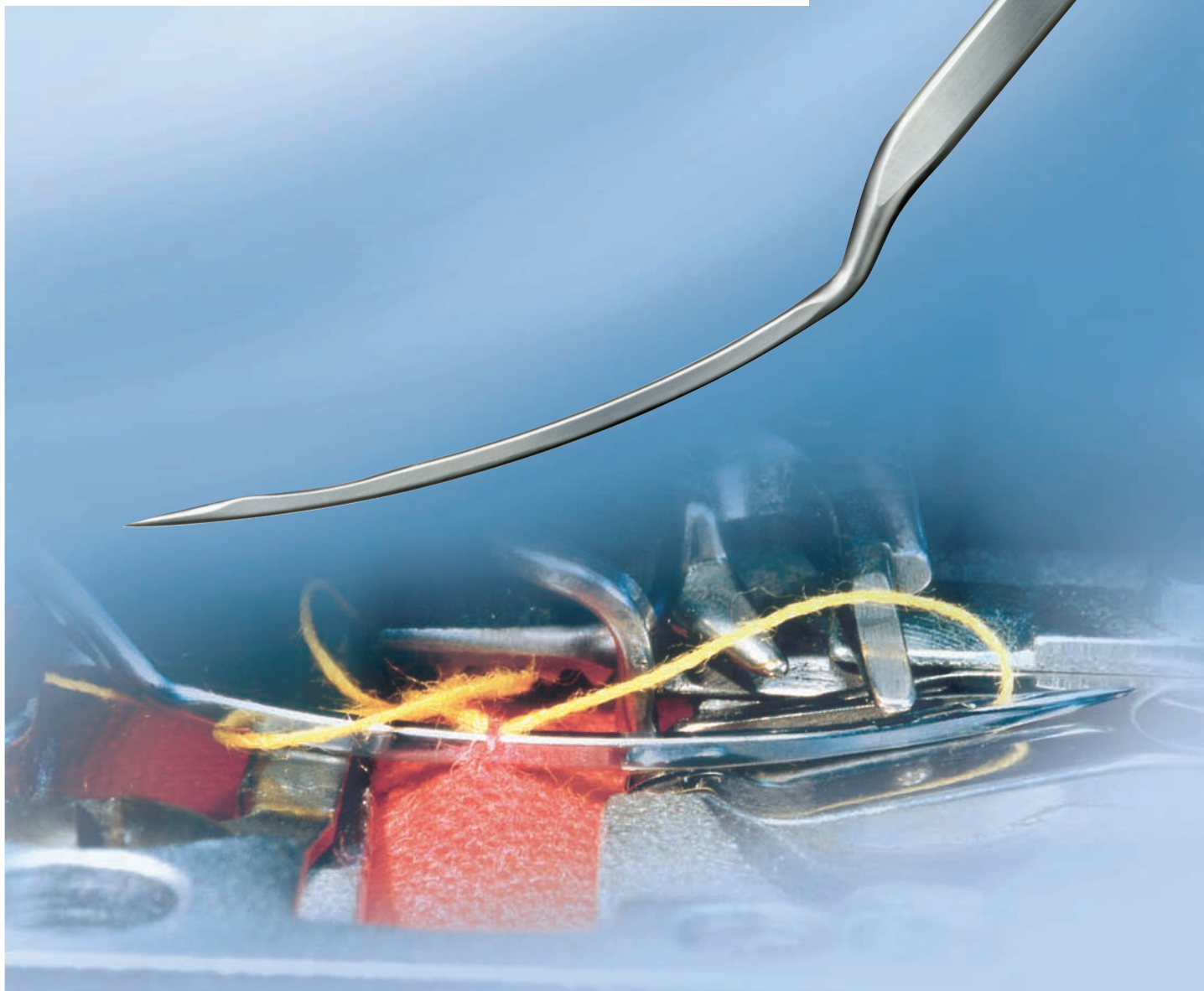


BLINDSTITCHING WITH GROZ-BECKERT V-NEEDLES – BECAUSE THE MOST IMPORTANT THINGS ARE OFTEN INVISIBLE

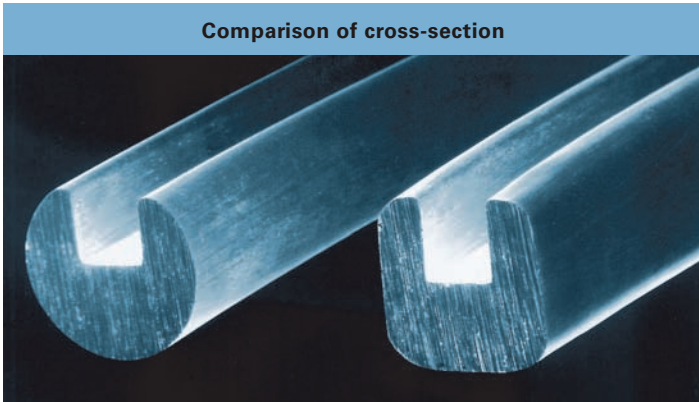


The production of a blindstitch seam which is invisible from the outside of the garment, has always been rather problematic. It is imperative for a blindstitch that the needle only picks up enough fabric fibres on the inside of the seam to achieve a secure fastening. Throughstitching as well as skipped stitches must be avoided.

This requires the highest precision in fabric control and in the guidance of the needle by the machine. The most important, and yet the weakest element of a blindstitch machine, is undoubtedly the needle. It should be very thin to avoid damage or puckering on the fabric surface. On the other hand, it should be very stiff

to approach the fabric always in one and the same position. The deflection that may be caused by lateral thread forces or other influences should be next to none in order to avoid malfunction. Those demands are highly contradictory.

THE ADVANTAGES OF THE SQUARE BLADE NEEDLES (V-NEEDLES)



Cross-section of blade

The development of the Groz-Beckert square blade needle (=V-Needle) has created new possibilities to combine needle stability and gentle fabric handling.

The square needle blade offers a rigidity considerably higher as compared to a conventional round blade of equal cross-sectional area.

Loading capacity

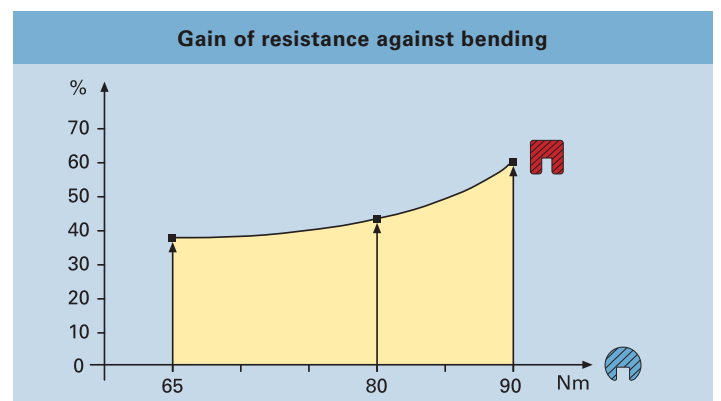
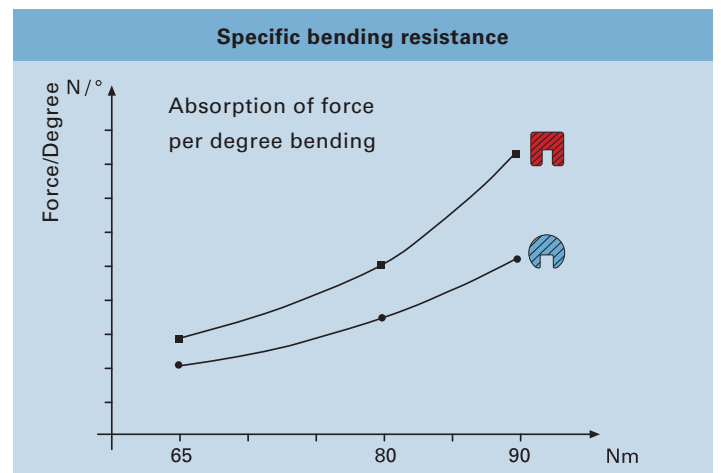
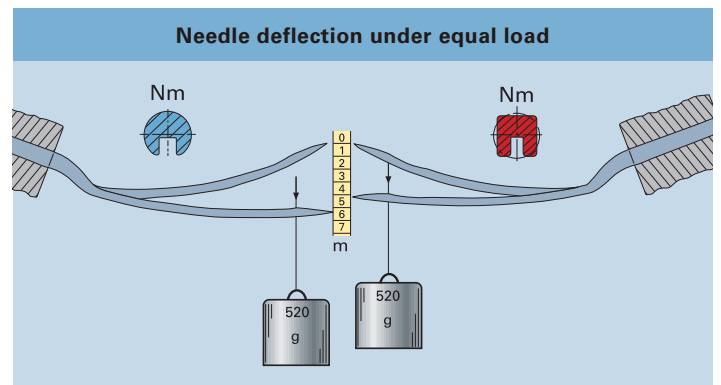
A very distinct advantage in needle stiffness becomes evident in a mechanical experiment.

Such features support the needle function during the sewing process. The resistance against bending forces of a V-needle Nm 65 almost reaches the resistance of a conventional size Nm 80 needle. Therefore, in many cases a V-needle size Nm 65 can be used where up to now a needle size Nm 80 was imperative for stability reason. Or, a V-needle size Nm 80, now has the functional rigidity of a regular size Nm 90 needle. The cross-sectionally thinner V-needles require less space during penetration. So, they stretch and displace the textile fibres to a lower degree than round blade needles of comparable stability. Blind-stitch seams without distortion on thin and critical cloth become possible.

Needle life and the machine performance are enhanced when standard needles are replaced with V-needles of same size.

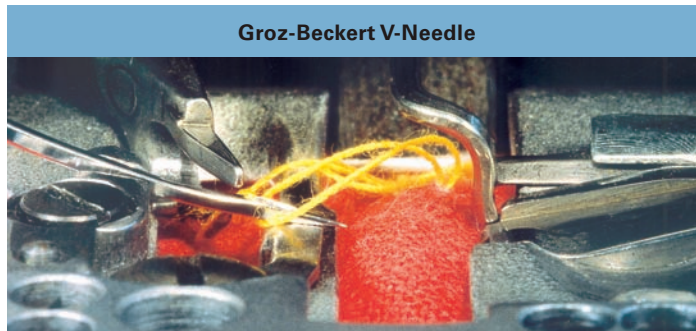
V-needles and standard round blade needles in direct comparison:

V-needles of size Nm 65 show an increased resistance against bending forces of 38% and for needle size Nm 90 even of 60%.



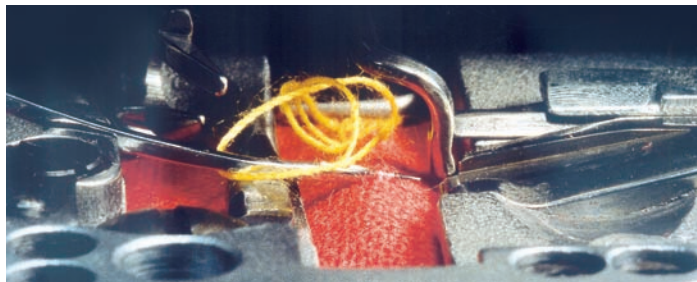
PENETRATION BEHAVIOR

For a proper blindstitch function not only needle stiffness is important but also the precision of the curvature and, hereto closely related, the shape and the position of the needle point. The needle must penetrate the fabric almost parallel to its surface. To enable the needle to split off some fibres, a very acute eccentric point is required.

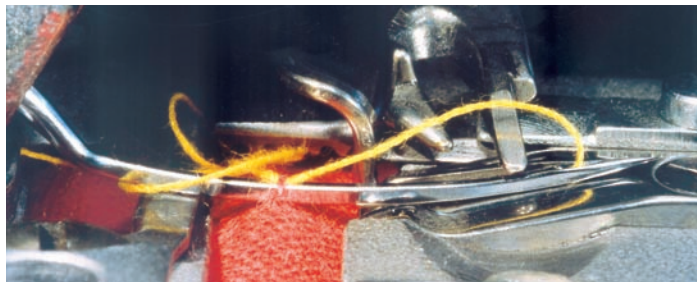


Groz-Beckert V-Needle

NEEDLE IN POSITION TO PENETRATE.



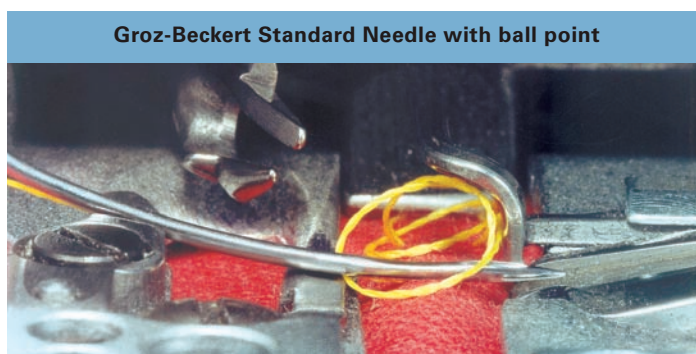
NEEDLE POINT HAS ENTERED FABRIC. SPLIT-OFF FIBRES ARE SHIFTED UP ON THE POINT CONE.



NEEDLE IN LOOP PICK-UP POSITION. THE FIBRES WHICH WERE SEPARATED FROM THE FABRIC BY THE FINE NEEDLE POINT, WRAP AROUND THE NEEDLE BLADE.

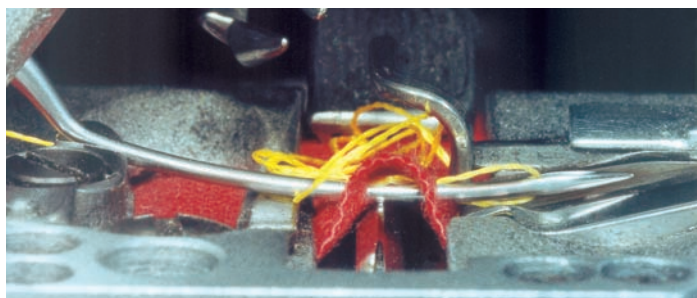
Within certain limits blindstitch needles are also produced and offered with ball points. However, such needles cannot be employed to produce a true blindstitch. The mere function of a ball point simply impedes the separation of fibres from the fabric which is imperative in the production of a blindstitch. Consequences like skipping of stitches, or alternatively, throughstitching cannot be avoided with ball point needles.

Nevertheless, this effect is utilized quite often in the confection of knitted apparel, like in the hemming of cuffs on pullovers. Ball point needles are used to produce "throughstitches" deliberately in order to achieve durable and washable seams. The stitches are hardly distinguishable since in such applications they usually fall in line with the loop-line of the fabric.



Groz-Beckert Standard Needle with ball point

NEEDLE JUST BEFORE PENETRATION. THE BALL POINT HAS IMPEDED THE SEPARATION OF FIBRES FROM THE CLOTH AS IT CAUSED THE NEEDLE TO DEFLECT. A SKIPPED STITCH IS THE CONSEQUENCE .



THE BALL POINT FOUND ITS PATH RIGHT THROUGH THE FABRIC IN A COMPLETE PENETRATION. THE CONSEQUENCE IS A "TROUGHSTITCH" INSTEAD OF THE INTENDED BLINDSTITCH.

