YARN FEEDING DEVICE

Uniform yarn tension for the weaving process

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OVERVIEW

Over-end creels and unrolling creels are used for many different technological applications, e.g. warping, weaving, knitting and pultrusion procedures.

In over-end feeding, the package remains stationary while the thread is pulled off the end of the package; however, in the unrolling creels, the package rotates about its core.

There are advantages and disadvantages with each type of creel. To improve the yarn feeding to processing machines, additional feeding devices are often necessary for the easy adjustment of the thread tension, with the advantage that the thread tension can be kept at a constant level for the processing steps.

KEY ADVANTAGES

• uniform yarn tension for the weaving process
• easy tension setting on the weaving machine
• no adjustment on creel side when fabric change
• higher fabric quality

ADDITIONAL FEEDING DEVICES

TENSION COMPENSATING FOR WARPS OF FIBROUS MATERIAL

For certain patterns, e.g. twill weave with fibers that possess a high elasticity modulus, different groups of warp threads are subject to different tension during shed opening. These warp tension variations have a negative impact to the weaving process.

The high elasticity modulus of the yarn material and distance between the position of the back rest roll over which the warp yarns are drawn also play a decisive role. An additional compensation unit between warp thread feeding device and weaving machine absorbs these tension peaks and allows for the optimization of the weaving process. While the warp thread feeding module provides a constant level of warp tension, the compensation device balances the tension peaks of the different groups of warp threads caused by shed opening.

Electronically controlled feeding devices are available for narrow and wide weaving machines. They can be mounted onto the weaving machine or between the creel and the weaving machine as an off-loom arrangement.
CORRECT WEAVING TENSION

YARN FEEDING DEVICE
The warp feeding device works as a warp tension regulator between creels and weaving machines. It pulls the yarn from the creel normally with a lower tension than used for weaving.

There is no doubt about the fact that it is important to work with a creel that keeps the yarn tension at a constant level from the full to empty package. If the run-off from the creel is not perfect, even the best equipment cannot repair the damage at a later stage.

The yarn feeding system feeds the yarn to the weaving machine by means of a drive roller with a rubber coating. The feeding device consists of a drawing-in unit that is designed to install lease rods, an expansion comb, warp detector and warp yarn accumulator. The yarn accumulator maintains the yarn under tension when weft faults have to be mended. The feeding roller is driven by a servomotor and guarantees a constant level of warp tension.

The warp tension is set and measured at the back rest roller of the weaving machine. After the prior setting of the yarn tension between creel and yarn feeding unit, no further adjustments have to be made when the fabric style changes.

The correct weaving tension can be set on the weaving machine and the yarn feeding unit ensures uniform yarn tension throughout the fabric width. The feeding device can be equipped with one or more feeding rolls when weaving heavy belting fabrics with different yarn consumptions.