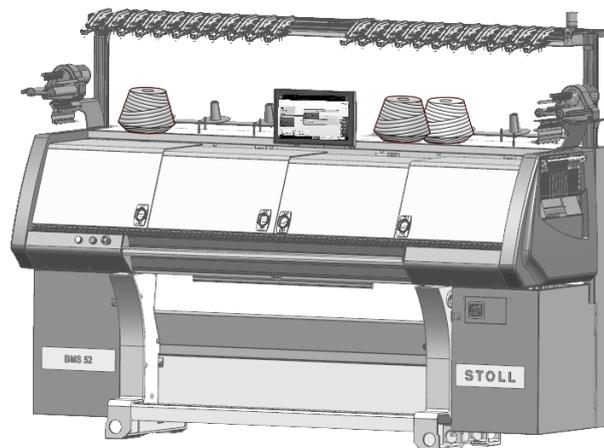


# STOLL

## CKC Handling and Knitting Technique





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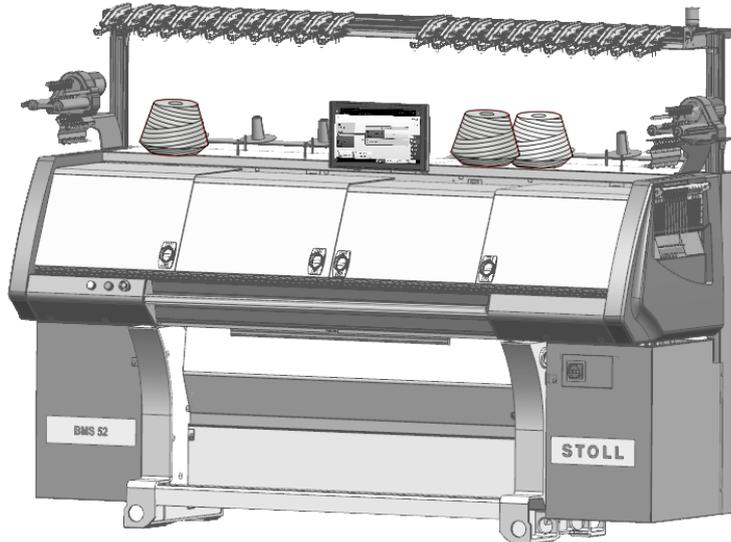
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# 1 BMS 52 – Handling



This document refers to the BMS 52 machine type if nothing else is specified.



## WARNING

### Dangerous operations!

Handling the knitting machine requests to follow the safety precautions.



## 2 Overview of Patterns for the BMS 52 Basic Training

Pattern name	Machine	Comb Usage	Task / Parameter
<b>Full Cardigan, 2 Colors / Tuck</b>	BMS 52	With Comb	RS, NP, WBF, MSEC
<b>Cable 4x4</b>	BMS 52		VCI, WBF, NP, RS, YDopt Usage of RS17
<b>1X1 Technique</b>	BMS 52		RS, NP, WBF, MSEC, VCI
<b>Fully Fashion</b>	BMS 52		NP, WBF, YDopt, YDF
<b>Fully Fashion</b>	BMS 52		Order with several items (= sequence) RS, NP, WBF, MSEC
<b>Jacquards</b>	BMS 52		RS, NP, WBF, MSEC
<b>Multi Gauge</b>	BMS 52		NP, RS, WBF, MSEC
<b>Fully Fashion</b>	BMS 52	Without Comb	NP, RS, WBF, YDI, Counter #90



### 3 BMS Documents

The following documents about operation and maintenance of the BMS 52 are delivered on DVD together with the machine:

- Safety Instructions
- Operating Instructions
- Circuit Diagram
- "Cleaning, Maintenance, Care" Brochure

These documents contribute to a safe and harmless operation.

The safety instructions and the "Cleaning, Maintenance, Care" brochure are delivered printed as well.



## 4 Philosophy of the New User Interface

<p><b>Task oriented structure</b></p>	<p>The variety of work steps of a production are grouped to four domains:</p> <ul style="list-style-type: none"> <li>◆  Set up Order</li> <li>◆  Produce Order</li> <li>◆  Maintain Machine</li> <li>◆  Configure Machine</li> <li>◆  View Data</li> </ul> <p>Each area is assigned to a specific user group and protected by password to the other user groups</p>
<p><b>User oriented structure</b></p>	<p>The tasks of the different users were combined to four user groups with defined user rights:</p> <ol style="list-style-type: none"> <li>1.  Operator (knitter)</li> <li>2.  Maintenance (maintenance personnel)</li> <li>3.  Senior Operator (technician, foreman) - having most of rights</li> <li>4.  STOLL Service (STOLL service technician)</li> </ol>
<p><b>Area for the knitter (operator) only</b></p>	<p>The knitter (operator) gets his own area strictly focused on his activity "Produce Order". The training period for this area is short.</p> <p><b>i</b>: All the other areas are locked for him. They are protected by a password (default setting). This way the operator cannot perform unintentional changes or error operations in the other areas.</p>
<p><b>Guided remedy of a production interruption</b></p>	<p>The remedy of the most common production interruptions (as for example yarn breakage, fabric take-down, etc.) is supported by special dialogs to remedy the error as fast as possible.</p>
<p><b>Intuitive Operation</b></p>	<p>Fast recognition of the function of a button by icon and an explanatory text.</p> <p><b>i</b>: Most of the buttons come with bubble help - an additional help text, which informs about the function of the button.</p>
<p><b>Order</b></p>	<p>An order is created for the production:</p> <ul style="list-style-type: none"> <li>◆ By one knitting program</li> <li>- or -</li> <li>◆ By several knitting programs</li> </ul>

	<p><b>i</b>: The previous order menu and sequence menu are no longer required.</p>
--	--

## 5 Rolls and Rights of Users

I. Classification of the tasks according to four main areas:

-  Set up Order
-  Produce Order
-  Maintain Machine
-  Configure Machine
-  View Data

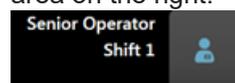
II: Defined User Groups

-  Operator (knitter)
-  Maintenance (maintenance personnel)
-  Senior Operator (technician, foreman)
-  STOLL Service (STOLL service technician)

---

**i**

The active user group and the selected shift are displayed in the information area on the right.



---

III. User Groups and User Rights:

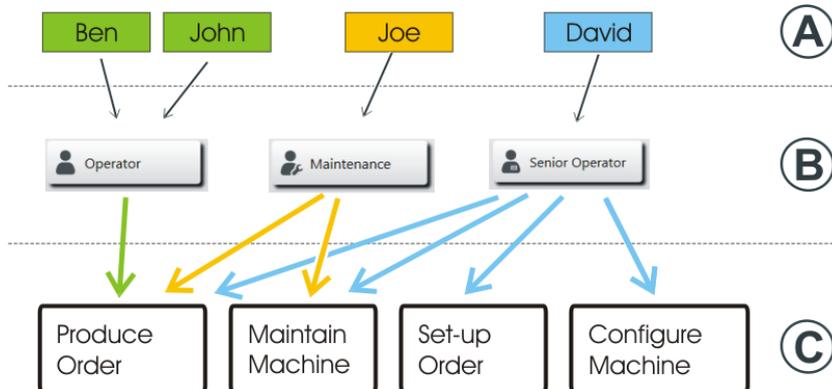
**i**

The four main areas are assigned to the user groups and each user group can only work in its own area.  
The areas which are not to be used by one user group are password protected.

---

	Main Area	User rights of the user groups		
	1  Set up Order			Senior Operator
	2  Produce Order	Operator	Maintenance	Senior Operator
	3  Maintain Machine		Maintenance	Senior Operator
	4  Configure Machine			Senior Operator

IV. Definition of User, User Group and User Profile



<b>User (A)</b>	Each user of the machine is assigned to a specific user group (B).
<b>User Group (B)</b>	<p>Each user group (B) has special user rights for the main areas (C), which they need for their work at the machine.</p> <p>⇒ The user group does not receive any permission for the actions they may not perform.</p> <p><b>i</b>: The senior operator defines the user profile (user rights of an user group). (Configure Machine-&gt; System Settings -&gt; User -&gt; Configure Windows)</p> <p>Each user group needs other permissions (user rights) to carry out the work at the machine.</p>

<b>User Profiles</b>	Working with user profiles simplifies the rights management, as only the rights of the user group are to be adapted in case of a change.
----------------------	--



### Labeling of password protected areas

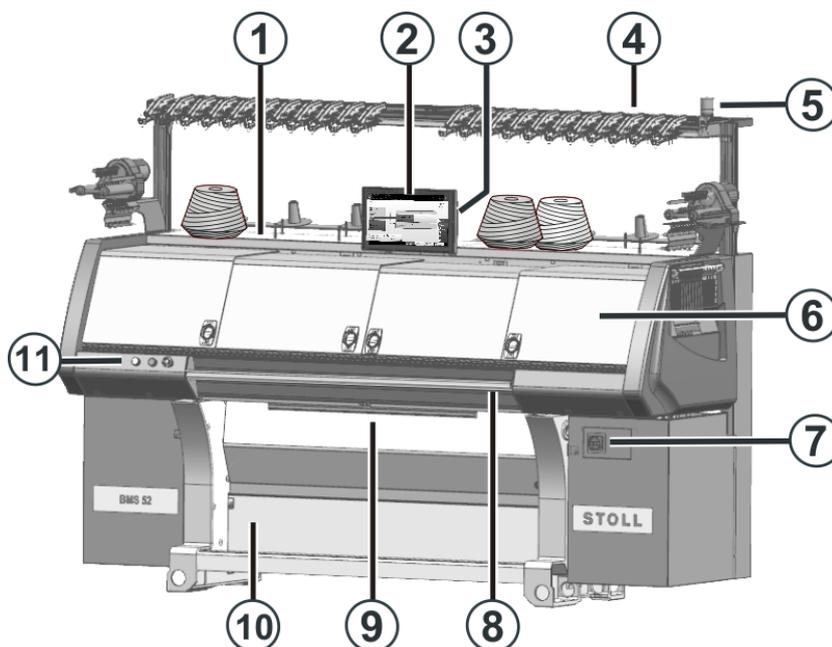
Main areas and the corresponding submenus, which are labeled with the  symbol cannot be executed by the currently active user group.

---



## 6 BMS machine

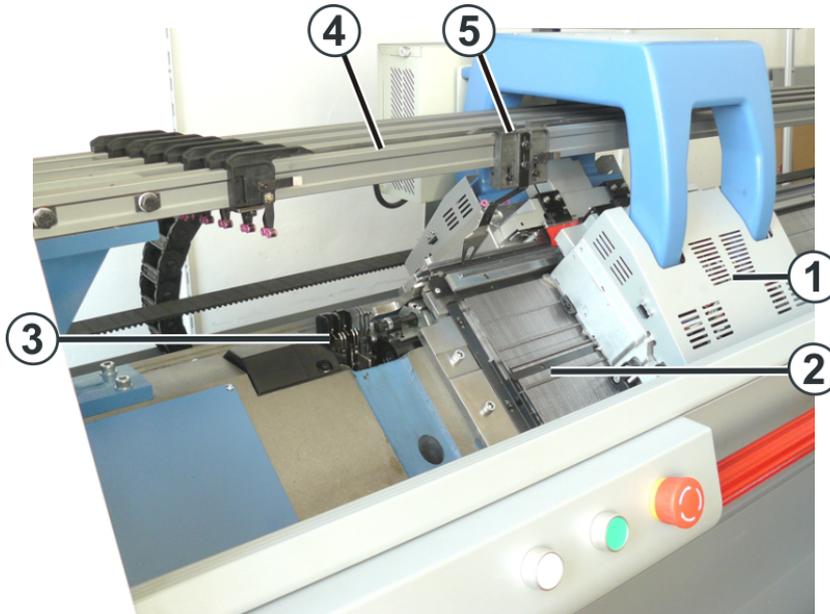
### 6.1 Front side



No.	Designation	No.	Designation
1	Bobbin board (with bobbin)	7	Main switch and emergency switching-off switch
2	Touch screen	8	Engaging rod (red)
3	USB port	9	Fabric take-down (belt take-down, comb take-down)
4	Yarn control units	10	Fabric collection chamber
5	Signal light (green, yellow)	11	Emergency stop pushbutton, stand-by buttons
6	Covers (over carriage and needle bed)		

Front side

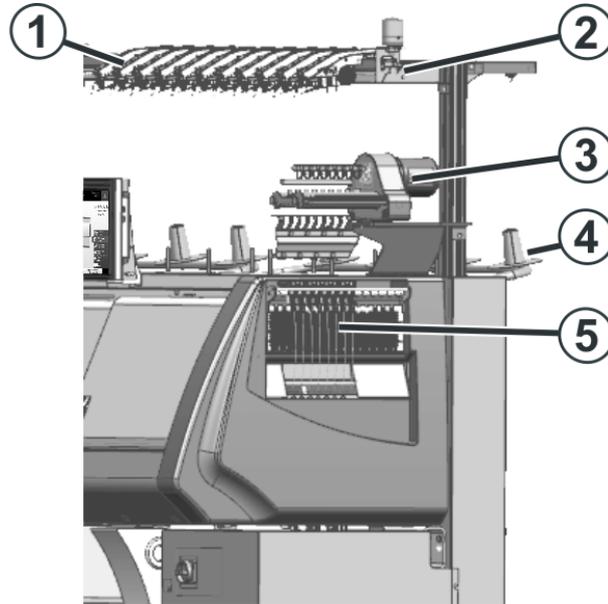
Inner view



Inner view of the knitting machine

No.	Designation	No.	Designation
1	Carriages	4	Yarn carrier rod
2	Front needle bed	5	Yarn Carriers
3	Left collecting clamp unit		

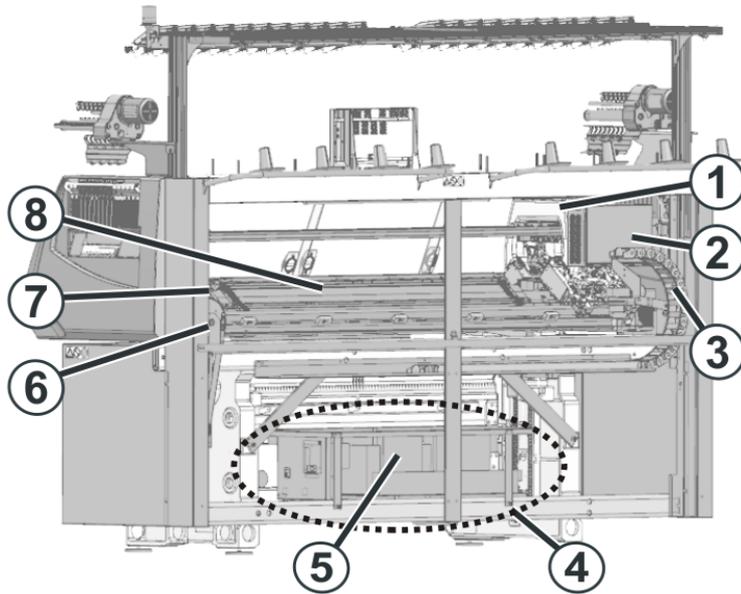
## 6.2 Lateral view (right)



Right lateral view

No.	Designation	No.	Designation
1	Yarn control unit	4	Additional bobbin board
2	Yarn guide device	5	Lateral yarn tensioner
3	Friction feed wheel		

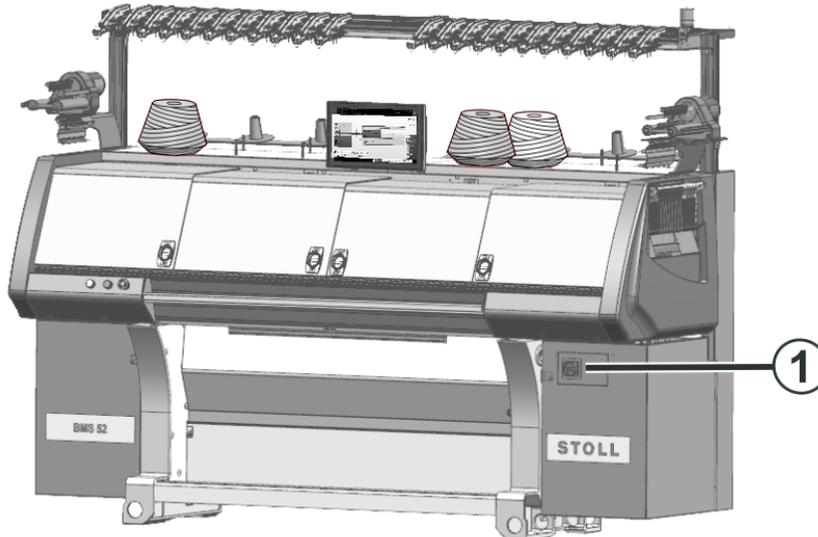
### 6.3 Rear side



Rear side (without rear panel segments)

No.	Designation	No.	Designation
1	Carriages	5	Transformer (Fuses)
2	Control (carriage)	6	Main Drive
3	Trailing cable (energy chain)	7	Racking device
4	Control	8	Rear needle bed

## 6.4 Main switch



Main switch

The main switch (1) is located on the right machine side.

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

### Shutdown process

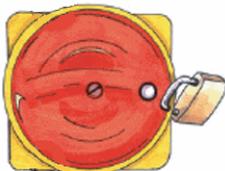
When the main switch is turned from "1" to "0", the machine is immediately switched off. Dangerous movements are immediately stopped. However, the machine data are not lost, as they are saved with a battery. This takes approx. 60 seconds. In the process, messages appear on the touch screen. Once the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

Even with the main switch switched off, the mains supply up to the main switch still carries current with extremely high voltage. The mains supply must be disconnected and secured against being switched on again before working on the main switch unit.

### Emergency Switching-off

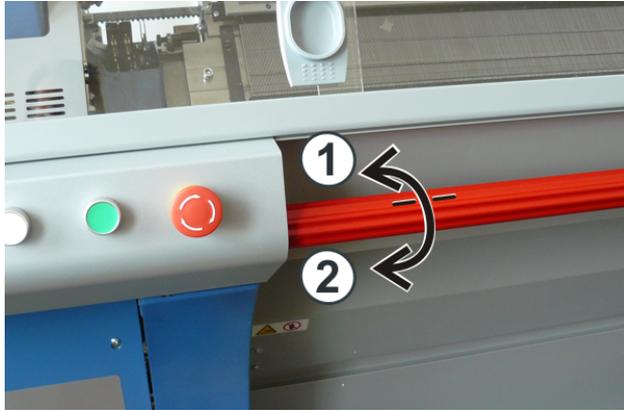
The main switch is also the emergency switching-off switch.

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



### 6.5 Engaging rod, Emergency stop and Stand-by

Engaging rod



Engaging rod

- 1 Carriage stopped
- 2 Production

The carriage and thus the production is started or stopped with the engaging rod.

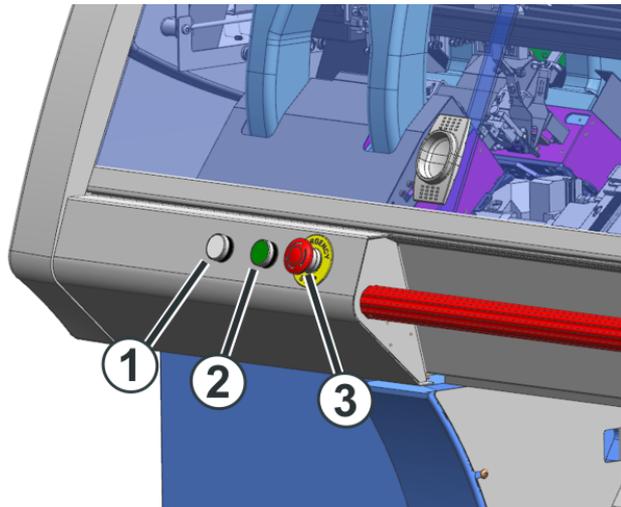
- If you turn the engaging rod forward (2), the production will start. The carriage moves to the reversing position at reduced speed. The carriage then moves at normal speed.
- If you turn the engaging rod forward (2) again, the speed is reduced after the carriage reversal.
- Whenever you turn the engaging rod forward, the speed changes (change between normal and reduced speed).

 The speed will be changed in the next carriage reversal.

The set speed is shown on the display.

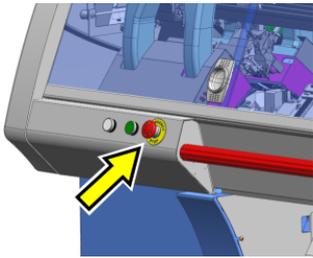
	green: normal speed
	yellow: reduced speed

Emergency stop and Stand-by



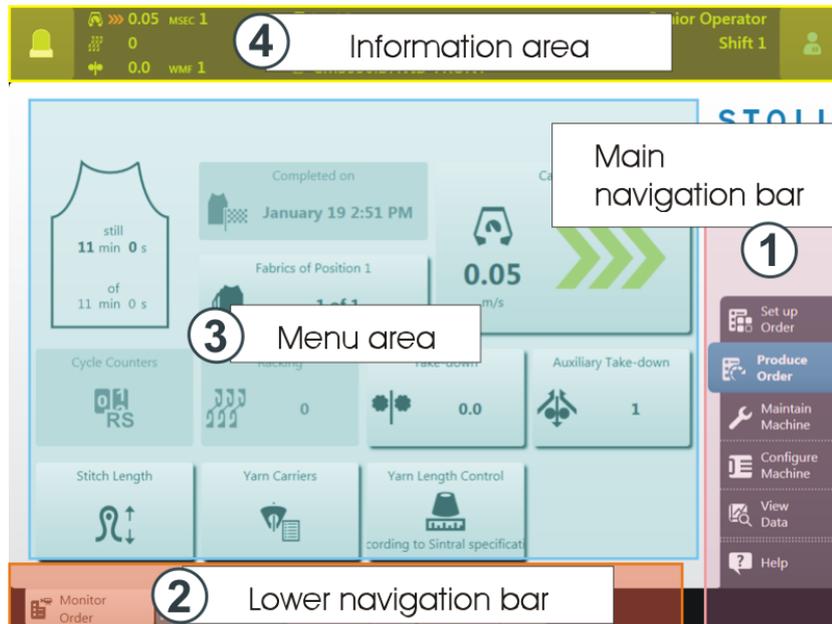
1	white	<p>Switch on stand-by mode If you interrupt production for a long time, you can switch on the stand-by mode.</p> <ul style="list-style-type: none"> <li>◆ Stop the carriage with the engaging rod.</li> <li>◆ The lighting in the interior of the machine will be switched off.</li> <li>◆ The display turns off.</li> </ul> <p><b>i</b> The running carriage immediately will stop even if you press the button (1) accidentally. Continue production: Turn the engagement rod forward.</p>
2	green	<p>Switch off stand-by mode After a few seconds the machine is ready to knit. Continue production: Turn the engagement rod forward.</p>
3	red	<p>Emergency stop pushbutton To stop the carriage immediately in the event of danger, press this switch. The emergency stop pushbutton locks in the OFF position. Continue production: Pull out the emergency stop pushbutton. Turn the engagement rod forward.</p>

Difference between  
Emergency Stop < -- >  
Emergency Switching-off

<p>Emergency Stop</p>		<ul style="list-style-type: none"> <li>◆ Stop the machine in case of emergency.</li> <li>◆ The hazardous movements are stopped immediately (carriage, drive belt, racking).</li> <li>◆ The machine is <b>not</b> disconnected from power supply. All electrical components remain switched on.</li> </ul>
<p>Emergency Switching-off</p>		<ul style="list-style-type: none"> <li>◆ Switch off the machine in case of emergency.</li> <li>◆ The hazardous movements are stopped immediately (carriage, drive belt, racking).</li> <li>◆ The power supply to the machine will be interrupted. The machine is switched off in order to exclude electrical hazards.</li> </ul>

## 7 Design of the user interface

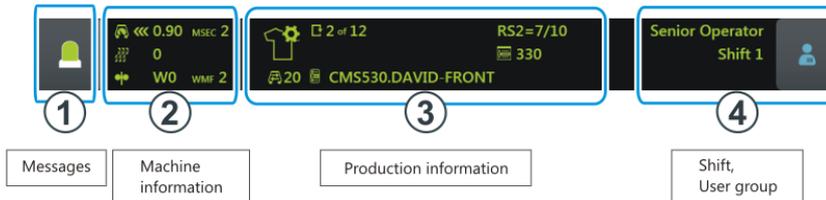
Structure of the user interface



<p>①</p>	<p><b>Main navigation bar</b></p>	<p>The tasks at the machine are separated in four main groups:</p> <ul style="list-style-type: none"> <li>◆  Set up Order</li> <li>◆  Produce Order</li> <li>◆  Maintain Machine</li> <li>◆  Configure Machine</li> <li>◆  View Data</li> <li>◆  Adjustment (area only visible at the STOLL factory when adjusting the machine)</li> <li>◆  Help</li> </ul>
<p>②</p>	<p><b>Bottom Navigation Bar</b></p>	<p>Display of the submenus depending on the selected main area (1)</p>
<p>③</p>	<p><b>Menu area</b></p>	<p>Content display of the selected submenu</p>
<p>④</p>	<p><b>Information area</b></p>	<ul style="list-style-type: none"> <li>◆ Messages</li> <li>◆ Information about the machine, the user group and the order (knitting program)</li> </ul>

◆ Select shift and user group

### 7.1 Information area



1		<ul style="list-style-type: none"> <li>◆ Display of operational state</li> <li>◆ Open message window</li> </ul>
2		Machine information
3		Production information
4		<ul style="list-style-type: none"> <li>◆ Display of the current user group</li> <li>◆ Opening of the dialog for changing:                             <ul style="list-style-type: none"> <li>- Change Shift</li> <li>- Change User Group</li> </ul> </li> </ul>

**i** Display Color

Depending on the operational state of the machine (status), the display color is changed.

#### Operational statuses of the machine (status)

	<p><b>Green:</b></p> <ul style="list-style-type: none"> <li>◆ Production is in progress</li> </ul>
	<p><b>Yellow:</b></p> <ul style="list-style-type: none"> <li>◆ No Optimal Production</li> </ul>

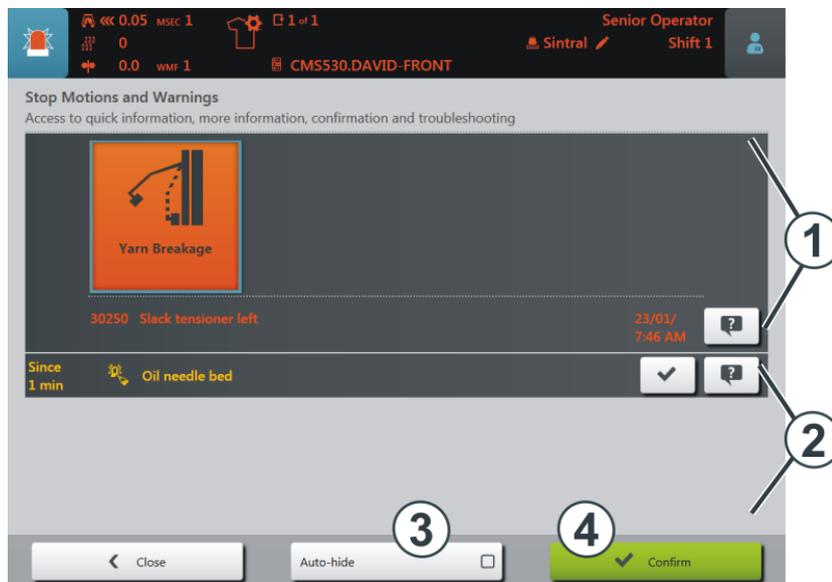
	<p><b>Red:</b></p> <ul style="list-style-type: none"> <li>Production interrupted, as an error occurred</li> </ul>
---	---

## 7.1.1 Errors and Messages



	<p><b>green</b></p>	<p>Production is in progress</p>
		<p>A note appears if you have carried out an action.</p>
	<p><b>yellow</b></p>	<p>No optimal production due to manual interventions.</p> <ul style="list-style-type: none"> <li>Reduced Speed </li> <li>Long Stroke </li> </ul> <p><b>i</b>: Tap the icon (1) and the message box will appear then.</p>
	<p><b>red</b></p>	<p>An error has occurred and the knitting machine is stopped.</p> <p><b>i</b>: The message window is opened automatically.</p>

Layout of the message box:

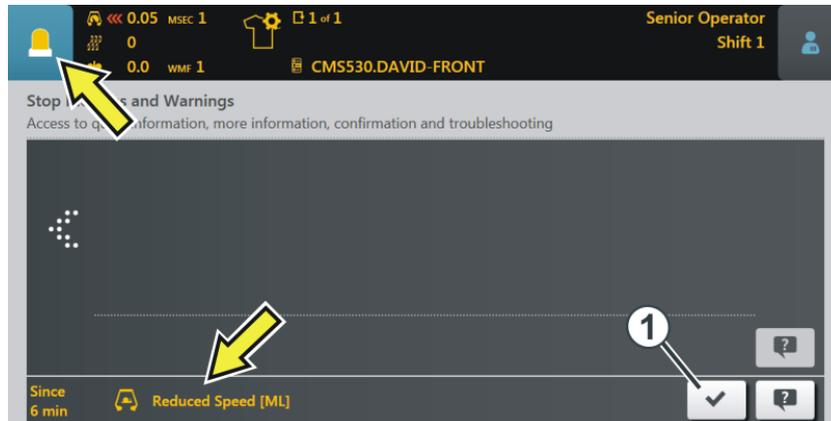


	Area and button	Explanation	
1	Error messages	Structure of the error message: <ul style="list-style-type: none"> <li>◆ Icon</li> <li>◆ Error code</li> <li>◆ Text of message</li> </ul>	
2	Warnings	Structure of the warning: <ul style="list-style-type: none"> <li>◆ Time of the warning</li> <li>◆ Text of the warning</li> </ul>	
3	Auto-hide	<input type="checkbox"/>	The message box remains in the foreground when a message / error appears.
		<input checked="" type="checkbox"/>	The message box remains in the background when a message / error appears.
4	Confirm	Confirm the remedy of the error	



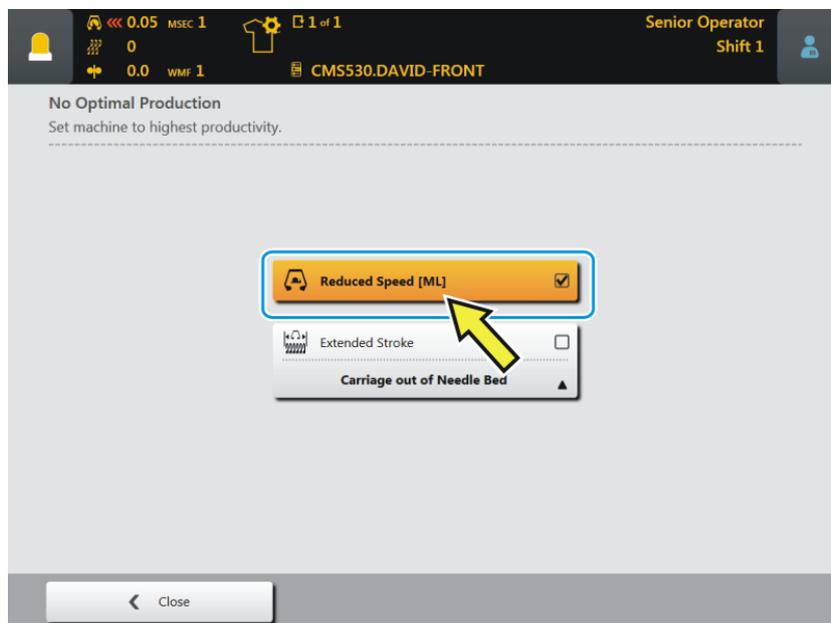
Display of the pending message:

1. Tap on the "Message" icon.
- ▶ The following window appears and in the lower area is displayed the cause.



Eliminate the cause:

1. Tap the (1) key.
- ▶ The window "No Optimal Production" is opened and the corresponding cause is displayed.



2. For deactivation, tap on the "Reduced Speed (ML)" key.
- ▶ The reason for the sub-optimal production is deactivated and the display changes to green

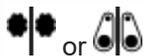


3. With the "Close" key return to the previous menu.

### 7.1.2 Machine information



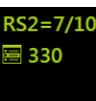
Symbolic picture

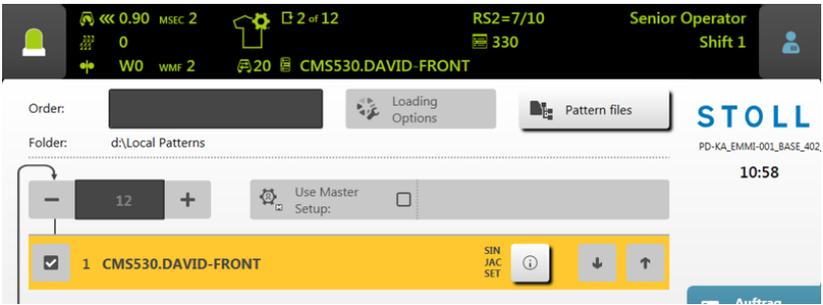
 <<< 0.90 MSEC 2	 Carriage Speed <ul style="list-style-type: none"> <li>◆ Current speed value</li> <li>◆ Used MSEC index in Setup</li> </ul>
	 Carriage Direction
 0	 Current racking position
 W0 WMF 2	 or  <ul style="list-style-type: none"> <li>◆ Current fabric take-down value</li> <li>◆ Used WMF index in Setup</li> <li>◆ Used WBF index in Setup</li> </ul>

### 7.1.3 Production information



Display with an order of a knitting program

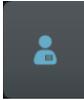
 2 of 12	 RS2=7/10 330
	Order consists of one knitting program
 20	 Course counter (1 course = 2 rows)
 2 of 12	 Display of run-throughs <b>n</b> of <b>m</b> <ul style="list-style-type: none"> <li>◆ <b>n</b> = current knitting run-through</li> <li>◆ <b>m</b> = Total of run-throughs to be produced</li> </ul>

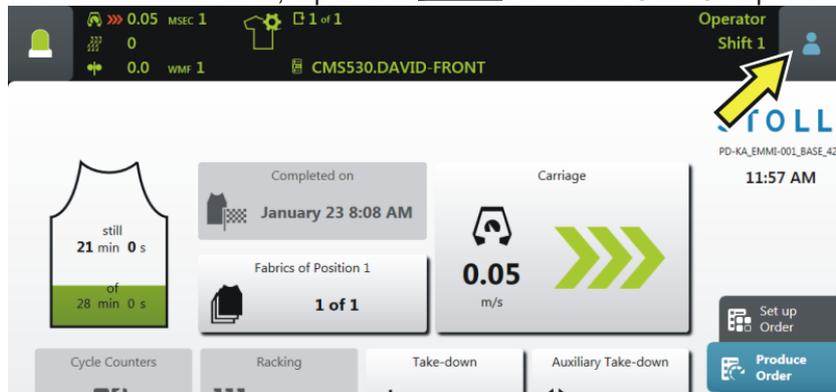
	<p>: If a knitting program is 'running through', the display corresponds to the piece counter.</p>
<p> CMS530.DAVID-FRONT</p>	<p> Name of the loaded knitting program</p>
<p>RS2=7/10</p>	<p>Current Cycle Counter RS<sub>n</sub> = x / m</p> <ul style="list-style-type: none"> <li>◆ n = Name of cycle counter</li> <li>◆ x = Quantity of produced repeats</li> <li>◆ m = Total of repeats to be produced</li> </ul>
<p> 330</p>	<p> Current Sintral line n</p>
<p> Sintral</p>	<p>Display only with connected yarn length measuring device ASCON</p>
<p></p>	<p>A change was made (manually or automatically), which has not been yet saved.</p> <p> If you want to load a new order, you will be asked, whether the changes are to be saved.</p> <p> If you load an older Setup file of the OKC machines, the default values will automatically be entered in the "Ua-b/NCC" tab - therefore, this icon appears.</p>
<p></p>	<p>The production was interrupted.</p>
	 <p>The screenshot shows the STOLL user interface. At the top, there is a status bar with various indicators: a bell icon, a speed indicator (0.90 MSEC 2), a gear icon with '2 of 12', 'RS2=7/10', '330', and 'Senior Operator Shift 1'. Below this, there are buttons for 'Loading Options' and 'Pattern files'. The main area shows a file list with columns for 'Order', 'Folder', and 'File Name'. The selected file is '1 CMS530.DAVID-FRONT'. There are also control buttons for 'Use Master Setup' and 'SIN JAC SET'.</p>

Display with an order consisting of several knitting programs

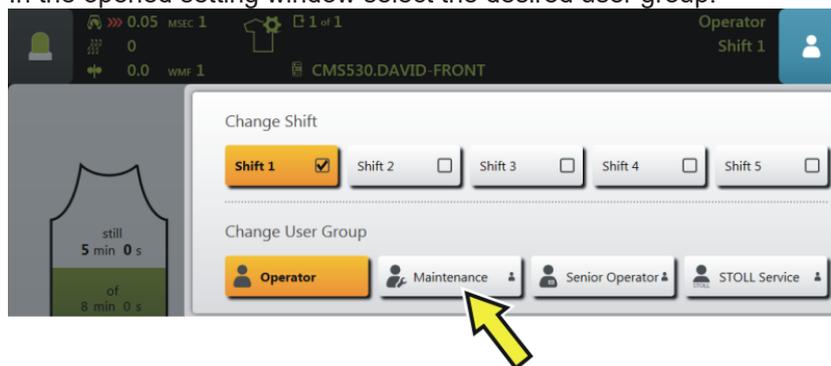
 2 of 12  1 of 5  20  2 of 3 CMS530.DAVID-BACK	RS2=7/10  330
	The order consists of several knitting programs
 1 of 5	 Display of the number of fabrics for the active position <b>n</b> of <b>m</b> <ul style="list-style-type: none"> <li>◆ <b>n</b> = currently knitting fabric of the position</li> <li>◆ <b>m</b> = Total of fabrics to be knitted per position</li> </ul> <p>: If several knitting programs are 'running through', the display corresponds to the piece counter for the active position (knitting program).</p>
 2 of 3 CMS530.DAVID-BACK	 <b>n</b> of <b>m</b> Name of the currently knitting position (knitting program) of the order <ul style="list-style-type: none"> <li>◆ <b>n</b> = currently knitting position of the order</li> <li>◆ <b>m</b> = Total of positions (knitting programs) in one order</li> </ul>
	A change was made (manually or automatically), which has not been yet saved. <p> If you want to load a new order, you will be asked, whether the changes are to be saved.</p> <p> If you load an older Setup file of the OKC machines, the default values will automatically be entered in the "Ua-b/NCC" tab - therefore, this icon appears.</p>
	The production was interrupted.
	

### 7.1.4 Change User Group

1. In the information area, tap on the  "Shift and User Group" icon.

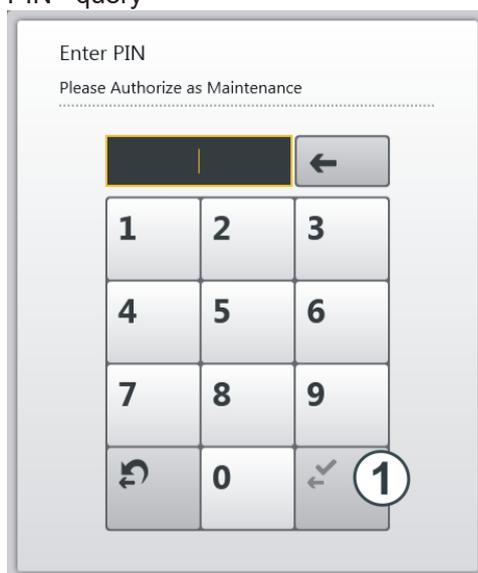


2. In the opened setting window select the desired user group.



■ **Switching to a user group with more rights:**

1. PIN - query



2. Enter PIN.

3. With the  (1) button confirm the entered PIN.

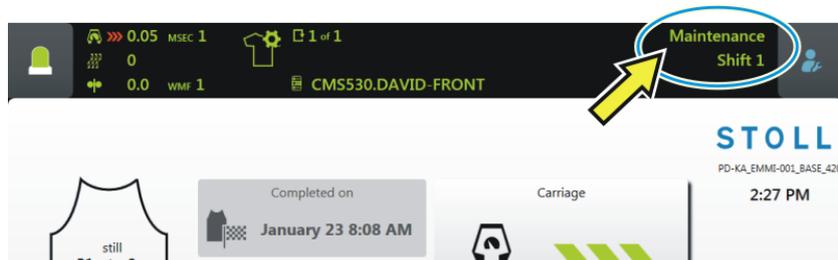


In case of an incorrect PIN entry

The window will not be closed and a new PIN input is required.

User Group	PIN required	PIN (default)
 Operator	no	no
 Maintenance	yes	1111
 Senior Operator	yes	2222
 STOLL Service	yes	3333

Display in the information area:

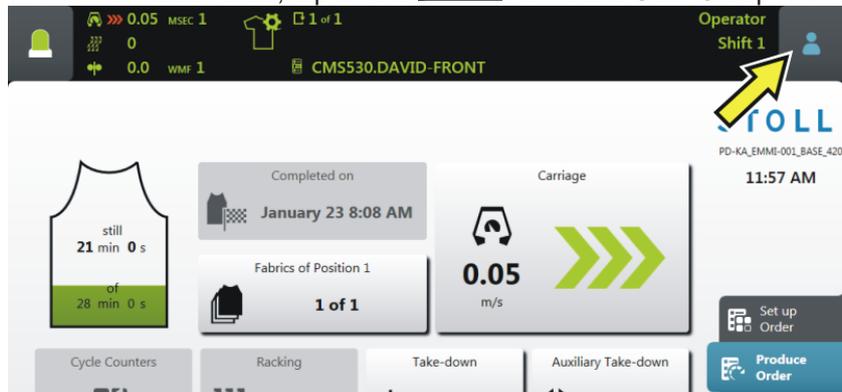


■ **Switching to a user group with less rights:**

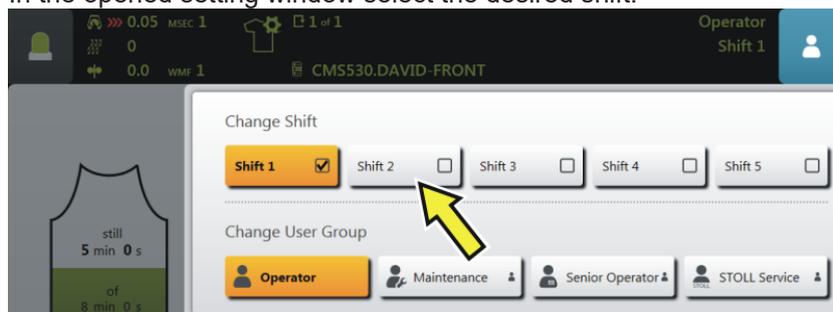
- No PIN entry is necessary.
- The selection window is closed automatically and the selected user group is displayed.

### 7.1.5 Change Shift

1. In the information area, tap on the  "Shift and User Group" icon.



2. In the opened setting window select the desired shift.



3. The window is automatically closed.  
► At the user interface, the shift set is displayed.



## 8 Safety Precautions for Production

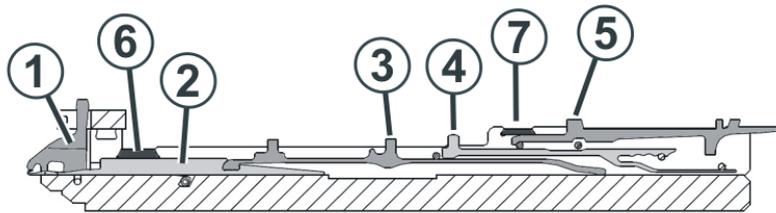
Type of Risks	Measures
Risk of Injury	<p>Close the covers.</p> <p>Close the rear panels of the machine.</p> <p>Keep eyes away from the lateral yarn tensioner.</p> <p>Objects such as tools, bobbins etc. to be removed from the inside of the machine.</p> <p>If the machine is in operation, under no circumstances should you reach into it.</p> <p>Stop the machine if an intervention is necessary.</p> <p>Do not tear off the yarn by hand but use scissors.</p>
Danger of winding and suction and danger of crushing.	<p>Do not reach into the belt take-down.</p> <p>Do not touch the friction feed wheel while the machine is in operation and keep away loose garments and hair strands.</p> <p>Wait for the feed wheel to stop moving after stopping the machine.</p>
Health hazard by fibers, dust and fumes.	<p>Special caution is to be observed while knitting of yarns that cause health hazards or a damage to the machine:</p> <ul style="list-style-type: none"> <li>◆ Yarns with heavy fiber fly</li> <li>◆ Dyestuffs causing health hazards</li> <li>◆ Yarns made of glass fibers, metallic-annealed fibers, asbestos, carbon, PU or similar materials</li> </ul> <p>Employ suitable measures to avoid the hazard caused by fiber fly, dust and fumes.</p> <p>Observe the country-specific laws and regulations.</p> <p>Observe the manufacturer's specifications (safety data sheet).</p> <p>For any further queries please contact Stoll.</p>

Type of Risks	Measures
Fire hazard by fluff, dust and other impurities. Increased danger of short circuit during knitting of metallic or conductive materials by building up of conductive fluff and dust.	Fluff, dust and other impurities to be removed regularly from the entire machine depending upon the degree of dirt at least once in every shift. Take care of any additional suction. Wear inhalation protection gear.

## 9 Needle Beds and their Elements

Construction: Needle beds

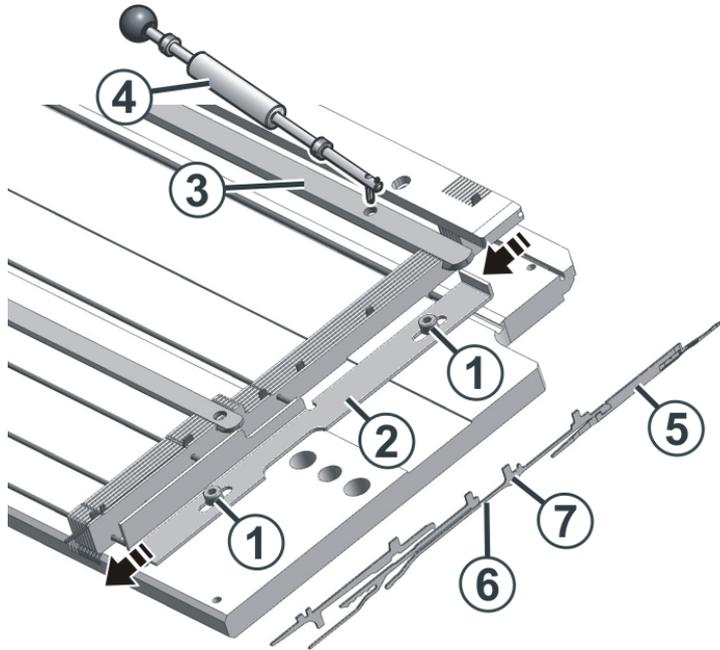
- The front needle bed is permanently screwed to the support of the needle beds.
- The rear needle bed can laterally be racked relative to the front needle bed by the racking device.



No.	Elements	No.	Elements
1	Holding-down jack	5	Selection jack
2	Needle	6	Needle bar
3	Coupling part	7	Cover rail
4	Intermediate slider		

The moveable parts (2) till (5) are fixed by multiple cover rails (6, 7) in the needle bed.

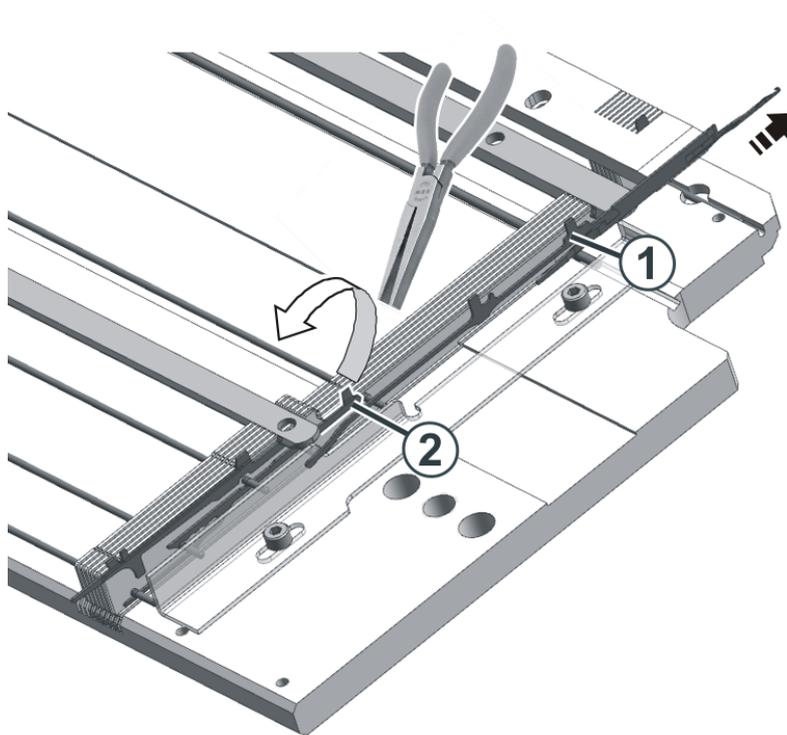
## I. Replacing needle and coupling part



1. Loosen both screws (1) and move the strip (2) downwards.
2. Push the needle rail (3) to the side with the extraction hook (4), until the repair point is free.
3. Pull the needle (5) and coupling part (6) upward.
4. Press the coupling part downward, when the butt of the coupling parts (7) bumps into the holding-down jack bed.
5. Assemble the new needle and coupling part.
6. Push the butt of the coupling part into the needle bed under the jack bed.
7. Push the needle rail (3) and the strip (2) into the home position.

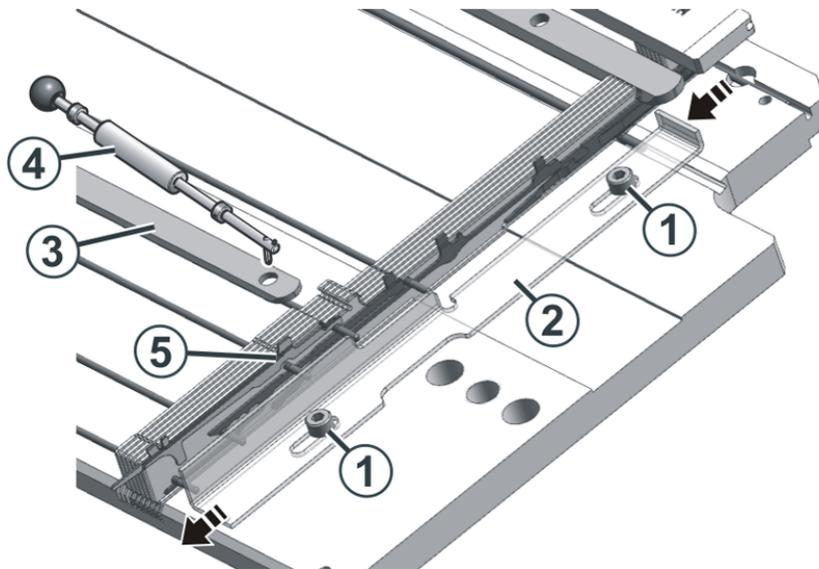
## II. Replacing intermediate slider

**i** To replace the intermediate slider, you need a pair of pliers.

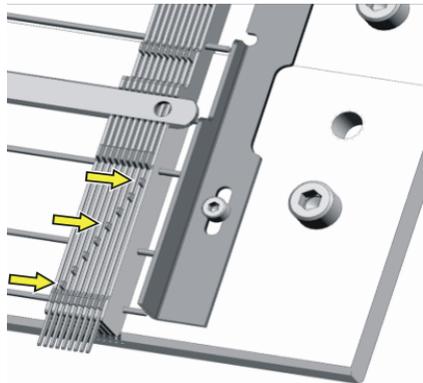


1. Push the needle and coupling part (1) upward.
2. Using the pliers, pull the butt of the intermediate slider (2) upwards out of the needle bed.
3. Install the new intermediate slider in the reverse order.
4. Push the needle and coupling parts into the home position.

## III. Replacing selection jack

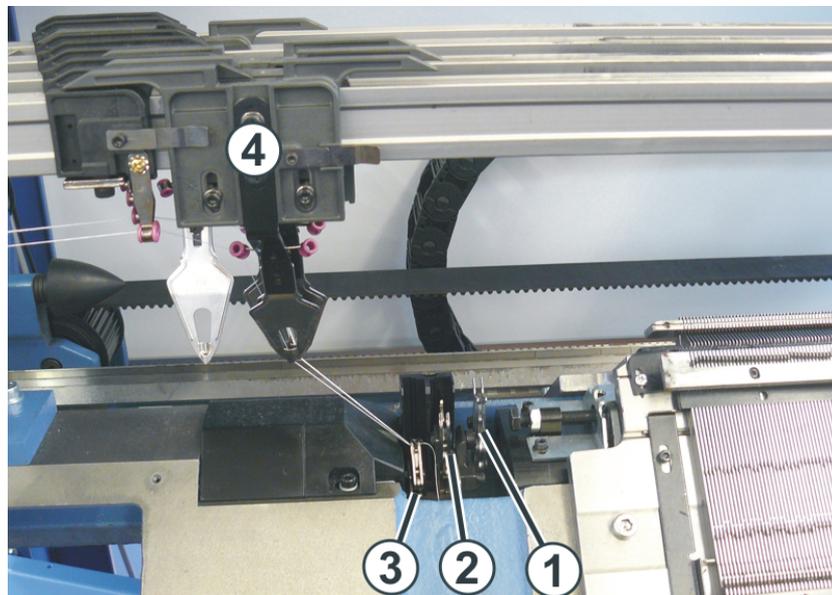


1. Loosen both screws (1) and move the strip (2) downwards.
2. Push the needle rail (3) to the side with the extraction hook (4), until the repair point is free.
3. Replace the selection jack (5).  
Make sure that you insert an identical selection jack (same position of the selection butt). There are eight different selection jacks. The selection jacks differ in the position of the selection butt, note this when replacing the selection jack.



4. Push the needle rail (3) and the strip (2) into the home position.

## 10 Collecting clamp unit



1	Cutting device	2	Collecting clamp 1
3	Collecting clamp 2	4	Yarn Carriers

The collecting clamp units are mounted on the left and right next to the needle bed. Each one works with two collecting clamps (2), (3) and a cutting device (1).

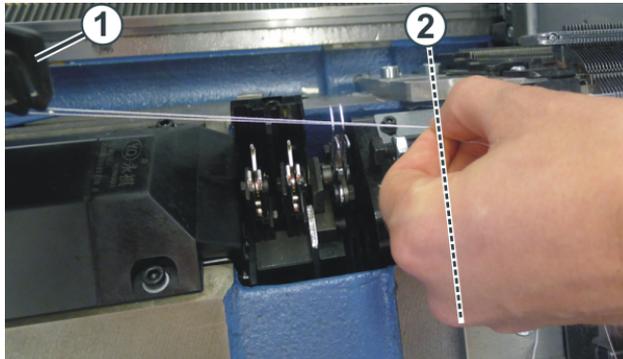
The collecting clamp unit holds the thread of a yarn carrier not used for knitting at the moment.

If the yarn carrier (4) is not needed anymore, it is positioned outside the collecting clamp unit. The collecting clamp (2) or (3) catches the thread and pulls the thread downward. Then the thread is cut off by the cutting device (1).

When the yarn carrier is used again, the collecting 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.

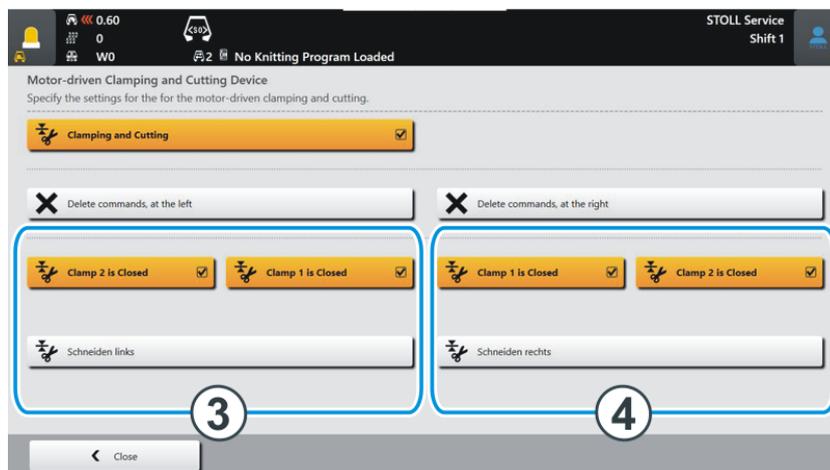
## 10.1 Threading up collecting clamp unit

1. Place the yarn carrier (1) outside the collecting clamp unit.  
The yarn carrier may not be positioned above the collecting clamp unit - risk of damage.

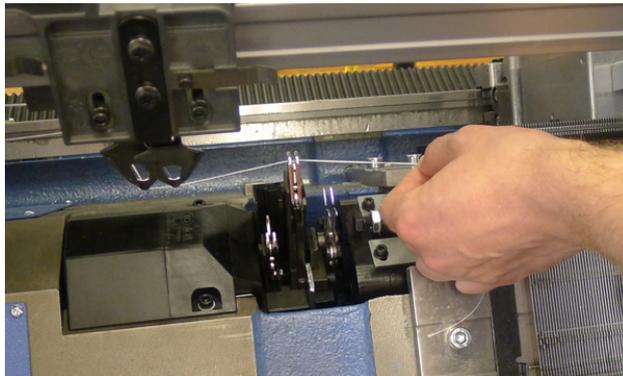


2. Take the yarn from the yarn carrier and pull it up to the needle bed (2).
3. Hold the yarn.
4. Open the "Intervene Manually II" menu.  
 "Produce Order" ->  "Intervene Manually II"
5. In the "Intervene Manually II" window tap the "Clamping and Cutting" button.  
 "Intervene Manually II" ->  "Clamping and Cutting"

- Tap the button "Clamp 1 is Closed" or "Clamp 2 is Closed".  
Left collecting clamp unit - area (3)  
Right collecting clamp unit - area (4)



- The thread is gripped by the collecting clamp and fixed.  
**i** If there is already a thread fixed in the selected collecting clamp, this thread will be released.



- Tap the button "Cutting left" or "Cutting right".  
▷ The thread is cut off.



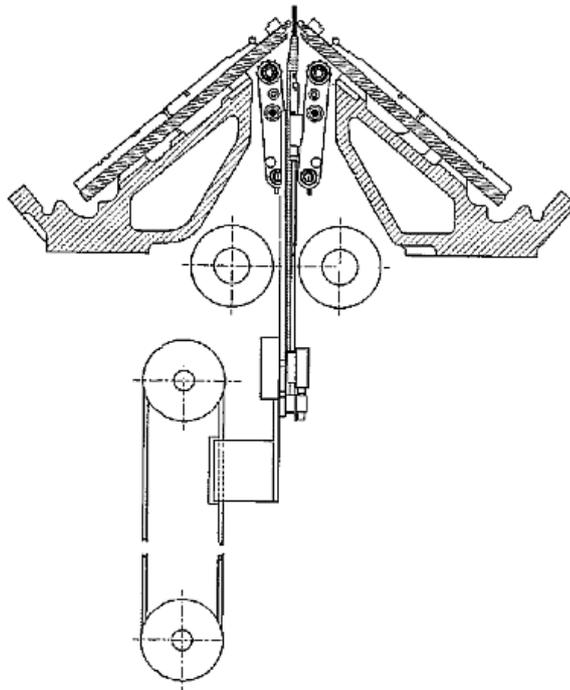
## 11 Fabric take-down

### 11.1 Comb take-down

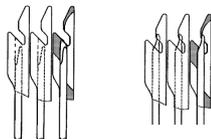
Function: Comb take-down

With the comb take-down fabrics are started on empty needles.

The fabric will be thrown off then and a new fabric will be started on empty needles again.



**Comb hooks with the sliders open or closed:**



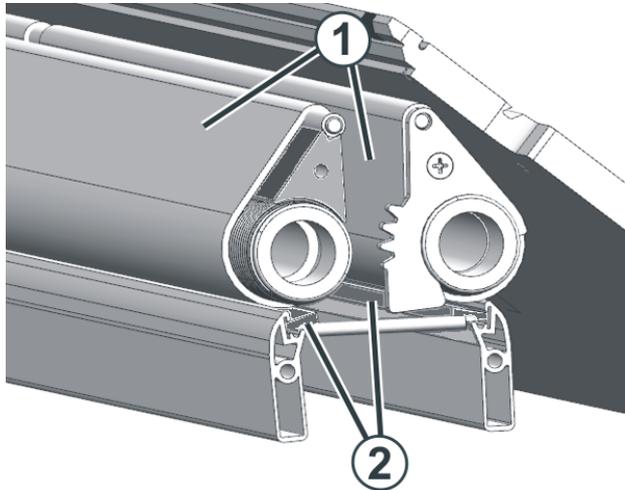
**i**

With the start of a new fabric on empty needles the comb take-down will provide the take-down function and pulls the fabric down till the fabric is taken down by the main take-down.

### How the Comb Take-down Works

- The knitting program must be generated with "Comb start".
  - The needle beds, comb hooks and fabric collection chamber must be empty.
  - The comb take-down adopts the settings of the main take-down.
  - The main take-down and the auxiliary take-down are open.
1. The knitting program is started.
  2. The comb thread (elastic yarn) is inserted in the two rows.
  3. The comb take-down moves upwards with opened comb hook and grasps the comb thread.
  4. The comb hooks close and the comb pulls the comb thread under the comb level.
  5. Now, the fabric can be started on the comb thread.
  6. The comb take-down pulls the fabric below the main take-down.
  7. The take-down rollers of the main take-down close and receive the fabric out of the comb.
  8. The comb hooks open and release the fabric, simultaneously the comb moves to the home position.
  9. The fabric is completed and gets cast-off at the end.
- A new fabric may start.

## 11.2 Belt Take-Down



1	Belts
2	Linear stripping brush

### How the belt take-down works

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

A motor drives the drive shafts. The belts (1) are driven by the drive shaft and guided by the deflection rod. The finished fabric is guided into the fabric collection chamber by the belts.

The winding protection device and linear stripping brushes (2) avoid the winding of the fabric and the threads around the take-down belts. If winding is detected nevertheless, the machine stops.

### Functional states

- **Rotate:** Forward rotation with controlled speed by the motor
- **Stop:** After a short delay the forward movement is stopped.
- **Close:** Short, fast forward rotation, then rotate
- **Open:** Short, fast backward rotation

### Premature wear of the take-down belts

The belt will be worn prematurely by:

- too high belt speed

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Belt Take-Down

- yarns that are harmful to rubber, e.g. abrasive, sanding yarns or yarn finishes such as greases or oils
- sharp tools that are used for example for pressing-down the stitches or the fabric
- UV radiation
- Cleaning agents harmful to rubber, e.g. ether or fuels. Recommendation: Use cleaning petrol for cleaning

## 12 Positioning the Needle Bed Upright

With machines with belt take-down it can happen that yarns are wound around the take-down rollers. For removing the yarns the needle beds can be positioned upright.

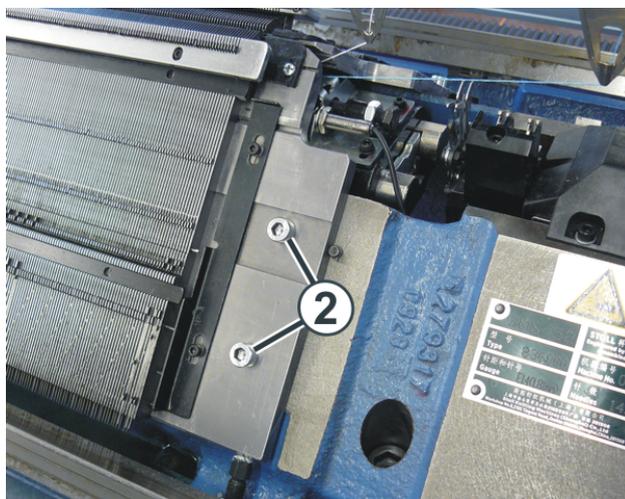
### Prepare Machine

✓ Before positioning the needles beds upright, the fabric is to be removed from the needles.

1. Stop the carriage assembly into the left reversing position.
2. In the main navigation bar select the main area  "Set up Order".  
- or -  
Select  "Maintain Machine".
3. Select  "Intervene Manually II" in the bottom navigation bar.
4. Press the  "Release drive brake [>!]" button.
5. Push the carriage assembly to the left up to the stop point.

### Positioning the Needle Bed Upright

1. Remove two screws (2) on each side of the machine.



2. Lift the front needle bed carefully, tilt it to the front and lean it against the machine cover.



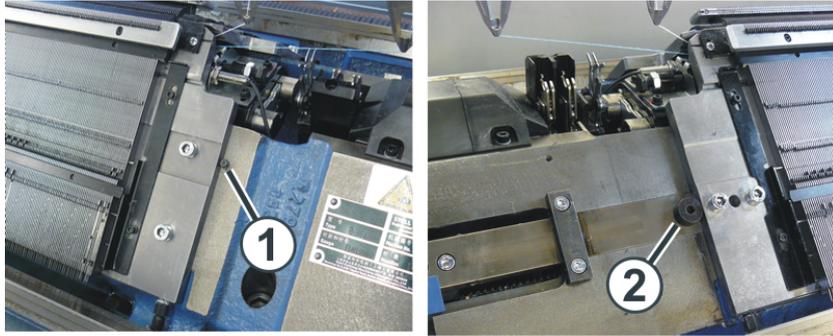
**Danger:** Damage of the take-down rollers.

Do not use pointed or sharp objects to remove the threads!

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### Returning the needle beds

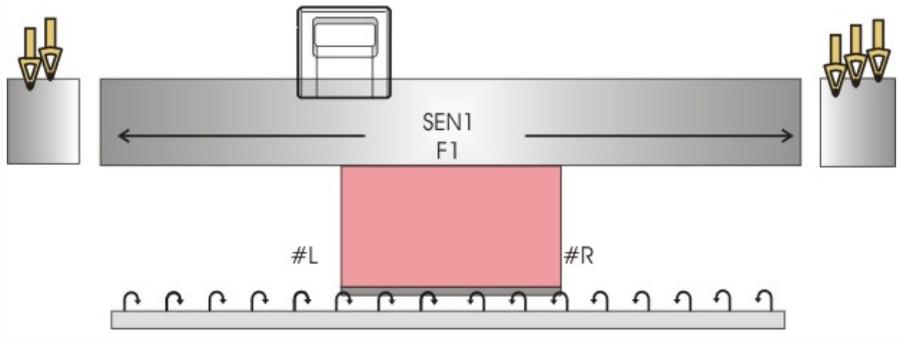
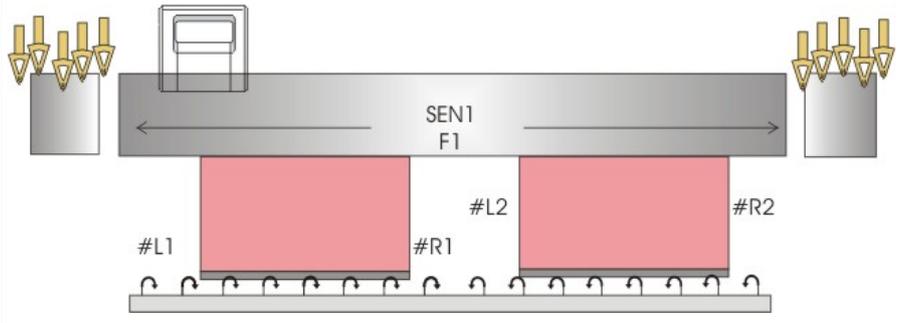
1. Reassemble the needle bed in the reverse order. When doing so, make sure that the front needle bed contacts the pin (1) and the rear needle bed contacts the roller (2).

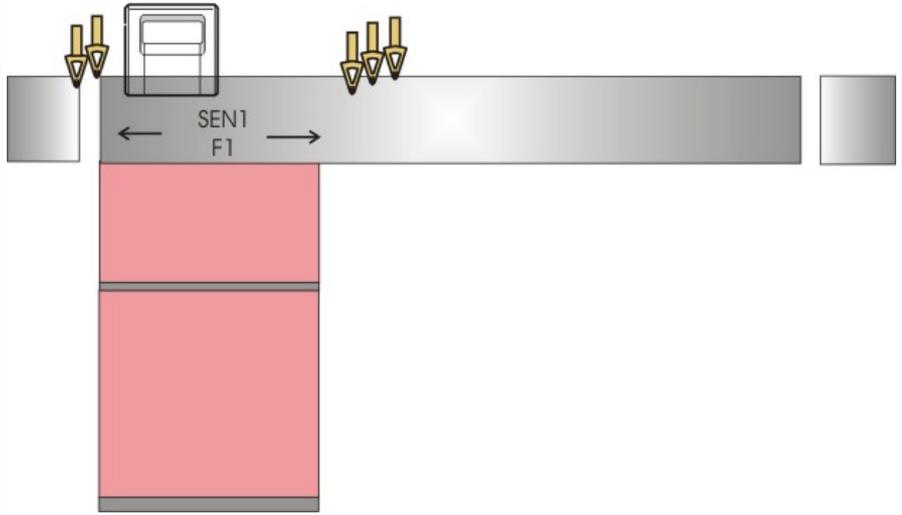
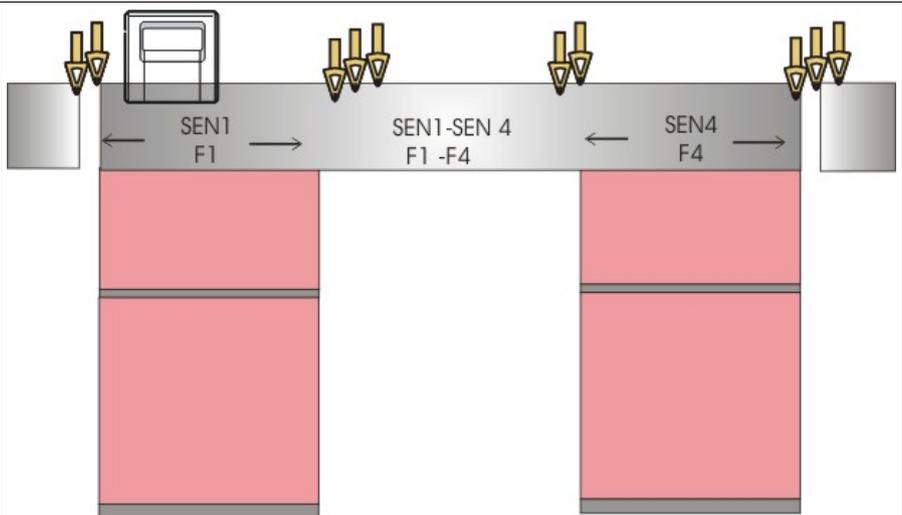


2. Screw the needle bed again onto each machine side.

## 13 Operating modes of BMS 52

If necessary, the BMS 52 can be operated with two different operating modes.

<p><b>Operating mode:</b></p> <ul style="list-style-type: none"> <li>◆ With Comb</li> <li>◆ With collecting clamp unit</li> </ul>	
<p><b>Single Piece</b></p>	
<ul style="list-style-type: none"> <li>◆ Machine does <b>work in Fully-Fashion mode</b> (PF0 command)</li> <li>◆ The fabric is generally positioned in the machine center.</li> <li>◆ SEN and F1 define the entire needle bed width</li> <li>◆ The #L and the #R counter define the actual knitting width</li> <li>◆ Yarn carriers are positioned in the <b>Collecting clamp unit</b></li> <li>◆ <b>Comb is active</b></li> </ul>	
<p><b>Double Pieces</b></p>	
<ul style="list-style-type: none"> <li>◆ Machine does <b>work in Fully-Fashion mode</b> (PF0 command)</li> <li>◆ Two pieces can be knitted</li> <li>◆ SEN1 and F1 define the entire needle bed width</li> <li>◆ The #L1 and the #R1 counter define the knitting width of the left piece</li> <li>◆ The #L2 and the #R2 counter define the knitting width of the right piece</li> <li>◆ Yarn carriers for the left piece in the left collecting clamp unit</li> <li>◆ Yarn carriers for the right piece in the right collecting clamp unit</li> <li>◆ <b>Comb is active</b></li> </ul>	

<p><b>Operating mode:</b></p> <ul style="list-style-type: none"> <li>◆ Without Comb</li> <li>◆ Without collecting clamp unit</li> </ul>	
<p><b>Single Piece</b></p>	
	<ul style="list-style-type: none"> <li>◆ If there is no fabric in the fabric take-down, the picking-up after pressing-off must be activated before starting the pattern.</li> <li>◆ For fully fashion, a special Sintral function is needed, which enables widening or cast-off to achieve the start width of the fabric.</li> <li>◆ The yarn carriers are positioned at the left and right fabric selvage</li> <li>◆ <b>Comb and collecting clamp unit are deactivated</b></li> </ul>
<p><b>Multi-piece</b></p>	
	<ul style="list-style-type: none"> <li>◆ If there is no fabric in the fabric take-down, the picking-up after pressing-off must be activated before starting the pattern.</li> <li>◆ For fully fashion, a special Sintral function is needed, which enables widening or cast-off to achieve the start width of the fabric.</li> <li>◆ Up to 4 pieces (SEN1 to SEN4) can be knitted simultaneously.</li> <li>◆ Home position of the yarn carriers (YG1 - YG4)</li> </ul>

	<ul style="list-style-type: none"><li>◆ The yarn carriers are positioned at the left and right fabric selvedge correspondingly</li><li>◆ <b>Comb and collecting clamp unit are deactivated</b></li></ul>
--	--



## 14 Elements of a knitting program

Generally, a knitting program consists of the following three elements:

- **Sintral file** (\*.sin)
- **Jacquard file** (\*.jac)
- **Setup file** (\*.setx):

---

**i** The information from all of the three elements result in the knitting program.

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### 14.1 Sintral

- Sintral is a machine language developed by Stoll.
- The text-based file contains all the relevant knitting specifications as function.

```

1 C CMS530.Full_Cardigan_2_Colors_GG72 E7.2 /janke 03.12.2015 11:33:28 <M1> 6.4.012
11 C NP1=9.0 Setup Row
12 C NP2=10.0 Setup Tub
13 C NP3=9.0 1x1-Cycle
14 C NP4=11.0 Loose Row
15 C NP5=11.5 stitch front
16 C NP6=9.5 tuck rear
17 C NP7=9.5 tuck front
18 C NP8=11.5 stitch rear
19 C NP9=12.0 Struc Single jersey front
20 C NP11=7.9 Setup Row front
21 C NP17=12.0 Safety rows
22 C NP20=9.0 Start 1
23 C NP21=10.0 Start 2
24 C NP22=11.0 Start 3
25 C NP24=12.0 Start 5
26 C NP25=16.0 Comb Thread
27 C MSEC1=0.70
39 IF #L=0 #L=1 IF #R=0 #R=699 #LM=0 #RM=0
40 START
41 C #98=0 C Cast-off On/Off (#98=0)
42 C #69=0 C MS*#69 (1-4s) (#69=1..4)
43 PFO
44 Y-CR1
50 YGC:1=A 2=B/4=C 5=D 8=E;
51 YDF=2
52 C-----I-----I
53 C LEFT I RIGHT I
54 C-----I-----I
55 C I 8=E Protection thread 1 I
56 C I 5=D color 2 I
57 C I 4=C Rib thread 1 color 1 I
58 C 2=B Comb thread1 I I
59 C 1=A Draw thread1 I I
60 C-----I-----I
61 YD YC
80 FBEG:M1-SIZES;
81 F1=1-699
82 PA:JA1; PAI:JA1; PANP<>:JA1;
83 PM:1:F1; SEN=1-699 #51=1 #52=699
84 FEND C M1-SIZES
85 JA1=1276(1100-1100)
110 #99=0
111 IF RS17=0 SOY #99=1
112 IF RS17=1 SOYCRO #99=1
113 IF #99=1 #99=0 MS PRINT/CHECK YARN CARRIER/
114 F:M1-SINTRAL;
115 END
    
```

I. Structure:

Program structure
1 C CMS530.Vollfang_2_Farben_E8 ... <SETUP2>
11 C NP1=9.0 Netz
12 C NP2=10.0 Schlauch-Netz
13 C NP3=9.5 1x1-Rapport
14 C NP4=12.0 Übergang
15 C NP5=10.0 Masche vorne Farbe1
16 C NP6=10.0 Fang hinten Farbe1
17 C NP7=8.8 Fang vorne Farbe2

```

18 C NP8=9.6 Masche hinten Farbe2
19 C NP9=12.0 Struk. einflaechig vorne
20 C NP11=7.9 Netz vorne
21 C NP17=12.0 Schutzreihen
22 C NP20=9.0 Anfang1
23 C NP21=10.0 Anfang2
24 C NP22=11.0 Anfang3
25 C NP24=12.0 Anfang5
26 C NP25=16.0 Kammfaden
27 C MSECI=0.70

40 START
41 C #98=0 C Cast-off On/Off (#98=0)
42 C #69=0 C MS*#69 (1-4s) (#69=1...4)
43 PF0
44 Y-CR1
50 YGC:1=A 2=B/ 4=C 5=D 8=E;

61 YD YC

80 FBEG: M1-SIZES;
81 F1=
82 PA: PAI:
83 PM:1:F1; SEN=..... #51=... #52=...
84 FEND C M1-Sizes
85 JA1= ...(...-...)
110 #99=0
111 IF RS17=0 SOY #99=1
112 IF RS17=1 SOYCR0 #99=1
113 IF #99=1 #99=0 MS PRINT / CHECK YARN CARRIER/

114 F:M1-SINTRAL;

xx END

xx FBEG:... (Funktionsbeginn)
xx FEND (Funktionsend)

999 S0 W0

```

## II. Knitting instructions:

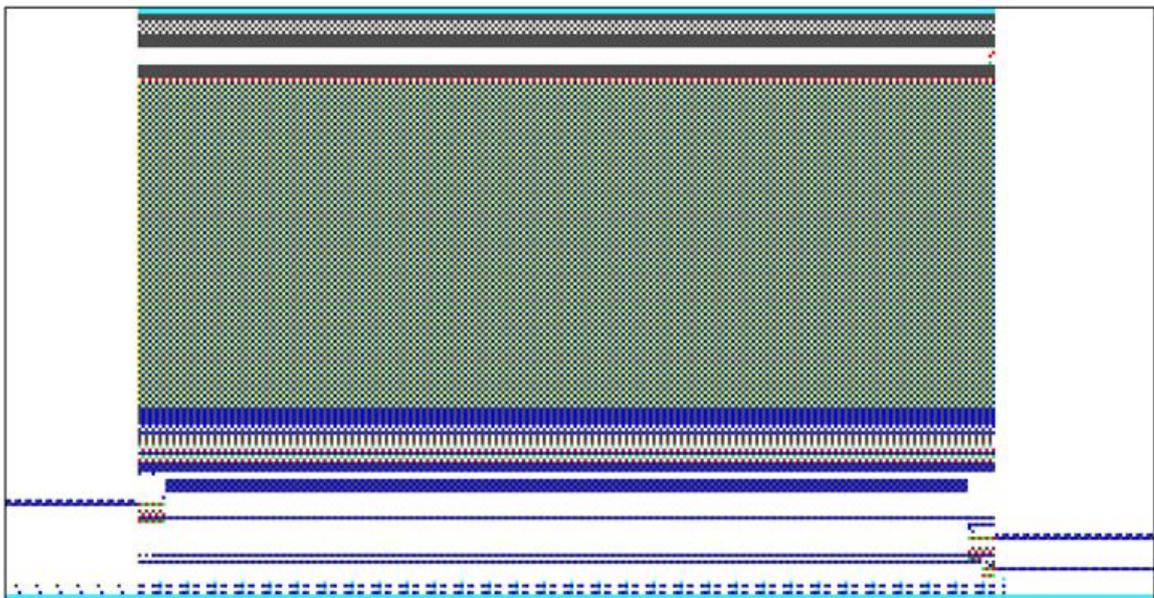
Sintral command	Meaning
<<	Carriage direction to the left
>>	Carriage direction to the right

Sintral command	Meaning
<>	any carriage direction
S: ...-...;	Knitting specification
* +.ABEGHIKLM OPQTWYZ abeghiklmopq twxyz	Jacquard symbols for single needle selection
N	Symbols written after N are not selected, but all other symbols Example: S: A - NA ;
%.	Symbols written after the % move needles to the tuck position, symbols written before % in the stitch position Example: S: A%Y – 0;
0	All needle do not knit
-	Break between front and rear system
/	Break between the systems
;	End of a knitting specification
<1->	Decrease Jacquard
<A>	Releases the Jacquard selection in the color field A
Y:...;	Yarn Carriers
S1 .... S6	Knitting system 1 to knitting system 6
U^S	Transfer to rear
UVS	Transfer to Front
UXS	Transfer to the rear and to the front
MCWSn-m	Carriage path from needle n to m
RS	Cycle Counters
FBEG	Beginning of the function
FEND	Function end
SBEG	Start of stroke processing. The knitting specifications are determined using conditions.
SEND	End of stroke processing.

Sintral command	Meaning
JA1 .....8	Jacquard1 .... 8
#	Counters
IF	IF-decisions
IFN	If not...

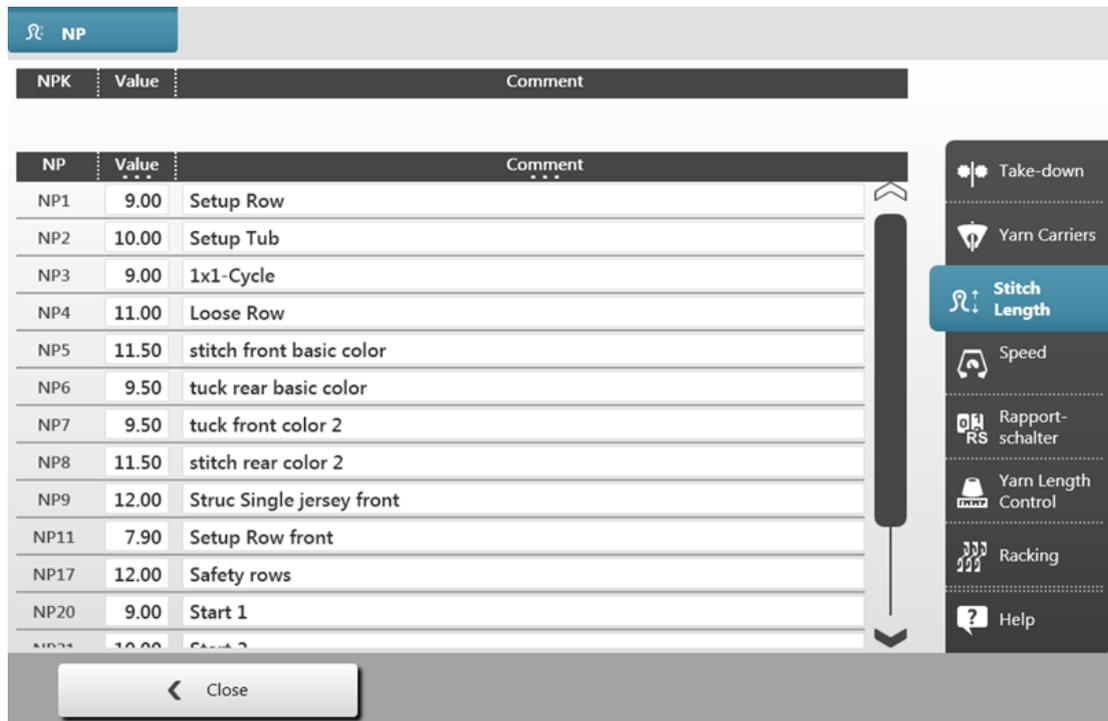
## 14.2 Jacquard

- The jacquard file provides the graphic representation of the knitting program with Jacquard symbols.
- Each Jacquard symbol refers to one needle, which is processed in the corresponding knitting specification in the Sintral.
- The information of one Jacquard row corresponds to one knitting row.



### 14.3 Setup file

#### Setup Editor



- All pattern related machine parameters are saved in the Setup.
- The setup data can be edited and saved on the running machine.
- The data of the setup file ensure the running properties of a pattern and allow for a convenient pattern setup at the machine.
- The edited values can be returned to the original pattern and are therefore repeatable.

Setup Editor	Tabs
<b>Take-down</b>	<ul style="list-style-type: none"> <li>◆ WMF</li> <li>◆ WBF</li> <li>◆ W+F</li> <li>◆ WM% / WMK%</li> </ul>
<b>Yarn Carriers</b>	<ul style="list-style-type: none"> <li>◆ YD / YDI: Yarn Carrier Staggering</li> <li>◆ YC / YCI: Corrections of yarn carriers</li> <li>◆ Y:Oa-b: Correction value for right carriage</li> <li>◆ Y:Ua-b: Engaging width of yarn carrier sliding block</li> </ul>
<b>Stitch length</b>	<ul style="list-style-type: none"> <li>◆ NPK: Stitch cam correction for all stitch cams</li> <li>◆ NPn: used stitch cam position</li> <li>◆ NPR: Correction for stitch cam position of the right carriage</li> </ul>

Setup Editor	Tabs
<b>Speed</b>	<ul style="list-style-type: none"> <li>◆ <b>MSEC0</b>: Standard S0</li> <li>◆ <b>MSEC1</b>: with intarsia yarn carriers</li> <li>◆ <b>MSECK</b>: Small knot</li> <li>◆ <b>MSECC</b>: Take yarn carrier out of clamp / Bring yarn carrier into clamp</li> <li>◆ <b>MSEC1</b>: with transfer rows</li> <li>◆ <b>MSEC2-20</b>: with knitting rows</li> </ul>
<b>Cycle Counters</b>	<ul style="list-style-type: none"> <li>◆ <b>List of the used cycle counters</b>: RSn (n=1 to 39)</li> </ul>
<b>Yarn length</b> (display only with connected ASCON)	<ul style="list-style-type: none"> <li>◆ <b>Basic Settings</b></li> <li>◆ <b>Correction Values</b></li> <li>◆ <b>Yarn Data</b></li> <li>◆ <b>NP (Knitting Mode) / Wheel</b></li> </ul>
<b>Racking</b>	<ul style="list-style-type: none"> <li>◆ <b>VCI</b>: Racking function</li> <li>◆ <b>Direction</b>: Racking direction of the correction</li> <li>◆ <b>VK</b>: Racking Correction</li> <li>◆ <b>VV</b>: Racking speed</li> <li>◆ <b>V+/-</b>: OVERRACKING</li> <li>◆ <b>Comment</b></li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>◆ Counter of the machine</li> <li>◆ Machine Data</li> <li>◆ Comment</li> </ul>



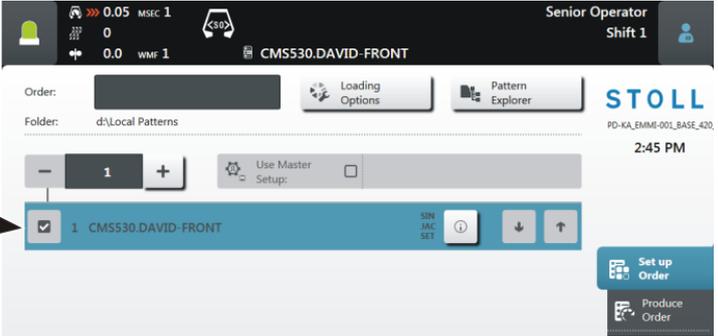
# 15 What is an Order?

An order consists of one or more knitting programs that are knitted once or more times.

**Example**

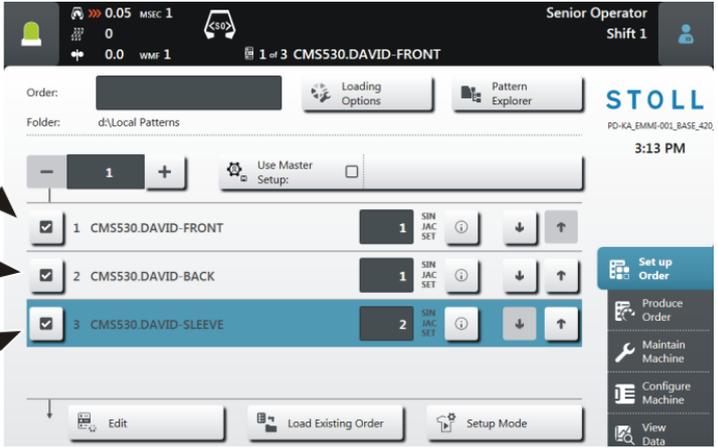
**Order with one knitting program**



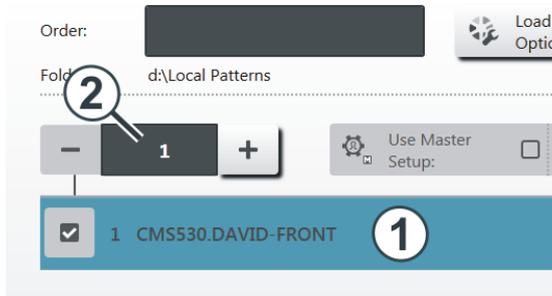


**Order with three knitting programs**



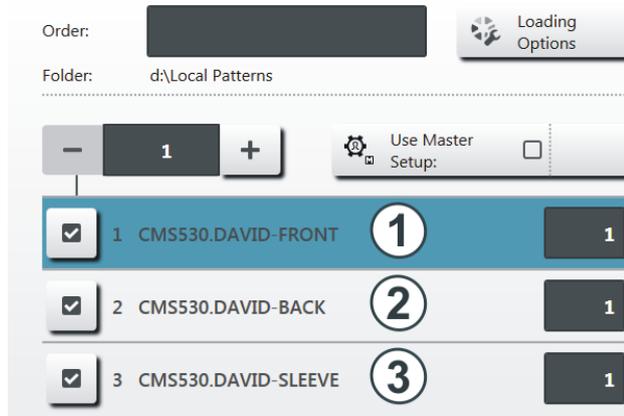


At the user interface it looks like this:



1	Knitting Program
2	Quantity of run-throughs (quantity of fabrics).

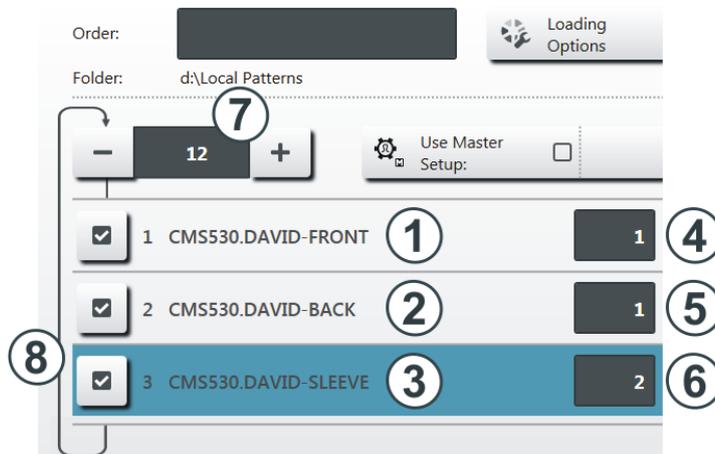
If the order consists of several knitting programs it looks like this:



1	Knitting program 1 (position 1)
2	Knitting program 2 (position 2)
3	Knitting program 3 (position 3)

**i** Several knitting programs (positions) are grouped to an order in a list. The sequence of positions is also the order when knitting.

The positions (knitting programs) are completed with the piece quantities.



4	Piece quantity for knitting program 1	7	Quantity of run-throughs Number of times that the list of positions (knitting programs) is repeated.
5	Piece quantity for knitting program 2	8	If the quantity of run-throughs is greater than "1", this will be represented graphically with a loop (8).
6	Piece quantity for knitting program 3		

The order consists of three positions (knitting programs) which should be knitted in the following order:

1. DAVID-FRONT (front) 1 piece
2. DAVID-BACK (back) 1 piece
3. DAVID-SLEEVE (sleeve) 2 piece

This sequence will be repeated a total of 12 times.

---

**i**

Perhaps, you already know this example from earlier, it was designated as a sequence.

---



## 16 Setting up the BMS machine

Sequence: Setting up the machine

1. Check the state of the machine.
2. Finish or cancel the current knitting program.



### Parking position of the carriage

The parking position of the carriage is as desired!

With "Start Order", the machine control ensures that the knitting program starts at the left in the carriage stroke. Empty rows may be necessary.

---

3. Save the changes in the current order.
4. Create a new order with a knitting program
5. Start production.
6. Preparation of the machine for the newly loaded knitting program.
  - Thread up the yarn carriers
7. Adapt pattern parameters.

### 16.1 Loading Files, Library and Folders

Possibilities of reading-in the knitting program (zip file):

- Removable Drive: USB Memory Stick
- Hard disk drive of the the knitting machine
- Ethernet (network drive)

### 16.2 Create an order with a knitting program



### Parking position of the carriage

The parking position of the carriage is as desired!

With "Start Order", the machine control ensures that the knitting program starts at the left in the carriage stroke. Empty rows may be necessary.

---

**Before loading the pattern, the current machine state is to be checked:**

## Create an order with a knitting program

■ **With comb**

- No fabric in the needle bed or in the fabric take-down.
- The yarn carriers are in the collecting clamp unit and are clamped.

■ **Without comb**

- Pay attention to the starting width of the new pattern.
- Check and adjust the yarn carrier positions.

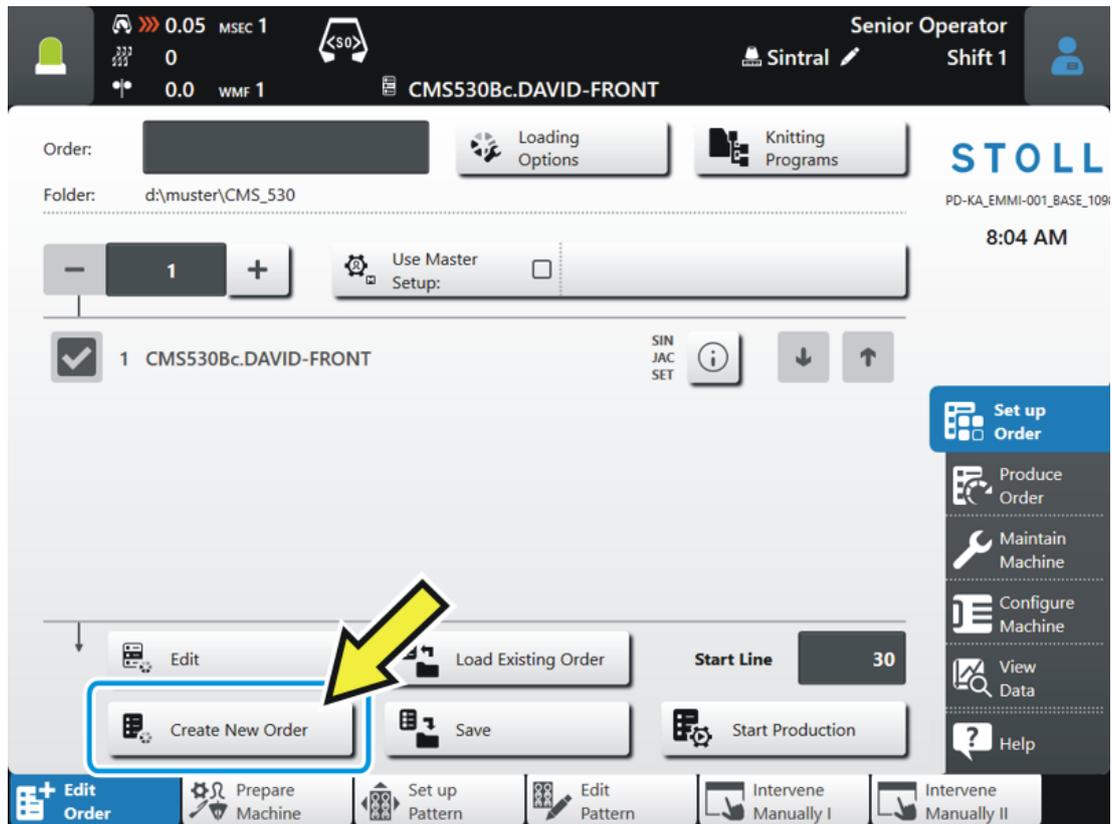
## Create Order

- ✓ You are signed in as Senior Operator .
  - ✓ The yarn carriers are in the collecting clamp unit.
1. In the main navigation bar select the main area  "Set up Order".
  2. Tap on  "Edit order" in the bottom navigation bar.

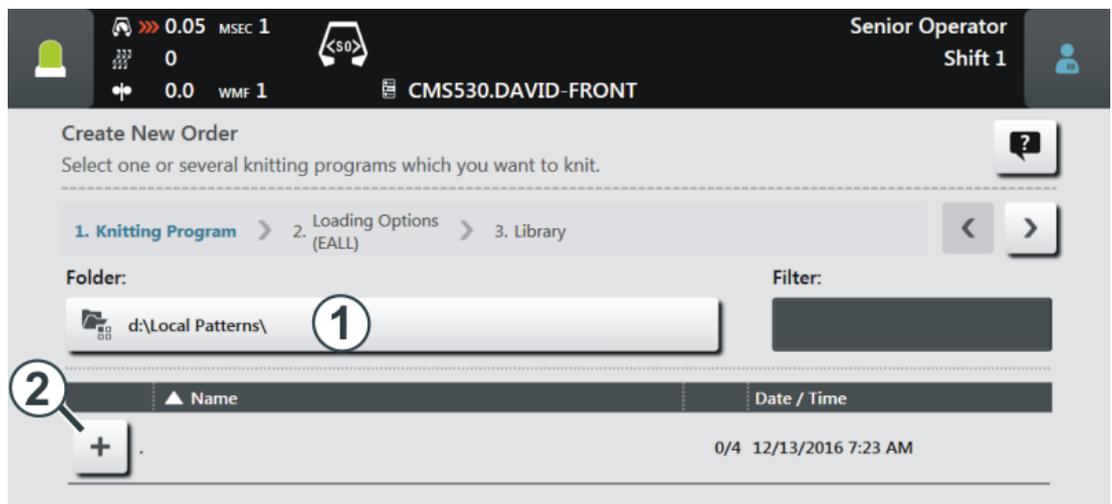


It must be ensured that the yarn carriers of the previous knitting program are positioned in the clamping and cutting position. For this purpose, start again the previous knitting program until the yarn carriers are clamped (SOY).

3. Then, first exit the current order with the  "Exit order" button.
- ▶ In case of changes in the pattern, a prompt appears for saving the changes.
4. Save changes if necessary.
5. Tap the  "Create New Order" button.



► The "Create New Order" window opens up.



1		Selection of the path (storage location) of the knitting program <ul style="list-style-type: none"> <li>◆ <b>Local Patterns:</b> Folder on the hard disc of the machine</li> <li>◆ <b>Network drive</b> (only one network drive possible)</li> <li>◆ <b>USB</b></li> </ul>
2		Button for opening a folder to display the subfolders

6. More in the next chapter "Select knitting program".

### 16.2.1 Select knitting program for the order (load)

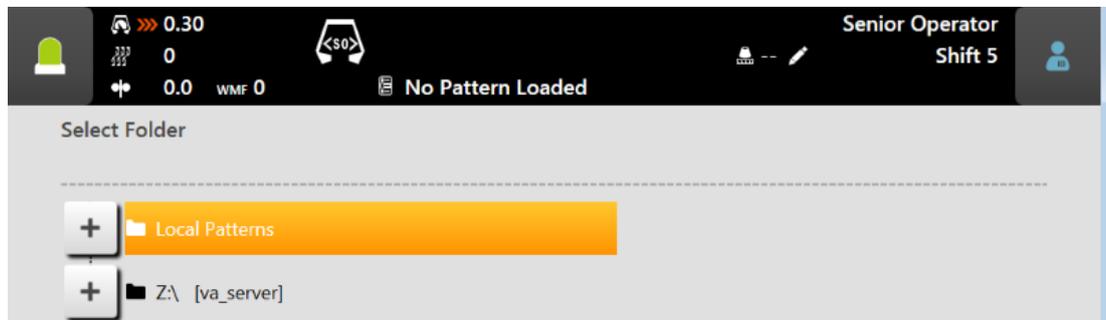
Select the knitting program:

✓ In the "Create new order" window, the setting **1. knitting program** must be selected.

1. If necessary switch to **1. knitting program** with the   buttons.

2. For changing the path, then press the  "..." button.

▶ The "Select folder" window appears.



3. Select the desired location:

- Local Patterns (hard disk)
- Any released network drive

4. With the  button, open the folder / drive to display the subfolder.

5. Select the folder with the knitting program (zip file) to be loaded.

---

**i** Display of the zip files (knitting program)

Only the zip files saved directly in the folder can be displayed in the picklist.

---

6. With the  "OK" button confirm the selection and return to the previous window.

▶ In the "Create new order" window is displayed the content of the selected folder.

7. Select the desired knitting program (zip file).

---

**i** The selection of several knitting programs of the list is also possible.  
In case of erroneous selection, this can be undone tapping again on them.

---

8. More in the next chapter Set Loading Options [ 77].

- or -

9. Press the  "Create order" button to complete the order and to return to the previous window.

▶ An order with one knitting program was created.

- or -

10. With the  "Cancel" button, cancel the process and return to the previous window.

▶ Create order is canceled without loading a new knitting program.

**i** When canceling the process, the previous knitting program is **not** deleted or overwritten!

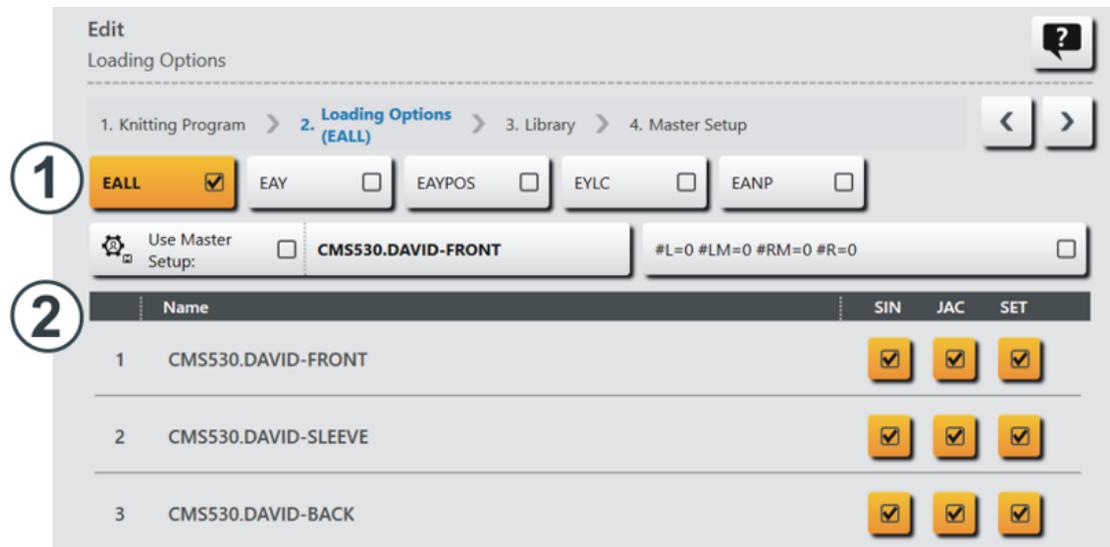
### 16.2.2 Set Loading Options

#### Loading Options

✓ In the "Create new order" window, the setting **2. Loading Options** must be selected.

1. If necessary, switch to **2. Loading Options** with the  buttons.

▶ The window is displayed.



<b>1</b>	<b>Loading Options for All Positions:</b>	
	<b>EALL</b>	Delete all data of the previous order.
	<b>EAY</b>	Delete the yarn carrier positions of the previous pattern. <b>i</b> :

	<ul style="list-style-type: none"> <li>♦ Recommended for patterns with comb and clamping / cutting</li> <li>♦ Not recommended for patterns without comb and clamping / cutting</li> </ul>
<b>EAYSEQ</b>	<p>Delete yarn carrier home position after each position of the order (knitting program).</p> <p><b>i</b>: This function is only active, if two or more positions (knitting programs) are selected for the order.</p>
<b>EYLC</b>	<p>If a YLC device is used for the yarn length control. Delete YLC correction values of the previous order ("Working with mm" mode).</p>
 <b>Use Master Setup:</b>	<p>Select whether a "Master Setup" should be used.</p> <p><b>i</b>: This function is only active, if two or more positions (knitting programs) are selected for the order.</p>
	
	<p>A Button for selecting the location (path) of the desired Master Setup.</p>
	<p>B <input type="checkbox"/> Do not use Master Setup</p> <p><input checked="" type="checkbox"/> Use Master Setup</p>

<b>2 Loading Options for Individual Positions</b>				
<b>Name</b>		<b>SIN</b>	<b>JAC</b>	<b>SET</b>
List of all selected knitting programs	<input checked="" type="checkbox"/>	The program element is switched on (active), i.e. it is used for the production (default setting).		
	<input type="checkbox"/>	The program element is switched off (inactive), i.e. it is not used for the production.		
		Symbol for using a "Master-Setup" in the SET column.		
	<b>i</b> : You can individually switch on or off these program elements.			

**i** Library

If a separate Sintral program (Auto Sintral) is required, it is to be saved in the library.

For this purpose continue with the "Library" chapter.

2. Selection of all required loading options.

3. Press the  "Create order" button to complete the order and to return to the previous window.

▶ An order with one knitting program was created.

- or -

4. With the  "Cancel" button, cancel the process and return to the previous window.

▶ Create order is canceled without loading a new knitting program.

**i** When canceling the process, the previous knitting program is **not** deleted or overwritten!

If a separate Sintral program (Auto Sintral) is required, then it continues in the next chapter "Library."

### 16.2.3 Library

**i** Library = protected memory area

Load a Sintral program element which is to be loaded additionally to the knitting programs.

Cannot be modified at the machine!

**i**: It can be the automatic functions of the AUTO-SINTRAL Stoll program or a private Autosintral file.

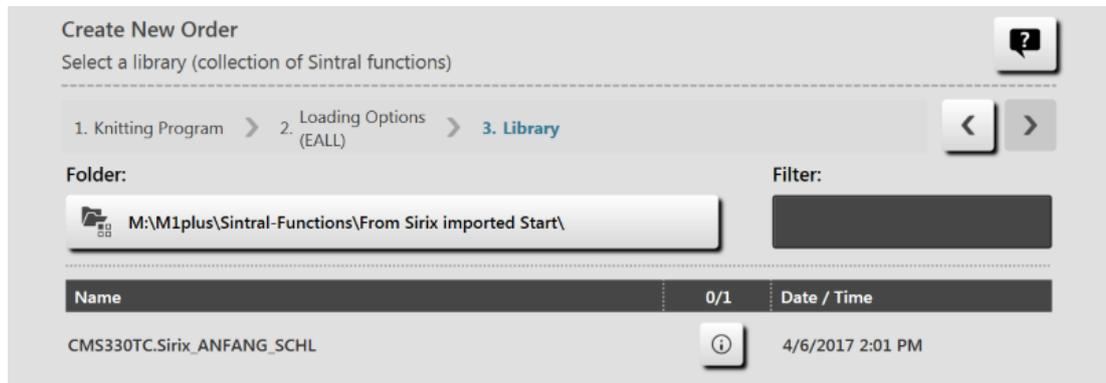
#### Library

✓ In the "Create new order" window, the setting **3. Library** must be selected.

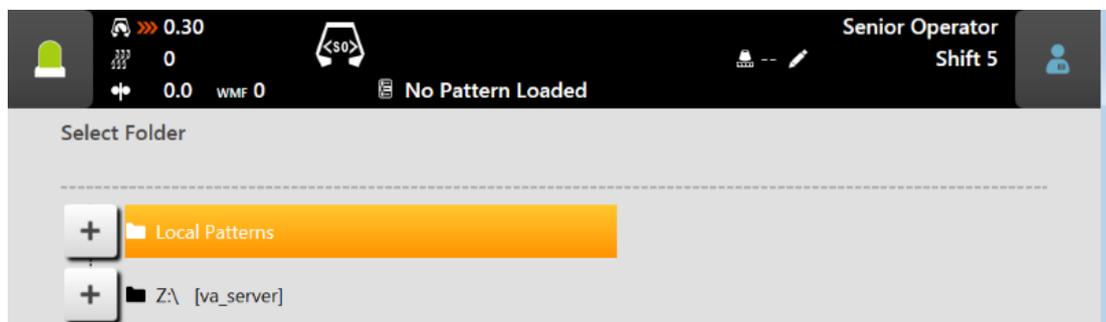
1. If necessary, switch to **3. library** with the  buttons.

▶ The window is displayed.

Create an order with a knitting program



2. For changing the path, then press the  "..." button.
- ▶ The "Select folder" window appears.



3. Select the desired location:
  - Local Patterns (hard disk)
  - Any released network drive
4. With the  button, open the folder / drive to display the subfolder.
5. Select the folder with the knitting program (zip file) to be loaded.

### Display of the zip file (knitting program)

Only the zip files saved directly in the folder can be displayed in the picklist.

6. With the  "OK" button confirm the selection and return to the previous window.
7. In the "Create new order" window is displayed the content of the selected folder.
8. Select the desired Sintral program element from the list.

### Term of the Sintral program element

This Sintral must also be saved as zip file!

The name of the zip file must be exactly the same as the name of the Sintral program element!

**Example:** **CMS530.Autosintral.zip** contains the Sintral program element with the name **CMS530.Autosintral.sin**.

9. Press the  "Create order" button to complete the order and to return to the previous window.

► The order is created with a Sintral program element of the library.

---

**i** Machine type designation of the Sintral program element

If the Sintral program element has a different machine type designation than the machine in use, then a message with the following note appears: "Do you want to adapt the pattern name on the current machine type?"



"Yes": The Sintral program element is saved with the machine type of the used machine.



"No": The Sintral program element with the saved machine type is directly loaded.

---

- or -

10. With the  "Cancel" button, cancel the process and return to the previous window.

► Create order is canceled without loading a Sintral program element.

---

**i** Deletion of the library

The content of the library (protected memory area) can only be deleted via generating a new order with the desired settings with the  "Create order" button.

---

## 16.2.4 Deleting orders

Delete all settings for 'Create new order':

---

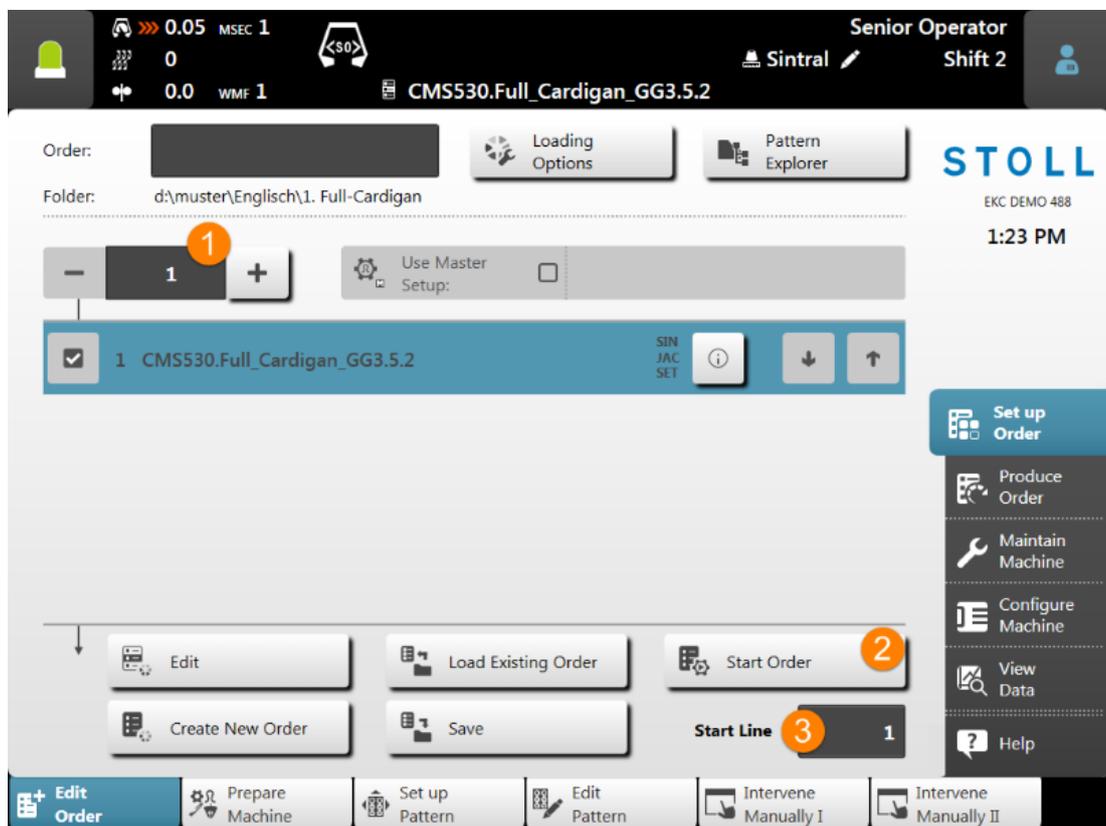
**i** The pattern memory cannot be deleted completely!

---

## 16.3 Setting up the piece number for an order with one knitting program

Set piece counters:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Edit order" in the bottom navigation bar.
  - ▷ The window is displayed.



- |   |  |
|---|--|
| 1 | Specify the total piece number (= quantity of run-throughs) <ul style="list-style-type: none"> <li>◆  Reduce quantity</li> <li>◆  Increase quantity</li> <li>◆ <b>Tap display field:</b> Input via virtual keyboard</li> </ul> |
|---|--|

- 3. Increase the quantity with the  button under (1).
  - ▶ If the piece number is > 1, the repetition is represented graphically with a loop (run through).

## 16.4 Start Production

**i** No TP (test program) is possible on the machine!!!

Start production:

✓ You are signed in as Senior Operator .

1. In the main navigation bar select the main area  "Set up Order".

2. Tap on  "Edit order" in the bottom navigation bar.

► The window is displayed.



2	Button for starting the production with the line number specified under (3). <b>i</b> : No TP is carried out.
3	Display of the Sintral line number, at which the knitting program will be started.

3. If necessary, specify the desired line number for the production start under (3).

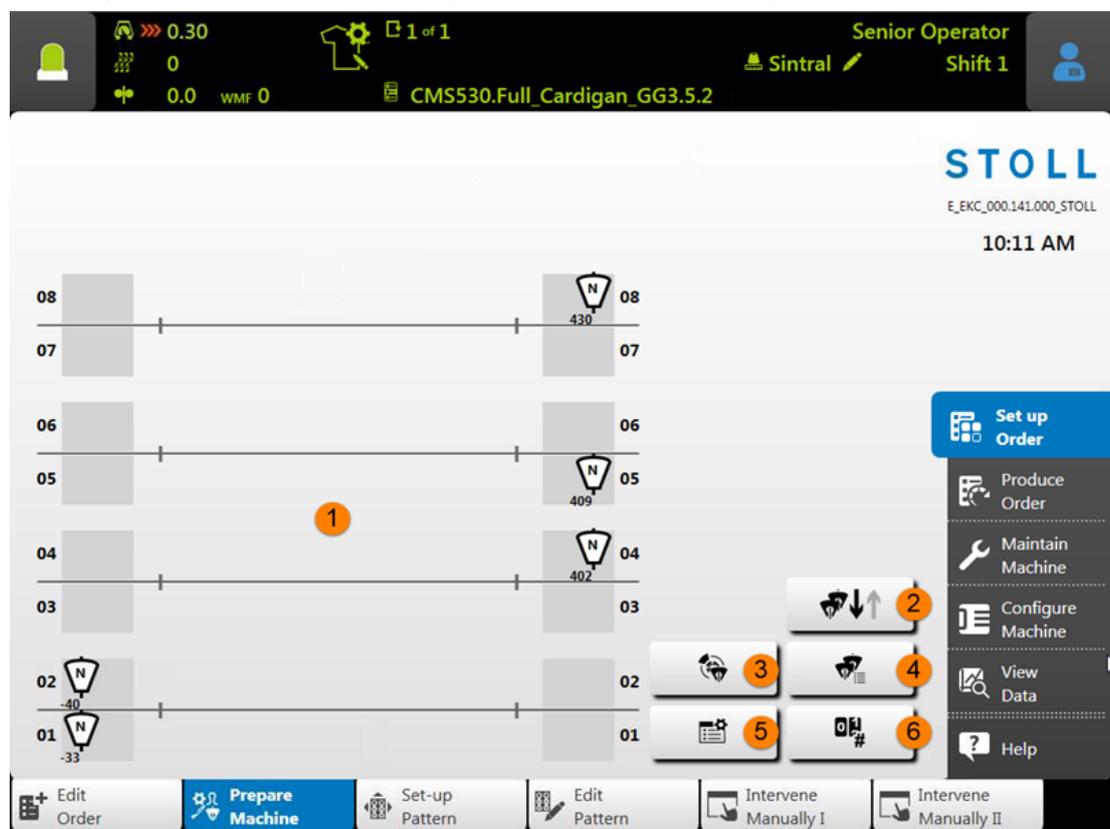
4. Press the  "Start production" button:

## 16.5 Prepare Machine

Prepare the machine for knitting: Thread-up yarn carriers:

- ✓ You are signed in as Senior Operator .
- ✓ Knitting program is loaded and the order was started.

1. Tap on  "Prepare Machine" in the bottom navigation bar.
  - ▶ The graphic representation of the yarn carriers used is displayed



<b>1</b>	<p>Graphic display of the active yarn carriers of the yarn carrier home position of the loaded knitting program.</p> <p>The dark background represents the collecting clamp unit.</p> <p><b>Yarn carriers required in the new pattern:</b></p> <table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"></td> <td> <p>Black symbol for yarn carriers identifying the <b>Yarn carrier type and the positioning (number)</b></p> <ul style="list-style-type: none"> <li>◆ N : Normal yarn carrier</li> </ul> </td> </tr> <tr> <td style="text-align: center;"></td> <td> <ul style="list-style-type: none"> <li>◆ <b>Without +:</b> Existing yarn carrier, which was used in the previously loaded pattern and therefore does not need to be thread-in.</li> <li>◆ <b>With +:</b> New yarn carrier, which was not used in the previously loaded pattern and therefore needs to be thread-in.</li> </ul> </td> </tr> </table>		<p>Black symbol for yarn carriers identifying the <b>Yarn carrier type and the positioning (number)</b></p> <ul style="list-style-type: none"> <li>◆ N : Normal yarn carrier</li> </ul>		<ul style="list-style-type: none"> <li>◆ <b>Without +:</b> Existing yarn carrier, which was used in the previously loaded pattern and therefore does not need to be thread-in.</li> <li>◆ <b>With +:</b> New yarn carrier, which was not used in the previously loaded pattern and therefore needs to be thread-in.</li> </ul>
	<p>Black symbol for yarn carriers identifying the <b>Yarn carrier type and the positioning (number)</b></p> <ul style="list-style-type: none"> <li>◆ N : Normal yarn carrier</li> </ul>				
	<ul style="list-style-type: none"> <li>◆ <b>Without +:</b> Existing yarn carrier, which was used in the previously loaded pattern and therefore does not need to be thread-in.</li> <li>◆ <b>With +:</b> New yarn carrier, which was not used in the previously loaded pattern and therefore needs to be thread-in.</li> </ul>				

<b>Yarn carriers no longer required in the new pattern:</b>	
	Gray symbol for yarn carriers identifying the <b>Yarn carrier type and the positioning (number)</b>
<b>i</b> : When starting the order, the yarn carrier home positions of the previous pattern are compared with those of the new pattern.	
2	 Switch on/off plunger
3	 Input braking values
4	 Tabular display of the yarn carriers
5	 Show the Setup Editor
8	 Display the list of counters <ul style="list-style-type: none"> <li>◆ #1 to #221</li> <li>◆ Shape Counters</li> <li>◆ Shape counters absolute</li> </ul> <b>i</b> : No cycle counters

2. Thread-up the yarn carriers according to the display.

### **i** Help for threading-up

To make the thread-up easier, the production can be interrupted (empty carriage stroke) with the  button of the  "Intervene Manually I" menu. Then deactivate the button again to continue with the production.

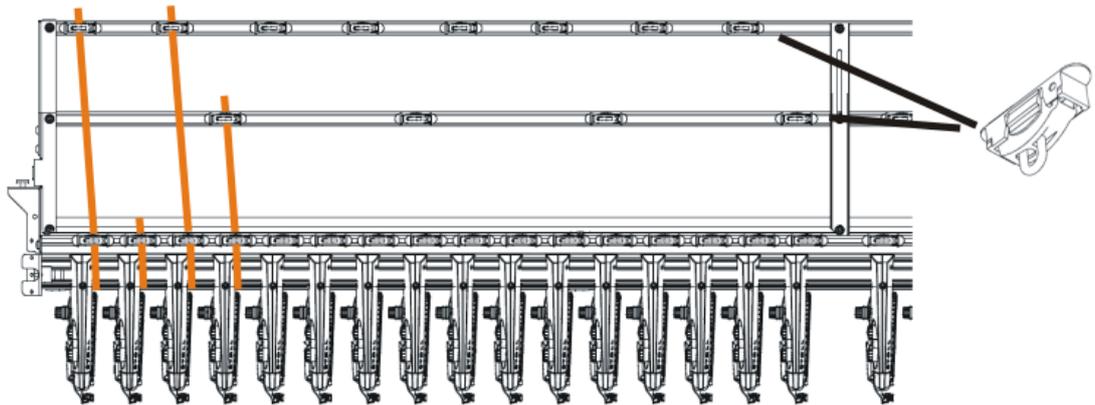
## 16.6 Threading up the Machine

Positioning the bobbins when using up to 16 yarn carriers:

You have different possibilities to position the bobbins depending on the machine type and the quantity of yarn carriers.

1. Place the bobbins from the outside toward the center of the machine.
2. Position the movable yarn guide brackets in order to get one yarn guide over each bobbin.

**Top view:**

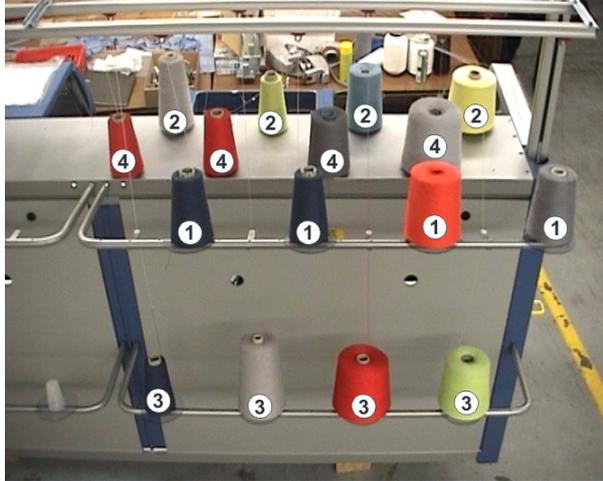


3. Thread each thread through a yarn guide bracket.
4. Thread-up the yarn carriers:
  - Start with the yarn carriers of the highest track number, from the back to the front.
  - Lead the thread of the **inner yarn control device** via the **rear track of the yarn deflector**.
  - Lead the thread of the **outer yarn control device** via the **front track of the yarn deflector**.
5. Lead all threads for a yarn carrier on this side via the same track of the yarn deflector.
6. Thread-up the draw thread, the elastic thread and the comb thread into the corresponding yarn carriers.

Positioning the bobbins when using more than 16 yarn carriers:

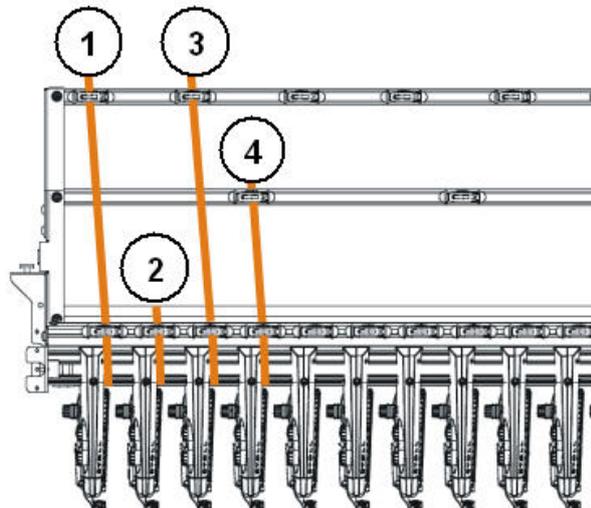
1. Position the bobbins on the bobbin board of the knitting machine and on the supplementary board starting from the outside to the center.

**Arrangement of the bobbins using a supplementary bobbin board:**



2. Feed the threads from the additional bobbin board (1) and (3) via the yarn guide bracket to the yarn control units (1) and (3).
3. Feed the threads from the additional bobbin board (2) and (4) via the yarn guide bracket to the yarn control units (2) and (4).

**i**: Do not cross the threads.



4. Thread-up the yarn carriers:

- Start with the yarn carriers of the highest track number, from the back to the front.
- Lead the thread of the **outer yarn control device** via the **rear track of the yarn deflector**.

- Lead the thread of the **inner yarn control device** via the **front track of the yarn deflector**.



5. Lead all threads for a yarn carrier on this side via the same track of the yarn deflector.
6. Thread-up the draw thread, the elastic thread and the comb thread into the corresponding yarn carriers.

### 16.6.1 Default Yarn Carrier Home Positions

Default allocations of yarn carrier rails for the different machine types:

Machine Type	Comb	Yarn type	left track	right track
BMS 52	With Comb	Protection thread 1		8
		Rib thread		2
		Elastic Thread		1
		Comb Thread	2	
		Draw thread	1	
	Without Comb	Rib thread		2
		Elastic Thread		1
		Comb Thread		
Draw thread		1		

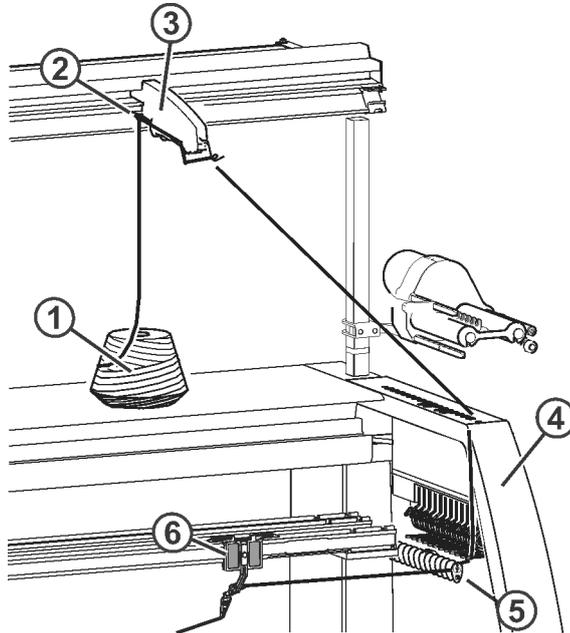
## 16.6.2 Threading up from the Bobbin Board to the Yarn Carrier

Various courses of yarn are provided for threading up the yarn on the knitting machine. The optimal course of yarn depends on the yarn and pattern.

Determining the course of yarn

Courses of yarn	Yarn
<b>Course of yarn 1</b>	Seldom used threads, e.g. elastic yarns
<b>Course of yarn 2</b>	Seldom used threads, e.g. draw threads
<b>Course of yarn 2:with simple patterns</b> <b>Course of yarn 3:with difficult patterns</b>	Frequently used threads
<b>Course of yarn 3</b>	Difficult-to-process threads
<b>Course of yarn 4</b>	Equally long fabrics

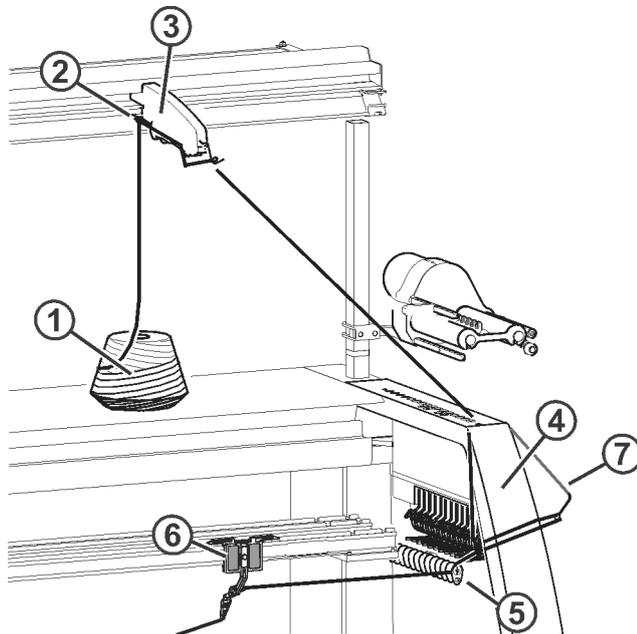
Course of yarn 1:



1	Bobbin	4	Safety door
2	Yarn guide bracket	5	Yarn deflector
3	Yarn control unit	6	Yarn Carriers

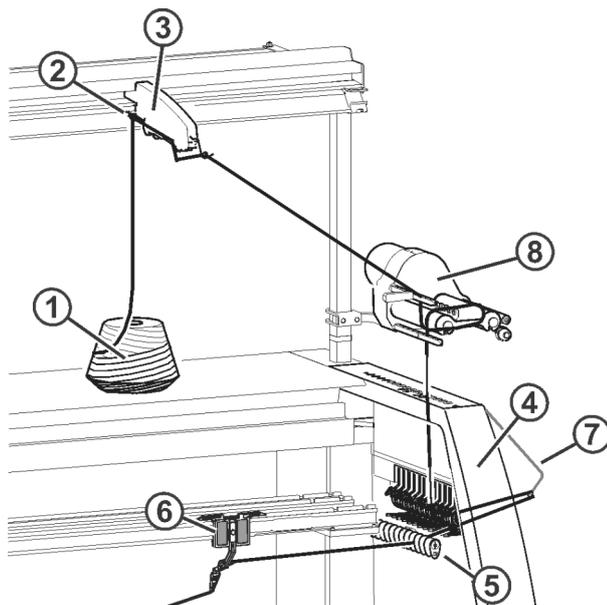
Threading up the Machine

Course of yarn 2



1	Bobbin	5	Yarn deflector
2	Yarn guide bracket	6	Yarn Carriers
3	Yarn control unit	7	Lateral yarn tensioner
4	Safety door		

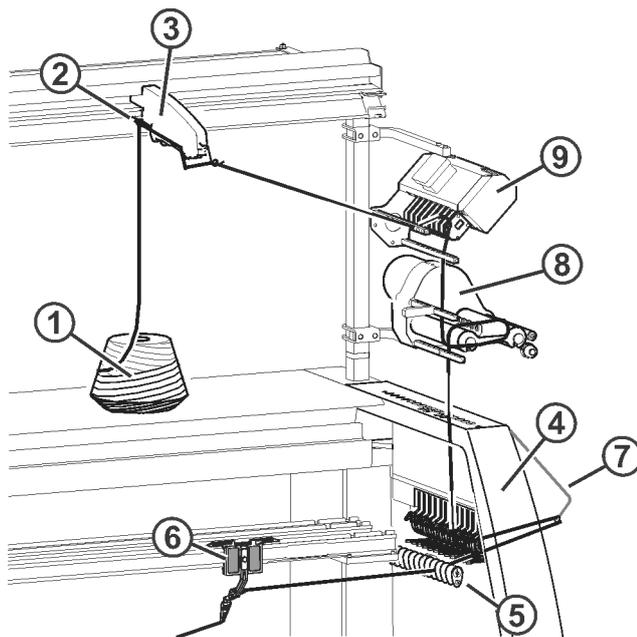
Course of yarn 3



1	Bobbin	5	Yarn deflector
---	--------	---	----------------

2	Yarn guide bracket	6	Yarn Carriers
3	Yarn control unit	7	Lateral yarn tensioner
4	Safety door	8	Friction feed wheel

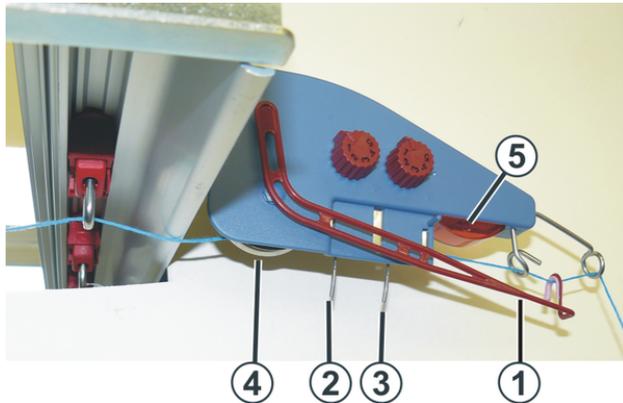
### Course of yarn 4



1	Bobbin	6	Yarn Carriers
2	Yarn guide bracket	7	Lateral yarn tensioner
3	Yarn control unit	8	Friction feed wheel
4	Safety door	9	Yarn length measuring device (ASCON, STIXX)
5	Yarn deflector		

## 16.6.2.1 Threading up the yarn control unit

## I. Yarn control unit (FKE):



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

## II. Tasks of the yarn control unit:

---

**i** The elements of the yarn control unit can individually be adjusted to the yarn being processed.

---

1. The yarn break control (1) monitors the yarn ends and switches off the machine in case of a yarn breakage or end.
2. In the case of large knots in the yarn, the knot detector switches off the knitting machine.

---

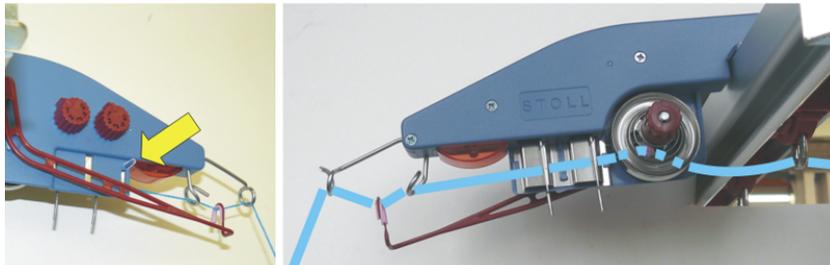
**i** **Error display**  
Errors are indicated by the LED (5), the signal light and at the display.

---

1. In the case of small knots in the yarn, the machine knits a programmed number of rows at reduced speed.
2. The yarn brake disc (4) regulates the yarn tension and prevents the thread from hanging through while knitting.

### III. Threading up the FKE:

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.

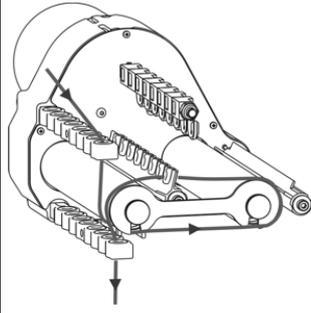
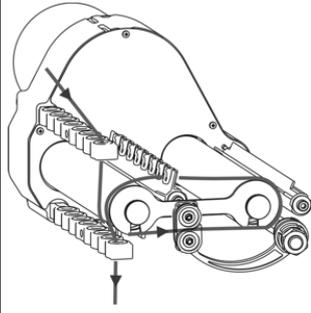
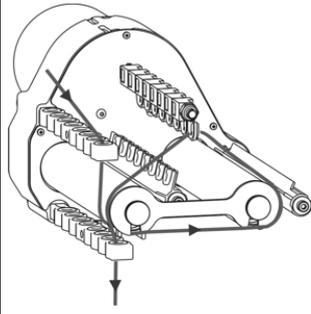
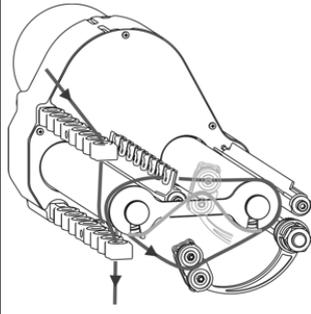


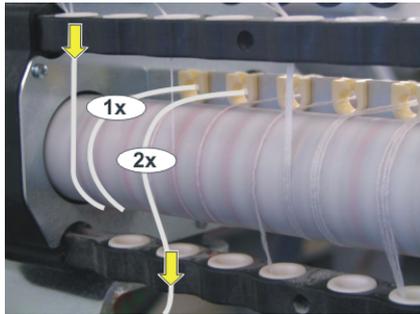
2. Thread each thread through a yarn control device as shown in the picture.

### 16.6.2.2 Threading up the Friction Feed Wheel

#### I. Different ways to thread up the friction feed wheel:

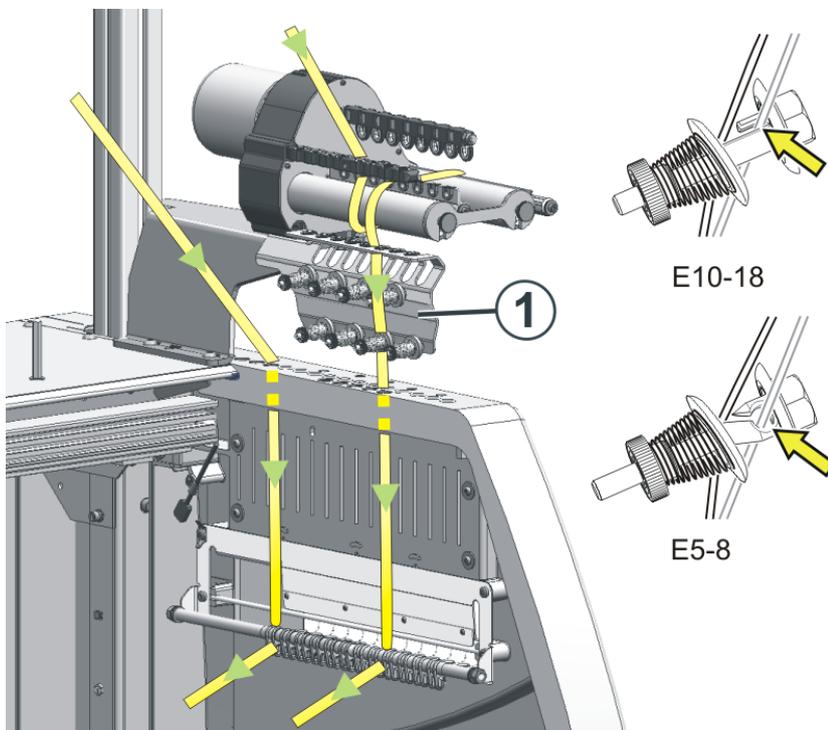
**i** The different ways of threading up depend on the construction type of the feed wheel.

Construction type without swivel arm	Construction type with swivel arm
	
Default setting: great yarn delivery	Default setting: medium yarn delivery
	
Lower yarn delivery	Greater yarn delivery (grey) Lower yarn delivery (black)

Construction type without swivel arm	Construction type with swivel arm
<p><b>i:</b> Lead the thread twice over the friction rollers if necessary. This reduces the yarn tension considerably.</p> 	

16.6.2.3 Threading-up the Permanent Brake

- i** Thread-up into the permanent brake only the yarns that are processed with the friction feed wheel.  
Make sure that you thread-up the yarn vertically downwards.



1. Guide the yarn downwards behind the brake discs.
2. Insert the yarn between the two brake discs.

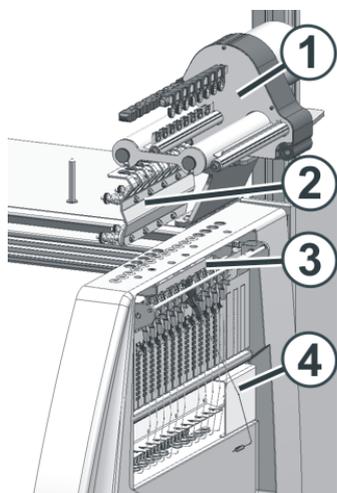
3. Pull the yarn somewhat towards the machine center to open the brake discs.
  4. Release the yarn tension again.
- The brake discs close and the yarn glides into the open eyelet.

#### 16.6.2.4 Threading-up the Lateral Yarn Guide

**i**

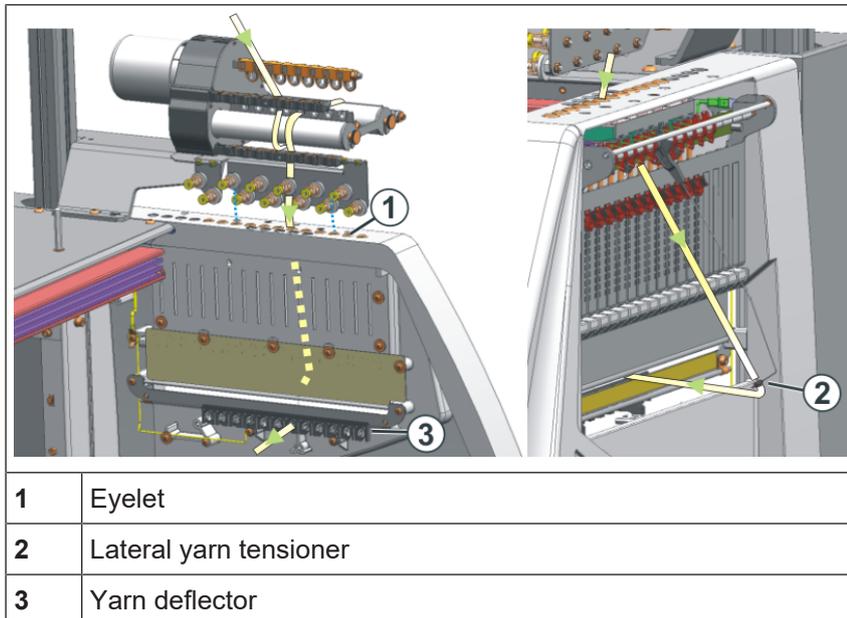
The friction feed wheel, the permanent brake, the active thread clamp and the lateral yarn tensioner work together.

##### I. Designations of the lateral yarn guide



	Designation
1	Friction feed wheel
2	Permanent brake
3	Active thread clamp
4	Lateral yarn tensioner

## II. Threading-up the lateral yarn tensioner:

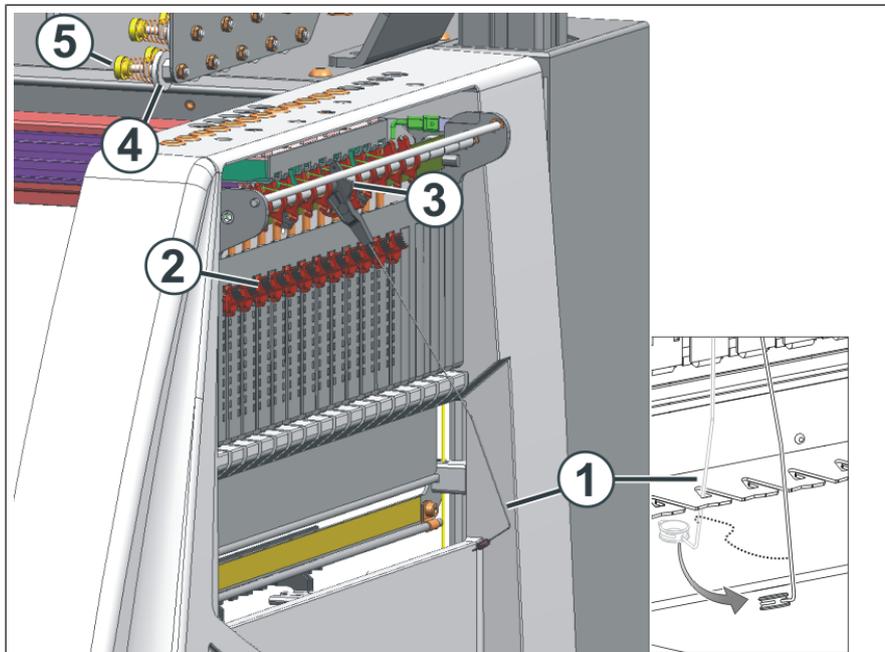


**i** Make sure that you thread-up the thread vertically through the lateral safety door.

1. Bring the lateral yarn tensioner in still position (lock). This way the active thread clamp is opened.
2. Thread the thread through one of the eyelets (1) on the lateral safety door.
  - **Eyelet 3 to 10:** for threads that are threaded-up via the feed wheel.  
The clamping positions of the active thread clamp are located in this area.
  - **Eyelet 1 + 2 / 11 and following:** for threads that are processed without feed wheel.  
Example: Comb thread, draw thread
3. Thread-up the thread vertically downwards in the eyelet (2) of the lateral yarn tensioner.
4. Feed the thread through the yarn deflector (3) to the yarn carrier.
5. Bring lateral yarn tensioner in work position by unlocking.

## 16.6.2.5 Adjustment of the lateral yarn guide

## I. Adjust the yarn tension:



1	Yarn tensioner locked / unlocked
2	Slider for the restoring force of the yarn tensioner
3	Notched plate
4	Brake disc of the permanent brake
5	Knurled screw for the contact pressure of the permanent brake

1. Lateral Yarn Tensioner: Adjusting the restoring force on the linear regulator (2).
2. Open permanent brakes (5).
3. Adjusting yarn control unit.
4. Adjusting permanent brakes (5).
5. Lateral Yarn Tensioner: Adjust the yarn tensioning path at the notched plate (3).

## II. Adjusting restoring force of the yarn tensioner

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.

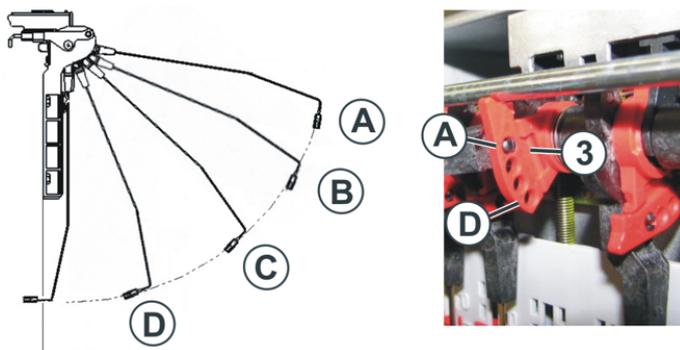
3. Control the setting while the machine is knitting.  
In this case the thread must not sag rather it should always be tensioned by the yarn tensioner.

III. Adjusting permanent brake:

- Adjust the permanent brake in such a manner that the lateral yarn tensioner swivels only a bit (approx. 25 degrees)  
If a thread loop is formed between the friction feed wheel and the permanent brake (on the inner side of the lateral safety door) then the yarn brake on the yarn control unit should be set a little stronger and the yarn brake should be set a little weaker.

IV. Set the yarn tensioning path of the yarn tensioner:

- The yarn tensioning path of the yarn tensioner can be set from 80 to 35 degrees.
- The yarn tensioning path is adjusted with the four lock positions of the notched plate (A-D).



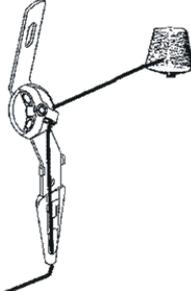
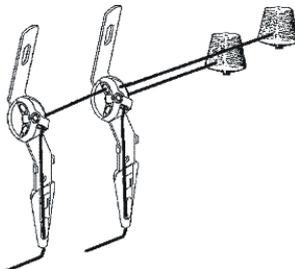
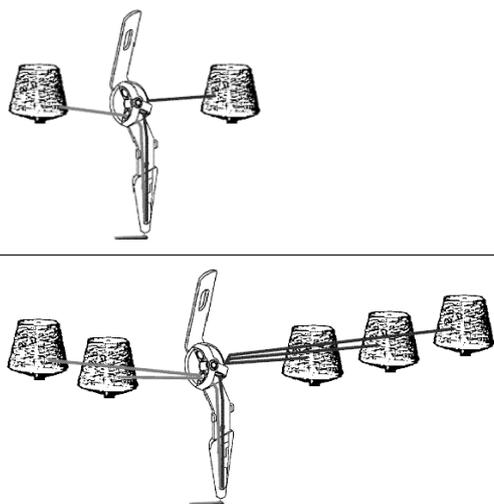
Position	max. angle	Function
<b>A</b>	80 °	Home position of the lock segment. Active thread clamp in action. Largest yarn tensioning path.
<b>B</b>	65 °	Active thread clamp in action.
<b>C</b>	50 °	Active thread clamp in action.
<b>D</b>	35 °	Active thread clamp out of action. Smallest yarn tensioning path.

## 16.6.2.6 Threading-up the normal yarn carrier

	<b>DANGER</b>
	<p><b>Danger by moving carriage</b>          Danger of crushing and cutting by the carriage.</p>

Different ways of threading-up the yarn carriers:

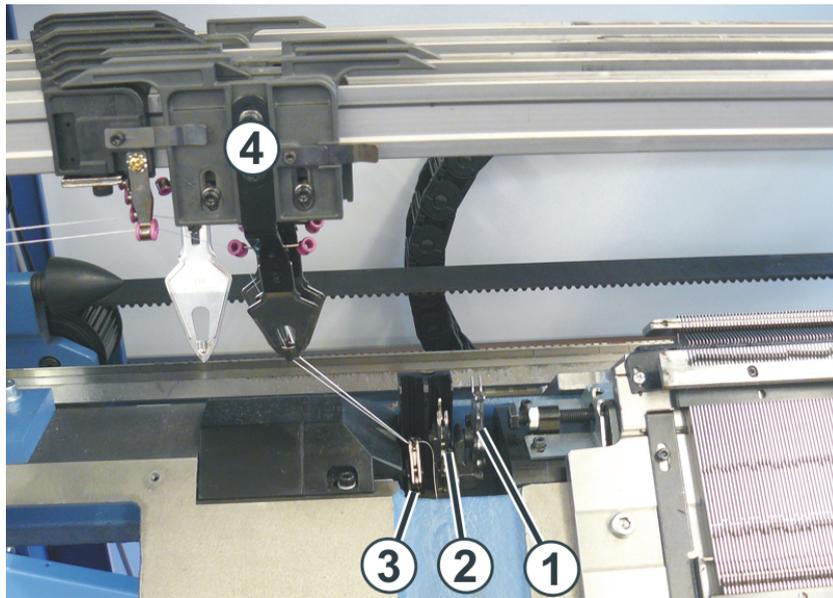
1. Open covers.
2. Thread up the yarn through the eyelets, the yarn guide star and yarn carrier head.

Thread up yarn carrier - Variants	
<p>Thread-up the threads into the respective next eyelet on the yarn carrier.</p>	
<p>If several yarn carriers of one track are used and the threads are led to the yarn carriers from the same side.</p>	
<p>If several bobbins are used for one yarn carrier.</p> <ul style="list-style-type: none"> <li>◆ Threading-up yarns from left and right.</li> <li>◆ Make sure that almost the same number of threads are used from left and right.</li> </ul>	

## 16.6.2.7 Locking yarn ends

## I. Utilization of clamping and cutting device and of the comb:

1. Position the yarn carriers next to the corresponding collecting clamp unit on the right or on the left according to the yarn carrier home position.
2. Insert the yarn ends manually into the collecting clamp unit (Threading up collecting clamp unit [▢ 48]).



No.	Element
1	Cutting device
2	Collecting clamp 1
3	Collecting clamp 2
4	Yarn Carriers

## II. Without utilization of clamping and cutting device and of the comb:

1. Position the yarn carriers at the fabric selvedge on the right or on the left according to the yarn carrier home position.
2. Push up some needles at the fabric selvedge manually.
3. Insert the yarn ends in the needles.
4. Pull down the needles manually.
5. Cut off the yarn end.
6. Close the covers.

16.6.2.8 Position the Yarn Carriers

I. Position the yarn carriers at the collecting clamp unit

- ✓ The yarn carriers used in the pattern are threaded-up.
  - ✓ With clamping and cutting device.
1. Position the yarn carriers at the **corresponding collecting clamp unit**.

II. Position the yarn carriers at the fabric selvedge:

- ✓ The yarn carriers used in the pattern are threaded-up.
  - ✓ Without clamping and cutting device.
1. Tap on  "Prepare Machine" in the bottom navigation bar.
    - ▶ The graphic representation of the yarn carriers used is displayed
  2. In the opened window press the  button.
    - ▶ The table with the yarn carriers in use is displayed.

Yarn Carriers

Y	Type	Wheel	Yarn		Position		Correction Value			Intarsia			Engaging Width		MSEC	V	Braking Values	
			Y:n	0/1	YG	YP	Ka	Kb	K<I>a	K<I>b	I<>	Ua	Ub	Ba			Bb	
1A	N		A	1	-33	-33	0.0	0.0	0.0	0.0			14.5	14.5	0.00	0	0	0
2A	N		B	1	-40	-40	0.0	0.0	0.0	0.0			14.5	14.5	0.00	0	0	0
4A	N		C	1	402	402	0.0	0.0	0.0	0.0			14.5	14.5	0.00	0	0	0
5A	N		D	1	409	409	0.0	0.0	0.0	0.0			14.5	14.5	0.00	0	0	0
8A	N		E	1	430	430	0.0	0.0	0.0	0.0			14.5	14.5	0.00	0	0	0

3. Position the yarn carriers staggered **at the fabric selvedge** according to the table.

16.6.3 Thread up the Yarn Carriers after Yarn Breakage

	DANGER
	<p><b>Danger by moving carriage</b>                  Danger of crushing and cutting by the carriage.</p>

With production: Thread up yarn carriers after yarn breakage.

1. Open covers.
2. Thread up the yarn through the yarn guide star and yarn carrier head.

3. Lay-in the thread in the needle head using a knitting hook.
4. Lead the yarn end opposed to the carriage direction.
5. Hold the yarn end outside the danger zone(carriage)
6. Push the carriage by hand until the yarn is fixed in the fabric.
7. Cut-off the yarn end.
8. Close the covers and continue production.

## 16.7 Setting up the pattern

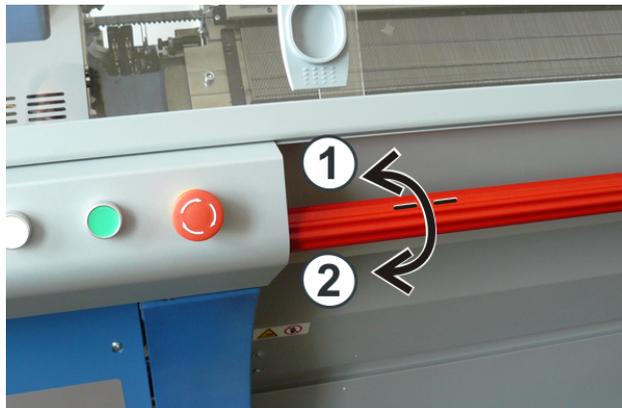
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**i** While the machine is knitting, the corresponding data of the knitting program is displayed for every carriage stroke and can be changed.

---

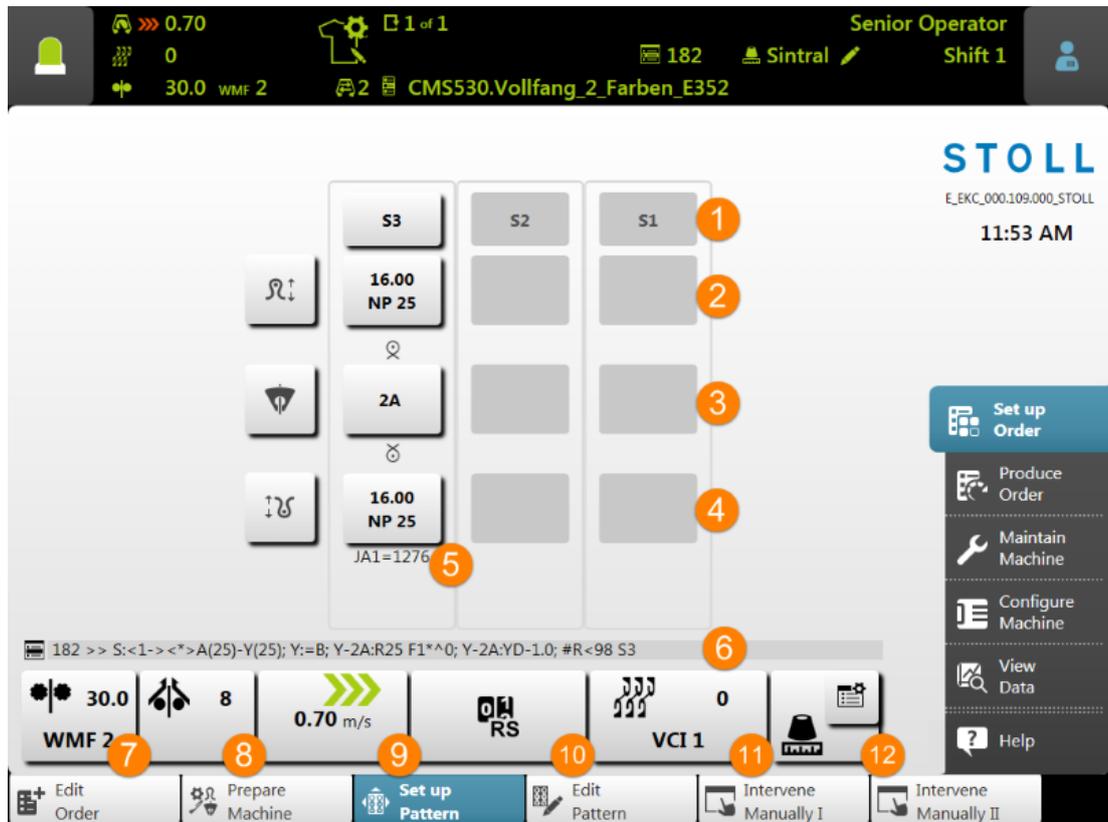
### I. Setting up the loaded pattern:

- ✓ You are signed in as Senior Operator .
  - ✓ An order with one knitting program was created.
  - ✓ Quantity (run-throughs) is set.
  - ✓ The order was started.
  - ✓ The yarn carriers used in the knitting program are threaded-up.
1. Start the machine with the engaging rod.



1	Carriage stopped
2	Production

2. Tap on  "Set-up pattern" in the bottom navigation bar.
  - ▶ The window is displayed.



Symbolic picture

No.	Key		
1		<b>System specification</b>	Display of the systems used with numbering <ul style="list-style-type: none"> <li>◆ Light gray: System active</li> <li>◆ Dark gray: System inactive</li> </ul>
<b>Data for the rear needle bed</b>			
2		Opening of the Setup Editor for changing the stitch tension	
		<ul style="list-style-type: none"> <li>◆ Display of the current stitch tension (NP index) and the assigned value</li> <li>◆ Opens number field for direct change of the value</li> <li><b>i</b>: The value is directly transferred to Setup.</li> </ul>	
		Graphic display of knitting symbols for the rear needle bed	
3		Opening of the Setup Editor for changing of <ul style="list-style-type: none"> <li>◆ YD /YDI</li> </ul>	

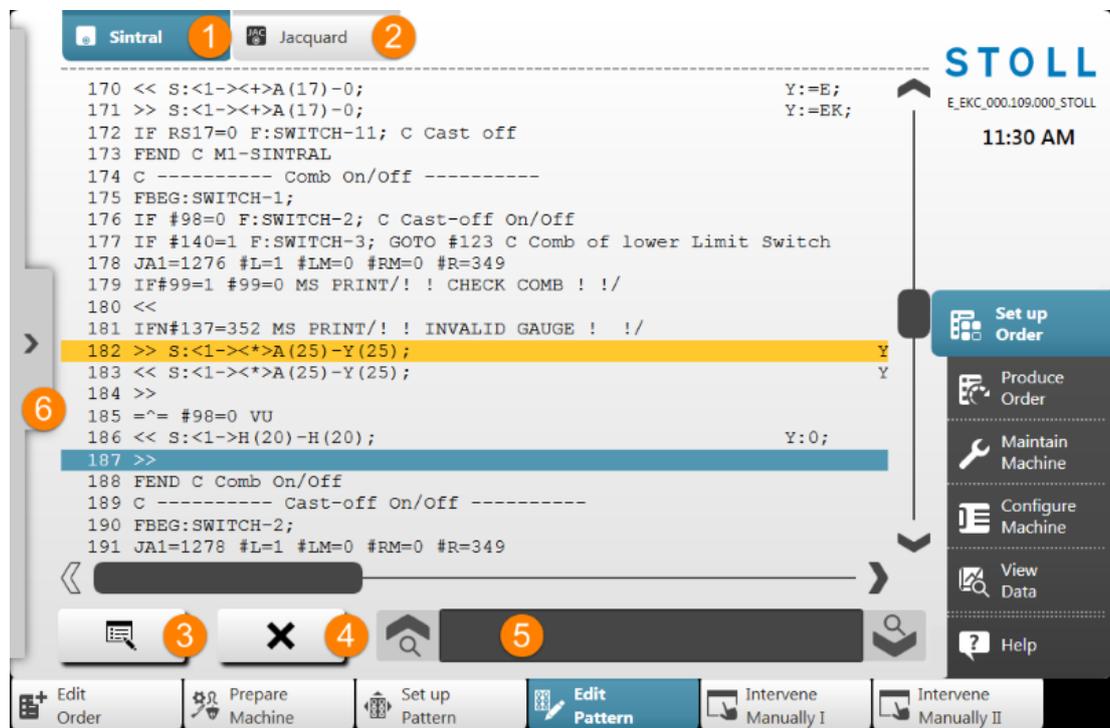
No.	Key		
		<ul style="list-style-type: none"> <li>◆ YC/YCI</li> <li>◆ Ua-b/NCC</li> </ul>	
			<ul style="list-style-type: none"> <li>◆ Display of the active yarn carrier</li> <li>◆ Opens the "Yarn carrier" window with graphic display of the yarn carrier rails</li> </ul>
<b>Data for the front needle bed</b>			
		Graphic display of knitting symbols for the front needle bed	
4		Opening of the Setup Editor for changing the stitch tension	
			<ul style="list-style-type: none"> <li>◆ Display of the current stitch tension (NP index) and the assigned value</li> <li>◆ Opens number field for direct change of the value</li> <li><b>i</b>: The value is directly transferred to Setup.</li> </ul>
5		Display of the currently knitting jacquard line number	
6		Display of the currently knitting Sintral line number	
7		<ul style="list-style-type: none"> <li>◆ Display of the take-down index with the current take-down value</li> <li>◆ Opening of the Setup Editors for changing data in the  WMF menu</li> </ul>	
9	 0.70 m/s	<ul style="list-style-type: none"> <li>◆ Display of the carriage stroke direction with the current carriage speed</li> <li>◆ Opening of the Setup Editor for changing the carriage speed values (MSEC)</li> </ul>	
10		<ul style="list-style-type: none"> <li>◆ Display of the current cycle counter</li> <li>◆ Opening of the Setup Editor for changing the cycle counter</li> </ul>	
11		<ul style="list-style-type: none"> <li>◆ Display of the current racking correction index with the current racking position</li> <li>◆ Opening of the Setup Editor for changing the values of the racking correction index</li> </ul>	

3. Make the desired changes of the pattern parameters.
  - ▶ The pattern is set-up and prepared for the production.

## 16.7.1 Edit Pattern

### I. View or changes of Sintral or Jacquard:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Edit Pattern" in the bottom navigation bar.
- ▶ The window is displayed.



No.	Key	
1		Display window with the program element Sintral <ul style="list-style-type: none"> <li>◆ Sintral line highlighted in yellow: currently knitting row</li> <li>◆ Sintral line highlighted in blue: selected Sintral line</li> </ul>
2		Display window with the program element Jacquard
3		Open the editor to change the selected line <b>i</b> : The changes are directly applied.
4		Delete the selected Sintral line <b>i</b> : A prompt appears before deleting.

No.	Key	
5		Edit box for searching of Sintral information
		Upward search referring the selected line
		Downward search referring the selected line
6		Expand the display window for the knitting simulation
		Collapse the display window for the knitting simulation

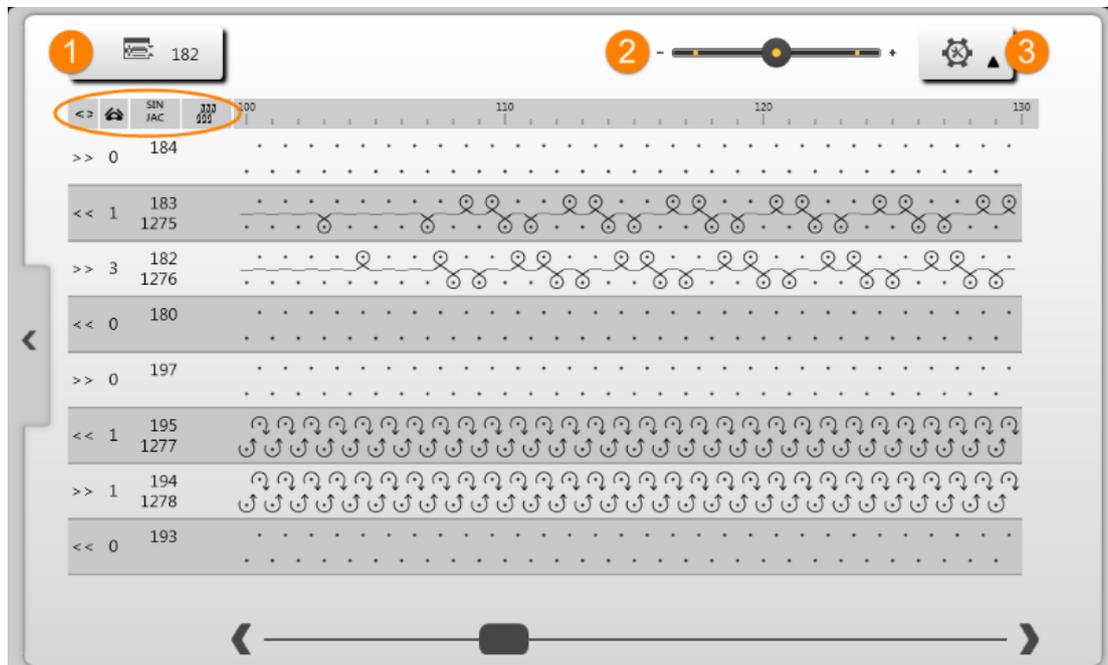
3. Make the desired changes in the Sintral or Jacquard



Changes at your own risk

The changes cannot be tested at the machine and can lead to major problems.

II. Display window with the knitting simulation:



No.	Key	
1		Currently knitting Sintral line
2		Zoom for the display

No.	Key	
3		<p>Selection menu for the display of the columns in the table</p> <ul style="list-style-type: none"> <li>◆  : Column for carriage direction</li> <li>◆  : Column for system specification</li> <li>◆ <b>SIN</b> <b>JAC</b> : Column for Sintral and Jacquard line number</li> <li>◆  : Column for racking position</li> <li>◆  : Display of the carriage position while knitting</li> </ul>

---

**i** The knitting simulation shows the Sintral line before and after the currently knitting Sintral line.  
Structure of the graphic in the knitting direction, i.e. read from the bottom upwards.

---

## 16.8 Check the yarn carriers

Display and check the yarn carrier positions.

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Prepare Machine" in the bottom navigation bar.
  - ▶ The graphic representation of the yarn carriers used is displayed
- 3. In the opened window press the  button.
  - ▶ The table with the yarn carriers in use is displayed.

Check the yarn carriers

Yarn Carriers																	
Y	Type	Wheel	Yarn		Position		Correction Value		Intarsia			Engaging Width		MSEC	V	Braking Values	
			Y:n	0/1	YG	YP	Ka	Kb	K<I>a	K<I>b	I<>	Ua	Ub			Ba	Bb
1A	N		A	1	-33	-33	0.0	0.0	0.0	0.0		14.5	14.5	0.00	0	0	0
2A	N		B	1	-40	-40	0.0	0.0	0.0	0.0		14.5	14.5	0.00	0	0	0
4A	N		C	1	402	402	0.0	0.0	0.0	0.0		14.5	14.5	0.00	0	0	0
5A	N		D	1	409	409	0.0	0.0	0.0	0.0		14.5	14.5	0.00	0	0	0
8A	N		E	1	430	430	0.0	0.0	0.0	0.0		14.5	14.5	0.00	0	0	0

Symbolic picture

Column	Meaning	
<b>Y</b>	Specification of yarn carrier	
<b>Type</b>	Definition of the yarn carrier type: ♦ Normal yarn carrier (N)	
<b>Wheel</b>	Allocation of the measuring wheels when using ASCON	
<b>Yarn</b>	<b>Y: = n</b>	Specification of yarn type
	<b>0/1</b>	Yarn type switched on or off
<b>Position</b>	<b>YG</b>	Home position of the yarn carrier with needle xx
	<b>YP</b>	Current yarn carrier position with needle xx <b>i</b> : Changes while knitting.
<b>Correction Values</b>	<b>Ka</b>	Yarn carrier correction value <b>a</b> at the left selvedge within the knitting area
	<b>Kb</b>	Yarn carrier correction value <b>b</b> at the right selvedge within the knitting area
		<b>i</b> : Valid for ♦ Normal yarn carrier
<b>Engaging Width</b>	<b>Ua</b>	Engaging value at the left when plating with two yarn carriers
	<b>Ub</b>	Engaging value at the right when plating with two yarn carriers
<b>MSEC</b>	Carriage speed related to yarn carrier	
<b>Braking Values</b>	<b>Ba</b>	Yarn carrier braking value <b>a</b> for the left selvedge
	<b>Bb</b>	Yarn carrier braking value <b>b</b> for the right selvedge

## 16.9 Save the order with a knitting program

**i** When saving an order a new file is always created with the xxx .seqx extension.

Saving an order with a knitting program:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Edit order" in the bottom navigation bar.
- 3. Then press the  "Save" button for saving.
- ▶ The "Save order" window is opened

**Save Order**  
Enter the save location for the order as well as the name for the order file and the knitting program.

---

**Save Location**

1  Z:\Anwender\_SC\Eisenlohr\EKC\ADF 32W\_E7.2\Englisch\1. Full-Cardigan\

---

**Name of Order File**

2 **Full Cardigan GG7**

`	1	2	3	4	5	6	7	8	9	0	-	=	←	
⌘	q	w	e	r	t	y	u	i	o	p	[	]	\	Del
↓	a	s	d	f	g	h	j	k	l	;	'	↵		
↑		z	x	c	v	b	n	m	,	.	/	↑	↑	
Copy											←	↓	→	Paste

4
 Cancel

3
 Save

<b>1</b>	Select location <ul style="list-style-type: none"> <li>◆ Local Patterns: Hard disc of the machine</li> <li>◆ Network drive</li> </ul>
<b>2</b>	Display of the name for the order file (seqx), which can be changed via the keyboard. Default setting: Name of the knitting program

	<b>i</b> : For orders with only one knitting program, the original name of the knitting program (zip file) is to be maintained, since with a modification also the zip file will be renamed!!
<b>3</b>	Save the order under the entered name
<b>4</b>	Cancel process

4. Select location.
5. Enter the desired name for the order file.

---

### **i** Attention

For orders with only one knitting program, the original name of the program (zip file) is to be maintained, since the zip file is also renamed in case of renaming!!

---

6. With the  "Save" button perform the operation.
  - ▶ In the specified location a **seqx** file with its zip file of the same name is created with the defined name.

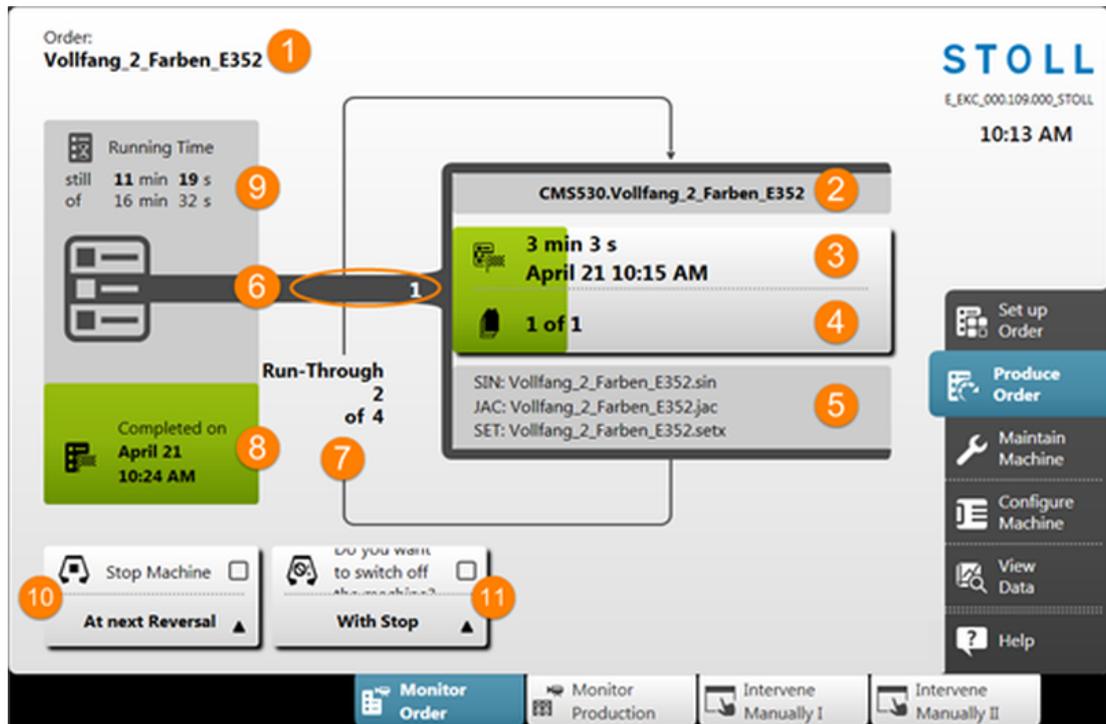
## 16.10 Produce Order

-  "Monitor Order": Display of the progress of an order
-  "Monitor Production": Display of the progress of the different fabrics of a position
-  : Re-knitting of fabrics of a position

### 16.10.1 Monitor the order with one knitting program

Monitor Order:

- ✓ An order is set-up and started.
  - ✓ You are signed in as Senior Operator .
1. Tap on  "Produce Order" in the main navigation bar.
  2. Tap on  "Monitor order" in the bottom navigation bar.
    - ▶ The window for **Monitoring the order** is displayed.



No.	Key	
1		Name of the order
2		Name of the active knitting program with the machine type designation
3		Display of the production progress (green bar) and running time of the current position (knitting program) <ul style="list-style-type: none"> <li>Running time of the number of fabrics per position plus fabrics to be re-knitted</li> <li>Date and time of the completion of the number of fabrics per position plus fabrics to be re-knitted</li> </ul>
4		Display of the number of fabrics per position (knitting program) <b>n</b> of <b>m</b> <ul style="list-style-type: none"> <li><b>n</b> = Number of completed fabrics of the current position</li> <li><b>m</b> = Total of fabrics to be knitted per position (knitting program)</li> <li><b>+ x</b> = Number of fabrics to be re-knitted of the current position</li> </ul> ⓘ: If several knitting programs are 'running through', the display corresponds to the piece counter for the corresponding active position (knitting programs).
5		Name of the elements of a knitting program <ul style="list-style-type: none"> <li>Sintral: xxx .sin</li> <li>Jacquard: xxx .jac</li> <li>Setup: xxx .setx</li> </ul>
6	No.	Active position number = sequential number of the knitting programs of the order

No.	Key	
7		Display of run-throughs (piece counter) <b>n</b> of <b>m</b> <ul style="list-style-type: none"> <li>◆ <b>n</b> = Quantity of completed run-throughs</li> <li>◆ <b>m</b> = Total of run-throughs to be produced</li> </ul> ⓘ: If a knitting program is 'running through', the display corresponds to the piece counter.
8		Displays the production progress (green area) of the order specifying the completion of the order (date + time).
9		Display of the running time <b>n</b> of <b>m</b> of the order <ul style="list-style-type: none"> <li>◆ <b>n</b> = Remaining run time</li> <li>◆ <b>m</b> = Total running time</li> </ul>
10		<input type="checkbox"/> Do not stop the machine
		<input checked="" type="checkbox"/> Stop Machine  Open the selection menu with the  button: <ul style="list-style-type: none"> <li>◆ At next Reversal</li> <li>◆ Once the Current Fabric Is Finished</li> </ul>
11		<input type="checkbox"/> Do not switch off machine
		<input checked="" type="checkbox"/> Switch Off Machine  Open the selection menu with the  button: <ul style="list-style-type: none"> <li>◆ With Stop</li> <li>◆ Once the Current Fabric Is Finished</li> <li>◆ Once the Order Is Finished</li> </ul>

### 16.10.2 Monitor the production with one knitting program

Monitor Production:

- ✓ You are signed in as Senior Operator .  
"Monitor Production" can also be performed by the Operator.
- ✓ An order is set-up and started.

1. In the main navigation bar select the main area  "Produce Order".
2. Tap  "Monitor production" in the bottom navigation bar.

► The window for **Monitoring the currently knitting fabric** is displayed.



Symbolic picture

No.	Key	
1		<p>Display of the running time per fabric piece <b>still nn of xx</b> with progress display (green bar)</p> <ul style="list-style-type: none"> <li>◆ <b>nn</b> : Remaining running time of the fabric piece</li> <li>◆ <b>xx</b> : Total running time of the fabric piece</li> </ul>
2	<p><b>Completed on</b></p> 	<p>Completion of the current position (plus re-knitting of fabric pieces)</p> <ul style="list-style-type: none"> <li>◆ Date</li> <li>◆ Time of Day</li> </ul>
3	<p><b>Carriages</b></p> 	<p>Current carriage speed m/s with display of</p> <ul style="list-style-type: none"> <li>◆ carriage direction toward left / toward right</li> <li>◆ Display of  with the activated "Reduced speed [ML]" button</li> </ul>
4	<p><b>Fabrics of Position z</b></p>  <p>n of m</p>	<p>Display of the number of fabrics per position z (knitting program) in the run-through n of m</p> <ul style="list-style-type: none"> <li>◆ <b>z = Position number = Sequential number of the knitting programs of the order</b></li> <li>◆ <b>n</b> = Number of completed fabrics of the current position</li> <li>◆ <b>m</b> = Total of fabrics to be knitted per position (knitting program)</li> <li>◆ <b>+ x</b> = Number of fabrics to be re-knitted of the current position</li> </ul>

No.	Key	
		 : If several knitting programs are 'running through', the display corresponds to the piece counter for the corresponding position (knitting program).
5	<b>Cycle Counters</b>	Display of the current cycle counter $RSn = x / y$ <ul style="list-style-type: none"> <li>◆ <b>n</b> : Number of the cycle counter</li> <li>◆ <b>x</b> : still remaining repetitions</li> <li>◆ <b>y</b> : total number of repetitions</li> </ul>
6	<b>Racking</b> 	Display of the current racking position
7	<b>Take-down</b> 	Display of the current take-down value
9	<b>Stitch length</b> 	Opening the dialog for changing the current stitch length
10	<b>Yarn Carriers</b> 	Opening the "Yarn carrier" window with the graphic representation of the active yarn carrier

3. Tap the desired button to change the corresponding value.

► The changes will be entered in Setup.

### 16.10.3 Re-knitting of fabrics

#### ■ Necessary modification

- In case of orders with only one knitting program, the number of run-throughs (piece number) can be influenced
- In case of orders with several knitting programs, the number of fabrics per position can be influenced in the order.

#### ■ Re-knitting of defective fabrics



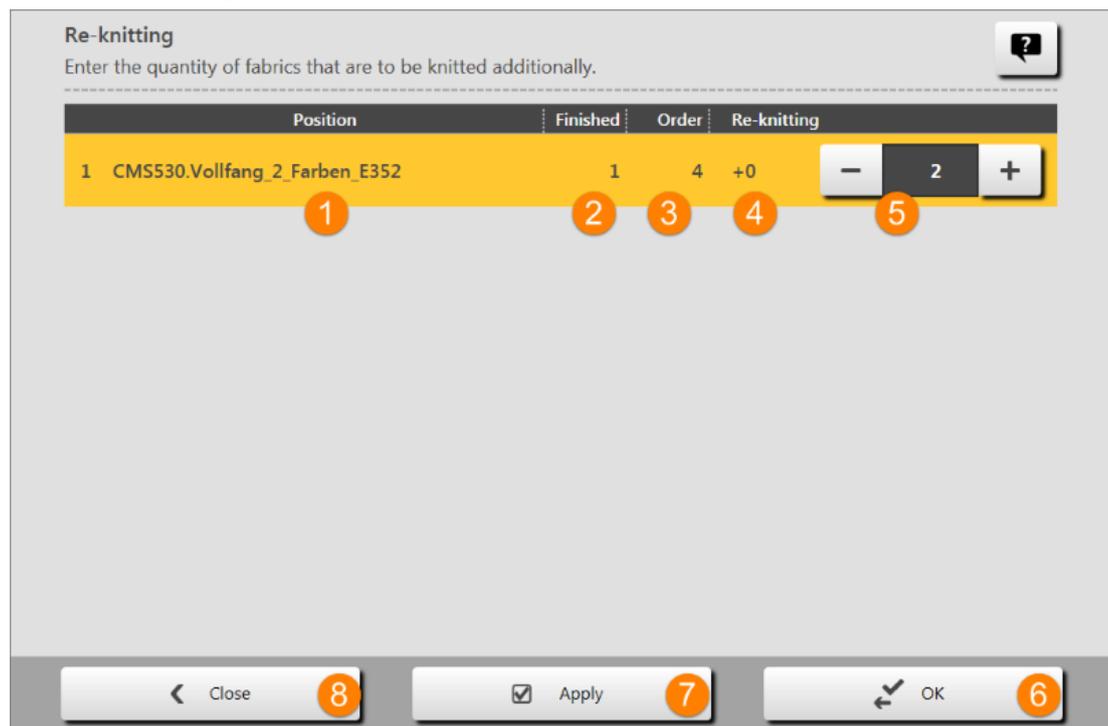
These changes do not influence the specification entered when creating the order, since this can only be performed by the Senior Operator.

---

## Re-knitting window

- ✓ You are signed in as Senior Operator .
- "Monitor Production" can also be performed by the Operator.
- ✓ An order is set-up and started.

1. Click the  button in the "Monitor Order" or the "Monitor Production" window.
- ▶ The "Re-knitting" window is opened.



No.		
1	<b>Position</b>	List of the knitting programs in the current order <ul style="list-style-type: none"> <li>♦ Order with one knitting program</li> <li>♦ Order with several knitting programs</li> </ul>
2	<b>Finished</b>	Quantity of processed run-throughs
3	<b>Order</b>	Total number of run-throughs <ul style="list-style-type: none"> <li>♦ Order with one knitting program = Piece number</li> <li>♦ Order with several knitting programs (positions) = Number of run-throughs of the entire position (list)</li> </ul>
4	<b>Re-knitting</b>	Display of the already re-knitted fabrics
5		+/- button for entering the number of fabric pieces to be re-knitted
6		Confirm the input and return to the previous window
7		Confirm the input for the first position in the list and do not exit the window to make further entries

No.		
8		Close the window without applying the entries

2. Make the desired entry for the first position to be changed

3. Press the  "Apply" button, to confirm this input and then to continue with the next entry.

- or -

Press the  "Ok" button, to confirm this input and to close the window.

---

**i** Behavior

If fabrics are entered to be re-knitted, 're-knitting' is performed immediately after completion of a currently knitting position.

---

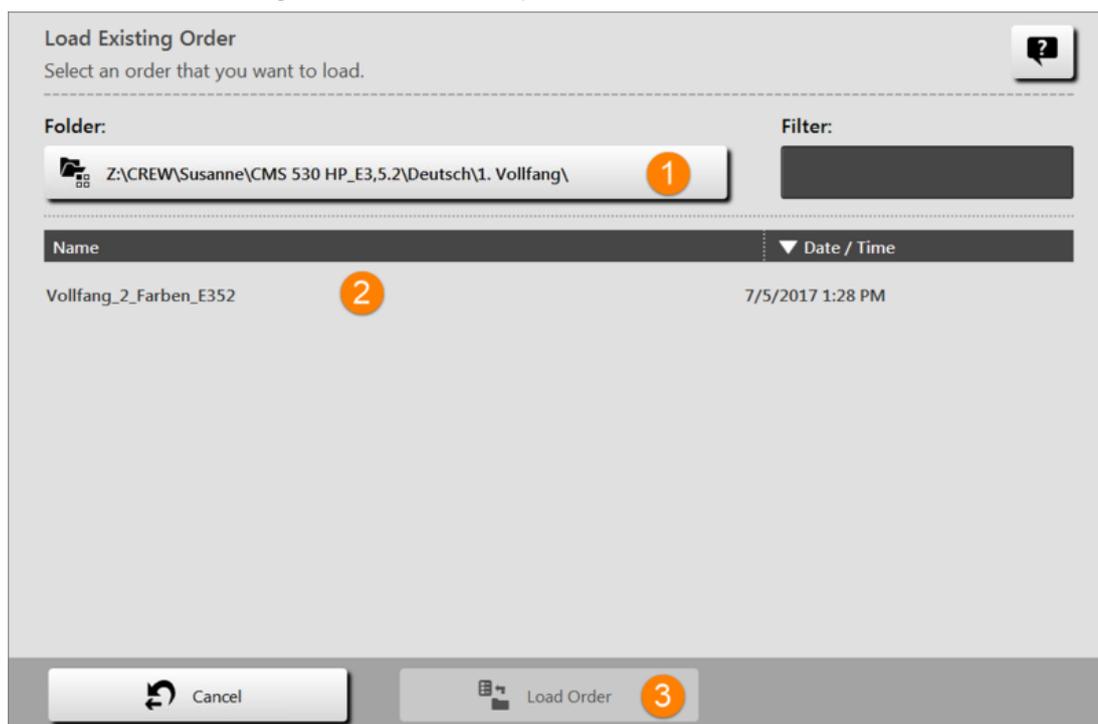
## 16.11 Load Existing Order

**i** An order with one or more knitting programs was saved as seqx file.

Load existing order (seqx file):

- ✓ You are signed in as Senior Operator .
- ✓ A **seqx** file is saved.

1. In the main navigation bar select the main area  "Set up Order".
2. Tap on  "Edit order" in the bottom navigation bar.
3. Then, for loading an existing order, press the  "Load existing order" button.
  - ▶ The "Load" "Existing Order" window is opened.

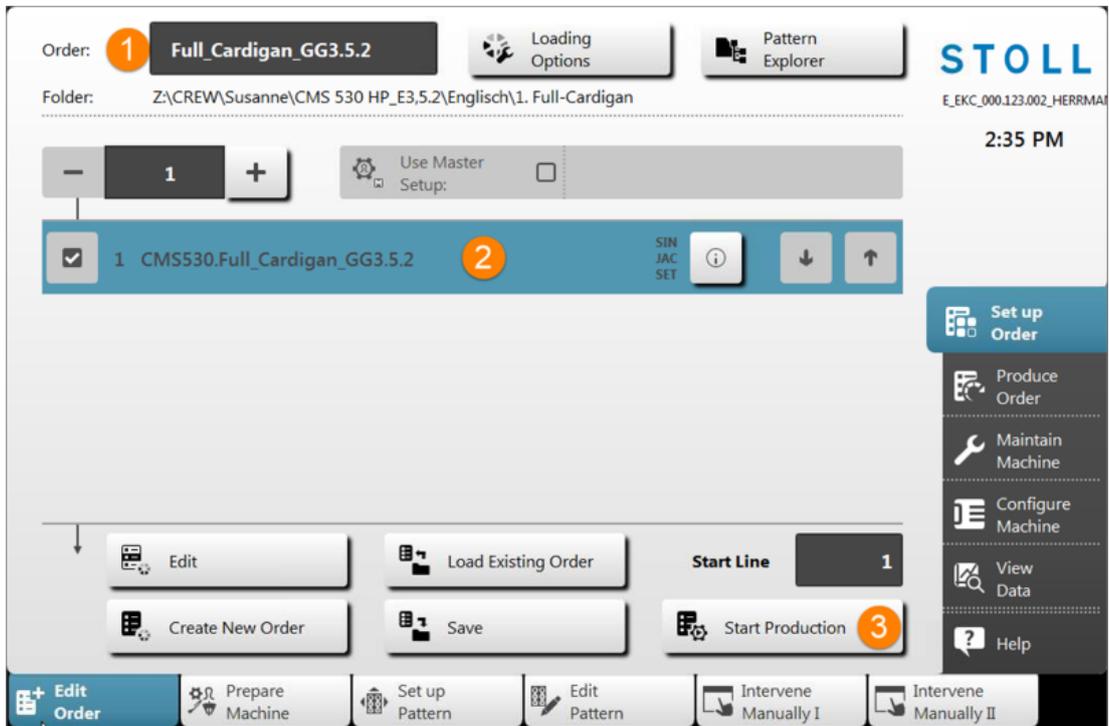


1	Select location (folder) of the saved seqx file <ul style="list-style-type: none"> <li>◆ Local Patterns: Hard disc of the machine</li> <li>◆ Network drive</li> </ul>
2	List of all seqx files in the selected folder.
3	Button for loading the selected seqx file

4. Select the desired seqx file.

Load Existing Order

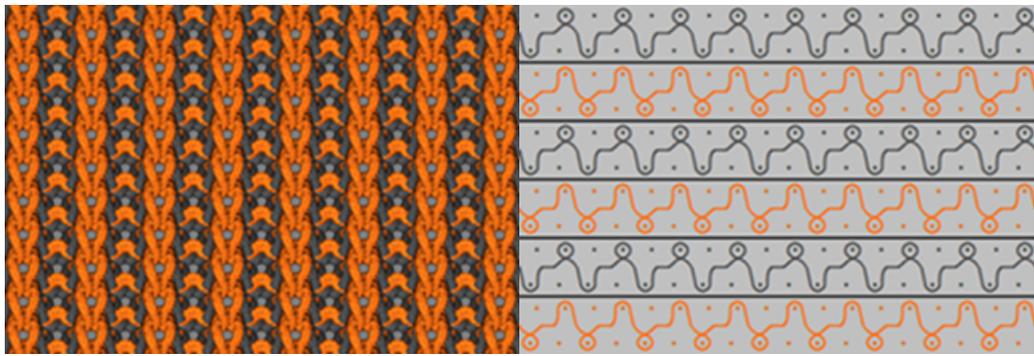
5. Press the  "Load Order" button.
  - ▶ The order is loaded.
  - ▶ In the menu area are displayed the loaded order and the knitting program.



1	Name of the seqx files
2	Name of the knitting program of the seqx file
3	Start Production

6. Press the  "Start production" button:

## 17 Full Cardigan, 2 Colors / Tuck

	
<b>Pattern name</b>	Full_Cardigan_2_Colors
<b>Start</b>	1x1 Rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ with comb function</li> <li>◆ with clamping / cutting</li> </ul>
<b>Pattern description</b>	<ul style="list-style-type: none"> <li>◆ 1x1 Start</li> <li>◆ Structure Full Cardigan (tuck) in 1x1 technique</li> <li>◆ 2 colors</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Cycle Counters (RS)</li> <li>◆ Stitch Length (NP)</li> <li>◆ Fabric Take-down (WB)</li> <li>◆ (MSEC) Carriage Speed</li> <li>◆ Staggering the yarn carriers at the fabric selvedge (YDI)</li> </ul>

## 17.1 Operating Mode of the Machine and Knitting Program

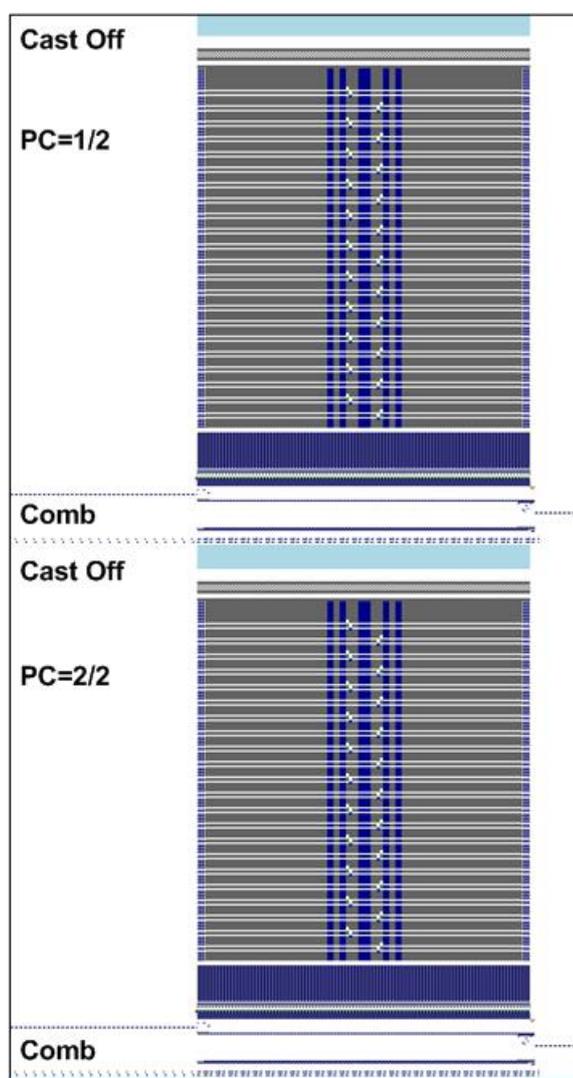
### Operating mode of the machine

#### ■ Operating mode using the comb

The knitting program (Sintral, Jacquard, Setup) is structured the way that the **comb function** is called-up at the start of the program and the **cast-off function** at the fabric end.

#### Result:

Each piece is started with the comb and cast-off at the end. This way single pieces are produced.



There must **not** be a fabric in the needle bed or main take-down.

---

### Comb function at the start of a fabric piece

1. Clearing the needle beds (knitting without yarn carrier)
2. Inserting the comb thread (special elastic yarn)
3. Raising the comb to the top till the comb thread is caught by the comb hooks
4. Closing the comb hooks
5. Lowering the comb till the comb hooks are no longer between the needles

### Casting-off function at the end of a fabric piece



The function is called-up at the end of the fabric to ensure an empty needle bed when starting the next fabric.

---

```

280 C ----- Abwerfen -----
281 FBEG: SCHALTER-9;
282 JA1=1103 #L=125 #LM=0 #RM=0 #R=275
283 << S:<1->H(8)-H(8)/<1->H-H;          Y:0/0;          V0          S1 S2          WMF5  MSEC=0.70
284 #98=1
285 >> S:<1->H-H/<1->H-H;          Y:0/0;          S2 S3          WMF2  MS=2.5
286 IF #69=>1 IF #69<=4 F: SCHALTER-10; C MS*#69 (1-4s)
287 FEND C Abwerfen
288 C ----- MS*#69 (1-4s) -----
289 FBEG: SCHALTER-10;
290 JA1=1100 #L=125 #LM=0 #RM=0 #R=275
291 <<
292 IF#69=1 MS=1
293 IF#69=2 MS=2
294 IF#69=3 MS=3
295 IF#69=4 MS=4
296 >>
297 FEND C MS*#69 (1-4s)

```



With the help of the **counter #69** in the cast-off function, an **additional standstill time (MS)** can be defined in the carriage reversal. This is necessary in certain cases to ensure the casting-off of the fabric.

---

### Set the counter#69:

✓ You are signed in as Senior Operator .

1. In the main navigation bar select the main area  "Set up Order".
2. Tap on  "Prepare Machine" in the bottom navigation bar.
3. Open the table of the counters with the  # button.
4. Tap on the  # "Counter 51-99" button.
  - ▶ The desired table is displayed
5. Enter the desired value for #69.

## 17.2 Create and set-up an order with a knitting program

Procedure:

1. **Create an order with a knitting program.**
2. **Start production.**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position the yarn carriers at the clamping point
  - Check the knitting area and the fabric collection chamber
4. **Start machine (engage).**

**Make the following changes:**

- Cycle Counters (RS)
- Stitch Length (NP)
- Machine speed (MSEC)
- Fabric take-down values (WB)

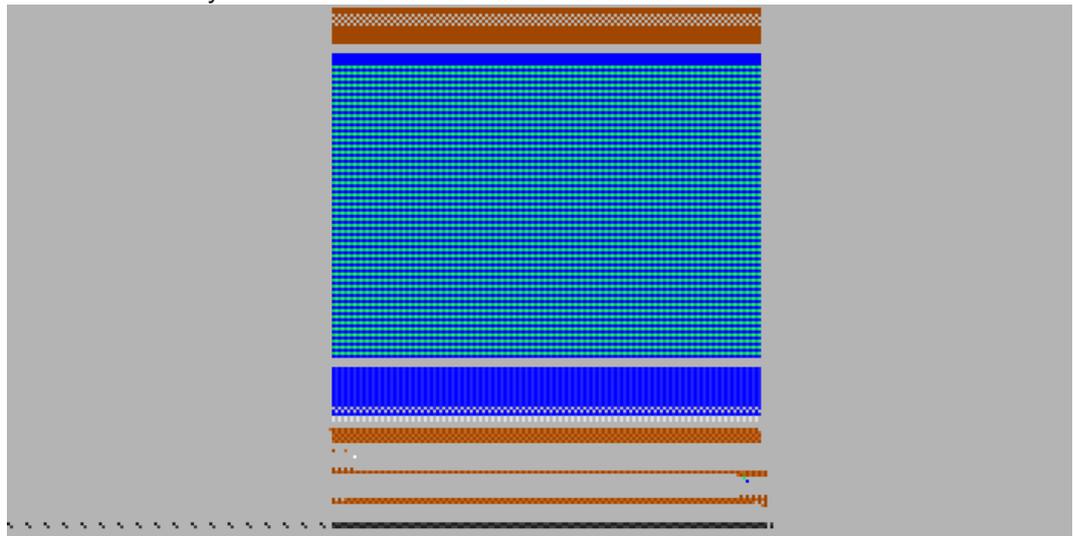
## 17.3 Setting: Cycle Counters

### Use of cycle counters

- Cycle counters are used for the length control in a fabric piece
- Pattern areas are defined in the pattern and repeated by cycle counters (variables)
- The cycle counters are allocated to the corresponding pattern areas in the Sintral program.
- Possible variables of cycle counters:
  - **Setup:** RS1 to RS39

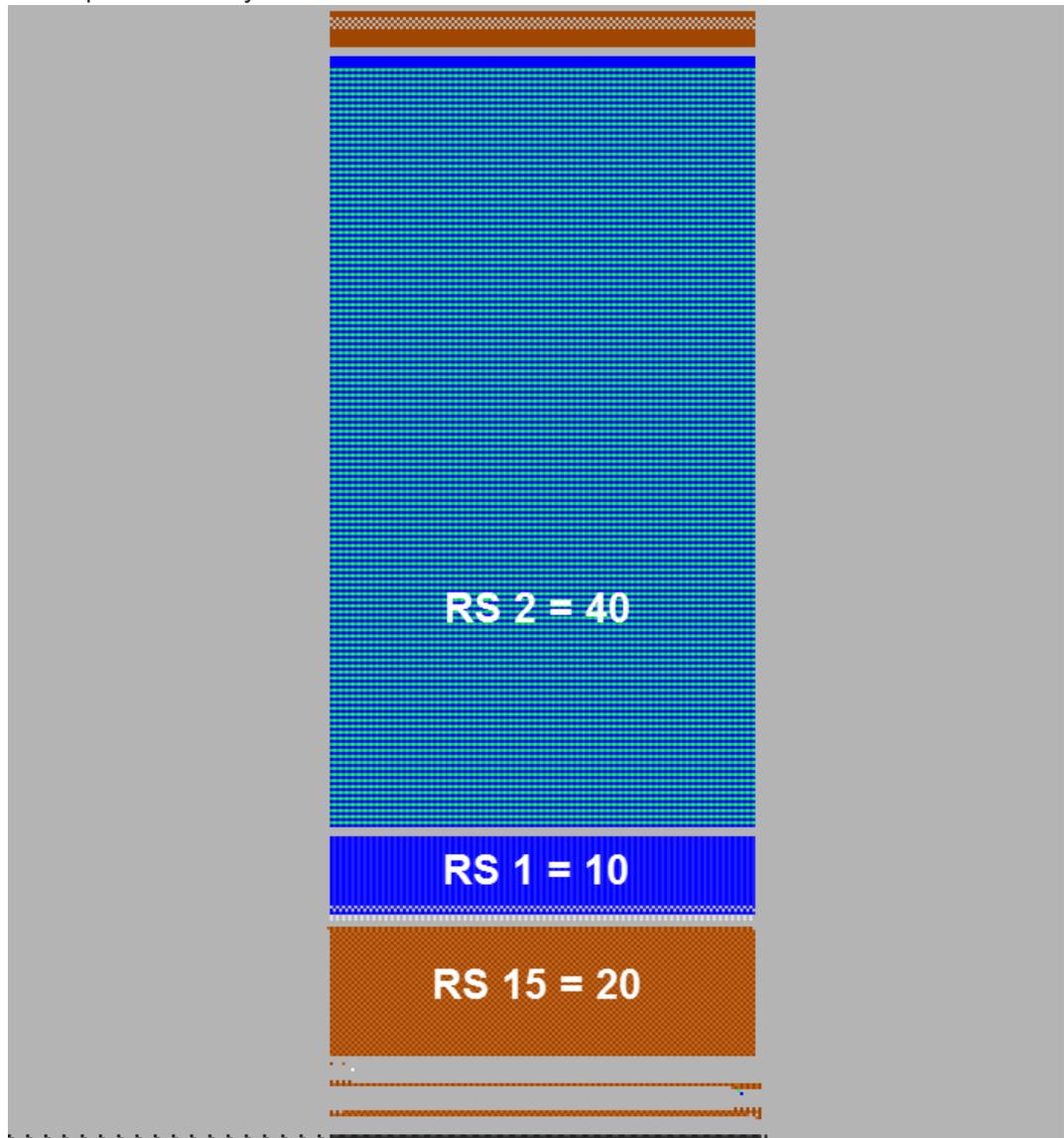
### Behavior of cycle counters

- Pattern without cycle counters



**Result:** The pattern cannot be influenced regarding the length.

## ■ Same pattern with cycle counters



**Result:** The pattern can be changed regarding the length in the areas with defined cycle counters.

Call up and change used cycle counters in the Setup Editor

- ✓ You are signed in as Senior Operator .
- ✓ The knitting program is loaded and the production was started.

1. Select  "Prepare Machine" in the bottom navigation bar and for changing the cycle counters, open the window with the  "Setup Editor" /  "RS "Cycle counter" button.  
- or -  
select the  "Set-up pattern" window and for changing the cycle counters, open the window with the  button.
2. Change the desired values.

RS	Value	Comment
RS1	10	1x1 Cycle
RS2	25	Full Cardigan (2 rows)
RS15	1	Safety Rows before Start
RS17	0	Comb On/Off (RS17=0)
RS18	0	Compensation Float and Lock (RS18=1)

<b>RS</b>	List of all the used cycle counters (RSn)	n = 1-39
<b>Value...</b>	Repetition factor	m = 1-9999
<b>Comment</b>	Designation of the cycle counter	

3. With the  "Close" button exit the Setup Editor.  
▶ Changed values in the Setup are saved together with the pattern when saving.

## 17.4 Setting: Stitch Length

The stitch length is essentially decisive for the stitch appearance of the knitwear.

- The longer the stitch is, the looser will be the fabric.
- The shorter the stitch is, the tighter will be the fabric.

The stitch length depends on:

- Yarn Quality
- Structure / Binding / Knitting technique

Setting: Stitch Length

Call up the stitch length table and change the values

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
1. In the main navigation bar  "Set up Order" is selected.
  2. Select  "Set-up pattern" in the bottom navigation bar.
    - Open the Setup Editor with the  button for changing the stitch length in the front needle bed
    - Open the Setup Editor with the  button for changing the stitch length in the rear needle bed
  3. Change the values.
  4. Close Setup Editor with the  "Close" button and return to  "Set-up Pattern".
    - ▶ The changed values are in Setup and will be stored together with the order when saving it.
- or -
5. In the main navigation bar select  "Produce Order".
  6. Open  "Monitor production" in the bottom navigation bar.
  7. Tap the  key.
    - ▶ Change the value via the number field.

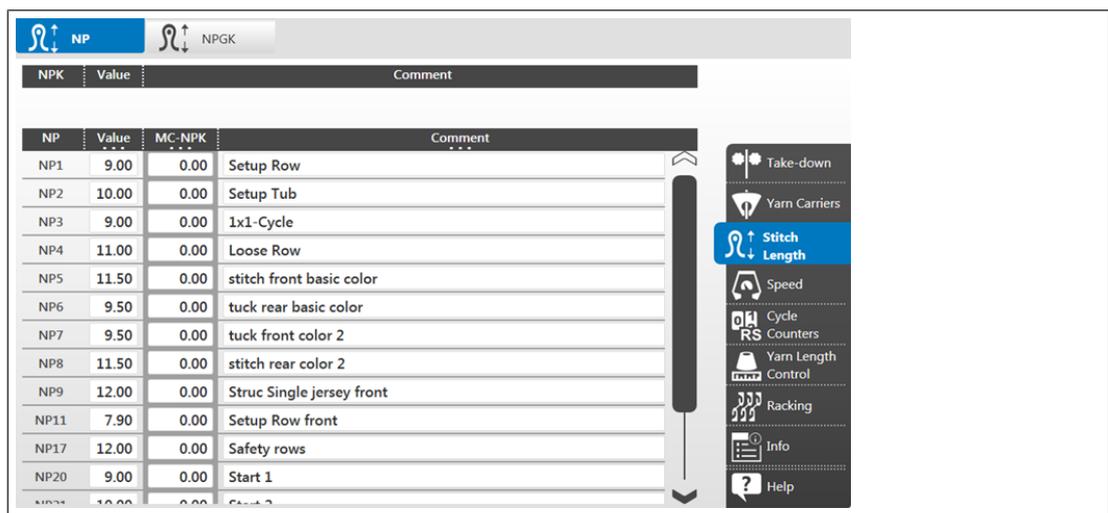


Table 1

<b>NPK</b>	Stitch cam correction for all stitch lengths (NP) used within the pattern
------------	---

<b>Value</b>	Input of desired correction	Min. value: -2 Max. value: 2 Step width: 0.05
<b>Comment</b>	Description of NPK value	
<b>Table 2</b>		
<b>NP</b>	List of all the used stitch lengths (NPn)	n = 1-250
<b>Value....</b>	Input of desired stitch length value	The value range depends on the gauge
<b>MC-NPK...</b>	<p>Machine specific <b>NP correction values</b></p> <ul style="list-style-type: none"> <li>◆ Input of correction values not to be applied to other machines.</li> <li>◆ These values are saved and kept by the machine.</li> <li>◆ These values cannot be transferred to other machines by the Setup file.</li> <li>◆ You can delete these values by <input checked="" type="checkbox"/> EANP (Loading Options) when creating a new order.</li> <li>◆ You can set all entries to one value or to =0 (zero) by click on the table header <b>MC-NPK....</b></li> </ul>	<p>Minimum value: -2 Maximum value: 2 Steps: 0.05</p> <p>Dongle Data  On the machine only!</p>
<b>Comment</b>	Description of NP value	

## 17.5 Setting: Carriage Speed

In a knitting program there are so-called technical rows (Jacquard rows), which control specific actions on the machine:

- Knit
- Transfer or casting-off
- Take or clamp yarn carriers

The carriage speed can be changed in the carriage reversal.

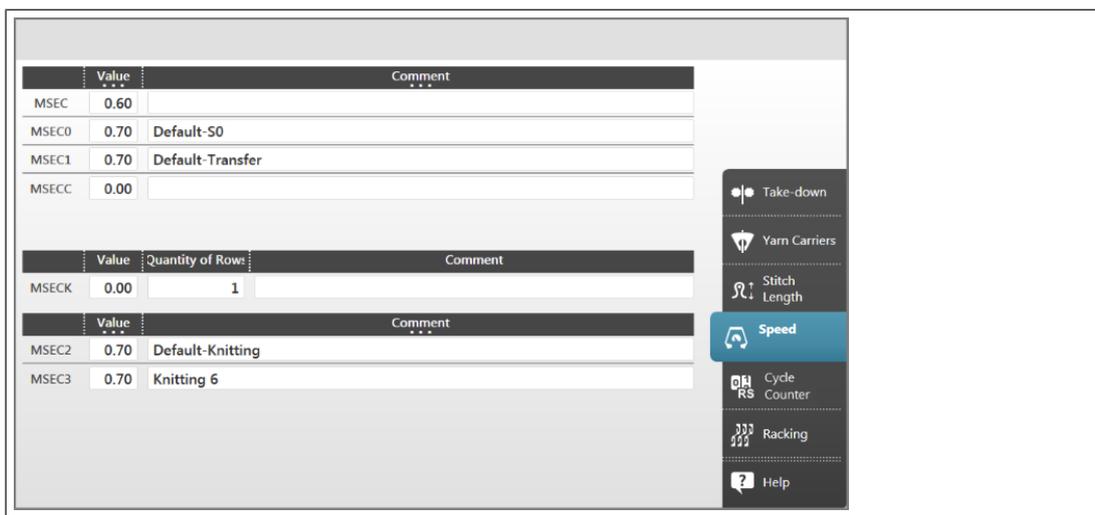
The quantity of Jacquard rows per carriage stroke to be knitted depends on the system number of the machine.

Adjust the carriage speed (MSEC) in case of:

- Different structures
- Difficult program parts
- Tight transfer rows
- Delicate yarns (for ex. cashmere)

### Carriage speed menu

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
1. In the main navigation bar  "Set up Order" is selected.
  2. Select  "Set-up pattern" in the bottom navigation bar.
  3. In the window tap the  button.
    - ▶ The Setup Editor appears.
  4. Change the value.
  5. Close Setup Editor with the  "Close" button and return to  "Set-up Pattern".
    - ▶ The changed values are in Setup and will be stored together with the order when saving it.
- or -
6. In the main navigation bar select  "Produce Order".
  7. Open  "Monitor production" in the bottom navigation bar.
  8. Tap the  key.
    - ▶ Change the value via the number field.



The screenshot shows the Setup Editor interface. It features a table with three sections of settings, each with 'Value' and 'Comment' columns. The first section has settings for MSEC (0.60), MSEC0 (0.70, Default-S0), MSEC1 (0.70, Default-Transfer), and MSEC2 (0.00). The second section has MSEC3 (0.00) and MSEC4 (1). The third section has MSEC5 (0.70, Default-Knitting) and MSEC6 (0.70, Knitting 6). To the right is a sidebar menu with options: Take-down, Yarn Carriers, Stitch Length, Speed (highlighted), Cycle Counter, Racking, and Help.

**Table 1**

<b>MSEC</b>	Carriage speed in general (meter / second)	Min. value: 0.05 Max. value: 1.2
<b>MSEC0</b>	Carriage speed for empty rows (S0)	Min. value: 0.05

		Max. value: 1.5
<b>MSEC1</b>	Carriage speed for transfer rows	Min. value: 0.00 = Carriage speed of the last knitting row will be applied Max. value: 1.2
<b>MSECC</b>	Carriage speed when fetching or bringing a yarn carrier to a clamp	Min. value: 0.05 Max. value: 0.5
<b>MSECI</b>	Carriage speed with intarsia yarn carriers	Min. value: 0.05 Max. value: 1.0
<b>Comment</b>	Description	
<b>Table 2</b>		
<b>MSECK</b>	Carriage speed with small knots	
<b>Value</b>	Input of the desired carriage speed	Min. value: 0.05 Max. value: 1.2
<b>Number of Rows</b>	Quantity of rows to be knit with the specified carriage speed. <b>i</b> : Default: 1 row with ML.	
<b>Table 3</b>		
<b>MSECM</b>	List of all carriage speeds in use	m = 2 - 20
<b>Value</b>	Input of the desired carriage speed	

## 17.6 Setting: Fabric Take-down

The purpose of the fabric take-down is to continuously take-down the knitwear the stitch. This way, the stitch loops are hold reliably in the needle hook during the stitch formation process or transfer. The fabric gets stability during the knitting process.

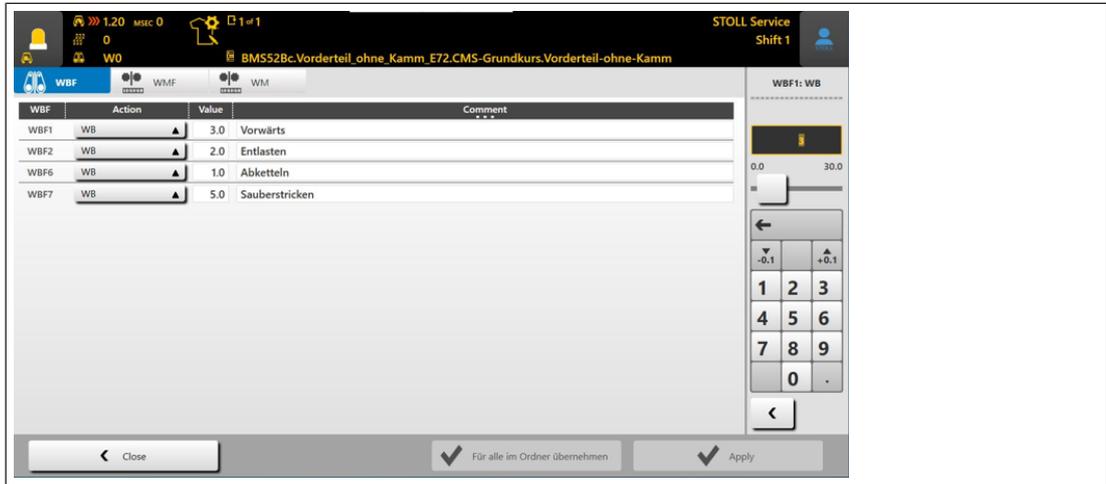
The fabric take-down depends on:

- Fabric width
- the knitting mode
- the stitch length
- the yarn in use

Open the Fabric Take-down Table

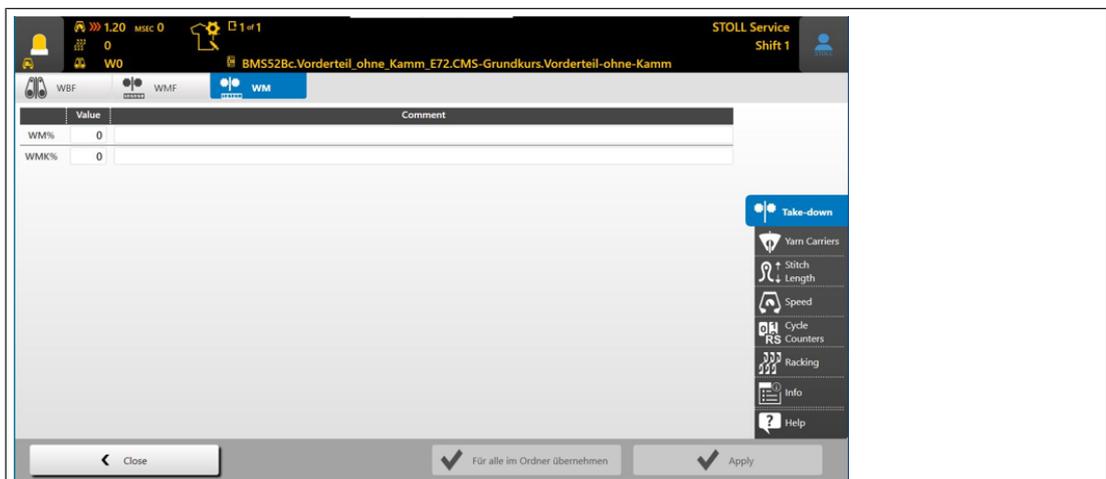
- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
  - ✓ In the main navigation bar  "Set up Order" is selected.
1. Select  "Set-up pattern" in the bottom navigation bar.
  2. In the window tap the button with the  symbol.
    - ▶ The  "WMF" menu in the Setup Editor is opened.
  3. Change the value.
  4. Close Setup Editor with the  "Close" button and return to  "Set-up Pattern".
    - ▶ The changed values are in Setup and will be stored together with the order when saving it.
- or -
5. In the main navigation bar select  "Produce Order".
  6. Open  "Monitor production" in the bottom navigation bar.
  7. Tap the button with the  symbol.
    - ▶ Change the value via the number field.

Tab:  WBF



WBF...	Belt take-down function	WBF1 to WBF50
Action	WB Belt speed by millimeters / second [mm/s]	Minimum value: 0 Maximum value: 30 Step width: 0.1
	WB^ Release the belt take-down	Minimum value: 1 Maximum value: 3 Step width: 1
	WBOPEN Open the belt take-down	

Tab:  WM



WM%	Modify the value for the main take-down by n percent	-80 to 80
-----	--	-----------

Setting: Fabric Take-down

<b>WMK%</b>	Modify the value for the comb take-down by n percent <b>i</b> : The value is only active till the fabric is taken down by the main take-down.	
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## 17.6.1 Additional Setting: Belt take-down and comb

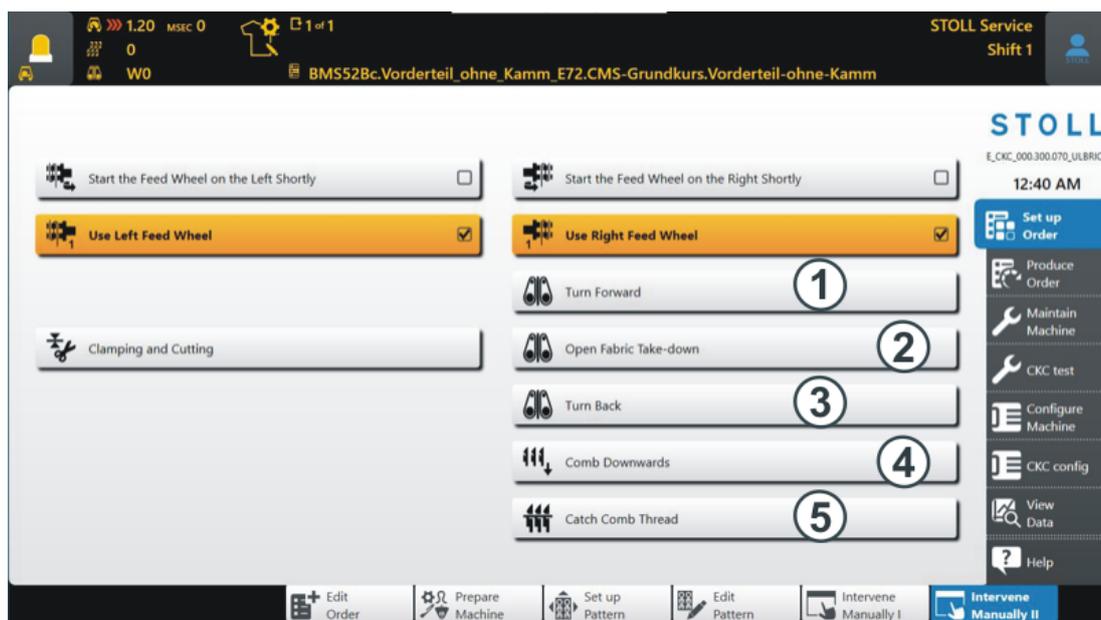
It may be necessary to do some of the following additional settings when setting up the knitting program or during production:

- Opening / closing the belt take-down or the auxiliary take-down
- Comb functions

### Submenu: Intervene Manually II

- ✓ You are signed in as Senior Operator .
- ✓ Knitting program is loaded and the order was started.
- ✓ In the main navigation bar  "Set up Order" is selected.

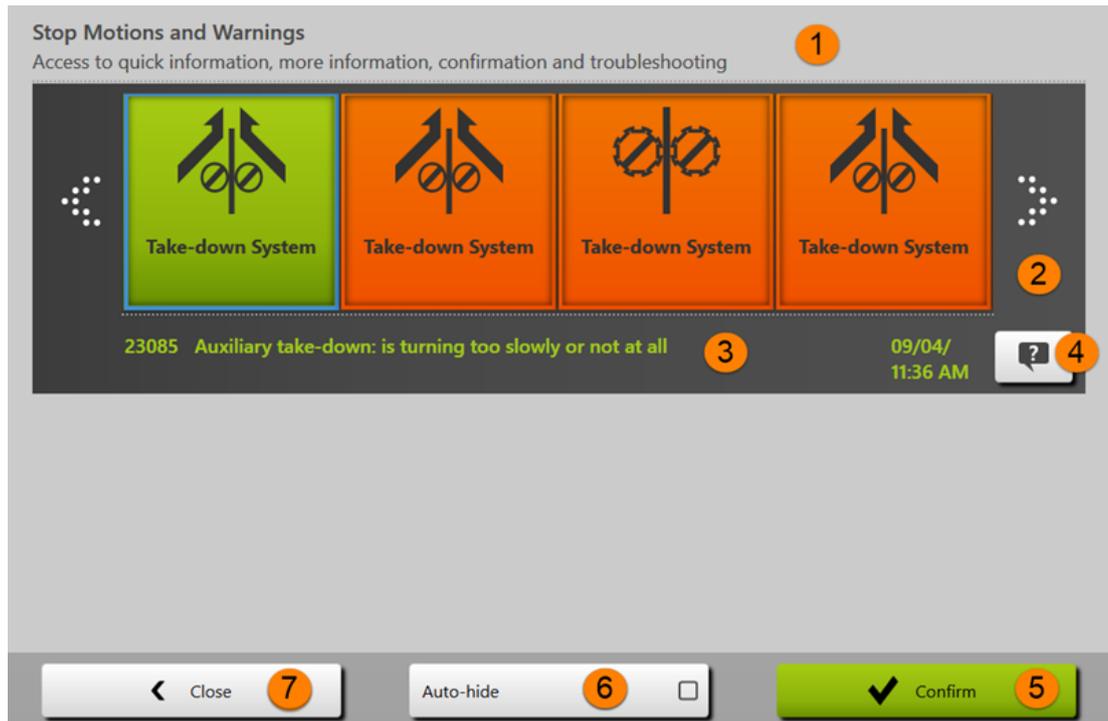
1. Select  "Intervene Manually II" in the bottom navigation bar.
2. Tap the button for the desired function.



1		Turn belt take-down forward.
2		Open or close the belt take-down.
3		Turn the belt take-down back.
4		Comb Downwards
5		Catch Comb Thread

### Error messages about the take-down systems

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 the corresponding error message in a window.



Symbolic picture

1	'Stop Motions and Warnings' window						
2	<p>Area for displaying of the current stop motions and warnings</p> <p>In the display jump to the left with  or to the right with .</p> <ul style="list-style-type: none"> <li>♦ <b>Buttons highlighted in green;</b> solved stop motions / warnings</li> <li>♦ <b>buttons highlighted in red:</b> existing stop motions / warnings</li> </ul>						
	<table border="1"> <tr> <td></td> <td>Comb take-down motor is turning to slow or not at all</td> </tr> <tr> <td></td> <td>Collision risk of comb with main take-down</td> </tr> <tr> <td></td> <td>Collision risk of comb with auxiliary take-down</td> </tr> </table>		Comb take-down motor is turning to slow or not at all		Collision risk of comb with main take-down		Collision risk of comb with auxiliary take-down
	Comb take-down motor is turning to slow or not at all						
	Collision risk of comb with main take-down						
	Collision risk of comb with auxiliary take-down						
3	<p>Display of the number with detailed text description of the current stop motion / warning</p> <ul style="list-style-type: none"> <li>♦ With stop motions the text is in red</li> <li>♦ With warnings the text is in yellow</li> </ul>						

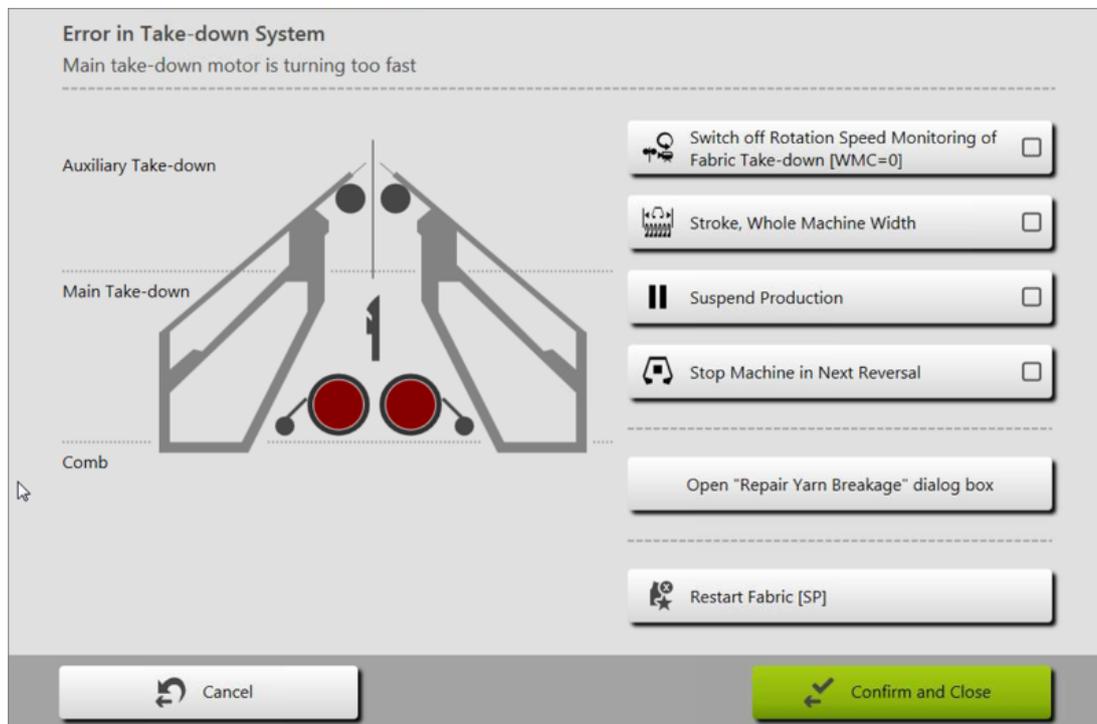
4		Opens a window for the current stop motion / warning with specification of the possible causes and their possible solution
5	Confirm	With this button confirm the entry after solving the stop motion / warning.
6	Auto-hide	<input type="checkbox"/> The display window remains visible in the foreground
		<input checked="" type="checkbox"/> The display window remains in the background.  When pressing the  button, the window with the stop motions / warnings is displayed.
7	Close	Close Window

- In the "Stop Motions and Warnings" menu tap the "Take-down system" (red) button.  
▶ The window with the possible solutions for the error message is opened.

**Example:**

Error in Take-down System

Main take-down motor is turning too fast



Symbolic picture

Save the order with a knitting program

2. Activate the  "Switch off Rotation Speed Monitoring of Fabric Take-down [WMC=0]" button.
- ▶ The speed control of the active take-down system (main take-down / comb take-down) is set to 0. The motor does not turn anymore.

## 17.7 Save the order with a knitting program

**i** When saving an order a new file is always created with the xxx .seqx extension.

Saving an order with a knitting program:

- ✓ You are signed in as Senior Operator .
1. In the main navigation bar select the main area  "Set up Order".
  2. Tap on  "Edit order" in the bottom navigation bar.
  3. Then press the  "Save" button for saving.
  - ▶ The "Save order" window is opened

**Save Order**  
Enter the save location for the order as well as the name for the order file and the knitting program.

---

**Save Location**

1  Z:\Anwender\_SC\Eisenlohr\EKC\ADF 32W\_E7.2\Englisch\1. Full-Cardigan\

---

**Name of Order File**

2 **Full\_Cardigan\_GG7**

`	1	2	3	4	5	6	7	8	9	0	-	=	←	
⌨	q	w	e	r	t	y	u	i	o	p	[	]	\	Del
↓	a	s	d	f	g	h	j	k	l	;	'	↵		
↑		z	x	c	v	b	n	m	,	.	/	↑	↑	
Copy											←	↓	→	Paste

4  Cancel
3  Save

1	Select location <ul style="list-style-type: none"> <li>◆ Local Patterns: Hard disc of the machine</li> <li>◆ Network drive</li> </ul>
2	Display of the name for the order file (seqx), which can be changed via the keyboard. Default setting: Name of the knitting program <b>i</b> : For orders with only one knitting program, the original name of the knitting program (zip file) is to be maintained, since with a modification also the zip file will be renamed!!
3	Save the order under the entered name
4	Cancel process

4. Select location.
5. Enter the desired name for the order file.

---

**i** Attention

For orders with only one knitting program, the original name of the program (zip file) is to be maintained, since the zip file is also renamed in case of renaming!!

---

6. With the  "Save" button perform the operation.
  - ▶ In the specified location a **seqx** file with its zip file of the same name is created with the defined name.



# 18 Cycle counter RS17 with constant fabric width (without fully fashion)

With the help of the cycle counter RS17, you control the work of the comb and the related clamping and cutting at the machine.

## Working with RS17

RS17	Function
RS17 = 0	Comb and clamping / cutting activated
RS17 = 1	Comb and clamping / cutting disabled

**i** After loading a pattern in the machine memory, the cycle counter is set to **RS17=0**.

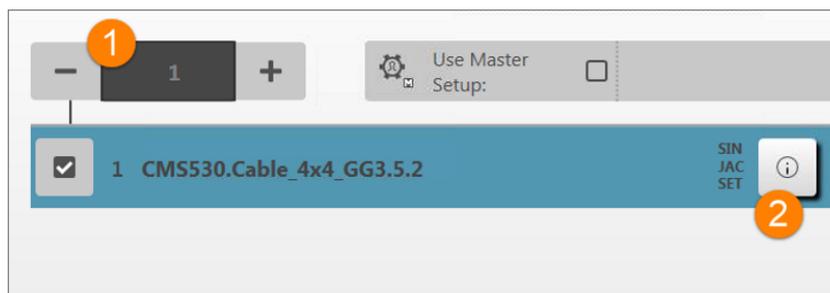
## Production with RS17 with fabrics with constant fabric width

- Via the Sintral command RS17=1 IF #100=1 RS17=0, the activation / deactivation of the comb function is coupled to the number of run-throughs (piece counter).
- The use of the comb and the clamping / cutting are therefore automatically regulated within the production.

## **i** Cancellation of the production with RS17

In case patterns need to be restarted based on machine problems (e.g. yarn breakage) or for other reasons it must be ensured that with SP the RS17 is set to RS17=0!

## Behavior of the run-throughs (piece number) when using RS17



1	Quantity of run-throughs (= piece number)
---	---

<b>2</b>	Information button for Sintral, Jacquard and Setup
----------	--

**With quantity of run-throughs (1) : =1:**

1. For the one fabric piece, the comb and the clamping / cutting are active.
2. All yarn carriers are taken out of the clamp before the start and knitted-in.
3. The fabric is cast-off at the end via a cast-off function in the Sintral.

**With quantity of run-throughs (1) : >1:****I. First fabric:**

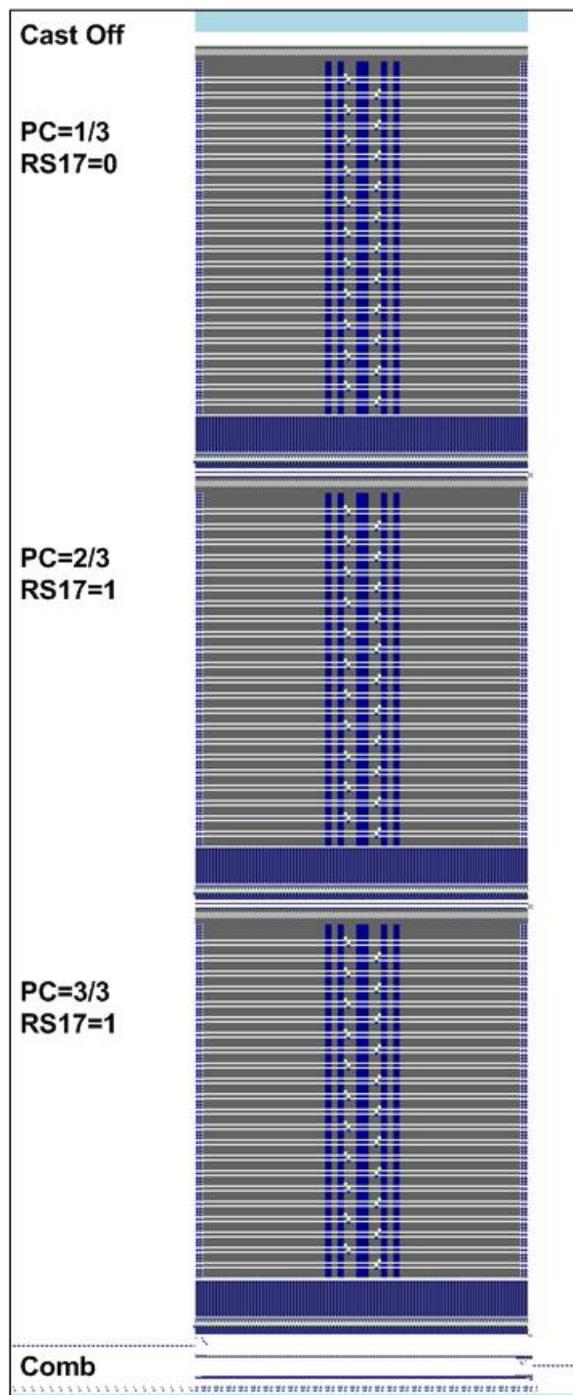
1. The first piece works with **Comb** since **RS17=0** is set.
  2. All yarn carriers are taken out of the clamp before the start and knitted-in.
  3. The **Comb thread** is clamped after knitting, since it is **only** needed **for the first piece**.
  4. All other yarn carriers are positioned at the fabric selvedge for the following pieces.
  5. At the fabric end the RS17 is set to =1 with the Sintral command RS17=1 IF #100=1 RS17=0, as the piece counter is >1.
- This way no cast-off is carried out at the fabric end.

**II. The following fabric pieces:**

1. All the following fabrics are processed without comb and clamping / cutting.
2. No cast-off is carried out at the end of these fabrics.
3. The pieces are connected by knitting-in a draw thread. (Transition)

**III. Last fabric piece of the piece counter:**

1. The last fabric piece is processed without comb and clamping / cutting.
2. At the end of the last piece, the piece counter is checked by the Sintral command RS17=1 IF #100=1 RS17=0 and this way is set **RS17 = 0**.
3. With **RS17 = 0** the yarn carriers are brought into the clamps and then the fabric piece is cast-off.



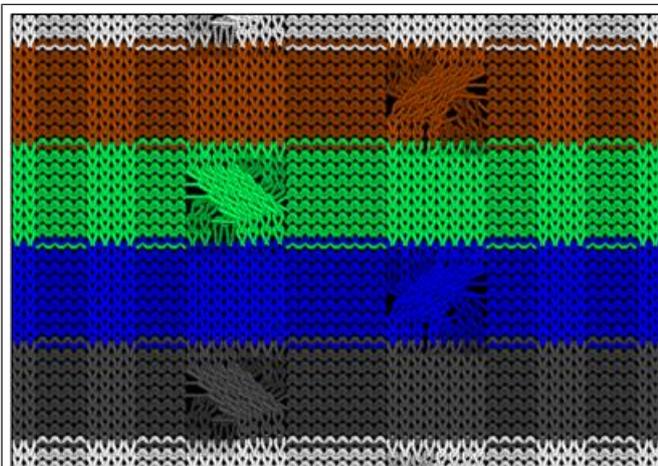
## Result

The fabric pieces are knitted together separated by the draw thread instead of casting-off after each single piece.

The working procedure is recommended for fabric pieces with reduced height, e.g. collars and other small pieces.

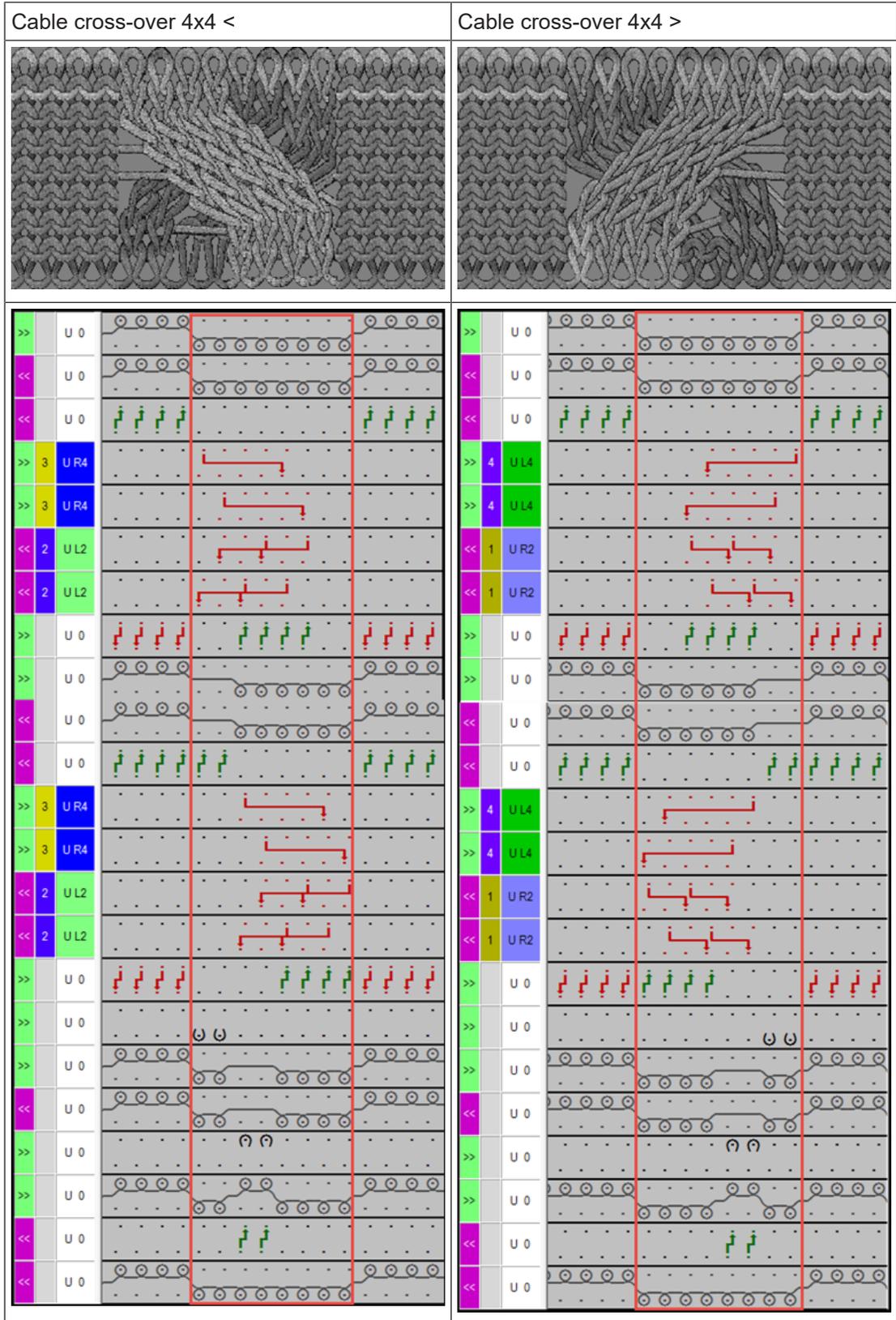


## 19 Cable\_4x4



<b>Pattern name</b>	Cable_4x4
<b>Start</b>	1x1 Rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ <b>Usage of RS17</b> <ul style="list-style-type: none"> <li>– First fabric piece with comb function and clamping / cutting</li> <li>– Following fabric pieces without comb function and clamping / cutting</li> <li>– Last fabric piece with piece counter =0 is cast-off</li> </ul> </li> <li>◆ with Sintral command RS17=1 IF #100=1 RS17=0</li> </ul>
<b>Pattern description</b>	<ul style="list-style-type: none"> <li>◆ 4x4_cable crossed over to the left and to the right</li> <li>◆ with rib structure</li> <li>◆ different colors as stripes</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Stitch Length (NP)</li> <li>◆ Cycle Counters (RS)</li> <li>◆ Fabric Take-down (WBF)</li> <li>◆ Yarn Carriers (YDopt)</li> <li>◆ Racking Correction (VCI)</li> </ul>

Fabric view and stitch line of the cable cross-over 4x4:



Cable cross-over 4x4 <	Cable cross-over 4x4 >
<p><b>i</b>: The stitches on the left and on the right next to the cable are called 'environment'. If these stitches are on the rear needle bed (= reverse jersey stitches), they are transferred to the front before the cable cross-over (transfer environment) and after the cross-over they are transferred again to the rear. This way, these stitches are not 'racked' with the racking. The stitch quality is retained.</p>	

---

### **i** Racking Correction

The racking specifications existing in the cable cross-overs have racking indices (VCI). In case of large racking courses this is necessary to increase the running reliability.

---

## 19.1 Operating Mode of the Machine and Knitting Program

### Operating mode of the machine

- **Operating mode without using the comb and production with RS17:**  
The knitting program (Sintral, Jacquard, Setup) is structured in such a way that the working mode of the machine can be influenced via the cycle counter RS17.
- RS17=1 IF #100=1 RS17=0 Sintral command required in the Sintral program
- Value specification for **Quantity of run-throughs**

---

**i**

There must **not** be a fabric in the needle bed or main take-down.  
All fabric pieces are knitted consecutively, separated by a draw thread.

---

## 19.2 Create and set-up an order with a knitting program

### Procedure:

1. **Create an order with a knitting program.**
2. **Start production.**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position the yarn carriers at the clamping point
  - Check the knitting area and the fabric collection chamber
4. **Start machine (engage).**

### Make the following changes:

- Cycle Counters (RS)
- Stitch Length (NP)
- Machine speed (MSEC)
- Fabric take-down values (WBF)
- Racking corrections (VCI)

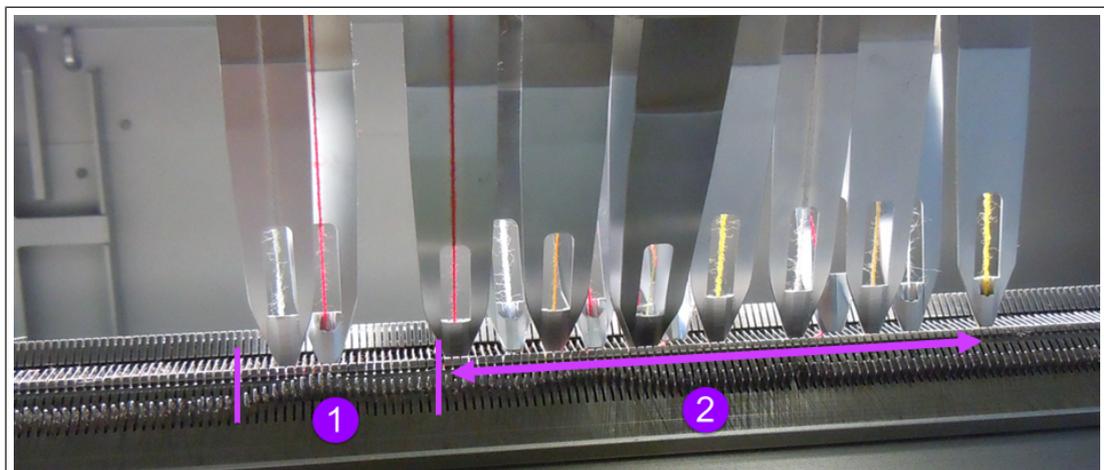
## 19.3 Optimized yarn carrier home position YDopt

YDopt:

If YDopt is used when programming, the distances between the yarn carriers and the fabric selvedge are automatically optimized.

Especially appropriate for patterns with a high use of yarn carriers, for ex. stripe patterns.

Functioning principle:

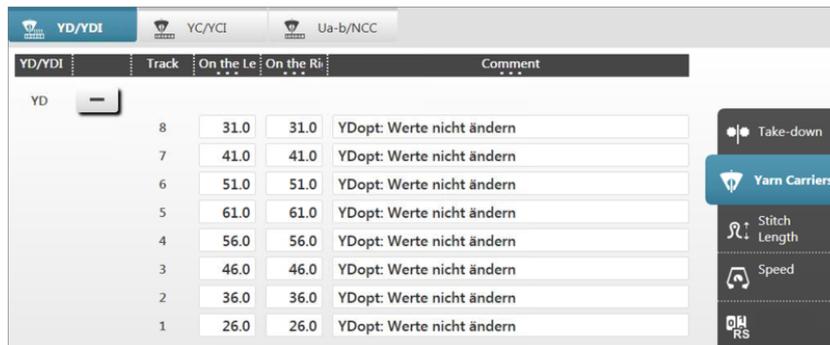


1	Parking area for the yarn carriers that are knitting in the pattern row <i>i</i> : The yarn carriers are positioned staggered
2	Parking position (waiting area) for the momentarily non knitting yarn carriers <i>i</i> : The yarn carriers are positioned staggered

1. The yarn carriers are positioned staggered with a **wide** distance (parking position) in relation to the fabric selvedge.
2. The required yarn carriers are taken out of the parking position and start knitting.
3. While knitting, the active yarn carrier receives a new parking position and will be positioned **much closer** to the fabric selvedge.  
The parking position is optimized (YDopt).
4. After the last knitting row, the active yarn carrier is returned to the parking position.
5. The following, knitting yarn carrier is taken out of the parking position and also positioned at the fabric selvedge with YDopt.

### YDopt in Setup

- The parking position YD of the yarn carriers is determined automatically.
  - i**: The specification are in the Sintral since the values change after each carriage stroke.
- The values are predetermined and cannot be edited anymore at the machine.



Column	Meaning	
<b>YD / YDI</b>	Display of the tables used for staggering of the yarn carriers at the fabric selvedge <ul style="list-style-type: none"> <li>◆ <b>YD</b>: Default table for yarn carrier staggering</li> <li>◆ <b>YDI<sub>n</sub></b>: further indirect yarn carrier staggering of YDI1 - YDI20</li> </ul>	
		Expanded table
		Collapsed table
<b>Track</b>	Numbering of the yarn carrier rails / yarn carrier number (YD <sub>n</sub> ) <ul style="list-style-type: none"> <li>◆ CMS MC with 8 yarn carrier rails: Track 1- 8 (YD1 – YD8)</li> <li>◆ ADF MC with 16 yarn carrier rails: Track 1 – 16 (YD1 – YD16)</li> </ul>	
<b>at the left...</b>	Distance of yarn carrier from the left outer fabric selvedge	Minimum value: 0 Maximum value: 160 Step width: 0.5=1/32 inch=0.8 mm
<b>at the right...</b>	Distance of yarn carrier from the right outer fabric selvedge	
<b>Comment</b>	Description	

---

**i** With **YDopt**, the corresponding YD values of the yarn carriers may **not** be changed.

---

## 19.4 Racking Positions and Racking Commands

### Racking Positions

Designation	Symbol	Position of the needle bed
V0	Normal Racking	
V#	Half Racking	
VU	Transfer Racking	

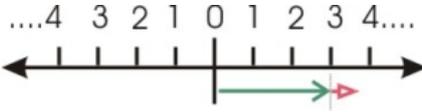
**i**

The maximum racking course of the rear needle bed covers 2 inch to left and 2 inch to the right starting from the home position 0.

### Racking Functions

Command	Function
VCI n	n = 1 – 50 racking functions available. <ul style="list-style-type: none"> <li>One function is used for each racking in use.</li> <li>The function has all commands to control the racking.</li> </ul>

### General Commands for Racking

Commands	Designation / Min./ max. values	Movement of the needle bed:
<b>Racking Correction</b> <ul style="list-style-type: none"> <li>VKn &gt; m</li> <li>VKn &lt; m</li> </ul>	n = A – Z < = to the left > = to the right m = 1-10	
	m = 0	Racking correction is turned off
	m = ?	Machine stops at the given racking position in order to check the racking position and correct it if necessary.
<b>Overracking</b> <ul style="list-style-type: none"> <li>V+ n</li> <li>V- n</li> </ul>	n = 1 - 24	

Commands	Designation / Min./ max. values	Movement of the needle bed:
<b>Racking speed</b> ♦ VV = n	n = 1-32	Default setting: VV=32 (highest speed)

**i Notice:**

- Racking of the rear needle bed is carried out in the carriage reversal.
- The racking commands are maintained for one carriage stroke. (stroke-related data)
- Additional racking commands are used for machines with additional beds.

## 19.5 Make settings for racking

The racking correction optimizes the transfer process and improves the running reliability with patterns with racking technique. A racking correction influences the position of the rear needle bed regarding the front needle bed during the transfer.

**Possible corrections:**

- Racking Correction (VKn)
- Racking Speed (VV)
- OVERRACKING (V+)

---

**i Racking Functions VCI**

All Sintral commands regarding the racking are managed by functions. For each racking position, a racking function VCI<sub>n</sub> is stored with index.

---

**Input of changes for racking:**

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
  - ✓ Machine is running till the automatic stop (Sintral command ?).
  - ✓ Machine is manually stopped at the racking position you want to check.
1. In the main navigation bar select the main area  "Set up Order".
  2. Tap on  "Prepare Machine" in the bottom navigation bar.

3. Tap the  button.
  - ▶ The Setup Editor appears.
4. With the  "Racking" button, open the table with the VCI indices used in the pattern.

VCI	Direction	VK	VV	V+/-	Comment
VCI1	? ▲	0	32	0	Racking 2 >
VCI2	? ▲	0	32	0	Racking 2 <
VCI3	? ▲	0	32	0	Racking 4 >
VCI4	? ▲	0	32	0	Racking 4 <



5. Tap in the input field to be changed.
6. Enter values or a comment.
  - Command VKn<? or VKn>?:
    - In the **Direction** column, change the ? symbol regarding a carriage direction specification < or >.
    - In the **VK** column, enter the necessary VK value.
  - Command VV=n or V+=n:
    - In the **VV...** and **V+/-...** columns, enter the desired values.

### Sintral specification

A VCI $n$  racking function is allocated to each racking direction existing in the cable cross-overs. With the help of the commands in the racking function, the corresponding racking position is influenced.

Save the order with a knitting program

```

149 << S:<1-><A>A(5)-Y(6)/<1->U^ST; Y:=C; V0 Y-3A:F1A^0; Y-3A:YD1.0-6.0;
150 >> S:<1-><A>A(5)-Y(6)/<1->0-%Z(9); Y:=C/0; VU Y-3A:YD1.0-1.0;
151 << S:<1-><A>A(5)-Y(6); Y:=C; VU
152 >> S:<1-><A>A(5)-Y(6)/<1->%O(7)-0/<1->UXST-+; Y:=C/0;
153 << S:<1->UVS+/<1->UVS+; VR2 VCI1
154 >> S:<1->UVS+/<1->UVS+; VL4 VCI4
155 << S:<1->U^ST/<1-><A>A(5)-Y(6); Y:=C; V0
156 >> S:<1-><A>A(5)-Y(6)/<1->UXST-+; Y:=C;
157 << S:<1->UVS+/<1->UVS+; VR2 VCI1
158 >> S:<1->UVS+/<1->UVS+; VL4 VCI4
159 << S:<1->U^ST/<1-><A>A(5)-Y(6); Y:=C; V0
160 >> S:<1-><A>A(5)-Y(6); Y:=C; VU Y-3A:YD1.0-46.0;
161 << S:<1-><E>A(5)-Y(6)/<1->U^ST; Y:=D; Y-4A:F1E^0; Y-4A:YD1.0-11.0;
162 >> S:<1-><E>A(5)-Y(6)/<1->0-%Z(9); Y:=D/0; VU Y-4A:YD1.0-1.0;
163 << S:<1-><E>A(5)-Y(6); Y:=D; VU
164 >> S:<1-><E>A(5)-Y(6)/<1->%O(7)-0/<1->UXST-+; Y:=D/0;
165 << S:<1->UVS+/<1->UVS+; VL2 VCI2
166 >> S:<1->UVS+/<1->UVS+; VR4 VCI3
167 << S:<1->U^ST/<1-><E>A(5)-Y(6); Y:=D; V0
168 >> S:<1-><E>A(5)-Y(6)/<1->UXST-+; Y:=D;
169 << S:<1->UVS+/<1->UVS+; VL2 VCI2
170 >> S:<1->UVS+/<1->UVS+; VR4 VCI3
171 << S:<1->U^ST/<1-><E>A(5)-Y(6); Y:=D; V0
172 REP*3
173 >> S:<1-><E>A(5)-Y(6); Y:=D; VU
174 << S:<1-><E>A(5)-Y(6); Y:=D; VU
175 REFEND
    
```

## 19.6 Save the order with a knitting program

**i** When saving an order a new file is always created with the xxx .seqx extension.

Saving an order with a knitting program:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Edit order" in the bottom navigation bar.
- 3. Then press the  "Save" button for saving.
  - ▶ The "Save order" window is opened
- 4. Select location.
- 5. Enter the desired name for the order file.

**i** Attention  
 For orders with only one knitting program, the original name of the program (zip file) is to be maintained, since the zip file is also renamed in case of renaming!!

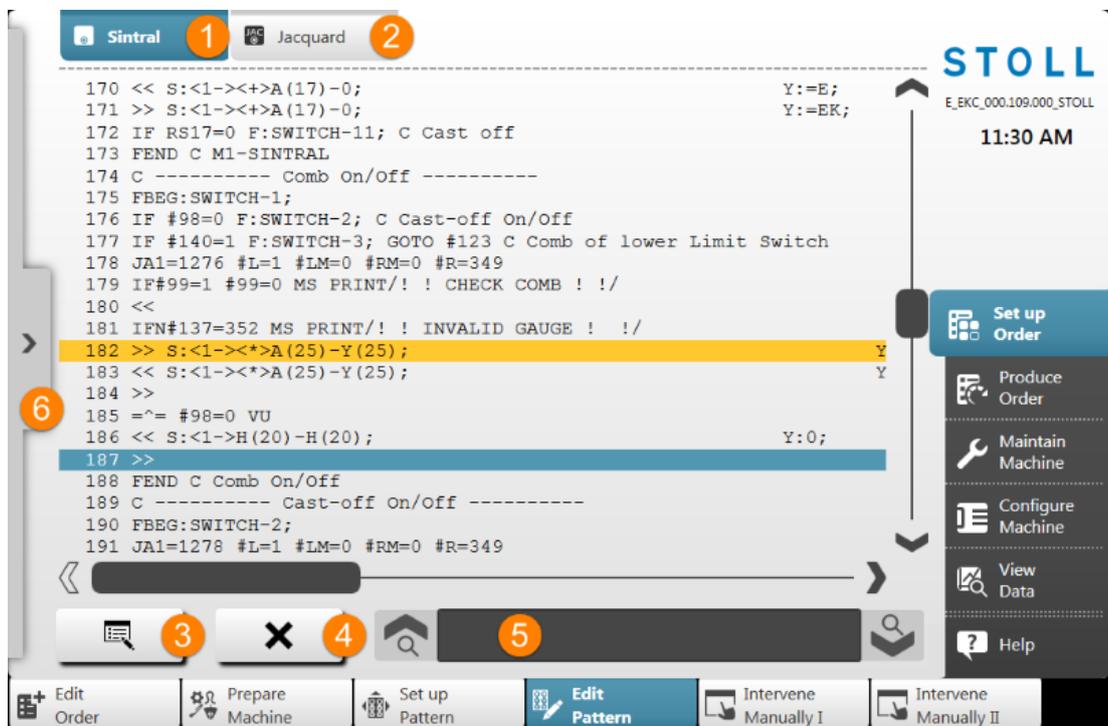
6. With the  "Save" button perform the operation.
  - ▶ In the specified location, a **seqx** file with its zip file of the same name is created with the defined name (= order).



## 20 Working in the Sintral / Jacquard editor: Edit Pattern

### I. View or changes of Sintral or Jacquard:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar select the main area  "Set up Order".
- 2. Tap on  "Edit Pattern" in the bottom navigation bar.
- ▶ The window is displayed.



No.	Key	
1		Display window with the program element Sintral <ul style="list-style-type: none"> <li>◆ Sintral line highlighted in yellow: currently knitting row</li> <li>◆ Sintral line highlighted in blue: selected Sintral line</li> </ul>
2		Display window with the program element Jacquard
3		Open the editor to change the selected line <b>i</b> : The changes are directly applied.

No.	Key	
4		Delete the selected Sintral line <b>i</b> : A prompt appears before deleting.
5		Edit box for searching of Sintral information
		Upward search referring the selected line
		Downward search referring the selected line
6		Expand the display window for the knitting simulation
		Collapse the display window for the knitting simulation

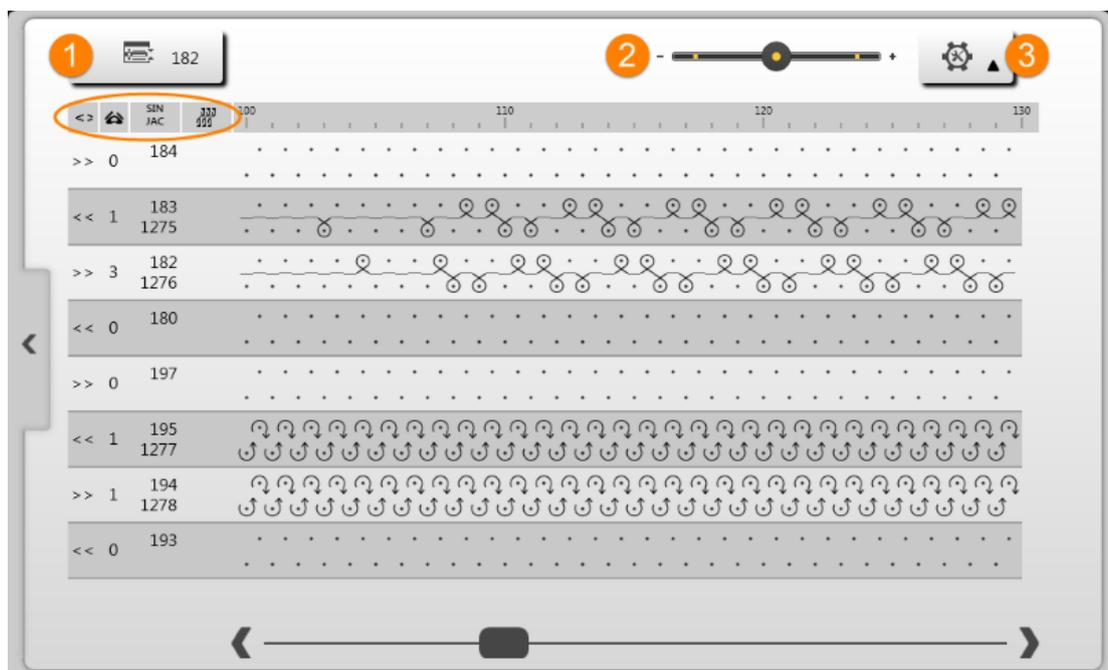
3. Make the desired changes in the Sintral or Jacquard



Changes at your own risk

The changes cannot be tested at the machine and can lead to major problems.

II. Display window with the knitting simulation:



No.	Key	
1		Currently knitting Sintral line
2		Zoom for the display
3		<p>Selection menu for the display of the columns in the table</p> <ul style="list-style-type: none"> <li>◆  : Column for carriage direction</li> <li>◆  : Column for system specification</li> <li>◆ SIN : Column for Sintral and Jacquard line number</li> <li>◆  : Column for racking position</li> <li>◆  : Display of the carriage position while knitting</li> </ul>

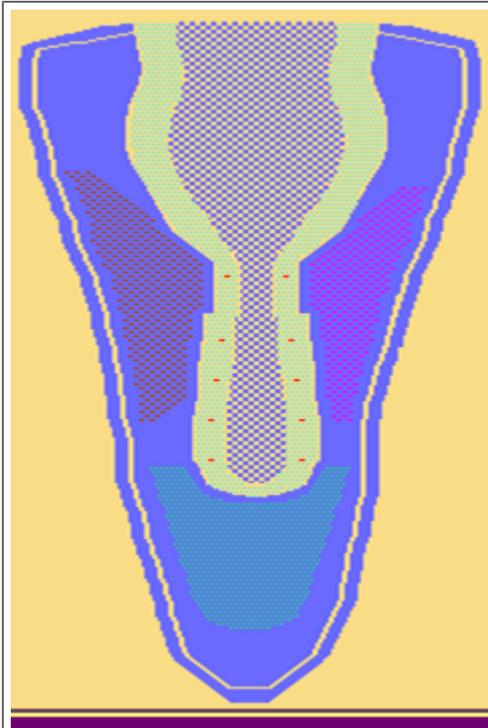
**i**

The knitting simulation shows the Sintral line before and after the currently knitting Sintral line.

Structure of the graphic in the knitting direction, i.e. read from the bottom upwards.



## 21 Example with stitch length groups and their handling



<b>Pattern name</b>	Groups of Stitch Lengths
<b>Start</b>	Tubular start (without RS1)
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ with comb function</li> <li>◆ with clamping / cutting</li> </ul>
<b>Pattern description</b>	<ul style="list-style-type: none"> <li>◆ Cross-tubular with binding thread (binding by tuck)</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Stitch Length (NP)</li> <li>◆ Correction of Stitch Length (NPK)</li> <li>◆ Correction of Stitch Length Groups (NPGK)</li> <li>◆ Correction of stitch length related to the machine (MC-NPK)</li> <li>◆ Correction of stitch length groups related to the machine (MC-NPGK)</li> <li>◆ Fabric Take-down (WBF)</li> </ul>

## 21.1 Advantages with Grouping Stitch Lengths

### Pattern without grouping

When setting up the pattern on the machine, you have to adjust step by step each NP value of the table or via a common correction value (NPK) until the desired length and quality of the fabric is reached.

- Changing the individual NP values takes a lot of time when setting-up the pattern.
- The input of a NPK value does not always lead to the desired result.

Display in the Setup Editor without grouping the NP:

#### NP tab

NP	Value	Comment
NPK		
NP1	9.00	Setup Row
NP2	10.00	Setup Tub
NP3	9.00	1x1-Cycle
NP4	11.00	Loose Row
NP5	12.00	Struc Single jersey front
NP6	12.00	Struc Single jersey rear
NP11	7.00	Setup Row front
NP17	12.00	Safety rows
NP20	9.00	Start 1
NP21	10.00	Start 2
NP22	12.50	Start 3
NP24	12.00	Start 5
NP25	16.00	Comb Thread

#### NPKG tab

NP	NPKG	Value	Comment
NPK			
NP1			
NP2			
NP3			
NP4			
NP5			
NP6			
NP11			
NP17			
NP20			
NP21			
NP22			
NP24			

### Pattern with grouping

When setting-up the pattern on the machine, all NP values which are combined in group can be corrected by a common correction value (NPK) .

Display in the Setup Editor with grouping the NP:

#### NP tab

NP	Value	Comment
NPK	0.00	
NP1	9.00	Setup Row
NP2	11.00	Tubular Cycle front
NP3	14.00	loose front
NP4	14.00	loose rear
NP5	12.00	Cross tubular_front_Cap_Color1
NP6	11.50	Cross tubular_rear_Cap_Color1
NP7	11.80	Cross tubular_front_Cap_Color2
NP8	11.50	Cross tubular_rear_Cap_Color2
NP9	12.00	Cross tubular_front_Shaft_Color1
NP10	11.80	Cross tubular_rear_Shaft_Color1
NP11	11.50	Cross tubular_front_Shaft_Color1
NP12	11.80	Cross tubular_rear_Shaft_Color1

#### NPKG tab

NP	NPKG	Value	Grp	Protect	NPKG	NPK	Comment
NPK		0.00					
NP1		9.00	1				Setup Row
NP2		11.00	0			0.00	Tubular Cycle front
NP3		14.00	0			0.00	loose front
NP4		14.00	0			0.00	loose rear
NP5		12.00	2		0.00	0.00	Cross tubular_front_Cap_Color1
NP6		11.50	2		0.00	0.00	Cross tubular_rear_Cap_Color1
NP7		11.80	2		0.00	0.00	Cross tubular_front_Cap_Color2
NP8		11.50	2		0.00	0.00	Cross tubular_rear_Cap_Color2
NP9		12.00	3		0.00	0.00	Cross tubular_front_Shaft_Color1
NP10		11.80	3		0.00	0.00	Cross tubular_rear_Shaft_Color1
NP11		11.50	3		0.00	0.00	Cross tubular_front_Shaft_Color1
NP12		11.80	3		0.00	0.00	Cross tubular_rear_Shaft_Color1

**i****Recommendation:**

When creating the pattern at M1plus, the programmer has to combine the stitch length values to groups according to the structure of the pattern (areas of special structures).

**Note:**

You can set up groups directly on the machine as well!  
This requires exact knowledge of the program structure.

---

## 21.2 Create and set-up an order with a knitting program

Procedure:

1. **Create an order with a knitting program.**
2. **Start production.**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position the yarn carriers at the clamping point
  - Check the knitting area and the fabric collection chamber
4. **Start machine (engage).**

Make the following changes:

- Stitch Length (NP)
- Correction of Stitch Length (NPK)
- Correction of Stitch Length Groups (NPGK)
- Correction of stitch length related to the machine (MC-NPK)
- Correction of stitch length groups related to the machine (MC-NPGK)
- Fabric take-down values (WBF)
- Machine speed (MSEC)

## 21.3 Working with grouped corrections of the stitch cams NPGK

### Step 1 Creating pattern on M1plus

The programmer gets the knitting program (zip file) generated by the M1plus correspondingly to the pattern with the stitch length groups. **(Recommended)**

Example for stitch length groups		Areas	
	<b>5</b>	<b>NPGK5</b>	For the binding thread: NP30 + NP31 <b>1</b> : not visible in the pattern
	<b>4</b>	<b>NPGK4</b>	For the area of the heel: NP13 – NP16
	<b>3</b>	<b>NPGK3</b>	For the shank: NP9 – NP12
	<b>2</b>	<b>NPGK2</b>	For the tip: NP5 – NP8
	<b>1</b>	<b>NPGK1</b>	All stitch cam positions from start to net row: NP1, NP18 - 24

NP	Value	Comment
NPK	0.00	
NPGK1		Start to Net row
NPGK2		Cross tubular_ Cap
NPGK3		Cross tubular_ Shaft
NPGK4		Cross tubular_ Heel
NPGK5		Connection_tuck

NP	Value	Grp	Protect	NPGK	NPK	Comment
NP1	9.00	1	<input checked="" type="checkbox"/>			Setup Row
NP2	11.00	0	<input type="checkbox"/>	0.00	0.00	Tubular Cycle front
NP3	14.00	0	<input type="checkbox"/>	0.00	0.00	loose front
NP4	14.00	0	<input type="checkbox"/>	0.00	0.00	loose rear
NP5	12.00	2	<input type="checkbox"/>	0.00	0.00	Cross tubular_front_Cap_Color1
NP6	11.50	2	<input type="checkbox"/>	0.00	0.00	Cross tubular_rear_Cap_Color1
NP7	11.80	2	<input type="checkbox"/>	0.00	0.00	Cross tubular_front_Cap_Color2
NP8	11.50	2	<input type="checkbox"/>	0.00	0.00	Cross tubular_rear_Cap_Color2
NP9	12.00	3	<input type="checkbox"/>	0.00	0.00	Cross tubular_front_Shaft_Color1
NP10	11.80	3	<input type="checkbox"/>	0.00	0.00	Cross tubular_rear_Shaft_Color1
NP11	11.50	3	<input type="checkbox"/>	0.00	0.00	Cross tubular_front_Shaft_Color1
NP12	11.80	3	<input type="checkbox"/>	0.00	0.00	Cross tubular_rear_Shaft_Color1

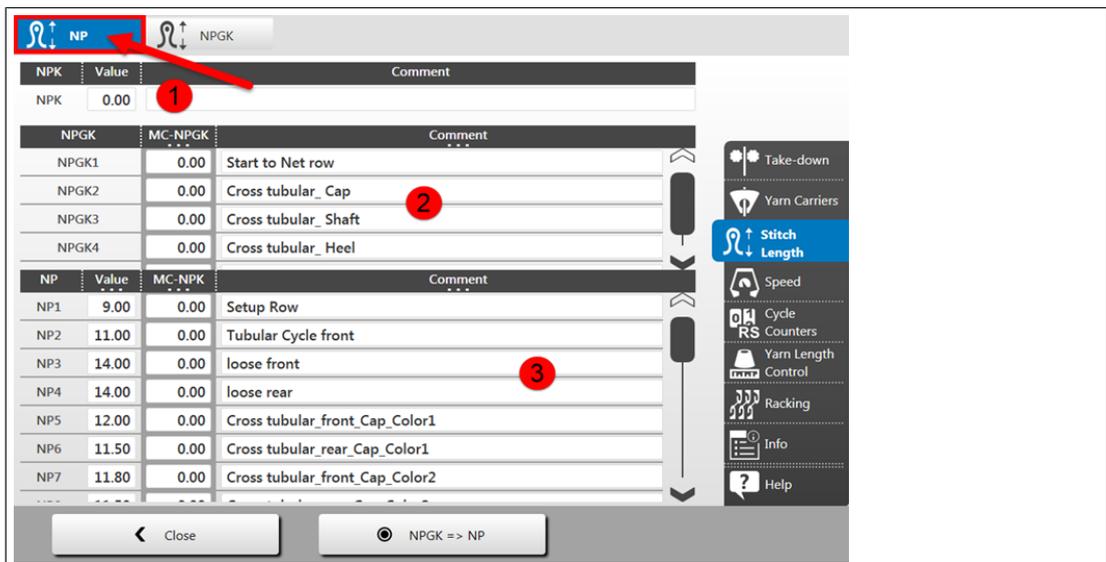
## Step 2: Set up pattern on the machine

The senior operator loads the knitting program (zip file) on the machine and starts setting-up the pattern. With it, he adjusts the pattern parameters as take-down and **stitch length** (NP values) in the Setup Editor accordingly to the desired quality.

### How to make changes in the Setup Editor:

#### ■ NP tab

- Input of a correction value (NPK) for all NP values in use
- Input of a new NP value in the "Value..." column



**Table 1**

<b>NPK</b>	Stitch cam correction for all stitch lengths (NP) used within the pattern	
<b>Value</b>	Input of desired correction	Min. value: -2 Max. value: 2 Step width: 0.05
<b>Comment</b>	Description of NPK value	

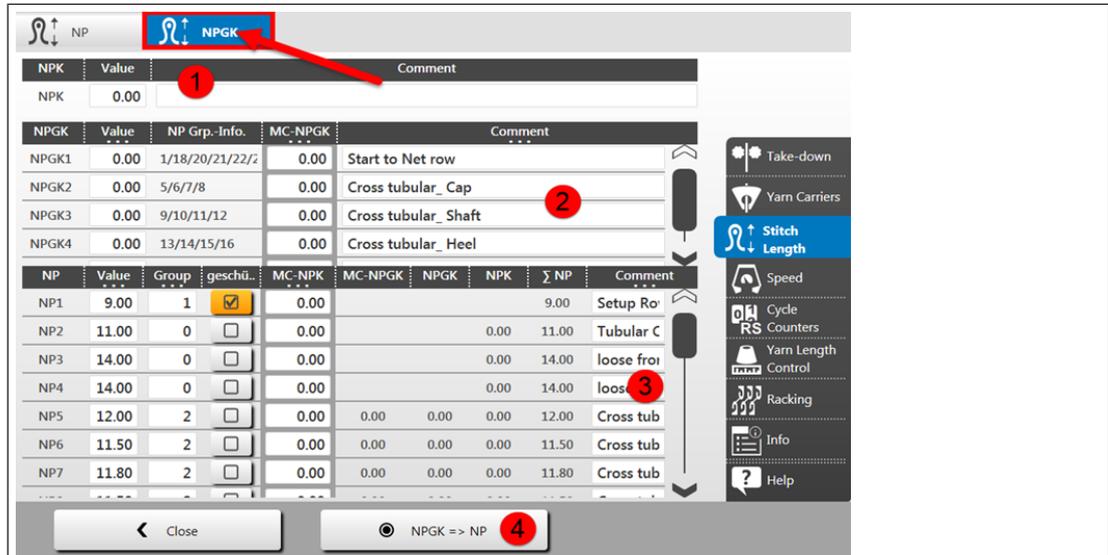
**Table 2**

<b>NPGK</b>	List of all NP groups (NPGKn) used by the knitting program	n = 1 - 25
<b>MC-NPGK...</b>	<p><b>Machine specific NP group correction values</b></p> <ul style="list-style-type: none"> <li>◆ Input of group correction values not to be applied to other machines.</li> <li>◆ These values are saved and kept by the machine.</li> <li>◆ These values cannot be transferred to other machines by the Setup file.</li> </ul>	<p>Minimum value: -2 Maximum value: 2 Steps: 0.05</p> <p>Dongle Data  On the machine only!</p>

	<ul style="list-style-type: none"> <li>◆ You can delete these values by EANP (Loading Options) when creating a new order.</li> <li>◆ You can set all entries to one value or to =0 (zero) by click on the table header <b>MC-NPGK....</b></li> </ul>	
<b>Table 3</b>		
<b>NP</b>	List of all the used stitch lengths (NPn)	n = 1-250
<b>Value...</b>	Input of desired stitch length value	The value range depends on the gauge
<b>MC-NPK...</b>	<p><b>Machine specific NP correction values</b></p> <ul style="list-style-type: none"> <li>◆ Input of correction values not to be applied to other machines.</li> <li>◆ These values are saved and kept by the machine.</li> <li>◆ These values cannot be transferred to other machines by the Setup file.</li> <li>◆ You can delete these values by EANP (Loading Options) when creating a new order.</li> </ul> <p>You can set all entries to one value or to =0 (zero) by click on the table header <b>MC-NPK....</b></p>	<p>Minimum value: -2 Maximum value: 2 Steps: 0.05</p> <p>Dongle Data  On the machine only!</p>

■ **NPGK tab**

- Input of a correction value (NPK) for all NP values used in table (1)
- Input of a new NPGK value in the "Value..." column



**Table 1**

♦ See NP tab

**Table 2**

<b>NPGK</b>	List of all NP groups (NPGKn) used by the knitting program	n = 1 - 25
<b>Value...</b>	Input of desired group correction value	Minimum value: -2 Maximum value: 2 Steps: 0.05
<b>NP Grp. Info</b>	Display of the NP index that belongs to the group	
<b>MC-NPGK...</b>	♦ See NP tab	

**Table 3**

<b>NP</b>	Name of NP Index	
<b>Value...</b>	Stitch length by NP values	
<b>Group...</b>	Specified NPGK index of the allocated group	
	<input type="checkbox"/>	The entry is not protected
	<b>i</b>	All corrections (NPK / NPGK / MC-NPK / MC-NPGK) are added to the corresponding NP index!

	<input checked="" type="checkbox"/> The entry is protected <b>i</b> : All corrections (NPK / NPGK / MC-NPK / MC-NPGK) are <b>not</b> added to the corresponding NP index!	
<b>MC-NPK...</b>	Display of the currently on the MC effective stitch cam corrections	 On the machine only!
<b>NPGK</b>	Display of the currently effective stitch cam group corrections	
<b>NPK</b>	Display of the currently effective stitch cam corrections for all stitch lengths (NP) in use	
<b>ΣNP</b>	Sum of the NP with all entered correction values, <b>i</b> : This is the NP value actually effective on the machine!	 On the machine only!

Step 3: Production

The desired quantity shall be produced after adjusting all machine parameters relevant for production by the  Senior Operator and achieving the desired quality when setting-up.

**Recommended for production:**

Apply the **NPGK correction values** set in the "Value..." column of table 2) in the "NPGK" tab

to the corresponding NP values by the  button.  
(NP value + NPGK value = effective NP value)

**Result:**

- The effective NP value is shown.
- During production, the separate NP group correction is no longer available as the NPGK correction is already added to the NP value.

**Attention!**

If machine specific corrections (MC-NPK) are used additionally in the knitting program, they are not included in the NP values.

This information is shown in the "NPGK" tab of the Setup Editor and the ΣNP column indicates the sum of all values effectively used to form the stitches.

## 21.4 Machine specific NP corrections

- Machine-specific NP correction **MC-NPK**
  - For knitting programs using NP1, NP2, NP3.... stitch lengths
- Machine-specific NP group correction **MC-NPGK**
  - For knitting programs using NPGK1, NPGK2.... stitch length groupings

### When to use:

- Adjusting stitch cam positions to the target value of the fabric piece when changing yarn colors or yarn quality.
- Adjusting stitch cam positions to the target value of the fabric piece when changing to another machine

### Working with MC-NPK or MC-NPGK:

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
1. In the main navigation bar  "Set up Order" is selected.
  2. Select  "Prepare Machine" in the bottom navigation bar.
  3. Open the Setup Editor with the  key.
  4. Select the  "Stitch Length" in the window.
  5. Open the  "NP" or  "NPGK" tab.
  6. Enter the desired machine specific correction value to the corresponding NP index in the "MC-NPK" or "MC-NPGK" column.
    - ▷ This value is automatically applied to the  "NPGK" tab.

Machine specific NP corrections

**Without NP groups**

◆ NP tab

NP	Value	MC-NPK	Comment
NP1	9.00	0.00	Setup Row
NP2	10.00	0.00	Setup Tub
NP3	9.00	0.00	1x1-Cycle
NP4	11.00	0.00	Loose Row
NP5	11.50	0.00	stitch front basic color
NP6	9.50	0.00	tuck rear basic color
NP7	9.50	0.00	tuck front color 2
NP8	11.50	0.00	stitch rear color 2
NP9	12.00	0.00	Struc Single jersey front
NP11	7.90	0.00	Setup Row front
NP17	12.00	0.00	Safety rows
NP20	9.00	0.00	Start 1

**With NP groups**

◆ NP tab

NPKG1	Value	MC-NPKG	Comment
NPKG1	0.00	0.00	Start to Net row
NPKG2	0.00	0.00	Cross tubular_Cap
NPKG3	0.00	0.00	Cross tubular_Shaft
NPKG4	0.00	0.00	Cross tubular_Heel

◆ NPKG tab

NPKG	Wert	MC-NPKG	Kommentar
NPKG1	0.00	0.00	Start to Net row
NPKG2	0.00	0.00	Cross tubular_Cap
NPKG3	0.00	0.00	Cross tubular_Shaft
NPKG4	0.00	0.00	Cross tubular_Heel

◆ NPKG tab

NP	Wert	Gruppe	geschl.	MC-NPKG	MC-NPKG	NPKG	NP	Kommentar
NP1	9.00	0		0.00	0.00	0.00	9.00	Setup Ro
NP2	10.00	0		0.00	0.00	0.00	10.00	Setup Tul
NP3	9.00	0		0.00	0.00	0.00	9.00	1x1-Cycl
NP4	11.00	0		0.00	0.00	0.00	11.00	Loose Ro
NP5	11.50	0		0.00	0.00	0.00	11.50	stitch fro
NP6	9.50	0		0.00	0.00	0.00	9.50	tuck rear
NP7	9.50	0		0.00	0.00	0.00	9.50	tuck fron

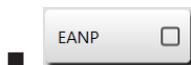
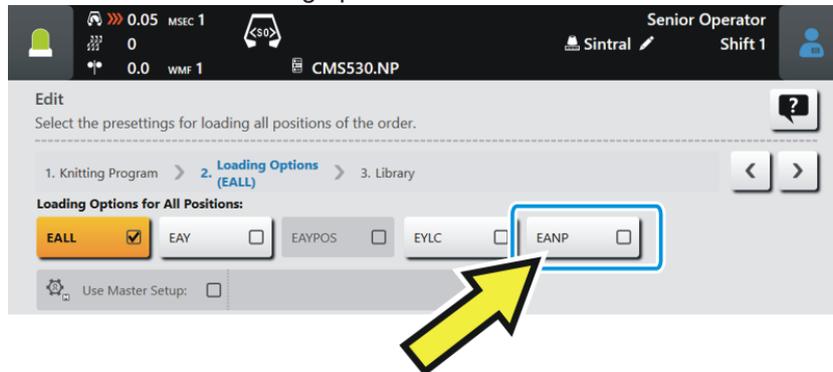
**i** These machine-specific NP correction values remain active at the machine until they will be deleted by the "Loading Options" setting when creating a new order.

7. Close Setup Editor by the "Close" button.

Deleting the machine-specific correction values MC-NPK / MC-NPKG:

- ✓ You are signed in as Senior Operator .
  - ✓ Machine specific correction values are available on the machine.
1. Select "Set up Order" in the main navigation bar.
  2. Tap on "Edit Order" in the bottom navigation bar.
  3. Then, first exit the current order with the "Exit Order" button.
- In case of changes in the pattern, a prompt appears for saving the changes.
1. Save changes if necessary.
  2. Open the menu with the "Loading Options" button.

3. Select the desired loading option:



The machine-specific correction values **will not be deleted** by creating a new order.



The machine-specific correction values will be deleted by creating a new order.

1. Close the menu with "OK".
2. Create a new order with the "Create New Order" button.

## 21.5 Save the order with a knitting program

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**i** When saving an order a new file is always created with the xxx .seqx extension.

---

Saving an order with a knitting program:

- ✓ You are signed in as Senior Operator .
1. In the main navigation bar select the main area "Set up Order".
  2. Tap on "Edit order" in the bottom navigation bar.
  3. Then press the "Save" button for saving.
    - ▶ The "Save order" window is opened
  4. Select location.
  5. Enter the desired name for the order file.

Save the order with a knitting program

---

**i** Attention

For orders with only one knitting program, the original name of the program (zip file) is to be maintained, since the zip file is also renamed in case of renaming!!

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6. With the  "Save" button perform the operation.
- ▶ In the specified location, a **seqx** file with its zip file of the same name is created with the defined name (= order).

## 22 Front fully fashion



<b>Pattern name</b>	Front fully fashion
<b>Start</b>	1x1 Rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ with comb function and clamping / cutting</li> <li>◆ <b>Usage of RS17</b> <ul style="list-style-type: none"> <li>– First fabric piece with comb function and clamping / cutting</li> <li>– Following fabric pieces without comb function and clamping / cutting</li> <li>– Last fabric piece with piece counter =0 is cast-off</li> </ul> </li> <li>◆ with Sintral command RS17=1 IF #100=1 RS17=0</li> </ul>
<b>Pattern description</b>	<ul style="list-style-type: none"> <li>◆ Shape: Front with V-neck</li> <li>◆ SJ fabric with stripe (3 colors)</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Cycle Counters (RS)</li> <li>◆ Stitch Length (NP)</li> <li>◆ Fabric Take-down (WBF)</li> <li>◆ Additional distance of the yarn carrier at the fabric selvedge (YDF)</li> </ul>

## 22.1 Additional Information with Fully Fashion - with Comb

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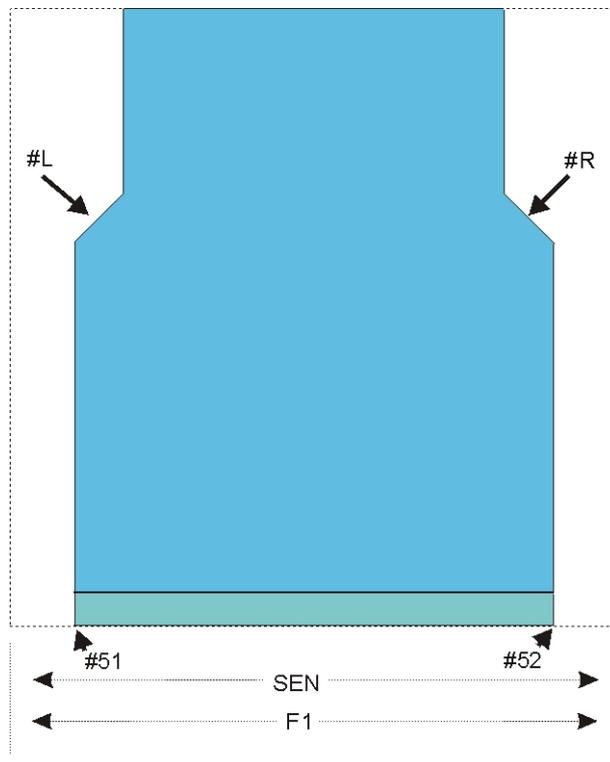
**i** Additional commands are necessary in Sintral for **fully fashion with comb!**

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Fully Fashion commands:

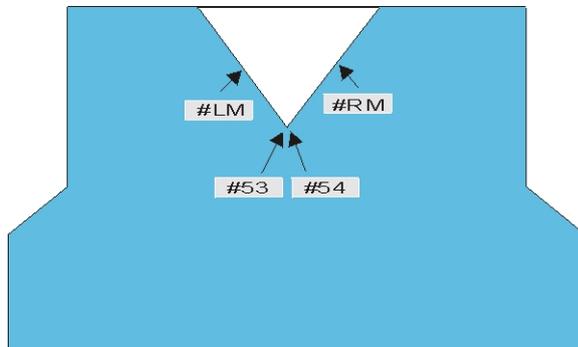
Command	Function
PFN	Machine is working as a normal machine (Needle selection over the total width of the SEN)
PFO	Machine is working as a fully fashion machine (Needle selection within #L - #R)
WMN	Value of the fabric take-down depending on the quantity of needles (changes with the knitting width)
YDF	Additional distance of the yarn carriers at the fabric selvedge with fully fashion
# L / #R #LM / #RM	Shape counters for outer edges

## II. Counter at the outer edge of the shape:



Counters	Function
#L	Selvedge counter for the left fabric selvedge
#R	Selvedge counter for the right fabric selvedge
#51	Auxiliary counter for start width at the left (Counter does not change)
#52	Auxiliary counter for start width at the right (Counter does not change)

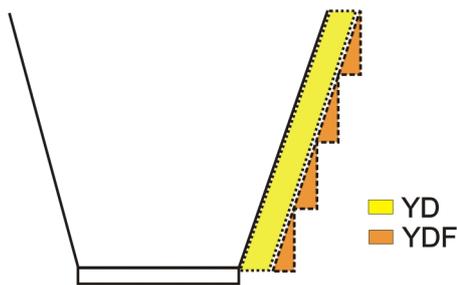
III. Counter at the outer edge of the V-neck:



Counters	Function
#LM	Selvedge counter for the fabric selvedge in the neckline middle left
#RM	Selvedge counter for the fabric selvedge in the neckline middle right
#53	Auxiliary counter for start width middle left (Counter does not change)
#54	Auxiliary counter for start width middle right (Counter does not change)

IV. Distance of the yarn carrier from the fabric selvedge:

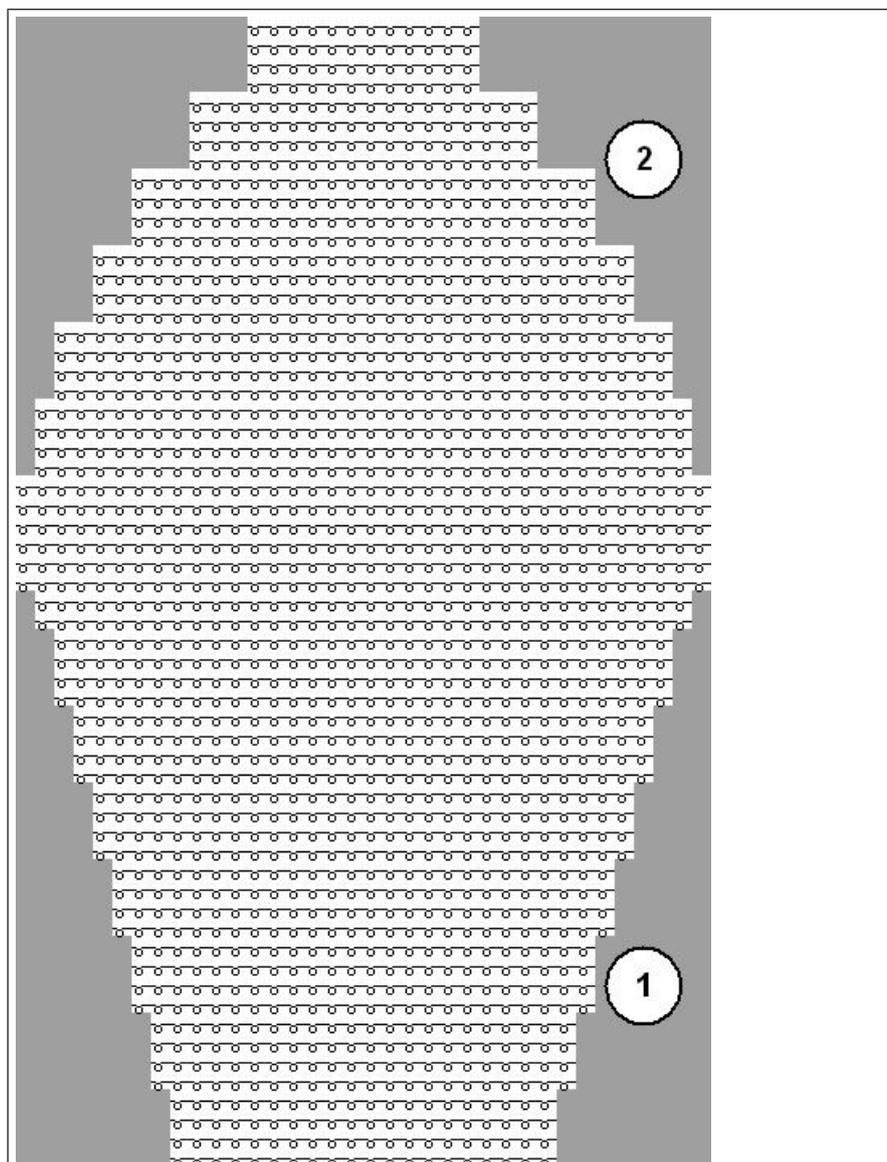
- YD: Manual staggering (yarn carrier distance) the yarn carriers at the fabric selvedge
  - Explanation and handling in the chapter Pattern 10: Fully fashion without comb
- YDopt: Automatic staggering the yarn carriers at the fabric selvedge
- YDF: Additional yarn carrier distance for fully fashion knitting



Command:		
YDF = n	Additional yarn carrier distance for fully fashion knitting	n = 1 – 20 (by needles)

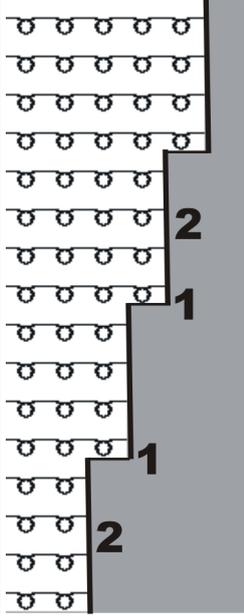
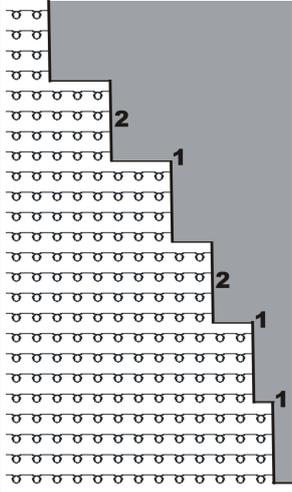
## 22.2 Widening / Narrowing of Fully Fashion

Shaping by widening / narrowing



1	<b>Widening</b>	Enlarging the knitting width
2	<b>Narrowing</b>	Reducing the knitting width <b>i</b> : The transfer of stitches results in double stitches = Fully fashion marking (fashioning marks)

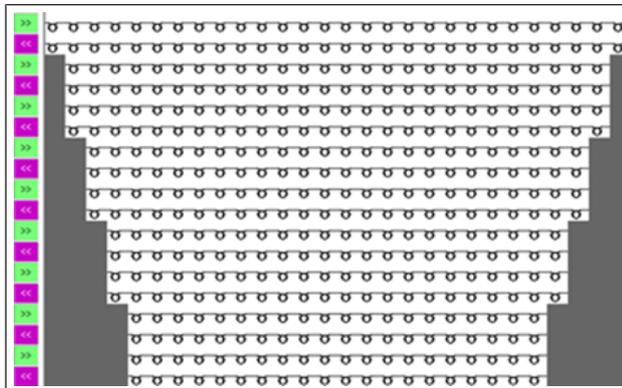
Step height and step width when widening / narrowing

Widening		
	1	<b>Step width</b> <b>i</b> : Widening always only 1 needle
	2	<b>Step height</b> = Number of rows between two widenings <b>i</b> : Step height is as desired
Narrowing		
	1	<b>Step width</b> <ul style="list-style-type: none"> <li>◆ 1 needle narrowing</li> <li>◆ 2 needle narrowing</li> <li>◆ 3 needle narrowing</li> </ul> <b>i</b> : Step widths of more than 3 stitches are bind-off.
	2	<b>Step height</b> = Number of rows between two narrowings <b>i</b> : Step height is as desired

22.2.1 Widening Procedure by the Example of Single Jersey fabric

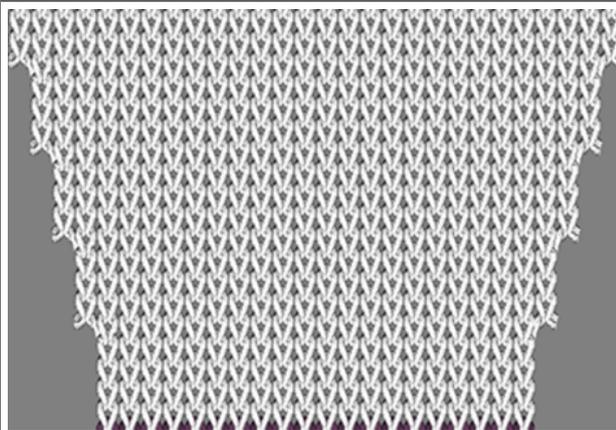
Widening

Widening onto an empty needle = tuck

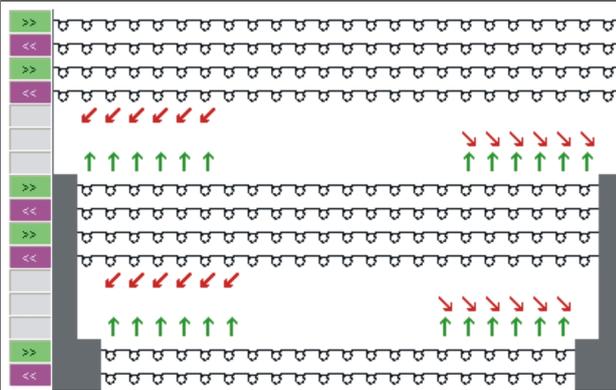


**i:**

The widening by 1 needle can be executed at the left and right fabric selvedge in the same stitch row.

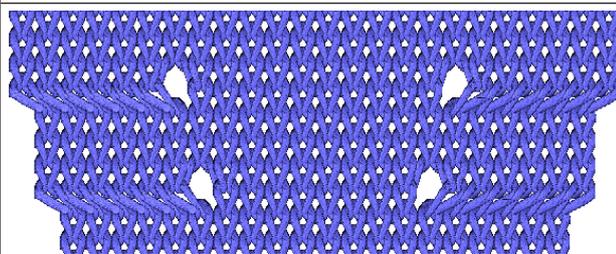


### Widening by transferring stitches by one needle outward = pointelle (without closing)



**i:**

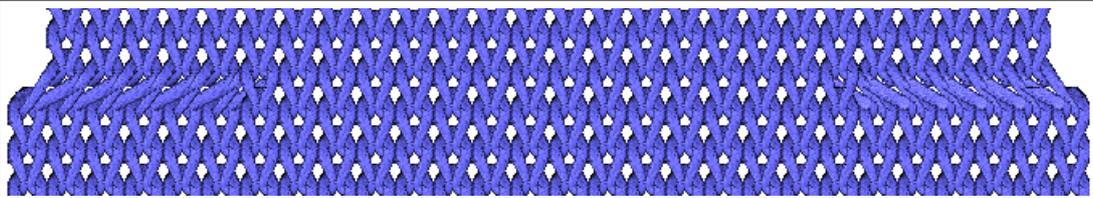
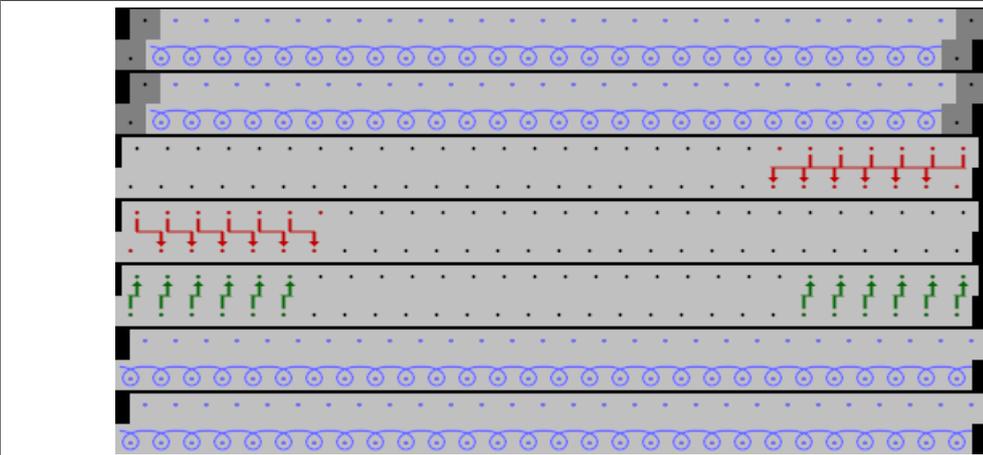
The hole (=pointelle) that resulted from transferring stitches outward (stitch group = widening width) can also be closed by knitting + transferring a tuck. (= Widening with Closing-Stitch)



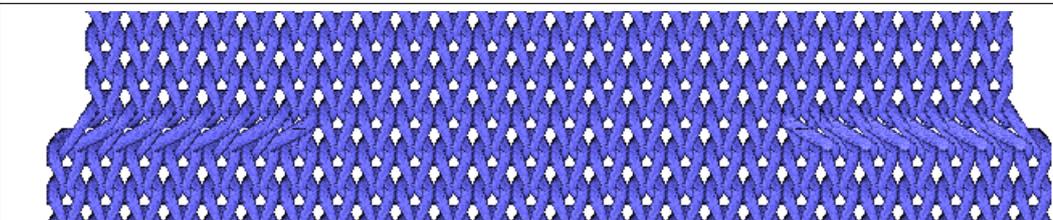
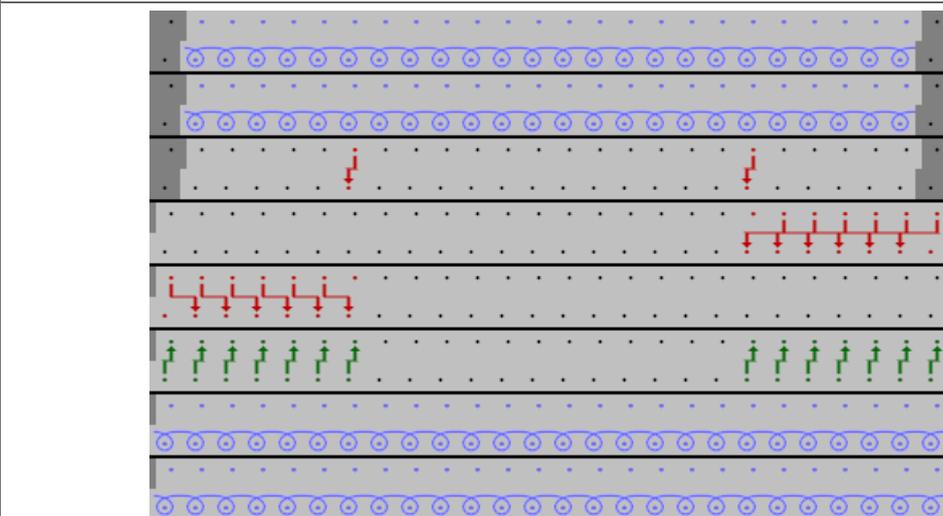
### 22.2.2 Narrowing Procedure by the Example of Single Jersey

#### Narrowing

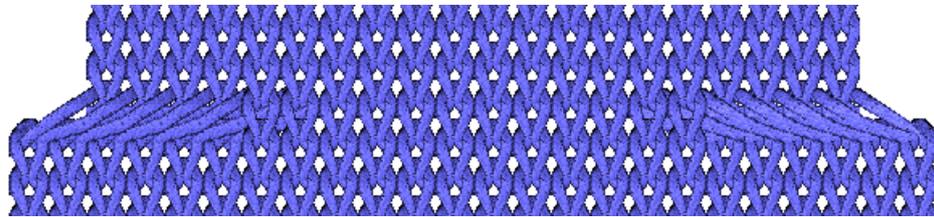
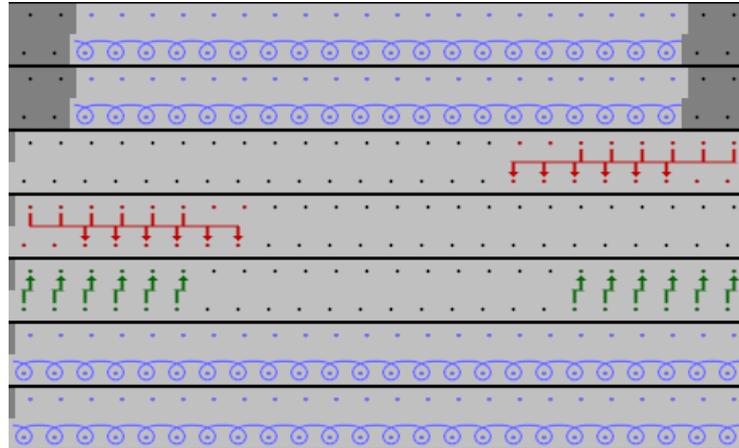
##### 1 needle narrowing underneath



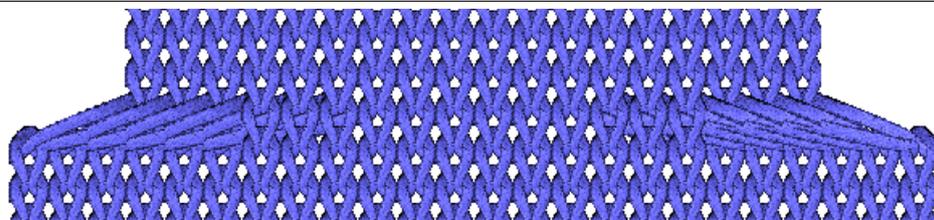
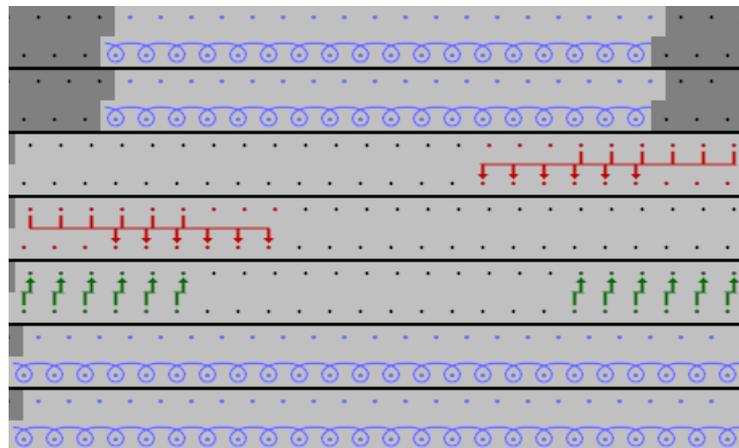
##### 1 needle narrowing above



### 2 needles narrowing underneath



### 3 needles narrowing underneath



### 22.2.3 Binding-off Procedure by the Example of Single Jersey Fabric

Binding-off (to the right >>)	
<p>You can change the form of a fully fashion fabric by binding-off as well.                  The binding-off sequence consists of knitting and transferring of individual stitches.                  Different variants of binding-off are available.</p>	

## 22.3 Create and set-up an order with a knitting program

Procedure:

1. **Create an order with a knitting program.**
2. **Start production.**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position the yarn carriers at the clamping point
  - Check the knitting area and the fabric collection chamber
4. **Start machine (engage).**

Make the following changes:

- Cycle Counters (RS)
- Stitch Length (NP)
- Additional distance of the yarn carrier at the fabric selvedge (YDF)
- Fabric Take-down (WBF)

## 22.4 Cycle Counter RS17 with different Fabric Widths (with fully fashion)

Production with RS17 with fully fashion fabrics:

- Via the Sintral command RS17=1 IF #100=1 RS17=0, the activation / deactivation of the comb function is coupled to the piece counter.
- Additional Sintral function FF-TRANS is required when using the cycle counter RS17 with fully fashion.  
This function regulates the transition between the single fabric pieces.
  - End width same as start-width: no special transition is necessary.
  - End width larger than start-width: Surplus stitches are cast-off except the required start-width.
  - End width smaller than start-width: protection yarn is used to widen up to the needed start-width.

## Behavior of the run-throughs (piece number) when using RS17

### With quantity of run-throughs: =1:

1. For the one fabric piece, the comb and the clamping / cutting are active.
2. All yarn carriers are taken out of the clamp before the start and knitted-in.
3. The fabric is cast-off at the end via a cast-off function in the Sintral.

### With quantity of run-throughs: >1:

#### I. First fabric:

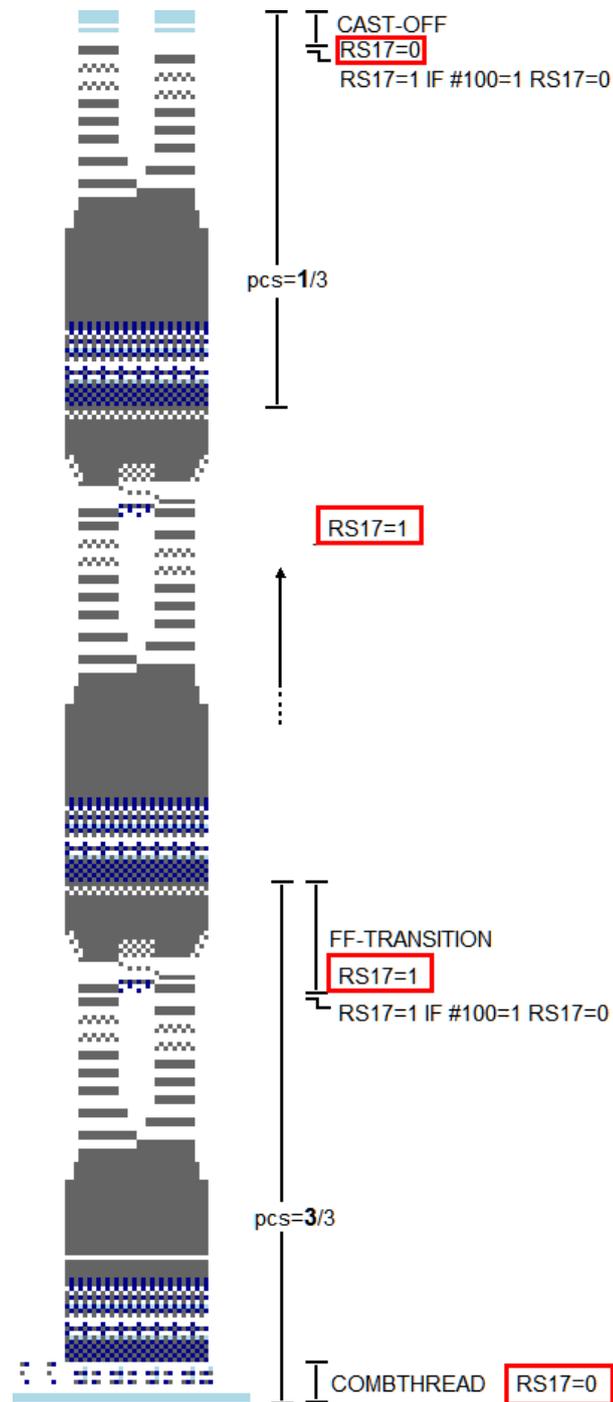
1. The first piece works with **Comb** since RS17=0 is set.
2. All yarn carriers are taken out of the clamp before the start and knitted-in.
3. The **Comb thread** is clamped after knitting, since it is **only** needed **for the first piece**.
4. All other yarn carriers are positioned at the fabric selvedge for the following pieces.
5. At the fabric end the RS17 is set to =1 with the Sintral command RS17=1 IF #100=1 RS17=0, as the **piece counter is >1**. This way **no cast-off is carried out at the fabric end**.
6. Afterwards, the Sintral function FF-TRANS is called-up for comparing the shape counters and the required transition rows are processed.

#### II. The following fabric pieces:

1. All the following fabrics are processed without comb and clamping / cutting.
2. No cast-off is carried out at the end of these fabrics.
3. Execution of the Sintral function FF-TRANS for the transition to the next fabric piece.

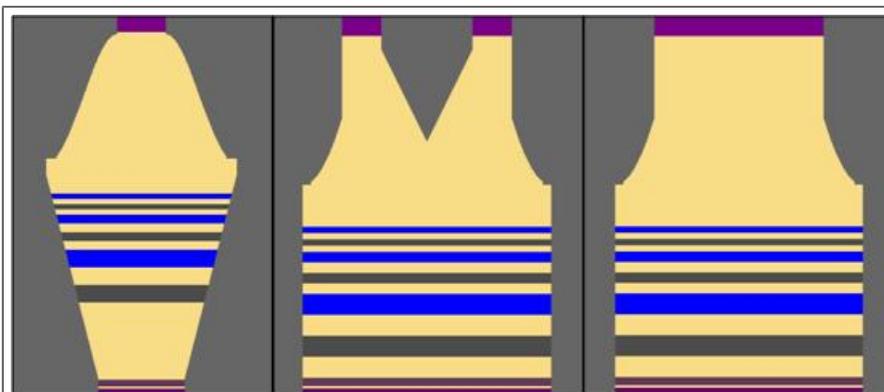
#### III. Last fabric piece of the piece counter:

1. The last fabric piece is processed without comb and clamping / cutting.
2. At the end of the last piece, the piece counter is checked by the Sintral command RS17=1 IF #100=1 RS17=0 and this way is set **RS17 = 0**.
3. With RS17 =0 the yarn carriers are brought into the clamps and then the fabric piece is cast-off.





## 23 Fully fashion - order with several knitting programs

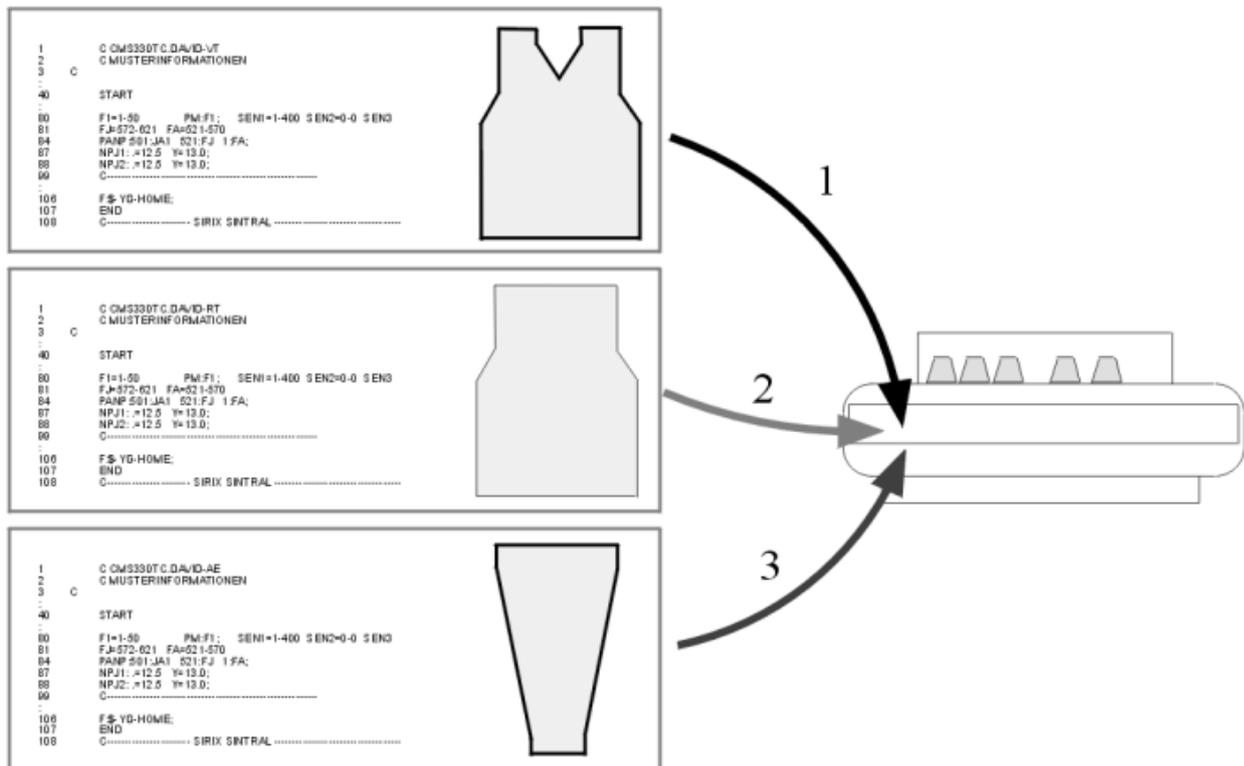


<b>Pattern name</b>	Order with the knitting programs <ul style="list-style-type: none"> <li>◆ Front</li> <li>◆ Back</li> <li>◆ Sleeve</li> </ul>
<b>Start</b>	2x1 rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ With Comb</li> <li>◆ with clamping / cutting</li> </ul>
<b>Pattern description</b>	<p>Fully fashion knitted as order with several knitting programs (sequence):</p> <ul style="list-style-type: none"> <li>◆ 1x front</li> <li>◆ 1x back</li> <li>◆ 2x sleeve</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Stitch Length (NP)</li> <li>◆ Cycle Counters (RS)</li> <li>◆ Fabric Take-down (WBF)</li> </ul>

## 23.1 Behavior with an order with several knitting programs

Working procedure:

- Processing of a specified sequence of knitting programs
- The knitting programs are automatically loaded into the main memory of the machine.



Usage:

- Knitting of different patterns with constant knitting width
- Knitting of a pattern with different fabric widths (set of sizes)
- Knitting of different patterns in different fabric widths (fully fashion)  
Example for fully fashion Front, back, sleeve, sleeve.

Requirements:

All the knitting programs used in the order must meet the following conditions:

- Same machine type and working procedure

**■ All yarn carriers must be present in every knitting program.**

Also draw the unused yarn carriers in the starting rows of the start module.

Otherwise there is a risk that the clamp will be opened and the not used yarn carrier will be unthreaded. This leads to a machine stop and that is annoying.

**■ With machines with comb and clamping / cutting:**

Home positions of the yarn carriers:

- Knitting programs have the same yarn carrier home position

**i**: Note:

"EAYSEQ" does not need to be performed after each order position (knitting program).

- Knitting programs have different yarn carrier home positions

**i**: Note:

"EAYSEQ" must be performed after each order position (knitting program).

- All yarn carriers must be brought to their home position before **END**.

**i**: Recommended for knitting programs with comb use.

**■ With machines without comb and clamping / cutting:**

Selected needle area (SEN):

- The SEN area must be the same in all knitting programs

Home positions of the yarn carriers:

- All knitting programs have the same yarn carrier home position

- The  "EAYSEQ" function does not need to be performed after each order position.

---

**i** This  "EAYSEQ" function only is available for selection for orders with 2 or more knitting programs.

---

## 23.2 Create order with several knitting programs

### **i** Parking position of the carriage

The parking position of the carriage is as desired!

With "Start Order", the machine control ensures that the knitting program starts at the left in the carriage stroke. Empty rows may be necessary.

#### **Before loading the pattern, the current machine state is to be checked:**

##### ■ **With comb**

- No fabric in the needle bed or in the fabric take-down.
- The yarn carriers are in the collecting clamp unit and are clamped.

##### ■ **Without comb**

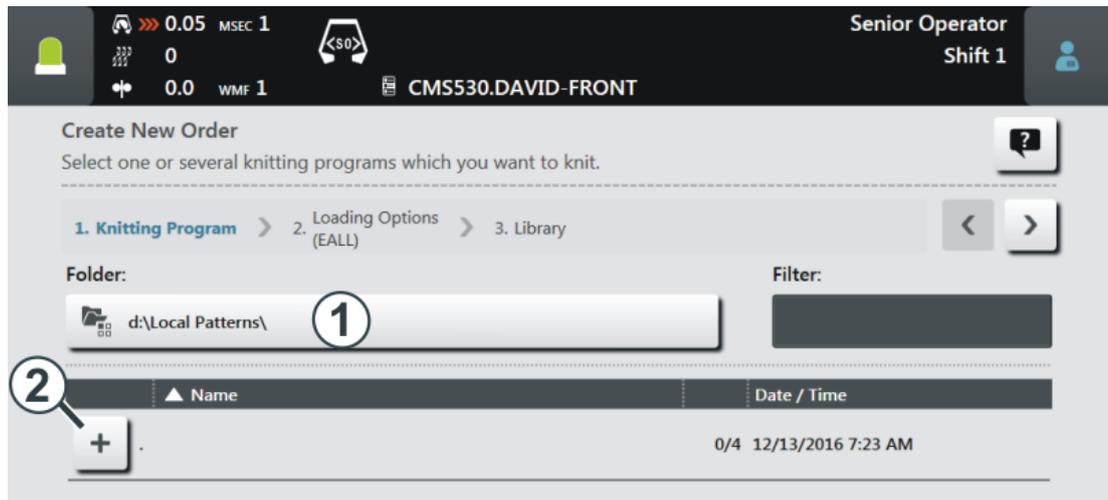
- Pay attention to the starting width of the new pattern.
- Check and adjust the yarn carrier positions.

#### Create Order

✓ You are signed in as Senior Operator .

✓ The yarn carriers are in the clamping and cutting bed.

1. In the main navigation bar select the main area  "Set up Order".
2. Tap on  "Edit order" in the bottom navigation bar.
3. Then, first exit the current order with the  "Exit production" button.
  - ▶ In case of changes in the pattern, a prompt appears for saving the changes.
4. Save changes if necessary.
5. Tap the  "Create New Order" button.
  - ▶ The "Create New Order" window opens up.



1		Selection of the path (storage location) of the knitting program <ul style="list-style-type: none"> <li>◆ <b>Local Patterns:</b> Folder on the hard disc of the machine</li> <li>◆ <b>Network drive</b> (only one network drive possible)</li> </ul>
2		Button for opening a folder to display the subfolders

6. More in the next chapter Select knitting program (load) [ 189].

### 23.2.1 Select knitting program (load)

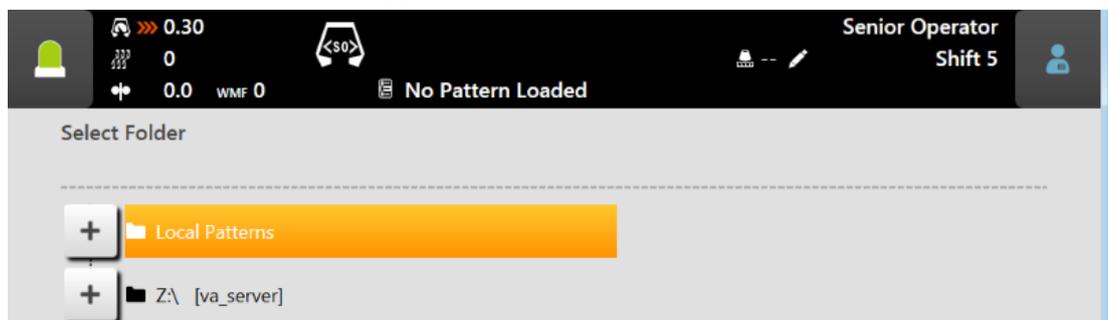
#### Load knitting programs

✓ In the "Create new order" window, the setting **1. knitting program** must be selected.

1. If necessary switch to **1. knitting program** with the buttons.

2. For changing the path, then press the "..." button.

▶ The "Select folder" window appears.



3. Select the desired location:

- Local Patterns (hard disk)

## Create order with several knitting programs

- Any released network drive
- 4. With the  button, open the folder / drive to display the subfolder.
- 5. Select the folder with the knitting programs (zip file) to be loaded.

---

**i** Display of the zip files (knitting program)

Only the zip files saved directly in the folder can be displayed in the picklist.

---

- 6. With the  "OK" button confirm the selection and return to the previous window.
- ▶ In the "Create new order" window is displayed the content of the selected folder.
- 7. Select all the desired knitting programs (zip files).

---

**i** The selection of several knitting programs of the list is also possible.  
In case of erroneous selection, this can be undone tapping again on them.

---

- 8. More in the next chapter Set Loading Options [ 190].

- or -

- 9. Press the  "Create order" button to complete the order and to return to the previous window.
- ▶ The order is created with several knitting programs.

- or -

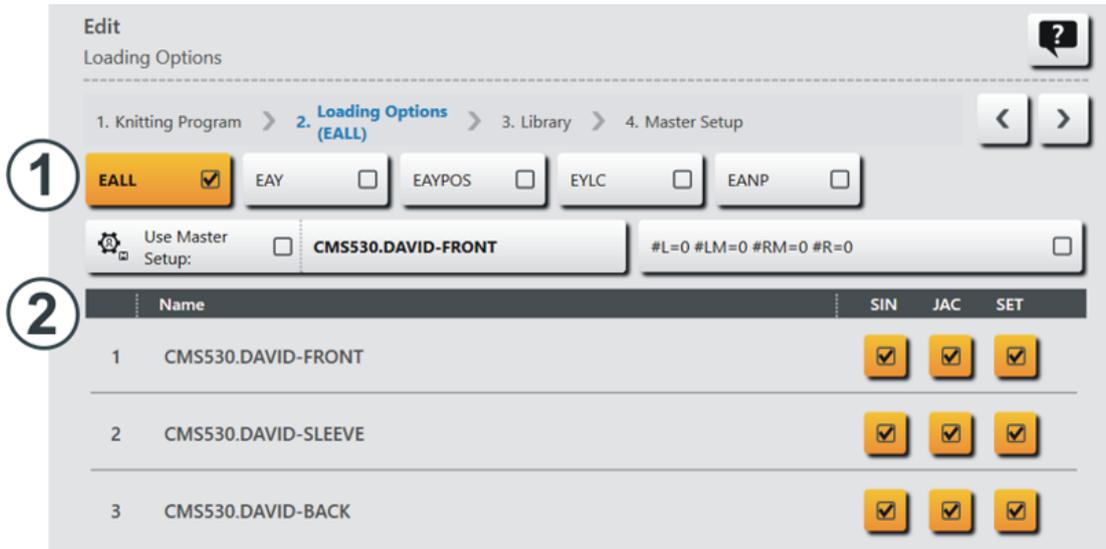
- 10. With the  "Cancel" button, cancel the process and return to the previous window.
- ▶ Create order is canceled without loading a new knitting program.

## 23.2.2 Set Loading Options

### Loading Options

- ✓ In the "Create new order" window, the setting **2. Loading Options** must be selected.

- 1. If necessary, switch to **2. Loading Options** with the   buttons.
- ▶ The window is displayed.



<b>1 Loading Options for All Positions:</b>	
<b>EAY</b>	The deletion of the yarn carrier home position is performed only for the first order position. <b>i</b> : Then, EAYSEQ is executed when changing to the next order position.
<b>EAYSEQ</b>	Delete yarn carrier home position after each position of the order (knitting program). <b>i</b> : This function is only active, if two or more positions (knitting programs) are selected for the order.
<b>Use Master Setup:</b>	Setting for using a "Master-Setup". <b>i</b> : This function is only active, if two or more positions (knitting programs) are selected for the order.
A	Button for selecting the location (path) of the desired Master Setup.
B	<input type="checkbox"/> Do not use Master Setup
	<input checked="" type="checkbox"/> Use Master Setup

**2 Loading Options for Individual Positions**

## Create order with several knitting programs

Name		SIN	JAC	SET
List of all selected knitting programs	<input checked="" type="checkbox"/>	The program element is switched on (active), i.e. it is used for the production (default setting).		
	<input type="checkbox"/>	The program element is switched off (inactive), i.e. it is not used for the production.		
		Symbol for using a "Master-Setup" in the SET column.		
		You can individually switch on or off these program elements.		

2. Selection of all required loading options:

- EALL
- EAY
- EAYSEQ

3. Press the  "Create order" button to complete the order and to return to the previous window.

▶ The order is created with several knitting programs.

- or -

4. With the  "Cancel" button, cancel the process and return to the previous window.

▶ Create order is canceled without loading a new knitting program.

### 23.2.3 Deleting all settings

Delete all settings for 'Create new order':

---

 The pattern memory cannot be deleted completely!

---

✓ The "Create New Order" window is displayed.

1. Press the  "Create New Knitting Program" button.

▶ A Sintral program element with empty rows is automatically generated and saved as new order in the pattern memory.

### 23.3 Setup Mode

**i** The setup mode is only available for orders with several knitting programs (positions).

Handling of the setup mode:

- ✓ You are signed in as Senior Operator .
- ✓ The yarn carriers are in the collecting clamp unit and are clamped.
- ✓ The order is created with several knitting programs.

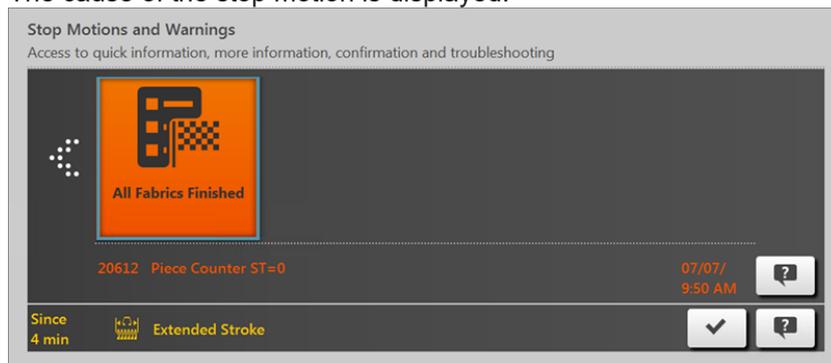
1. In the dialog box select the first position (knitting program).



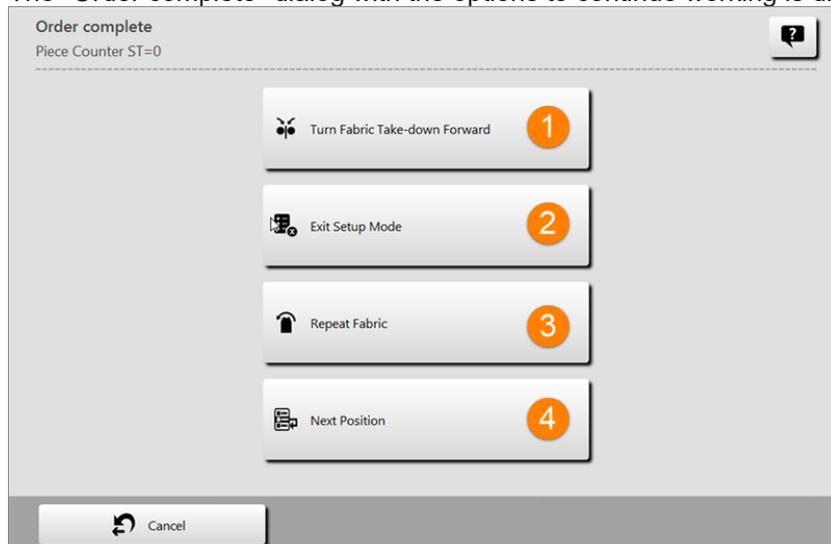
1	List of all loaded knitting programs (positions) in the sequence of production.
2	Changing of the knitting order with the  /  buttons. <b>i</b> : Select the knitting program to be moved.
3	Information for <ul style="list-style-type: none"> <li>♦ Sintral (sin)</li> <li>♦ Jacquard (jac)</li> <li>♦ Setup (setx)</li> </ul>
4	Piece counter for the corresponding position (knitting program)
5	Quantity of run-throughs for the entire order (all listed knitting programs)

6	Start the setup mode
7	Start Production

2. Start the setup of the first position (knitting program) with the  "Setup Mode" button.
3. Change to  "Prepare Machine" in the bottom navigation bar.
  - ▶ The yarn carrier home position for the first knitting program is displayed.
4. Thread-up yarn carrier.
5. Start machine (engage) and knit.
6. Control all pattern parameters during the knitting and change them if necessary.
  - ▶ The machine stops automatically at the end of the first knitting program in the left reversal.
  - ▶ The cause of the stop motion is displayed.



7. In the "Stop Motions and Warnings" dialog box press the  button.
  - ▶ The "Order complete" dialog with the options to continue working is displayed.



1		Rotate fabric take-down forward to cast-off the fabric
2		Exit the setup mode to start the production
3		Knit-off again the position (knitting program) for another control
4		Select the next position and start the knitting program

8. If necessary, cast-off the fabric piece with the  "Turn Fabric Take-down Forward" button.

- 
- i** Check the fabric piece to verify if the desired quality was achieved.
- Stitch Length
  - Fabric length
  - Fabric width
  - ...
- 

9. Inspection of the fabric piece:

- ▶ Not ok

Proceed by the  "Repeat Fabric" button.

- ▶ ok

Proceed by the  "Next Position" button.

10. When changing to the next position (new knitting program), if necessary, in the bottom navigation bar go again to  "Prepare Machine", to check the yarn carrier home position for this knitting program.

11. If necessary, thread-up the added yarn carriers.

12. Continue with this sequence until all positions (knitting programs) are appropriate for the production.

13. After running-through all positions of the order exit the mode with the  "Exit Setup Mode" button.

14. Exit the dialog with the  "Cancel" button and return to the main window.

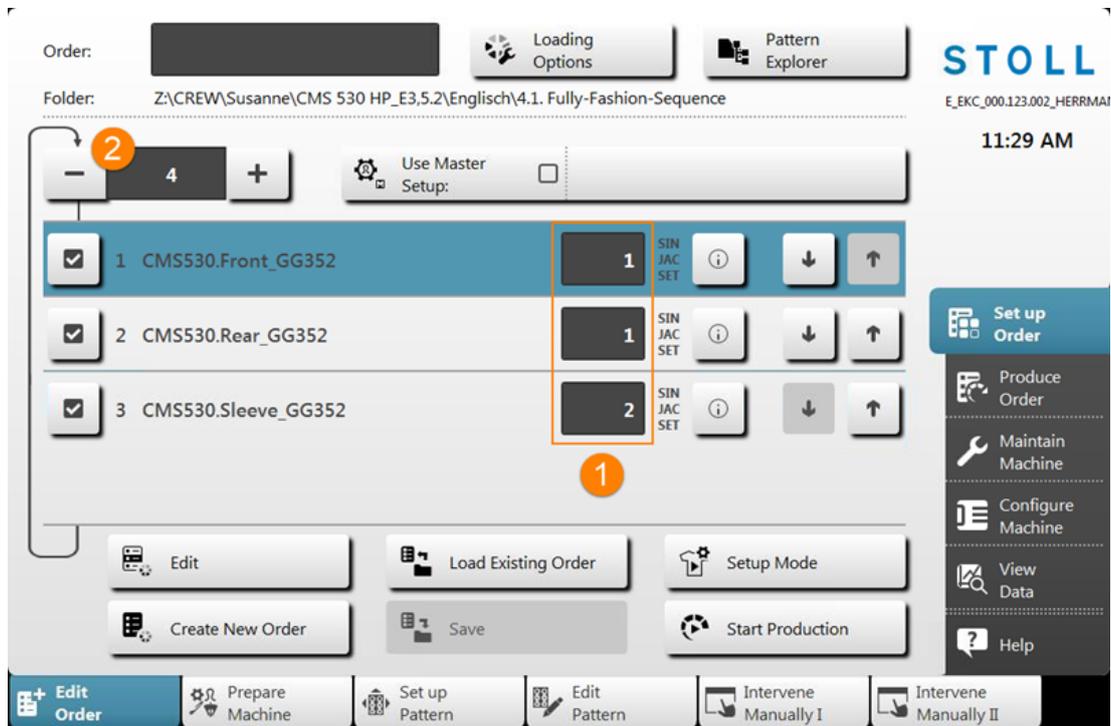
Set the piece number and the run-throughs and start the production

## 23.4 Set the piece number and the run-throughs and start the production

Set the piece counter per position and quantity of run-throughs:

✓ You are signed in as Senior Operator .

1. In the main navigation bar select the main area  "Set up Order".
2. Tap on  "Edit order" in the bottom navigation bar.
- ▶ The window with the loaded knitting programs is displayed.



1	Enter the piece number for a position (knitting program). <b>i</b> : Input via virtual numeric keypad.
2	Enter the quantity of run-throughs (all listed knitting programs): <ul style="list-style-type: none"> <li>◆  Reduce quantity</li> <li>◆  Increase quantity</li> </ul>

3. Tap into the area under (1) and enter the desired piece number per position via the virtual numeric keypad.
4. Enter the desired quantity of run-throughs at (2)
  - ▶ If the number is > 1, the repetition is represented graphically with a loop (run through).

Set the piece number and the run-throughs and start the production

5. Then start the production with the  "Start production" button.

## 23.5 Save the order with several knitting programs

---

**i** When saving an order a new file is always created with the xxx **.seqx** extension.

---

Saving an order with several knitting programs:

- ✓ You are signed in as Senior Operator .
  - ✓ The production was not yet completed with the  "Exit production" button.
  - 1. In the main navigation bar select the main area  "Set up Order".
  - 2. Tap on  "Edit order" in the bottom navigation bar.
  - 3. Then press the  "Save" button for saving.
  - 4. Select location.
  - 5. Enter the desired name for the order file.
  - 6. With the  "Save" button perform the operation.
- ▶ In the specified location, a seqx file and the corresponding zip files of all positions of the order are created with the defined name.

## 24 Working with Master Setup with orders with several knitting programs

**i** In case of orders with several knitting programs, it is possible to work with a Master Setup.

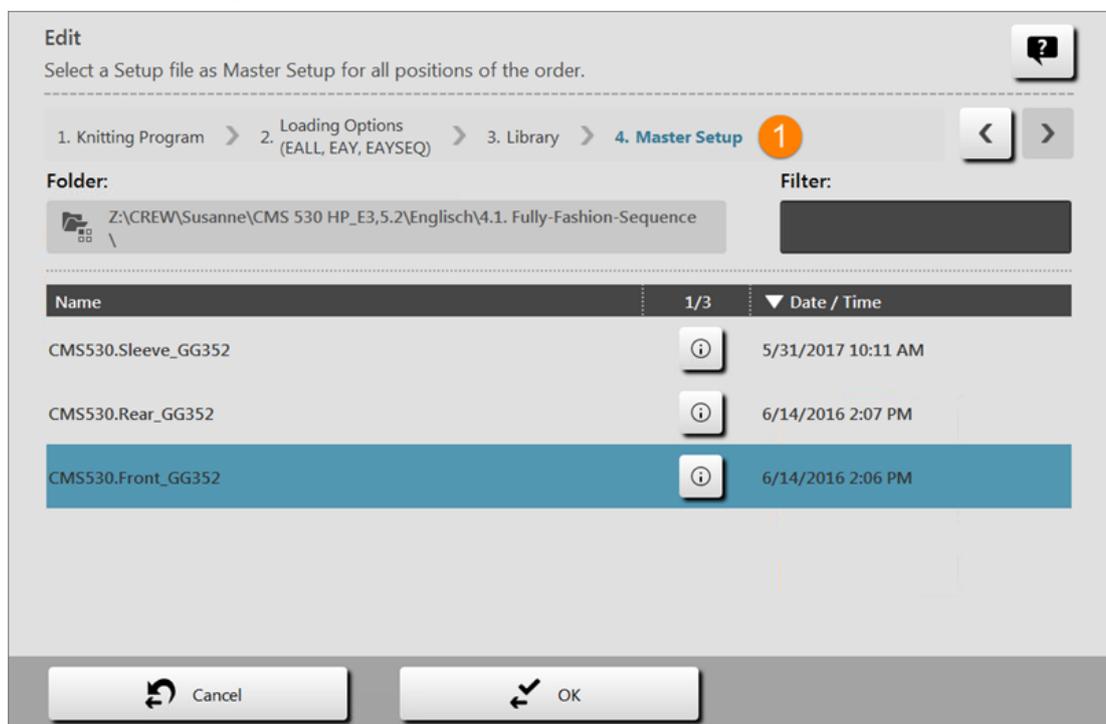
### What is a Master Setup:

The Master Setup contains all important pattern parameters for all the knitting programs used in the order. The Master Setup must be prepared at the pattern workstation by the programmer for using it as Master Setup.

### Working with a Master Setup:

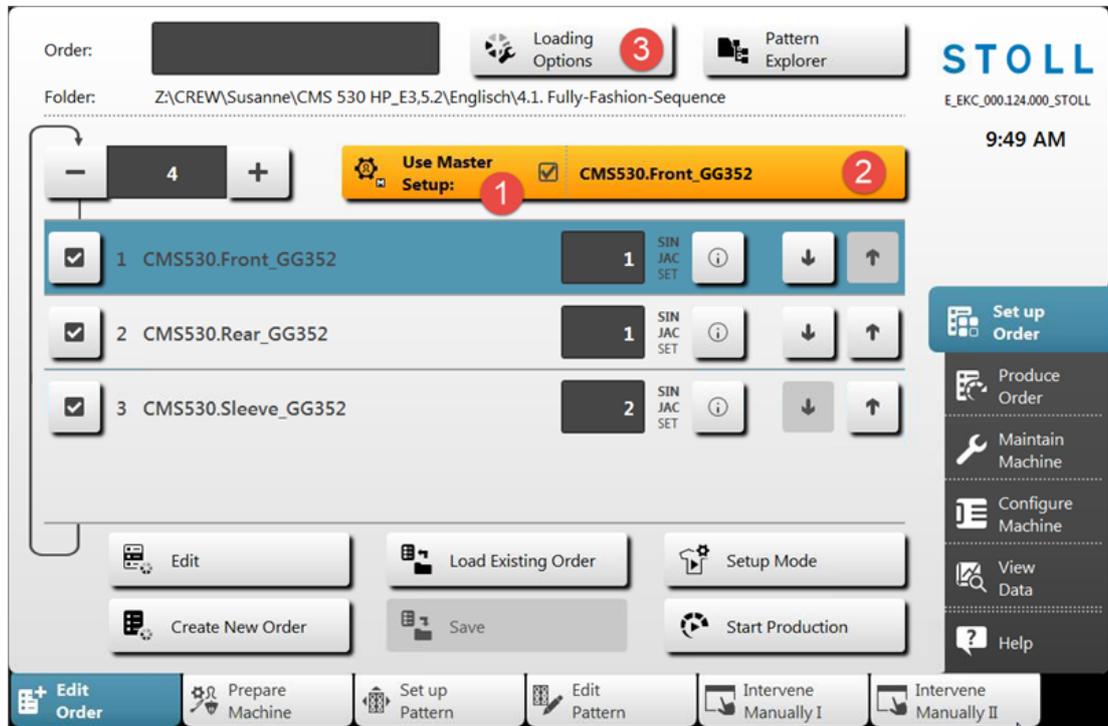
- ✓ You are signed in as Senior Operator .
- ✓ The yarn carriers are in the collecting clamp unit and are clamped.
- ✓ The order is created with several knitting programs.

1. In the dialog activate the  "Use Master Setup"  button.
- ▶ The "Edit" dialog for **4. Master Setup** selection is displayed.



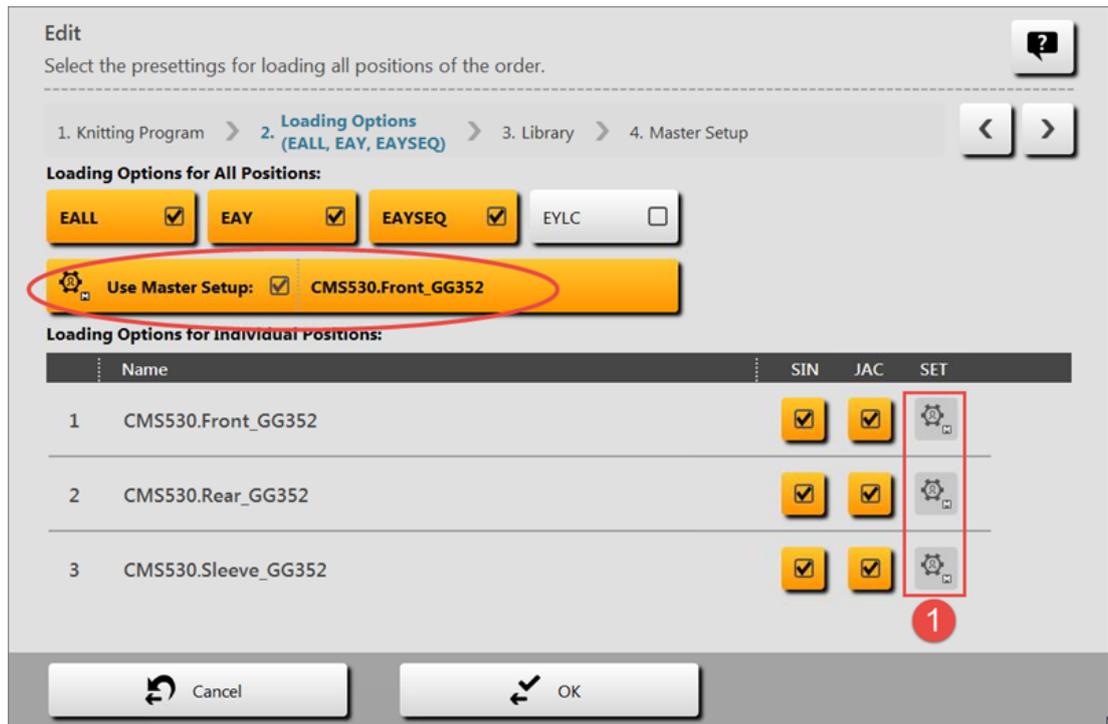
**i** The Master Setup must be saved together with the knitting programs of the order in the same folder.  
If there are several setup files in the folder, they will be displayed all in the list.

2. Select the desired setup file.
3. Confirm the selection with the  "OK" button.
- ▶ Return to the main window, where the selected Master Setup is displayed.



1	Activated orange colored  "Use Master Setup" <input checked="" type="checkbox"/> button.
2	Name of the selected Master Setup
3	Selection of the loading options

4. Open the "Edit" dialog box with the  "Loading options" button.

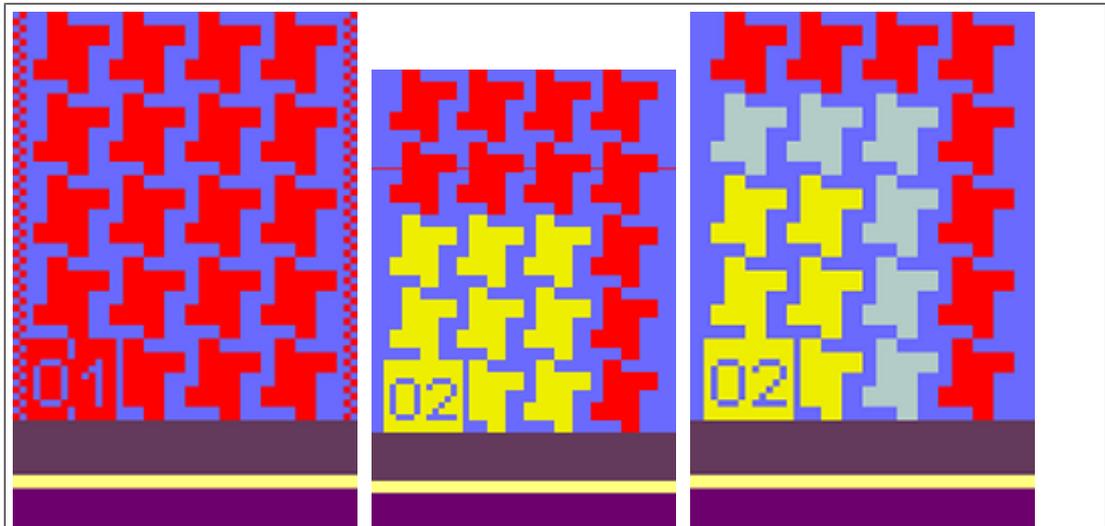


1	Display for working with a Master Setup 
2	Use the activated orange colored  "Use Master Setup" <input checked="" type="checkbox"/> button with the name of the used setup file

**i** Working with the Master Setup can be disabled in the main window or via the loading options.



## 25 Jacquards with different backs - Order with several knitting programs



<b>Pattern name</b>	Order with knitting programs for the different Jacquard backs
<b>Start</b>	2x1 rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ With Comb</li> <li>◆ with clamping / cutting</li> </ul>
<b>Pattern description</b>	Order with several knitting programs for the Jacquards
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Stitch Length (NP)</li> <li>◆ Cycle Counters (RS)</li> <li>◆ Fabric Take-down (WBF)</li> </ul>

## 25.1 Knitting Technique: Jacquard

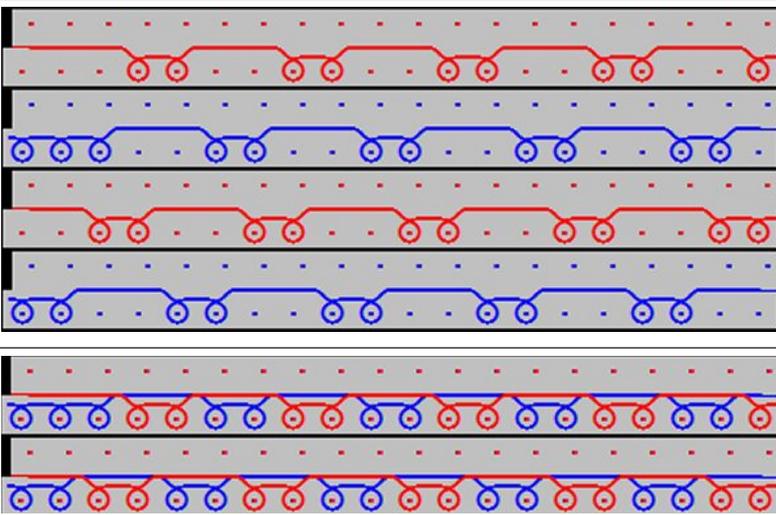
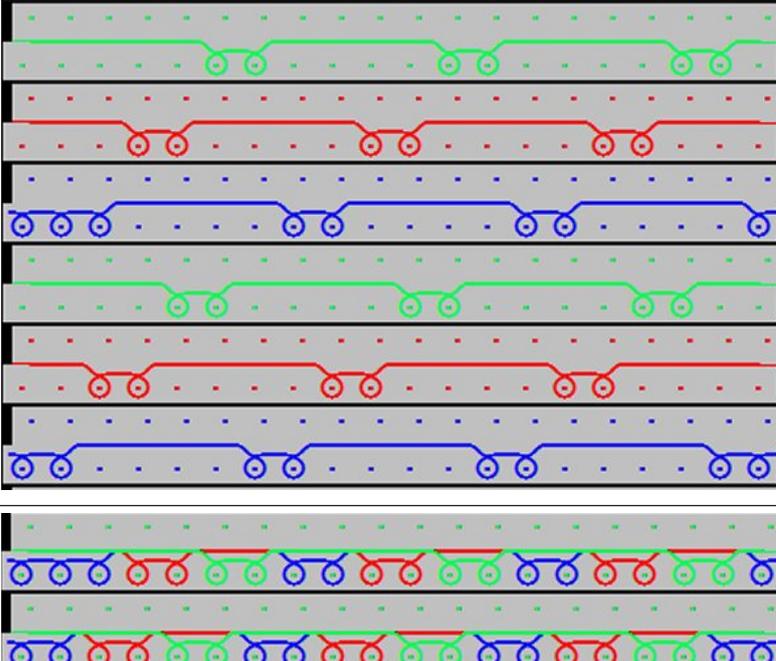
### Pattern description Jacquard:

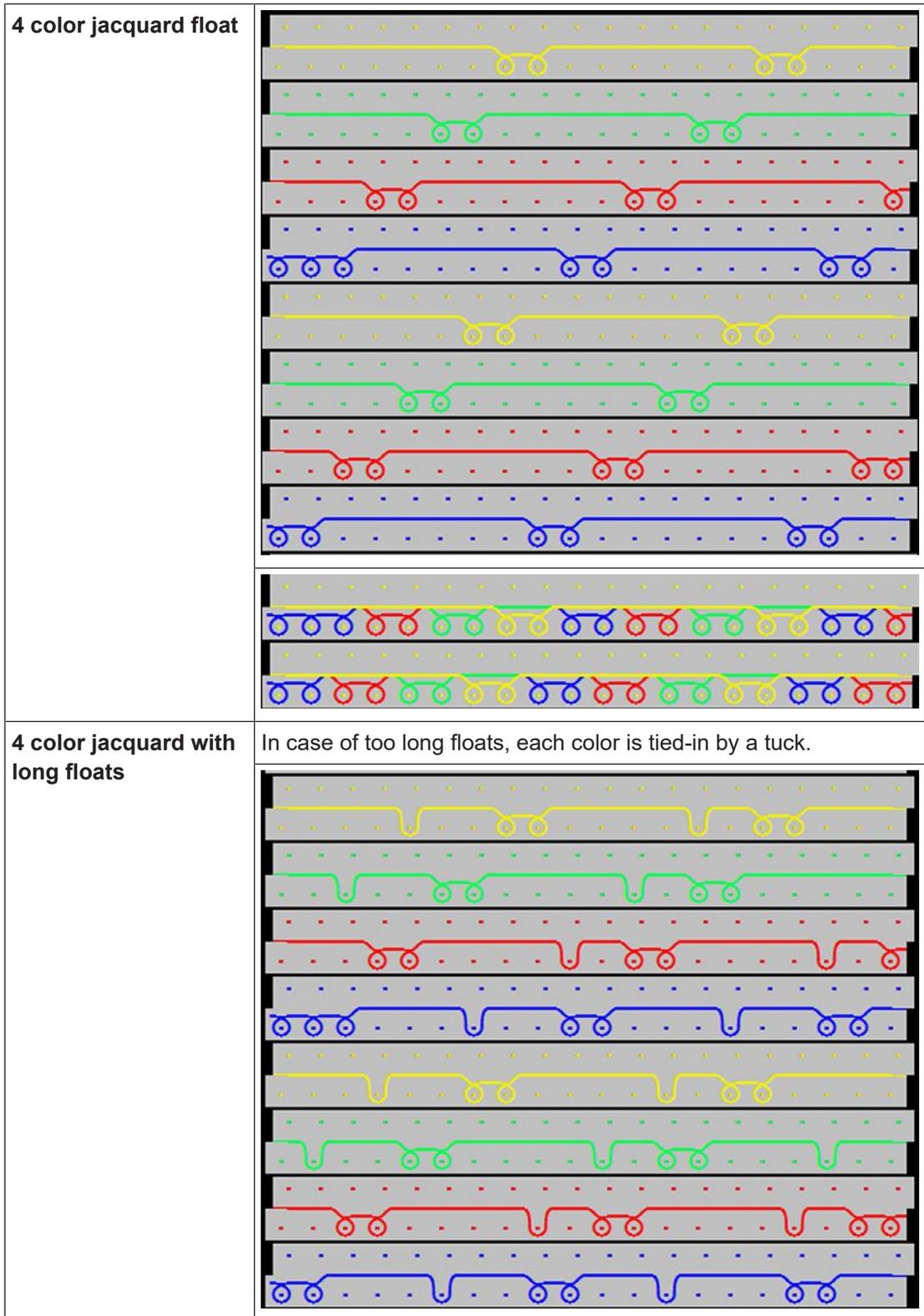
A fabric with several colors on one fabric side. The so called picture side, which can be on the front or on the back side of the fabric piece, is a result of the colors. Depending on the picture side, the so called jacquard back is on the opposite fabric side.

The exact designation of a jacquard contains also the number of colors on the picture side.

### 25.1.1 Jacquard float

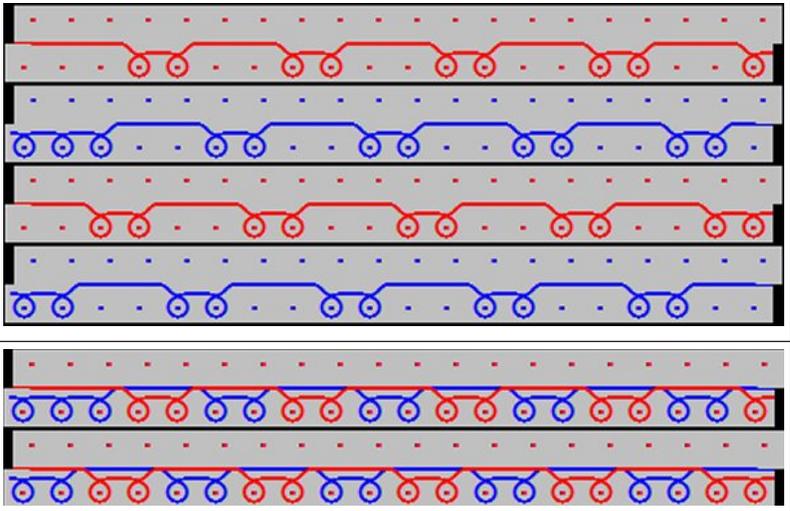
<b>Fabric View</b>	
<b>Properties</b>	<ul style="list-style-type: none"> <li>◆ Single jersey fabric / single-bed fabric</li> <li>◆ Maximum floating length is 1 inch (= 2.54 cm)</li> <li>◆ In case of longer floats the yarn must be tied-in by a tuck in the fabric.</li> </ul>

Examples	
<p><b>2 color jacquard float</b></p>	<p>2 colors must be knitted one after the other to get a complete jacquard row (= picture row).</p> 
<p><b>3 color jacquard float</b></p>	



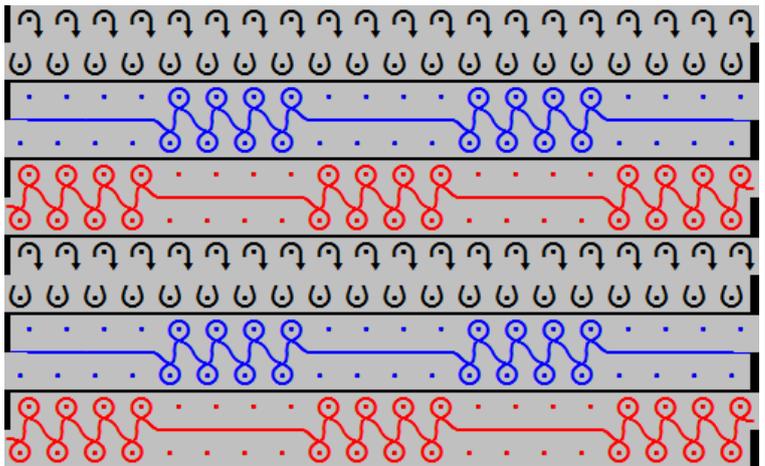
## 25.1.1.1 Jacquard float without transfer

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Single jersey fabric / single-bed fabric</li> <li>◆ Maximum floating length is 1 inch (= 2,54 cm)</li> <li>◆ In case of longer floats the yarn must be tied-in by a tuck in the fabric.</li> <li>◆ This jacquard back is used with             <ul style="list-style-type: none"> <li>– Waves with jacquard</li> <li>– Applications with jacquard</li> </ul> </li> </ul>

<p><b>Example</b></p>	
<p><b>2 color jacquard float without transfer</b></p>	<p>This jacquard back is worked the same way as the back side of the jacquard with float. With this jacquard, <b>no transfer</b> to the jacquard area takes place in the transition to the jacquard area.</p> 

### 25.1.2 Jacquard Float with Cast-off

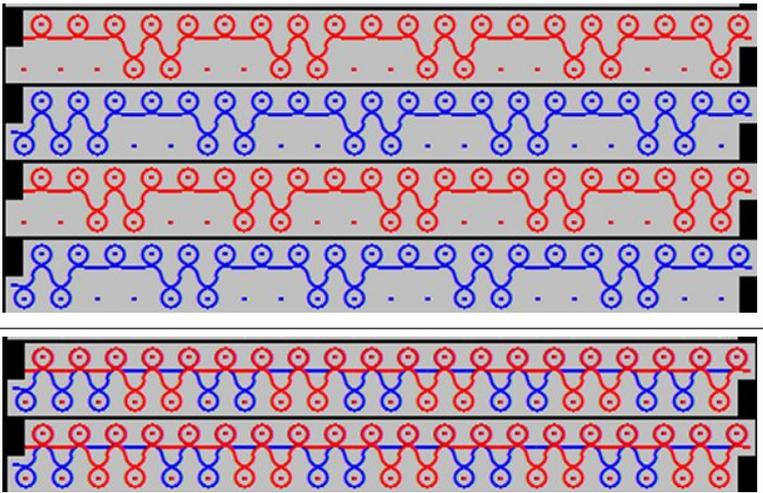
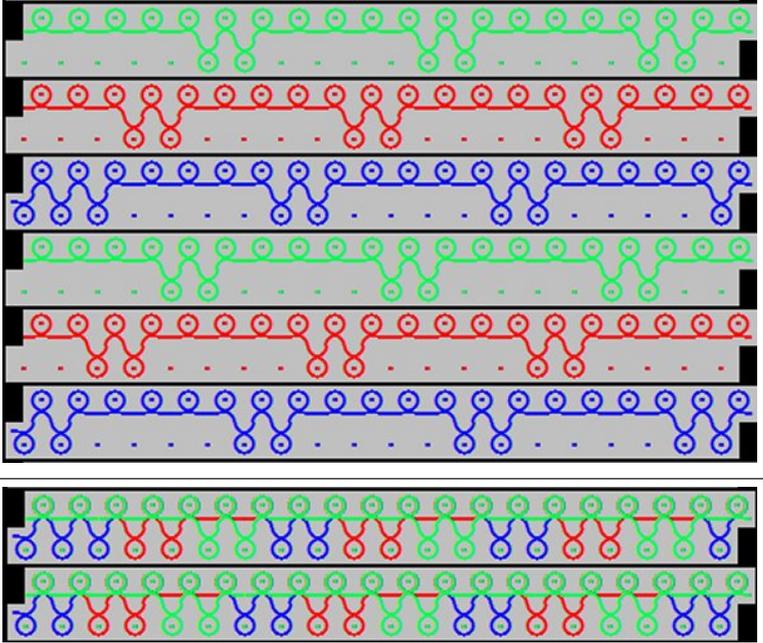
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Single jersey fabric / single-bed fabric</li> <li>◆ Maximum floating length is 1 inch (= 2,54 cm)</li> <li>◆ In case of longer floats the yarn must be tied-in by a tuck in the fabric.</li> <li>◆ The jacquard back is used with cast-off technique in case of coarse fabrics</li> </ul>

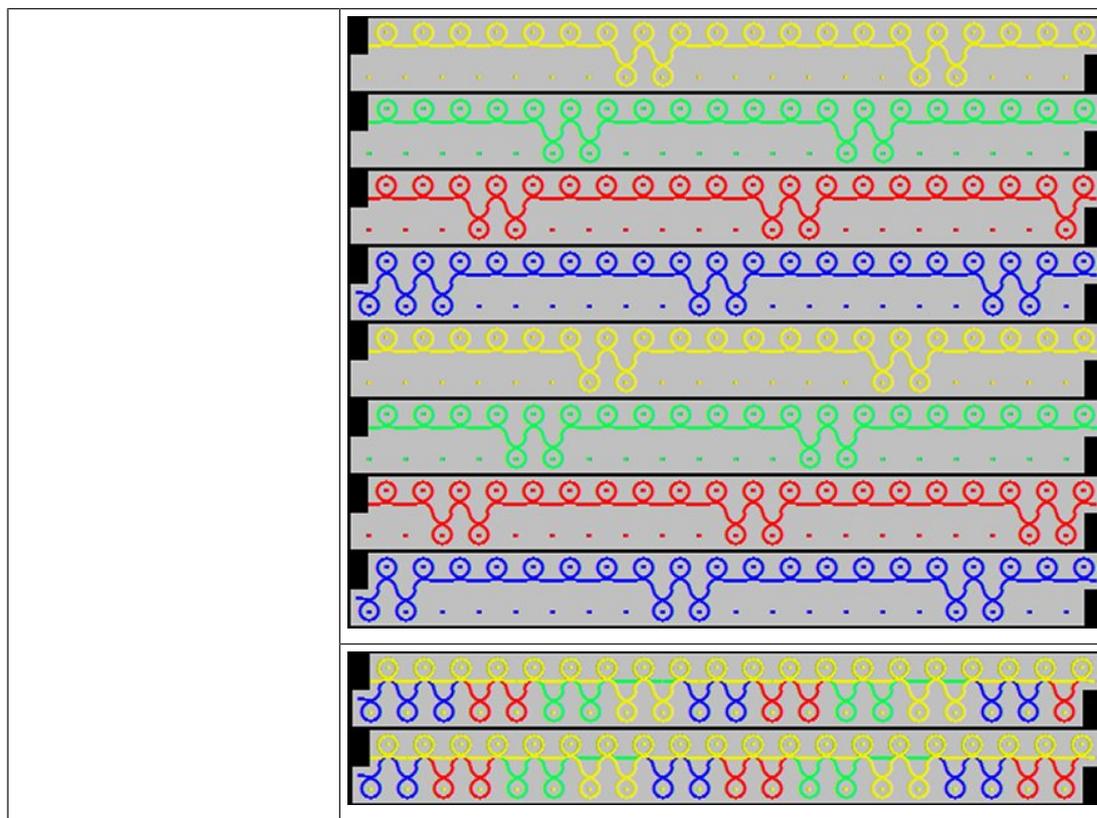
<p>Examples</p>	
<p><b>2 color jacquard float with cast-off</b></p>	<p>2 colors must be knitted one after the other to get a complete jacquard row (= picture row). Then the stitches on the rear needle bed are cast-off and 'after-pressed'.</p> 

Examples	
<p><b>3 color jacquard float with cast-off</b></p>	

## 25.1.3 Jacquard stripe

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ When using many colors, a high stitch ratio between picture side and back side is the result. <b>Result:</b> the picture side turns unclear</li> </ul>

Examples	
<p><b>2 color jacquard stripe</b></p>	<p>2 colors must be knitted one after the other to get a complete jacquard row (= picture row). Each color is knitted on all needles on the jacquard back.</p> <p>The stitch ratio between the front and the rear needle bed with a 2 color jacquard with stripe is 1: 2.</p> 
<p><b>3 color jacquard stripe</b></p>	
<p><b>4 color jacquard stripe</b></p>	<p>4 colors must be knitted one after the other to get a complete jacquard row (= picture row).</p> <p>The stitch ratio between the front and the rear needle bed with a 4 color jacquard with stripe is 1: 4. This stitch ratio distorts the look of the picture side, wherefore the twill back is used in case of a large quantity of colors.</p>



## 25.1.4 Jacquard stripe relief

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ <b>Rule:</b> The total number of colors of the jacquard picture is reduced by 1 color. In this area the jacquard back turns visible.</li> </ul>

◆ When using many colors, a high stitch ratio between picture side and back side is the result.  
**Result:** the picture side turns unclear

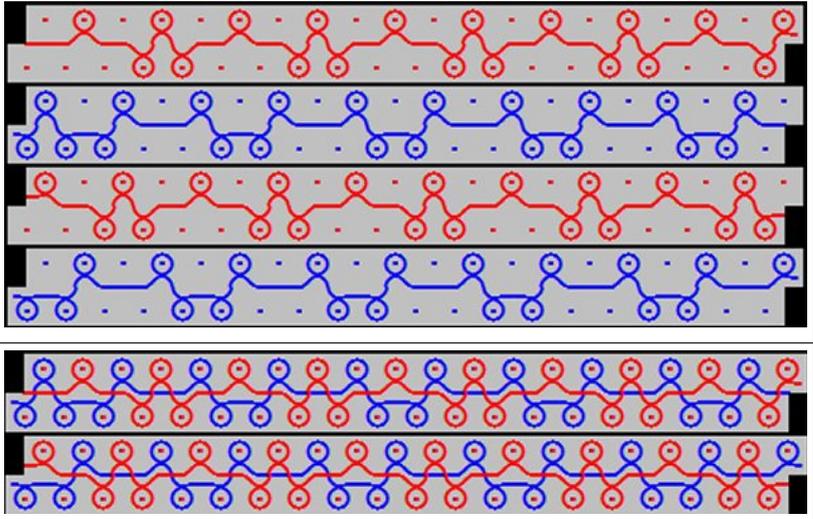
**Example**

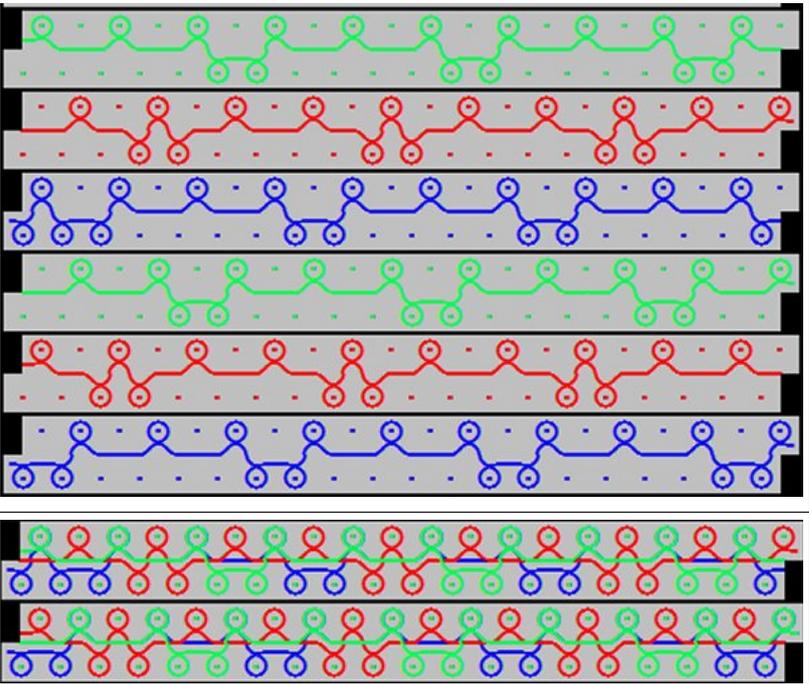
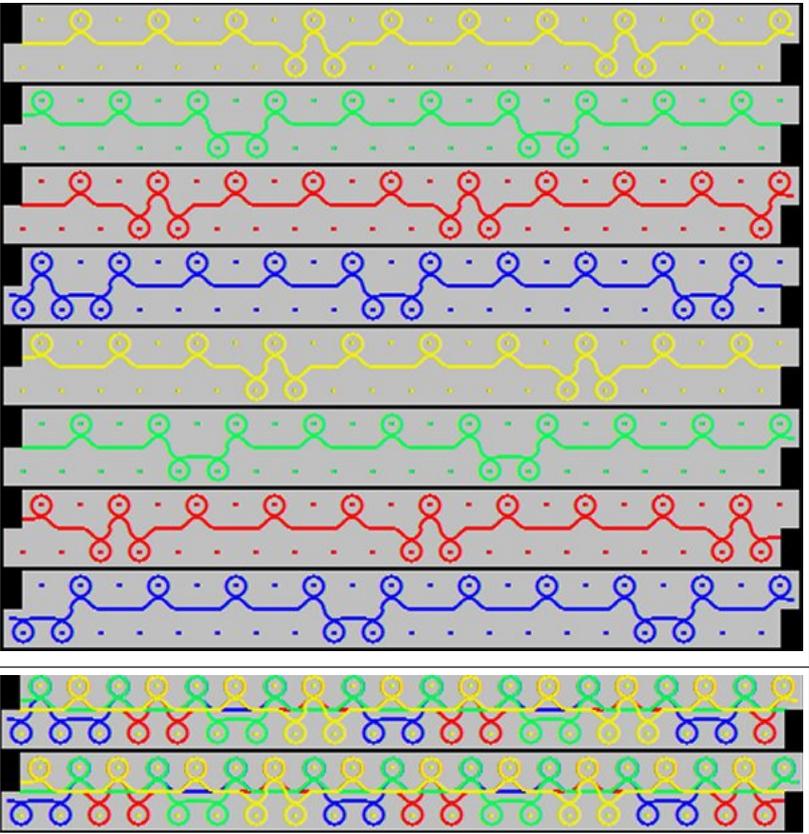
**3 color jacquard stripe relief**

For this jacquard the basic motif is created with 4 colors. During the processing, the color, which is not to be knitted will be defined. At the border of the non-knitting area, the stitches are transferred, whereby the back will be visible in that area. The stitch ratio between the front and the rear needle bed with a 3 color jacquard stripe relief is 1: 3.

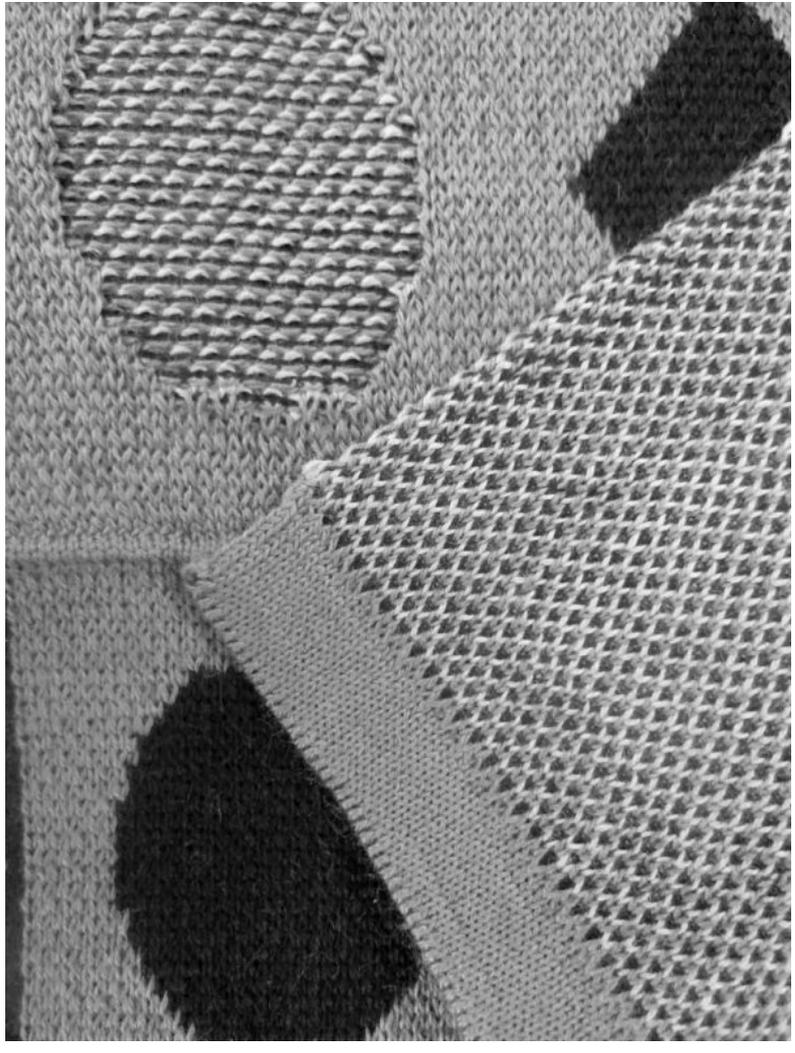
## 25.1.5 Jacquard twill

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors.</li> </ul>

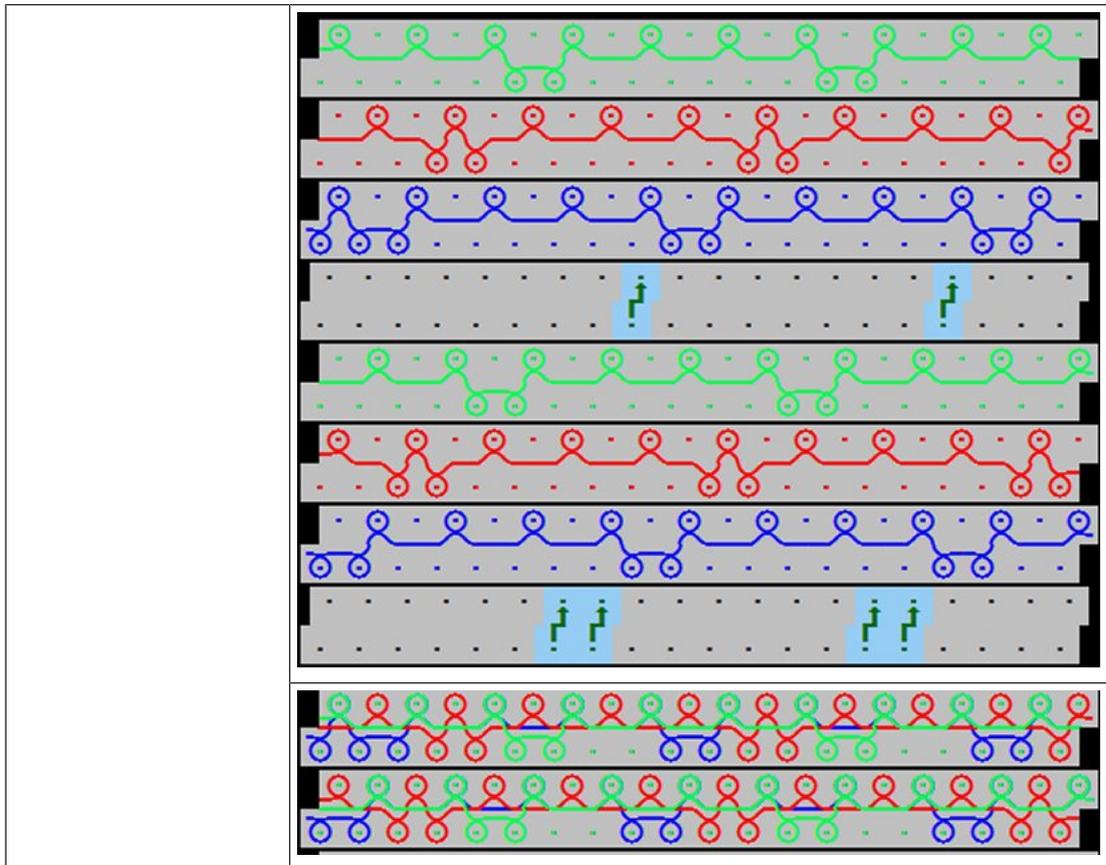
<p><b>Examples</b></p>	
<p><b>2 colour jacquard twill</b></p>	<p>2 colors must be knitted one after the other to get a complete jacquard row (= picture row). The first color is knitted on every 2nd needle and the second color shifted on the jacquard back.</p> <p>The stitch ratio between the front and the rear needle bed with a 2 color jacquard twill is 1: 1.</p> 

<p><b>3 colour jacquard twill</b></p>	
<p><b>4 color jacquard twill</b></p>	<p>4 colors must be knitted one after the other to get a complete jacquard row (= picture row). The stitch ratio between the front and the rear needle bed with a 4 color jacquard twill is 1: 2.</p> 

## 25.1.6 Jacquard twill relief

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors.</li> <li>◆ <b>Rule:</b> The total number of colors of the jacquard picture is reduced by 1 color. In this area the jacquard back turns visible.</li> </ul>

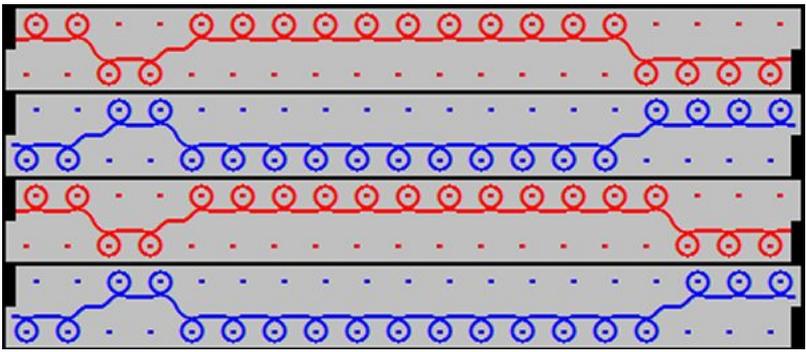
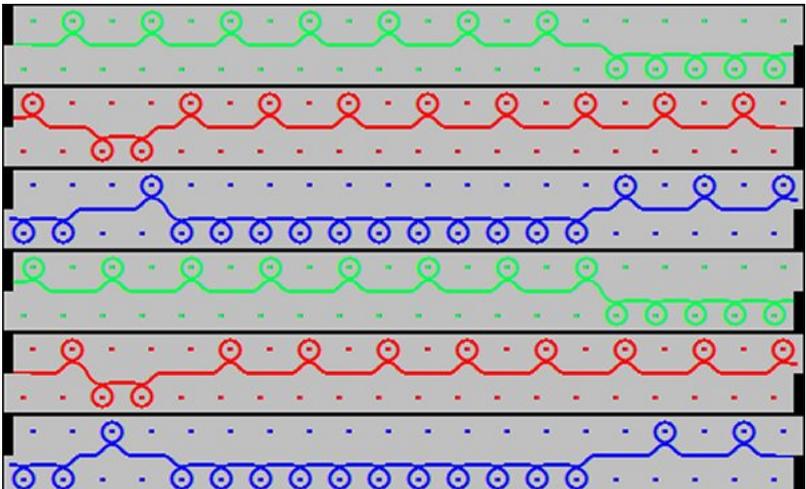
<p><b>Examples</b></p>	
<p><b>3 color jacquard twill relief</b></p>	<p>For this jacquard the basic motif is created with 4 colors. During the processing, the color, which is not to be knitted will be defined. At the border of the non-knitting area, the stitches are transferred, whereby the back will be visible in that area. The stitch ratio between the front and the rear needle bed with a 3 color jacquard twill relief is 1: 1.5.</p>



25.1.7 Jacquard net (cross-tubular)

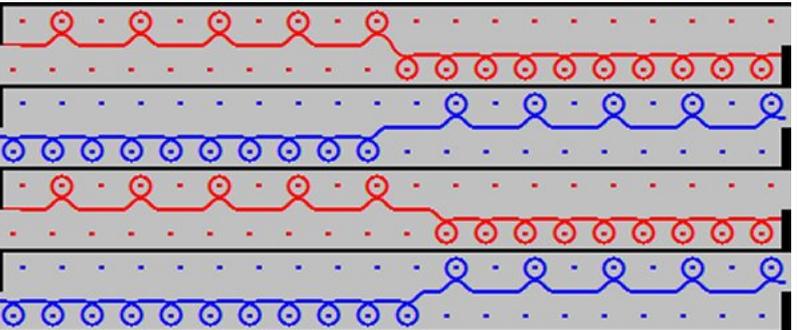
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Tubular fabric - knitted on all needles</li> </ul>

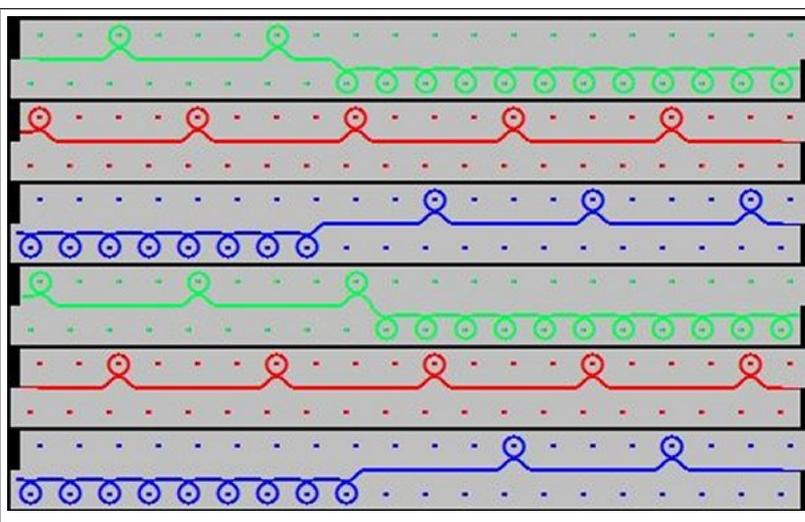
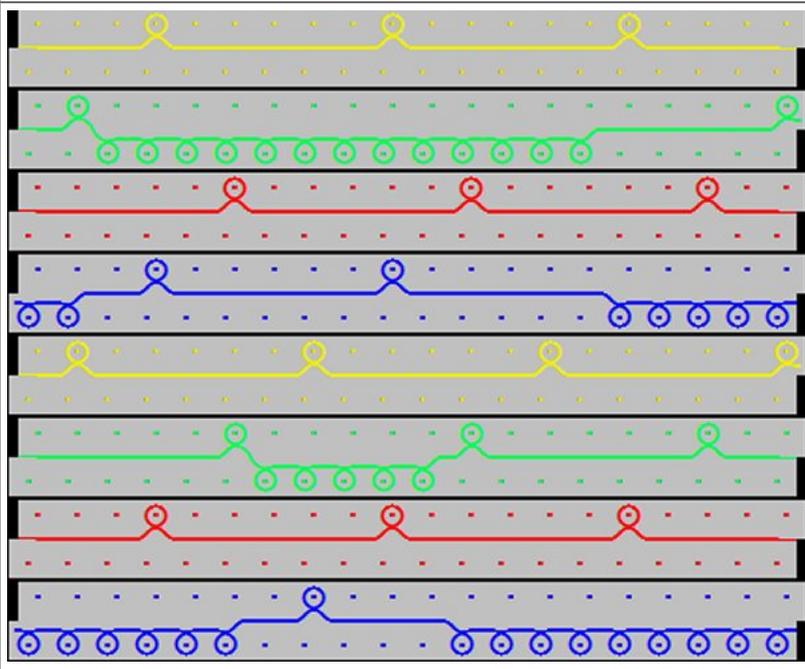
	<ul style="list-style-type: none"> <li>♦ For closing the selvedge (connection between front and rear needle bed), generally, a special selvedge is knitted.</li> </ul>
--	--

<b>Examples</b>	
<b>2 color jacquard net</b>	<p>With a 2 color jacquard net, a double-face fabric is produced that shows a picture side on both sides. The picture sides only have interchanged colors (inverted).</p> 
<b>3 color jacquard net</b>	<p>With a quantity of colors <math>\geq 3</math>, the jacquard back is 'twilled' to maintain a low stitch ratio. The different colors are knitted as tubular, meaning that a connection only results when the colors change between the needle beds.</p> 

### 25.1.8 Jacquard Net 1x1

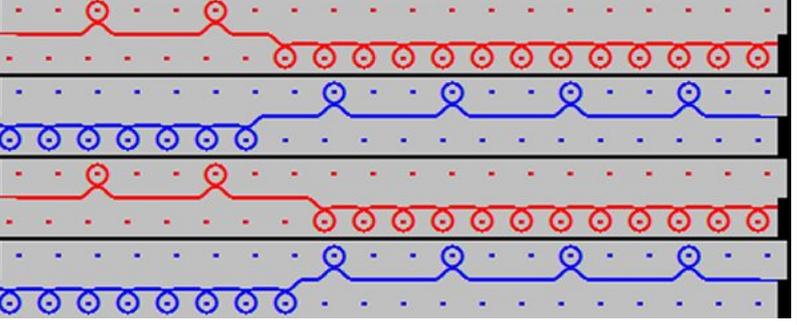
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Tubular fabric - Jacquard back is knitted on every 2nd needle</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors</li> <li>◆ The jacquard back is worked in 1x1 technique (only every 2nd needle knits), whereby the back does not result as compact.</li> <li>◆ With a large quantity of colors, the float length (max. 1 inch) must be taken into account.</li> </ul>

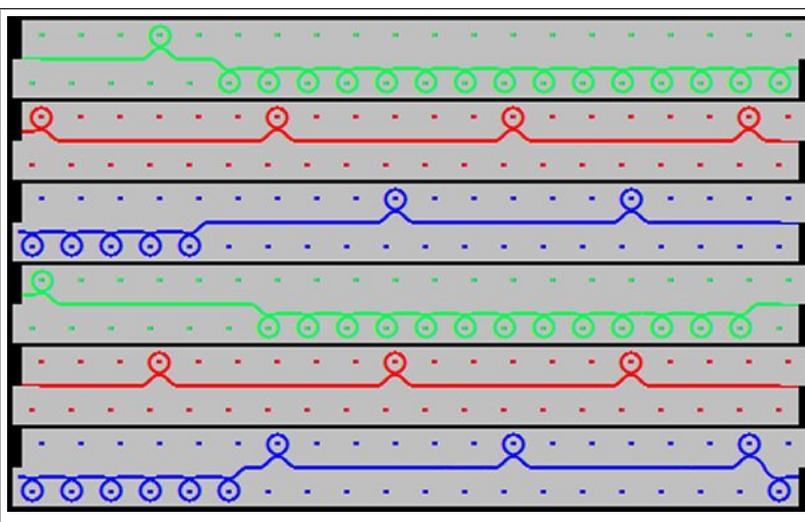
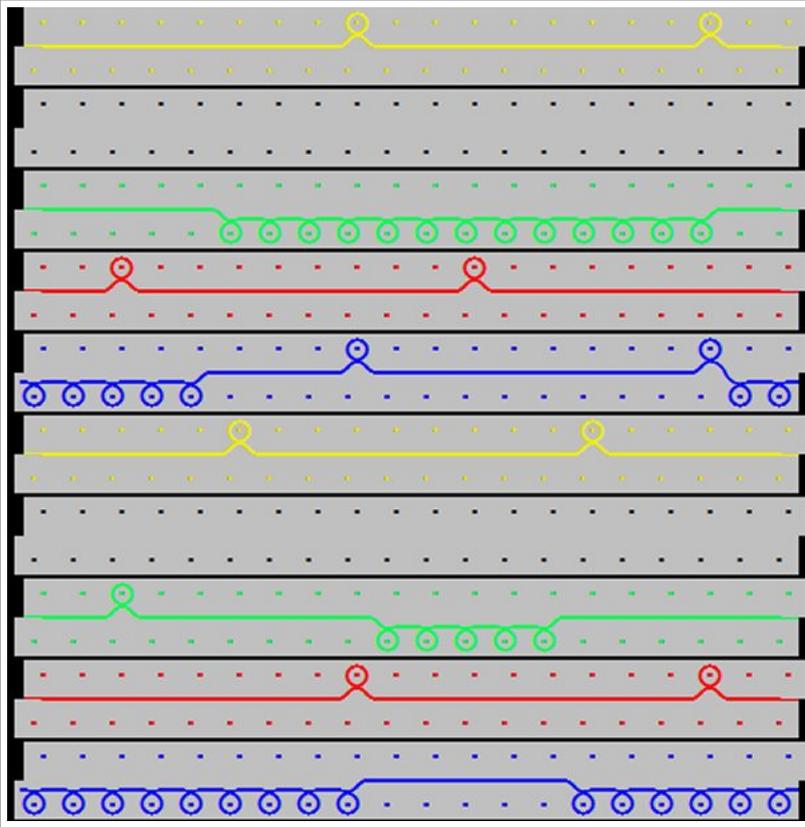
<p><b>Examples</b></p>	
<p><b>2 color jacquard net 1x1</b></p>	

<p><b>3 color jacquard net 1x1</b></p>	
<p><b>4 color jacquard net 1x1</b></p>	<p>4 colors must be knitted one after the other to get a complete jacquard row (= picture row). The stitch ratio between the front and the rear needle bed with a 4 color jacquard with 1x1 net is 1: 2.</p> 

### 25.1.9 Jacquard Net 1x2

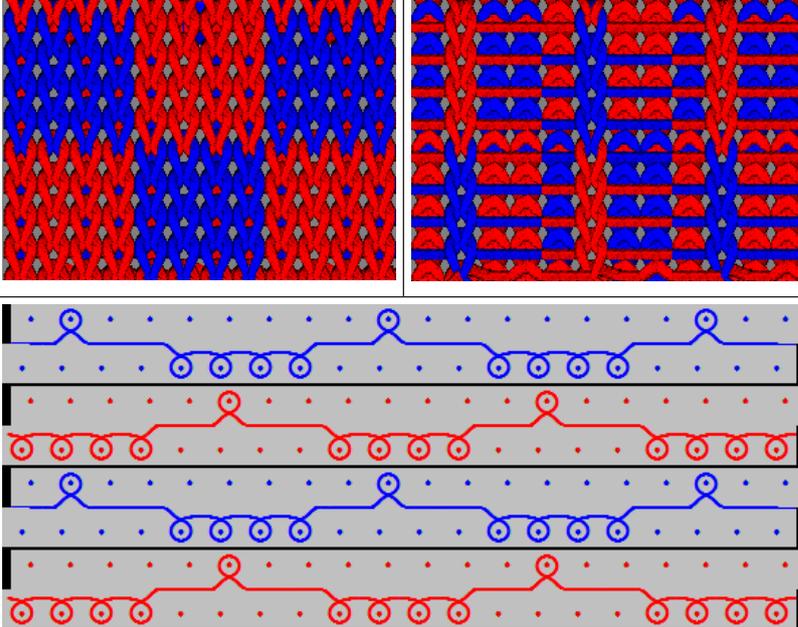
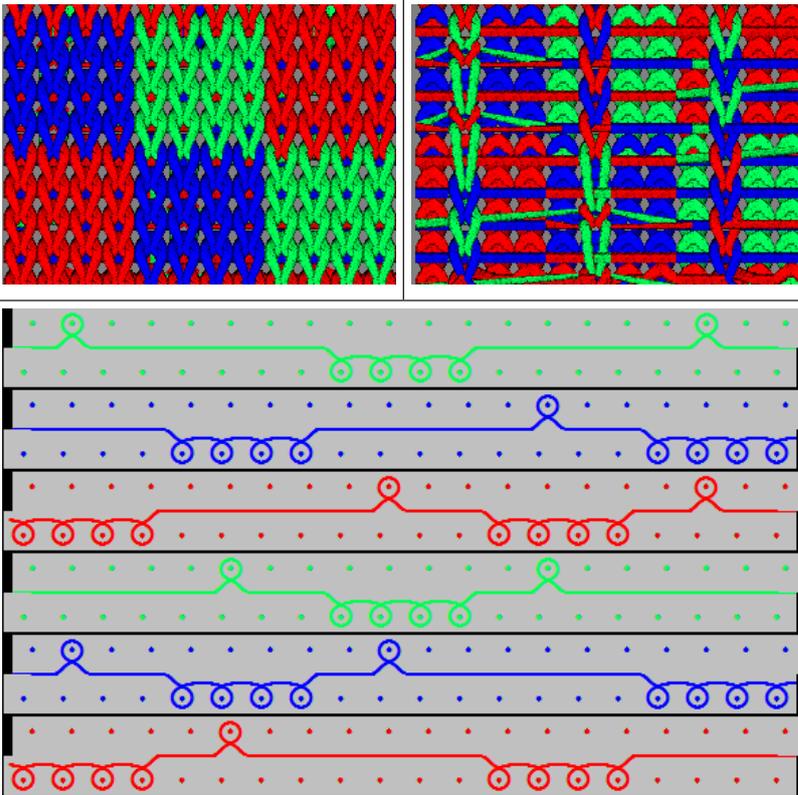
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Tubular fabric - Jacquard back is knitted on every 3rd needle</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors</li> <li>◆ The jacquard back is worked in 1x2 technique (only every 3rd needle knits), whereby the back does not result as compact.</li> <li>◆ With a large quantity of colors, the float length (max. 1 inch) must be taken into account</li> </ul>

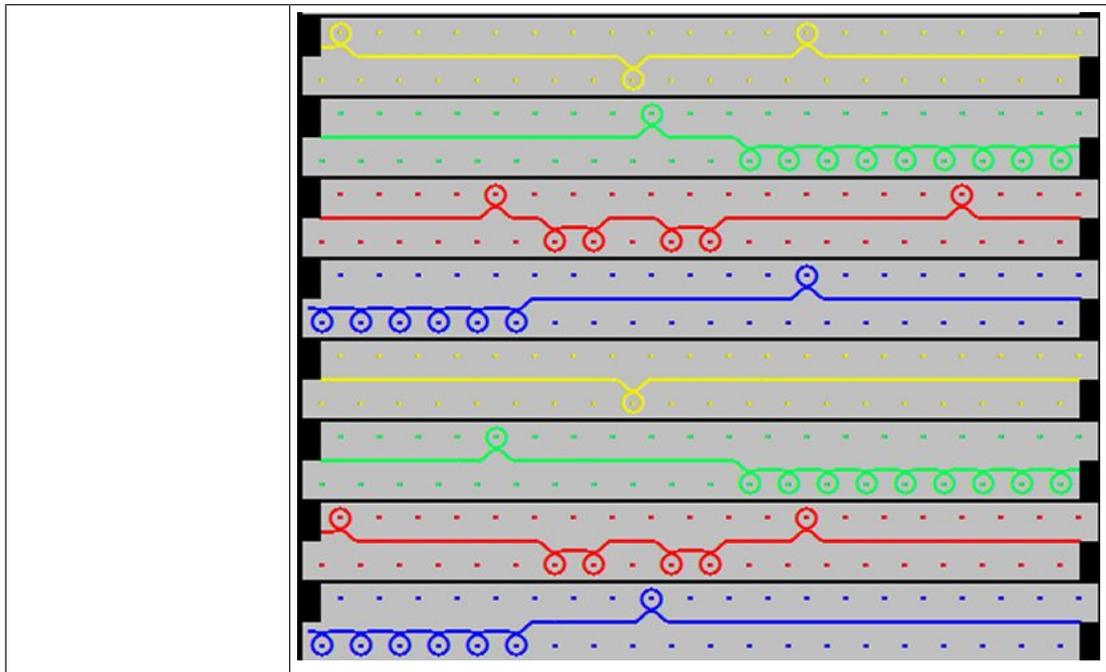
<p><b>Examples</b></p>	
<p><b>2 color jacquard net 1x2</b></p>	

<p><b>3 color jacquard net 1x2</b></p>	
<p><b>4 color jacquard net 1x2</b></p>	<p>4 colors must be knitted one after the other to get a complete jacquard row (= picture row). The stitch ratio between the front and the rear needle bed with a 4 color jacquard with net 1x2 is 1: 1.</p> <p><b>i</b>: Pay attention to the floating length!!!</p> 

## 25.1.10 Jacquard Net 1x3

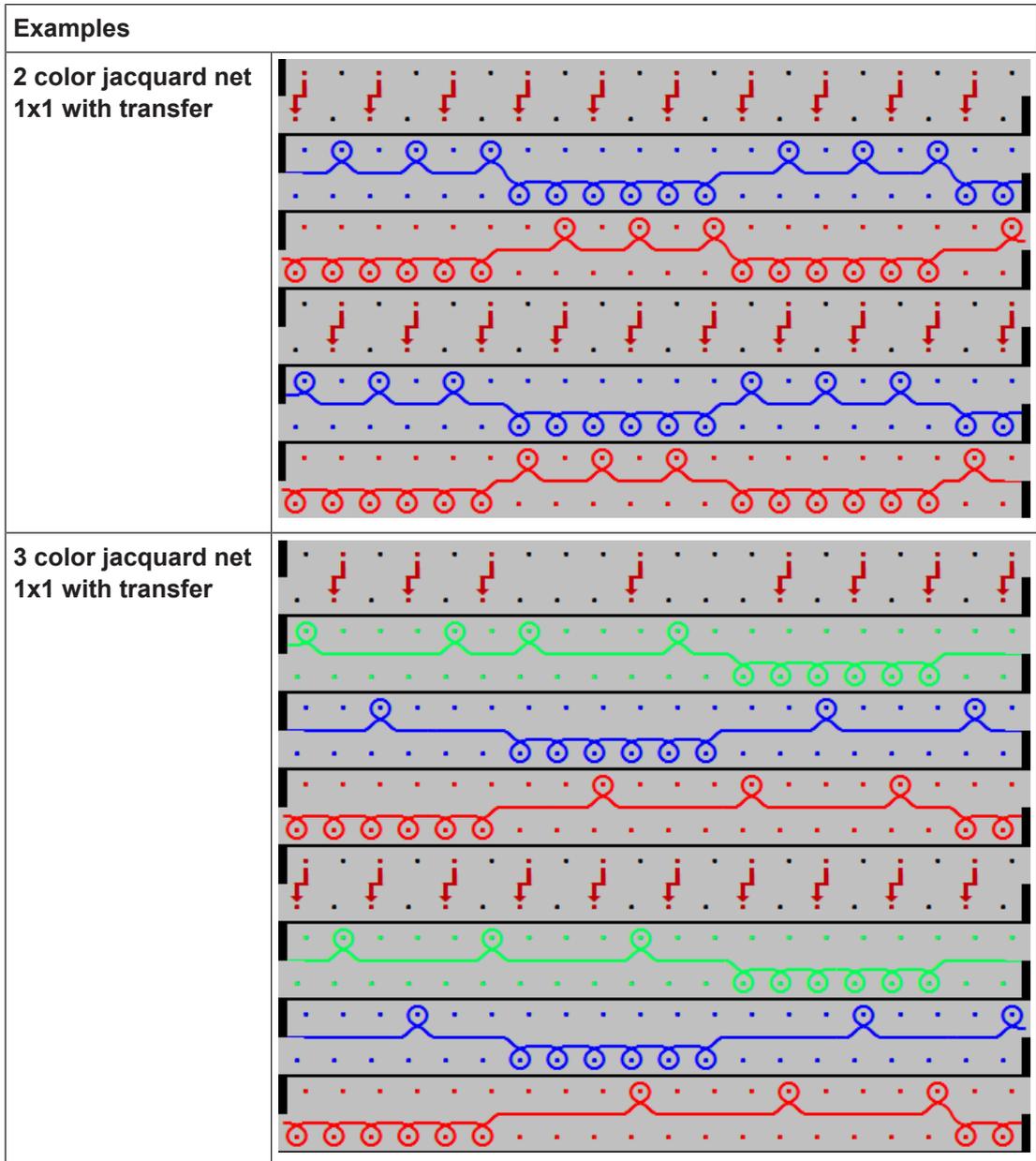
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Tubular fabric - Jacquard back is knitted on every 4th needle</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors</li> <li>◆ The jacquard back is worked in 1x3 technique (only every 4th needle knits), whereby the back does not result as compact.</li> <li>◆ With a large quantity of colors, the float length (max. 1 inch) must be taken into account.</li> </ul>

Examples	
<p><b>2 color jacquard net 1x3</b></p>	
<p><b>3 color jacquard net 1x3</b></p>	
<p><b>4 color jacquard net 1x3</b></p>	<p>4 colors must be knitted one after the other to get a complete jacquard row (= picture row). The stitch ratio between the front and the rear needle bed with a 4 color jacquard with net 1x3 is approx. 1: 1.5.</p>

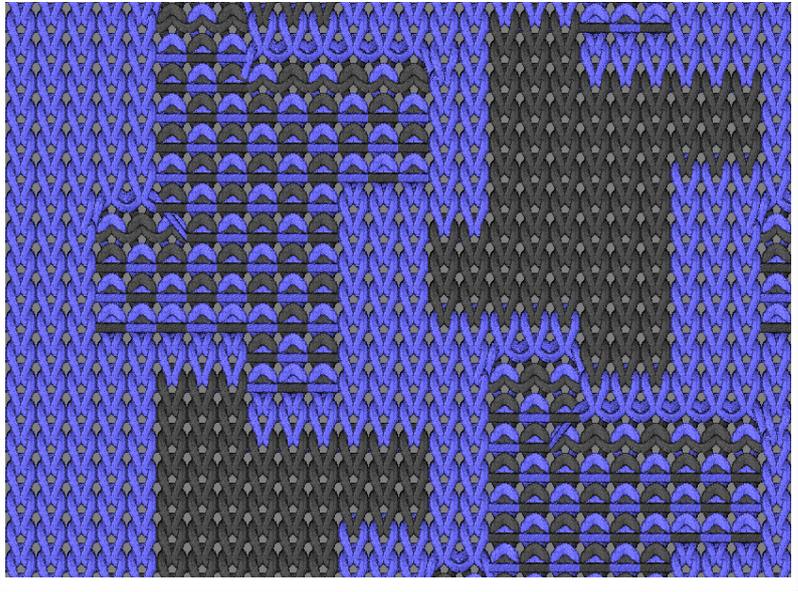


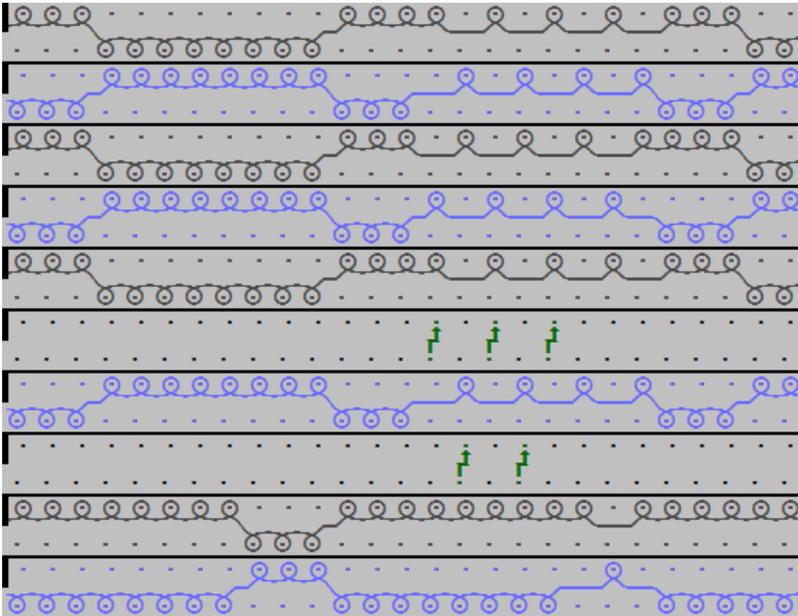
### 25.1.11 Jacquard Net 1x1 with Transfer

<p><b>Fabric View</b></p>		
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Single jersey / single-bed fabric</li> <li>◆ Appropriate jacquard back for                         <ul style="list-style-type: none"> <li>– reducing the weight of the knitwear</li> </ul> </li> <li>◆ The jacquard back is worked in 1x1 technique (only every 2nd needle knits) and then the stitches are transferred.</li> </ul>	



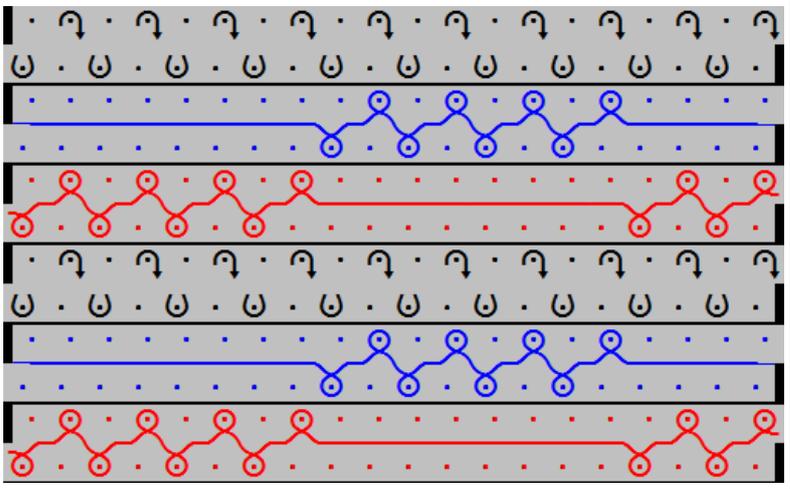
## 25.1.12 Jacquard net relief

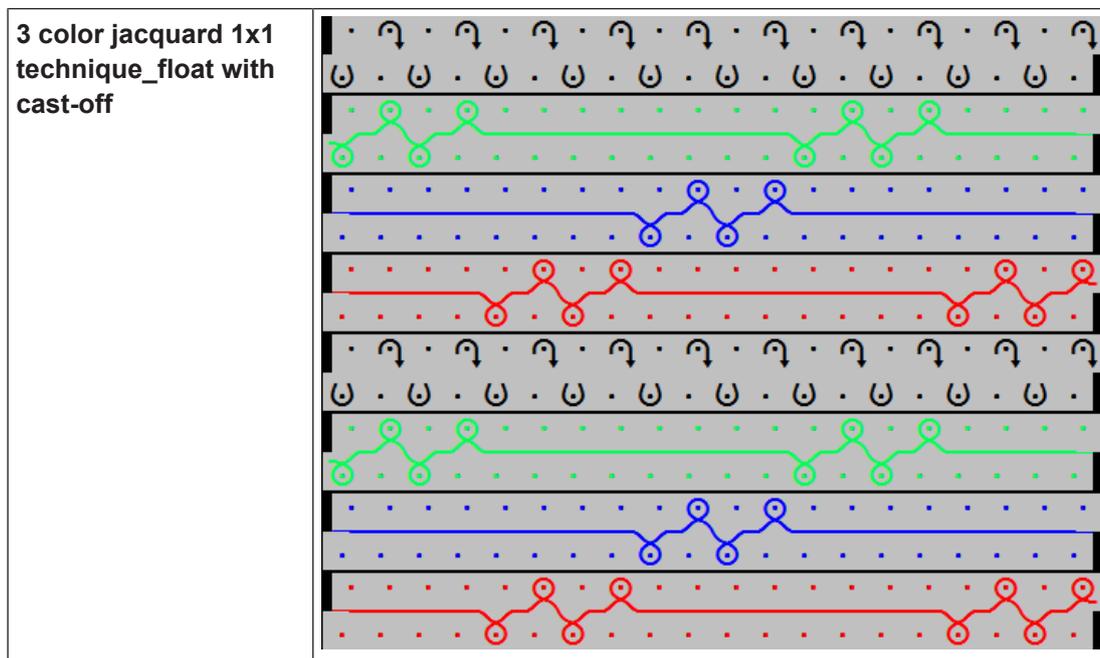
<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Double jersey fabric / double-bed fabric</li> <li>◆ Appropriate jacquard back for reducing the stitch ratio when using many colors.</li> <li>◆ <b>Rule:</b> The total number of colors of the jacquard picture is reduced by 1 color. In this area the jacquard back turns visible.</li> </ul>

Examples	
<p><b>2 color jacquard net relief</b></p>	<p>For this jacquard the basic motif is created with 3 colors. During the processing, the color, which is not to be knitted will be defined. At the border of the non-knitting area, the stitches are transferred, whereby the back will be visible in that area.</p> <p>The stitch ratio between the front and the rear needle bed with a 3 color jacquard net relief is 1: 1.5.</p>  

### 25.1.13 Jacquard Module 1x1 Technique\_Float with Cast-off

<p><b>Fabric View</b></p>	
<p><b>Properties</b></p>	<ul style="list-style-type: none"> <li>◆ Single jersey fabric / single-bed fabric</li> <li>◆ Maximum floating length is 1 inch (= 2,54 cm)</li> <li>◆ The jacquard back is used with coarse fabrics in 1x1 technique (every 2nd needle knits)</li> <li>◆ <b>Attention:</b> the float length is 'doubled' by the 1x1 technique</li> </ul>

<p><b>Examples</b></p>	
<p><b>2 color jacquard 1x1 technique_float with cast-off</b></p>	<p>2 colors must be knitted on every 2nd needle one after the other to get a complete jacquard row in 1x1 technique (= picture row). Then the stitches on the rear needle bed are cast-off and 'after-pressed'.</p> 



## 25.2 Create and set-up order with several knitting programs

Procedure:

1. **Create order with several knitting programs.**
2. **Start the setup mode.**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position the yarn carriers at the clamping point
  - The yarn carriers are in the collecting clamp unit and are clamped.
  - Check the knitting area and the fabric collection chamber
4. **Start production.**
5. **Start machine (engage).**

Make the following changes:

- Cycle Counters (RS)
- Stitch Length (NP)
- Fabric take-down values (WBF)
- Machine speed (MSEC)

## 25.3 Save the order with several knitting programs

---

**i** When saving an order a new file is always created with the xxx **.seqx** extension.

---

Saving an order with several knitting programs:

- ✓ You are signed in as Senior Operator .
  - ✓ The production was not yet completed with the  "Exit production" button.
  - 1. In the main navigation bar select the main area  "Set up Order".
  - 2. Tap on  "Edit order" in the bottom navigation bar.
  - 3. Then press the  "Save" button for saving.
  - 4. Select location.
  - 5. Enter the desired name for the order file.
  - 6. With the  "Save" button perform the operation.
- ▶ In the specified location, a seqx file and the corresponding zip files of all positions of the order are created with the defined name.

## 26 Manage folders and patterns

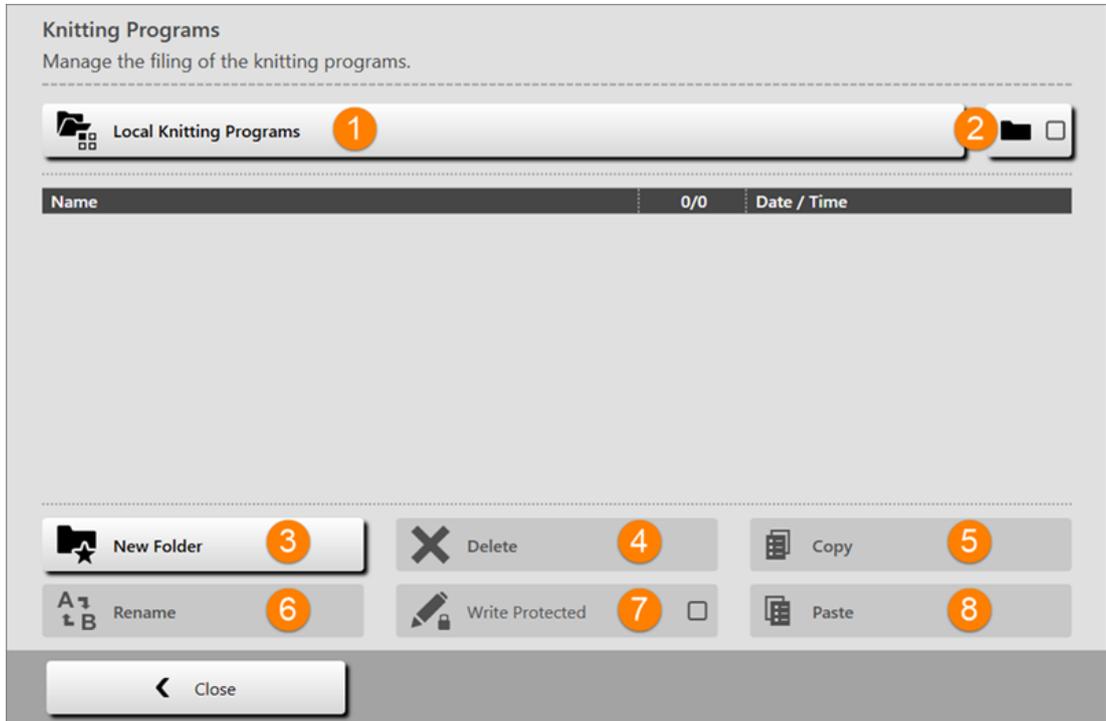
I. Open the "Knitting Programs" Menu:

✓ You are signed in as "Senior Operator" .

1. In the main navigation bar select  "Set-up Order".

2. Select  "Edit order" in the bottom navigation bar.

3. Open the Select folder "Knitting Programs" menu with the  "Knitting Programs" button.



1		<p>Select Path</p> <ul style="list-style-type: none"> <li>◆  <b>Local Knitting Programs:</b> Hard disc of the machine</li> <li>◆  <b>Network drive:</b> Shortcut to a folder on the network drive   : A network drive can be specified.</li> <li>◆  <b>Drive [USB]:</b> Display only with a USB stick in use</li> </ul>
2		<p>Only knitting programs (zip files) are displayed in the list of the selected path (1).</p>
		<p>Folder and knitting programs (zip files) are displayed in the list of the selected path (1).</p>

3		Create New Folder
4		Deleting the selected file (knitting program)
5		Copying selected files
6		Renaming a selected file
7		Write-protecting a selected file
8		Pasting the copied files

## II. Create new folder:

- ✓ The  "Knitting Programs" menu is opened.
- 1. With the  button open the "Select folder" menu.
- 2. Select the desired folder (path) for creating a new folder.
- 3. Confirm input with  "OK".
  - ▶ The path is displayed in the "Knitting Programs" menu.
- 4. Press the  "New folder" button.
  - ▶ The "New folder" with the virtual keyboard is opened.
- 5. Enter the desired folder name.
- 6. Confirm input with  "OK".
  - ▶ Return to the previous menu and the new folder is created.

## III. Copy and paste files:

- ✓ The  "Knitting Programs" menu is opened.
- 1. With the  button open the "Select folder" menu.
- 2. Select the folder (path) of the files to be copied.
- 3. Confirm input with  "OK".
- 4. In the "Knitting Programs" menu select the desired files to be copied from the list.
- 5. Then press the  "Copy" button.
- 6. Via the  button select the path of the target folder.

- Local Patterns (hard disk)
- Network drive
- USB

7. For pasting tap the  "Paste" button.
- ▶ The copied files are pasted and displayed in the menu.

#### IV. Rename files:

- ✓ The  "Knitting Programs" menu is opened.
1. With the  button open the "Select folder" menu.
  2. Select the desired folder (path) of the file to be renamed.
  3. Confirm input with  "OK".
  4. Select the desired file to be renamed from the list in the "Knitting Programs" menu.
  5. Then tap the  "Rename" button.
- ▶ The virtual keyboard is opened.
1. Enter the desired file name.
  2. Confirm input with  "OK".

#### V. Delete files:

- ✓ The  "Knitting Programs" menu is opened.
1. With the  button open the "Select folder" menu.
  2. Select the desired folder (path) of the file to be deleted.
  3. Confirm input with  "OK".
  4. Select the desired file to be deleted from the list in the "Knitting Programs" menu.
  5. Then tap the  "Delete" button.
- ▶ The selected files are deleted.



## 27 Front fully fashion without comb



<b>Pattern name</b>	FF_without_comb
<b>Start</b>	1x1 Rib
<b>Machine Type</b>	BMS 52
<b>Operating mode of the machine</b>	<ul style="list-style-type: none"> <li>◆ without comb function</li> <li>◆ without clamping / cutting</li> </ul>
<b>Pattern description</b>	<ul style="list-style-type: none"> <li>◆ Shape: Front with V-neck</li> <li>◆ SJ fabric with stripe (3 colors)</li> </ul>
<b>Pattern Parameters</b>	<ul style="list-style-type: none"> <li>◆ Picking-up after pressing-off (counter #90)</li> <li>◆ Cycle Counters (RS)</li> <li>◆ Stitch Length (NP)</li> <li>◆ Fabric Take-down (WBF)</li> <li>◆ Yarn Carriers (YDF)</li> </ul>

## 27.1 Create and set-up an order with a knitting program

Procedure:

1. **Create an order with a knitting program.**
2. **Start production from start line 1 (SP1).**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position yarn carriers at the fabric selvedge and fix the yarn ends
  - Check the knitting area and the fabric collection chamber
4. **Activate the Picking-up after Pressing-off function**
  - Set counter #90
  - Check counter #51 and counter #52
5. **Start machine (engage).**

Make the following changes:

- Cycle Counters (RS)
- Stitch Length (NP)
- Fabric take-down values (WBF)
- Machine speed (MSEC)

## 27.2 Additional Information with Fully Fashion - without Comb

Additional commands and functions are necessary with **Fully Fashion without comb**:

- Picking-up after pressing-off
- Transition rows (FF-trans)
- Yarn carrier home position

I. Transition rows:

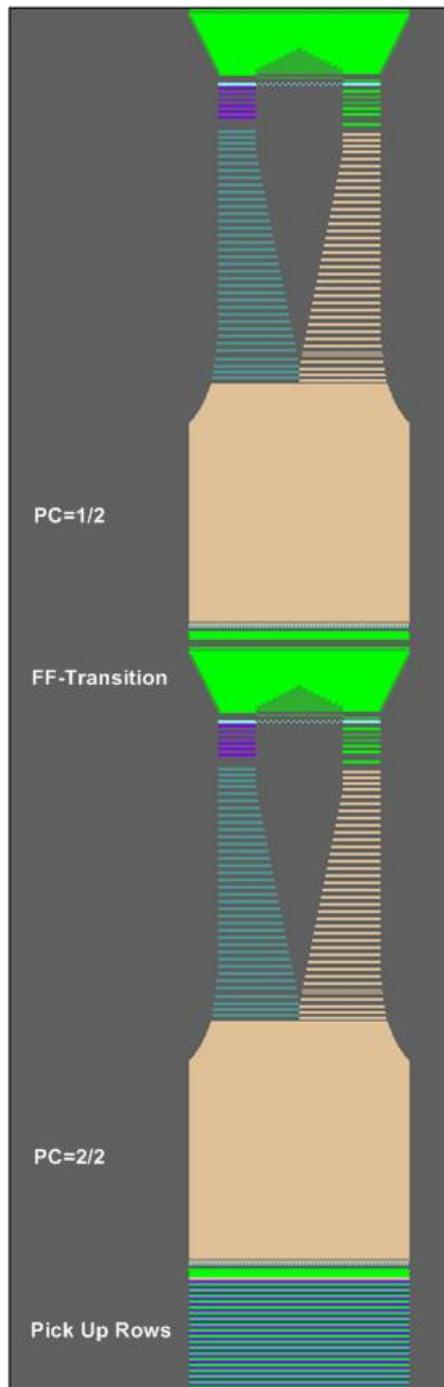
---

**i** Transition rows (FF-trans) are used when **Knitting without comb**.

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- The transition rows form the transition from the end width of the previous fabric piece to the starting width of the following fabric piece.
- The FF-Trans function contains IF conditions to call up the necessary functions for widening and/or casting-off.

- By RS17, you can control the number of knitting rows of the transition in order to get the entire fabric width into the main take-down.
- Separate yarn carriers allow to use residual yarn.

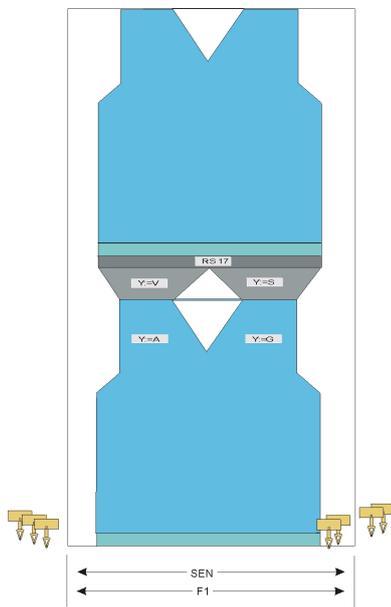


**Sintral Function:**

```

C----- FF-TRANSITION -----
FBEG:FF-TRANS;
IF #LM<#54 IF #RM>#53 IF #RM-#LM>2 F: !-WIDENING-V;
IF #L=#51 IF #R=#52 #L=#51 #R=#52 #LM=0 #RM=0 GOTO FEND
IF #L<=#51 IF #R>=#52 F: !-PRESS-OFF; #L=#51 #R=#52 #LM=0 #RM=0 GOTO FEND
IF #L>=#51 IF #R<=#52 F: !-WIDENING; #L=#51 #R=#52 #LM=0 #RM=0 GOTO FEND
IF #L<>#51 IF #R<>#52 F: !-PRESS-OFF; F: !-WIDENING; #L=#51 #R=#52 #LM=0 #RM=0
FEND
    
```

**II. Yarn carrier home position - YG**



- Due to SOY, the yarn carriers **without** F are positioned at the SEN.
- Due to SOY, the yarn carriers **with** F are positioned at the fabric selvedge.

## 27.3 Threading-up and Positioning Yarn Carriers with patterns without comb

Calling up the assignment and allocation of the yarn carriers:

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started with the **Start line 1** (SP 1) setting.
1. Tap on  "Prepare Machine" in the bottom navigation bar.
    - ▶ The dialog with the yarn carrier home position is displayed.



2. Additionally, the "Yarn carrier" dialog can be opened with the  button.
3. Exit the dialog with the  "Close" button.

## 27.4 Picking-up after Pressing-off Function

- The **Picking-up after Pressing-off** function is used for:
  - Knitting programs for machines without comb
  - Knitting programs for machines with comb **but without using it**
- The **Picking-up after Pressing-off** function can be activated or deactivated.
- The knitting width and the knitting length for Picking-up after Pressing-off can be determined

Setting	Function
#90=0	Switch-off the Picking-up after Pressing-off function
#90=1	Activate the picking-up after pressing-off function (Automatic calculation of the length - depending on the gauge)
#90=n	The picking-up after pressing-off function is executed n times
#41 / #42	<ul style="list-style-type: none"> <li>◆ #41 identical to #L</li> <li>◆ #42 identical to #R</li> </ul>
#51 / #52	Auxiliary counter for defining the start width of the fabric <b>i</b> : The counter values do not change during the knitting.

### Start the picking-up after pressing-off function

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started with the **Start line 1 (SP 1)** setting.
1. Select  "Intervene Manually I" in the bottom navigation bar.
  2. Press the  "Picking-up after pressing-off M1plus (#90)" button.
    - ▷ The "Picking-up after pressing-off M1plus (#90)" menu is opened and the counters #L (#41) and #R (#42) are set.
  3. Perhaps, deactivate the  "# 51" and  "#52" buttons, to be able to set manually the counters #L (#41) and #R (#42).
  4. Check the inputs.
  5. Under "# 90" enter the desired value: e.g. 1.
  6. Press the  "Start picking-up after pressing-off" button.
  7. Exit the dialog with the  "Close" button.
  8. Engage machine (start).
    - ▷ The machine stops to check the yarn carriers.
  9. Engage the machine again.

- ▷ The gauge-dependent length calculation for picking-up after pressing-off is executed and knitted.
  - ▷ After processing the function picking-up after pressing-off, the counter #90 is set to =0 and the machine is stopped.
    - or -
    - perhaps exit the function prematurely when the fabric reached the desired length.
10. Take the fabric into the take-down:
- Via the main navigation bar select the main area  "Set up Order"
- or -
- select  "Produce Order".
11. Then, in the bottom navigation bar tap  "Intervene Manually II".
12. With the  "Open fabric take-down" button open the main take-down to pull the fabric through.
13. Then, close the main take-down again with the  "Close fabric take-down" button.
14. Engage the machine again.
- ▶ The function picking-up after pressing-off is closed and the knitting program is being processed.

---

**i** The function picking-up after pressing-off will no longer be called-up during the production.  
Usage only at knitting start on the empty needle bed, in case of yarn breakage or other occurring situations, where the entire fabric is no longer in the main take-down.

---

### Cancel the function picking-up after pressing-off before the end

In case of sufficient fabric length, the function **Picking-up after pressing-off** can be canceled before finishing the automatic length calculation..

1. Select  "Prepare Machine" in the bottom navigation bar.
2. Tap the  # key.
3. In the  # tab open the "Counters 51-99".
4. Under #90 enter the value 0 and confirm.
  - ▷ The machine stops and the fabric can be taken to the take-down.
5. Under  "Intervene Manually I" press the  "Restart fabric automatically [Ctrl-Z]" button
  - or -
  - press the  "Restart fabric [SP]" button, perhaps do not enter the desired start line (1 or 40) until "from line [SPn]"

6. Start machine (engage).
  - ▶ The knitting program is automatically started until the machine stops again to check the yarn carriers. After the inspection it is possible to continue knitting.

## 27.5 Setting: Distance of the yarn carrier at the fabric selvedge

**i** Manual staggering the yarn carriers at the fabric selvedge  
 This is only necessary if one is not working with YDopt (automatically optimized staggering) and loops are being formed at the fabric selvedge.

### I. Modify the yarn carrier distance (YD):

- ✓ You are signed in as Senior Operator .
  - ✓ The knitting program is loaded and the production was started.
  - ✓  "Prepare Machine" is selected in the bottom navigation bar.
1. Open the "Setup Editor" with the  button.
  2. Select the  "Yarn carrier" menu.
  3. Open the  "YD/YDI" tab.
    - ▶ The yarn carrier staggering YD used in the pattern and all the additional yarn carrier staggerings YDI will be displayed.

YD/YDI		YC/YCI	Ua-b/NCC	Width
YD/YDI	Track	On the Le	On the Ri	Comment
YD				
	8	32.0	32.0	Protection Thread right
	7	27.0	18.0	Protection thread left
	6	9.0	4.0	Basic color 1
	5	15.0	22.0	Color 3
	4	22.0	15.0	Color 2
	3	18.0	27.0	Basic color
	2	4.0	9.0	Comb Thread
	1	8.0	12.0	Draw thread

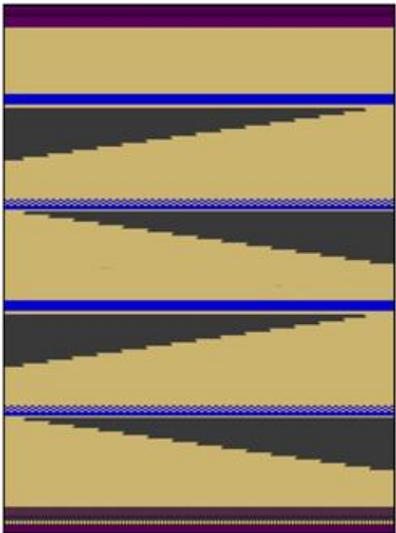
YD / YDI	Display of the YD / YDI tables used for the distance of the yarn carriers from the fabric selvedge in the knitting program <ul style="list-style-type: none"> <li>◆ YDn= m-o</li> <li>◆ YDI n: further indirect yarn carrier staggerings (YDI1-YDI20)</li> </ul>
----------	--

Setting: Distance of the yarn carrier at the fabric selvedge

	–	Expand the display of the table
	+	Collapse the display of the table
<b>Track</b>	Display of the yarn carrier rail with the yarn carrier (n)	
<b>at the left...</b>	Distance from fabric selvedge at the left (m)	Minimum value: 0
<b>at the right...</b>	Distance from fabric selvedge at the right (o)	Maximum value: 160 Step width: 0,5 = 1/32 inch = 0,8mm
<b>Comment</b>	Explanation	ASCII Characters

4. Make changes in the YD table.
  5. If necessary, perform further changes in the other YDI tables.
  6. Exit the dialog with the  "Close" button.
  7. Start the machine with the engaging rod.
- The changes will be carried out with the next use of the yarn carrier.

## 28 Applications + gore technique without comb

	
<p><b>Pattern name</b></p>	<p>Applications_without_comb</p>
<p><b>Start</b></p>	<p>1x1 Rib</p>
<p><b>Machine Type</b></p>	<p>BMS 52</p>
<p><b>Operating mode of the machine</b></p>	<ul style="list-style-type: none"> <li>◆ without comb function</li> <li>◆ without clamping / cutting</li> </ul>
<p><b>Pattern description</b></p>	<ul style="list-style-type: none"> <li>◆ SJ structure</li> <li>◆ Gore Technique</li> <li>◆ Waves                         <ul style="list-style-type: none"> <li>– with SJ</li> <li>– with jacquard float</li> </ul> </li> <li>◆ Applications</li> </ul>
<p><b>Pattern Parameters</b></p>	<ul style="list-style-type: none"> <li>◆ Picking-up after pressing-off (counter #90)</li> <li>◆ Cycle Counters (RS)</li> <li>◆ Stitch Length (NP)</li> <li>◆ Fabric Take-down (WBF)</li> </ul>

## 28.1 Create and set-up an order with a knitting program

Procedure:

1. **Create an order with a knitting program.**
2. **Start production from start line 1 (SP1).**
3. **Prepare the machine and set-up the pattern**
  - Threading up the Yarn Carriers
  - Position yarn carriers at the fabric selvedge and fix the yarn ends
  - Check the knitting area and the fabric collection chamber
4. **Activate the Picking-up after Pressing-off function**
  - Set counter #90
  - Check counter #51 and counter #52
5. **Start machine (engage).**

Make the following changes:

- Cycle Counters (RS)
- Stitch Length (NP)
- Fabric take-down values (WBF)
- Machine speed (MSEC)

## 29 Maintenance of the knitting machine

This chapter contains information on:

- Minimize wear [▢ 247]
- Cleaning the Knitting Machine [▢ 249]
- Lubricate the Knitting Machine [▢ 258]

### 29.1 Minimize wear

All parts of the knitting machine have carefully been selected and checked by Stoll. Nevertheless, they are subject 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
Belts of the fabric take-down (belt take-down)	<ul style="list-style-type: none"> <li>◆ Too high belt speed</li> <li>◆ Fabric winding</li> <li>◆ Thread winding</li> <li>◆ Yarns harmful for e.g. abrasive, sanding yarns or yarn finishes like greases or oils</li> <li>◆ UV radiation (including direct sunlight)</li> <li>◆ Cleaning agents harmful to rubber, e.g. ether or fuels. Recommendation: Use cleaning petrol for cleaning</li> </ul>
Needle brushes, Brushes of the winding protection device (belt take-down)	<ul style="list-style-type: none"> <li>◆ Incorrect adjustment</li> </ul>
Feed wheel rollers	<ul style="list-style-type: none"> <li>◆ Abrasive, sanding yarn</li> <li>◆ Allowing the feed wheel to run unnecessarily</li> </ul>
Needle bed elements, cams	<ul style="list-style-type: none"> <li>◆ Excessive fabric take-down values</li> <li>◆ Yarn too thick</li> <li>◆ Insufficient lubrication</li> <li>◆ Insufficient cleaning</li> </ul>
Yarn guiding parts (deflectors, yarn control device, etc.)	<ul style="list-style-type: none"> <li>◆ Abrasive, sanding yarn</li> </ul>
Yarn carrier, yarn carrier sliding block	<ul style="list-style-type: none"> <li>◆ Insufficient lubrication</li> <li>◆ Abrasive, sanding yarn</li> </ul>
Yarn carrier magnet	<ul style="list-style-type: none"> <li>◆ Magnet may not come into contact with grease or oil</li> </ul>

## Minimize wear

Wearing part	Possible causes of increased wear
Belts (drive, racking, comb take-down)	<ul style="list-style-type: none"> <li>◆ Belt tension too high: Danger of bearing damage (adjustment with measuring device by Stoll technician)</li> <li>◆ Belt tension too low: Danger of position errors (racking)</li> </ul>
Energy chain trailing cable	<ul style="list-style-type: none"> <li>◆ Heavy soiling</li> <li>◆ Laying down of objects</li> <li>◆ Damage to depositing gutter</li> <li>◆ Not moved into position carefully after work at the rear of the machine</li> </ul>

## Wearing parts

- Cleaning the Knitting Machine [ 249]
- Lubricate the Knitting Machine [ 258]

## 29.2 Cleaning the Knitting Machine

**Cleaning interval** 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
daily	Vacuuming off knitting machine Cleaning needle bed Cleaning the collecting clamp unit Cleaning the active thread clamp Cleaning the permanent brakes Cleaning the friction feed wheel
monthly	Cleaning the interior on the right side Cleaning the racking light barrier
3 to 6 months	Thoroughly cleaning needle bed

Cleaning plan

**Cleaning agent** 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 Plexiglas (note the manufacturer's specifications)	Touch screen and covers
Cleaning petrol (note the manufacturer's specifications)	Roller rubber of the take-down roller

Cleaning agent



### NOTICE

Plastics, in particular the transparent covers, may not be cleaned with alcohol or spirit, but instead only with a special cleaning agent for Plexiglas.



### NOTICE

Do not remove metallic parts and fragments (e.g. broken needle latch or needle 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 [▢ 251]
- Vacuuming off knitting machine [▢ 251]
- Cleaning needle bed [▢ 252]
- Cleaning the collecting clamp unit [▢ 252]

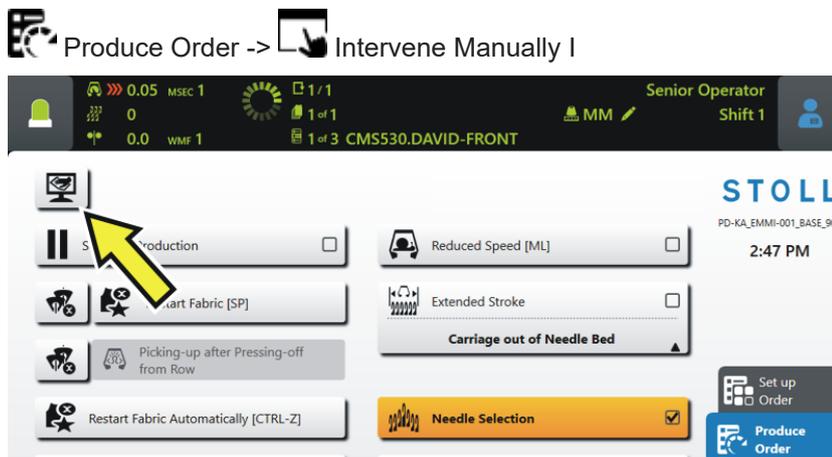
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Cleaning the Knitting Machine

- Cleaning the active thread clamp [▢ 253]
- Cleaning the permanent brakes [▢ 253]
- Cleaning the friction feed wheel [▢ 253]
- Vacuuming the Interior on the Right Side [▢ 254]
- Cleaning the racking light barrier [▢ 254]
- Thoroughly cleaning needle bed [▢ 255]
- Clean the knitting systems [▢ 257]

### 29.2.1 Cleaning the touch screen

To prevent menus and function keys from being activated when cleaning the touch screen, tap the "Cleaning touch screen" button. The touch screen will be blocked for 15 seconds. If this period is not enough, tap the button again.



Use a clean, soft cloth for cleaning.

If heavy soiling is present, use a cleaning agent suitable for acrylic glass.

### 29.2.2 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.

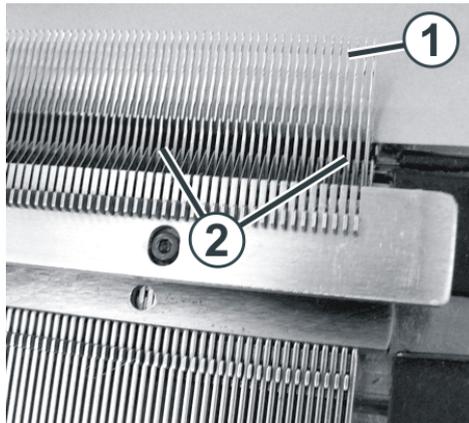
1. Stop the knitting machine.
2. Vacuum fluff and dust off the knitting machine.

### 29.2.3 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.

Cleaning needle bed:

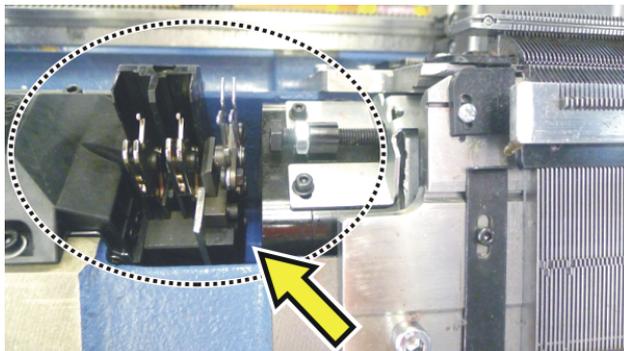
1. Transfer all stitches to the rear needle bed.
2. Slide open all covers over the needle bed.



Cleaning the needle bed

3. Push all needles of the front needle bed right to the top.
  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 the same way.
- Thoroughly cleaning needle bed [☞ 255]

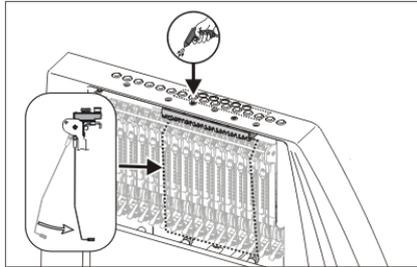
### 29.2.4 Cleaning the collecting clamp unit



1. Vacuum off the dirt in the area of the collecting clamp unit.
2. Remove yarn wastes.

### 29.2.5 Cleaning the active thread clamp

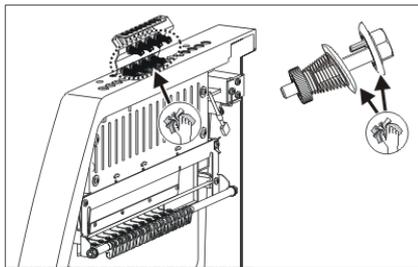
1. Bring the lateral yarn tensioner in still position. Thereby the active thread clamp is open.



Cleaning the active thread clamp

2. Blow the eyelets in the lateral safety door by compressed air.

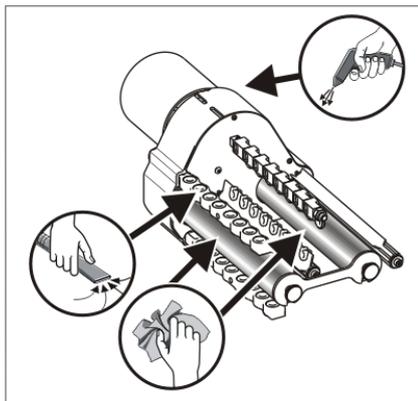
### 29.2.6 Cleaning the permanent brakes



Cleaning the permanent brake

- Clean both the brake settings of each permanent brake with a cloth.

### 29.2.7 Cleaning the friction feed wheel

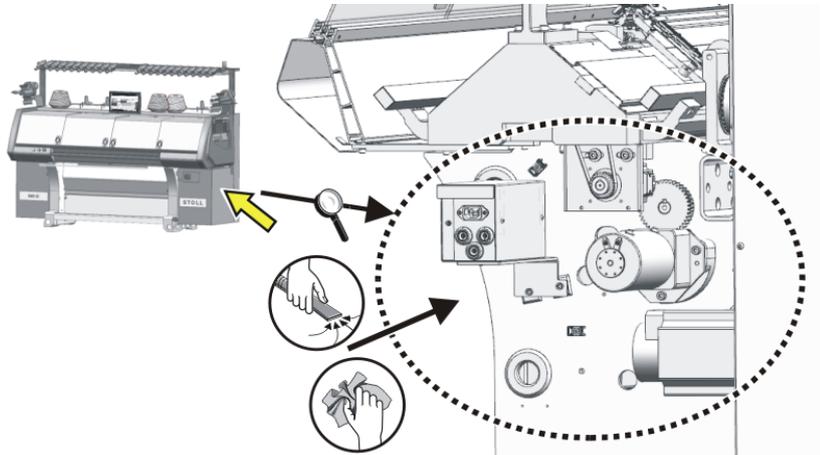


Cleaning the friction feed wheel

1. Vacuum off the fluff and dust from the friction feed wheel.
2. Remove dirt (e. g. paraffin) from the friction rollers.

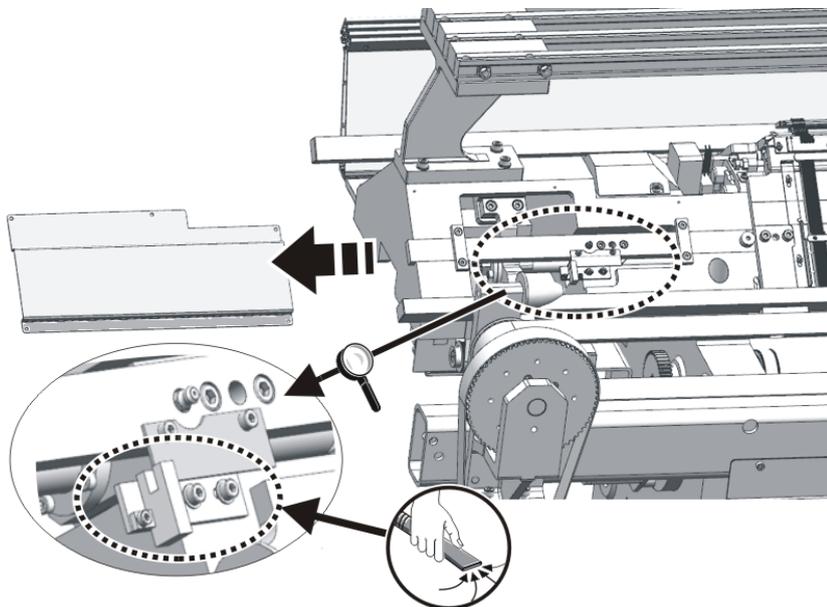
### 29.2.8 Vacuuming the Interior on the Right Side

Fire hazard by fluff, dust and other impurities.



1. Remove the cover at the main switch.
2. Vacuum the interior.

### 29.2.9 Cleaning the racking light barrier



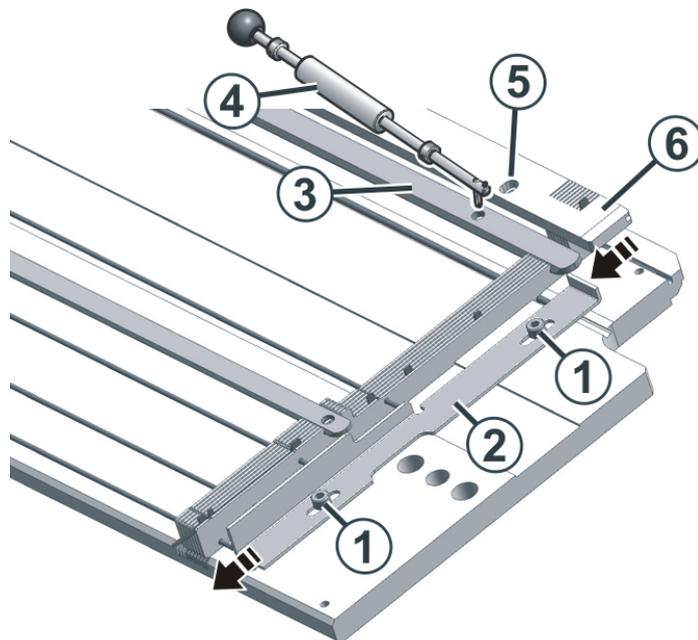
→ Vacuum fluff and dust from the racking light barrier.

### 29.2.10 Thoroughly cleaning needle bed

The needle bed is cleaned daily by the operator. In addition, it must be cleaned thoroughly every 12 to 26 weeks.

- i** 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.

Thoroughly cleaning needle bed:



Thorough cleaning of needle bed

- ✓ No fabric may be hanging on the needle bed.
- 1. Loosen both screws (1) and move the strip (2) downwards.
- 2. Remove all needle rails (3) with the extraction hook (4).
- 3. Remove all screws (5) of the jack bed.
- 4. Take off jack bed (6).
- 5. Remove needles, coupling part, intermediate slider and selector jacks.



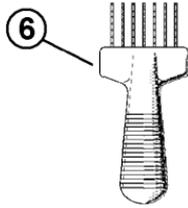
#### NOTICE

##### **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. Remove dirt out of needle channels, for example with a groove cleaner (6).



Groove cleaner

7. Clean groove for pelerine spring of needle.
  8. Blow out dirt with compressed air from the needle bed.
  9. Check whether needles, coupling part, intermediate slider and selector jacks are undamaged.
  10. Clean needles, coupling part, intermediate slider and selection jacks with oil.
  11. Reassembly needle bed.
  12. Lubricate needles, coupling part, intermediate slider and selector jacks. If a central lubrication is installed, then use the setting "Initial lubrication" for approx. 15 minutes.
- Cleaning needle bed [▢ 252]
  - Lubrication interval [▢ 259]

### 29.2.11 Clean the 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.



#### NOTICE

##### 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.



#### NOTICE

##### 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 selector systems and impulse sensors with a clean cloth.

6. Clean the selector systems and impulse sensors with a clean cloth.
7. Check the cams for wear and damage.
8. Apply oil onto 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 position is re-referenced.

## 29.3 Lubricate the Knitting Machine

This chapter contains information on:

- Lubrication interval [▢ 259]
- Set lubrication interval for needle bed [▢ 261]
- Oil needle bed [▢ 263]
- Restarting lubricating interval [▢ 264]
- Oil jack bed [▢ 265]
- Oiling yarn carrier rods [▢ 265]
- Check the oil collecting container [▢ 266]
- Oiling carriage guide bar [▢ 267]
- Greasing butts of the coupling parts and intermediate sliders [▢ 267]
- Greasing the control sliders [▢ 268]
- Greasing racking device [▢ 270]
- Grease needle bed supports [▢ 272]

## 29.3.1 Lubrication interval

To retain the operability of the knitting machine and ensure the quality of the fabric, the knitting machine must regularly be lubricated.

Lubrication interval	Lubricating work
adjustable engaging width Recommendation: Every 6 - 10 operating hours; select shorter interval if necessary	Oiling the needle bed
10 operating hours	Oiling the jack bed Oiling the yarn carrier rods Oiling the control of the holding-down jacks
100 operating hours	Check the oil collecting container Oiling the carriage guide bar Greasing the coupling parts and the intermediate sliders
6 months	Greasing the drive chain of the belt take-down Greasing the racking device Greasing the needle bed supports

Lubrication schedule

### 29.3.1.1 Lubricants

Use only the lubricants found with the accessories of the machine or those listed in the lubricating schedule.

		Designation	Gauge
Oil		Stolltex T46 ID 268 621 (1 l) ID 268 622 (20 l)	E3   E3,5   E4   E5   E7   E8   E2,5.2   E3,5.2   E5.2   E10   E12   E14   E6.2   E7.2
		Stolltex T32 ID 268 620	E16   E18   E8.2   E9.2
Grease		Stoll Grease 0475 ID 270 721	
		Grease gun: Klueber Staburags NBU 12/300 KP ID 231 191	

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**i** In the first weeks after setting up the knitting machine, select shorter lubricating intervals.

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**i** 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
- Sticking of the needle bed elements and the yarn carrier
- rust on metal parts
- damage to the electrical cable insulation and the plastic parts.

We point out here that failure to observe this, will void our guarantee services.

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### 29.3.2 Set lubrication interval for needle bed

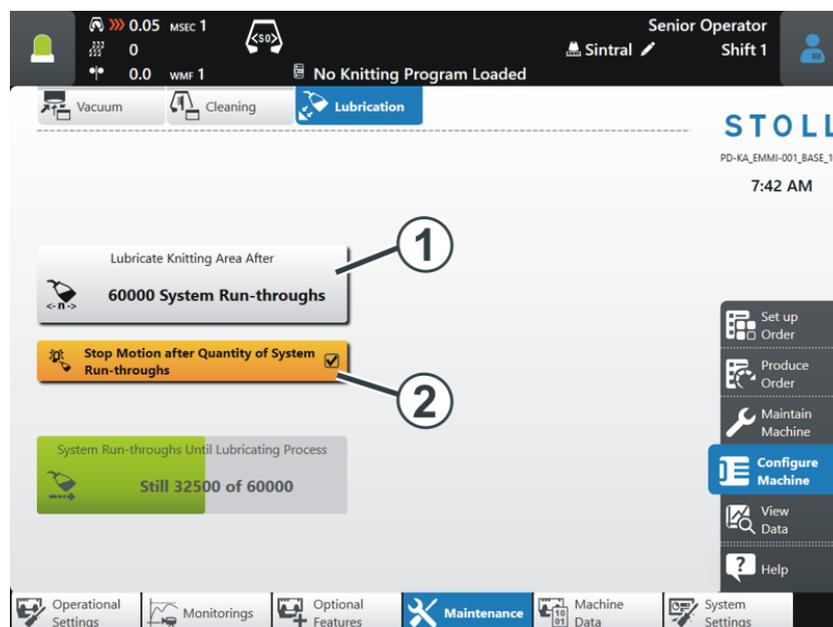
Between 1 and 65.535 courses can be set as a lubricating interval for the needle bed. A mean value for a three-system machine is 25,000 courses. However, this value depends highly on: Machine speed, temperature and number of knitting systems. We recommend: Selecting a shorter lubricating interval instead of a longer one. After the lubricating interval expires, a message appears stating that the needle bed must be oiled.

Set lubricating interval:

1. Open the "Lubrication" menu.

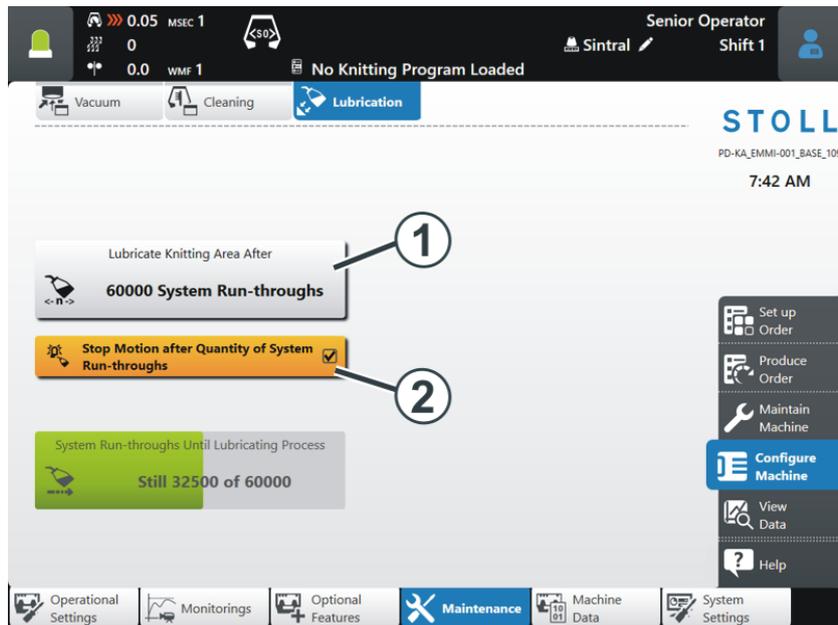
 "Configure Machine" ->  "Maintenance" ->  "Lubrication"

2. Tap the button (1).



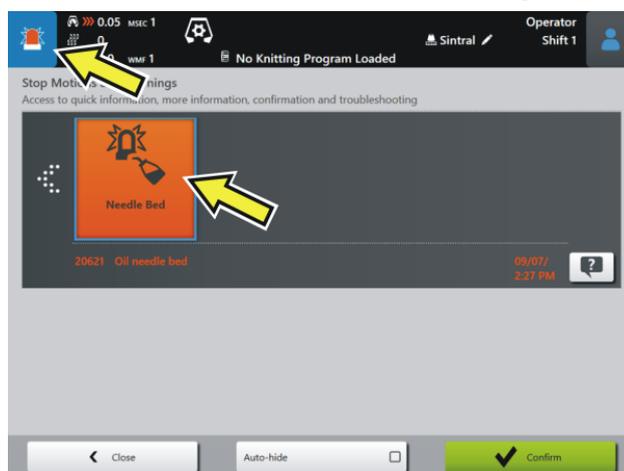
3. Enter the value after how many system run-throughs the needle bed should be oiled manually.
4. Confirm the entry with "OK".

Lubricate the Knitting Machine



- If the machine is to stop after reaching the specified number of system run-throughs, the button (2) must be switched on (active).

▷ The machine stops and the error message "Nadelbett ölen" is displayed.



- If the button (2) is switched off (inactive), the machine does not stop. The message "Nadelbett ölen" is shown on the display.



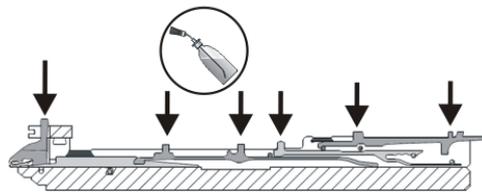
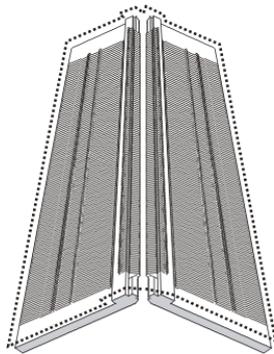
### 29.3.3 Oil needle bed

When the lubricating interval for the needle bed expires, the pictograph "Oil needle bed" appears.



Nadelbett ölen

1. Apply oil with a brush or spray bottle.

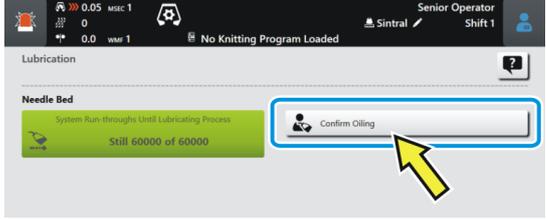
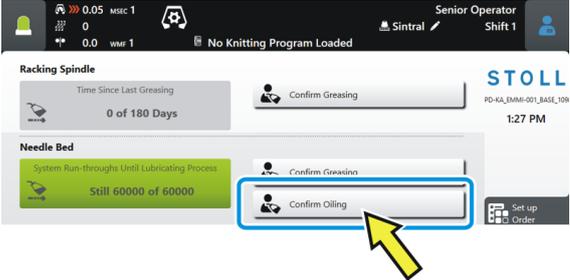


2. Restart lubricating interval [ 264].

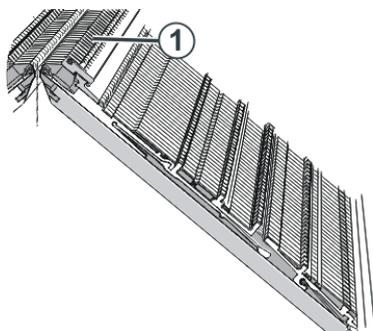
### 29.3.4 Restarting lubricating interval

Depending on the setting in the menu "Lubrication", you have the following options to confirm the oiling process.

 Configure Machine ->  Maintenance ->  Lubrication

<p>Setting:</p>  <p>The machine stops and the icon appears.</p> 	<ol style="list-style-type: none"> <li>1. Tap on the pictograph  </li> <li>2. The "Lubrication" menu appears.</li> <li>3. Tap the button "Confirm Oiling".  </li> </ol>
<p>Setting:</p>  <p>The following note appears:</p> 	<ol style="list-style-type: none"> <li>1. Open the "Lubrication" menu.   "Maintain Machine" -&gt;  "Lubrication"</li> <li>2. Tap the button "Confirm Oiling".  </li> </ol>

### 29.3.5 Oil jack bed



Oiling the jack bed



#### NOTICE

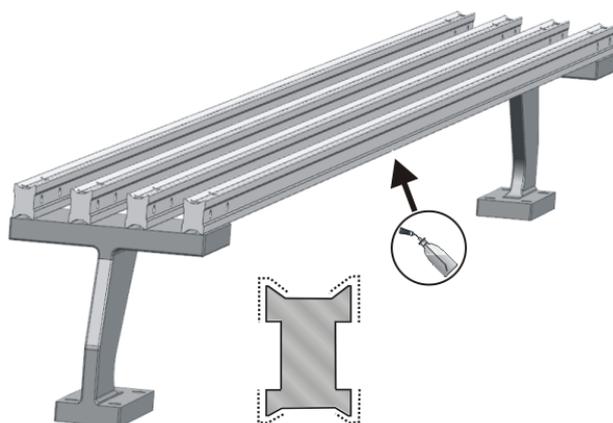
**If a spray gun is used for oiling, too much oil may be applied!**

The suction tube becomes clogged.

→ Do not use a spray gun for oiling.

→ Use a brush to apply oil on the jack bed (1).

### 29.3.6 Oiling yarn carrier rods

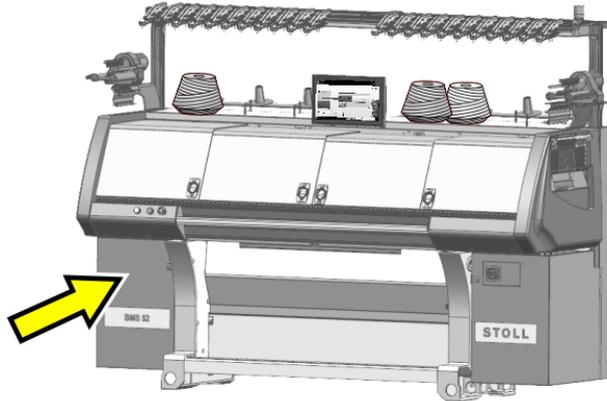


Oiling the yarn carrier rods

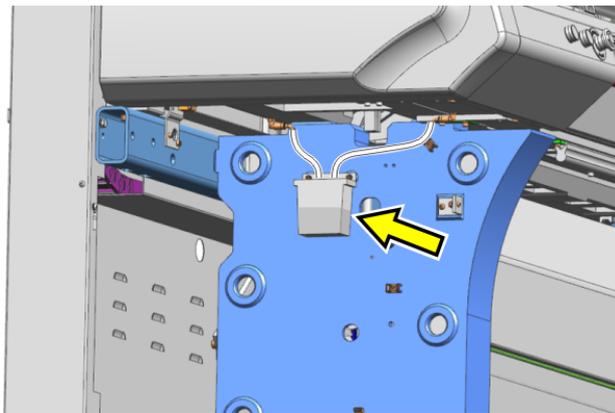
1. Use a brush or a spray bottle to apply oil on the yarn carrier rods (1).

### 29.3.7 Check the oil collecting container

1. Remove cover on the left machine side.

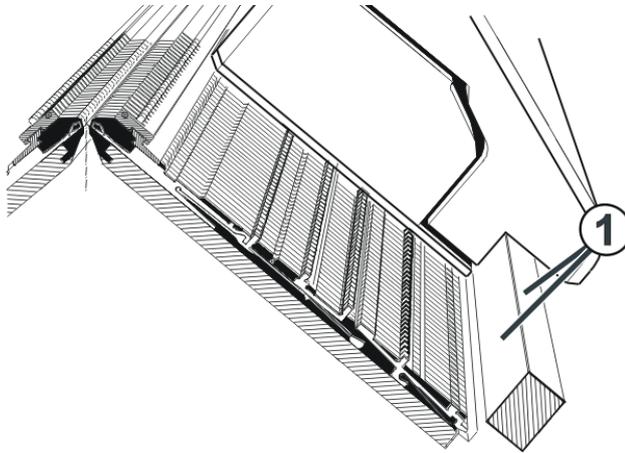


2. Check the oil level in the collecting container.



3. If necessary, remove the collecting container and dispose of the oil in an environmentally friendly manner.

### 29.3.8 Oiling carriage guide bar



Oiling the carriage guide bar

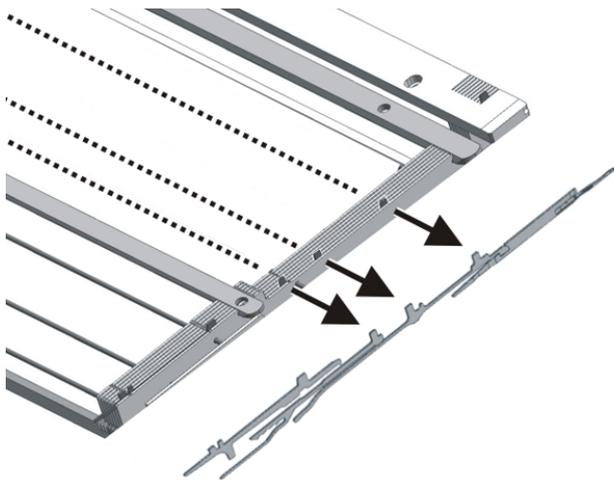
→ Use a cloth to apply oil on the carriage guide bar (1).

### 29.3.9 Greasing butts of the coupling parts and intermediate sliders

After every tenth "Oil needle bed" note appears a "Lubricate needle beds" pictograph.



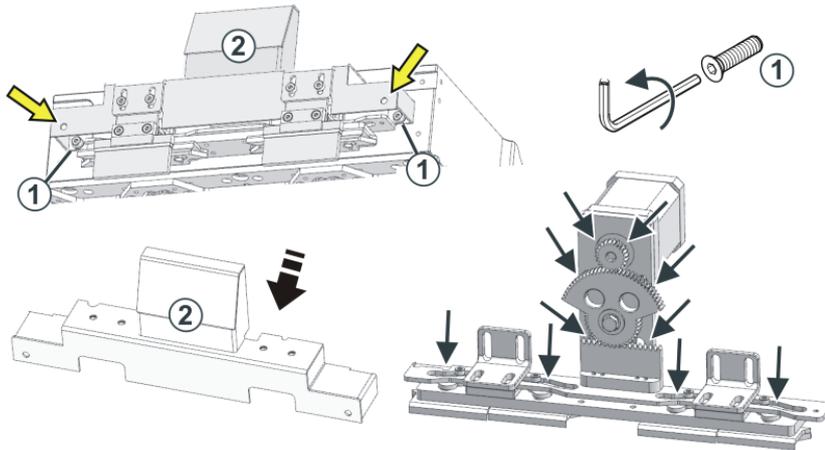
20651 Nadelbett schmieren



Greasing the butts of the coupling part and intermediate sliders

→ Use a brush to apply grease on the butts of the coupling parts and intermediate sliders.

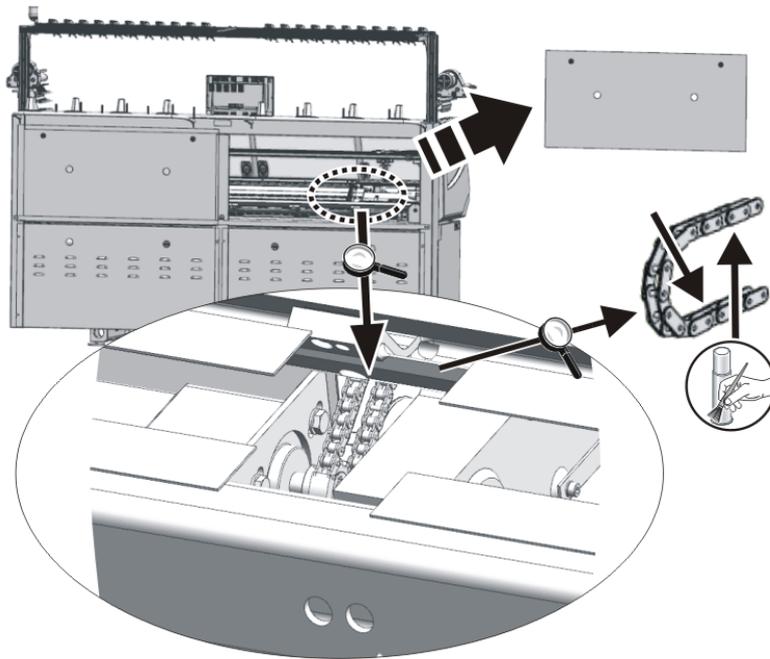
## 29.3.10 Greasing the control sliders



Greasing the control slider

1. Remove cover of holding-down jack control (2).
2. To do this, guide the hexagon socket through the through-hole (arrow) and loosen the screw (1).
3. Remove cover (2).
4. Apply grease on the control slider with a brush.
5. Do this for both control sliders (front and rear).

## 29.3.11 Greasing the drive chain of the belt take-down



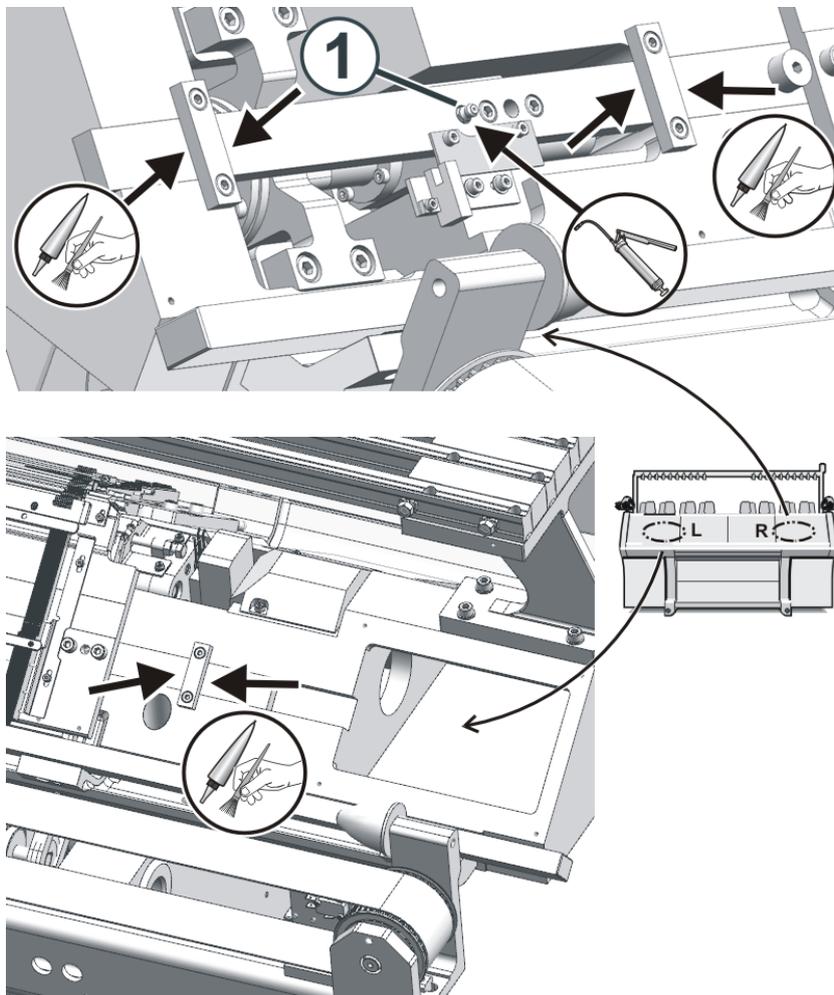
1. Remove cover.
2. Apply grease to the inside of the drive chain with a brush.

### 29.3.12 Greasing racking device

To ensure that the greasing of the racking spindle will not be forgotten, the "Grease racking spindle" pictograph will appear after 180 days.



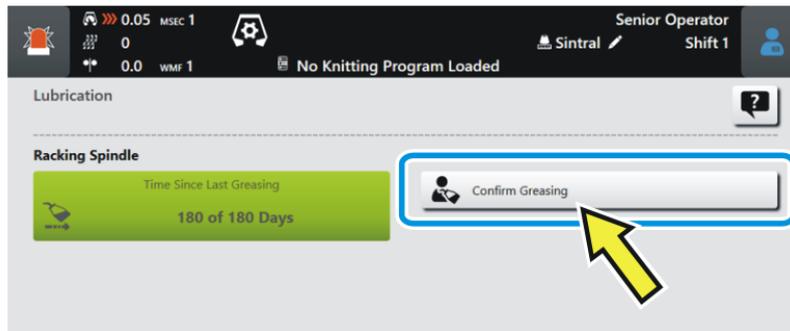
1. Remove cover over the racking device.
2. Apply grease on the racking strip and on the sliding guidances with a brush.



3. Grease the lubricating nipple (1) with a grease gun (Klueber Staburags NBU 12/300 KP, ID 231 191).

## 29.3.12.1 Confirm the lubrication process

1. Tap on the pictograph.

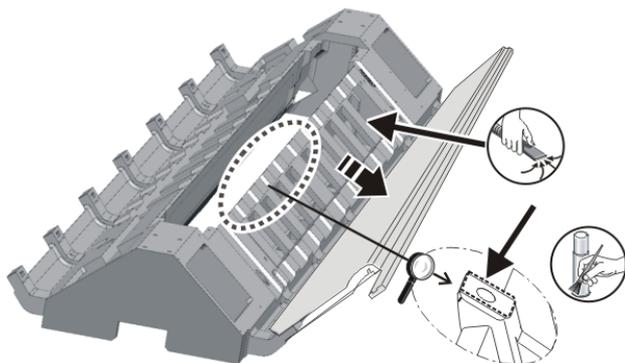


2. The "Lubrication" menu appears.
3. Tap the button "Confirm Greasing".

 You can also access this menu as follows:

 Maintain Machine ->  Lubrication

### 29.3.13 Grease needle bed supports



Greasing the needle bed supports

1. Position the needle beds at an angle.
2. Vacuum off fluff and dust.
3. Apply grease on needle bed supports with a brush.

## 30 Service

### 30.1 Export / import machine data

Reasons to export (save) machine data (dongle):

- Loss of data
- Installation of a new version of the Stoll operating system
- Exchanging the hard disk

Content of dongle data:

- Machine Data
- Options of the machine
- Configuration of Machine
- Report
- Network settings
- Other internal information



**Dongle-Data** is saved in a file with the name: Machine number. smc (**Stoll-Machine-Configuration** data).

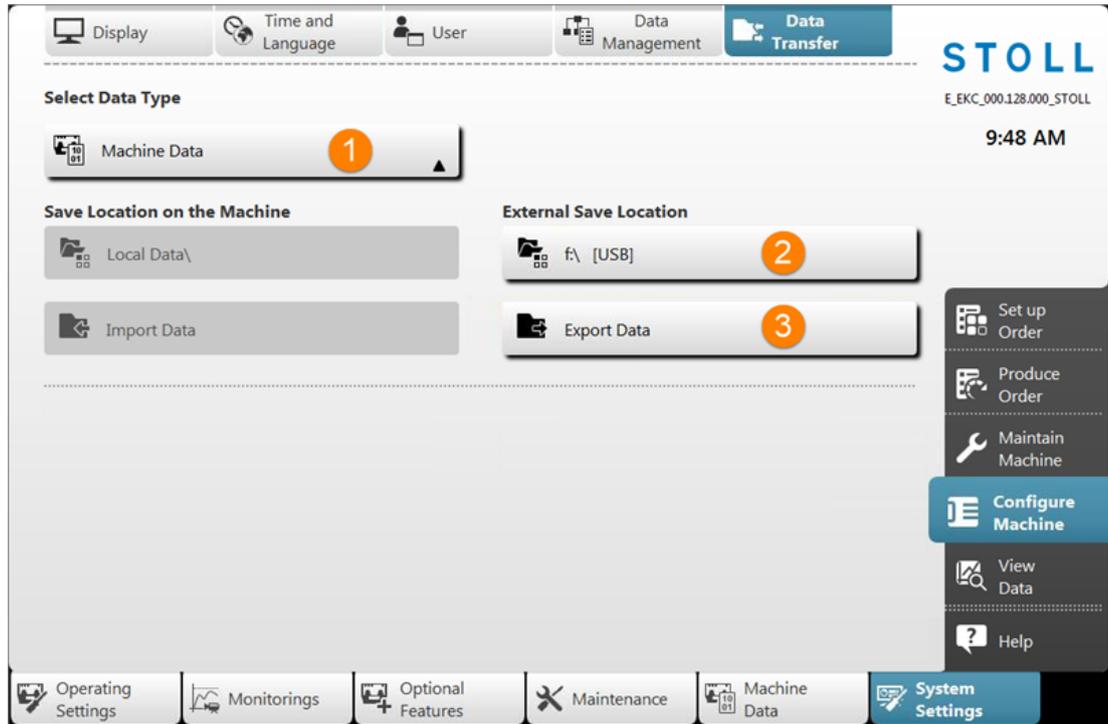
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Possible data medium for saving:

- USB Memory Stick
- Network drive

Export machine data:

- ✓ You are signed in as Senior Operator .
- 1. In the main navigation bar switch to  "Configure Machine".
- 2. Select  "System Settings" in the bottom navigation bar.
- 3. Open the  "Data Transfer" tab.

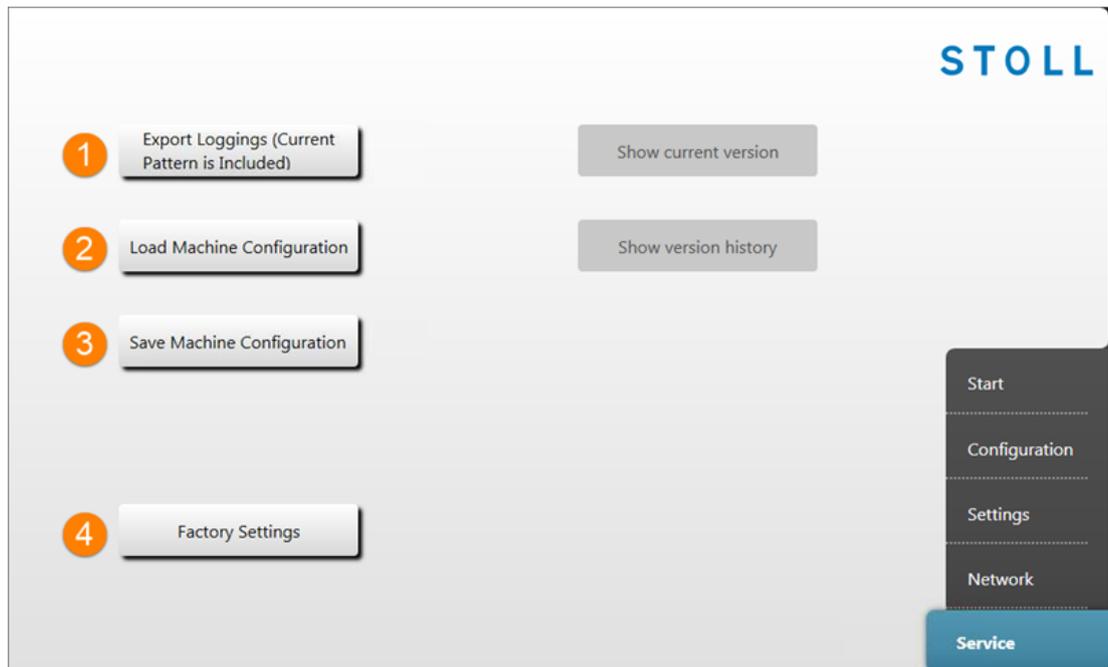


1		<p>Selection menu for the data type for data transfer</p> <ul style="list-style-type: none"> <li>◆  Operating System</li> <li>◆  Knitting Programs</li> <li>◆  PIN and Permissions</li> <li>◆  Shift Plan</li> <li>◆  Machine Data</li> <li>◆  Machine Settings</li> <li>◆  Report Data</li> <li>◆  "Sintral Crypto Key File" (only with EVP-Extended Value Package)</li> </ul>
2		<p>Selection of the external location regarding the target directory</p> <ul style="list-style-type: none"> <li>◆  F:\ [USB]</li> <li>◆  Network Drive</li> </ul>
3		<p>Button to perform the data transfer Export</p>

4. Open the menu under "Select data type".
5. In the selection menu, select the  "Machine data".
6. Under "External Save Location" specify the desired target directory.
7. Press the  "Export data" button.
  - ▶ The dongle data is exported to the specified target directory.

### Load machine data (import):

1. Switch off machine.
2. Switch on machine at the main switch.
  - ▶ The machine boots until the "System Control Unit" (SCU) menu appears.
  - In the menu "System Control Unit" tap the "Service" button.



1	Export (Save) the logfiles
2	Import (load) the Dongle data to the machine
3	Export (save) the Dongle data from the machine
4	Reset to default settings of Stoll

- Press the "Load Machine Configuration" button.
  - ▶ The Dongle data are loaded.

## 30.2 Software installation

The installation of the Stoll operating system can be carried out in two ways:

- **Direct Software Installation**

- When switching on the machine, the operating system is installed

- **Indirect Software Installation**

- During the production, the operating system is made available and when switching on the machine the next time, it will automatically be installed.

### 30.2.1 With BMS 52

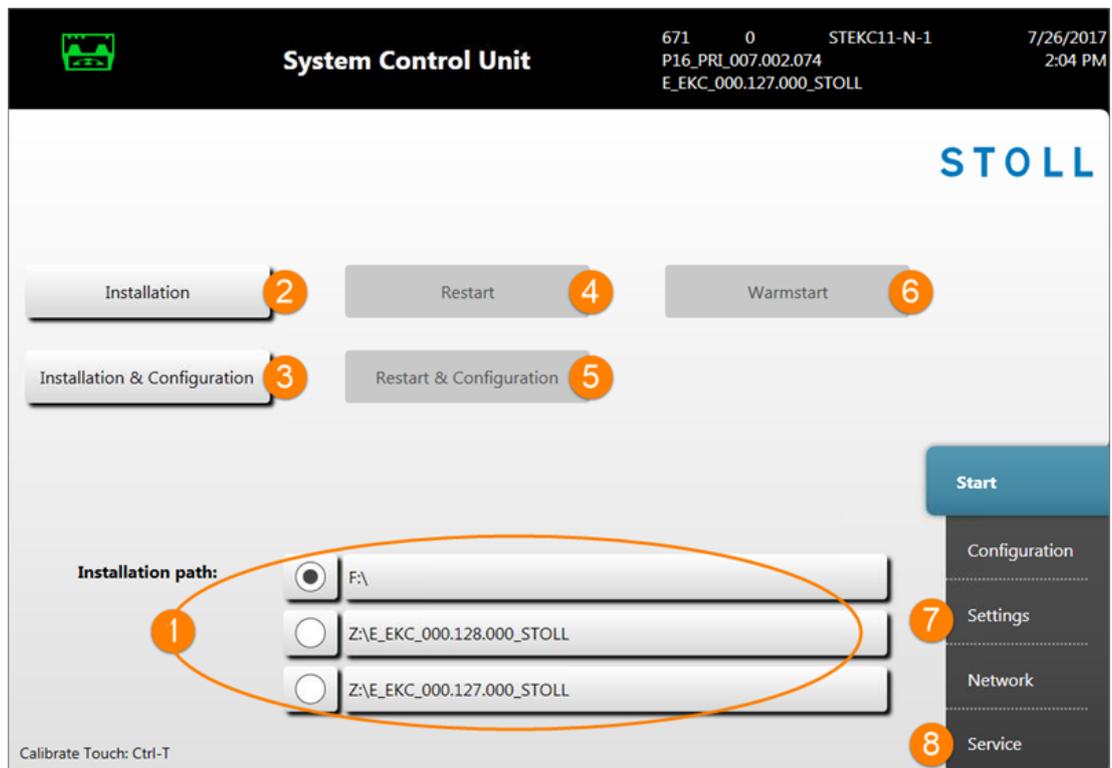
#### 30.2.1.1 Install the Software - Direct Installation

Direct Software Installation:

- ✓ The machine is switched off.

1. Switch on machine.

- ▶ The menu "System Control Unit" appears.



1	Buttons for the selection of the source directories for the software installation <ul style="list-style-type: none"> <li>◆ USB drive: F:\</li> <li>◆ Network drive (only one drive possible) with directories</li> </ul>	
2	Button to start the installation process of the Stoll operating system (without query of the configuration data)	
3	Button to start the installation process of the Stoll operating system (with query of the configuration data)	
4	Restart of the machine (reboot) <b>i</b> : After restarting, there is no pattern in the pattern memory. The machine is set to one empty row.	
5	Restart of the machine (reboot) with query of the configuration data	
6	Carrying out an automatic Warmstart of the machine <b>i</b> : A pattern is still located in the pattern memory and the machine can then be engaged again.	
7	Menu "Settings"	<ul style="list-style-type: none"> <li>◆ Button automatic Warmstart: <ul style="list-style-type: none"> <li>– <input checked="" type="checkbox"/>: if the machine is able to carry out a Warmstart, it will be executed</li> <li>– <input type="checkbox"/>: if the machine is able to carry out a Warmstart, <b>no</b> Warmstart will be executed</li> </ul> </li> <li>◆ Calibrate Touch Screen</li> </ul>
8	Menu "Service"	Working with the machine configuration data

2. More in the chapter **Direct installation: Installation and Configuration**.

### 30.2.1.1.1 Direct Installation: Installation and Configuration

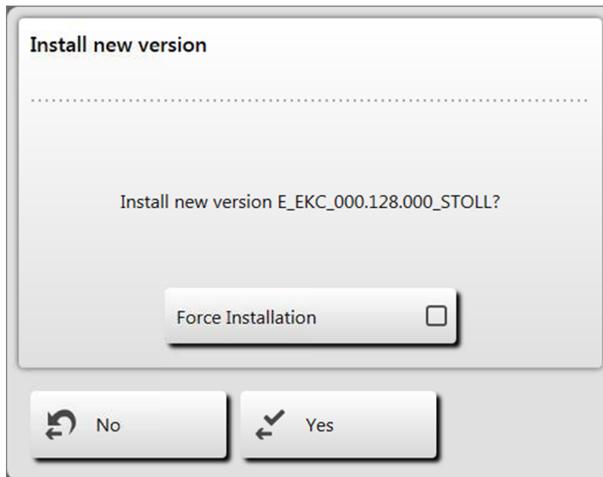
Perform installation and configuration:

1. While the Warmstart is running, press one of the buttons, for ex. under "Installation path" (1) to specify the source directory for the software installation.
  - ▶ The automatic warm start will be canceled.
2. Under (1) select one of the 3 presettings.
3. If necessary, change the path of the source directory via the corresponding button.
4. Select the desired installation:

- "Installation":  
**Without** the possibility of changing the **Machine parameters**.
- "Installation and Configuration":  
**With** the possibility of changing the **Machine parameters**.

**Result:**

A message "Install new version" with the version to be installed is displayed.

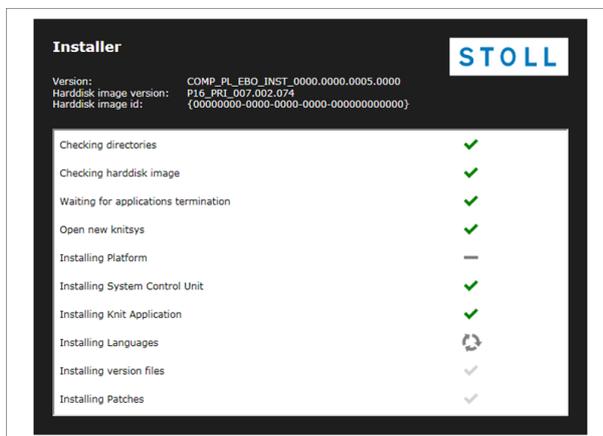


5. **Force Installation** :  
Install the operating system completely new or repair it.  
**Not recommended!!** (takes a long time)  
- or -  
**Force Installation** :  
Quickly install the changed data.

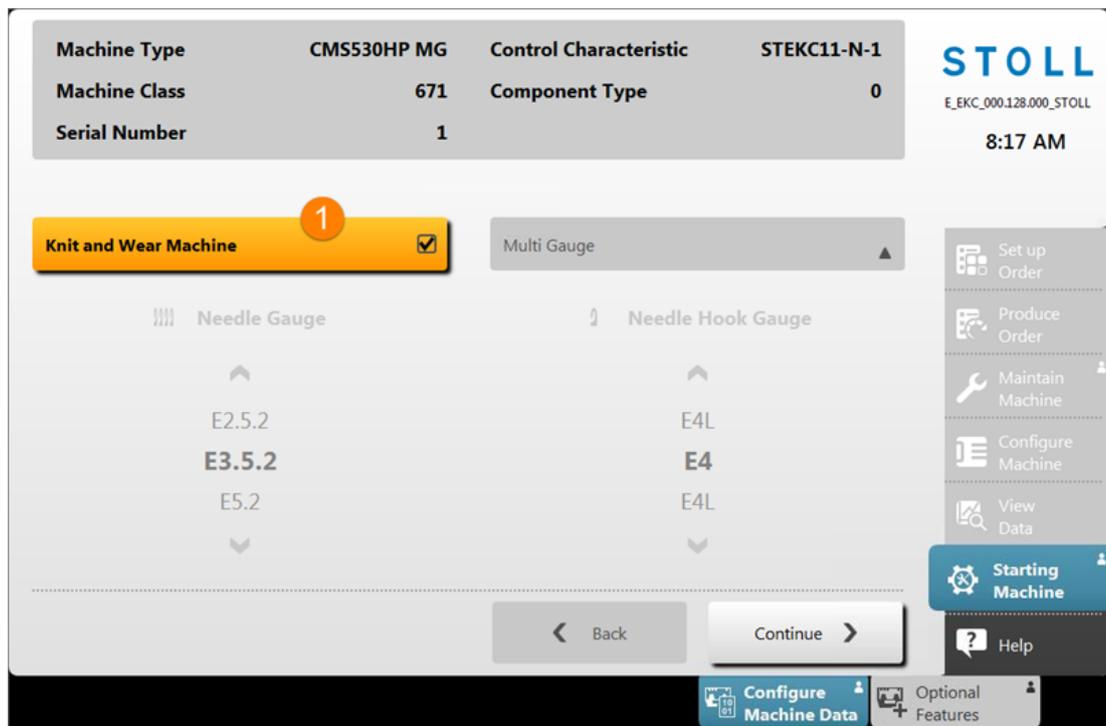
If the language file eknitlang is in the same directory as the operating system, this file is installed automatically.

Can also be installed afterwards.

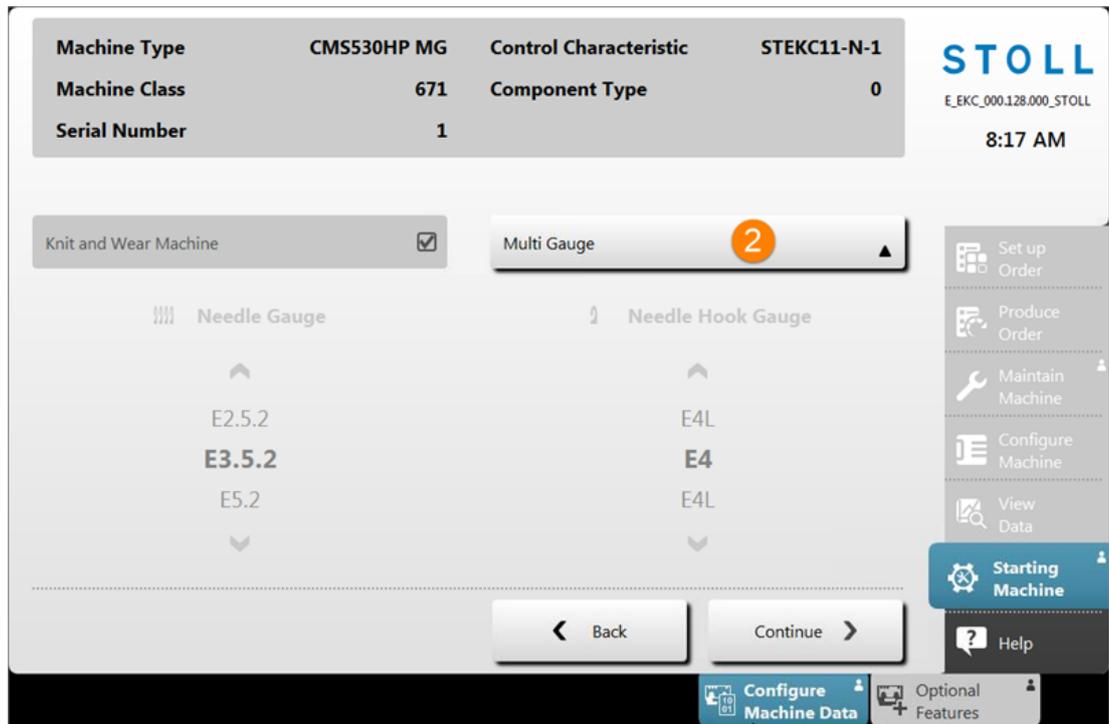
6. To confirm tap the "Yes" button.
- ▶ The installation process gets started.



- ▶ The menu "Installer" is automatically closed and the next menu is displayed.



7. According to the machine gauge the "Knit and wear machine" button
  - Activated : with gauges of multi gauge and knit&wear machines
  - Disabled : with 'normal' gauges of the machine
8. Activate the "Knit and wear machine"  button.
9. Go to the next setting with the "Continue"  button.

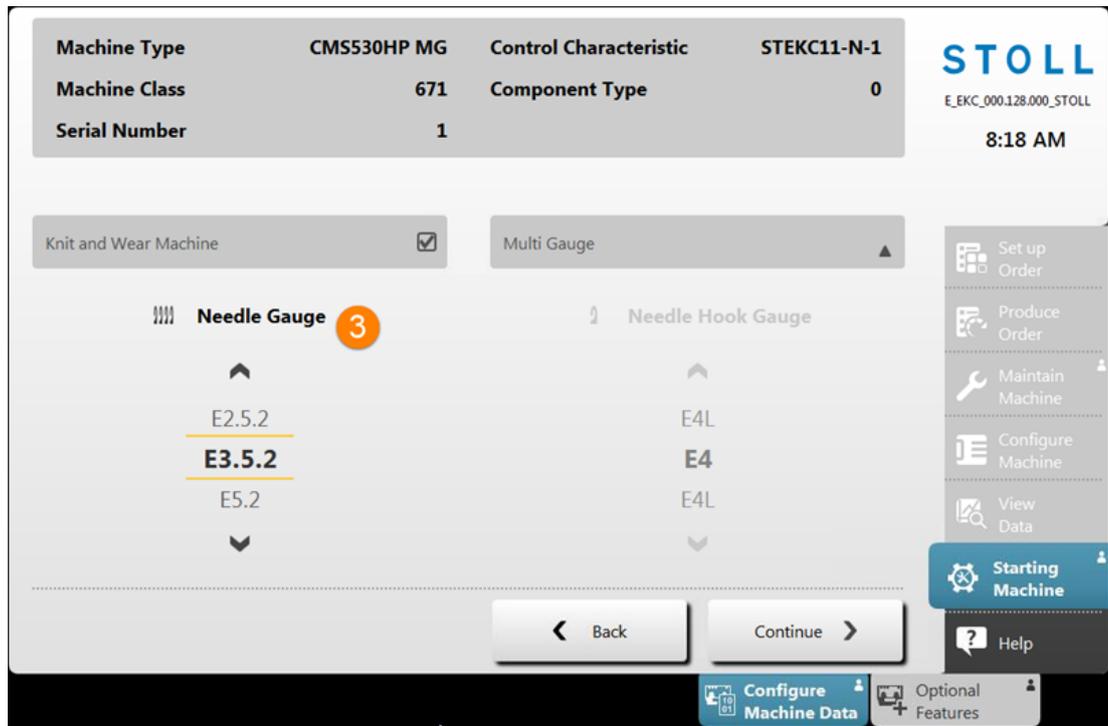


10. With the (2) button select the following:

- Multi Gauge
- Knit&Wear

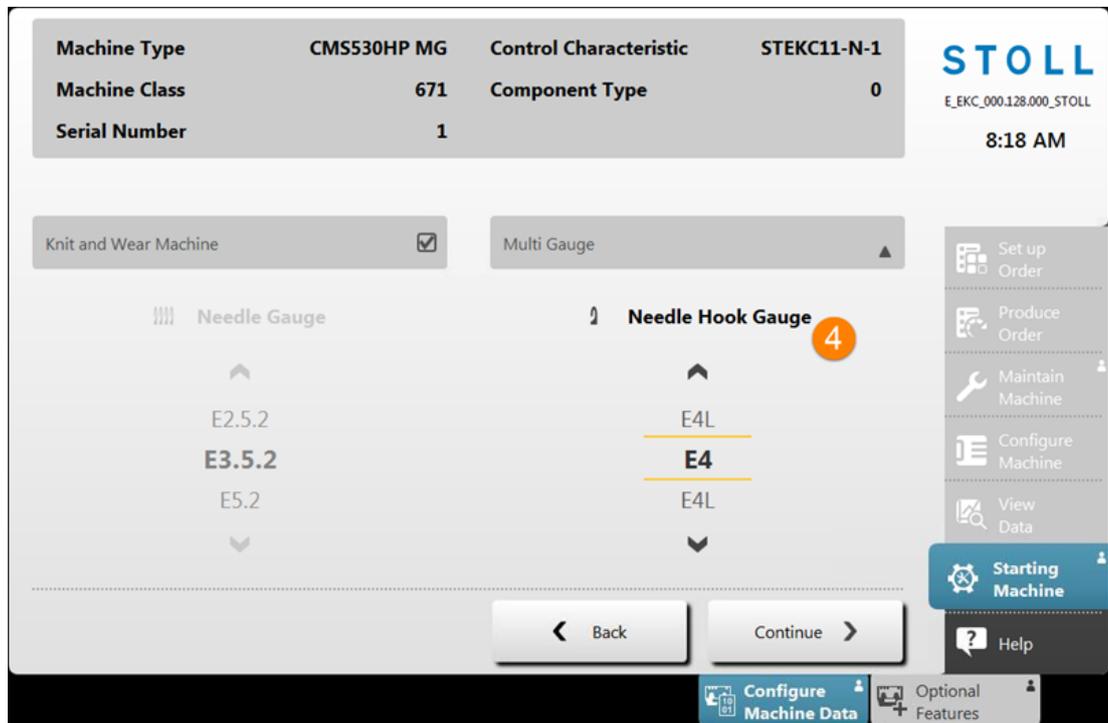
The selection only is possible if the "Knit and wear machine"  button was activated.

11. Go to the next setting with the "Continue"  button.



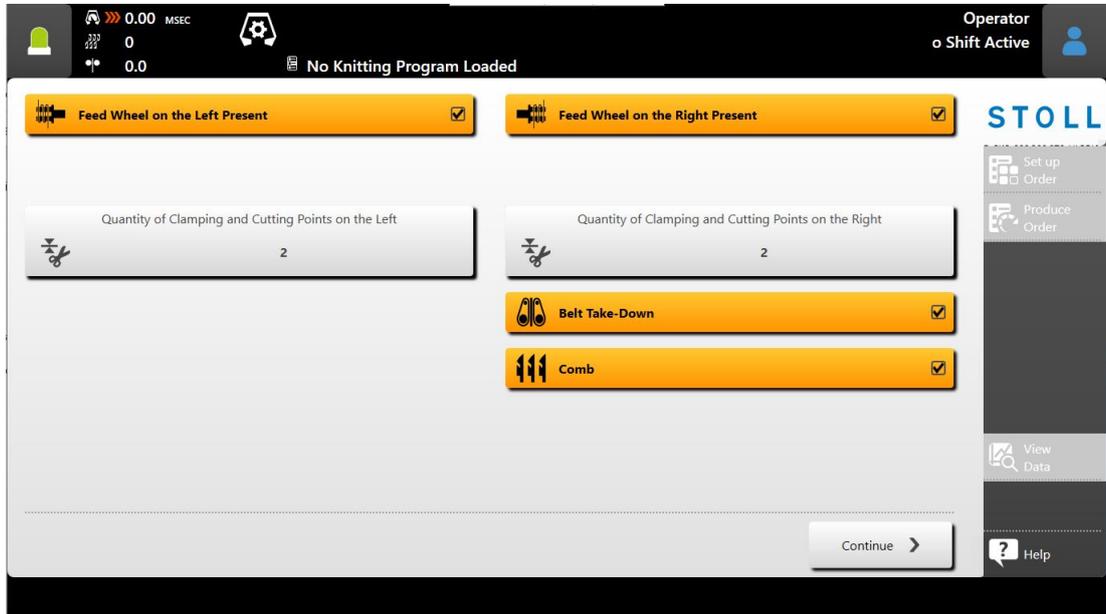
12. With  or  select the desired  "Needle gauge".

13. Go to the next setting with the "Continue"  button.



14. With  or  select the desired  "Needle hook gauge".

15. Go to the next menu with the "Continue"  button.



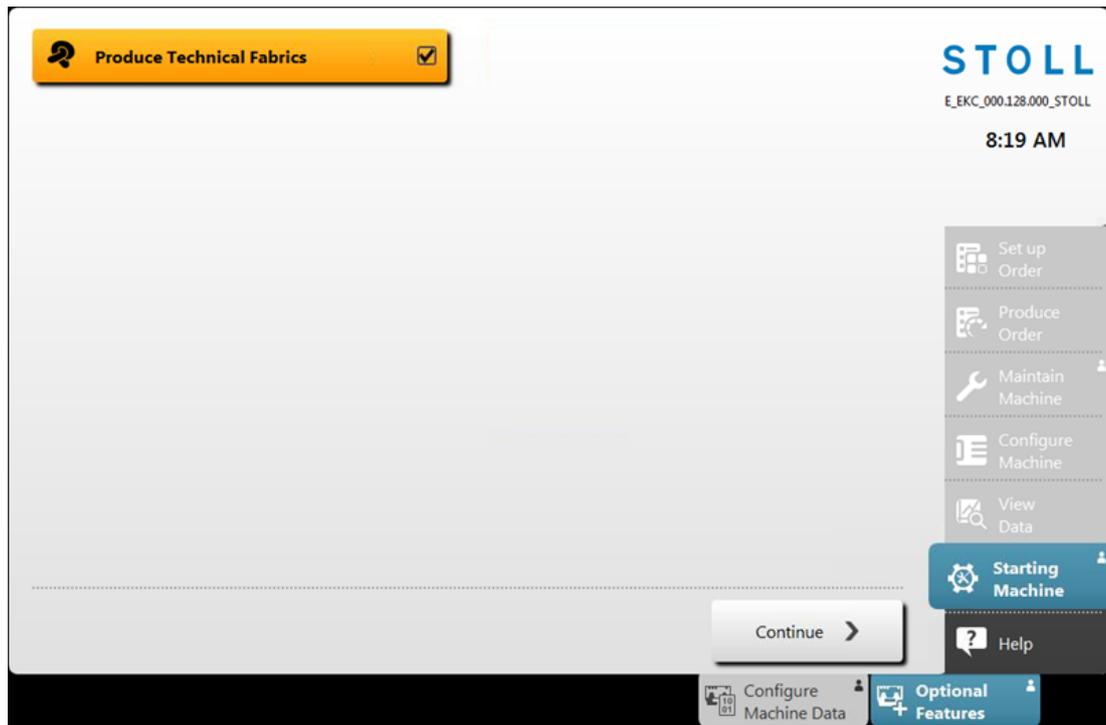
	Feed Wheel on the Left Present	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Feed Wheel on the Right Present	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Number of clamping and cutting points on the left	
	Number of clamping and cutting points on the right	
	Auxiliary Take-down	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Belt Take-Down	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Central lubrication	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Suction	<ul style="list-style-type: none"> <li>◆ <input checked="" type="checkbox"/>: Yes</li> <li>◆ <input type="checkbox"/>: No</li> </ul>
	Yarn Carrier Drive	<ul style="list-style-type: none"> <li>◆ Type 1</li> <li>◆ Type 2</li> </ul>

16. Via the respective buttons enter the corresponding machine configuration.

**i****Machine fault!**

The presence or lack of machine options must correctly be specified, as otherwise a fault may occur on the machine.

17. Go to the next menu with the "Continue"  button.



18. Make the desired setting with the  "Produce Technical Fabrics" button:

- Activated : The functions for technical fabrics are enabled
- Disabled : The functions for technical fabrics are not enabled

19. Go to the next menu with the "Continue"  button.

▶ The menu "Reference Machine" is opened.

20. More in the next chapter **Reference runs**.

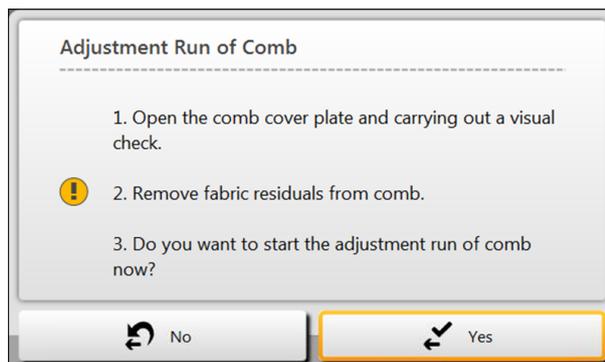
## 30.2.1.1.2 Reference Runs

Perform the following reference runs after the installation:

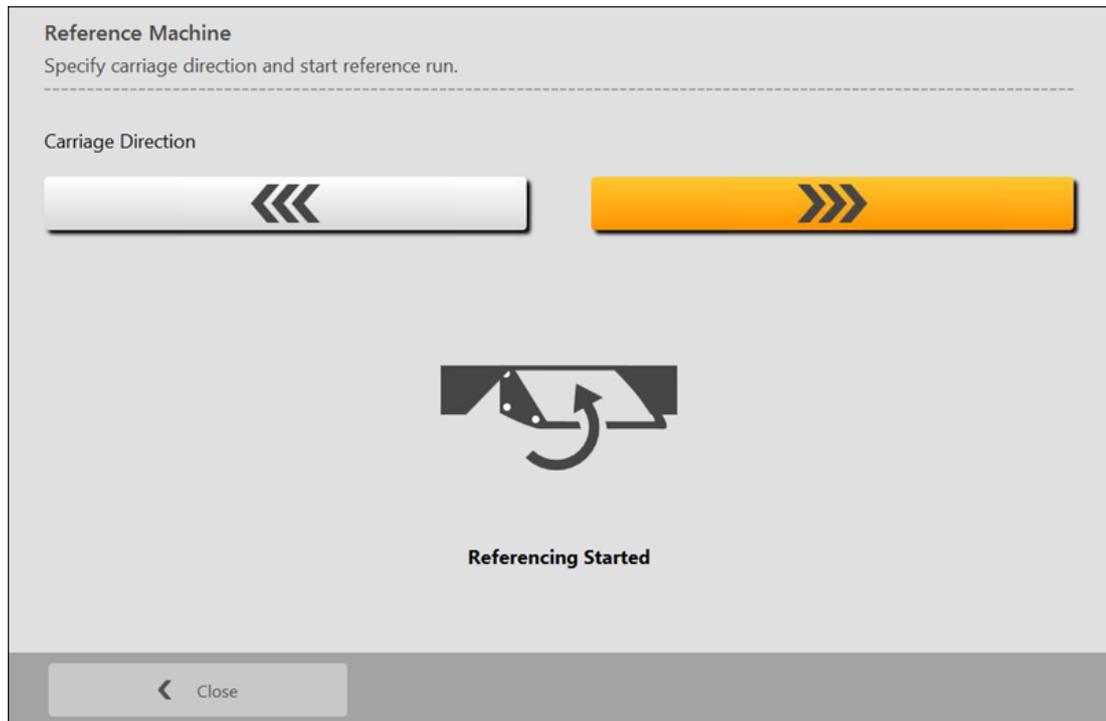
- ✓ The "Reference Machine" menu is displayed.



1. Tap the  button or the  button.
2. Start the machine with the engaging rod.
  - ▶ The message for a comb reference appears.
  - ▶ Observe the note!!



3. With the  "Yes" button confirm the message.
  - ▶ The comb reference is performed.



4. Tap on the desired carriage direction for the reference run.
5. Then, start the machine again with the engaging rod.
  - ▶ The carriage moves at creep speed until the reference run is carried out.
  - ▶ Racking and step motor reference is performed in the right carriage reversal.

---

**i** Recommendation: Weave-in devices should be referenced as well if mounted on the machine.

---

6. Continue with Create Order.

---

**i** Reference run racking  
Ensure that the stitches of one needle bed are cast-off.

---

### 30.2.1.2 Updating Software - Indirect Installation

#### Indirect Installation:

- The new Stoll operating system is located on the hard disk in a **separate memory area**.
- The software can be provided while the machine is producing
- The software will be read-in when starting the machine the next time

---

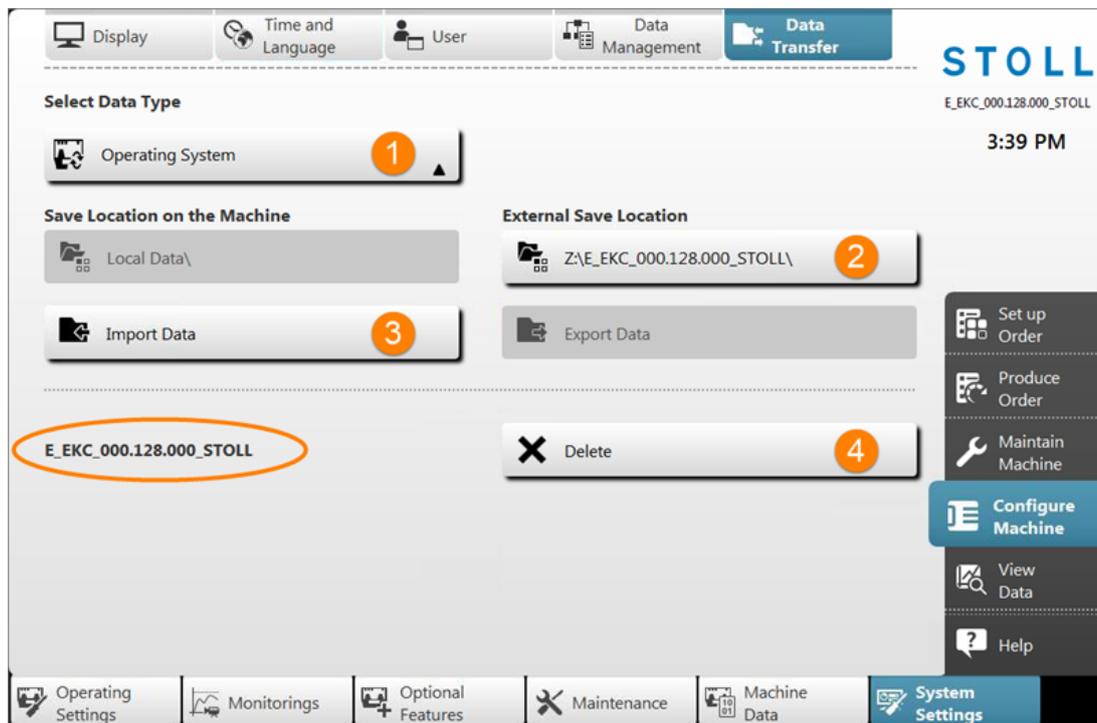
**i** No data is overwritten when copying the operating system.

---

Prepare the indirect installation:

- ✓ You are signed in as Senior Operator .
- ✓ The machine is producing.

1. In the main navigation bar switch to  "Configure Machine".
2. Select  "System Settings" in the bottom navigation bar.
3. Open the  "Data Transfer" tab.



1		Selection menu for the data type for data transfer
2		Selection of the external location regarding the source directory <ul style="list-style-type: none"> <li>◆  F:\ [USB]</li> <li>◆  Network Drive</li> </ul>
3		Button to perform the data transfer Import
4		Deletion of the provided operating system

4. Open the menu under "Select data type".
5. In the selection menu, select the  "Operating system".

6. Under "External Save Location" select the desired source directory of the operating system.

---

**i** The operating system may **not** be saved as a zip file in the selected source directory. Always save the operating system as extracted file.

---

7. Press the  "Import data" button.
  - ▷ The operating system to be installed is displayed and installed when the machine is switched off the next time.
8. More in the chapter **Reference runs**.

---

**i** If an operating system was loaded for **indirect installation**, **no** function key may be pressed in the "System Control Unit" window!

---

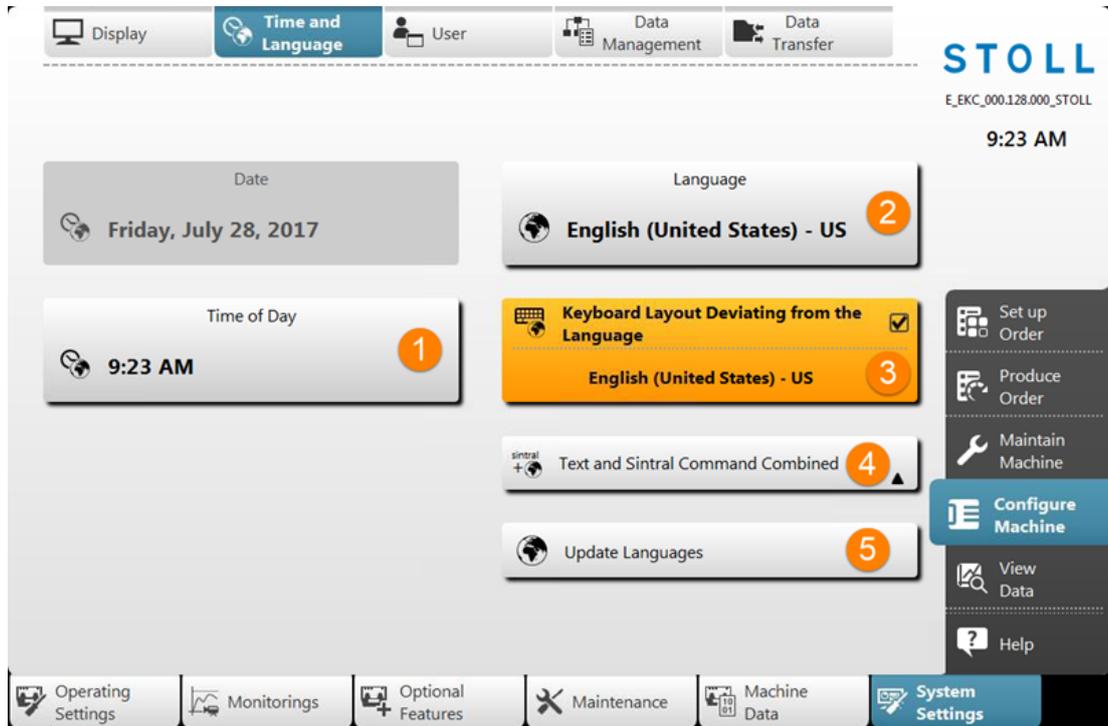
### 30.2.1.3 Update Languages

#### Reasons for update languages:

- The eknitlang file was not installed with the software installation
- A new eknitlang file is available

#### Sequence update languages.

- ✓ You are signed in as Senior Operator .
1. In the main navigation bar on  switch to "Configure Machine".
  2. Then, select  "System Settings" in the bottom navigation bar.
  3. Open the  "Time and Language" tab.



1		Set the time
2		Change the language <b>i</b> : An installed eknitlang file is requested. The default language is german.
3		<input checked="" type="checkbox"/> Changing the language for the virtual keyboard
		<input type="checkbox"/> Language of the virtual keyboard the same as the set language
4		Display of the keys <ul style="list-style-type: none"> <li>◆ : Text and Sintral commands combined</li> <li>◆ : Text Only</li> <li>◆ : Sintral Command Only</li> </ul>
5		Update Languages Opens the dialog box to update the languages.

4. Tap the "Update Languages" key.

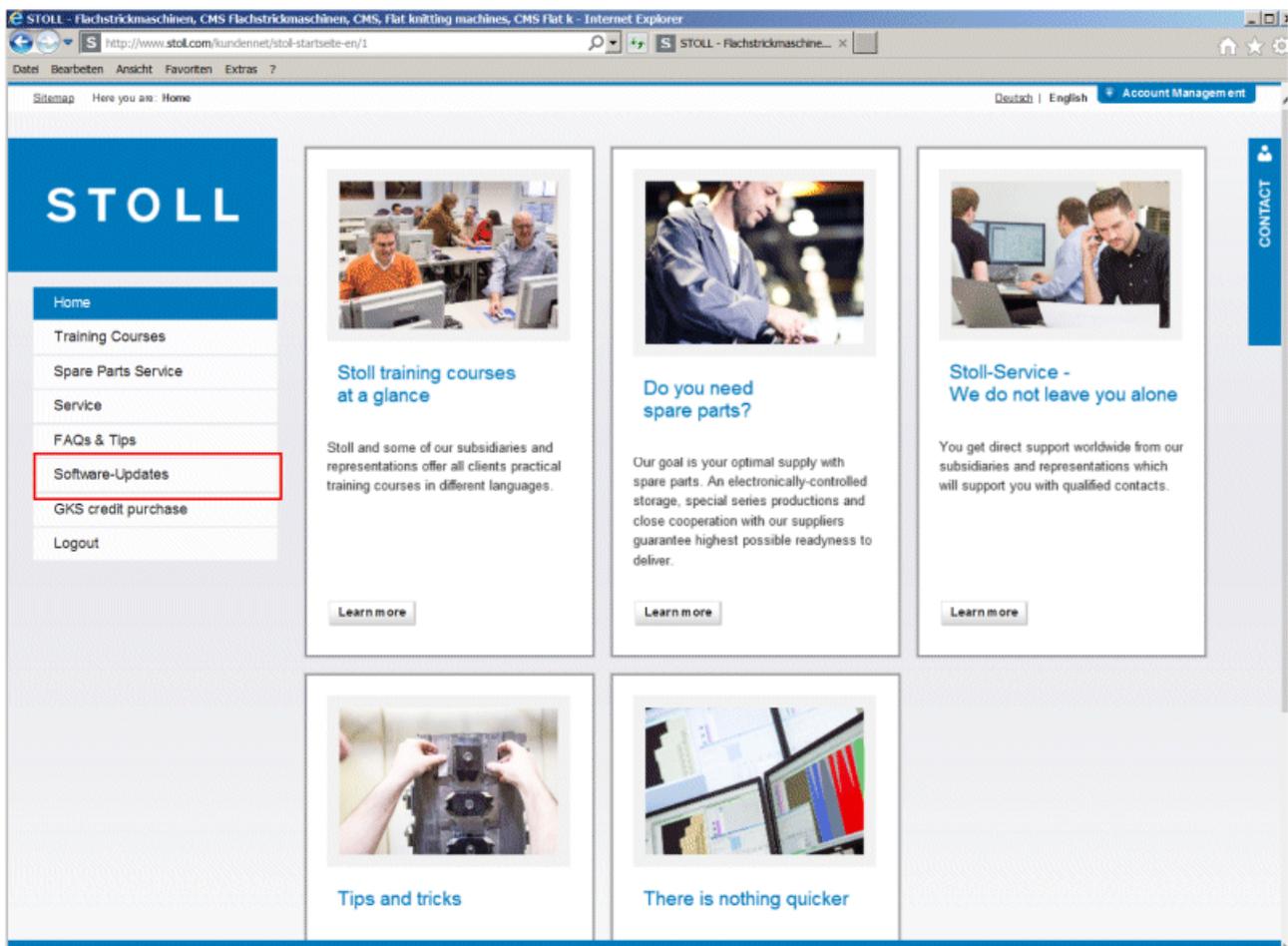
▶ The "Update Languages" menu is opened.

5. Open the "Select Folder" menu with the button.

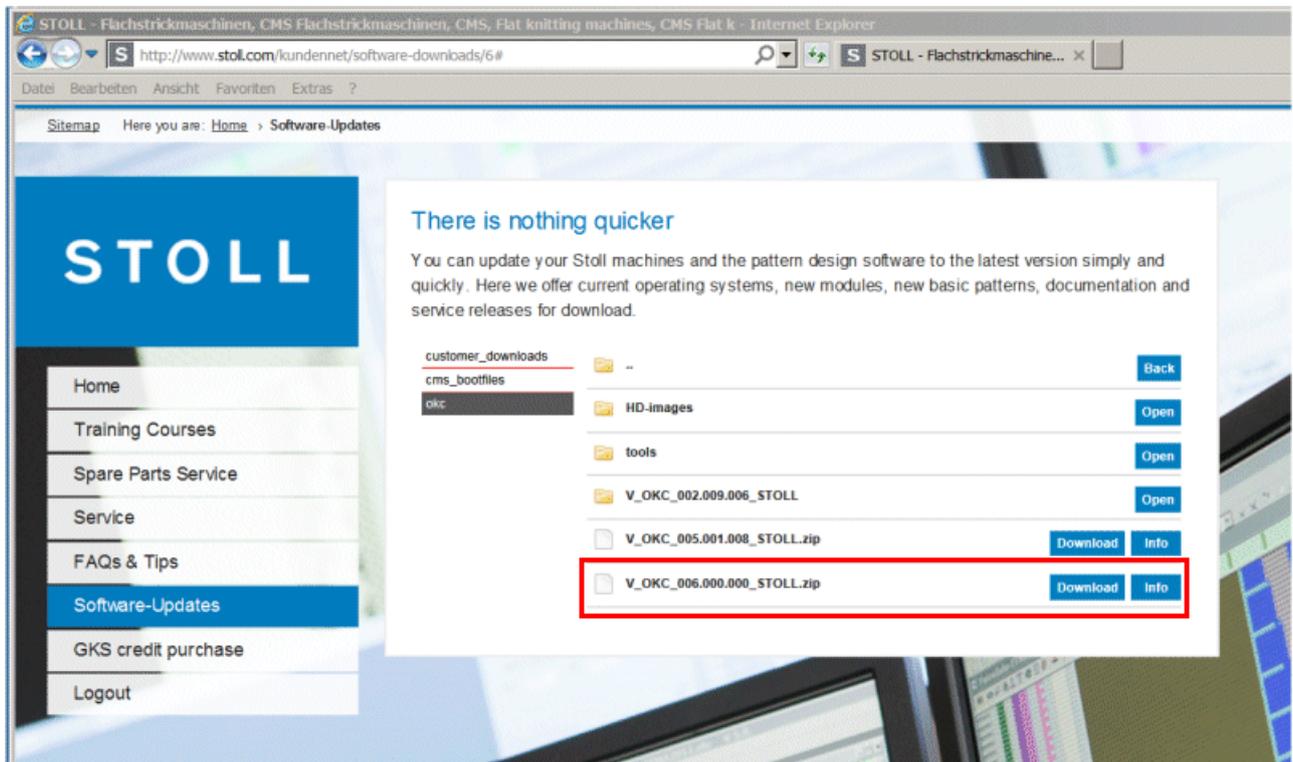
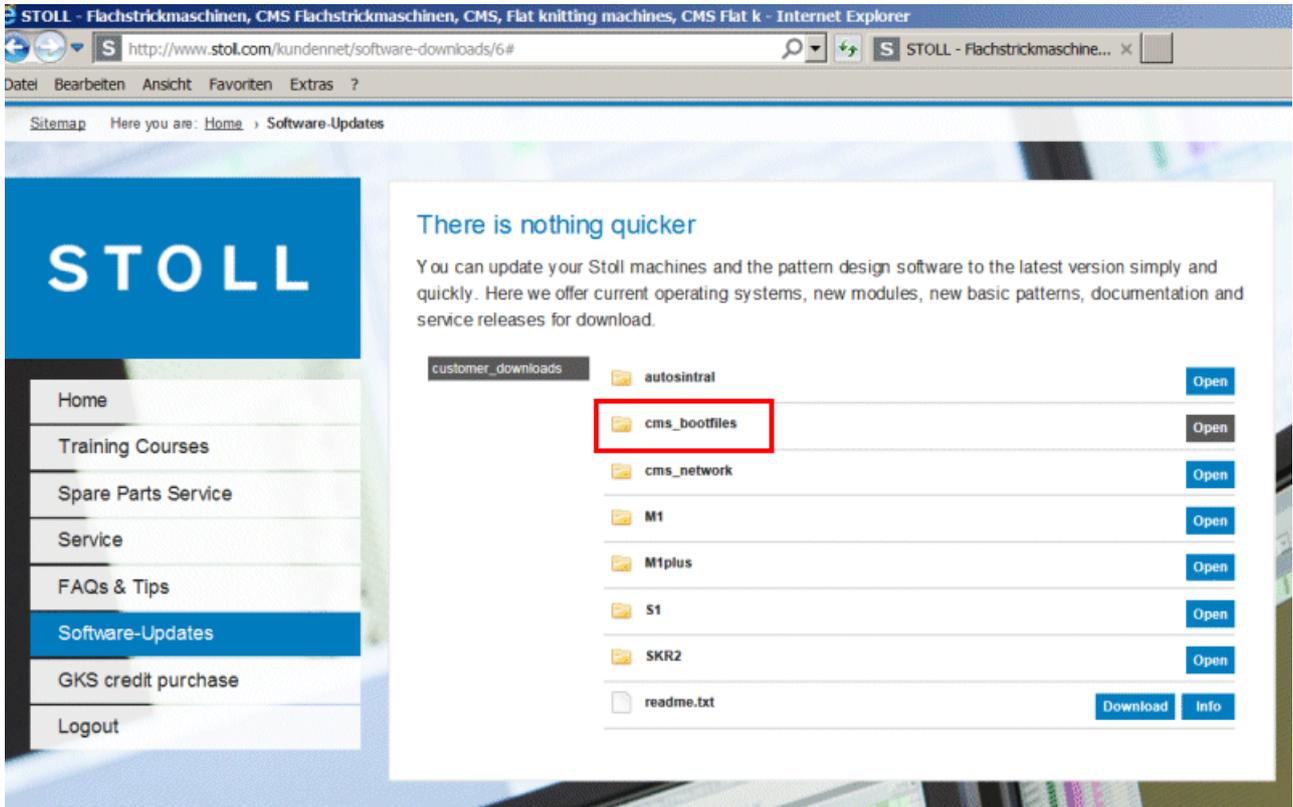
6. Select the path of the source directory for the eknitlang file:
  - Local Patterns (hard disk)
  - USB
  - Network drive
7. Eknitlang Select the file in the source directory.
8. Confirm with the  "OK" button.
- ▶ The language is being updated 
9. If necessary, make further settings in this menu.

## 30.3 Software Download

The Stoll operating system for CMS machines can be downloaded via the internet from the [www.stoll.com / Service / Customer-Net / Software Updates](http://www.stoll.com/Service/Custom-Net/Software-Updates).



The screenshot shows the Stoll website interface in Internet Explorer. The browser address bar displays <http://www.stoll.com/kunden/stoll-startseite-en/1>. The website features a blue header with the 'STOLL' logo and a navigation menu on the left. The 'Software-Updates' option in the menu is highlighted with a red rectangle. The main content area contains five promotional tiles: 'Stoll training courses at a glance', 'Do you need spare parts?', 'Stoll-Service - We do not leave you alone', 'Tips and tricks', and 'There is nothing quicker'. Each tile includes an image, a title, a short description, and a 'Learn more' button. A vertical 'CONTACT' button is visible on the right side of the page.



## 31 Miscellaneous

### 31.1 Further system settings

-  Display
  - Calibrate touch screen
  - Select the color presentation of the menus.
  - VNC
-  Time and Language
  - Set the time, date, time zone:
  - Select a Language
  - Synchronize Clock with Network Time
-  User
  - Enter PINs for the different user groups
  - Configure Windows
    - Establish, which actions can be performed by a user group at the machine and which cannot.
  - Set Shift Plan
    - Enter times of beginning and ending of each shift.
    - Activate the Automatic Shift Change.
-  Data Management
  - Carry out network settings
  - Set Ticket Processing

#### 31.1.1 Display

	Setting screen brightness
	Select the color presentation of the menus.
	Allow or prevent the VNC connection to the machine. (VNC: Virtual Network Computing)  The machine is networked.

	<p>With the help of the VNC connection, the user interface of the machine can be accessed from another computer. This way it is possible to work on a remote computer like being directly in front of the machine.</p> <p> Other people may access the user interface of the machine without you noticing if this function is activated.</p>
--	---

### 31.1.2 Time and Language

 Date	<p>Enter the date.</p>
 Language	<p>Select a Language.</p> <p>The menus and the error messages are displayed in the selected language.</p>
 Time of Day	<ul style="list-style-type: none"> <li>◆ Set Time of Day</li> <li>◆ Setting time zone</li> <li>◆ Automatically switch the clock to summer or winter time.</li> </ul> <p> Set Time</p>
 Keyboard Layout Deviating from the Language	<p><input checked="" type="checkbox"/> Activate this setting if you want to use another keyboard than the set menu language.</p> <p>For example if the menu language is set to english and a russian keyboard (with Cyrillic letters) is to be used.</p> <p>The keyboard layout is active:</p> <ul style="list-style-type: none"> <li>◆ with the virtual keyboard on the user interface</li> <li>◆ with the external keyboard which is plugged into the USB socket at the display</li> </ul>
 Text and Sintral Command Combined	<p>Select which text is to be displayed on the buttons: only text, text and Sintral command or only the Sintral command.</p> <p> A Sintral command is not available for all control elements.</p>
 Update Languages	<p>Opens the dialog box to update the languages.</p> <p>Select the desired language file "eknitlang.zip".</p>

## 31.1.3 User

 Set PINs	<p>Each user group authorizes itself with a special PIN number for working at the machine.</p> <p>These user groups need a PIN number:</p> <ul style="list-style-type: none"> <li>◆ Maintenance</li> <li>◆ Senior Operator</li> <li>◆ STOLL Service</li> </ul> <p><b>i</b> The user group "Operator" doesn't need any PIN number.</p> <p> Set PINs [📄 294]</p>
 Set Permissions	<p>Establish, which actions can be performed by a user group at the machine and which cannot.</p> <p>The specification can be made for a complete window or for individual controls within one window.</p> <p> Set Permissions [📄 295]</p> <p> Copying Permissions</p>
 Set Access Permissions	<ul style="list-style-type: none"> <li>◆ Specify, which user group may use the remote desktop connection.</li> </ul> <p><b>i</b> This function is only available with EKC ki machines.</p> <ul style="list-style-type: none"> <li>◆ Determine whether the password protected menus and sub-menus are to be hidden for the "Operator".</li> </ul> <p> Remote Desktop Connection RDP</p> <p> Hide all blocked menus</p>
 Set Shift Plan	<ul style="list-style-type: none"> <li>◆ Enter times of beginning and ending of each shift.</li> <li>◆ Activate the automatic shift change</li> </ul> <p> Set Shift Plan [📄 301]</p>

## 31.1.3.1 Set PINs

Each user group authorizes itself with a special PIN for working at the machine.

User Group	PIN required	PIN (default)
 Operator	—	—
 Maintenance	X	1111
 Senior Operator	X	2222
 STOLL Service	X	3333

**i** The user group "Operator" does not need any PIN number.

Enter a password for a user group:

1. Select the user group.
2. Enter the current PIN.
3. Enter the new PIN.
4. Confirm the new PIN, for this purpose enter the new PIN again.
5. Confirm entries with "OK".

### 31.1.3.2 Set Permissions

For the work steps at the machine, the Maintenance staff needs other permissions than the Operator (knitter). The Operator, for example, may not change any data or perform specific machine actions. You define this in the corresponding user profile.

Requirements:

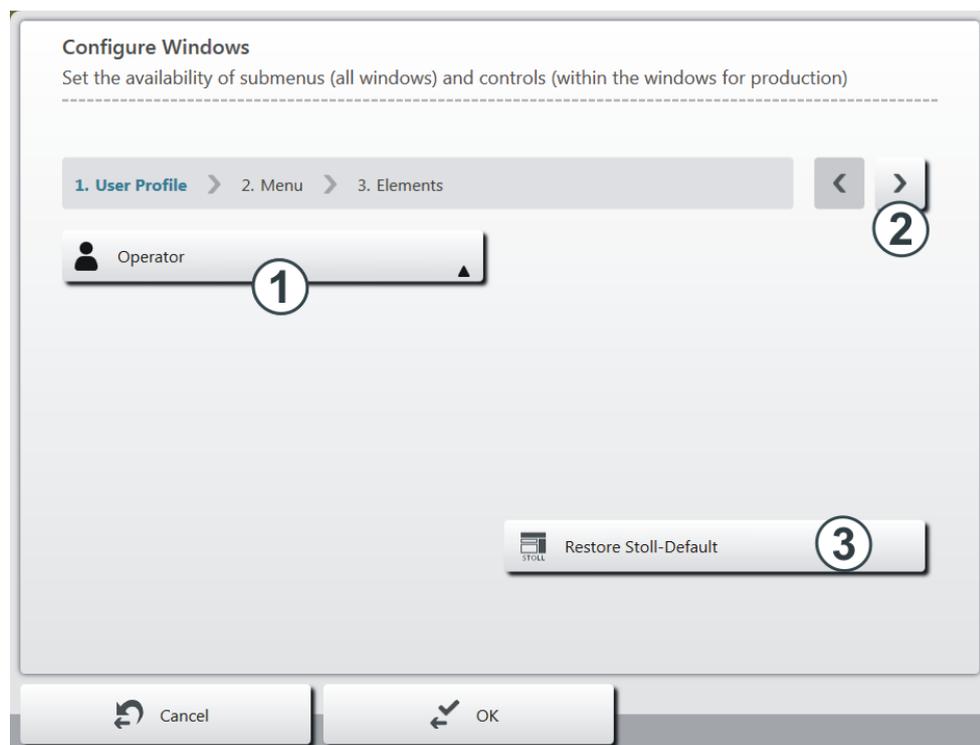
- You are signed in as "Senior Operator".
- Call up the "Set Permissions" window.

 "Configure Machine" ->  "System Settings" ->  "User" ->  "Set Permissions"

The selection of a user profile is carried out in several steps:

Select the user group:

1. Tap the button (1).  
In the selection menu select the desired user group.

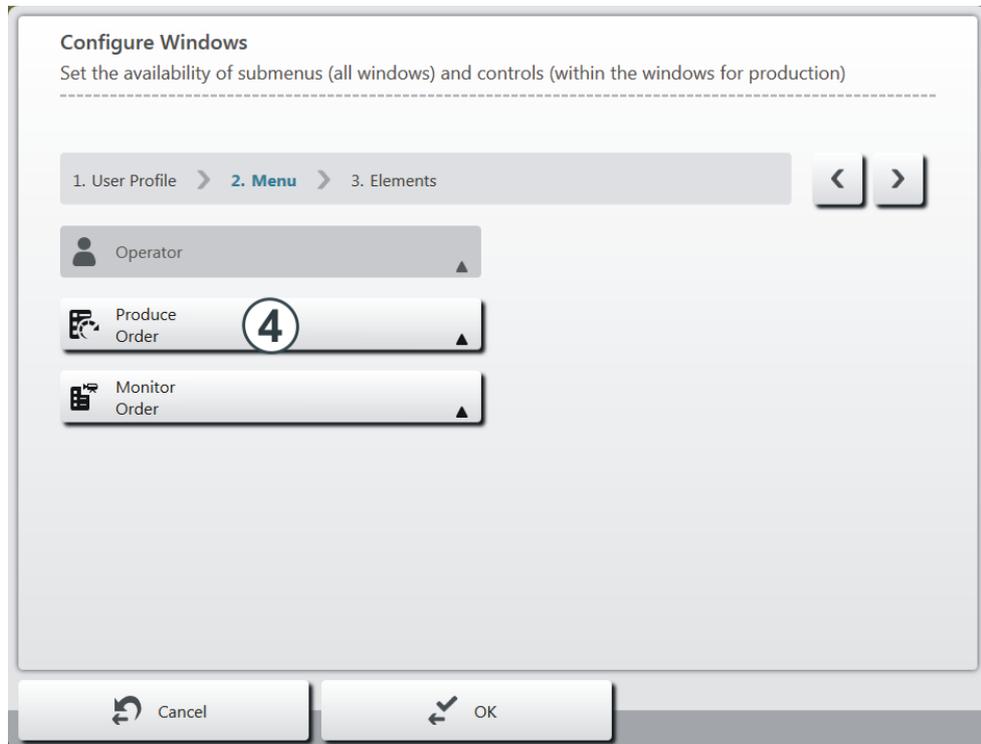


2. Proceed to the next program step. For this, tap the button (2).

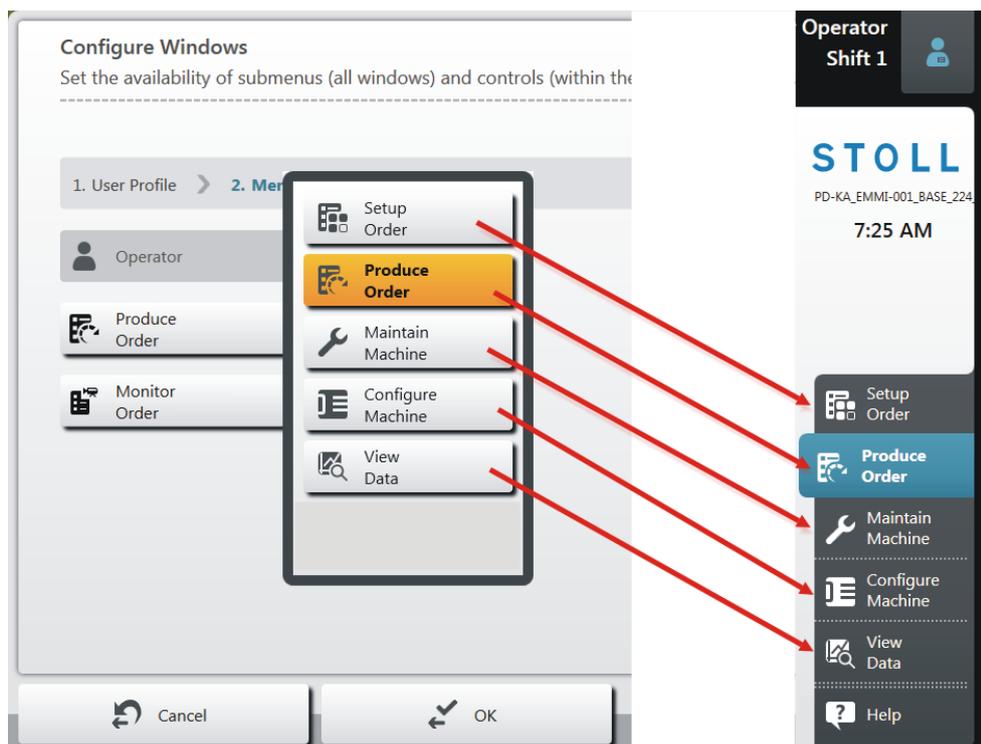
 If you tap the button (3) your settings for all user profile will be reset to the STOLL settings (default).

Select the user rights for a menu:

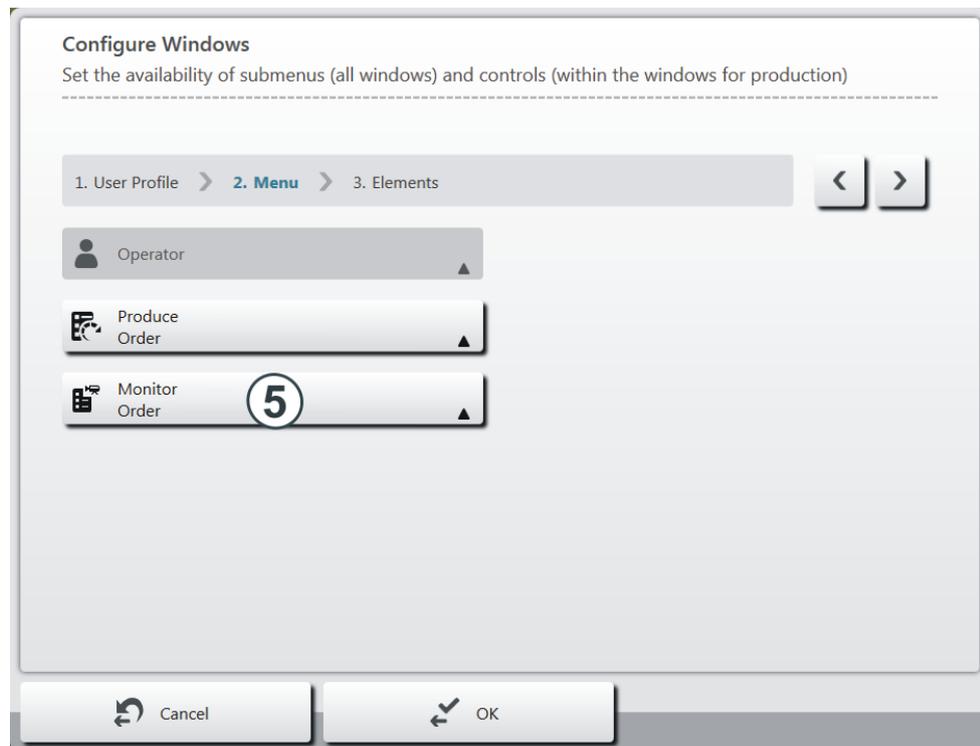
1. Select the desired menu item from the main navigation bar.  
For this, tap the button (4).



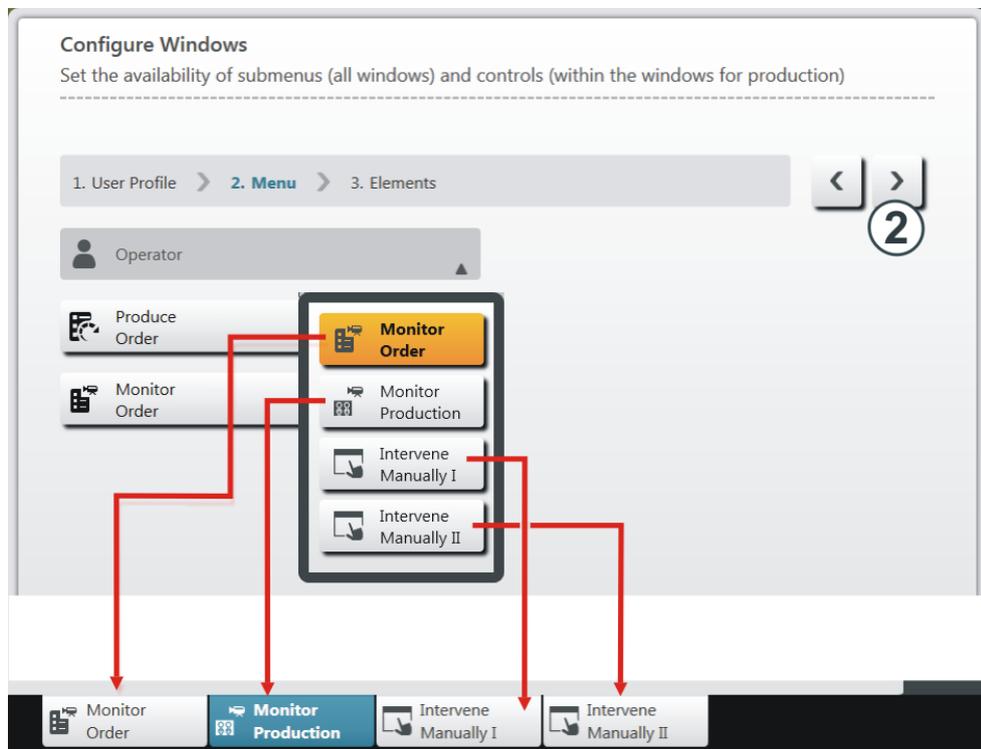
2. The selection menu appears.



3. Select the desired menu item.  
**i** These are the menu points from the main navigation bar (at the right screen edge).
4. Select the desired menu item from the lower navigation bar.  
For this, tap the button (5).

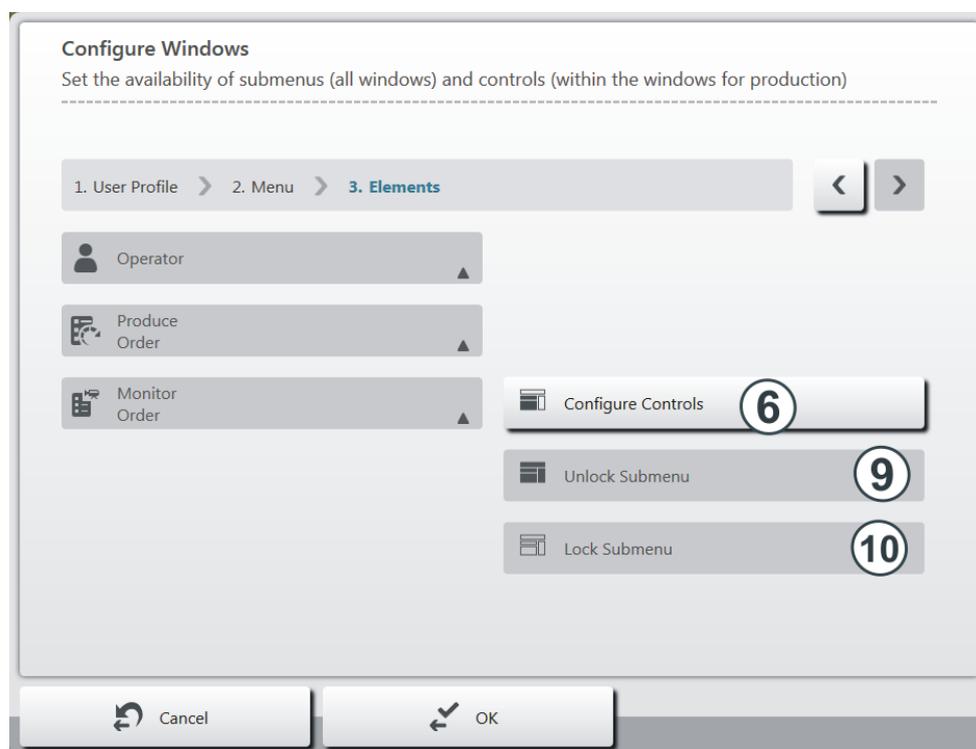


5. The selection menu appears.



6. Select the desired menu item.  
**i** These are menu points from the lower navigation bar (at the lower screen edge)
7. Proceed to the next program step.  
For this, tap the button (2).

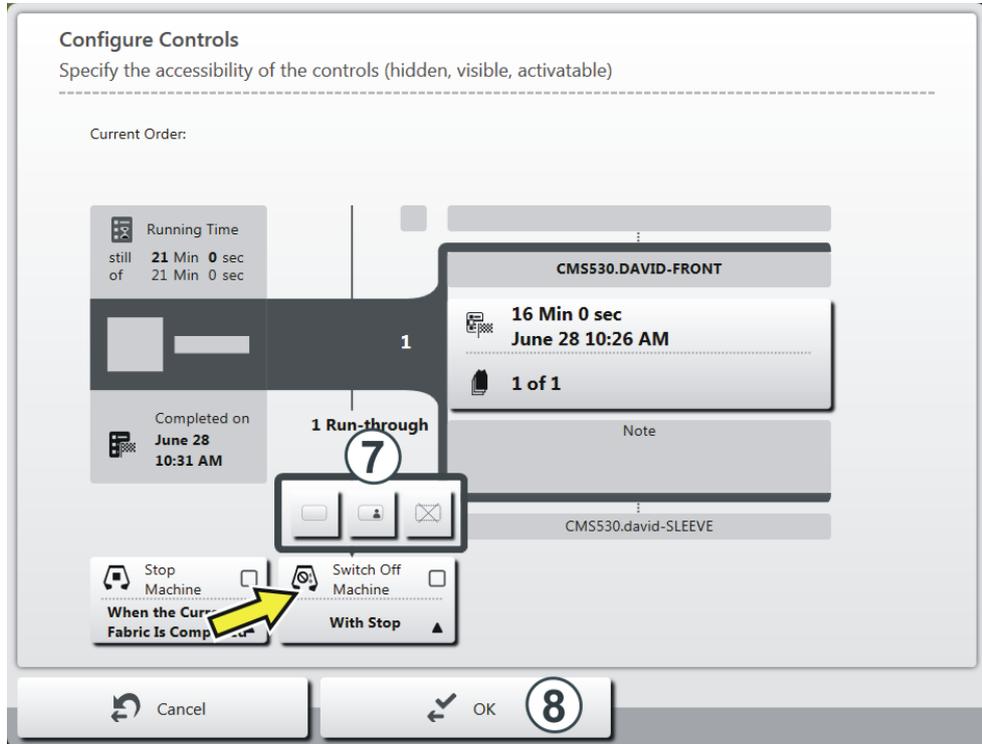
Selecting user rights for the selected menu:



6	Set accessibility for each control (action, button). <i>i</i> Only possible for the "Produce Order" menu.
9	Unlock all controls of the selected window.
10	Lock all controls of the selected window.

1. Set accessibility for each control (action, button).  
 For this, tap the button (6).

- The selected menu appears. In the example, the "Monitor Order" menu is displayed.



- In this window you can establish the access possibility for each element (action, button). In the example the "Switch Off Machine" element is selected. The selection menu (7) appears.
- Select the desired setting in the selection menu (unlock, password protected, lock). Tap on the corresponding button for this.

<input type="checkbox"/>	Unlock the element
	The element is password protected (password of the Senior Operator required)
	Lock the element.
	The element is no longer displayed.

- If necessary, establish the access possibility for further elements. Repeat step 3 for this.
- Save the settings. For this, tap the button (8).

If necessary, you can establish the access possibility for further menus. For this, repeat the "Select the desired menu" work step.

### 31.1.3.3 Set Shift Plan

1. Activate the "Automatic Shift Change" key.
2. Activate the checkbox of the desired shift.
3. Enter times of beginning and ending of the shift.
4. Set the time for all the shifts.
5. The entries are automatically checked.

---

**i**

- The shift times may not overlap.

- The total time is to be 24 hours.

If the actual working time is less than 24 hours, then an additional shift that covers the remaining time is to be determined.

- "Ghost shift"

You can enter also a so-called "ghost shift" in the shift plan.

A "ghost shift" is a production shift outside the regular working time, during which no operator is present. The machines work until they are stopped by an error. Ghost shifts are often used at night.

---

### 31.1.4 Data Management

#### Network

	<p>Opens the dialog box to enter the path to the network drives. Use it to access different network drives e.g. in order to load knitting programs.</p>
---	---

 STOLL KnitLAN	<p>Pattern transfer from M1plus to knitting machine and vice versa. Opens the dialog box to enter the Online ID.</p>
---	--

#### STOLL Extended knit Report



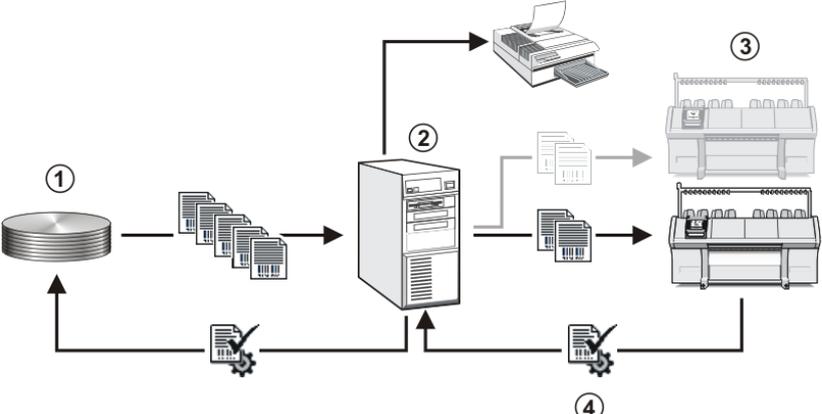
 STOLL Nameserver (SNS)	<p>Activate or deactivate the STOLL Nameserver. Opens the dialog box in order to enter the name of the STOLL Nameserver. "Specifies that the knitting machine is really running on a STOLL Nameserver (SNS) and can be incorporated in the PPS. Opens the dialog box for entering the SNS name."</p>
--	--

<p>SNS Group:</p>	<p>Opens the dialog to specify the SNS group which the machine uses to register in the PPS.</p>
-------------------	---

 STOLL - knit report (SKR)	<p>STOLL-knit report on or off.</p>
---	-------------------------------------

 Infrastructure Management	<p>Enables the use of the PPS base functions.</p>
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STOLL Production Planning System (PPS)

<p> Production Management</p>	<p>✓ "Infrastructure Management"  is switched on.</p> <p>"Production Management" on or off.</p> <p>The "Production Management" is part of the production planning system PPS and serves for the distribution, control and management of tickets:</p> <ul style="list-style-type: none"> <li>◆ Production</li> <li>◆ Auto Production</li> <li>◆ Maintenance</li> <li>◆ Set-up Pattern</li> <li>◆ Operating system update</li> <li>◆ Maintenance tickets</li> </ul> <p>With these tickets, the work progress is followed up and controlled via the PPS network.</p> 
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### 31.2 Report Data

The control collects all operating data recorded since the operating system was first read in and since the current knitting program was started.

Show Report Data:

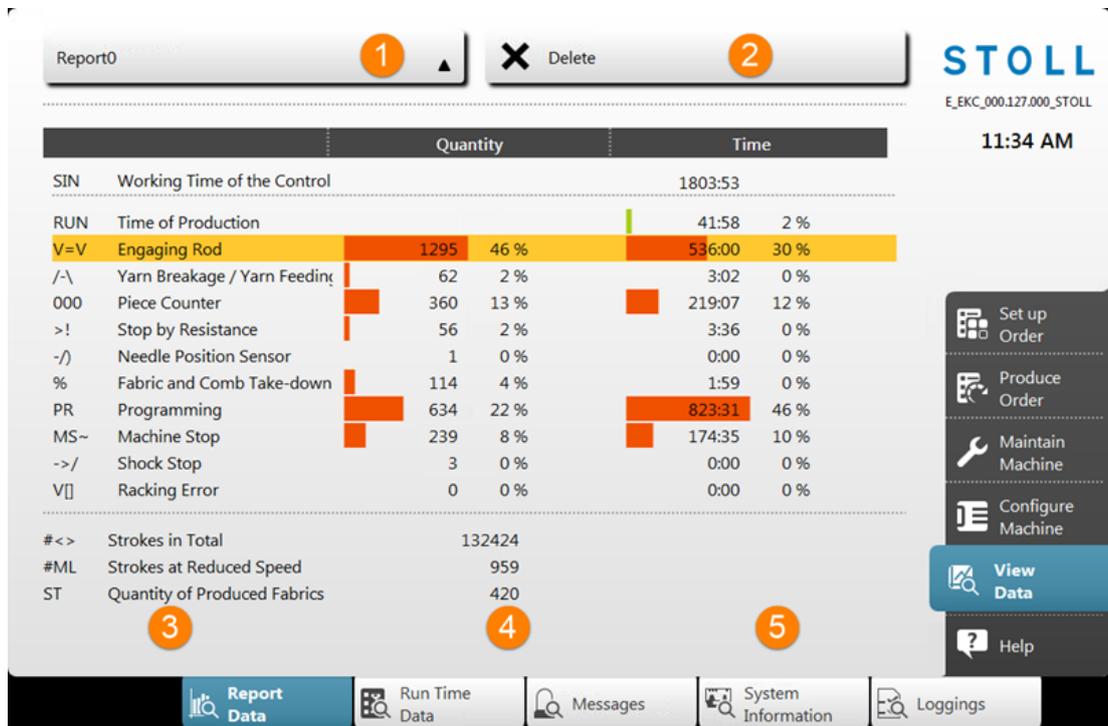
- ✓ You are signed in as Senior Operator .
- ✓ Knitting program is loaded.

1. Select  "View Data" in the main navigation bar.

2. Open  "Report Data" in the bottom navigation bar.

Report Data

► The following menu will be shown.



1		<p>Button to open the selection menu:</p> <ul style="list-style-type: none"> <li>◆ Report: Data since the first loading of the operating system in the Stoll factory (not deletable)</li> <li>◆ Report 0: Collect operating data for a specific time period</li> <li>◆ Report for Shift n (n=1-5) Collect operating data for each shift individually</li> </ul>
2	✘	Button to delete the displayed table
3	SIN	Working time of the control unit (SINTRAL loaded)
	RUN	Time of Production
	V=V	Stop Stopping at the engaging rod
	/-\	Stop Yarn control device, yarn feed
	000	Stop Piece counter
	>!	Stop Stop by resistance
	- /)	Stop Position needle sensor
	%	Stop Fabric take-down
	PR	Stop Programming

	MS~	Machine stop or brief power failure
	- > /	Stop Shock stop motion
	V[ ]	Racking Error
	# <>	Total number of strokes
	#ML	Number of strokes at reduced speed
	ST	Quantity of produced fabrics
4	Quantity	1. Column: Total quantity of each error
		2. Column: Percentage specification of the respective error
5	Time	1. Column: Stand still time of the respective error
		2. Column: Percentage specification of the stand still time of the respective error

### 31.3 Run-time Data

In the "View data" menu the running times of the following sequences are recorded and displayed:

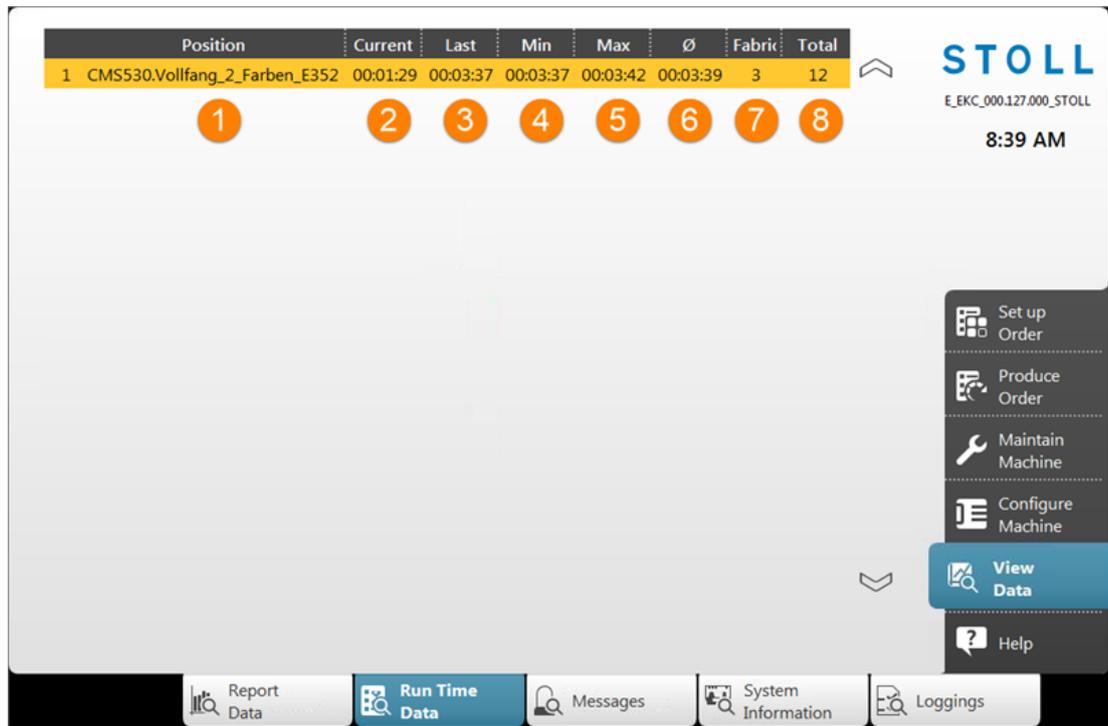
- Sequence lists / Sequences
- Orders with the individual elements
- of individual patterns

#### I. Call up running time data:

- ✓ You are signed in as Senior Operator .
- ✓ The knitting program is loaded, quantity of run-throughs entered and the production started.

1. Select  "View Data" in the main navigation bar.
  2. Press the  "Run time data" button in the bottom navigation bar.
- ▶ The following menu is displayed.

Run-time Data

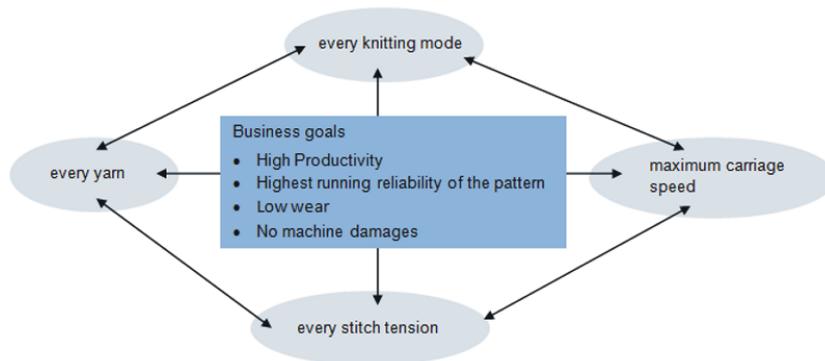


1	Position	List of knitting programs
2	Current	Running time of the currently knitting fabric
3	Last	Running time of last knitted fabric
4	Min	Shortest running time
5	Max	Longest running time
6	Ø	Average running time
7	Fabrics	Number of pieces knitted so far
8	Total	Total number of pieces to be knitted

### 31.4 Economic production and the influencing factors

The requirements for a knitting machine can be divided into two main groups: the machine related goals and the business goals.

The knitting machine is to work with maximum speed with every knitting mode, every stitch tension, regardless of the yarn. Simultaneously a high productivity is expected from the knitting machine and the pattern shall be knitted faultless.



The simultaneous achievement of all goals is seldom possible, as there is a conflict between some goals. A conflict because they cannot be accomplished all simultaneously. Between the individual goals there are rather interactions, which can have negative effects on the accomplishment of other goals. In other words, there are goals that cannot be achieved together or that exclude each other.

Example:

One conflict exists between the yarn thickness, the stitch tension and the carriage speed. If the intention is to work at the upper limit, the maximum with all of the three goals, this will lead to a reduced running reliability of the pattern, an increased wear and in some cases even to machine damages.

The influencing factors

Running reliability	<ul style="list-style-type: none"> <li>◆ Structure of the pattern (knitting mode, Flexible Gauge, ...)</li> <li>◆ Carriage Speed</li> <li>◆ Stitch length (stitch tension)</li> <li>◆ Yarn quality (friction coefficient, elasticity, twisting, moisture, hairiness, bobbin setup, tensile strength)</li> <li>◆ Yarn gauge, yarn count / twisted yarn</li> <li>◆ Yarn type (fancy yarn)</li> <li>◆ Yarn tension, yarn feeding</li> <li>◆ Fabric take-down</li> </ul>
Wear and machine damages	The unsuitable combination of the influencing factors may lead to increased wear and to the damage of machine parts.
Conclusion	Therefore the influencing factors have to be adjusted.

	<p>It's not possible to achieve any carriage speed and stitch tension with every yarn and knitting pattern. Recommendation: Start with a lower carriage speed (e.g. 0.7 m/sec) and increase it step by step.</p> <p><b>i</b> Defective machine parts caused by disregarding our guidelines, are excluded from warranty.</p>
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