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BERNINA L 850

User manual

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IMPORTANT SAFETY INSTRUCTIONS

DANGER!

To reduce the risk of electrical shock:

- Never leave the machine unattended as long as it is plugged in.
- Always unplug the machine from the electrical outlet immediately after using and before cleaning.

Protection against LED radiation:

- Do not view the LED light directly with optical instruments (e.g. magnifier). The LED light corresponds with protection class 1M.
- When the LED light is damaged or defective, contact your BERNINA specialist dealer.

To reduce risk of injury:

- Attention moving parts. To reduce risk of injury switch off the machine before servicing. Close the covers before operating machine.

WARNING

To reduce the risk of burns, fire, electric shock or injury to persons:

- Do not use the machine outdoor.
- Use this machine only for purposes as described in this manual.
- To operate the machine always use the supplied power cable. USA and Canada only: Do not connect power plug NEMA 1-15 to circuits exceeding 150 volt-to-ground.
- Do not use this machine as a toy. Increased caution is advised when the machine is used by or near children.
- The machine can be used by children older than 8 or by people with reduced physical, sensory or mental capabilities or if there is a lack of experience and knowledge how to operate the machine as long as they are supervised or have been given instruction concerning the responsible use of the appliance and are aware of the involved risks.
- Children are not allowed to play with the machine.
- Never operate this machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the machine to your local authorized BERNINA dealer for examination or repair.
- Only use accessories recommended by the manufacturer.



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.

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 concerning consequences resulting from an inappropriate usage.

Equipment and scope of delivery

Example images are used in these operating 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. Accessories mentioned or shown which are not included in the scope of delivery can be purchased as special accessories from a BERNINA specialist dealer. Further accessories can be found at <https://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.

Maintenance 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. Only original spare parts should be used for service and repairs. 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 is committed to the protection of the environment. 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 wastebbin. 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.

2 My BERNINA overlocker

2.1 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, serged and hemmed simultaneously in one run.

With the differential transport, particularly fine fabrics or very elastic materials can be processed professionally.

Stitches varieties of 18 overlock stitches are available for sewing comfortably with tried-and-tested Swiss quality.

In addition to this instruction manual for your BERNINA L850 the following information products are enclosed:

The current version of your manual as well as many other information about the machine and the accessories can be found on our website www.bernina.com

2.2 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.

2.3 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. I 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. Detailed explanations are also provided as for the various presser feet, so that your projects will succeed completely.

<http://www.youtube.com/BerninaInternational>

Provided in the languages English and German.

inspiration – the sewing magazine

Are you looking for ideas and instructions for great projects? In that case the BERNINA magazine «inspiration» is exactly what you need. «inspiration» offers extraordinary sewing and embroidery ideas four times a year. From seasonal fashion trends to trendy accessories and practical tips to decorate your home in an original way.

<http://www.bernina.com/inspiration>

The magazine is available in the languages English, German, Dutch and French. Not available in all countries.

BERNINA Blog

Fancy instructions, free sewing patterns and embroidery motifs as well as many new ideas: all this you can find in the weekly blog by BERNINA. Our experts give valuable 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.

<http://www.bernina.com/blog>

Provided in the languages English, German and Dutch.

BERNINA Social Media

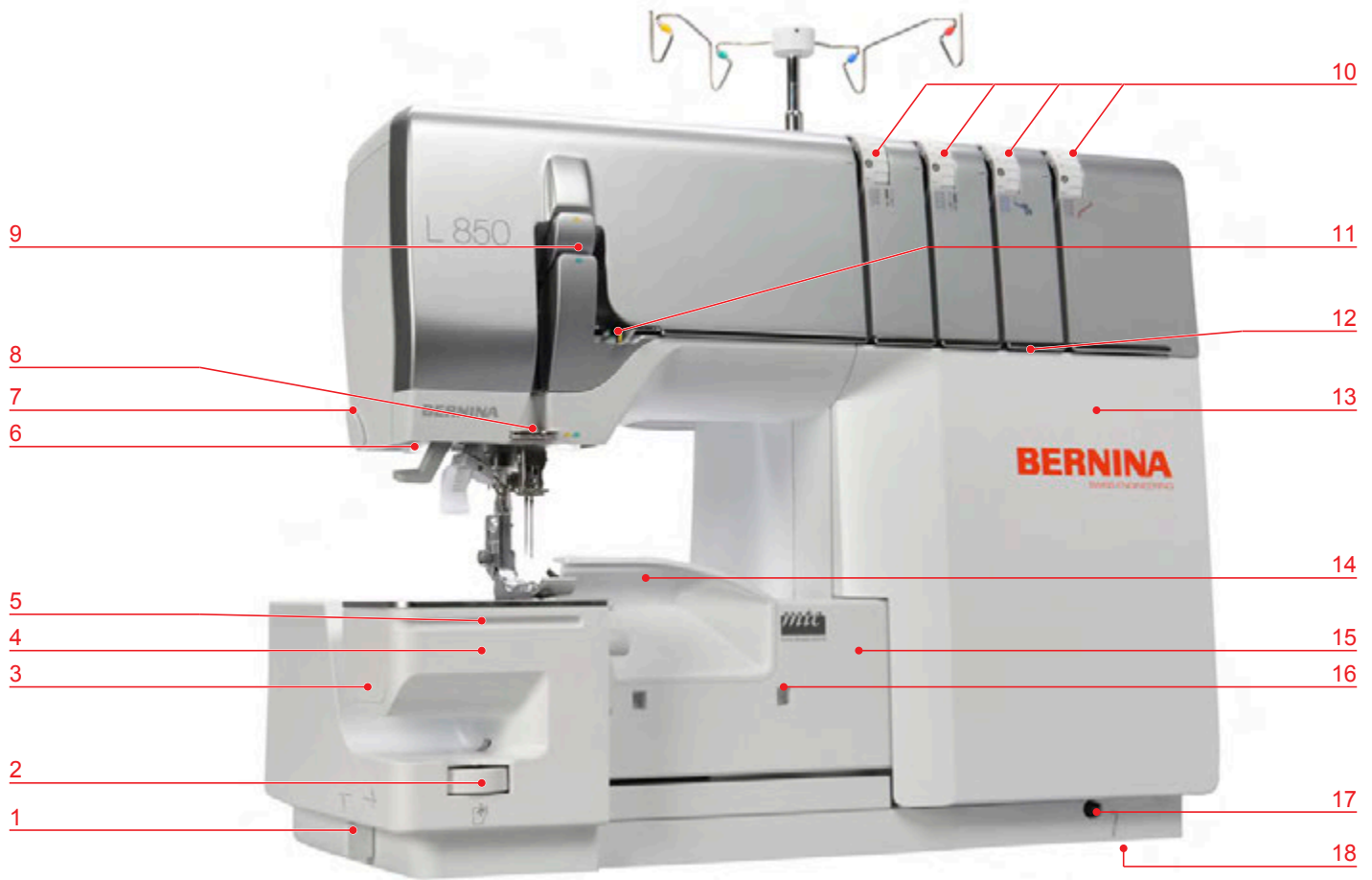
Follow us on the social networking to learn more about events, thrilling projects as well as tips and tricks all about sewing, quilting and embroidering. We will keep you informed and we are looking forward to presenting you the one or the other highlight from the world of BERNINA.

<http://www.bernina.com/social-media>



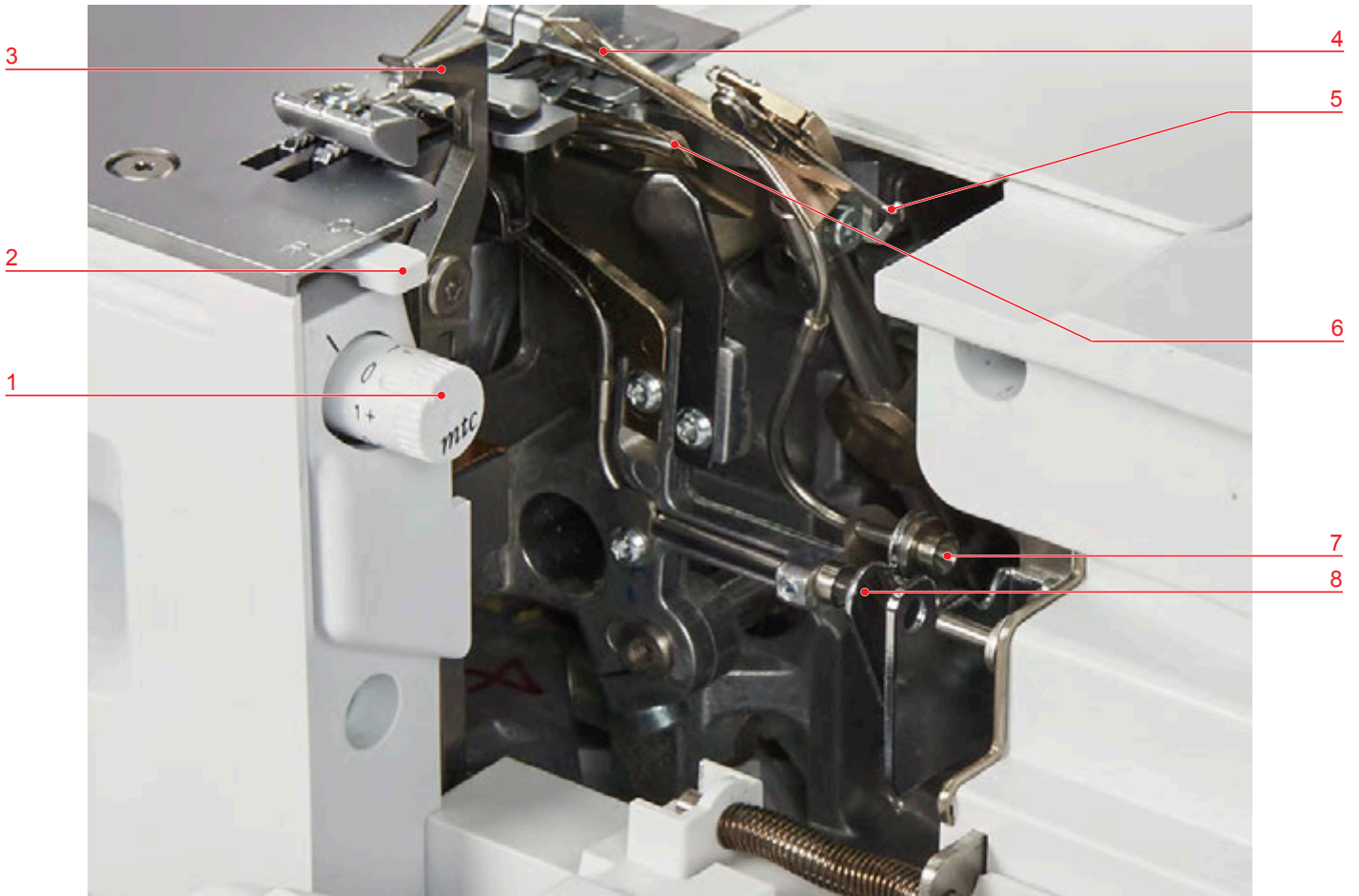
2.4 Machine overview

Overview - Front



- | | | | |
|---|-----------------------------------|----|--------------------------------|
| 1 | Knife on/off | 10 | Thread tension adjustment dial |
| 2 | Cutting width dial | 11 | Thread deflection fingers |
| 3 | Freearm cleaning cover | 12 | Thread guiding plate |
| 4 | Freearm | 13 | Threader cover |
| 5 | Guide rails | 14 | Knife cover insert |
| 6 | Sewing light LED | 15 | Looper cover |
| 7 | Thread cutter | 16 | Cut-offs bin snap-in opening |
| 8 | Thread guide on the headframe | 17 | Free Hand System connection |
| 9 | Needle thread take-up lever cover | 18 | Suction feet |

Overview - Looper area







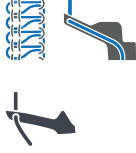









- 1 mtc micro thread control dial
- 2 Rolled hem selection lever
- 3 Knife
- 4 Upper looper

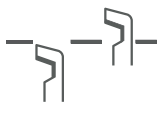



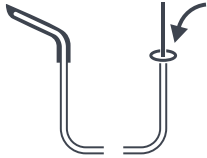
- 5 Upper looper converter
- 6 Lower looper
- 7 Upper looper thread air pipe
- 8 Lower looper thread air pipe



Symbols on the machine

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

	LN (Left Needle)	Left needle thread
		Thread path yellow
	RN (Right Needle)	Right needle thread
		Thread path green
	UL (Upper Looper)	Upper looper thread
		Thread path blue
	LL (Lower Looper)	Lower looper thread
		Thread path red
		Thread path not used
	ULC (Upper Looper Converter)	Upper looper converter activated/deactivated
	CW (Cut Width)	Cutting width
	SL (Stitch Length)	Stitch length
	DF (Differential Feed)	Differential feed
	O/R (Overlock/Rollhem)	Rolled hem selection lever

		Knife on/off
<i>mtc</i>	mtc (micro thread control)	mtc micro thread control
	FHS (Free Hand System)	Knee lifter
1  SPM 1/2		Adjusting speed
		Presser foot pressure
		Air threader

Tab. 1: Printed characters and symbols

Default values

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

- ④ ● The basic 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.

2.5 Overview - standard accessories

Accessories

The machine is ready for operation with the supplied accessories. Special sewing applications may require special accessories.

Visit www.bernina.com for more accessories information.















Figure	Name	Purpose
	Dust cover	To protect the machine from dust and contamination.
	Power cable	To connect the machine with the power supply system.
	Foot control	To start and stop the machine. To control the sewing speed.
	Cut-offs bin	For collecting scraps.
	Knife cover insert	To protect the fingers and to deflect the fabric cut-offs during the sewing process.
	Slide-on table	To increase the sewing surface.
	Free Hand System (FHS)	To raise and lower the presser foot.








Figure	Name	Purpose
	Standard presser foot overlock #L10	For all overlock stitches. For general sewing projects. To sew on tape up to a width of 12 mm.
	Right seam guide	For an even fabric trim. To sew along a folded edge, without trimming, e.g. for flat joining seams. To guide while creating decorative pintucks with 3-thread overlock.

Accessories in the threader cover

The most frequently used accessories while sewing are stored in the threader cover and ready at any time.

Figure	Name	Purpose
	Needle set ELx705 CF (3 x Nr. 80, 2 x Nr. 90)	In different sizes for the most widely used applications.
	Screwdriver, hex 1,5 mm	For loosening/tightening the fixing screws on the needle holder.
	Brush	For cleaning the needle-/ looper area.
	BERNINA tweezers	For gripping the thread in tight positions.
	Needle threader/insertor	For threading, inserting and removing the needle.

Accessories box

Figure	Name	Purpose
	Accessories box	To store the supplied accessories as well as the optional accessories.
	Overlocker oil	For oiling the looper components.
	Spool stabilizer (4 x)	To stabilize the thread cone on the thread stand.
	Spool net (4 x)	To support even unwinding of nylon, rayon, silk or metallic threads from the spool.
	Spool disc (4 x)	For evenly pulling thread from a small thread spool.
	Torx T10 screwdriver	To loosen/tighten the stitch plate screws.
	Threading wire	To thread the looper threads manually in the air threader pipe.

Using the spool net

The spool net prevents polyester or bulky threads from sliding down from the spool.



> Slip the spool net from above over the thread spool and pull the thread end up.



A spool net is recommended for the following threads:

- Thin threads that easily slide from the spool
- Overlock yarn
- Nylon, rayon, silk or metallic threads



3.7 Needle area

Needle holder

The needle holder can hold two 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 48)

- Left Needle (LN)
- Right Needle (RN)

The needle holder screws must always be tightened, even if no needles are inserted, so falling out of the needle holder screws is excluded by vibration. Correctly inserted needles are not at the same height.



▶ «LN» left needle for overlockstitches; the thread path is marked yellow.



▶ «RN» right needle for overlockstitches; the thread path is marked green.

Changing the Needle

The needle threader/insertor is located in the accessory holder on the threader cover. Using the needle insertor is recommended when changing the needle. It prevents the needle from falling into the feed dog area. The needle screws must always be tightened, even when a needle is not inserted.

NOTICE

Damage by overtightening the needle screws

The needle screw threads may be damaged. Repair by a BERNINA dealer will be necessary.

> Do not overtighten the needle screws.

Prerequisite:

- The needles are at 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 hex screw driver.



- > Remove the needle downwards and place it in the needle box or needle pad behind the threader cover.
- > Insert the new needle with the flat side to the back into the needle inserter.



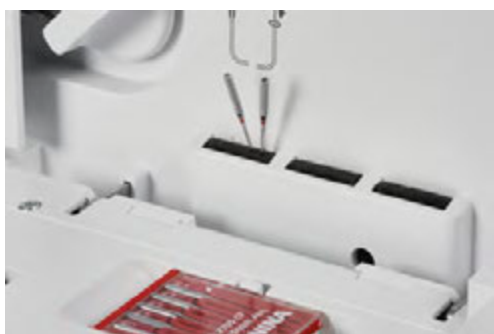
- > Push the needle up as far as it will go.
- > Check the needle position in the needle checking window.



- > Tighten the needle screws.

Needle pad

The needle pad is located behind the threader cover and is used to store needles that are not being used.



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 raised.
 - The fabric and the application have been selected. (see page 43)
 - The thread has been selected. (see page 46)
 - The needle size is matched with the thread type and the sewing project. (see page 48)
 - The stitch has been selected. (see page 55)
 - The machine settings basing on the stitch selection have been performed. (see page 55)/ (see page 57)
 - Threading has been performed according to the stitch chart. (see page 69)
 - All needle threads and looper threads as well lie under the presser foot to the back left.
 - The threader cover is 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







For a perfect sewing result, the quality of needle, thread, fabric and the optimal stitch play a vital role.




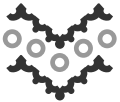


This combination can have an effect on the sewing result.

- > It is recommended to perform a test sample. (see page 80)

Fabric/stitch/application

The stitch recommendation serves the purpose, first and foremost, of obtaining a stitch selection for the current fabric and application. The suggested stitch can be preset according to the stitch chart or the quick reference card.

	Sewing	Finishing	Sewing and finishing	Rolled hem	Gathering	Decorative seam	Decorative hem
 Lightweight woven	#1 4-Thread Overlock	#4 3-Thread Overlock (RN)	#7 3-Thread Narrow Seam	#8 3-Thread Rolled Hem	#1 4-Thread Overlock	#6 3-Thread Flatlock Narrow (RN)	#10 2-Thread Wrapped Overlock Narrow (RN)
 Medium weight woven	#1 4-Thread Overlock	#4 3-Thread Overlock (RN)	#1 4-Thread Overlock	#8 3-Thread Rolled Hem	#1 4-Thread Overlock	#6 3-Thread Flatlock Narrow (RN)	#10 2-Thread Wrapped Overlock Narrow (RN)
 Heavyweight woven	#1 4-Thread Overlock	#3 3-Thread Overlock Wide (LN)	#1 4-Thread Overlock	—	—	#5 3-Thread Flatlock Wide (LN)	#9 2-Thread Wrapped Overlock Wide (LN)
 Light knits	#4 3-Thread Overlock (RN)	#4 3-Thread Overlock (RN)	#4 3-Thread Overlock (RN)	#8 3-Thread Rolled Hem	#1 4-Thread Overlock	#12 2-Thread Flatlock Narrow (RN)	#10 2-Thread Wrapped Overlock Narrow (RN)
 Medium weight knits	#1 4-Thread Overlock	#4 3-Thread Overlock (RN)	#3 3-Thread Overlock Wide (LN)	—	—	#11 2-Thread Flatlock Wide (LN)	#9 2-Thread Wrapped Overlock Wide (LN)
 Heavy knits	#1 4-Thread Overlock	#3 3-Thread Overlock Wide (LN)	#1 4-Thread Overlock	—	—	#11 2-Thread Flatlock Wide (LN)	#9 2-Thread Wrapped Overlock Wide (LN)

	Sewing	Finishing	Sewing and finishing	Rolled hem	Gathering	Decorative seam	Decorative hem
 Fabric with a piled texture	#1 4-Thread Overlock	#4 3-Thread Overlock (RN)	#1 4-Thread Overlock	—	—	—	—
 Jeans	#1 4-Thread Overlock	#3 3-Thread Overlock Wide (LN)	#1 4-Thread Overlock	—	—	#5 3-Thread Flatlock Wide (LN)	#9 2-Thread Wrapped Overlock Wide (LN)
 Terry cloth	#1 4-Thread Overlock	#4 3-Thread Overlock (RN)	#1 4-Thread Overlock	—	—	—	—
 Tulle and lace	#7 3-Thread Narrow Seam	#4 3-Thread Overlock (RN)	#7 3-Thread Narrow Seam	#8 3-Thread Rolled Hem	#1 4-Thread Overlock	#12 2-Thread Flatlock Narrow (RN)	#10 2-Thread Wrapped Overlock Narrow (RN)
 Leather and vinyl	—	#3 3-Thread Overlock Wide (LN)	—	—	—	#5 3-Thread Flatlock Wide (LN)	—
 Fur	—	—	#3 3-Thread Overlock Wide (LN)	—	—	—	—

Tab. 2: Fabric/stitch/application combination

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 purchase of quality threads is recommended to achieve good sewing results.
- Use thread cones/spools which are suitable for overlock machines.



WARNING

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

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

The thread should be able to be threaded easily through the looper and the needle eye.

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.




Needle thread

Needle size and thread type must be carefully matched. The correct needle thickness depends on the selected thread as well as the fabric being used. The fabric weight and type determine the thread weight, needle size and point form.

Needle thicknesses of 70/9 - 90/14 can be used in the machine.

Thread type	Needle thickness
Polyester overlock thread no. 120	80 – 90
Polyester multifilament < no. 120	70 – 90
Overlock yarn	80 – 90
Decorative thread/yarn	80 – 90
Metallic thread	80 – 90

Needle/thread combination

	<p>The needle/thread combination is correct, when the thread fits perfectly into the long groove and goes easily through the needle eye.</p>
	<p>The thread can break and skipped stitches can occur when there is too much clearance in the long groove and the needle eye.</p>
	<p>The thread can break and get stuck when the thread scrapes against the edge of the long groove not fit well into the needle eye optimally.</p>

Looper thread

A wide variety of thread types can be used as looper threads. They can be threaded using the air threading system. The air threading circumvention must be used for thicker threads. (see page 72)

NOTICE

Damage by coated or waxed threads

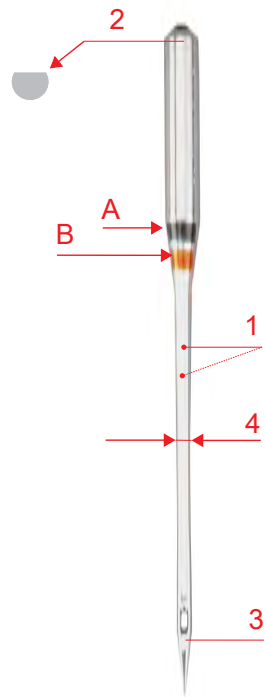
Coated or waxed threads may lose some of their coating in the air threader pipes, resulting in permanent blocking of the pipes. Repair by a BERNINA dealer will be necessary. Avoid use of coated or waxed threads.

4.4 Selecting the needle

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

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

A coverstitch needle ELx705 CF/80 is explained by the following graph as an example.



A	■ Coverstitch needle ELx705 CF/80
1	two thread grooves
2	705 = Flat shank
3	CF = chrome finish
4 / B	80 = Needle size

The needles should be replaced regularly. Only a flawless needle point can achieve a clean stitch.

- Needle size 80: For any common applications. for mid-weight to heavy fabrics.
- Needle size 90: for heavy fabrics.
- Needle size > 80: In exceptional cases, only for light fabrics.

Select needle using the chart

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

*Not all needle sizes are available as BERNINA needles.

5 Stitch selection

5.1 Stitch type

With this machine, 18 different stitch formations can be set. They are achieved by various configurations of needles and mechanical settings, as summarized in the stitch chart.

Overlockstitch

The 3- and 4-Thread Overlock are standard overlockstitches, e.g. for sewing 2 fabric layers together. 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 more stretchable than the 4-Thread Overlock as the safety seam is missing and is therefore ideal for seams on knitted fabrics (LN wide) or fine fabrics (RN narrow).

Both stitch types are ideal for finishing cut edges, e.g. facings, hem edges and seam allowances which are ironed .



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.



5.2 Select stitch by application

Seam

Seams are 2 or more fabric layers, which are usually placed right side on right side and sewn together.

Closed seam

3-Thread or 4-Thread Overlock stitches are suitable for closed seams, which loop around and sew together both finishing edges.

Only the 4-Thread Overlockstitch with safety seam forms a reliable seam. This stitch is mainly chosen for garments made of knitted fabrics and for wide cut garments made of woven fabrics.



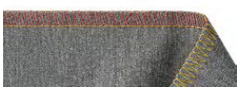

No.	Name	Stitch pattern
1	4-4-Thread Overlock with safety seam	
2	3-Thread Super Stretch	
3	3-Thread Overlock Wide (LN)	
4	3-Thread Overlock Narrow (RN)	
7	3-Thread Narrow Seam	

Tab. 3: Recommended stitches for a closed seam

Flatlock

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

No.	Name	Stitch pattern
5	3-Thread Flatlock Wide (LN)	
6	3-Thread Flatlock Narrow (RN)	
11	2-Thread Flatlock Wide (LN)	
12	2-Thread Flatlock Narrow (RN)	

Tab. 4: Recommended stitches for a flatlock

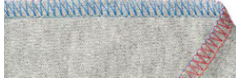





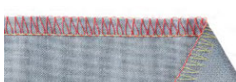




Open seam

An open seam cannot be produced with the overlocker without the help of a coverstitch or sewing machine.

Finish the fabric edge with the overlocker and then sew the finished fabric layers together, right side on right side.

Edge serging

Finishing edges are usually used as preparation for open seams.

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












Tab. 5: Recommended stitches for serging a finishing edge



5.3 Stitch chart

These default values may vary depending on the used material. (see page 80)

- > Remove all the needles which are not required.
- > Set the mtc micro thread control to «0».

No.	Name	Stitch pattern									
1	4-Thread Overlock with Integrated Safety Seam		4	4	4	4	6	0	2.5	1	
2	3-Thread Super Stretch		4	4	–	4	6	0	2.5	1	
3	3-Thread Overlock Wide (LN)		4	–	4	4	6	0	2.5	1	
4	3-Thread Overlock Narrow (RN)		–	4	4	4	6	0	2.5	1	
5	3-Thread Flatlock Wide (LN)		2	–	4	7	6	0	2.5	1	
6	3-Thread Flatlock Narrow (RN)		–	2	4	6	6	0	2.5	1	
7	3-Thread Narrow Seam		–	4	4	4	7,5	R	2	1	
8	3-Thread Rolled Hem		–	4	4	5,5	5,5	R	R	1	
9	2-Thread Wrapped Overlock Wide (LN)		4	–	–	4	6	0	2.5	1	

Stitch selection

No.	Name	Stitch pattern									
10	2-Thread Wrapped Overlock Narrow (RN)		–	4	–	4	6	0	2.5	1	
11	2-Thread Flatlock Wide (LN)		1.5	–	–	4.5	6	0	2.5	1	
12	2-Thread Flatlock Narrow (RN)		–	2	–	4	6	0	2.5	1	
13	2-Thread Rolled Hem		–	4	–	4	5,5	R	R	1	
14	2-Thread Overlock Wide (LN)		2	–	–	4	6	0	2.5	1	
15	2-Thread Overlock Narrow (RN)		–	2	–	4	6	0	2.5	1	
28	2-Thread Blanketstitch Wide (LN)		2	–	–	4	6	0	4	1	
29	2-Thread Blanketstitch Narrow (RN)		–	2	–	4	6	0	4	1	
30	3-Thread Picot Stitch		–	3,5	3,5	5	6	R	2.5	1	

Tab. 6: Settings overview



6 Machine settings

6.1 Knife

Knife on/off



For better visibility and access into the sewing area, e.g. for threading, the knife can be lowered (off) and then reactivated (on). The knife can also be lowered during a sewing project if a clean cutting edge already exists and it just needs to be serged. The best sewing results are achieved by cutting and serging in a single process.

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



- > Pull the «Knife on/off» to the front.
 - The knife raises to the cutting position.



Setting the cutting width

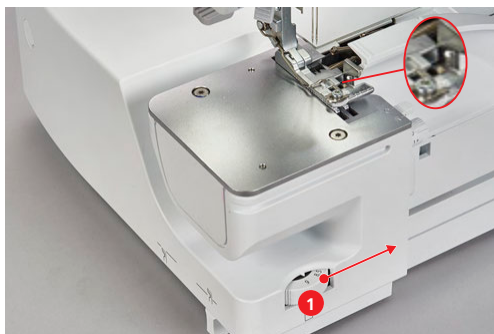


The cutting width for the knife position can be adjusted between 5 - 9 mm.

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 63)



- > 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.



If the cutting width changes, the knife, stitch finger and looper cover move in the corresponding direction.



6.3 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 there for the desired application.

Overlocking «O»

During overlocking, the upper looper thread is laid along the stitch finger to form a constant distance from the finishing edge.

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



If the thread quantity at the fabric edge is too much or too little, this thread quantity can be corrected by the mtc micro thread control. (see page 61)

Rolled hem «R»

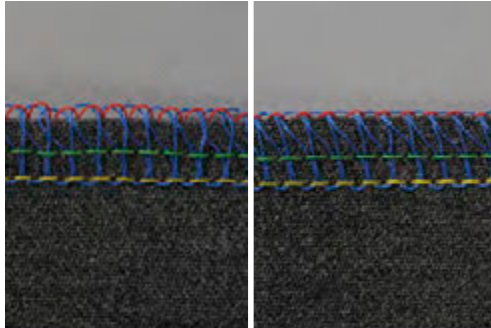
By retracting the stitch finger, the loops of the upper and lower loopers thread are reduced and the fabric edge is rolled up. Roll hems are the ideal edge finishing for fine and medium-weight fabrics. These are particularly suitable for decorative finishings on scarves, evening gowns, lingerie, home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

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



6.4 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 looper threads around the fabric edge and can be adjusted continuously during sewing. With this unique feature, a well balanced stitch can be easily achieved at any given cutting width.



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

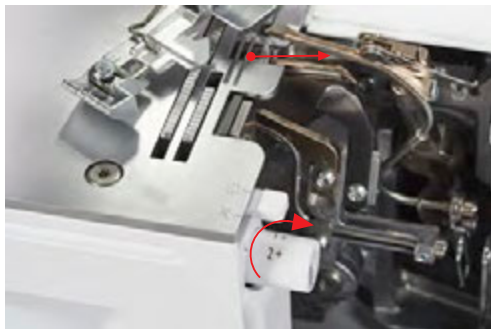
Between 5 – 6 mm the adjustment towards the minus «-» direction is limited.

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

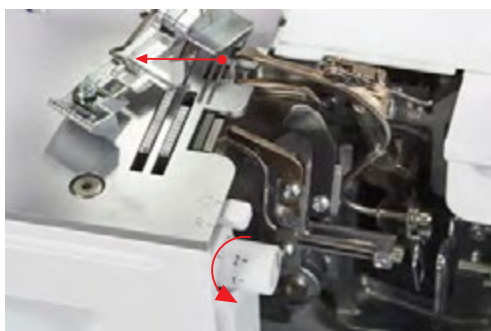
Prerequisite:

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

- > To enlarge the loops of the looper at the fabric edge, turn the mtc micro thread control during sewing in «+» direction.
- > In order to adjust the mtc 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 at the fabric edge, turn the mtc micro thread control in «-» direction during sewing.



6.5 Setting the presser foot pressure



The presser foot pressure of this machine is set in the default value «4» such that it is suitable for sewing medium-weight fabrics.

Most materials do not require adjustment of the presser foot pressure. However, there are some cases where adjustment may help, such as when sewing very light and heavy fabrics.



1	Extra light	4	Standard setting
2	Light	5	Medium high
3	Medium light	6	High

Tab. 7: Presser foot pressure adjustments

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

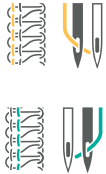


- > To reduce the presser foot pressure, set the presser foot pressure wheel to a lower value.



6.6 Adjusting the stitch width

Influence by 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.

Influence by the knife position



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.

(see page 58)

6.7 Adjusting the thread tension

The thread tension has a considerable influence on each individual thread and its task to perform the stitch formation. The stitch chart provides a recommended default value for each stitch. This recommendation can be optimized for different thread/fabric combinations. (see page 80)



- > To reduce the thread tension, turn the thread tension adjustment dial down to a lower value.
- > To increase the thread tension, turn the thread tension adjustment dial up to a higher value.

6.8 Setting the differential feed




Differential feed prevents unwanted puckering or wavering in knitted or stretch fabrics as well as shifting of fabric layers. The two fabric feed dogs can be geared to each other so that the fabric is fed evenly while sewing and that neither wavering nor unintended gathering occurs. The differential feed is variable while sewing.




When the machine is running, the adjustment ranges are shown larger to allow «blind operation».

6.9 Setting the stitch length

-  The stitch length can be infinitely adjusted between 0.8 – 4.5 mm while sewing. The default stitch length is 2.5. A stitch length value recommendation for each stitch is shown in the stitch chart. A value of 1.5 and less is used for rolled hems. The default roll hem is «R».
- > To elongate the stitch, set the stitch length knob upwards to a higher value.
 - > To shorten the stitch, set the stitch length knob down to a lower value.



6.10 Adjusting speed

- 1 The sewing speed is infinitely adjustable and can be controlled by applying more or less pressure on the foot control.
-  The maximum sewing speed can be preset at 2 speed levels.

1/2

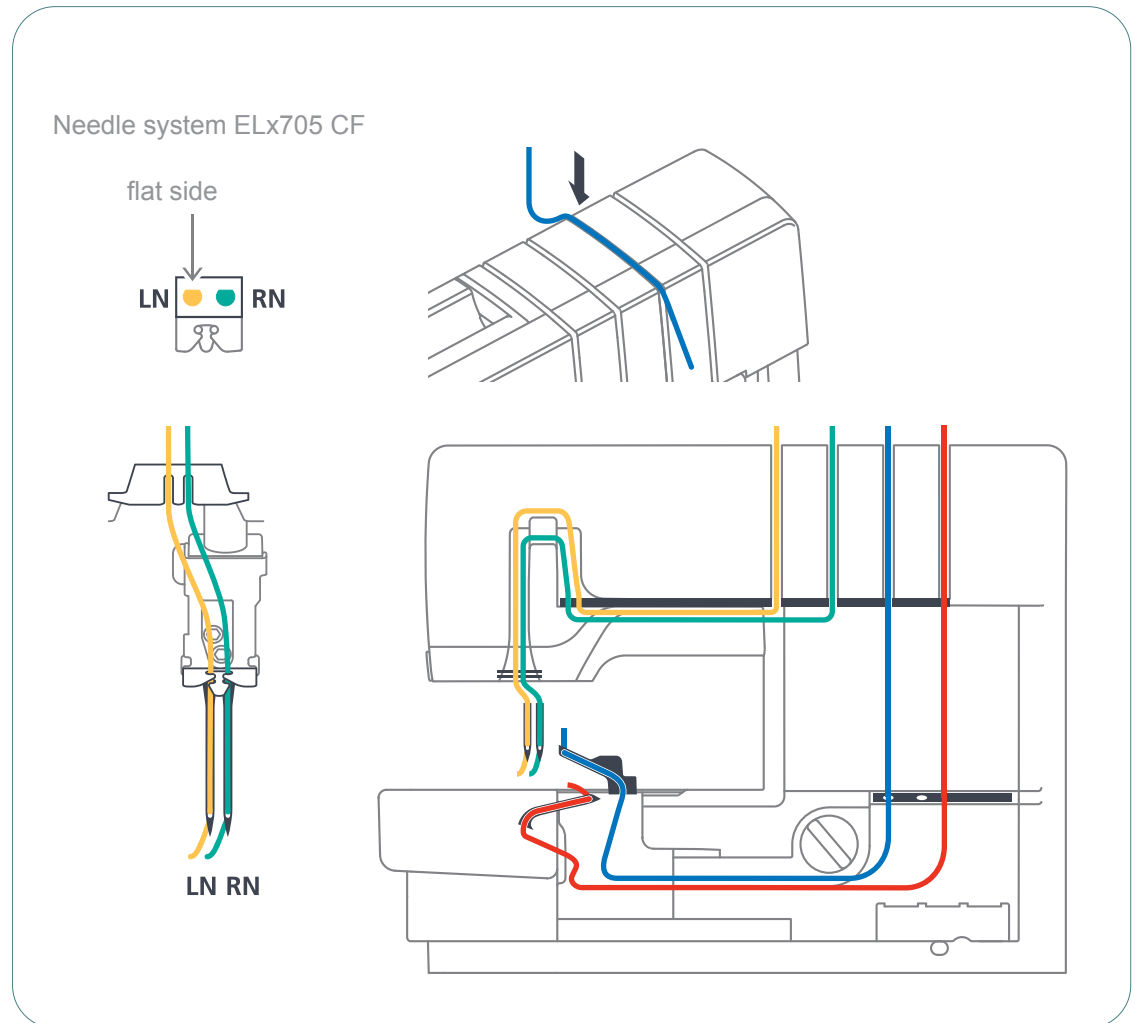


Prerequisite:

- The threader cover is opened.
- > To reach the maximum sewing speed (1500 U/min), set the speed switch to «1» (factory setting).
- > To reduce the maximum sewing speed, set the speed switch to «1/2».
- > Close the threader cover.

7 Threading

Due to the one-step BERNINA air threader, no specific sequence is required for threading the machine.

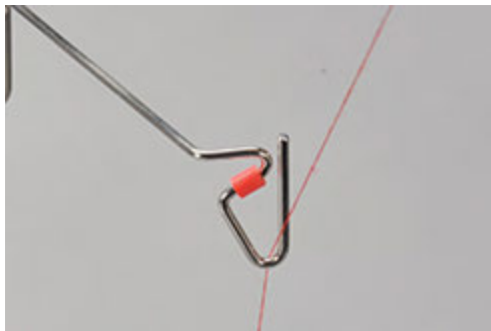


7.1 Preparing for threading

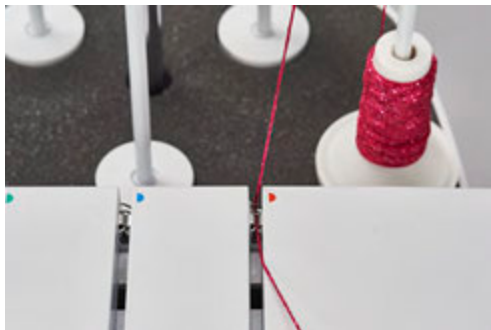
Before threading, make sure that the device is mechanically adjusted to the required stitch. Perform the required mechanical settings e.g. for needle, rolled hem selection lever and upper looper cover. The machine has color-coded threading paths. Correct threading is ensured when following the color markings.

Prerequisite:

- Retractable thread guide extracted.
 - The needles are at top position. (see page 40)
 - All threads that are not needed for the particular stitch have been 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 color-coded thread guide.



- > Engage the thread by pushing downwards into the thread pre-tension with both hands and check by pulling it upwards to the back that it does not slide out of the thread pre-tension.



- > Place the thread along the slot into the thread tension discs.



7.2 One-step BERNINA air threader

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.

Air threading adjustment is accomplished by turning the air threader connector in two possible positions. The air threader connector should always be turned to the stop in the required direction.

The lower looper thread (red) is needed for each stitch. Depending on the stitch, the upper looper thread (blue) must be additionally threaded.

Detailed information can be found in the stitch chart.

Pulse drive

If the needles are not in the uppermost position, the one-step BERNINA air threader cannot be coupled.

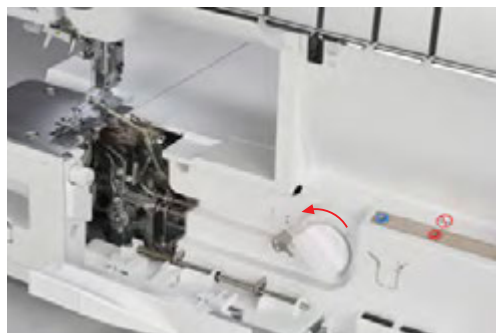
- > By pressing the foot control, the coupling is first carried out by moving the needles in «Pulse drive» to the uppermost position.
- > Pressing the foot control again starts the air threading process.

Threading the looper threads UL/blue, LL/red

With the one-step BERNINA air threader, both looper threads can be threaded in one simple step.

Prerequisite:

- «The threading preparation» has been performed. (see page 69)
- > Open the threader cover and the looper cover.
- > Set the air threader connector to «I».



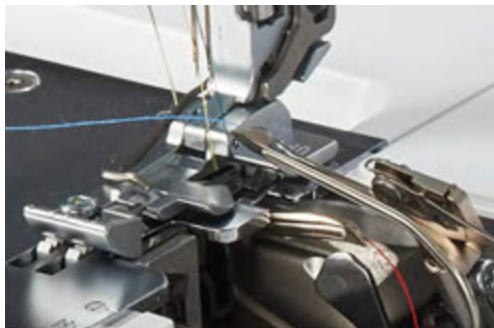
– The air threader pipes are coupled.

- > 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.

- > Press the foot control.
 - Automatic thread feed into the air threader starts.
 - The looper thread is shot through the air threader pipe and exits at the looper tip.
- > Release the foot control as soon as the looper thread emerges from the looper eye.



NOTICE

Pulse drive

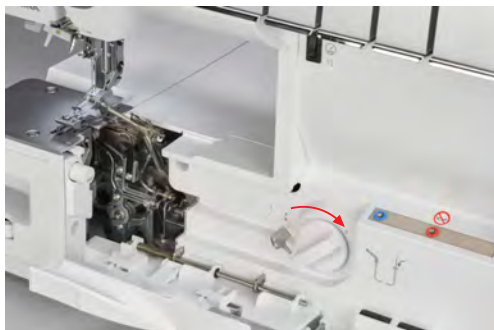
If the air threader pipes are not coupled, the Puls Drive will be performed by pressing the foot control.

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

Press the foot control again.

Threading can continue.

- > Place the looper threads under the presser foot to the rear left.
- > Repeat the process with the other looper thread if required.
- > Set the air threader connector to position «0».



- > Close the looper cover and the threader cover.

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:

- The «Threading preparation» has been performed. (see page 69)
- > Open the threader cover and the looper cover.
- > Set the air threader connector to «1».
- > Prepare an auxiliary thread at a length of about 60 cm.
- > Fold the auxiliary thread in half, hold the thread end with the loop in your hand 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 of the auxiliary thread emerge from the looper eye.

Using the threading wire

The supplied threading wire can be used as a threading aid for the looper thread. 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.

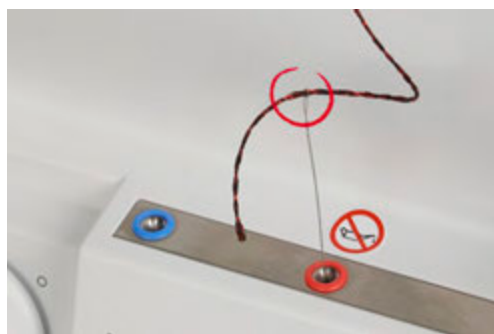
- > Insert and pull through the threading wire only in the thread flow direction.

Prerequisite:

- There is no thread in the respective air threader pipe.
- «Threading preparation» (see page 69)
- > Open the threader cover and the looper cover.
- > Guide the threading wire with the gummed end (threading wire loop up) through the corresponding air threading tip until it emerges from the eye of the looper.



- > Place the wanted looper thread through the loop of the threading wire.



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



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

In case of a malfunction of the one-step BERNINA air threader must be repaired by a specialized BERNINA dealer.

8 Perform a sewing test

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

The default values of the stitches represent recommendations that work for most standard applications. Depending on your material combination (fabric, stitch, thread, needle) fine tuning may be possible to further optimise a stitch.

8.1 Overlockstitch sewing test

Prerequisite:

- The «Sewing start» has been performed. (see page 43)
- > Raise the presser foot.
- > Push the fabric under the presser foot to the front of the knife so that the desired seam allowance is cut off.
- > Start sewing slowly. Guide the fabric gently as the machine automatically transports the material.
- > Sew beyond the fabric end so that a thread chain is formed.
- > Pull the thread chain over the thread cutter.
- > Assess the sewing test and make any necessary fine adjustments until the stitch setting matches the material combination. (see page 57)
- > Repeat the sewing test until you are satisfied with the stitch - then start your project.

8.2 Stitch optimizing

Optimizations of stitches should be made systematically. In the following, recommendations are listed for each stitch type, which optimize the stitch pattern through specific changes to the machine setting.

- > Perform one reducing thread tensions step after the other from the top.
- > Alter the thread tensions only by half or one digit at a time.
- > A thread tension reduction should be carried out before trying to increase.
- > Perform a sewing test.



3-Thread Narrow Seam

With a balanced stitch formation, the looper thread (blue/red) are intertwined at the fabric edge.

The needle thread (green) is identifiable on the top side of the stitch as a straight line and on the bottom side of the stitch as points.



Stitch pattern	Recommendation
The looper threads are intertwined on the wrong side of the fabric.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red). > Increase the upper looper thread tension (blue).
The looper threads are intertwined on the right side of the fabric.	<ul style="list-style-type: none"> > Reduce the upper thread tension (blue). > Increase the lower looper thread tension (red).
The right needle thread forms loop on the wrong side of the fabric.	<ul style="list-style-type: none"> > Increase the right needle thread tension (green).
The fabric edge doesn't curl as intended.	<ul style="list-style-type: none"> > Increase the upper looper thread tension (blue). > Increase the lower looper thread tension (red). > Increase the cutting width «CW». > Shorten the stitch length «SL». > Check the rollhem selector lever position «R».

Tab. 9: Optimizing the stitch: 3-Thread Narrow Seam

3-Thread Super Stretch / 2-Thread Wrapped Overlock

With a balanced stitch formation, the looper thread (red) loops around the cutting edge.

The needle threads (green/yellow) create two straight lines of stitches on the top side of the stitch and appear as dots on the bottom side of the stitch.



The elasticity of the 3-Thread Super Stretch can be increased by shortening the stitch length or by reducing the needle thread tension depending on the material and application.



Stitch pattern	Recommendation
The looper thread is too loose around the fabric edge.	<ul style="list-style-type: none"> > Increase the lower looper thread tension (red). > Increase the mtc Micro Thread Control.
The looper thread is too tight around the fabric edge.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red). > Increase the mtc micro thread control. > Reduce the cutting width «CW». > Check the rollhem selector lever position «O».
The needle thread forms loops on the wrong side of the fabric.	<ul style="list-style-type: none"> > Increase the needle thread tension (yellow, green). > Reduce the lower looper thread tension (red).
The fabric edge forms a tunnel or curls.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red). > Increase the mtc micro thread control. > Reduce the cutting width «CW». > Check the rollhem selector lever position «O».
The seam puckers.	<ul style="list-style-type: none"> > Reduce the left needle thread tension (yellow). > Increase the right needle thread tension (green). > Set the Differential feed between 1 and 0.7 (Stretching). > Shorten the stitch length «SL».

Tab. 10: Optimizing the stitch: 3-Thread Super Stretch / 2-Thread Wrapped Overlock



3-Thread Flat Seam

With a balanced stitch formation, the upper thread (blue) is on the top side of the stitch related to the insertion into the fabric edge.

The lower looper thread (red) is parallel to the fabric edge.

The needle thread (yellow or green) forms a «V» on the bottom side of the stitch related to the insertion into the fabric edge.



Stitch pattern	Recommendation
The lower looper thread overedges the fabric edge towards the wrong side of the fabric.	<ul style="list-style-type: none"> > Reduce the left or the right needle thread tension (yellow or green). > Increase the upper looper thread tension (blue).
The upper looper thread doesn't reach to the fabric edge.	<ul style="list-style-type: none"> > Increase the needle thread tension (yellow or green). > Reduce the upper thread tension (blue).
The lower looper thread is not parallel to the fabric edge.	<ul style="list-style-type: none"> > Increase the lower looper thread tension (red). > Reduce the left or the right needle thread tension (yellow or green). > Reduce the upper thread tension (blue).
The seam puckers, the lower looper thread is overstretched.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red).
The needle thread doesn't reach to the fabric edge.	<ul style="list-style-type: none"> > Reduce the left or the right needle thread tension (yellow or green). > Increase the upper looper thread tension (blue).
The lower looper thread overedges the fabric edge towards the wrong side of the fabric.	<ul style="list-style-type: none"> > Increase the needle thread tension (yellow or green). > Reduce the upper thread tension (blue).
The fabric edge curls.	<ul style="list-style-type: none"> > Reduce the left or the right needle thread tension (yellow or green). > Reduce the upper thread tension (blue). > Increase the mtc Micro Thread Control. > Reduce the cutting width «CW». > Check the rollhem selector lever position «O».

Tab. 11: Optimizing the stitch: 3-Thread Flat Seam

3-Thread Rolled Hem / 3-Thread Picot Stitch

With a balanced stitch formation, the upper looper thread (blue) loops around the cutting edge.

The lower looper thread (red) lies straight along the needle thread on the bottom side of the stitch.

The needle thread (green) is identifiable on the top side of the stitch as a straight line and on the bottom side of the stitch as points.



Stitch pattern	Recommendation
The looper thread is too loose around the fabric edge.	<ul style="list-style-type: none"> > Increase the upper looper thread tension (blue). > Increase the cutting width «CW». > Shorten the stitch length «SL».
The fabric edge doesn't curl as intended.	<ul style="list-style-type: none"> > Increase the cutting width «CW». > Increase the upper looper thread tension (blue). > Elongate the stitch length «SL».
The upper looper thread is too tight around the fabric edge.	<ul style="list-style-type: none"> > Reduce the upper thread tension (blue). > Shorten the stitch length «SL».
The lower looper threads are not parallel to the needle thread.	<ul style="list-style-type: none"> > Increase the lower looper thread tension (red). > Increase the right needle thread tension (green).
The seam puckers, the lower looper thread is overstretched.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red).
The needle thread forms loops on the wrong side of the fabric.	<ul style="list-style-type: none"> > Increase the right needle thread tension (green).
The seam puckers.	<ul style="list-style-type: none"> > Reduce the lower looper thread tension (red). > Set the Differential Feed between 1 and 0.7 (Stretching). > Increase the right needle thread tension (green). > Shorten the stitch length «SL».

Tab. 12: Optimizing the stitch: 3-Thread Rolled Hem / 3-Thread Picot Stitch

2-Thread Rolled Hem

With a balanced stitch formation, the looper thread (red) loops around the cutting edge. The needle thread (green) is identifiable on the top side of the stitch as a straight line and on the bottom side of the stitch as points.



Stitch pattern	Recommendation
The looper thread is too loose around the fabric edge.	> Increase the lower looper thread tension (red).
The looper thread is too tight around the fabric edge.	> Reduce the lower looper thread tension (red). > Reduce the cutting width «CW».
The fabric edge doesn't curl as intended.	> Increase the cutting width «CW». > Elongate the stitch length «SL». > Increase the lower looper thread tension (red).
The needle thread forms loops on the wrong side of the fabric.	> Increase the right needle thread tension (green).
The seam puckers.	> Reduce the right needle thread tension (green). > Set the Differential Feed between 1 and 0.7 (Stretching). > Shorten the stitch length «SL».

Tab. 13: Optimizing the stitch: 2-Thread Rolled Hem



Securing the thread chain

- > 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, an awl or a sewing needle with a large eye.



Tie on thread chain

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

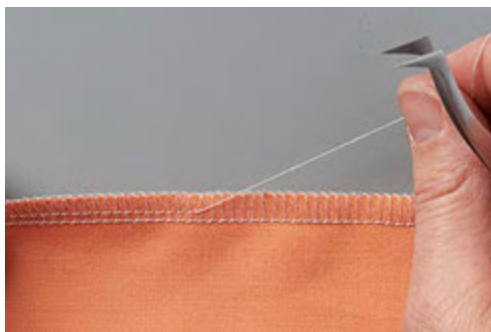
9.2 Removing a stitch

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

- > Turn the fabric away from the presser foot to the left.



- > Lower the presser foot and sew over and beyond the fabric.

9.9 Using the tape guide

This presser foot provides an adjustable tape guide which can hold ribbons and elastics up to 12 mm in width. It is optimal to integrate ribbons as seam reinforcements or to attach elastics to lingerie and swimwear seams.



Prerequisite:

- The 4- or 3-Thread Overlock stitch is set.
 - The presser foot is raised and swung out.
 - The needles are raised.
- > Place the tape beneath the presser foot and insert it into the tape guide from the right.
 - > Swing in and lower the presser foot to fix the tape.
 - > Sew a few stitches on the tape.
 - > Loosen the screw at the ribbon guide lightly.
 - > Adjust the width of the tape guide so that at least one needle can stitch the tape.
 - > Tighten the screw.
 - > Raise the presser foot toe and place the material under the presser foot.
 - > Continue sewing on the tape.



10 Appendix

10.1 Care, cleaning and maintenance

NOTICE

Damage by cleaning with compressed air

Cleaning using aerosol sprays or compressed air may cause permanent damage to your machine. Repair by a BERNINA dealer will be necessary.

- > Remove fabric scraps and thread remnants using a vacuum cleaner with soft top piece.

Care of the machine

The operational life span depends on the maintenance of the machine. The machine can be dusted off with a moist cloth without cleaning agents.

Based on normal household use, an annual service at a certified BERNINA dealer is recommended.

- > Free the sewing area from fabric and thread scraps regularly after sewing.
 - Needle, needle bar
 - Presser foot
 - Feed dog (from above)
 - Knife
- > Free the looper area from fabric and thread scraps. (see page 97).
 - Brush
 - Tweezers
 - Vacuum with soft attachment

Cleaning the air threader pipes

NOTICE

Damage by fluids in the air threader system



The air threader pump may be damaged permanently if liquids infiltrate the system. Repair by a BERNINA dealer will be necessary.

- > Protect the air threader nozzles from liquids.

Now and then, dust and thread remnants must be removed from all air threader pipes.

Prerequisite:

- Use a thick thread (e.g. Amann Saba C size 30) at a length of about 1 m.
- > Thread the thread in the air threader nozzle.
- > To clean the air threader pipe, hold the thread at both ends and pull it to and fro.
- > Remove the thread at the looper end in thread feed direction.
- > Repeat this process for the other air threader nozzles using a clean thread.

Cleaning the suction feet

Regular cleaning of the suction feet prevents the machine from shifting on the table at high sewing speed.

- > Use a damp cloth to remove dust and threads remnants.

Oiling the machine

- > After frequent use, lubricate the upper looper joint with 1 – 2 drops of the supplied BERNINA serger oil.



10.2 Storing and transporting the machine

Storing the machine

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

- > To store the machine, the original packaging supplied must be used.
- > Don't store the machine outdoor.
- > Protect the machine against climatic influences.
- > Before operating the machine again after storage, leave the machine unpacked for approx. 1 h at room temperature.

Transporting the machine

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

- > Retract the spool reel stand completely downwards.
- > Lower the presser foot.
- > Remove all connecting cables.
- > Lift and transport at the carry handle and the transport carry groove under the handwheel.
- > For a longer transport, protect the machine and transport it in its original packaging.



10.3 Troubleshooting

Failure	Cause	Recommendation
Irregular stitch	Incorrect thread tension.	> Adjust the thread tension. (see page 63)
	Incorrect needle size.	> Match needle size with fabric/thread. (see page 48)
	Threading incorrect.	> Rethread the machine. (see page 68)
	Fabric has been pulled.	> Don't pull the fabric; guide lightly.
	Loose presser foot.	> Attach the presser foot properly. (see page 34)
	Air threader pipes dirty.	> Clean the air threader pipes. (see page 96)
Needle breaks	Needles are defective.	> Replace needles. (see page 35)
	Fabric has been pulled.	> Don't pull the fabric; guide lightly.
	Incorrect needle size.	> Replace the needle. (see page 35)
	Needle fit incorrect.	> Match needle size with fabric/thread. (see page 48)
	Loose presser foot.	> Attach the presser foot properly. (see page 34)
	Needle system incorrect.	> Insert needle of the system ELx705 CF. (see page 48)
Unintended seam gathering	Incorrect thread tension.	> Adjust the thread tension. (see page 63)
	Needles are defective.	> Insert a new needle. (see page 35)
	Differential feed incorrect.	> Set the Differential feed to 0.7 – 1. (see page 63)
Unintended seam waving	Differential feed incorrect.	> Set the Differential feed to 1 – 2. (see page 63)
Skipped stitches	Incorrect needle size.	> Match needle size with fabric/thread. (see page 48)
	Threading incorrect.	> Rethread the machine. (see page 68)
	Defective needle	> Insert a new needle. (see page 35)
	Needle fit incorrect.	> Insert the needle correctly. (see page 35)

Failure	Cause	Recommendation
Thread breakage	Threading incorrect.	> Thread correctly. (see page 68)
	Needle damaged.	> Insert a new needle. (see page 35)
	Incorrect needle size.	> Replace the needle. (see page 35)
	Incorrect thread tension.	> Adjust the thread tension. (see page 63)
	Thread tangles above the thread cone.	> Check whether the thread cone can unwind freely. (see page 28) > Use the spool net.
	Retractable thread stand is not fully extended.	> Raise the retractable thread stand fully. (see page 28)
The machine doesn't sew	No power supply.	> Connect the machine. (see page 24)
	Power switch off.	> Switch the machine on. (see page 24)
	Machine is overheated.	> Switch the machine off and let it cool down for 10 15 min. (see page 24)
	Air threader connector	> Set the air threader connector to «0».
Machine runs slowly and then stops	Pulse drive	> Close the threader cover. (see page 26)
Fabric piles up	Incorrect presser foot pressure.	> Reduce the presser foot pressure. (see page 62)
Acoustic signal	The air threader doesn't work.	> Swing the presser foot in. (see page 33)
	Machine is not ready for sewing.	> Lower the presser foot. (see page 32)
		> Close the threader cover and the looper cover. (see page 26)
		> Set needle to topmost position. (see page 40)

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