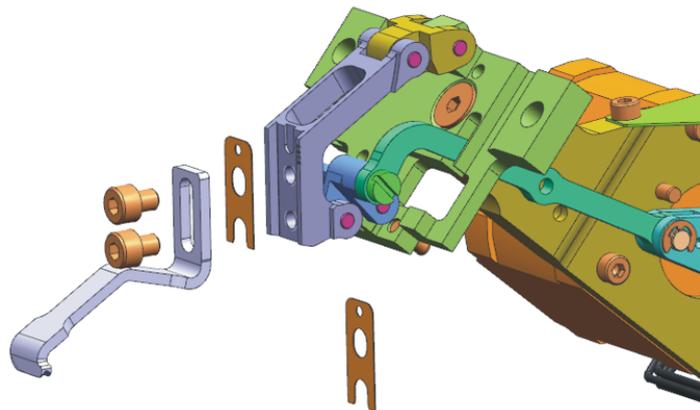


## Supplementary instructions "Presser foot"



Date: 2022-11-16

Original operating instructions

Operating system of the machine: V\_EKC\_001.000.000\_STOLL (or higher)

KARL MAYER STOLL Textilmaschinenfabrik GmbH, Adolf-Kolping-Str. 5, 72770 Reutlingen,  
Germany

Our products are being developed further continuously. They are therefore subject to technical modifications.

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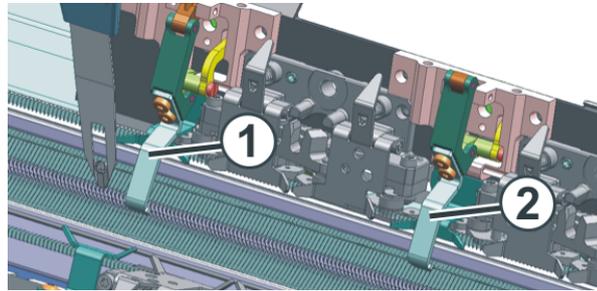


# 1 Instructions for presser foot

## 1.1 Weave-in Device

The weft yarn presser foot (1) supports the inlay of the weft yarn:

- The weave-in device holds the weft yarn deep so that it does not obstruct the knitting process.
- The weave-in device holds the weft yarn deep enough so that it is enclosed safely in the following system.
- In working position the weave-in device is between the front and the rear needle bed, beneath the needles.



Weave-in device with an ADF machine

1	Weave-in device in operation
2	Weave-in device out of operation

The movement of weave-in device is carried out with a step motor.

Weave-in Device

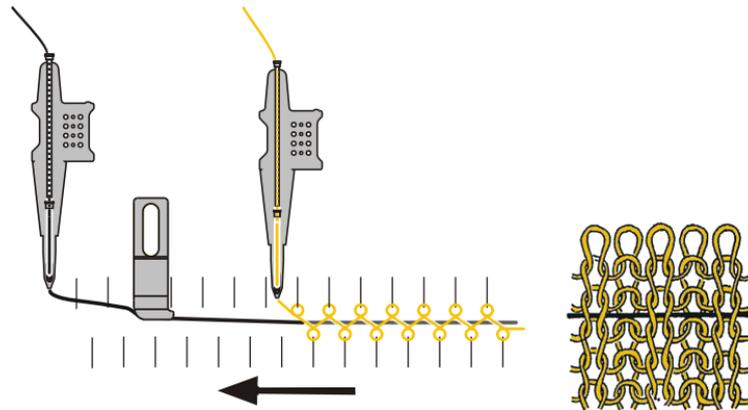
What is a weft yarn like?

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 presses the thread downwards between the needle beds.

The weft yarn is enclosed in the following system, it is tied in the fabric with stitches or with transfers.



Schematic representation of the weft yarn technique (ADF machine)

You can use the weft yarn technique with the following machines:

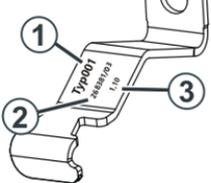
ADF W	Normal yarn carrier
CMS W	Normal yarn carrier
	Weft yarn carrier Qw

What is a weft yarn used for?

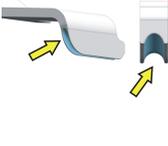
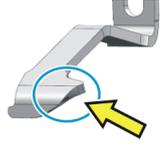
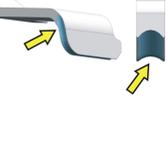
- For reducing fabric extensibility:  
Use weft yarn with lower elasticity.
- For improving elasticity:  
Use weft yarn with a higher elasticity (rubber).
- To achieve pattern effects:  
For example fillings in tubular rows

### 1.1.1 Presser Foot

On the presser foot you will find the following specifications:

<ul style="list-style-type: none"> <li>◆ Designation of the type of presser foot (1)</li> <li>◆ ID (2)</li> <li>◆ Thickness of the presser foot [mm] (3)</li> </ul>	
---	---

Different types of presser feet can be used.

Gauge	Type 2, deep groove (Standard)	Type 3A, left deflecting curve	Type 3B, right deflect- ing curve	Type 1, flat groove (Initial ver- sion)
				
E20	283 431 [0,9]	283 432 [0,9]	283 433 [0,9]	—
E18 E18m.16 E16	273 761 [1,1]	276 081 [1,1]	276 082 [1,1]	268 381 [1,1]
E8.2	275 160 [1,4]	278 509 [1,4]	278 510 [1,4]	269 124 [1,4]
E10.2 KW E9.2 KW	275 160 [1,4]	278 509 [1,4]	278 510 [1,4]	—
E14 E14/12	273 760 [1,6]	278 562 [1,6]	278 563 [1,6]	267 946 [1,6]
E12 E12m.10	275 161 [1,8]	278 564 [1,8]	278 565 [1,8]	268 382 [1,8]
6.2 MG 7.2 MG E10 E14 (TT) E14/12 (TT) E12m.10 (TT)	274 790 [2,1]	276 212 [2,1]	276 213 [2,1]	268 384 [2,0]
E7.2 KW (TT) E7.2 KW	274 789 [2,8]	278 511 [2,8]	278 512 [2,8]	268 628 [2,2]

Gauge	Type 2, deep groove (Standard)	Type 3A, left deflecting curve	Type 3B, right deflect- ing curve	Type 1, flat groove (Initial ver- sion)
E6.2 KW	277 815 [3,1]	278 547 [3,1]	278 548 [3,1]	—

■ Deflecting Presser Foot for Upright Threads [ 9 ]

### 1.1.2 Deflecting Presser Foot for Upright Threads

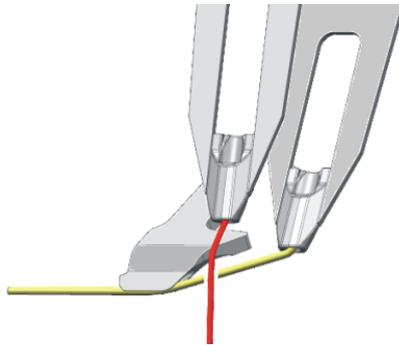
If a weft yarn is inserted with the presser foot, it may lead to the following problems:

- The upright thread is taken along by the presser foot.  
(Upright thread = yarn carrier parked in the fabric, e.g. intarsia yarn carrier)
- The upright thread drives the weft yarn out of the presser foot groove.

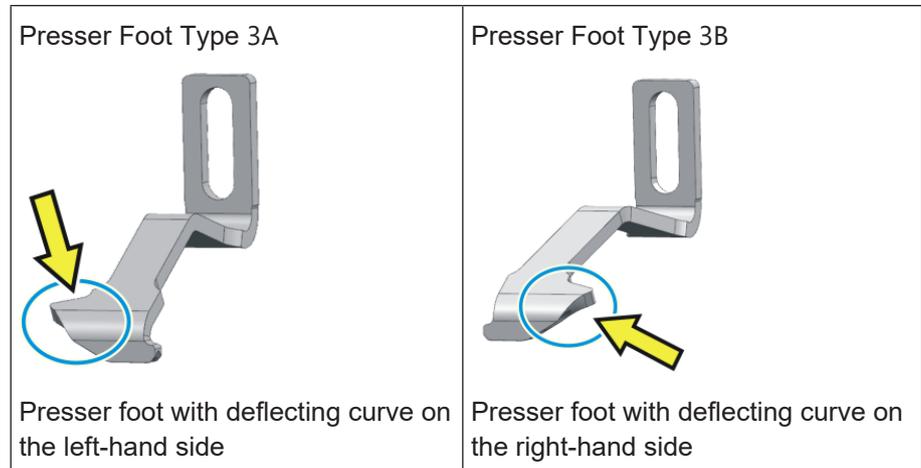
Remedy:

Use the presser feet with deflecting curve.

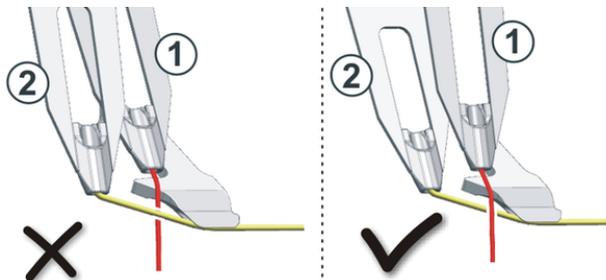
The deflecting curve guides the upright threads to pass the presser foot.



Deflecting Presser Foot



Take care of the yarn carrier tracks for upright thread and weft yarn. The upright thread may not be located between the presser foot and the weft yarn.



1	Upright thread	2	Weft Yarn
<b>X</b>	Wrong allocation to the tracks <ul style="list-style-type: none"> <li>The upright thread (1) is positioned on a higher track than the weft yarn (2).</li> <li>The upright thread (1) drives the weft yarn out of the presser foot groove.</li> </ul>		
<b>✓</b>	Correct allocation to the tracks <ul style="list-style-type: none"> <li>The upright thread (1) is positioned on a lower track than the weft yarn (2).</li> </ul>		

Depending on the yarn carrier tracks, where the upright thread and the weft yarn are, use either the front or the rear presser feet.

Upright thread	Weft Yarn	Example for a mounting position of the presser feet						
lower track (e.g. track 3)	higher track (e.g. track 6)	Installation in the rear carriage * <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 5px;">2    3B    3A</td> <td style="border: 1px solid black; padding: 5px;">3B    3A</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">-    -    -</td> <td style="border: 1px solid black; padding: 5px;">-    -</td> </tr> <tr> <td style="text-align: center;">ADF-W</td> <td style="text-align: center;">CMS-W</td> </tr> </table>	2    3B    3A	3B    3A	-    -    -	-    -	ADF-W	CMS-W
2    3B    3A	3B    3A							
-    -    -	-    -							
ADF-W	CMS-W							
higher track (e.g. track 6)	lower track (e.g. track 3)	Installation in the front carriage * <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 5px;">-    -    -</td> <td style="border: 1px solid black; padding: 5px;">-    -</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">3B    3A    2</td> <td style="border: 1px solid black; padding: 5px;">3B    3A</td> </tr> <tr> <td style="text-align: center;">ADF-W</td> <td style="text-align: center;">CMS-W</td> </tr> </table>	-    -    -	-    -	3B    3A    2	3B    3A	ADF-W	CMS-W
-    -    -	-    -							
3B    3A    2	3B    3A							
ADF-W	CMS-W							
To be able to use the presser feet in a flexible way, mount the presser feet on both carriages.		Installation on both carriages * <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 5px;">2    3B    3A</td> <td style="border: 1px solid black; padding: 5px;">3B    3A</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">3B    3A    2</td> <td style="border: 1px solid black; padding: 5px;">3B    3A</td> </tr> <tr> <td style="text-align: center;">ADF-W</td> <td style="text-align: center;">CMS-W</td> </tr> </table>	2    3B    3A	3B    3A	3B    3A    2	3B    3A	ADF-W	CMS-W
2    3B    3A	3B    3A							
3B    3A    2	3B    3A							
ADF-W	CMS-W							

\* The mounting position of the presser feet depends on the pattern.

**i** Depending on the pattern, the changed mounting position may allow for a shorter knitting time.

**Working on the M1plus:**

1. Configure the mounting position of the presser feet  
Pattern Parameter -> Machine Attributes -> "Presser feet" tab
2. Create pattern

 Refer to the M1plus online help for more information.

**How to test different mounting positions to determine the shortest knitting time.**

1. In the "Presser feet" tab, configure the mounting position of the presser feet
2. Create pattern
3. Determine the knitting time (knitting time 1) in the Sintral Check
4. In the "Presser feet" tab, change the mounting position of the presser feet
5. Editing the knitting program (technical processing)
6. Determine the knitting time (knitting time 2) in the Sintral Check
7. If necessary, repeat the steps 4 to 6 until you have determined the shortest knitting time (knitting time 3, 4...)

**Working on the knitting machine:**

1. Mount the presser feet at the determined position.
2. Adjust the presser feet vertically and horizontally.
3. Configure the presser feet (same configuration as on the M1plus)



Configure Machine ->



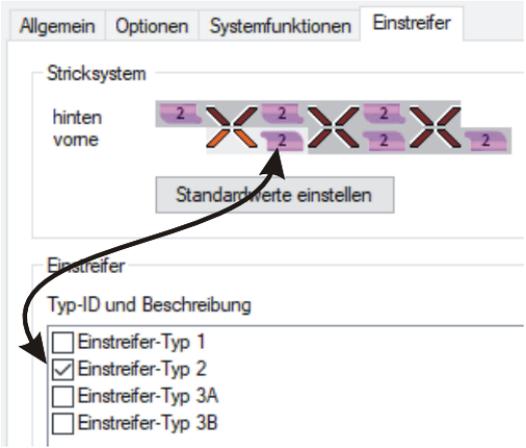
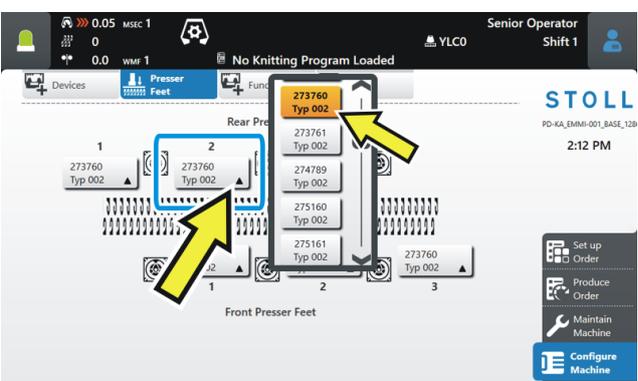
Optional Features ->



Presser Feet

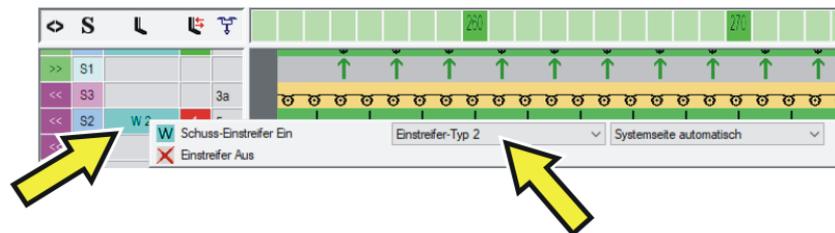
### 1.1.3 Configure and enter the presser feet type

Configure the presser feet type

<p>On the M1plus:</p>	<p>Pattern Parameter -&gt; Machine Attributes -&gt; "Presser feet" tab</p>  <p>Example: ADF machine</p>
<p>On the knitting machine</p>	<p>Configure Machine -&gt; Optional Features -&gt; Presser Feet</p>  <p>Important: same configuration as on the M1plus</p>

Enter the presser foot type in the control column

Enter this presser foot type in to the control column  of the pattern.



 You can only select the presser foot type, that is configured in the "Presser foot" tab (see above).

## 1.2 Working with the weave-in device

Watch out the following points:

<p>Height of the weave-in device</p>	<ul style="list-style-type: none"> <li>◆ 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.</li> </ul> <p>The adjustment height depends on:</p> <ul style="list-style-type: none"> <li>◆ Quality of the weft yarn (friction coefficient, elasticity, twisting, moisture, hairiness, tensile strength)</li> <li>◆ Yarn gauge of the weft yarn, yarn count / twisted yarn</li> <li>◆ Yarn tension, yarn feeding</li> </ul> <p>If the weave-in device is adjusted too high, the weft yarn is partially above the stitches of the basic yarn.</p> <p>Remedy: Step by step, adjust the weave-in device deeper.</p>
<p>Yarn tension of the weft yarn</p>	<ul style="list-style-type: none"> <li>◆ In case of a very elastic weft yarn, we recommend using a feed wheel.</li> <li>◆ If a yarn loop results when changing the direction of the weft yarn carrier, a higher restoring force is necessary.             <ul style="list-style-type: none"> <li>– Increase the restoring force at the yarn control device</li> <li>– Gauge range E10-E18: Assemble a yarn control unit of the coarser gauge range (E5-E8): ADF: ID 270 467 CMS: ID 237 124</li> </ul> </li> </ul>
<p>Carriage Speed</p>	<p>Start with a lower carriage speed (e.g. 0.7 m/sec) and increase it step by step.</p>

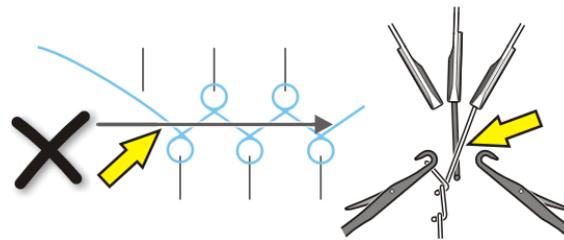
M1plus	Yarn carrier staggering optimized by rows (YDopt) Recommendation: Work with "YDopt", so that the "Weave-in device - Yarn carrier" distance is automatically taken into account.	
	Working without "YDopt"	
	<ul style="list-style-type: none"> <li>◆ YDF=2</li> <li>◆ Assign the yarn carriers so that the weft yarn carriers are placed on the inner tracks. Thus, shorter run time can be achieved.</li> </ul> Inner Tracks: CMS-W = track 4 + 5 ADF 16-W = track 4 + 5 ADF 24-W = track 6 + 7 ADF 32-W = track 7, 8, 9 + 10	
	<ul style="list-style-type: none"> <li>◆ With the yarn carrier staggering "YD" ensure that there is sufficient space for switching on and off the weave-in device.</li> <li>◆ Yarn carrier staggering if the weave-in device is active:</li> </ul>	
		YD Value *
	Weft yarn carrier (inner track) Enclosing by stitch	34
	Weft yarn carrier (inner track) Enclosing by transfer	24
	Weft yarn carrier (outer track) Enclosing by stitch	43
Weft yarn carrier (outer track) Enclosing by transfer	33	
* If the weave-in device is used in a selective pattern area, use this value for the yarn carrier overrun path.		



Additional information is contained in the chapter Avoid and Correct Errors [ 30]

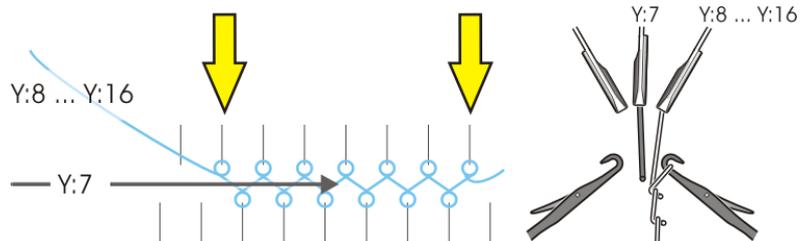
### 1.3 Secure insertion of the weft yarn

- Each yarn carrier can be used as a weft yarn carrier.
- The weft yarn is enclosed by the stitches of 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.



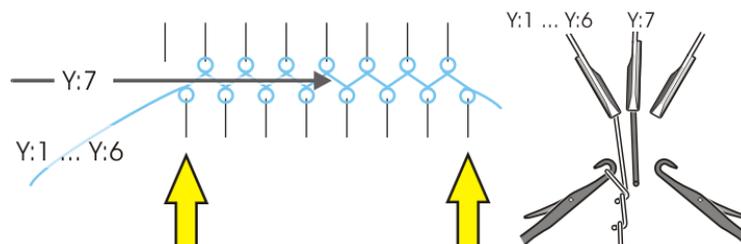
ADF-W To ensure a secure insertion of the weft yarn, please pay attention to the following points:

- 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 ... Y:16	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.

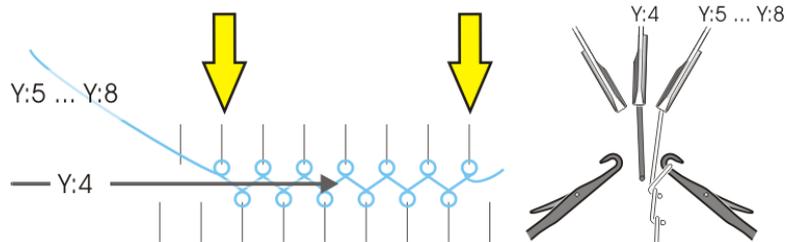


Y:7	Weft yarn carrier
Y:1 ... Y:6	The subsequent knitting yarn carrier is on the track 1 up to track 6

Secure insertion of the weft yarn

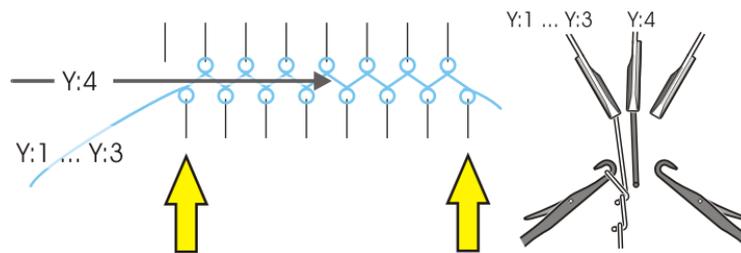
CMS-W To ensure a secure insertion of the weft yarn, please pay attention to the following points:

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



Y:4	Weft yarn carrier
Y:5 ... Y:8	The subsequent knitting yarn carrier is on the track 5 up to track 8

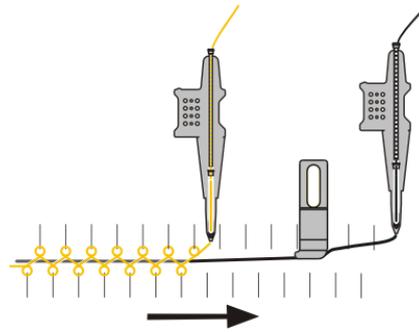
- The yarn carrier with a lower number than the weft yarn carrier must knit the last stitch on the front needle bed.



Y:4	Weft yarn carrier
Y:1 ... Y:3	The subsequent knitting yarn carrier is on the track 1 up to track 3

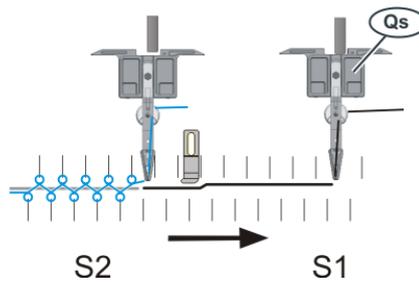
## 1.4 Pattern design technique on the M1plus

Create pattern for ADF-W



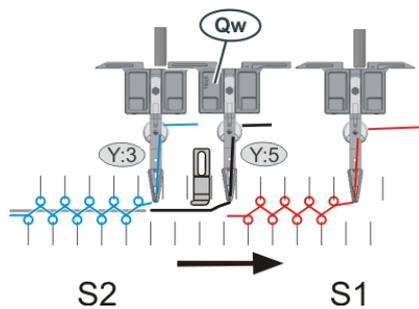
- ◆ Enclose the Weft Yarn by Stitch (ADF) [□ 18]
- ◆ Enclose the Weft Yarn by Transfer (ADF) [□ 19]
- ◆ Knitting-in presser foot (ADF) [□ 20]

Create pattern for CMS-W, yarn carrier type Qs



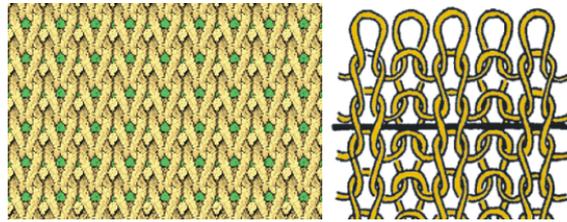
- ◆ Enclose the Weft Yarn by Stitch (CMS-W, Qs) [□ 22]
- ◆ Enclose the Weft Yarn by Transfer (CMS-W, Qs) [□ 24]

Create pattern for CMS-W, yarn carrier type Qw



- ◆ Enclose the Weft Yarn by Stitch (CMS-W, Qw) [□ 26]
- ◆ Enclose the Weft Yarn by Transfer (CMS-W, Qw) [□ 28]

### 1.4.1 Enclose the Weft Yarn by Stitch (ADF)



Enclose the weft yarn by stitch

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

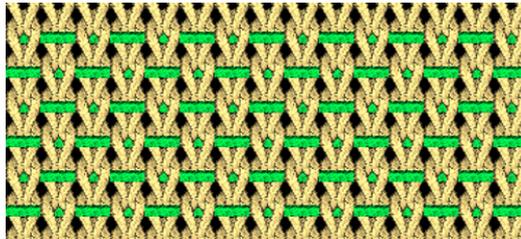
YPI	Einlegeposition <	Höhe <<
1	6.5	0.9
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
Q Schussfaden		
Unbestimmt		
Weitere Werte...		
Farbe löschen		

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 needle action (3) together with the plating color into the pattern.
5. In the "Weave-in device" (4) control column, activate the weave-in device.

	S3	W 2	2	a 3
<<	S1	W 2	1	5a 3a
>>	S7	W 2	2	5a 3a
<	S1	W 2	1	5a 3a
>>	S1	W 2	2	5a 3a
<<	S1	W 2	1	5a 3a
>>	S3	W 2	2	5a 3a

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

### 1.4.2 Enclose the Weft Yarn by Transfer (ADF)



Enclose the weft yarn by transfer

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

YPI	Einlageposition <	Höhe <<
1	6.5	0.9
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	0.0
6	0.0	0.0
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
Q	Schussfaden	
X	Unbestimmt	

- For plating color "P1", the following specification (2) is necessary:  
Column 1: Inlay yarn carrier "Q"
- Draw-in the weft yarn (3) into the pattern ("Float").

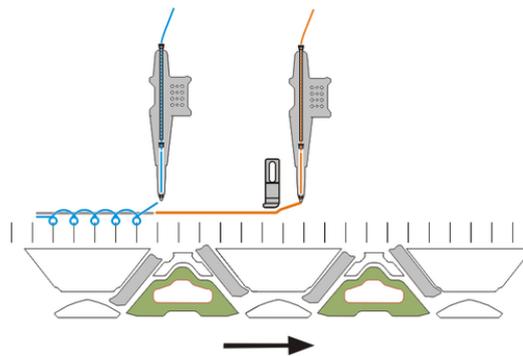
>>	S2		
>>	S1	W 2	2
<<	S3		
<<	S1	W 2	1
>>	S1	W 2	2
<<	S3		
<<	S2		
<<	S1	W 2	
>>	S2		

5. Draw-in the transfer.  
Use both needle actions (4) for it.
6. In the "Weave-in device" (5) control column, activate the weave-in device.

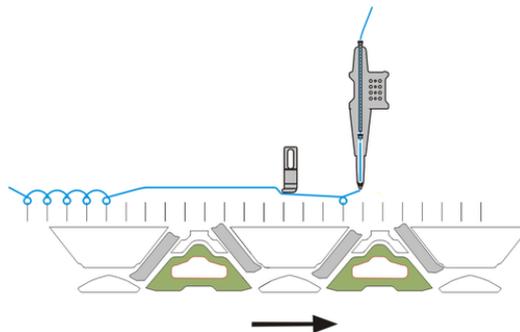
### 1.4.3 Knitting-in presser foot (ADF)

The presser foot can be used in the ADF machines as weft yarn presser foot or as knitting-in presser foot.

- Weft yarn presser foot ■ The weft yarn presser foot is used leading, it holds the weft yarn deep.

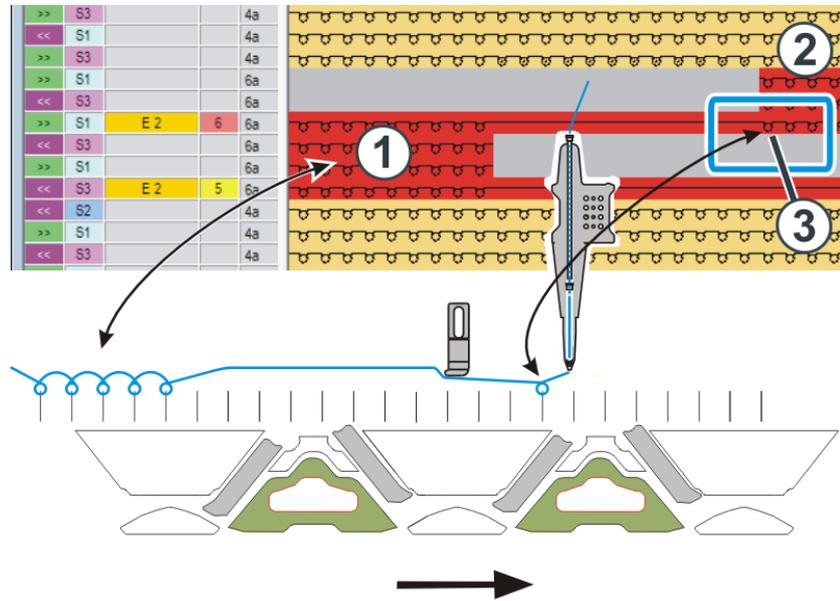


- Knitting-in presser foot ■ The knitting-in presser foot is used following.



- Until the yarn insertion in the first needles, the presser foot holds the yarn deep.
- Intended use:  
Long floats in the fabric  
Knitting-in a yarn of the clamp

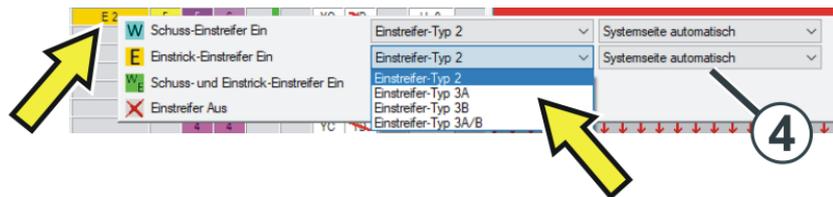
Example With a long float the knitting-in presser foot holds the yarn deep.



- The pattern areas (1) and (2) are knitted with the same yarn carrier.
- The change of the yarn carrier to the area (2) is executed with the "Float" needle action.
- The knitting-in presser foot holds the yarn deep, so that it is inserted safely in the first needle (3) of the area (2).

Enter the presser foot type in the control column

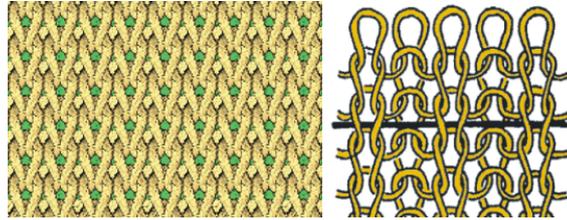
Enter how the presser foot is to be used in to the control column  of the pattern.



<b>W</b>	Weft yarn presser foot The leading presser foot is active.
<b>E</b>	Knitting-in presser foot The following presser foot is active.
<b>WE</b>	Weft yarn and knitting-in presser foot The leading and following presser foot are active.
	Recommendation: Select the setting "Automatic system side" (4). The M1plus selects the front or rear presser foot automatically.

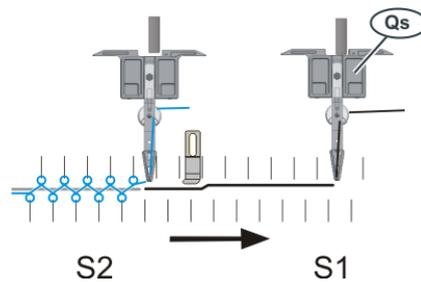
### 1.4.4 Enclose the Weft Yarn by Stitch (CMS-W, Qs)

Yarn Carrier Type Qs



Enclose the weft yarn by stitch

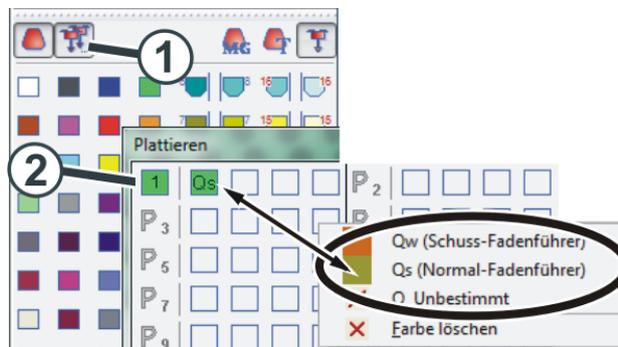
Schematic representation of the knitting situation



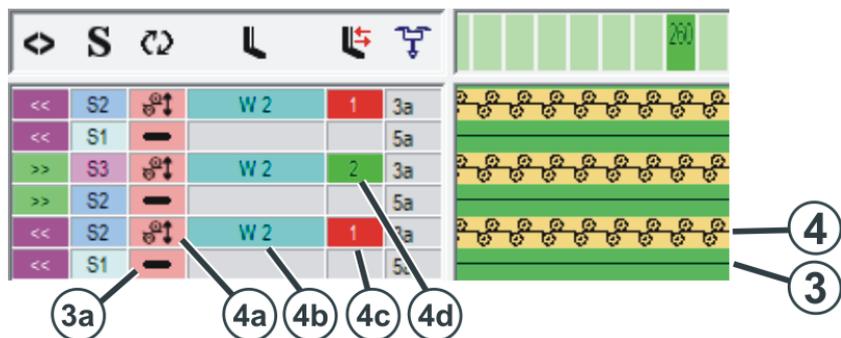
The weft yarn is inserted by the separate system (S1).

Create pattern

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



3. For plating color "P1", the following specification (2) is necessary:  
Column 1: weft yarn carrier "Qs"
4. Draw-in the weft yarn (3) into the pattern ("Float").



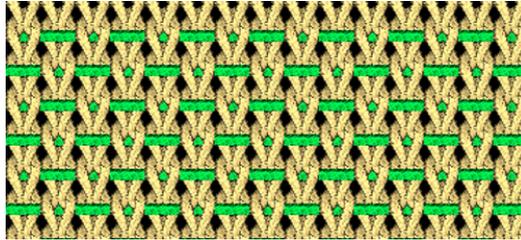
5. The weft yarn will be enclosed in the following row (4) ("Stitch").

The following settings are required in addition:

Control column	Weft Yarn	Enclosing Row
	Icon  (3a)	Icon  (4a)
Sequence of Technical Rows	Both these rows are done by one carriage stroke.	
	—	Switch-on the presser foot  (4b)
	—	Carriage direction to the left (4c) Carriage direction to the right (4d) These settings are not absolutely necessary. Notice: The yarn carrier will automatically be moved out of this area if the correction value would cause a collision.

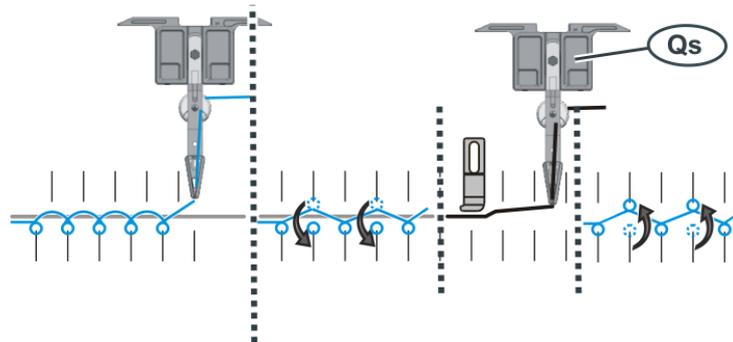
### 1.4.5 Enclose the Weft Yarn by Transfer (CMS-W, Qs)

Yarn Carrier Type Qs



Enclose the weft yarn by transfer

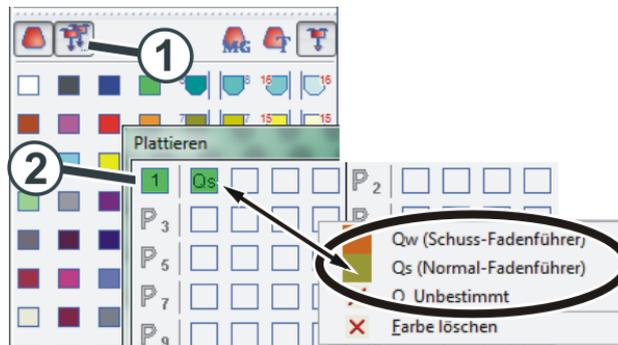
Schematic representation of the knitting situation



The knitting process will be done by four knitting systems

Create pattern

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

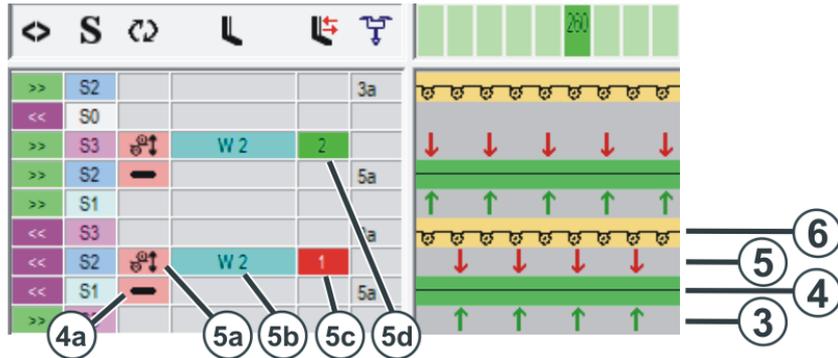


3. For plating color "P1", the following specification (2) is necessary:  
Column 1: weft yarn carrier "Qs"

4. Draw in the knitting sequence.

The knitting process of four steps will be executed by four knitting systems:

- (3) - transferring (distributing)
- (4) - inlay weft yarn
- (5) - transferring (enclose weft yarn)
- (6) - knitting

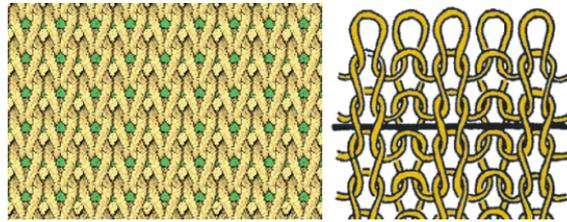


The following settings are required in addition:

Control column	Weft Yarn	Enclosing Row
	Icon  (4a)	Icon  (5a)
Sequence of Technical Rows	Both these rows are done by one carriage stroke.	
 Presser Foot	—	Switch-on presser foot  (5b)
 Presser Foot Correction	—	Carriage direction to the left(5c) Carriage direction to the right(5d) These settings are not absolutely necessary. Notice: The yarn carrier will automatically be moved out of this area if the correction value would cause a collision.

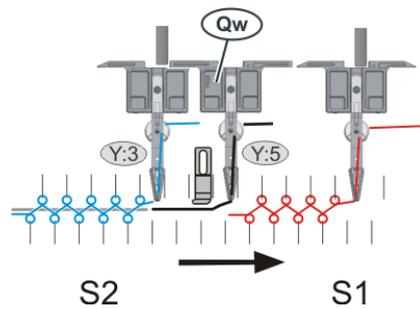
### 1.4.6 Enclose the Weft Yarn by Stitch (CMS-W, Qw)

Yarn Carrier Type Qw



Enclose the weft yarn by stitch

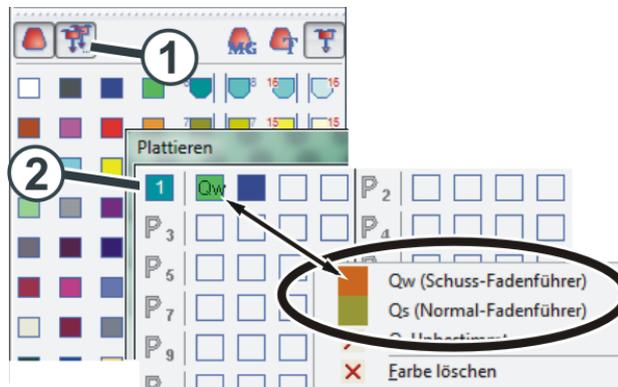
Schematic representation of the knitting situation



One system only (S2) inserts the weft yarn and encloses it by knitting.

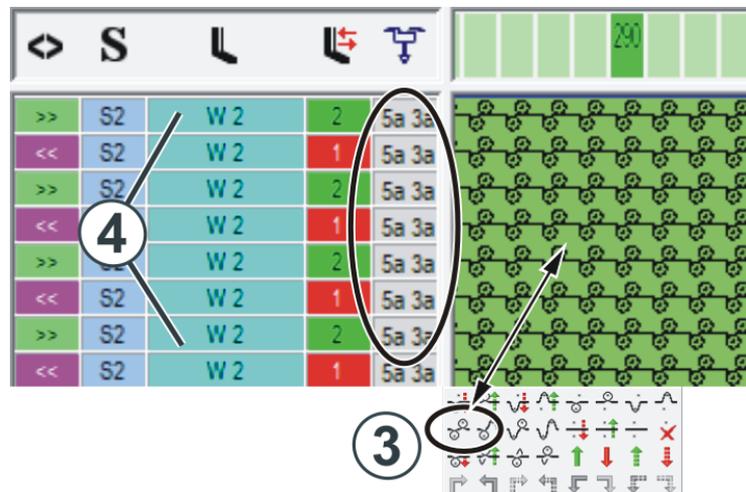
Create pattern

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: weft yarn carrier "Qw"  
Column 2: Yarn carrier for the basic color

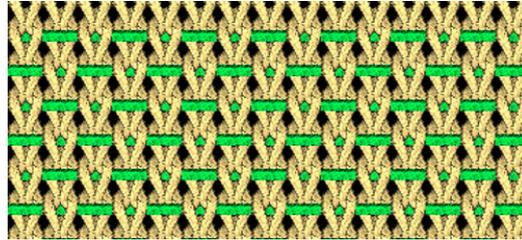
4. Draw needle action (3) together with the plating color into the pattern.
5. In the "Weave-in device" (4) control column, activate the weave-in device.



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

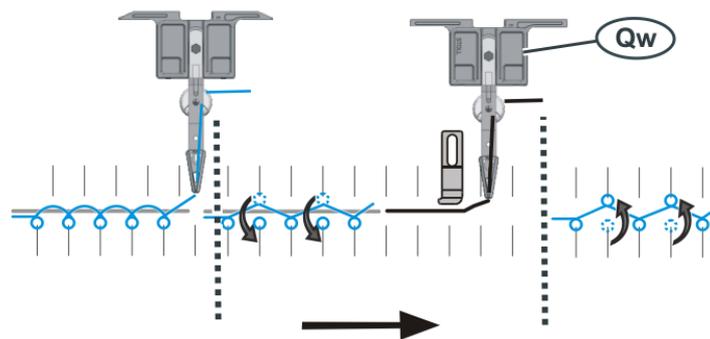
### 1.4.7 Enclose the Weft Yarn by Transfer (CMS-W, Qw)

Yarn Carrier Type Qw



Enclose the weft yarn by stitch

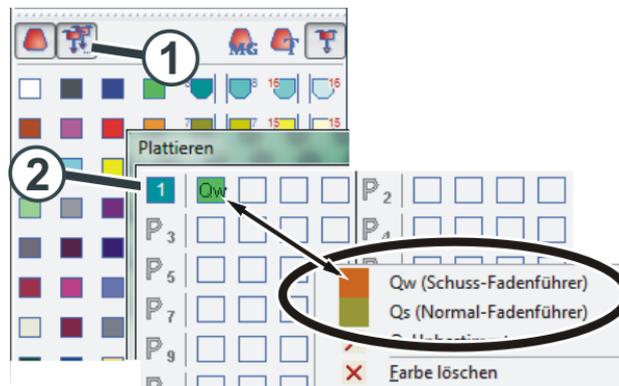
Schematic representation of the knitting situation



The knitting process will be done by three knitting systems. One system only inserts the weft yarn and encloses it by transferring.

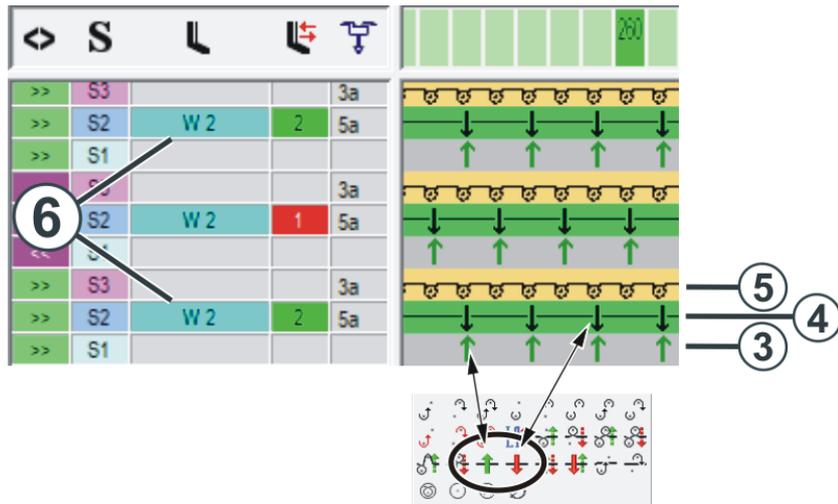
Create pattern

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



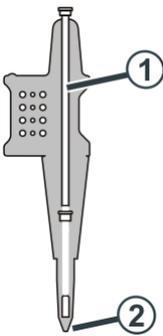
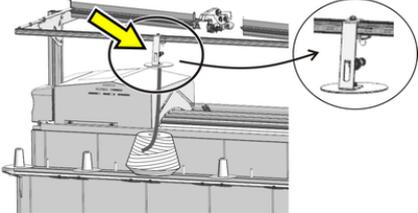
3. For plating color "P1", the following specification (2) is necessary:  
Column 1: weft yarn carrier "Qw"

4. Draw in the knitting sequence.  
 The knitting process of three steps will be executed by three knitting systems:
  - (3) - transferring (distributing)
  - (4) - inserting weft yarn and transferring (enclose weft yarn)
  - (5) - knitting
5. In the "Weave-in device" (6) control column, activate the weave-in device.

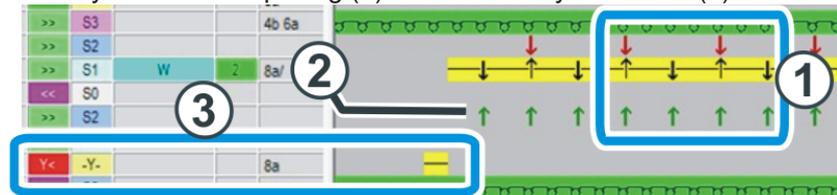


## 1.5 Avoid and Correct Errors

### Yarn Feeding

<p>ADF W</p> 	<ul style="list-style-type: none"> <li>◆ Adjust the yarn feeding to the weft yarn. The yarn carrier tip has to match the yarn.</li> <li>◆ Use yarn carrier with bypass when:             <ul style="list-style-type: none"> <li>– the yarn "sticks" in the yarn tube (1) Remedy: Use assembly kit bypass, see [☐ 51]</li> <li>– the yarn cannot be threaded in the yarn carrier tip (2). Remedy: Use "Yarn carrier carriage with bypass" kit, see [☐ 52]</li> </ul> </li> </ul> <p>Tip: Use additional yarn brake. The yarn brake prevents that the yarn tension arm (yarn control unit) pulls off yarn from the bobbin. See Yarn brake (ID 266 739) [☐ 54]</p>  <ul style="list-style-type: none"> <li>◆ Correct the position of the weft yarn carrier (YCI / YPI): (Edit the distance of the yarn carrier to the presser foot) (Setup Editor -&gt; "Yarn carrier" menu -&gt; "YC/YCI" tab or "YPI" tab)</li> <li>◆ Set the weft yarn carrier higher (vertical correction) -&gt; better guidance of the yarn in the presser foot groove</li> <li>◆ Gauge range E10-E18: Increase the restoring force at the yarn control device. For this, assemble a yarn control unit of the coarser gauge range (E5-E8) (ID 270 467).</li> </ul>
<p>CMS W</p>	<ul style="list-style-type: none"> <li>◆ Adjust the yarn feeding to the weft yarn.</li> <li>◆ If a bigger tip is needed then take a yarn carrier of a coarser gauge.</li> <li>◆ Set the lateral yarn tensioner and the yarn control unit so that no loops are created at the fabric selvedge.</li> </ul>

- Knitting Technique
- Execute the "Border processing" function so that the weft yarn is inserted at the fabric selvedge, see [☐ 61]
  - Edit knitting-in and out of the weft yarn carrier, see [☐ 59]
  - Enclosing of the weft yarn by transferring by alternating sides (1).  
Possible problem: The weft yarn is caught when transferring.  
Remedy: Before the spacing (2) stow the weft yarn carrier (3)



- First narrowing then spacing (2) to prevent problems when transferring.
- When knitting with high stitch tension, an area with NPJ in the "Spacing" (2) row may be favorable (set about 6/10 looser).
- Adjust the weft yarn carrier via the yarn tension correction (Ka, Kb) to the knitting situation  
(Setup Editor -> "Yarn carrier" menu -> "YC/YCI" tab)
- Adjust the presser foot via the presser foot correction "ESCI" to the knitting situation, see [☐ 55] and see [☐ 57].  
(Setup Editor -> "Presser foot" menu)
  - ⓘ If you enter a positive value in the "W ↑ +/-" column, the presser foot is later switched off. As a result, the weft yarn is held deep for longer.
- ADF W: On a knitting-in presser foot adjust the values in the "E ↑ +/-".
- Ensure enough space for the weft yarn in the needle bed gap:
  - By a reduced stitch tension
  - By an additional stitch row

## 1.6 Working on the knitting machine

This chapter contains information on:

- Assembling and adjusting the weave-in device [▢ 32]
- Continue production after a Warmstart [▢ 41]
- Assembling the carriage (ADF) [▢ 42]
- Assembling the carriage (CMS W) [▢ 45]
- Presser foot reference run [▢ 46]

### 1.6.1 Assembling and adjusting the weave-in device

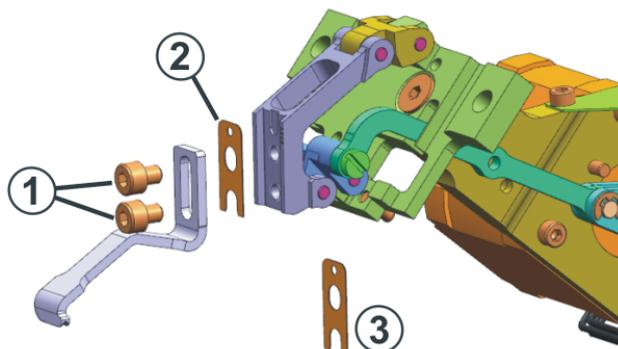
Operations at a glance

1	Assemble weave-in device, see [▢ 32]
2	Adjust the presser foot horizontally, see [▢ 33]
3	Adjust the presser foot vertically, see [▢ 36]
4	Setting measurements for the presser foot, see [▢ 38]
5	Final check of the settings, see [▢ 39]

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.

---

**i** When you assemble a new presser foot type on the machine, you have to register it on the knitting machine, see Configure and enter the presser feet type [▢ 12].

---

Adjust the presser foot horizontally

For doing this, proceed as follows:

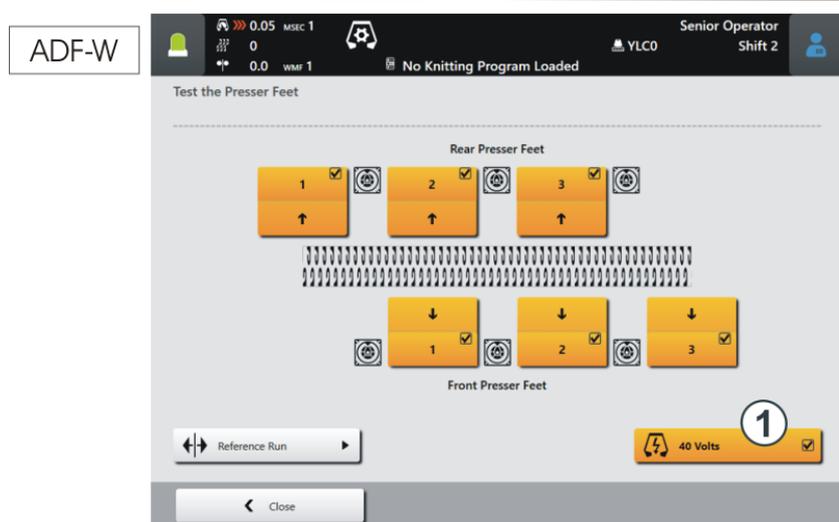
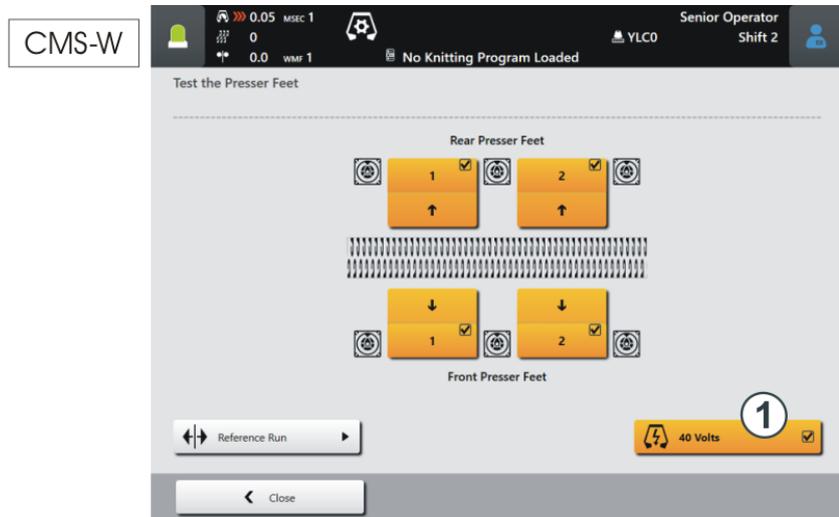
✓ You are signed in as "Senior Operator".

1. Open the "Presser Feet" menu.

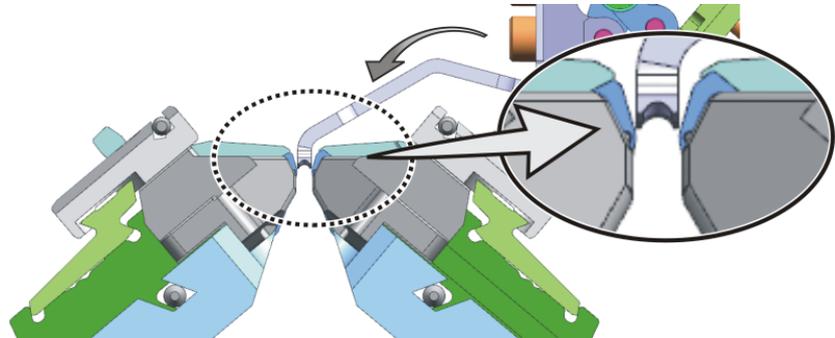
 "Maintain Machine" ->  "Service" ->  "Presser Feet"

2. Switch power supply "40 Volts" off (1).

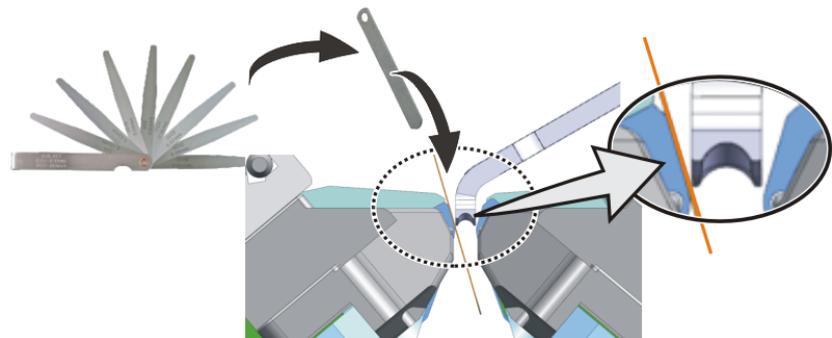
▷ The motors of the presser feet are currentless - You can move the presser foot manually.



3. Move the presser foot manually to the undermost position.
  - ▷ The presser foot is located between the needle beds.



4. Control the distance between the presser foot and the front needle bed with a feeler gauge, see Setting measurements for the presser foot [▢ 38].



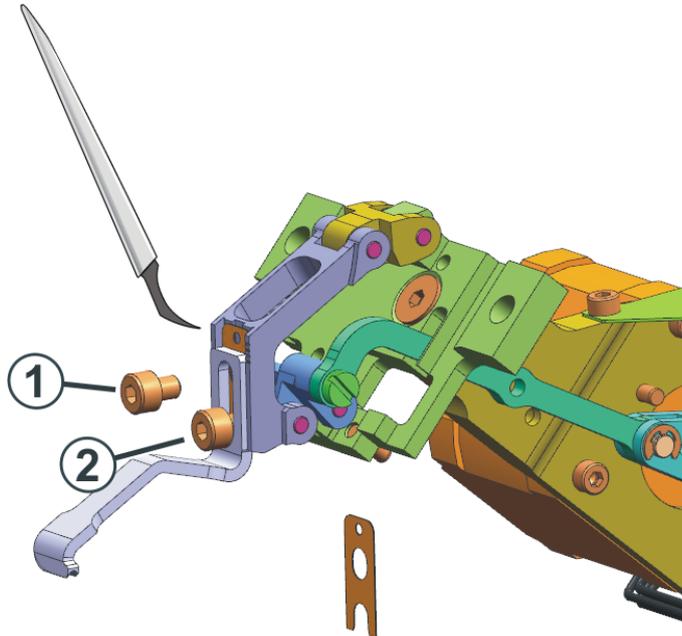
5. If necessary, correct the distance. For this, use one of the shims from the accessories.

Shim 0,1 mm (ID 276 043)

Shim 0,15 mm (ID 276 044)

Shim 0,2 mm (ID 276 045)

Remove the upper screw (1) and loosen the screw (2). With a pointy object (e.g. a knitter hook) you can remove or insert a shim.



Adjust the presser foot vertically

For doing this, proceed as follows:

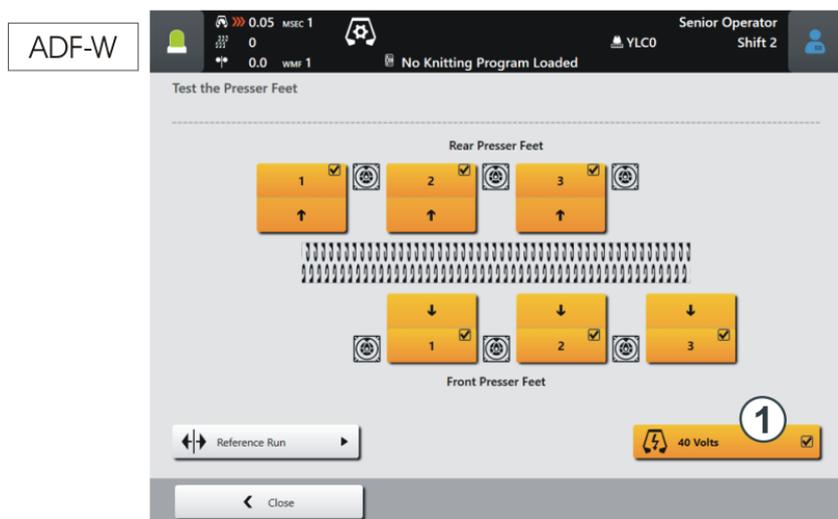
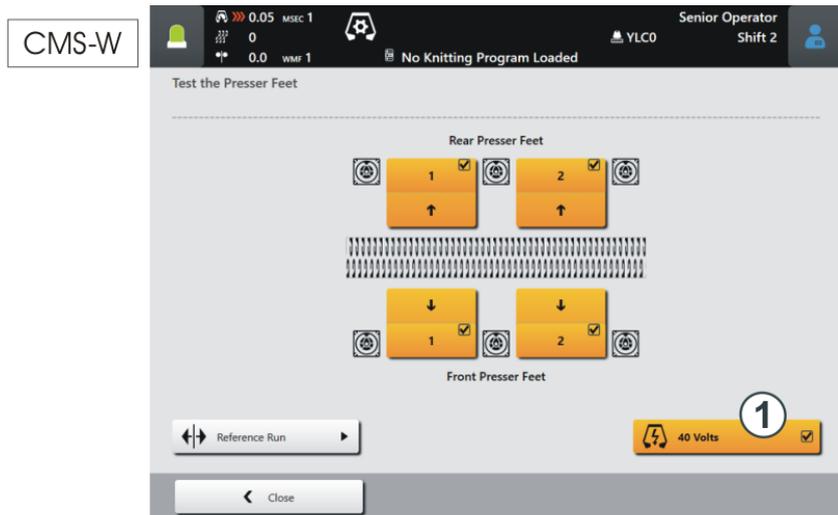
✓ You are signed in as "Senior Operator".

1. Open the "Presser Feet" menu.

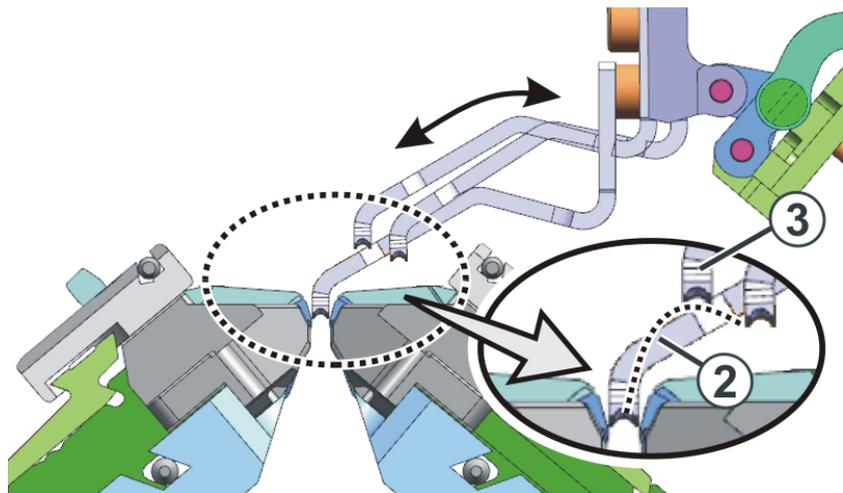
 "Maintain Machine" ->  "Service" ->  "Presser Feet"

2. Switch power supply "40 Volts" off (1).

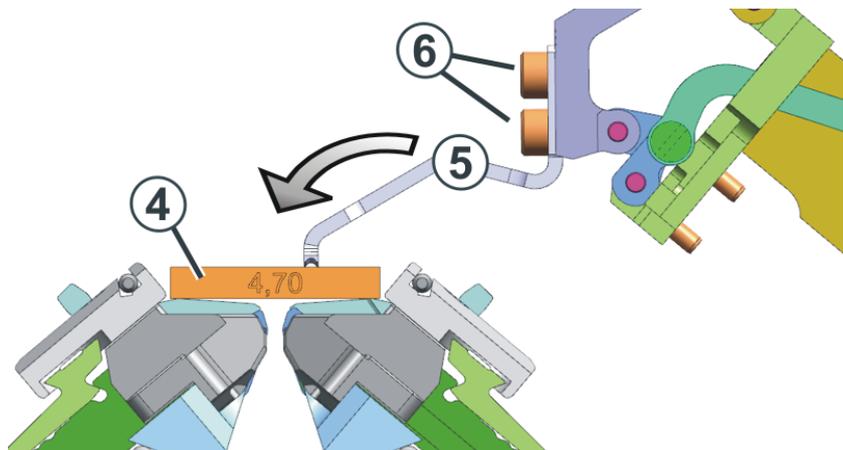
▷ The motors of the presser feet are currentless - You can move the presser foot manually.



3. Move the presser foot manually to the uppermost position.
4. Determine the highest position (3) of the presser foot.  
For this, slowly move the presser foot downward.  
The movement of the presser foot is parabolic (2): The presser foot first moves a bit upwards and then downwards, until it reaches the undermost position (between the needle beds).  
Repeat this movement several times, until you determine the highest point (3).



5. Put the setting gauge (4) on the holding-down jacks and push it under the presser foot (5), see Setting measurements for the presser foot [▢ 38].

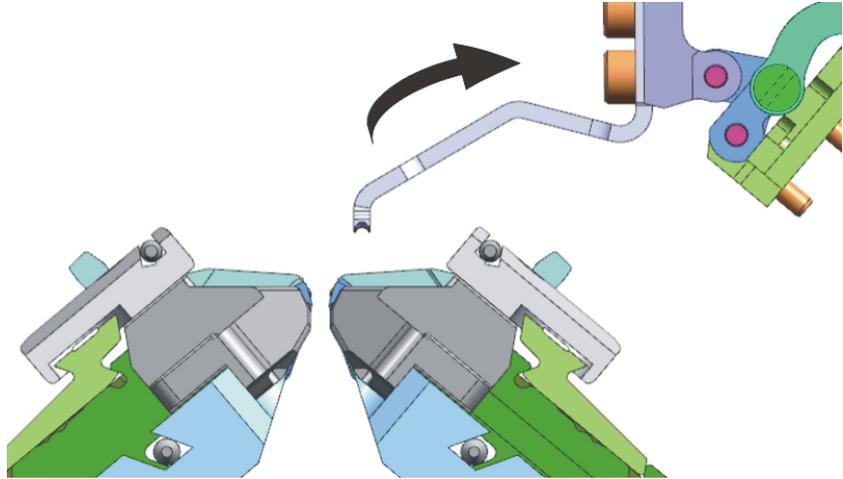


6. The height is adjusted correctly when the presser foot touches the adjusting spacer.  
**i** You can move the presser foot about 1 mm upwards or downwards.
7. If the height is not correct, loosen the screws (6) and push the presser foot into the right position. Retighten the screws and check the settings.

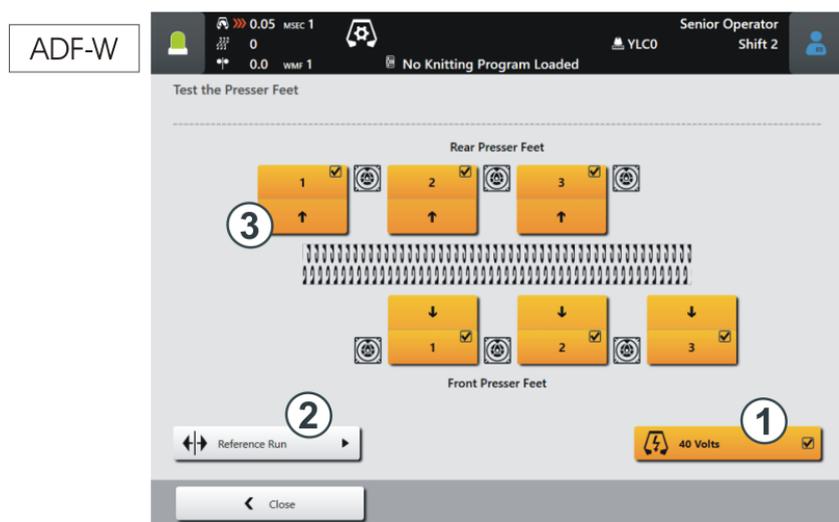
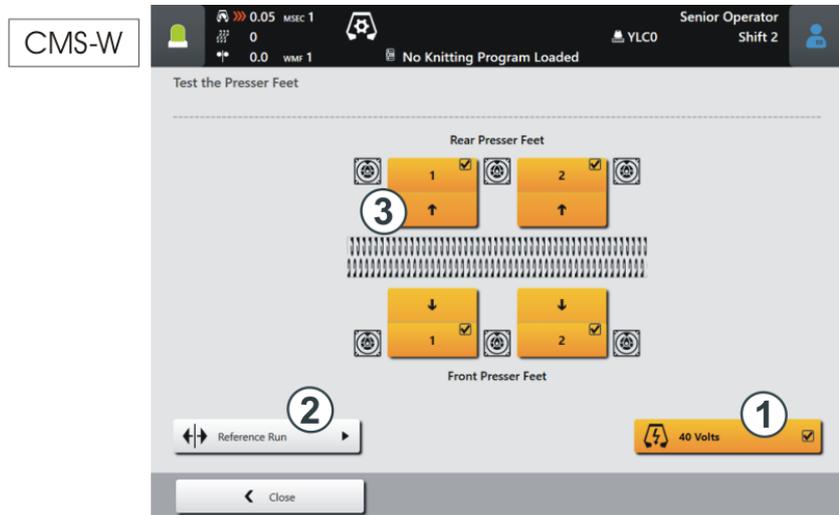
Setting measurements for  
the presser foot

Gauge	Feeler gauge [mm]	Adjusting spacer Thickness [mm]
E20	0,03	283 436 [5,40]
E18 E18m.16 E16 E10.2 KW E9.2 KW	0,05	275 827 [5,25]
E10.2 MG	0,15	275 827 [5,25]
E8.2	0,05	275 828 [5,15]
E14 E14/12	0,05	275 829 [4,65]
E12 E12m.10	0,10	275 829 [4,65]
7.2 MG	0,10	275 830 [4,70]
6.2 MG E10	0,05	275 831 [4,50]
E14 (TT) E14/12 (TT) E12m.10 (TT)	0,15	275 831 [4,50]
E7.2 KW (TT) E7.2 KW	0,10	275 832 [4,30]
E6.2 KW	0,10	277 816 [4,00]

Final check of the settings 1. Move all presser feet manually to their uppermost position.



2. Switch power supply "40 Volts" on (1).
3. Carry out a presser foot reference run. For this, tap the button (2).
4. Switch the presser foot on. For this, tap the button (3).



	Rear	ON The presser foot is activated. The arrow shows towards the needles.
	Front	OFF The presser foot is deactivated. The arrow shows away from the needles.

5. Check the distance between the presser foot and the needle bed with the feeler gauge.
6. Carry out this check with every presser foot.

## 1.6.2 Continue production after a Warmstart

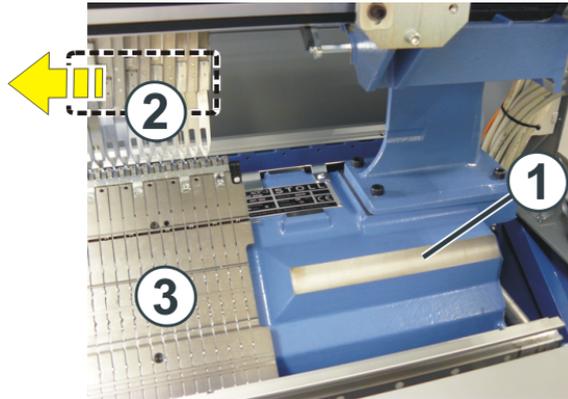
1. If you pull up the engaging rod, then the carriage will not move immediately as the weave-in devices must still achieve a position run (duration approx. 10 seconds).
2. If you pull up the engaging rod again, then the carriage will set off. The production is continued.

### 1.6.3 Assembling the carriage (ADF)

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.

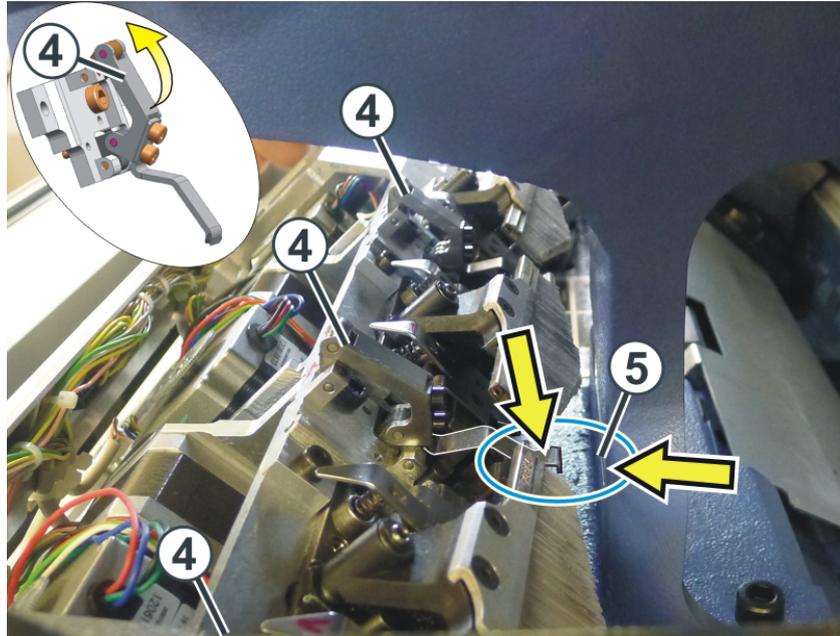


Please observe the following procedure:

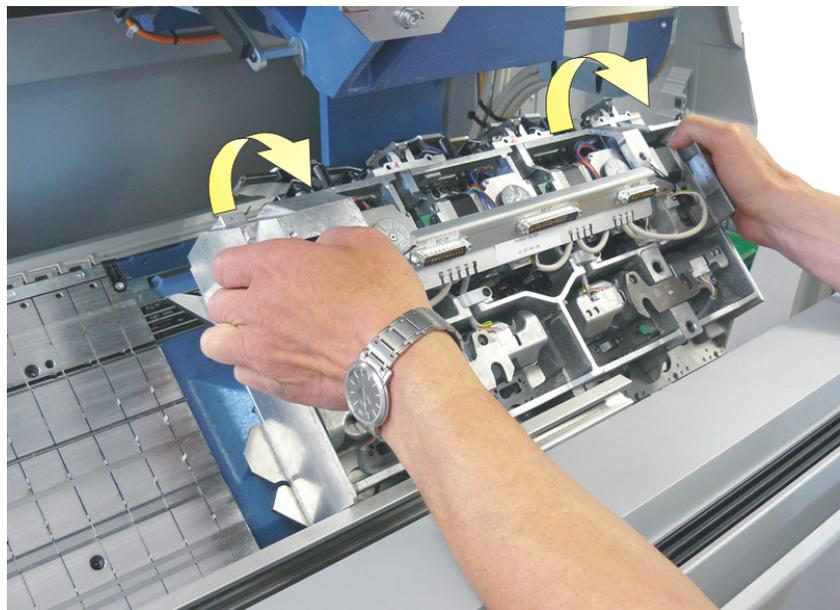
	Procedure
Front Needle Bed	<ul style="list-style-type: none"> <li>◆ Open the lateral safety door (on the right side).</li> <li>◆ Push the carriage part from outside onto the support surface (1).</li> <li>◆ Push the carriage part in until it reaches the clamping and cutting bed.</li> </ul>
Rear Needle Bed	<ul style="list-style-type: none"> <li>◆ Push both sliding boards in the same direction.</li> <li>◆ Position the carriage part on the support surface (1).</li> </ul>

What is to be considered with the weave-in devices?

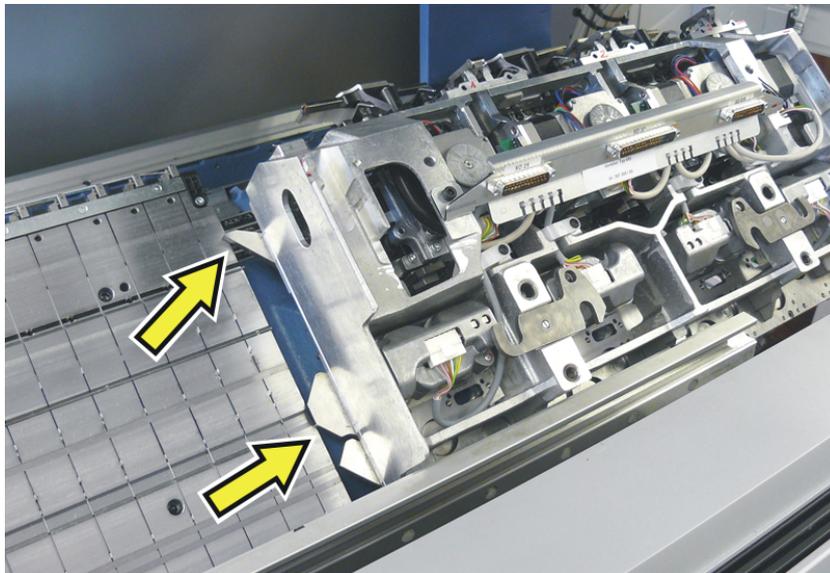
- Move the yarn carriers (2) from the clamping and cutting area into the needle bed.
  - If you cannot open the lateral safety door completely because of space reasons, we recommend you to dismantle the clamping and cutting bed (3) to prevent the weave-in device from getting damaged.
1. On the removed carriage part, move manually all the weave-in devices (4) into their upper position (out of operation).



2. Push the carriage part from outside onto the support surface (1). To prevent the weave-in devices 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.

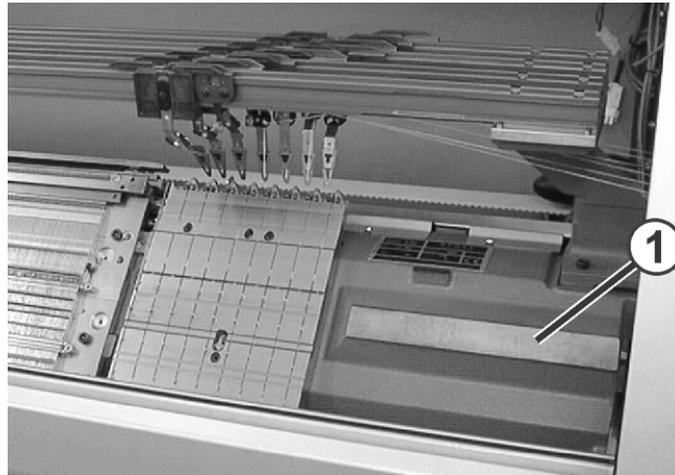


4. Push the carriage part inward and assemble with the carriage assembly.

### 1.6.4 Assembling the carriage (CMS W)

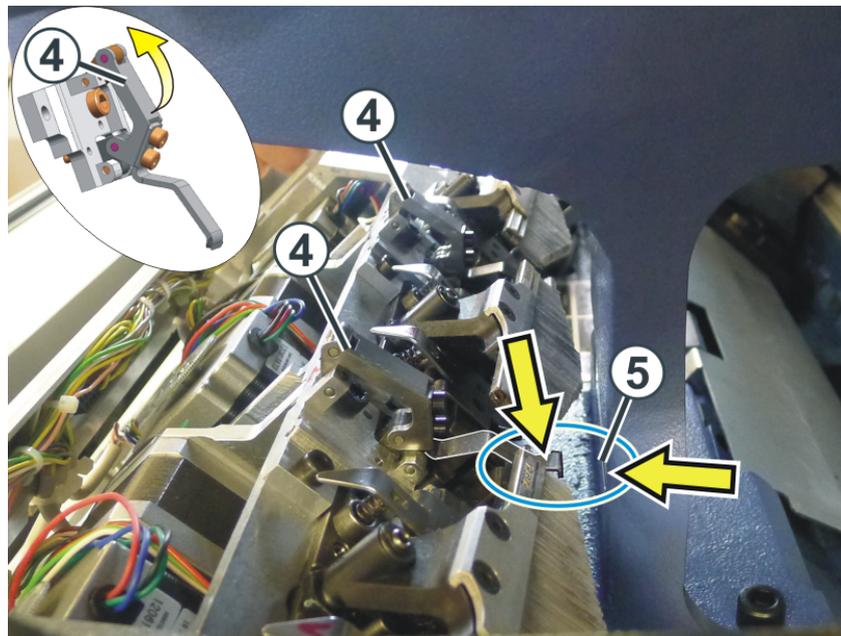
Put the carriage part on

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 curve) into their correct positions.



Support surface of carriage part

1. Push the carriage part from outside onto the support surface (1).
2. To prevent the weave-in devices from colliding with the support (5), shift by hand all weave-in devices (4) into their upper position (out of operation).



**i**

As you have shifted the weave-in devices by hand, a weave-in device reference run may be necessary. If this is the case, then an error message will appear on the display.

### 1.6.5 Presser foot reference run

Weave-in device reference run - What must be observed?

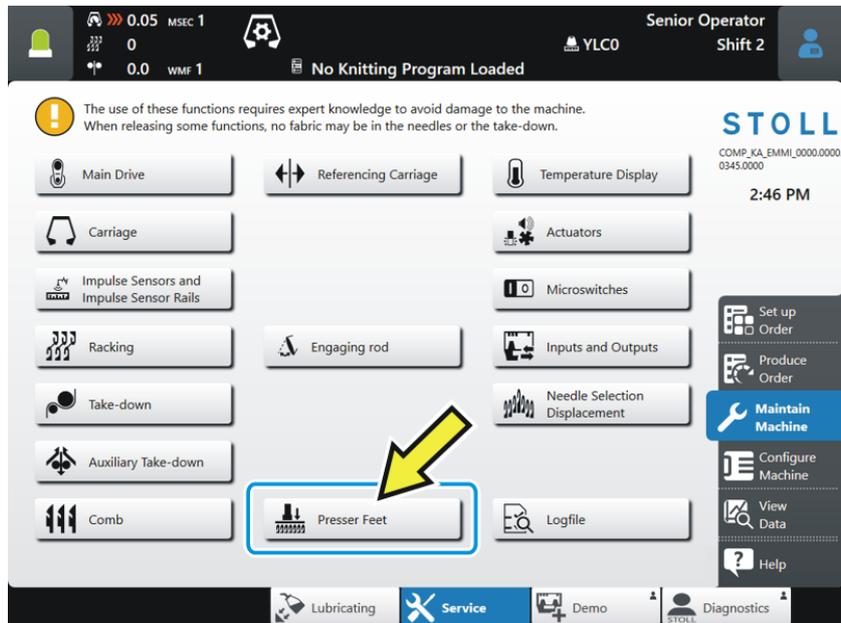
- The carriage must be located in the needle bed. Otherwise, there is the danger of the weave-in device being damaged by the clamping and cutting bed.
- Stop the carriage at a point in the needle bed, where no yarn carrier is located.

For doing this, proceed as follows:

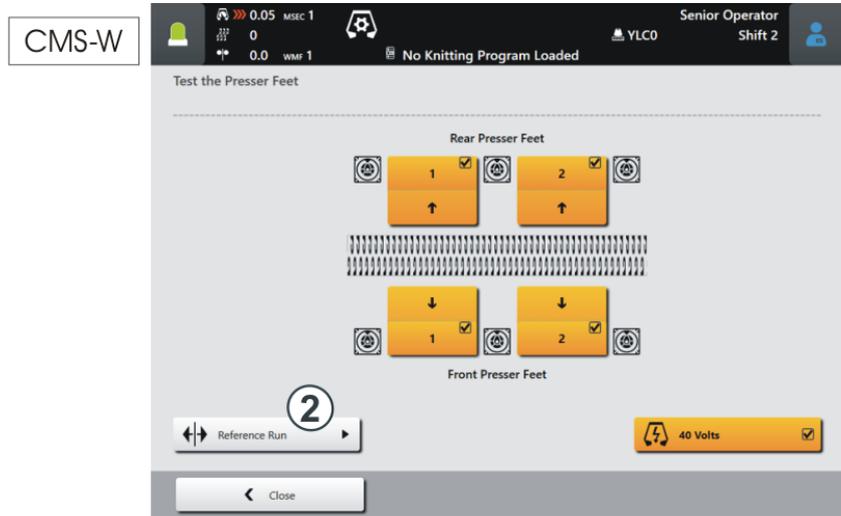
✓ You are signed in as "Senior Operator".

1. Open the "Presser Feet" menu.

🔧 "Maintain Machine" -> 🔧 "Service" -> 🏠 "Presser Feet"

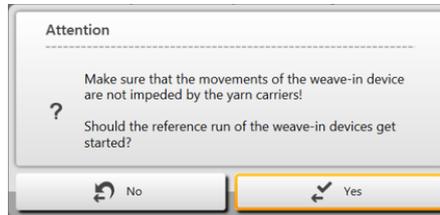


2. Tap the button "Reference Run" (2).

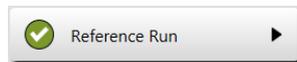


	<b>NOTICE</b>
<p><b>Damage of the weave-in device!</b></p> <p>No yarn carrier may be in the area of the weave-in device - the presser foot and yarn carrier may get damaged.</p> <p>→ Push the yarn carriers aside so that the weave-in devices can carry out the reference run (high-deep movement).</p>	

3. If there is no yarn carrier in the area of the presser foot, then tap the "Yes" button.



4. The reference run will be carried out automatically. All weave-in devices will be referenced one after the other.
  - ▷ During the reference run, the "Reference Run" button is greyed out.
  - ▶ Once the reference run is complete, the "Reference Run" button will be active again.

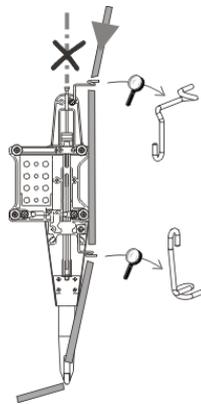


## 1.7 Further information

This chapter contains information on:

- ADF yarn carrier with bypass equipment [▢ 50]
- Yarn brake (ID 266 739) [▢ 54]
- Correction of Presser Feet (ESCI) on W Machines [▢ 55]
- Two variants for knitting in or out the yarn carriers of the area with selective weft yarn inlay [▢ 59]
- Border Processing of the Area with Selective Weft Yarn [▢ 61]

### 1.7.1 ADF yarn carrier with bypass equipment



Bypass: The yarn won't be threaded in the yarn tube but it will rather be led over two eyelets.

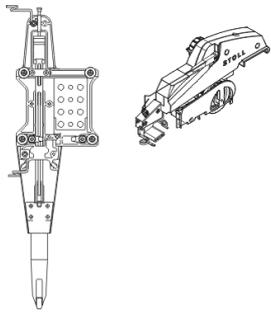
When will the bypass be used?

	Explanation
♦ with a very coarse, voluminous yarn	The yarn is too thick, and cannot be threaded in the yarn tube.
♦ with a yarn, which "sticks" in the yarn tube	After the carriage reversal, the yarn is to be fetched back (tensioned) by the tension arm of the yarn control unit so that no yarn loop is formed.  The increased friction results in a yarn loop, which leads to a fault in the fabric (yarn loop, hole, drop stitch, yarn breakage).

There are two variants depending on the yarn thickness:

- Assembly kit Bypass
- "Yarn carrier carriage with bypass" kit

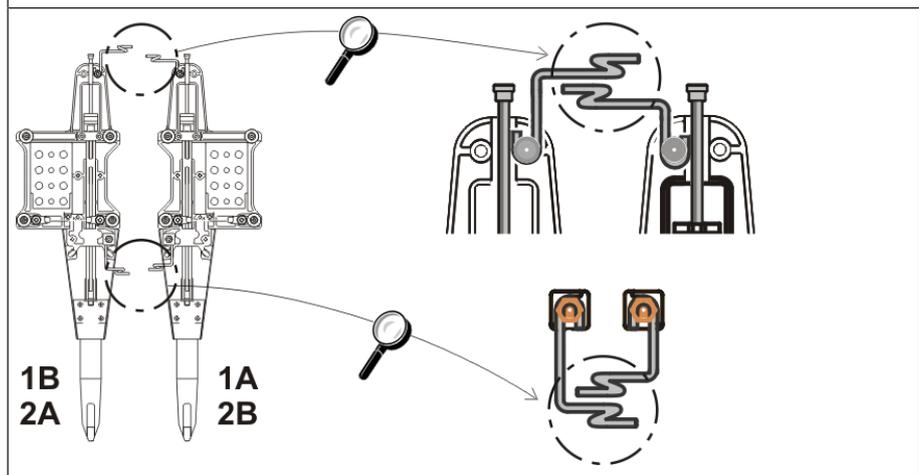
1	<p>The yarn can be threaded in the yarn carrier tip (1).</p> <p>The "Assembly kit Bypass" is satisfactory.</p>	
---	--	--

2	<p>The yarn cannot be threaded in the yarn carrier tip (1).</p> <p>In this case, you will have need of the "Yarn carrier carriage with bypass" kit This kit contains a coarse yarn carrier, and a coarse yarn control unit.</p> <p><b>i</b> With the ADF 32 W, the kit for the yarn carriers 2A and 2B is contained in the accessories of the machine.</p>	
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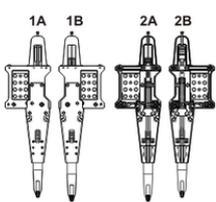
Variant 1: "Assembly kit Bypass"

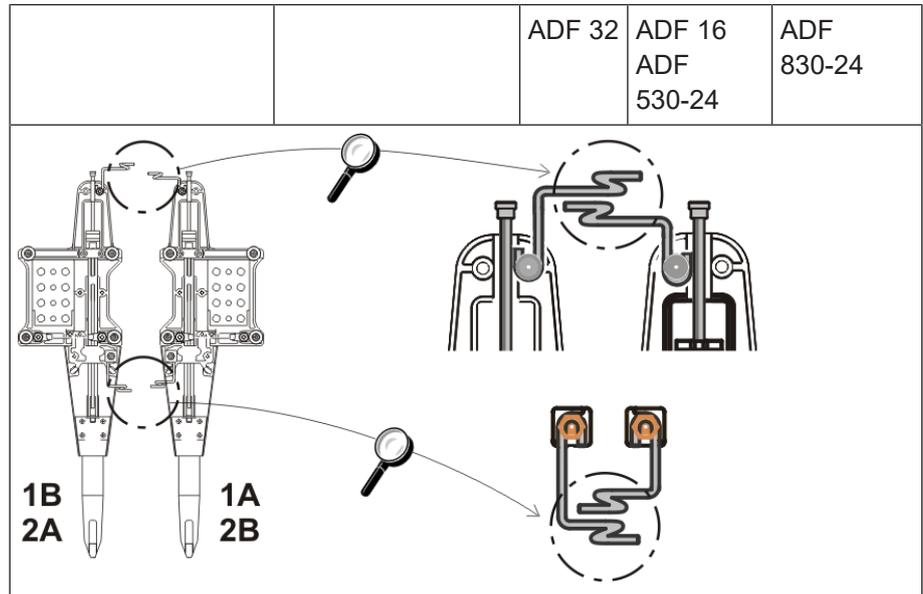
	ADF 32 ADF 830-24	ADF 16 ADF 530-24
Assembly kit Bypass on the left (1A, 2B)	270 471	270 469
Assembly kit Bypass on the right (1B, 2A)	270 472	270 470

	ADF 32	ADF 16	ADF 24				
 1A	2B	1B	2A				
 1B	1B	2A	1A				
 2A	2A	1A	8				
 2B	1B	2A	7				
	2B	1B	6	4	5		
	2B	1B	2A	1A	5	3	4
	1A	2A	1B	2B	4	2	3
	1A	2A	1B	2B	3	1	2
	1A	2A	1B	2B	2		1
	1A	2A	1B	2B	1		1



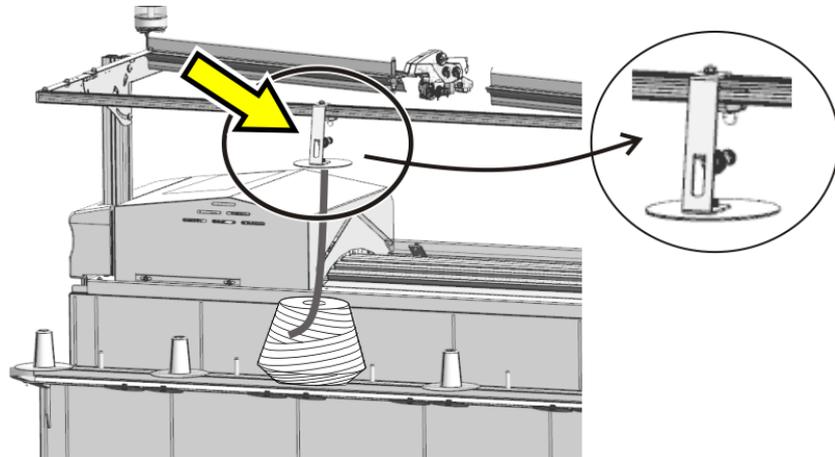
Variant 2: "Yarn carrier carriage with bypass" kit

		ADF 32	ADF 16 ADF 530-24	ADF 830-24																																				
E10   E12   E14 E6.2   E7.2 ♦ Yarn carrier (E3,5.2) with Bypass ♦ Yarn control unit (E3,5.2)	Yarn carrier carriage with bypass 1A	270 958	271 180	—																																				
	Yarn carrier carriage with bypass 1B	270 959	271 181	—																																				
	Yarn carrier carriage with bypass 2A	270 960	271 182	274 476																																				
	Yarn carrier carriage with bypass 2B	270 961	271 183	274 477																																				
E16   E18   E8.2 ♦ Yarn carrier (E6.2) with Bypass ♦ Yarn control unit (E6.2)	Yarn carrier carriage with bypass 1A	271 230	271 238	—																																				
	Yarn carrier carriage with bypass 1B	271 231	271 239	—																																				
	Yarn carrier carriage with bypass 2A	271 232	271 240	274 474																																				
	Yarn carrier carriage with bypass 2B	271 233	271 241	274 475																																				
		<table border="1"> <thead> <tr> <th></th> <th>ADF 32</th> <th>ADF 16</th> <th>ADF 24</th> </tr> </thead> <tbody> <tr> <td>2B 1B 2A 1A</td> <td>8</td> <td></td> <td></td> </tr> <tr> <td>2B 1B 2A 1A</td> <td>7</td> <td></td> <td>6</td> </tr> <tr> <td>2B 1B 2A 1A</td> <td>6</td> <td>4</td> <td>5</td> </tr> <tr> <td>2B 1B 2A 1A</td> <td>5</td> <td>3</td> <td>4</td> </tr> <tr> <td>1A 2A 1B 2B</td> <td>4</td> <td>2</td> <td>3</td> </tr> <tr> <td>1A 2A 1B 2B</td> <td>3</td> <td>1</td> <td>2</td> </tr> <tr> <td>1A 2A 1B 2B</td> <td>2</td> <td></td> <td>1</td> </tr> <tr> <td>1A 2A 1B 2B</td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>				ADF 32	ADF 16	ADF 24	2B 1B 2A 1A	8			2B 1B 2A 1A	7		6	2B 1B 2A 1A	6	4	5	2B 1B 2A 1A	5	3	4	1A 2A 1B 2B	4	2	3	1A 2A 1B 2B	3	1	2	1A 2A 1B 2B	2		1	1A 2A 1B 2B	1		
	ADF 32	ADF 16	ADF 24																																					
2B 1B 2A 1A	8																																							
2B 1B 2A 1A	7		6																																					
2B 1B 2A 1A	6	4	5																																					
2B 1B 2A 1A	5	3	4																																					
1A 2A 1B 2B	4	2	3																																					
1A 2A 1B 2B	3	1	2																																					
1A 2A 1B 2B	2		1																																					
1A 2A 1B 2B	1																																							



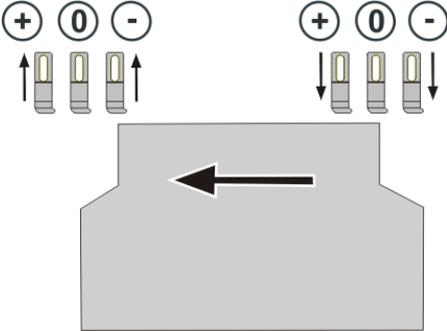
### 1.7.2 Yarn brake (ID 266 739)

The yarn brake prevents that the yarn tension arm (yarn control unit) pulls off yarn from the bobbin.

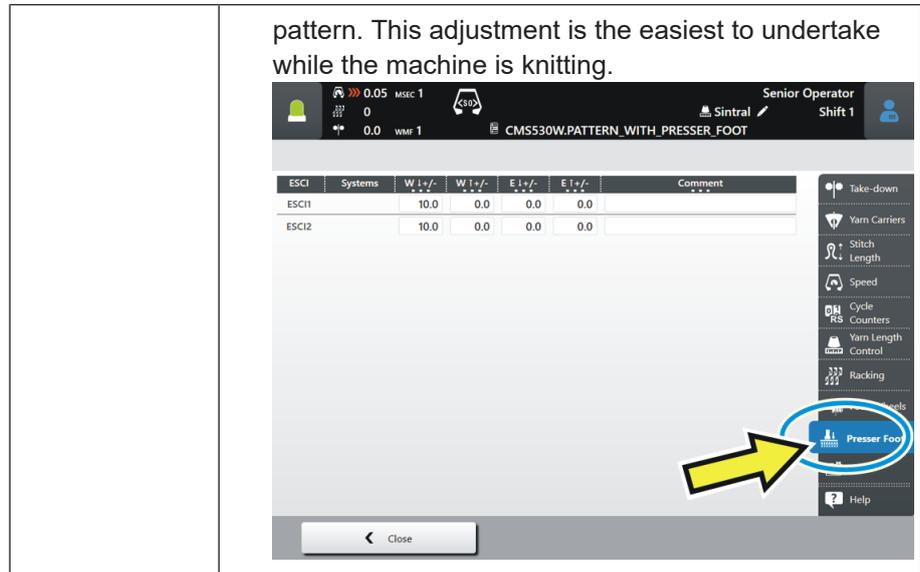


### 1.7.3 Correction of Presser Feet (ESCI) on W Machines

For some patterns, the problem may arise that the weft yarn presser foot does not catch the thread properly.

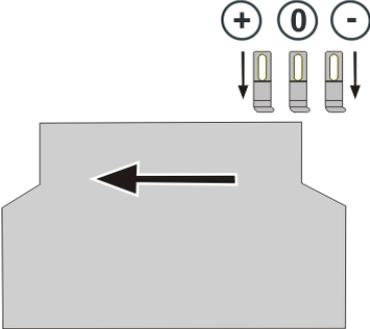
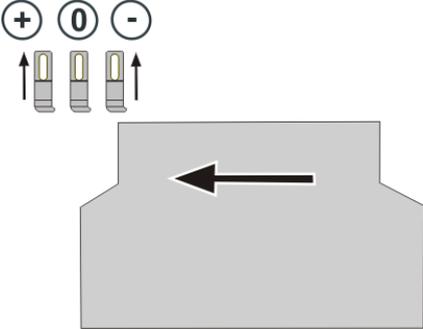
Possible causes	<ul style="list-style-type: none"> <li>◆ Quality of the weft yarn (friction coefficient, elasticity, twisting, moisture, hairiness, tensile strength)</li> <li>◆ Yarn gauge of the weft yarn, yarn count / twisted yarn</li> <li>◆ Yarn tension, yarn feeding</li> <li>◆ Weft yarn is not in center of the needle bed gap</li> <li>◆ Long float of the weft yarn. The float arises when the end position of the weft yarn in the previous row and the starting position of the following row are far apart.</li> </ul>
Task of the weave-in device	<ul style="list-style-type: none"> <li>◆ Shift-in position The presser foot has to catch and guide the weft yarn in order to get safely enclosed.</li> <li>◆ Shift-off position The presser foot secures the weft yarn until it is enclosed at the last needle.</li> </ul>
Solution	<p>You can adjust the shift positions of the weft yarn presser foot to the corresponding knitting situation.</p> <div style="text-align: center;">  </div> <p>0 = shift position (default)          + = later shift position (1...120 steps)          - = former shift position (-1...-120 steps)          ↓ = shift-in position          ↑ = shift-off position</p>
Programming	<ol style="list-style-type: none"> <li>1. On the M1plus: Specify the indices (ESCI1, ESCI2...) for the corrections of the presser feet on the M1plus ("Presser Foot" control column ).</li> <li>2. On the knitting machine You can specify the correction values in the "Presser Foot" menu of the Setup2 Editor. The optimal adjustment depends on the yarn and the</li> </ol>

pattern. This adjustment is the easiest to undertake while the machine is knitting.



Setup2 – "Presser Foot" tab [ 57]

Setup2 – "Presser Foot" tab

	Explanation	Value range
ESCI 1 - ESCI 50	1 to 50 indirect specifications to correct the shift points of presser feet.	
Systems	Display of the active knitting system	
W ↓ +/-	<p>Weft yarn presser foot Correcting shift-in position</p>  <ul style="list-style-type: none"> <li>◆ Positive value: later shift-in position</li> <li>◆ Negative value: former shift-in position</li> </ul>	<p>Minimum value: -120 Maximum value: 120 Step width: 0.5=1/32 inch=0.8 mm</p>
W ↑ +/-	<p>Weft yarn presser foot Correcting shift-off position</p>  <ul style="list-style-type: none"> <li>◆ Positive value: later shift-off position</li> <li>◆ Negative value: former shift-off position</li> </ul>	<p>Minimum value: -120 Maximum value: 120 Step width: 0.5=1/32 inch=0.8 mm</p>
E ↓ +/-	<p>Knitting-in presser foot Correcting shift-in position</p> <ul style="list-style-type: none"> <li>◆ Positive value: later shift-in position</li> <li>◆ Negative value: former shift-in position</li> </ul>	<p>Minimum value: -120 Maximum value: 120 Step width: 0.5=1/32 inch=0.8 mm</p>
E ↑ +/-	<p>Knitting-in presser foot Correcting shift-off position</p> <ul style="list-style-type: none"> <li>◆ Positive value: later shift-off position</li> </ul>	<p>Minimum value: -120 Maximum value: 120</p>

	Explanation	Value range
	♦ Negative value: former shift-off position	Step width: 0.5=1/32 inch=0.8 mm
Comment	Comment	ASCII Characters

## 1.8 Examples from the training documents

### 1.8.1 Two variants for knitting in or out the yarn carriers of the area with selective weft yarn inlay

---

**i** Weft yarn carriers are knit in or out by the "Float" needle action.

---

#### I. Knitting-in and out a weft yarn carrier with SJ structure:

---

**i** Front stitch (SJ) only is knitted in the basic pattern next to the area with the selective weft yarn. With it, the weft yarn carrier can be knit out or in easily by the "Float" needle action.

---

✓ The basic pattern with the area for selective weft yarn is drawn and the color arrangement is created.

1. Open the Yarn Field dialog box by .

2. Define the desired specifications in the following columns.

■ Knitting-in:

- In the  "Module for knitting-in" column the "Float" module
- In the  "Binding/Knot at start" column the "Float" module

■ Knitting-out:

- In the  "Module for knitting-out" column the "Float" module
- In the  "Binding/Knot at end" column the "Float" module

3. Close the dialog box.

#### II. I. Knitting-in and out a weft yarn carrier with structure:

---

**i** A structure (e.g. border) is knitted in the basic pattern next to the area with the selective weft yarn. With it, knitting in or out the weft yarn carrier may make problems. You can fix the problem by locking the weft yarn at the border when knitting in or out.

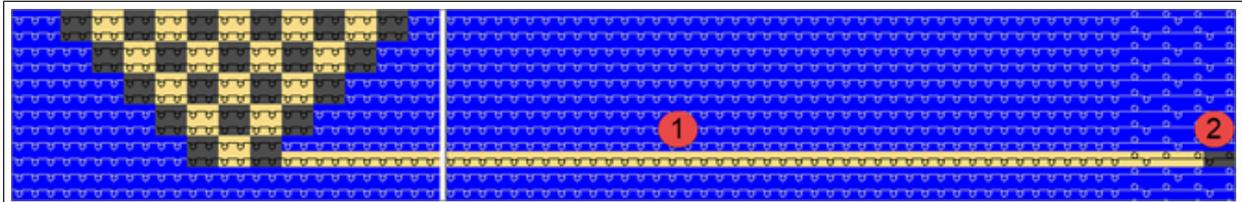
---

✓ The basic pattern with the area for selective weft yarn is drawn and the color arrangement is created.

1. Modify the pattern row for knitting-in:

2. Draw yarn color #2 (weft yarn) on the desired quantity of needles at the fabric selvedge.

3. Exchange yarn color #3 to yarn color #31 up to the start of the motif (selective weft yarn area).



<b>1</b>	Yarn color #31 up to the start of the motif with weft yarn
<b>2</b>	Yarn color #2 (weft yarn) with desired quantity of needles for locking Example: 2 needles

4. Modify the knitting-out following the same procedure.

## 1.8.2 Border Processing of the Area with Selective Weft Yarn

---

**i** For patterns with the machine with presser feet and selective weft yarn, the border of the area for the weft yarn (color field) must be corrected. The border processing (correction) ensures to catch and keep deep the weft yarn by the presser foot in the reversal of the weft yarn carrier.

The border processing will be done within the whole pattern.

---

Activate the 'border processing' function.

1. Open the dialog via the "Pattern Parameters" / "Configuration..." menu.
2. Select the "Further Settings" tab.
3. Activate the  "Enclose the weft yarn at the last needle" function under "Weft Yarn at Color Field Border".

▷ The color fields (areas) with weft yarn are adapted throughout the pattern by the technical processing depending on the carriage stroke direction.

---

**i** No border processing will be entered for weft yarn insertions over the complete pattern width.

---

Requirements for setting up the border processing:

- Yarn carrier must be defined as weft yarn carrier by the  icon or must have a YCI correction  $\geq 30$ .
  - The rows for the weft inlay must have the "Weft yarn / Transferring with Float" needle action.
  - The presser foot must be activated in this row of weft inlay.
- 

**i** Attention!  
Border processing depends on the carriage direction

---

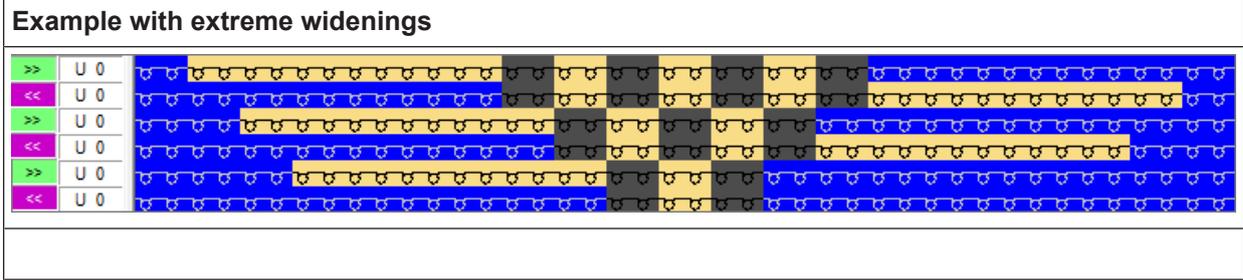
Pattern Examples for Border Processing

Pattern template

---

**i** When creating the pattern, make sure that the area of the selective weft inlay at the edge does not end with the knitting yarn carrier (example: yarn color # 31) The weft yarn will not be enclosed.

---



Border Processing 'Weft Yarn at Color Field Border'

**i** Attention!  
Border processing depends on the carriage direction

**Result after expanding**

♦ with ,swiveled' yarn carrier or with ,unswiveled' yarn carrier

1	Regarding the previous knitting course, this knitting row is extremely widened, i.e. the weft yarn guide (red) is only floated and not held by transferring (enclosed). <b>i</b> : With too long floatings, this may lead to stop motions by the yarn tensioner and the weft yarn presser foot may miss the weft yarn.
2	Enclosing the weft yarn by transfer of the front stitch.

**i**

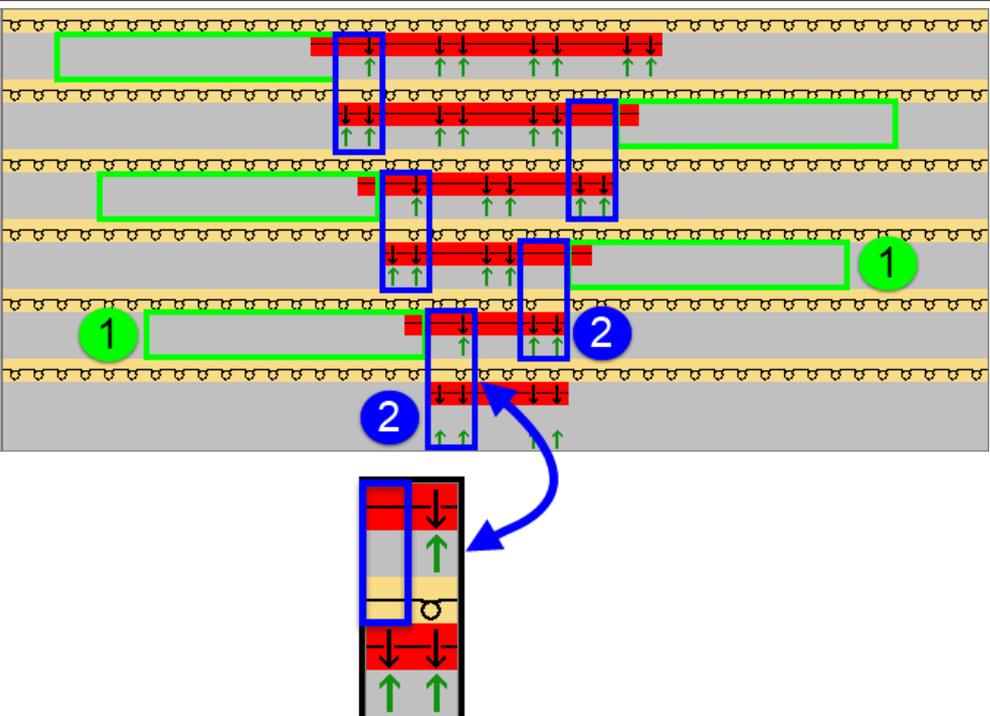
**Rule:**

The last needle have to enclose the weft yarn by transfer at the edge of area with selective weft inlay.

**Result after technical processing** 

♦ with 'swiveled' yarn carrier 

>>	S2			U 0
>>	S1	W2		U 0
<<	S3			U 0
<<	S2			U 0
<<	S1	W2		U 0
>>	S3			U 0
>>	S2			U 0
>>	S1	W2		U 0
<<	S3			U 0
<<	S2			U 0
<<	S1	W2		U 0
>>	S3			U 0
>>	S2			U 0
>>	S1	W2		U 0
<<	S3			U 0
<<	S2			U 0
<<	S1	W2		U 0
>>	S0			U 0
<<	S1			U 0



1	The 'superfluous' floats are cut down to one needle.
2	<ul style="list-style-type: none"> <li>♦ The last stitch of the previous knitting row (yarn color #31) of the knitting yarn carrier will be replaced by the "Float" needle action.                     <p><b>i</b>: Reason: With it, the knitting yarn carrier can pass by the 'swiveled' weft yarn carrier more easily.</p> </li> <li>♦ If a re-transferring (enclosing) is present in the following knitting row, it will be removed.                     <p><b>i</b>: Will be done in the previous knitting row.</p> </li> </ul>

♦ with 'unswiveled' yarn carrier 

