

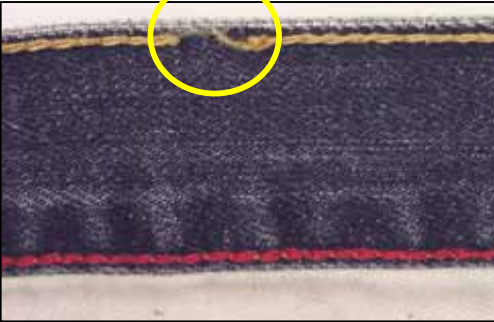

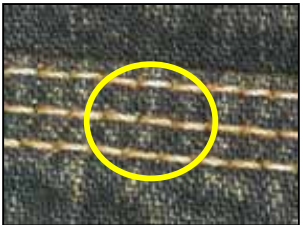
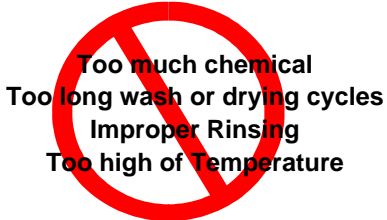


# Common Denim Seam Unqualities











# COMMON SEAM QUALITY DEFECTS

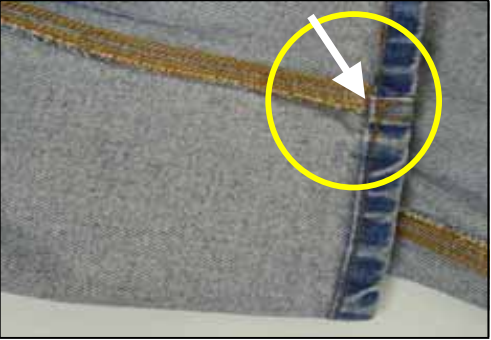
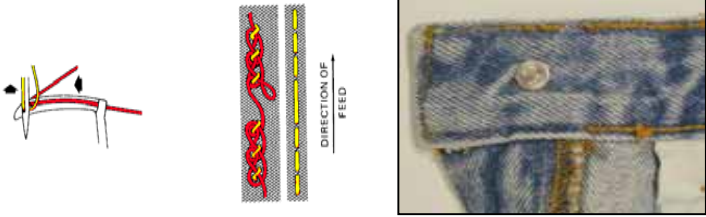



SEAM UNQUALITY PHOTO OR DRAWING	DESCRIPTION	RECOMMENDED SOLUTIONS
 <p><b>BROKEN STITCHES - NEEDLE CUTTING</b></p>	<p><b>BROKEN STITCHES - NEEDLE CUTTING</b> - where the thread is being broken where one seam crosses another seam (ex: bartacks on top of waistband stitching, seatseam on top of riser seam) resulting in stitch failure.</p>  <p>Thread Tension Too Tight      Proper Thread Tension</p>	<p><b>MINIMIZING BROKEN STITCHES DUE TO NEEDLE CUTTING</b></p> <p>- 1) Use a higher performance Perma Core or D-Core thread. 2) Use a larger diameter thread on operations where the thread is being cut. 3) Make sure the proper stitch balance is being used. On a chainstitch seam on denim, you normally would like to maintain a 60%/40% relationship of Needle thread to Loper thread in the Seam. 4) Use needles with the correct needle point. 5) Change the needles at regular intervals on operations where the Needle Cuts are occurring frequently.</p> <p><i>Note: Using the proper thread and maintaining the proper stitch balance are the two best ways to minimize broken stitches due to Needle Cutting.</i></p>
 <p>Here the looper thread has been broken due to harsh abrasion during stone-washing.</p> <p><b>BROKEN STITCHES - ABRASION</b></p>	<p><b>BROKEN STITCHES - ABRASION</b> - where thread on the stitch line is broken during stone-washing, sand blasting, hand sanding, etc. Broken stitches must be repaired by restitching over the top of the stitch-line.</p>  <p>Row of Stitch on right sewn with Perma Core NWT</p>	<p><b>MINIMIZING BROKEN STITCHES DUE TO ABRASION</b> - 1) Use a higher performance <i>Perma Core</i> or <i>D-Core</i> thread; 2) Use a larger diameter thread on operations where excessive abrasion is occurring (ex: use T-120 on Waistband); 3) Make sure stitches are balance properly, 4) Use a <i>Magic</i> air entangled thread in the Loper due to its lower seam profile making it less susceptible to abrasion (ex: use T-90 or T-135 Magic in loopers of the Yoke, Seat and Waistband seam); 5) Monitor the Finishing Cycle for compliance to specs.</p> <p><i>A&amp;E's new Perma Core NWT was designed to today's more demanding finishing processes. Note the Picture to the left. The seam on the right was sewn with this new thread.</i></p>
 <p>Here is an example of where the Cotton wrapper has been degraded by the harsh chemicals during Laundering</p> <p><b>BROKEN STITCHES - CHEMICAL DEGRADATION</b></p>	<p><b>BROKEN STITCHES - CHEMICAL DEGRADATION</b> - where thread is being compromised by the chemicals used during laundering resulting in loss or change of color and seam failure.</p>  <p><i>Note: Corespun threads with their continuous filament core has much greater resistance to chemical degradation than spun polyester threads.</i></p>	<p><b>MINIMIZING BROKEN STITCHES DUE TO CHEMICAL DEGRADATION</b> - 1) Use a higher performance Perma Core NWT that has greater resistance to chemical degradation. 2) It is recommended to go to larger thread sizes when the Denim Garments will be subject to Harsh Chemical washes. 3) To achieve the best laundering results make sure that the water temperatures and PH Levels are correct and that the proper amounts and sequence of chemical dispersion are within guidelines. 4) Make sure the garments are being rinsed properly to neutralize the chemicals in the fabric. 5) Monitor the drying process, cycle times, and temperatures to make sure they are correct so that the best possible garment quality can be achieved.</p>



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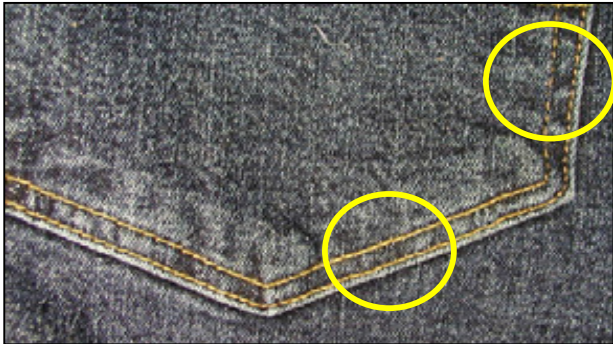
SEAM UNQUALITY PHOTO OR DRAWING	DESCRIPTION	RECOMMENDED SOLUTIONS
 <p data-bbox="199 604 443 630"><b>UNRAVELING SEAMS</b></p>	<p data-bbox="604 139 1362 251"><b>UNRAVELING SEAMS</b> - generally occurs on 401 chainstitch seams where either the stitch has been broken or a skipped stitch has occurred. This will cause seam failure unless the seam is Restitched.</p>  <p data-bbox="835 305 982 328">Skipped Stitch</p>  <p data-bbox="772 591 1081 613">Broken Stitch that is unraveling</p>	<p data-bbox="1371 139 2022 311"><b>MINIMIZING UNRAVELED STITCHES</b> - 1) Use a high performance Perma Core or D-Core thread that will minimize broken stitches and skipped stitches; 2) Insure proper machine maintenance and sewing machine adjustments; 3) Observe sewing operators for correct material handling techniques.</p> <p data-bbox="1423 415 2007 506"><i>See A&amp;E Technical Bulletins on our web-site on "Minimizing Thread Breakage and Skipped Stitches" and "Machine Maintenance Checklist".</i></p>
 <p data-bbox="205 1040 443 1065"><b>RESTITCHED SEAMS</b></p>	<p data-bbox="604 633 1362 805"><b>RESTITCHED SEAMS</b> - where there is a "splice" on the stitch line. If this occurs on Topstitching, then the seam does not appear to be 1st quality merchandise. Caused by 1) thread breaks or thread run-out during sewing; or 2) cut or broken stitches during a subsequent treatment of the finished product (I.e., stone washing).</p>   <p data-bbox="783 1024 1134 1047">Excessive Restitched Seams</p>	<p data-bbox="1371 633 2043 954"><b>MINIMIZING RESTITCHED SEAMS</b> - 1) Use a better quality sewing thread. This may include going to a higher performance thread designed to minimize sewing interruptions. (see A&amp;E "Thread Selection Guide" and/or A&amp;E's Technical Bulletin "Minimizing Thread Breakage &amp; Skipped Stitches"); 2) Insure proper machine maintenance and sewing machine adjustments; 3) Make sure sewing machines are properly maintained and adjusted for the fabric and sewing operation; (see A&amp;E's Technical Bulletin - "Machine Maintenance Checklist". 4) Observe sewing operators for correct material handling techniques.</p>
 <p data-bbox="142 1497 506 1521"><b>SAGGING OR ROLLING POCKET</b></p>	<p data-bbox="604 1068 1362 1123"><b>SAGGING OR ROLLING POCKETS</b> - where the pocket does not lay flat and rolls over after laundering.</p>  <p data-bbox="1079 1230 1304 1312">Setting the front pocket with a re-enforcement tape.</p>	<p data-bbox="1371 1068 2043 1419"><b>MINIMIZING SAGGING OR ROLLING FRONT &amp; BACK POCKETS</b> - 1) Make sure the sewing operators are not holding back excessively when setting the front pocket. 2) Make sure the hem is formed properly and that excessive fabric is not being put into the folder that will cause the hem to roll over. 3) Check to make sure pocket is cut properly and that pocket curve is not too deep. 4) Use a re-enforcement tape on the inside of the pocket that may help prevent the front panel from stretching along the bias where the front pocket is set. 5) The type and weight of denim, along with the fabric construction, may contribute to this problem. Contact your fabric supplier for assistance.</p> <p data-bbox="1381 1468 2011 1513"><i>Note: In some cases the rolling may be an inherent characteristic of the fabric.</i></p>

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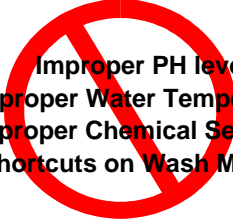


SEAM UNQUALITY PHOTO OR DRAWING	DESCRIPTION	RECOMMENDED SOLUTIONS
 <p data-bbox="142 545 506 570"><b>EXCESSIVE SKIPPED STITCHES</b></p>	<p data-bbox="606 141 1360 253"><b>SKIPPED STITCHES</b> - where the stitch forming device misses the needle loop or the needle misses the looper loop. Skips are usually found where one seam crosses another seam and most of the time occurs right before or right after the heavy thickness.</p> <div data-bbox="638 285 1339 500">  <p data-bbox="785 529 1108 553">ExcessiveSkipped Stitches</p> </div> 	<p data-bbox="1373 141 2041 342"><b>MINIMIZING SKIPPED STITCHES</b> - 1) Use corespun thread. 2) Use minimum thread tension to get a balanced stitch. 3) Use the ideal foot, feed and plate that helps to minimize flagging. 4) Training sewing operators NOT to stop on the thickness. 5) Make sure the machine is feeding properly without stalling. 6) Make sure the machine is not back-feeding.</p>
 <p data-bbox="50 927 590 980"><b>RAGGED / INCONSISTENT EDGE ON OVEREDGE OR SAFETYSTITCH SEAMS</b></p>	<p data-bbox="606 578 1360 631"><b>RAGGED / INCONSISTENT EDGE</b> - where the edge of the seam is either extremely "ragged" or "rolls" inside the stitch.</p>	<p data-bbox="1373 578 2041 716"><b>SOLUTIONS TO RAGGED / INCONSISTENT EDGE</b> - 1) Make sure the sewing machine knives are sharpened and changed often; 2) The knives should be adjusted properly in relationship to the "stitch tongue" on the needle plate to obtain the proper seam width or width bite.</p>
 <p data-bbox="128 1373 520 1398"><b>WAVY SEAMS ON STRETCH DENIM</b></p>	<p data-bbox="606 989 1360 1070"><b>WAVY SEAMS ON STRETCH DENIM</b> - where the seam does not lay flat and is wavy due to the fabric stretching as it was sewn or during subsequent laundering and handling operations.</p>	<p data-bbox="1373 989 2041 1154"><b>SOLUTIONS FOR WAVY SEAMS ON STRETCH GARMENTS</b> 1) Use minimum presser foot pressure; 2) Instruct sewing operators to use proper handling techniques and not stretch the fabric as they are making the seam. 3) Where available, use differential feed to compensate for the stretch of the fabric.</p>



# COMMON SEAM QUALITY DEFECTS

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 <p data-bbox="247 561 390 586"><b>ROPY HEMS</b></p>	<p data-bbox="604 139 1293 191"><b>ROPY HEM</b> - is where hem is not laying flat and is skewed in appearance.</p> 	<p data-bbox="1371 139 2043 313"><b>SOLUTIONS FOR ROPY HEMS</b> - 1) Usually caused by poor operator handling. Instruct the sewing operator to make sure they get the hem started correctly in the folder before they start sewing. Also, make sure the don't hold back excessively as the seam is being sewn. 2) Use minimum roller or presser foot pressure.</p>
 <p data-bbox="233 984 411 1008"><b>TWISTED LEGS</b></p>	<p data-bbox="604 589 1356 646"><b>TWISTED LEGS</b> - is where the sideseam twists around to the front of the pant and distorts the appearance of the jeans.</p>	<p data-bbox="1371 589 2043 883"><b>SOLUTIONS FOR TWISTED LEGS</b> - 1) Usually caused by poor operator handling. Instruct the sewing operator to match the front and back properly so they come out the same length. Sometimes notches are used to insure proper alignment. They should NOT trim off the front or back with scissors to make them come out the same length. 2) Make sure the cut parts are of equal length coming to the assembly operation. 3) Check fabric quality and cutting for proper skew. 4) Make sure the sewing machine is adjusted properly for uniform feeding of the top and bottom plies.</p>
 <p data-bbox="69 1373 583 1419">Notice that the thread looks much smaller on the seat seam as compared to the Yoke seam.</p> <p data-bbox="54 1471 590 1495"><b>DISAPPEARING STITCHES ON STRETCH KNITS</b></p>	<p data-bbox="604 1011 1335 1094"><b>DISAPPEARING STITCHES IN STRETCH DENIM</b> - is where the thread looks much smaller on seams sewn in the warp direction than in the weft direction of the fabric.</p> 	<p data-bbox="1371 1011 2039 1214"><b>SOLUTIONS TO MINIMIZING DISAPPEARING STITCHES ON STRETCH DENIM</b> - 1) Use a heavier thread size (T-120, T-135, T-150) on topstitching. 2) Go to a longer stitch length (from 8 to 6 spi). 3) Make sure the thread tensions are as loose as possible so the thread sits on top of the fabric rather than burying in the fabric on seams sewn in the warp.</p>

# COMMON SEAM QUALITY DEFECTS

SEAM UNQUALITY PHOTO OR DRAWING	DESCRIPTION	RECOMMENDED SOLUTIONS
 <p data-bbox="69 524 569 548"><b>THREAD DISCOLORATION AFTER LAUNDRY</b></p>	<p data-bbox="604 141 1362 253"><b>THREAD DISCOLORATION AFTER LAUNDRY</b> - is where the thread picks up the indigo dyes from the fabric giving the thread a 'dirty' appearance. A common discoloration would be the pick-up of a greenish or turquoise tint.</p> <div data-bbox="785 298 1136 516" style="text-align: center;">  <p data-bbox="785 350 1136 472">                     Improper PH level                      Improper Water Temperature                      Improper Chemical Selection                      Shortcuts on Wash Method                 </p> </div>	<p data-bbox="1371 141 2043 313"><b>SOLUTIONS TO THREAD DISCOLORATION</b> - 1) Use thread with proper color fastness characteristics. 2) Correct PH level (too low) and Water Temperature (too low) during laundry. 3) Use the proper chemicals &amp; laundry cycles. 4) Use Denimcol PCC in wash or similar additive, 5) Do Not overload washers with too many garments at one time.</p>
 <p data-bbox="58 902 583 954">Notice how the bartack thread washed down differently than the Topstitching thread.</p> <p data-bbox="79 995 562 1019"><b>POOR COLOR FASTNESS AFTER LAUNDRY</b></p>	<p data-bbox="604 553 1362 638"><b>POOR COLORFASTNESS AFTER LAUNDRY</b> - is where the thread does not washdown consistently in the garment or changes to a different color altogether.</p> <div data-bbox="705 711 1220 928" style="text-align: center;">  <p data-bbox="705 764 1220 857">                     Mixing threads in a Garment                      Using threads with different color fastness                      Not doing pre-production testing                 </p> </div>	<p data-bbox="1371 553 2043 816"><b>SOLUTIONS TO POOR COLORFASTNESS AFTER LAUNDRY</b> - 1) Use thread with proper color fastness characteristics. 2) Use threads from the same thread supplier and do not mix threads in a garment. 3) Always do preproduction testing on denim garments using new colors to assure that they will meet your requirements. 4) Make sure sewing operators select thread by type and color number and do not just pick a thread off the shelf because it looks close in color.</p> <p data-bbox="1392 870 2011 922"><i>Note: If preproduction testing shows a problem, then make sure to contact your global thread company for assistance.</i></p>