



Beissel Practical Guide: Conquering Technical Outdoor Gear

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1. Getting to Know Outdoor Materials

- 1.1. Technical gear involves fabrics built to survive the elements—think of tough Cordura backpacks, waterproof laminates, and lightweight ripstop tents. These materials are often coated with silicone or polyurethane (PU) to keep water out, which makes them "grippy" and harder to sew than regular clothes.
- 1.2. When you're working with these, you aren't just joining fabric; you're building a barrier against wind, rain, and wear. The right needle ensures your gear stays functional and the seams stay waterproof.

2. Selecting the Right Machine and Setup

- 2.1. **Sewing Machine Selection:** For heavy backpacks or thick tents, an **industrial walking foot machine** is the gold standard. For lightweight jackets and apparel, a high-quality **straight-stitch machine** with a strong motor is preferred.
- 2.2. **Throat Plate:** Use a plate with a **small needle hole**. This prevents thin, slippery outdoor fabrics from being pushed down into the machine (a common headache called "flagging").
- 2.3. **Presser Foot:** When sewing coated fabrics (like vinyl or PU-coated nylon), a **Teflon (non-stick) foot** or a **roller foot** is a lifesaver. It prevents the fabric from sticking to the foot, ensuring a smooth, even feed.

3. Choosing the Needle System, Size, and Point

- 3.1. **Needle System:** Most industrial machines for outdoor gear use the **135x17** or **DPx17** system for heavy items, and **16x231** or **DBx1** for lighter apparel.

3.2. **Needle Point and Size:** Match your outdoor project with the right Beissel needle parameters:

Application	Recommended Needle Size	Point Style	Why it works
Backpacks / Webbing	110/18 to 125/20	R (Sharp)	Punches through dense straps without bending.
Waterproof Jackets	70/10 to 80/12	SPI (Slim Sharp)	Creates a tiny hole that is easily sealed with tape.
Tents / Ripstop	80/12 to 90/14	R (Sharp)	Punctures the weave cleanly to prevent puckering.
Softshells / Stretch	75/11 to 90/14	SES (Ball Point)	Protects elastic fibers from breaking.

4. Thread and Stitch Considerations

- 4.1. **Thread Type:** Use **bonded polyester** or **nylon** threads. Polyester is better for items exposed to the sun (UV resistance), while nylon is excellent for high-stress seams like those on climbing gear or heavy bags.
- 4.2. **Thread Size:** For heavy gear, use **V-69** or **V-92** thread. For lightweight apparel, **Tex 25** to **Tex 40** is standard.
- 4.3. **Stitch Type:** The **Lockstitch (301)** is most common for durability. For seams that need to stretch (like sleeve cuffs), a **Chainstitch (401)** or **Overlock (504)** is recommended.

5. Troubleshooting Your Seams

- 5.1. **Thread Fraying:** If your thread looks "fuzzy," your needle eye might be too small or have a tiny burr. Switch to a Beissel needle with a larger eye to let the thread breathe.
- 5.2. **Skipped Stitches:** This is common on dense webbing. Ensure your needle is fully seated and consider slowing down your sewing speed.
- 5.3. **Leaky Seams:** If water gets through, your needle might be too thick. Drop down one needle size and always finish with quality seam sealer or tape.

6. Frequently Asked Questions (FAQ)

6.1. **Can I use the same needle for my backpack and my tent?**

No. A backpack needs a thicker, reinforced needle (Size 110+), while a tent requires a much finer needle (Size 80-90) to keep the fabric waterproof.

6.2. Does the needle point really matter for waterproof fabric?

Absolutely. A sharp, slim point creates the smallest possible entry hole, which is crucial for maintaining the integrity of the waterproof coating.

7. Practical Sewing Tips

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.



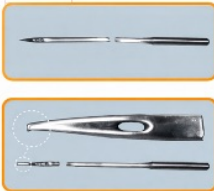
Result

- 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.

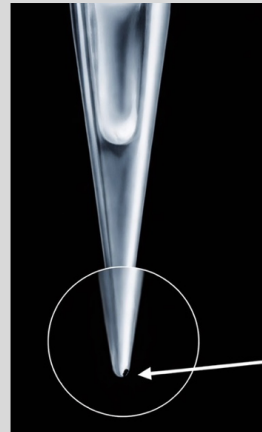
7.1. **Avoid Pins:** Pins leave permanent holes in waterproof fabric. Use **clips** or **basting tape** to hold layers together instead.

7.2. **Needle Heat:** When sewing heavy synthetics at high speeds, the needle can get hot and melt the fabric. Using a Beissel needle with a specialized finish helps dissipate heat.

7.3. **The Anchor Technique:** Always stop with the needle "down" when pivoting around corners on backpacks to keep your layers perfectly aligned.

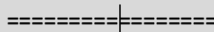
Invisible Tip Damage — A Hidden Cause of Sewing Problems

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.



8. Why Professionals Choose Beissel

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.
- **Rigorous Testing:** Every needle undergoes 155 quality checks before reaching you.

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