

Quality • Reliability • Innovation



Precision components for spinning machines





TeraSpin, a business unit of A.T.E. Enterprises Private Limited, manufactures precision components for spinning machines at its state-of-the-art eco-friendly manufacturing facility at Sari, near Ahmedabad in Western India.

TeraSpin was formed with A.T.E.'s takeover of the textile machinery components business of SKF India Limited in the beginning of 2012. TeraSpin products are thus built on the strong foundation of SKF knowledge and expertise.

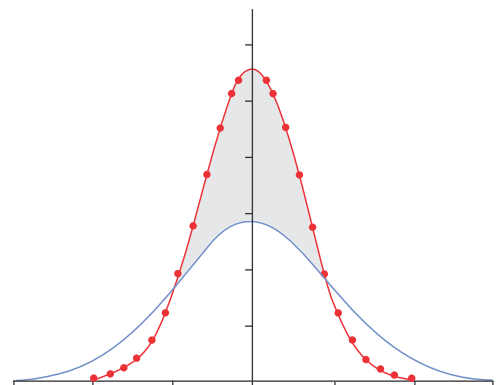
Through constant R&D at TeraSpin, some of these products have been further improved upon, thereby ensuring high performance and durability.

With a clear mandate of 'zero defect', 'zero rejection', 'excellence in quality', 'safety' and 'eco-friendly operations', TeraSpin has deployed a series of quality initiatives, such as ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007. Thus, we ensure our products' quality at every stage of the production process. All products are manufactured with a high degree of automation that helps achieve consistent quality on mass scale.

At TeraSpin we manufacture all products as close to their nominal specification limits as possible as shown in the peaked bell curve of the normal distribution – driving towards Six Sigma quality levels.

TeraSpin's products are available for OEMs as well as for replacement in spinning mills in all major textile and machinery producing countries like China, Germany, India, Indonesia, Japan, Spain, Turkey, and Vietnam.

TeraSpin also provides customised upgrade kits for roving frames and ring spinning machines.



— Normal distribution curve for products manufactured within the tolerance limit

— A peaked bell curve for TeraSpin products show a much higher proportion manufactured close to the exact dimensions



Spindles and Inserts



TeraSpin is one of the few complete spindle manufacturers who also make inserts that enable speeds up to 25,000 rpm (mechanical).

Complete spindles are available in a variety of configurations and for auto-doffing or manual doffing ring frames

Spindles are available in a variety of configurations:

- with self locking inserts
- with external locking hooks
- with yarn catcher or knurled base
- for 4 spindle tape drive or tangential belt drive
- different combinations of the features listed above

TeraSpin high performance HF series spindle inserts are well proven in design and widely accepted by spinning mills and spindle manufacturers. Millions of spindles are in operation across the globe.

HF 100

for spindle speeds of up to 25,000* rpm
(mechanical)

HF 1

for spindle speeds of up to 22,000* rpm
(mechanical)

HF 21

for spindle speeds of up to 20,000* rpm
(mechanical)

Features

- Reduced blade length to 100 mm (HF 100)
- Only two point contact (at footstep and neck bearing)
- Spring support for axial load
- Well proven conical foot step design
- Flexible centering sleeve

Benefits

- Self centering ensures concentric running
- Low coefficient of friction
- Very steady even at high spindle speeds
- Low energy consumption
- Low noise
- Spindle oil requirement reduced by up to 20% (HF 100)



Weighting Arms

TeraSpin weighting arms are characterised by their robust design and corrosion resistant finish. Not only are these weighting arms built to last the lifetime of the ring frame or roving frame, but each weighting arm exerts the same load on top rollers irrespective of how long they are in use or at what position in the machine they are fastened. Loading springs used on TeraSpin weighting arms are pre-calibrated for specified loads and last a life time.

PK 2025 and PK 2035

for ring frames in short staple spinning system

Features

- Reliable loading through leveraged force of helical coil springs
- Choice of load selection on each top roller
- Partial load release

PK 1601

for ring frames in worsted spinning system

PK 1500

for roving frame in short staple spinning system

Features

- Reliable loading through leveraged force of helical coil springs
- Available in 3/3 or 4/4 drafting roller configurations
- Choice of different loading force on top rollers
- Also available in corrosion resistant NiCr finish

Benefits

- Consistent quality of yarn
- No height gauge setting required after cot buffing within the range
- Free from vagaries of pneumatic pressure loss or pressure variations
- Suitable for a wide variety of fibres and yarn counts
- Virtually maintenance-free
- Long service life



Top Rollers

Each top roller is manufactured such that the clearance between hardened arbour and shell is perfectly matched with appropriately sized double row steel balls. The top rollers made for ring frames and speed frames are injected with just the right amount of special grease – TRG 5. The ends are fitted with a uniquely designed seal to prevent leaks while in operation.

LP 302, LP 303 and LP S (with polymer sleeve) series for ring frames

LP 315 and LP 317 for roving frames

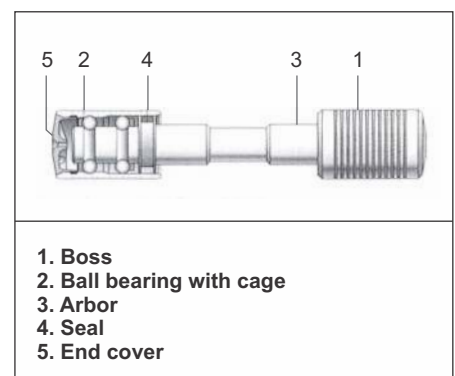
LP 314 and LP 316 for worsted spinning ring frames

Features

- Sturdy double row ball bearing
- Through hardening of axle and outer shells
- Effective U-type seal
- Lubricated with precise amount of special grease TRG 5

Benefits

- Higher load bearing capacity
- No ingress of foreign particles
- Long re-lubrication intervals reduce maintenance
- Smooth trouble-free operation under mill conditions
- Consistent quality output



Double row ball bearings with specially designed end seals to prevent grease leakage during use

Cradles



Cradles discharge the important function of keeping the top apron in position over the rotating apron top roller so that fibres are effectively guided in the main draft zone. TeraSpin cradles are made with Fibre Reinforced Plastic (FRP) for long life and ease of handling.

OH 62, OH 131, OH 121 and OH 554

for ring frame drafting for cotton and man-made fibres of up to 60 mm staple length, wool, and worsted spinning for up to 200 mm fibres

OH 514, OH 534 and OH 524

for roving frame drafting for cotton and man-made fibres of up to 60 mm staple length

Features of FRP cradles

- Rigid and stable structure for use under mill conditions
- Lighter in weight as compared to sheet metal cradles
- Design ensures gentle nipping and effective fibre control
- Cleaner surface for smooth rotation of top aprons
- Can readily replace existing metal cradles

Benefits

- No danger of deformed cradles being used (unlike metal cradles susceptible to deformation)
- Existing range of spacers can be used on the cradles
- Consistent quality
- Maintenance-free

OH S 168

for ring frames

OH P 110 & OH P 310

for roving frames

Features

- Minimum contact area minimises friction during apron rotation
- Fixed radius ensures uniform distance between apron nip and front roller nip
- Accommodates variation in apron length & maintains uniform apron tension

Benefits

- Reduced yarn imperfections
- Longer apron working life
- Easy apron removal and mounting during maintenance



Distance Clips

These small light weight plastic elements in a drafting system can sometimes make the difference between a good and bad yarn. TeraSpin ensures that the distance clips you buy are exactly of the same dimensions thousands after thousands in every order.



Upgradation Kits



TeraSpin upgradation kits offer the twin benefits of enhanced performance with low investment. A viable option adopted by many spinning mills in India and abroad, it improves productivity, quality, and energy efficiency.

Drafting zone

Drafting conversion is the preferred way of upgrading roving frames and ring frames. Outdated mechanical and/or old pneumatic drafting systems can be replaced by the more efficient TeraSpin spring loaded weighting systems. No compressed air required.

Spindle zone

Ring frames consume almost 60% of the power of the spinning process, out of which spindles and the spindle drive consume approx. 40%. A small saving here will directly reflect in the cost of the yarn. By optimising parameters like spindle wharve diameter, DUI, taper ratio, lift, etc., the power consumption can be considerably reduced.

Benefits

- Increased spindle speed and productivity
- Reduced power consumption
- Improved and consistent quality of output
- Extended machine life

Grease TRG 5

TeraSpin special grease TRG 5 is specially formulated to meet the stringent working conditions of the spinning industry. TRG 5 keeps drafting top rollers running with longer re-lubrication intervals. Its lubricating properties address the issues of micro dust, fluff, humidity, and temperature in the spinning section. It is also suitable for bottom roller bearings.

Features

- Barium based grease
- High load carrying capacity
- Good metal affinity
- Excellent water resistant properties
- Wider range of working temperature (-30°C to $+140^{\circ}\text{C}$)

Benefits

- Longer lubrication interval – 30,000 hours
- High corrosion resistance
- Extended service life
- Reduced maintenance cost



Sustainability at TeraSpin

TeraSpin is not only the epitome of quality products, but it also embodies A.T.E.'s vision of sustainability. Hence, TeraSpin is certified under ISO 14001:2004 Environment Management System for its sustainable practices.

Some of TeraSpin's green initiatives:

- Design of the buildings allows optimum use of natural light. Not a single electrical light is used in the office or factory during the day time.
- Green wall structure around the building with various plants and creepers to cut down heat coming into the structure.
- A water pipe network inside the walls of the building to keep it cooler.
- A unique two-stage evaporative cooling technology from HMX (a part of the A.T.E. group) providing 100% fresh cool air for people comfort and process efficiency.
- A sewage treatment plant from A.T.E. Envirotech (a part of the A.T.E. group) that treats the wastewater and makes it usable for non-potable purposes like watering the trees and plants around the complex.
- A special type of PU coated flooring in the shop floor, which prevents any seepage into the soil and is easy to clean too.
- Hazardous wastes like grinding dust and lubricating oils from the machining centres are carefully collected and handed over to government certified agencies for recycling and disposal.
- Use of IoT based remote monitoring from EcoAxis (a part of the A.T.E. group) to ensure that temperatures, CO₂ levels, etc., are always at the intended levels within the manufacturing facility.
- Rain water harvesting and reverse bore wells to replenish the ground water in the area.



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