

Case Study

A leading spinning mill derives significant benefits of ring frame drafting upgradation

Background

One of India's pioneering textile mills, known for its premium fabric has installed capacity of approx. 46000 spindles & produces 50 tons of denim per day. It also produces its own fancy yarn. The mill was facing productivity and quality issues on its ring frames equipped with pneumatic drafting. As TeraSpin had solved similar problems at another unit in the same group, the mill approached TeraSpin to provide suitable solutions to improve the productivity and quality of its denim and lycra yarns.

After a complete study and analysis of the existing pneumatic drafting and lycra yarn system, TeraSpin recommended a drafting upgradation with TeraSpin's up-gradation kit consisting of the standard PK 2025 weighting arm and appropriate, tailor-made components. This proved to be an excellent solution for addressing the challenges faced by the mill, as shown by the results achieved by the mill post-upgradation.

Raw material 100%

Drafting

Technical details	Before up-gradation	After up-gradation
Drafting type	Pneumatic (with & without lycra attachment)	TeraSpin PK 20
Cradle	Short	25OH 62-1275267

Process parameters

Parameters	Before up-gradation	After up-gradation
Bottom roller setting	42.5/60	42.5/60
Top roller setting	51/58	51/58
Spacer	6 mm	Green (6 mm)
Top roller loading (front/middle/back)		14 (Green)/10/12
Spindle speed	11000	11000

Yarn quality parameters for yarn count Ne 7

Yarn quality parameters	Before up-gradation	After up-gradation	% improvement
U%	12.08	11.58	4.14
CVm	15.38	14.74	4.16
CVm (1m)	5.57	4.91	11.58
CVm (3m)	4.15	3.52	15.18
-30%	1820	1482	18.57
-40%	153	101	33.99
-50%	3	2	33.33
-60%	0	0	0
35%	764	667	12.7
50%	125	112	10.4
70%	11	7	36.36
200%	12	11	8.33
280%	2	2	0
H	11.57	11.29	2.42
Sh	2.43	2.24	7.82
Total IPI	140	125	10.71
Micro IPI	2750	2259	17.86

Benefits after drafting up-gradation

- **4.14%** improvement in U%
- **10.71%** improvement in IPI
- **17.86%** improvement in micro IPI
- **2.42%** improvement in hairiness

Conclusion

The TeraSpin spring loaded drafting system invariably gives better and more consistent yarn quality as compared to a pneumatic drafting system. It also saves power as it does not require compressed air, and is zero maintenance as well.