CARD LC636 S

'Card with Highest Active
Carding Area & Cylinder Area'

Flexible

CARD LC636 S

Technology at its Best

'LC636 S Card with Highest Active Carding Area & Cylinder Area'

'Well carded is half spun'. Carding is a machine which shapes up the final quality level of the yarn to be produced. LC636 S is a machine with 1.5 metres working width and meets the demands of modern spinners.

Highly Efficient

Increased Production and Optimal Utilization of Resources

An increased production capacity of up to 50% can be achieved and it provides enormous benefits to the customer in terms of

- Better Space Utilization
- Saving in Humidification
- Lower Power for Waste Recovery System
- Reduced Manpower
- Less Power Consumption

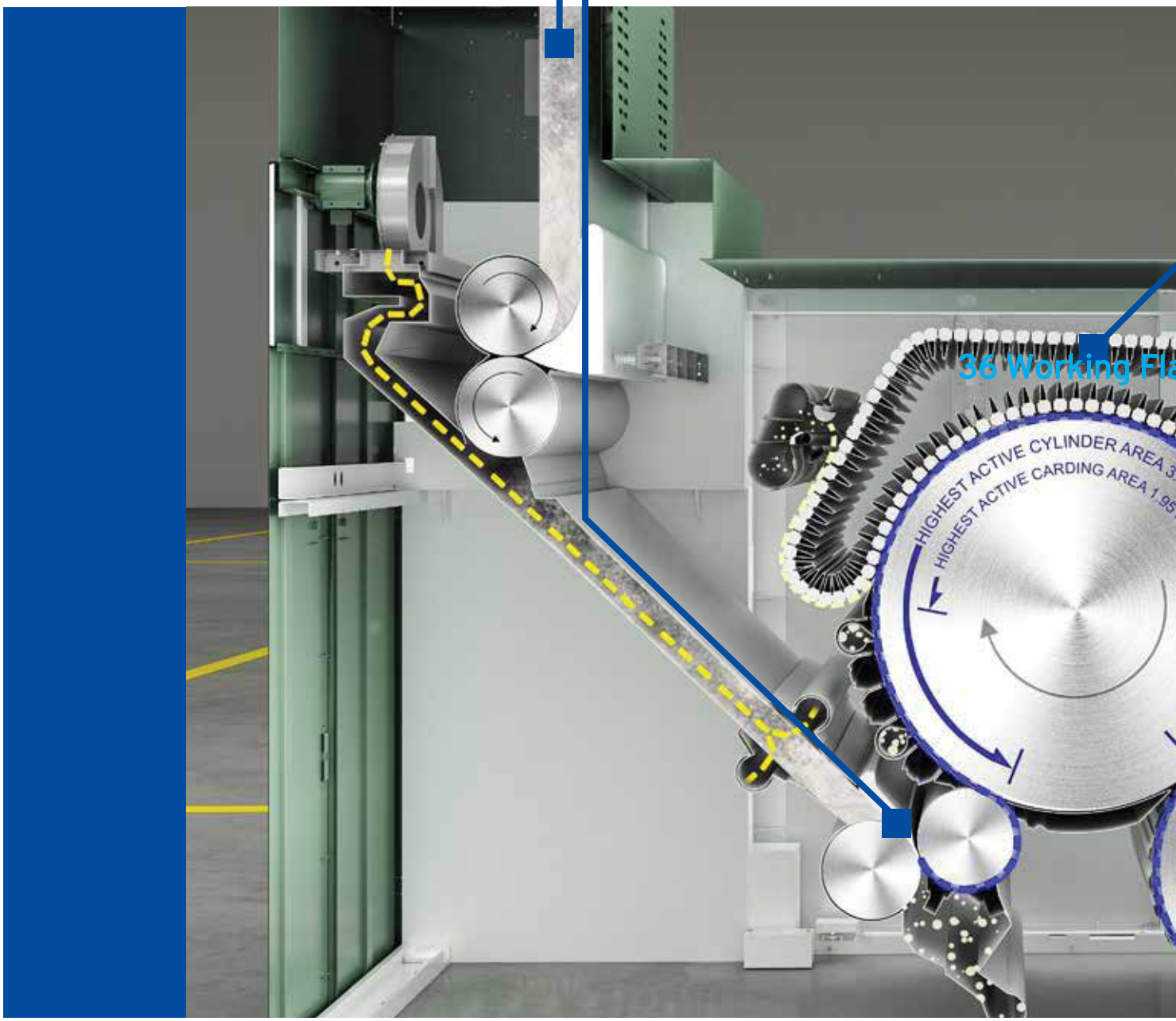
Specific
Features

Chute

- Pressure regulated chute for uniform feeding
- Direct feeding system to card

Feed & Licker-In zone

- Multilevel sensor for Autolevelling
- Single Licker-in arrangement
- Special profiled Arcual combing segment
- Unique bigger feed roller for controlled feeding
- External knife adjustment for easy licker-in dropping optimization



Cylinder & Flat zone

- Highest Active Carding Area of 1.95 m^2 and Cylinder Area of 3.95 m^2
- Aluminium alloy flats with highest no. of working flats (36 nos.) with patented brass clip flat tops
- Optimum cylinder diameter of 1017 mm leading to lower thermal expansion
- Optimal air extraction arrangement in Pre & Post carding area with modular construction
- Replaceable type polymer end connector for flats
- Inverter controlled drive for cylinder & licker-in

Doffer & Delivery zone

- High Speed take up conveyor web doffing arrangement
- Linear 40" x 48" coiler with high speed can changer
- Fix Fil Can changer for bigger can dia of 48" (optional)
- CDS (Card with Drafting Syaytem) for shortend Air Jet and OE Process (Optional)

Quality

- Online Quality Monitoring System (QMS)

Construction

- Modular assemblies - Chute, Licker-in Zone, Flats, Delivery Zone & Coiler

Direct Feed to Card for Better CV%

The Chute LA7/7 is for continuous feeding to card with proven pressure regulated principle which enables to maintain uniform batt and best CV% of the delivered sliver.

Patented feed roller and opening roller with bigger diameter ensures intensive

- opening of tufts
- Active compression on the fiber material resulting in optimal compact structure
- which is required for delivering highest sliver quality.
- Patented unique delivery unit with Swinging arrangement for easy maintenance
- and accessibility of card feed zone.
- Less influence of climatic condition on the performance due to direct feeding to card feed roller.

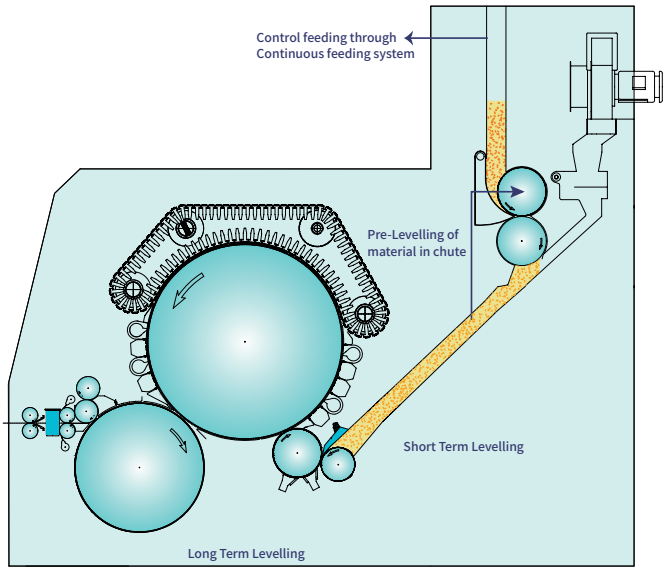
Feed Zone

The material feeding from feed roller to licker-in is through unidirectional feeding system which is vital to avoid fibre rupture and the feed roller diameter has been matched with that of Licker-in diameter for efficient fibre holding and uniform feeding of material to the licker-in.

Auto Leveller Arrangement

The pre-levelling of material is done in chute through pressure transducer by altering the chute feed roller speed.

- The feed thickness is measured by multiple feed plate and five level sensor and adjusts the material feed roller speed through encoder arrangement to maintain uniformity
- The metal detector along with multiple feed plate ensures the stoppage of card in case of foreign material entry and ensures the card safety
- Delivery sensor measures the variation in the output sliver and suitable correction will be given to the system for necessary auto adjustment in the feed roller speed.



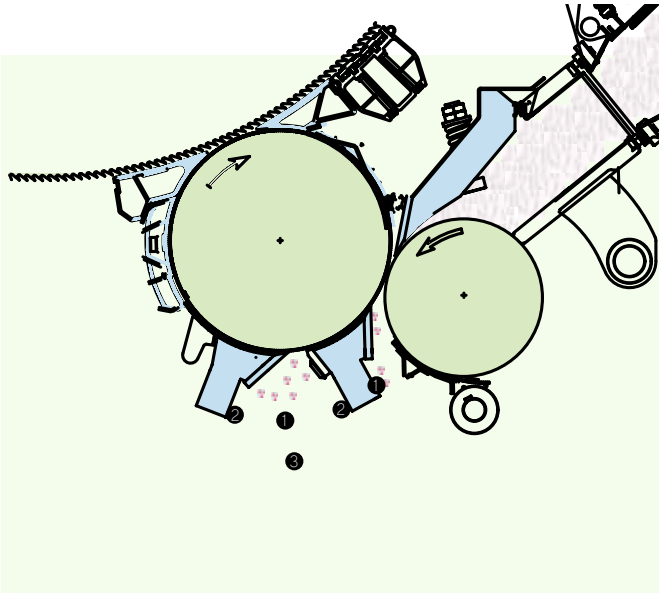
Variable Nipping Distance

Fibre handling in licker-in zone decides the gentle fibre opening. In order to optimize, the nipping distance can be adjusted depending on the raw material fibre length for better opening.

Licker-in Zone with Arcual Combing Segment

Licker-in has two unique specially profiled arcual combing segments in which the wire points are aligned towards the line of the Licker-in wire which helps in gentle opening and also prevents damage to the fibre. This also ensures effective clamping of fibre batt for opening and reduced tuft size which is the basis for reduced load to the main carding zone thus improving the carding quality.

1) Trash ejection mole knives
2) Gentle fibre opening with arcual combine segment
3) Gravity fall of waste



Higher yarn realization-Raw material saving upto 10700 USD/year

Upto 1% lint loss saving

* Assuming production rate of 90kg/hr at raw material cost of USD 1.5/kg

Lesser Lint Ratio

- Two trash ejection knives are positioned below licker-in for effective removal of waste.
- The quality of waste is high and the Lint loss is very less due to gravity fall & gentle opening of the fibre in the licker-in zone.
- The waste can be adjusted from outside with a lever mechanism and the trash percentage can be varied depending on the raw material used.
- The suction duct is positioned below the licker-in to collect the waste which fall by gravity.

Flats Cleaning Arrangement

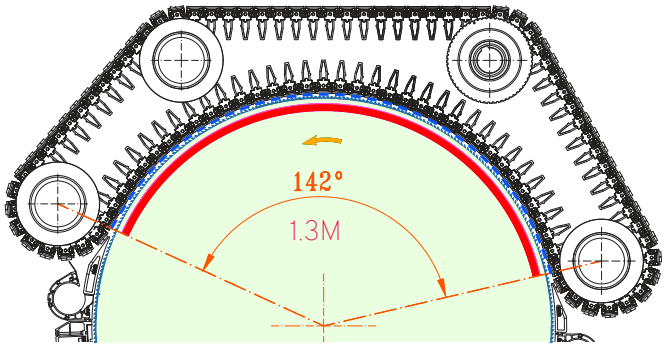
The flats to be presented clean for every cycle is done by a unique aluminium extruded oscillating stripper with stationary comb arrangement. Additional proven Philipson brush arrangement in the front ensures effective cleaning of flats.

Active Carding Area

The majority of the area in the card LC636 S is occupied by technological elements like Pre carding, Flats & Post carding. This is technically mentioned as active carding area where the technological elements occupies 82% of the cylinder surface..

The REAL Carding Area - Active Flat Area

The actual carding action takes place between revolving flats and the cylinder. Card LC636 S has 101 total flats out of which 36 Flats are in working position occupying 142 degrees of cylinder periphery which works out to be 1.3m. Hence, the total active carding area covered of working flats is 1.95 m^2.

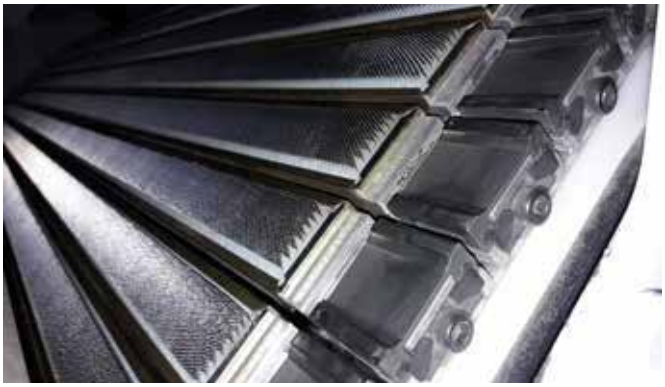


Flat Construction

The flats are mounted on a light weight aluminium alloy profile with patented BRASS Clipping to ensure minimum variation throughout the length of the flats negating the impact of thermal expansion..

Flats with Replaceable Polymer End Connector

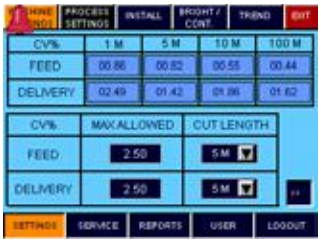
The unique feature of this machine is that it has Replaceable Polymer end connector to get accurate level of heel & toe. Provision is given for end milling in Replaceable Polymer End Connector to get precise cylinder to flats setting.



On-line Quality Monitoring System (QMS)

QMS to monitor instant sliver quality with machine stop control. Trend chart is available to study the consistency level in continuous process. Correction factor can be given to match ONLINE & OFFLINE values. The parameters measured and monitored are:

- Number of Thick Places & U% value
- 1M, 5M, 10M & 100M CV Values
- Chute operating pressure
- Graphical representation
- Maximum allowed set limit can be specified for CV%,
- Thick & U% values



Linear Can Changer -- Quality Ensured with Perfect Coiling

Linear can changer enhances the machine efficiency by 1% through high speed can changer mechanism with positive sliver cutter arrangement. This eliminates sliver variation occur due to reduction in delivery speed during can change in other conventional can changes and contributes to the increase in production at the same run time of the machine.

Production increase of 7400 kg/year*
*Assuming 22.5 hrs run time with production rate of 90 kg/hr

Pre & Post Carding Zone

The stationary flats and suction module are independent with modular construction for achieving an accurate setting throughout the width of the card.

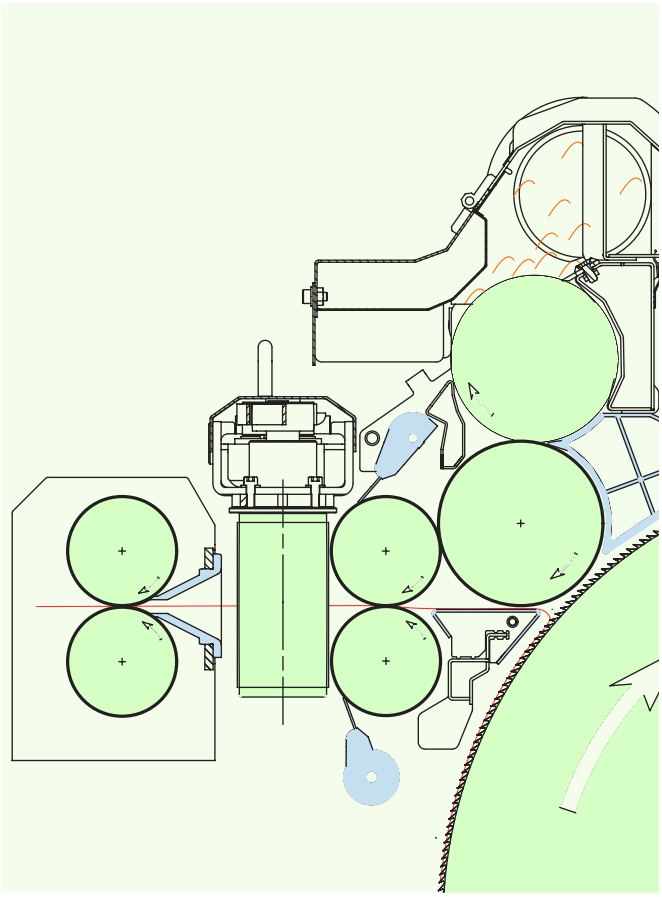
Maximum of 10 Flats in the pre carding zone and 6 Flats in the post carding zone can be accommodated depending on the raw material processed.

Settings for these elements can be varied by replacing the shims of different thickness.

Additionally, 2 knife arrangement option is also available in pre and post carding zone for the application where feed material with harder trash particles.

Delivery Zone

Effective web transfer is ensured by saw tooth take-off roller and a pair of smooth web detaching delivery roller. The web is collected by a pair of conveyor aprons, and the condensed web will pass through a pair of scanning rollers. Advanced timing belt drive ensures the machine's quiet running even at higher delivery speed. Clearer brush located above the redirecting roller strips the fiber from the redirecting roller during initial web piecing.



Continuous Waste Collection System

- The WCS is designed with specially profiled FRP duct (Fibre Reinforced Plastice) for continous collection of waste
- The main purpose is to avoid fiber accumulation in the ducts as it may affect the suction pressure. All the individual points are routed to the central ducts ensuring user friendliness and cleanliness of the card.
- Various options of waste collection systems available as listed:
  - All together Upward.
  - Licker-in Separate & others together-Upward.
  - All together Downwards.
  - Licker-in Separate & others together-Downwards.

Energy Saving Electrical System

The card LC636 S has been designed and developed for lesser energy consumption. The dynamically balanced carding elements and energy efficient drives helps in lesser power utilization.

Electronically Controlled Cylinder Brake System

The cylinder stoppages is carried out by Electronically Controlled Cylinder Brake System. This helps in reduction of machine downtime where cylinder stoppage is done for carrying out any maintenance activity.

Maintenance through HMI

The key maintenance schedules like Grinding, Wire Replacement and Lubrication activities are available in the display for customized setting of time period with alarms.

Modular construction

The machine with modular construction guarantees operator friendliness and minimum installation time.

The Licker-in, Doffer and Flats module can be easily taken out for clothing and with the availability of spare modules, downtime during maintenance can be prevented and thus enhances machine utilization.

Card with Flexible options for MMF Process

The card is equipped with stainless steel ducts for material transport and in chute top and bottom chamber for free flow of material. The following flexibility is also available to suit Man made fibre process

- Variable nipping distance for gentle fibre opening
- Interchangeable and addition of Pre & Post carding elements and Knife positions
- Specially coated coiler
- Unique wire profiles for effective carding action
- High speed take up Conveyor web doffing arrangement

Benefit for customer (1.0mts Vs 1.5mts)

Higher Production
(Approx. 50%)

Lesser
Space
(~29%)

Lower Recurring Cost
- WCS (~18%)
- Installed KW (~12%)
- UKG (~5%)

Lesser Maintanance & downtime
- Inverter drive for cylinder / Licker-in
- Setting adjustment through shim for Pre & Post carding

CDS (Card with Drafting System)

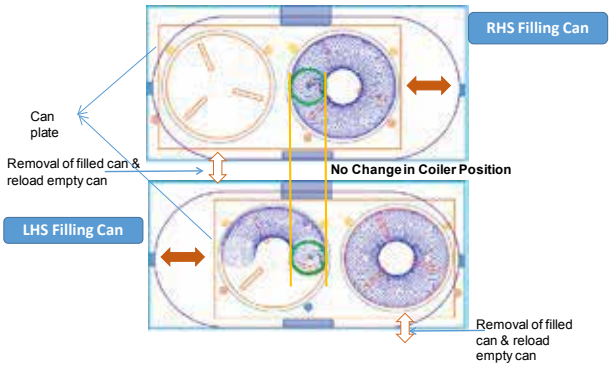
Card LC636 S can be offered with Integrated drafting system. The CDS comes with 2 over 2 pneumatically loaded drafting system with servo control. The Intelligent auto levelling system ensures the consistent quality of the sliver delivered from card. The maximum delivery speed of 700 MPM is possible with CDS. The drafting is equipped with easy adjustment of load for drafting rollers. The CDS can be offered for shortened Air Jet and Open End process and it can be retrofitted in the existing machines.

The unique design of CDS ensures quicker and effective piecing which increases the machine efficiency. The levelling of sliver takes place through the speed change of front drafting roller and the hank is ensured through the additional sensor positioned at delivery. The drafting unit consist of in-built suction system with stripper arrangement for effective removal of microdust.

Specification	CDS
Drafting front roller	Variable
Drafting back roller	Constant
Speed Change	Front roller, Calender roller and Coiler

Fix Fil Can Changer

Card LC636 S can be offered with with the delivery can size dia of 1200mm. The unique concept of can changer is developed to handle bigger can for minimizing space. In the Fix Fil concept the coiler is strategically positioned for minimal movement of can which helps for reduction in can movement and space. The can movement takes place Inside the machine which is possible by dual can plate with individual drive arrangement. The machine comes with doffed can monitoring sensor inbuilt which ensures safety.



Advantages of Bigger Can

- Mean time between assist can be increased upto 50%, so one person can handle more card and draw frame.
- Up to 33% Fewer can transport up to Draw frame, as it runs longer in card and creel of draw frame.
- Lesser creel changes means lesser sliver piecings result in upto 33% fewer error locations and thus improves quality
- Increased efficiency upto 2% in Draw frame, requires lesser can changes as it runs longer in card and creel of draw frame

Spinconnect

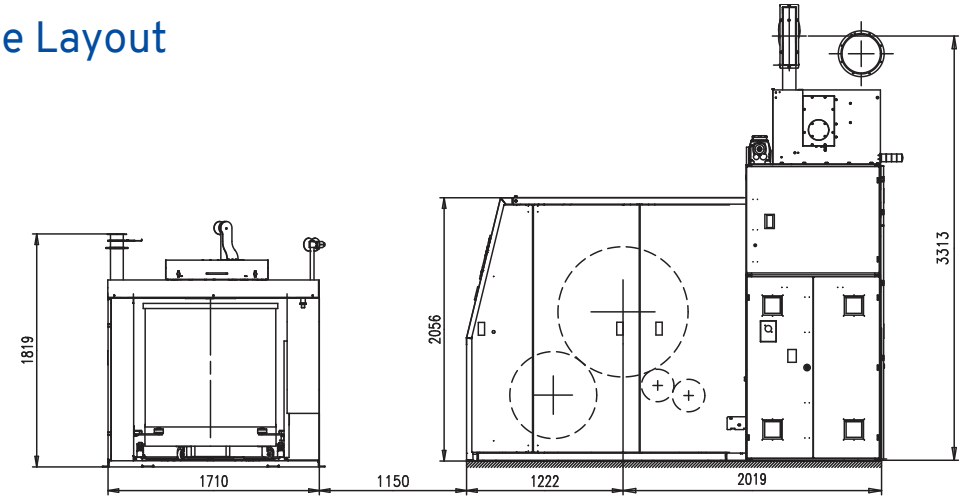
Digital Automation our passion

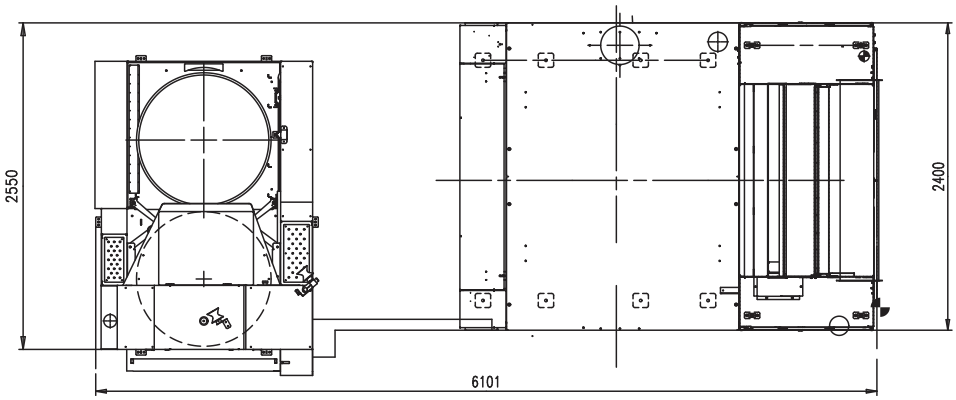
Auto Leveller drawframe LDF3 S can be integrated with Spinconnect, a web based monitoring and control application. The HMI details are transferred through Wi-Fi / LAN Connection and all the parameters can be viewed in a central computer.

- 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 drawframe performance can be generated for further improvement.
- Predefined daily, weekly, monthly reports can be sent through mail to respective users.

CARD LC636 S

Machine Layout





Technical Data	
Material	: Cotton, Blends & Man-made Fibres
Sliver count range	: 0.04 – 0.12 Ne
Feed weight	: 650-950 g/m
Working Width	: 1500 mm
Can Size and Changer	: 40" x 48" Linear Can Changer
Waste Removal	: Automatic Waste Evacuation System
Auto levelling	: Both long term and short term as standard equipment
Pre Carding	: SFL 6F+2K
Post-Carding	: SFD 4F+2K
Exhaust Air Requirement	: 1.3 m^3/sec
Installed power	: 23.1 kW
Compressed air requirement	: 0.7 Nm^3/hr @ 6 bar

CARD LC636 S

LMW®

LMW LIMITED

(formerly Lakshmi Machine Works Limited)
Perianaickenpalayam,Coimbatore - 641 020, India.
Phone : +91 422 719 2255 E-Mail : info@lmwtmd.com

ISO 9001 BUREAU VERITAS Certification UKAS

Leadership through Excellence