

**CURVED OVERLOCK SEWING
MACHINE NEEDLES:**
FUNCTION AND PERFORMANCE – GUARANTEED
BY GROZ-BECKERT.



Currently, straight needles are preferred in order to produce an overlock seam. Irrespective of this the curved needle maintains advantages within the range of alternatives. Its advantages become apparent when ultra high speed sewing is required and in particular when producing difficult and delicate seams. Unsurpassed in reliability and function, the relatively high price for such needles is quickly repaid. However, to accomplish the ultimate performance, the needle has to be equipped with certain features.

- The features warranted by Groz-Beckert:
- Needle elements are accurately designed and meticulously manufactured.
 - Selective treatment of the special grade steel.
 - Ideal relationship of hardness and elasticity.
 - Highly polished, mark free point cones.
 - String polished needle eyes.
 - Precise adjustment of curvature and point position of every individual needle.
 - Total conformity of looper contact area and thread handling elements.

CURVED OVERLOCK SEWING MACHINE NEEDLES

ADVANTAGES AND EFFECTS DURING USE

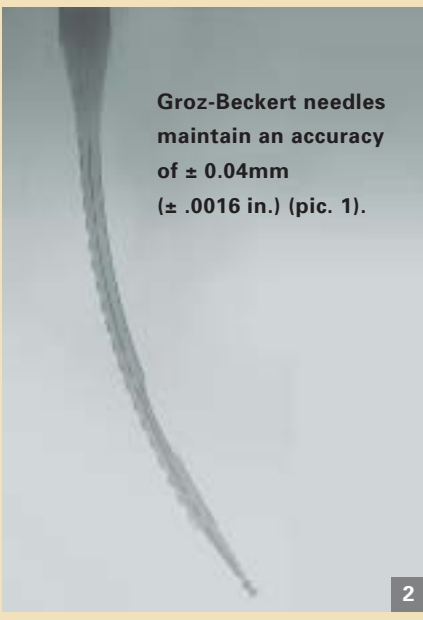
Why a curved Needle ?

Pic. 1 clearly illustrates how the looper point enters the needle thread loop. The curvature of the needle presents a natural loop formation. Such a loop can be picked up with high reliability when the needle passes the lower dead center of its movement.

The result is consistent stitch formation without skip stitching.

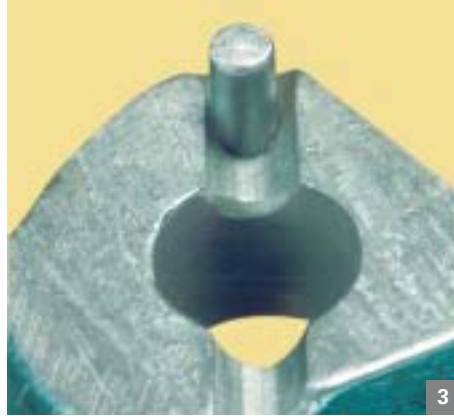


In today's high speed sewing machines this action may take place up to 10,000 times per minute, for hours and for days, in continuous repetition. In order to function in such a dynamic situation, every fragment of the needle blade has to be set and adjusted very precisely.



Groz-Beckert needles maintain an accuracy of $\pm 0.04\text{mm}$ ($\pm .0016\text{ in.}$) (pic. 1).

intact needle holder



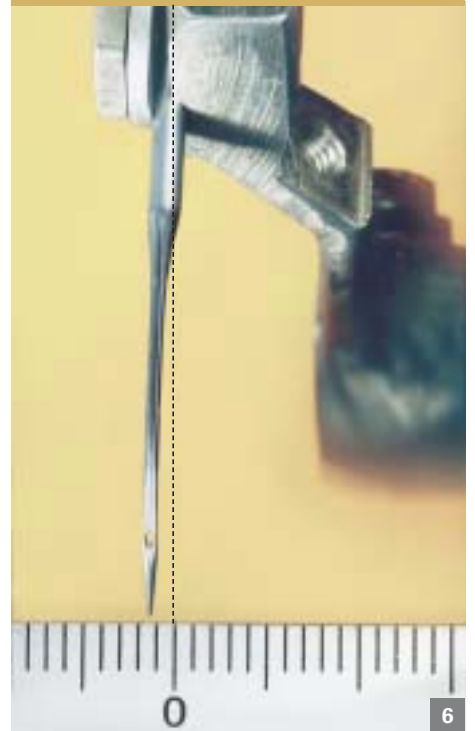
worn needle holder



intact needle holder



worn needle holder



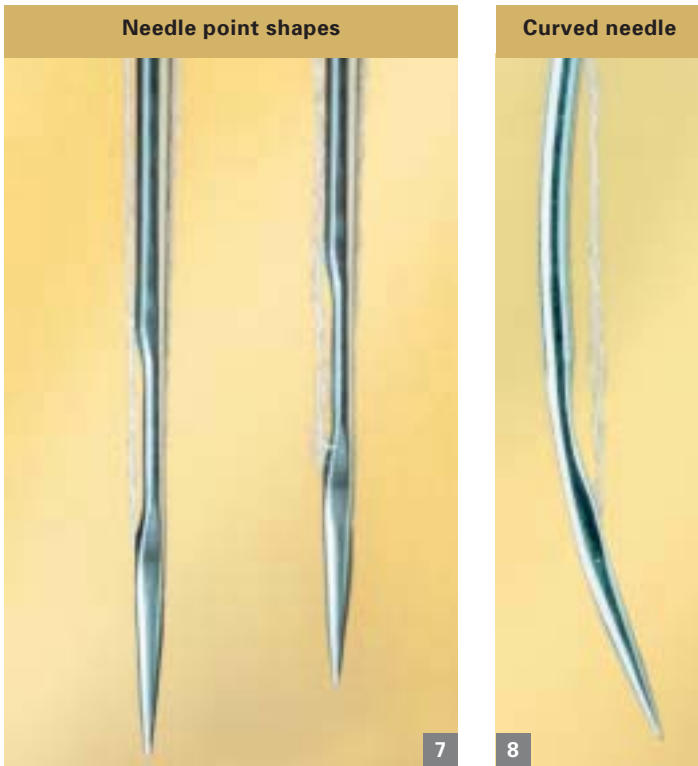
If machine parts wear out

Yet, even the highest precision in needle manufacturing is not of much help when machine elements wear out. Pic. 3 shows a needle carrier in perfect condition. Applying too much force when tightening the needle into the holder and also excessive usage may, without it being obvious, damage the needle carrier as clearly shown in Pic. 4.

The consequences of such wear are quite disastrous.

Pic. 5: A needle positioned in a perfect holder.

Pic. 6: The very same needle in a damaged holder. Neither the machine nor the needle can function properly in such condition.



Natural loop formation

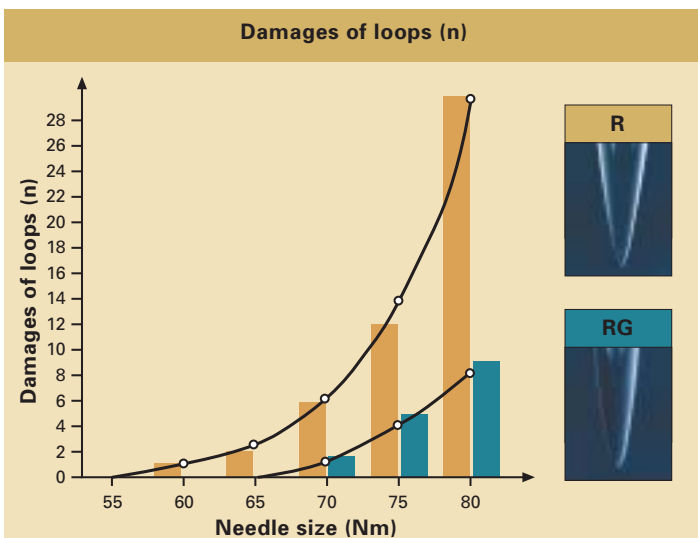
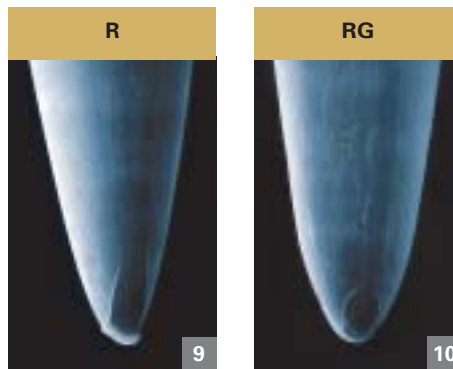
For certain seams, so called bulk yarns, i. e. texturized sewing threads, are preferred, for several good reasons, when sewing hosiery and body apparel. To sew such threads with straight overlock needles often proves to be a mission impossible.

Pic. 7 shows on the left a straight needle upon reaching the lower dead center of movement. Under tension the texturized thread lies closely attached to the needle. The needle on the right shows the condition after the regular loop forming stroke. No loop has formed in spite of an up-movement of 2 mm (.080 in.). Even the minimal clearance between thread and needle scarf has vanished as the highly elastic thread flares open. A proper sewing function is almost impossible. On the opposite, Pic. 8, shows very clearly the "natural" loop formation caused by the needle curvature. Even when the thread splits open there is enough room for the looper to enter. Highest machine speeds are possible.

Effects of the RG-point

The needle function and the needle life are largely influenced by the shape and by the manufacturing quality of the needle point. However, **standard sharp points**, as widely used, require greater forces to penetrate the fabric and they are very susceptible to wear (Pic. 9).

Very lightly rounded points like the Groz-Beckert "RG" point (Pic. 10) show hardly any wear even after a long time of operation in the machine. Also, the penetration forces are reduced considerably.



This is particularly important in the sewing of fine gauge and other sensitive knitted fabrics. The diagram, Pic. 15, shows the influence of the point style on a very critical and poorly finished knitted fabric.

The amount of damages is clearly reduced with the "RG" point as compared to a sharp point. Bottom line, that means, the best possible fabric handling is achieved when using needles with RG points.

All the advantages of our curved needles, and the accumulation of their precision features are positively confirmed in the day to day experience of the sewing rooms. **Groz-Beckert – that subtle difference.**

STANDARD PROGRAM CURVED NEEDLES BY GROZ-BECKERT:

Shank	Needle symbol 1:1	System	Blade
	A	151 x 7	
	A1	151 x 9	
	B	UY 154 GAS	
	B1	UY 154 GJS	*
	B2	UY 8454 GS	
	B3	UY 8455 GS	
	B4	UY 8456 GS	
	C	UY 154 GBS	
	C1	UY 154 JCM	*
	C2	UY 154 GDS	
	C3	UY 154 GFS	
	D	UY 158 GJS	*
	E	UY 161 GS	
	F	UY 162 SAS	
	F1	UY 162 SDS	
	G	576 SAN 1	

* Reinforced blade

System	Needle symbol	R	RG	FFG	FG
151 x 5	A	●		○	○
151 x 7	A	●		○	○
151 x 11	A1		●	○	
151 x 9	A1		●	○	
151 x 21	B		●	○	○
UY 154 FGS	B			●	○
UY 154 GAS	B		●		
UY 154 GBS	C		●		
UY 154 GCS	C3		●		
UY 154 GDS	C2		●	○	
UY 154 GFS	C3		●		
UY 154 GHS	B			●	○
UY 154 GJS	B1			●	
UY 154 JCM	C1			●	
UY 154 ZA	C			●	
UY 158 GHS	D				●
UY 158 GJS	D	●			
UY 158 GLS	D			●	
UY 161 GS	E		●		
UY 161 GHS	E			●	
UY 162 GBS	F			●	
UY 162 SAS	F	○	●		○
UY 162 SDS	F1	○	●		
576 DA	F1	●			
576 SAN® 1	G		●		
W&G 576	F1	●		○	○
661	F1	●		○	○
MY 1151	A	●		○	○
SY 1431	B		●		
SY 1433	B			●	
SY 1434	B				●
MY 1519	A1		●	○	
UY 8454 GS	B2		●		
UY 8454 GHS	B2			●	○
UY 8455 GS	B3		●		
UY 8455 GHS	B3			●	
UY 8456 GS	B4		●		
UY 8456 GHS	B4			●	
MR x R1	A	●		○	○
TL x 7	A	●		○	○
TL x 9	A1		●	○	
UO x 154	C		●		
UY x 154 GAS	B		●		
UY x 154 GCS	C3		●		
UY x 8454	B2		●		

Point: ● Standard
○ Additional