BEISSEL

FASHION INPUTS

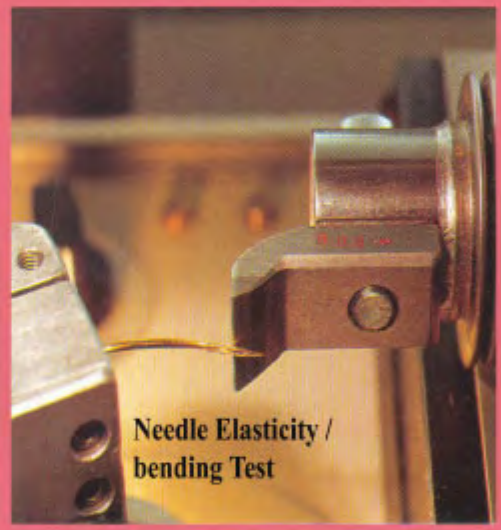
Vital needle inputs for crafting fashion.

INPUT # 1

WHAT'S A GOOD NEEDLE?

TRAITS OF A GOOD NEEDLE

- Should not break easily
- Should not stay as bent
- Must be elastic (12 - 15 degrees)
- Tip must be intact
- Tip hardness > 850 HV
- Should not develop high friction
- Thread should not fray
- Skipped stitch should not occur
- Should not make bigger hole



INPUT # 2

WHAT ARE THE 3 VITAL PARAMETERS ONE MUST KNOW ABOUT A NEEDLE?

3 KEY THINGS ABOUT A NEEDLE

- SYSTEM: The needle system indicates what kind of sewing machine uses the needle. For example, DBX1.

- SIZE: The diameter of the needle blade just above CAE. Usually measured in Nm. For example, Nm 80 means 0.80 mm.

- POINT: The part of the needle between the top of the eye and the end of the needle. For example, SES.

INPUT # 3

WHAT ARE THE DIFFERENT NEEDLE POINT STYLES?

TYPES OF POINT STYLES

ACUTE ROUND POINT (RSPI)

NORMAL ROUND POINT (R)

LIGHT BALL POINT (R-SES)

MEDIUM BALL POINT (R-SUK)

HEAVY BALL POINT (R-SKF)

SPECIAL BALL POINT (R-SKL)

INPUT # 4

WHAT ARE THE PLUSES AND MINUSES OF DIFFERENT POINT STYLES?

ACUTE POINT STYLE

ADVANTAGES

- Takes lesser force to pierce fabric
- Smaller hole visibility
- Good seam appearance
- Minimum seam puckering

DISADVANTAGES

- Needle point life lesser

APPLICATIONS

- Attaching name tags
- Stitching cuffs
- Used for densely woven material, micro fibers, coated fabrics & silks.

NORMAL ROUND POINT

APPLICATIONS

- Light woven materials
- Thin coated materials
- Laminated materials
- Textile combinations

LIGHT BALL POINT

ADVANTAGE

- Avoids yarn fabric and damage.

APPLICATION

- Knit garments
- Jersey / Terricot
- Elastic woven
- Fine & heavy jeans

MEDIUM BALL POINT

APPLICATIONS

- Coarse knitted fabrics
- Stone Washed / Sand Washed jeans

SPECIAL BALL POINT

APPLICATION

- Being needles with very wide, highly rounded point these are good for medium to coarse elastic material with covered elastomeric threads.
- Specially good for sewing Lycra.

INPUT # 5

HOW DOES ONE SEW LEATHER?
ARE THERE SPECIAL NEEDLES FOR IT?

NEEDLES FOR CREATING MAGIC WITH LEATHER

NARROW WEDGE POINT (W/P)

APPLICATION

- For very strong seam.
- On all types of leather materials like bags, belts, shoes & suitcases.

TYPES

- P – Normal narrow wedge point
- PCL – Left twist groove below eye for hook turning clockwise
- PCR – Right twist groove below eye for hook turning anti-clockwise

REVERSE TWIST POINT (RTW/LR)

APPLICATION

- For decorative seam appearance.
- Used primarily for manufacture of footwear, bags & suitcases.

TWIST POINT (TW/LL)

APPLICATION

- For slightly recessed and straight seam.
- Used for manufacture of shoes, bags and suitcases.

  Ideal for shoe repairs.

TRIANGULAR POINT (TRI/D)

APPLICATION

- For a straight seam.
- Ideal for heavy footwear & high heeled shoes.

ROUND POINT WITH SMALL TRIANGULAR TIP (SD1)

APPLICATION

- For a straight seam and tidy seam appearance.
- Ideal for stitching plastic, hard fibres, films & fine leather clothing.

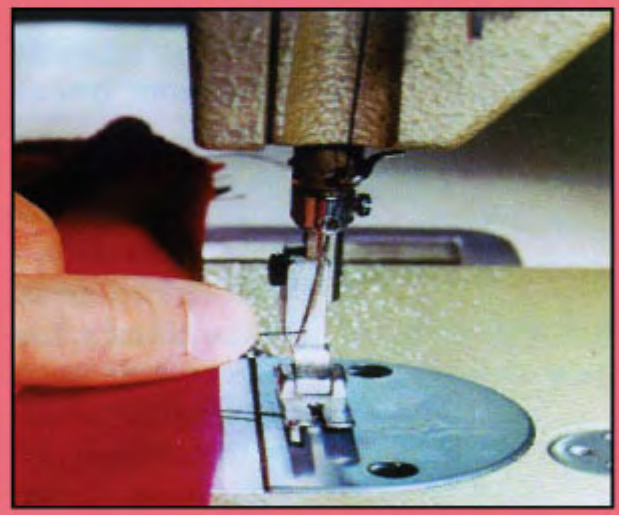
INPUT # 6

WHY DOES A NEEDLE BREAK?

GENERAL REASONS

1. BAD SEWING HABITS

Sometimes, a bent bobbin, an uncentered needle or a lapse in checking tip smoothness may result in needle breakage.

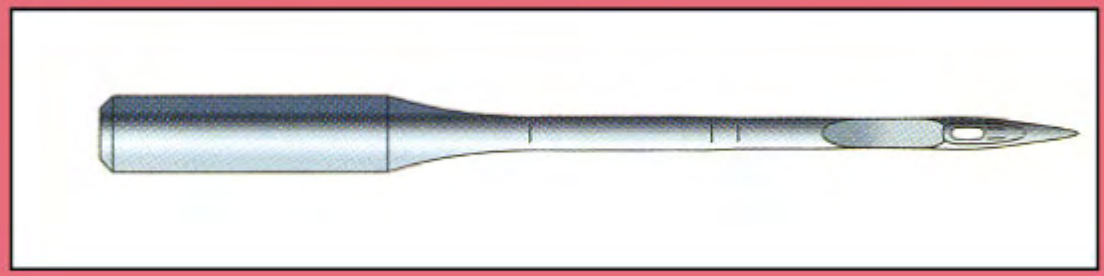


2. MACHINE SETTING

If a needle breaks too often at the CAE, chances are a faulty machine setting may have caused it.

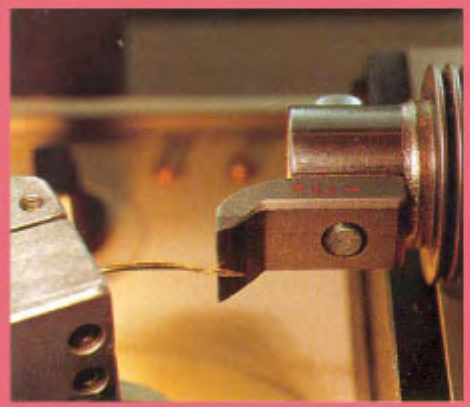
3. NEEDLE SELECTION

When you don't use the right needle at the right time for the right job, the needle breaks.



4. SPURIOUS NEEDLE

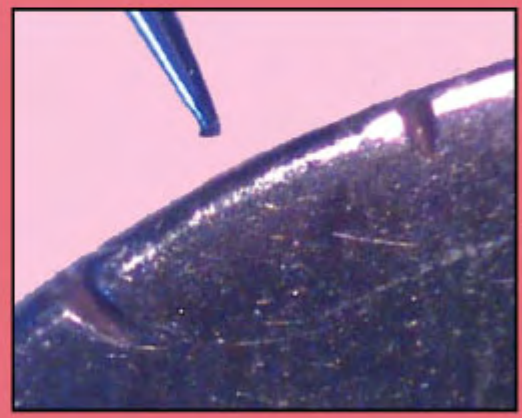
When you use a needle of dubious quality,
the needle breaks.



SPECIFIC REASONS

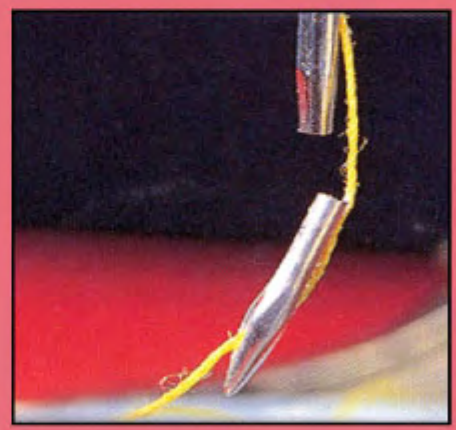
TIP BREAKAGE

Happens when needle point hits bobbin and other machine parts.



BREAKAGE AT CAE

Happens when needle is at the fag end of its life.
The reason clearly is wear and tear.



BREAKAGE AT BLADE

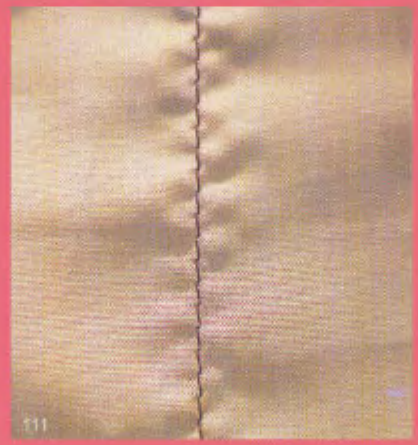
Happens when operator pulls garment manually during sewing or when thread tension is high.

INPUT # 7

WHAT IS SEAM PUCKERING?

SEAM PUCKERING

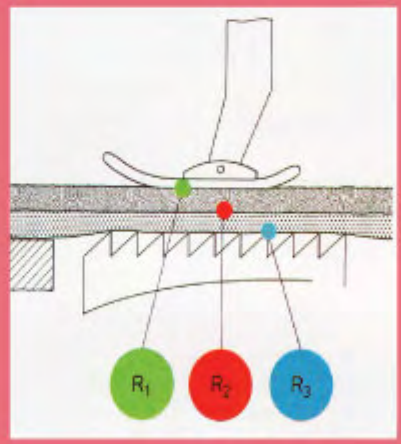
Seam puckering is a seam of unacceptable appearance. It's of 3 types: Transportation, Displacement and Relaxation puckering.



TRANSPORTATION PUCKERING

CAUSE: Unequal feeding of top and bottom plies.

And the resulting feed compensation by the operator.



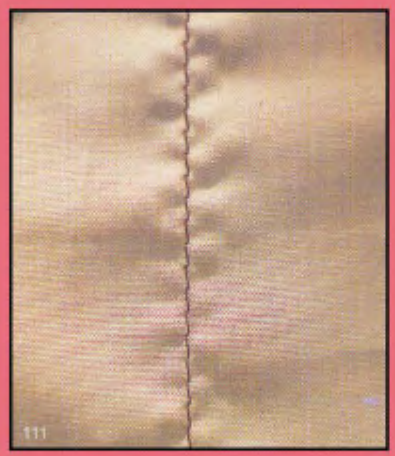
SOLUTION

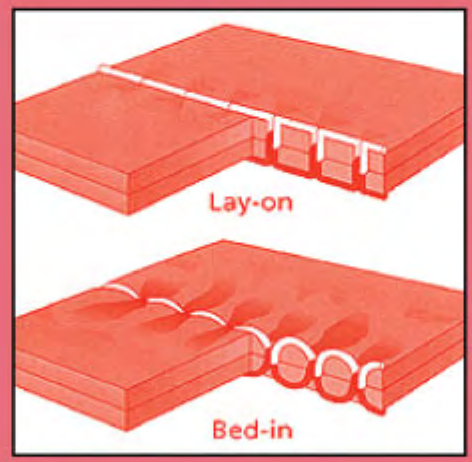
DIAGNOSIS: Make two cuts across seam in the area of most pucker. Remove all stitches between cuts. If one ply is longer problem is unequal feed.

SOLUTION: Correct top and bottom feed timing. Correct operator technique. Correct hole size in throat plate and presser feet. Use compound feed machine.

RELAXATION PUCKERING

Also called Tension Puckering. This occurs when the thread tension is high.





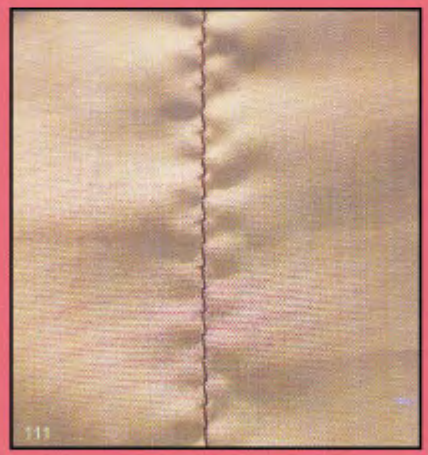
SOLUTION

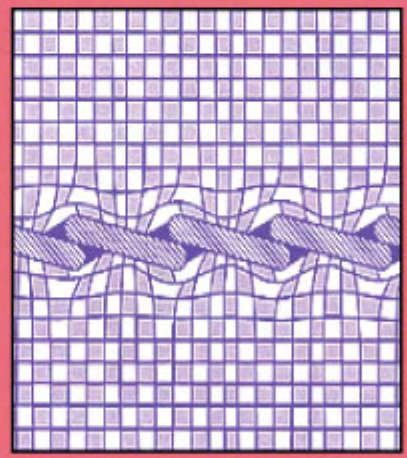
DIAGNOSIS: Cut top and bottom stitches. If pucker disappears, problem is incorrect tension setting.

SOLUTION: Sew with minimum tension. Select thread with appropriate lubricity.

DISPLACEMENT PUCKERING

When sewing thread displaces the yarns near the stitch hole it results in tension which in turn leads to puckering.





SOLUTION

DIAGNOSIS: Cut top and bottom stitches. If pucker remains, problem is yarn displacement.

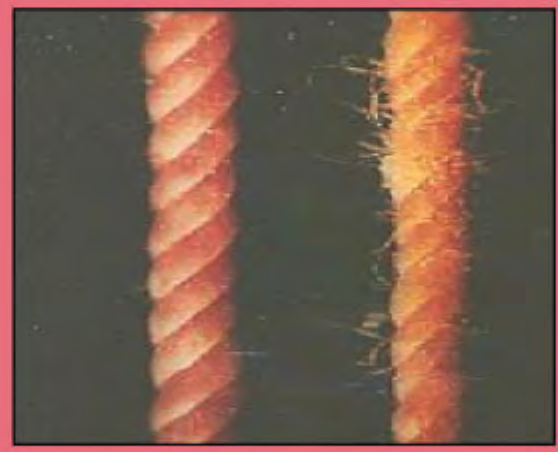
SOLUTION: Use smallest possible needle size. Reduce number of stitches per inch. And select correct thread size.

INPUT # 8

HOW TO AVERT THREAD BREAKAGE?

THREAD BREAKAGE CAUSES

Thread breaks during sewing primarily due to tensile stress, fraying and needle heating.

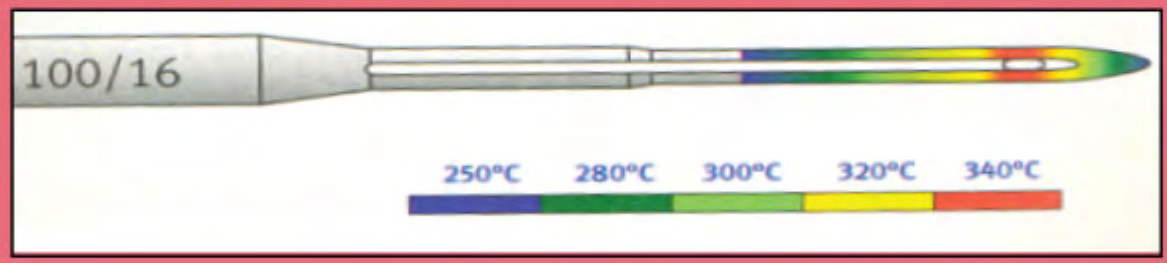


MANAGING MECHANICAL STRESS

1. If thread doesn't fill 40% of the needle eye width, then use appropriate thread size and needle size.
2. If there are rough edges either on hook surface, threat path or throat plates then keep smoothening at regular intervals.
3. If the hook pierces the thread ply due to improper timing then maintain the clearance between the needle and the hook.

MANAGING NEEDLE HEATING

1. If thread selection is causing the problem, then use heat resistant threads.
2. If the needle design is the root of the problem, then use special needles.
3. If there is an excessive rise of needle temperature, then use lubricants.



MANAGING TENSILE STRESS

1. If high tension of needle or bobbin thread is the cause of the problem, then use appropriate tension.
2. Uneven winding of the bobbin may sometimes be the cause. In such cases make sure the bobbin is properly wound.
3. If thread quality is an issue, opt for a better quality thread.

INPUT # 9

HOW TO AVERT SKIPPED STITCHES?

SKIPPED STITCHES CAUSES

Skipped stitches may arise either due to:

1. Bent needles
2. Machine setting
3. Sewing operations
4. Thread tension
5. Thread quality
6. Nature of fabric

1. BENT NEEDLE EFFECT

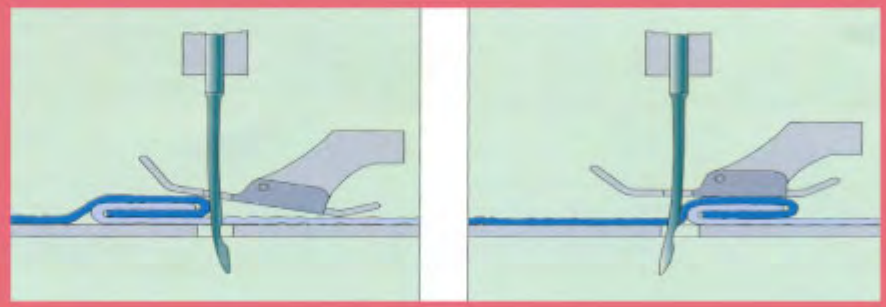
When the needle bends at CAE, hook can't catch the thread, resulting in a skipped stitch.

2. MACHINE SETTING EFFECT

When hook / looper is not adjusted correctly, when hook timing is improper or when thread tension is too loose or tight, a skipped stitch occurs.

3. SEWING OPERATION EFFECT

Sometimes critical sewing operations can cause skipped stitches.



4. NEEDLE DESIGN EFFECT

Conventional needles with less hump often cause skipped stitches.

Redesigning the needle by introducing an extra hump may help.

5. THREAD QUALITY EFFECT

Uneven twists, slabs in thread and elongation might lead to skipped stitches.

6. FABRIC NATURE EFFECT

Some types of fabrics cause improper loop formation. This in turn could trigger skipped stitches. Selection of correct needle, point style and thread quality will solve the problem.

INPUT # 10

WHY DOES SEWING RESULT IN FABRIC DAMAGE, SOMETIMES?

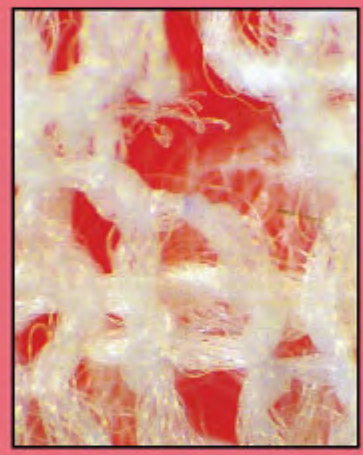
FABRIC DAMAGE CAUSES

1. Mechanical 2. Thermal 3. Thermo-mechanical 4. Needle point.

1

2

3



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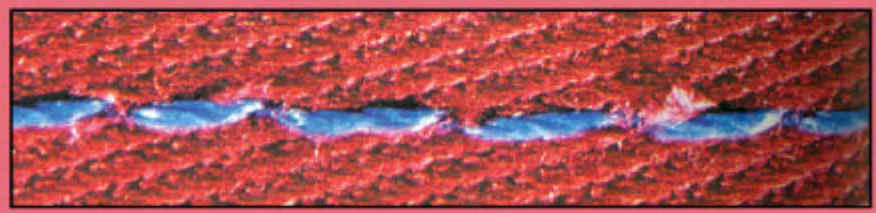


INPUT # 11

WHY DOES SEAM FAILURE OCCUR?

TO KNOW ABOUT SEAM FAILURE
ONE MUST FIRST KNOW ABOUT
SEAM STRENGTH.

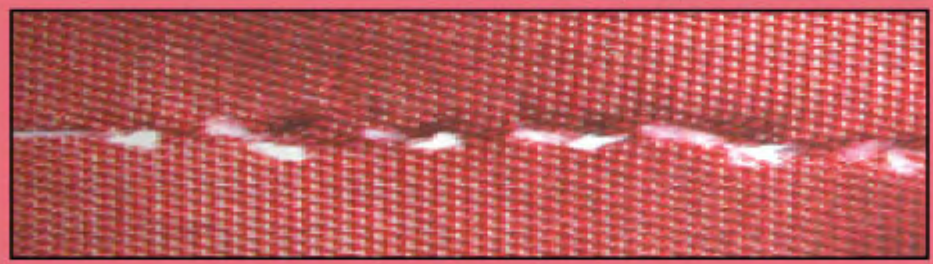
SEAM STRENGTH

Seam strength is a function of:

- Stitch clause
- SPI (Stitches per inch)
- Seam type
- Seam allowance
- Thread strength (loop strength)
- Thread tension
- Fabric structure (count & construction)

SEAM FAILURE SYMPTOMS

1. Rupture of the stitch
2. Rupture of the yarn
3. Yarn slippage at seam
4. High degree of transverse stress



SEAM FAILURE CAUSES

Seam failure during washing occurs due to:

1. Forces of torsion and elongation
2. Less SPI
3. Poor thread tension
4. Poor seam allowance
5. Improper folding of the seam

THANK YOU FOR YOU TIME.