

## LPC-LOOP POSITION CONTROL

THE NEEDLE GEOMETRY FROM GROZ-BECKERT –  
INNOVATIVE TECHNOLOGY FOR THE PERFECT LOOP



### Standard needle

- Loop deformation due to twist displacement
- Impairment of the thread structure

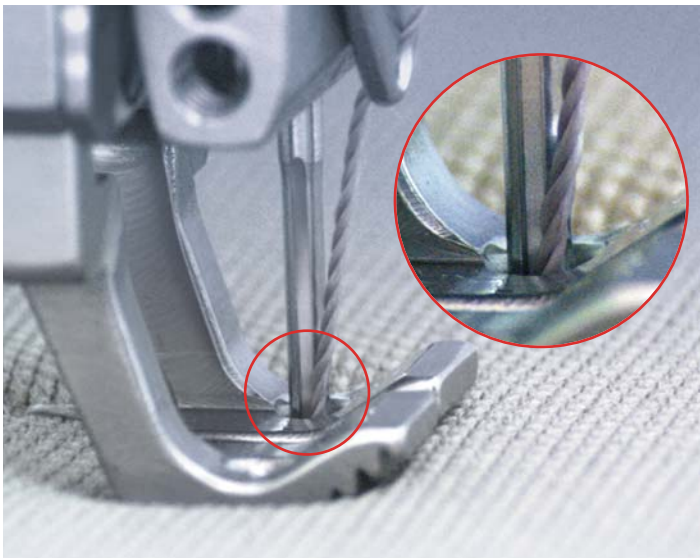
### Groz-Beckert LPC needle

- Perfect loops protect against skipped stitches
- Maximum care of the sewing thread due to special longitudinal groove geometry

## CRITICAL APPLICATIONS FOR STANDARD NEEDLES

### The problems inherent in standard needles

When processing highly dense or hard materials, the thread is squashed during the downward stroke of the needle between the fabric and the edge of the longitudinal groove.



THE THREAD IS SQUASHED OVER THE LONGITUDINAL GROOVE

When using multifilament sewing threads, this results in twist displacement, as the displaced thread filaments can catch the edge of the longitudinal groove. Above the throat plate the thread remains twisted, beneath it the thread filaments become displaced.

The effect of this thread displacement and unravelling of the thread filaments, serve to impair loop formation.

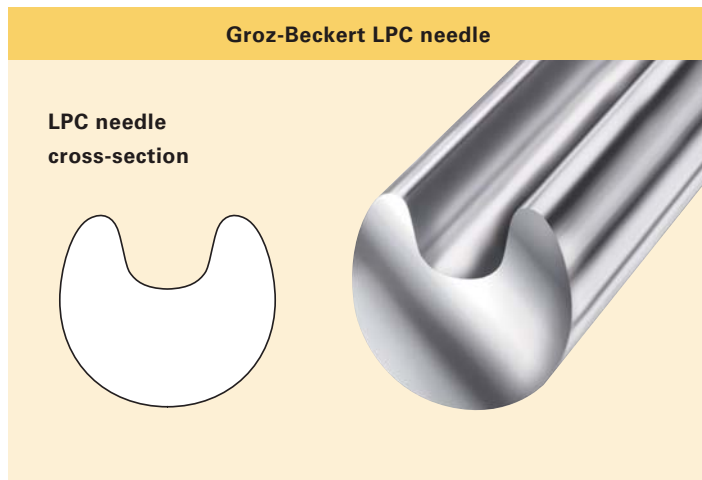
**Standard needle**

**Standard needle cross-section**

LOOP FORMATION WITH A STANDARD NEEDLE

**Deflection of a standard needle**

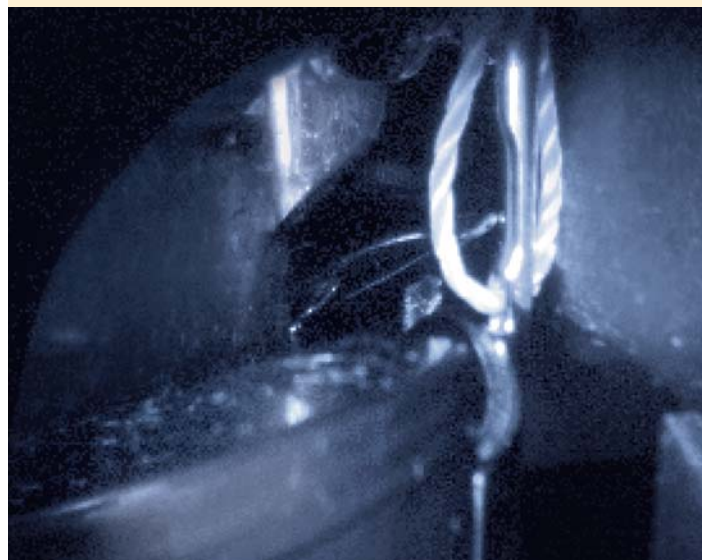
## LPC NEEDLE GEOMETRY – THE SOLUTION FROM GROZ-BECKERT



### Loop position control technology (LPC)

Using an improved shank and groove geometry, with Groz-Beckert needles LPC technology, this brings marked improvements by ensuring greater thread protection and reducing thread load during thread run-in over the edges of the longitudinal groove.

The result: Improved protection of threads, and substantially better and more stable loop formation in critical applications. Skipped stitches and thread breakage due to poor loop formation are consequently reduced when working in difficult conditions.

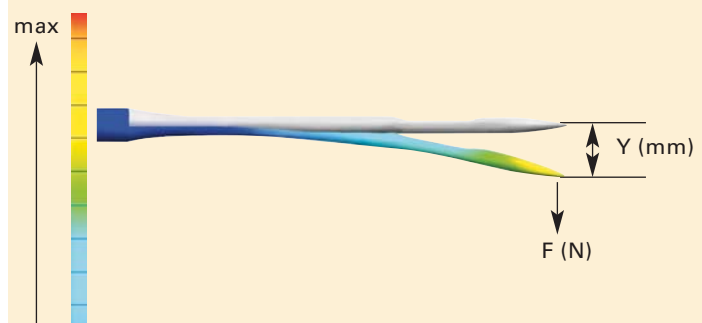


### High-speed photos

Needle, looper and thread during loop pick-up in a lockstitch machine with vertical looper axis, Groz-Beckert needle system 134-35 Nm 140, multifilament thread PES no. 20, at a speed of 2500 penetrations per minute.

The improved loop formation quality and reduced untwisting of the thread are clearly evident.

LOOP FORMATION WITH AN LPC NEEDLE



Deflection of a Groz-Beckert LPC needle

### Stability

Notching effects are significantly reduced by the achievement of maximum rounding, making the needle less susceptible to breakage.

