



# BERNINA L 890 QUILTERS EDITION

User Manual





## Dear Bernina Customer,



Congratulations on the purchase of your BERNINA Overlocker!

With BERNINA, you have selected a product that will impress you for years to come. For our family has made customer satisfaction our number one priority for more than 100 years. It is my personal goal to offer you Swiss innovation and precision at the highest level of perfection, future-oriented sewing technology, and comprehensive customer service.

With the new Overlocker Series, BERNINA launches extremely modern models which have been developed by our engineers in Switzerland. In addition to meeting the highest standards of modern technology, we have also focused on the design. After all, we are selling products to creative people like you, who place great emphasis on the language of design in addition to demanding the best quality. Thus, for the first time, our Overlocker models have a free arm as seen in the classic BERNINA sewing and embroidery machines. The new world of overlocking guarantees you all of this and more.

Enjoy creative sewing, embroidering and overlocking with BERNINA and stay informed about the various accessories. Visit us at [www.bernina.com](http://www.bernina.com) and allow yourself to be inspired to create new sewing projects. And don't forget to make use of service and maintenance offers from our highly trained authorized BERNINA dealers. I wish you lots of pleasure and many creative hours with your new BERNINA.



H.P. Ueltschi

Owner

BERNINA International AG

CH-8266 Steckborn

# Table of Contents

<b>SAFETY INSTRUCTIONS</b> .....	<b>7</b>	Needle Holder .....	41
<b>Important Information</b> .....	<b>9</b>	Changing the Needle .....	41
<b>1 My BERNINA overlocker</b> .....	<b>11</b>	Needle Pad .....	42
1.1 Introduction .....	11	Threading the Needle Manually .....	43
1.2 BERNINA quality control .....	11	Positioning the needles up/down .....	44
1.3 Welcome to the World of BERNINA .....	11	Adjusting the needle stop up/down .....	44
1.4 Machine Overview .....	13	2.6 Machine Covers .....	44
Overview - front .....	13	Open/Close the Threader Cover .....	44
Overview - needle area .....	14	Open/close the looper cover .....	45
Overview - looper area .....	15	Removing/attaching the knife cover insert .....	45
Overview - threading area .....	16	Removing/attaching the coverstitch insert .....	46
Overview - side .....	17	2.7 Handwheel .....	47
Overview - rear .....	18	2.8 Sewing Assistance .....	47
Symbols on the machine .....	19	Using the Thread Cutter .....	47
Default values .....	21	Attaching/Removing the Knee Lifter .....	48
1.5 Overview - Standard Accessories .....	21	Attaching/Removing the Cut-offs Bin .....	48
Included accessories .....	21	Attaching/Removing the Freearm Cover .....	48
1.6 Details of the screen .....	25	Attaching/Removing the Slide-on Table .....	49
Software Operation .....	25	Attaching/removing the seam guide .....	49
Screen structure .....	28	<b>3 Setting up software</b> .....	<b>50</b>
Home screen .....	29	3.1 Setup Program .....	50
Sewing screen .....	30	Adjusting the sewing speed .....	50
<b>2 Setting Up the Machine</b> .....	<b>34</b>	Adjusting screen brightness/sewing light .....	50
2.1 Working Area .....	34	Activating the audio signals .....	51
Connecting the machine .....	34	Setting up the firmware .....	51
Switching the machine on/off .....	34	Personalize the sewing screen .....	52
2.2 Spool Holder .....	35	Presser foot indicator .....	52
Preparing the retractable thread guide .....	35	3.2 Querying the Tutorial .....	52
Attaching the Spool Stabilizer .....	36	3.3 Activating the eco mode .....	53
Place the Spool Disc .....	36	<b>4 Sewing Start</b> .....	<b>54</b>
Using the Spool Net .....	36	4.1 Check before starting to sew .....	54
2.3 Foot Control .....	37	4.2 Selecting the Fabric .....	54
Connect the foot control .....	37	4.3 Selecting the thread .....	54
Press the foot control .....	37	Selecting the needle thread .....	55
2.4 Presser Foot .....	38	Selecting the looper thread .....	55
Positioning the Presser Foot Up/Down .....	38	4.4 Selecting the needle .....	56
Lifting the front foot .....	39	Needle overview .....	57
Lifting the Presser Foot Up/Down with the Knee Lifter ..	39	Detect Defective Needles .....	58
Swing the presser foot in/out .....	39	4.5 Fixing Fabric Layers .....	58
Changing the Presser Foot .....	40	<b>5 Selecting a Stitch</b> .....	<b>59</b>
Removing/Fitting the Presser Foot Shaft .....	40	5.1 Stitch Type .....	59
2.5 Needle Area .....	41	Overlock Stitch .....	59

Coverstitch .....	62	7.4	Changing the Thread .....	89
Chainstitch .....	62		Knitting Thick Thread .....	89
Combostitch .....	63		Changing the Needle Thread .....	90
5.2	Stitch selection on the screen .....		Changing the Looper Thread .....	91
	Selecting a stitch directly .....	<b>8</b>	<b>Sewing Test .....</b>	<b>92</b>
	Selecting/Editing a stitch from the Personal Memory ...	8.1	Performing a Sewing Test for an Overlock Stitch .....	92
	Using the stitch recommendation of creative consultant .....	8.2	Performing a sewing test for an coverstitch .....	92
	66	8.3	Performing a Sewing Test for an Chainstitch .....	92
<b>6</b>	<b>Machine Settings .....</b>	8.4	Stitch optimizer .....	93
6.1	Preparing the Machine for Overlock or Overlock/ Chainstitch Combo .....	<b>9</b>	<b>Practical Overlocking .....</b>	<b>94</b>
	67	9.1	Securing Overlock Stitches .....	94
6.2	Preparing the Machine for Cover- and Chainstitch ..		Sewing in the Overlock Chain at the Start of the Seam	94
	67		Sewing in the Overlock Chain at the End of the Seam	94
6.3	Setting the Knife .....		Securing Overlock Stitches .....	95
	67		Knitting the Overlock chain .....	95
	Setting the Knife On/Off .....	9.2	Removing a Stitch .....	95
	67	9.3	Securing Coverstitches .....	96
	Setting the cutting width .....		Securing Cover- and Chainstitches at the Start of the Seam .....	96
	68		Securing the Stitches at the Seam End and Detaching the Thread Chain .....	96
6.4	Setting the upper looper on/off .....	9.4	How to Undo Coverstitches .....	97
	68		Undoing Coverstitches .....	97
6.5	Upper looper converter hooked in/hooked out .....	9.5	Sew blanket stitch .....	97
	69	9.6	Gathering .....	98
6.6	Adjusting the thread tension .....		Increasing the differential feed .....	98
	70		Pulling the Needle Thread .....	98
6.7	Adjusting the differential feed .....	9.7	Sew Outer Corners .....	99
	71	9.8	Sewing Inner Corners .....	100
6.8	Rolled Hem Selection Lever «O/R» .....	9.9	Sewing Inner Curves .....	101
	74	9.10	Sew Outer Curves and Circles .....	101
	Selecting Overlocking «O» .....	9.11	Sewing a Hem .....	102
	74	9.12	Joining Seams .....	102
	Setting Rolled Hem «R» .....	<b>10</b>	<b>Care and Maintenance .....</b>	<b>103</b>
	74	10.1	Firmware .....	103
6.9	Setting the mtc micro thread control .....		Selecting a language .....	103
	75		Information on the firmware .....	103
6.10	Setting the presser foot pressure .....		Restore factory settings .....	104
	76		Updating firmware .....	105
6.11	Adjusting the Stitch Width .....		Calibrate screen .....	106
	77	10.2	Machine .....	107
	Changing the stitch width via the needle position .....		Cleaning the Machine .....	107
	77		Cleaning the looper area .....	107
	Changing the stitch width via the cutting width .....		Cleaning the Air Threader Pipes .....	108
	77			
6.12	Adjusting the stitch length .....			
	77			
<b>7</b>	<b>Threading .....</b>			
	<b>78</b>			
7.1	Preparing for threading .....			
	79			
7.2	Threading the Needle Thread .....			
	80			
	Threading the Left Overlock Needle Thread LN/Yellow .			
	80			
	Threading the Right Overlock Needle Thread RN/Green			
	.....			
	81			
	Threading the Left Coverstitch Needle Thread LC/ Yellow .....			
	82			
	Threading the Center Coverstitch Needle Thread CC/ Green .....			
	83			
	Threading the Right Coverstitch Needle Thread RC/ Blue .....			
	84			
7.3	One-step BERNINA air threader .....			
	84			
	Performing a pulse drive .....			
	84			
	Threading the Looper Threads UL/blue, LL/red, CL/ purple .....			
	85			
	Threading the looper thread with an auxiliary thread ...			
	86			
	Circumventing the air threader .....			
	87			
	Using the threading wire .....			
	88			



Table of Contents

Cleaning the screen .....	108
Cleaning the Suction Feet .....	108
Oiling the Machine .....	108
<b>11 Errors and Faults .....</b>	<b>109</b>
11.1 Troubleshooting .....	109
<b>12 Storage and disposal .....</b>	<b>111</b>
12.1 Storing the Machine .....	111
12.2 Transporting the machine .....	111
12.3 Dispose of the machine .....	111
<b>13 Technical data .....</b>	<b>112</b>
<b>Index .....</b>	<b>113</b>



# SAFETY INSTRUCTIONS

Please be aware of the following basic safety instructions when using your machine. Before using this machine, read instruction manual carefully.

## DANGER

To protect against electric shock, the following instructions must be observed.

- Never leave the machine unattended when it is connected to the power supply.
- Immediately after use and before cleaning, switch off the machine and disconnect the power cable from the outlet.

In order to protect against injury, the following instructions must be adhered to.

- Do not look directly into the LED lamp with optical instruments (e. g. magnifying glass).
- If the LED lamp is damaged or defective, have the LED lamp checked or repaired at your local authorized BERNINA dealer.
- Switch off the machine before working in the needle area.
- Before starting the machine, attach all protection guards and close the covers.

## WARNING

To reduce the risk of burns, fire, electric shock or injury to persons, the following instructions must be observed.

### General Facts

- This machine may only be used for the purpose described in this instruction manual.

### Working Environment

- Do not use the machine outdoors.
- Only use the machine in dry rooms.

- Do not use the machine in a humid area.
- Do not use the machine in rooms where aerosol products (sprays) are being used.
- Do not use the machine in rooms where oxygen is dispensed.

### Technical Condition

- Never use the machine when it is damp.
- Do not use the machine if it is not working properly.
- Do not use the machine if a cable or the plug is damaged.
- Do not use the machine if it has been dropped, damaged or has fallen into water.
- If the machine is damaged or does not work properly, have the machine checked or repaired by your local authorized BERNINA dealer.
- Keep all ventilation openings of the machine and the foot control free of lint, dust and loose cloth.
- Do not use the machine if the ventilation openings are blocked.

### Accessories and Supplies

- Only use the accessories recommended by the manufacturer.
- Always use the original BERNINA Stitch Plate.  
An incorrect stitch plate can result in needle breakage.
- Use only straight needles of good quality. Bent or damaged needles can cause needle breakage.
- This machine is double-insulated (except for USA, Canada and Japan). Use only identical replacement parts. See instructions for Servicing of double-insulated products.
- To lubricate the machine, only use the supplied overlocker oil.

### Safety Instructions


- While operating the machine, all protective inserts must be in place and all covers must be closed.

### Appropriate Use

- The machine may be used, cleaned and maintained by children older than eight or by people with reduced physical, sensory or mental capabilities or if there is a lack of experience and knowledge as long as they have been given instructions.
- Furthermore, these persons must be supervised while working with the machine, and/or they must know the safe operation of the machine and be aware of the resulting hazards.
- Children are not allowed to play with the system.
- Special care should be taken when the machine is operated by or in the presence of children.
- Only use the machine with the supplied power cable.
- USA and Canada only: Do not connect power plug NEMA 1-15 to circuits exceeding 150 volt-to-ground.
- Only use this machine with the supplied foot control of type LV-1.
- Do not insert any objects into the openings of the machine.
- Do not place any objects on the foot control.
- While sewing, guide the fabric gently. Pulling and pushing the fabric can cause needle breakage.
- Keep fingers away from all moving parts.
- Special care is required in the needle area, the loopers and the knife.
- For activities in the needle area - such as threading the needle, changing the needle, threading the looper or changing the presser foot - switch off the machine.

- To switch off, set the power switch to «0».
- When protective covers are removed, when the machine is oiled or when other cleaning and maintenance operations mentioned in this instruction manual are carried out, switch off the machine and disconnect the power plug from the outlet.
- Pull the plug out of the outlet by pulling on the plug. Do not pull on the cable.

## Safety Signs on the Machine

Sign	Purpose
	<p>Caution; moving parts.</p> <p>To reduce the risk of injury, switch off the machine before maintenance work.</p>





## Important Information

### Availability of the Instruction Manual

The instruction manual is supplied with the machine.



- Keep the instruction manual safe at a suitable place near the machine to have it at hand in case that you need to look up something.
- If you pass the machine to a third party, always include the instruction manual.
- The latest version of the instruction manual can be downloaded at [www.bernina.com](http://www.bernina.com)

### Proper Use

Your BERNINA machine is conceived and designed for private household use. It answers the purpose for overlocking fabrics as it is described in this instruction manual. Any other use is not considered proper. BERNINA assumes no liability for consequences resulting from improper use.

### Equipment and Scope of Delivery

Example images are used in these instructions for the purposes of illustration. The machines shown in the images and the accessories shown therefore do not always match the actual items included with your machine. The supplied accessory can vary depending on the country of delivery. You can acquire any accessories mentioned or shown that are not included in the scope of delivery as optional accessories from a specialist BERNINA dealer. Further accessories can be found at [www.bernina.com](http://www.bernina.com).

For technical reasons and in order to improve the product, changes may be made to the equipment of the machine and the scope of delivery at any time and without prior notice.

### Servicing of Double-insulated Products

In a double-insulated product two systems of insulation are provided instead of grounding. No grounding means is provided on a double-insulated product nor should a means for grounded be added to the product. Servicing a double-insulated product requires extreme care and knowledge of the system and should only be done by qualified service personnel. Replacement parts for a double-insulated product must be identical to the original parts in the product. A double insulated product is marked with the words: «Double-Insulation» or «double-insulated».



The symbol may also be marked on the product.

### Environmental Protection

BERNINA International AG is committed to environmental protection. We strive to minimize the environmental impact of our products by continuously improving product design and our technology of manufacturing.



The machine is labeled with the symbol of the crossed-out wastebin. This means that the machine should not be disposed of in household waste when it is no longer needed. Improper disposal can result in dangerous substances getting into the groundwater and thus into our food chain, damaging our health.

The machine must be returned free of charge to a nearby collection point for waste electrical and electronic equipment or to a collection point for the reuse of the machine. Information on the collection points can be obtained from your local administration. When purchasing a new machine, the dealer is obliged to take back the old machine free of charge and dispose of it properly.

If the machine contains personal data, you are responsible for deleting the data yourself before returning the machine.

## Explanation of Symbols

 DANGER

Designates a danger with a high risk which can lead to serious injuries or even death unless it is avoided.

 WARNING

Designates a medium-risk hazard which can lead to serious injuries if not avoided.

 CAUTION

Designates a low-risk hazard which can lead to minor or moderate injuries if not avoided.

NOTICE

Designates a hazard which can lead to material damage if not avoided.



You will find **tips** from BERNINA **sewing experts** next to this symbol.



# 1 My BERNINA overlocker

## 1.1 Introduction

Since the introduction of the overlocker for household use in the early 80s, they have become a standard sewing tool and are here to stay. Overlockers not only sew faster than conventional sewing machines, they also achieve more steps in just a single operation, which saves time. Seams are cut back, seamed and finished simultaneously in one task. Due to the Differential Feed, particularly fine fabrics or very elastic materials can be processed professionally.

Stitches varieties of 18 overlock stitches, 5 cover stitches and 4 combo stitches are available for sewing comfortably with tried-and-tested Swiss quality.



In addition to this instruction manual for your BERNINA L 890 the following information products are enclosed.

The latest version of the instruction manual as well as much more information about the overlock machine and accessories can be found on our website <https://www.bernina.com>

## 1.2 BERNINA quality control

All BERNINA machines are assembled with utmost care and are subjected to an extensive functionality test. The subsequent thorough cleaning does not exclude the possibility that thread remnants may still be found in the machine.

## 1.3 Welcome to the World of BERNINA

Made to create, this is the slogan of BERNINA. Not only with our machines do we support you in the implementation of your ideas. In addition to the offers listed below, we offer you lots of suggestions and instructions for your future projects as well as the opportunity to exchange ideas with other sewing, quilting and embroidery enthusiasts. We wish you lots of pleasure.

### **BERNINA YouTube channel**



On YouTube we offer a wide range of how-to videos and support concerning the most important functions of our machines. You can also find detailed explanations many presser feet, meaning that your projects will be a complete success.

[youtube.com/BerninaInternational](https://youtube.com/BerninaInternational)

Available in English and German.

### **«inspiration»- the creative sewing magazine and online store with cutting patterns**



Are you looking for ideas, sewing patterns and instructions for great sewing projects? In this case, the BERNINA magazine «inspiration» is exactly what you need. Three times a year, inspiration offers fantastic sewing and embroidery ideas. From seasonal fashion trends to trendy accessories and practical tips to original decorations for your home or cute sewing ideas for children.

The magazine is available in English, German, Dutch, and French.

In our online shop you can purchase «inspiration» as an e-magazine or as a print version, either as individual issues or as a subscription. Furthermore, there are many individual downloadable cutting patterns to discover! Have a look at:

[inspiration.bernina.com](https://inspiration.bernina.com)

And follow us on Instagram ([inspiration.sewing.magazin](https://www.instagram.com/inspiration.sewing.magazin)).

### **BERNINA Blog**



Subtle instructions, free cutting patterns and embroidery designs as well as many new ideas: All this you can find in the weekly blog of BERNINA. Our experts give useful tips and explain step by step how you can achieve the desired result. In the community you can upload your own projects and exchange experiences and ideas with other sewing and embroidering enthusiasts.

[bernina.com/blog](http://bernina.com/blog)

Available in English, German, Dutch and French.

### **BERNINA Social Media**



Follow on social networks to learn more about events, thrilling projects as well as tips and tricks all about sewing, quilting and embroidering. We will keep you informed and we are looking forward to presenting you the one or the other highlight from the world of BERNINA.

[bernina.com/social-media](http://bernina.com/social-media)

### **BERNINA World App**



Download the BERNINA App from the App Store to your smartphone and enjoy direct access to all product information. The accessory organizer gives you an overview of your accessories and those you still would like to have. Furthermore, you have direct access to the customer portal, the blog and the "inspiration" online store, and you can always find a BERNINA dealer near you. The app is available in the Apple App Store and the Google Play Store.

Direct links can be found at: [bernina.com/app](http://bernina.com/app)





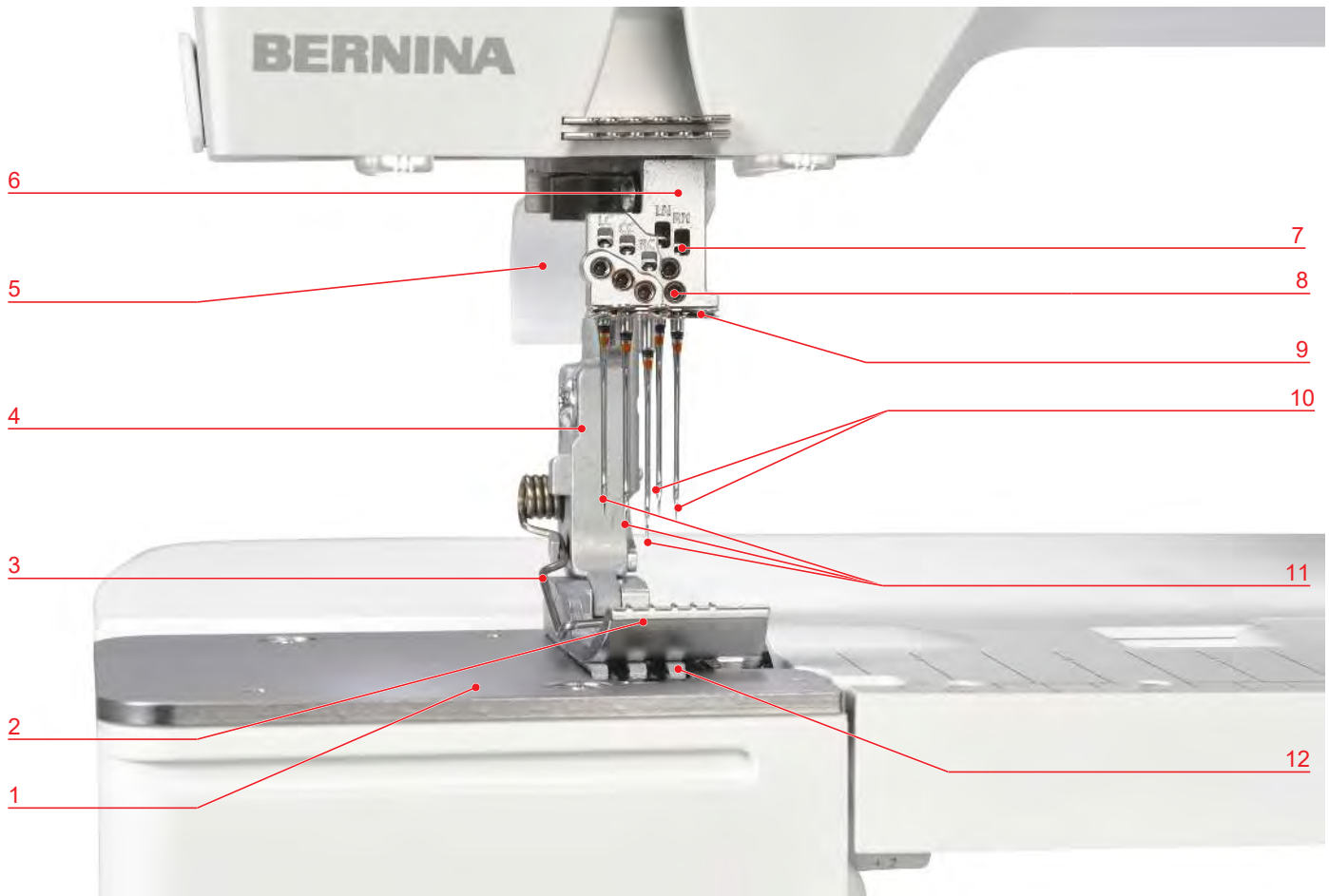
## 1.4 Machine Overview

### Overview - front



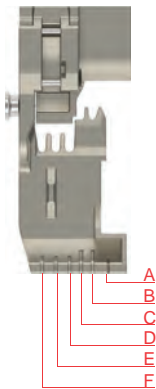
- |    |                                   |    |                                       |
|----|-----------------------------------|----|---------------------------------------|
| 1  | Knife on/off                      | 12 | Screen                                |
| 2  | Cutting width dial                | 13 | Thread tension fine adjustment        |
| 3  | Freearm cleaning cover            | 14 | Thread guiding plate                  |
| 4  | Freearm                           | 15 | Thread deflection fingers             |
| 5  | Guide rails                       | 16 | Threader cover                        |
| 6  | Sewing light                      | 17 | Knife cover insert/coverstitch insert |
| 7  | Thread cutter                     | 18 | Looper cover                          |
| 8  | Thread guide on the headframe     | 19 | Cut-offs bin snap-in opening          |
| 9  | Needle thread take-up lever cover | 20 | Knee lifter (FHS) connection          |
| 10 | Coverstitch threading slot        | 21 | Suction feet                          |
| 11 | Thread take-up lever guide        |    |                                       |

### Overview - needle area



- |   |  |    |                                     |
|---|--|----|-------------------------------------|
| 1 | Stitch plate                               | 7  | Needle checking window              |
| 2 | Standard presser foot overlock/coverstitch | 8  | Needle screws                       |
| 3 | Presser foot spring                        | 9  | Thread guide on the needle holder   |
| 4 | Presser foot shaft                         | 10 | Overlock needles ELx705 CF (2 pcs.) |
| 5 | Presser foot lifter                        | 11 | CS needles ELx705 (3 pcs.)          |
| 6 | Needle holder                              | 12 | Feed dog                            |

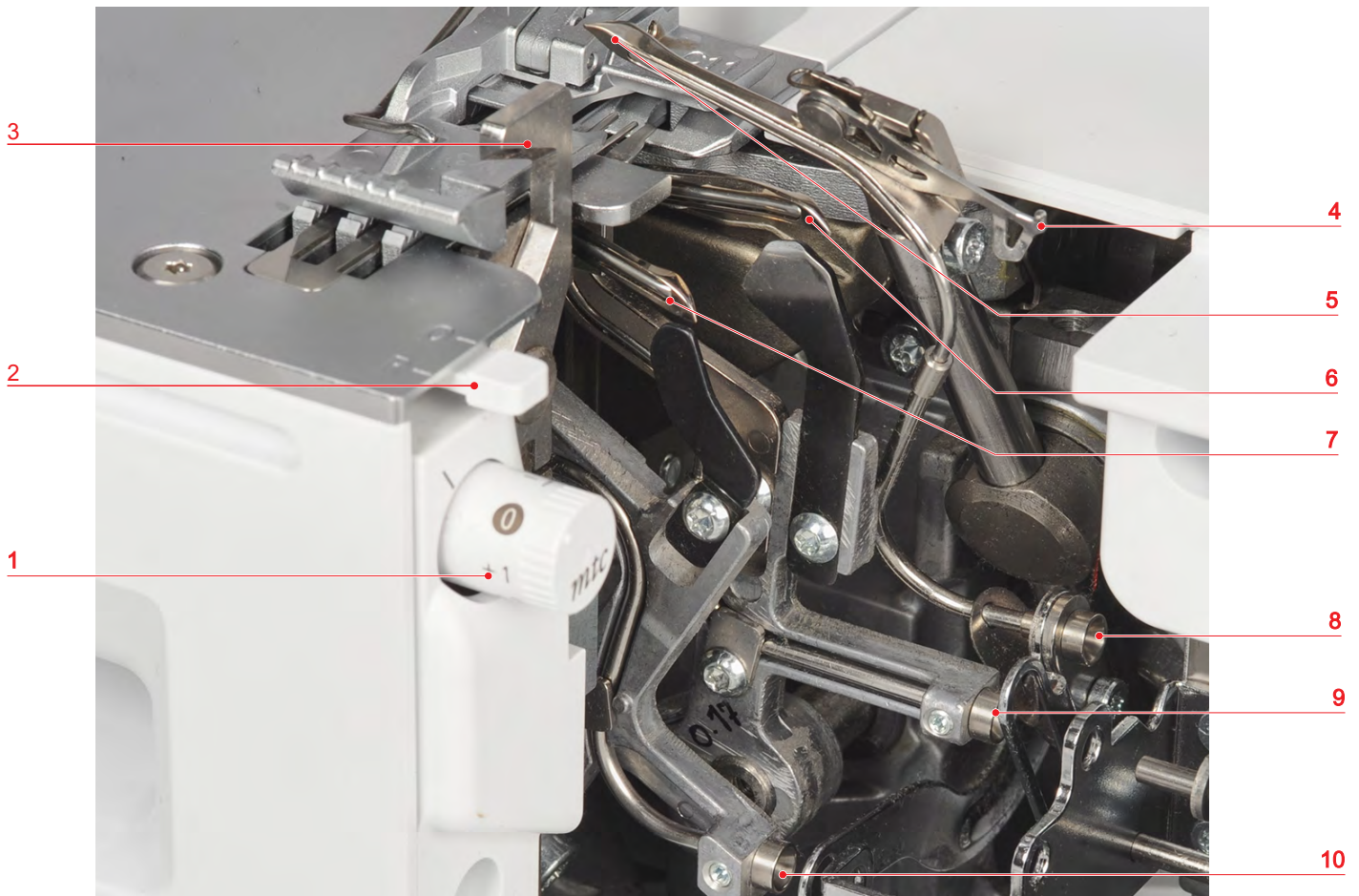
### Standard presser foot overlock/coverstitch



- |   |                                 |   |                           |
|---|---------------------------------|---|---------------------------|
| A | Cutting line at cutting width 6 | D | Right needle for CS (RC)  |
| B | Right needle for OL (RN)        | E | Center needle for CS (CC) |
| C | Left needle for OL (LN)         | F | Left needle for CS (LC)   |



## Overview - looper area

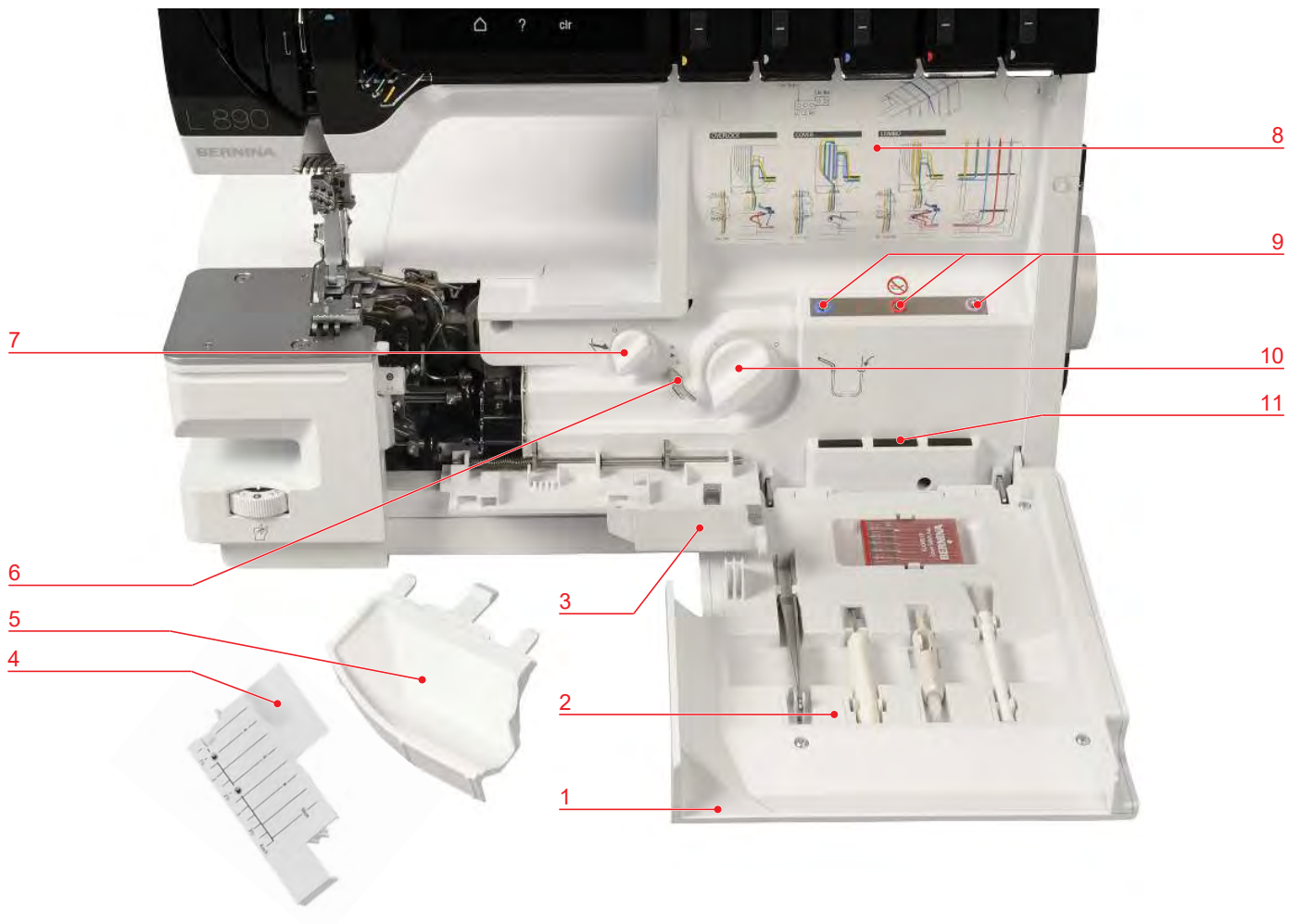


- 1 mtc Micro Thread Control Dial
- 2 Rolled Hem Selection Lever
- 3 Knife
- 4 Upper Looper Converter
- 5 Upper Looper

- 6 Lower Looper
- 7 Chain Looper
- 8 Air Threader Pipes Upper Looper
- 9 Air Threader Pipes Lower Looper
- 10 Air Threader Pipes Chain Looper



## Overview - threading area



- |   |                            |    |                               |
|---|----------------------------|----|-------------------------------|
| 1 | Threader cover             | 7  | Upper looper on/off           |
| 2 | Accessories storage        | 8  | Threading chart               |
| 3 | Looper cover               | 9  | Air threader nozzles          |
| 4 | Coverstitch insert         | 10 | Air threader connector on/off |
| 5 | Knife cover insert         | 11 | Needle pad                    |
| 6 | Air threader circumvention |    |                               |



### Overview - side



- |   |                                      |   |                         |
|---|--------------------------------------|---|-------------------------|
| 1 | Carry Handle and Recessed Grip       | 5 | Foot Control Connection |
| 2 | Handwheel                            | 6 | Power Switch            |
| 3 | Magnetic Holder for Touch Screen Pen | 7 | Type Label              |
| 4 | Air Vents                            | 8 | Power Plug Socket       |

### Overview - rear





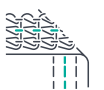


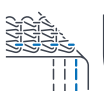

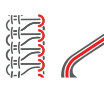

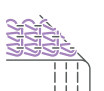




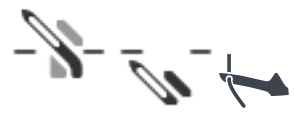







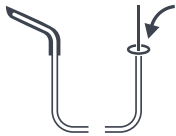


- |   |                             |   |                                  |
|---|-----------------------------|---|----------------------------------|
| 1 | Thread stand                | 6 | Thread cutter                    |
| 2 | Spool pin                   | 7 | Presser foot lifter              |
| 3 | Carrying handle             | 8 | Presser foot release Lever (red) |
| 4 | Retractable thread guide    | 9 | Guide rails                      |
| 5 | Presser foot pressure wheel |   |                                  |

## Symbols on the machine

The symbols on the machine are for your guidance and give assistance when adjusting settings and threading the machine.

- Overlock Stitch Formation «OL»
- Coverstitch Formation «CS»

	LN (Left needle for OL)	Left Overlock Needle Thread
	LC (Left needle for CS)	Left Coverstitch Needle Thread
		Thread Path Yellow «OL» Thread Path Yellow «CS»
	RN (Right needle for OL)	Right Overlock Needle Thread
	CC (Center needle for CS)	Center Coverstitch Needle Thread
		Thread Path Green «OL» Thread Path Green «CS»
	UL (Upper Looper)	Upper Looper Thread
	RC (Right cover needle for CS)	Right Coverstitch Needle Thread
		Thread Path Blue «OL» Thread Path Blue «CS» Thread Path Blue Air Threading Circumvention
	LL (Lower Looper)	Lower Looper Thread
		Thread Path Red «LL» Thread Path Red Air Threading Circumvention
	CL (Chain Looper)	Chain Looper

		Thread Path Purple «CL» Thread Path Purple Air Threading Circumvention
	ULC (Upper Looper Converter)	Upper Looper Converter Activated/Deactivated
		Upper Looper On/Off
	CW (Cutting Width)	Cutting Width
	SL (Stitch Length)	Stitch Length
	DF (Differential Feed)	Differential Feed
	O/R (Overlock/Rolled Hem)	Rolled Hem Selection Lever Overlock «O» / Rolled Hem «R»
		Knife On/Off
<i>mtc</i>	mtc (Micro Thread Control)	Micro Thread Control (mtc)
	FHS (Free Hand System)	Knee Lifter (FHS)
		Presser Foot Pressure
		Air Threader
		Knife Cover Insert
		Coverstitch Insert



## Default values

The default values of the machine are chosen so that the settings are suitable for most typical applications.

- 4 ● The default values are marked on the machine with a gray dot.

The actual values may differ from the stitch chart depending on the fabric, thread and stitch and may need to be adjusted to the result of the sewing sample.

## 1.5 Overview - Standard Accessories

### Included accessories

The machine is ready for operation with the supplied accessories. Special sewing applications sometimes require optional accessories.

To find more accessories, visit [www.bernina.com](http://www.bernina.com).



















Illustration	Name	Purpose
	Dust Cover	To protect the machine against dust when it is not in use and to store the accessories such as the slide-on table, the instruction manual, the Free Hand System, the foot control and the power cable.
	Power Cable	To connect the machine with the power supply system.
	Foot Control	To start and stop the machine. To control the sewing speed. To start the air threading.
	Cut-Offs Bin	To collect scraps and fabric trimmings.
	Knife Cover Insert	To protect the fingers and to deflect the fabric cut-offs during the sewing process.
	Coverstitch Insert	To extend the sewing area when sewing coverstitches and chainstitches. To cover the looper area.

Illustration	Name	Purpose
	Freearm Cover	To fill the clearance between the stitch plate and the sewing area.
	Slide-on Table	To extend the sewing area.
	Free Hand System (FHS)	To raise and lower the presser foot.
	Overlock/Combostitch Foot #C11	<p>For general sewing projects with overlock and combo stitches.</p> <p>The standard cover presser foot is already attached to your machine and is suitable for all stitches made by this machine.</p>
	Accessories in Threader Cover	To store the most frequently used accessories.
	Accessories Box	To store the supplied accessories as well as optional accessories.
	Extension Box	To store the supplied accessories as well as optional accessories.





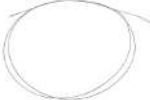




## Accessories in Threader Cover



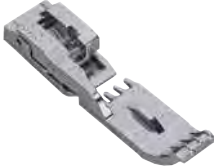

The most frequently needed accessories while sewing are arranged in the threader cover of the machine.

Illustration	Name	Purpose
	Needle Set ELx705 CF	Recommended needles for all-purpose use.
	Screwdriver, hex 1.5 mm	To loosen or tighten the fixing screws on the needle holder.
	Brush/Needle Inserter	To clean the feed dog and the looper area.
	BERNINA Tweezers	For gripping the thread in tight positions.
	Needle Threader/ Inserter	To manually thread, insert and remove the needle.

Accessories in the Accessories Box

Illustration	Name	Purpose
	Overlocker Oil	For oiling the looper components.
	Spool Stabilizer (5x)	To stabilize the thread cone on the spool holder.
	Spool Net (5x)	For even thread unwinding with smooth threads from the thread spool, e.g. nylon, rayon, silk threads or metallic yarns.
	Spool Cap (5x)	To support the regular unwinding of the thread from the spool.
	Threading Wire	To thread the looper threads manually in the air threader pipe.
	Needle set ELx705 CF SUK	Needles recommended for special use in knitwear.
	Right Seam Guide	For an even fabric trim. To sew along a folded edge, without trimming, e.g. for flat joining seams. To use as a guide when creating decorative pintucks or parallel seams and hems.

## Accessories in the Accessories Box Extension

Illustration	Name	Purpose
	Touchscreen Pen	For precise operation of the touch screen.
	CS Lock Tool	To pull the needle threads and to secure the stitches.  To separate the threads so that the sewing project can be removed from or placed under the presser foot.
	Cover/Chainstitch Foot #C13	For cover and chainstitch seams, for general sewing, seams and hems and for topstitching.
	Torx T10 screwdriver	To loosen/tighten the stitch plate screws.

## 1.6 Details of the screen

### Software Operation

The touch-sensitive display can be operated with the finger or touchpen.

**Tap:** Short tap of an element.

**Draw:** Tap the display and slowly move in one direction, eg. for scrolling up and down.

### Navigation














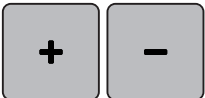

Illustration	Name	Purpose
	«Home»	Show Home screen.
	Navigation Path	Show a previous menu level.
	Animation	Show animations on the corresponding topic.

Illustration	Name	Purpose
	«Close»	Close the window.
	More	Show more features or information.
	Continue	Scroll to next display.
	Back	Scroll to previous display.

### Activate/Deactivate Functions

Illustration	Element	Status
	Switch	Function is activated.
		Function is deactivated.
	Icon	Function is deactivated.
		Function is activated.

### Adjust Values









Illustration	Name	Purpose
	Slider Control	Set the value with the slider control. Displays the default value.
	blue ribbon	The set value is in the experimental range. This can affect stitch quality.
	Icons «Plus» / «Minus»	To increase the value by touching «Plus», to reduce by touching «Minus».
	Yellow Frame	Indication that the set value differs from the default value. Reset the value to the default value by tapping.



## Enter Text and Numbers

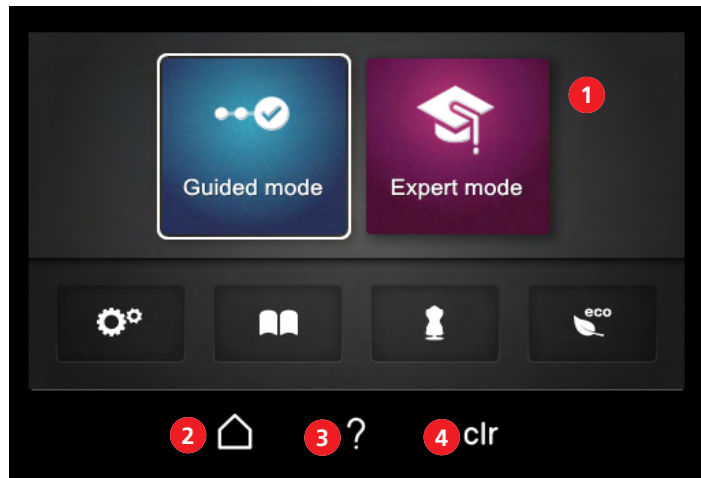
To enter numerical values or text, a corresponding keyboard is shown.



Illustration	Name	Purpose
	Entry Field	Display of the entry. Delete all characters entered with a single tap.
	«Deleting»	Delete the last character.
	«Lower Case Characters»	Show the available letters in lower case letters.
	«Upper Case Characters»	Show the available letters in upper case letters.
	«Numbers and Mathematical Characters»	Show the available numbers and mathematical characters.
	«Special Characters»	Show the available special characters.
	«Confirm»	Confirm the entry and leave the submenu.
	«Cancel»	Cancel the entry and the view closes.

## Screen structure

The screen can be operated by touching the desired icon with your finger or with the included touch screen pen. When the machine is switched on for the first time, the desired screen language is requested in which the display texts appear. Each time the machine is switched on again, the sewing screen appears directly.



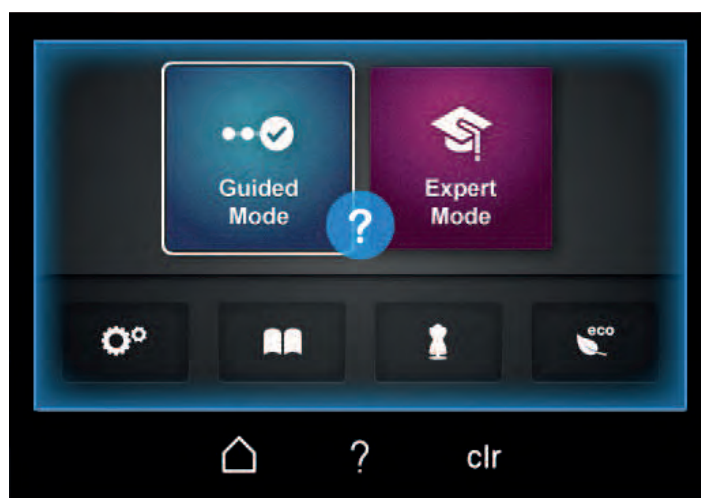
- |   |                                  |   |          |
|---|----------------------------------|---|----------|
| 1 | «Home Screen» or «Sewing Screen» | 3 | «?»-Help |
| 2 | «Home»                           | 4 | «clr»    |



«Home» switches between the two screens «Home Screen» and «Sewing Screen». «Home» allows you to obtain information, make machine settings or get sewing tips without losing the set stitch.



When help «?» is activated, information can be called up and displayed by tapping the desired screen area.

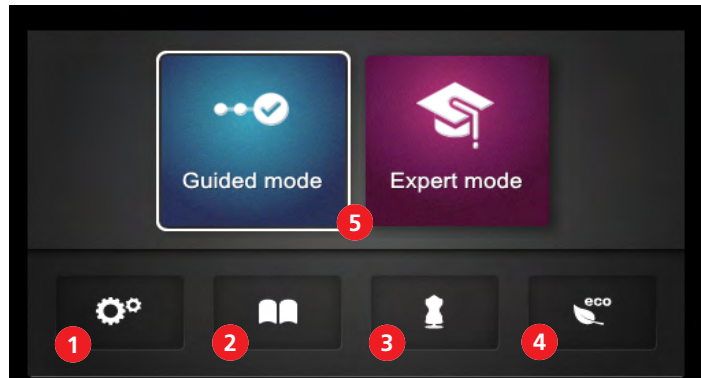


**clr**

«clr» resets all settings of the selected stitch changed on-screen to the default value.

## Home screen

All settings that have nothing to do with a stitch are made on the home screen. This view provides an entry-point to personalize the machine and query information.



- |   |                       |   |              |
|---|-----------------------|---|--------------|
| 1 | «Setup Program»       | 4 | «eco»        |
| 2 | «Tutorials»           | 5 | «User Modes» |
| 3 | «Creative Consultant» |   |              |

### Setup Program



The setup program is used to make software settings or store machine information that is not directly related to a stitch setting.

### Tutorial



The tutorial provides information and explanations about different areas of overlocking and the machine.

### Creative consultant



The creative consultant recommends the optimal stitch in combination with needle, thread and presser foot based on an individual project. (see page 66)

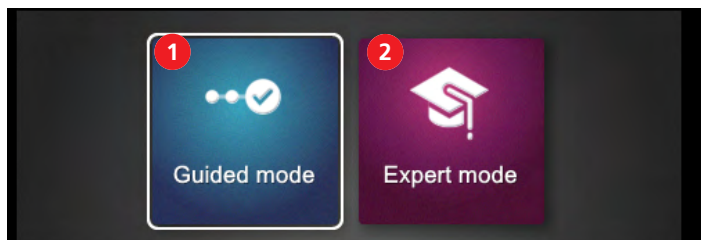
### eco mode



If work is interrupted for a longer period of time, the machine can be switched to power saving mode. The eco mode also serves as a child safety feature. The screen will be locked and the machine cannot be started.

## User modes

The user modes allow to preset the sewing screen according to the sewing experience of the user. The Guided mode is preset.



1 «Guided mode»

2 «Expert mode»

### Guided mode



The guided mode is preset as standard and allows a smooth start into the operation of the machine. No previous knowledge is required. This mode guides you step by step through the necessary manual settings and leads to sewing start. Before changing to another stitch, you are asked whether the currently set stitch is to be added to the personal memory. Animations are offered in many places and help to perform the correct operation. By default, this mode is represented by a blue background of the screen.

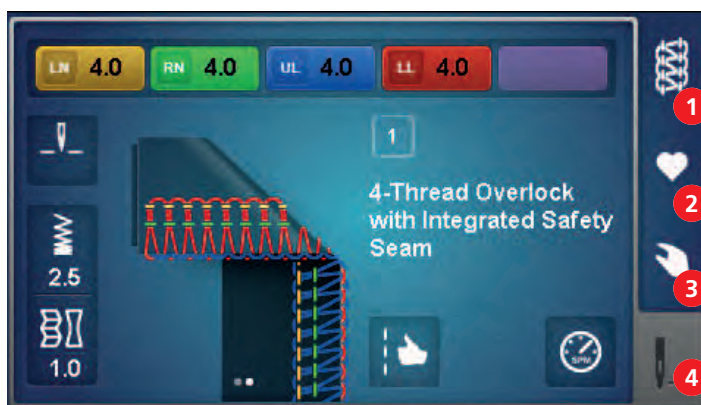
### Expert mode



The expert mode is a creative and fast mode, which allows shortened operation and only the most important instructions are indicated. In this mode a good knowledge of overlocking is required. After selecting the stitch this mode shows an overview of the manual settings, which are to be individually checked or executed. By default, this mode is represented by a purple background of the screen.

## Sewing screen

The sewing screen displays all the settings that are directly related to a stitch. Different views or default values of the stitch can be displayed or the Setup Wizard can be called up.



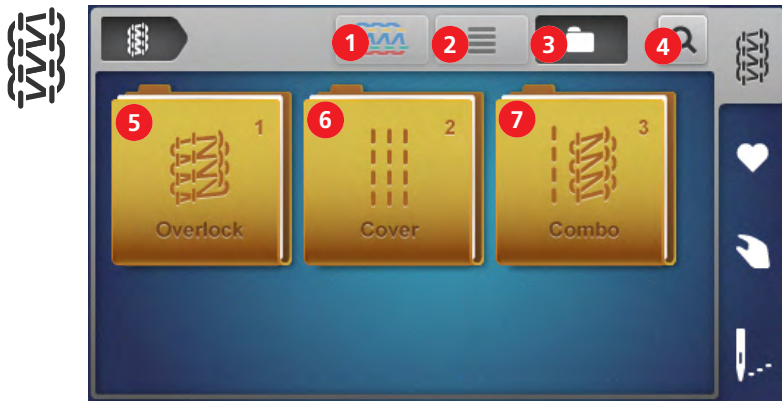
1 «Stitch selection»

2 «Personal Memory»

3 «Manual settings»

4 «Stitch view»

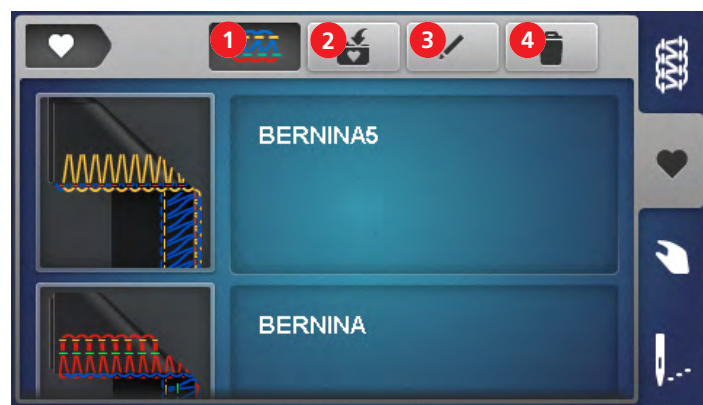
## Stitch selection



1	«Stitch pattern»	To change the stitch view from schematic to realistic view.
2	«Name»	To activate/deactivate the stitch name next to the stitch pattern.
3	«Folder structure»	To switch between stitchgroups or all stitches.
4	«Stitch number»	To select the stitch by entering the stitch number.
5	«Overlock»	To select an overlock stitch from the folder structure.
6	«Cover»	To select a coverstitch from the folder structure.
7	«Combo»	To select a combo stitch from the folder structure.

## Personal memory

In the personal memory, stitches with individually modified stitch settings can be saved, named and selected again. A maximum of 100 different stitches can be saved.



1	«Stitch View»	To alternate the stitch display to schematic or realistic stitch view.
2	«Saving a Stitch»	To save the set stitch in the Personal Memory.
3	«Renaming a Stitch»	To rename a saved stitch in the Personal Memory.
4	«Deleting a Stitch»	To delete the stitch from the Personal Memory.

## Manual Settings



This overview shows which manual settings must be made for the selected stitch. All settings listed here must be checked and performed in order to sew the selected stitch.

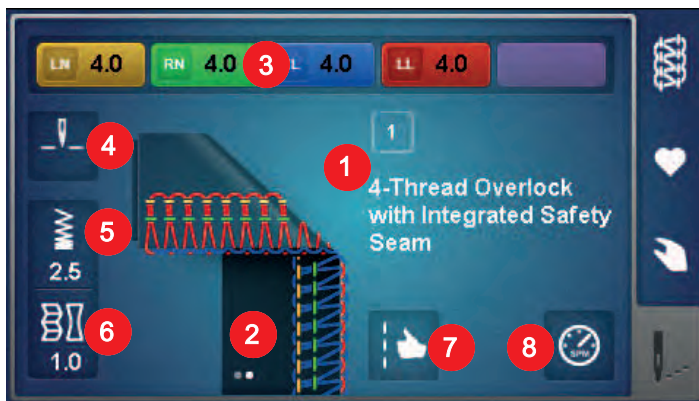


	Note	Description
1	«Presser Foot»	Indicates the presser foot recommended for the stitch. (see page 40)
2	«Upper Looper Converter»	Indicates whether the upper looper converter is to be mounted or unhooked. (see page 69)
3	«Knife On/Off»	Indicates the required position of the knife. (see page 67)
4	«Cutting Width»	Indicates the recommended cutting width. (see page 68)
5	«Micro Thread Control (mtc)»	Indicates the recommended default value of the mtc Micro Thread Control. Setting the mtc micro thread control. (see page 75)
6	«Presser Foot Pressure»	Indicates the value of the presser foot pressure. (see page 76)
7	«Upper Looper On/Off»	Indicates the required position of the upper looper. (see page 68)
8	«Knife Cover Insert/Coverstitch Insert»	Indicates the required insert. (see page 67)
9	«Rolled Hem Selection Lever O/R»	Indicates the required position of the rolled hem selection lever. (see page 74)
10	«CS Needles»	Indicates the needle positions for the corresponding stitch. (see page 41)
11	«OL Needles»	Indicates the needle positions for the corresponding stitch. (see page 41)
12	«Cancel»	Closes the screen «Manual Settings» and switches to the previous view.
13	«Confirm»	Closes the screen «Manual Settings», saves modified stitch settings and switches to the view of the currently selected stitch in the «Stitch View».
14	«Wizard»	Starts «step-by-step instruction» through the manual settings that must be made or checked for the selected stitch.



## Stitch view

Any changes in this stitch view directly affect the stitch and the machine. All displayed values are set by the machine accordingly.



1	«Stitch Number/Name»	Shows the currently set stitch name with the stitch number.
2	«Stitch View»	Shows the currently set stitch pattern. Can include multiple views (schematic / real or exploded e.g. flat seam). The dots refer to hidden views. Tap to switch views.
3	«Thread Tension»	Shows the preset default thread tension value for each required thread path. Tap to change.
4	«Needle Stop Up/Down»	Indicates the position of the needle when the needle stops. Tap to change.
5	«Stitch Length»	Indicates the stitch length. Tap to change.
6	«Differential Feed»	Indicates the preset default value of the Differential Feed. Tap to change.
7	«Stitch Optimizer»	Shows possible stitch results with the setting actions for stitch optimization. Tap to use.
8	«Sewing Speed Adjustment»	Determines the maximum sewing speed with the foot control pressed down. Tap to change.

### Setting with a direct effect on the stitch

- Stitch length setting. (see page 77)
- Differential Feed setting. (see page 71)
- Thread tension adjustment setting. (see page 70)

These settings, or any modifications to them, are stored in the personal memory when the stitch is saved.

### Functions With a Direct Effect on the Machine

- Needle stop up/down. (see page 44)
- Sewing speed setting. (see page 50)

These settings or any changes to them, remain active until they are changed again.

## 2 Setting Up the Machine

### 2.1 Working Area

A stable table with a secure stand is a good prerequisite for optimal sewing results. Ergonomics around the sewing table is important to protect the muscles and joints of the back, shoulder, arms and hands. The recommendation for optimal ergonomics includes matching the table height with the body posture. Avoid remaining in the same position for long periods.

The machine can also be operated when standing.

- > Place the machine on a solid table.

#### Correct Sitting Position

With the arms bent (90°), the fingertips can touch the stitch plate in a comfortable sitting position.

#### Connecting the machine

- > Insert the power cable into the power cable connection (1).



- > Insert the power plug into the power outlet.

#### Use of the Power Cable (only USA/Canada)

The machine has a polarized plug (one contact is wider than the other). To reduce the risk of electric shock, the plug can only be plugged into the socket in one way. If the plug does not fit into the socket, turn the plug. If it still does not fit, an electrician needs to be called to install an appropriate outlet. Do not modify the plug in any way.

#### Switching the machine on/off

- > Set the main power switch to position «I».

  - The machine, the sewing light and the screen are switched on.

- > Set the main power switch to position «0».

  - The machine, the sewing light and the screen are switched off, whereby the sewing light may still glow a little.



## 2.2 Spool Holder

Thread cones, foot spools or household spools of all sizes can be placed on the spool holder.

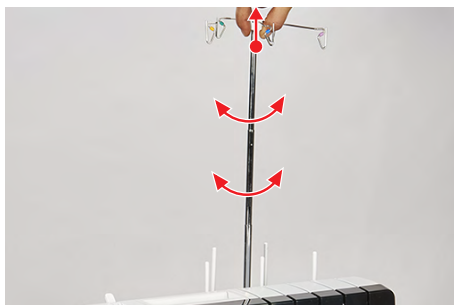


### Preparing the retractable thread guide

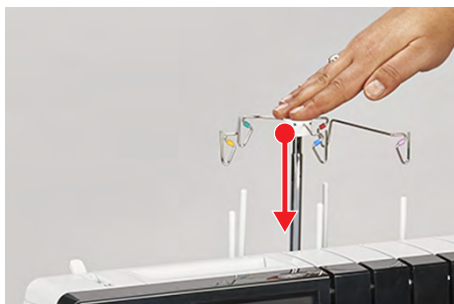
The retractable thread guide is placed on the thread stand. It ensures a clean unwinding of the thread from the thread cones. Each thread is guided through a thread guide wire located directly above the thread cone. These thread guide wires are color-coded according to the threading path.



- > Hold the thread guide attachment and pull it fully up.
- > Turn the thread guide to the left and right until the two positioning pins engage.
  - The outer thread guide wires are parallel to the machine front.



- > To retract the thread guide, push the thread guide down with a little pressure.



### Attaching the Spool Stabilizer

For large thread cones, the spool stabilizer serves to stabilize the thread cone on the spool pin.



- > For extremely conical spools, place the spool stabilizer onto the thread spool pin with the pointy end up.
- > For slightly conical spools, place the spool stabilizer onto the thread spool pin with the pointy end down.



### Place the Spool Disc

The spool disc ensures the stability of the thread spool and the even unwinding of the thread.

- > Place the thread spool on the spool holder.
- > Push the flat side of the spool cap over the spool pin to the thread spool.



### Using the Spool Net

The spool net prevents the thread from sliding down from the thread spool and is recommended for special threads.

- Thin threads, which slide easily off the spool
- Nylon, rayon, silk threads or effect and metallic threads



- > Put the spool net over the thread spool from above and pull the thread end upwards.



## 2.3 Foot Control

### Connect the foot control

- > Unwind the foot control cable out to the desired length and then reattach the cable to the clamping modules.
  - To ensure the cable stays on the desired side.



- > Insert the cable of the foot control into the foot control connection (1).



### Press the foot control

Pressing the foot control moves the needles, the loopers and the knife. The sewing speed can be infinitely adjusted by more or less pressure on the foot control. The maximum sewing speed (pressing the foot control all the way down) can be preset. (see page 50) When the threader cover is open, the one-step BERNINA air threader starts.

- > To start the sewing process, press the foot control down.

- > To stop the sewing process, release the pressure on the foot control.



- > To position the needle up/down, press the foot control down with the heel «Back-kick».



The «Back-kick» is deactivated when the machine covers are open.

## 2.4 Presser Foot

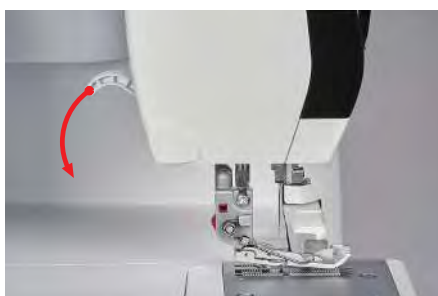
### Positioning the Presser Foot Up/Down

The lifted presser foot allows you to place the sewing project under the presser foot. The lowered presser foot is a prerequisite for starting to sew.

- > Lift the presser foot lifter until it engages.
  - The presser foot remains in the upper position.
  - The thread tension is released.



- > Lower the presser foot lifter.
  - The machine is ready for sewing.
  - The thread tension is active.





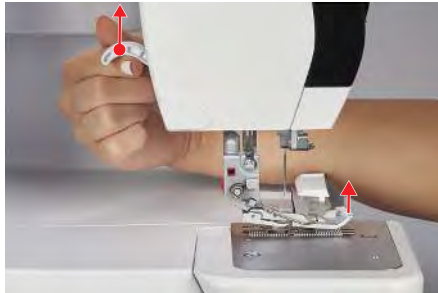
### Lifting the front foot

By lifting the presser foot lifter above the latching position, the space between the stitch plate and presser foot increases.

Thick layers of fabric can be placed more easily under the presser foot.

Prerequisite:

- The presser foot is raised.
- > Pull the presser foot lifter up over the upper latching position and hold it.
  - The presser foot lifts another 3 - 4 mm and the presser foot front is lifted.
- > Release the tension on the presser foot lifter.
  - The presser foot is held in the lock-in position.

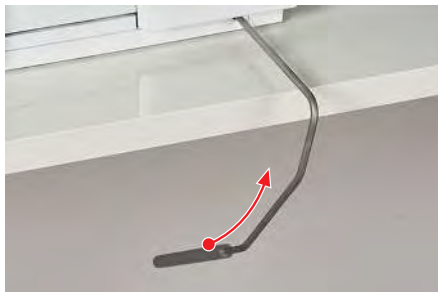


### Lifting the Presser Foot Up/Down with the Knee Lifter

Temporarily lifting the presser foot using the knee lifter allows to position the sewing project with both hands.

Prerequisite:

- The knee lifter is attached.
- > To raise the presser foot, press the knee lifter with the knee out to the right and hold it in place.



- > To lower the raised presser foot, slowly release the pressure on the knee lifter.
- > To lower the already engaged presser foot, press the knee lifter all the way to the right and release slowly.

### Swing the presser foot in/out

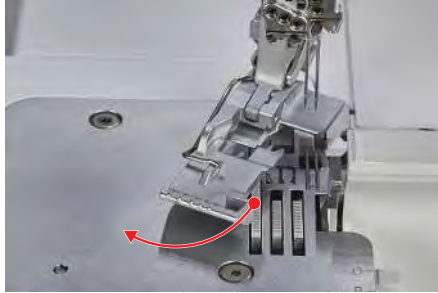
Swinging out the presser foot facilitates changing and threading the needle.

Prerequisite:

- The needles are in the top position. (see page 44)
- The presser foot is raised.



- > Swing the presser foot front sideways to the left.

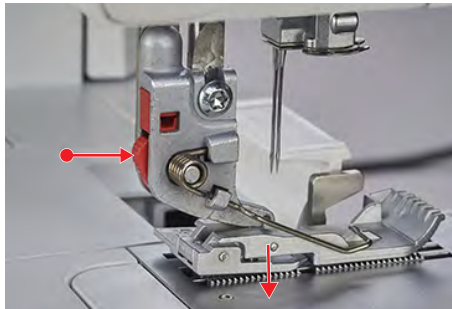


- > To set the presser foot in the sewing position, lower the presser foot lifter or swing the presser foot sideways to the right.

## Changing the Presser Foot

Prerequisite:

- The needles are in the top position.
  - The presser foot is raised.
- > Press the release button on the rear side of the presser foot shaft.
    - The presser foot is released.



- > Lift the presser foot spring slightly and remove the presser foot.
- > Lift the presser foot spring slightly and place the new presser foot beneath the shaft groove so that the shaft groove lies exactly above the presser foot pin.
- > Lower the presser foot shaft carefully until the shaft groove engages with the presser foot pin.



- > Raise the presser foot.

## Removing/Fitting the Presser Foot Shaft

The presser foot shaft is used for attachment for most presser foot soles and is part of the machine. A few accessories require a different presser foot shaft, which is included in the scope of delivery of the accessory.

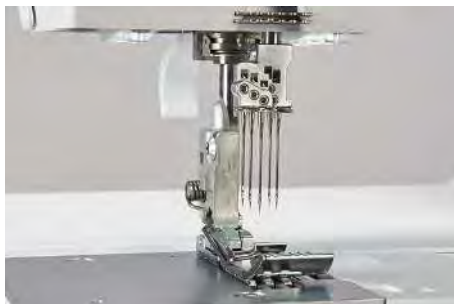
- > To remove the presser foot shaft, loosen the fixing screw on the needle holder bar.
- > Flip the presser foot shaft down and remove it.
- > To fit the presser foot shaft, position the presser foot shaft sideways around the needle bar and push it up as far as it will go.
- > Tighten the fixing screw.



## 2.5 Needle Area

### Needle Holder

The needle holder can hold five needles. The machine is designed for needles of the ELx705 system. Needle sizes between 70-90 are to be used for this machine. (see page 56)



### Needles for Coverstitches



«LC» Left coverstitch needle for coverstitches and chainstitches.

«CC» Center coverstitch needle for coverstitches and chainstitches.

«RC» right coverstitch needle for coverstitches and chain stitches.

### Needles for Overlock Stitches



«LN» Left needle for overlock stitches.

«RN» Right needle for overlock stitches.

### Changing the Needle

The use of the needle inserter is recommended and prevents the needle from falling into the feed dog area. (see page 23)

Correctly inserted needles are not at the same height.

The needle holder screws must always be tightened, even if no needles are inserted. This prevents the needle holding screws from falling out because of vibrations.

#### NOTICE

#### Damage due to Excessive Tightening of the Screws

The threads of the needle holder may be damaged. A repair by the authorized BERNINA dealer is required.

> Do not overtighten the needle screws.

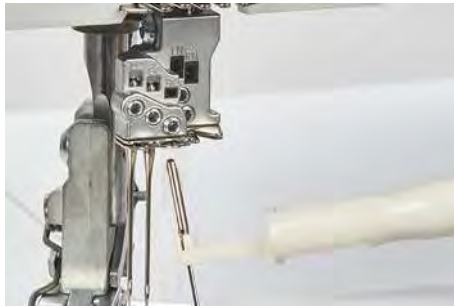
Prerequisite:

- The needles are in the top position.
- The presser foot is up and swung out.

- > Guide the needle inserter from below over the needle and loosen the needle screw using the supplied screwdriver Hex.



- > Remove the needle downwards and store it in the needle pad.
- > Insert the new needle with the flat side to the back into the needle inserter.



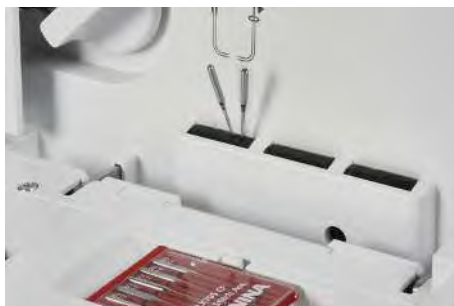
- > Push the needle into the corresponding needle holder opening as far as it will go.
- > Check the needle position in the needle checking window.



- > Tighten the needle screws.

### Needle Pad

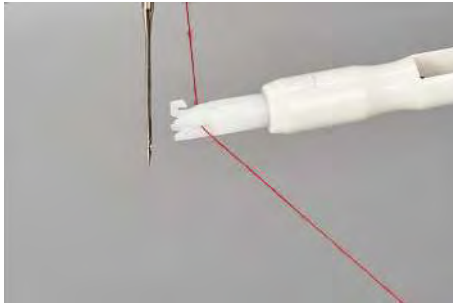
The needle pad is used to store needles that are not being used.



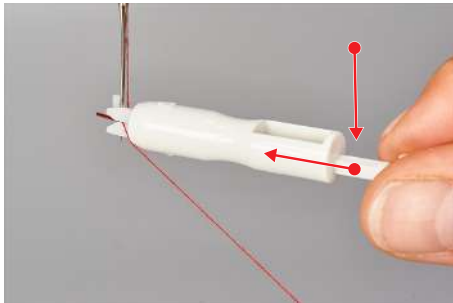
## Threading the Needle Manually

With the needle threader every needle can be threaded easily.

- > Hold the needle threader with the triangular mark facing up.
- > Pull the thread horizontally through the Y-shaped slot and hold the end of the thread.



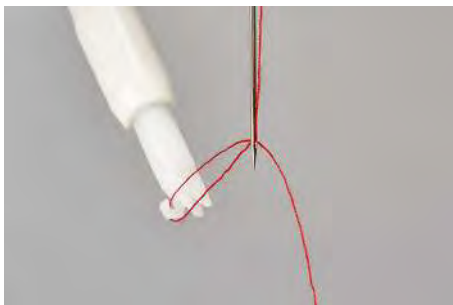
- > Place the needle threader with the triangular mark facing upwards on the needle and glide along the needle with light pressure towards to the needle eye.



- The metal pin presses the thread through the eye of the needle.
- > Release the pressure on the needle threader and remove it from the needle.



- A thread loop has formed.
- > Use the hook of the needle threader to pull the thread loop to the back.



- > Place the thread beneath the presser foot to the back left.



## Positioning the needles up/down

The needles always remain in the topmost position when the sewing process is stopped. Turning the handwheel changes the needle position and the topmost position is not ensured. The «Back-kick» is deactivated when the machine covers are open.

The top needle position is required for the following actions:

- to change the needle
  - to thread the needle
  - to swing out the presser foot
  - to start the air threader process
- > «Back-kick» on the foot control.
- The needles are positioned up/down.



## Adjusting the needle stop up/down



The needle stop position can be preset in the stitch view and defines the stop position of the needle at the end of the sewing. (see page 33)

- > Tap needle stop up/down.
- The needle stops in the selected position.

## 2.6 Machine Covers

The machine covers protect against injuries caused by moving components and prevent fragile elements from being damaged. All covers must be fitted or closed prior to sewing.

- Threader cover
- Looper cover
- Knife cover insert/coverstitch insert

A needle movement is still possible in some cases. (see page 84)

### Open/Close the Threader Cover

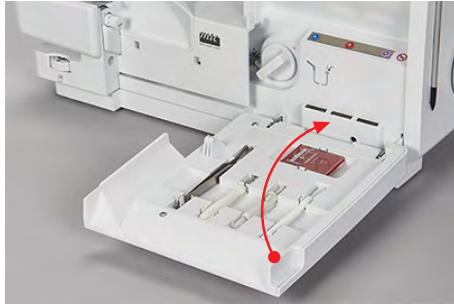
The threader cover protects the inserted looper threads during sewing operations. The accessory holder on the inside of the threader cover provides quick access to the most frequently used accessories.

- > To open the threader cover, hold the groove and lower it forwards.





- > To close the threader cover, swing the threader cover up until it clicks into place.



If the threader cover cannot be closed completely, the air threader connector is still switched on.

### Open/close the looper cover

The looper cover with integrated knife cover insert protects against injuries caused by the movement of the looper and knife movement as well as against dust and fabric scraps.

Prerequisite:

- Threader cover is opened.
- > To open the looper cover, push the tabbed handle to the right and then lower it to the front.



- > To close the looper cover, lift the tabbed handle upwards and let it slide back to the left slowly.



### Removing/attaching the knife cover insert

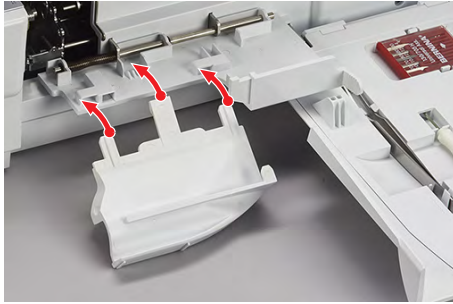


Prerequisite:

- The looper cover is opened.



- > To insert the knife cover insert, push the knife cover insert into the snap-in opening.



- > To remove the knife cover insert, pull the knife cover insert out of the snap-in opening.

**NOTICE**

**Missing knife cover insert while sewing**

Injury to the fingers due to the knife movement.

Before each sewing start, check that the knife cover insert is fitted.

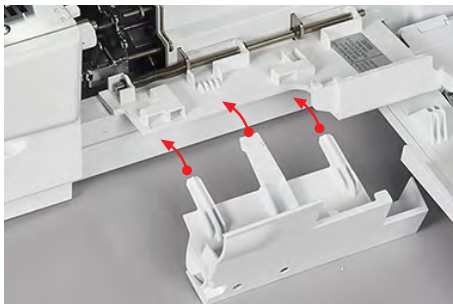
**Removing/attaching the coverstitch insert**



Prerequisite:

- Loper cover is opened.
- Upper looper is deactivated. (see page 68)
- Knife cover insert is removed.

- > To insert the coverstitch insert, push the coverstitch insert into the snap-in opening.



- > To remove the coverstitch insert, pull the coverstitch insert out of the snap-in opening.



## 2.7 Handwheel

By turning the handwheel counterclockwise, several activities can be performed.



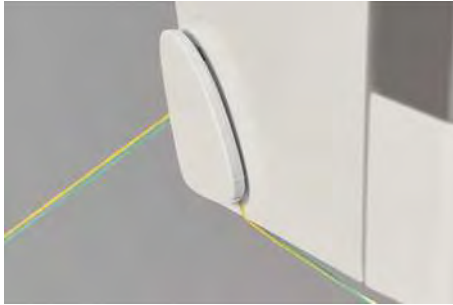
- Slow, Precise Placement of the Needle
- Moving the Loopers
- Moving the Knife
- Mechanical Coupling of the Air Threader

## 2.8 Sewing Assistance

### Using the Thread Cutter

The thread cutter is used to cut the threads/thread chain.

- > Pull the threads/thread chain down from the front into the thread cutter.



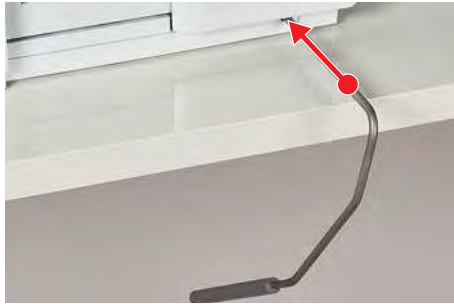
- The threads/thread chains are held after cutting and are ready for sewing.



### Attaching/Removing the Knee Lifter

Temporarily lifting the presser foot using the knee lifter allows to position the sewing project with both hands.

- > To attach the knee lifter, push the knee lifter engaging cam in a horizontal position into the knee lifter connection until it stops.



- > To remove the knee lifter, pull the knee lifter out of the knee lifter connection without swinging the knee lifter sideways.



The swing-out position of the knee lifter can be adjusted at an authorized BERNINA dealer if required.

### Attaching/Removing the Cut-offs Bin

The cut-offs bin catches the fabric scraps during the sewing process.



- > To attach the cut-offs bin, hook the cut-offs bin into the snap-in opening on the looper cover.



- > To remove the cut-offs bin, lift the cut-offs bin out of the snap-in opening on the looper cover.

### Attaching/Removing the Freearm Cover

The freearm is ideal when working with tubular, closed projects such as cuffs, trouser hems or sleeve ends. The freearm cover closes the gap between the stitch plate and the sewing surface.

Prerequisite:

- The slide-on table is removed.
- > To attach the freearm cover, push the freearm cover along the guide rails from the left until it engages.



- > To remove the freearm cover, pull the freearm cover to the left.



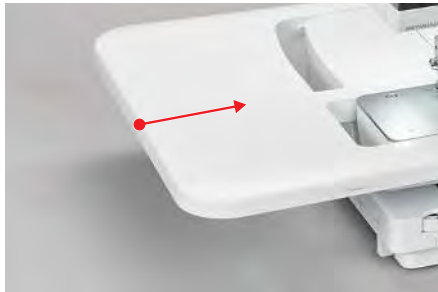
### Attaching/Removing the Slide-on Table

The slide-on table increases the sewing surface, which is especially helpful with larger sewing projects.

Prerequisite:

- The freearm cover is removed.

- > To attach the slide-on table, push the slide-on table along the guide rails from the left until it engages.



- > To remove the slide-on table, press the release mechanism (1) of the slide-on table and pull the slide-on table to the left.



### Attaching/removing the seam guide

For an even fabric trim.

To sew along a folded edge, without trimming, e.g. for flat joining seams.

To use as a guide when creating decorative pintucks or parallel seams and hems.

- > Press the clamp together at the upper part of the seam guide, place the seam guide on the edge of the knife cover insert and let it engage.



- > To remove the seam guide, press the upper part of the clamp together and pull it away from the knife cover insert.



## 3 Setting up software

### 3.1 Setup Program



In the setup program, default settings are performed, which will remain active until the next adjustment is made.

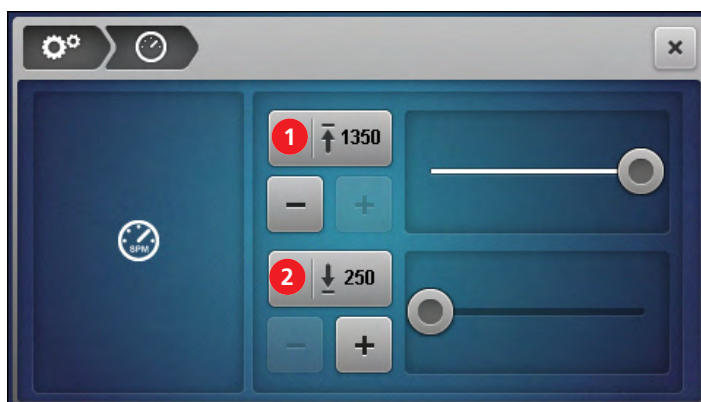


- |   |                                    |   |                      |
|---|------------------------------------|---|----------------------|
| 1 | «Sewing Speed»                     | 4 | «Firmware Settings»  |
| 2 | «Screen Brightness / Sewing Light» | 5 | «Personal Settings»  |
| 3 | «Sound Settings»                   | 6 | «Monitoring Sensors» |

#### Adjusting the sewing speed

The sewing speed of the machine can be preset.

The maximum sewing speed is achieved by pressing the foot control all the way down. The minimum sewing speed is attained by pressing the foot control gently. (see page 37)



- |   |                                    |   |                                    |
|---|------------------------------------|---|------------------------------------|
| 1 | «Setting the maximum sewing speed» | 2 | «Setting the minimum sewing speed» |
|---|------------------------------------|---|------------------------------------|

#### Adjusting screen brightness/sewing light

The screen brightness can be regulated and preset according to your own preferences.



The sewing light can be switched off and on again in case of a disturbing effect.

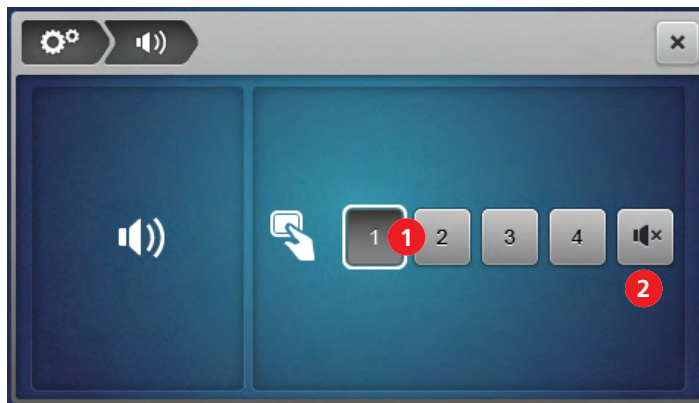


1 «Display Brightness»

2 «Sewing Light On/Off»

### Activating the audio signals

On-screen touches are confirmed with a sound. The sound can be selected or muted as requested.



1 «Set sound» (1-4)

2 «Mute sound»

### Setting up the firmware



1 «Language Selection»

4 «Factory Setting»

2 «Information on the Firmware Version»

5 «Firmware Update»

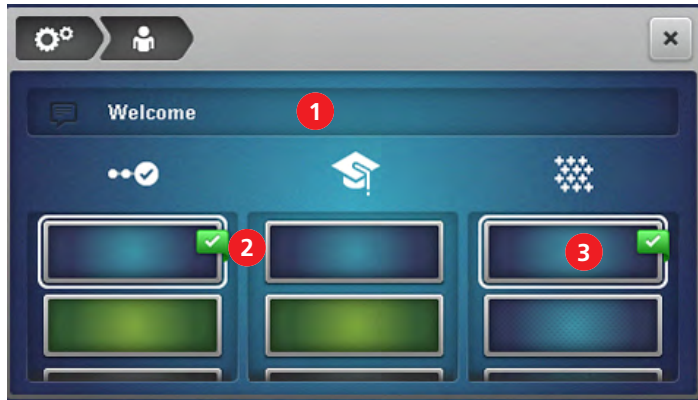
3 «Calibrating the Screen»



## Personalize the sewing screen

Different colors can be assigned to the sewing screen for the two user modes «Guided mode» and «Expert mode». A wallpaper pattern can be selected, which is displayed for both user modes.

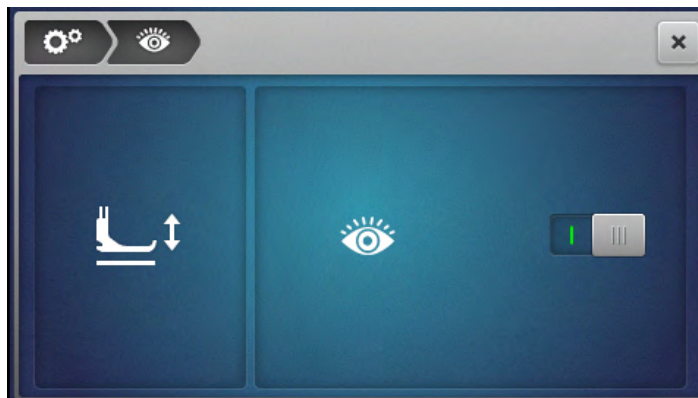
The entry of the welcome text appears only for a short time during the start-up of the machine.



- 1 «Welcome text»
- 2 «Background color» of the sewing screen
- 3 «Wallpaper» of the sewing screen

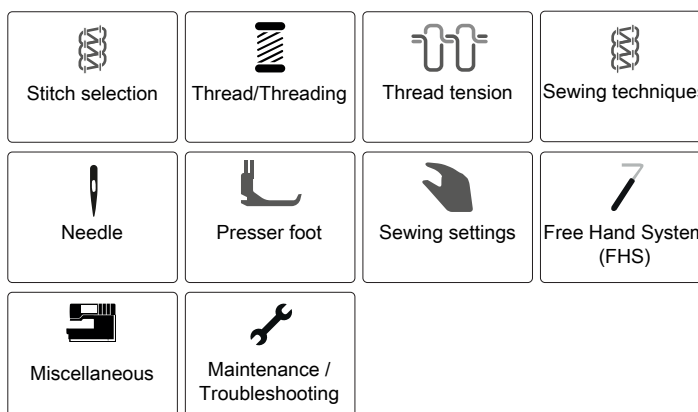
## Presser foot indicator

When the «presser foot indicator» is activated, an animation appears if the presser foot is not in sewing position. A warning signal is heard when the sound is on.



- 1 «Presser foot indicator»

## 3.2 Querying the Tutorial



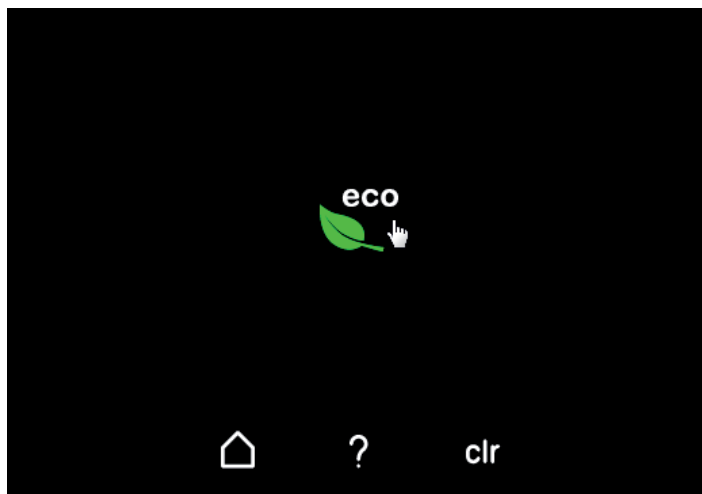
> To access the topic selection, tap the «Tutorial».

- > Select a subordinate topic until the desired information is obtained.
  - A history navigation at the upper left edge of the screen serves as orientation.

### 3.3 Activating the eco mode



- > Press «eco».



- The screen turns black and the eco mode symbol appears.
  - The sewing light switched off.
  - The machine is not ready for sewing.
- > Tap the icon «eco» on the screen.
    - The Home screen appears.

## 4 Sewing Start

### 4.1 Check before starting to sew

In order to start a project successfully, the following steps must be performed.

- The machine is switched on and the presser foot is lifted.
  - The fabric and the applications have been selected. (see page 54)
  - The thread has been selected. (see page 54)
  - The needle size matches with the thread type and the sewing project. (see page 55)
  - The stitch is selected. (see page 64)
  - The machine settings have been performed based on the stitch selection. (see page 67)
  - The threading has been performed. (see page 79)
  - All needle threads and looper threads lie under the presser foot to the back left.
  - The looper cover and the threader cover are closed.
- > Lower the presser foot.
- > Press the foot control to start the sewing process.
- A thread chain is formed.
  - If no thread chain is formed, the settings on the machine for the stitch must be checked.

### 4.2 Selecting the Fabric

The choice of fabric, in combination with needle, thread and stitch, plays a vital role in achieving the perfect sewing result. The sewing test with the selected fabric is recommended. (see page 92)

### 4.3 Selecting the thread

A wide range of sewing and special overlock threads are manufactured in various sizes and in different fiber combinations.

- The use of high quality overlock thread is recommended to achieve good results.
- Use thread cones/spools which are suitable for overlock machines.

#### NOTICE

Thread breakage due to incorrect needle/thread or thread/looper matching

The thread needs to glide smoothly through the respective thread guides.

It must be possible to feed the thread through the looper or the needle eye without any resistance.

Thread thick decorative threads exclusively into the loopers, use the air threader circumvention if necessary.

In the case of thick threads, elongate the stitch length and reduce the thread tension.




## Selecting the needle thread

Needle size and thread type must be carefully matched. The correct needle size depends both on the selected thread type and the fabric to be sewn. The fabric weight and type determine the thread weight, needle size and point form.

Needle thicknesses of 70 - 90 can be used on the machine.

Thread type	Needle size
Polyester overlock thread No. 120	80 – 90
Polyester multifilament < No. 120	70 – 90
Wooly nylon	80 – 90
Decorative thread/yarn	80 – 90
Metallic thread	80 – 90

### Check the Needle/Thread Combination

	The needle/thread combination is correct if the thread is guided perfectly into the long groove and through the eye of the needle.
	The thread can break and cause skipped stitches if there is too much play in the long groove or eye of the needle.
	The thread can break and become jammed if it frays on the edges of the long groove and is not guided optimally through the eye of the needle.

## Selecting the looper thread

A wide range of thread types can be used as looper threads which can be threaded with the One-step BERNINA air threader. For very thick threads, the air threader circumvention must be used. (see page 87)

### NOTICE

#### Damage by coated or waxed threads

Coated or waxed threads may lose some of their coating in the air threader pipes, resulting in permanent blocking of the pipes. Repair by a BERNINA dealer will be necessary. Avoid use of coated or waxed threads.

## 4.4 Selecting the needle

This machine is designed for needles of the system ELx705 with needle sizes 70 – 90. It is recommended to use the ELx705 CF (Chrome Finish) version as ELx705 CF needles are more durable. Due to the second thread groove, the machine runs most reliably with ELx705 CF needles.

If required, needles of the 130/705 H system can also be used. These universal needles can provide good results in certain applications and are available with various tip shapes and in different needle sizes.

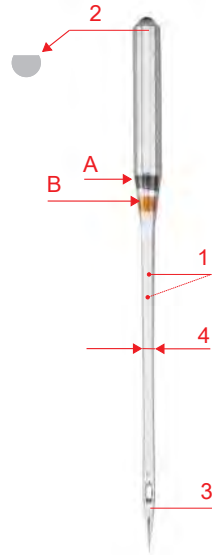


Fig. 1: Coverstitch Needle ELx705 CF/80

A	■ Coverstitch Needle ELx705 CF/80	3	CF = ChromFinish
1	Two Thread Grooves	4 / B	80 = Needle Size
2	705 = Flat Shank		

The needles should be replaced regularly. Only a perfect needle point can achieve a proper stitch.

- Needle size 80: for all common applications, medium to heavy fabrics
- Needle size 90: For heavyweight fabrics
- Needle sizes < 80: In exceptional cases, only for light fabrics

## Needle overview

Illustration	Designation	Size*	Description	Material/Application
 ■	<b>Coverstitch needle</b> ELx705 CF	80/12 90/14	Needle with two thread grooves	Overlock and coverstitch applications universal
 ■	<b>Jersey/Coverstitch needle</b> ELx705 SUK CF	80/12 90/14	Mid-sized ball point	Overlock and combo applications in knits and knitwear
 ☒	<b>Universal needle</b> 130/705 H	70/10 80/12 90/14	Slightly rounded point	For nearly all natural and synthetic fabrics (woven and knitted)
 ■	<b>Stretch needle</b> 130/705 H-S	75/11 90/14	Mid-sized ball point, special eye shape and groove	Jersey, tricot, knitted and stretch fabrics
 ■	<b>Jersey/Embroidery needle</b> 130/705 H SUK	70/10 80/12 90/14	Mid-sized ball point	Knitwear and embroidery
 ■	<b>Jeans needle</b> 130/705 H-J	80/12 90/14	Pointed, narrow point, reinforced shank	Heavy-weight fabrics such as jeans, canvas
 ■	<b>Microtex needle</b> 130/705 H-M	70/10 80/12 90/14	Especially sharp, narrow point	Micro fiber fabrics and silk
 ■	<b>Quilting needle</b> 130/705 H-Q	75/11 90/14	Slightly rounded, narrow point	Straight and topstitching
 ☒	<b>Fine material needle</b> 130/705 H SES	70/10 90/14	Small ball point	Fine knitwear, embroidering on fine, delicate fabrics
 ■	<b>Metafil needle</b> 130/705 H METAFIL	80/12	Long needle eye (2 mm) in all needle sizes	Sewing projects with metallic threads

\*Not all needle sizes are available as BERNINA Needles.

## Detect Defective Needles

Check the needle before each sewing start and replace it if necessary.



1 Bent Needle

2 Damaged Needle Point

3 Blunt Needle

## 4.5 Fixing Fabric Layers

If several layers of fabric are sewn together, they can be fixed with basting stitches sewn on the sewing machine or by pins.

### NOTICE

#### Damage to the Knife

Pins placed too close to the fabric edge can be caught by the knife. The needle tips can be sheared off or the blade of the knife can be damaged.

Position the pins at an adequate distance from the edge of the fabric.

> Place the pins approx. 2 cm from the edge of the fabric or remove them continuously while sewing.





## 5 Selecting a Stitch

### 5.1 Stitch Type

With this machine different stitch formations can be set. These stitches are achieved by different configurations of needles and mechanical settings.

#### Overlock Stitch

The 3- and 4-Thread Overlock are considered standard overlock stitches for sewing two layers of fabric together, for finishing cut edges, e. g. facings, hem edges and seam allowances that are ironed apart.

The 2-Thread Overlock is ideal for finishing a fabric edge.

#### 4-Thread Overlock

The 4-Thread Overlock is the most durable stitch thanks to the safety seam. The left and right overlock needle thread as well as the upper and lower looper thread are required for this stitch. The overlock needle threads form two parallel stitch rows, which on the front side look like step stitch rows of a sewing machine. On the wrong side, the overlock needle threads form «dots» to catch the under looper thread when the fabric is pierced, whereby the right overlock needle thread also serves as a safety seam.



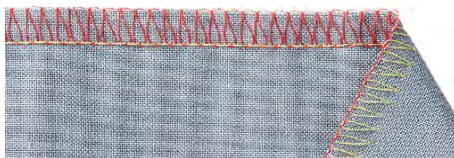
#### 3-Thread Overlock

The 3-Thread Overlock is usually stretchable than the 4-Thread. Therefore it is ideal for seams on knitted fabrics (LN wide) or fine fabrics (RN narrow).




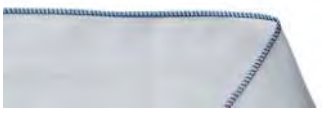




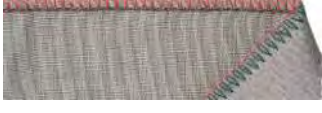



#### 2-Thread Overlock

The 2-Thread Overlock is formed with an overlock needle thread (LN wide or RN narrow) and the under looper thread. The lower looper thread is guided to the right side of the fabric by means of the hooked-in upper looper converter. This overlock stitch is only suitable for edge finishing.



### Finishing Edges

The finishing of a fabric edge is mostly used as preparation for open seams or as a decorative edge finish.

Stitch Number	Stitch Name	Stitch Pattern
No. 3	3-Thread Overlock Wide (LN)	
No. 4	3-Thread Overlock Narrow (RN)	
No. 8	3-Thread Rolled Hem	
No. 9	2-Thread Wrapped Overlock Wide (LN)	
No. 10	2-Thread Wrapped Overlock Narrow (RN)	
No. 13	2-Thread Rolled Hem	
No. 14	2-Thread Overlock Wide (LN)	
No. 15	2-Thread Overlock Narrow (RN)	
No. 28	2-Thread Blanket Stitch Wide (LN)	
No. 29	2-Thread Blanket Stitch Narrow (RN)	
No. 30	3-Thread Picotstitch	



## Seam

Seams are at least two layers of fabric, which are usually placed right side on right side and then sewn together. There are two different types of seams.

- Closed Seams
- Flat Seams

### Closed Seam



For closed seams 3-Thread or 4-Thread Overlock Stitches are suitable, because they loop around both fabric edges and sew them together. These stitches are mainly chosen for garments made of knitted fabrics and for wide cut garments made of woven fabrics.



Stitch Number	Stitch Name	Stitch Pattern
No. 1	4-Thread Overlock with Integrated Safety Seam	
No. 2	3-Thread Super Stretch	
No. 3	3-Thread Overlock Wide (LN)	
No. 4	3-Thread Overlock Narrow (RN)	
No. 7	3-Thread Rolled Seam	

### Flatlock for Flat Seams

The flatlock forms loops on the upper side of the seam and stitches on the underside.

- > Thread and set the machine for 2- or 3-Thread Flatlock.
- > Sew two layers of fabric together (wrong side on wrong side).
- > Carefully separate the two layers of fabric.
  - The two fabric edges now lie flat on top of each other at the stitch width of the flatlock.

Stitch Number	Stitch Name	Stitch Pattern
No. 5	3-Thread Flatlock Wide (LN)	
No. 6	3-Thread Flatlock Narrow (RN)	

Stitch Number	Stitch Name	Stitch Pattern
No. 11	2-Thread Flatlock Wide (LN)	
No. 12	2-Thread Flatlock Narrow (RN)	

## Coverstitch

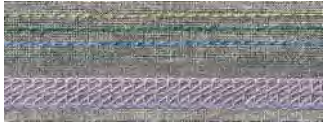



### Hem

Coverstitch hems on garments, having been sewn with the machine, look very professional.

### 3- / 4-Thread Coverstitch

The coverstitch consists of 2 - 3 needle threads on the right side and 1 looper thread on the wrong side of the fabric.

Cover and chainstitch seams allow the option to sew without cutting the edges. These seams can be used in many different ways, for both functional and decorative purposes: Seams, hems, bordering.

Stitch Number	Stitch Name	Stitch Pattern
No. 21	4-Thread Coverstitch	
No. 22	3-Thread Coverstitch Wide (LC-RC)	
No. 23	3-Thread Coverstitch Narrow (LC-CC)	
No. 24	3-Thread Coverstitch Narrow (CC-RC)	

### Decorative Seam

Coverstitches and chainstitches can be used for decorative sewing. The wrong side of the seam is especially attractive when multicolor thread is used in the looper.

## Chainstitch

### Basting

The chainstitch is ideal for basting, e.g. in the provisional assembly of garments for fitting, when sewing costumes or with alterations to be made. Due to the loop structure of the stitch, the seam can be undone simply by pulling the looper thread.










## 5.2 Stitch selection on the screen

There are three different options to select a stitch.

	<p>Select a stitch from the «Stitch selection» in the sewing screen. (see page 64)</p>
	<p>In the sewing screen, select a stitch from the «Personal memory». (see page 65)</p>
	<p>In the Home screen, open the «Creative Consultant» for assistance. (see page 66)</p>



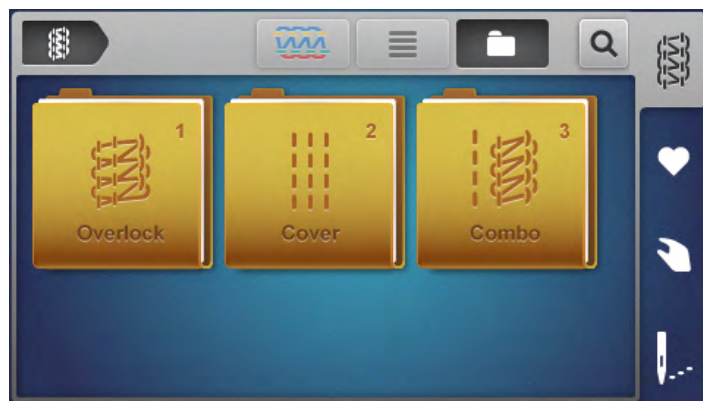
When changing a stitch in the guided mode, a prompt appears asking whether the current stitch should be saved.

### Selecting a stitch directly



Prerequisite:

- «Sewing screen» is active.
- > Select the «Stitch selection».



- > Select the «Stitch group».
  - An overview of stitches is displayed.
- > Select a «Stitch.»
  - The Wizard begins.
- > Follow the instructions by scrolling forward and perform one setting at a time, step by step.

The stitch selection with the preset Expert Mode omits the Setup Wizard and displays an overview of the manual settings to be made. (see page 32)

## Selecting/Editing a stitch from the Personal Memory

- > Select the Personal Memory.
  - Stitches which are already saved are displayed.



- > Select the stitch by tapping on the icon.
  - The Setup Wizard starts.
- > Perform all settings for the selected stitch step by step on the machine and scroll forward.
- > When all settings have been made, tap on «Confirm».
  - The stitch from the Personal Memory is visible in the stitch view and ready to sew.

### Stitch save/overwrite

In order to save a stitch with changed settings in the Personal Memory, the stitch selection and any modifications to it must already have been made.



In the guided mode, a prompt appears automatically when the personal memory is tapped to ask whether the stitch is to be saved.

- > By «confirming» the query, the screen «Save the Stitch» opens directly.
- > By «canceling» the query, the screen «Personal Memory» opens directly.

### Saving a Stitch

- > Select the «Personal Memory» and tap on «Save the Stitch».
  - The stitch pattern is added to the selection without a stitch name.
- > Select a new stitch pattern.
- > Enter and confirm the stitch name using letters, numbers and symbols.
- > Enter any changed manual settings as a note and confirm.
  - The stitch is saved.
  - The last selected stitch is shown in the stitch view.

### Overwriting a Stitch

- > Select the «Personal Memory» and tap on «Save the Stitch».
  - The stitch pattern is added to the selection.
- > Select the stitch pattern of the stitch to be overwritten.
- > Confirm the query «Overwrite».
- > Check the stitch name, change it if necessary and confirm.
- > Enter any changed manual settings as a note and confirm.
  - The stitch is renamed.
  - The last selected stitch is shown in the stitch view.



### Rename stitch



#### Prerequisite:

- The Personal memory is selected.
  - All saved stitches are listed.
- > Tap on «Rename a stitch».
- > Select the stitch pattern with the stitch name to be changed.
- The entry field for stitch naming appears.
- > Change and confirm the new stitch name using letters, numbers and symbols.
- The stitch name is changed in the personal.

### Delete stitch



#### Prerequisite:

- The Personal Memory is selected.
  - All saved stitches are listed.
- > Tap «Deleting a stitch».
- The stitches in the memory that can be deleted are marked.
- > Tap on the stitch pattern of the stitch to be deleted.
- > Confirm the query «Delete» on the screen.
- The stitch is deleted from the Personal Memory.

## Using the stitch recommendation of creative consultant



#### Prerequisite:

- The Home screen is selected.
  - The Creative Consultant is selected.
- > Select the fabric type.
- > Select the application.
- A matching stitch, presser foot, thread and a matching needle are suggested.
- > Reject the suggestions made by the Creative Consultant.
- The home screen appears.
- > Confirm the suggestion made by the Creative Consultant.
- The Setup Wizard starts.
- > Perform all settings for the selected stitch step by step on the machine and scroll forward.
- > By tapping on «Confirm», you also confirm that the settings have been made on the machine.



## 6 Machine Settings

### 6.1 Preparing the Machine for Overlock or Overlock/Chainstitch Combo



The machine can be set up for finishing the fabric edge with fabric cut with just a few movements.

Prerequisite:

- The looper cover is opened.
- > Set the «Upper Looper On/Off» to the right. (see page 68)
- > Adjust the knife according to the stitch settings. (see page 67)
- > Knife cover insert is attached. (see page 45)
  - The machine is prepared for overlock or overlock/chainstitch combo.
- > Perform the sewing start. (see page 54)

### 6.2 Preparing the Machine for Cover- and Chainstitch



For hemming, basting or sewing together without cutting the fabric, the machine can be set up for coverstitch or chainstitch with just a few movements.

- > Set the «Upper Looper On/Off» to the left. (see page 68)
- > Adjust the knife according to the stitch settings. (see page 67)
- > Coverstitch insert is attached. (see page 46)
  - The machine is prepared for a coverstitch or a chainstitch.
- > Perform the sewing start. (see page 54)

### 6.3 Setting the Knife

#### Setting the Knife On/Off



For a better overview and better access in the sewing area, e. g. for threading, the knife can be lowered (off) and then raised again (on). The knife is also lowered if the sewing project already has a clean cut edge and the edge is only to be finished. The best sewing results are achieved by cutting and finishing in one single step.

- > Push «Knife off» to the back.
  - The knife is lowered.



- > Pull «Knife on» to the front.
  - The knife raises and is in cutting position.



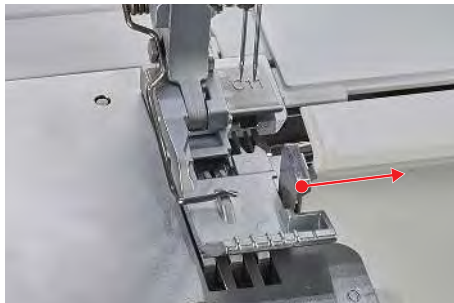
## Setting the cutting width



The cutting width for the knife position can be adjusted between 5 - 9 mm. The numbers on the scale correspond with the actual cutting width in mm from the left overlock needle «LN» to the cutting edge. The cutting width is used to determine the stitch width. The set cutting width is indicated at the cutting width dial. (see page 77)

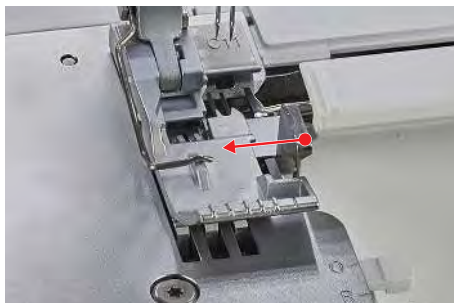


> To increase the cutting width, turn the cutting width dial (1) to the a higher value.



– The set cutting width is visible on the cutting width dial.

> To reduce the cutting width, turn the cutting width dial (1) to a lower value.



– The knife, the stitch finger and the looper cover move in the corresponding direction as a result of the set knife position.

## 6.4 Setting the upper looper on/off



### Activating the upper looper

Prerequisite:

- The looper cover and the threader cover are opened.



> Set the «Upper looper on/off» to position «I».

- > Press the foot control.
  - The pulse drive is performed.
  - Upper looper is activated.



- > Attach the knife cover insert. (see page 45)

### Deactivating the upper looper



Prerequisite:

- The looper cover and the threader cover are opened.
  - The upper looper converter is hooked out. (see page 69)
- > Set the «Upper looper on/off» to position «0».
  - > Press the foot control.
    - The pulse drive is performed.
    - Upper looper is deactivated.



- > Attach the coverstitch insert. (see page 46)

## 6.5 Upper looper converter hooked in/hooked out



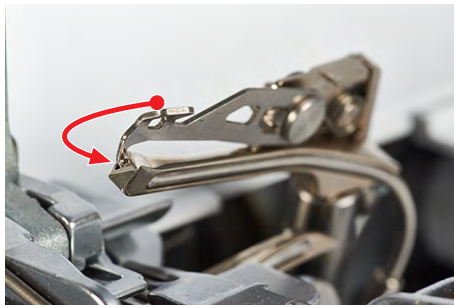
By hooking in the upper looper converter, the upper looper grabs the lower looper thread so that it covers the entire fabric edge.

Prerequisite:

- The needles are in the top position.
  - Upper looper is in position «I».
  - The upper looper thread is removed.
  - The lower looper thread is below the upper looper.
- > To hook in the upper looper converter, swing the upper looper converter to the left at the retaining bracket.



- > Lightly press the upper looper converter back on the retaining bracket and hook the snap-in lug into the eye of the looper, making sure that the snap-in lug is completely engaged.



- > To unhook the upper looper converter, press the retaining bracket of the upper looper converter back slightly and remove the snap-in lug out of the looper eye.
- > Swing the upper looper converter completely back to the right.



## 6.6 Adjusting the thread tension

The thread tension has a considerable influence on each individual thread and its task to perform the stitch formation. The thread tension is preset for each stitch with a default value and does not have to be changed until the test sewing.

The thread tension can be changed while sewing.

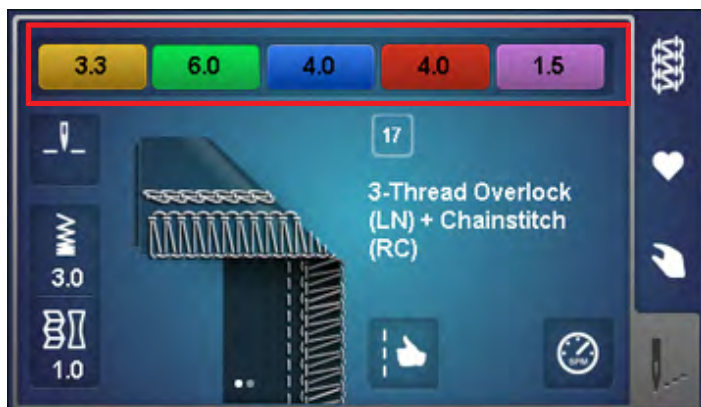
- > To reduce the thread tension, set the thread tension fine adjustment to a lower value.
- > To increase the thread tension, set the thread tension fine adjustment to a higher value.



An adjustment of the stitch formation can primarily be achieved by reducing the thread tension.

The thread tension can be changed using the fine adjustment buttons «+»/«-» or in the stitch view. (see page 33)

- > By selecting the thread tension range, the thread tension can be adjusted individually for each thread path.



- > The slider control of each thread tension can be adjusted between 1 and 9.



- > Each individual thread tension can be adjusted between 1 and 9 using the fine adjustment keys «+/-». The alteration of the thread tension is visible on the screen.



### Optimizing the thread tension for cover stitches

The thread tension should be reduced in the smallest possible steps from the basic value.

A blue ribbon indicates that the set value is in the experimental range. In rare cases this may lead to skipped stitches.




The stitch elasticity can also be increased by reducing the stitch length.

### Resetting to default value

- > Select the yellow-outlined field
  - The thread tension is reset to the default value.
- > Touch the icon «clr»
  - resets all settings of the selected stitch that have been changed on the screen to the default value.

## 6.7 Adjusting the differential feed

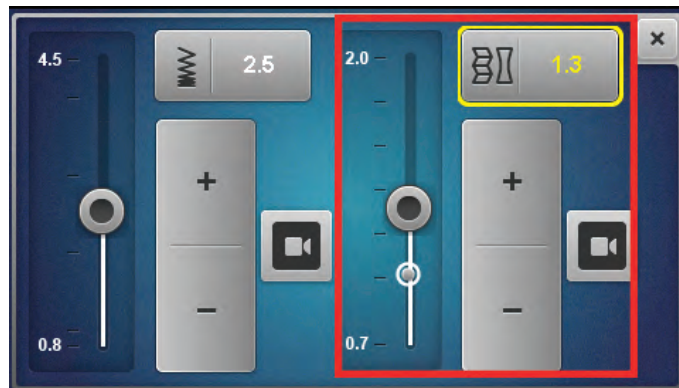
 The Differential Feed prevents unwanted seam puckering or seam waves in knitted or stretchy fabrics as well as the shifting of fabric layers. The rear feed dog always maintains the same speed, while the speed of the front feed dog can be adjusted. The two feed dogs can be synchronized with each other during the sewing process so that the fabric is fed as desired, and no waves or unwanted puckering occur.



To enable a «blind operation», the setting range is displayed larger when the machine is running.



> Set the Differential Feed proportion of the front feed dog via the Differential Feed setting.



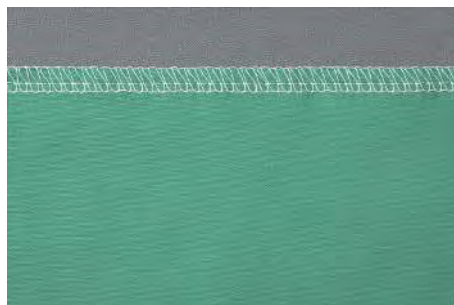
Setting for the front feed dog	Fabric	Result
2	Fine, soft fabrics	Ruffling, puckering, gathering
1.5	Jersey, sweatshirt, knits	Slight ruffling, preventing seam waving
1	Woven knit and medium-weight dense fabric	Default value
0.7	Fine nylon tricots, densely woven fabric, lining, satin	Stretching, preventing seam puckering

These setting values describe the transport ratio of the front feed dog to the rear feed dog.

### Default value 1



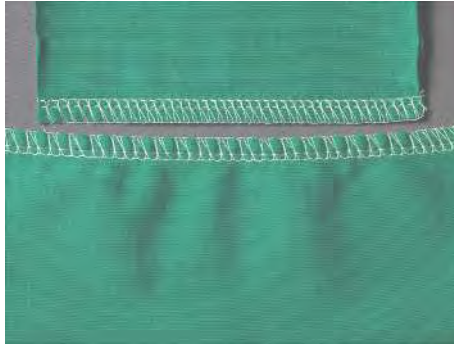
For default value 1, both feed dogs move by the same distance. The machine achieves an optimal sewing result for most applications regarding flat and even seams in the default value.







- > To prevent seam puckering, reduce the Differential Feed to a value between 0.7 and 1.



## 6.8 Rolled Hem Selection Lever «O/R»



The adjustment positions for overlocking «O» and rolled hems «R» are marked in the stitch plate and can be set for the desired application.



### Selecting Overlocking «O»

During overlocking, the upper and lower looper threads are laid around the stitch finger and this creates an even distance to the cut edge.

- > Move the rolled hem selection lever to position «O».



- Overlocking is activated.
- The stitch finger is extended.

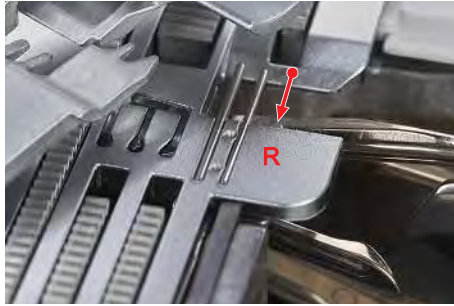
If the thread quantity at the fabric edge is too much or too little, the thread quantity can be corrected by the mtc thread control. (see page 75)

### Setting Rolled Hem «R»

By retracting the stitch finger, the loops of the upper and lower loopers thread are reduced and the fabric edge is rolled under. Rolled hems are the ideal edge finishing for fine fabrics. These are particularly suitable for decorative finishings on scarves, evening gowns, lingerie, home textiles and as lining seams.



- > Move the rolled hem selection lever to position «R».



- The rolled hem is activated.
- The stitch finger is retracted.

## 6.9 Setting the mtc micro thread control

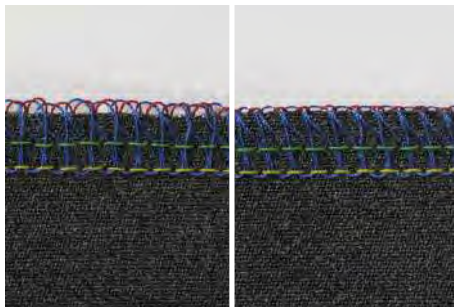
*mtc* By default mtc micro thread control is always set to position «0». The mtc micro thread control affects the amount of the Loper Thread around the fabric edge and can be adjusted continuously while sewing. This feature makes it easy to achieve the look of the stitch at any given cutting width.



The mtc is most effective when used for a cutting width of 6 – 8 mm.

Between 5 – 6 mm the adjustment towards the minus «-» direction is limited.

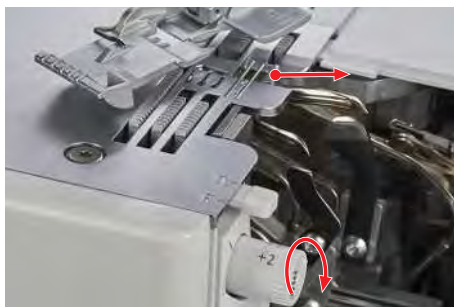
Between 8 – 9 mm the adjustment towards the plus «+» direction is limited.



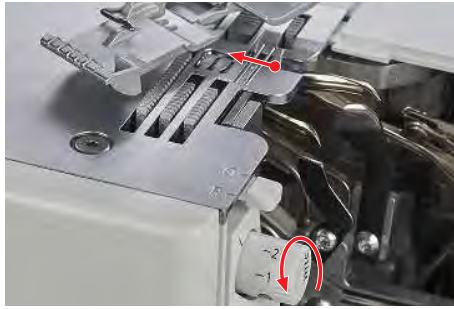
Prerequisite:

- The sewing test has been performed.
- The thread tension is set correctly.
- The knife position is set correctly.
- mtc (micro thread control) set to «0».

- > To enlarge the loops of the Loper Thread at the fabric edge, turn the mtc micro thread control during sewing in «+» direction.
- > In order to adjust the mtc micro thread control in «+» direction when the machine is at rest, the thread loops must be pushed off the stitch finger so that the movement of the stitch finger is not limited.



- > To minimize the loops of the looper thread at the fabric edge, turn the mtc micro thread control in «-» direction during sewing.



## 6.10 Setting the presser foot pressure



The Presser Foot Pressure of the machine is set in the default value "4" so that it is suitable for sewing medium-weight fabrics. Most materials do not require any adjustment of the Presser Foot Pressure. However, there are some cases where an adjustment is necessary, for example when sewing very light or heavy fabrics.

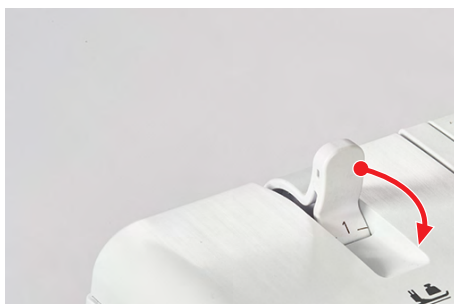


- |   |              |   |               |
|---|--------------|---|---------------|
| 1 | Extra-light  | 4 | Default value |
| 2 | Light        | 5 | Medium-high   |
| 3 | Medium-light | 6 | High          |

- > To set the optimal presser foot pressure for your sewing project, perform a sewing test.
- > Reduce the presser foot pressure for light fabrics.
- > Increase the presser foot pressure for heavy fabrics.
- > To increase the presser foot pressure, set the presser foot pressure wheel to a higher value.



- > To reduce the presser foot pressure, set the presser foot pressure wheel to a lower value.



## 6.11 Adjusting the Stitch Width

The stitch width can be adjusted in two different ways.

- Needle Position
- Cutting Width

The stitch width can be set by means of the needle position.

### Changing the stitch width via the needle position

The stitch width can vary by the choice of needle position by 2 mm.

- > To sew a wide stitch, insert the left needle.



- > To sew a narrow stitch, insert right needle.



### Changing the stitch width via the cutting width



The stitch width can vary by adjusting the knife position. The scale of the cutting width dial determines the distance between the left overlock needle (LN) and the knife in mm. For the right overlock needle, the set scale value is reduced by 2 mm.

- > To adjust the stitch width, set the cutting width dial between 5 – 9 mm.

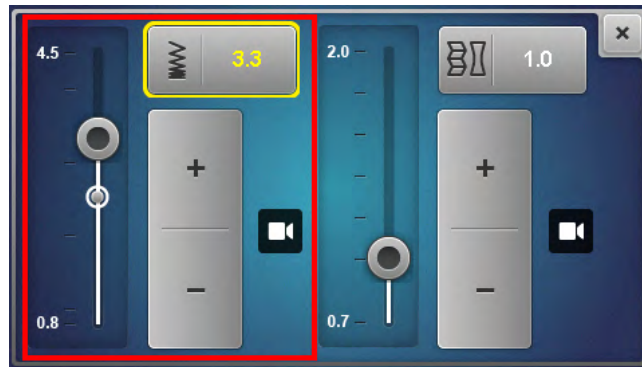
## 6.12 Adjusting the stitch length



The stitch length setting corresponds to the feed dog movement in mm.

The common stitch length for overlock stitches is 2.5 mm, for coverstitches 3.5 mm and for combo-stitches 3 mm. Stitch lengths of approx. 1 mm are e. g. used for rolled hems, while stitch lengths of approx. 4 mm are used for gathering or sewing on an elastic band. The stitch length can be infinitely adjusted from 0.8 – 4.5 mm while sewing.

- > Tap on the stitch length icon on the sewing screen and adjust the value.



To enable a «blind operation», the setting range is displayed larger when the machine is running.



### Optimizing the stitch length for cover stitches

The stitch length should be reduced in the smallest possible steps from the basic value.

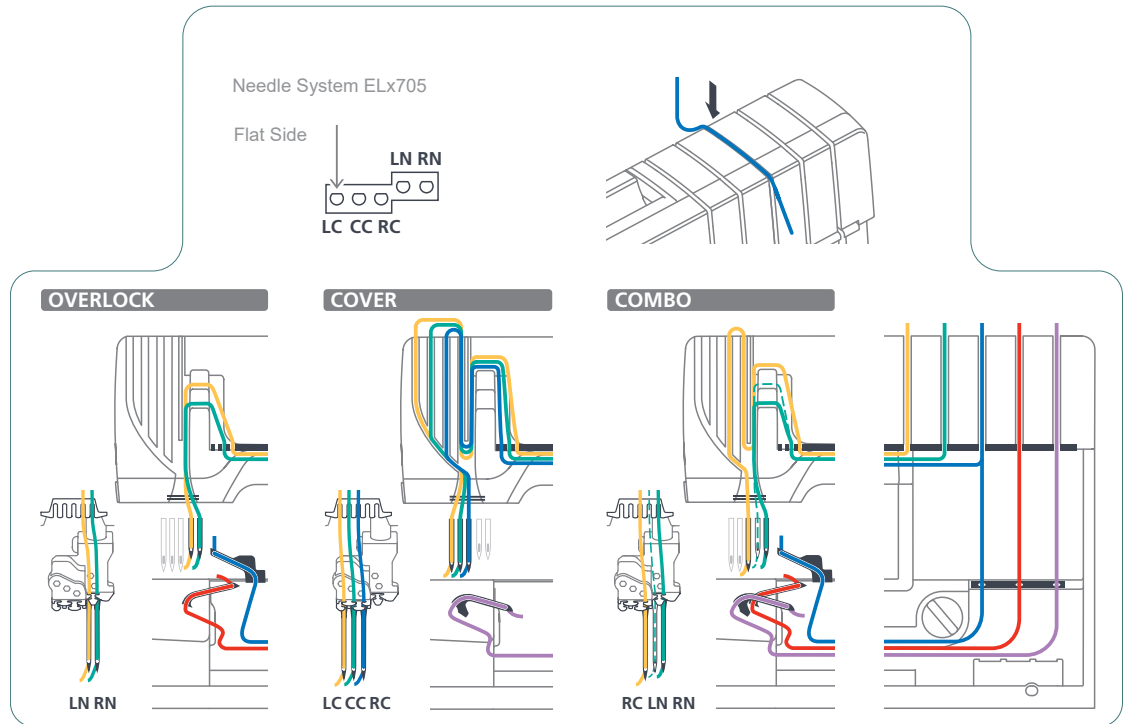
A blue ribbon indicates that the set value is in the experimental range. In rare cases this may lead to skipped stitches or problems with fabric feed occurs.



The stitch elasticity can also be increased by reducing the differential feed.

## 7 Threading

Thanks to the One-step BERNINA air threader, the machine can be threaded in any desired sequence.



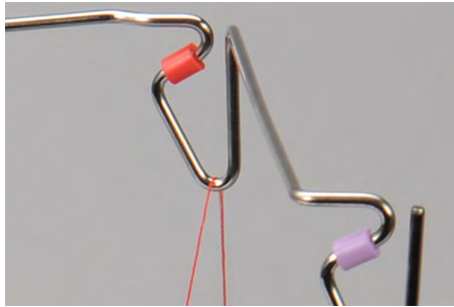


## 7.1 Preparing for threading

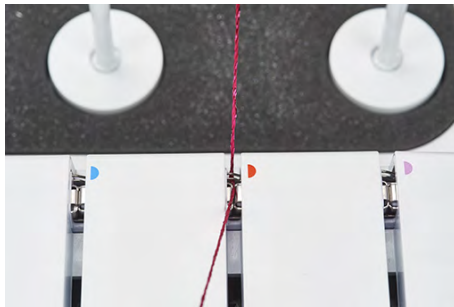
Perform the required mechanical settings for the stitch e. g. needle position, rolled hem selection lever and upper looper converter. Correct threading is ensured when following the color markings.

Prerequisite:

- The retractable thread guide is fully extended.
  - The needles are in the top position.
  - All threads that are not needed are removed.
- > Raise the presser foot.
- The thread tensions are released. The thread can be inserted without resistance.
- > Place the thread cones on the respective spool pin.
- > Place the thread from the back through the corresponding color-coded thread guide.



- > Engage the thread into the thread pretension with both hands downwards and check that the thread does not slip out of the thread pretension when pulling it up backwards.



- > Place the thread along the threading slot between the thread tension discs.











## Threading the Center Coverstitch Needle Thread CC/Green

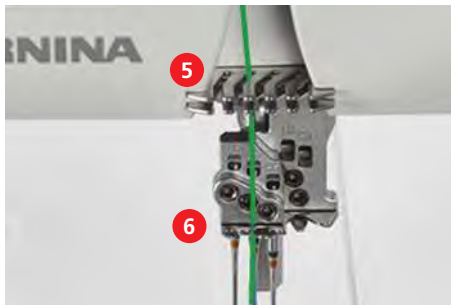
- The center coverstitch needle thread is marked in green all along the thread path.

Prerequisite:

- Threading is prepared. (see page 79)



- > Pull the thread beneath the thread guide plate to the left and up behind the green marking.
- > Place the thread over the upper needle thread take-up lever cover.
- > Pull the thread up around the thread take-up lever and pull it along the corresponding thread path towards the needle.



- > Hook the thread into the second thread guide from left of the needle holder.
- > Thread the needle eye.
- > Place the thread beneath the presser foot to the back left.
- > When all needed threads are threaded, lower the presser foot.

## Threading the Right Coverstitch Needle Thread RC/Blue

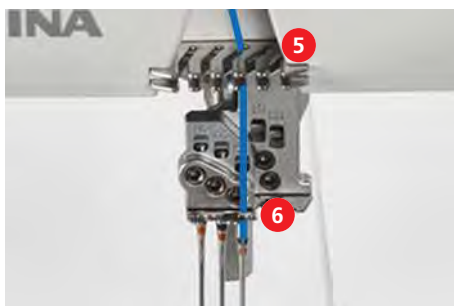
- ⤿ The right coverstitch needle thread is marked in blue all along the thread path.

Prerequisite:

- Threading is prepared. (see page 79)



- > Pull the thread beneath the thread guide plate to the left and up behind the green marking.
- > Pull the thread up around the thread take-up lever and pull it along the corresponding thread path towards the needle.
- > Hook the thread into the third thread guide from left of the needle holder.



- > Thread the needle eye.
- > Place the thread beneath the presser foot to the back left.
- > When all needed threads are threaded, lower the presser foot.

### 7.3 One-step BERNINA air threader

The activation of the air threader is done by turning the air threader connector.



- > Turn the air threader connector completely in the required direction.

#### NOTICE

#### Damage by coated or waxed threads

Coated or waxed threads may lose some of their coating in the air threader pipes, resulting in permanent blocking of the pipes. Repair by a BERNINA dealer will be necessary. Avoid use of coated or waxed threads.

#### Performing a pulse drive

The Pulse drive is a support function, allowing to move the main drive slowly while the covers are open. With this function the main drive moves to threading position or the upper looper is activated/deactivated.

**NOTICE****Pulse drive**

If the air threader pipes are not coupled, the Pulse drive will be performed by pressing the foot control.

The needles are brought into the top position and the coupling is complete.

Press the foot control again.

Threading or activating/deactivating upper looper can be continued.

**Threading the Looper Threads UL/blue, LL/red, CL/purple**

Depending on the stitch, the upper looper (blue), lower looper (red) and/or chain looper (violet) are threaded.

Prerequisite:

- «Preparing for Threading» has been performed.
- > Open the threader cover and the looper cover.
- > Set the air threader connector to «I». (see page 84)
  - The air threader pipes are coupled.
- > Hold the thread end above the respective air threader nozzle.



- > Pull a thread reserve of approx. 40 cm so that the thread can be completely drawn through the threading path.
- > To start the thread feed, press the foot control.
  - The looper thread is pulled through the air threader pipe and exits at the looper tip.
- > As soon as the looper thread emerges out of the looper eye, release the foot control.



- > Place the upper and lower looper threads under the presser foot to the rear left.
- > Cut the chain looper thread back to 10 cm and leave in the looper area.
- > Set the air threader connector to «0».



- > Close the looper cover and the threader cover.

**NOTICE****Unfavorable Stitch Formations**

Too thick looper thread creates high friction in the looper eye and in the air threader pipe. As a result, the machine cannot ensure an optimum stitch formation. It is therefore recommended to choose a thinner thread.

**Threading the looper thread with an auxiliary thread**

The use of an auxiliary thread makes sense if a Looper Thread cannot be threaded automatically with the Air Threader.

Prerequisite:

- «Preparing for Threading» has been performed. (see page 79)
- > Open the threader cover and the looper cover.
- > Set the air threader connector to «I».
- > Prepare an auxiliary thread at a length of about 80 cm.
- > Fold the auxiliary thread in half, hold the thread loop and position the two thread ends above the respective air threader nozzle.
- > Start the air threader process by pressing the foot control until the thread ends emerge out of the looper eye.
- > Pull the looper thread end approx. 20 cm through the thread loop.



- > Pull the auxiliary thread ends until the looper thread comes out of the looper eye.



- > Remove the auxiliary thread.
- > Place the looper thread under the presser foot to the rear left.

An alternative threading option for thick threads. (see page 87)

**NOTICE****Unfavorable Stitch Formations**

Too thick looper thread creates high friction in the looper eye and in the air threader pipe. As a result, the machine cannot ensure an optimum stitch formation. It is therefore recommended to choose a thinner thread.



## Circumventing the air threader

- ▶ Some thick or decorative threads cannot be threaded through the air threader nozzles or don't provide optimal stitch formations when these threads are threaded through the air threader pipes.
- ▶ Alternatively, such threads may be threaded through the air threader circumvention. This reduces the friction in the air threader pipes and results in a lower thread tension.

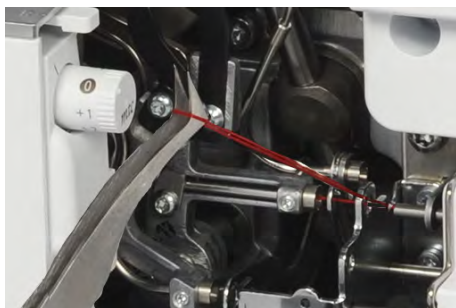
### NOTICE

#### Unfavorable Stitch Formations

Too thick looper thread creates high friction in the looper eye and in the air threader pipe. As a result, the machine cannot ensure an optimum stitch formation. It is therefore recommended to choose a thinner thread.

Prerequisite:

- The looper thread is threaded and can serve as auxiliary thread.
- > Open the threader cover and the looper cover.
- > Set the air threader connector to «0».
- > Using the tweezers pull the looper thread out of the air threader pipe exit creating a thread loop.



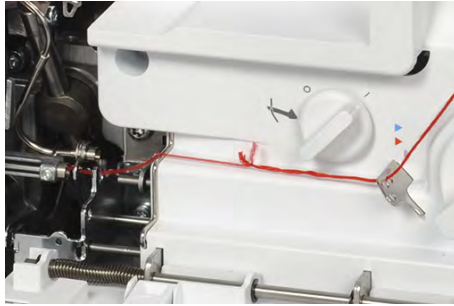
- > Cut the loop with scissors.



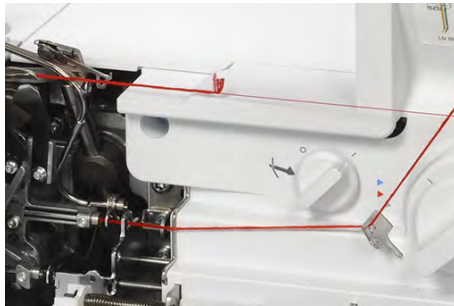
- > Replace the looper thread on the thread stand with the desired special thread.
- > Thread the special thread and guide it through the respective colored eyelet of the air threader circumvention.



- > Tie the end of the auxiliary thread to the special thread from the air threader circumvention eye.



- > Pull the auxiliary thread until the knot emerges out of the looper eye.
- > Cut the knot.
  - The special thread is threaded as the new looper thread.



- > Place the looper thread under the presser foot to the rear left.

### Using the threading wire

The threading wire can be used as a threading aid for the looper thread if the air threader doesn't work. The threading wire is a wear part and not designed as a permanent threading or cleaning aid.

#### NOTICE

#### Damage by improper use of the threading wire

The air threader pipes may be damaged. Repair by a BERNINA dealer will be necessary.

- > Insert and pull through the threading wire only in the thread flow direction.

Prerequisite:

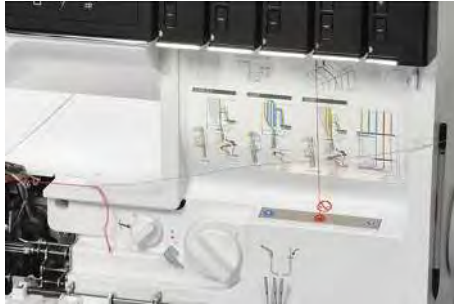
- There is no thread in the respective air threader pipe.
  - «The threading preparation» has been performed. (see page 79)
- > Open the threader cover and the looper cover.
  - > Guide the **threading wire** with the end marked in red (threading wire loop upwards) through the corresponding air threader nozzle until it exits at the looper eye.



- > Pull the desired looper thread through the threading wire loop.



- > Pull the end of the threading wire until the looper thread emerges from the eye of the looper.



- > Place the looper thread under the presser foot to the rear left.

## 7.4 Changing the Thread

### Knitting Thick Thread

Tying on two thread ends is often used for changing a needle thread or looper thread.

Keep the knotted area as little as possible to reduce friction.

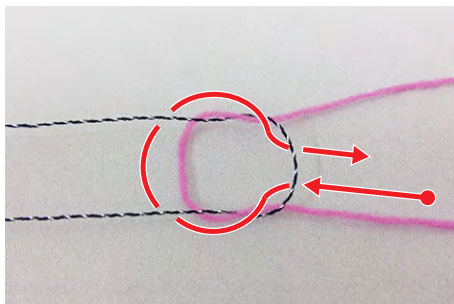
#### NOTICE

#### Pulling a Thread Tie through the Needle Eye

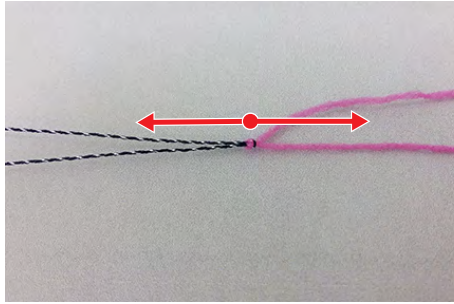
The needle can be bent. A bent needle affects the stitch formation.

- > Cut the tie in front of the needle eye and thread the needle individually.

- > Form a loop with the dark thread.
- > Thread the pink thread end from beneath into the dark thread loop.
- > Guide the pink thread to the back around the two dark threads and from above through the loop.



- > Hold both thread ends and pull them apart.



## Changing the Needle Thread

### NOTICE

#### Pulling a Thread Tie through the Needle Eye

The needle can be bent. A bent needle affects the stitch formation.

- > Cut the tie in front of the needle eye and thread the needle individually.

- > Cut the thread above the thread cone.



- > Change the thread cone.
- > Tie the threaded thread to the new thread.



- > Pull the threaded end of the thread until the newly knotted thread is in front of the needle eye.
- > Cut off the new thread behind the knotting.



- > Remove the excess thread from the needle eye.
- > Thread the needle eye.
- > Place the thread under the presser foot to the left.

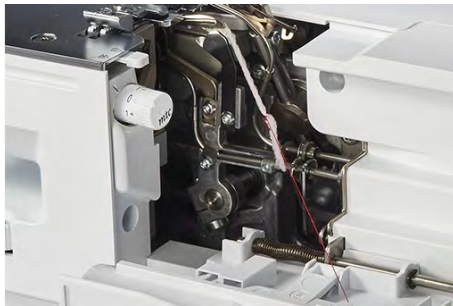


## Changing the Looper Thread

- > Cut the thread above the thread cone.
- > Change the thread cone.
- > Tie the inserted looper thread to the new thread.



- > Pull the end of the thread out of the looper eye until the knot emerges.



- > Cut off the new thread behind the knotting.
- > Place the thread under the presser foot to the left.

## 8 Sewing Test

To check the optimal setting, a sewing test should be sewn on a spare piece of the fabric used for your project.

The default values of the stitches represent recommendations that work for most standard applications. Depending on the result of the sewing test, fine adjustments for stitch optimization are possible.

### 8.1 Performing a Sewing Test for an Overlock Stitch

Prerequisite:

- The sewing start has been performed.
- > Place the fabric under the presser foot to the front of the knife so that the desired seam allowance is cut off.
- > Press the foot control and sew slowly. Guide the fabric gently as the machine automatically feeds the material.
- > Sew beyond the fabric end such that a thread chain is formed.
- > Pull the thread chain over the thread cutter.
- > Assess the sewing test and make any necessary adjustments until the stitch setting matches the material combination.

The Stitch Optimizer provides assistance to achieve the perfect stitch appearance.

### 8.2 Performing a sewing test for an coverstitch

Prerequisite:

- The sewing start has been performed.
- > Raise the presser foot.
- > Place the fabric under the presser foot such that the presser foot lies completely on the fabric.
- > Lower the presser foot.
- > Press the foot control and sew slowly. Guide the fabric gently as the machine automatically feeds the material.
- > Do not sew beyond the end of the fabric.
- > At the end of the fabric, use the «Back-kick» function to raise the needle holder.
- > Raise the presser foot.
- > Pull the needle thread between the fabric and the presser foot to the back with the coverstitch lock tool and cut it.
- > Pull the sewing project to the back left and cut the looper thread.
  - The seam end is secured.
- > Assess the sewing test and make any necessary adjustments until the stitch setting matches the material combination.

The stitch optimizer provides assistance to obtain a perfect stitch appearance. (see page 93)

### 8.3 Performing a Sewing Test for an Chainstitch

Prerequisite:

- The sewing start has been performed.
- > Raise the presser foot.
- > Place the fabric under the presser foot such that the presser foot lies completely on the fabric.
- > Lower the presser foot.
- > Press the foot control and sew slowly. Guide the fabric gently as the machine automatically feeds the material.
- > Sew beyond the fabric end such that a thread chain is formed.
- > Raise the presser foot.







## 9 Practical Overlocking

In this chapter the most important applications for a successful sewing project are described. More advanced sewing techniques are described in the BERNINA overlocker manual and can be purchased from authorized BERNINA dealers.

### 9.1 Securing Overlock Stitches

Securing stitches is particularly important when seam ends are not secured by other seams or hems. The stitches are secured when they are overstepped.

#### Sewing in the Overlock Chain at the Start of the Seam

- > Form a thread chain at a length of 5 - 8 cm.
- > Place the fabric under the presser foot and sew a stitch into the fabric.
- > Lower the needle.
- > Raise the presser foot.
- > Now pull the thread chain carefully forward and place it on the seam line to be sewn.
- > Lower the presser foot.
- > Sew approx. 4 cm over the thread chain.



#### Sewing in the Overlock Chain at the End of the Seam

- > At the end of the seam, sew one stitch over the fabric edge.
- > Raise the needle.
- > Raise the presser foot.
- > Pull the fabric a bit backwards.
- > Turn the fabric so that the wrong side points upwards.
- > Place the fabric beneath the presser foot so that the needles pierce the fabric at the first stitch.
- > Lower the presser foot.
- > Sew approx. 1.5 - 2.5 cm over the thread chain and make sure that the existing thread chain is not cut.
- > Finish the seam by sewing off the edge.



## Securing Overlock Stitches

- > Sew a thread chain of about 10 cm beyond the end of the seam.
- > Pull the thread chain end through the looper threads using a loop flip or a tapestry needle.



## Knotting the Overlock chain

Knotting the overlock chain is the safest way to prevent the stitch from opening.

- > Tie thread chain at the seam end, close to the fabric.

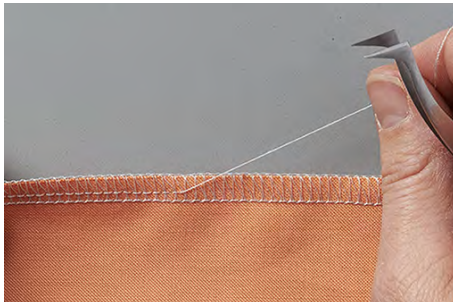
## 9.2 Removing a Stitch

The thread loops of the looper and needle threads can be undone easily.

- > Pull the right overlock needle thread (RN) out of the thread chain with tweezers, starting from the seam end.



- > Pull the needle thread out of the seam.



- > With very long seams, cut the thread in the stitch and remove it step by step.
- > Remove the left overlock needle thread in the same way.
  - The looper threads lie loosely around the fabric edge and can be pulled away easily.



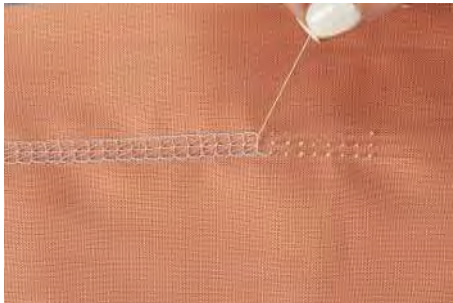


## 9.4 How to Undo Coverstitches

Cover- and chainstitches are loops which are formed by the intertwining of looper thread and needle threads.

### Undoing Coverstitches

- > On the wrong side of the fabric, pull the looper thread out of the thread chain at the seam end.



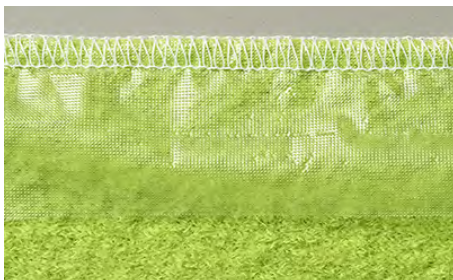
- > Remove the needle thread on the right side of the fabric.
  - The stitches are undone.



## 9.5 Sew blanket stitch

The Blanketstitch is similar to the popular Parisian stitch and suits as edge finishing on woollen blankets, scarves or thick materials.

- > Preferably thread decorative threads into the looper and the needle.
- > Place water-soluble stabilizer on top of the fabric along the fabric edge.
- > Sew along the fabric edge.



- > After sewing, pull the stabilizer away from the fabric, and in doing so, the needle thread is pulled to the edge of the fabric.
  - This makes the seam look like the typical hand-stitched blanket stitch.



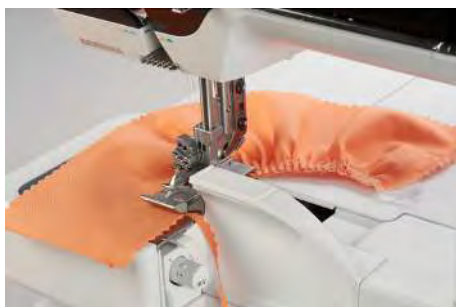
- > Wash out the water-soluble stabilizer.

## 9.6 Gathering

Ruffling is a gathering or puckering of a seam.

### Increasing the differential feed

- > Set the machine for a 4-thread overlock.
- > Set the Differential Feed to «2».
- > Set the stitch length to «4.5».
- > Sew the fabric with this side up on which the ruffling is wanted.
- > Sew off the edge of the fabric.



### Pulling the Needle Thread



---

Slightly different colors of the needle/looper threads facilitates separating the needle threads.

The needle threads are usually the shorter ones in the thread chain.

---

- > Set the machine for a 4-Thread Overlock.
- > Set the differential feed at default value.
- > Sew the fabric with this side up on which the ruffling is wanted.
- > Leave a long thread chain at seam end.
- > Separate the needle thread/threads from the thread chain.
- > Pull the needle thread(s) and evenly spread the puckers along the seam.





## 9.7 Sew Outer Corners

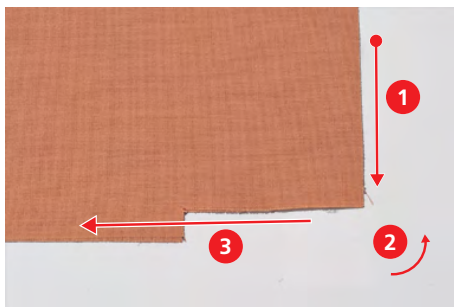
### How to Sew over a Corner

- > Set the machine for a 2-, 3- or 4-Thread Overlock.
- > Sew along the edge of the fabric beyond the corner.
- > Start a new edge and sew over the previously sewn edge.
- > Secure the thread chain. (see page 95)



### How to Clip a Corner

- > Trim the seam allowance for the cutting width of the following corner in the sewing direction (presser foot length).



- > First sew the edge up to the cut corner.
- > Sew one stitch beyond the fabric edge and stop.
  - The needles are in the top position.
- > Raise the presser foot.
- > Move the rolled hem selection lever to position «R».
  - The thread loops are loosened from the stitch finger.
- > Turn the fabric counterclockwise.
  - The trimmed edge of the fabric is in the sewing direction under the presser foot.
- > Move the rolled hem selection lever to position «O».
- > Pierce the needle into the fabric.
- > Pull back and tighten loose threads of the thread spools on the spool holder.
- > Lower the presser foot and continue sewing.









## 9.11 Sewing a Hem

The coverstitch is ideal for hems on elastic and knitted material.

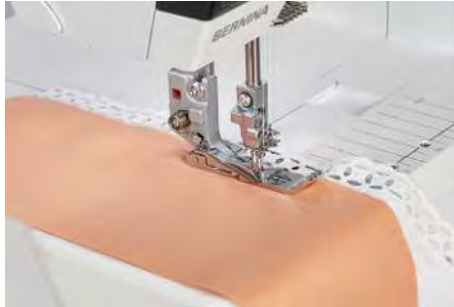
- > Set the machine for the coverstitch.
- > Mark the hem depth (wrong side on wrong side) and press the hem.
- > Place the fabric under the presser foot, right side up.
- > Guide the edge of the hem along one of the markings on the coverstitch insert and sew.
  - The hem is sewn and finished on the wrong side at the same time.



- > Cut back any excess seam allowance.

## 9.12 Joining Seams

- > Thread and set the machine for a cover- or chainstitch.
- > Adjust the stitch length to be suitable for the fabric.
- > Place the fabric under the presser foot and lower the presser foot.
- > Sew the seam.
- > To sew parallel lines or pintucks, use either the left or the right edge of the foot or the scale on the coverstitch insert.



## 10 Care and Maintenance

### 10.1 Firmware

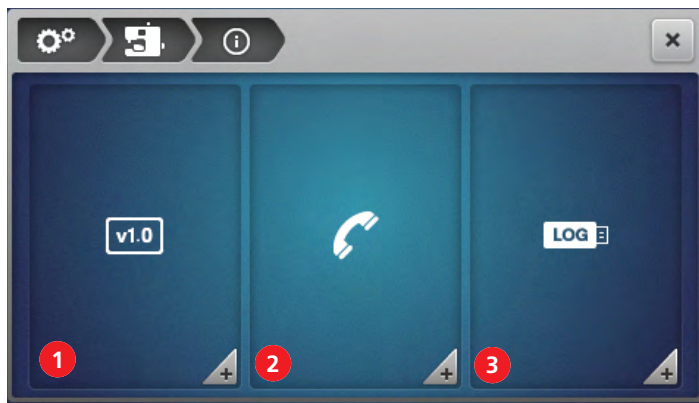
#### Selecting a language

By selecting one of the languages listed, all displays and assistance are changed accordingly. (see page 25)



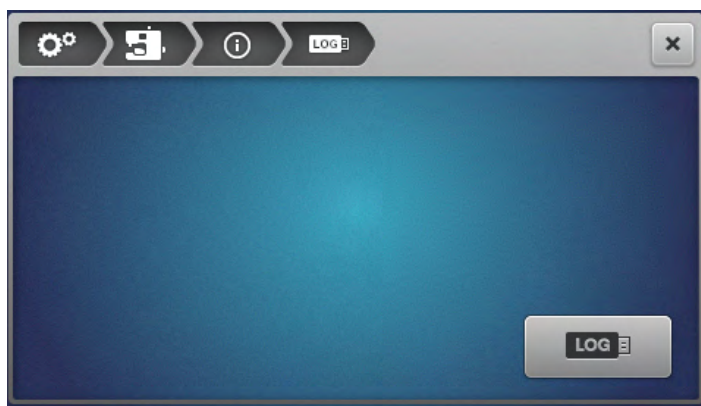
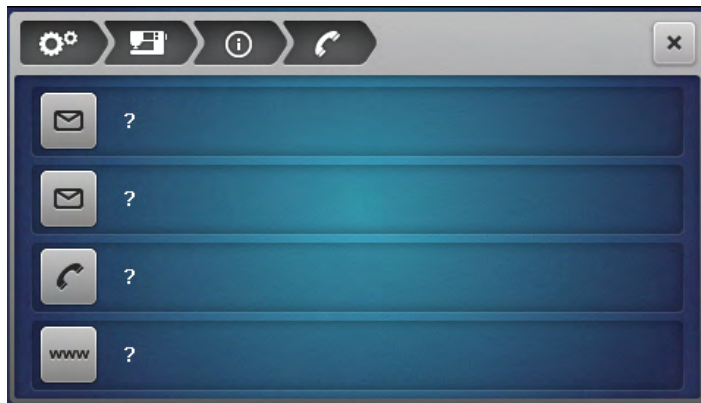
#### Information on the firmware

This screen allows the dealer to gather important information about the machine.



- |   |                         |   |                |
|---|-------------------------|---|----------------|
| 1 | «Firmware Version»      | 3 | «Service Data» |
| 2 | «My Dealer Information» |   |                |





### Restore factory settings

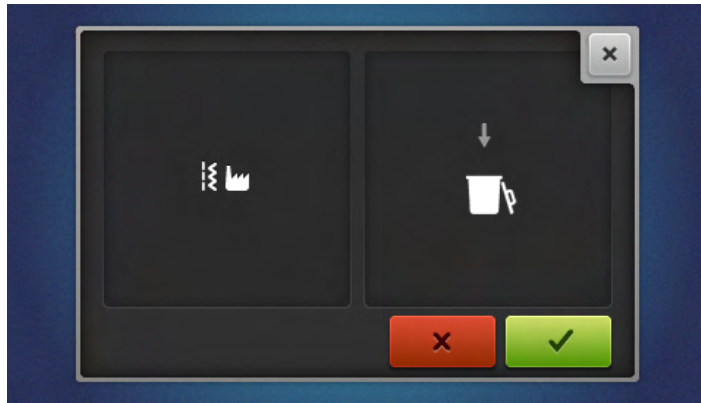
The factory settings are used to reset the software to the delivery state. All saved data will be deleted and cannot be restored. If the data from the personal memory should still be available, it must be backed up to the USB stick. (see page 105)



- 1 «Deleting the personal memory»                      2 «Factory setting»

> To delete **only** the contents of the personal memory, tap on icon (1) and confirm the deletion process.

- > To delete **all** data (personal memory and system memory), tap on field (2) and confirm the deletion process.



## Updating firmware



- |   |                       |   |                  |
|---|-----------------------|---|------------------|
| 1 | «Backing up data»     | 3 | «Importing data» |
| 2 | «Starting the update» |   |                  |

### Downloading a firmware update

Download the latest firmware version from the website [www.bernina.com](http://www.bernina.com) and prepare it according to the firmware update installation instructions.

### Backup/import data

In general, data from the Personal Memory and altered settings are automatically transferred during a firmware update. Data loss can be avoided by backing up data and settings to the BERNINA USB stick before the update and importing them back to the machine after the update.

Even before resetting the software to factory settings, a data backup is recommended.

### Backup data on USB stick



Prerequisite:

- The USB stick is inserted.
- > To back up personal data and settings, tap on «Data on USB».
- > Remove the USB stick or continue with the firmware update. (see page 106)

### Loading data to the machine



Prerequisite:

- The USB stick with the saved data is inserted.
- > To import saved data and settings, tap on the «USB to machine».
- > Remove the USB stick.



## Starting the firmware update

Prerequisite:

- The latest firmware version is unpacked according to the firmware update installation instructions and saved on the USB stick.
  - Personal data (if desired) are saved on the USB stick before the update.
- > Insert the USB stick into the port.  
> Tap on «update».



- Wait until the firmware update has finished.

### NOTICE

#### Incomplete update due to removing the BERNINA USB stick too early

If the software has not been updated or has not been fully updated, the machine cannot be used.

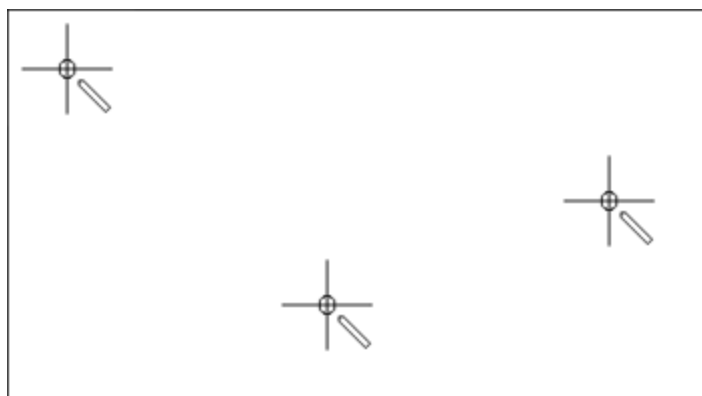
- > Remove the BERNINA USB stick only once the update has been successfully completed.

- > Import the saved data, if available.  
> Remove the USB stick.

### Calibrate screen

The purpose of screen calibration is to tell the screen where the correct touch points are. The screen must be calibrated if it no longer responds properly to touch.

- > Tap on «Calibrate screen».
- A screen with crosshairs appears.
- > Use the touch screen pen to tap exactly on the intersection of the crosshairs.



- > Repeat this process until the crosshairs no longer appear.

## 10.2 Machine

### Cleaning the Machine

The service life of the machine depends on the care and maintenance. Based on normal household use, an annual service at the authorized BERNINA dealer is recommended.

Recommended aids:

- Damp Cloth
- Brush
- Tweezers
- Vacuum Cleaner with Soft Tip

Clean recommended machine areas:

- Needle, Needle Bar
  - Presser Foot
  - Feed Dog (from above)
  - Knife
  - Freearm Interior
- > The machine can be cleaned with a damp cloth without detergent.
- > Regularly free the recommended areas from dust, fabric scraps and thread remnants.

### Cleaning the looper area

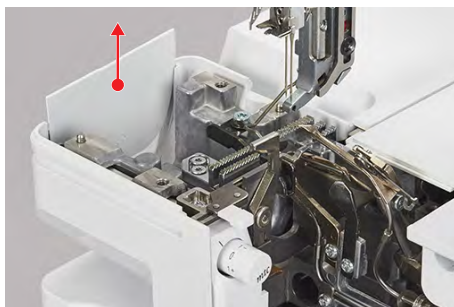
Dust, fabric and thread remnants accumulate in the looper area during overlocking and these must be removed regularly.

Prerequisite:

- The machine is switched off.
  - The presser foot is raised.
  - The needles are in the top position.
- > Remove the presser foot.
- > Remove the screws of the stitch plate with the Torx screwdriver.
- > Unscrew the stitch plate from the freearm.

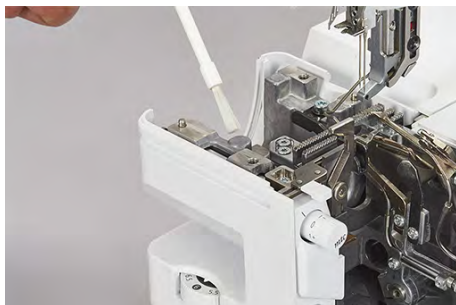


- > Remove the cleaning cover on the freearm.





- > Remove dust, fabric and thread remnants with the brush or a vacuum cleaner.



- > Insert the cleaning cover.
- > Attach the stitch plate and screw it on.
- > By slowly turning the handwheel, ensure that the knife, the needle and the feed dogs are not impeded in their movement.

### **Cleaning the Air Threader Pipes**

Regularly remove dust and thread remnants from the air threader pipes.

- > Use a thick thread (e.g. Amann Saba C size 30) at a length of about 1 m.
- > Feed the thread into the air threader nozzle.
- > Hold the thread at the thread ends and pull it back and forth several times.
- > Remove the thread at the looper end in the thread feed direction.

### **Cleaning the screen**

- > Wipe the screen with a soft, slightly damp microfiber cloth.

### **Cleaning the Suction Feet**

Cleaning the suction feet prevents the machine from slipping on the table at high sewing speed.

- > Remove dust and thread remnants from the suction feet with a damp cloth.

### **Oiling the Machine**

#### **NOTICE**

#### **Damage by Fluids in the Air Threader System**

The air threader pump may be damaged permanently if liquids infiltrate the system. A repair by the authorized BERNINA dealer is required.

- > Keep liquids away from the air threader nozzles.

- > Regularly lubricate recommended areas with a drop of the supplied BERNINA.



## 11 Errors and Faults

### 11.1 Troubleshooting

Fault	Cause	Solution
Screen reacts poorly to touch	The screen is misaligned.	> Calibrate the screen. (see page 106)
The stitch is irregular	The thread tension is incorrect.	> Adjust the thread tension. (see page 70)
	The needle size is incorrect.	> Match the needle size with the fabric/thread. (see page 55)
	Threading is incorrect.	> Rethread the machine. (see page 78)
	Fabric was pulled.	> Don't pull the fabric; guide it only lightly.
	The presser foot is loose.	> Attach the presser foot properly. (see page 40)
	Air threader pipes are dirty.	> Clean the air threader pipes. (see page 108)
Needle breaks	The needle is defective.	> Replace needles. (see page 41)
	Fabric was pulled.	> Don't pull the fabric; guide it only lightly.
	The needle size is incorrect.	> Match the needle size with the fabric/thread. (see page 56)
	The needle insertion is incorrect.	> Replace the needle. (see page 41)
	The presser foot is loose.	> Attach the presser foot properly. (see page 40)
	The needle system is incorrect.	> Insert needle of the system ELx705 CF or HAx1. (see page 56)
Unwanted puckering	The thread tension is incorrect.	> Adjust the thread tension. (see page 70)
	Needles are defective.	> Insert a new needle. (see page 41)
	The Differential Feed is incorrect.	> set the Differential Feed to 0.7 – 1. (see page 71)
Unwanted wavering	The Differential Feed is incorrect.	> set the Differential Feed to 1 – 2. (see page 71)
Skipped stitches	The needle size is incorrect.	> Match the needle size with the fabric/thread. (see page 56)
	Threading is incorrect.	> Rethread the machine. (see page 78)
	The needle is defective.	> Insert a new needle. (see page 41)
	The needle insertion is incorrect.	> Insert the needle correctly. (see page 41)

Fault	Cause	Solution
Thread breakage	Threading is incorrect.	> Rethread the machine. (see page 78)
	The needle is bent.	> Insert a new needle. (see page 41)
	The thread tension is incorrect.	> Adjust the thread tension. (see page 78)
	The upper thread is tangled.	> Check the thread spool. (see page 35)
	Retractable thread stand is not fully extended.	> Raise the retractable thread stand completely. (see page 35)
The machine doesn't sew	No power supply.	> Connect the machine. (see page 34)
	The main power switch is switched off.	> Switch on the machine. (see page 34)
	Machine is overheated.	> Switch off the machine and let it cool down for 10 - 15 min. (see page 34)
The sewing light does not light up	Switched off in default setting.	Switch on the sewing light in the setup program. (see page 50)
	The sewing light is defect.	Have the sewing light replaced by the specialized dealer.
The fabric is not cut properly	Knife tainted.	> Set the cutting width to 9. > Remove lint and remnants from the knife.
	Knife defective.	> Have the knife replaced by the specialized dealer.
Fabric jam	The presser foot pressure is incorrect.	> Reduce the presser foot pressure. (see page 76)

## 12 Storage and disposal

### 12.1 Storing the Machine

The correct storage of the machine over a longer period of time has an influence on its lifespan and functionality.

- > Don't store the machine outdoors.
- > Protect the machine against climatic influences.
- > Before operating the machine again after storage, leave the machine unpacked for approx. 1 h at room temperature.

### 12.2 Transporting the machine

For a relocation or a longer transport of the machine, the following actions should be carried out.

- > Retract the retractable thread guide of the thread stand completely downwards.
- > Lower the presser foot.
- > Remove all connecting cables.
- > Lift and transport the machine at the carry handle and the transport carry groove under the handwheel.

### 12.3 Dispose of the machine

BERNINA International AG is committed to environmental protection. We make every effort to increase the environmental friendliness of our products by continually improving their design and production technology.

If the machine is no longer required, dispose of it in an environmentally friendly way in accordance with the national guidelines or take it to the nearest BERNINA specialist shop. Do not dispose of the machine in the household waste.

## 13 Technical data

Name	Value	Unit
Number of stitches	27	
Number of loopers	3	
Number of needle positions	1 – 5	
Needle system	ELx705 CF	
Needle size	70 – 90 (10 – 14)	
Differential feed	0,7 – 2	
Maximum fabric thickness	6 (0,41)	mm (in)
Stitch length	0,8 – 4,5 (0,03 – 0,18 )	mm (in)
Cutting width from the left overlock needle LN	5 – 9 (0,19 – 0,35)	mm (in)
Cutting width from the right overlock needle RN	3 – 7 (0,11 – 0,27)	mm (in)
Sewing speed	250 – 1'350	Stitches per minute
Dimension without retractable thread stand	43 x 28 x 41 (16,92/11,02/16,14)	cm (in)
Dimensions with sewing table / cut-offs bin	57 x 35 x 65 (22,44/13,78/25,59)	cm (in)
Weight of the machine	13,4 (29,54)	kg (lb)
Boxed weight	≈18,8 (41,45)	kg (lb)
Power rating	140	Watt
Input voltage	100 – 240 (50 – 60)	Volt (Hz)
Protection class (electrical engineering)	II	
Production date	Shown on the rating label under «Code».	



**I**

Importing data.....	105
Information on the Firmware Version.....	51, 103

**K**

Knee Lifter.....	39, 48
Knife.....	15
Knife cover insert.....	16, 44
Knife cover insert/Coverstitch insert.....	13
Knife on/off.....	13

**L**

Language selection.....	51, 103
Lifting the front foot.....	39
Lifting the presser foot up/down.....	38
Lifting the presser foot up/down with the knee lifter.....	39
Logfile.....	103
Looper Cover.....	13, 16, 44
Looper Thread.....	55
Lower Looper.....	15

**M**

Magnetic Holder for Touch Screen Pen.....	17
Moving the needles up/down.....	44
mtc micro thread control.....	75
mtc Micro Thread Control Dial.....	15

**N**

Navigation.....	25
Needle holder.....	14, 41
Needle pad.....	16
Needle thread.....	55
Needle window.....	14
Needle, Thread and Fabric.....	54
Needle, Thread, Fabric.....	56
Needles, threads.....	55

**O**

Overlock needles.....	14
Overlock Stitch.....	59
Overlocker oil.....	108
Overwriting a Stitch.....	65

**P**

Personal Memory.....	65
Personalize the sewing screen.....	52
Power Plug Socket.....	17

Power Switch.....	17
Presser foot lifter.....	18
Presser foot presser wheel.....	18
Presser Foot Pressure.....	76
Presser foot release button.....	18
Presser foot shaft.....	14
Presser foot spring.....	14
Pressing the foot control.....	37
Pulse drive.....	84

**R**

Renaming a stitch.....	66
Retractable thread guide.....	18, 35
Rolled Hem Selection Lever.....	15, 74

**S**

Safety Instructions.....	7
Saving a Stitch.....	65
Screen.....	13
Cleaning.....	108
Securing stitches.....	96
Securing the overlock chain.....	95
Selecting the Needle.....	56
Selecting the thread.....	54
Setting the sounds.....	51
Setup Program.....	29
Sewing light.....	13
Sewing start.....	54
Sewing test overlock stitch.....	92
Slide-on table.....	49
Spool Disc.....	36
Spool Holder.....	35
Spool net.....	36
Spool pin.....	18
Spool stabilizer.....	36
Standard cover presser foot.....	14
Standard presser foot overlock/coverstitch.....	14
Stitch plate.....	14
Stitch selection.....	64
Storage.....	111
Stretching.....	73
Supplied Accessories.....	21, 23
Swinging the presser foot in/out.....	39

**T**

Thread Cones.....	35
Thread cutter.....	13, 18, 47









in partnership with

*Mettler*<sup>®</sup>

BERNINA International AG | CH-8266 Steckborn Switzerland | [www.bernina.com](http://www.bernina.com) | © Copyright by BERNINA International AG

1082415.00A.04  
2023-10

made to create **BERNINA**