



b64
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-316/-326/-345.
- 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

**DANGER**

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

**WARNING**

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

**CAUTION**

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

NOTICE

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



Tips from the BERNINA overlock experts.

2 My bernette

2.1 Machine

Front view



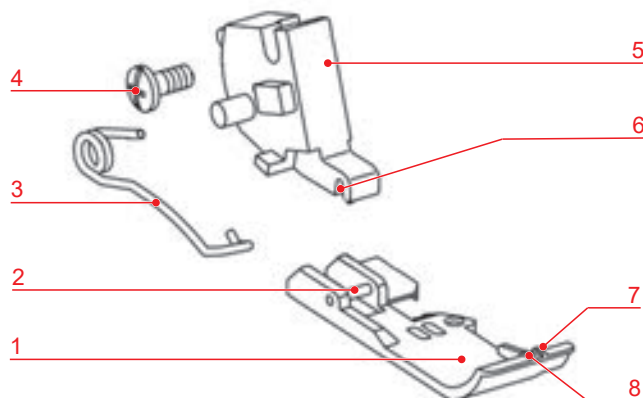
- | | | | |
|---|-----------------------------|----|---------------------------|
| 1 | Freearm Cover Plate | 8 | Thread Tension Adjustment |
| 2 | Guide Rail | 9 | Thread Deflection Finger |
| 3 | Freearm | 10 | Thread Guide Plate |
| 4 | Sewing Light (LED) | 11 | Knife Cover Insert |
| 5 | Thread Cutter | 12 | Threader Cover |
| 6 | Presser Foot Pressure Wheel | 13 | Cut-Offs Bin |
| 7 | Thread Take-up Lever Cover | 14 | Suction Feet |

Overview - Needle area



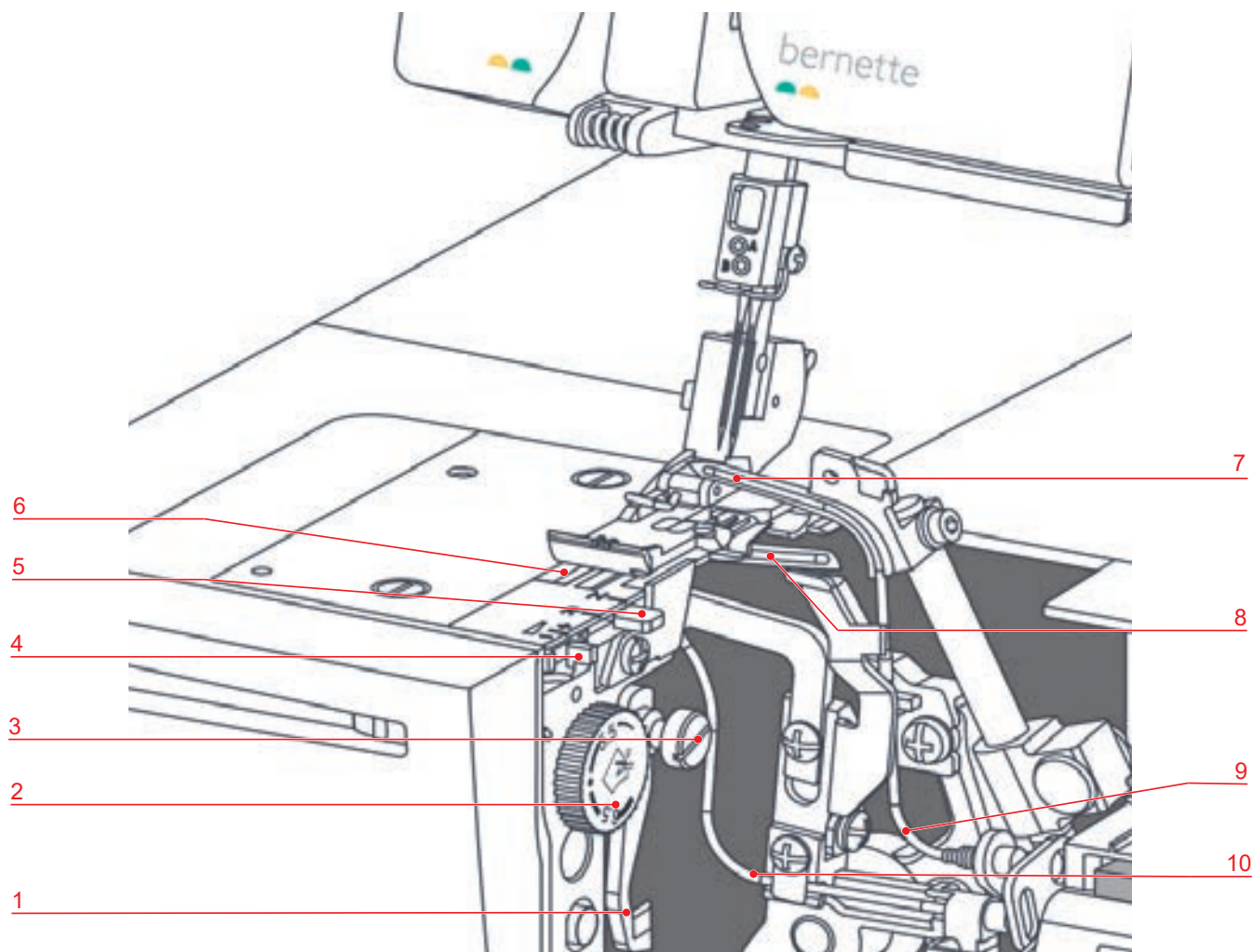
- | | | | |
|---|----------------------------------|----|-----------------------------------|
| 1 | Stitch Plate | 6 | Thread Guide on the Machine |
| 2 | Stitch Plate Screw | 7 | Needle Holder |
| 3 | Standard Presser Foot Overlock | 8 | Needle Screws |
| 4 | Presser Foot Release Lever (Red) | 9 | Thread Guide on the Needle Holder |
| 5 | Presser Foot Bar | 10 | Needles ELx705 |

Overview Presser Foot



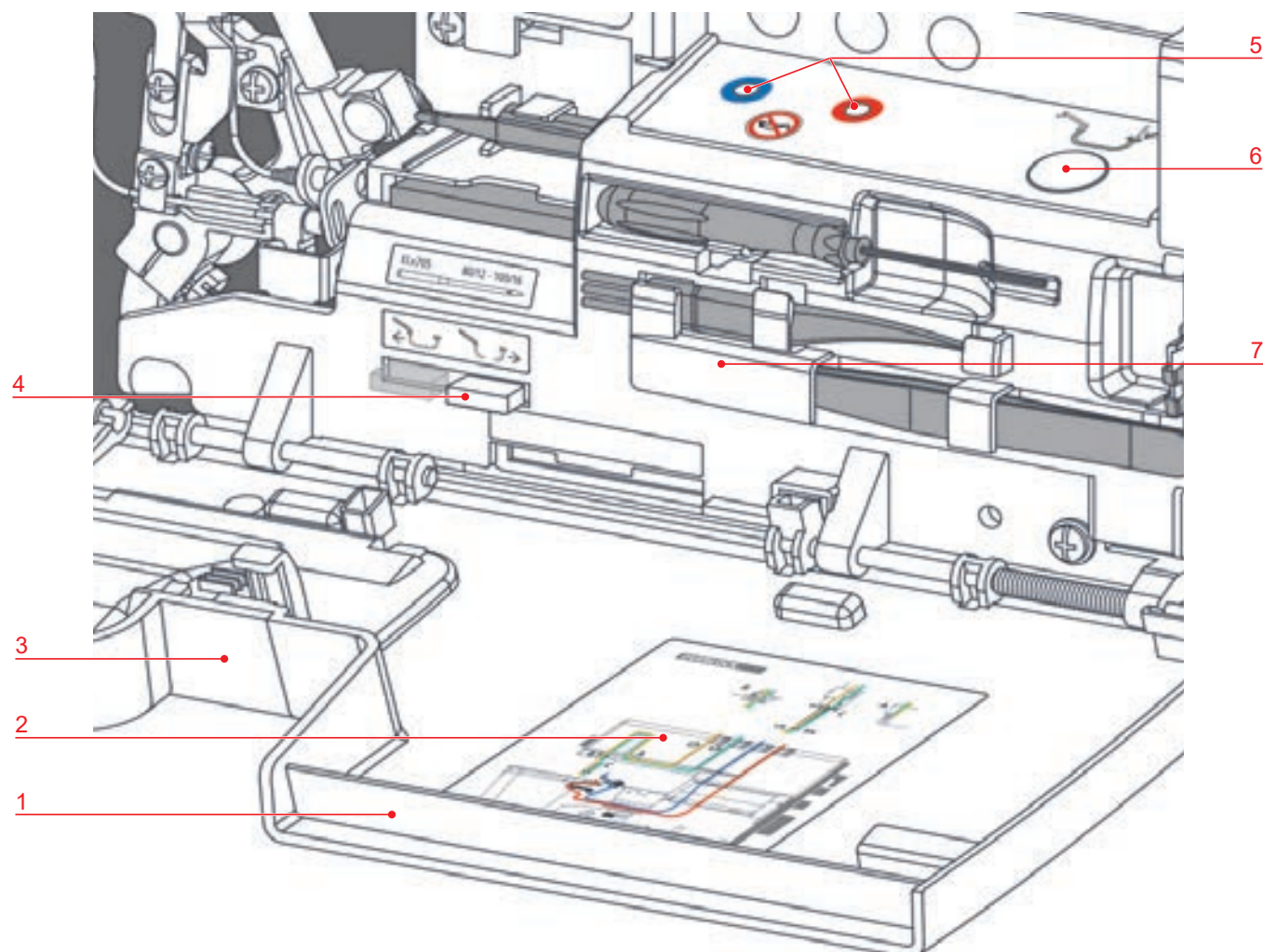
- | | | | |
|---|-----------------------|---|-------------------------------------|
| 1 | Presser Foot Sole | 5 | Presser Foot Shaft |
| 2 | Presser Foot Sole Pin | 6 | Shaft Groove |
| 3 | Presser Foot Spring | 7 | Marking: Right Overlock Needle (RN) |
| 4 | Fixing Screw | 8 | Marking: Left Overlock Needle (LN) |

Overview - Looper area



- | | | | |
|---|-------------------------------|----|---------------------------------|
| 1 | Knife | 6 | Feed Dog |
| 2 | Cutting Width Dial | 7 | Upper Looper |
| 3 | Knife On/Off | 8 | Lower Looper |
| 4 | mtc Micro Thread Control Dial | 9 | Air Threader Pipes Upper Looper |
| 5 | Rolled Hem Selection Lever | 10 | Air Threader Pipes Lower Looper |

Overview Threading area



- | | | | |
|---|-------------------------------|---|-------------------------------|
| 1 | Threader Cover | 5 | Air Threader Nozzles |
| 2 | Threading Chart | 6 | Air Threader Button |
| 3 | Knife Cover Insert | 7 | Accessories in Threader Cover |
| 4 | Air Threader Connector On/Off | | |

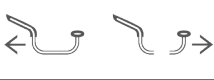
Overview - Side panel



- | | | | |
|---|--------------------------|----|----------------------------------|
| 1 | Carry Handle | 8 | Differential Feed Dial |
| 2 | Retractable Thread Guide | 9 | Handwheel |
| 3 | Spool Pin | 10 | Air Vents |
| 4 | Thread Stand | 11 | Foot Control-/Power Connection |
| 5 | Needle Pad | 12 | Power Switch |
| 6 | Presser Foot Lifter | 13 | Connection for Knee Lifter (FHS) |
| 7 | Stitch Length Setting | | |

Symbols

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

	LN	Left Needle Thread
		Thread path yellow
	RN	Right Needle Thread
		Thread path green
	UL	Upper looper thread
		Thread path blue
	LL	Lower looper thread
		Thread path red
	ULC	Upper Looper Converter
	CW	Cutting width
	SL	Stitch Length
	DF	Differential Feed
	N/R	Rolled Hem Selection Lever
	mtc	mtc Micro Thread Control
		Presser Foot Pressure
		Air Threader Lever
		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



Further information and application notes on the supplied and optional accessories can be found under:

<https://www.bernette.com/b64airlock>

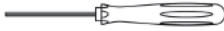
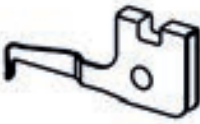
Included Accessories

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

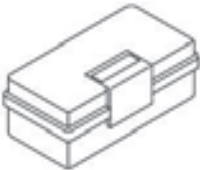
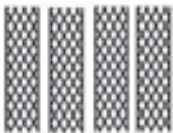
Illustration	Name	Purpose
	Foot Control with Power Cable	To connect the machine with the power supply system. To start and stop the machine. To control the sewing speed.
	Cut-Offs Bin	To collect scraps and fabric trimmings.
	Knife Cover Insert	To protect the fingers and to deflect the fabric cut-offs during the sewing process.
	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.
	Overlock Foot	For all overlock stitches. For general sewing projects.
	Retractable Thread Guide	For an even unwinding of the thread from the thread cones.

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
	BERNINA Accessories Box	To store the supplied accessories as well as optional accessories.
	Spool Stabilizer (4x)	To stabilize large spools. To avoid vibrations from the spool.
	Spool Net (4x)	To support even unwinding of nylon, rayon, silk or metallic threads from the spool.
	Spool Cap (4x)	To secure the thread cone/spool. To support the regular unwinding of the thread from the thread cone/spool.
	Screwdriver	To loosen/tighten the stitch plate screws.
	Knife	To exchange the knife.
	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

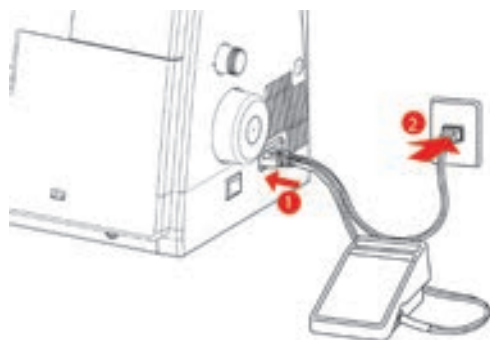
With the arms bent (90°), the fingertips can touch the stitch plate in a comfortable sitting position.

3.2 Connection and Switching On

Connecting the Machine and Foot Control



[Video](#)

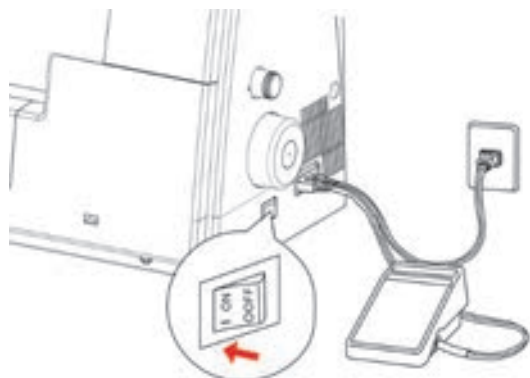


- > Insert the device plug (1) of the foot control/power cable into the connection for the foot control/power cable.
- > Insert the power plug (2) of the foot control/power cable into the socket.

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.

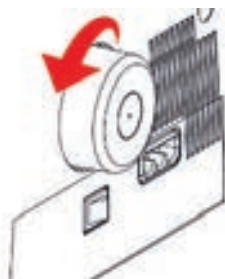
Press the Foot Control

- > 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.

- Needle Threader Cover
- Knife Cover Insert

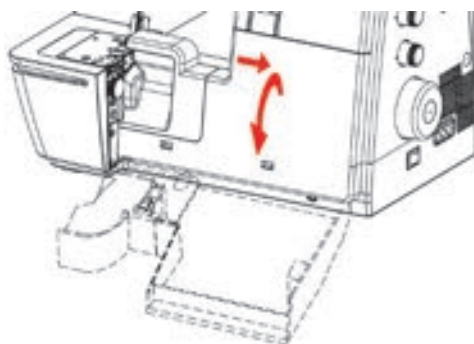
Open/Close the Threader Cover



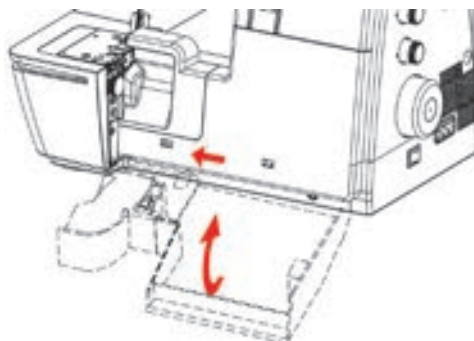
[Video](#)

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.

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
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

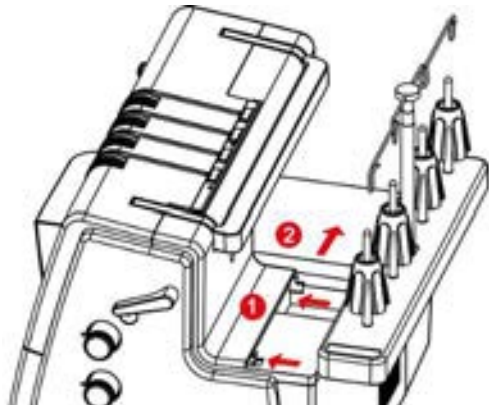
The thread stand is used to position thread cones and spools of various sizes needed for sewing.

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.



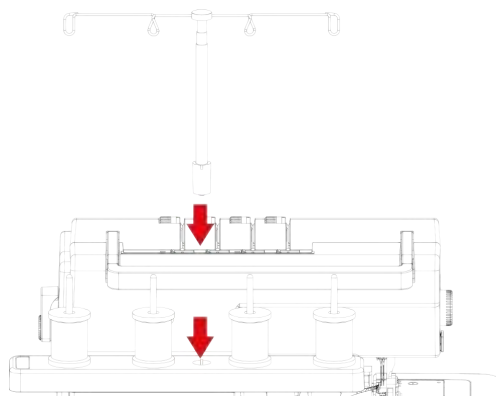
Preparing the Thread Guide



[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.

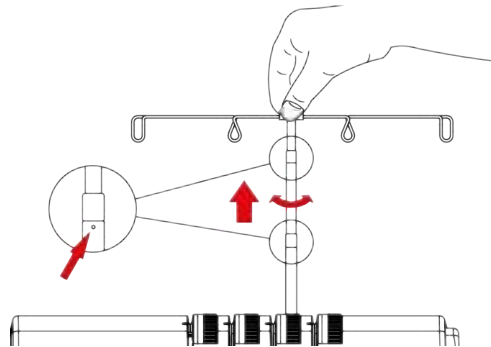
- > To attach the retractable thread guide, insert the thread guide into the provided opening in the thread stand until it clicks.



- > 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.

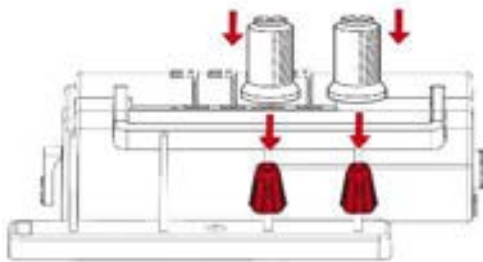


- > To retract the thread guide, push the thread guide down with a little pressure.

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.

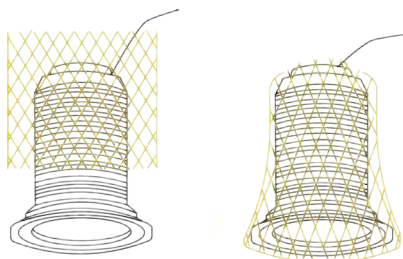
- > Place the thread spool on the spool pin.
- > Push the flat side of the spool cap over the spool pin to the thread spool.



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

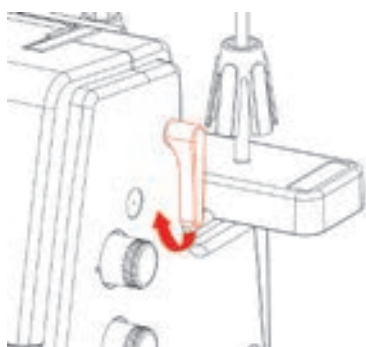
Raising/Lowering the Presser Foot



[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.



Lifting the Front of the Foot

The additional lifting of the front foot provides more space for thick materials. Thanks to this extra space, you can place thick layers of fabric more easily under the presser foot.

- > Pull the presser foot lifter up over the upper snap-in position and hold.
 - The presser foot lifts a further 2 mm during the lifting process and the front of the presser foot tilts upwards a further 3 mm.

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

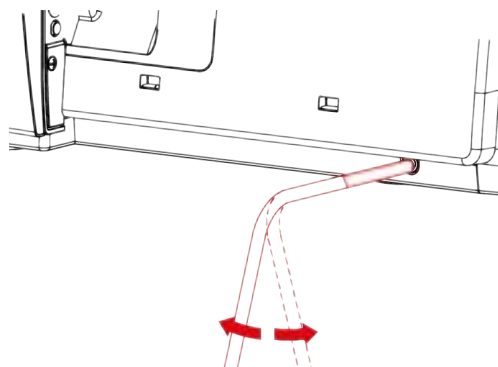


[Video](#)

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

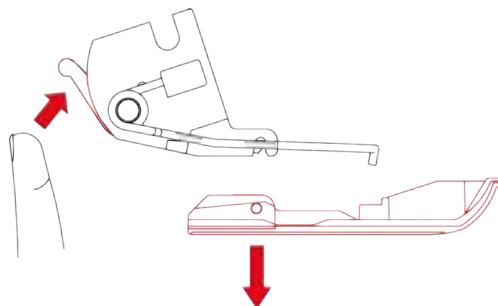


[Video](#)

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

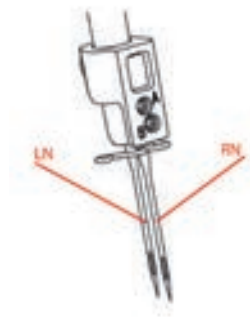
- > Slightly lift the presser foot spring and place the pin of the new presser foot sole under the notch on the presser foot shaft.
- > Carefully lower the presser foot lifter until the shaft notch engages in the presser foot sole pin.



3.9 Needle

Needle Holder

The Needle Holder can hold two needles. The needle positions are at different heights.



- | | | | |
|---|---------------------------|---|----------------------------|
| 1 | Left Overlock Needle (LN) | 3 | Needle Check Window |
| 2 | Needle Screw | 4 | Right Overlock Needle (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

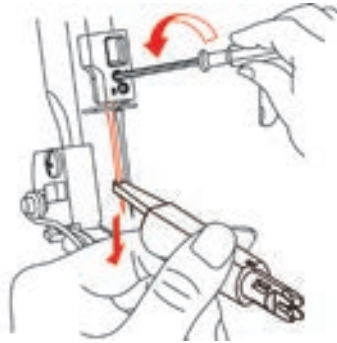
The thread of the needle holder screw can be damaged. A repair by the authorized bernette dealer is required.

- > Do not overtighten the needle screws.

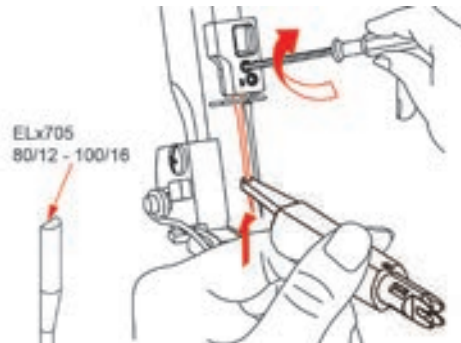
SET UP THE MACHINE

Prerequisite:

- The needles are in the top position.
 - The presser foot is raised.
- > Guide the needle inserter from below over the needle and loosen the needle screw using the supplied screwdriver Hex.



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



- > Push the needle into the corresponding Needle Holder opening as far as it will go.
- > Check the needle position in the needle checking window.
- > Tighten the needle screws.

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.

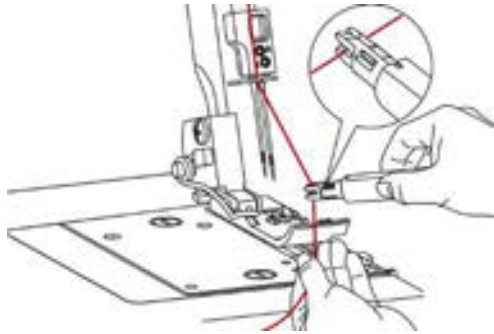
Threading the Needle Manually



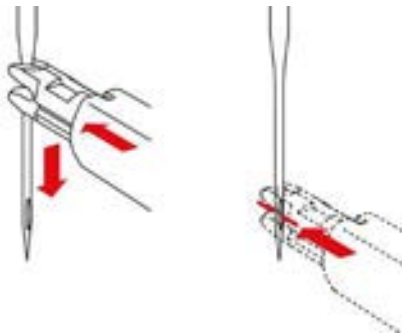
[Video](#)

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.



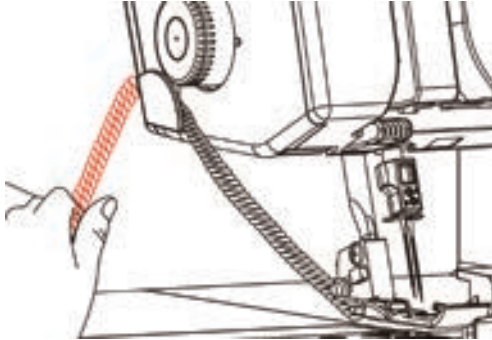
- > Place the thread under the presser foot to the back left.

3.10 Sewing Assistance

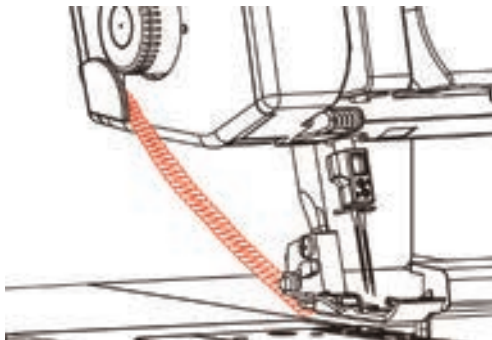
Using the Thread Cutter

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.



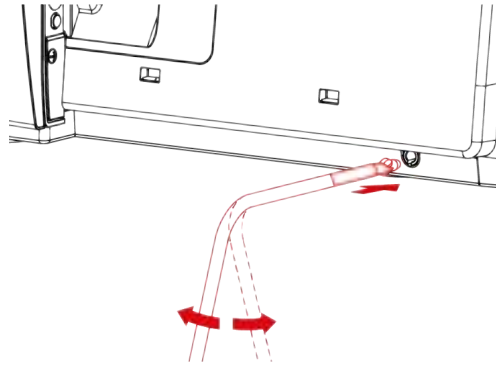
Attaching/removing the Knee Lifter



[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.



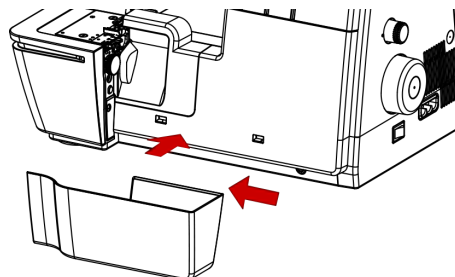
The lateral position of the lever can be adjusted by your local BERNINA dealer if required.

Attaching/Removing the Cut-offs Bin

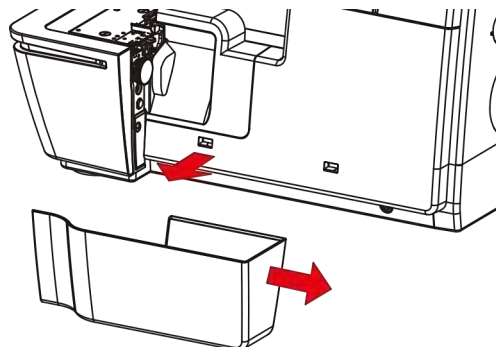


[Video](#)

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.

Attaching/Removing the Freearm Cover

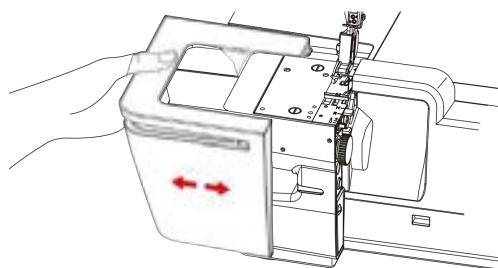


[Video](#)

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.



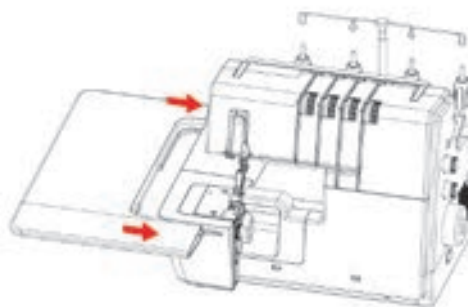
Attach the slide-on table.



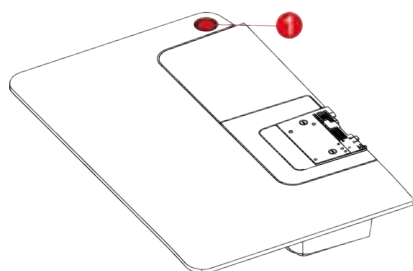
[Video](#)

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.



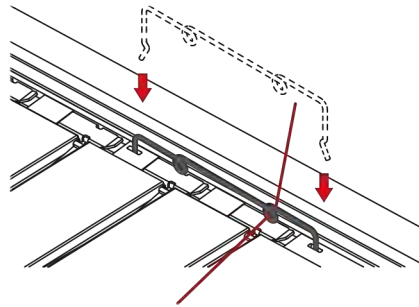
Attaching the Decorative Threads Guide



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 34)
 - The thread has been selected. (see page 34)
 - The needle size matches with the thread type and the sewing project. (see page 36)
 - The stitch is selected. (see page 38)
 - The machine settings based on the stitch selection have been performed. (see page 40)
 - 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 58)

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

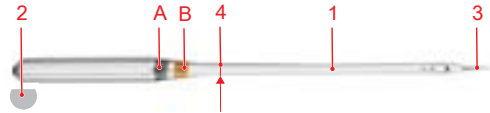
Damage by coated or waxed threads

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 | 3 | CF = ChromeFinish |
| 1 | two thread grooves | 4 / B 80 | = Needle size |
| 2 | 705 = Flat shank | | |

- 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

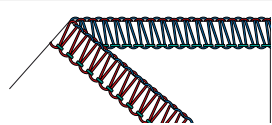
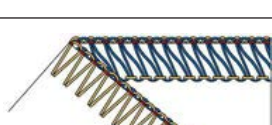
The 3-Thread and 4-Thread Overlock stitches are the standard overlock stitches used for joining two layers of fabric and finishing raw edges.

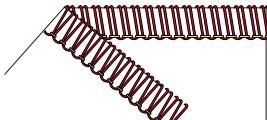
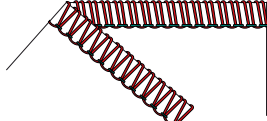
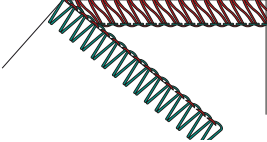
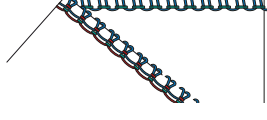
The 2-Thread Overlock is ideal for finishing a fabric edge on fine fabrics.

5.2 Stitch Chart

This manual includes a stitch overview with all necessary default settings for each stitch. These default values may vary depending on the used material.

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

No.	Stitch Name	Stitch Formation								
No. 1	4-Thread Overlock with Integrated Safety Seam		4	4	4	4	6	N	2.5	1
No. 2	3-Thread Super Stretch		5	4		4	6	N	2.5	1
No. 3	3-Thread Overlock Wide (LN)		4	—	4	4	6	N	2.5	1
No. 4	3-Thread Overlock Narrow (RN)		—	4.5	4	4	6	N	2.5	1
No. 5	3-Thread Flatlock Wide (LN)		0	—	5	8	5.5	N	2.5	1
No. 6	3-Thread Flatlock Narrow (RN)		—	0	6.5	8	6	N	2.5	1
No. 7	3-Thread Rolled Seam		—	4.5	5	4	6	R	1.5	1

No.	Stitch Name	Stitch Formation								
No. 8	3-Thread Rolled Hem		—	4.5	5	7	5	R	1.5	1
No. 9	2-Thread Wrapped Overlock Wide (LN)		3	—		3.5	6	N	2.5	1
No. 10	2-Thread Wrapped Overlock Narrow (RN)		—	5		4	6	N	2.5	1
No. 11	2-Thread Flatlock Wide (LN)		0.5	—		7	5.5	N	2.5	1
No. 12	2-Thread Flatlock Narrow (RN)		—	3		7.5	6	N	2.5	1
No. 13	2-Thread Rolled Hem		—	5		4.5	5.5	R	1.5	1
No. 14	2-Thread Overlock Wide (LN)		0.5	—		7	5.5	N	2.5	1
No. 15	2-Thread Overlock Narrow (RN)		—	3		7.5	6	N	2.5	1
No. 30	3-Thread Picotstitch		—	4.5	4	5.5	5.5	R	3	1

6 Sewing Settings

6.1 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

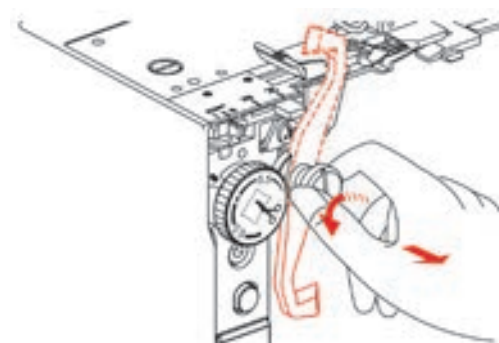
Missing Knife Cover Insert or Coverstitch Insert while Sewing

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)

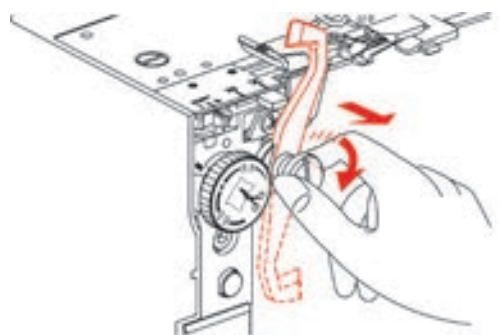
- > Open the threader cover.
- > Pull the knife away from the stitch plate as far as possible and then lower it forwards to the lock-in position.



- > 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.

6.2 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.

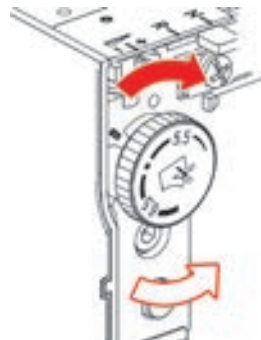
Setting the Cutting Width



[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 41)

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.

6.3 Upper Looper Converter Hooked in/Hooked out



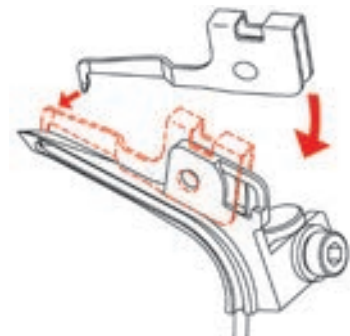
[Video](#)

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

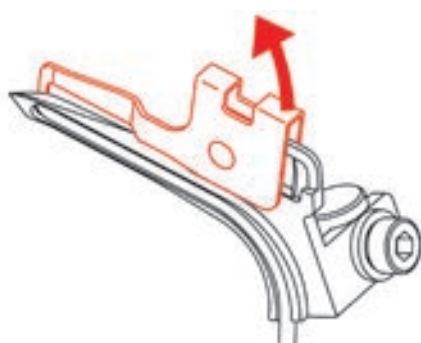
Prerequisite:

- 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.



6.4 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.



6.5 Rolled Hem Selection Lever «N/R»



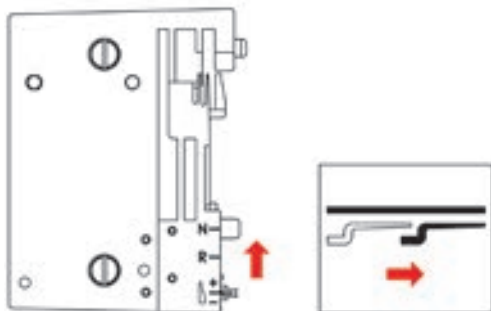
[Video](#)

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

Setting Overlocking «N»

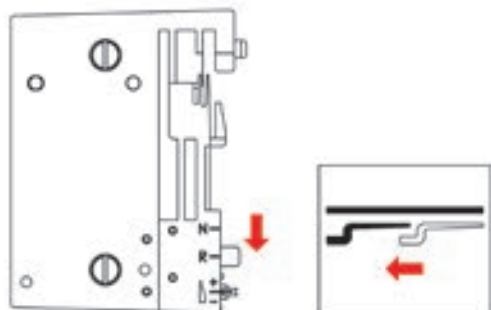
During overlocking, the upper and lower looper threads are laid around the stitch finger and this creates an even distance to the cut edge. If the thread quantity at the fabric edge is too much or too little, this thread quantity can be corrected by the mtc micro thread control. (see page 43)

- > 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.

6.6 Setting the mtc micro thread control



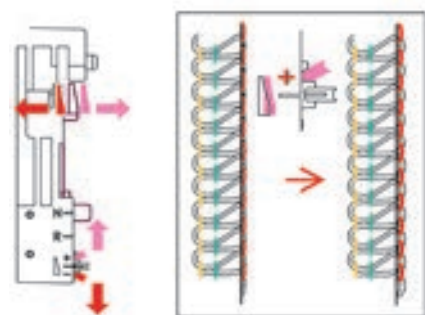
[Video](#)

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.

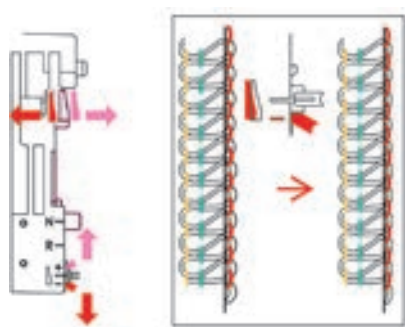
Prerequisite:

- 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.



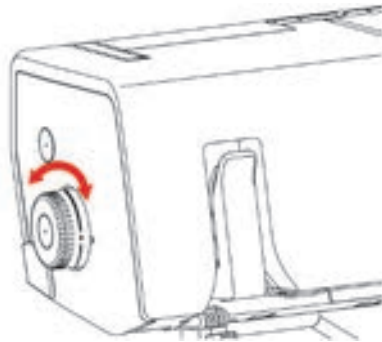
6.7 Setting the Presser Foot Pressure

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

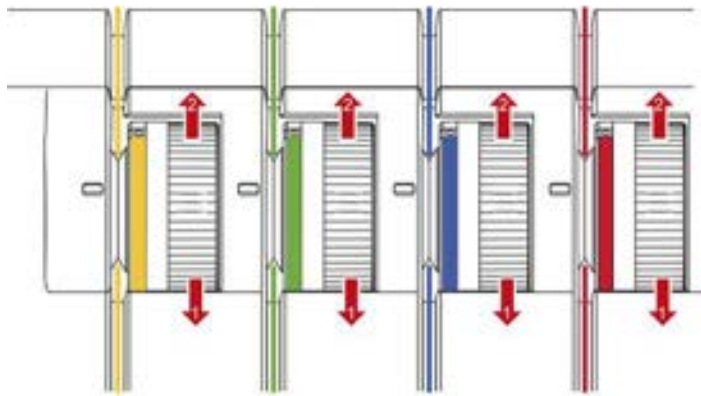
- > For light fabrics, reduce the presser foot pressure.
- > For heavy fabrics, increase the presser foot pressure.
- > Perform a sewing test to set the optimal presser foot pressure for your sewing project.
- > To increase the presser foot pressure, set the presser foot pressure wheel to a higher value.

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



6.8 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.

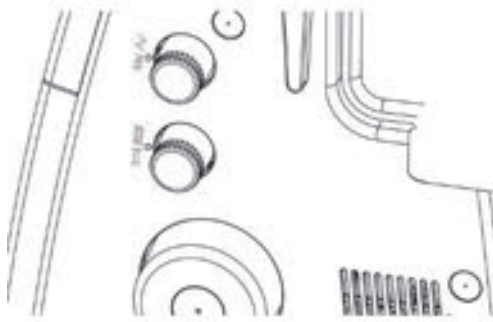
6.9 Adjusting the Differential Feed



Video

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.

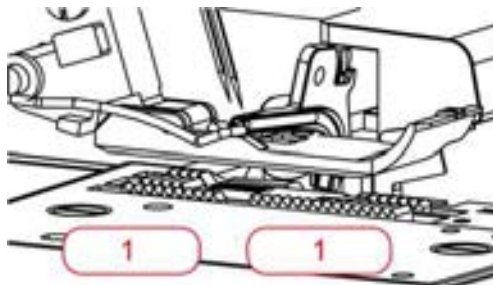
- > Adjust the feeding ratio of the two feed dogs by using the differential feed setting.



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

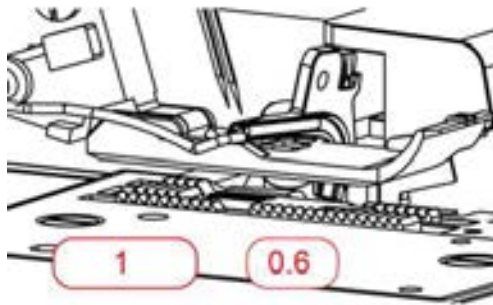
Default Value "1"

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.



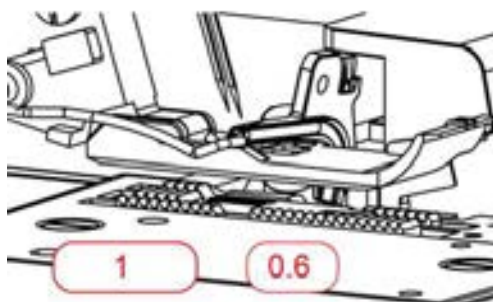
Gather to Fit

> To prevent waviness 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.

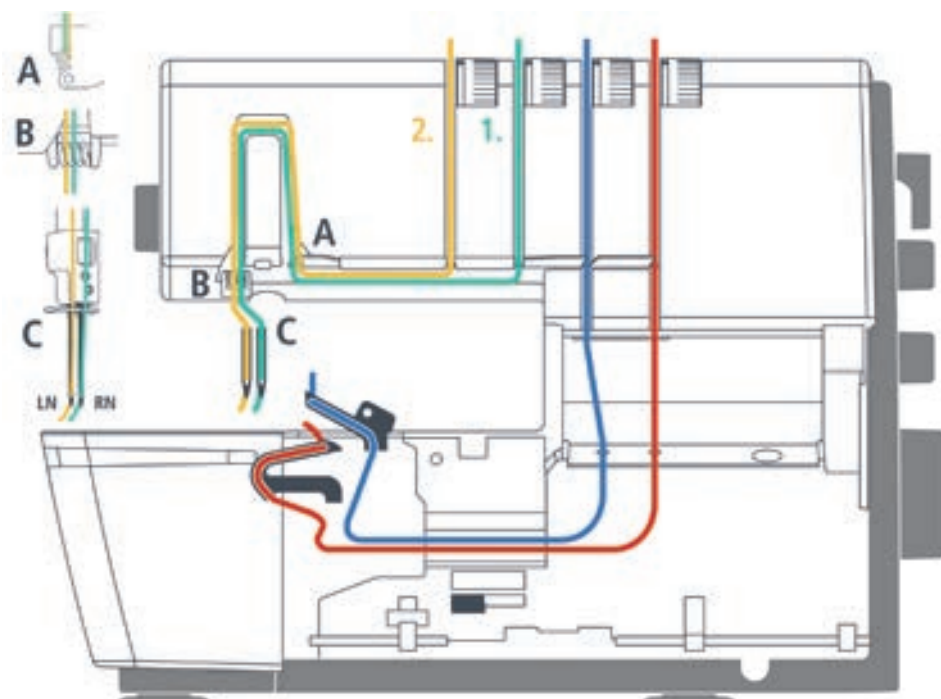


- > To prevent seam puckering, reduce the differential feed to a value between 0.6 and 1.



7 Threading

The threading sequence is important for the correct stitch formation.



7.1 Preparing for Threading

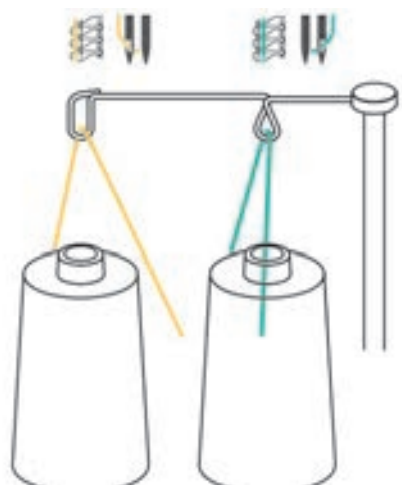
Before threading, make sure that the machine settings match with the required stitch.

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

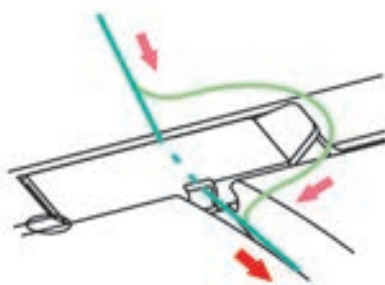
Prerequisite:

- 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.

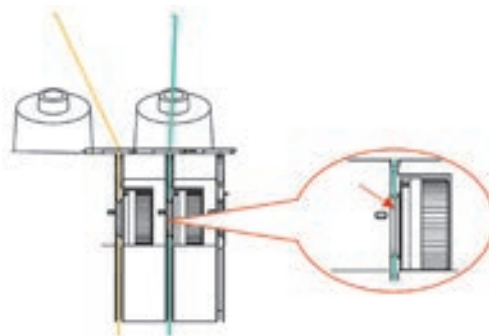
- > Place the thread cones on the respective spool pin.
- > Place the thread from the back through the thread guide.



- > 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 Right Needle Thread RN/green

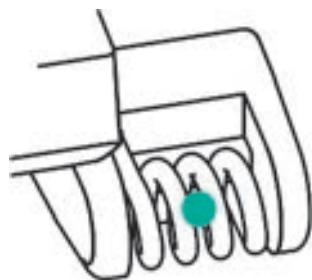
 The Right Needle Thread Path is marked green.

Prerequisite:

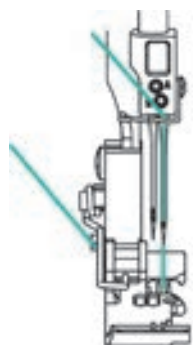
-
- > Pull the thread beneath the Thread Guide Plate to the left and up between the backmost opening of the Thread Deflection Finger.



- > 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:

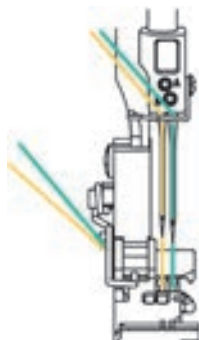
- The Right Needle Thread is threaded.
 - The «Threading preparation» has been performed.
- > Pull the thread beneath the Thread Guide Plate to the left and up through the center opening of the Thread Deflection Finger.



- > 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

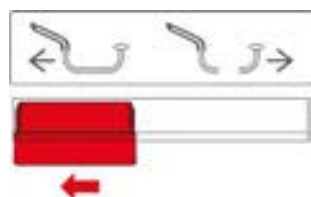
Coated or waxed threads may lose some of their coating in the air threader pipes. This results in permanent blocking of the pipes. A repair by the authorized bernette dealer is required.

Stitch information is listed in the stitch chart.

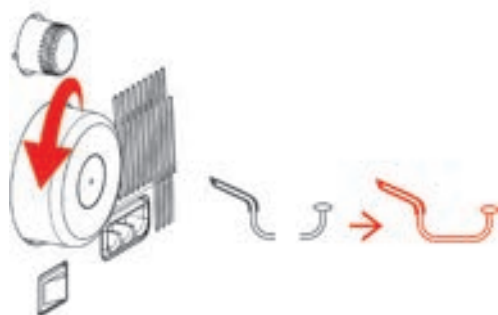
Threading the Looper Thread

Prerequisite:

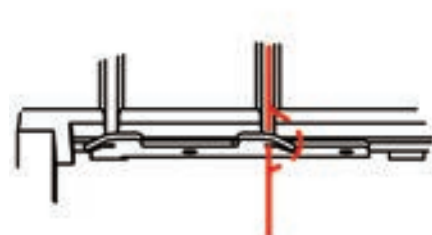
- Threading is prepared.
 - Threader cover is opened.
- > Set the air threader connector to the left position.



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

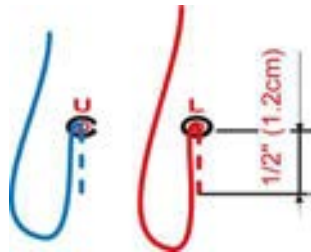


- > Feed the thread through the thread guide.

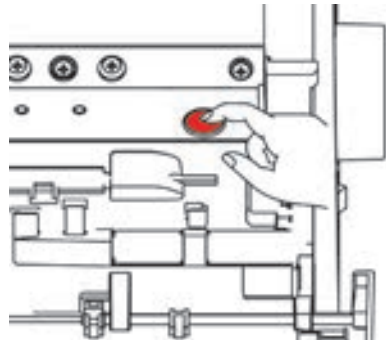


- > Pull off a thread reserve of approx. 56 cm so that the thread can be completely drawn through the air threader pipe.

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



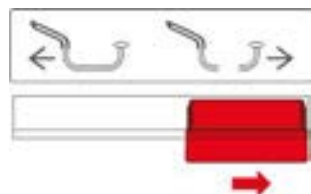
- > Press and hold the air threader button.



- 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/close the threader cover.
- > Move the air threader connector to the left.
- > 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](#)

The supplied Threading Wire can be used as a threading aid for the Looper Thread. The threading wire is a wear part and not designed as a permanent threading or cleaning aid.

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](#)

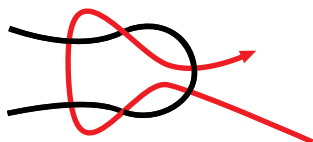
Tying on two thread ends is often used for changing a needle thread or looper thread. Keep the knotted area as little as possible to reduce friction in the thread path.

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.

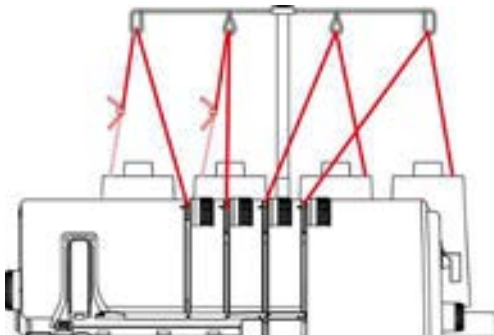


- > Hold one thread end of each colour and pull them apart.



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 56)



- > 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.



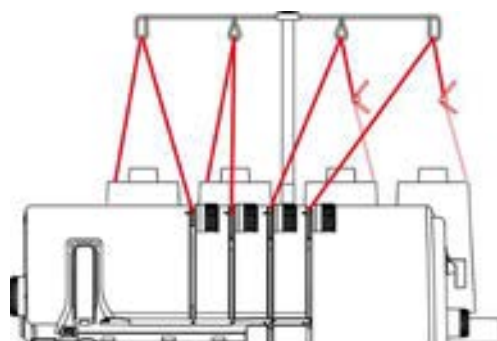
- > Remove the excess thread from the needle eye.
- > Thread the needle eye.
- > Place the thread under the presser foot to the left.

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



Video

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 79)
 - If no stitch is formed, the stitch setting has not been performed or has been performed incorrectly.

8.2 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.

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 overstitched.

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.



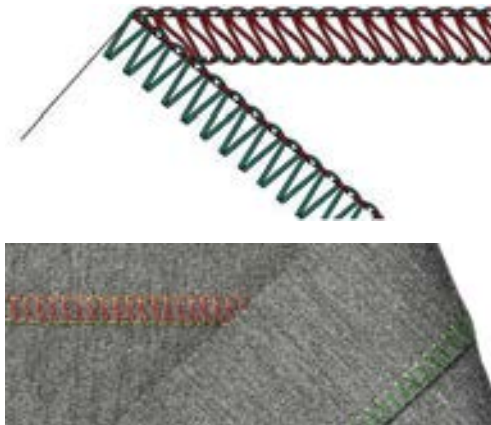
9.3 Flatlock

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.

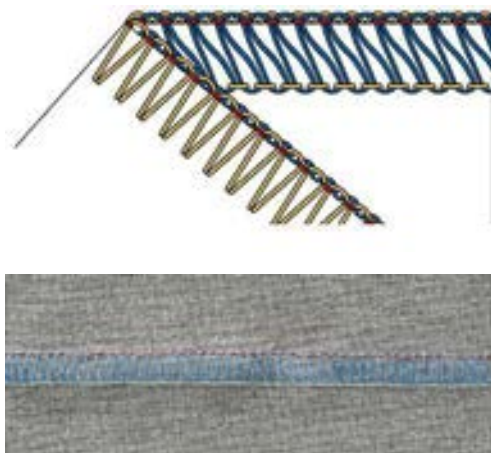
Flatlock Narrow

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.



9.4 Gathering a Seam

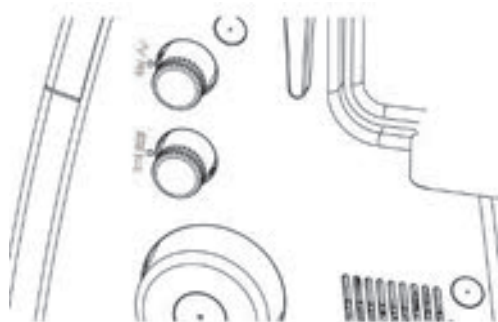
Ruffling is a gathering or puckering of a seam.

Increasing the differential feed



Video

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



Pulling the Needle Thread



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

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

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



9.5 Sew Outer Corners

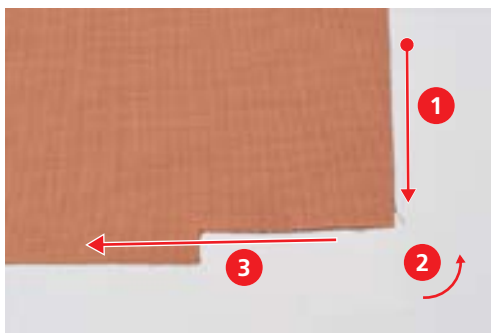
How to Sew over a Corner

- > 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 70)



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.



9.6 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.

9.7 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.

9.8 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.

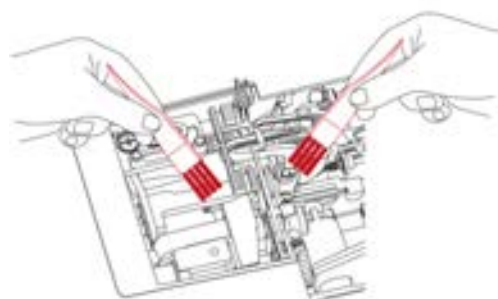
> Remove fabric scraps and thread remnants using a vacuum cleaner with soft tip.

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.

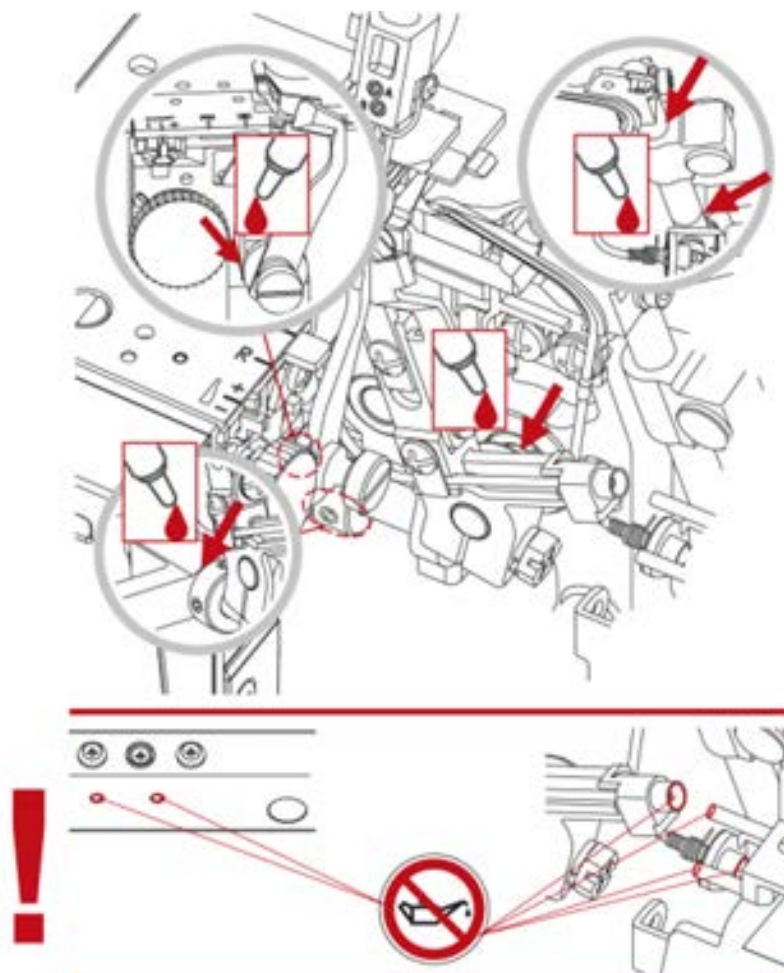
- > Remove dust and thread remnants from the suction feet with a damp cloth.

Oiling the looper area



[Video](#)

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



10.3 Troubleshooting

Fabric is not feeding properly	The stitch setting is not optimal.	> Elongate the stitch length. (see page 42) > Adjust the Differential Feed. (see page 45)
	The presser foot pressure is not optimal.	> Adjust the presser foot pressure. (see page 44)
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 26)
	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	> 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.	

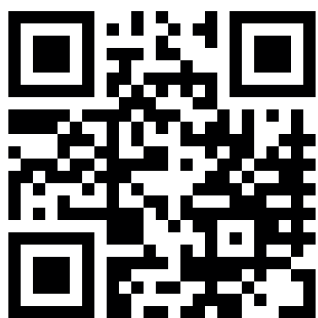
Irregular stitch	Thread is not correctly inserted in the thread pre-tension.	> Check the thread path.
	The thread tension is incorrect.	> Adjust the thread tension. (see page 45)
	Incorrect needle/thread combination.	> Use a needle with a suitable needle size.
	Thread threading is incorrect.	> Rethread 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 26)
	The air threader pipe is blocked.	> Clean Air Threader Pipes. (see page 78)
Unwanted seam puckering	The thread tension is incorrect.	> Adjust the thread tension. (see page 45)
	Defective needle.	> Replace the needle.
	The setting of the Differential Feed is not optimal.	> Set the Differential Feed to 0.7 – 1. (see page 45)
Fabric jam	The presser foot pressure too high.	> Reduce the presser foot pressure.
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.

Fault	Solution
Irregular Trimming	> Check the alignment of the Knives. > Replace one or both Knives.

Fault	Solution
Fabric jam	> Reduce the Presser Foot Pressure. > Check the setting of the Differential Feed. > Check for tangled or caught thread. > First baste thick layers of fabric with a conventional sewing machine before sewing with the Overlocker.
The fabric is not cut properly	> Set the cutting width to 9. > Remove lint and remnants from the knife.
Knife Defective	> Replace the knife.
Machine Not Running	> Connect machine to the power source and switch it on. > Close the hook cover.

10.4 Specifications

Term	Value	Unit
Number of Stitches	16	
Number of Loopers	2	
Number of Needles	1 – 2	
Needle System	ELx705	
Needle Size	80 – 100 (12 – 16)	
Differential Feed	0.6 – 2.0	
Maximum Fabric Thickness	5.3 (0.23)	mm (in)
Stitch Length	1.0 – 5.0 (0.03 – 0.17)	mm (in)
Cutting Width Left Overlock Needle LN	5 – 7 (0.19 – 0.35)	mm (in)
Cutting Width Right Overlock Needle RN	3 – 5 (0.11 – 0.27)	mm (in)
Minimum Sewing Speed	300	Stitches per Minute
Maximum Sewing Speed	1300	Stitches per Minute
Dimensions without Retractable Thread Guide	43 x 27 x 29 (16.92/10.62/11.41)	cm (in)
Dimensions with Slide-on Table/Cut-offs Bin	59 x 40 x 29 (23.22/15.78/11.41)	cm (in)
Weight of the machine	9.3 (20.46)	kg (lb)
Weight packaged	12.8 (28.2)	kg (lb)
Input Voltage (Energy Consumption)	120 (80) / 230 – 240 (75)	Volt (W)
Protection Class (Electrical Engineering)	II	
Date of Manufacture	Visible on the type plate	



www.bernette.com/b64AIRLOCK

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