

CASE STUDY



## SARA SPINTEX

India



## Sara Spintex: productivity & quality

*"Marzoli spinning plant allows Sara Spintex to consistently meet our ambitious goals"*

Mr Amit Mahalle states



Mr Amit Mahalle  
Sara Spintex's technical director

- TOP QUALITY
- HIGH FLEXIBILITY
- FULL AUTOMATION

Sara Spintex is an Indian textile company located in Yavatmal (Maharashtra), in the central part of India. It was founded as a ginning firm in 2004 and, under the name of Sagar Fibers, has caught the attention of some of the main global textile brands, thanks to its high quality managerial philosophy. Its ambitious growth plans led the firm to vertically integrate and enter the spinning sector. Sara Spintex India Pvt Ltd was established in 2013 with a production capacity of over 5.5 million kilograms of 100% cotton yarn per year.

Today Sara Spintex produces ring spun yarn made of 100% Indian cotton with counts ranging from Ne 6 to Ne16 carded yarn.

These types of yarn find application in segments (e.g. denim, bathmats, home furnishing, high end knitting

and shirting) that have thrived for several years now and that will grow even further, as the world population and global middle classes keep rising. Sara Spintex's mission, which aims at delighting customers through excellence in manufacturing and service, led the firm to rely on Marzoli. In March 2013 Marzoli technicians finished to install the complete spinning line that made Sara Spintex the first fully automated, third generation spinning plant in India.

*"Marzoli spinning plant allows Sara Spintex to consistently meet our ambitious goals:*

- *to score among the highest percentiles of Uster Statistics;*
- *to serve the market with the type of yarn it wants with the right volumes and with on time deliveries".*

Sara Spintex's Technical director, Mr Amit Mahalle, states.

Marzoli provides great service throughout the relationship with the customer.

## High return on investment thanks to productivity, quality & service

- LEADING-EDGE TECHNOLOGY
- OUTSTANDING QUALITY
- GREAT PRODUCTIVITY
- PROMPT AND RELIABLE SERVICE

In March 2013 Marzoli installed a complete third generation spinning line of 12,000 spindles that has a production capacity of Ne6, Ne10 and Ne16 carded yarn of almost 15,000 kilograms a day. Since then the company has thrived.

The success of Sara Spintex vertical integration strategy is even more impressive when the reader thinks that the company was relatively small, that the spinning sector is one of the most competitive sectors in India and that Sara Spintex had no experience in it. Its success testifies that it is possible for ginners to integrate vertically and that they can find a valuable partner in Marzoli as a supplier of leading-edge technology.

Investing in leading-edge technology is a decision that makes perfect sense in the long-run: complete automation and perfectly integrated opening, carding, combing and spinning sections, capable of producing high volumes of high quality yarn, allow to save on increasing labor and operating costs and to leverage on high volumes to boost profits. *"The decision to partner with Marzoli has allowed Sara Spintex to achieve a great return on investment thanks to high margins coming from value-added segments and high sales volumes stemming from excellent productivity and quality"*

Mr Mahalle states. The daily tests on yarn witness that Marzoli machinery allows Sara Spintex to be among the top quality manufacturers in India.

These results have been achieved thanks to technical and technological expertise and effective service. Marzoli provides great service throughout the relationship with the customer: from mill design, through installation, to after-sale maintenance and upgrading operations. Furthermore, Marzoli, with the branch Marzoli India, has highly improved its after-sales service in the Indian market. The efficient service is guaranteed by its specialized technicians and technologist that periodically visit the plant, a sales team constantly in contact with its customers, a service center for electronic components and a warehouse for the prompt delivery of critical spare parts.



## Blowroom

- EFFICIENT OPENING
- PERFECT MIXING
- HIGHLY EFFECTIVE CLEANING

Outstanding yarn quality and process productivity require great performances from the very beginning of the process: the blow room. Sara Spintex has installed a complete Marzoli blow room line which allows to process up to 20 tons/day of cotton and ensures efficient opening, perfect mixing and highly effective cleaning of cotton.

The innovative working concept of pre-opening without nipping the raw material allows to be gentle on the fibers while reaching higher production levels. Moreover, the innovative beaters and carding sectors allow to effectively open and clean the raw cotton with a reduced amount of good fibers in the waste.

### Machines Installed

- N.1 B12N Superblender;
- N.1 B390L Duo Cleaner;
- N.1 B143L Automixer;
- N.2 B380L Horizontal openers.

The B12N Superblender has two beaters which allow to turn the bales into very small flocks; the detacher follows the contour of the bale and plucks the material all the way down to the floor thanks to the movable guidance rollers. The grid, controlled by the mixer, moves up and down for automatic adjustment of production and to equalize the bales. The B12N Superblender can

reach up to 1600 Kg/h and stands for reliability and safety.

The B390L Duo cleaner is equipped with two cleaning beaters with different rotating speeds and tips number. This machine efficiently removes trash and dust, thanks to the innovative grids, the carding sectors and the cage condenser placed on the top of the B390. This machine scores particularly high on productivity: as the material is divided in two flows that are processed in two different sections of the beaters at the same time, the quality obtained is comparable to that of a standard cleaner working at half production (Kg/h). The B143L is an easy and reliable machine, suitable for any type of fiber, that ensures perfect mixing through its mixing chambers. Thanks to its large working width, it can store up to 550 Kg of raw material, it has a dedusting area of 10 m<sup>2</sup> and it can work with an input production of 1600 Kg/h. The B380L is a machine that ensures fine opening and excellent cleaning of the raw material. The pre-opening roller grants a first gentle opening of the fibers before the material is processed by the opening beaters. The pre-opening operation allows to reduce fiber breakages and entails higher yarn quality. The two opening beaters in combination with carding segments and knives grant excellent and progressive cleaning of the fibers.



## Carding

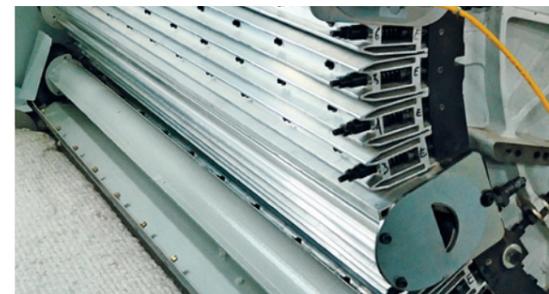
- EXCELLENT QUALITY
- GREAT PRODUCTIVITY
- HIGH EFFICIENCY

Carding plays a crucial role in spinning as the quality of the final yarn heavily depends on how carding operations are carried out.

Currently there are ten C701 cards running at Sara Spintex, processing over 800 Kg/h of raw cotton and delivering excellent quality sliver.

Marzoli C701 Card is designed to excel on three aspects: productivity, quality and efficiency. Thanks to its carding angle of 284° and the dimensions of the main cylinder, Marzoli's card has the widest carding surface available on the market (3.74 m<sup>2</sup>). This allows to spread

the fibers on a greater carding area. Moreover, C701 card has a high number of flats: up to eight stationary flats in the pre-carding area plus up to six in the post-carding area and 90 moving flats, of which 32 working, on the main cylinder. All these features guarantee high carding effectiveness and higher production volumes. Higher productivity allows to reduce the number of required cards with a direct positive effect on investment and operating costs (energy consumption and maintenance).



## Draw frame

- EXCELLENT SLIVER EVENNESS
- HIGH RELIABILITY
- PERFECT BLENDING OF INPUT SLIVERS

Currently at Sara Spintex there are 8 Marzoli draw frames. Draw frames play a fundamental role in ensuring yarn quality and they must reach high speed in order to allow a fast return on investment.

For these reasons Marzoli's draw frames have been designed in order to deliver excellent quality slivers and produce up to 1,000 m/min

of perfectly evened sliver. This is possible thanks to the implementation of advanced electronics that guarantees a fast reaction of the drafting unit if variations in the input sliver thickness are detected (autoleveller reaction time = 0,003 seconds). The output calender is equipped with a quality-monitoring sensor which stops the machine if the production values exceeds the pre-settled tolerance values.

## Spinning Section: Roving frame



- HIGH PRODUCTION VOLUMES
- LOW OPERATING COSTS
- COMPLETE AUTOMATION

There are four Marzoli FT2DN roving frames with 144 spindles currently running at Sara Spintex's spinning mill. Moving from the previous model, the FT1, where mechanical transmissions had been substituted with independent motors coordinated through electronics, the FT2 roving frame constituted a further step forward towards the integration of electronics into the roving frame. The FT2 has separate drives for the drafting unit, the flyers, the bobbins and the bobbin rail; all the drives are perfectly synchronized thanks to state of the art Siemens electronics. The concept of substituting mechanical transmission with electronic coordination has had the major benefit of increasing running

speed while lowering operating costs. In fact, less mechanical transmission entails lower friction and vibrations and, consequently, relevant energy savings. Moreover, fewer mechanical parts grant lower costs for spare parts. The FT2DN is completely automated: technological parameters, including twist, roving tension and bobbin conicity and speed, can be directly inserted by the user on the touch screen. The doffing cycle requires no human intervention as the machine stops, substitutes the full bobbins with empty tubes and restarts automatically. All doffing operations for a roving frame with up to 192 spindles are carried out in less than 3 minutes. After doffing the automatic bobbin changer takes the full bobbins from the doffing rail and places them on the automatic transport system which brings the bobbins to the ten MPTN spinning frames.



## Spinning Section: Spinning frame

- HIGH PRODUCTIVITY
- GREAT EFFICIENCY
- HIGH FLEXIBILITY

Sara Spintex's spinning mill is equipped with ten MPTN spinning frames. The MPTN is a fully electronic frame with independent drive for spindles (double tangential belt drive), ring rail and drafting system. Its design aims at finding the best balance between efficiency and productivity: the implementation of Siemens state-of-the-art electronics with high efficiency motors allows spinners to reduce energy consumption; constant yarn tension thanks to the variation of the spindles speed during bobbin build up allows to substantially reduce yarn breakages; the fast and reliable automatic doffing and the low maintenance requirements guarantee that machine downtimes are kept to a minimum. The MPTN

spinning frame is very flexible: thanks to the integrated slubbing technology, Sara produces high quality fancy yarn at no additional cost: no increase in energy consumption, no increase of maintenance or cleaning activities, no need of spare parts. Furthermore, thanks to the versatile feeding creel, Sara Spintex's management could decide to extend production to any kind of core-spun and double roving yarn. Changes in production can be carried out very easily thanks to electronics: all technological parameters, including twist, bobbin speed, draft, acceleration and deceleration ramps and shape of the slubs, can be easily set through the touch screen. This reduces the downtime for change in production lots and guarantees that Sara Spintex can easily target any high value segment of the yarn market at any time thanks to Marzoli's flexible technology.



## Outstanding yarn quality

Yarn quality is a fundamental competitive lever as it boosts quality of the final product and the efficiency of downstream processes: *"A strong yarn with no weak points guarantees fewer downtimes during weaving operations. This is very important for our customers because fewer downtimes of the weaving machines means higher productivity and fewer defects on the fabric - quality manager states - This is why it is fundamental for Sara Spintex to constantly produce high quality yarn"*.

In order to obtain excellent yarn quality standards, a decisive contribution comes from the installed spinning technology. *"Sara Spintex decided to rely on Marzoli because its brand name stood for technological excellence. Over 160 years of history speak for themselves and I must say that we are very satisfied with Marzoli: our daily tests constantly witness excellent quality standards that score among the highest percentiles of Uster Statistics"* quality manager states.

Sara Spintex's outstanding quality is also testified, for ginning operations, by the Five star rating certification appointed by the Textile Committee of the Government of India. The outstanding performances of Sara Spintex's spinning mill will be preserved in the long run thanks to the effective after sale service that Marzoli provides in India. Marzoli, in fact, aims at being a reliable partner that continuously maximize its clients' performances in a long profitable relationship for both firms.



MARZOLI  
INTERNATIONAL, INC.  
USA

MARZOLI MACHINES  
TEXTILE SRL  
Italy

MARZOLI INDIA  
MTMM PVT. LTD.  
India

SARA SPINTEX

- Legend**
- Marzoli premises
  - Sales & service network
  - Sales affiliates

**Sara Spintex India Pvt. Ltd.**  
Aftab Dhamangaon Road,  
Yavatmal - 445001, Maharashtra  
India  
Tel. +91 7232 243077  
[www.saraspintex.com](http://www.saraspintex.com)

**Marzoli Machines Textile S.r.l.**  
Via Sant'Alberto, 10  
25036 Palazzolo sull'Oglio (BS)  
Italy  
Tel. +39 030 73091  
[sales@marzoli.it](mailto:sales@marzoli.it)

**Marzoli India  
MTMM Pvt. Ltd.**  
Shed No 6, Bangalore Main Road  
SIDCO Industrial Estate  
Hosur - 635 126  
Krishnagiri District, Tamil Nadu  
India  
Tel +91 4344 400111

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