



WORKSHEET FOR SOCK SHORT ROW HEEL CUSTOMIZATION
 (FOR LARGER HEEL DIAGONAL MEASUREMENTS)

ACTUAL SOCK GAUGE	
STITCHES PER INCH	
ROWS PER INCH	

ACTUAL FOOT MEASUREMENTS	
BALL OF FOOT (inches)	
LENGTH OF FOOT (inches)	
HEEL DIAGONAL (inches)	

DESIRED SOCK MEASUREMENTS	
SOCK CIRCUMFERENCE (inches)	
FOR TOE UP: LENGTH OF FOOT (inches) BEFORE SHORT ROW HEEL	

THE HOW
<p>Multiply the ball of foot measurement by 0.95. Use this number to help you choose the correct actual sock measurement for you.</p> <p>NOTE: Traditionally a sock is made to have about 1/2 inch negative ease. If your desired sock circumference is in between sizes it is typically advised to choose the smaller of the two sizes.</p>
<p>Multiply the number of rows on half of the short row heel by the row gauge; then subtract that number from your total length of foot.</p> <p>NOTE: As the number of rows increase or decrease as does the length of the 1st half of the short row heel.</p>



HEEL DIAGONAL (inches)	<p>Multiply your heel diagonal by .8 and the resulting number is your desired heel diagonal.</p> <p>NOTE: This measurement traditionally has a 20% negative ease for a comfortable fit.</p>
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ACTUAL SOCK PATTERN MEASUREMENTS & DETAILS	THE HOW
FINISHED SOCK CIRCUMFERENCE (inches)	<p>Divide the total number of stitches of the sock by the stitch gauge.</p>
HEEL DIAGONAL (inches)	<p>Multiply the finished sock circumference by 1.3</p> <p>NOTE: The heel diagonal circumference is traditionally anywhere from 30-40% larger than the finished sock circumference (according to a study by Kate Atherley and published in Custom Socks). I prefer to calculate the measurement with the lower percentage.</p>
TOTAL HEEL STITCHES	<p>Divide the total number of stitches of the sock by 2.</p> <p>NOTE: This number is traditionally 1/2 of the total number of stitches of the sock. It can be adjusted to be more or less as necessary.</p>
FINAL HEEL STITCHES	<p>Divide the total heel stitches of the sock by 3. Round to nearest even number.</p> <p>NOTE: This number is traditionally 1/3 of the total heel stitches. It can be adjusted to be more or less as necessary.</p>



FINAL HEEL STITCHES MEASUREMENT (inches)	Divide the final heel stitches by the stitch gauge. NOTE: This number will allow you to determine if the heel will be too wide or not wide enough.
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CUSTOMIZE SOCK PATTERN MEASUREMENTS & DETAILS	THE HOW
NUMBER OF STITCHES TO INCREASE ON ROW <i>BEFORE</i> SHORT ROW HEEL; AND DECREASE ON THE ROW <i>AFTER</i> THE SHORT ROW HEEL	Subtract actual sock pattern heel diagonal from desired heel diagonal number, then multiply by the stitch gauge. Round to even number. 3 Step Calculation: 1. Desired Sock Heel Diagonal - Actual Sock Heel Diagonal = X 2. X * Stitch Gauge = Y 3. Round Y to the nearest even number Y = Number of stitches to increase for the short row heel. This is also the number of stitches to decrease after short row heel is complete.
NEW TOTAL HEEL STITCHES	Add together the total actual sock total heel stitches and number of stitches to increase.
<div style="background-color: #ffcc00; display: inline-block; padding: 2px;">NEW FINAL HEEL</div>	Divide the new total heel stitches of the sock by 3. Round to nearest even number. NOTE: This number is traditionally 1/3 of the total heel stitches. It can be adjusted to be more or less as necessary.



<p>NEW NUMBER OF ROWS ON EACH HALF OF SHORT ROW HEEL (does not include 2 'pick up' rows)</p>		<p>Subtract the new total heel stitches from the new final heel stitches.</p> <p>2 Step Calculation:</p> <p>1. New Total Heel Stitches - New Final Heel Stitches = Z</p> <p>2. Z = Number of rows to work on each half of the short row heel.</p>
<p>NEW NUMBER OF SHORT ROW TURNS ON EITHER SIDE OF NEW OF HEEL</p>		<p>New total heel stitches - new final heel stitches = A</p> <p>$A / 2 = B$</p> <p>B = number of short row turns on each side of heel.</p>
<p>NEW MEASUREMENT OF EACH HALF OF SHORT ROW HEEL (inches)</p>		<p>Divide the number of short row stitches by the row gauge.</p> <p>NOTE: When working toe up, use this number to calculate the length to subtract from total foot length before starting the short row heel.</p>

Now apply the information you have gathered by filling out the instructions below for German Short Rows.



SPECIAL STITCHES

German Short Rows (GSR): these short rows are worked in such a way that you get a 'double stitch' in place of a traditional W&T short row.

- ***GSR Right side:*** bring the yarn to the front BETWEEN the needles, slip the stitch from the left needle to the right needle purlwise with the yarn in front pull the yarn to the back of the work OVER TOP of the right needle. This will distort the stitch making it look as if there are 2 stitches instead of 1. This is called the 'double stitch'. With yarn in back, begin knitting.
- ***GSR Wrong side:*** Slip the stitch from the left needle to the right needle purlwise with yarn in front, pull the yarn to the back of the work OVER TOP of the right needle. This will distort the stitch, making it look as if there are 2 stitches instead of 1. This is called the 'double stitch'. Don't forget to bring the yarn to the front BETWEEN the needles to begin purling.

Continue in this fashion as specified in your pattern, creating your 'doubled' stitches. To finish the short rows simply knit or purl the double stitch together.

W&T: Knit row—with yarn in back, slip next st purlwise onto right hand needle, bring yarn to front of work, return slipped st to left hand needle, bring yarn to back of work, then turn work. Purl row—with yarn in front, slip next st purlwise onto right hand needle, bring yarn to back of work, return slipped st to left hand needle, bring yarn to front of work, then turn work.

Hide Wraps: Knit row—Pick up the wrap from the front with the right hand needle and knit together with the stitch it wraps.



GERMAN SHORT ROW HEEL (as worked with 2 Circulars or Magic Loop)

1st half of short row heel (worked only on *needle #2*)

Row 1 (RS): Knit [NEW NUMBER OF SHORT ROW TURNS] _____ stitches, PM, knit [NEW FINAL HEEL] _____ stitches, PM, knit [NEW NUMBER OF SHORT ROW TURNS] _____ stitches, turn work.

★Stitches between markers are final heel stitches. The short rows will be worked outside of those markers.

Row 2 (WS): *GSR Wrong side* (see special stitches), purl to last stitch on *needle #2*, turn work.

Row 3: *GSR Right side* (see special stitches), knit to stitch before previous 'double stitch', turn work.

Row 4: *GSR Wrong side*, purl to stitch before previous 'double stitch', turn work.

Repeat rows 3 and 4 until all the stitches outside of the markers are 'double stitches' (note the last double stitch will be created on the next row).

Center of short row heel (worked on *needle #2* and *needle #1*)

Row 1 (RS):

*Needle #2: **GSR Right side***, knit to the 'double stitch', *knit the two strands of the 'double stitch' together as one, repeat from * to end of *needle #2*,

*Needle #1: W&T the 1st stitch on *needle #1*, turn work.*

Row 2 (WS):

*Needle #2: Purl to the 'double stitch', *purl the two strands of the 'double stitch' together as one, repeat from * to end of *needle #2*,*

*Needle #1: W&T the 1st stitch on *needle #1*, turn work.*



2nd half of short row heel (worked only on *needle #2*)

Row 1 (RS): Knit [NEW NUMBER OF SHORT ROW TURNS] _____ stitches, slip marker, knit [NEW FINAL HEEL] _____ stitches, remove marker, knit 1 stitch, turn work.

Row 2 (WS): *GSR Wrong side*, purl [NEW FINAL HEEL] _____ stitches, remove marker, purl 1 stitch, turn work.

Row 3: *GSR Right side*, knit to the 'double stitch', knit the two strands of the 'double stitch' together as one, knit 1, turn work.

Row 4: *GSR Wrong side*, purl to the 'double stitch', purl the two strands of the 'double stitch' together as one, purl 1, turn work.

Repeat rows 3 and 4 until all 'double stitches' have been worked save the one created on the next row.

Next Row (RS): *GSR Right side* (see special stitches), knit to the 'double stitch', knit the two strands of the 'double stitch' together as one, ***do not turn work.***

Finishing round

Next Round (RS):

Needle #1: Knit the W&T together, knit to the last stitch of needle #1, knit the W&T together.

Needle #2: Knit the two strands of the 'double stitch' together as one, knit to end of needle #2.