GROZ-BECKERT®

INFO

SMN 11

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THE SPECIAL APPLICATION NEEDLE SAN® 11

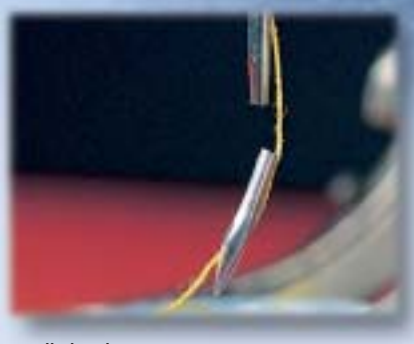
Developed for automated sewing processes with multidirectional feeding systems.

In the clothing industry, the shoe industry and in the processing of technical textiles, more and more often computerized sewing machines are in operation.
For all application areas the same conditions are valid:

- *High productivity and highest process security.*
- *Perfect seams with highest possible load bearing capacity.*

These conditions put great demands on the sewing machine needles in automated sewing processes.
Very often standard sewing needles cannot meet these demands with the result that sewing problems mentioned below occur.
The SAN® 11 is the solution.

GEBEDUR®
The titanium nitride coated needle of Groz-Beckert.



Needle breakage

Imperfect seams
(skip stitches, thread breakage)

Material damages

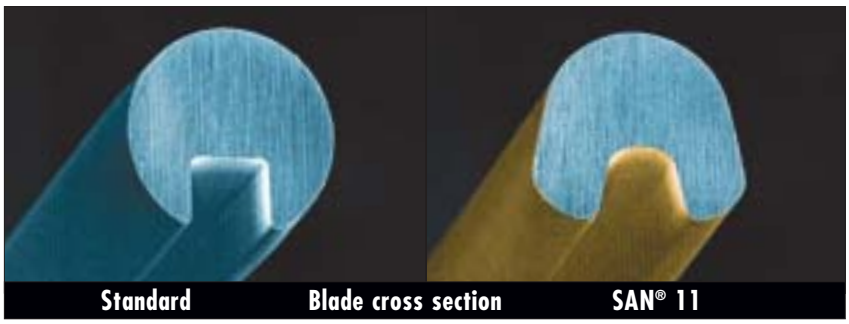
STABILITY

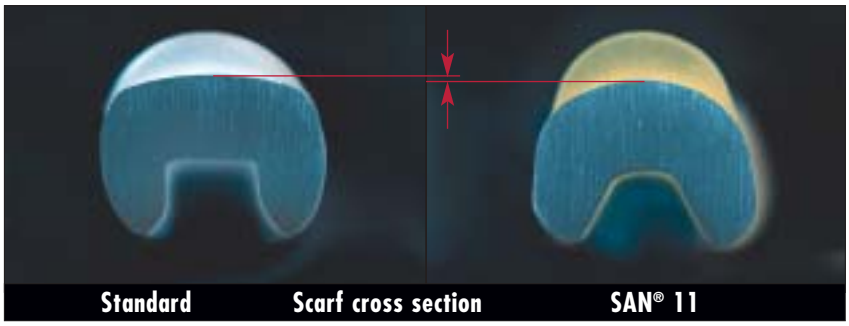
The SAN® 11 needle with its special blade and scarf geometry has an extreme bending resistance, ensuring the highest possible stability in the whole working part.

The very deep formed scarf makes an extremely tight adjustment of the hook to the needle possible.

The advantages are:

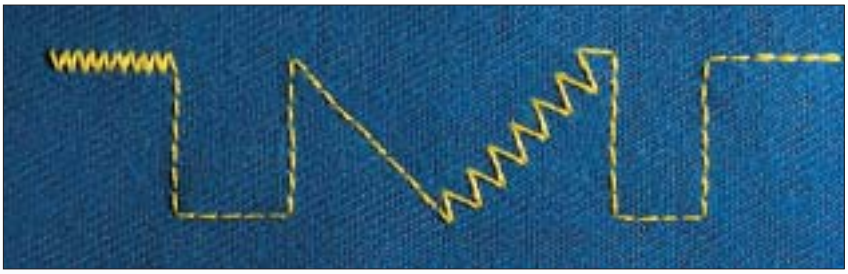
- **Less needle deflection**
- **Less needle breakage**
- **Less skip stitches**
- **Less thread breakage**





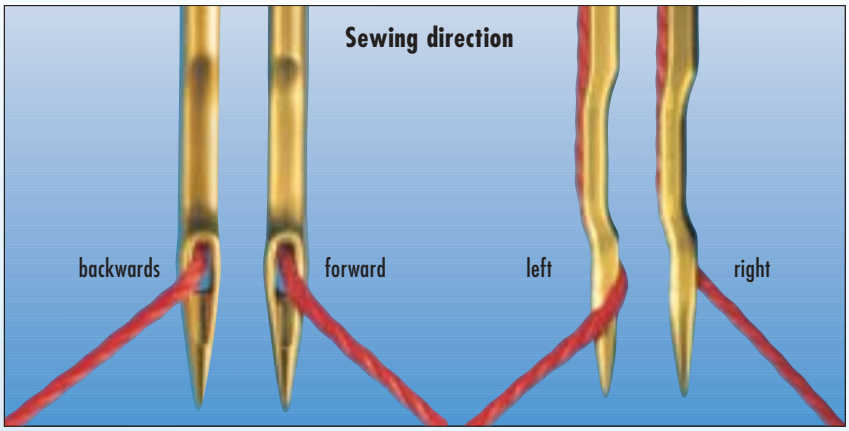
MULTIDIRECTIONAL SEWING

Computerized sewing machines are in the position to produce seams under frequent changes of the sewing direction without changing the machine speed. These operations are called multidirectional sewing.



THREAD LOADING

When changing sewing direction the sewing thread is pulled out of the needle eye into different directions. The needle slides along the tightened sewing thread during its downstroke. This can lead to changes in the thread twisting and by that to an irregular loop formation.

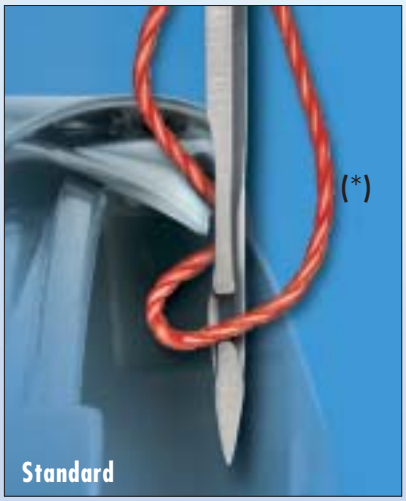


LOOP FORMATION

The special asymmetrically shaped thread sliding area inside the SAN® 11 needle eye guarantees a stable loop formation even under unfavourable sewing conditions. The formation of a negative loop (*) and thread twisting is almost eliminated.

The consequence:

- **Less skip stitches**

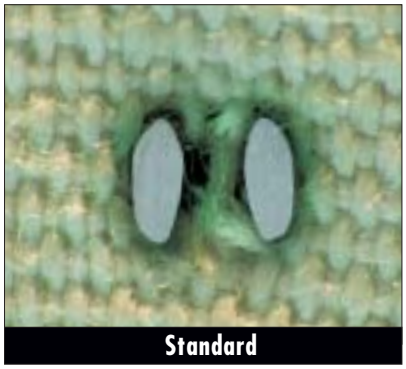


THREAD PICK-UP

Difficult sewing operations may lead to an unwinding of the thread during loop formation. Single yarns or filaments can be picked up and torn off by the hook point. The special thread guiding features of the SAN® 11 reduce the possibilities of unwinding.
The extremely deep scarf makes a very close adjustment of the hook to the needle possible and gives a high security at the loop pick-up.

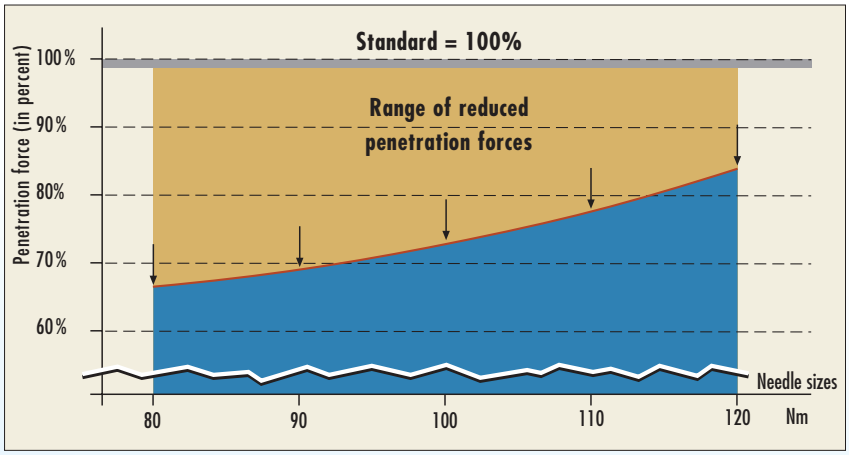
Results:

- **Less thread splicing**
- **Less thread breakage**



CROSS SECTION AT EYE

When stitching through the material the maximum penetration force is reached in this needle area and increases over proportionally with needle size. The special design of the SAN® 11 needle in this area results in significantly lower penetration forces in comparison with a standard needle.

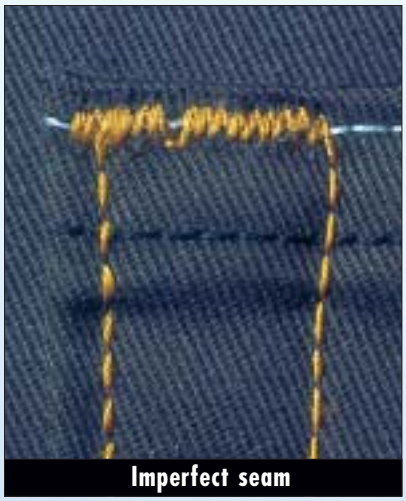


PENETRATION FORCE

The lower the penetration force the higher the fabric protection. The determined measurements of the penetration forces show significant advantages of the SAN® 11.
In comparison with the standard needle they are 33% lower in size Nm 80 and 17% in size Nm 120.

Results:

- **Better fabric protection**
- **Less material damage**
- **Less seam puckering**



SEAM QUALITY

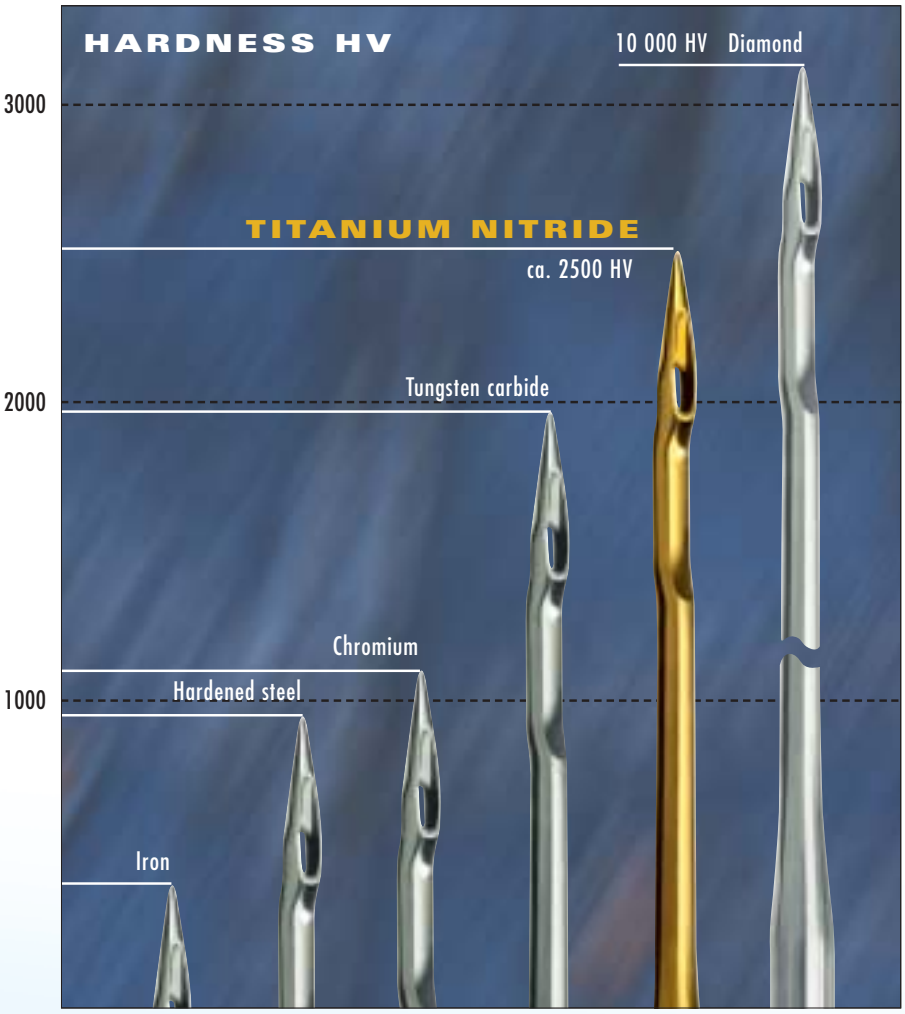
Especially in critical applications (material, thread etc.) the advantages of the SAN® 11 needle become visible with highest seam quality.

Results:

- **Special fabric protection**
- **Less material damage**
- **Less thread breakage**
- **Less skip stitches**
- **Less seam puckering**

GROZ-BECKERT®

COMPARISON OF THE GEBEDUR®-COATING IN HARDNESS



The titanium nitride coating provides the SAN® 11 needle with high protection from wear and tear as well as damage.

Feedback from industry confirms the progress of the SAN® 11 GEBEDUR® needle. Especially at automated sewing operations in different application areas the SAN® 11 GEBEDUR® needle achieves a longer working life.

The results are:

- **High seam quality**
- **High productivity**

GROZ-BECKERT
– that subtle difference.

THE RESULTS OF THE SAN® 11 DEVELOPMENT WORK

- **Less needle breakage**
- **More security against skipped stitches**
- **Less thread breakage**
- **High protection of the sewing fabric**
- **Less seam puckering**
- **Optimum protection of the hook point**
- **Extremely tight adjustment of the looper to the needle**
- **High productivity due to less machine downtime**
- **Reduced production costs**
- **High protection from wear and tear especially at needle point**

You can get our needles from: