be located in the same "Workgroup" so that the machines can communicate with each other. This input field must be filled up. Ask for your corresponding Work group name from your Network administrator in case of a network spanning your firm/LAN.
Description	The input of a description is optional, but it helps in identifying a machine better in larger networks, e.g. Machine type, gauge and other specifications of this machine. This input appears as a comment in Windows Explorer.
My network	Here those computers are listed that are defined in the field "My Network", see KnitLAN connection (see page 4-135). If you wish to supplement the lists manually, take note of the spelling when multiple computers are used: \\computer name;\\computer name;\\computer name As a separator between the individual computers the semicolon (";") must be used.

7.1 Boot process

Designation	Description
User name	This user must be familiar with his password in the network so that the shared drives and the folders can be used. Your Network administrator will create a user name and a password for you so that you can access the network resources.
Password	
e-mail	Input an e-mail address (Configure). The messages of control are sent to this address, when the check box is activated before "Enable".
IP address	Each machine (computer) should have a unique IP address within a network. The network protocol TCP/IP communicates with the individual machines about this IP address. The division of the network is done in the so-called network classes. Each machine is automatically assigned an individual Network-address by the program and it is displayed here.
Subnet mask	This field is automatically filled up by the program with a value for the shared network "Class B".
Use DHCP	The DHCP (Dynamic Host Configuration Protocol) enables with the help of a corresponding server the dynamic allocation of an IP-Address and the further configuration parameters on the computer (machine) in a network.
MAC address	Media Access Control Address.
Name	Name of the network card.
Use DNS	Domain Name Services over a DNS Server. Enter the name of the IP address of the server, if necessary.
Use WINS	Windows Internet Name Services. Enter the name of the IP address of the server, if necessary.
Gateway	A Gateway enables the connection between the shared networks. Enter the IP-Address of the active component, if necessary.

Tab. 7-4 Components of the window "Network Configuration"



Settings in the window "Network Configuration", especially the settings for "External LAN", are to be done by a Network Administrator. The settings for "Internal LAN" serve developmental purposes only and may not be altered.

The Ethernet IP addresses 192.168.0.1 and 192.168.0.2 are reserved for Stoll knitting machines and may not be used in the company network. The reason for this: The cards 963 (IPC) and 966 (Power-CPU) in the knitting machine use these IP addresses in order to communicate with each other. But if both these addresses are used in the company network, the cards cannot work correctly with each other anymore and the machine does not function any longer.

Opening and closing screen
keyboard

➔ In order to keep the screen keyboard constantly open, activate the check box before "Use Touch Screen Keyboard".
By clicking on an input field the screen keyboard opens.

- or -

➔ In order to close the screen keyboard deactivate the check box before "Use Touch Screen Keyboard".

Enter the machine name
(Computer-Name)

1. Tap in the input field "Computer Name".
The screen keyboard is displayed.
2. Enter in the input field "Computer Name" by any desired name (5-15 characters) for the respective knitting machine.



Enter the user name and the
password

Your Network administrator must create a user name and a password before you can access the network resources.

1. Key in in the input field "User Name" the user name (5-15 characters).
2. Key in in the input field "Password" the corresponding password (5-15 characters).
For every character entered "*" an asterik is displayed.

Enter Workgroup

➔ In the input field "Workgroup" key in the name of the work group and the machine group for this machine (5-15 characters).

- or -

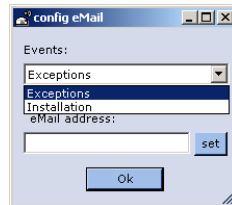
➔ Maintain the standard setting.

Enter the description of the
machine (Description)

➔ In the input field "Description" enter a meaningful description of this machine (maximum 50 characters).

7.1 Boot process

- Enter E-Mail-Address
1. Activate the check box before "Enable".
 2. Tap on the key "Configure".
The window "E-Mail Configuration" is displayed.

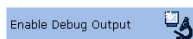


3. Select the case in the field Events by the appearance of which the e-mail should be sent.
4. Enter the e-mail address in the field "E-Mail address"
5. Confirm the input.

Further information:

- KNITLAN connection ([see page 4-135](#))

Debug output on/off



With this key an extended output of debug messages can be switched on or off in the window "Logging".

1. To give out extended debug messages in the window "Logging" tap on the key "Enable Debug Output".
The marking of the key in "Disable Debug Output" is altered.
 2. Confirm the input.
- or -
1. To give no extended debug messages tap on the key "Disable Debug Output".
The marking of the key in "Enable Debug Output" is altered.
 2. Confirm the input.

Load the machine settings in
the machine computer



The machine settings do not only contain the machine data, but also the machine options, the machine configuration, the report, the network settings, and other internal control information. This data is displayed as "Dongle". Dongle-Data are saved in a file with the name "mcnumber.dgl" (mcnumber = machine number).

■ A file with dongle data is available.

1. Tap the "Load Dongle" key.
A selection window for opening a file is displayed.
2. Select Dongle-file (mcnumber.dgl).



The current machine settings will be overwritten!

When you copy the machine settings to the hard disk, the current machine settings are overwritten.

Only carry out the following steps if you want to replace the current machine settings with the settings saved on the file.

3. Confirm the input.
4. When the network settings are available, the question appears whether these should be read also. If you answer this question with "Yes" the network settings are read and a Reboot is automatically run. The machine settings are copied to the machine. After the copying is complete, a message appears.

7.1 Boot process

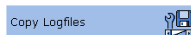
Save dongle data



The machine settings do not only contain the machine data, but also the machine options, the machine configuration, the report, the network settings, and other internal control information. This data is displayed as "Dongle". Dongle-Data are saved in a file with the name "mcnumber.dgl" (mcnumber = machine number). It is important to back up the data, e.g. when the hard disk is replaced.

1. Tap on the key "Save Dongle".
A selection window for saving a file is displayed.
2. Select the saving location.
3. Confirm the input.
The machine settings are copied on the target medium (file name: mcnumber.dgl).

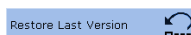
Error diagnosis with Copy log files



If the machine computer has serious problems, e.g. it does not react to any entries or the program crashes any longer, the cause is very important for Stoll. The computer saves the data up to the error internally in so-called "Logfiles". These files can be zipped and can be saved on a target medium as desired. The file gets the name "Log_date_time_mcnr.zip" and can be sent to STOLL-HELPLINE in order to carry out an exact diagnosis of the error.

1. Tap the "Copy Logfiles" key.
A selection window for saving a file is displayed.
2. Select the saving location.
3. Confirm the input.
The log files are zipped and saved on the target medium (file name: Log_date_time_mcnr.zip).

Restore the last version of the Stoll operating system



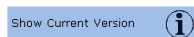
1. Tap on the key "Restore Last Version".
A dialog window for confirming the restoration appears.



The current operating system version will be overwritten!
When you restore the saved operating system version, the current operating system version is overwritten.
Only carry out the following steps if you want to replace the current operating system by the previous version.

2. Confirm message.
The window "BootOkc" is displayed. The source (Boot Source) "Previous Version (HD)" is automatically set.
 3. When the Stoll operating system is to be installed without the final configuration tap on the key "Installation".
- or -
- ➔ When the Stoll operating system is to be installed with the final configuration, tap on the key "Installation and Configuration".
The Stoll operating system gets installed.

Display current software version



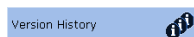
For diagnosis purposes it is important to know which software is installed on the computer. In the window "Info" the version numbers of the currently installed Stoll operating system are displayed. In the case of error messages, these version numbers should also be provided to STOLL-HELPLINE, if possible.

- ➔ Tap on the key "Show Current Version".
The window "Info" is displayed. Here the current version numbers of the Stoll operating system are displayed.



With "Copy Logfiles" this data is automatically saved with the file "Log_date_time_mcnr.zip".

Display the history of the software versions



For diagnosis purposes it is important to know which software is installed on the computer. In the window "Version Info" the current versions and all previously installed software programs are logged. In the case of error messages, these version numbers should also be provided to STOLL-HELPLINE, if possible.

- ➔ Tap on the key "Show Version History".
The window "Version Info" is displayed. Here the current version numbers and all the software installations of Stoll operating system executed so far, are displayed.



With "Copy Logfiles" this data is automatically saved with the file "Log_date_time_mcnr.zip".

7.2 Load/save machine data

The machine data comprise of the machine-specific settings (correction values) for example:

- Machine number (for Ethernet)
- Racking
- Stitch cam
- Fabric take-down
- Take-down comb
- Needle selection shifting
- Machine model and machine number
- Clamp/Cut
- Holding-down jack control

The machine data can be saved on the hard disk or can be restored from it again.

List of machine data

When the knitting machine was shipped, the machine data was printed out on this sheet and put on the right control cabinet





Fig. 7-11 List of machine data

If any changes are made in the machine data, these can be saved on the hard disk.

Instruction	Function
MC-SAVE	Save machine data on the hard disk
MC-RESTORE	Restore machine data from the hard disk to the machine memory
MC-RESTOREDATA	Restore the STOLL factory settings to the machine memory

Tab. 7-5 Commands for saving and reading the machine data

Key	Function
	Call up the "Direct commands" window
	Tap the "Keyboard" key

Tab. 7-6 Keys for saving and reading the machine data

1. Call up the "Direct commands" window.
2. Tap the "Keyboard" key.
The virtual keyboard is displayed.
3. Type in the corresponding command and confirm.



Further information:

- Copying service data ([see page 4-61](#))

7.3 Save all machine data on the USB-Memory-Stick

The machine settings do not only contain the machine data, but also the machine options, the machine configuration, the report, the network settings, and other internal control information. This data is displayed as "Dongle". Dongle-Data are saved in a file with the name "mcnumber.dgl" (mcnumber = machine number).

The Machine data can be copied on a USB-Memory-Stick. After installing a new operating system version or following data loss or the change of the hard disk the machine data can be copied back from the USB Memory-Stick to the machine computer.

Key	Function
	Call up the "Direct commands" window
	Tap the "Keyboard" key

Tab. 7-7 Keys for saving the machine data on a USB-Memory-Stick

1. Insert the USB-Memory-Stick in the USB-socket.
2. Call up the "Direct commands" window.
3. Tap the "Keyboard" key.
The virtual keyboard is displayed.
4. Type in the command "save dongle" and confirm.
The entire machine data are saved under the file name "mcnumber.dgl" on the USB-Memory-Stick ("mcnumber" = machine number).
5. Take out the USB-Memory-Stick.

Further information:

- Basic Settings ([see page 7-6](#))
- Copying service data ([see page 4-61](#))

7.4 Install the Stoll-Operating system

The installation of the Stoll-Operating system can be carried out in two ways:

- **Direct Installation:**

After switching on of the main switch the window "BootOkc" gets displayed. Type in within the waiting time for the warm start on the key "Basic Settings" and select in the window "Basic Settings Menu" the protected location of the new Stoll-Operating system. Go back to the window "BootOkc" and type on the key "Installation" or "Installation and Configuration". The Installation process is triggered.

When you tap on the key "Installation" the Installation is run through till the window "Reference run".

If you tap on the key "Installation and Configuration" the machine can be configured afresh for stopping the installation.

- **Indirect Installation:**

During the production the new Stoll-Operating system is copied on the hard disk. You use the window "Actualising Software" for this purpose. When the machine is switched on again the software can determine that a new Stoll-Operating system is available for installation. You will be asked in one window whether you want to install the new Stoll-Operating system and whether you wish to configure the machine anew simultaneously. If you acknowledge this process with "Yes" the installation process gets started with or without configuration.

In the next sections the different types of installations will be discussed at length.

It contains the following information:

- Direct Installation ([see page 7-20](#))
- Indirect Installation ([see page 7-26](#))
- Updating software ([see page 7-32](#))
- Carrying out a restart ([see page 7-36](#))
- Carrying out restart with machine configuration ([see page 7-37](#))
- Setting online connection ([see page 7-39](#))
- Overview of all system data ([see page 7-42](#))

Further information:

- Setting touch screen ([see page 3-8](#))
- Setting machine parameters ([see page 4-57](#))
- Basic Settings ([see page 7-6](#))

7.4.1 Direct Installation

In the case of "Direct Installation" the installation process is started directly in the window "BootOkc".

Overview:

- Start the installation process by switching on the machine Tap in the window "BootOkc" on the key "Basic Settings" to select storage location in which the installation data is available. ("Boot Source").
- Start the installation in the window "BootOkc" with the keys "Installation and Configuration" or "Installation".
- Configure the machine when you have selected the key "Installation and Configuration" or start a reference run when you have selected the key "Installation" .



Select the key "Installation and Configuration", when along with the installation of the new Stoll-Operating system the machine parameters have also to be altered.

Select the key "Installation", when the machine parameters are not to be altered. This shortens the installation process



The current operating system version will be overwritten!

When you install a new Stoll-Operating system-Version the current Stoll-Operating system-Version is overwritten.

Carry out the following steps only if you want to replace the current operating system by the previous version.

Save the machine data and the files specifically the ones you have created before the installation process.

Select Boot Source ■ The amchine is switched off.

1. Set the main switch to "1".

The window "BootOkc" is displayed on the Touch-Screen

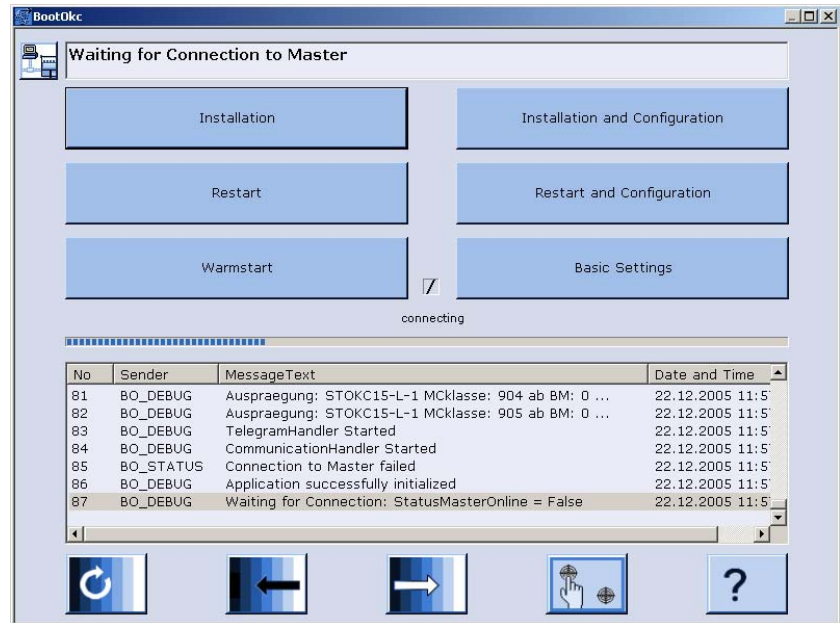


Fig. 7-12 "BootOkc" window

2. For the automatic warm start tap on the key "Basic Settings" within the waiting time.

The window "Basic Settings Menu" is displayed.

3. In the space "Boot Source" select a source for the installation data.
4. Confirm the input.
The window "BootOkc" is displayed.
5. Continue with the next section.

Start Installation

1. When you want to execute the installation with the final configuration, tap in the window "BootOkc" on the key "Installation and Configuration"

- or -

- ➔ When you want to execute the installation without the final configuration, tap in the window "BootOkc" on the key "Installation"
- In the window "User Message" (INSTALLATION STARTED!) the path to the installation data is displayed.



Fig. 7-13 Window "User Message" (INSTALLATION STARTED!)

2. If only the files that have got altered are to be installed anew during the installation deactivate the check box "FORCE INSTALLATION" (expedites the installation process).



When you take up an installation in order to repair your operating system, activate the check box "FORCE INSTALLATION" so that the damaged files do not get overwritten subsequently.

3. To confirm the Installation tap on the key "YES"
In the window "User Message" (ATTENTION!) the Version number of the Stoll-Operating system Version selected earlier gets displayed.



Fig. 7-14 Window "User Message" (ATTENTION!)







The current operating system version will be overwritten!
When you install a new Stoll-Operating system-Version the current Stoll-Operating system-Version is overwritten.
Carry out the following steps only if you want to replace the current operating system by the previous version.

4. To confirm the installation tap on the key "YES"
When the installation file of the Stoll operating system has several languages, the window "Install Languages" is open.



Fig. 7-15 "Install Languages" window

Key	Function
	End selection process without saving modifications
	Confirm selection
	Key "All languages"
	Key "No language"

Tab. 7-8 Key for selection languages

5. Select the desired language(s)



If you want to have all languages available simultaneously, tap the "All languages" key.

If you only want to carry on working in "German", end selection process.

7.4 Install the Stoll-Operating system

6. Confirm the selection.
The installation process gets started.
The window "Language" is displayed when you select the key
"Installation and Configuration"
- or -
The window "Reference runs " is displayed when you select the key
"Installation"
7. If the window "Language" is displayed , continue with the section
"Configure machine "
- or -
- If the window "Reference runs " is displayed , continue with the section
"Start Reference runs"

Configure Machine

- The window "Language " is displayed
1. Select the dialog language and confirm the selection.
 2. Continue on to the next window.
The window "Configure machine " is displayed The data have been set
at the factory and will not be changed.
 3. Continue on to the next window.
The window "Machine-configuration 2" is displayed. The data have
been set at the factory and will not be changed.
 4. Continue on to the next window.
The window "Machine-Options" is displayed The data have been set at
the factory.



Machine malfunction!

The presence or lack of machine options must correctly be specified, as
otherwise a malfunction may occur on the machine.
Always specify the machine options correctly.

5. If necessary, change the data and confirm the changes.
6. Continue on to the next window.
The window "Machine-Parameter" is displayed The data have been set
at the factory.
7. If necessary, change the data and confirm the changes.

8. Continue on to the next window.
The window "Needle bed -Parameter " is displayed The data have been set at the factory.
9. If necessary, change the data and confirm the changes.
10. Continue on to the next window.
The window "NPK-Values" is displayed The data have been set at the factory.
11. If other NPK values are to be used, change the values and confirm the changes.
12. Continue on to the next window.
The window "Knit Report Configuration" is displayed
13. If other settings are to be used, change the settings and confirm the changes. Use the "additional function keys" to activate/deactivate the running time control and/or running time measurement.
14. Continue on to the next window.
The configuration is complete
The window "Reference runs " is displayed
15. Continue with the next section.

Start Reference runs

- The window "Reference runs " is displayed.
 - 1. If the racking device is not in the basic position, press off the stitches of a needle bed.
 - 2. Carry out reference run(s).
 - 3. Proceed to the next window.
- The installation process is complete and the "Main menu" is displayed.

Further information:

- Select the source of the installation data (Boot Source) ([see page 7-7](#))
- Enter waiting time to warm start ([see page 7-7](#))
- Configure Machine ([see page 7-8](#))
- Configure Network ([see page 7-9](#))
- Load the machine settings in the machine computer ([see page 7-13](#))
- Save Dongle-Data ([see page 7-14](#))

7.4.2 Indirect Installation

In the case of "Indirect Installation" the new Stoll-Operating system is immediately transmitted on the hard disk of the knitting machine (Window "Software update").

Overview:

- Start the installation process by switching on the machine. A message prompt displays that a new Stoll-Operating system is available for installation.
You have to make a decision here whether you wish to install the new Stoll-Operating system or wish to continue with the old one.
- Determine with the check box "Installation without configuration" whether the new Stoll-Operating system should be installed with simultaneous configuration of the machine parameter.
- Configure the machine if you have deactivated the check box "Installation without configuration" or carry out a reference run if you have activated the check box "Installation without configuration".



Deactivate the check box "Installation without configuration", if the machine parameters have also to be altered simultaneously with the installation of the new Stoll-Operating system.

Activate the check box "Installation without configuration" if you do not want to alter any machine parameters. This shortens the installation process



The current operating system version will be overwritten!

When you install a new Stoll-Operating system-Version the current Stoll-Operating system-Version is overwritten.

Carry out the following steps only if you want to replace the current operating system by the previous version.

Save the machine data and the files specifically the ones you have created before the installation process.

- Start Installation
- The Stoll-Operating system was updated.
 - The amchine is switched off.
1. Set the main switch to "1".
The window "BootOkc" is displayed with the following message on the Touch-Screen.



Fig. 7-16 Window "User Message" (START UPDATE NOW?)

2. Deactivate the check box "Installation without configuration", if the machine parameters have also to be altered simultaneously with the installation of the new Stoll-Operating system.
- or -
- ➔ Activate the check box "Installation without configuration" if you do not want to alter any machine parameters.
3. To start installation process tap on "YES"



To proceed with the old Stoll-Operating system tap on "NO"

In the window "User Message" (INSTALLATION STARTED!) the path to the installation data is displayed.



Fig. 7-17 Window "User Message" (INSTALLATION STARTED!)

4. If only the files that have got altered are to be installed anew during the installation deactivate the check box "FORCE INSTALLATION" (expedites the installation process).

7.4 Install the Stoll-Operating system



When you take up an installation in order to repair your operating system, activate the check box "FORCE INSTALLATION" so that the damaged files do not get overwritten subsequently.

5. To confirm the Installation tap on the key "YES"
In the window "User Message" (ATTENTION!) the Version number of the Stoll-Operating system Version selected earlier gets displayed.



Fig. 7-18 Window "User Message" (ATTENTION!)







The current operating system version will be overwritten!
When you install a new Stoll-Operating system-Version the current Stoll-Operating system-Version is overwritten.
Carry out the following steps only if you want to replace the current operating system by the previous version.

6. To confirm the installation tap on the key "YES"
When the installation file of the Stoll operating system has several languages, the window "Install Languages" is open.



Fig. 7-19 "Install Languages" window

Key	Function
	End selection process without saving modifications
	Confirm selection
	Key "All languages"
	Key "No language"

Tab. 7-9 Key for selection languages

7. Select the desired language(s)



If you want to have all languages available simultaneously, tap the "All languages" key.

If you only want to carry on working in "German", end selection process.

7.4 Install the Stoll-Operating system

8. Confirm the selection.
The installation process gets started.
The window "Language" is displayed when you select the check box "Installation without configuration"
- or -
The window "Reference runs" is displayed when you select the check box "Installation without configuration"
9. If the window "Language" is displayed , continue with the section "Configure machine "
- or -
- If the window "Reference runs " is displayed , continue with the section "Start Reference runs"

Configure Machine

- The window "Language " is displayed
1. Select the dialog language and confirm the selection.
 2. Continue on to the next window.
The window "Configure machine " is displayed The data have been set at the factory and will not be changed.
 3. Continue on to the next window.
The window "Machine-configuration 2" is displayed. The data have been set at the factory and will not be changed.
 4. Continue on to the next window.
The window "Machine-Options" is displayed The data have been set at the factory.



Machine malfunction!

The presence or lack of machine options must correctly be specified, as otherwise a malfunction may occur on the machine.
Always specify the machine options correctly.

5. If necessary, change the data and confirm the changes.
6. Continue on to the next window.
The window "Machine-Parameter" is displayed The data have been set at the factory.
7. If necessary, change the data and confirm the changes.

8. Continue on to the next window.
The window "Needle bed -Parameter " is displayed The data have been set at the factory.
9. If necessary, change the data and confirm the changes.
10. Continue on to the next window.
The window "NPK-Values" is displayed The data have been set at the factory.
11. If other NPK values are to be used, change the values and confirm the changes.
12. Continue on to the next window.
The window "Knit Report Configartion" is displayed
13. If other settings are to be used, change the settings and confirm the changes. Use the "additional function keys" to activate/deactivate the running time control and/or running time measurement.
14. Continue on to the next window.
The configuration is complete
The window "Reference runs " is displayed
15. Continue with the next section.

Start Reference runs

- The window "Reference runs " is displayed.
 - 1. If the racking device is not in the basic position, press off the stitches of a needle bed.
 - 2. Carry out reference run(s).
 - 3. Proceed to the next window.
- The installation process is complete and the "Main menu" is displayed.

Further information:

- Configure Machine ([see page 7-8](#))
- Configure Network ([see page 7-9](#))
- Load the machine settings in the machine computer ([see page 7-13](#))
- Save Dongle-Data ([see page 7-14](#))
- Updating software ([see page 7-32](#))









7.4.3 Updating software

A new Stoll-Operating system can also be copied on the hard disk while the machine is producing. No data is overwritten here; the operating system is loaded in a separate memory area.

This saves a few minutes time, as copying occurs during production. The updating is not carried out until later, i.e. when the machine is switched off and on again at the main switch. A prompt appears, asking you whether the new operating system is to be loaded.

- If the question is answered with "YES" then the new Stoll-Operating system is installed.
- If it is answered with "NO" then this question is asked again the next time you switch on whether the new Stoll-Operating system should be installed.

For the Software-updation the source from where the new Stoll-Operating system should be copied can be selected.

Key	Function
	Call up the "Service" menu
	Call up the "Software updating" window
	Key "Select source folder"
	Key "Carry out update"
	Key "Update display"
	Save changes and end setting process
	End setting process without saving changes
	Call up the "Main menu"

Tab. 7-10 Keys for updating the Software

- Updating software
1. Call up the "Service" menu from the "Main menu".
 2. Call up "Software updating" window.

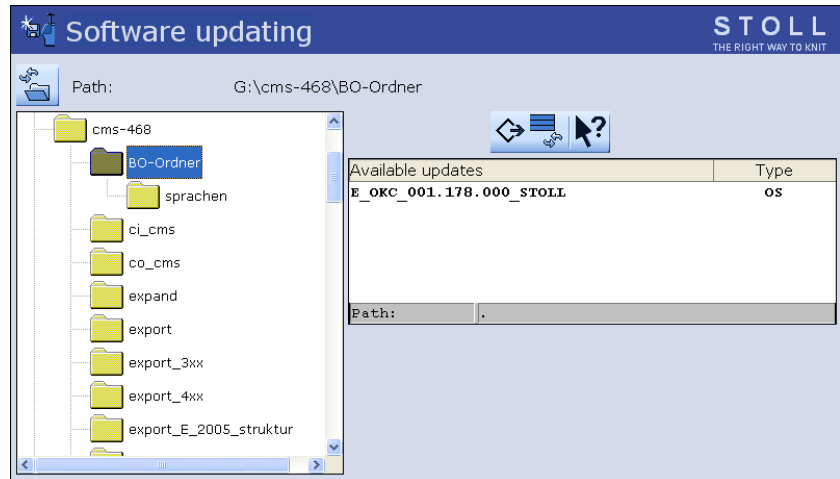


Fig. 7-20 "Software updating" window

3. Select source folder
If multiple Stoll-Operating systems are found on the data carrier, these are listed.



When searching for the Stoll-Operating system the selected folder section and a section under this section (sub-folder section) is also searched.

4. If more Stoll-Operating systems are listed, the Stoll-Operating system (Type OS) that is to be copied should be marked.
5. Tap the "Carry out updating" key.
The installation files are copied on the hard disk of the machine in a separate storage location.
6. When the new Stoll-Operating system gets copied the message "Update successfully installed" is displayed

When the Stoll-Operating system is copied two more program points are displayed in the window "Software updation"

7.4 Install the Stoll-Operating system

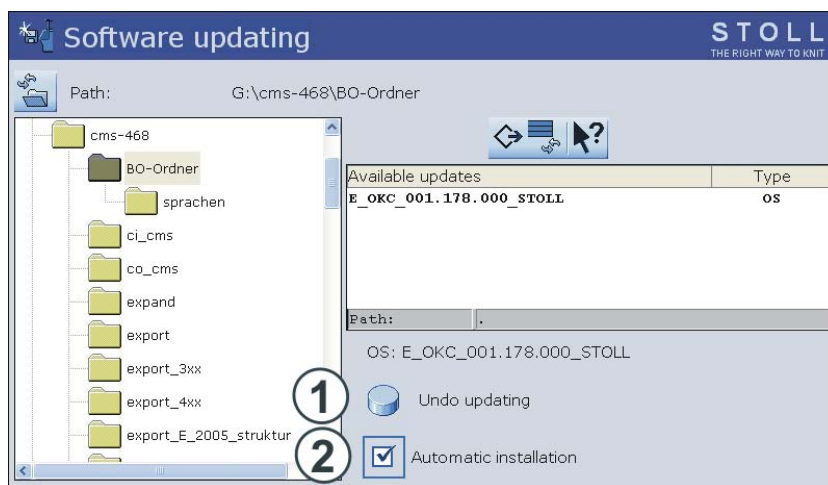


Fig. 7-21 "Software updating" expanded window

Key	Function				
1	The data in the separate memory area are deleted.				
2	Selection of whether the installation should be executed automatically or manually when the machine is switched on next.				
	<table> <tr> <td>On</td><td>After a waiting time of 10 seconds the installation is automatically carried out till the window "Reference runs" (like in the case of "Installation"). Within the waiting time the installation can be cancelled by tapping on "Cancel". Choose this setting if just the operating system is to be updated.</td></tr> <tr> <td>off</td><td>Installation like in the case of "Installation and Configuration". Select this setting if the machine data have changed. For example, after a gauge conversion or if a special equipment has been mounted.</td></tr> </table>	On	After a waiting time of 10 seconds the installation is automatically carried out till the window "Reference runs" (like in the case of "Installation"). Within the waiting time the installation can be cancelled by tapping on "Cancel". Choose this setting if just the operating system is to be updated.	off	Installation like in the case of "Installation and Configuration". Select this setting if the machine data have changed. For example, after a gauge conversion or if a special equipment has been mounted.
On	After a waiting time of 10 seconds the installation is automatically carried out till the window "Reference runs" (like in the case of "Installation"). Within the waiting time the installation can be cancelled by tapping on "Cancel". Choose this setting if just the operating system is to be updated.				
off	Installation like in the case of "Installation and Configuration". Select this setting if the machine data have changed. For example, after a gauge conversion or if a special equipment has been mounted.				

Tab. 7-11 More functions in the window "Software updation"

Reset updation:

- Tap on the key "Reset updation" (1)
 The data is deleted in a separate storage location on the hard disk of the machine.

Select type of Installation:

1. If the new Stoll-Operating system is to be installed after a waiting time of 10 Seconds automatically , set the switch "Automatic Installation" (2) at "On" .
- or -
- ➔ If the new Stoll-Operating system is to be installed manually set the switch "Automatic Installation" (2) at "Off"
2. Call up "Main menu".
3. If the new Stoll-Operating system is to be installed the knitting machine must be switched off and then switched on again.

More data on a network drive or USB-Memory-Stick

In addition to the operating system, other data can be present on the network drive and the USB Memory Stick. Which data is available can be displayed by activating the key "Carry out updation"

Type	Meaning
OS	Operating system (OS)
IMG	Hard disk image
HDA	HD Analyst
UPT	Update of Windows XP Embedded (OPTION)
REP	Update of repair image

Tab. 7-12 Selection of individual installation types

Further information:

- Indirect Installation ([see page 7-26](#))

7.4.4 Carrying out a restart

A restart is carried out when the software no longer reacts to inputs following an error.

Carry out a restart:

1. Set the main switch to "0".
The switch-off process takes approx. 60 seconds. When the process is complete, the touch screen becomes dark and a signal sounds.
2. Set the main switch to "1".
The window "BootOkc" is displayed on the Touch-Screen

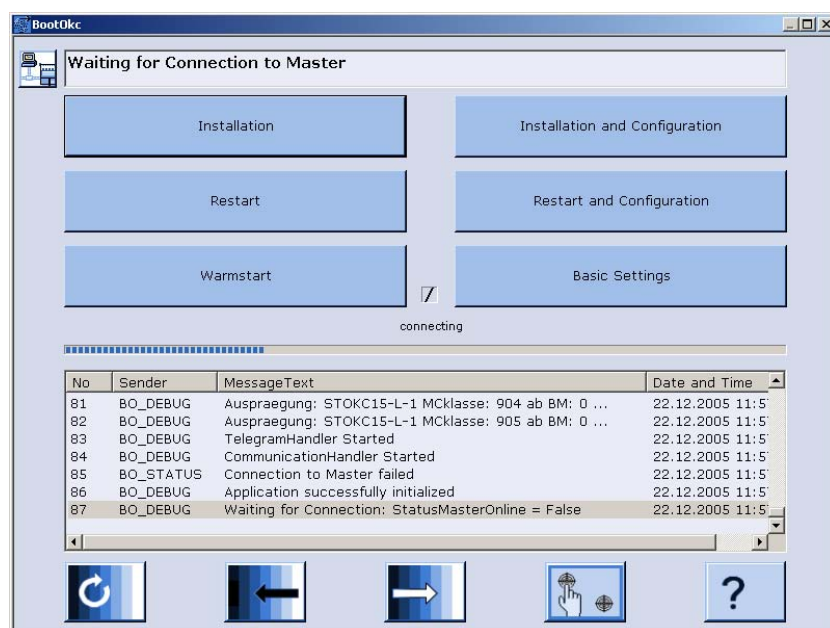


Fig. 7-22 "BootOkc" window

3. For the automatic Warmstart within the waiting time tap on the key "Restart"
The machine is configured.
Finally the window "Reference runs " is displayed.
4. Carry out Reference run(s)
5. Continue on to the next window.
The Restart is complete and the "Main menu" is displayed.
The machine is ready to knit.

Further information:

- Setting touch screen ([see page 3-8](#))
- Enter waiting time to warm start ([see page 7-7](#))

7.4.5 Carrying out restart with machine configuration

A restart with the machine configuration is carried out after a gauge conversion or after attaching special equipments.

Carry out restart with machine configuration:

- The machine is switched off.
- 1. To switch on the machine, set the main switch to "1".
The window "BootOkc" is displayed on the Touch-Screen.

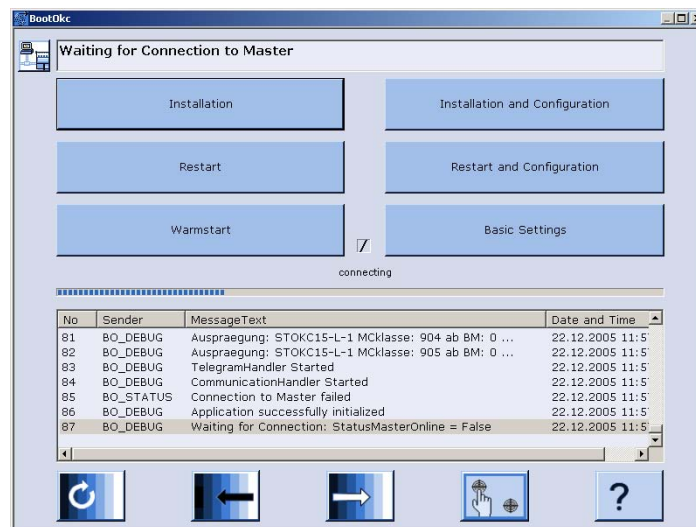


Fig. 7-23 "BootOkc" window

- 2. For the automatic Warmstart within the waiting time tap on the key "Restart and Configuration"
The Restart-Process gets started.
After the process is shut, the window "Language" is displayed.
- 3. Select the dialog language and confirm the selection.
- 4. Continue on to the next window.
The window "Machine-configuration" is displayed. The data have been set at the factory and will not be changed.
- 5. Continue on to the next window.
The window "Machine-configuration 2" is displayed The data have been set at the factory and will not be changed.
- 6. Continue on to the next window.
The window "Machine-Options" is displayed. The data have been set at the factory.

7.4 Install the Stoll-Operating system



Machine malfunction!

The presence or lack of machine options must correctly be specified, as otherwise a malfunction may occur on the machine.

Always specify the machine options correctly.





7. If necessary, change the data and confirm the changes.
8. Continue on to the next window.
The window "Machine-Parameters" is displayed. The data have been set at the factory.
9. If necessary, change the data and confirm the changes.
10. Continue on to the next window.
The window "Needle bed -Parameter " is displayed. The data have been set at the factory.
11. If necessary, change the data and confirm the changes.
12. Continue on to the next window.
The window "NPK-Values" is displayed. The data have been set at the factory.
13. If other NPK values are to be used, change the values and confirm the changes.
14. Continue on to the next window.
The window "Knit Report Configuration" is displayed.
15. If other settings are to be used, change the settings and confirm the changes. Use the "additional function keys" to activate/deactivate the running time control and/or running time measurement.
16. Continue on to the next window.
The configuration is complete.
The window "Reference runs" is displayed.
17. Carry out Reference run(s)
18. Continue on to the next window.
The Restart is complete and the "Main menu" is displayed.
The machine is ready to knit.

Further information:

- Setting touch screen ([see page 3-8](#))
- Setting machine parameters ([see page 4-57](#))
- Enter waiting time to warm start ([see page 7-7](#))
- Configure Machine ([see page 7-8](#))
- Configure Network ([see page 7-9](#))

7.4.6 Setting online connection

The knitting machine (s) and the STOLL-pattern preparation unit can be connected by an Ethernet-connection.

Key	Function
	Switch on virtual keyboard
	Confirm input
	Continue on to the next window
	Confirm selection

Tab. 7-13 Keys for setting online connection

Setting online connection:

- The knitting machine is switched off.
- 1. To switch on the machine, set the main switch to "1".
The window "BootOkc" is displayed on the Touch-Screen.

7.4 Install the Stoll-Operating system

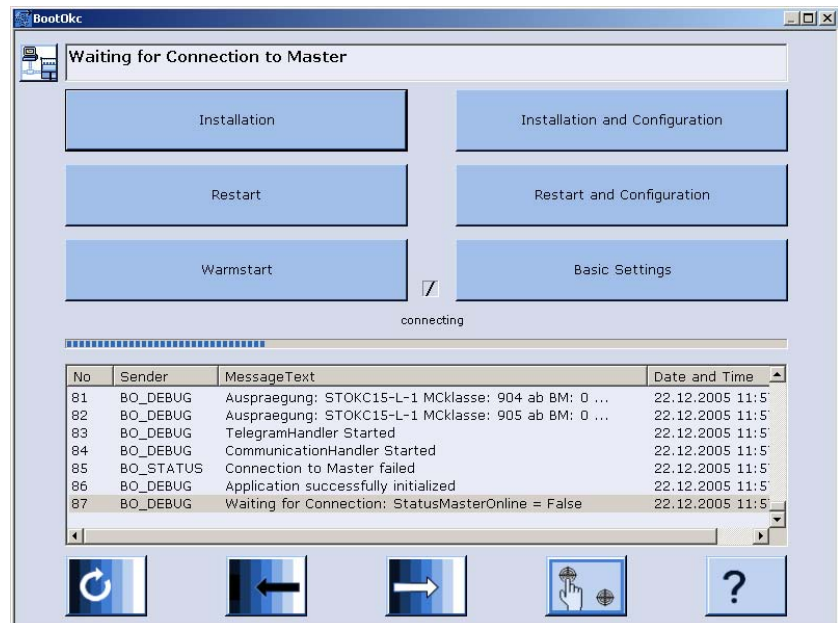


Fig. 7-24 "BootOkc" window

2. For the automatic Warmstart within the waiting time tap on the key "Restart and Configuration"
The Restart-Process gets started.
After the process is shut, the window "Language" is displayed.
3. Continue on to the next window.
The window "Machine-configuration" is displayed.

Machine classification	554
Version	0
Machine type	CMS 530
Specification of control	STOKC15-L-1
Knit and wear machine	Yes
Serial number	3455
Needle gauge	4.2
Needle hook gauge	4
Online ID	0
Date	07.12.2005 13:15:29

Fig. 7-25 "Machine configuration" window

4. Tap in the field "Online Id"
5. Enter the Online -ID of the knitting machine with the help of the virtual keyboard.
6. Confirm the input.

7. Advance till the "Main menu" appears.

The Restart is ended



If network problems occur and these are impairing the production , then the Online ID can be set at "0" (switched off) To do this call up in the menu "Service/Basic settings" the window "Machine-configuration" and alter the Online ID.

7.4 Install the Stoll-Operating system

7.4.7 Overview of all system data

All important hardware and software data of the control are displayed in the window "System info".



Fig. 7-26 "System info" window

Field	Data shown
1	Stoll-Operating system (OS) that is loaded, the machine number, machine type and the gauge etc.
2	"Memory" line: Display of the amount of memory this pattern occupies
3	Additional hardware and software data

Key	Function
	Call up the "Service" window
	Call up Window" Diagnosis"
	Call up the "System info" window
	Call up the "Main menu"

Tab. 7-14 Keys for calling up the "System info" window

Display System data:

1. In the "Main menu" tap on the key "Service"
The window "Service" is displayed.
2. Tap on the key "Diagnosis"
The window "Diagnosis" is displayed
3. Tap on the key "System Info"
The window "System Info" with all the important Hardware and Software data of the control is displayed.

8 Yarns and stitch tension

8.1 Stitch tension range

The tension ranges for knitting and splitting differ. The reason for this is the shape of the split-stitch piece. The information in the table show the minimum and maximum NP values.

	min. NP	max. NP	min. NP (Split)	max. NP (Split)
E 3	7.0	16.7	8.2	15.6
E 3,5	7.0	16.7	8.2	15.6
E 4	7.0	16.7	8.2	15.6
E 5	6.5	16.9	8.0	14.1
E 7	8.3	18.7	9.8	15.9
E 8	8.8	19.5	10.3	16.6
E 10	7.4	21.5	9.4	17.7
E 12	7.7	21.5	9.4	15.1
E 14	8.1	22.3	9.8	15.5
E 16	8.1	22.5	9.5	15.2
E 18	8.1	22.5	9.5	15.2
E 5.2	7.8	17.5	9.0	14.7
E 6.2	7.7	21.5	9.4	15.1
E 7.2	8.1	22.3	9.8	15.5
E 8.2	8.1	22.5	9.5	15.2
E 9.2	8.1	22.4	9.5	15.5
E 2,5.2	6.5	16.9	8.0	14.1
E 3,5.2	8.3	18.7	9.8	15.9

Tab. 8-1 Stitch tension range

8.2 Stitch length

The specified values serve as a guideline. Depending on the yarn, these values may differ, as the quality and the specific weight of the material influence the stitch length.

NP	E 3	E 3.5	E 5	E 7	E 8	E 10	E 12
6.5			6.26				
7.0	7.67	5.90	6.96				
7.5	9.25	7.40	7.52			2.20	
8.0	10.83	8.90	8.22			2.80	2.85
8.5	12.42	10.40	8.92	4.66		3.60	3.38
9.0	14.00	11.90	9.48	5.46	3.58	4.20	3.91
9.5	15.85	13.40	10.18	6.10	4.30	4.80	4.45
10.0	17.17	14.90	10.88	6.90	5.20	5.60	4.98
10.5	18.75	16.40	11.44	7.70	5.92	6.20	5.51
11.0	20.33	17.90	12.14	8.34	6.82	7.00	6.05
11.5	21.92	19.40	12.84	9.14	7.54	7.60	6.58
12.0	23.50	20.90	13.40	9.94	8.44	8.40	7.11
12.5	25.08	22.40	14.10	10.58	9.34	9.00	7.65
13.0	26.67	23.90	14.80	11.38	10.06	9.80	8.18
13.5	28.25	25.40	15.36	12.18	10.96	10.40	8.71
14.0	29.83	26.90	16.06	12.82	11.68	11.00	9.25
14.5	31.42	28.40	16.76	13.62	12.58	11.80	9.78
15.0	33.00	29.90	17.32	14.26	13.30	12.40	10.31

Tab. 8-2 Stitch length - yarn consumption per stitch (mm) with R/L fabric (Table 1)

NP	E 14	E 16	E 18	E 2,5.2	E 2,5.2 (1)	E 3,5.2
6.5				6.26		
7.0				6.96	4.36	
7.5				7.52	5.71	
8.0		1.88		8.22	7.06	4.97
8.5	2.58	2.16	1.86	8.92	8.41	5.30
9.0	3.13	2.51	2.21	9.48	9.76	6.13
9.5	3.68	2.86	2.56	10.18	11.11	6.80
10.0	4.23	3.21	2.91	10.88	12.46	7.63
10.5	4.78	3.56	3.26	11.44	13.81	8.47
11.0	5.33	3.91	3.61	12.14	15.16	9.13
11.5	5.88	4.26	3.96	12.84	16.51	9.97
12.0	6.43	4.61	4.31	13.40	17.86	10.80
12.5	6.98	4.96	4.66	14.10	19.21	11.47
13.0	7.53	5.31	5.01	14.80	20.56	12.30
13.5	8.08	5.66	5.36	15.36	21.91	13.13
14.0	8.63	6.01	5.71	16.06	23.26	13.97
14.5	9.18	6.36	6.06	16.76	24.61	14.80
15.0	9.73	6.71	6.41	17.32	25.96	15.47

Tab. 8-3 Stitch length - yarn consumption per stitch (mm) with R/L fabric
(Table 2)

(1) CMS 830 C

8.2 Stitch length

NP	E 5.2	E 6.2	E 6.2 (knit and wear) (1)	E 7.2	E 7.2 (knit and wear) (1)	E 9.2
6.5						
7.0						
7.5	3.54	2.14	1.77			
8.0	3.86	2.47	2.07	2.14	1.58	1.61
8.5	4.66	3.02	2.57	2.58	1.99	1.91
9.0	5.46	3.57	3.08	3.13	2.49	2.30
9.5	6.26	4.12	3.58	3.68	3.00	2.68
10.0	7.06	4.67	4.08	4.23	3.50	3.06
10.5	7.86	5.22	4.58	4.78	4.01	3.45
11.0	8.66	5.77	5.08	5.33	4.51	3.83
11.5	9.46	6.32	5.58	5.88	5.02	4.21
12.0	10.26	6.87	6.09	6.43	5.52	4.60
12.5	11.06	7.42	6.59	6.98	6.03	4.98
13.0	11.86	7.97	7.09	7.53	6.53	5.36
13.5	12.66	8.52	7.59	8.08	7.04	5.75
14.0	13.46	9.07	8.09	8.63	7.54	6.13
14.5	14.26	9.62	8.59	9.18	8.05	6.51
15.0	15.06	10.17	9.10	9.73	8.55	6.90

 Tab. 8-4 Stitch length - yarn consumption per stitch (mm) with R/L fabric
 (Table 3)

(1) Stitch length on:

- CMS 822
- CMS 740

8.3 Yarn table

The specified values serve as a guideline. The quality and the specific weight of a yarn must also be taken into account. Instead of a simple yarn, we recommend twisted yarn. With coarser machines it is advisable to use several twisted threads.

Gauge	Final count [Nm]	Assembled processing [Nm]
2	1,2 - 1,4	6 X 16/2
2.5	1,3 - 1,6	6 X 18/2
3	1 - 2	5 X 18/2
3.5	1,4 - 2,5	6 X 24/2
4	1,4 - 3	5 X 24/2 6 X 34/2
5	3 - 4,5	4 X 24/2 4 X 34/2
7	4,5 - 7	2 X 22/2 2 X 28/2
8	6 - 8	2 X 24/2 2 X 34/2
10	8 - 12	2 X 36/2 1 X 24/2
12	10 - 18	1 X 24/2 2 X 44/2
14	14 - 20	1 X 28/2 2 X 40/1
16	20 - 30	1 X 48/2 1 X 54/2 1 X 60/2
18	20 - 40	1 X 54/2 1 X 60/2 1 X 80/2
20	20 - 40	1 X 80/2
2,5.2 (all needles)	3 - 4,5	3 X 28/2 2 X 14/2
2,5.2 (CMS 830 C) (each 2nd needle)	1,3 - 2	3 X 14/2 6X 14/2
2,5.2 (each 2nd needle)	1,3 - 2	3 X 14/2 4 X 14/2

Tab. 8-5 Yarn table - Allocation of machine gauge and yarn thickness (Table 1)

8.3 Yarn table

Gauge	Final count [Nm]	Assembled processing [Nm]
3,5.2 (all needles)	4,5 - 7	2 X 28/2 3 X 28/2
3,5.2 (each 2nd needle)	1,5 - 2,5	3 X 14/2 7 X 28/2
5.2 (all needles)	8 - 12	1 X 20/2 2 X 28/2
5.2 (each 2nd needle)	3 - 4,5	3 X 28/2 4 X 28/2
6.2 (all needles)	10 - 16	2 X 44/2 1 X 28/2
6.2 (each 2nd needle)	4,5 - 7	2 X 28/2 3 X 28/2
7.2 (all needles)	14 - 20	1 X 28/2 1 X 30/2
7.2 (each 2nd needle)	6 - 8	2 X 28/2 2 X 30/2
8.2 (all needles)	15 - 25	1 X 50/2 2 X 60/2
8.2 (each 2nd needle)	10 - 12	2 X 50/2 3 X 60/2
9.2 (all needles)	20 - 30	1 X 40/2 1 X 60/2
9.2 (each 2nd needle)	10 - 16	2 X 40/2 2 X 44/2 2 X 60/2 3 X 60/2

Tab. 8-6 Yarn table - Allocation of machine gauge and yarn thickness (Table 2)

Knitting information

Gauge	Explanation
2,5.2 and 3,5.2 (knit and wear)	If an extreme yarn (non-elastic and/or very thick) is used, it should not be knitted too loosely (in the upper NP area), as there is a danger of wear of the cams and needle bed.
9.2	For tight knitting, special cams must be used (ID No. 213 303, 213 304 and 210 285). They are included in the machine accessories.

Tab. 8-7 Knitting information

8.4 Conversion table

The following table is used for the conversion of one yarn gauge to another. The named yarn gauges mean:

TEX (Tt)
Grams per kilometer

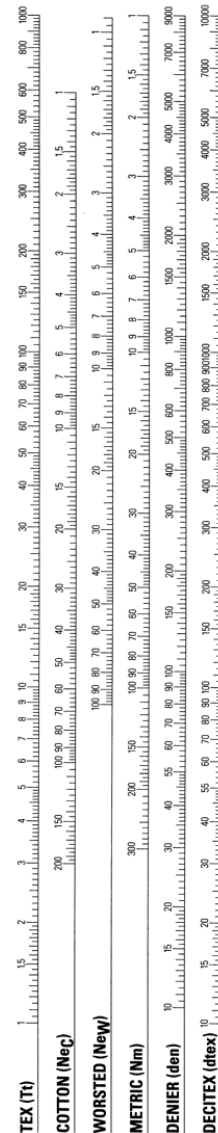
COTTON (NeC)
Number of strands at 840 yd. per lb.

WORSTED (NeW)
Number of strands at 560 yd. per lb.

METRIC (Nm)
Meters per gram

DENIER (den)
Grams per 9000 meters

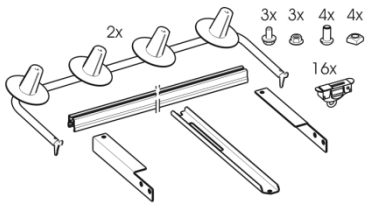
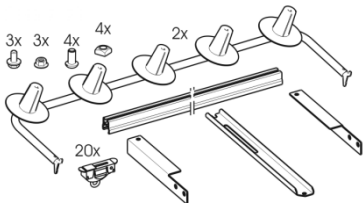
DECITEX (dtex)
Grams per 10000 meters

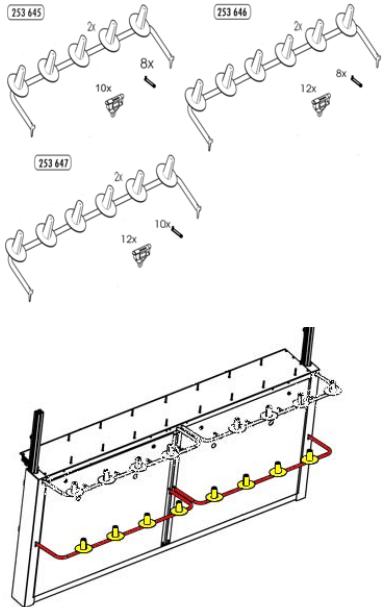
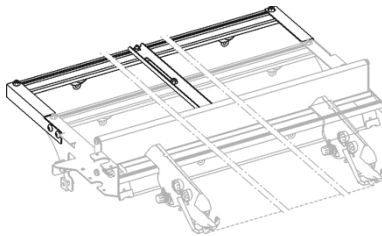


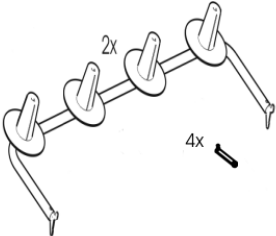
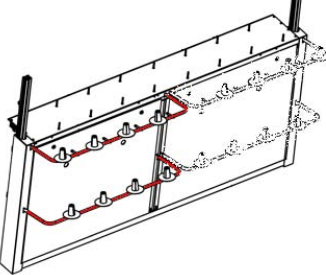
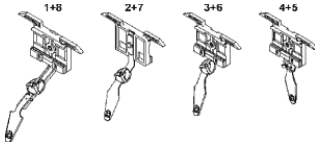
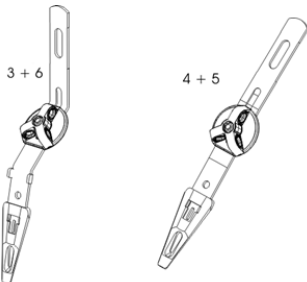
Tab. 8-8 Conversion table

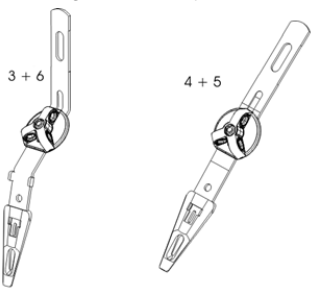
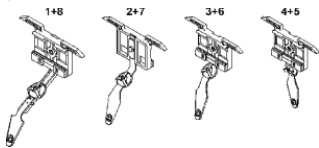

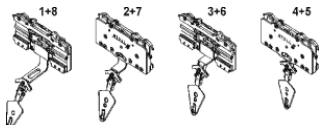
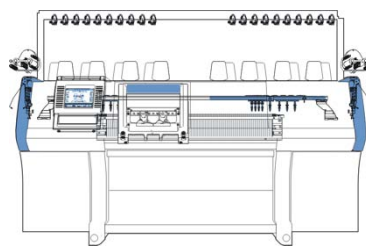
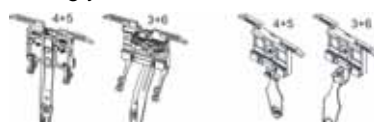
Due to the great variety of natural and synthetic fibers, it must be noted that yarns with a low specific weight are often more voluminous than yarns with a high specific weight. Therefore, the relationship $dtex / den / Nm$ does not necessarily correspond to the conversion result.

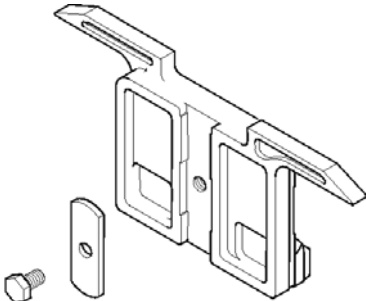
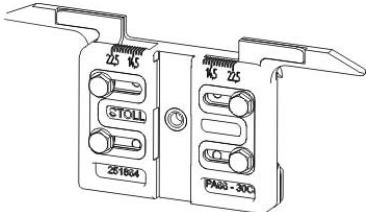
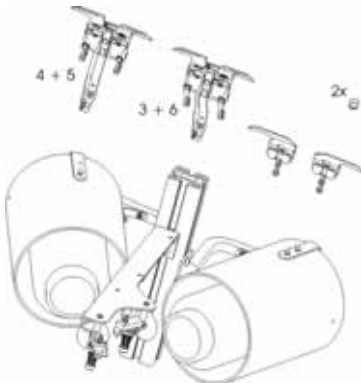
9 Special equipment

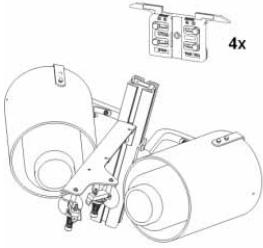
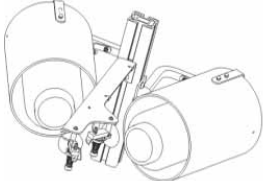
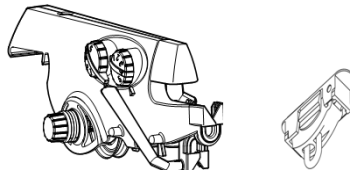

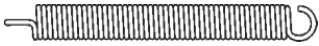
Designation	Id-No.	Machine type
<p>2 additional bobbin boards for 4 yarn bobbins each and 1 yarn guide bar</p> 	243 770	CMS 530 T
<p>2 additional bobbin boards for 5 yarn bobbins each and 1 yarn guide bar</p> 	243 777	CMS 730 T

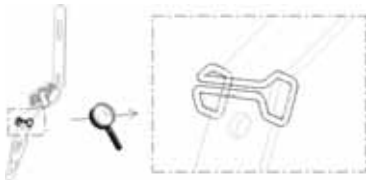
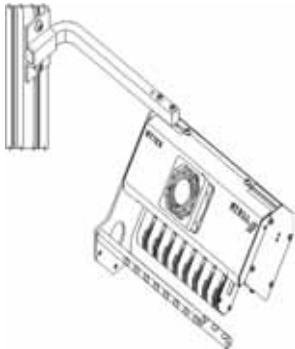
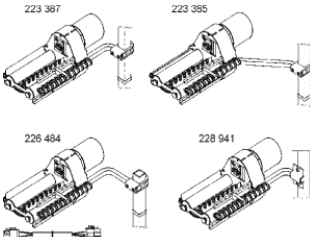
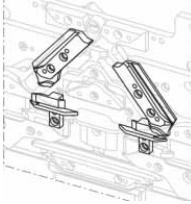
Designation	Id-No.	Machine type
<p>2 additional bobbin boards (bottom)</p>  <p>Condition: The second yarn guide bar has to be available.</p> 	253 645	CMS 730 T

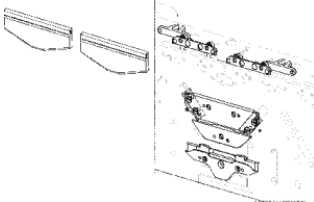
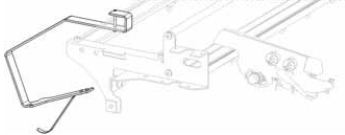
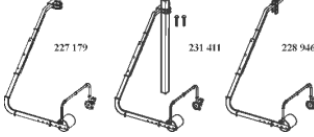



Designation	Id-No.	Machine type
<p>2 additional bobbin boards (top, bottom)</p>   <p>Condition: The second yarn guide bar has to be available.</p>	244 424	CMS 530 T
<p>Yarn carrier carriage</p> 	See spare parts catalog	all CMS
<p>Yarn carrier carriage for very sanding, abrasive yarns.</p>  <p>The eyelet is hard chrome plated. This prevents premature wear of the lower eyelet.</p>	<p>E 10-14: No. 3+6 -239,074 No. 4+5 -239,076</p> <p>E 16-18: No. 3+6 -239,059 No. 4+5 -239,061</p>	<p>all CMS except CMS 830 C CMS 730 S CMS 520 C</p>

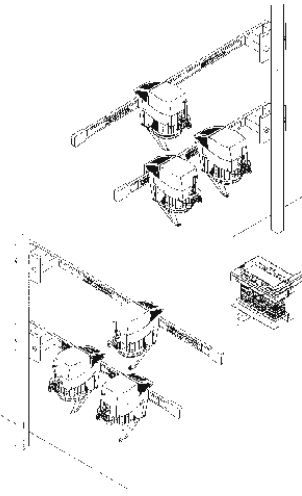
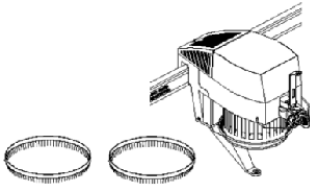
Designation	Id-No.	Machine type
<p>Yarn carrier carriage for very sanding, abrasive yarns.</p>  <p>The eyelet is ceramic-coated. This prevents premature wear of the lower eyelet.</p>	<p>E 5: No. 3+6 -250,860 No. 4+5 -250,863</p> <p>E 7-8: No. 3+6 -250,866 No. 4+5 -250,869</p> <p>E 10-14: No. 3+6 -250,872 No. 4+5 -250,875</p> <p>E 16-18: No. 3+6 -250,878 No. 4+5 -250,881</p>	<p>all CMS except CMS 830 C CMS 730 S CMS 520 C</p>
<p>Yarn carrier carriage for ultra coarse yarns</p> 	<p>E 2-2.5: No. 1+8 - 231 856 No. 2+7 - 231 857 No. 3+6 -231,858 No. 4+5 -231,859</p>	<p>CMS 520 C</p>
<p>Shifting device for intarsia yarn carrier</p> 	<p>214 268</p>	<p>all CMS except CMS 420 E</p>
<p>Intarsia yarn carrier</p> 	<p>See spare parts catalog</p>	<p>all CMS except CMS 420 E</p>
<p>Conversion kit Intarsia yarn carrier Type 2</p> 	<p>E 7-8: 254 904 E 10-14: 254 905</p> <p>E 6.2: 254 902 E 7.2: 254 903</p>	<p>CMS 530 T</p> <p>CMS 730 T</p>
<p>Plating yarn carrier</p> 	<p>See spare parts catalog</p>	<p>all CMS</p>

Designation	Id-No.	Machine type
Plating yarn carrier (46 mm) - for plating with a standard yarn carrier 	244 998	all CMS
Plating yarn carrier - adjustable mesh width 	251 867	all CMS except CMS 830 C CMS 520 C
Assembly kit Plating kit 1 	E 5 E 2.5.2 E 3.5.2 E 5.2 left: 253 857 right: 253 858	all CMS except CMS 830 C CMS 520 C
	E 7 E 8 E 6.2 left: 253 859 right: 253 860	
	E 10 E 12 E 14 E 7.2 E 8.2 left: 253 861 right: 253 862	
	E 16 E 18 E 9.2 left: 253 863 right: 253 864	

Designation	Id-No.	Machine type
Assembly kit Plating kit 2 	left: 254 257 right: 254 258	all CMS except CMS 830 C CMS 520 C
Assembly kit Plating kit 3 	left: 253 965 right: 253 966	all CMS except CMS 830 C CMS 520 C
Yarn control device / Yarn guide bracket 	237 124 241581	all CMS
O-ring - for switching off the yarn brake  <p>Area of application: For the processing of highly elastic yarn, e.g. lycra Measuring the yarn tension outside the safety cover</p>	252 679	all CMS
Tension spring with E-5 (for insufficient tensioning force in slack tensioner) 	023 722	all CMS

Designation	Id-No.	Machine type
<p>Wire bow (more exact yarn guidance with yarn carriers 2+7 and 3+6)</p> 	250 243	all CMS
<p>STIXX device</p>  <p>Measures the used yarn length and corrects the stitch length by adjusting the stitch cams, if necessary.</p>	228 943	CMS 730 T CMS 530 T
<p>Friction feed wheel</p> 	See spare parts catalog	all CMS
<p>Retrofitting kit Short tuck (per system)</p> 	<p>E 3 / E 4: 243 840</p> <p>E 5 / E 2,5.2 / E 3,5.2 / E 5.2: 243 841</p> <p>E 7 / E 8: 243 842</p> <p>E 10 / E 12 / E 14 / E 7.2: 243 843</p> <p>E 6.2: 243 844</p> <p>E 16 / E 18 / E 8.2 / E 9.2: 254 954</p>	all CMS

Designation	Id-No.	Machine type
<p>Plush equipment</p>  <p>Special cams allow the knitting of plush.</p>	<p>E 5, 5.2, 7, 8: 218 779</p> <p>E 6.2, 7.2, 10-14: 218 780</p>	CMS 730 T
<p>Bobbin holder</p> 	244 204	all CMS
<p>Bobbin holder</p>  <p>For the processing of highly elastic yarn, e.g. Lycra.</p>	See spare parts catalog	all CMS
<p>Front panel (fabric collection chamber)</p> 	243 771	CMS 530 T
	243 772	CMS 730 T
<p>Keyboard and keyboard support</p> 	244 558	all CMS except CMS 420 E
<p>Trolley with shims</p> 	202 197	all CMS

Designation	Id-No.	Machine type
<p>SFE feed wheel assembly kit</p> 	231 427	CMS 5XX CMS 7XX CMS 8XX
<p>SFE feed wheel</p> 	213 537	CMS 5XX CMS 7XX CMS 8XX

Tab. 9-1 Special equipment

10 Machine Management Tools

In our world the fast exchange of information has achieved a high level of significance. In order that the knitting machines live up to the growing requirements, a series of auxiliary tools in the software have been taken up with the control OKC that can prove to be more efficient while working with the knitting machine and they are referred under the term "Machine Management Tools" comprehensively.

This chapter contains information on:

- Window Machine Management Tools ([see page 10-1](#))
- Open the screen keyboard ([see page 10-3](#))
- Remote control with the software VNC ([see page 10-4](#))
- Send e-mail directly from the machine ([see page 10-12](#))




10.1 Window Machine Management Tools



Fig. 10-1 Window "Machine Management Tools"

- 1 Opens the window "VNC Properties (Service-Mode)" for configuration of the remote control VNC.
- 2 Opens the window "send e-mail" to send the e-mails directly from the machine.
- 3 A screen keyboard opens.

10.1 Window Machine Management Tools

Key	Function
	Call up the "Service" window
	Call up "Diagnosis" window
	Call up "Machine Management Tools" window

Tab. 10-1 Keys for calling up the Machine Management Tools

Call up Machine Management Tools:

1. In the "Main menu" tap on the key "Service".
2. In window "Service" tap on "Diagnosis" key.
3. In window "Diagnosis" tap on the "Machine Management Tools" key.
The window "Machine Management Tools" opens.
4. Call up the desired machine management tool.

In the following sections is described how to set up the different tools and how to use them.





Further information:

- Open the screen keyboard ([see page 10-3](#))
- Remote control with the software VNC ([see page 10-4](#))
- Send e-mail directly from the machine ([see page 10-12](#))

10.2 Open the screen keyboard

For inputs that are not integrated in the user interface, an external keyboard or a screen keyboard is required.

Open the screen keyboard

Key	Function
	Call up the "Service" window
	Call up "Diagnosis" window
	Call up "Machine Management Tools" window
	Call up the "Main menu"

Tab. 10-2 Keys for calling up "send e-mail" window

1. Call up the "Service" window.
2. Call up "Diagnosis" window.
3. Call up "Machine Management Tools" window.
4. Tap on the "Screen keyboard" switch.
The screen keyboard is opened.



Fig. 10-2 Screen keyboard

With the screen keyboard you can make inputs as if an external keyboard has been connected.

You can find information for usage of the screen keyboard in the Menu "Help".

Tips for working with the screen keyboard:

- An "locked" key (e. g. alt) must be activated finally again in order that a double key function can be achieved.
- Various key layouts can be selected (Menu "Keyboard").

10.3 Remote control with the software VNC

You can use the remote control VNC to control a networked machine (VNC Server) by a remote computer (VNC client) as if you were standing in front of the machine and you can enter data via the touch screen.

Requirements:

- Network
- Networked and correctly configured ready-to-use machine
- Computer that serves as a client, is networked also (e. g. a Notebook)
- Software VNC Viewer for the client
- Software for the client:
VNC Viewer or the Java Runtime Engine from Sun Microsystems Inc.

The Software VNC Viewer for the client can for e. g. be obtained from the following manufacturer websites:

- www.realvnc.com
- www.tightvnc.com
- www.ultravnc.sourceforge.net








The Java Runtime Engine for the client can be obtained from the manufacturer website www.java.com.

In the following sections is described how to activate and use the remote control VNC:

- Activate the remote control VNC on the machine ([see page 10-5](#))
- Configure the remote control VNC on the machine ([see page 10-6](#))
- Determine the IP address of the machine ([see page 10-7](#))
- Install software VNC Viewer on the computer (e. g. a Notebook) ([see page 10-7](#))
- Remote control with the VNC Viewer ([see page 10-8](#))
- Remote control through a web browser ([see page 10-10](#))

10.3.1 Activate the remote control VNC on the machine

The remote control VNC is deactivated on the knitting machine by default.

Key	Function
	Call up the "Service" window
	Call up "Diagnosis" window
	Call up "Machine Management Tools" window
	Call up "Additional function keys"
	Activate/deactivet "Remote control VNC"
	
	Call up the "Main menu"

Tab. 10-3 Keys to activate the remote control VNC on the machine

1. Call up the "Service" window.
2. Call up "Diagnosis" window.
3. Call up "Machine Management Tools" window.
4. Call up "Additional function keys".
5. Tap on "Remote control VNC" key.
The activation of the remote control VNC gets is acknowledged by a message.

10.3.2 Configure the remote control VNC on the machine

- The remote control VNC is activated on the machine.
 - The window "Machine Management Tools" is displayed.
1. Tap on the "Remote control - Adjustments" switch.
The window "VNC Server Properties (Service-Mode)" opens with different tabs.

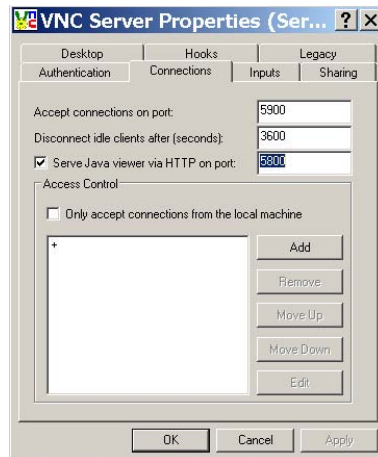


Fig. 10-3 Window "VNC Server Properties (Service-Mode)" with the tab "Connections"

2. Activate "Connections" tab.
Here all the fields are set to their default values.
3. Should another port be activated as the standard port "5900" the number of the port is to be entered in the field "Accept connections on port:" .
4. If the machine has to be controlled remote also via a web browser, activate the check box "Serve Java viewer via HTTP on port:" and enter "5800" as port.







Any other adjustments on the various tabs are not necessary.



The value in the field "Disconnect idle clients after (seconds):" causes the automatic disconnection of a VNC connection when the value entered here is exceeded and within the mentioned time no operation is carried out. Thereafter, the connection can be established again without any problem. By default one hour = 3600 seconds is adjusted.

10.3.3 Determine the IP address of the machine

- The main menu is displayed.

Key	Function
	Call up the "Service" window
	Call up "Diagnosis" window
	Call up the "System info" window
	Call up the "Main menu"

Tab. 10-4 Keys for determining the IP address of the machine

1. In the "Main menu" tap on the key "Service".
2. In window "Service" tap on "Diagnosis" key.
3. In window "Diagnosis" tap on the "System Info" key.
The window "System Info" opens.

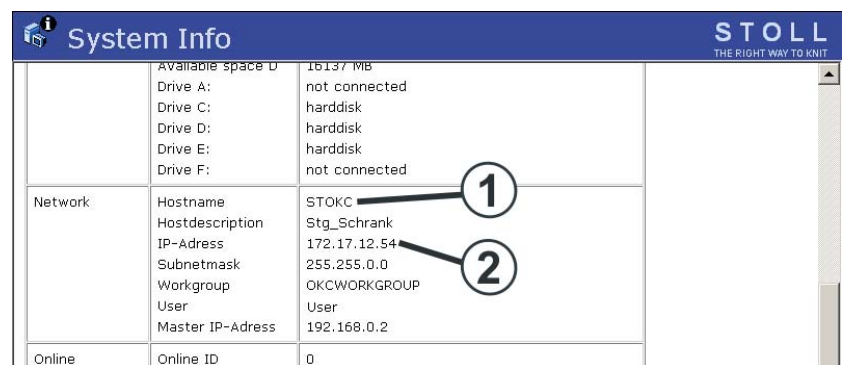


Fig. 10-4 "System info" window

4. Note IP-Adresse (2) and host name (1).

10.3.4 Install software VNC Viewer on the computer (e. g. a Notebook)

- The software VNC Viewer was obtained from the internet.
1. Start installation program.
 2. Follow instructions of the installation program.
Thereafter the software VNC Viewer is installed on the computer.

10.3.5 Remote control with the VNC Viewer

1. Start the software VNC Viewer on the computer.
The window "VNC Viewer: Connecting Details" opens.



Fig. 10-5 Window "VNC Viewer: Connection Details"

2. Enter the noted IP address of the machine in the field "Server".



When your network makes the "Naming Service" available, instead of the IP address the host name can also be entered.

If another port as "5900" was entered during configuration of the remote control VNC on the machine the port must be entered along with e. g. 172.17.12.54:5903.

3. In order to configure the software VNC Viewer when needed, click on the button "Options".
The window "VNC Viewer Options" opens.

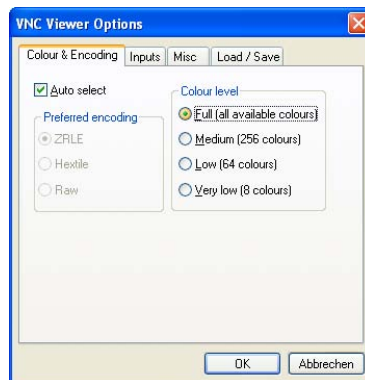


Fig. 10-6 Window "VNC Viewer Options", tab "Colour & Encoding"

4. In order that all colors are displayed, activate the Option "Full (all available colours)" on the tab "Colour & Encoding" under "Colour level".
5. In order to make a small square visible as the mouse pointer alternative, deactivate on the tab "Misc" the check box "Render cursor locally".
6. To save the option adjustments, click on the button "Save" on the tab "Load / Save" under "Defaults".



You can find continuative instructions for configuration of VNC in the documentation of VNC.

7. Click on the "OK" button.
The window "VNC Viewer: Connection Details" opens.
8. Click on the "OK" button.
Now the user interface of the selected machine gets displayed.



Fig. 10-7 Display of the user interface of the machine

9. Operate the machine now from this window.



The machine can be operated simultaneously through the user interface of the machine or through the computer (VNC Client).

Further information:

- Configure the remote control VNC on the machine ([see page 10-6](#))

10.3.6 Remote control through a web browser

When the Java Runtime Engine from Sun Microsystems Inc. is installed on the controlling computer (client), the access to a machine can be also be done through the web browser without the software VNC Viewer being installed.

By default the port "5800" is adjusted for this access on the VNC server on the machine and is activated in the server adjustment under "Serve Java Viewer".

Start remote control:

1. Start web browser e. g. the Internet Explorer.
2. Enter the following address as URL: `http://<IP address of the machine>:5800`

A Java applet is run which is obtained as a alternative for the software VNC Viewer from VNC Server (machine).

Then the web browser appears as follows:

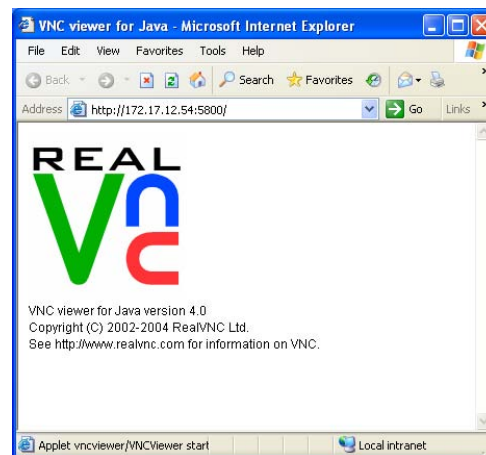


Fig. 10-8 Web browser with the Java applet from VNC

Above opens the window "VNC Viewer: Connection Details".

The IP address is entered automatically.

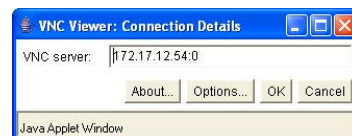


Fig. 10-9 Window "VNC Viewer: Connection Details"

3. Click on "Options".

The window "VNC Viewer: Connection Details" opens.

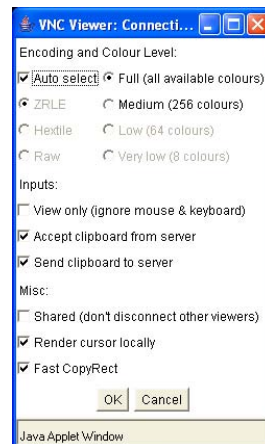


Fig. 10-10 Window "VNC Viewer: Connection Details"

4. So that all colors are displayed, activate under "Encoding and Colour Level:" the option "Full (all available colours)".
5. In order to activate the mouse pointer alternative, deactivate the check box "View only (ignore mouse & keyboard)" under "Inputs".
6. Click "OK".

The user interface of the machine is opened in the web browser and can now be operated from here.



Fig. 10-11 Display of user interface of the machine in the window "Java applet"








The machine can be operated through the user interface of the machine or in the window "Java applet" simultaneously.

10.4 Send e-mail directly from the machine

In the window "send e-mail" e-mails can be written and sent directly from the machine.

For this purpose the machine must be connected to the internet or to a network with a mail server. Call up your network administrator in order to install this function.

Call up window send e-mail

Key	Function
	Call up the "Service" window
	Call up "Diagnosis" window
	Call up "Machine Management Tools" window
	Call up "send e-mail" window
	Call up the "Main menu"

Tab. 10-5 Keys for calling up "send e-mail" window

1. Call up the "Service" window.
2. Call up "Diagnosis" window.
3. Call up "Machine Management Tools" window.
4. Call up "send e-mail" window.
The window "send e-mail" opens.

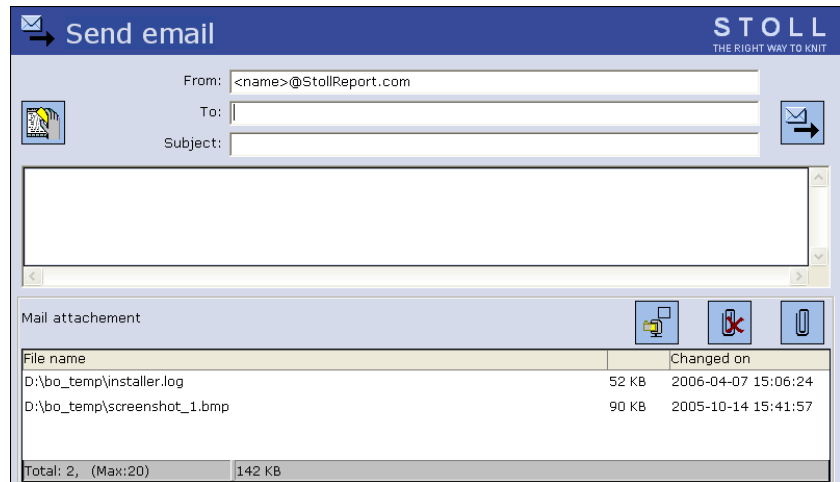








Fig. 10-12 Window "send e-mail" on the machine

Entries	Explanation
	Key "Delete all entries" (except the entry in the field "from").
	Key "send e-mail".
From	Sender of the message. Here the machine name is entered by default as the sender. If you are expecting an answer to the e-mail, enter a valid e-mail address here as the machine cannot receive any e-mails.
To	Receiver of the message. Multiple receivers are to be separated by semicolon (;).
Subject	Subject of the message.
	Field for entering the content of message.
Mail attachment	
	Key "Unzipped": In the field "File name" displayed files are attached unzipped to the message.
	Key "Zipped": In the field "File name" displayed files are zipped before they are attached to the message.

10.4 Send e-mail directly from the machine

Entries	Explanation
	Key "Delete marked entry" (in the field "File name").
	Key "Mail attachment": Opens the window " Mail attachment" for selection of files (for example Bitmaps, Logfiles, Zipfiles) that can be attached to the message. The file names are displayed in the field "File name " subsequently.
File name	Display of file(s) that can be attached to the message.



Write e-mail

Use the virtual keyboard for input.

1. Enter a sender address in the field "from".



If you are expecting an answer to the e-mail, enter a valid e-mail address here as the machine cannot receive any e-mails.

2. In the field "To" enter the e-mail address of the receiver.
Multiple receivers are to be separated by semicolon (;).
3. In the field "Subject" enter the subject of the message.
4. In the field below the field "Subject" enter the content of the message.



With the key "Delete all entries" you can delete all entries in all fields of the window "Window send e-mail" (except the entry in the field "from").

Attach files to the e-mail You can attach any files to an e-mail which are sent with the message. In order to reduce the size of the file, the files to be attached can be zipped (compressed).

1. Tap on "Mail attachment" key.
The window "Mail attachment" opens.

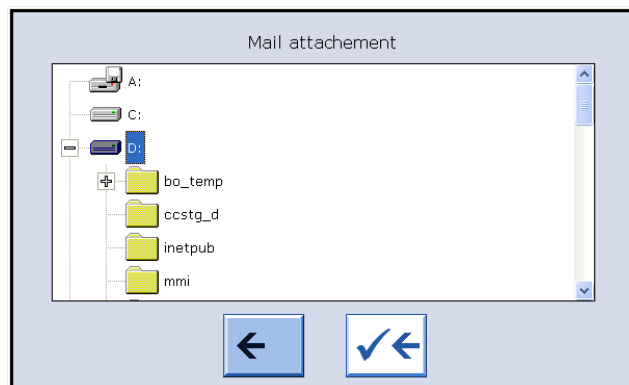


Fig. 10-13 Window "Mail attachment"

2. In window "Mail attachment" select the file that has to be attached.
3. Confirm the selection.

The file is displayed in the field "File name".

4. If additional files are to be attached, repeat the steps 1 to 3.
5. If the files in the field "File name" are to be attached zipped to the e-mail, tap "Zipped" key.

- or -

- ➔ If the files in the field "File name" are to be attached unzipped to the e-mail, tap "Unzipped" key.



In order to remove a file from the field "File name" mark this file and then tap on the key "Delete marked entry".

- Send e-mail**
- Sender and receiver addresses have been entered correctly.
 - The message is entered.
 - The e-mail attachments are selected.
- ➔ Tap on "Send e-mail" key.

The e-mail is sent with the attachments.

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