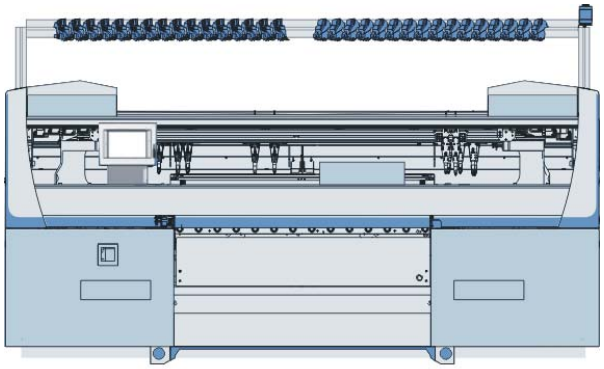
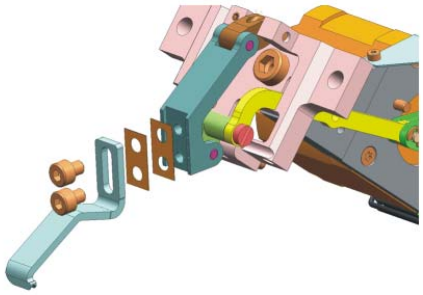
STOLL

Supplementary instructions for

CMS ADF-3 with weave-in device





CE

ID 271 275

EN

STOLL

Date: 2016-06-09
Translation of the original operating instructions
Operating system of the machine: V_OKC_005.001.003_STOLL (or higher)
H. STOLL GmbH & Co. KG, Stollweg 1, D-72760 Reutlingen, Germany

Table of Contents

1 About this document

Supplementary instructions

This supplementary instructions are to provide you with an overview over the features that are new with this machine.

You will find the descriptions, which did not change in the operating instructions and in the safety instructions on the documentation DVD.

Documentation DVD

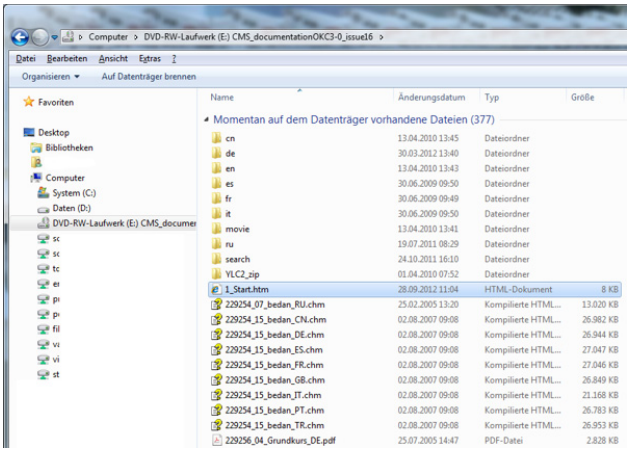
Included in the accessories you will find a DVD with documents about your machine.

- Operating instructions
- Safety instructions
- Spare Parts Catalog
- Circuit diagram
- Brochure "Cleaning, maintenance, care"
- Pocket Card
- Training documents...

The documents are available in different languages.

For browsing the documentation DVD:

1. Insert the DVD in the computer.
2. Open the "1_Start.htm" file double clicking on it.



➜ Keep the DVD where it is accessible to all personnel who are responsible for working on the knitting machine.

➜ In case of resale deliver the machine with the DVD.

2 Putting up knitting machine

You will find the installation of the machine in the safety instructions.

The "Carry out reference runs" section was changed - a presser foot reference run must be carried out additionally (Carry out reference runs [🗋8]).

Three reference runs are necessary:

- Presser foot reference run
- Carriage reference run
- Reference run of yarn carriers

Reference Runs

If you must carry out a carriage reference run e.g. after a "Restart", you always must perform these three reference runs.

Presser foot reference run - What must be observed?

- The carriage must be located in the needle bed. Otherwise, there is the danger of the presser foot being damaged by the yarn carriers or the clamping and cutting bed.
- Stop the carriage at a point in the needle bed, where no yarn carrier is located.
- Carry out reference runs [🗋8]

2.1 Carry out reference runs

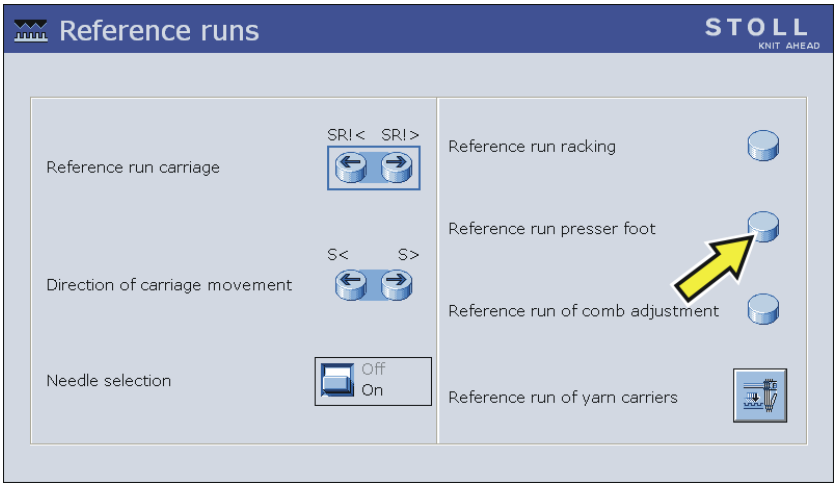
Three reference runs are necessary. Carry out these reference runs one after the other:

Presser foot reference run	With the presser foot reference run, the presser feet are referenced.
Carriage reference run	The position of the carriage towards the needles is determined during the carriage reference run.
Reference run of yarn carriers	During the yarn carrier reference run the autarkic yarn carriers are synchronized. They move outwards to their limit stop, then into clamping position above the clamping and cutting bed.

Icon / key	Meaning
	Icon "Yarn carrier not referenced"
	Icon "Yarn carrier ready to knit"
	Proceed to the next window
	Call up "Main menu"

Presser foot reference run

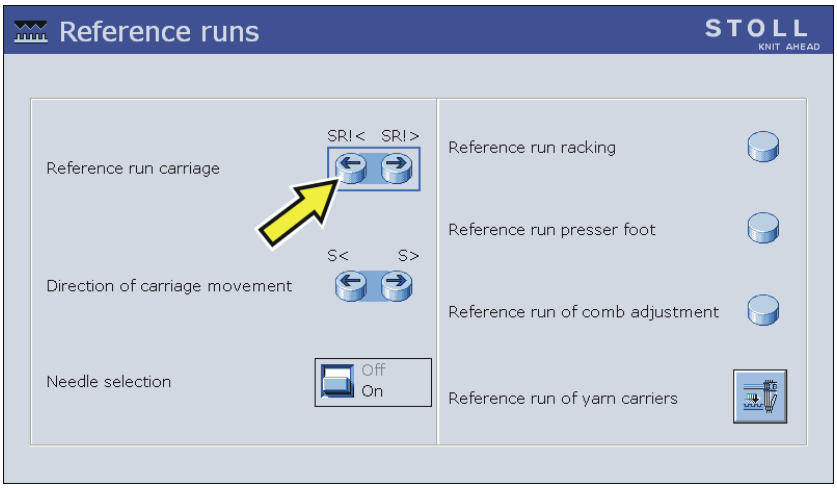
✓ The carriage must be located in the needle bed. This way, a damage of the presser feet is avoided by the clamping and cutting bed.



1. Tap the "Reference run presser foot" key.
2. The presser feet are automatically referenced one after the other.
3. The message "Reference run complete" is displayed on the touch screen.

Carriage reference run

✓ The carriage is located in the center of the needle bed.



"Reference runs" window

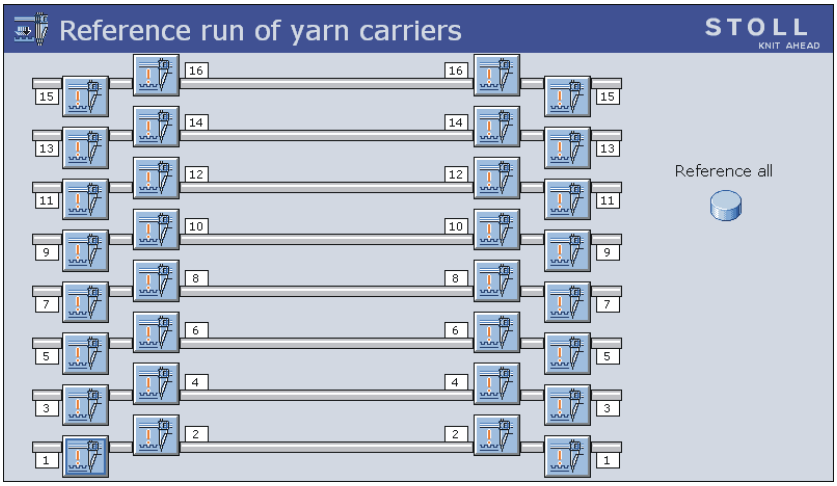
1. In the "Reference run carriage" field tap the "SR!<" key.
   Confirm the prompt that follows with "YES".

	DANGER
	Danger by moving carriage! Danger of crushing and cutting by the carriage. ➜ Close the covers.

2. Pull up the engaging rod and release it.
   ▷ The carriage moves at creep speed to the left and carries out a reference run.
3. The carriage stops automatically outside the needle bed. The engaging rod falls down.
4. The message "Reference run complete" is displayed on the touch screen.
5. Tap the "Proceed to the next window" key.

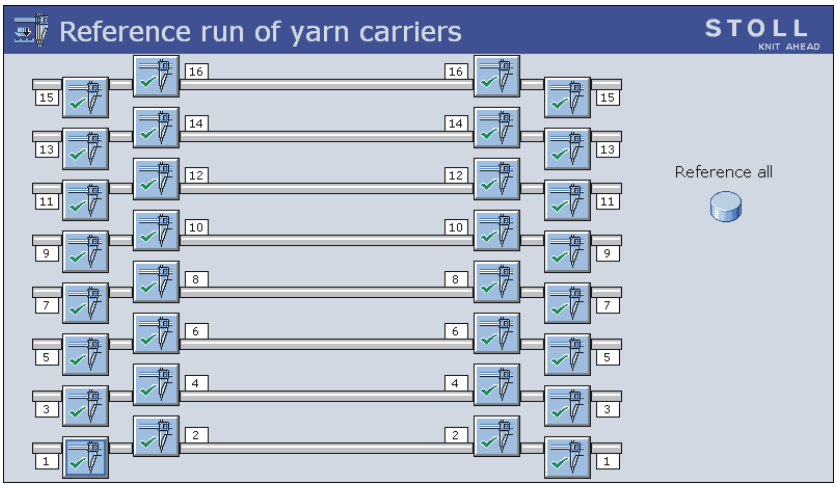
Reference run of yarn carriers

1. The "Reference run of yarn carriers" window appears.



2. Tap on the "Reference all" key.
   Confirm the prompt that follows with "YES".
3. The yarn carriers are automatically referenced consecutively rail by rail.
   ▷ The yarn carriers move outwards to their left or right limit stop, then into clamping position above the clamping and cutting bed.
4. If a yarn carrier is referenced, the icon changes from "Yarn carrier not referenced" to "Yarn carrier ready to knit".

5. After completing the yarn carrier reference run all the yarn carriers are ready to knit.

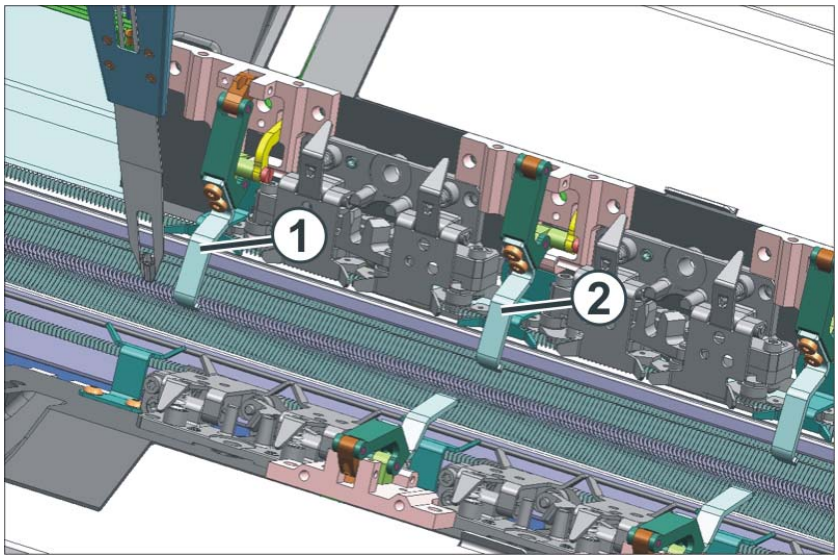


6. The reference run is complete, the machine is ready to knit.
   The carriage is positioned at the right position for you to be able to load a knitting program.
7. Tap the "Proceed to the next window" key.

▶ Call up "Main menu".

i	Leave the machine switched on for at least 6 hours in order to charge the accumulators fully.

3 Weave-in device



Weave-in device

1 Weave-in device in operation

2 Weave-in device out of operation

The weave-in device (1) supports the knitting and transfer process in difficult knitting situations:

- The weave-in device presses the fabric away from the needles
- The weave-in device avoids that the finished fabric gets pulled upwards during the upward movement of needles
- The weave-in device holds the floats deep so that they don't obstruct the knitting process
- The weave-in device holds the weft yarn deep enough so that it does not knit any stitch or tuck in the following knitting system

In working position the weave-in device is between the front and the rear needle bed, beneath the needles.

Two weave-in devices are allocated for every front and rear knitting system that work according to the carriage direction. In the rightwards carriage direction, the front weave-in device is active, in the leftwards carriage direction, the rear weave-in device is active. The weave-in device of the front and rear carriage parts can be switched on and off independent of each other. The instructions for this are in the knitting program.

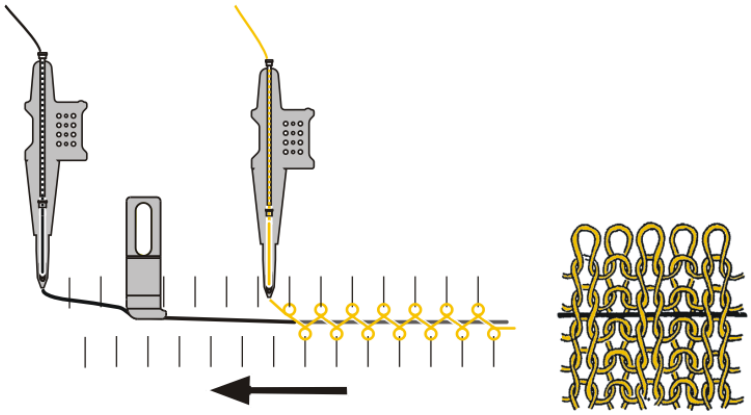
The movement of weave-in device is carried out with a step motor. The swing-in in the working position of the weave-in device is carried out shortly after the carriage reversal. The swinging out is carried out shortly after the last knitting needle has left the system.

i	If the carriage is standing in the needle bed and the carriage part is removed from the machine then you must check whether a weave-in device is active. If this is the case, then the weave-in device must be dismantled.

What is a weft yarn like?

An weft yarn is inserted toward the stitch rows but not knitted.

The insertion of the weft yarn is carried out by the weft yarn carrier. This yarn carrier runs thus so far ahead before the knitting system that the yarn is only inserted but does not knit any stitch or tuck.
The weave-in device pressed the thread downwards between the needle beds.
In the subsequent knitting system, the weft yarn will be enclosed by the stitches.



What is a weft yarn used for?

- For reducing fabric extensibility: Use weft yarn with lower elasticity.
- For improving elasticity: Use weft yarn with a higher elasticity (rubber).

4 Working with the weave-in device

Watch out the following points:

Height of the weave-in device	◆ The weave-in device is to guide the weft yarn (touch slightly), but not press too hard, so that the weft yarn does not get damaged or elongated. The adjustment height depends on: ◆ Quality of the weft yarn (friction coefficient, elasticity, twisting, moisture, hairiness, tensile strength) ◆ Yarn gauge of the weft yarn, yarn count/twisted yarn ◆ Yarn tension, yarn feeding If the weave-in device is adjusted to high, the weft yarn is partially above the stitches of the basic yarn. Remedy: Step by step, adjust the weave-in device deeper.
Yarn tension of the weft yarn	◆ In case of a very elastic weft yarn, we recommend using a feed wheel. ◆ If a yarn loop results when changing the direction of the weft yarn carrier, a higher restoring force is necessary. – Increase the restoring force at the yarn control device – Gauge range E12-E18: Assemble a yarn control unit of the coarser gauge range (E5-E8)

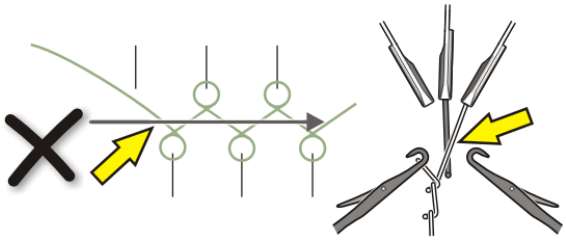
<table>
<tr><td>M1plus</td><td>Yarn carrier staggering optimized by rows (YDopt)
Recommendation:
Work with "YDopt", so that the "Weave-in device - Yarn carrier" distance is automatically taken into account.</td></tr>
<tr><td></td><td>Working without "YDopt"
◆ YDF=2
◆ With the yarn carrier staggering "YD" ensure that there is sufficient space for switching on and off the weave-in device.
Yarn carrier staggering if the weave-in device is active:
<table><tr><td></td><td>Knitting Row (start) minimum YD value</td><td>Knitting Row (end) minimum YD value</td></tr><tr><td>active yarn carrier</td><td>13</td><td>13</td></tr><tr><td>inactive yarn carrier</td><td>13</td><td>25</td></tr><tr><td>Weft yarn carrier</td><td>13</td><td>25</td></tr></table></td></tr>
<tr><td>Carriage Speed</td><td>Start with a lower carriage speed (e.g. 0.7 m/sec) and increase it step by step.</td></tr>
</table>

5 Secure insertion of the weft yarn

Each yarn carrier can be used as an weft yarn carrier.

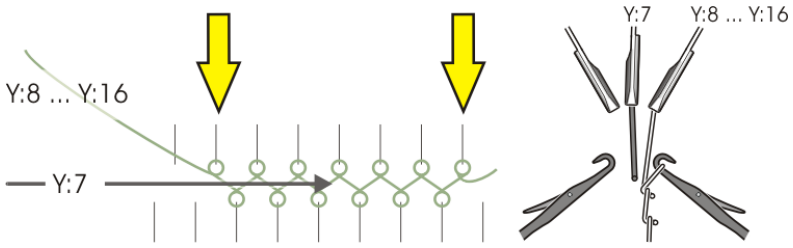
The weft yarn is enclosed in the fabric by the subsequent basic yarn.

To ensure a secure insertion of the weft yarn, the basic yarn may not cross the weft yarn. If the course of the weft yarn is obstructed by the basic yarn, there is the danger of the weft yarn not being inserted in the weave-in device.



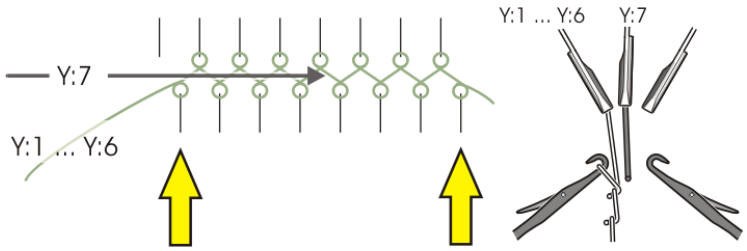
To ensure a secure insertion of the weft yarn, please pay attention to the following points:

- The yarn carrier with a higher number than the weft yarn carrier knits the last stitch on the rear needle bed.



Y:7	Weft yarn carrier
Y:8 … Y16	The subsequent knitting yarn carrier is on the track 8 up to track 16

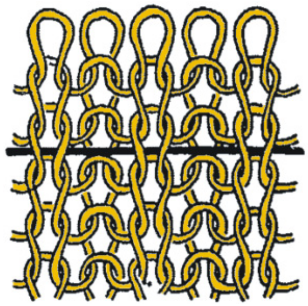
- The yarn carrier with a lower number than the weft yarn carrier knits the last stitch on the front needle bed.



Y:7	Weft yarn carrier
Y:1 … Y6	The subsequent knitting yarn carrier is on the track 1 up to track 6

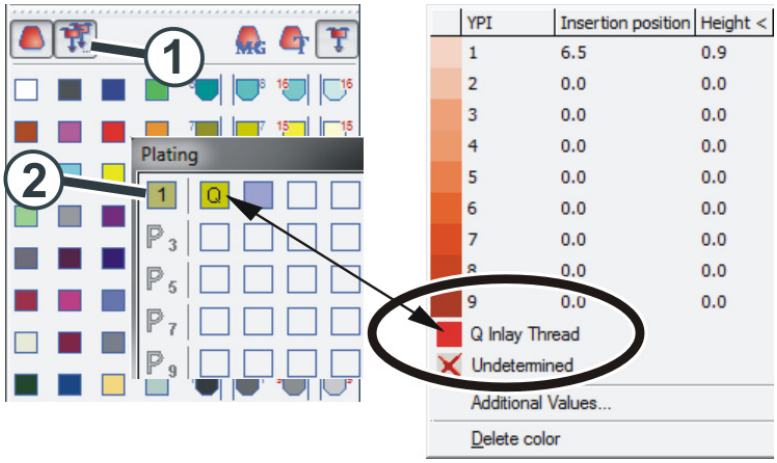
6 Pattern design technique on the M1plus

6.1 Enclose the weft yarn by stitch



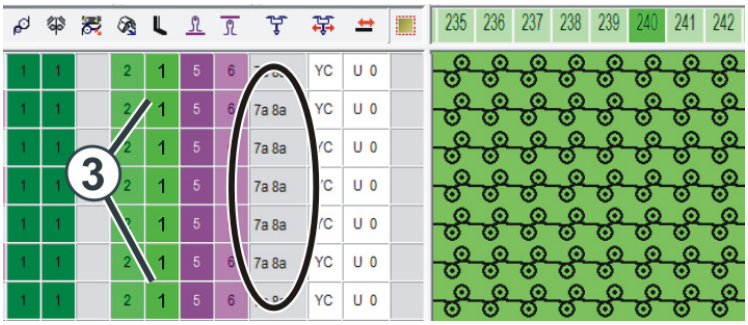
Enclose the weft yarn by stitch

1. Draw basic pattern.
2. Define a plating color.
   Open the "Plating" (1) dialog box.



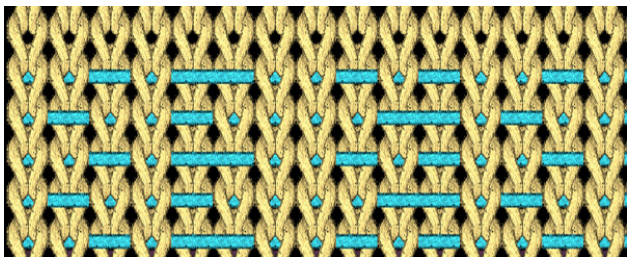
3. For the plating color "P1" the following specifications (2) are necessary:
   Column 1: Inlay yarn carrier "Q"
   Column 2: Yarn carrier for the basic color
4. Draw plating color in pattern.

5. In the "Presser foot" (3) control column, activate the presser foot.



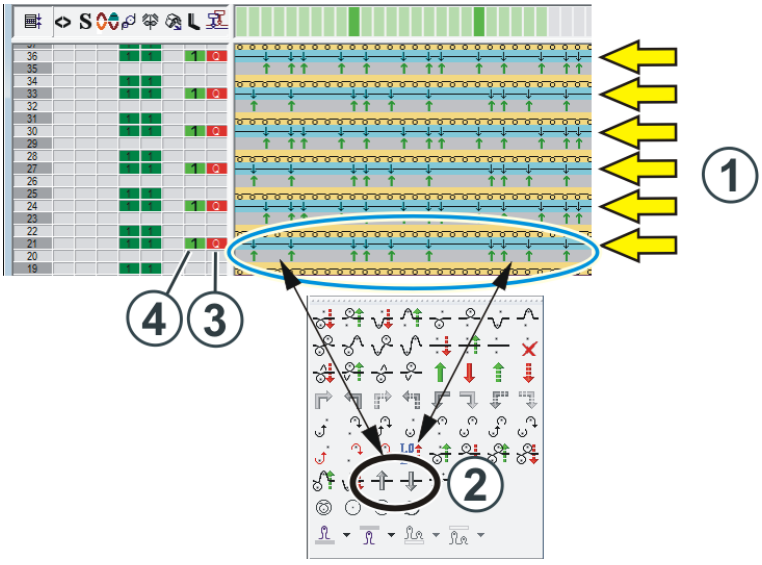
6. Carry out technical processing.
   Both yarn carriers are automatically entered in the "Yarn carrier" control column.

6.2 Enclose the weft yarn by transfer



Enclose the weft yarn by transfer

1. Draw basic pattern.
2. Draw-in the weft yarn (1) into the pattern ("Float").



3. Draw-in the transfer.
   Use both needle actions (2) for it.
4. In the "Plating-offset of yarn carrier (YPI)" control column (3) use the inlay yarn carrier "Q".
5. In the "Presser foot" (4) control column, activate the presser foot.

Create a "CA" with these settings and use it again and again in the pattern.

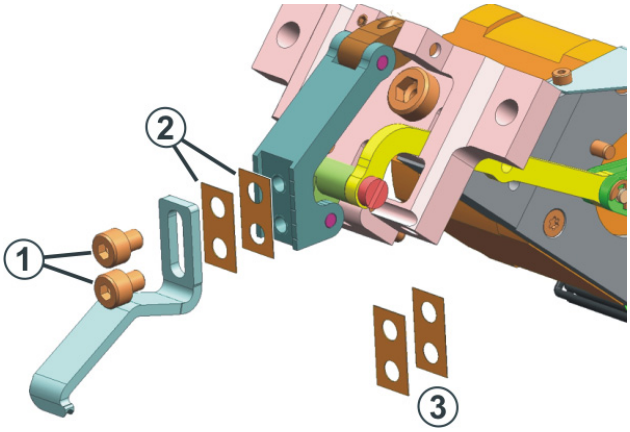
7 Assembling and adjusting the weave-in device

Assemble weave-in device

For doing this, proceed as follows:

✓ The carriage must be located in the needle bed. This way, a damage of the weave-in devices is avoided by the clamping and cutting bed.

1. Start machine with the engaging rod and stop again when the carriage is located in the needle bed.
2. Assemble the corresponding weave-in device.



Adjust the weave-in device

3. Place the weave-in device on the support. Tighten the screws (1) only slightly as the weave-in device must still be adjusted exactly.

Adjust weave-in device

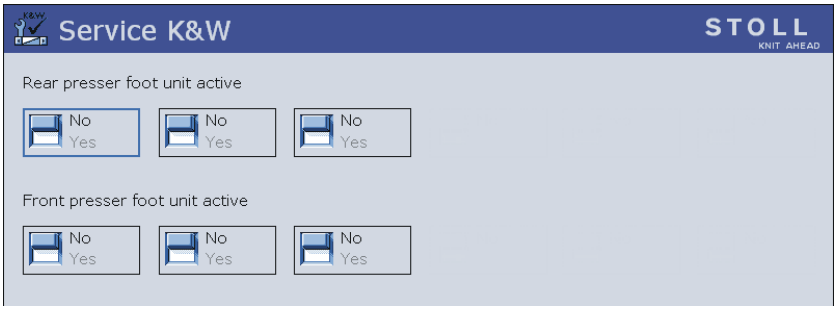
Key	Function
	Call up "Main menu"
	Call up the "Service" menu
	Call up the "Service K&W" menu

Keys for adjusting the weave-in devices

For doing this, proceed as follows:

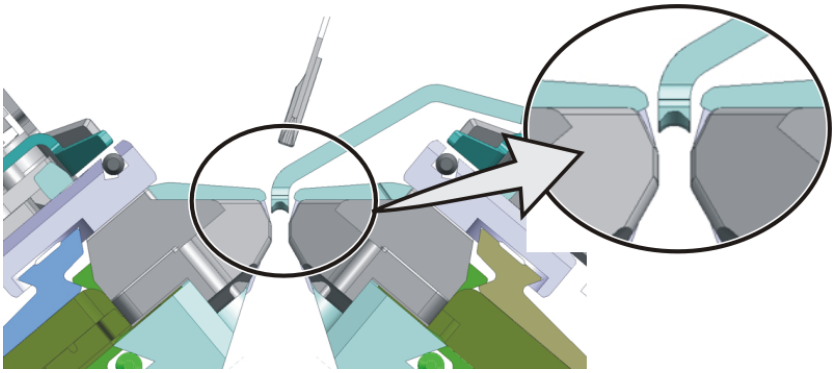
1. Call up the "Service" menu from the "Main menu".
2. Call up the "Service K&W" menu.

3. Switch on the corresponding presser foot.



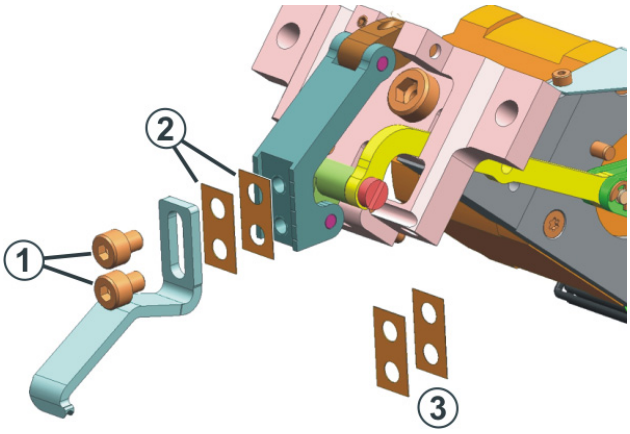
"Service K&W" menu

4. The weave-in device must be positioned exactly between both needle beds.
   The weave-in device must not touch the holding-down jacks.



Check position of the weave-in device

5. Vertical setting:
   Loosen the screws (1) and adjust the height (range: 0 - 1.6 mm)



Adjust weave-in device

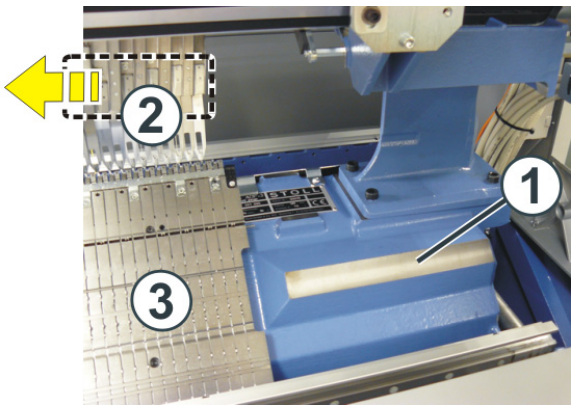
6. Horizontal setting:
   Two spacing plates (2) (thickness 0.2 mm and 0.1 mm) are mounted.
   You can remove spacing plates or insert additional spacing plates (3). The spacing plates (3) (thickness 0.2 mm and 0.1 mm) are included in the machine accessories.
7. Tighten the screws (1).

8 Assembling the carriage

Extract from the operating instructions

Section "Assembling carriage part and carriage support"

If the front carriage part is returned to the machine, it needs to be pushed from outside on to the support surface (1). The reason for this: The movable parts in the clamping and cutting bed will be pushed by the carriage part (more exactly: by the cam box curves) into their correct position.



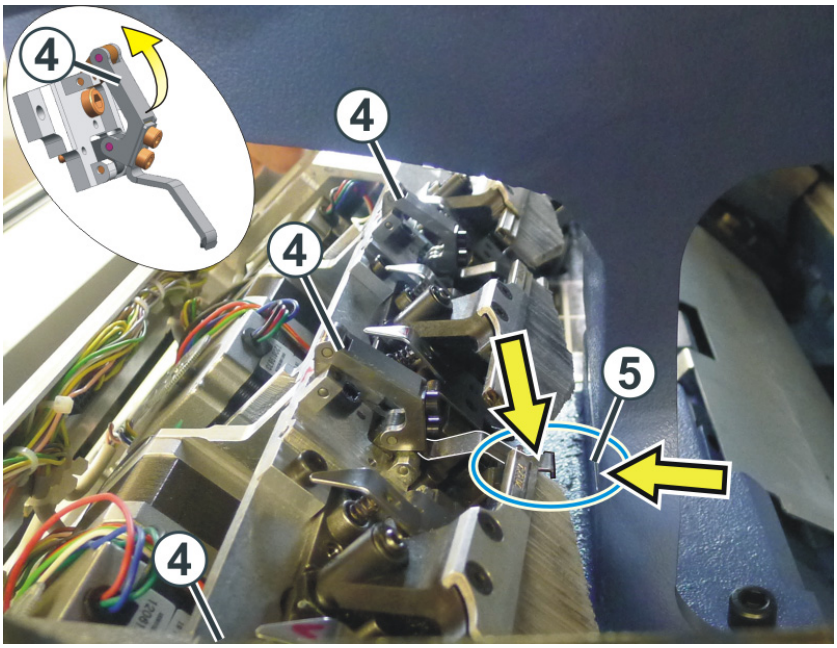
Please observe the following procedure:

	Procedure
Front needle bed	◆ Open the lateral safety door (on the right side). ◆ Push the carriage part from outside on to the support surface (1). ◆ Push the carriage part inward enough to position it above the clamping and cutting bed.
Rear needle bed	◆ Push both sliding boards in the same direction. ◆ Position the carriage part on the support surface (1).

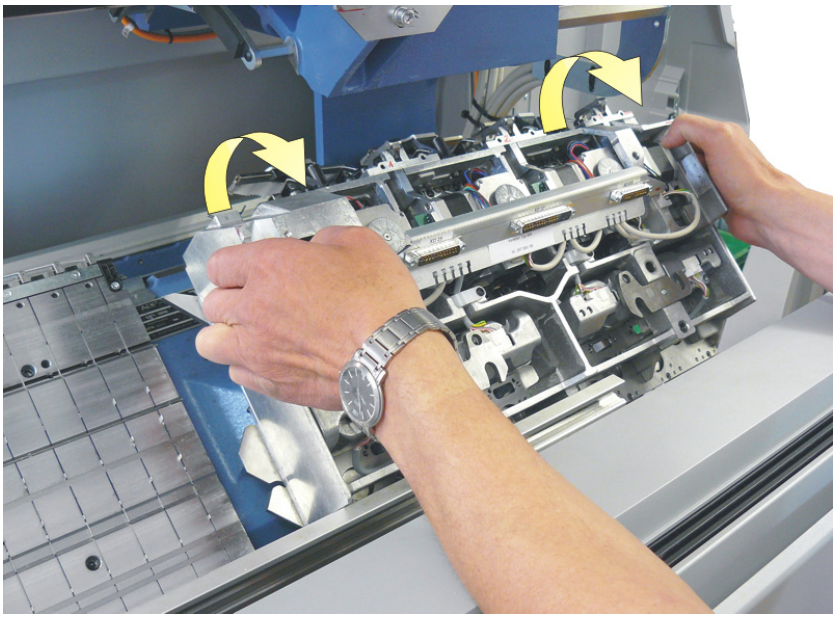
What is to be considered with the presser feet?

- Move the yarn carriers (2) from the clamping and cutting area into the needle bed.
- If you cannot open the lateral safety door completely because of space reasons, we recommend you to dismantle the clamping and cutting bed (3) to prevent the presser feet from getting damaged.

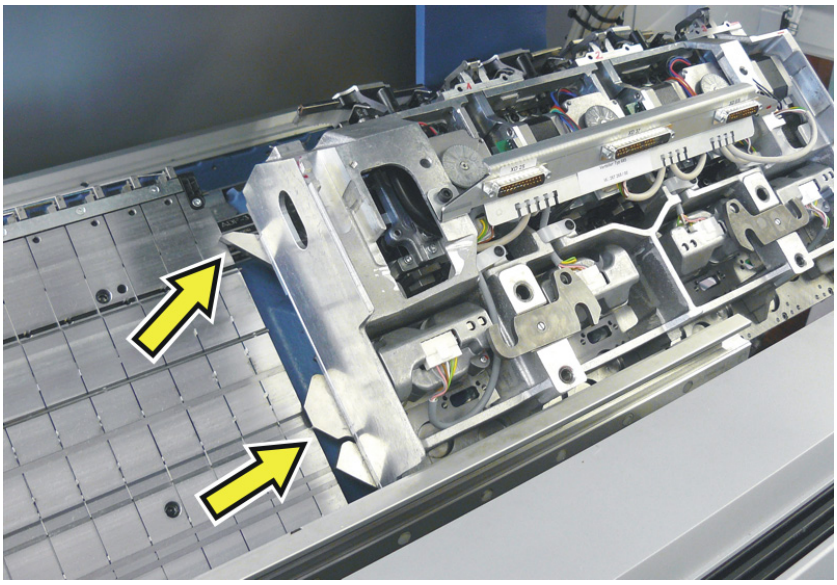
1. On the removed carriage part, manually move all the three presser feet (4) into their upper position (out of operation).



2. Push the carriage part from outside on to the support surface (1). To prevent the presser feet from colliding with the support (5) lift the carriage part somewhat and push it inward.



3. If the outer cams are positioned above the clamping and cutting bed, position the carriage part on the support surface.



4. Push the carriage part inward and assemble with the carriage assembly.