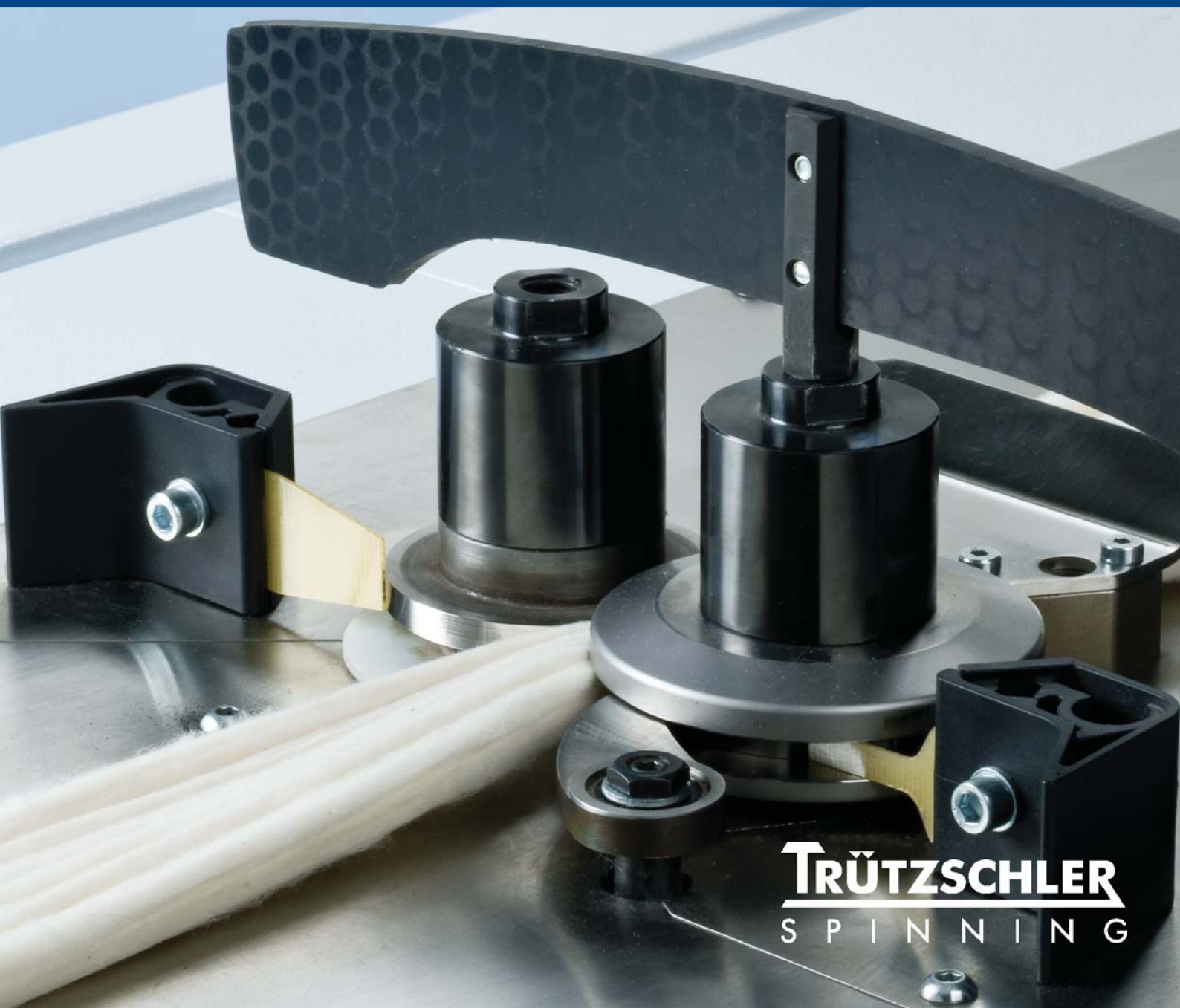


# More precision in levelling quality



**TRÜTZSCHLER**  
SPINNING

# More precision in levelling quality

## New measuring system for increased accuracy

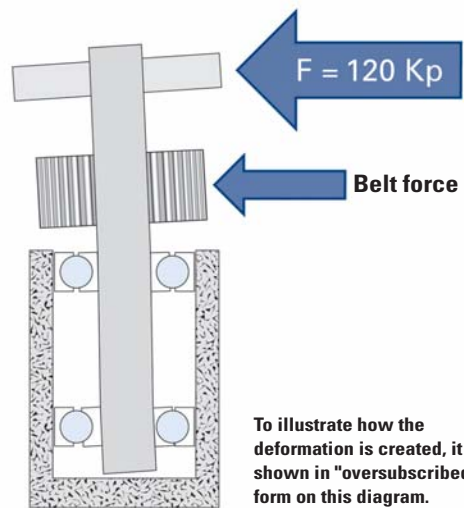
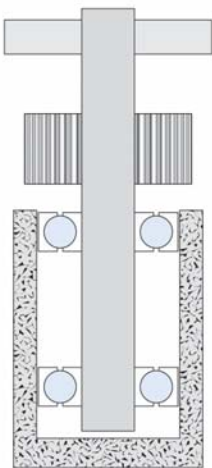
Since 2003, the Trützschler TD 03 draw frames are equipped with the so-called input measuring funnel. Trützschler developed this principle because the existing measuring systems with grooved and sensing roll lacked precision.

Though these known systems are basically solid and robust, the bearing at one end and the high load on the sensing roll results in deformations and consequently in measurement errors. The reason

lies in the large distance between grooved or sensing roll and bearings. The axis is freely movable in the bearings and bends slightly.

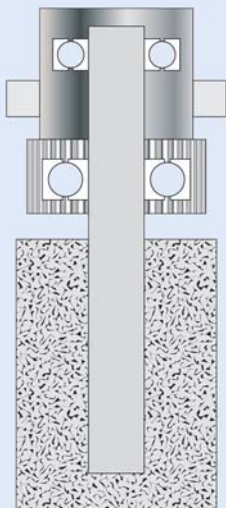
This undesirable effect has led us to develop a completely new bearing system. Trützschler has applied for a patent for the new system, referred to as TD-DL. The axis no longer turns and is firmly anchored in the machine frame. The bearings have been optimally positioned to the sensor plates. Since the force acts between the bearings, there is no more noticeable deformation.

### This is the structure of conventional sensing rolls

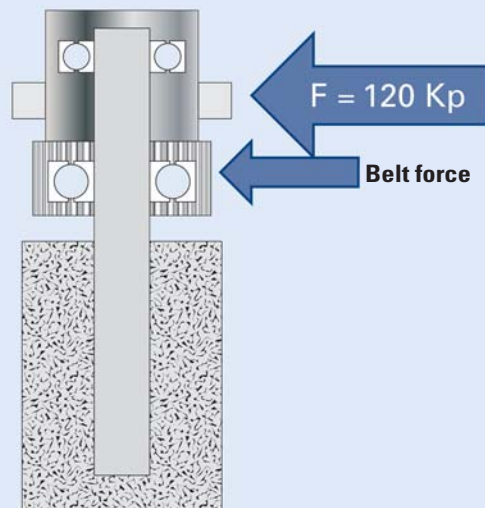


The high loads cause runouts with conventional tongue rolls. These high loads of well above 100 Kp are necessary to compress the slivers to the substance cross-section. An additional force is applied on the belt pulley. Due to the design of the system, the rotatable axis has play in the bearings.

### Cross-section of the new Trützschler bearing



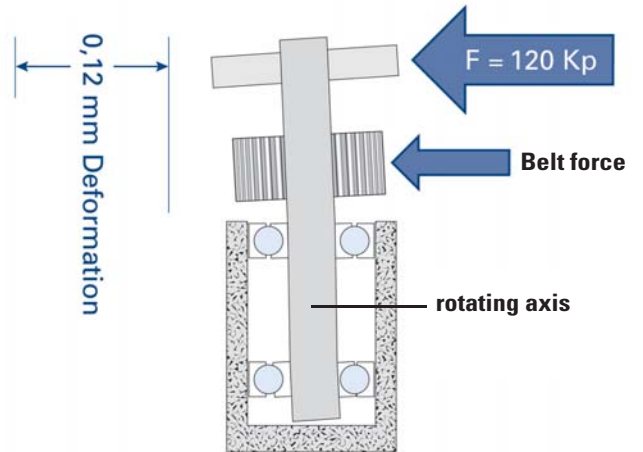
The bearings of the TD-DL, arranged near the sensing roll, absorb the forces without causing deformations of the axis. The belt forces are directly absorbed by the lower bearing. Since the axis no longer needs to turn it was possible to fasten it without play.



## What counts is long-term constancy

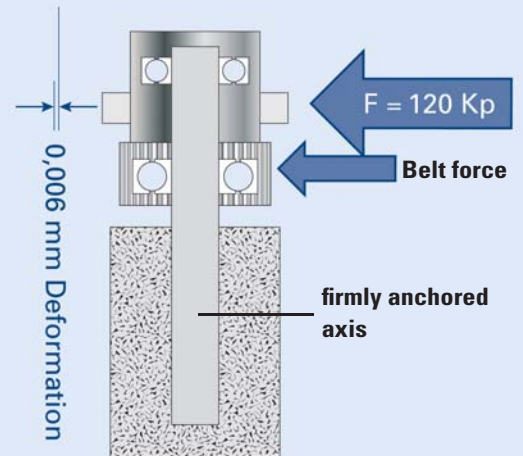
Measuring systems on the draw frame must function reliably for years. Hence, the development of a new system always goes hand in hand with long test phases. The TD-DL system has successfully passed the testing process.

### STANDARD



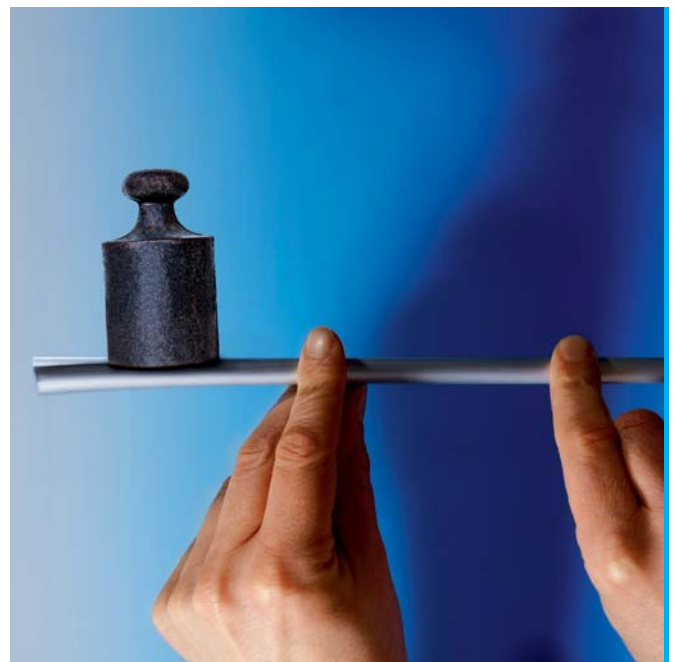
The deformation on the new Trützschler TD-DL system is hardly measurable and accounts only for a fraction of deformation compared to conventional systems.

### TRÜTZSCHLER



## Improved solution for familiar system

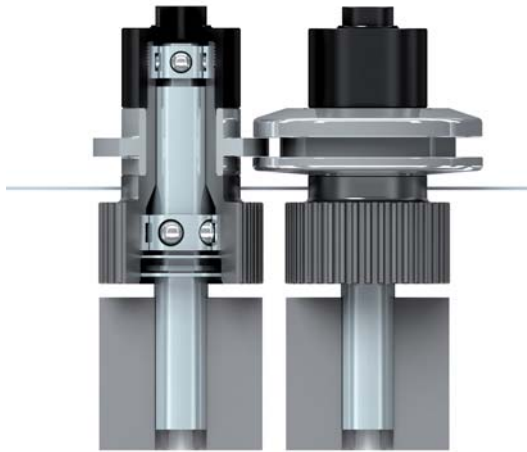
For instance, a deformation of  $\pm 0,12 \text{ mm}$  at 6 fed slivers totalling 30 ktex means measurements between 29,4 and 30,6 ktex or approximately 2% sliver count deviation. In this case the draw frame sliver no longer has 5 ktex, but rather 4,9 or 5,1 ktex.



The advantage of bearings on both ends is very easy to demonstrate. This can be seen in this experiment. When holding the bar on one side, it bends. When holding the bar on both sides, no bending occurs.

### Perfect levelling is the interaction of hardware and software

Parallel to the development of the new measuring system, new control algorithms that perfectly match the measuring system were developed. The sliver count consistency and the 1 metre CV value have been significantly improved.



This diagram shows the structure of the TD-DL bearing.

### Simple conversion

Draw frames of the TD series can easily be converted to the new measuring system. The old assembly group with feed sensor is completely replaced by the new system. Next the control is upgraded with new software. Such a conversion takes only a few hours.

### Easy operation

The photo shows that accessibility is available on all sides. The new bearing structure does not restrict operation.



#### Advantages at a glance:

- maintenance-free bearings
- one-piece precise sensing rolls and grooved rolls
- simple, handling-optimised adaptation to the respective application

For more information please contact:

[t.tuning@truetzschler.de](mailto:t.tuning@truetzschler.de)

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