



b68
AIRLOCK



User Manual

bernette

SWISS DESIGN

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IMPORTANT SAFETY INSTRUCTIONS

Please be aware of the following basic safety instructions when using your machine. Before using this machine, read the 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 bernette dealer.

- Switch off the machine before working in the needle area.
- Before starting the machine, close all covers or attach machine 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.

IMPORTANT SAFETY INSTRUCTIONS

- 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 bernette 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 accessories recommended by the manufacturer.
- Always use an original bernette 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.
- The machine is double-insulated.
Only use original spare parts. See instructions for servicing of double-insulated products.
- To lubricate the machine, only use oil recommended by bernetteoverlock oil.

Safety Instructions

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

Appropriate Use

- The machine can be used by children aged 8 years and over or by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they are supervised or have been given instructions on how to use the machine safely and understand the hazards involved.
Children are not allowed to play with the machine. Cleaning and maintenance work may only be carried out by children under supervision.
- 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.
If the machine is to be used in a country other than the country of origin, obtain a power cable suitable for this country from a bernette dealer.
- Only use this machine with the supplied foot control of type 4C-326G/4C-316B.
- 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.

- Only lift the machine by the handle.
- 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.

SAVE THESE INSTRUCTIONS

General Information

Proper Use

Your bernette 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 bernette dealer. Further accessories can be found at www.bernette.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



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



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



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

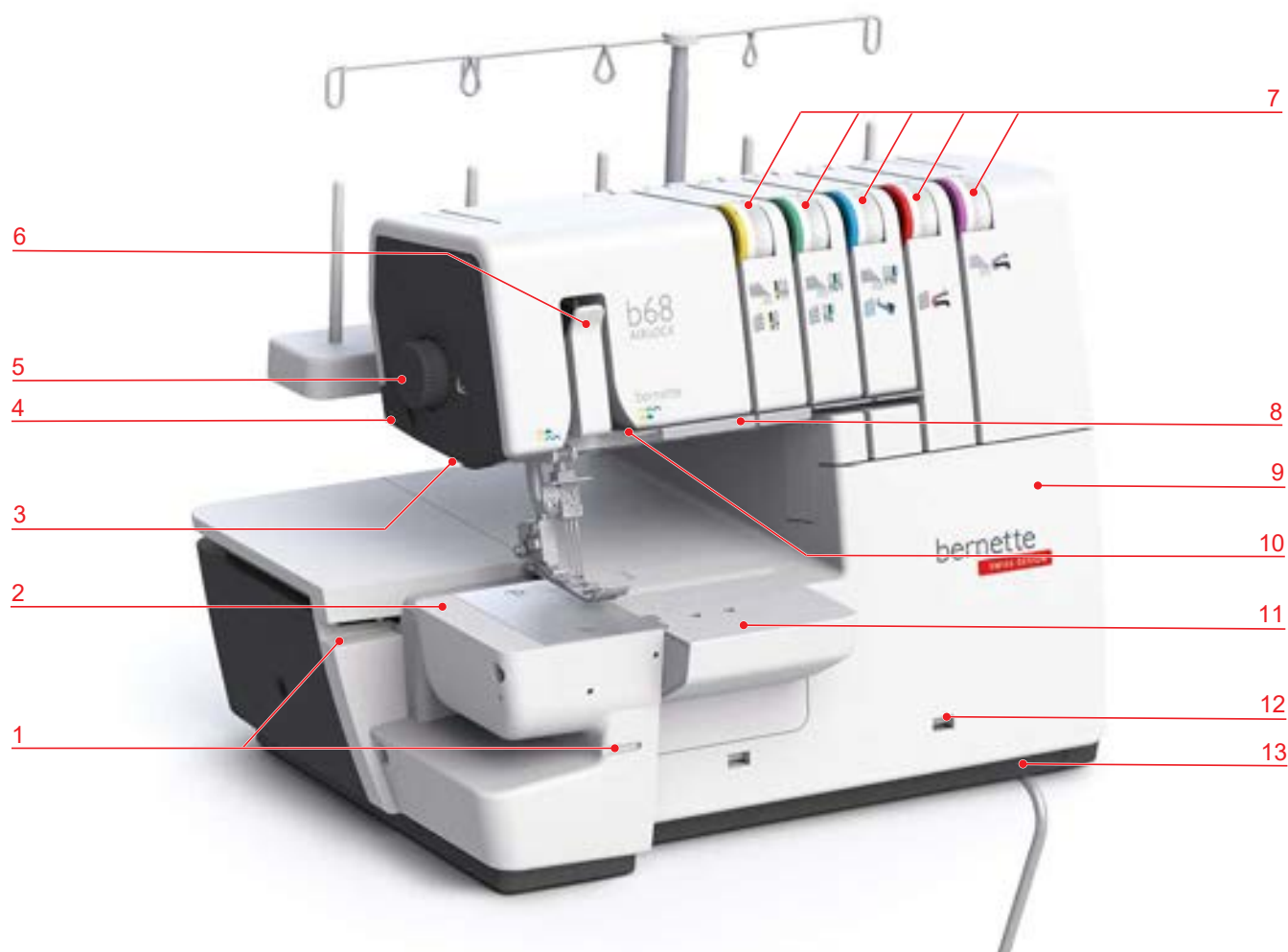


Designates a hazard which can lead to material damage if not avoided.

2 My bernette

2.1 Machine

Overview - Front



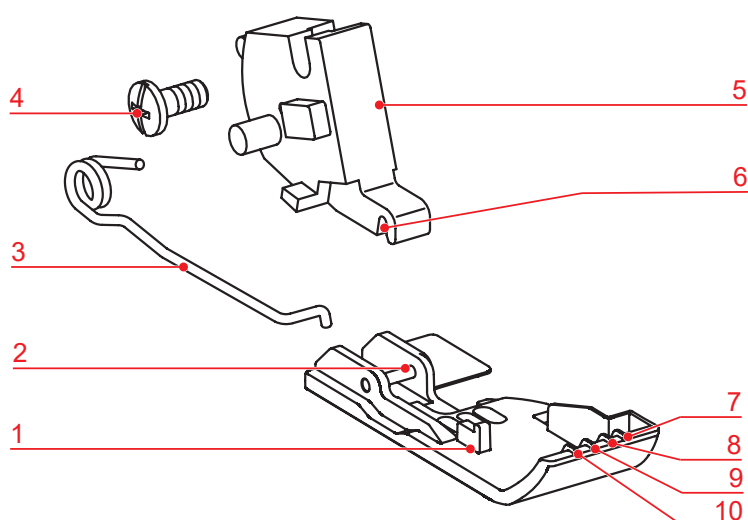
- | | | | |
|---|-----------------------------|----|----------------------------------|
| 1 | Guide Rail | 8 | Thread Guide Plate |
| 2 | Freearm | 9 | Threader Cover |
| 3 | Sewing Light | 10 | Thread Deflection Finger |
| 4 | Thread Cutter | 11 | Coverstitch Insert |
| 5 | Presser Foot Pressure Wheel | 12 | Cut-offs Bin Snap-in Opening |
| 6 | Thread Take-up Lever Cover | 13 | Connection for Knee Lifter (FHS) |
| 7 | Thread Tension Adjustment | | |

Overview - Needle Area



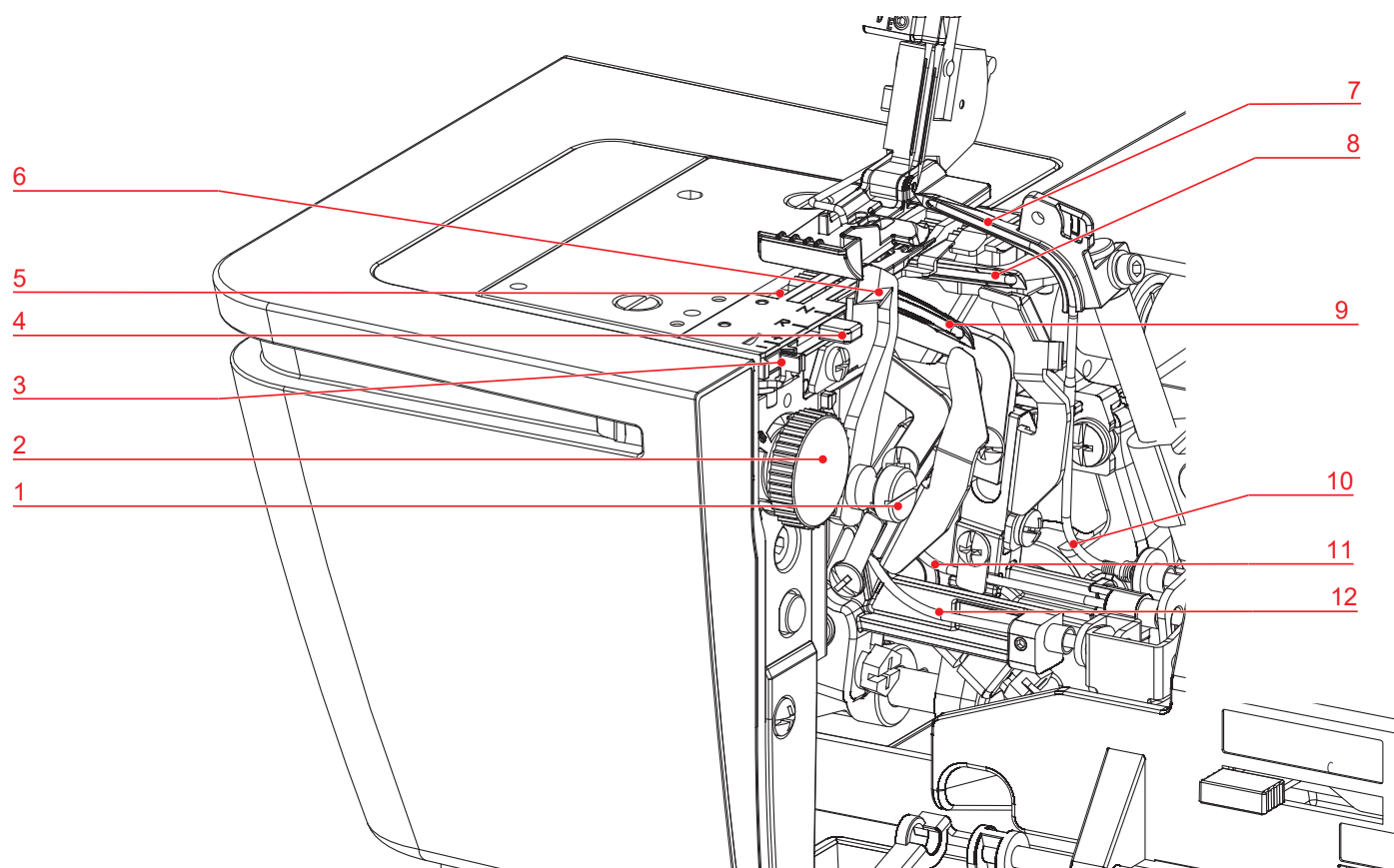
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|---|-----------------------------|----|-----------------------------------|
| 1 | Stitch Plate | 6 | Thread Guide on the Machine |
| 2 | Stitch Plate Screw | 7 | Thread Guide on the Needle Holder |
| 3 | Standard Presser Foot | 8 | Needle Holder |
| 4 | Presser Foot Release Button | 9 | Needle Screws |
| 5 | Presser Foot Bar | 10 | Needles |

Overview - Presser Foot



- | | | | |
|---|-----------------------|----|---|
| 1 | Presser Foot Sole | 6 | Shaft Groove |
| 2 | Presser Foot Sole Pin | 7 | Marking: Right Overlock Needle (RN) |
| 3 | Presser Foot Spring | 8 | Marking: Right Coverstitch Needle (RC) |
| 4 | Fixing Screw | 9 | Marking: Center Coverstitch Needle (CC) |
| 5 | Presser Foot Shaft | 10 | Marking: Left Coverstitch Needle (LC) |

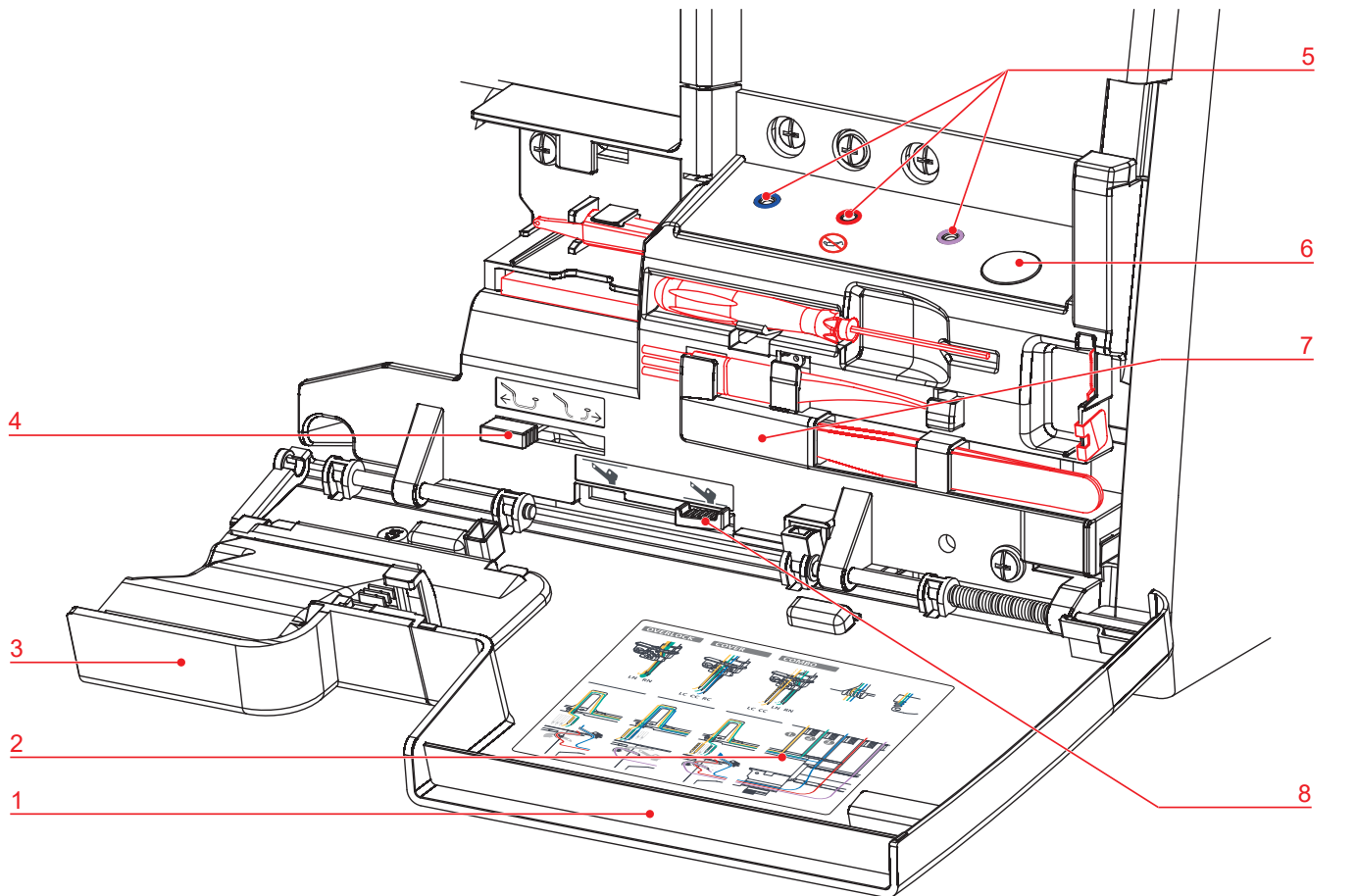
Overview - Looper Area



- 1 Knife On/Off
- 2 Cutting Width Dial
- 3 mtc Micro Thread Control Dial
- 4 Rolled Hem Selection Lever
- 5 Feed Dog
- 6 Knife

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

Overview - Threading Area



- | | | | |
|---|---------------------------------------|---|---|
| 1 | Threader Cover | 5 | Air Threader Nozzles |
| 2 | Threading Chart | 6 | Air Threader Button |
| 3 | Knife Cover Insert/Coverstitch Insert | 7 | Accessories stored in the Needle Threader Cover |
| 4 | Air Threader Connector On/Off | 8 | Upper looper On/Off |

Overview - Side Panel

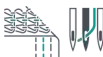
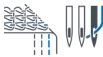


- | | | | |
|---|--------------------------|----|--------------------------------|
| 1 | Carry Handle | 7 | Stitch Length Setting |
| 2 | Retractable Thread Guide | 8 | Differential Feed Dial |
| 3 | Spool Pin | 9 | Handwheel |
| 4 | Thread Stand | 10 | Air Vents |
| 5 | Needle Pad | 11 | Foot Control-/Power Connection |
| 6 | Presser Foot Lifter | 12 | Power Switch |

Symbols

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»
- Chainstitch formation «CS»

	LN (Left Overlock Needle)	Left overlock needle thread
		Thread path yellow «OL»
	LC (Left Cover Needle)	Left coverstitch needle thread
		Thread path yellow «CS»
	RN (Right Overlock Needle)	Right overlock needle thread
		Thread path green «OL»
	CC (Center Cover Needle)	Center coverstitch needle thread
		Thread path green «CS»
	RC (Right Cover Needle)	Right coverstitch needle thread
		Thread path blue «CS»
	UL (Upper Looper)	Upper looper thread
		Thread path blue
	LL (Lower Looper)	Lower looper thread
		Thread path red
	CL (Chain Looper)	Chain looper thread
		Thread path purple «CL»
	ULC (Upper Looper Converter)	Upper Looper Converter

		Upper looper On/Off
	CW (Cutting Width)	Cutting width
	SL (Stitch Length)	Stitch Length
	DF (Differential Feed)	Differential Feed
	N/R	Rolled Hem Selection Lever
	mtc	mtc Micro Thread Control
	FHS (Free Hand System)	Knee Lifter (FHS)
		Presser Foot Pressure
		Air threader
		Air Threader Connector On/Off

Default Value



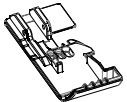
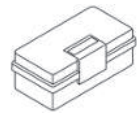
The default values are marked on the machine with a dot.

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.

2.2 Accessories

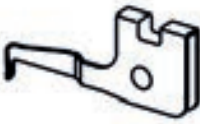
Included Accessories

To find more accessories, visit www.bernette.com.

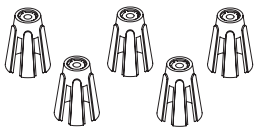
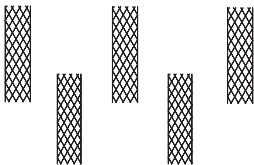
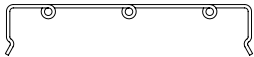
Figure	Name	Purpose
	Foot Control with Power Cable	To connect the machine with the power supply system. To start and stop the machine. To control the sewing speed.
	Cut-Offs Bin	To collect scraps and fabric trimmings.
	Knife Cover Insert	To protect the fingers and to deflect the fabric cut-offs during the sewing process.
	Coverstitch Insert	To extend the sewing area when sewing coverstitches and chainstitches. To cover the looper area.
	Coverstitch Insert for Slide-on Table	To protect the fingers and the looper area. To increase the sewing area when using the slide-on table.
	Freearm Cover	To fill the clearance between the stitch plate and the sewing area.
	Slide-on Table	To extend the work surface.
	Knee Lifter	To raise the presser foot and to lower the feed dog at the same time.
	Standard Presser Foot	For all overlock, cover and combostitches. For general sewing projects.
	Retractable Thread Guide	To guide the thread correctly when threading.
	Accessories Box	To store the supplied accessories as well as optional accessories.

Accessories behind the Threader Cover

The most often used accessories while sewing are stored behind the threader cover on the machine, so it is always quickly at hand.

Figure	Name	Purpose
	Needle Set ELx705 CF	For universal use.
	Screwdriver	To loosen or tighten the needle screws.
	Upper Looper Cover	To cover the upper looper. For sewing 2-thread overlock and the 3-thread super stretch stitch.
	Brush	To clean the feed dog and the looper area.
	Tweezers	For gripping the thread in tight positions.
	Needle Threader/ Insertor	To manually thread, insert and remove the needle.

Accessories Box

Illustration	Name	Purpose
	Spool Stabilizer (5x)	To stabilize the thread cone on the spool holder.
	Spool Net (5x)	To support even unwinding of nylon, rayon, silk or metallic threads from the spool.
	Spool Cap D12 (5x)	To secure the spool. To support the regular unwinding of the thread from the spool.
	Screwdriver	To loosen/tighten the stitch plate screws.
	CS Lock Tool	To pull the needle threads and to secure the stitches.
	Threading Wire	To thread the looper threads manually in the air threader pipe.
	Decorative Thread Guide	To sew with decorative threads for particularly wide and long stitches, for seams and edge finishing.

3 Set Up the Machine

3.1 Working Area

A stable table with a secure stand is a good prerequisite for optimal sewing results. Ergonomics of 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

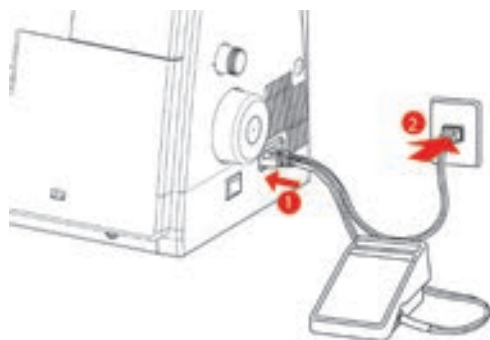
With the arms bent (90°), the fingertips can touch the stitch plate in a comfortable sitting position.

3.2 Connection and Switching On

Connecting the Machine and Foot Control



[Video](#)

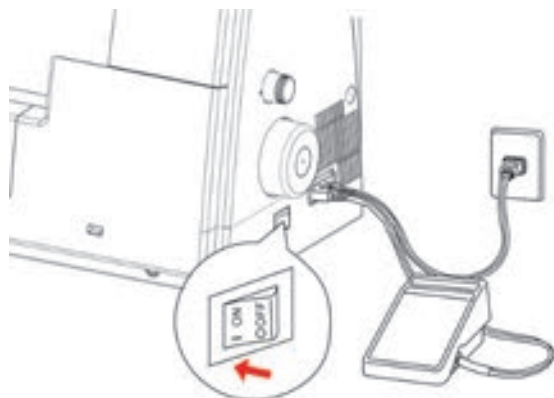


- > Insert the device plug (1) of the foot control/power cable into the connection for the foot control/power cable.
- > Insert the power plug (2) of the foot control/power cable into the socket.

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 and Sewing Light On/Off



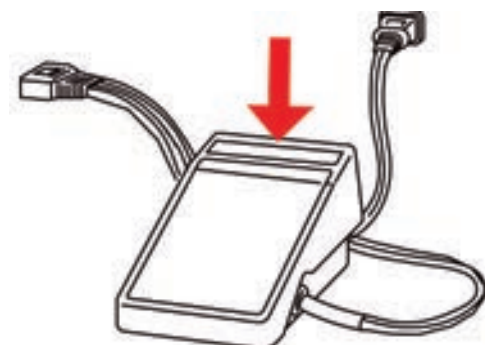
- > Set the power switch to «I».
 - The machine and the Sewing Light switch on.
- > Set the power switch to «O».
 - The machine and the sewing light switch off at different times.

3.3 Foot Control

Pressing the foot control starts the main motor, which sets the needles and loopers in motion. The sewing speed can be adjusted continuously; the harder you press the foot control, the faster the machine sews.

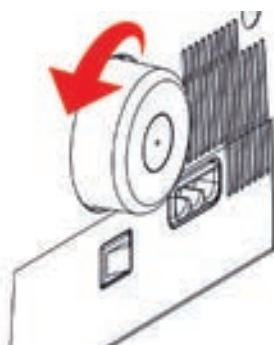
Press the Foot Control

- > To start the sewing process, increase the pressure on the foot control.
- > To stop the sewing process, reduce the pressure on the foot control.



3.4 Handwheel

Turning the handwheel counterclockwise allows you to manually position the needle at any height or complete mechanical adjustments.



Turning the handwheel enables:

- Slow, precise placement of the needle
- Looper movement
- Knife movement
- Connecting the air threader pipes

3.5 Machine cover

The thread covers protect against injuries caused by moving components and prevent fragile elements from being damaged.

- Threader Cover
- Knife Cover Insert
- Coverstitch Insert for Slide-on Table

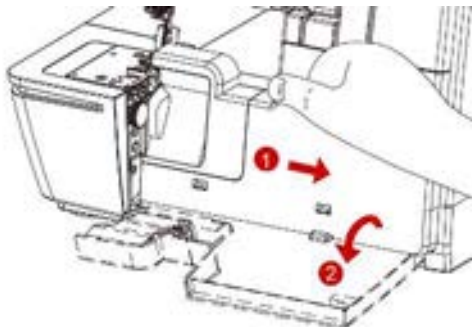
Open/Close the Threader Cover



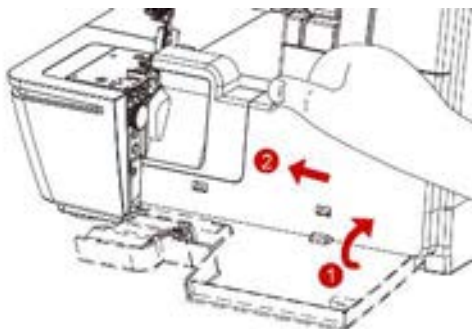
[Video](#)

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

- > To open the threader cover, push it to the right and swing it forward.

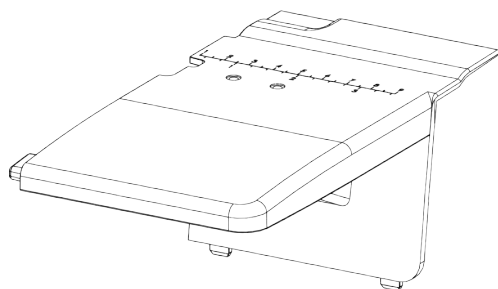


- > To close the threader cover, swing the threader cover up until it clicks into place to the left.



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

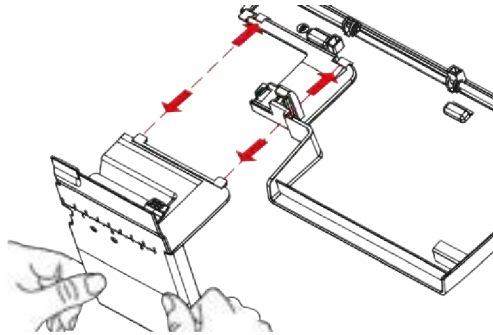
Removing/attaching the Coverstitch Insert for the Slide-on Table



Prerequisite:

- Threader cover is opened.
- > To remove the coverstitch insert, press the snap-in points downwards and pull out of the snap-in opening.

- > To insert the coverstitch insert for the slide-on table, push the snap-in points into the snap-in opening.



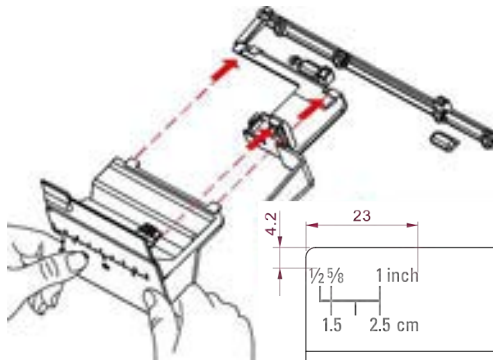
- > To remove the coverstitch insert for the slide-on table, press the snap-in points downwards and pull out of the snap-in opening.

3.6 Removing/Attaching the Knife Cover Insert/Coverstitch Insert

The knife cover Insert or the coverstitch insert protects against injuries caused by the knife or by the looper movement.

Prerequisite:

- The cuff-off bin is removed.
 - The bobbin door cover is opened.
 - For the coverstitch insert, the knife and the upper looper are lowered.
- > To remove the knife cover insert or the coverstitch insert, press the snap-in points downwards and pull out of the snap-in opening.
 - > To insert the knife cover insert or the coverstitch insert, push the snap-in points into the snap-in opening.



NOTICE

Missing knife cover insert or coverstitch insert while sewing

Injuries caused by the knife or by the looper movement.

Before each sewing, check whether the mounted knife cover insert or the coverstitch insert is attached.

Effective distance in «mm» - with seam guide to LN					
Scale	CW = 5.0	CW = 5.5	CW = 6.0 (Default)	CW = 6.5	CW = 7.0
1.5 cm	4.0	4.5	5.0	5.5	6.0
2.0 cm	8.5	9	9.5	10.0	10.5
2.5 cm	13.5	14.0	14.0	15.0	15.5

SET UP THE MACHINE

1/2 inch	1.5	2.0	2.5	3.0	3.5
5/8 inch	4.0	4.5	5.0	5.5	6.0
1 inch	13.5	14.0	14.5	15.0	15.5

Effective distance in «mm» - **without** seam guide to LN

Scale	CW = 5.0	CW = 5.5	CW = 6.0 (Default)	CW = 6.5	CW = 7.0
1.5 cm	14.0	14.5	15.0	15.5	16.0
2.0 cm	19.0	19.5	20.0	20.5	21.0
2.5 cm	24.0	24.5	25.0	25.5	26.0
1/2 inch	11.5	12.0	12.5	13.0	13.5
5/8 inch	14.0	14.5	15.0	15.5	16.0
1 inch	24.0	24.5	25.0	25.5	26.0

3.7 Thread Stand

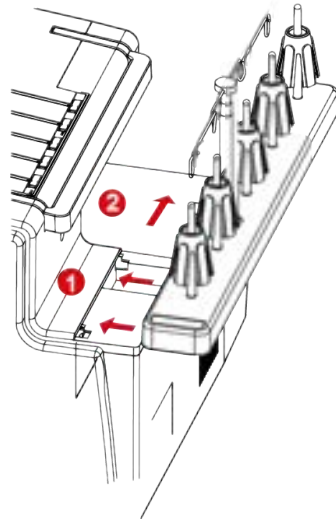
The thread stand is used to position thread cones and spools of various sizes needed for sewing.

Attaching the Spool Holder



[Video](#)

- > To fit the thread stand, press the connection points of the thread stand from the back to the front of the machine and engage them laterally.



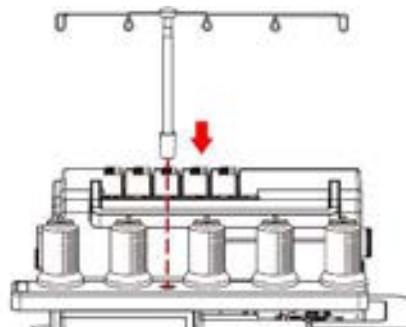
Preparing the Thread Guide



[Video](#)

The thread guide 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.

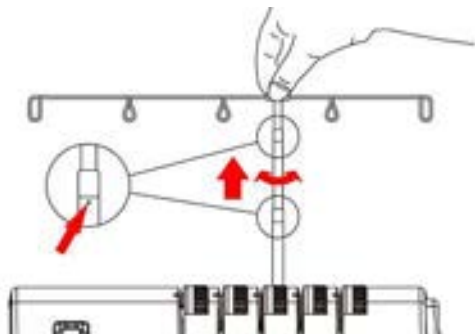
- > To attach the retractable thread guide, insert the thread guide into the provided opening in the thread stand until it clicks.



- > Hold the thread guide and pull it up to the stop.

SET UP THE MACHINE

- > 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

The spool stabilizer ensures stability and a firm hold for large thread cones 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

A spool cap ensures stability and a firm hold for small yarn spools on the spool pin.

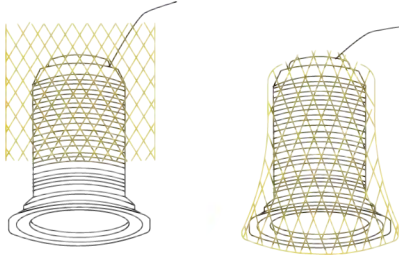
- > Place the thread spool on the spool pin.
- > Push the flat side of the spool cap over the spool pin to the thread spool.



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



- > Hold the thread end of the thread spool and insert the spool into the spool net.

3.8 Presser Foot

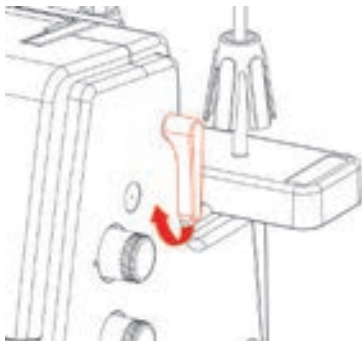
Raising/Lowering the Presser Foot



Video

By raising the presser foot, you can place or remove the sewing project under the presser foot.

- > To raise the presser foot, pull the presser foot lifter lever up until it clicks into place.
 - The thread tensions are released.
 - The feed dog remains in the sewing position.



- > To lower the presser foot, push the presser foot lifter lever down.
 - The machine is ready for sewing.
 - The thread tension is active.



Raising/lowering the presser foot using the Knee Lifter (Free Hand System)

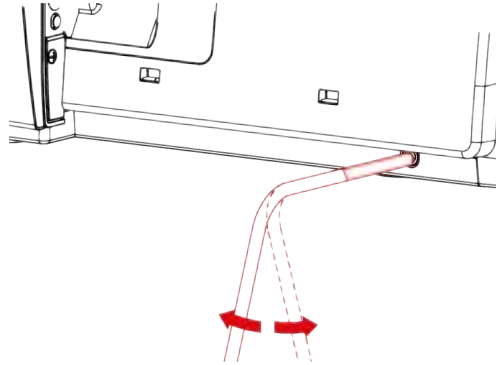


[Video](#)

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.

Removing the Presser Foot Sole

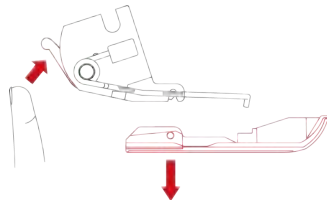


[Video](#)

Removing the presser foot sole provides better access to the needle/feed dog area, e.g., when changing the sole or removing the stitch plate to clean the machine.

Prerequisite:

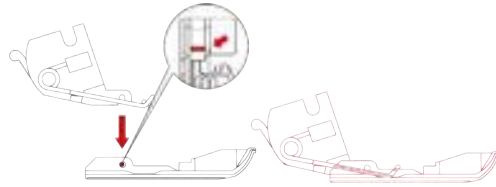
- The needles are in the top position.
 - The presser foot is raised.
- > Press the release button on the rear side of the presser foot shaft.
- The presser foot sole is disengaged.



- > Lift the presser foot spring slightly and remove the presser foot.

Fitting the Presser Foot Sole

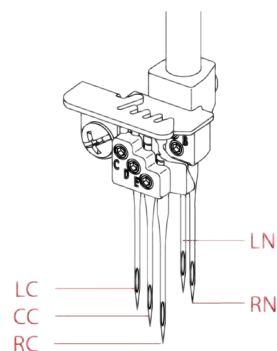
- > Slightly lift the presser foot spring and place the pin of the new presser foot sole under the notch on the presser foot shaft.
- > Carefully lower the presser foot lifter until the shaft notch engages in the presser foot sole pin.



3.9 Needle

Needle Holder

The needle holder can hold five needles. The needle positions are at different heights.



- | | | | |
|---|---------------------------|---|---------------------------|
| 1 | Left needle for OL (LN) | 2 | Needle Holder Screw LN |
| 3 | Needle Checking Window LN | 4 | Needle Checking Window RN |
| 5 | Needle Holder Screw RN | 6 | Right needle for OL (RN) |

Changing the Needle



[Video](#)

The use of the needle inserter is recommended and prevents the needle from falling into the feed dog area.

Correctly inserted needles are not at the same height.

All needle holder screws must always be tightened, even if no needle is inserted. This prevents the needle holder screws from falling out due to vibration.

NOTICE

Damage due to excessive tightening of the screws

The thread of the needle holder screw can be damaged. A repair by the authorized bernette dealer is required.

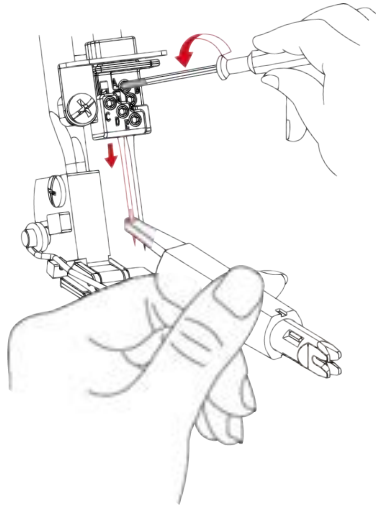
- > Do not overtighten the needle screws.

Prerequisite:

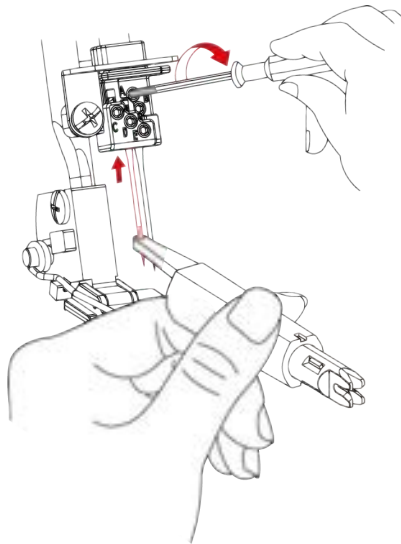
- The needles are in the top position.
- The presser foot is raised.

SET UP THE MACHINE

- > Hold the needle and loosen the needle screw from the threader cover using the screwdriver supplied.



- > 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.

Positioning the Needles Up/Down

The needle position up/down is recommended for various actions.

- to change the needle
 - to thread the needle
 - to activate the air threader pipes
 - to change the presser foot
- > To move the needle manually, turn the handwheel counter-clockwise until the desired needle position is reached.

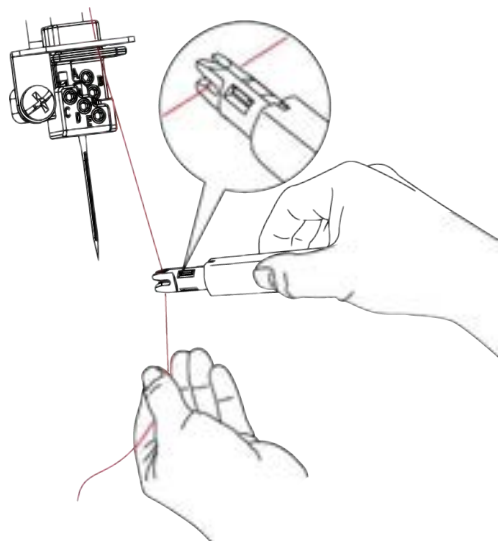
Threading the Needle Manually



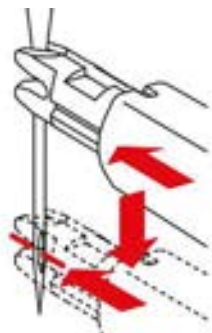
[Video](#)

The manual needle threader serves as an additional threading aid.

- > Hold the needle threader with the flat grip side facing up.
- > Pull the thread horizontally through the slot and hold the end of the thread.

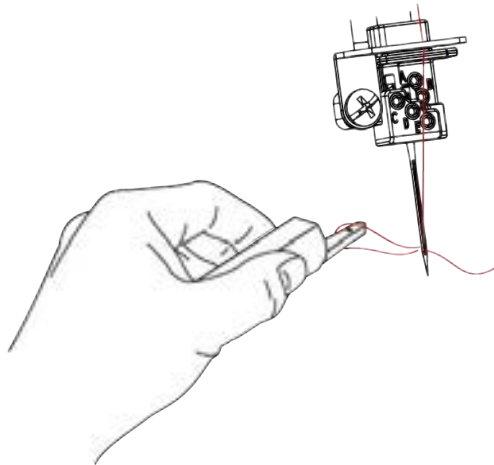


- > Position the needle threader with the V-guide at the top of the needle and with little pressure slide along the needle to the eye.



- 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 is formed.

- > Pull the thread loop with the end of the needle threader to the back.



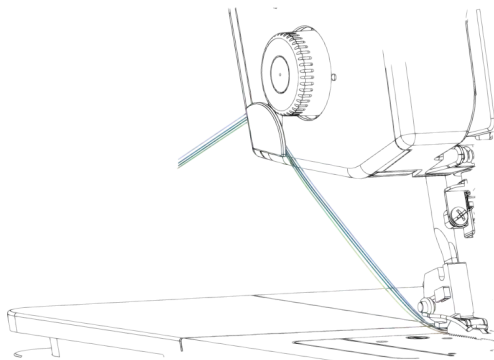
- > Place the thread under the presser foot to the back left.

3.10 Sewing Assistance

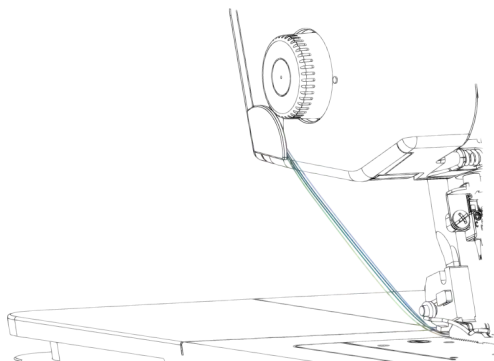
Using the Thread Cutter

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.



Needle Pad

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



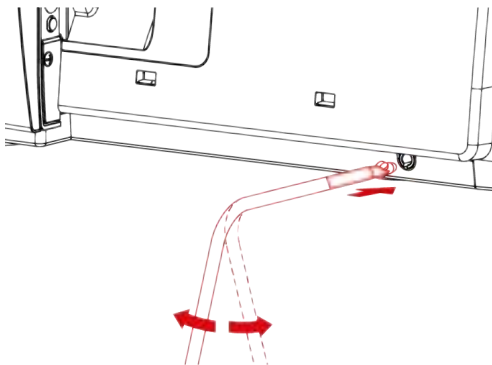
Attaching/removing the Knee Lifter



[Video](#)

Attaching the Knee Lifter of the Free Hand System

> Insert the knee lifter in a vertical position into the knee lifter connection as far as it will go.



Removing the Knee Lifter

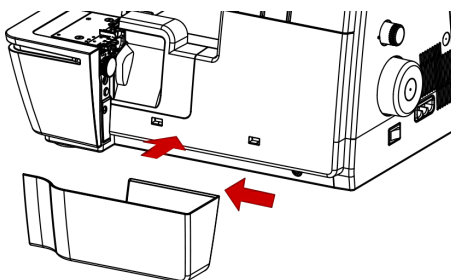
> Pull the knee lifter in resting position towards you without any lateral movement.

Attaching/Removing the Cut-offs Bin

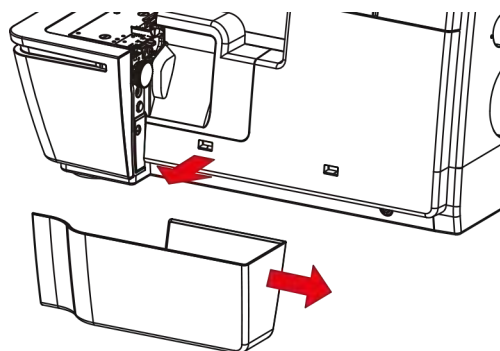


[Video](#)

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.

Attach the slide-on table.

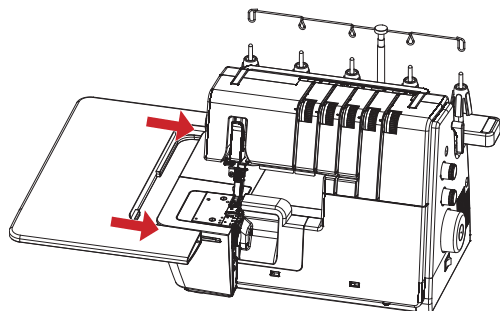


Video

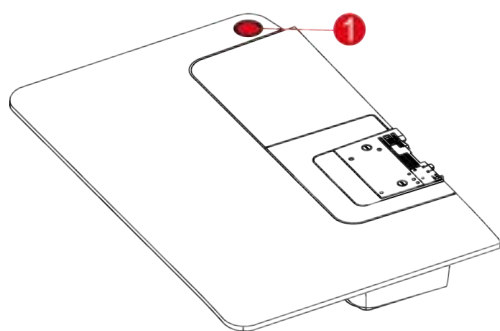
Prerequisite:

- 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 Freearm Cover

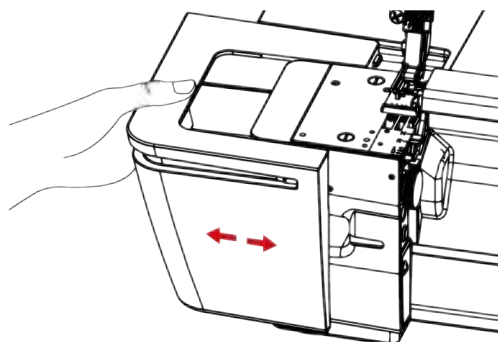


[Video](#)

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.



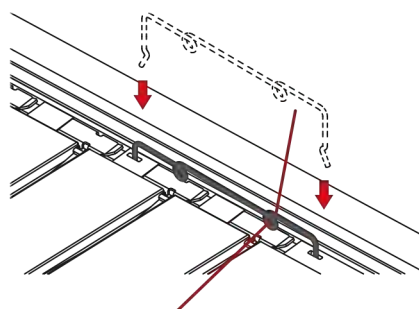
Attaching the Decorative Threads Guide



[Video](#)

The deco thread guide releases the thread tension adjustment from overstretching the thread.

- > Press the deco thread guide together slightly and hook it into the left and right recesses in the machine cover.
- > Thread the thread through the thread guide eyelet and insert it along the thread path between the thread tension discs.



Fitting Deco Thread Guide with Thread already inserted

- > Pull the thread out of the thread pretension.
- > Attach one end of the deco thread guide.
- > Thread the thread into the deco thread guide.
- > Attach the second end of the deco thread guide.

4 Material selection

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 36)
 - The thread has been selected. (see page 36)
 - The needle size matches with the thread type and the sewing project. (see page 37)
 - The stitch is selected.
 - The machine settings based on the stitch selection have been performed. (see page 42)
 - Needle and looper threads are threaded.
 - All needle threads and looper threads lie under the presser foot to the back left.
 - Threader cover is closed.
- > Place the test fabric under the presser foot and lower the presser foot.
- > To start the sewing process, press the foot control.
- The set stitch is formed.
 - If no stitch is formed, the settings on the machine for the stitch must be checked.

4.2 Fabric selection

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 material is recommended. (see page 64)

The stitch recommendation is used to obtain a stitch suggestion for the substance in question and its application. The suggested stitch can be preset according to the stitch chart or the quick reference card.

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 high-quality threads is recommended to achieve good sewing results.
- Use thread cones/spools which are suitable for cover 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.

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 type determines the thread type and point form.
- The thread type determines the needle size.

Needle sizes of 80/12 -100/16 can be used with this machine.

Thread type	Needle Size
Polyester Overlock Thread No. 120	80 – 100
Polyester Multifilament < No. 120	80 – 90
Wooly nylon	80 – 100

Decorative thread/yarn	80 – 100
Metallic thread	80 – 100

Check the Needle/Thread Combination

	Correct Needle/Thread Combination > Thread can be guided precisely into the long groove and through the eye of the needle.
	Wrong Needle/Thread Combination > Thread can be fed through the long groove and the eye of the needle with too much slack. – Thread can break or lead to skipped stitches.
	Wrong Needle/Thread Combination > Thread rubs against the edges in the long groove and is difficult or impossible to feed through the eye of the needle. – This can result in the thread breaking and sticking in the needle.

Looper Thread

A wide variety of thread types can be used as looper thread which can be threaded using the air threader system.

NOTICE

Damage by coated or waxed threads

Coated or waxed threads may lose some of their coating in the air threader pipes. This results in permanent blocking of the pipes. A repair by the authorized bernette dealer is required.

> Avoid the use of coated or waxed threads.

4.4 Needle Selection

It is recommended to use the needle type ELx705 CF (Chrome Finish) version as they are more durable due to the chrome coating. The machine runs most reliably with these needles because of their second groove. The needles should be replaced regularly. Only a perfect needle point can achieve a proper stitch.



- A Coverstitch needle ELx705 CF/80
- 1 two thread grooves
- 2 705 = Flat shank

- 3 CF = ChromeFinish
- 4 / B 80 = Needle size

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

Detect Defective Needles

The needle is an important accessory when sewing. A defective needle (bent, defective tip, or blunt) cannot deliver satisfactory sewing results.



Needle Overview

Illustration	Designation	*Size	Description	Material/Application
	Coverstitch Needle ELx705 CF	80/12 90/14 100/16	With slightly rounded point, a second groove and chrome coating.	For overlocking and coverstitching applications.
	Jersey/Coverstitch Needle ELx705 SUK CF	80/12 90/14 100/16	With slightly rounded point, a second groove and chrome coating.	For overlocking and coverstitching on multilayer, elastic fabrics.

*Not all needle sizes are available as BERNINA Needles.

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 Stitch selection

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 stitches

The 3-Thread and 4-Thread Overlock stitches are the standard overlock stitches used for joining two layers of fabric and finishing raw edges.

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

Cover stitches

The coverstitch consists of 2 – 3 needle threads on the top and 1 looper thread on the bottom of the fabric.

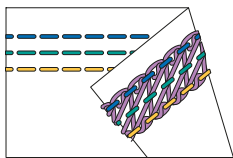
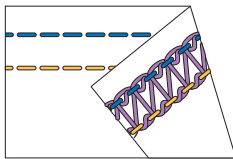
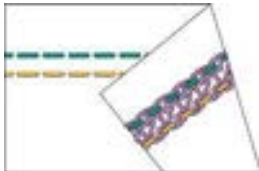
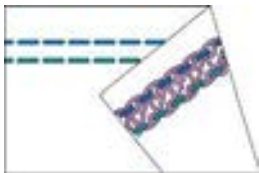
Cover and chainstitch seams allow the option to sew without cutting the edges. These seams can be used in many different ways, for both functional and decorative purposes: Seams, hems, bordering.

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.

No.	Stitch Name	Stitch Formation
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.

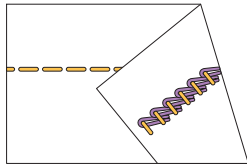
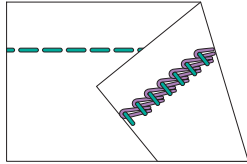
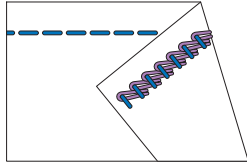
Chain Stitches

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.

2-Thread Chainstitch

The 2-Thread Chainstitch looks like a straight stitch on the right side of the fabric, and on the wrong side it forms a chain. With a decorative thread in the chain looper and the needle, the chain stitch looks more distinctive and is more prominent. With such a chain looper/needle thread combination many creative possibilities are given. Due to the loop structure of the stitch, the seam can be undone simply by pulling the chain looper thread.

No.	Stitch Name	Stitch Formation
16	2-Thread Chainstitch (LC)	
32	2-Thread Chainstitch (CC)	
33	2-Thread Chainstitch (RC)	

Tab. 1: Chain Stitch

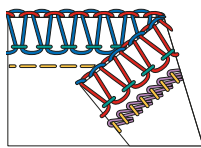
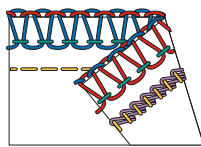
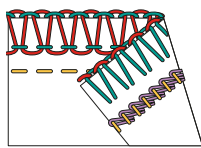
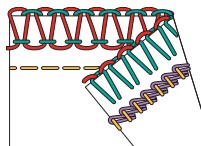
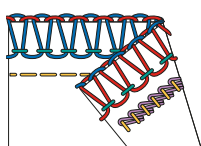
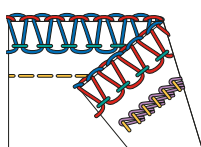
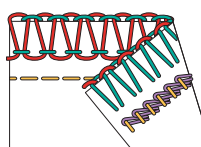
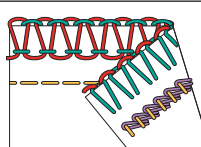
Combo Stitches

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.

Seam

3-/2-Thread Overlock with Chainstitch

No.	Stitch Name	Stitch Pattern
No. 34	3-Thread Overlock (LN) + 2-Thread Chainstitch (CC)	
No. 35	3-Thread Overlock (RN) + 2-Thread Chainstitch (CC)	
No. 36	2-Thread Overlock (LN) + 2-Thread Chainstitch (CC)	
No. 37	2-Thread Overlock (RN) + 2-Thread Chainstitch (CC)	
No. 38	3-Thread Overlock (LN) + 2-Thread Chainstitch (LC)	
No. 39	3-Thread Overlock (RN) + 2-Thread Chainstitch (LC)	
No. 40	2-Thread Overlock (LN) + 2-Thread Chainstitch (LC)	
No. 41	2-Thread Overlock (RN) + 2-Thread Chainstitch (LC)	

Tab. 2: Recommended stitches for a durable closed seam

6 Sewing Settings

6.1 Preparing the Machine for Overlock or Overlock/Chainstitch Combo



[Video](#)

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

Prerequisite:

- The bobbin door cover is opened.
- > Set the «Upper Looper On/Off» to the right.
- > Adjust the knife according to the stitch settings.
- > Knife cover insert is attached.
 - The machine is prepared for overlock or overlock/chainstitch combo.
- > Perform the sewing start. (see page 36)

6.2 Preparing the Machine for Cover- and Chainstitch



[Video](#)

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.
- > Adjust the knife according to the stitch settings.
- > Coverstitch insert is attached.
 - The machine is prepared for a coverstitch or a chainstitch.
- > Perform the sewing start. (see page 36)

6.3 Knife

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 engaged 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.

NOTICE

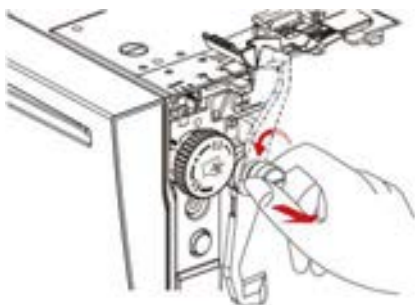
Missing Knife Cover Insert or Coverstitch Insert while Sewing

Injuries caused by the knife or by the looper movement.

Before each sewing, check whether the mounted knife cover insert or the coverstitch insert is attached.

Knife «Off» (to lower)

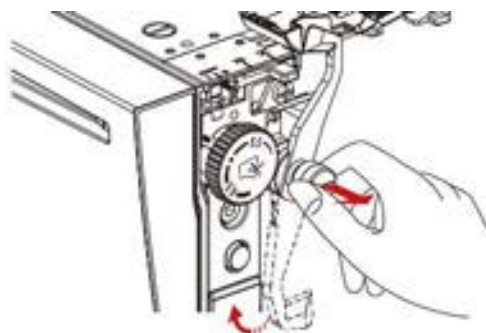
- > Open the threader cover.
- > Pull the knife away from the stitch plate as far as possible and then lower it forwards to the lock-in position.



- > Close the threader cover.

Knife «On» (to lift)

- > Open the threader cover.
- > Pull the knife away from the stitch plate as far as possible and then lift it backwards to the lock-in position.



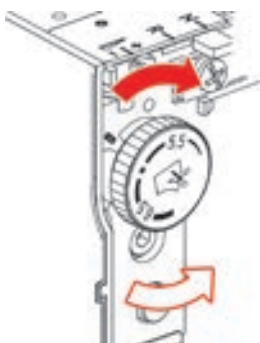
- > Close the threader cover.

Setting the Cutting Width

Video

The cutting width for the knife position can be adjusted between 5 – 7 mm. The numbers on the scale correspond with the actual cutting width in mm from the left overlock needle «LN» to the cutting edge. Towards the right overlock needle, the cutting width is reduced by 2 mm. The cutting width has a direct effect on the stitch width. (see page 44)

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



- > To increase the cutting width, turn the cutting width dial to a higher value.
- > To reduce the cutting width, turn the cutting width dial to a lower value.

6.4 Adjusting the Stitch Width

The stitch width can be directly adjusted by changing the needle position or by adjusting the cutting width. Selecting the left overlock needle position (LN) increases the stitch width by 2 mm compared to the right overlock needle position (RN).



The stitch width can be adjusted continuously by changing the knife position while sewing. The stitch width varies from 5 mm to 9 mm. The scale of the knife position wheel defines the distance in mm between the left overlock needle (LN) and the knife. For the right overlock needle, the set scale value is reduced by 2 mm.

Cutting Width	Needle Position in Relation to the Cut Edge			
CW 5 	5 mm (13/64") 	3 mm (1/8") 	7.8 mm (5/16") 	10.6 mm (27/64")
CW 6 	6 mm (15/64") 	4 mm (10/64") 	8.8 mm (11/32") 	11.6 mm (29/64")
CW 7 	7 mm (17/64") 	5 mm (3/16") 	9.8 mm (3/8") 	12.6 mm (31/64")

6.5 Setting the Upper Looper On/Off



Activating the Upper Looper

Prerequisite:

- Threader cover is opened.
- > Set the «Upper Looper On/Off» to the right.
- > Turn the handwheel until the upper looper is activated.
 - Upper looper is activated.



- > Attach the knife cover insert.



Deactivating the Upper Looper

Prerequisite:

- The threader cover is opened.
- The upper looper converter is hooked out.
- The upper looper is in lowest position.
- > Set the «Upper Looper On/Off» to the left.
 - The upper looper is deactivated.



- > Attach the coverstitch insert.

6.6 Upper Looper Converter Hooked in/Hooked out

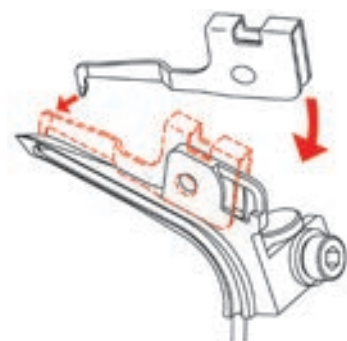


Video

By attaching 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.
- The upper looper thread is removed.
- The lower looper thread is below the upper looper.
- > To hook in the upper looper converter, place the end of the upper looper cover over the elevation of the upper looper and hook the tip of the upper looper cover into the looper eye.



- > To unhook the upper looper converter, lift the end of the upper looper cover upwards and unhook the lock-in lug from the looper eye.



6.7 Setting the Stitch Length



[Video](#)

The stitch length can be infinitely adjusted between 1.0 – 5.0 mm while sewing.

- > To elongate the stitch, set the stitch length knob to a higher value.
- > To shorten the stitch, set the stitch length knob to a lower value.

6.8 Rolled Hem Selection Lever «N/R»



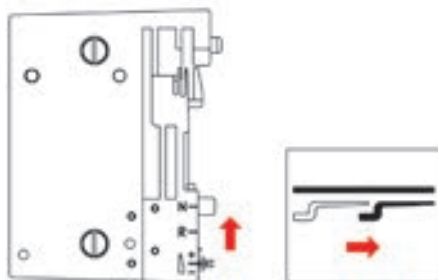
[Video](#)

Depending on the application, the rolled hem selection lever must be set to the appropriate position.

Setting Overlocking «N»

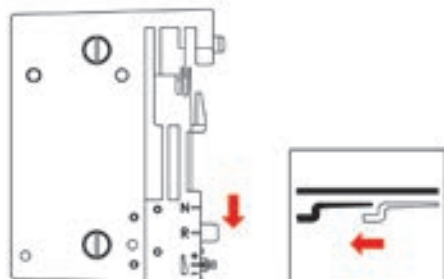
During overlocking, the upper and lower looper threads are laid around the stitch finger and this creates an even distance to the cut edge. If the thread quantity at the fabric edge is too much or too little, this thread quantity can be corrected by the mtc micro thread control. (see page 47)

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



Setting Rolled Hem «R»

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



- The stitch finger is retracted.

6.9 Setting the mtc micro thread control

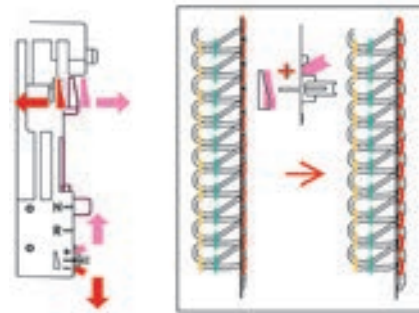


[Video](#)

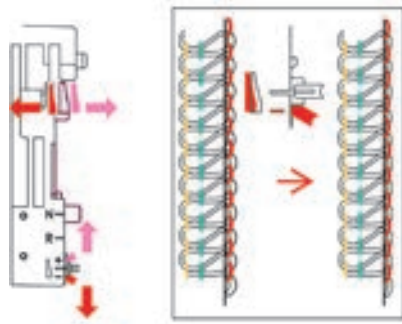
The mtc micro thread control affects the amount of the looper thread around the fabric edge and can be adjusted continuously while sewing. This feature makes it easy to achieve a well-balanced stitch at any given cutting width.

Prerequisite:

- The thread tension is set correctly.
 - The knife position is set correctly.
 - The mtc micro thread control is set to «-».
 - The sewing test has been performed.
- > To enlarge the loops of the looper thread at the fabric edge, turn the mtc micro thread control in «+» direction while sewing.



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

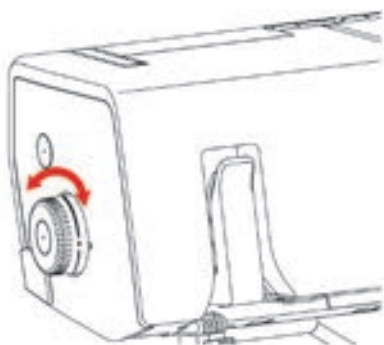


6.10 Setting the Presser Foot Pressure

The presser foot pressure on the machine has been set by the factory so that it is optimal to sew medium-weight fabrics. Most materials do not require any adjustment of the presser foot pressure. In some cases, it is required to make adjustments such as when sewing very light or heavy fabrics.

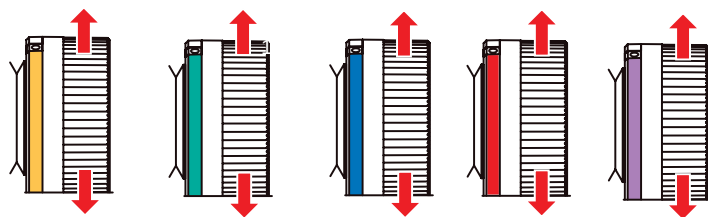
	Extra-high
	High
	Medium-high
	Default value
	Medium-light
	Light
	Extra-light

- > For light fabrics, reduce the presser foot pressure.
- > For heavy fabrics, increase the presser foot pressure.
- > Perform a sewing test to set the optimal presser 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.



6.11 Thread Tension

The thread tension affects the quantity of thread used to form the stitch. Depending on the thread/fabric combination, you may need to increase or reduce the thread tension. You can adjust the respective thread tension using the corresponding «Thread Tension Control».



- 1 Thread Tension Control LN
- 2 Thread Tension Control RN

- 3 Thread Tension Control UL
- 4 Thread Tension Control LL

The recommended setting can be found in the stitch chart.



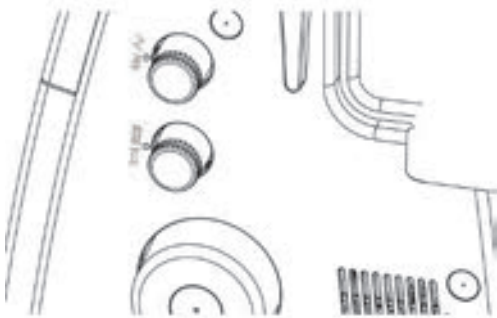
When the presser foot is raised, the thread tension is released, allowing the inserted thread to move easily.

6.12 Adjusting the Differential Feed



The differential feed prevents unwanted puckering or wavering in knitted or stretch fabrics as well as shifting of fabric layers. The setting values describe the ratio of movement of front feed dog relative to the rear feed dog. With default value 1, both feed dogs move at the same speed.

> Adjust the feeding ratio of the two feed dogs by using the differential feed setting.



Value	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
0.6	Fine nylon tricots, densely woven fabric, lining, satin	Stretching, preventing seam puckering

Default Value "1"

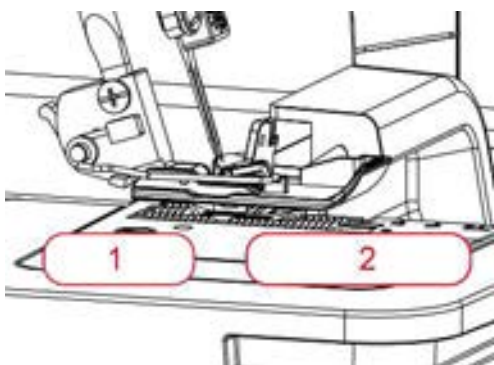
In a default value of 1, the machine achieves optimum sewing results with most applications. The differential feed in default setting 1 for flat and even seams.





Gathering/Gather to fit "1.5 – 2"

At a setting of 1.5 - 2 the front feed dog (2) covers a longer distance than the rear feed dog (1).



Gathering

> To gather intentionally, increase the differential feed to a value between 1.5 and 2.



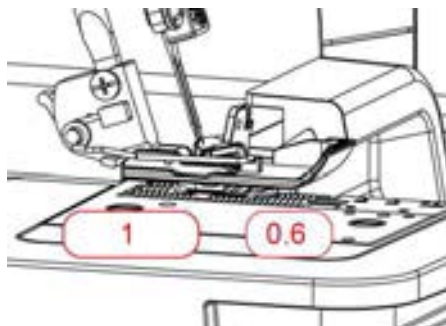
Gather to Fit

> To prevent waving increase the differential feed to a value between 1 and 2.



Stretching "0.6"

The front feed dog (0.6) covers a shorter distance than the rear feed dog (1). The material is stretched under the presser foot which helps to reduce puckering. This setting can also be used to deliberately stretch the material.

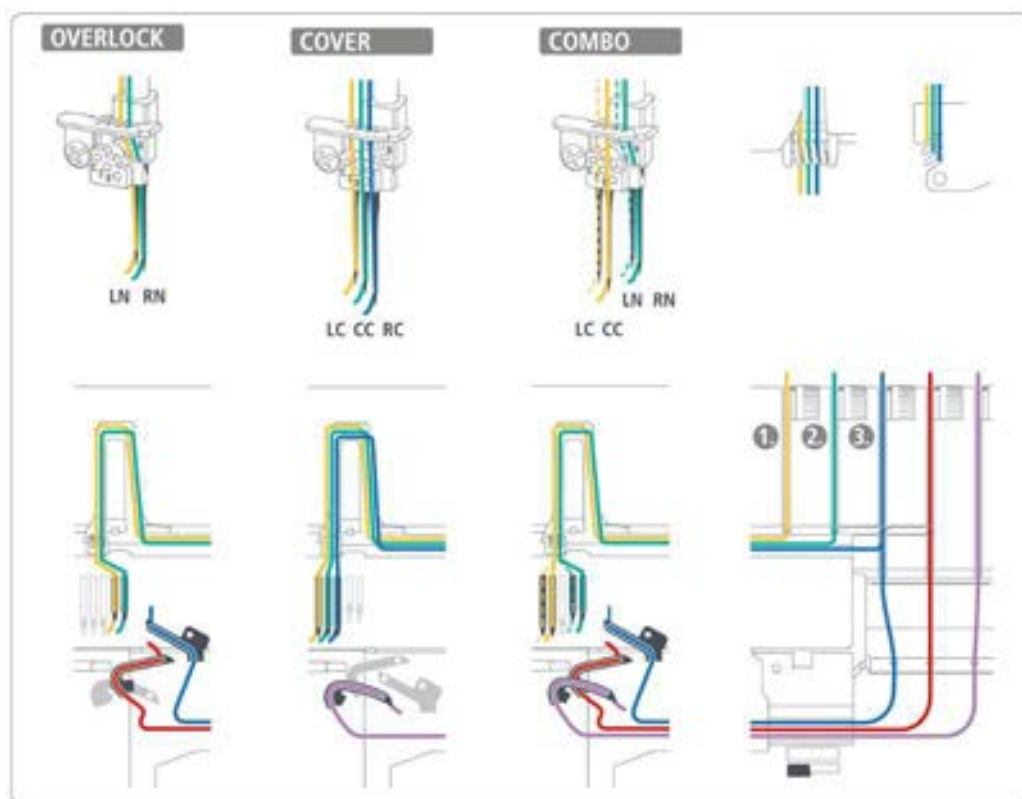


> To prevent seam puckering, reduce the differential feed to a value between 0.6 and 1.



7 Threading

The threading sequence is important for the correct stitch formation.



7.1 Preparing for Threading

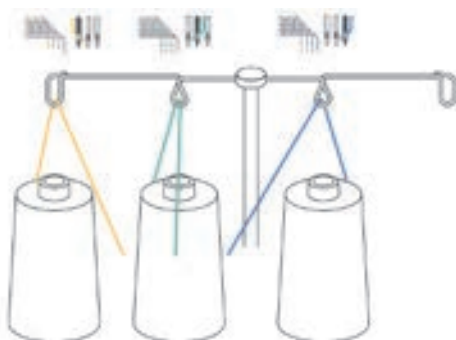
Before threading, make sure that the machine settings match with the required stitch.

The machine has color-coded threading paths. Correct threading is ensured when following the color markings.

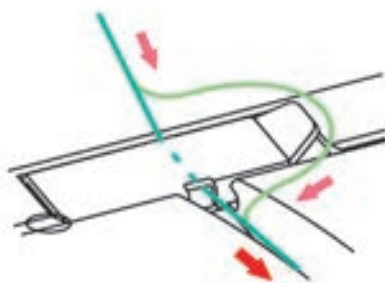
Prerequisite:

- The retractable thread guide is fully extended.
- The needles are at the top position.
- All threads and needles that are not needed for the particular stitch have been removed.
- The presser foot is up and swiveled out.

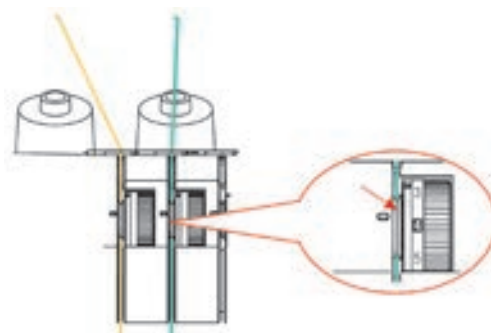
- > Place the thread cones on the respective spool pin.
- > Place the thread from the back through the thread guide.



- > Engage the thread in the thread pretension.



- > Place the thread along the thread path between the thread tension discs.



7.2 Needle Threads

Stitch information is listed in the stitch chart.

Threading the coverstitch needle left LC/yellow

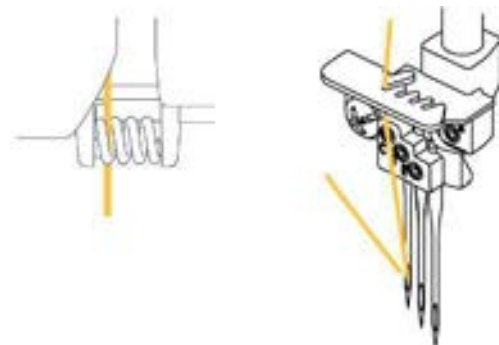
- 🟡 The left needle thread is provided with this yellow mark over the entire threading path.

Prerequisite:

- «Threading preparation» has been performed.
- > Pull the thread beneath the thread guide plate to the left and up behind the yellow marking.
- > Place the thread over the upper needle thread take-up lever cover.



- > Pull the thread up around the thread take-up guide and pull it along the corresponding thread path towards the needle.
- > Hook the thread into the left thread guide of the needle holder.



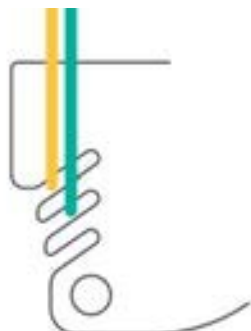
- > Thread the needle eye.
- > Place the thread beneath the presser foot to the back left.
- > Lower the presser foot when all necessary threads have been threaded.

Threading the center cover needle thread CC/blue

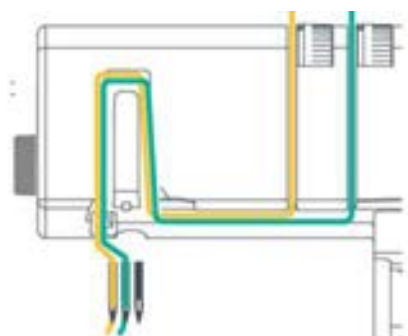
- ⤿ The center needle thread is provided with this blue mark over the entire threading path.

Prerequisite:

- «Threading preparation» has been performed.
- > Pull the thread beneath the thread guide plate to the left and up behind the blue marking.



- > Place the thread over the upper needle thread take-up lever cover.
- > Pull the thread up around the thread take-up guide and pull it along the corresponding thread path towards the needle.



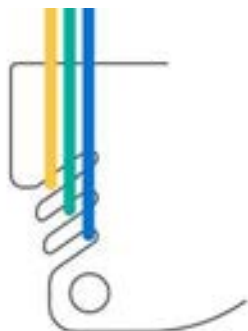
- > Hook the thread into the second thread guide from left of the needle holder.
- > Thread the needle eye.
- > Place the thread beneath the presser foot to the back left.
- > Lower the presser foot when all necessary threads have been threaded.

Threading the right cover needle thread RN/green

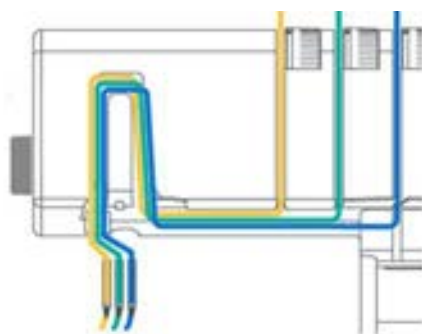
- ⤿ The right cover needle thread is provided with this blue mark over the entire threading path.

Prerequisite:

- «Threading preparation» has been performed.
- > Pull the thread under the thread guide plate to the left 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 guide 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.
- > Lower the presser foot when all necessary threads have been threaded.

Threading the Right Needle Thread RN/green

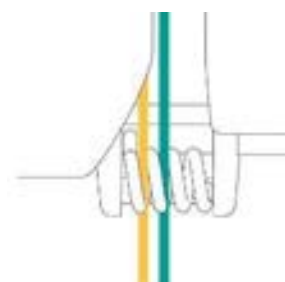
 The Right Needle Thread Path is marked green.

Prerequisite:

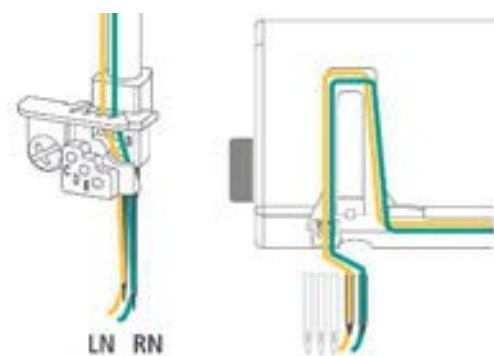
-
- > Pull the thread beneath the Thread Guide Plate to the left and up between the backmost opening of the Thread Deflection Finger.



- > Place the thread over the Needle Thread Take-up Lever Cover and pull it down.



- > Insert the thread into the right Thread Guide.
- > Hook the thread into the right Thread Guide at the Needle Holder.



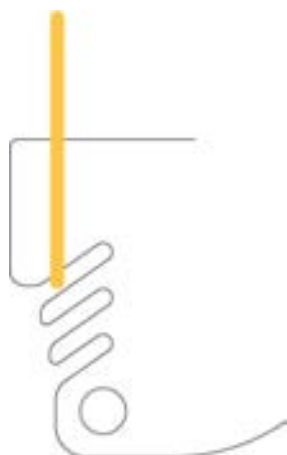
- > Thread the Right Overlock Needle (RN).
- > Place the thread beneath the presser foot to the back left.

Threading the Left Needle Thread LN/yellow

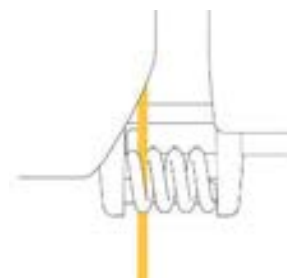
 The left needle thread path is marked in yellow.

Prerequisite:

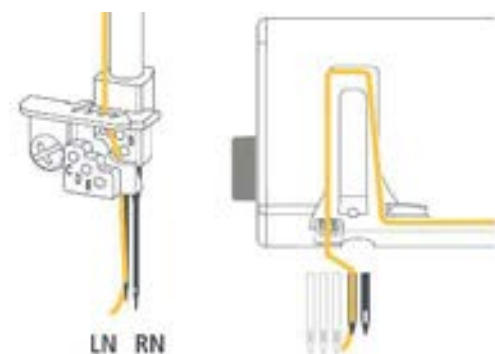
- The Right Needle Thread is threaded.
 - The «Threading preparation» has been performed.
- > Pull the thread beneath the Thread Guide Plate to the left and up through the center opening of the Thread Deflection Finger.



- > Place the thread over the needle thread take-up lever cover and pull it down.



- > Insert the thread into the left Thread Guide.
- > Hook the thread into the left thread guide at the needle holder.



- > Thread the left overlock needle (LN).
- > Place the thread beneath the presser foot to the back left.

7.3 Looper thread



[Video](#)

You can also use bulky, decorative and ornamental thread as the looper thread. At least one looper thread is required to form a stitch.

The looper thread interlaces with the needle thread to form stitches and is visible as a loop on the underside or at the edge of the fabric.

NOTICE

Damage by coated or waxed threads

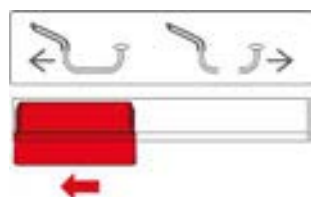
Coated or waxed threads may lose some of their coating in the air threader pipes. This results in permanent blocking of the pipes. A repair by the authorized bernette dealer is required.

Stitch information is listed in the stitch chart.

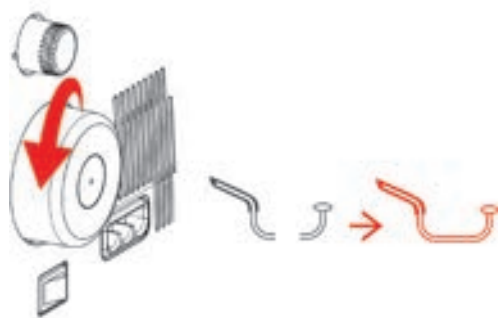
Threading the Looper Thread

Prerequisite:

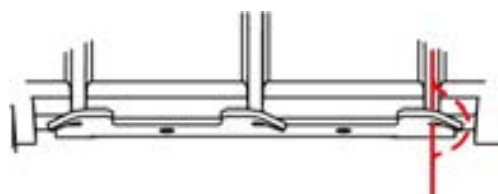
- Threading is prepared.
 - Threader cover is opened.
- > Set the air threader connector to the left position.



- > Slowly turn the handwheel counterclockwise until the air threader pipes couple.

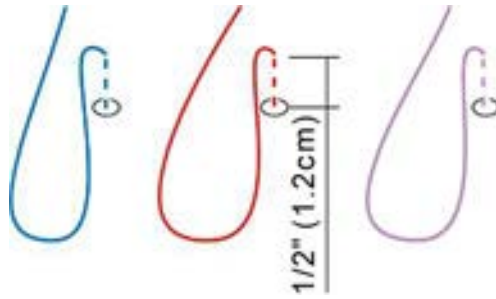


- > Feed the thread through the thread guide.

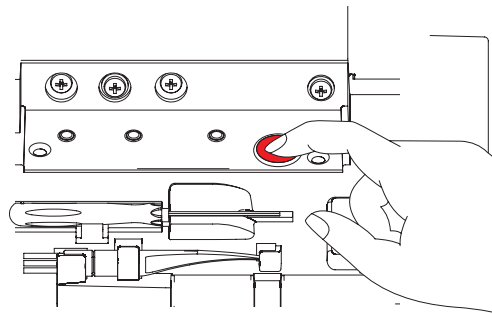


- > Pull off a thread reserve of approx. 56 cm so that the thread can be completely drawn through the air threader pipe.

- > Place the end of the thread approx. 1.2 cm into the corresponding air threader nozzle.



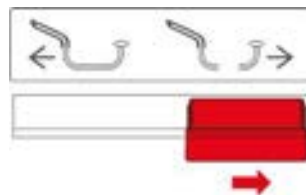
- > Press and hold the air threader button.



- Thread feed is started.
 - The looper thread is shot through the air threader pipe and exits at the looper tip.
- > As soon as the looper thread exits out of the looper eye, release the air threader button.



- > Place the looper thread under the presser foot to the rear left.
- > Set the air threader connector to the right position.



- > Close the threader cover.

Threading the Looper Thread with an Auxiliary Thread



[Video](#)

If a looper thread cannot be threaded automatically with the air threader, the use of an auxiliary thread makes sense.

Prerequisite:

- Threading is prepared.
- > Open the threader cover.
 - > Move the air threader connector to the left.

- > Slowly turn the handwheel counterclockwise until the air threader pipes couple.
- > 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 until the thread ends of the auxiliary thread emerge out of the looper eye.
- > Place the looper thread end at the length of about 20 cm through the loop of the auxiliary thread.
- > Pull the auxiliary thread ends until the thread exits the looper eye.
- > Remove the auxiliary thread.
- > Place the looper thread under the presser foot to the rear left.

Using the Threading Wire



Video

If the air threader cannot be started for threading the looper threads, the use of the threading wire is a threading option. The threading wire is a wear part and not designed as a permanent threading or cleaning aid.

Any malfunctions of the air threader system must be repaired by an authorized bernette dealer.

NOTICE

Damage by Improper Use of the Threading Wire

The air threader pipes may be damaged. A repair by the authorized bernette dealer is required.

- > 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 is prepared.
- > Open the threader cover.
- > Guide the threading wire end without loop through the corresponding air threader nozzle until it exits at the looper eye.
- > Place the wanted thread through the loop of the threading wire.



- > Pull the end of the threading wire until the looper thread exits from the looper eye.
- > Place the looper thread under the presser foot to the rear left.
- > Close the threader cover.

7.4 Changing the Thread

Knotting the thread



[Video](#)

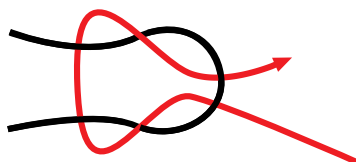
Tying on two thread ends is often used for changing a needle thread or looper thread. Keep the knotted area as little as possible to reduce friction in the thread path.

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 black thread.
- > Thread the red thread end through the thread loop from below.
- > Pull the red thread underneath both black threads and guide it through the loop from above.

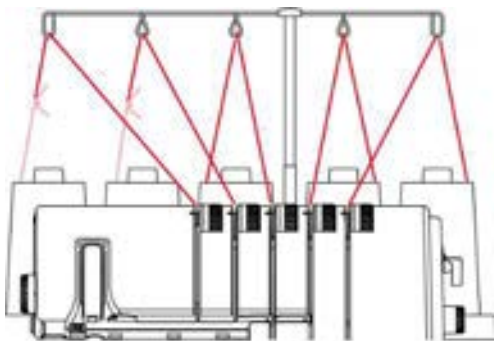


- > Hold one thread end of each colour and pull them apart.



Changing the Needle Thread

- > Cut the thread above the thread cone.
- > Change the thread cone.
- > Tie the threaded thread to the new thread. (see page 62)



- > Pull the threaded end of the thread until the newly knotted thread is in front of the needle eye.

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 off the new thread behind the knotting.



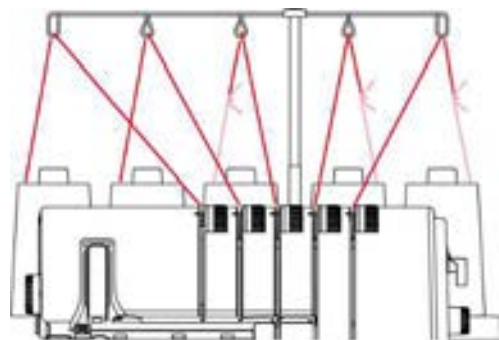
- > Remove the excess thread from the needle eye.
- > Thread the needle eye.
- > Place the thread under the presser foot to the left.

Changing the Looper Thread



Video

- > Cut the thread above the thread cone.
- > Change the thread cone.
- > Knot 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 Stitch Optimization

To check the optimal stitch 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 necessary.

8.1 Performing a Sewing Test for an Overlock Stitch



[Video](#)

Prerequisite:

- All settings are made according to the fabric, application, and stitch.
- > Place the test fabric under the presser foot in front of the knife and lower the presser foot..
- > Start sewing slowly, guiding the fabric lightly.
- > Check stitch formation and optimize if necessary. (see page 92)
 - If no stitch is formed, the stitch setting has not been performed or has been performed incorrectly.

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 start sewing slowly. Guide the fabric gently as the machine automatically feeds the material.
- > Do not sew beyond the end of the fabric.
- > Set the needles to topmost position.
- > Raise the presser foot.
- > Pull the needle thread between the fabric and the presser foot to the back with the CS 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.

8.3 Performing a Sewing Test for a Chainstitch

Prerequisite:

- The machine is set up according to the fabric and the application.
- > 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 thread chain off the edge of the fabric.
- > Raise the presser foot.
- > Pull the sewing project to the back left and pull the threads over the thread cutter.
 - The seam end is secured.
- > Assess the sewing test and make any necessary adjustments until the stitch setting matches the material combination.

8.4 Optimizing Stitches

The optimization of stitches should be carried out systematically. In the following, recommendations are listed for each stitch type to optimize the stitch formation by making specific changes to the machine settings.

- > Carry out one action step after the other, starting from the top.
- > Reduce the Thread Tension in the first place before increasing the Thread Tension.
- > Alter the Thread Tensions only by half or one digit at a time.
- > Perform a Sewing Test.

4-Thread Overlock with Integrated Safety Seam

Stitch Formation	Measures
The looper threads (red/blue) form loops on the bottom side of fabric.	> Reduce the LL thread tension (red). > Increase the UL thread tension (blue).
The looper threads (red/blue) form loops on the top side of fabric.	> Reduce the UL thread tension (blue). > Increase the LL thread tension (red).
The needle thread (yellow) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Reduce the UL thread tension (blue). > Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The seam puckers.	> Reduce the LN thread tension (yellow). > Reduce the RN thread tension (green). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Super Stretch

Stitch Formation	Measures
Looper thread (red) wraps fabric edge too loosely.	> Increase the LL thread tension (red). > Reduce the Micro Thread Control (mtc). > Increase the cutting width CW.
Looper thread (red) wraps fabric edge too tightly.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The fabric edge forms a tunnel or rolls up.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The needle thread (yellow) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).
The seam puckers.	> Reduce the LN thread tension (yellow). > Reduce the RN thread tension (green). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Overlock Wide (LN)

Stitch Formation	Measures
The looper threads (red/blue) form loops on the bottom side of fabric.	> Reduce the LL thread tension (red). > Increase the UL thread tension (blue).
The looper threads (red/blue) form loops on the top side of fabric.	> Reduce the UL thread tension (blue). > Increase the LL thread tension (red).
The needle thread (yellow) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The fabric edge forms a tunnel or rolls up.	> Reduce the UL thread tension (blue). > Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The seam puckers.	> Reduce the LN thread tension (yellow). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Overlock Narrow (RN)

Stitch Formation	Measures
The looper threads (red/blue) form loops on the bottom side of fabric.	> Reduce the LL thread tension (red). > Increase the UL thread tension (blue).
The looper threads (red/blue) form loops on the top side of fabric.	> Reduce the UL thread tension (blue). > Increase the LL thread tension (red).
The needle thread (green) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Reduce the UL thread tension (blue). > Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The seam puckers.	> Reduce the RN thread tension (green). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Flatlock Wide (LN)

Stitch Formation	Measures
Upper looper thread (blue) extends over the fabric edge towards the bottom.	> Reduce the LN thread tension (yellow). > Increase the UL thread tension (blue).
Upper looper thread (blue) doesn't reach the fabric edge.	> Reduce the UL thread tension (blue). > Increase the LN thread tension (yellow).
Lower looper thread (red) not straight along the fabric edge.	> Increase the LL thread tension (red). > Reduce the LN thread tension (yellow). > Reduce the UL thread tension (blue).
The seam puckers. Lower looper thread (red) too tight.	> Reduce the LL thread tension (red).
Needle thread (yellow) doesn't reach the fabric edge.	> Reduce the LN thread tension (yellow). > Increase the UL thread tension (blue). > Increase the LL thread tension (red).
Needle thread (yellow) extends over the fabric edge to the top.	> Reduce the UL thread tension (blue). > Increase the LN thread tension (yellow).
The fabric edge forms a tunnel or rolls up.	> Reduce the LN thread tension (yellow). > Reduce the UL thread tension (blue). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.

3-Thread Flatlock Narrow (RN)

Stitch Formation	Measures
Upper looper thread (blue) extends over the fabric edge towards the bottom.	> Reduce the RN thread tension (green). > Increase the UL thread tension (blue).
Upper looper thread (blue) doesn't reach the fabric edge.	> Reduce the UL thread tension (blue). > Increase the RN thread tension (green).
Lower looper thread (red) not straight along the fabric edge.	> Increase the LL thread tension (red). > Reduce the RN thread tension (green). > Reduce the UL thread tension (blue).
The seam puckers. Lower looper thread (red) too tight.	> Reduce the LL thread tension (red).
Needle thread (green) doesn't reach the fabric edge.	> Reduce the RN thread tension (green). > Increase the UL thread tension (blue). > Increase the LL thread tension (red).
Needle thread (green) extends over the fabric edge to the top.	> Reduce the UL thread tension (blue). > Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Reduce the RN thread tension (green). > Reduce the UL thread tension (blue). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.

3-Thread Narrow Seam

Stitch Formation	Measures
The looper threads (red/blue) form loops on the bottom side of fabric.	> Reduce the LL thread tension (red). > Increase the UL thread tension (blue).
The looper threads (red/blue) form loops on the top side of fabric.	> Reduce the UL thread tension (blue). > Increase the LL thread tension (red).
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).
The fabric edge doesn't curl as intended.	> Increase the cutting width CW. > Increase the LL thread tension (red). > Increase the UL thread tension (blue). > Reduce the stitch length SL. > Check the rolled hem lever N/R position.
The seam puckers.	> Set the differential feed between 1 and 0.6 (Stretching). > Reduce the RN thread tension (green). > Reduce the stitch length SL.

3-Thread Rolled Hem

Stitch Formation	Measures
The upper looper thread (blue) wraps fabric edge too loosely.	> Increase the UL thread tension (blue). > Increase the cutting width CW. > Increase the stitch length SL.
The fabric edge doesn't curl as intended.	> Increase the cutting width CW. > Increase the LL thread tension (red). > Increase the UL thread tension (blue). > Reduce the stitch length SL. > Check the rolled hem lever N/R position.
The upper looper thread (blue) wraps fabric edge too tightly.	> Reduce the UL thread tension (blue). > Reduce the stitch length SL.
Lower looper thread (red) not straight along the needle thread.	> Increase the LL thread tension (red). > Increase the RN thread tension (green).
The seam puckers.	> Set the differential feed between 1 and 0.6 (Stretching). > Reduce the LL thread tension (red). > Reduce the RN thread tension (green). > Reduce the stitch length SL.
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).

2-Thread Wrapped Overlock Wide (LN)

Stitch Formation	Measures
Looper thread (red) wraps fabric edge too loosely.	> Increase the LL thread tension (red). > Reduce the Micro Thread Control (mtc). > Increase the cutting width CW.
Looper thread (red) wraps fabric edge too tightly.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The needle thread (yellow) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The fabric edge forms a tunnel or rolls up.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The seam puckers.	> Reduce the LN thread tension (yellow). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

2-Thread Wrapped Overlock Narrow (RN)

Stitch Formation	Measures
Looper thread (red) wraps fabric edge too loosely.	> Increase the LL thread tension (red). > Reduce the Micro Thread Control (mtc). > Increase the cutting width CW.
Looper thread (red) wraps fabric edge too tightly.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The needle thread (green) forms loops on bottom side of the fabric.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Reduce the LL thread tension (red). > Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The seam puckers.	> Reduce the RN thread tension (green). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

2-Thread Flatlock Wide (LN)

Stitch Formation	Measures
Lower looper thread (red) extends over the fabric edge to the bottom.	> Increase the LL thread tension (red). > Reduce the LN thread tension (yellow).
Needle thread (yellow) doesn't reach the fabric edge.	> Reduce the LN thread tension (yellow). > Increase the LL thread tension (red).
The lower looper thread (red) doesn't reach the fabric edge.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
Needle thread (yellow) extends over the fabric edge to the top.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The fabric edge forms a tunnel or rolls up.	> Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Reduce the stitch length SL. > Check the rolled hem lever N/R position.

2-Thread Flatlock Narrow (RN)

Stitch Formation	Measures
Lower looper thread (red) extends over the fabric edge to the bottom.	> Increase the LL thread tension (red). > Reduce the RN thread tension (green).
Needle thread (green) doesn't reach the fabric edge.	> Reduce the RN thread tension (green). > Increase the LL thread tension (red).
The lower looper thread (red) doesn't reach the fabric edge.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
Needle thread (green) extends over the fabric edge to the top.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Reduce the stitch length SL. > Check the rolled hem lever N/R position.

2-Thread Rolled Hem

Stitch Formation	Measures
Looper thread (red) wraps fabric edge too loosely.	> Increase the LL thread tension (red). > Increase the cutting width CW.
Looper thread (red) wraps fabric edge too tightly.	> Reduce the LL thread tension (red). > Reduce the cutting width CW. > Check the rolled hem lever N/R position.
The fabric edge doesn't curl as intended.	> Increase the cutting width CW. > Reduce the stitch length SL. > Increase the LL thread tension (red). > Check the rolled hem lever N/R position.
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).
The seam puckers.	> Set the differential feed between 1 and 0.6 (Stretching). > Reduce the RN thread tension (green). > Reduce the stitch length SL.

2-Thread Overlock Wide (LN)

Stitch Formation	Measures
Lower looper thread (red) extends over the fabric edge to the bottom.	> Increase the LL thread tension (red). > Reduce the LN thread tension (yellow).
Needle thread (yellow) doesn't reach the fabric edge.	> Reduce the LN thread tension (yellow). > Increase the LL thread tension (red).
The lower looper thread (red) doesn't reach the fabric edge.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
Needle thread (yellow) extends over the fabric edge to the top.	> Reduce the LL thread tension (red). > Increase the LN thread tension (yellow).
The fabric edge forms a tunnel or rolls up.	> Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Reduce the stitch length SL. > Check the rolled hem lever N/R position.

2-Thread Overlock Narrow (RN)

Stitch Formation	Measures
Lower looper thread (red) extends over the fabric edge to the bottom.	> Increase the LL thread tension (red). > Reduce the RN thread tension (green).
Needle thread (green) doesn't reach the fabric edge.	> Reduce the RN thread tension (green). > Increase the LL thread tension (red).
The lower looper thread (red) doesn't reach the fabric edge.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
Needle thread (green) extends over the fabric edge to the top.	> Reduce the LL thread tension (red). > Increase the RN thread tension (green).
The fabric edge forms a tunnel or rolls up.	> Increase the Micro Thread Control (mtc) > Reduce the cutting width CW. > Reduce the stitch length SL. > Check the rolled hem lever N/R position.

2-Thread Chainstitch (RC)

Stitch Formation	Measures
The needle thread (yellow) forms loops on bottom side of the fabric.	> Increase RC-Thread tension (yellow). > Check threading path.
Chain looper (purple) thread visible on top side of fabric.	> Reduce RC-Thread tension (yellow).
The seam puckers.	> Reduce RC-Thread tension (yellow). > Reduce the CL thread tension (purple). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.
The chain looper (purple) thread loose on the bottom side of fabric.	> Increase the CL thread tension (purple). > Check threading path.

4-Thread Coverstitch

Stitch Formation	Measures
Needle thread (yellow, green or blue) forms loops on bottom side of the fabric.	> Increase the needle thread tension (yellow, green or blue). > Reduce the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
The chain looper (purple) thread loose on the bottom side of fabric.	> Increase the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
Chain looper (purple) thread too tense, seam is tunneling.	> Reduce the CL thread tension (purple). > Reduce the stitch length SL. > Check threading path.
The seam puckers. Needle thread (yellow, green or blue) too tense.	> Reduce the needle thread tension (yellow, green or blue). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Coverstitch Wide (LC-RC)

Stitch Formation	Measures
Needle thread (yellow or blue) forms loops on bottom side of the fabric.	> Increase the needle thread tension (yellow or blue). > Reduce the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
The chain looper (purple) thread loose on the bottom side of fabric.	> Increase the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
Chain looper (purple) thread too tense, seam is tunneling.	> Reduce the CL thread tension (purple). > Reduce the stitch length SL. > Check threading path.
The seam puckers. Needle thread (yellow or blue) too tense.	> Reduce the needle thread tension (yellow or blue). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Coverstitch Narrow (LC-CC)

Stitch Formation	Measures
The needle thread (yellow or green) forms loops on bottom side of the fabric.	> Increase the needle thread tension (yellow or green). > Reduce the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
The chain looper (purple) thread loose on the bottom side of fabric.	> Increase the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
Chain looper (purple) thread too tense, seam is tunneling.	> Reduce the CL thread tension (purple). > Reduce the stitch length SL. > Check threading path.
The seam puckers. Needle thread (yellow or green) too tense.	> Reduce the needle thread tension (yellow or green). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Coverstitch Narrow (CC-RC)

Stitch Formation	Measures
Needle thread (green or blue) forms loops on bottom side of the fabric.	> Increase the needle thread tension (green or blue). > Reduce the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
The chain looper (purple) thread loose on the bottom side of fabric.	> Increase the CL thread tension (purple). > Increase the stitch length SL. > Check threading path.
Chain looper (purple) thread too tense, seam is tunneling.	> Reduce the CL thread tension (purple). > Reduce the stitch length SL. > Check threading path.
The seam puckers. Needle thread (green or blue) too tense.	> Reduce the needle thread tension (green or blue). > Set the differential feed between 1 and 0.6 (Stretching). > Reduce the stitch length SL.

3-Thread Picotstitch

Stitch Formation	Measures
The upper looper thread (blue) wraps fabric edge too loosely.	> Increase the UL thread tension (blue). > Increase the cutting width CW. > Reduce the stitch length SL.
The fabric edge doesn't curl as intended.	> Increase the cutting width CW. > Increase the UL thread tension (blue). > Reduce the stitch length SL. > Check the rolled hem lever N/R position.
The upper looper thread (blue) wraps fabric edge too tightly.	> Reduce the UL thread tension (blue). > Reduce the stitch length SL.
Lower looper thread (red) not straight along the needle thread.	> Increase the LL thread tension (red). > Increase the RN thread tension (green).
The seam puckers.	> Set the differential feed between 1 and 0.6 (Stretching). > Reduce the LL thread tension (red). > Reduce the RN thread tension (green). > Reduce the stitch length SL.
The needle thread (green) forms loops on bottom side of the fabric.	> Increase the RN thread tension (green).

9 Practical Sewing

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 over stitched.

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.



9.3 Securing Coverstitches

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

Securing Cover- and Chainstitches at the Start of the Seam

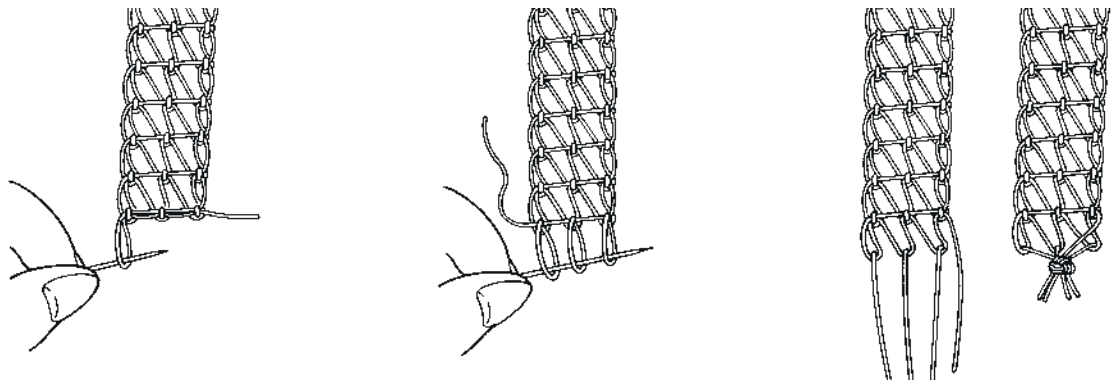
With cover- and chainstitches, the first stitch is automatically secured by the following stitches.

Securing Cover- and Chainstitches at the Seam End

The stitches are secured when they are overstitched. Securing stitches is particularly important when they don't start or end together with other seams or hems.

Securing Coverstitches at the Seam End

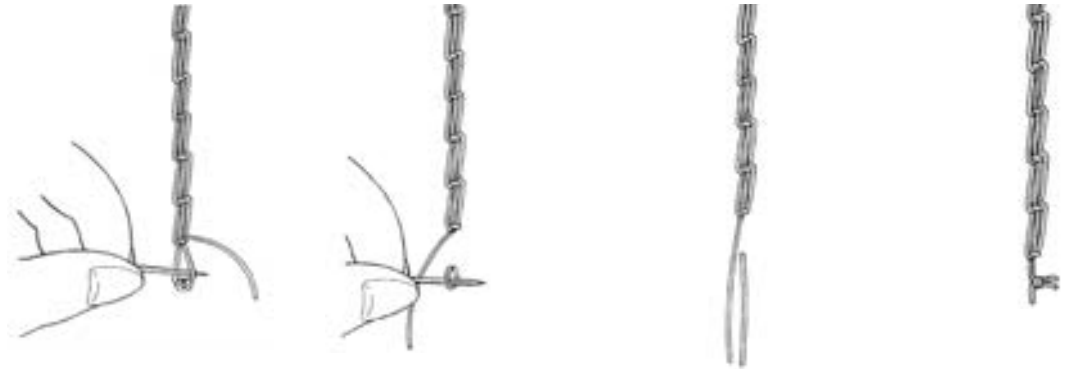
To secure the coverstitch at the end of the seam, the needle threads need to be pulled through the loop of the looper thread first and then knotted with the end of the looper thread on the wrong side of the fabric.



- > Turn the fabric to the wrong side.
- > Undo the loop of the looper thread with a sewing needle and hold it.
- > Pull the looper thread ends upwards so that the loops of the needle thread appear on the wrong side of the fabric.
- > String the loops of the needle threads with a sewing needle and pull them up so that all thread ends are on the wrong side of the sewing project.
- > Knot all thread ends together close to the stitch end.

Securing Chainstitches at Seam End:

To secure the chainstitch at the end of the seam, the needle thread need to be pulled through the loop of the looper thread first and then knotted with the end of the looper thread on the wrong side of the fabric.



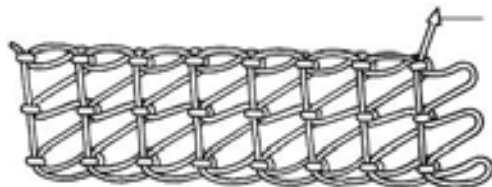
- > Turn the fabric to the wrong side.
- > Undo the loop of the looper thread with a sewing needle and hold it.
- > Pull the end of the looper thread upwards so that the loops of the needle thread appear on the wrong side of the fabric.
- > String the loops of the needle threads with a sewing needle and pull them up so that all thread ends are on the wrong side of the sewing project.
- > Knot all thread ends together close to the stitch end.

9.4 How to Undo Coverstitches

Cover- and chain stitches 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.



Undoing Chainstitches

- > At the end of the seam, pull the looper thread out of the thread chain on the wrong side.

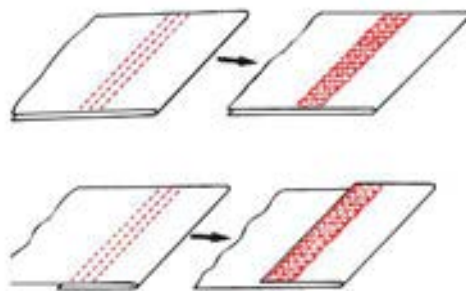


- > Remove the needle thread on the right side of the fabric.
 - The stitches are undone.

9.5 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.

9.6 Flatlock

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

- > Set the machine for a 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.

Flatlock Narrow

A narrow flatlock is the result when the right Overlock Needle (RN) is inserted.



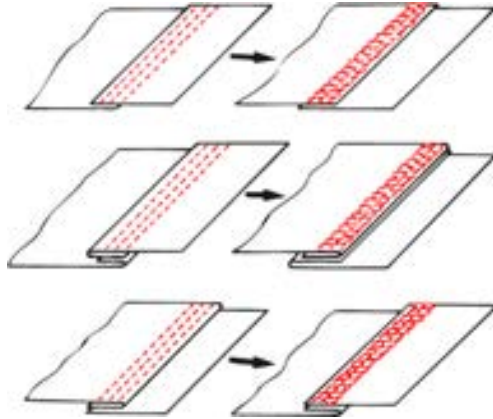
Flatlock Wide

A wide flatlock is the result when the left Overlock Needle (LN) is inserted.



9.7 Join Seam

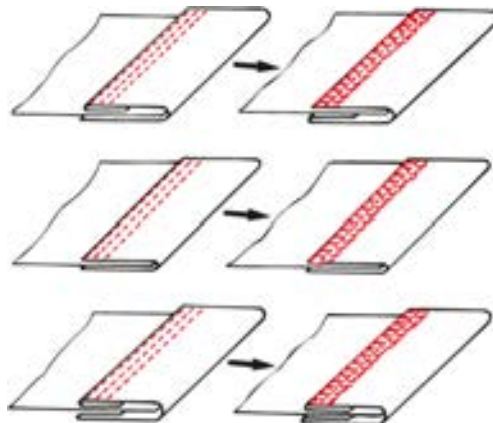
- > Thread and set the machine for a cover- or chainstitch.
- > Adjust the stitch length to be suitable for the fabric.
- > Place the fabric under the presser foot and lower the presser foot.
- > Sew the seam.
- > To sew parallel lines or pintucks, use either the left or the right edge of the foot or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



9.8 Binding Seams

Seam binding proves ideal for elastic necklines, sleeve edgings and circular finishes.

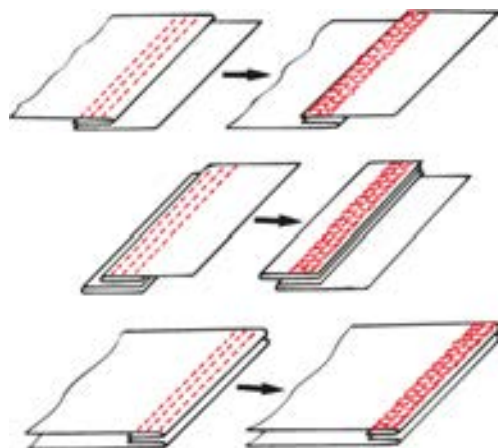
- > Cut the bias tape or tricot strips to size at the desired width.
- > Mark the seam, pre-iron or pin it.
- > Place the binding around the edge of the fabric and start sewing.
- > Guide the edge of the binding on the upper side of the sewing project along the left spring-loaded foot part.
 - On the bottom side, the edge of the binding is finished by the looper thread.
- > Trim the protruding seam allowance to 2 mm.



9.9 Topstitching Seams

To topstitch overlock seams, the coverstitch is suitable in all elastic materials. Ideal for sweatshirts, jersey dresses, jackets, knitted coats and patchworked garments.

- > Place the seam to one side or iron it.
- > Topstitch close along the edge on the right of the sewing project.
- > Guide the lateral foot parts along the edge of the seam.
 - A decorative, hard-wearing and durable finish is created.



9.10 Gathering a Seam

Ruffling is a gathering or puckering of a seam.

Pulling the Needle Thread

- > 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.



9.11 Sew Outer Corners

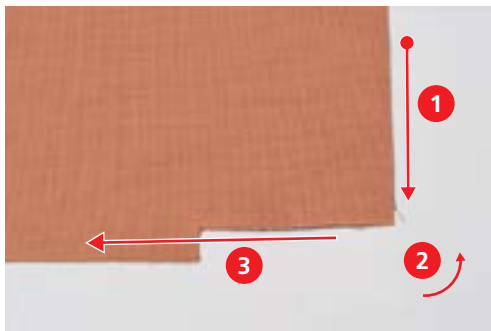
How to Sew over a Corner

- > 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 79)



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.



9.12 Sewing Inner Corners

- > Set the machine for a 2- or 3-Thread Overlock.



- > Draw sewing lines on both sides of the corner about 5 cm long with the fabric pen.
- > Sew the seam until the knife reaches the corner.
- > Position the needle in the fabric.
- > Raise the presser foot.
- > Carefully pull the fabric edge to a straight line and fold the fabric forwards.
- > Lower the presser foot.
- > Continue sewing until the needle reaches the corner.
- > Fix the fabric by piercing the needle in the inner corner.
- > Raise the presser foot and fold the fabric to the back.
- > Lower the presser foot and continue sewing.

9.13 Sew Outer Curves and Circles

- > Cut away the seam allowance in one place along the length of the presser foot.



- > Start and end the seam at the cut seam allowance.
 - if seam waving out happens: set the differential feed to 1.5 – 2.
 - if puckering happens: set the differential feed to 0.7 – 1.
- > At the seam end, sew 1 – 2 stitches over the seam beginning.
- > Lower the needle and raise the presser foot.

- > Turn the fabric off to the left of the presser foot.



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

9.14 Sewing Inner Curves

Inner curves appear on necklines, facings and armholes. Time-consuming clipping or trimming can be avoided by overlocking the fabric edge.

- > Set the machine for a 3- or 4-Thread Overlock.
- > Carefully straighten the rounded part while sewing.



10 Appendix

10.1 Storage, Transport and Disposal

Storing the Machine

bernette recommends storing the machine in its original packaging in a dry place at room temperature.

- > Switch off the machine and disconnect it from the power supply.
- > Clean the machine.
- > Don't store the machine outdoors.
- > Protect the machine against climatic influences.

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.

Disposing the Machine

- > Sort components by material and dispose of in accordance with local laws and regulations.

10.2 Machine

Cleaning the Machine



Video

Recommended aids:

- Damp microfiber cloth
- Brush
- Tweezers
- Vacuum cleaner with soft attachment

Recommended areas:

- Needle, Needle Bar
 - Presser Foot
 - Feed Dogs (from above)
 - Knife
 - Rubber feet
- > Clean the machine on the outside with a damp microfiber cloth without detergent.
 - > Regularly remove dust, fabric and thread residues from recommended areas.

Cleaning the Looper Area



[Video](#)

Dust, fabric and thread remnants accumulate in the looper area during coverstitching. They should be removed regularly.

NOTICE

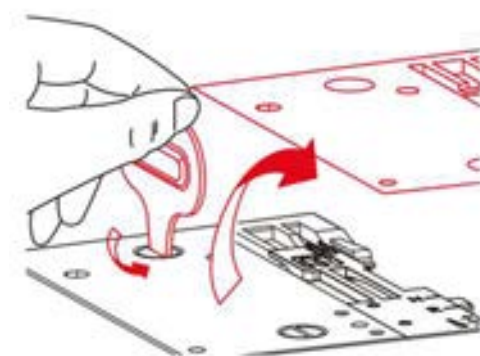
Damage by cleaning with compressed air

Cleaning using aerosol sprays or compressed air may cause permanent damage to your machine. A repair by the authorized bernette dealer is required.

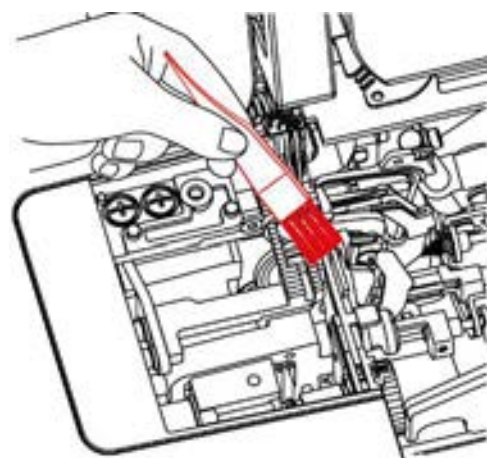
> Remove fabric scraps and thread remnants using a vacuum cleaner with soft tip.

Prerequisite:

- The presser foot is raised.
 - The needles are in the top position.
 - The machine is switched off.
- > Remove the presser foot sole.
- > Unscrew the stitch plate from the freearm.



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



- > Fit the stitch plate.



- > Slowly turn the handwheel to check that the knife, needles, and feed dogs do not interfere with each other's movement.
- > Attach the presser foot.

Clean Air Threader Pipes

Over time, dust and thread residues accumulate in the air threader pipe. Remove them regularly.

- > Have a thicker thread ready approx. 1 m long, e.g., Mettler 12 weight thread.
- > Feed the thread into the air threader nozzle.
- > Hold the thread at both ends and pull it back and forth several times.
- > Pull thread out of looper eye and air threading pipe.

Cleaning the Suction Feet

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

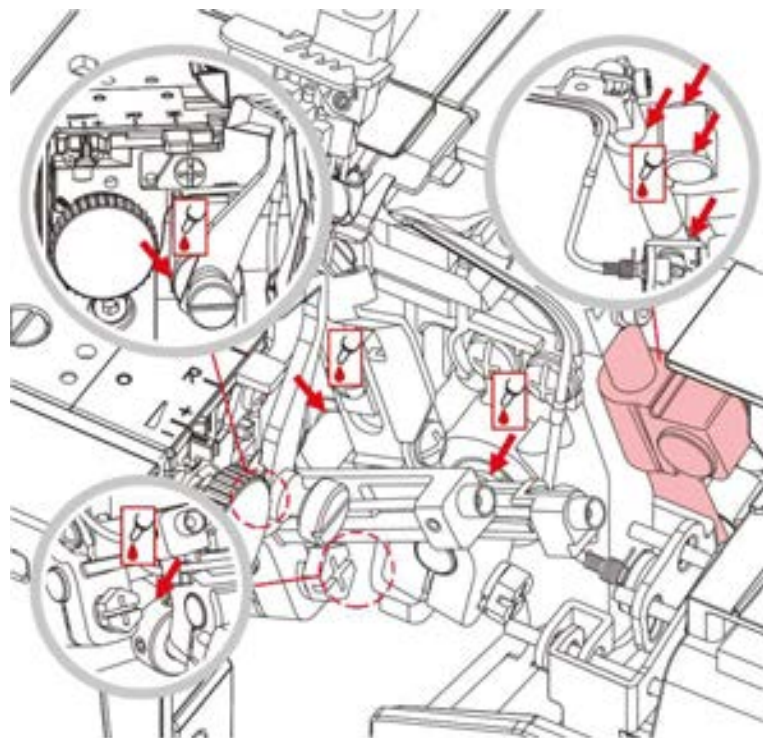
- > Remove dust and thread remnants from the suction feet with a damp cloth.

Oiling the looper area



[Video](#)

- > Remove the looper cover.
- > Add a drop of BERNINA overlock oil to the upper looper joint.



10.3 Troubleshooting

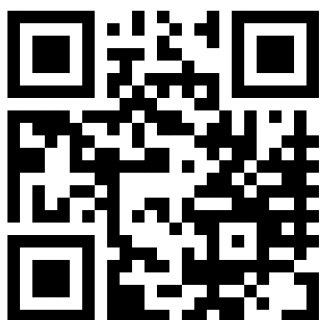
Fault	Possible Cause	Troubleshooting
Fabric is not feeding properly	The stitch setting is not optimal.	> Elongate the stitch length. (see page 46) > Adjust the Differential Feed. (see page 49)
	The presser foot pressure is not optimal.	> Adjust the presser foot pressure. (see page 47)
Needle breaks	The needle is defective.	> Replace the needle.
	The fabric has been pulled.	> Feed the fabric evenly.
	Incorrect needle/thread combination.	> Use a needle with a suitable needle size.
	The needle seat is incorrect.	> Tighten the needle screw. > Replace the needle.
	The presser foot is loose.	> Attach the presser foot. (see page 28)
	Incorrect needle.	> Use needles from the needle system ELx705 CF.
Thread breakage	Incorrectly threaded.	> Rethread the needle and the looper thread paths.
	The needle is blunt or bent.	> Replace the needle.
	The thread tension is not optimal.	> Adjust the thread tension.
	The thread is tangled.	> Check thread feed from the thread spool.
	Thread guide is not fully extended.	> Pull out the thread guide completely.
Skipped stitches	Incorrect needle/thread combination.	> Use a needle with a suitable needle size.
	Threading is incorrect.	> Rethread the needle and the looper thread paths.
	The needle is defective.	> Replace the needle.
	The needle is incorrectly inserted.	> Insert the needle correctly.

Fault	Possible Cause	Troubleshooting
Irregular stitch	Thread is not correctly inserted in the thread pre-tension.	> Check the thread path.
	The thread tension is incorrect.	> Adjust the thread tension. (see page 48)
	Incorrect needle/thread combination.	> Use a needle with a suitable needle size.
	Thread threading is incorrect.	> Rethread the needle and the looper thread paths.
	The fabric has been pulled.	> Feed the fabric evenly.
	The presser foot is loose.	> Attach the presser foot. (see page 28)
	The air threader pipe is blocked.	> Clean Air Threader Pipes. (see page 90)
Thread breakage	Incorrectly threaded.	> Rethread the needle and the looper thread paths.
	The needle is blunt or bent.	> Replace the needle.
	The thread tension is not optimal.	> Adjust the thread tension.
	The thread is tangled.	> Check thread feed from the thread spool.
	Thread guide is not fully extended.	> Pull out the thread guide completely.
Skipped Stitches	> Replace the needle. > Tighten the needle screws. > Match the needle size with the fabric/thread. > Insert the needles correctly. > Select the appropriate needle for the sewing project and the weight of thread. > Check the thread path. > Increase the presser foot pressure. > Thread high-quality thread.	
Unwanted seam puckering	The thread tension is incorrect.	> Adjust the thread tension. (see page 48)
	Defective needle.	> Replace the needle.
	The setting of the Differential Feed is not optimal.	> Set the Differential Feed to 0.7 – 1. (see page 49)
Unwanted weavy seam	The setting of the Differential Feed is not optimal.	> Set the Differential Feed to 1 – 2. (see page 49)
Fabric is not cutting properly	The knife is dirty.	> «Cutting Width Control» set to 9. > Switch the machine off. > Remove any fabric and thread residues from the blade of the knife. > Clean the blade of the knife.
	The knife is defective.	> Have the knife by a authorized BERNINA dealer.

Fault	Possible Cause	Troubleshooting
Fabric is not feeding properly	The stitch setting is not optimal.	> Elongate the stitch length. (see page 46) > Adjust the Differential Feed. (see page 49)
	The presser foot pressure is not optimal.	> Adjust the presser foot pressure. (see page 47)
Irregular stitch	Thread is not correctly inserted in the thread pre-tension.	> Check the thread path.
	The thread tension is incorrect.	> Adjust the thread tension. (see page 48)
	Incorrect needle/thread combination.	> Use a needle with a suitable needle size.
	Thread threading is incorrect.	> Rethread the needle and the looper thread paths.
	The fabric has been pulled.	> Feed the fabric evenly.
	The presser foot is loose.	> Attach the presser foot. (see page 28)
	The air threader pipe is blocked.	> Clean Air Threader Pipes. (see page 90)
Machine runs slowly and then stops	The pulse drive is performed.	> The machine prepares the threading position.
Machine does not sew	The looper area is open.	> Close the looper cover properly.
	The machine is not connected to the power supply.	> Insert the mains plug into the socket and into the machine. > Check the socket for power.
	The machine is switched off.	> Switch the machine on.
	The machine is overheated.	> Switch off the machine and leave to cool for 10 – 15 minutes.
	The machine is too cold.	> Leave the machine at room temperature for approx. 1 hour.
Looper thread cannot be threaded	Air threading pipe is not closed properly.	> Turn the air threader switch completely to position I. / (see page 49) > Check the connection of the air threader pipe.
	Threads with special properties (e.g., bulky yarn or metallic yarns).	> Pull in the thread using a thread cradle.
	The air threader doesn't work.	> In case of a malfunction or damage, repair by an BERNINA dealer is necessary.
Looper cover does not attach	The air threader switch prevents attaching the looper cover.	> Turn the air threader switch completely to position 0.

10.4 Technical Specifications

Name	Value	Unit
Number of stitches	31	
Number of loopers	3	
Number of needles	1– 5	
Needle system	ELx705	
Needle size	80 – 100 (12 – 16)	
Differential feed	0.6 – 2.0	
Maximum fabric thickness	5 (0,23)	mm (in)
Cutting width overlock LN	5.0 – 7.0 (0.19 – 0.27)	mm (in)
Cutting width overlock RN	3.0 – 5.0 (0.12 – 0.19)	mm (in)
Stitch width coverstitches	2.8 – 5.6 (0.11 – 0.22)	mm (in)
Stitch width combostitches	7.8 – 12.6 (0.31 – 0.49)	mm (in)
Maximum sewing speed	1300	Stitches per minute
Dimensions without retractable thread guide (LxWxH)	43 x 27 x 29 (16.92 x 10.62 x 11.41)	cm (in)
Dimensions with slide-on table / cut-offs bin (LxWxH)	59 x 40 x 29 (23.22 x 15.78 x 11.41)	cm (in)
Weight of the machine	8.9 (19.6)	kg (lb)
Weight packaged	12.8 (28.2)	kg (lb)
Input voltage (energy consumption)	120 (80) / 230 – 240 (75)	V (W)
Protection class (Electrical Engineering)	II	
Date of manufacture	Visible on the type plate	



www.bernette.com/b68AIRLOCK

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