

Com4® yarn – guaranteed success in practice

Com4® yarn guarantees success in practice whenever the best yarn is used for a given application. Rieter knows the limits and outline conditions for all four spinning processes and advises its customers neutrally and individually.

A look at operations in the mill highlights the differences between the four spinning technologies. Yarn count is a crucial parameter for selecting the appropriate spinning process. Com4®ring yarn has the greatest flexibility in the choice of yarn count and is spun in practice from Ne 5 to Ne 250. Com4®compact is possible in the range from Ne 10 to Ne 250, but encountered most frequently in practice from Ne 20 to Ne 120. Com4®rotor is found rather in the coarse-count range from Ne 2 to Ne 60, although Ne 60 can only be produced with microfibers. Com4®jet yarns are spun in practice from Ne 24 to Ne 70, with Ne 70 also being spun only with microfibers, since the minimum number of fibers in the yarn cross-section should be no less than approx. 95.

IT ALL DEPENDS ON THE RAW MATERIAL

The ability of each spinning process to deal with individual fiber properties differs. The most suitable spinning process should be selected depending on the raw material and the required yarn structure (Fig. 1).

Raw material in practical use, split up according to Com4®yarn

	Com4®ring	Com4®compact	Com4®rotor	Com4®jet
Cotton carded	++	+	++	
Cotton combed	++	++		++
Cellulosic fibers	++	+	++	++
Synthetics	++		++	
CO with < 50 % Cellulosic	++	+	++	++
CO with > 50 % Cellulosic	++		++	++
CO with < 50 % PES	++	+	++	++
CO with > 50 % PES	++	+	++	
Cellulosic with < 50 % PES	++		++	++
Blends with other MMF	++	+	++	
Regenerated fibers	+		++	

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Nowadays carded cotton is mainly processed into Com4®ring and Com4®rotor yarns. Com4®ring, Com4®compact and Com4®jet yarns are spun from combed cotton. There is no point in using combed feed slivers for Com4®rotor, since they lack the short fibers needed to achieve the required bulk and yarn structure.

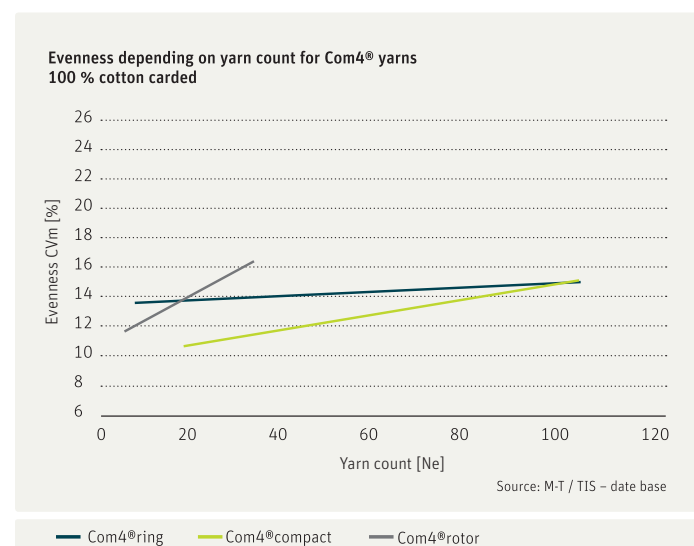
Cellulosic fibers such as viscose, Modal or Lyocell are mainly to be found in practice in Com4®ring, Com4®rotor and Com4®jet yarns. Cellulosic or synthetically produced fibers already display such high yarn tenacities and low hairiness values that a compacting process is of no benefit for Com4®ring yarn in most cases. These raw materials are therefore rarely processed into compact yarns in practice. If the manmade fiber content is less than 50 %, Com4®jet is

a possible application. In the case of regenerated fibers, which feature high contents of trash and short fibers, the rotor spinning process for Com4®rotor yarns is clearly dominant. No other spinning technology can extract trash so effectively during the spinning process and utilize short fibers as filling fibers in the yarn cross-section.

LEADING THROUGH EXPERIENCE

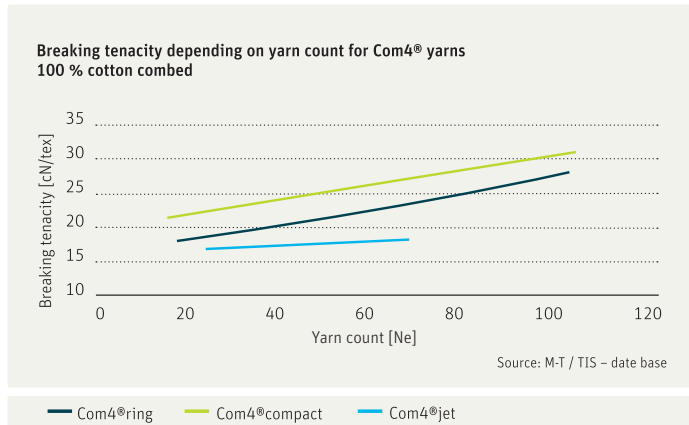
Results of tests by Rieter's Customer Technology Dept. in mill operations as well as findings from trials in Rieter's SpinCenters have been collected over decades in a central database. This accumulated knowledge helps to make an objective appraisal of Rieter's four spinning systems. The adjoining graphs underline Rieter's technological know-how.

Many quality parameters are heavily dependent on yarn count and the raw material used. Rotor-spun yarn has many positive properties, especially in the coarse-count range, such as very high regularity, which is reflected in high fabric uniformity (Fig. 2).



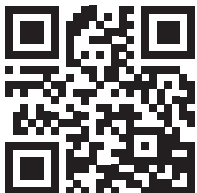
Com4®rotor yarn displays very good regularity in the coarse-count range, and this is reflected in high fabric uniformity.

Com4®compact yarn is considerably more resistant in downstream processing due to its high yarn tenacity (Fig. 3). However, high tenacity also offers potential in high-grade finishing. Each stage of high-grade finishing is at the expense of fabric strength. If the yarn itself displays high tenacity, finishing potential can be exploited much more effectively.



The high tenacity of Com4®compact yarns offers potential in high-grade finishing, for example.

The complete offprint entitled “Rieter Com4® yarn” can be ordered via info@rieter.com under “Offprint Com4® No. 2562” or downloaded from the Rieter website (Fig. 4).14-115 •



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