

# INFO



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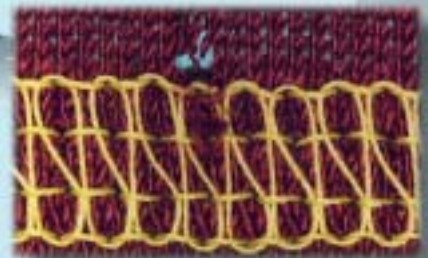
## NEEDLE CLASS 118 OF GROZ-BECKERT FOR UNION SPECIAL FLATSEAMERS

Sewing machine needles are pushed to their capability limits in the demanding high speed production of beautiful flat seams and assembly seams. Resulting in the high quality requirements for such needles.



Stitch skipping

Feedback from industry prompted Groz-Beckert to enter into a comprehensive sewing technical investigation in the course of which five areas of breakdown evolved.



Fabric damage



Thread breakage



Damaged throat plates



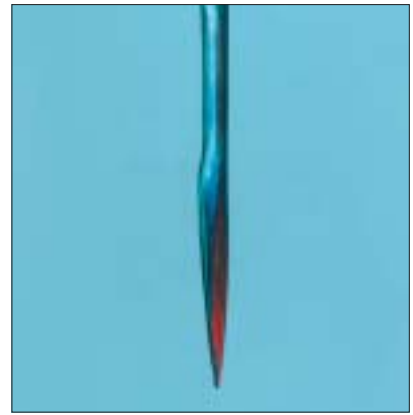
Needle breakage and needle point damage

**STITCH SKIPPING**

Poor needle alignment and needles with an insufficient straightness are often the cause of skipping. They aggravate needle deflection and cause an irregular operational distance between needles and looper. Groz-Beckert needles are designed and tuned precisely in both their shank and in their blade geometry, towards a perfect alignment in the sewing machine.



Variation in needle alignment



Proper needle alignment

Rotating the needle shows the difference:

Crooked needle



Perfect straightness



**DAMAGED THROAT PLATE**

This expensive machine damage basically has the same cause as skipping. Insufficiently straight or deflected needles strike upon the fingers of the throat plate. The consequences such as damaged needle points, needle breakage and impaired throat plates are inevitable.



A broken needle crashes upon a stitch finger

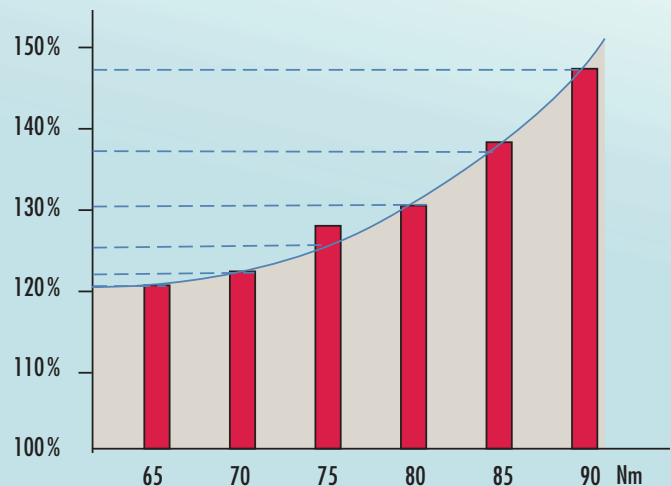
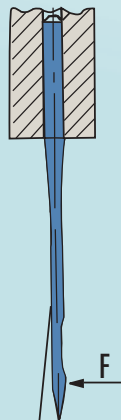


Broken stitch finger

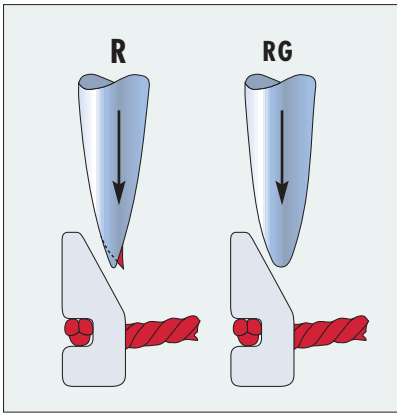
**NEEDLE BREAKAGE**

Special methods of heat treatment as well as a careful adaptation of the needle design to the specific machine function shows the following result:

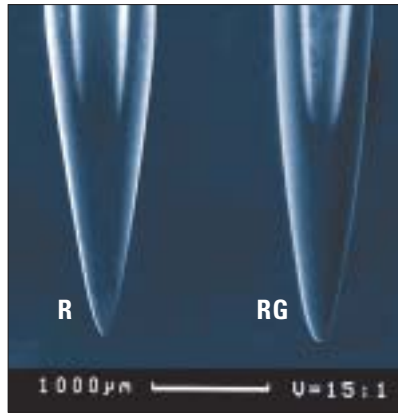
The Groz-Beckert needles have an increased resistance against bending between 20% and 47% over the regular standard. Needle deflection is drastically reduced due to these measures.



Comparison of bending resistance. The common standard = 100%



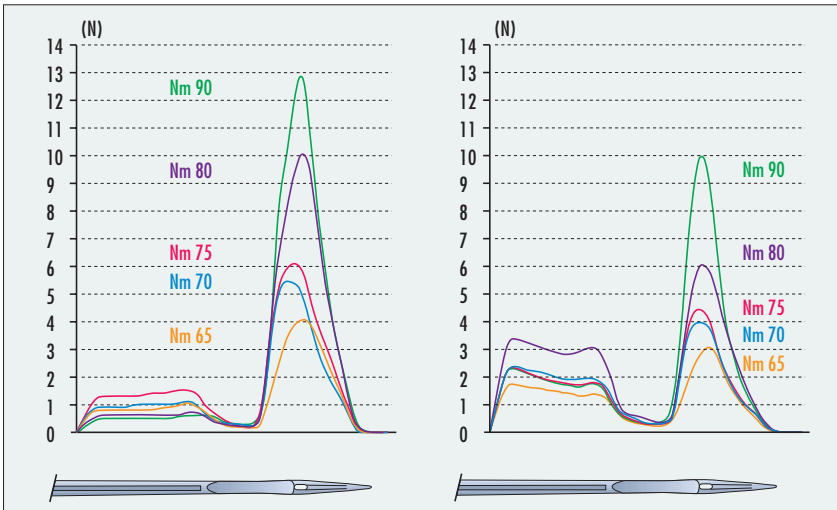
Point damage caused by machine looper



Comparison needle point styles R - RG

### NEEDLE POINT DAMAGE

A sharp needle point will be damaged rather quickly through the unavoidable dynamic impact with the looper back. Needle class 118 of Groz-Beckert in its standard execution is therefore equipped with an RG point. The specific shape of this point style helps to avoid such early damage. Needle deflection and the possibility of fabric damage are further reduced. The functional needle life is increased.



Distribution of penetration forces (Common standard) Groz-Beckert needles

### LESS PENETRATION RESISTANCE

Low penetration resistance also reflects the outstanding functional quality of the Groz-Beckert needles. They require on average 28% lower forces (measured at 4000 St./min.) to impel the resistance of the fabric during penetration.

#### Positive consequences:

- The danger of fabric damage is minimised
- Reduced frictional needle heat
- Less needle deflection
- Increased needle life
- Lower machine strain

### Eye surface in a Scanning Electron Microscope 1000 x magn.



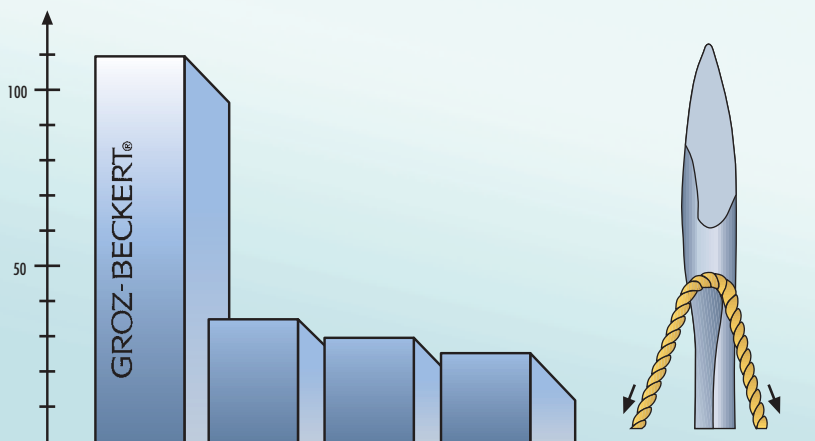
The usual standard – chemically treated surface



The string polished eye surface of a Groz-Beckert needle

### THREAD BREAKAGE

The fibres of the sewing thread will be damaged if the surface of the needle eye is not perfectly smooth. After a short period of sewing, knots will appear followed by thread breakage. An incomparably smooth eye surface is guaranteed by the process of string polishing which is applied 100% to all Groz-Beckert needles.



On average four times better thread protection. Simplified needle threading.

### SUMMARY

The Groz-Beckert investigation culminated in a general improvement of the functional quality with needle class 118 in all variants.

Please utilize these advantages for your own production by choosing the appropriate Groz-Beckert needle.

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

