

MY BERNINA



WORKBOOK – BASIC SERGER USE
For BERNINA Overlockers: L 450, L 460, L 850

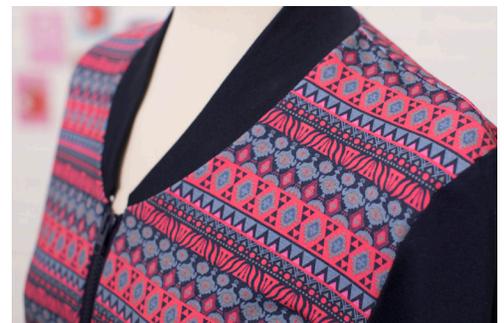


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L 450



L 460



L 850



The information in this workbook applies to the BERNINA Overlocker Machines models shown above.

Note: Some exercises apply only to certain models equipped with the feature being highlighted.

INTRODUCTION

Congratulations on the purchase of your new BERNINA overlocker. Learning to use your new machine to its fullest capabilities will let you enjoy your machine for many years. Understanding your machine's features will maximize your creativity. You'll learn the essentials to help you be successful with any project.

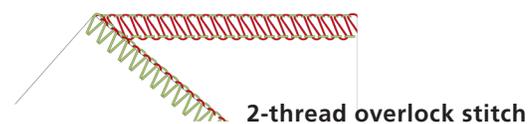
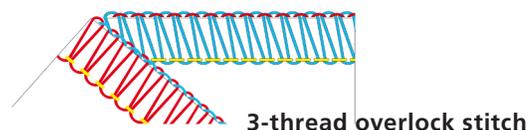
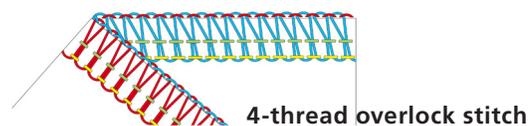
Your overlocker will speed your sewing in many ways, letting you produce more in less time. The speed of the overlocker is faster because it performs several operations (trimming, seaming, and overcasting) at the same time, so your project is finished faster and will produce neater and more professional results.

Even though the workings of the overlocker may appear be more complex than a sewing machine, it doesn't take long to learn the basics. The stitching exercises in this workbook use four, three, and two thread stitch formations.

Once you have completed the exercises designated for your BERNINA overlock machine, attach the sewn samples to the indicated pages, insert the pages into plastic page protectors and store them in a 3-ring binder. Use this workbook as a reference tool in the future as you learn to use your overlocker in new ways.

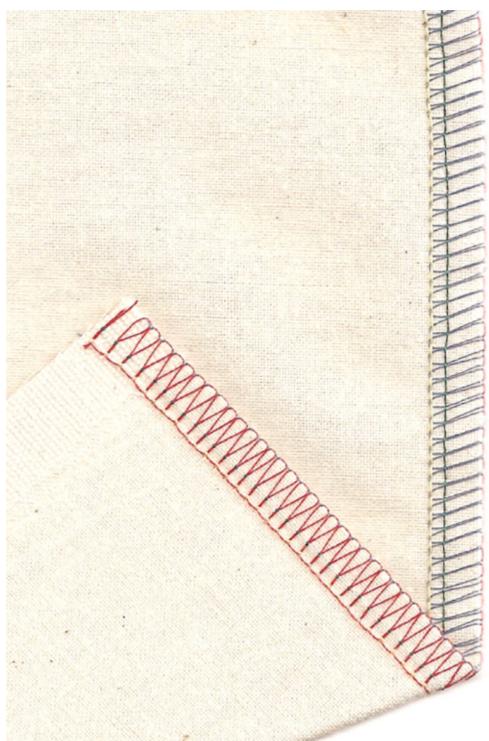
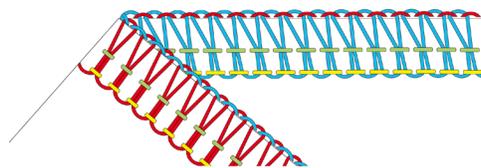
For more information on the BERNINA line of sewing machines and overlockers, as well as sewing projects, visit:

www.bernina.com

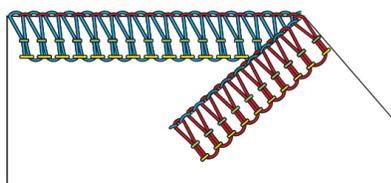


4-THREAD OVERLOCK STITCH

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  4 Spools Serger Thread (B, R, G, Y)
-  4-Thread Overlock Stitch
-  Standard



-  Left Needle
-  Right Needle
-  Upper Looper
-  Lower Looper



1. Thread the overlocker for a 4-thread overlock stitch using thread colors to match the color-coded threading path on the machine. Adjust all thread tension settings as indicated in chart below.
2. Fold the fabric in half to 5" x 10".
3. For best results, raise the needles to their highest position before stitching. To begin stitching, lift the front of the presser foot with your thumb and slide the fabric under the presser foot. Release the tip of the presser foot and begin stitching, trimming the fold away. NOTE: Trimming a minimum of 1/4" will result in a cleaner edge finish.
4. Stitch to the end of the fabric. Continue stitching off the fabric until you have a 3"- 4" thread chain. Cut the thread chain using the thread cutter at the side of the machine. This cutter works as a clamp and will keep your threads in position as you begin the next seam.
 - L 4 Series- come over the back and pull straight down.
 - L 850- same cutter as a BERNINA sewing machine, come from the front to the back to trim.
5. Examine the stitch formation:
 - Blue: Loops should extend to the edge of the fabric where they will interlock with the red loops of the Lower Looper.
 - Red: Loops should extend to the edge of the fabric, interlocking with the blue loops of the Upper Looper.
 - Yellow: Needle stitches should appear along the inside edge of the stitch as straight stitches or tiny "dots" of thread on the back.
 - Green: Needle stitches should appear as a line of straight stitching running through the middle of the overlock stitching.
6. See following page for tension adjustment information. Make any necessary tension adjustments and sew another 4-thread overlock stitch. Record your setting adjustments on the fabric if necessary.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	2.5	6	1	▲
L 460	4	4	4	4	2.5	6	1	▲
L 850	4	4	4	4	2.5	6	1	○

TENSION SETTINGS: UPPER LOOPER THREAD TENSIONS

 Firm fabric such as muslin, 10" x 10"

 80/12 ELX705 for L 850
80/12 130/705H for L 450, 460

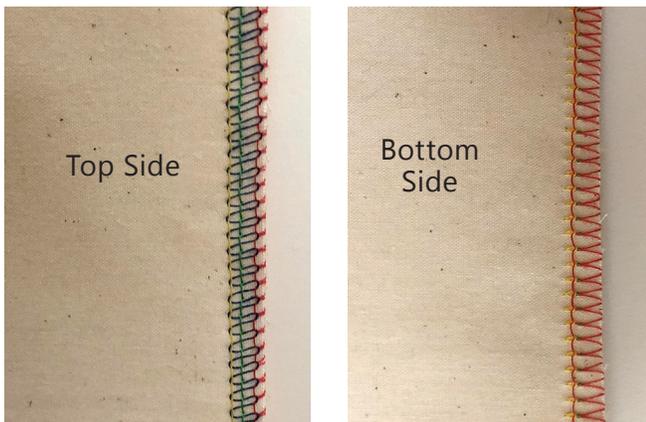
 4 Spools Serger Thread (B, R, G, Y)

 4-Thread Overlock Stitch-unbalanced
Upper Loper tensions

 Standard

The next few pages will give you some pointers for understanding what a balanced overlock stitch should look like. This will help you better understand how to adjust your machine while test sewing and troubleshooting the stitches.

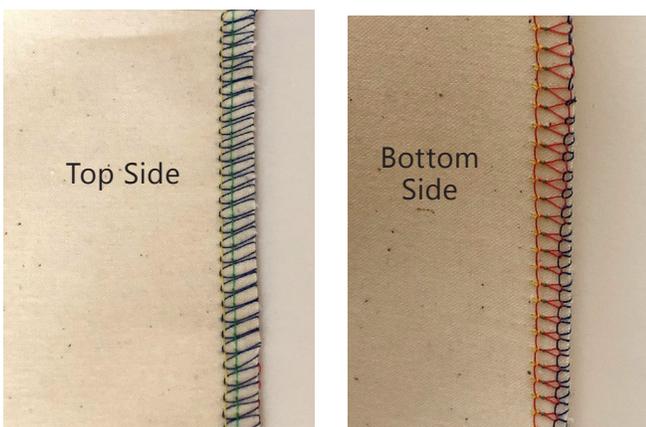
Upper Loper Tension Too Tight



Upper Loper Tension Too Tight

1. Adjust the Upper Loper tension to the highest setting of 9.
2. Fold the fabric in half to 5" x 10" and sew the seam along the fold, trimming off approximately 1/4".
3. Look at the stitch. You can see that when the tension is too tight the Upper Loper pulls the Lower Loper (red thread) over to the right side.
4. Label the sample "Upper Loper Tension Too Tight".

Upper Loper Tension Too Loose



Upper Loper Tension Too Loose

1. Now adjust the tension setting to the lowest setting of 1 and sew the seam on the opposite side.
2. Examine the stitch formation. When the Upper Loper is too loose, the blue thread is pulled to the back side of the fabric.
3. Label the sample "Upper Loper Tension Too Tight".
4. Put the Upper Loper setting back to the default of 4.

TENSION SETTINGS: LOWER LOOPER THREAD TENSIONS

 Firm fabric such as muslin, 10" x 10"

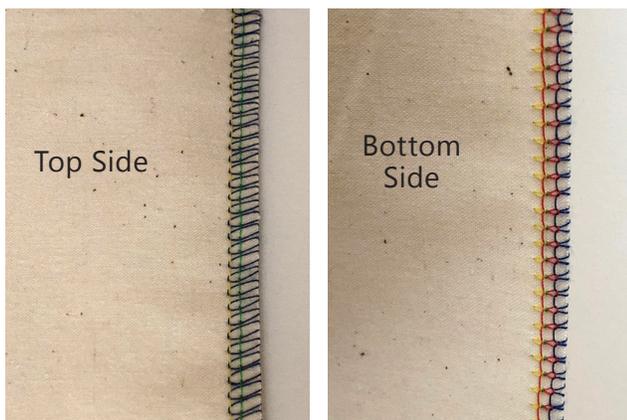
 80/12 ELX705 for L 850
80/12 130/705H for L 450, 460

 4 Spools Serger Thread (B, R, G, Y)

 4-Thread Overlock Stitch-unbalanced
Upper Looper tensions

 Standard

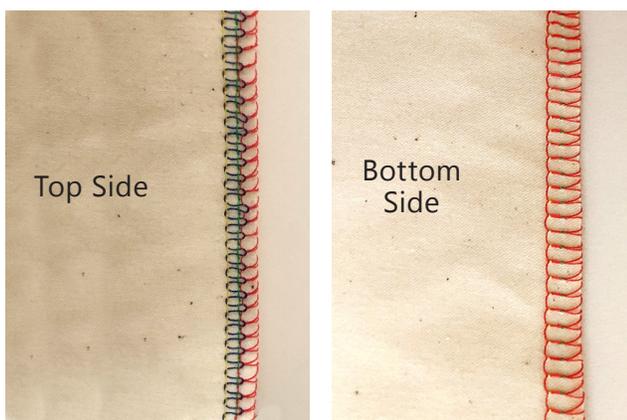
Lower Looper Tension Too Tight



Lower Looper Tension Too Tight

1. Adjust the Lower Looper tension to the highest setting of 9.
2. Fold the fabric in half to 5" x 10" and sew the seam along the fold, trimming off approximately 1/4".
3. Look at the stitch. When the Lower Looper is too tight, the upper thread (blue) is pulled to the back.
4. Label this sample "Lower Looper Tension too Tight".

Lower Looper Tension Too Loose



Lower Looper Tension Too Loose

1. Now adjust the tension setting to the lowest setting of 1 and sew the seam on the opposite side, trimming off approximately 1/4".
2. Examine the stitch formation. When it is too loose, the Lower Looper (red) thread is pulled to the front.
3. Label this sample "Lower Looper Tension Too Loose".
4. Put the Lower Looper setting back to the default of 4.

TENSION SETTINGS: RIGHT NEEDLE THREAD TENSIONS

 Firm fabric such as muslin, 10" x 10"

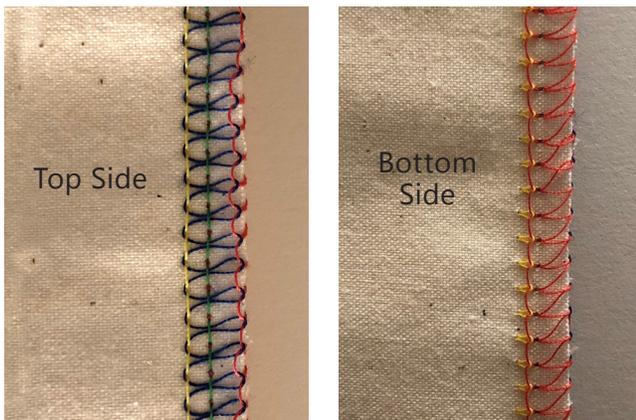
 80/12 ELX705 for L 850
80/12 130/705H for L 450, 460

 4 Spools Serger Thread (B, R, G, Y)

 4-Thread Overlock Stitch-unbalanced
Upper Loper tensions

 Standard

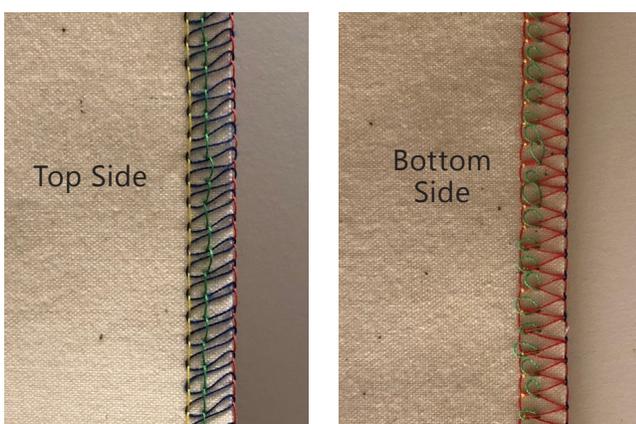
Right Needle Tension Too Tight



Right Needle Tension Too Tight

1. Adjust the Right Needle tension to the highest setting of 9.
2. Fold the fabric in half to 5" x 10" and sew the seam along the fold, trimming off approximately 1/4".
3. Look at the stitch. You might have noticed when you sewed the seam that the fabric wanted to pucker more. You might also notice a bit of the Lower Loper (red thread) showing up on the edge of the seam. From the bottom side, you may notice that the Left Needle thread is being pulled up.
4. Label this sample "Right Needle Tension Too Tight".

Right Needle Tension Too Loose



Right Needle Tension Too Loose

1. Now adjust the tension setting to the lowest setting of 1 and sew the seam on the opposite side, trimming off approximately 1/4".
2. Examine the stitch formation. Notice how you can now see the needle thread making loose loops on the front and on the back of the fabric.
3. Label the sample "Right Needle Tension Too Loose".
4. Put the Right Needle tension setting back to the default of 4.

TENSION SETTINGS: LEFT NEEDLE THREAD TENSIONS

 Firm fabric such as muslin, 10" x 10"

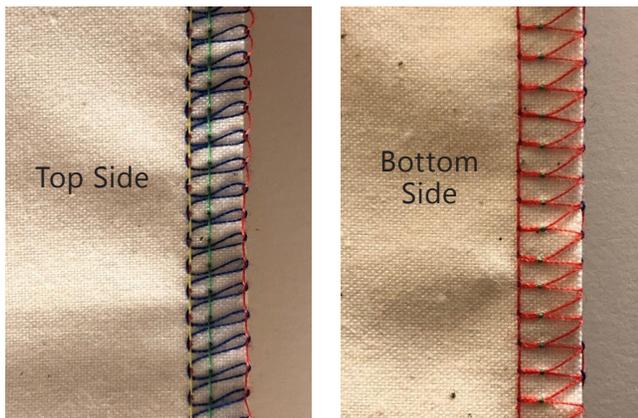
 80/12 ELX705 for L 850
80/12 130/705H for L 450, 460

 4 Spools Serger Thread (B, R, G, Y)

 4-Thread Overlock Stitch-unbalanced
Upper Loper tensions

 Standard

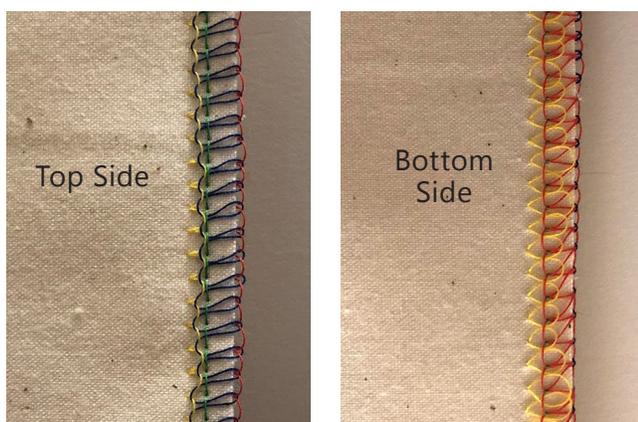
Left Needle Tension Too Tight



Left Needle Tension Too Tight

1. Adjust the Left Needle tension to the highest setting of 9.
2. Fold the fabric in half to 5" x 10" and sew the seam along the fold, trimming off approximately 1/4".
3. Look at the stitch. You may see some of the red thread showing up on the front side of the seam, but also the stitch will appear to "tunnel" or scrunch up more when sewing.
4. Label the sample "Left Needle Tension Too Tight".

Left Needle Tension Too Loose

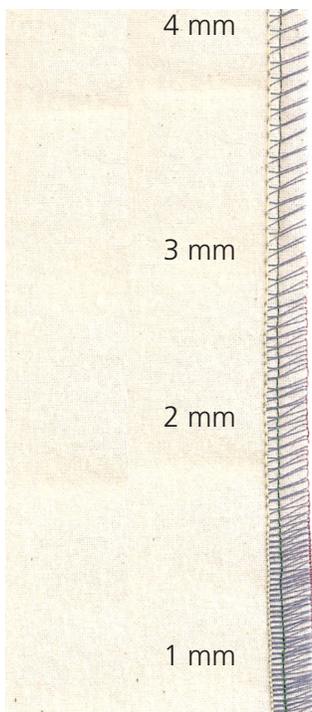
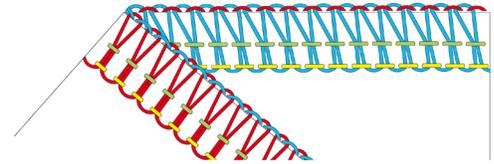


Left Needle Tension Too Loose

1. Now adjust the tension setting to the lowest setting of 1 and sew the seam on the opposite side, trimming off approximately 1/4".
2. Examine the stitch formation. You will notice that on the back of the seam you will see the yellow thread being pulled by the loopers.
3. Label the sample "Left Needle Tension Too Loose".
4. Put the Left Needle tension setting back to the default of 4.

STITCH LENGTH

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  4 Spools Serger Thread (B, R, G, Y)
-  4-Thread Overlock Stitch
-  Standard



Using the balanced 4-thread overlock stitch from the previous exercise, follow the instructions below to adjust the stitch length.

1. Fold the fabric in half to 5" x 10".
2. Using a fabric marker, divide the fabric into four equal sections along the folded edge.
3. Adjust the stitch length to 4 mm for L 450, 460 / 4.5 mm for L 850. Sew to the first mark along the folded edge, trimming folded edge approximately 1/4".
4. Adjust the stitch length to 3 mm and sew to the second mark.
5. Adjust the stitch length to 2 mm and sew to the third mark.
6. Adjust the stitch length to 1 mm and sew to the end.
7. Mark the stitch length settings on the fabric sample.
8. Return stitch length to its normal setting of 2.5 mm.

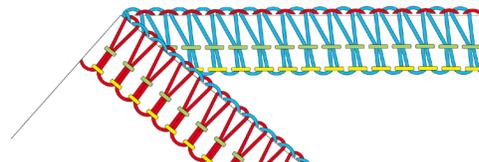
NOTE: *Stitch length adjustments may be needed to accommodate thicker or thinner threads or different weights of fabric, as well as being used for decorative effects.*

General guidelines for stitch length settings	
2.5 mm	Standard setting
1-2 mm	Rolled hems and decorative edges
2.5-4 mm	Heavy weight fabrics
3-4 mm	Gathering and applying elastic

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	1-4	6	1	▲
L 460	4	4	4	4	1-4	6	1	▲
L 850	4	4	4	4	1-4.5	6	1	○

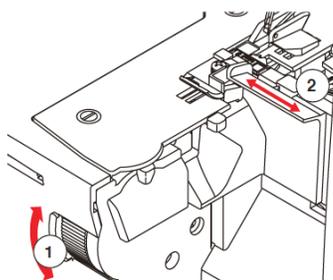
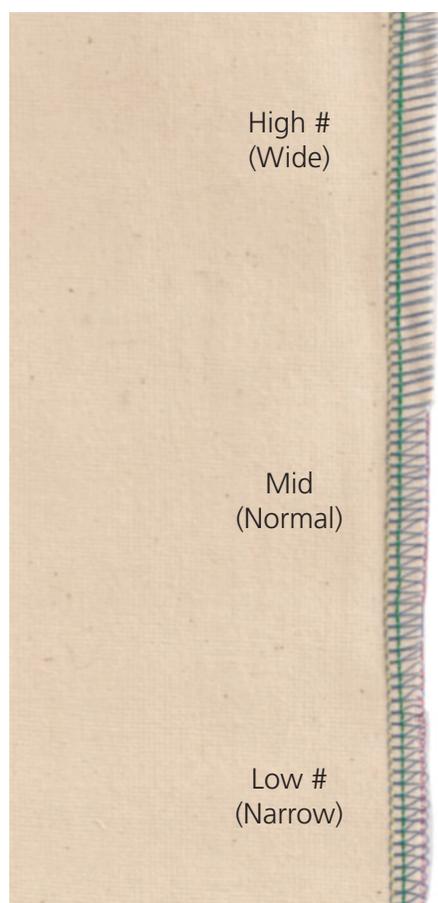
CUTTING WIDTH

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  4 Spools Serger Thread (B, R, G, Y)
-  4-Thread Overlock Stitch
-  Standard



The overlocker should be threaded for a 4-thread overlock stitch using thread colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings as indicated below, or as previously determined.

1. Fold the fabric in half to 5" x 10".
2. Using a fabric marker, divide the fabric into three equal sections along the folded edge.
3. Adjust the cutting width to the widest setting (9). Sew to the first mark on the fabric, stopping when the knife edge is on the mark.
4. Reduce the cutting width to 7 and overlock to the second mark.
5. Turn the dial again to adjust the cutting width to the lowest setting (5) and overlock to the end of the fabric.
6. Mark the cutting width settings on the fabric sample.
7. Return cutting width to its normal setting (6).



L 450, 460



L 850

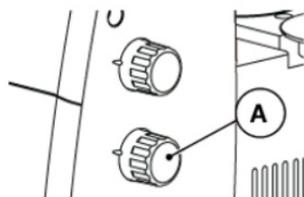
THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	2.5	5 to 9	1	▲
L 460	4	4	4	4	2.5	5 to 9	1	▲
L 850	4	4	4	4	2.5	5 to 9	1	○

UNDERSTANDING DIFFERENTIAL FEED

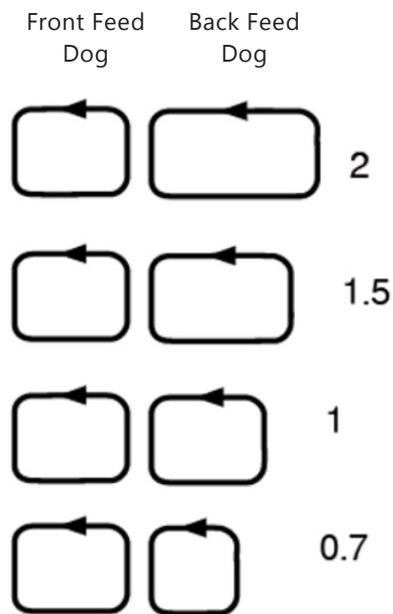
Differential feed is a feature found on most overlockers today, but it takes some understanding to fully comprehend the benefits for your sewing. Did you realize that your overlocker has two sets of feed dogs that move the fabric through the machine? This gives you a mechanical advantage for controlling the fabric and when you adjust differential feed, you are in fact adjusting the rate at which the front feed dog moves.

Look at the diagram and the Differential Feed Dial and settings together. When the differential feed is set at 2, the front feed dog is moving at twice the rate of the back feed dog. This can compensate for fabrics that want to stretch out or "wave" while stitching, or create a gathering effect on other fabrics.

L 450, 460



L 850



Setting	Effect
2	Gathering or Stretching Compensation
1.5	Light Gathering
1	Neutral, no effect (Standard)
0.7	Stretching

DIFFERENTIAL FEED: SOFT FABRICS

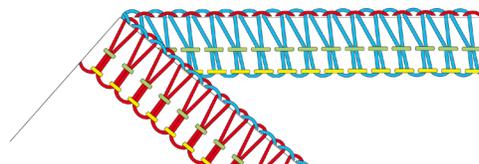
 Lightweight tricot, two 5" x 10" pieces

 80/12 ELX705 for L 850
80/12 130/705H for L 450, 460

 4 Spools Serger Thread (B, R, G, Y)

 4-Thread Overlock Stitch

 Standard



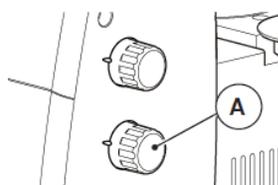
With the overlocker still threaded for a 4-thread overlock stitch and using thread colors to match the color-coded threading path on the machine, adjust all thread tension settings as indicated in the chart below or as previously determined.

Differential
1 (normal)
Puckering may occur on
lightweight fabrics

Differential
0.6 mm
to correct puckering



1. Place the tricot pieces right sides together. With the differential set at 1 (normal), stitch along the 6" side of the soft fabric together along one 6" edge, trimming about 1/4" off the edge. When sewing on very lightweight fabric, you may notice that you have a puckered edge.
2. To correct this, adjust the Differential Feed to 0.7. Sew along the other 6" edge, trimming about 1/4" from the edge of the fabric.
3. Mark the differential settings on the fabric sample.
4. Return Differential Feed Dial to its normal setting of 1.



L 450, 460

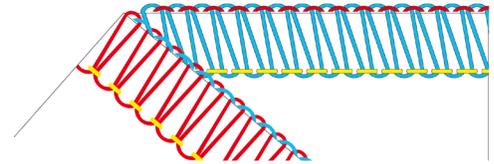


L 850

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	3	6	1 TO 0.7	▲
L 460	4	4	4	4	3	6	1 TO 0.7	▲
L 850	4	4	4	4	3	6	1 TO 0.7	○

3-THREAD OVERLOCK STITCH-WIDE

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (Y, R, B)
-  3-Thread Overlock Stitch (wide/narrow)
-  Standard



For this exercise, the overlocker will be threaded for a wide 3-thread overlock stitch using only the Left Needle and thread colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a balanced stitch as indicated in chart below.

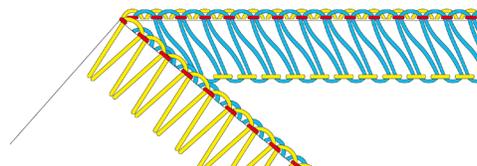
1. Using the small screwdriver and needle holder tool, remove the Right Needle and thread. Tighten the needle set screw after removing the Right Needle. The Left Needle will remain threaded.
2. Fold fabric in half to 5" x 10". Stitch along the folded edge of the fabric, trimming 1/4".

TIP: To remove thread, always clip the thread at the beginning of the thread path and pull the tail through the machine. Do not pull thread backwards through a machine.

	THREAD TENSION SETTING				MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	-	4	4	2.5	6	1	▲
L 460	4	-	4	4	2.5	6	1	▲
L 850	4	-	4	4	2.5	6	1	○

3-THREAD FLATLOCK - WIDE

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (Y, B, R)
-  3-Thread Flatlock (wide)
-  Standard



For this exercise, the overlocker will be threaded for a wide 3-thread flatlock stitch using the Left Needle and thread colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a flatlock stitch as indicated in chart below.

Note: If following the order of activities in this Mastery book, the Right Needle was removed in the previous exercise so you will skip Step 1.



Decorative Thread Tip: A heavy thread such as YLI Jeans Stitch, Pearl Crown Rayon, or Designer 6 can be used in the looper for a more decorative look. When working with heavy decorative threads, loosen the Upper Looper tension and lengthen the stitch length as needed for the desired look.

1. Using the small screwdriver and needle holder tool, insert the Left Needle and remove the Right Needle. Tighten the needle set screw after inserting or removing needles.
2. Fold the fabric in half, wrong sides together, to 5" x 10".
3. Place the fold under the presser foot. Guide the fabric halfway between the Left Needle and the right edge of the stitch finger. This method allows the fabric to lay totally flat under the stitches.

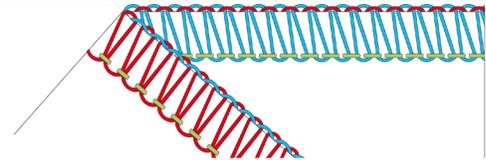
Optionally, you may choose to trim the folded edge which will allow one fabric to lay on top of the other. This is the preferred method if using the flatlock stitch as a seam.

4. Slowly sew the fabric. The looper threads will extend beyond the fabric on the right side of fold.
5. Gently pull the fabric flat.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	1.5	-	3.5	7	2.5	6.5	1	▲
L 460	1.5	-	3.5	7	2.5	6.5	1	▲
L 850	2	-	4	7	2.5	6	1	○

3-THREAD OVERLOCK STITCH-NARROW

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (G, R, B)
-  3-Thread Overlock Stitch (narrow)
-  Standard



For this exercise, you will thread the overlocker for a 3-thread narrow overlock stitch using the Right Needle and thread colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a balanced stitch as indicated below.

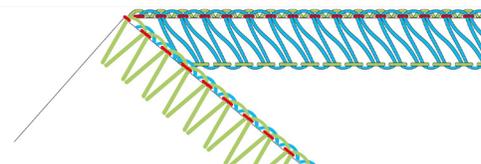
Note: If following the order of activities in this Mastery book, the Right Needle was removed in the previous exercise. You will now be inserting the Right Needle and removing the left to complete this exercise.

1. Using the small screwdriver and needle holder tool, loosen the Right Needle screw and insert the Right Needle. Tighten the needle set screw. Thread the needle.
2. Remove the Left Needle thread. Loosen the Left Needle set screw and remove the Left Needle.
3. Fold the fabric in half to a 5" x 10" rectangle and stitch along the fold of the fabric, trimming 1/4".
4. Using this same stitch, finish edge of one 10" side of the fabric to see how the stitch looks on a single layer.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	4	4	4.5	2.5	7	1	▲
L 460	-	4	4	4.5	2.5	7	1	▲
L 850	-	4	4	4.5	2.5	7	1	○

3-THREAD FLATLOCK - NARROW

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (G, B, R)
-  3-Thread Flatlock (narrow)
-  Standard



For this exercise, the overlocker will be threaded for a narrow 3-thread flatlock stitch using the Right Needle and thread colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a flatlock stitch as indicated in chart below.

Note: If following the order of activities in this Mastery book, the Right Needle was inserted and threaded, and the Left Needle and thread was removed in the previous exercise. If so, you will skip Steps 1 and 2.



Decorative Thread Tip: A heavy thread such as YLI Jeans Stitch, Pearl Crown Rayon, or Designer 6 can be used in the looper for a more decorative look. When working with heavy decorative threads, loosen the Upper Looper tension and lengthen the stitch length as needed for the desired look.

1. Using the small screwdriver and needle holder tool, loosen the Right Needle screw and insert the Right Needle. Tighten the needle set screw. Thread the needle.
2. Remove the Left Needle thread. Loosen the Left Needle set screw and remove the Left Needle.
3. Fold the fabric in half, wrong sides together, to 5" x 10".
4. Place the fold under the presser foot. Guide the fabric halfway between the Left Needle and the right edge of the stitch finger. This method allows the fabric to lay totally flat under the stitches.

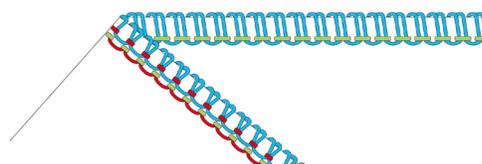
Optionally, you may choose to trim the folded edge which will allow one fabric to lay on top of the other. This is the preferred method if using the flatlock stitch as a seam.

5. Slowly sew the fabric. The looper threads will extend beyond the fabric on the right side of fold.
6. Gently pull the fabric flat.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	2.5	4	7	2.5	7	1	▲
L 460	-	0	4	7	2.5	7	1	▲
L 850	-	2	4	6	2.5	6	1	○

3-THREAD ROLLED HEM

-  Light weight fabric, 5" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools serger thread (B, R, G)
-  3-thread rolled hem
-  Standard



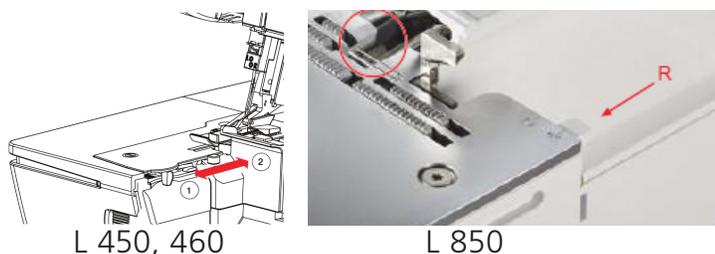
- The Rolled Hem Selection Lever moves the stitch finger in and out of position.
- Push the lever forward (O on the L 850) for normal sewing so the stitch can form over it, keeping the fabric flat.
- Pull the lever toward you (R on the L 850) so the fabric edge can roll when stitching a rolled edge.

For this exercise, the overlocker will be threaded for a narrow 3-thread rolled hem stitch using the Right Needle. Thread with colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a flatlock stitch as indicated in chart below.

Note: If following the order of activities in this Mastery book, the Right Needle was inserted and threaded, and the Left Needle and thread was removed in a previous exercise. If so, you will skip Steps 1 and 2.

1. Using the small screwdriver and needle holder tool, loosen the Right Needle screw and insert the Right Needle. Tighten the needle set screw. Thread the needle.
2. Remove the Left Needle thread. Loosen the Left Needle set screw and remove the Left Needle.
3. Disengage the stitch finger by placing the Rolled Hem Selection Lever in the "R" position.
4. Start the machine and run a chain for several inches so that you have a thread tail to aid in getting the fabric started.
5. Place the fabric under the presser foot and sew along one 10" edge.
6. Return stitch length and thread tensions to their normal setting.
7. Return the Rolled Hem Selection Lever to normal sewing position.

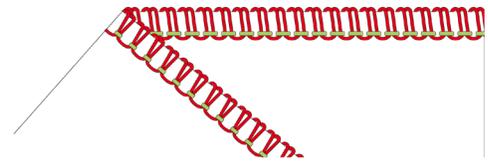
Optional: Thread the Upper Looper with **texturized nylon thread** in the Upper Looper. Loosen the Upper Looper tension slightly from the settings listed below.



THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	3.5	4	7.5	1	5	1	▽
L 460	-	3.5	4	7.5	1	5	1	▽
L 850	-	4	4	5.5	R	5.5	1	R

2-THREAD ROLLED HEM

-  Light weight fabric, 5" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  2 Spools Serger Thread (R, G)
-  2-Thread Rolled Hem
-  Standard

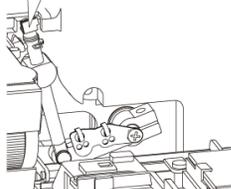
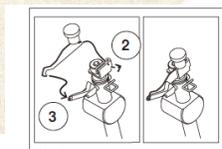


Accessory: Upper Looper Converter (Built-in on the L 850)



L 450, 460

L 850



For this exercise, the overlocker will be threaded for a 2-thread rolled hem stitch using the Right Needle and threaded with colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a rolled hem stitch as indicated in chart below.

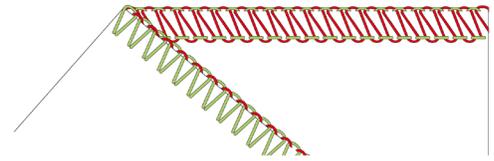
Note: If following the order of activities in this Mastery book, the Right Needle was inserted and threaded, and the Left Needle and thread was removed in the previous exercise. If so, you will skip Steps 1 and 2.

1. Using the small screwdriver and needle holder tool, loosen the Right Needle screw and insert the Right Needle. Tighten the needle set screw. Thread the needle.
2. Remove the Left Needle thread. Loosen the Left Needle set screw and remove the Left Needle.
3. Attach the Upper Looper Converter to the Upper Looper See Diagram below.
4. Disengage the stitch finger by placing the Rolled Hem Selection Lever in the "R" position.
5. Start the machine and run a chain for several inches so that you have a thread tail to hold as an aid in getting the fabric started.
6. Place the fabric under the presser foot and sew along one 10" edge, trimming about 1/4" from the raw edge.
7. Return stitch length and thread tensions to their normal setting.
8. Return the Rolled Hem Selection Lever to normal sewing position.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	4	CONVERTER	4	1	5	1	▽
L 460	-	4	CONVERTER	4	1	5	1	▽
L 850	-	4	CONVERTER	4	R	5.5	1	R

2-THREAD FLATLOCK - NARROW

-  Firm fabric, 10" x 10"
 -  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
 -  2 Spools Serger Thread (R, G)
 -  2-Thread Flatlock (narrow)
 -  Standard
- Accessory: Upper Looper Converter (Built-in on the L 850)**



Thread the overlocker for a *narrow* 2-thread flatlock stitch using the Right Needle and threaded with colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a 2-thread flatlock stitch as indicated in chart below.

Note: If following the order of activities in this Mastery book, the Right Needle was inserted and threaded, and the Left Needle and thread was removed in the previous exercise. If so, you will skip Steps 1 and 2.

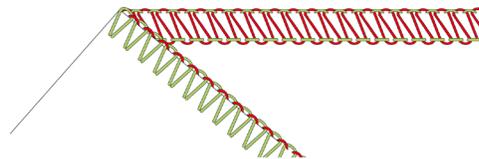


1. Using the small screwdriver and needle insertion tool, insert the Right Needle. Remove the Left Needle. Tighten the needle set screw after removing the needle.
2. Attach the Upper Looper Converter to the Upper Looper.
3. Fold the fabric in half to 5" x 10". Place the fold under the presser foot. Guide the fabric halfway between the Left Needle and the right edge of the stitch finger. This method allows the fabric to lay totally flat under the stitches. Optionally, you may choose to trim the folded edge which will allow one fabric to lay on top of the other.
4. Slowly stitch the fabric. The looper threads will extend beyond the fabric on the right side of fold.
5. Gently pull the fabric flat. Note: Before the fabric is pulled flat to create the flatlock stitch, the threads form a 2-thread balanced stitch with the threads connecting at the edge of the fabric. This stitch is not strong enough for seaming, but can be used as an edge finish for light to medium weight fabrics.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	2	CONVERTER	4	2.5	6	1	▲
L 460	-	2	CONVERTER	4	2.5	6	1	▲
L 850	-	2	CONVERTER	4	2.5	6	1	○

2-THREAD BLANKET STITCH NARROW

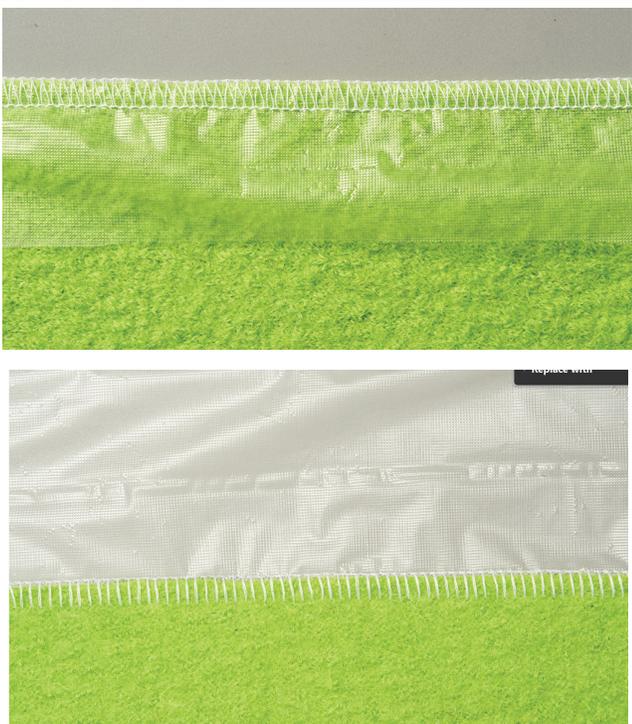
-  Fleece fabric, 5" x 10"
5" x 10" StitchH2O
 -  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
 -  2 Spools Serger Thread (R, Y)
 -  2-Thread Blanket Stitch (narrow) - L850
2-Thread Flatlock Stitch (narrow) - L 4 Series
 -  Standard
- Accessory: Upper Looper Converter (Built-in on the L 850)**



Thread the overlocker for a *wide* 2-thread flatlock stitch using the Right Needle and threaded with colors to match the color-coded threading path on the overlocker. Adjust all thread tension settings for a 2-thread flatlock stitch as indicated in chart below.

Note: If following instructions in the Mastery book, the Right Needle was inserted and threaded, and the Left Needle and thread was removed in the previous exercise. If so, you will skip Steps 1 and 2.

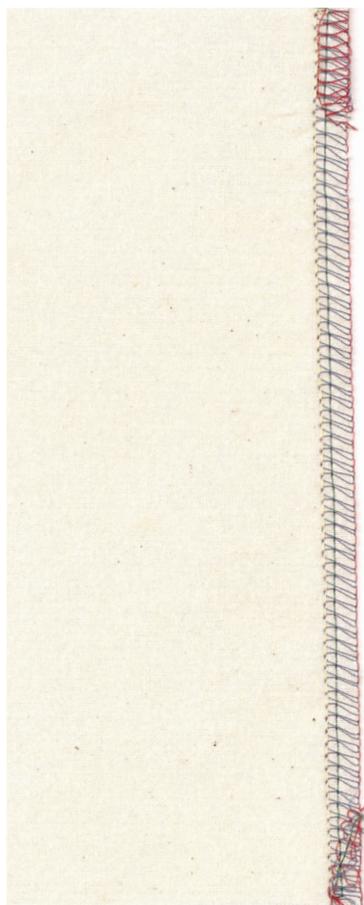
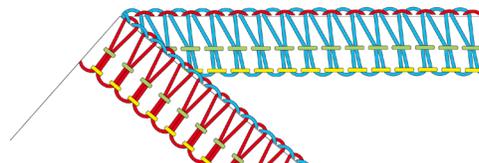
1. Using the small screwdriver and needle insertion tool, insert the Right Needle. Remove the Left Needle. Tighten the needle set screw after removing the needle. Attach the Upper Looper Converter to the Upper Looper.
2. Place the StitchH2O on top of the fabric and under the presser foot. Guide the fabric so that a small amount of the fabric and StitchH2O is cut off.
3. Slowly stitch the fabric.
4. Carefully and gently pull the StitchH2O to the edge of the fabric. This will pull the needle thread to the edge of the fabric and the Lower Looper threads will appear on the top of the fabric, resembling a hand-stitched blanket stitch.
5. Wash away the water-soluble stabilizer.
6. Using the small screwdriver and needle insertion tool, insert the Left Needle. Tighten the needle set screw after inserting the needle.
7. Remove the Upper Looper Converter. Return stitch length and thread tension dials to normal.
8. Rethread the loopers and both needles.



THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	-	2	CONVERTER	4	4	6	1	▲
L 460	-	2	CONVERTER	4	4	6	1	▲
L 850	-	2	CONVERTER	4	4	6	1	○

OVERLOCKER TECHNIQUES: SECURING SEAMS

-  Firm fabric, 10" x 10
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  4 Spools Serger Thread (B, R, G, Y)
-  4-Thread Overlock Stitch
-  Standard



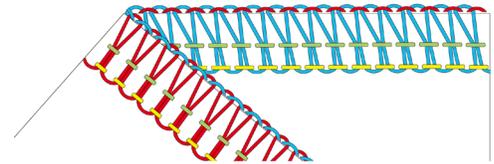
Thread the overlocker for a 4-thread overlock stitch using thread colors to match the color-coded threading path on the machine. Adjust all thread tension settings as indicated in the chart below.

1. Sew a 2"-3" thread chain without fabric.
2. Fold fabric in half to 5" x "10" and place under the presser foot.
3. Take 2-3 stitches on the fabric. Lower the needles into the fabric. Raise the presser foot, and with your left hand gently pull the thread chain around and in front of the needles to the knife.
4. Lower the presser foot and sew over the thread chain approximately 1", and then trim the thread chain with the knife.
5. Continue stitching. At the end of the fabric, sew just off the edge of the fabric. Carefully pull the threads off the stitch finger by placing the Rolled Hem Selection Lever in the "R" position temporarily.
6. Raise the presser foot and carefully turn the fabric over so that the Lower Loper side of the previously stitched seam will be overstepped.
7. Place the fabric under the presser foot so that the first stitch will enter the fabric when you begin stitching.
8. Engage the stitch finger by placing the Rolled Hem Selection Lever back in the "N" position.
9. Sew for about 1", overstepping the previous stitching. Guide the fabric so as not to cut the previous stitching.
10. Raise the toe of the presser foot and rotate the fabric 90° clockwise.
11. Stitch off the edge of the fabric.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	2.5	6	1	▲ to ▽
L 460	4	4	4	4	2.5	6	1	▲ to ▽
L 850	4	4	4	4	2.5	6	1	O to R

OVERLOCKER TECHNIQUES: INSIDE CORNER

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (B, R, G)
-  3-Thread Overlock (narrow)
-  Standard



Thread the overlocker for a 4-thread overlock stitch using thread colors to match the color-coded threading path on the machine. Adjust all thread tension settings as indicated in the chart below.

INSIDE CORNER

NOTE: This technique works well for continuous plackets on sleeves and back neck openings.

1. Cut an inside corner into the fabric.
2. Snip into the corner about 1/4" (the width of the stitching). See Image 1.
3. Sew until the knife reaches the end of the cut.
4. Use the handwheel (L 450) or Back-kick (L 460 and L 850) to lower the needle into the fabric.
5. Lift the presser foot and straighten the corner placing the fabric in front of the presser foot. See Image 2.
6. Lower the presser foot; continue sewing in a straight line. See Image 3.



Image 1

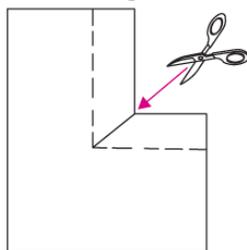


Image 2

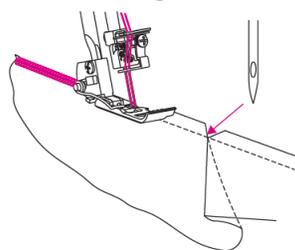
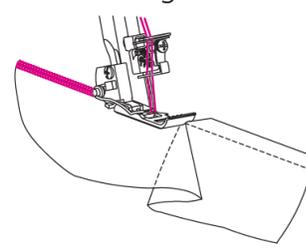


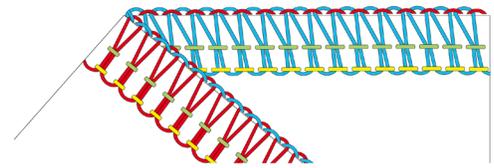
Image 3



THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	2.5	6	1	▲
L 460	4	4	4	4	2.5	6	1	▲
L 850	4	4	4	4	2.5	6	1	○

OVERLOCKER TECHNIQUES: OUTSIDE CORNER

-  Firm fabric, 10" x 10"
-  80/12 ELX705 for L 850
80/12 130/705H for L 450, 460
-  3 Spools Serger Thread (B, R, G)
-  3-Thread Overlock (narrow)
-  Standard



Thread the overlocker for a 4-thread overlock stitch using thread colors to match the color-coded threading path on the machine. Adjust all thread tension settings as indicated in the chart below.

OUTSIDE CORNER: OPTION 1



OUTSIDE CORNER: OPTION 1

1. Sew one edge of the fabric, sewing off the end of the fabric.
2. Continue stitching around the square, crossing over previous stitching.
3. Use a seam sealant on the untrimmed thread tails (or use a tapestry needle to weave the thread tail back through the stitching). When the seam sealant is dry, trim the thread tails.

OUTSIDE CORNER: OPTION 2



OUTSIDE CORNER: OPTION 2

1. Before sewing, trim away the seam allowance (1/4") for about 2" on each corner of the square.
2. Beginning at one trimmed corner, stitch (trimming very slightly as you sew) to the end of the fabric. Take one stitch off the end of the fabric.
3. Release the stitch finger by placing the Rolled Hem Selection Lever into the "R" position.
4. Lift the presser foot and carefully pivot the fabric 90° clockwise.
5. Engage the stitch finger by returning the Rolled Hem Selection Lever to the "N" position.
6. Place the needle one stitch into the fabric and lower the presser foot.
7. Continue sewing until you are one stitch off the next corner. Repeat the turning procedure and continue stitching.

THREAD TENSION SETTING					MACHINE SETUP			
	LEFT NEEDLE	RIGHT NEEDLE	UPPER LOOPER	LOWER LOOPER	STITCH LENGTH	CUTTING WIDTH	DIFFERENTIAL FEED	ROLLED HEM LEVER
L 450	4	4	4	4	2.5	6	1	▲ to ▽
L 460	4	4	4	4	2.5	6	1	▲ to ▽
L 850	4	4	4	4	2.5	6	1	O to R

REFERENCE - OVERLOCKER NEEDLES

BERNINA Overlocker Needles

Along with thread, needles are very important to stitch formation. Many mechanical problems and damage to fabrics can be traced to a bent, damaged, or incorrect size or type needle.

When selecting the correct needle, consider the following:

- Recommended needle system for L 850 – ELX705. These needle are a flat shank industrial needle. A pack of these needles is included with the overlocker.
- Recommended needle system for L 450, 460 – 130/705 H
- Recommended sizes for your overlocker are 70/11, 80/12 and 90/14. Larger needles can interfere with looper movement and cause damage; smaller needles may not form the stitches correctly.
- Needle point – assures proper stitch formation; avoids fabric damage
- You may use needle systems other than those recommended to accommodate the usage of certain specialty needles (stretch, microtex, etc), but keep in mind that adjustments to tensions may be required for a proper stitch formation.

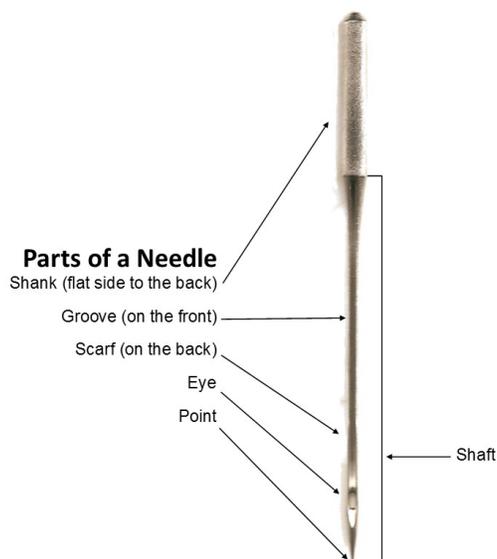
Need to Know

- Always make sure needles are fully inserted as high as possible, with the flat side to the back. The Left Needle will appear to be slightly higher than the Right Needle.
- Do not pull or push fabric while sewing. This can result in needle breakage or damage.
- Do not use bent or damaged needles.
- The needle is the most inexpensive part in your sewing machine, but it is crucial for getting good results and keeping your machine running well.
- The selected thread should fit in the groove on the front of the needle. If it isn't protected by the groove, a needle with a larger groove should be used.

Tip: If one needle breaks, it is a good habit to change both needles. Keeping the needle size and type the same results in a better formed stitch.

Needle Size for Fabrics

70 – shirt-weight
80 – medium-weight
90 – denim and twill



REFERENCE - OVERLOCKER THREADS

Overlocker Threads

Overlocker threads are usually polyester and are finer (lighter weight) than many sewing machine threads to avoid thread build-up and excessive bulk in seams. It is important that the thread is smooth and without variations in diameter as it needs to feed smoothly through many thread guides for good stitch formation.

You also want a good-quality thread – such as Mettler Seracor – that is not “fuzzy” and does not leave excessive lint in the lower part of your overlocker. Overlocker threads are sold on larger spools for economy and convenience; regular spools of thread may be used but will not last very long when forming overlock stitches. Along with overlocker thread, there are applications that call for specialty and decorative threads.

Listed below are some of these threads commonly used in the overlocker:

- Texturized Nylon Thread – such as YLI Woolly Nylon, Maxi-Lock Stretch or Wonderfil Softloc—A very elastic thread with excellent coverage; perfect for rolled edges and knit seams.
- Topstitching Thread – such as YLI Jeans Stitch, Mettler Cordonnet, Aurifil 12wt Cotton and Wonderfil Spagetti – this heavy thread is used for decorative stitching (flatlocked seams and overcast edges). Also nice for cover and chain stitching. Topstitch thread can be polyester or cotton.
- Rayon Decorative Threads – such as YLI Pearl Crown Rayon & YLI Designer 6 – shiny threads for decorative applications. Pearl Crown Rayon is twisted, while Designer 6 is untwisted. Available in solid and variegated colors.
- Metallic Decorative Threads – add a bit of glitz to seams and edgings.
- Decorative Sewing Threads – sewing machine threads can also be used in the overlocker, and are particularly effective when several are used together as one thread.
- TIP: Avoid using threads with heavy wax coatings in the L 850 air threading system, as the coating can build up in the air threading tubes over time. Coated or waxed threads may lose some of their coating in the air threader pipes, resulting in permanent blocking of the pipes. Repair by a BERNINA dealer will be necessary.



SUPPLIES

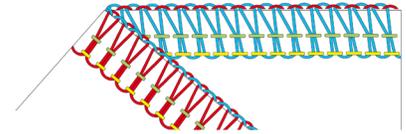
NEEDLES AND THREADS
80/12 ELX705 Serger Needles for L 850
80/12 130/705 H Needles for L 450, 460
4 Spools Serger Thread (blue, red, green, yellow)
Texturized nylon thread (optional)
Pearl Crown Rayon thread (optional)

FABRICS FOR EXERCISES PAGES 6 THROUGH 19		
QUANTITY	SIZE	FABRIC
16	10" x 10"	Firm Fabric such as: <ul style="list-style-type: none"> • Heavy muslin • High-quality quilting cotton • Medium weight denim
2	10" x 10"	Lightweight tricot/fabric
2	10" x 10"	Lightweight Fabric
1	5" x 10"	Fleece

FABRICS FOR OPTIONAL OVERLOCKER TECHNIQUE PAGES 20 THROUGH 23		
QUANTITY	SIZE	FABRIC
3	10" x 10"	Firm Fabric such as: <ul style="list-style-type: none"> • Heavy muslin • High-quality quilting cotton • Medium weight denim

REFERENCE: ADJUSTING TENSION SETTINGS FOR BALANCED STITCH

The illustrations below show examples of unbalanced stitches and how to correct the settings to balance the stitch. When making corrections in the tension settings, increase or decrease the settings as needed, moving the dial ½ to 1 number at a time. Stitch a seam using the new settings and then evaluate the new stitch. Continue in this manner until the stitch is balanced.



	<p>UPPER AND LOWER LOOPERS - TIGHT TENSION</p> <p>Unbalanced: The looper threads cause the thread to roll at the edge of the fabric and/or the seam allowance is folded inside the stitch.</p> <p>Correction: Decrease (lower number) one or both looper tensions until the seam allowance is flat and loopers meet at the edge. Note: This problem might also result from an incorrect cutting width setting.</p>
	<p>UPPER LOOPER - LOOSE TENSION</p> <p>Unbalanced: The looper threads are not at the edge of the fabric. Upper Looper thread is visible on the back of the fabric and the looper threads are very loose.</p> <p>Correction: Make sure the thread is seated in the tension guides. If it is, tighten the Upper Looper thread (higher number).</p>
	<p>LOWER LOOPER - LOOSE TENSION</p> <p>Unbalanced: The looper threads do not lock on the edge of the fabric. Lower Looper thread is visible on the face of the fabric. The looper threads are very loose.</p> <p>Correction: Make sure the thread is seated in the tension guides. If it is, tighten the Lower Looper thread (higher number).</p>
	<p>LEFT NEEDLE - LOOSE TENSION</p> <p>Unbalanced: The yellow needle forms loops on the underside of the fabric. The seam is not secure and the yellow thread may show in the seam line.</p> <p>Correction: Make sure the yellow thread is seated in the tension guide. If it is, tighten the Left Needle tension (higher number).</p>
	<p>RIGHT NEEDLE - LOOSE TENSION</p> <p>Unbalanced: The green needle thread forms loops on the underside of the fabric.</p> <p>Correction: Make sure the green thread is seated in the tension guide. If it is, tighten the Right Needle tension (higher number).</p>
	<p>RIGHT AND LEFT NEEDLES - TIGHT TENSION</p> <p>Unbalanced: The green and yellow needle threads are pulled taut, causing puckers in the fabric at the seam line.</p> <p>Correction: Make sure the threads are seated in the tension guides or have not double-wrapped around a threading guide. If they have, unwrap or loosen appropriate needle tension (lower number).</p>