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## THE SPECIAL APPLICATION NEEDLE **SAN® 10**

for the problem-free processing of fine gauge knitwear and microfibre fabrics.

A standstill in technical development is virtually unknown. For apparel this means new fibres, new fabrics and new fabric constructions with different sewability features.

These may be the cause for multiple processing problems on the working floor in a sewing plant. There is a general demand for lasting and flawless seams.

Within such conditions the sewing machine needle can make all the difference. Specific fabric or seam components may require rather special needle features.



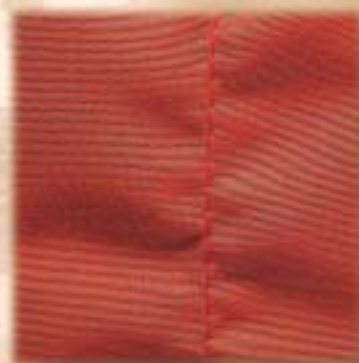
The most common problems:



Fabric damage (needle cuts)



Skipped stitches, staggered seams



Puckering, distortion

**CROSS-SECTION**

During the sewing process the needle can reach extremely high speeds when moving through the fabric. The textile fibres or yarns have to give way to the needle within an extremely short time span of down to 0.0003 seconds.

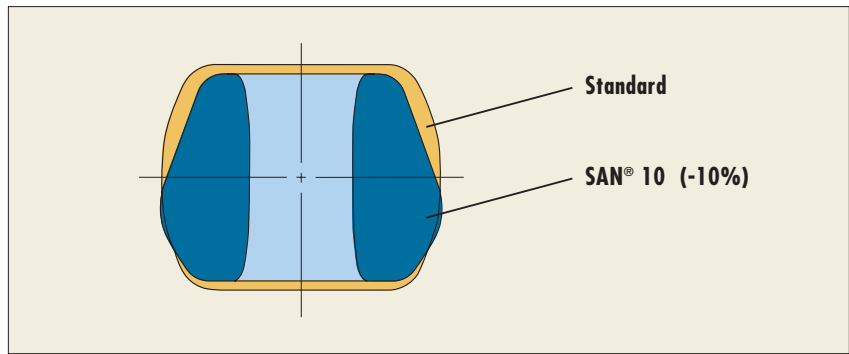
They are being displaced by the penetrating needle. The fibre displacement, a result of the bursting effect, increases overproportionally with the increase of the needle size. Consequently, there is a demand for the employment of the thinnest possible needles. However, such needles are rather instable or weak. They often lead to irregular staggered seams, to skipped stitches and to needle breakage. The machine speed has to be slowed down drastically.

In the design of the new SAN® 10 needles all those problems and requirements were taken into consideration. To realize this, specific manufacturing procedures had to be developed.

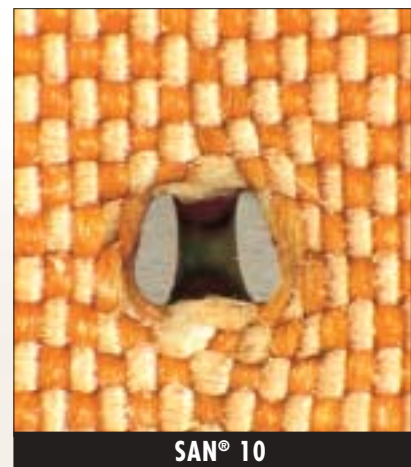
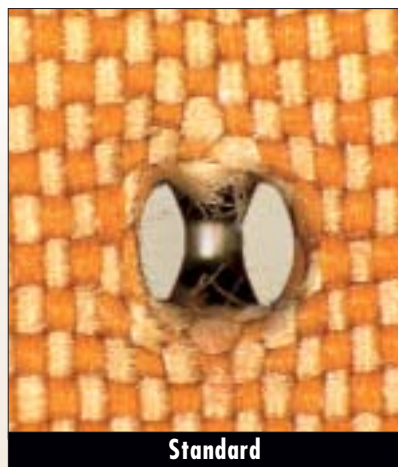
A SAN® 10 needle of size Nm 70/10 has the stability of a regular needle size Nm 75/11. Yet, the fibre displacement in the penetration area is comparable only with that of a regular needle size Nm 65/9. The SAN® 10 needles combine a most gentle fibre/fabric handling with increased sewing capacity.

In the case of loop damage or needle cuts in knitted structures or excessive puckering in microfibre fabrics you should select a SAN® 10 needle of the same size as being used - or of the next smaller size without losing needle stability.

In the case of stitch skipping, staggered seams or excessive needle breakage you should select a SAN® 10 needle of the same size as being used - or the next bigger size without an increase in fabric damage.



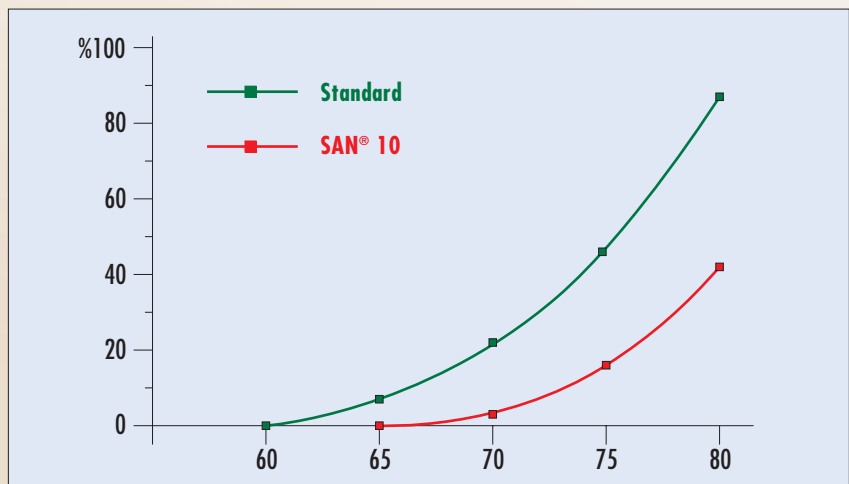
Cross-section at eye relevant for fibre displacement



**FIBRE DAMAGE**

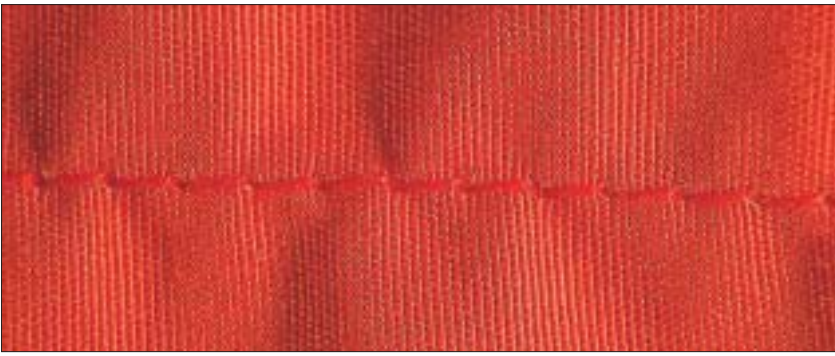
The advantages of a SAN® 10 needle over a standard needle are shown clearly in a comparison of the amount of fabric damages which were evaluated on a critical 28 gauge single knit fabric. 22% of the needle penetrations produced with the standard needle size Nm 70/10 showed some fibre damage in a microscopical inspection. Equivalent seams produced with a SAN® 10 needle of size 70/10 had only 2% damaged fibres.

In the comparison of needle sizes Nm 65/9 the standard needle seams showed 8% damages whereas the SAN® 10 needle laid a seam without any relevant damages.



Comparison: fabric damages





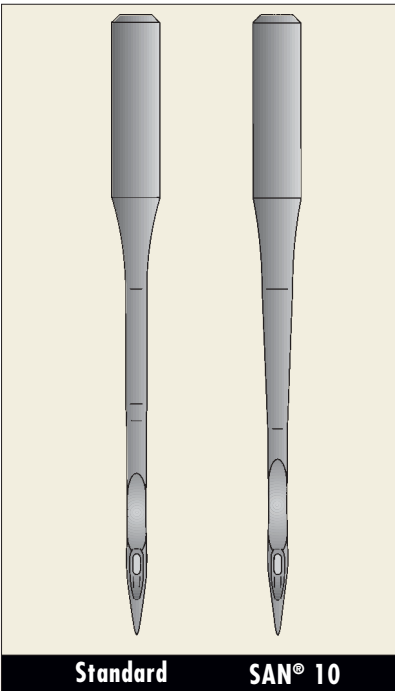
**QUALITY OF SEAM**

Seampuckering on densely woven cloth and on microfibre fabrics is often initiated by the displacement of the warp and weft yarns during needle penetration.

The relatively high stability of the SAN® 10 needle in most cases allows the selection of a thinner needle size. Both, the reduction of at least one needle size and the improved needle cross-section help to minimize the puckering effect in many cases of application. (The thread size may have to be adapted). The particular shape of the needle point also helps to avoid damages.

Skipped stitches and staggered seams are often the consequences when too thin and thus instable needles are used.

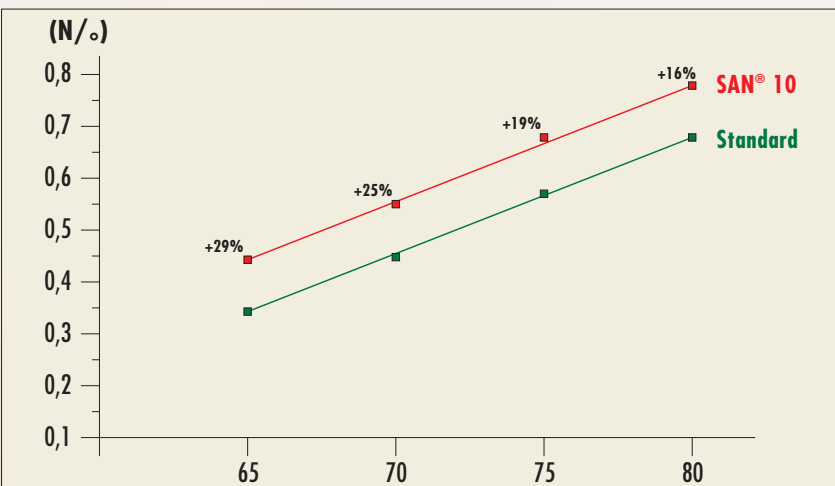
It is the higher bending resistance of the SAN® 10 needles that opens the opportunity to use thinner needles without such consequential downfalls.



**SPECIAL DEVELOPED GEOMETRY**

The whole geometry of the SAN® 10 needle has been fine tuned to the application. The needle blade, the scarf, the eye, the groove and even the point were designed towards the processing of fine gauge and critical fabrics.

**This is why the SAN® 10 needle does not only handle the sewing goods more gently than the standard needles but it also has a maximum achievable needle stability within each size.**



Comparison: bending resistance

**DEFLECTION RESISTANCE**

The specific resistance against bending forces, i.e. the force required to deflect the needle dynamically by 1 degree, is up to 29% higher, e.g. with needle class 1738 SAN® 10 as compared to standard 16x257.

**GROZ-BECKERT**  
- that subtle difference.

# GROZ-BECKERT®

## THE ADVANTAGES OF SAN® 10 NEEDLES IN THE SEWING PROCESS OF FINE GAUGE KNITWEAR AND MICROFIBRE FABRICS

- Straight, unstaggered seams
- Less skipping problems
- Less fabric damage
- Less puckering
- Less needle breakage problems
- Higher productivity



**THE RANGE:** (will be adapted to market requirements)

| Needle system/Class                 | Needle sizes → | 55/7 | 60/8 | 65/9 | 70/10 | 75/11 | 80/12 |
|-------------------------------------|----------------|------|------|------|-------|-------|-------|
| B 27 SAN® 10                        |                |      | ●    | ●    | ●     | ●     | ●     |
| B 27 SAN® 10 GEBEDUR®               |                |      |      | ●    | ●     | ●     |       |
| 62x57 SAN® 10                       |                |      |      |      | ●     |       | ●     |
| B 63 SAN® 10                        |                |      | ●    | ●    | ●     | ●     | ●     |
| B 63 SAN® 10 GEBEDUR®               |                |      |      | ●    | ●     | ●     |       |
| B 63 SAN® 10 FG                     |                |      |      | ●    | ●     |       |       |
| 81X1 SAN® 10                        |                |      |      | ●    | ●     | ●     |       |
| UY 118 SAN® 10 = UY 118 GKS SAN® 10 |                |      |      | ●    | ●     | ●     |       |
| UY 121 GFS SAN® 10                  |                |      |      |      | ●     |       |       |
| UY 128 GFS SAN® 10                  |                |      |      |      | ●     |       |       |
| UY 128 SAN® 10                      |                |      | ●    | ●    | ●     | ●     | ●     |
| 134 SAN® 10                         |                |      | ●    | ●    | ●     | ●     | ●     |
| 134 SAN® 10 FG                      |                |      |      | ●    | ●     | ●     |       |
| 134 SAN® 10 SKL                     |                |      |      | ●    | ●     | ●     |       |
| 134-35 SAN® 10                      |                |      |      | ●    | ●     | ●     |       |
| MY 1014 H SAN® 10                   |                |      |      | ●    | ●     | ●     |       |
| 1280 KSP SAN® 10                    |                | ●    | ●    | ●    | ●     | ●     | ●     |
| 1280 KSP SAN® 10 GEBEDUR®           |                |      |      | ●    | ●     | ●     |       |
| 1738 SAN® 10                        |                |      | ●    | ●    | ●     | ●     | ●     |

You can get our needles from: