



BEISSEL — CONFIDENTIAL & PROPRIETARY

The Beissel Guide to Mastering Denim & Jeans

1. Denim Fashion: From Rugged Workwear to High-Fashion Runways

Jeans are all about staying "with-it". Whether the trend is a boot cut, a low rise, or the flexible comfort of stretch jeans, the one thing that never changes is that a pair of jeans must last. This durability is made possible by craftsmen who turn scraps of denim into fashion delights.

1.1 The Modern Wardrobe

- **Style Trends:** Denim is incredibly versatile, adapting to every fashion shift from rugged utility to high-end style.
- **Crafting Durability:** At Beissel, we specialize in helping craftsmen make blue denim look bewitching by offering needles that ensure every stitch is secure.

1.2 Modern Variations

- **Stretch Denim:** Modern jeans often feature elastomeric fibers for a comfortable, snug fit.
- **Children's Wear:** Sewing for kids requires a focus on soft, flexible seams that can handle constant movement while using light ball points to prevent fabric damage.
- **Decorative Embroidery:** High-quality needles are essential for creating dense, bewitching designs on back pockets and labels.

2. The Impact of Washing and Finishes

Denim is often a thick, hard, unwashed fabric that offers high penetration resistance to the needle.

- **Mechanical Distress:** Stone and sand-washing soften the fabric, but they can hide damage that only appears after the final wash.
 - **Chemical Effects:** Bleaching and chlorine washes affect more than just color; they can strain the seams and weaken fibers, requiring the use of high-quality thread.
 - **The Post-Wash Reveal:** Using a needle size larger than necessary can cause fabric damage that stays hidden until the garment is laundered.
-

3. Choosing the Right Sewing Machine for the Task

A standard 5-pocket jean involves roughly 37 different sewing operations. Choosing the right machine ensures these operations are efficient and precise.

3.1 Machine Applications and Stitch Requirements

Machine Type	Operation / Requirement	Stitch Type
Flatbed Machine	Joining and closing seams, topstitching.	Lockstitch (301)
Postbed Machine	Securing closing seams on small or rounded parts.	Lockstitch (301)
Free-Arm Machine	Securing round parts and closing seams in hard-to-reach areas.	Lockstitch (301)
Feed-off-the-arm	Creating high-strength lap seams at the side and seat.	Double Chain (401)
Bartack Automat	Attaching belt loops and reinforcing pocket corners.	Lockstitch (301)
Buttonhole Automat	Creating durable buttonholes for waistbands.	Zig-zag Chain
Pocket Setter	Automatically attaching back pockets and labels with precision.	Lockstitch (301)

3.2 Stitch Density

To achieve a professional appearance and the required seam strength, we recommend a stitch density of **2.5 to 3.5 stitches per cm**. For elastic fabrics, you may increase this up to **4.5 stitches per cm** to enhance the flexibility of the seam.

4. The Beissel Technical Toolkit: Needle Selection

Your needle size must match both the fabric weight (Oz) and the thread size to prevent breakage and fabric scarring.

4.1 Weight Categories and Sizing

Denim Category	Oz Weight	Needle Size (NM)	Recommended Thread Size
Light/Stretch	Below 12 Oz	100 – 110	50
Standard/Medium	14 Oz	110 – 130	30 – 35
Heavy/Coarse	Above 14 Oz	130 – 160	20 – 25

4.2 Beissel Needle Systems for Specific Operations

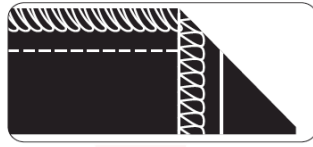
Most important sewing operations for the manufacture of jeans

DOUBLE CHAIN STITCH 401



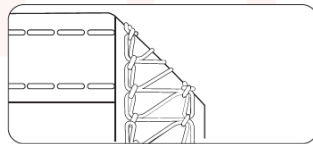
Operation	No.	Needle System	Needle Size
Join inseam or outseam (felled) seam	1	UY 130 GS	125-130
		UY 128 GAS	125-130
		149 x 3	125-130
Sew on riser	2	UY 128 GAS	125-130
Seatseam (felled seam)	2	149 x 3	125-130
Hem back pocket and watch pocket	3	B 64	125-130
	4		
Sew on waistband	5	62 x 57	140
		UY 113 GS	140

OVERLOCK (SAFETY STITCH) 51 6



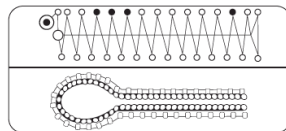
Operation	No.	Needle System	Needle Size
Join inseam or outseam	1	B 27	120
Serging fly facing		DO x 5	120
		DC x 27	120
		B 29 A	120

INTERLOCK WITHOUT TOP COVER 40 6



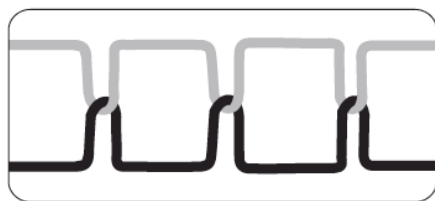
Operation	No.	Needle System	Needle Size
Make belt-loops	6	B 63	120-125
		UY 128 GAS	120-125

FINAL OPERATION SUCH AS BARTACKS (301) AND BUTTONHOLE (404)



Operation	No.	Needle System	Needle Size
Attach belt loops	16	1135 x 17 / 135 x 5	120
Bartacks on pockets	17	DP x 5 / DP x 17	120
Bartacks on fly	18	DP x 5	
Set belt loop	16	DP x 17	120
		438	120
		DP x 17	120
Buttonholes	19	501 SC	120
		558	120
		DO x 558	120

LOCKSTITCH 301



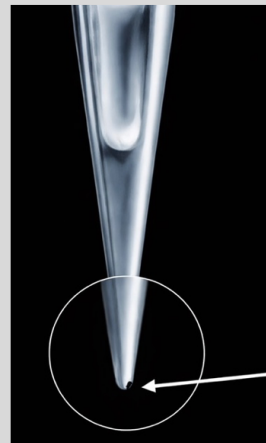
Operation	No.	Needle System	Needle Size
Topstitch on side seam	7	134 R 134-35 R	130 130
Topstitch on side seam	7	134 R	120-130
Attach back pockets	8	DB x 1 – DP x 5	120-130
Finish end of waistband			
Attach label on waistband	9	134 R	120-130
Design on back pocket	10	DP x 5	120-130
Bottom hemming	11	UY 180 GS DP x 5 134 R	140 140 140
Attach back pockets	8	134 SPECIAL 438 DP x 5 SPECIAL	120-130 120-130 120-130
Attach back pockets	8	134 or 134-35	130-140
Hem watch pocket	4	135 x 5	130-140
Attach watch pocket	12	DP x 5 / DP x 17	130-140
Turn and topstitch front pocket	13	DP x 5	130-140
Topstitch leftfly piece	14		
Close crutch seam	15		

4.3 Selection of Point Style

Point Style	Recommended Use
Normal Round (R)	Recommended for all general sewing operations on standard denim.
Light Ball Point (SES)	Essential for stretch denim or elastic combinations to avoid fiber damage.
Medium Ball Point (SUK)	Ideal for heavy, coarse, or treated denims to prevent thread bursting.
Small Triangle Tip (SD1)	Provides a straight, tidy seam for leather labels.

Invisible Tip Damage — A Hidden Cause of Sewing Problems

Over time, every sewing needle develops microscopic damage at the tip. This damage is not visible to the naked eye and can be detected only under magnification (around 10×). It can occur due to incorrect machine settings, improper handling, contact with machine parts, or other external factors during normal use.



Once this invisible damage develops, the needle may still look “fine,” but it can cause thread breakage, fabric damage, skipped stitches, and accelerated wear of machine components.

Continuing to use such a needle until it breaks is costly and disruptive. Replacing the needle once it has crossed its useful life is far more economical than running it to failure. Timely needle changes protect the garment, the thread, the machine — and overall productivity.

=====|=====

5. The Beissel Advantage: Why We Are Ideal for Denim

At Beissel, we combine German heritage with modern precision to create needles that handle the toughest denim with ease.

- **Advanced Engineering:** Our unique curved CAE design ensures a long life, while the **Reinforced Blade** prevents needle vibration and deflection during heavy-duty sewing.
- **Milled Groove:** Our precision-milled groove protects the thread during high-speed operations, unlike some designs that can damage thread.
- **Hard Chrome Plating:** Our high-quality hard chrome plating provides rugged piercing power without the need for synthetic coatings.
- **Global Quality:** We are the only brand offering a full range of Industrial and Home needles, manufactured using **German Technology**. We conform to **German DIN standards**, carry the **ISO 9002** mark, and comply with all **BIS** and **Legal Metrology** standards.
- **Made in India:** Proudly manufactured in a state-of-the-art plant in Southern India.
- **Business Ready:** We offer transparent and stable pricing, expert sewing advice, and **GST-compliant invoices**.
- Every needle undergoes **155 quality checks** before reaching you.

6. Troubleshooting: Common Denim Hurdles

If things go wrong, it is usually a quick fix involving machine speed or tool maintenance.

Symptom	Cause	Solution
Skipped Stitches	Needle deflection in thick layers or incorrect thread tension.	Use a reinforced blade needle and optimize thread tension.
Thread Breakage	Needle eye is too small for the thread or excessive heat generation.	Reduce machine speed and match thread size to the needle eye.
Fabric Damage	Needle is too thick or the point style is incorrect for the fabric.	Choose a needle point (SES/SUK) that displaces rather than cuts fibers.
Needle Breakage	Sewing over seams at full speed or incorrect needle size.	Slow down the machine speed when sewing over cross-seams.

7. Maintenance: Protecting Your Production

- **LIFE OF THE NEEDLE**

The wear and tear of the needle is influenced by a multitude of factors. The most important one is the condition of the point. To avoid garment rejects caused by damaged points, needles should be changed every 8 hours in operations involving multiple plies such as double felled seams, attaching pockets and bartacking on automatic machines.

4 Simple Checks That Cut Needle Breakage and Boost Production

1

Check throat plates of all your sewing machines. They carry tell tale signs of needles having hit the throat plate.



Result

- Needle breakage.
- Thread breakages when it continuously brushes against rough edges.
- Frequent down time.



Corrective Action

- Select throat plate according to size of needle.
- Change damaged throat plates.

2

Most needle breakages happen when, due to incorrect machine setting, needle hits the hook point.



Result

- Needle breakages.
- Rough edges cause thread breakages.
- If the hook point is ground to smoothen rough edges, machine setting becomes challenging. Too close, and hook point hits the needle and just a bit away from needle, results in skipped stitches.



Corrective Action

- Frequent needle breakage in any single machine is a certain pointer to incorrect setting.
- Weekly check of hook point condition. Change damaged shuttle hook.

3

If Bobbin is wound manually, the side walls will go out of shape. Then it will be directly in the path of needle and will cause it to break.



Result

- Needle will break in an instant.
- Needle will become blunt and begin to cause bigger holes in garments.



Corrective Action

- Always wind the bobbin with the automatic device which spreads the thread evenly.
- Change bobbin if out of shape. After all, it is a low-cost item.

4

1-2-3 of needle breakage



If needle breaks in blade, it is certainly due to garment being pulled. The needle will break only in blade due to "Bending stress".



If needle breaks in the CAE, examine the tip. If it is damaged, it has most certainly hit a machine part – throat plate, shuttle hook or bobbin.

Tip: Change needles every 24 hours on other operations but always check the tip regularly.

Sewing machine needles deflect more when sewing denim and can hit the machine parts. This not only ruins the tip of the needle but also the fabric thread when sewn with that needle. The use of slightly rounded point, than the normal round point helps in avoiding this problem. But this is true only in the 2 needle chain stitch systems UY128 GAS, 149X3 and B63.

- **The Nail Test:** Check the state of your needle by running the point across your fingernail. If it scratches the nail, the point is damaged and must be replaced.

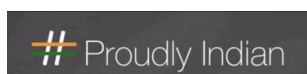
Proprietary Notice and Legal Disclaimer

No part of the contents of this guide, including text, tables, and unique branding elements, may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of **Altek Beissel Needles Limited**.

For permission requests, please submit a formal inquiry to:

sales@beisselneedles.com.

In the event that written permission is granted, such permission must be explicitly acknowledged in the final work or publication through a clearly visible credit line stating: *"Reproduced with the express permission of Altek Beissel Needles Limited."* Failure to comply with these terms may result in legal action.



Registered office and factory:

Altek Avenue,
43/1C, ECR, New Chennai Township SEZ
Atchivilagam village,
Cheyyur Taluk,
Chengelpet district
Tamil Nadu 603 305.
GST:AAA 4302J 2Z8
PAN: AAACA 4302 J

CIN:U93090TN1988PLC035704

Whatsapp: 99401 74376

[www:beisselneedles.com](http://www.beisselneedles.com)

sales@beisselneedles.com