

# INFO



SMN 14

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## NEEDLES FOR SINGLE- AND MULTIHEAD EMBROIDERY

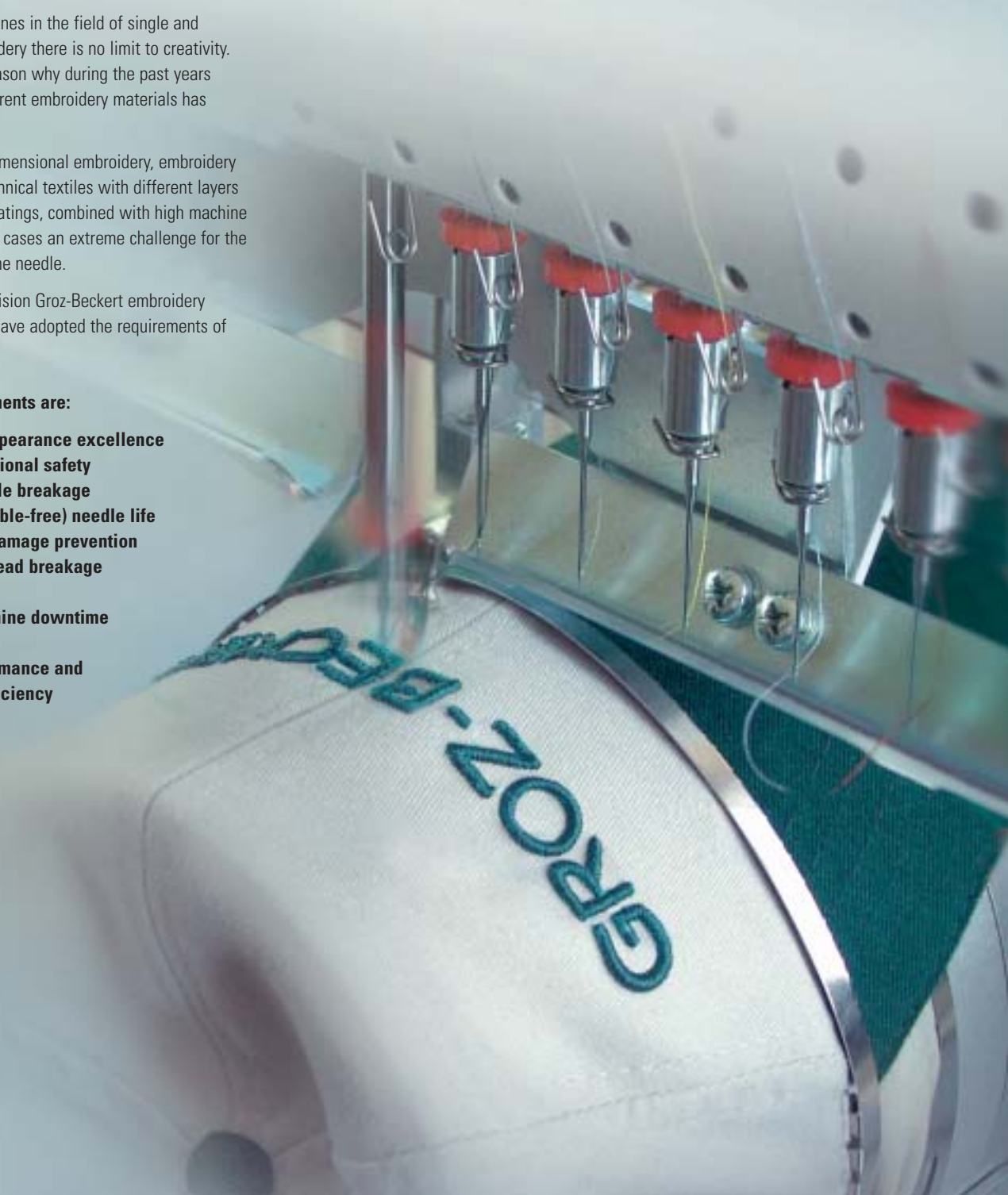
With today's machines in the field of single and multi-head embroidery there is no limit to creativity. This is also the reason why during the past years the variety of different embroidery materials has increased rapidly.

Especially three-dimensional embroidery, embroidery on leather and technical textiles with different layers of material and coatings, combined with high machine speeds, is in many cases an extreme challenge for the embroidery machine needle.

In design and precision Groz-Beckert embroidery machine needles have adopted the requirements of the market.

### Market requirements are:

- Embroidery appearance excellence
  - Optimum functional safety
  - Reduced needle breakage
  - Extended (trouble-free) needle life
  - Needle-hole damage prevention
  - Minimised thread breakage
- for
- Reduced machine downtime and to achieve
  - Highest performance and production efficiency



## THE DB X K5 AND ITS SPECIAL FEATURES

### VARIATIONS OF THE DBXK5

#### The Original Needle for Single- and Multi-head embroidery

The needle system DBxK5 was especially developed for the use in modern high performance machines. During research and development the following points had to be considered:

- Reduction of skipped stitches and thread breakage
- Maximum protection of thread and material
- Safe thread loop pick up
- Best universal point style
- Eliminate looping
- Optimum stitch fill (no gaps)

### THE FEATURES AND APPLICATIONS OF THE DB X K5

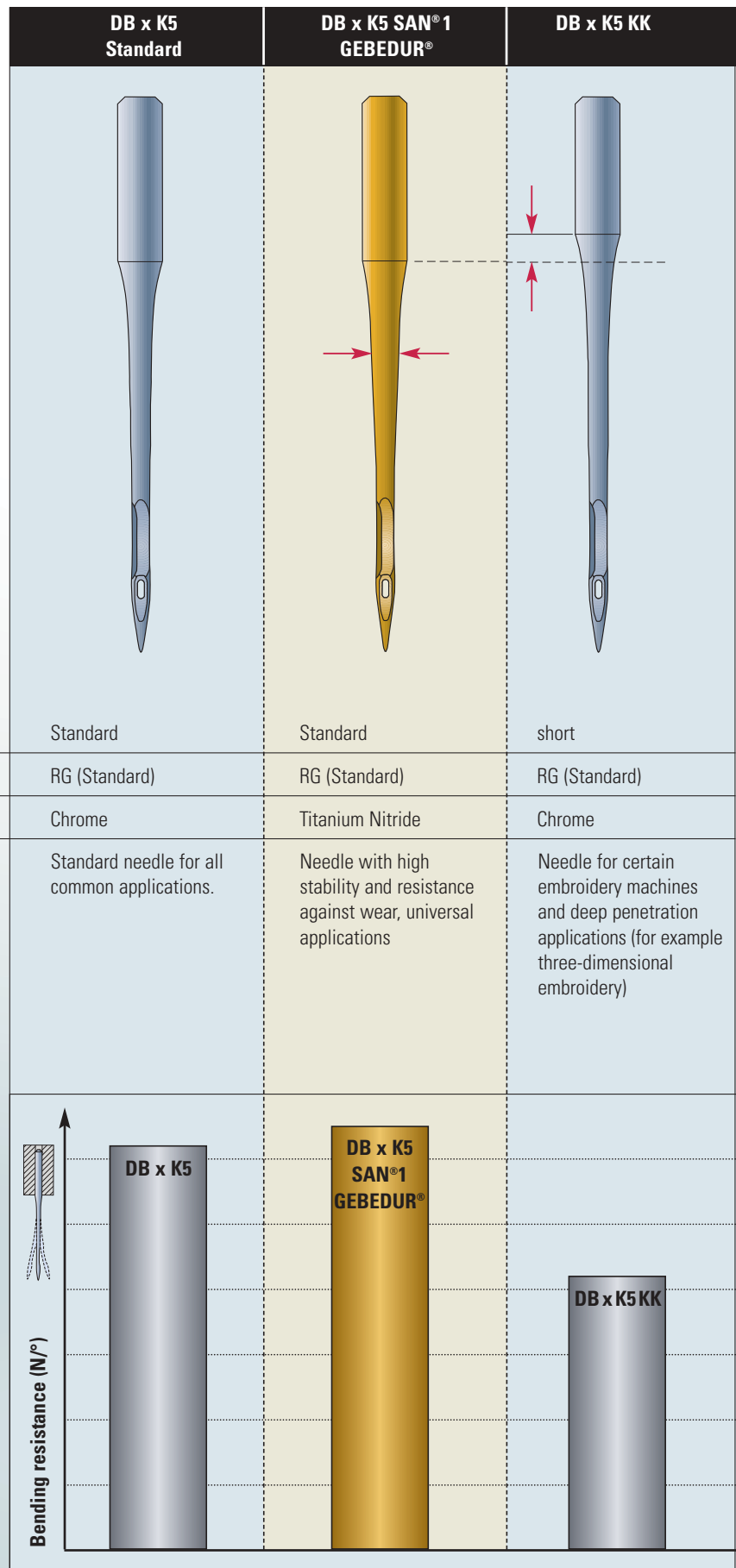
	DB x K5 Standard	DB x K5 SAN <sup>®</sup> 1 GEBEDUR <sup>®</sup>	DB x K5 KK
<b>Shank length</b>	Standard	Standard	short
<b>Point style</b>	RG (Standard)	RG (Standard)	RG (Standard)
<b>Coating</b>	Chrome	Titanium Nitride	Chrome
<b>Application</b>	Standard needle for all common applications.	Needle with high stability and resistance against wear, universal applications	Needle for certain embroidery machines and deep penetration applications (for example three-dimensional embroidery)

### STABILITY COMPARISON OF THE STANDARD DBXK5 AND ITS VARIATIONS.

Essentially the needle system DBxK5 has the highest stability. The bending resistance of the standard needle is higher than any of the other needle systems used in the embroidery industry.

The SAN 1<sup>®</sup> GEBEDUR<sup>®</sup>, with its special design and a titanium nitride coating, offers highest stability and maximum resistance against wear.

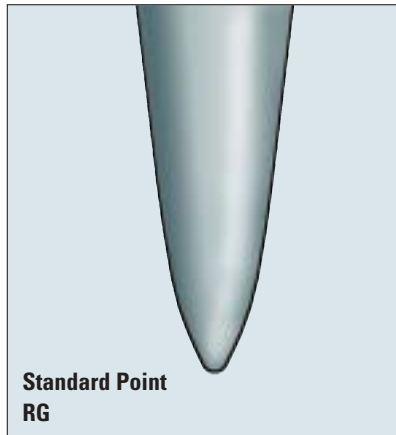
The blade design of the "KK" version corresponds to the standard DBxK5 needle. However, due to its shorter shank, bending resistance is lower.



## THE POINT STYLES OF THE DB X K5

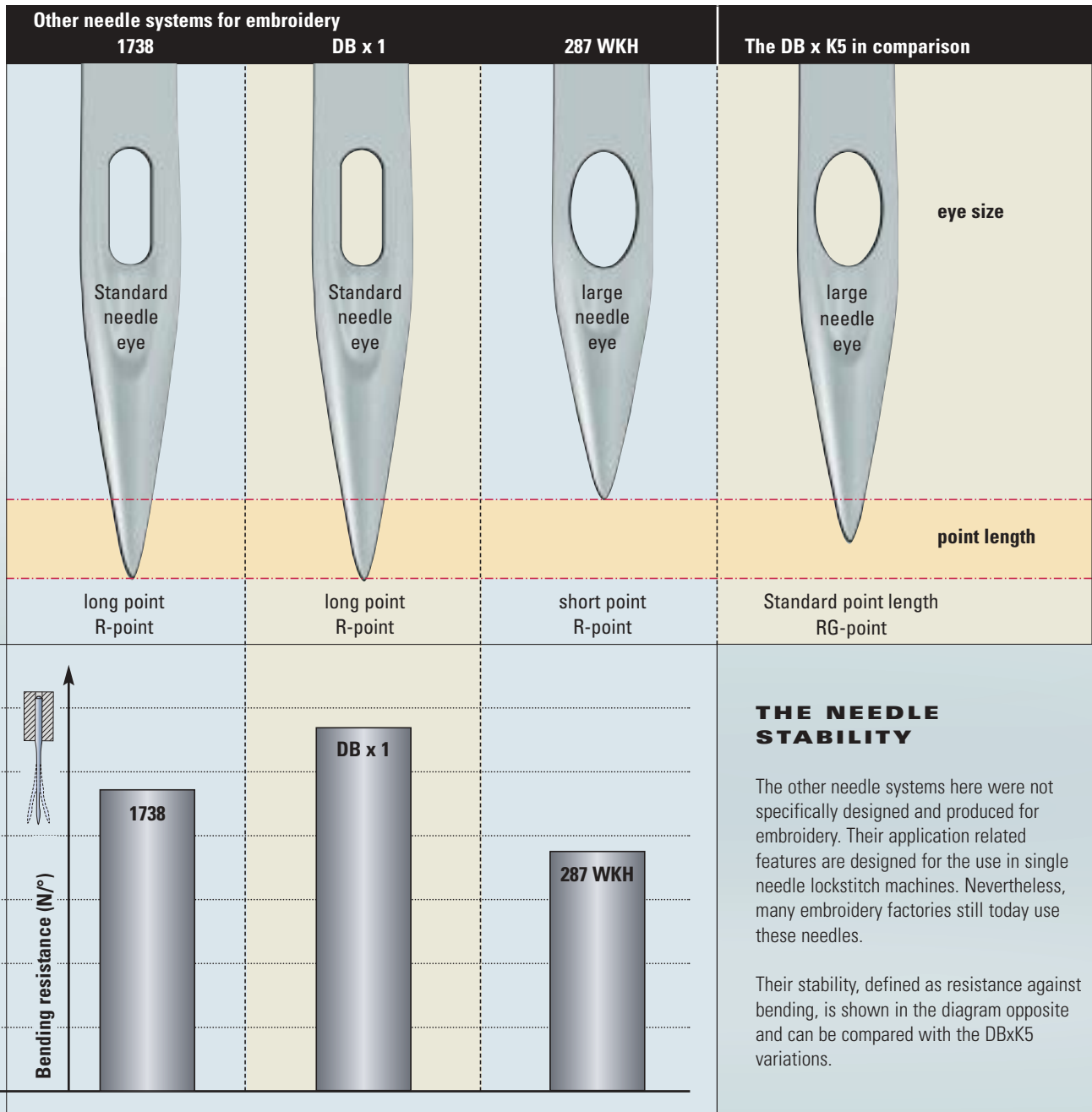
### STANDARD POINT RG AND POINT VARIANTS

In various application tests the **RG-point** proved to be the most suitable point across a variety of materials. Therefore the RG-point is the standard point style for Groz-Beckert embroidery needles.



for other applications the following point styles are available:

**FG/SUK**  
**FFG/SES**  
**R**  
**SD**



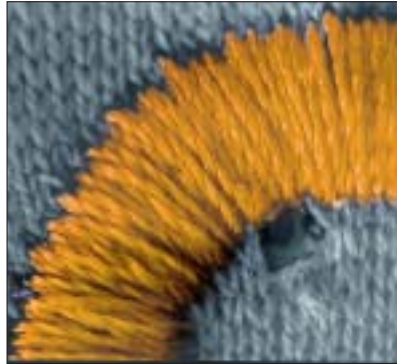
## KNOWN APPLICATION PROBLEMS AND POSSIBLE SOLUTIONS

### ON KNITWEAR

To avoid material damage when embroidering knitted fabrics, it is recommended in most cases to use needles with a ballpoint.

On fine knitwear the standard point RG (also FFG) and on coarse knitwear the FG-point.

In addition, needle size has a big influence on material damages. It goes without saying; tests with the requested needle size should be done before starting production.



#### Material damage:

A needle point which is too sharp will create loop damage or needle cuts. A needle, which is too thick will push out the loop under tension and break it.



A DBxK5 size 65 with RG-point was used on this fine knitwear, the result is a nice embroidery design without any damages.

### ON WOVEN FABRIC

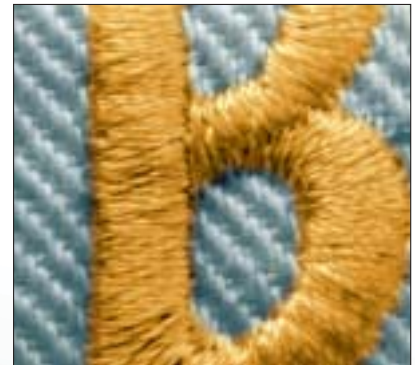
Whether on fine or heavy woven fabrics, if the ballpoint is too big or the used needle too thin, problems will occur during the embroidery operation. Irregular appearance of the embroidery design, thread breaks and also needle breakage can be the result.

High stability and at the same time maximum material protection are required! Features which the needle system DBxK5 offers in all sizes.



#### Irregular embroidery appearance:

Needle deflection caused by a needle which is too thin or a ballpoint which is too big results in an irregular embroidery design.



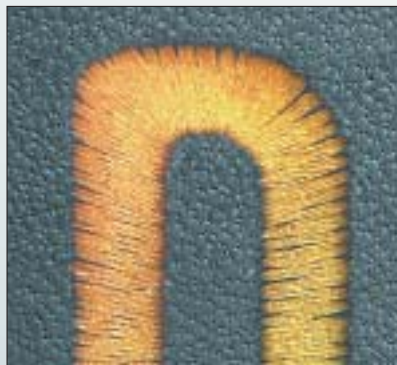
A DBxK5 75 with RG-point was used on this woven fabric, the result is an excellent embroidery design.

### ON LEATHER

When embroidering onto leather, the needle point used has a significant influence on the appearance and the quality of the embroidery. Cutting points are not suitable for this application. The changes in the stitching direction will result in previously sewn threads being cut, excessive perforation of the leather and irregular stitch hole openings.

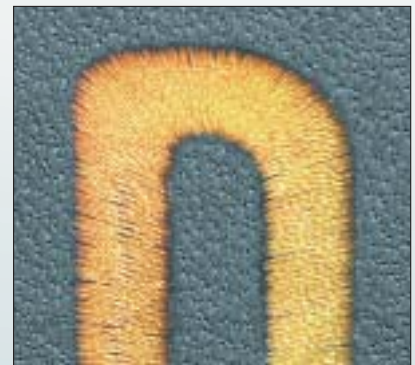
On fine and medium hard leather the RG- and R point are proven and on hard leather the R- or SD point are recommended.

Penetration forces through leather are relatively high, so needles must offer highest stability. The DBxK5 and in particular the DBxK5 SAN® 1 Gebedur® meet this requirement.



#### Irregular embroidery appearance:

When using a cutting point on embroidery, lengthways and across the grain, the cuts in the leather are different. In extreme cases, the design can be completely cut out from the leather.



A DBxK5 SAN® 1 Gebedur® with RG-point was used on this leather, the result is an attractive and consistently top quality embroidery design.



## 3-D EMBROIDERY

### Highest demands are put on a needle in Three - Dimensional Embroidery

In order to achieve the 3-D-effect foam material is positioned on the embroidery base before being over stitched. The adhesion and the foam material leads to higher friction, not to mention the variety of thickness the needle has to contend with. In addition these embroidery designs often have to transverse panel seams in caps.

Therefore the many forces placed upon the needle (and embroidery threads) can and do vary in the extreme.

For this sort of application the embroidery needles need to fulfil the following requirements:

#### Lower penetration force

- Material protection

#### Raise (highest) stability

- Eliminate skipped stitches
- Reduced needle breakage
- Precise embroidery fill
- Clear design definition
- Less thread breaks

#### High resistance against wear

- Long lifetime

Besides Groz-Beckert's standard DBxK5 needle, these demands are further reduced as problem areas by using the DBxK5 SAN® 1 GEBEDUR®.



After over stitching, the foam material is taken away from the embroidery.

Any remaining parts of the foam material are removed carefully from the embroidered design.



Now the 3-D image is available. An acceptable result is only achieved with precise stitching. Thread is covering the foam material without gaps and no stitches looped. The material must not be damaged and the 3-D effect must be uniform.



# GROZ-BECKERT®

## PROGRAM SINGLE- AND MULTIHEAD EMBROIDERY NEEDLES:

(will be extended when required)

System	Point	Surface	Needle size Nm										
			55 /7	60 /8	65 /9	70 /10	75 /11	80 /12	85 /13	90 /14	100 /16	110 /18	120 /19
DB x K5	RG	Chrome		●	●	●	●	●	●	●	●	●	
DB x K5	R	Chrome		●	●		●						
DB x K5	FFG	Chrome		●	●	●	●	●		●			
DB x K5	FG	Chrome			●	●	●	●		●			
DB x K5	SD	Chrome			●		●						
DB x K5	RG	GEBEDUR®		●	●	●	●	●					
DB x K5	FFG	GEBEDUR®			●	●	●						
DB x K5	FG	GEBEDUR®				●	●						
DB x K5 SAN®1	RG	GEBEDUR®		●	●	●	●	●	●	●			
DB x K5 KK	RG	Chrome					●			●			
1738	R	Chrome	●	●	●	●	●	●	●	●	●	●	
1738	FFG	Chrome	●	●	●	●	●	●	●	●	●	●	
1738	FG	Chrome	●	●	●	●	●	●	●	●	●	●	
1738	SD	Chrome			●	●	●	●		●	●		
1738	R	GEBEDUR®		●	●	●	●	●		●	●	●	
1738	FFG	GEBEDUR®		●	●	●	●	●		●	●		
1738	FG	GEBEDUR®		●	●	●	●		●	●			
1738 KK	R	Chrome			●	●	●	●		●	●	●	
1738 KK	FFG	Chrome				●	●	●		●			
DB x 1	R	Chrome		●	●	●	●	●	●	●	●	●	●
DB x 1	FFG	Chrome	●	●	●	●	●	●	●	●	●	●	●
DB x 1	FG	Chrome		●	●	●	●	●	●	●	●	●	●
DB x 1	R	GEBEDUR®		●	●	●	●	●	●				
DB x 1	FFG	GEBEDUR®			●	●	●						
287 WKH	R	Chrome	●	●	●	●	●	●	●	●	●	●	●
287 WKH	FFG	Chrome		●	●	●	●	●	●	●	●		
287 WKH	FG	Chrome			●	●	●	●		●			
287 WKH	R	GEBEDUR®				●	●	●					
287 WKH	FFG	GEBEDUR®				●	●						

You can get our needles from: