USER MANUAL



Swiss Heritage
since 1893

BERNINA L 620

BERNINA
made to create

We take pride in providing you with the perfect sewing experience!



BERNINA has represented exceptional quality since 1893. As a traditional Swiss company, we use high quality materials to manufacture our products and have them extensively tested, ensuring high performance and a long life. Over the years, we have always remained true to our company philosophy - we are personally committed to offering our customers an exceptional sewing experience.

Every BERNINA is characterized by state-of-the-art technology paired with innovations in both hardware and software. This is because we truly want you to enjoy the creative process to the fullest - after all, creativity is turning your ideas into something that makes you and others happy.

With this in mind, I wish you many joyous moments with your BERNINA L 620.



Sincerely, yours
Hanspeter Ueltschi
Owner, BERNINA

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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 BERNINA 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 personal injury, the following instructions must be observed.

General Facts

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

Working Environment

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

Technical Condition

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

Accessories and Supplies

- Only use the accessories recommended by the manufacturer.
- Always use an original BERNINA Stitch Plate.
  An incorrect stitch plate can result in needle breakage.
- Use only straight needles of good quality. Bent or damaged needles can cause needle breakage.
- The machine is double-insulated.
  Only use original spare parts. See instructions for servicing of double-insulated products.

IMPORTANT SAFETY INSTRUCTIONS

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 BERNINA dealer.
- Only use this machine with the supplied foot control of type LV-1.
- Do not insert any objects into the openings of the machine.
- Do not place any objects on the foot control.
- While sewing, guide the fabric gently. Pulling and pushing the fabric can cause needle breakage.
- Keep fingers away from all moving parts. Special care is required in the area of the Needle and the Looper.
- 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

Safety Signs on the Machine

Sign	Purpose
	**CAUTION** Moving parts. To reduce the risk of injury, switch off the machine before maintenance work.

Availability of the Instruction Manual

The instruction manual is supplied with the machine.

Keep the instruction manual safe at a suitable place near the machine to have it at hand in case that you need to look up something.

If you pass the machine to a third party, always include the instruction manual.

The latest version of the instruction manual can be downloaded at bernina.com/L620-support.

Proper Use

Your BERNINA machine is conceived and designed for private household use. It is intended for sewing fabrics and other materials as 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 and the accessories shown in the images therefore do not always match the actual items included with your machine. The supplied accessory can vary depending on the country of delivery. Accessories mentioned or shown, which are not included in the scope of delivery, can be purchased as optional accessories from a BERNINA dealer. Further accessories can be found at bernina.com/L620.

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.

BERNINA Quality Control

All BERNINA machines are assembled with utmost care and are subjected to an extensive functionality test. The integrated stitch counter therefore indicates that the machine has already sewn stitches, which were performed exclusively for test purposes and quality control. The subsequent thorough cleaning does not exclude the possibility that thread remnants may still be found in the machine.

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 manufacturing technology.

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 electrical waste and electronic equipment or to a collection point for the reuse of the machine. Information on 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.

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.

1 Welcome to the World of BERNINA

With your BERNINA L 620 you can complete several steps in one operation. Sewing and hemming in one, faster than with a conventional sewing machine. Both fine silk or satin fabrics as well as very stretchy materials can be easily processed with this machine. Comfortable sewing in Swiss Quality.

Further Information

In addition to your BERNINA L 620, further information products are also enclosed.

The current version of your manual as well as further information about the machine and the accessories can be found on our website

bernina.com

Made to create this is the slogan of BERNINA. Not only do our machines support you as you make your ideas a reality, we offer additional suggestions and instructions for projects and the opportunity to exchange ideas with other sewing enthusiasts. I wish you lots of pleasure.

BERNINA YouTube Channel

On YouTube we offer a wide range of how-to videos and support concerning the most important functions of our machines. You can also find detailed explanations of presser feet and accessories that make your projects successful.

youtube.com/BerninaInternational

Available in English and German.

"inspiration" – the Creative Sewing Magazine and Online Store with Sewing Patterns

Are you looking for ideas, sewing patterns and instructions for great sewing projects? If so, the BERNINA magazine “inspiration” is just the right thing for you. Three times a year, “inspiration” offers you great sewing and embroidery ideas. From seasonal fashion trends to trendy accessories and practical tips to original decorations for your home or cute sewing ideas for children.

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

In our online shop you can purchase "inspiration" as an e-magazine or as a print version, either as individual issues or as a subscription. Furthermore, there are many individual downloadable patterns to discover! Why not take a look at:

inspiration.bernina.com

And follow us on Instagram (@inspiration.sewing.magazine).

BERNINA Blog

Sophisticated instructions, free sewing patterns and embroidery designs as well as many new ideas can be found weekly on our BERNINA Blog. Our experts give useful tips and step by step instructions to achieve your desired results. In the community you can upload your own projects and exchange experiences and ideas with other sewing and embroidering enthusiasts.

bernina.com/blog

Available in English, German, Dutch and French.

BERNINA Social Media

Follow on social networks to learn more about events, exciting projects and tips and tricks all about sewing, quilting and embroidering. We will keep you informed and are looking forward to sharing highlights from the world of BERNINA.

bernina.com/social-media

2 Introduction

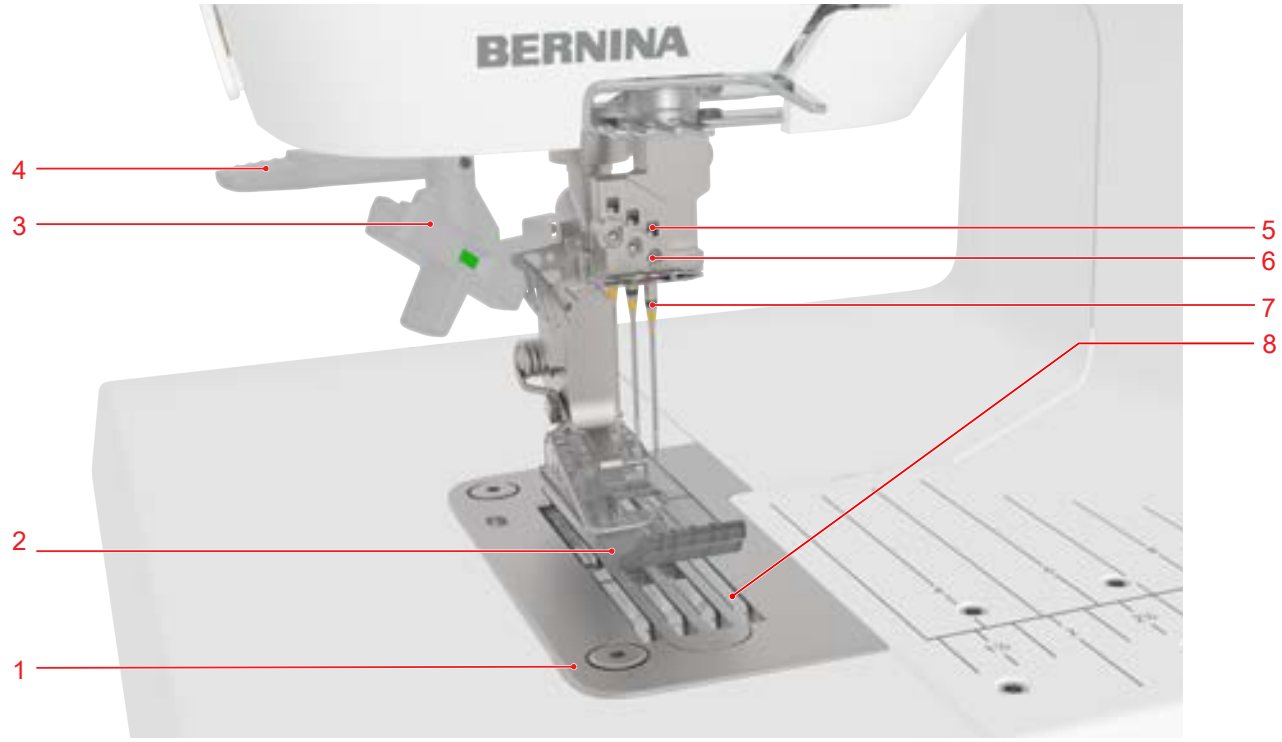
2.1 Machine

Front



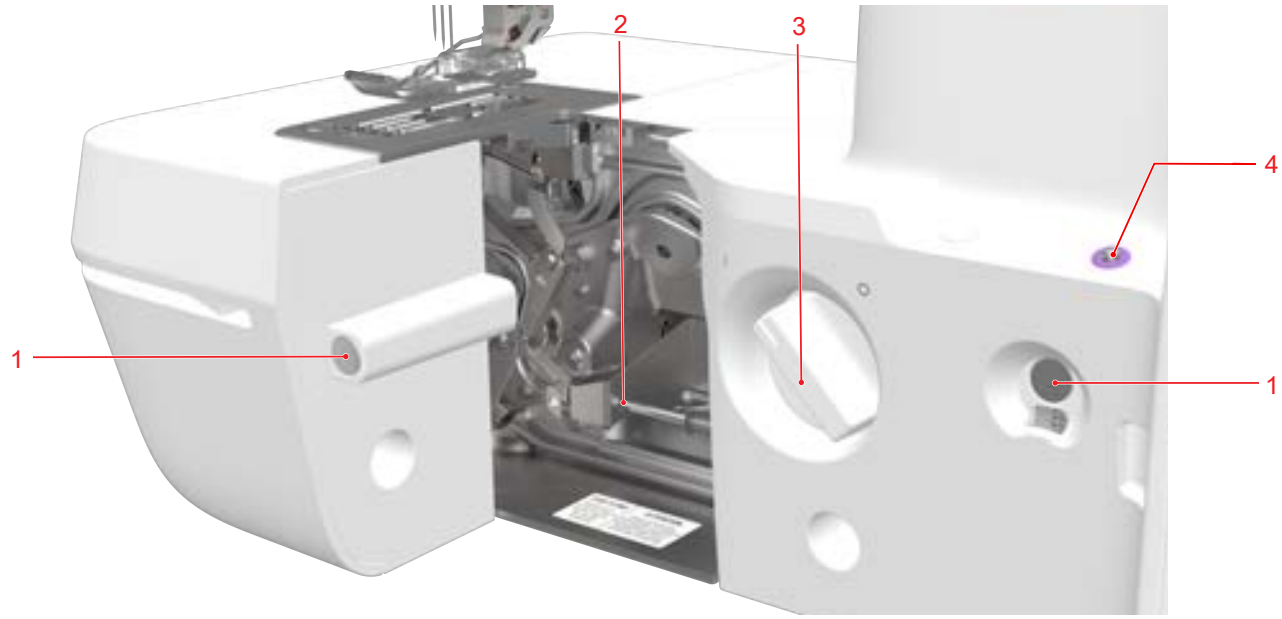
1 Guide Groove for Slide-on Table **2** Needle Area **3** Thread Cutter **4** Presser Foot Pressure Control **5** Thread Tension Control **6** Looper Cover

Needle Area



1 Stitch Plate **2** Presser Foot **3** Needle Selector **4** Needle Threader Lever **5** Needle Check Window **6** Needle Screws **7** Needles **8** Feed Dogs

Looper Area



1 Magnet for Looper Cover **2** Air Threader Pipe CL **3** Air Threader Switch **4** Air Threader Nozzle CL

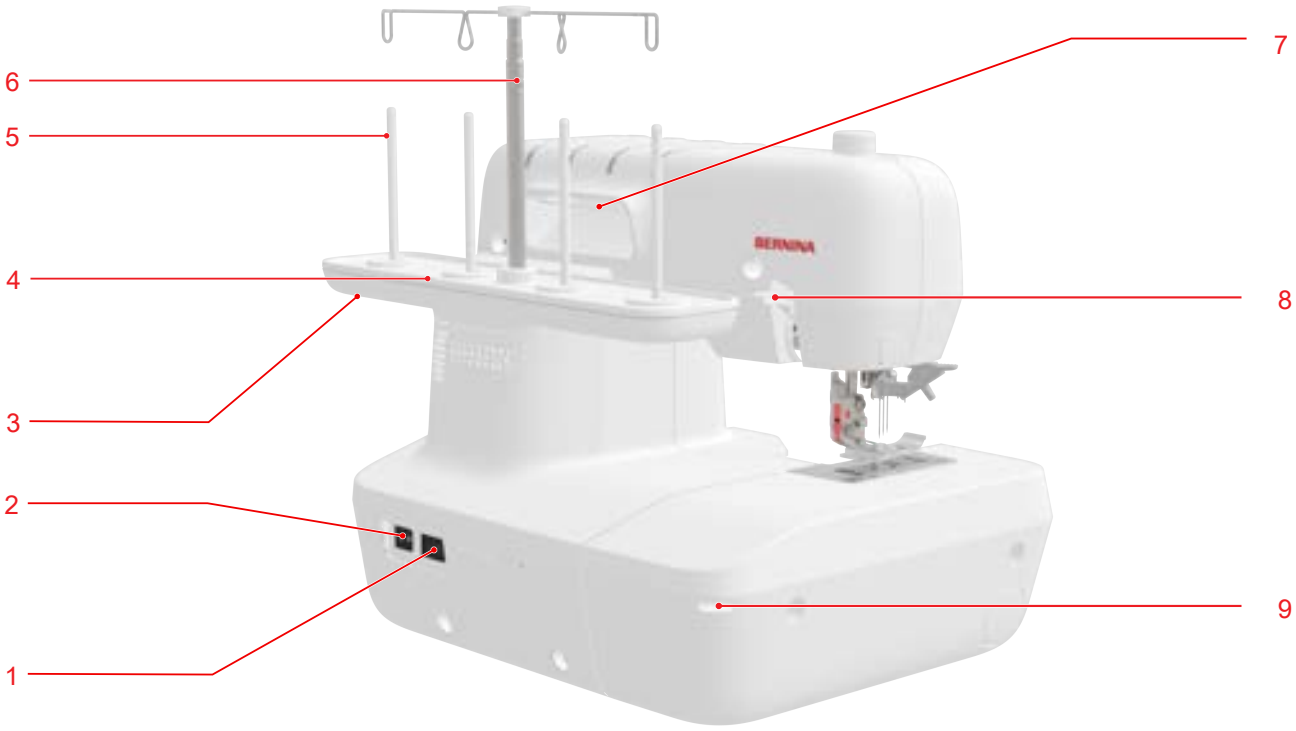
2 Introduction

Handwheel Side



1 Knee Lifter Connection **2** Sewing Light Control **3** Speed Control **4** Threader Light **5** Stitch Length Control
6 Differential Feed Control **7** Handwheel **8** Air Vents **9** Foot Control Connection

Back



1 Power Connection **2** Power Switch **3** Magnetic Holder for Accessories **4** Spool Holder **5** Spool Pin
6 Retractable Thread Guide **7** Carrying Handle **8** Presser Foot Lifter Lever **9** Slide-on Table Mount

2.2 Accessories

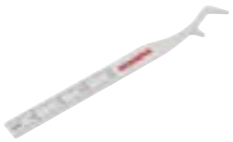
Further information and application notes on the supplied and optional accessories can be found under:
bernina.com/L620

Accessories Supplied

Accessories	Purpose
Dust Cover 	To protect the machine from dust and contamination.
Power Cable 	To connect the machine with the power supply.
Foot Control 	To start and stop the machine. To control the sewing speed.
Thread Set for Overlocker 	Test Sewing

Accessories	Purpose
Looper Cover 	To cover the looper area.
Coverstitch Insert Extension	Interchangeable insert of the looper cover. To increase the work surface when using the slide-on table.
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.
Clear Cover/Chain-stitch Foot 	For precise coverstitches and chainstitches, thanks to optimal view onto the stitching area.
Accessories Box 	For storing the included accessories.

Accessories in the Accessories Box

Accessories	Purpose
CS Lock Tool 	To pull the needle threads and to secure the stitches.
4 x Spool Stabilizer 	To stabilize large spools. To avoid vibrations from the spool.
4 x Spool Net 	To regulate threads that unwind too quickly from the spool, e.g. nylon, rayon, silk or metallics.
4 x Spool Cap D43 	To secure the spool. To support the regular unwinding of the thread from the spool.
Screwdriver, Torx T10 	To loosen and tighten the screws of the stitch plate or the accessories.

Accessories	Purpose
Needle Set ELx705 CF 	For universal use.
Screwdriver, hex 1.5 mm 	To loosen or tighten the needle screws.
Brush 	To clean the feed dog and the bobbin area.
BERNINA Tweezers 	For gripping the thread in tight positions.
Needle Threader/ Inserter 	To manually thread, insert and remove the needle.

3.1 Working Area

A stable surface with a secure stand is a good prerequisite for optimal sewing results. Ergonomics at the sewing table are important for protecting the muscles and joints in your back, shoulders, arms, and hands. Optimal ergonomics involves adjusting the table height and posture to complement each other. Avoid remaining in the same position for long periods.

Ergonomic Sitting Position

Ergonomics at the sewing table are important for protecting the muscles and joints in your back, shoulders, arms, and hands. Choose a sitting position in which your fingertips touch the stitch plate with your arms bent at 90°.

3.2 Connecting the Machine and Switching it On

1. Insert the cable into the machine.



2. Insert the power plug of the power cable into the socket.
3. Switch on the machine using the power switch.

⇨ The machine and the sewing light are switched on.

3.3 Preparing the Machine for Sewing

For your sewing project, you must prepare and set the machine accordingly.

Prerequisite:

- The machine is switched on. [▸ see page 14]
- The foot control is connected. [▸ see page 16]
- The presser foot is raised. [▸ see page 17]

1. Match the needle with the fabric. [▸ see page 19]
2. Match the thread with the needle. [▸ see page 19]
3. Select the stitch based on the application and fabric. [see additional sheet Quick Reference]
4. Set up the machine based on the stitch table. [▸ see page 25]
5. Thread the needles. [▸ see page 21]
6. Thread the loopers. [▸ see page 22]
7. Close the looper cover. [▸ see page 16]

3.4 Slide-on Table

The slide-on table allows you to enlarge the sewing area. This makes it easier to position and work on your sewing project.

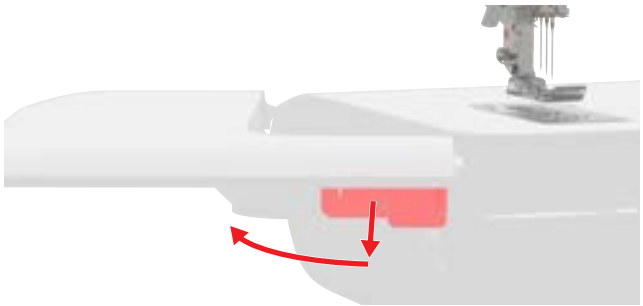
Attaching the Slide-on Table

► To attach the slide-on table, hook it into the designated mount on the rear of the machine and swing it horizontally to the right into the guide rail until it audibly clicks into place.



Removing the Slide-on Table

1. Press the release lever.
2. Swing the slide-on table horizontally to the left and unhook it at the rear.

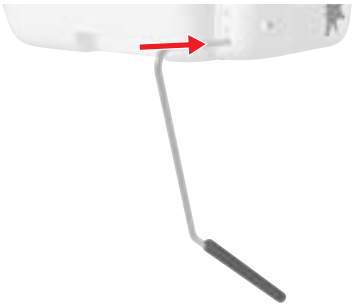


3.5 Freehand System (FHS)

The Freehand System (FHS) facilitates positioning the fabric under the presser foot. This makes it very easy to raise the presser foot and lower the feed dogs at the same time.

Attaching the Knee Lifter

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



TIP

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

Removing the Knee Lifter

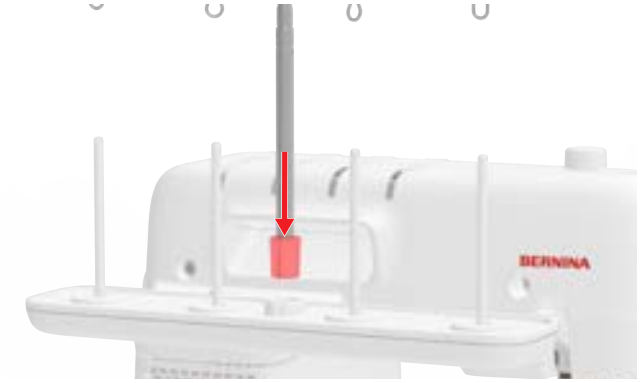
► Pull the knee lifter in resting position towards you without any lateral movement.

3.6 Retractable Thread Guide

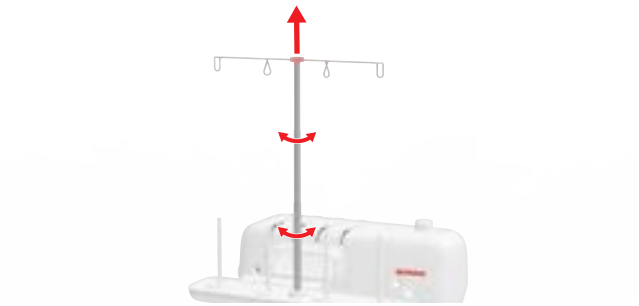
The thread guide enables even thread feed from the thread cone/spool.

Preparing the Thread Guide

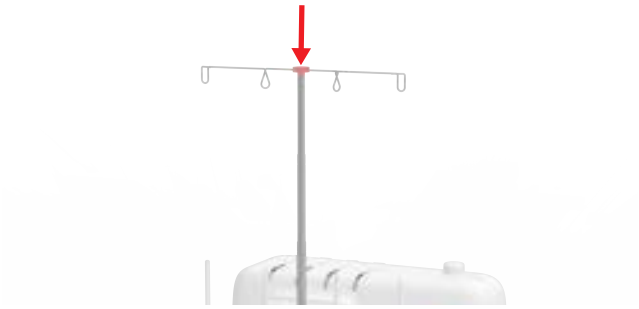
1. Insert the thread guide into the designated opening on the spool pin with soft pressure.



2. Pull the thread guide up as far as it will go. While doing so, rotate the rod slightly in both directions so that the locking cams engage.



► To lower the thread guide, push it down with a little pressure.



3.7 Spool Holder

The desired thread cones/spools can be placed on the spool pins of the spool holder according to the thread paths.



TIP

Use spool stabilizers or spool caps to stabilize or secure the thread cones on the spool pin. Spool nets covering decorative thread spools ensure even thread feeding.

3.8 Foot Control

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

Connect the Foot Control

1. Unroll the foot control cable to the desired length and insert the plug of the cable into the foot control socket of the machine.



2. Place the foot control on the floor under the sewing table.

Press the Foot Control

1. To start or stop sewing, as well as to adjust the sewing speed, press the foot control with more or less pressure.
2. To start or stop the air threading process, press the foot control.
3. To raise or lower the needles, perform a Back-kick (heel pressure) on the foot control.

TIP

You can set the maximum sewing speed using the speed control.

3.9 Handwheel

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



Turning the handwheel enables:

- Slow, precise placement of the needle
- Looper movement
- Connetcting the air threader pipe

3.10 Looper Cover

The looper cover prevents injuries caused by moving components or protect sensitive elements from damage. The threading diagram is located on the inside of the looper cover.

The 2-piece looper cover is suitable for sewing with or without a slide-on table. You can choose between two inserts of different lengths depending on the application.

- Looper Cover Base
- Coverstitch Insert
- Coverstitch Insert Extension

Removing the Looper Cover

► Pull on the recessed grip of the looper cover so that the magnets separate from each other.



Attaching the Looper Cover

► Push the looper cover towards the machine until the magnets hold the looper cover in place.

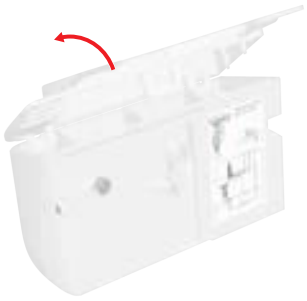


Changing the Coverstitch Insert

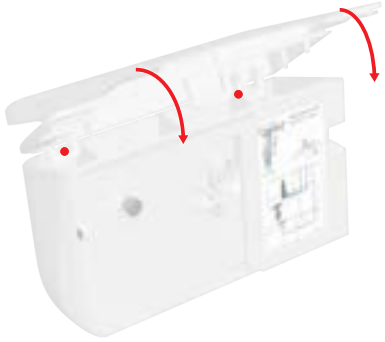
1. To unlock the coverstitch insert, press the snap lock on the inside of the looper cover base.



2. Hold the coverstitch insert and swing it up towards the outer edge.

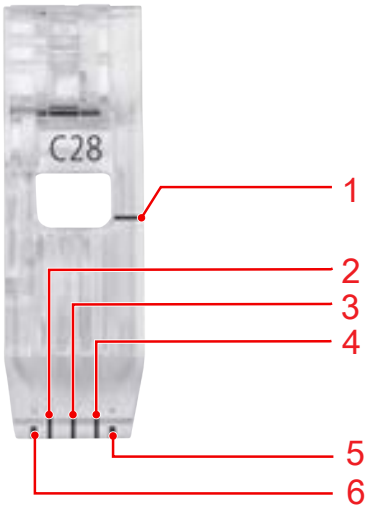


3. Attach the coverstitch insert extension to the outer edge and press it down until it audibly clicks into place.



3.11 Presser Foot

The machine is equipped with a standard presser foot that can be used for all stitches. The markings at the tip help you align the fabric precisely with the needle.



1 Position of the Needles **2** Left Needle Position (LC) **3** Center Needle Position (CC) **4** Right Needle Position (RC) **5** Needle Window, 2 mm to RC **6** Needle Window, 2 mm to LC

Raising/Lowering the Presser Foot

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

1. 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.



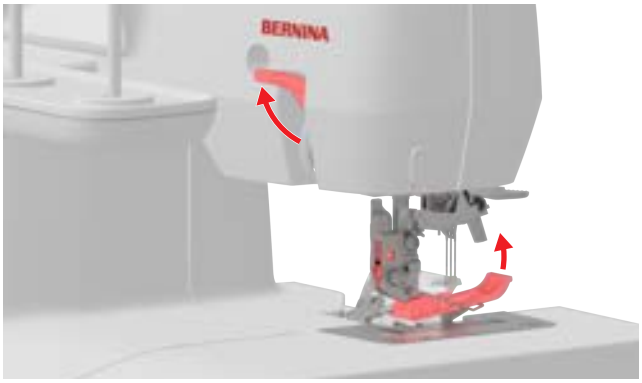
2. To lower the presser foot, push the presser foot lifter lever down.
   ⇨ The machine is ready for sewing.
   ⇨ The thread tension is active.



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 and Feed Dog by Knee Lifter

The knee lifter raises the presser foot and lowers the feed dog at the same time. This allows you to place your sewing project precisely under the presser foot with both hands without resistance.

Prerequisite:

- The knee lifter is attached.

1. Push the knee lifter to the right and hold it there with your knee.
   ⇨ The presser foot is raised and the feed dog is lowered at the same time.



2. Release the pressure on the knee lifter.
   ⇨ The presser foot is lowered and the feed dog is raised at the same time.
3. To lower the raised presser foot, press the knee lifter all the way to the right and release.

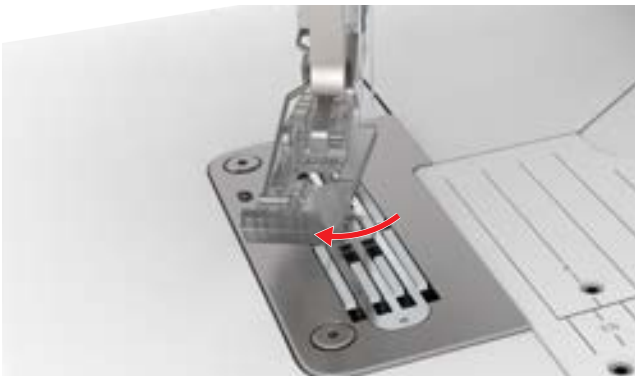
Swinging out the Presser Foot

Swinging the presser foot out provides additional space in the needle area, e.g., when changing needles or threading the needles.

Prerequisite:

- The needles are at top position. [▸ see page 20]
- The presser foot is raised.

► To swing the presser foot out, push the tip of the presser foot to the left and swing it out.



► To set the presser foot in the sewing position, lower the lever of the presser foot lifter or swing the presser foot back sideways to the right.

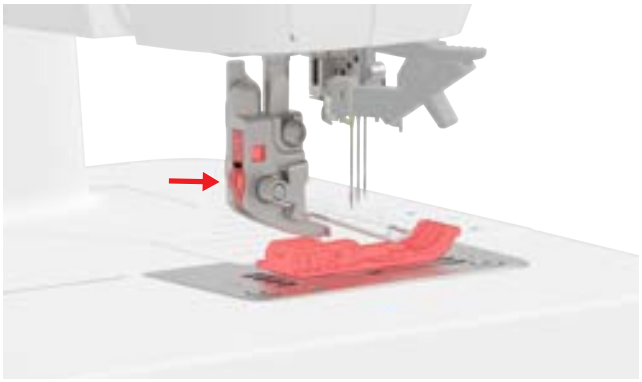
Removing the Presser Foot Sole

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 at top position.
- The presser foot is raised.

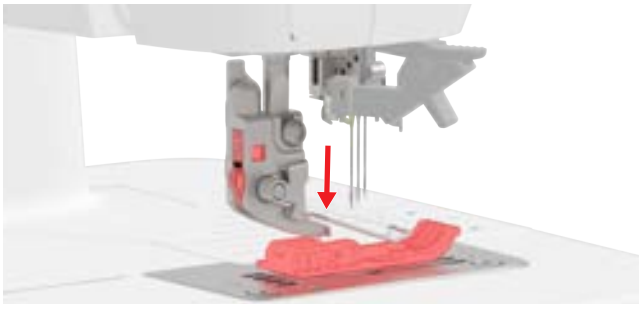
1. Press the release button on the rear side of the presser foot shaft.
   ⇨ The presser foot sole is disengaged.



2. Lift the presser foot spring slightly and remove the presser foot.

Mounting the Presser Foot Sole

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



3.12 Needle

Use the needle system ELx 705 for your machine. The needles influence your sewing result, depending on their shape and size.

- Needle size 80: Medium weight fabric
- Needle size 90: Heavy fabrics
- Needle sizes < 80: Light fabrics

Detailed information on needles and their applications can be found in the BERNINA Needle Brochure.

TIP

Needles become worn over time. Change the needle regularly, because only a needle in perfect condition will produce a neat stitch.



Correct Needle/Thread Combination

The thread can be guided precisely into the long groove and through the eye of the needle.



Wrong Needle/Thread Combination

The thread can be fed through the long groove and the eye of the needle with too much slack.

The thread may break or lead to skipped stitches.

► Select a smaller needle size.



Wrong Needle/Thread Combination

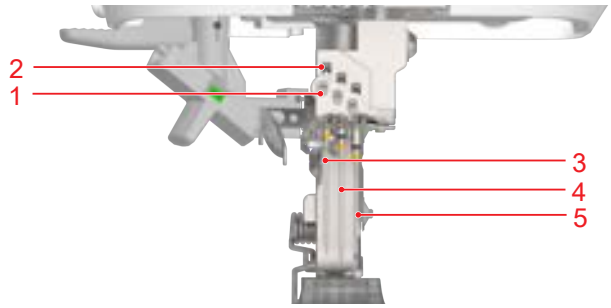
The thread rubs against the edges in the long groove and is difficult or impossible to feed through the eye of the needle.

This can result in the thread breaking and sticking in the needle.

► Select a larger needle size.

Needle holder

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



1 Needle Screws **2** Needle Check Window **3** Left Coverstitch Needle (LC) **4** Center Coverstitch Needle (CC) **5** Right Coverstitch Needle (RC)

Raising/Lowering the Needles

► To move the needles to the top or bottom position, perform a Back-kick. [▸ see page 16]

Changing the Needle

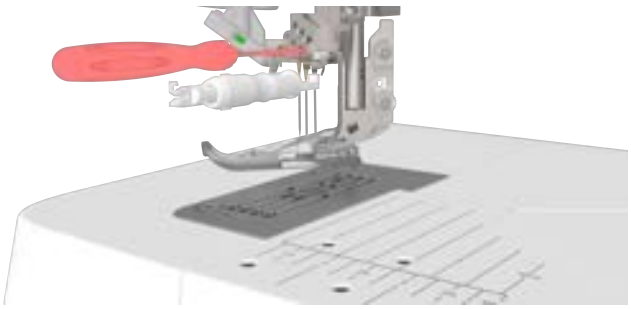
TIP

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

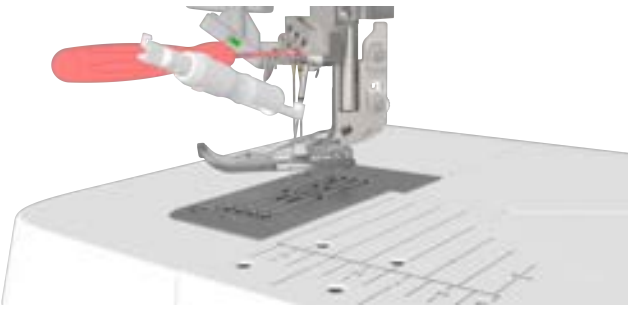
Prerequisite:

- The needles are at top position.
- The presser foot is raised and swung out.

1. Guide the needle inserter over the needle from below and loosen the corresponding needle holder screw.



2. Pull the needle downwards to remove.
3. Insert the new needle with the flat side to the back into the needle inserter.



4. **Important:** Push the needle into the corresponding needle holder opening as far as it will go and check the position in the needle window.
5. Carefully tighten the needle fixing screw, making sure not to overtighten it.

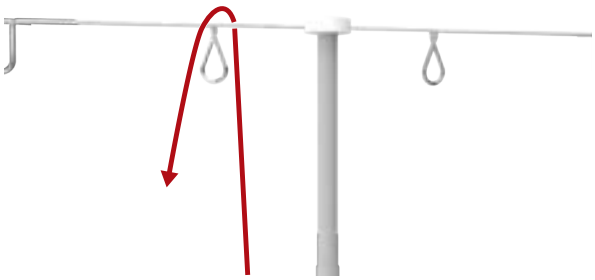
3.13 Threading

Preparing for Threading

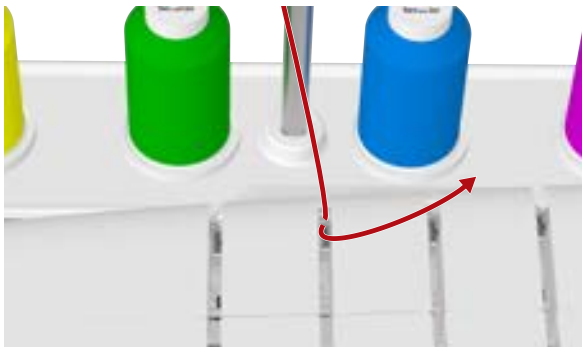
Prerequisite:

- The needles are at top position. [▸ see page 16]
- The presser foot is raised and swung out. [▸ see page 17] [▸ see page 18]
- The retractable thread guide is fully retracted. [▸ see page 15]
- The thread cones/spools are attached. [▸ see page 15]

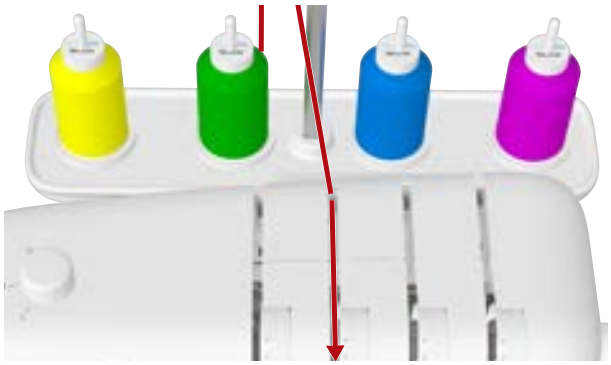
1. Pass the thread from the back through the corresponding thread guide and place it to the front.



2. Tighten the thread and use both hands to engage it in the thread pre-tension.



3. Guide the thread along the thread channel between the thread tension discs towards the front.



Needle Thread

The needle thread interlaces with the looper thread to form a stitch and is visible on the top of the fabric as a straight stitch. At least one needle thread must be threaded so that stitches can be formed.

Threading the Needle Thread

Prerequisite:

- Threading preparation has been performed. [▶ see page 20]
- The needle for the required thread path is inserted.

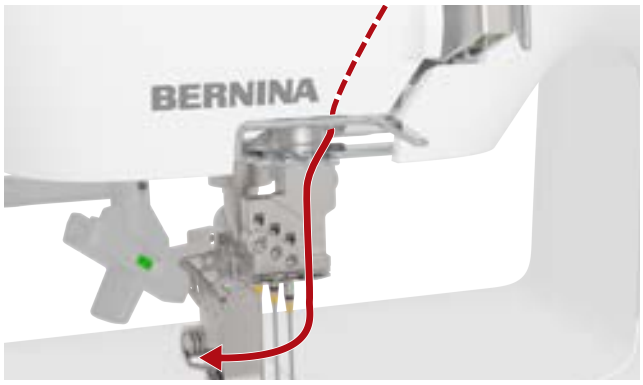
1. Guide the thread around the thread deflection of the thread take-up lever cover and pull it upwards.



2. Guide the thread through the corresponding guide slots of the thread take-up lever cover and guide it downwards.



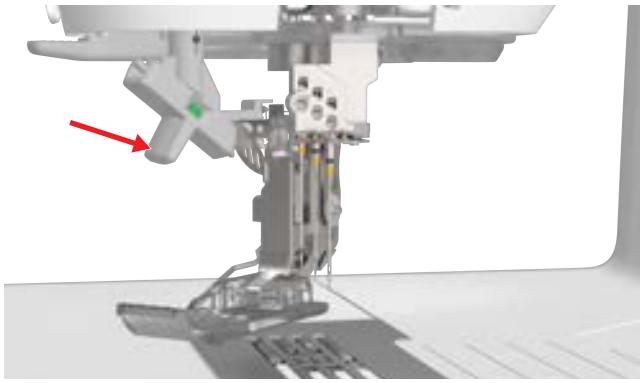
3. Insert the thread through the thread guide above the needle holder and hook it into the thread clamp on the needle holder.



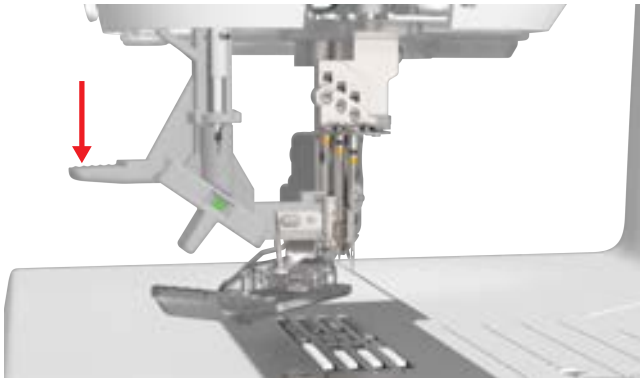
4. Thread the needle thread.

Threading the Needle Thread

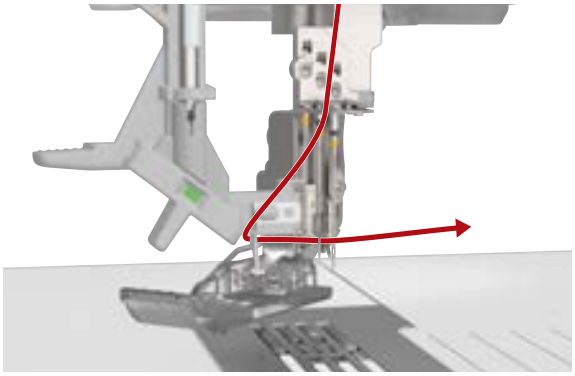
1. Slide the Needle Selector on the threader head sideways towards the color of the threading path.



2. Press the needle threader lever all the way down and keep it pressed.
   ⇨ The thread hook pushes through the preset needle eye of the thread path.



3. Pull the thread around the thread deflection counterclockwise and through the guide slots at the threader head to the back.
   ⇨ The thread is caught by the thread hook.



4. Release the pressure from the needle threader lever. While doing so, hold the end of the thread lightly.
   ⇨ The thread is pulled through the needle eye by the backward movement of the threader head and forms a thread loop behind the needle.
5. Pull the thread loop to the back out of the eye of the needle.
6. Place the thread above the presser foot to the back left.
7. Set sewing settings according to the stitch chart. [▸ see page 25]

Looper Thread

You can also use bulky, decorative and ornamental thread as the looper thread. Waxed or coated threads are not recommended to be used as looper threads, as they contaminate the pipe and impede air threading.

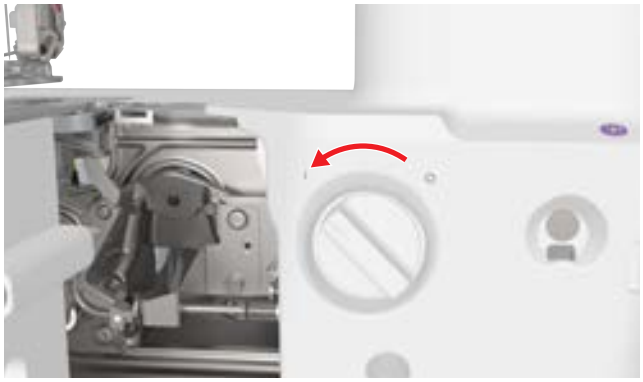
The looper thread interlaces with the needle thread to form stitches and is visible as a loop on the wrong side of the fabric.

Threading the Looper Thread

Prerequisite:

- Threading preparation has been performed. [▸ see page 20]
- The looper cover has been removed.

1. Turn the **Air Threader Switch** completely to position **I**.



   ⇨ The air threader pipes connect.
   ⇨ The threader light is on.
2. Pull a thread allowance of approx. 30 cm so that the thread can be pulled completely through the air threader pipe.
3. Press the foot control and hold the thread end above the respective air threader nozzle.



   ⇨ The looper thread is pulled through the air threader pipe and exits at the tip of the looper.
4. Release the foot control as soon as the looper thread emerges out of the looper eye.
5. Cut the looper thread back to approx. 10 cm after the looper tip and leave it hanging in the looper area.
6. Turn the**Air Threader Switch** completely to position **0**.
7. Attach the looper cover.
8. Set sewing settings according to the stitch chart. [▸ see page 25]

3.14 Sewing Settings

Dimming the Sewing Light and Turning it Off/On

The sewing light turns on when the machine is switched on. You can dim the light intensity or turn the sewing light off or on again.



1 Sewing Light Control

- ► To dim the sewing light, press the **Sewing Light Control** and keep it pressed until the desired light intensity is reached.
- ► Push the **Sewing Light Control** again to switch the sewing light on or off.

Programming the Foot Control

- ► Press and hold the Back-kick on the foot control and program the needle stop position from top to bottom or vice versa.
  - ⇨ A short beep confirms that the new needle stop position is activated.

When the machine is restarted, the needle stop position is at the top position.

Default Value

4 M

The default values for settings are marked with a gray dot.

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

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 LC **2** Thread Tension Control CC **3** Thread Tension Control RC **4** Thread Tension Control CL

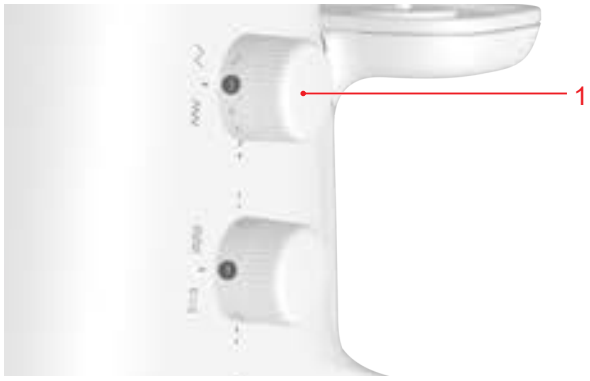
The recommended setting can be found in the stitch chart. [► see page 25]

TIP

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

Stitch Length

You can use the **Stitch Length Control** to elongate or shorten the stitch. The effective stitch length may vary depending on the material use.



1 Stitch Length Control

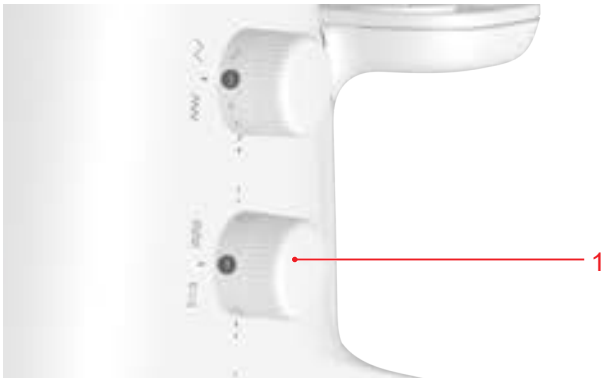
The recommended setting can be found in the stitch chart. [► see page 25]

TIP

For decorative seams, you can change the stitch length as desired while sewing.

Differential Feed

Using the **Differential Feed Control** prevents unwanted puckering or stretching, especially. With firmer fabrics, the result of the differential feed is less apparent.



1 Differential Feed Control

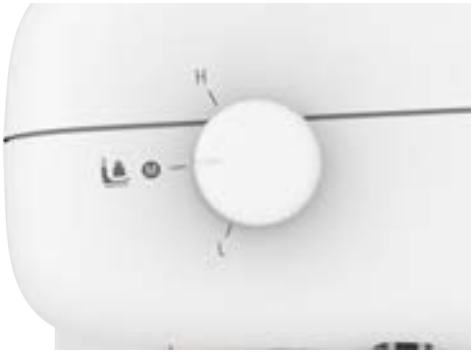
Value	Fabric	Result
2	Fine, soft fabrics	Ruffling, gathering
1.5	Jersey, sweatshirt, knits	Slight ruffling, preventing seam waving
1	Woven fabric	
0.7	Fine nylon tricots, densely woven fabric, lining, satin	Stretching, preventing seam puckering

TIP

For decorative seams, you can create additional creative effects, such as deliberate gathering or stretching, with the help of Differential Feed.

Presser Foot Pressure

The **Presser Foot Pressure Control** allows you to change the pressure of the presser foot on the fabric, e.g., when working with light or very heavy fabrics. The presser foot pressure affects the fabric feed and is recommended at the default setting for medium-weight fabrics.



- L: Low (light fabrics)
- M: Default Value
- H: High (heavy fabrics)

TIP

With the lowered presser foot, it is easier to adjust the presser foot pressure.

4 Stitch Setting

The stitch settings are individual for each stitch. The default setting for your stitch can be found in the stitch chart. The setting values specified specified are for medium-weight fabrics and may vary for other fabric qualities.

4.1 Setting the Stitch

Prerequisite:

- The stitch is selected according to the fabric and the application.

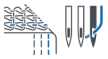
1. Thread the needle thread. [▶ see page 21]
2. Thread the looper thread. [▶ see page 22]
3. Adjust the thread tension of the needle thread. [▶ see page 23]
4. Adjust the thread tension of the looper thread. [▶ see page 23]
5. Set the stitch length. [▶ see page 23]
6. **and set to default value.** [▶ see page 23]



LC
Left Coverstitch Needle Thread



CC
Center Coverstitch Needle Thread



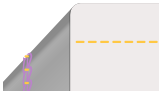
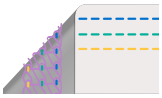
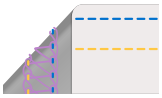
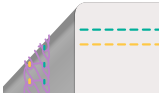
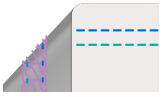
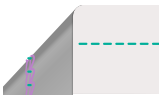
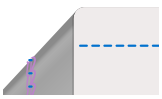
RC
Right Coverstitch Needle Thread



CL
Chain Looper Thread



SL
Stitch Length

Stitch	Name		LC	CC	RC	CL	SL
No. 16	2-Thread Chainstitch (RC)		–	–	4	4	3
No. 21	4-Thread Coverstitch		4	4	4	4	3
No. 22	3-Thread Coverstitch Wide (LC-RC)		4	–	4	4	3
No. 23	3-Thread Coverstitch Narrow (LC-CC)		4	4	–	4	3
No. 24	3-Thread Coverstitch Narrow (CC-RC)		–	4	4	4	3
No. 32	2-Thread Chainstitch (CC)		–	4	–	4	3
No. 33	2-Thread Chainstitch (LC)		4	–	–	4	3

5 Stitch Optimization

To obtain the best possible stitch setting, a sewing test should be sewn on a spare piece of the fabric used for your project. The setting values of the stitches represent recommendations that work for most standard applications. Stitch optimization can be performed at any time after the sewing test.

5.1 Perfoming a Sewing Test for a Coverstitch

Prerequisite:

- The machine is set up according to the fabric and the application.

1. Place the fabric under the presser foot such that the presser foot lies completely on the fabric.
2. Lower the presser foot.
3. Press the foot control and sew slowly. Guide the fabric gently as the machine automatically feeds the material.
4. Do not sew beyond the end of the fabric.
5. Raise the presser foot.
6. Pull the needle thread between the fabric and the presser foot to the back with the CS lock tool and cut it.
7. Pull the sewing project to the back left and cut the looper thread.
   ⇨ The seam end is secured.
8. Assess the sewing test and make any necessary adjustments until the stitch setting matches the material combination.

5.2 Perfoming a Sewing Test for a Chainstitch

Prerequisite:

- The machine is set up according to the fabric and the application.

1. Raise the presser foot.
2. Place the fabric under the presser foot such that the presser foot lies completely on the fabric.
3. Lower the presser foot.
4. Press the foot control and sew slowly. Guide the fabric gently as the machine automatically feeds the material.
5. Sew thread chain off the edge of the fabric.
6. Raise the presser foot.
7. Pull the sewing project to the back left and pull the threads over the thread cutter.
   ⇨ The seam end is secured.
8. Assess the sewing test and make any necessary adjustments until the stitch setting matches the material combination.

5.3 Optimizing Stitches

The stitch optimization guides you step by step to achieve the optimal stitch formation. A systematic approach is provided for this purpose.

- Perform a sewing test after each alteration.
- Change thread tensions in small increments; by half or a full value.
- Carry out one action step after the other.

4- / 3-Thread Coverstitch

In a balanced stitch formation the needle threads (yellow, green, blue) are visible as straight lines on the top side of the stitch and as points on the bottom side of the stitch. The looper thread forms a connecting waved line on the bottom side of the stitch.

Needle thread (yellow, green or blue) forms loops on bottom side of the fabric.

1. Increase the needle thread tension (yellow, green or blue).
2. Reduce the CL thread tension (purple).
3. Increase the stitch length SL.
4. Check threading path.

The chain looper (purple) thread loose on the bottom side of fabric.

1. Increase the CL thread tension (purple).
2. Increase the stitch length SL.
3. Check threading path.

Chain looper (purple) thread too tense, seam is tunneling.

1. Reduce the CL thread tension (purple).
2. Reduce the stitch length SL.
3. Check threading path.

The seam puckers. Needle thread (yellow, green or blue) too tense.

1. Reduce the needle thread tension (yellow, green or blue).
2. Set the differential feed between 1 and 0,7 (Stretching).
3. Reduce the stitch length SL.

2-Thread Chainstitch

In a balanced stitch formation the needle threads (yellow/green or blue) are visible as straight lines on the top side of the stitch. The looper thread is visible as a chain on the wrong side of the fabric and on the underside of the stitch.

Needle thread (yellow, green or blue) forms loops on bottom side of the fabric.

1. Increase the needle thread tension (yellow, green or blue).
2. Check threading path.

Chain looper (purple) thread visible on top side of fabric.

- ► Reduce the needle thread tension (yellow, green or blue).

The chain looper (purple) thread loose on the bottom side of fabric.

1. Increase the CL thread tension (purple).
2. Check threading path.

The seam puckers.

1. Reduce the needle thread tension (yellow, green or blue).
2. Reduce the CL thread tension (purple).
3. Set the differential feed between 1 and 0,7 (Stretching).
4. Reduce the stitch length SL.

6 Care and maintenance

6.1 Safety Instructions for Cleaning and Maintenance

Damage caused by liquids in the Air Threader System

Liquids in the air threading system can damage the air threader pump.

► Protect the air threader nozzles from liquids.

Damage by cleaning with Compressed Air

Compressed air or pump spray can permanently block the looper area with dust, fabric and thread residue.

► Remove dirt with a vacuum cleaner fitted with a soft attachment.

6.2 Machine

Cleaning the Machine

Recommended aids:
- Damp Cloth
- Brush
- Tweezers
- Vacuum cleaner with soft attachment

Recommended areas:
- Needle, Needle Bar
- Presser Foot
- Feed Dogs (from above)
- Rubber feet

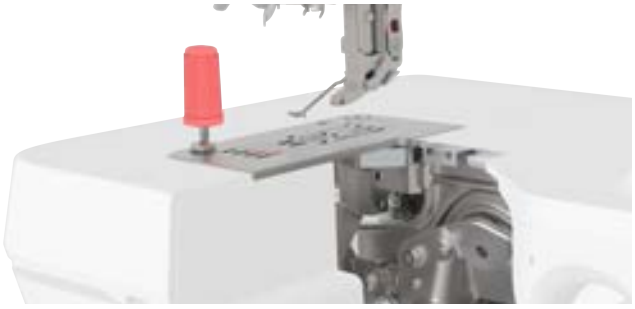
1. Clean the machine on the outside with a damp microfiber cloth without detergent.
2. Regularly remove dust, fabric and thread residues from recommended areas.

Cleaning the Looper Area

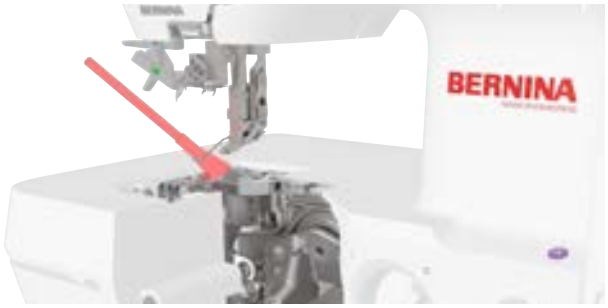
Dust and thread residues accumulate in the looper area over time. Remove them regularly.

Prerequisite:
- The machine is switched off.
- The presser foot is in the upper position or removed.
- The needles are in the upper position or removed.

1. Remove the stitch plate. To do this, loosen the screws.



2. Remove dirt with a brush, tweezers, and a vacuum cleaner with a soft attachment.



3. Attach the stitch plate.
4. Slowly turn the handwheel counterclockwise to check that the needles and the feed dogs do not interfere with each other's movement.

Clean Air Threader Pipes

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

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

7 Troubleshooting

Skipped stitches	
Incorrect needle/thread combination.	► Use a needle with a suitable needle size. [▸ see page 19]
Threading is incorrect.	► Rethread the needle and the looper thread paths. [▸ see page 20]
The needle is defective.	► Replace the needle. [▸ see page 20]
The needle is incorrectly inserted.	► Insert the needle correctly. [▸ see page 20]
Irregular stitch	
Thread is not correctly inserted in the thread pre-tension.	► Check the thread path. [▸ see page 20]
The thread tension is incorrect.	► Adjust the thread tension. [▸ see page 23]
Incorrect needle/thread combination.	► Use a needle with a suitable needle size. [▸ see page 19]
Thread threading is incorrect.	► Rethread the needle and the looper thread paths. [▸ see page 20]
The fabric has been pulled.	► Feed the fabric evenly.
The presser foot is loose.	► Attach the presser foot. [▸ see page 19]
The air threader pipe is blocked.	► Clean Air Threader Pipes. [▸ see page 28]
Needle breaks	
The needle is defective.	► Replace the needle. [▸ see page 20]
The fabric has been pulled.	► Feed the fabric evenly.
Incorrect needle/thread combination.	► Use a needle with a suitable needle size. [▸ see page 19]
The needle seat is incorrect.	► Tighten the needle screw. ► Replace the needle. [▸ see page 20]
The presser foot is loose.	► Attach the presser foot. [▸ see page 19]
Incorrect needle.	► Use needles from the needle system ELx705 CF. [▸ see page 19]

7 Troubleshooting

Unwanted seam puckering	
The thread tension is incorrect.	► Adjust the thread tension. [▸ see page 23]
Defective needle.	► Replace the needle. [▸ see page 20]
The setting of the Differential Feed is not optimal.	► Set the Differential Feed to 0.7 – 1. [▸ see page 24]
Unwanted weavy seam	
The setting of the Differential Feed is not optimal.	► Set the Differential Feed to 1 – 2. [▸ see page 24]
Thread breakage	
Incorrectly threaded.	► Rethread the needle and the looper thread paths. [▸ see page 20]
The needle is blunt or bent.	► Replace the needle. [▸ see page 20]
The thread tension is not optimal.	► Adjust the thread tension. [▸ see page 20]
The thread is tangled.	► Check thread feed from the thread spool. [▸ see page 15]
Thread guide is not fully extended.	► Pull out the thread guide completely. [▸ see page 15]
Machine does not sew	
The looper area is open.	► Close the looper cover properly. [▸ see page 16]
The machine is not connected to the power supply.	► Insert the mains plug into the socket and into the machine. [▸ see page 14] ► Check the socket for power.
The machine is switched off.	► Switch the machine on. [▸ see page 14]
The machine is overheated.	► Switch off the machine and leave to cool for 10 – 15 minutes. [▸ see page 14]
The machine is too cold.	► Leave the machine at room temperature for approx. 1 hour.
Machine runs slowly and then stops	
The pulse drive is performed.	► The machine prepares the threading position.

7 Troubleshooting

Sewing light is not lit	
The sewing light is dimmed, turned off, or defective.	► Press the button **Sewing Light Control** twice. [▸ see page 23] ► Have the sewing light by an authorized BERNINA dealer.
Fabric is not feeding properly	
The stitch setting is not optimal.	► Elongate the stitch length. [▸ see page 23] ► Adjust the Differential Feed. [▸ see page 24]
The presser foot pressure is not optimal.	► Adjust the presser foot pressure. [▸ see page 24]
Fabric jam	
The presser foot pressure too high.	► Reduce the presser foot pressure. [▸ see page 24]
Acoustic signal	
short Confirmation.	► Program the needle stop position using the foot control. [▸ see page 23]
extended The machine is not ready for sewing.	► Lower the presser foot. [▸ see page 17] ► Set the needle to the upper position. [▸ see page 20] ► Check the seat of the looper cover. [▸ see page 16]
continually The air threader switch is not completely turned off.	► Turn the air threader switch completely to position **0**. [▸ see page 22] ► Switch the machine off and on again. [▸ see page 14]
Looper thread cannot be threaded	
Air threading pipe is not closed properly.	► Turn the air threader switch completely to position **I**. [▸ see page 22] ► Check the connection of the air threader pipe.
Threads with special properties (e.g., bulky yarn or metallic yarns).	► Pull in the thread using a thread cradle.
The air threader doesn't work.	► In case of a malfunction or damage, repair by a BERNINA dealer is necessary.
Looper cover does not attach	
The air threader switch prevents attaching the looper cover.	► Turn the air threader switch completely to position **0**. [▸ see page 22]

8 Storage, Transport and Disposal

8.1 Storing the Machine

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

1. Switch off the machine and disconnect it from the power supply.
2. Clean the machine.
3. Don't store the machine outdoors.
4. Protect the machine against climatic influences.

8.2 Carrying the Machine

To carry or relocate the machine, prepare the machine as described below.

1. Retract the thread guide completely downwards.
2. Lower the presser foot.
3. Remove any cables connected to the machine.
4. Lift the machine by the carrying handle and support it with the other hand.

8.3 Disposing the Machine

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

9 Technical specifications

Term	Value	Unit
Needle System	ELx705	
Maximum Fabric Thickness	6 (0.2)	mm (in)
Sewing Speed	250 – 1200	Stitches per Minute
Dimensions without Retractable Thread Guide	30 x 29 x 33 (11.8 x 11.4 x 13)	cm (in)
Dimensions with Slide-on Table/Cut-offs Bin	30 x 36 x 48 (11.8 x 14.2 x 18.9)	cm (in)
Weight of the Machine	9.5 (20.9)	kg (lb)
Energy Consumption	100 – 240V (50 – 60 Hz)	W
Input Voltage	140W	V (Hz)
Protection Class (Electrical Engineering)	II	

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