



RING FRAME LR9/SX SERIES

A long, perspective view of a factory floor filled with rows of industrial ringframe machines. The machines are primarily white with green accents. The ceiling is high with various pipes, conduits, and lighting fixtures. Labels like 'RING FRAME-17 RHS TRACK' are visible on the ceiling structure. A yellow line is painted on the floor, marking a path. The overall atmosphere is clean and industrial.

Flexible

LR9/SX

LMW's Smart Ringframe LR9/SX Series, is built with Superlative Technology to spin high quality yarn. Compatible for Industry 4.0 standards, this advanced new age machine is flexible and engineered with smart features which ensures, high productivity, enhanced quality, lower energy consumption and sustainable features for the future.

Reliability

Trust

Quality

Highly Efficient





Specific Features



Energy Saving

- High Energy Efficient Motor
- Inverter Controlled Fan Motor
- Instantaneous Power Monitoring

LR 9/SX



FLEXI Drive for Drafting

Servo drive for Drafting
No Change Gears for Draft & Twist
Better management of Torsional forces to get uniform yarn quality along the machine

Fancy by Design - Multi Effect Fancy yarns

Flexible to produce Fancy yarns
(Slub, Multi Count, Multi Twist, Injection)

Proven Rapid Doff

Reliable & Easy Autodoffing Mechanism
(Doff time < 110 sec)

HPM (High Performance Module)

Auto Lub System for DLD
DDPC (Digital Drafting Pressure Control)
CAM (Compressed Air Monitoring)
Inbuilt electrical protection system during power deviation

Longer Machine with Space Saving

Maximum Spindleage upto 1824

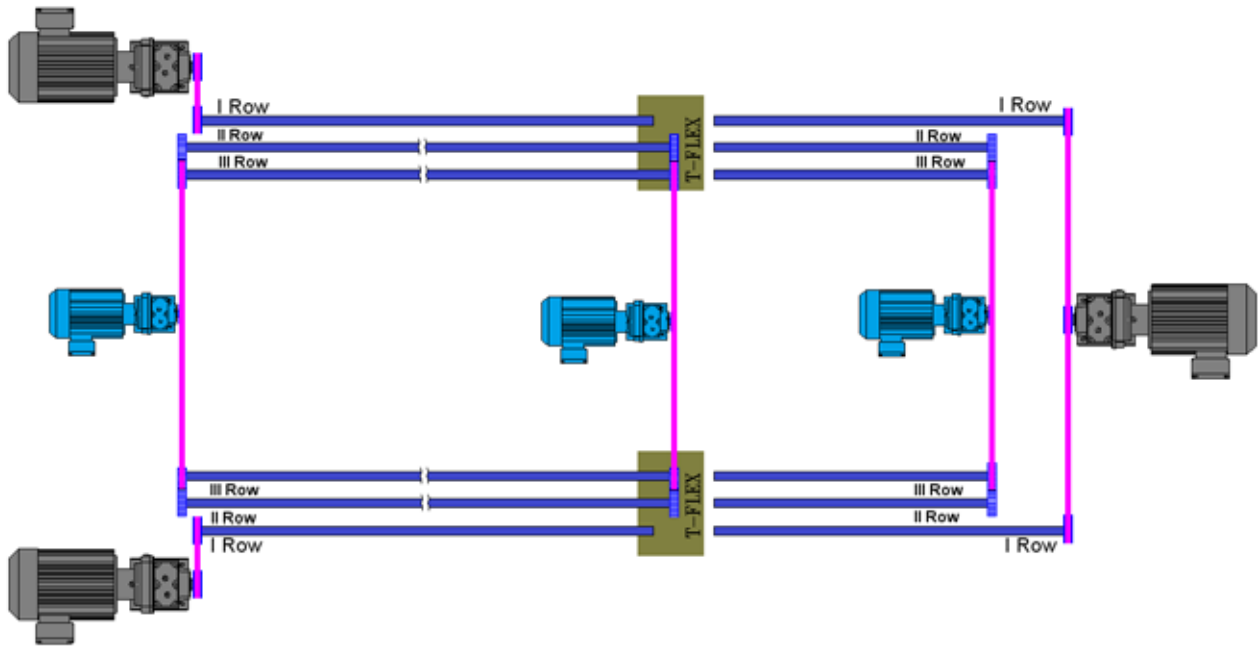
ECO Friendly

Low Decibel Silent Spindles



Ultimate Flexibility in Yarn Spinning

The Ring Frame LR9/SX is a Change Gear-less Machine with a host of features that provides flexibility in terms of producing regular and fancy yarns such as Siro, Slub, Short Slub, Injection slub, Multicount, Multitwist & Multieffect yarn with higher productivity and quality.



Slub Yarn



Negative Slub

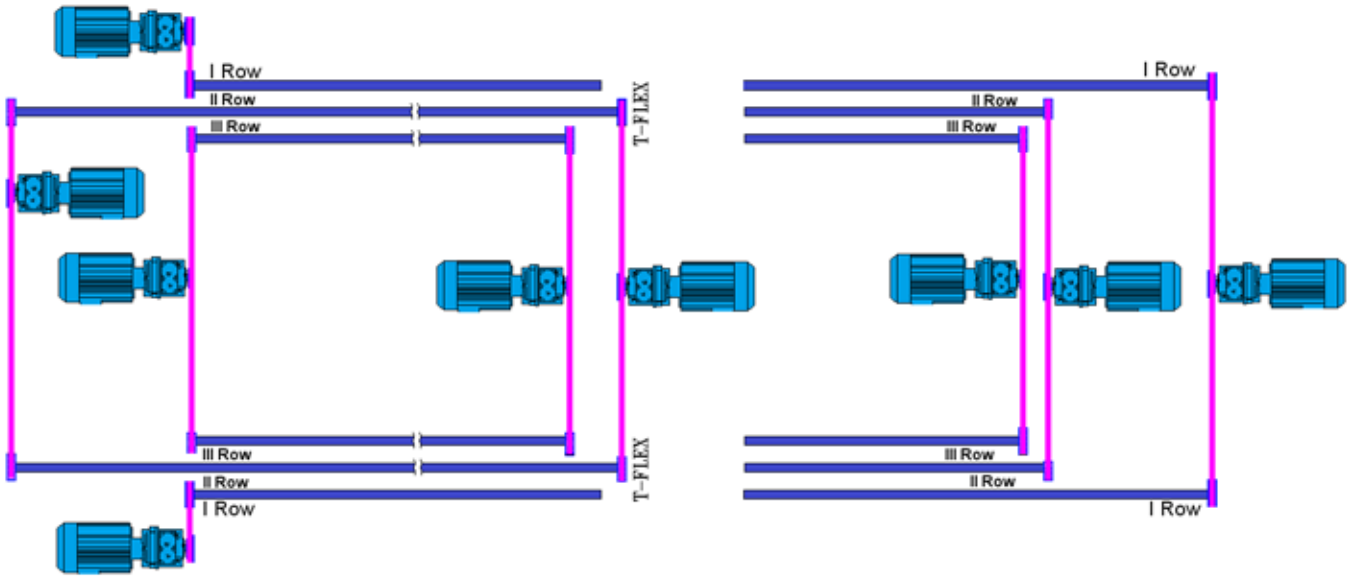


Slub on Slub

Options	1	2
Front Roller	Induction - 3	Servo - 3
Middle & Back Roller	Servo - 3	Servo - 3
Yarn Types	Normal/SIRO/ slub	Normal/SIRO/slub/Multi count/Multi twist/Multi effect



Injection Yarn / Injection Slub



Multicount



Multitwist



Injection Yarn



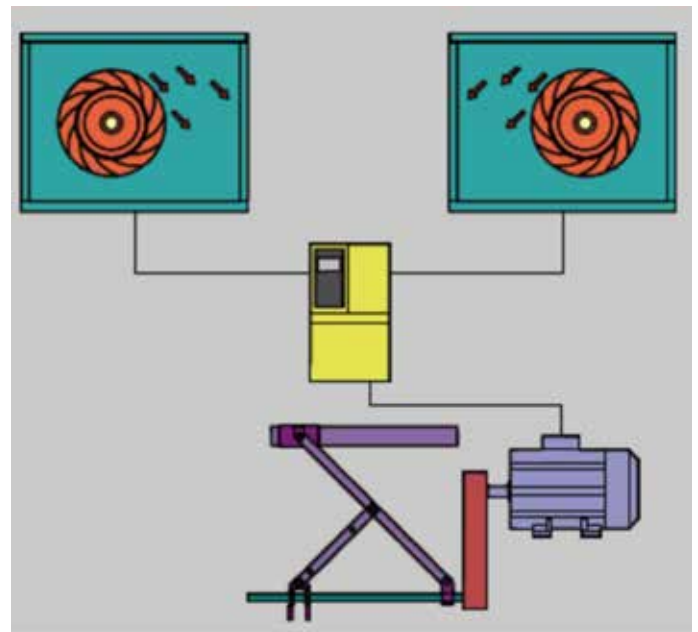
Options	3	4
Front Roller	Servo - 3	Induction-3
Middle Roller	Servo - 3	Servo - 3
Back Roller	Servo - 3	Servo - 3
Yarn Types	Normal / SIRO / Slub / Short Slub Multi count / Multi twist / Multi effect / Injection yarn / Injection slub	Normal / SIRO / Slub / Injection yarn / Injection slub



Inverter Drive System - for Fan Motor & Doffer Motor

The inverter varies the pneumafil suction fan speed based upon the suction requirement during regular running of the machine.

During pre-doff function, the same inverter runs the pneumafil fan motor at normal power of 50 Hz and controls the Doffer gripper rail motor acceleration between slow speed and high speed according to the doffing sequence and hence doff time is reduced.



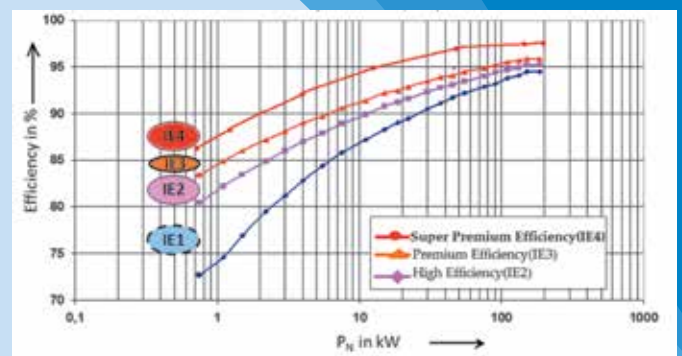
Energy Saving

Energy module consists of INX OPTI Main Motor – IE4 standard, Energy efficient IE3 standard Fan Motors, Inverter Drive to Fan Motors, New Suction System and module to monitor power.

Energy Efficient Main Motor

INX OPTI Motor has power saving @ 2.5% to 5% compared to INX motor. Temperature reduction to the tune of 20 to 30 degrees Celsius.

Power in kWh stores in report screen for every doff
 Continuous data can be stored in USB device - Optional



Efficiency classes IE1, IE2, IE3, IE4

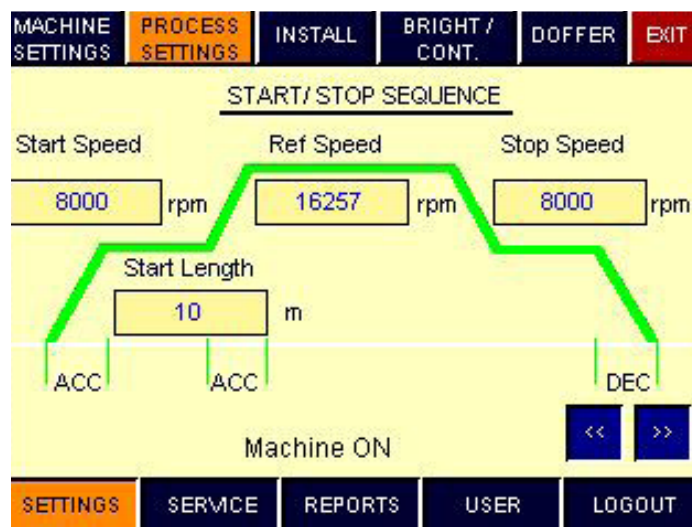


HMI Display

Machine Settings made easy with HMI display

Dynamic lot / count changes are made possible with the 5 different process settings available in memory.

The speed pattern can be set for the optimum cop build-up, to increase the productivity without affecting quality. This is effected by the smooth change in the Speed Pattern as programmed in the display. The number of steps programmable is up to 16 steps. Every process control parameters like underwinding speed, time & position are fed through display.



Credo+Rings for Superlative Performance

Lakshmi Credo+Rings are best established for Compact, Combed, Carded Yarn Processes, Synthetic blends and dyed synthetic material. Its consistent performance with best productivity is already proven at different spinning mills for various materials and applications.

The Credo+Rings precise profile geometry ensures shorter running in period. Increased micro hardness leads to extended life of the rings. While the higher wear resistance guarantees the consistent performance throughout the life with consistent yarn quality.



Low Decibel Spindles (HLLD) for best working atmosphere

Ring Frame LR9/SX is supplied with proven HLLD spindles. These Low decibel spindles ensures very low noise levels and very low vibration levels for assuring higher spindle speeds by the use of Double elastic viscous damping construction in the bolsters.

The noise level is reduced by 5 dB.





Auto Lub System for DLD (Doffer Lifting Drive)

Auto Lubricating Grease Pump, to supply grease to the screw rod arrangement in the stipulated time intervals. The time intervals can be set through HMI. Screw Rod is covered completely to avoid Fluff accumulation inside the screw rods.



CAM (Compressed Air Monitoring) and DDPC (Digital Drafting Pressure Control)

Display of Compressed air consumption in HMI. The data can be integrated to our SPINCONNECT software. Drafting pressure can be monitored through HMI Drafting pressure change through digital pressure switch

Rapid Doff (Optional)

With Rapid Doff feature, doffing cycle time <110 secs is possible.

Direct Link to Winding machine

Any make of winders can be linked directly to Lakshmi Ring Frame. Tube transfer rate is upto 40 Tubes / Minute.





Smart Doffer

Well proven user-friendly Intermediate Peg System with Aluminium Extruded Gripper Rail and the Sturdy Steel Scissor arm ensures perfect doffing.

Pneumatically operated Piston type gripper ensures positive grip on the cops without disturbing the yarn content. Snap fit type gripper cap for facilitating easy mounting onto the gripper offers the ultimate user friendliness to customers.

Precise peg movement is ensured by friction free electroplated trays assisted by two pneumatic cylinders on each side. For effortless movement there is one pusher per 24 spindles.



Stand Alone Basket Type Tube Loader

The Ring Frame tubes from winders can be put in to the basket of the Tube Loader. This has reduced the operator fatigue since the loading made easy by stack free loading. Tube feeding rate is upto 34 Tubes/Minute.



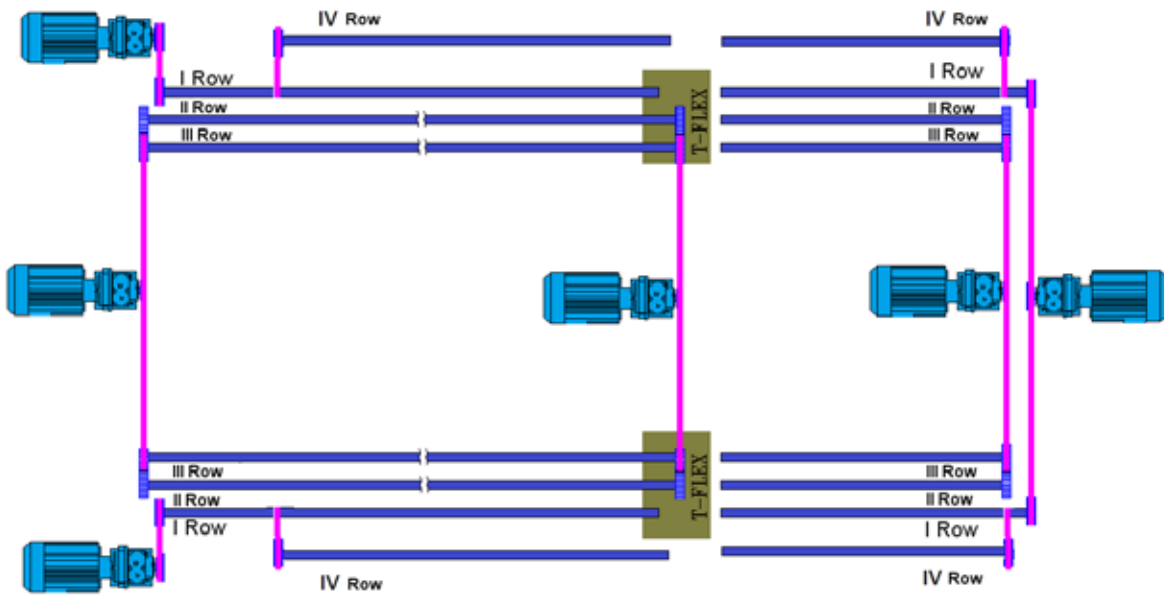


Lakshmi Ring Frame LRJ9/SX Series



- Hi-tech, Unique Suction Compact System with Ease of Handling
- Maximum number of spindles upto 1824
- Idler gear with play adjusting provision for transmitting drive from front bottom roller to compact bottom roller
- Uni compact nozzle made up of special aluminium alloy for eight Spindles
- Unique top suction arrangement
- Special spinning angle for enhanced performance
- Lesser power consumption





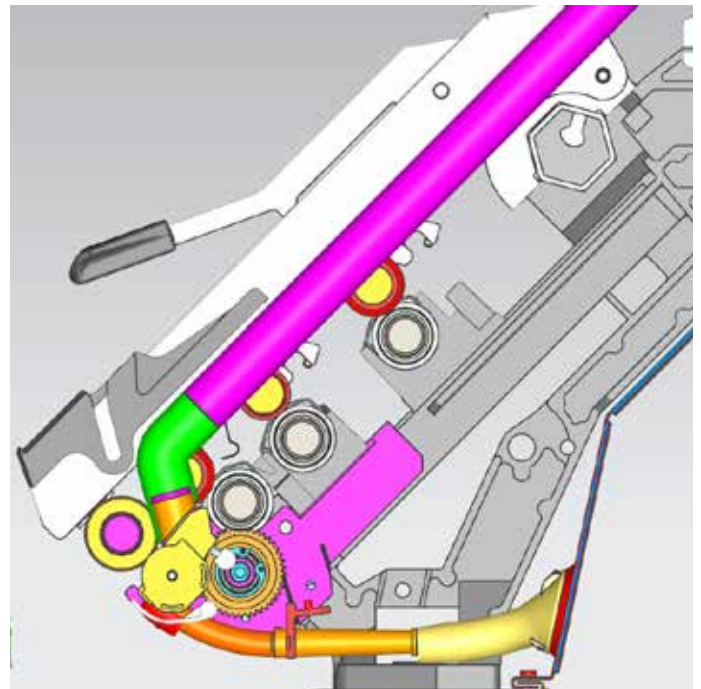
Options	Front Roller	Middle & Back Roller
1	Induction - 3	Servo - 3
2	Servo - 3	Servo - 3

The versatility of Lakshmi Suction Compact system to work with Cotton, Polyester, Regenerated Polyester, Viscose, Modal, Micro Modal, PV blends, PC blends, Melange, Bamboo, Modal Cotton Blends, Lyocell and for the applications of weaving and knitting has made the system acceptable by top end spinners.

Integrated Top Arm and Roller Stand ensure precision in roller setting and reduction of parts.

Superlative performance with Lakshmi Compact is well proven all around the world with the following yarn quality parameters.

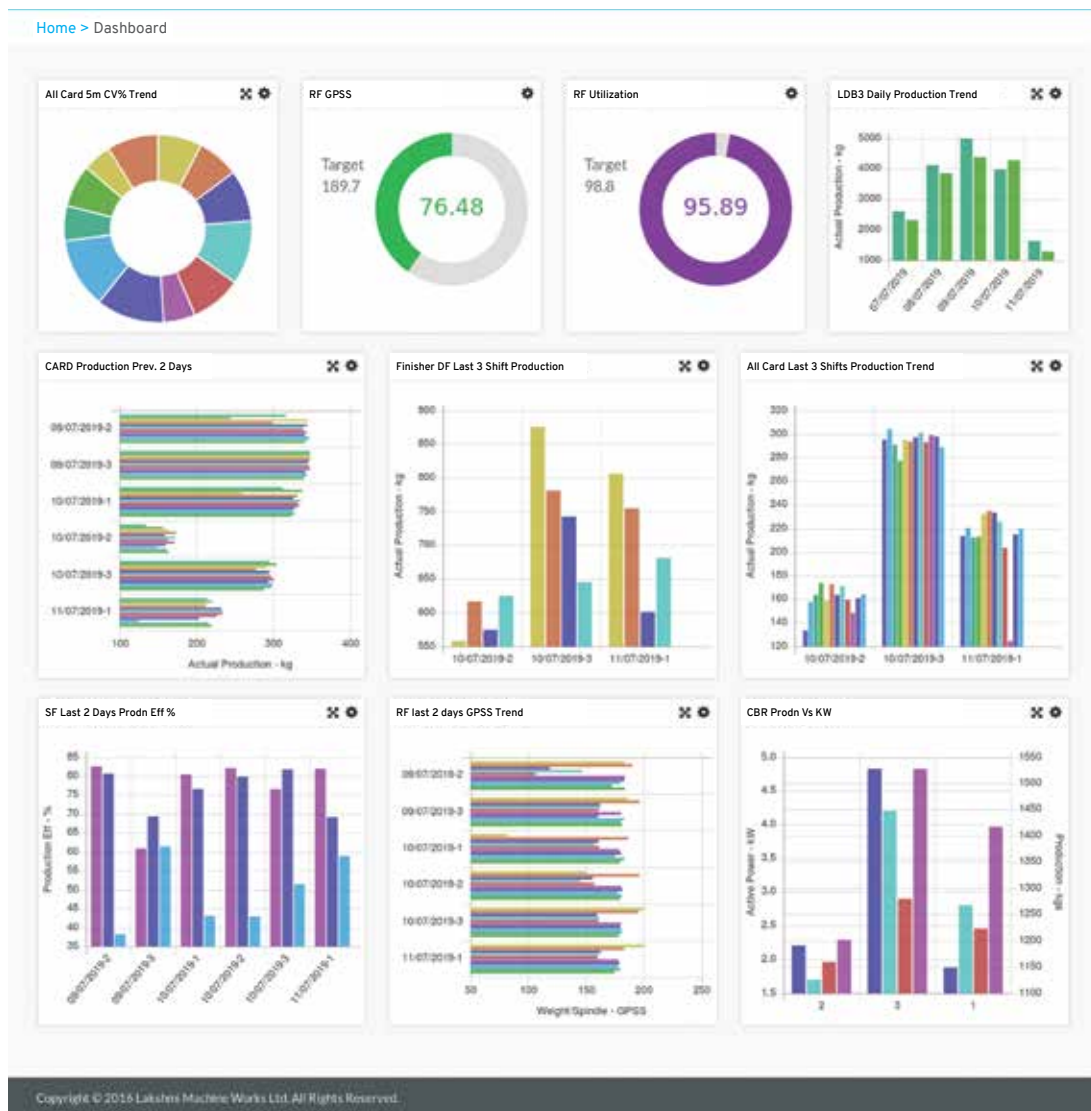
Increase in Yarn Tenacity by upto 15%, ZWEIGLE yarn hairiness S3 reduced upto 85%, Uster Hairiness Index improvement upto 30% and improvement in Yarn imperfections and classimat faults.





Spinconnect

Digital Automation our passion



Integration of Ringframe through SPINCONNECT

Smart Ringframe LR9/SX Series can be integrated with Spinconnect, a web based monitoring and control application. The HMI details are transferred through Wi-Fi / LAN connection and all the parameters can be viewed in a central computer.

- Editing of process parameters from a central location for better process control and lot changes across machines.
- Remote viewing of machine PLC status from any location for troubleshooting and for software upgradation.
- User defined reports and charts for analysing the Ringframe performance can be generated for further improvement.
- Predefined daily, weekly, monthly reports can be sent through mail to respective users.



LR9/SX

Technical Data	
Material	: Cotton, Man Made Fibres & Blends upto 60 mm
Spindle gauge (mm)	: 70 mm
Spindles per section	: 48
No. of Spindles	: Max - 1824 Spl. Min - 144 Spl.
Spindle Type	: HLLD
Spindle speed	: Mechanical up to 25 000 rpm
Ring Type	: CREDO +
Lift (mm)	: 160, 170, 180, 190 & 210
Tube Length (mm)	: 180 to 240
Ring diameter (mm)	: 36, 38, 40, 42 & 45
DUI (mm)	: 18 / 20 / 22
Wharve Dia (mm)	: 18.5 / 21
Count range (Ne)	: 12's to 200's (Cotton) 14's to 120's (Synthetic Blend) 16's to 120's (Synthetics)
Hank of Roving	: 0.5 to 2.5 Ne
Drafts	: Upto 100
TPI Range	: 9.57 to 82.84
Cradle size (mm)	: 36mm / 39mm / 43mm / 59mm depending on material process
Tube loading type	: BTL (Basket Tube Loader) Linking with Winder
Waste Collection System	: Rotary (Cotton) Stationary (Synthetic & Blends)
HPM (High Performance Module)	: Auto Lub System for DLD DDPC (Digital Drafting Pressure Control) CAM (Compressed Air Monitoring) Inbuilt electrical protection system during power deviation
Machine Width	: Long Stretch Compact Stretch
Spindle Centre	: 620 mm 680 mm
Doffer retracted	: 1070 mm 1132 mm
Doffer extended	: 1480 mm 1530 mm
Options	: Multi count and Multi Twist Injection Slub SIRO Rapid Doff Automatic Waste Evacuation System

LR/SX



Data & Diagrams in this brochure refer to the date of printing. LMW reserves the right to make any necessary changes at any time and without special notice. LMW Innovations are patent protected.



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