

**MAG**<sup>TM</sup>  
beyond quality



**SPinFO**<sup>TM</sup>  
Online Spinning Information System

## Monitoring Parameters

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- Production
- Waste
- Doffs
- Stoppages
- End Breaks
- Rogue Spindles
- Slip Spindles
- Idle Spindles
- Draft
- Twist
- Power Consumption
- Air Consumption
- Temperature & RH

## Features

- Online monitoring of the above parameters and provide notifications/alerts to the concerned in time
- Multi-data Dashboard with all details and colour coding for easy understanding
- Simultaneous and multiple user access to the data.
- Wireless data transmission between machines and access points to reduce wiring complexity and maintenance.
- Six Tier information system provides exhaustive information for different levels (Shop floor to Top Management)
- Dynamic and user friendly software provides various reports, analysis, trend and comparative analysis.
- MIS reports through mail and software.
- Mobile App for live data and notifications
- Production and Alert messages through SMS
- Multiple language support.
- Automatic data back-up eliminates risk of data loss.
- **Pneumafil suction control system according to the end breaks**
- **Roving Stop Motion**

## TECHNICAL INFORMATION

### Measuring principle

- Spindle sensors – EMF
- Production, Doff, Drafts – Proximity sensors
- Power consumption – Energy meter
- Pneumafil fan speed control system – Frequency adjustment based on end breaks level
- Temperature and Relative Humidity - Humidity sensor
- Air monitoring through - Flow meter
- Roving stop motion – Solenoid coil based stop motion

### Data Transfer

- Sensor to Section – Wire
- Section to Machine Control Unit – Wire
- Machine Control Unit to WAP – Wifi
- WAP to Server – LAN cables
- Server to Client PCs – LAN cables
- Mobile App – Through Static IP

### Reports

Detailed and consolidated reports of

- Production - Kg / Lbs, GPS, Converted GPS, Stoppage, Efficiency, Speed, Waste
- Breakage - End Breaks, EB/100 SH or EB/1000 SH, EM Time, Start-up Breaks data
- Doff - Machine wise, group wise, Doff history
- Deviations - Idle, Slip & Rogue and its %
- Stoppage - Detailed, Consolidated & History
- Power consumption, UKG, graphical reports for analysis
- Air consumption report machine-wise during running, stop & doff time
- Temperature & RH% report and hour wise data
- RSM pneumafil waste savings report
- Speed curve analysis – End Breaks, Power, machine to machine or sidewise comparison
- Hour-wise production & End Breaks report
- Analysis reports – Detailed, Comparative & Trend
- User Defined Parameter Reports as required by customer

### Graphical reports

Comparison, Analysis and performance trend graphs of

- Machine, Machine group, Allocation group, Supervisor, Operator
- Bobbin build Vs End Breaks & Power
- Production, Utilisation, End Breaks, GPS

For day, week, month and user defined dates

## Limits

Separate limits can be set according to mill requirements for the following parameters:

- EB – Total
- EB – Machine-wise
- EBHSH / EBTSH
- EM Time
- Rogue spindles / %
- Slip spindles / %
- Idle spindles / %
- Doff time
- Spindle Efficiency %
- Utilisation %
- Production Efficiency %
- Overall Efficiency %
- GPS (Count-wise)
- 40s GPS / 20s GPS
- Stoppage limit time
- Draft range
- TPI range

## General settings

- GPS or OPS
- Kg or Lbs
- Shift change day
- Rogue
- Slip %
- Idle time
- Batch change

## Scope of supply – MAG

### 1.1 SPinFO Basic

#### Sensors

- Spindle sensors – 1 / spindle
- Doff sensor – 1 / machine
- Draft roller sensor - 6 /machine

#### Control Units

- Machine control unit – 1 / machine
- Section control unit – 1 / section
- Draft control unit – 1 / machine (Inbuilt with Machine Control Unit)

#### Data transfer

- Wireless access point - 1 / 10 machines
- 1 Network switch for every 40 meters

#### Displays

- Machine display unit 1 / machine with 2 side display and indications for alerts
- Info panel (TV 40") on crossing every 25,000 spindles
- Two numbers of TAB (One for Production and another one for Maintenance)
- Client application software for remote monitoring
- Mobile App based on number of users

#### Cables & Others

- LAN cables
- Timers
- MCBs
- SMS module for alerts
- Power card
- LHS and RHS section communication cable
- LHS and RHS draft cable
- Display cable



## 1.2 Power

Energy meter – 1 / machine

Current Transformer – 3 / Machine (1 per each phase)

Energy meter is installed in the power inlet cables for 3 phases for monitoring the phase-wise readings round the clock – Doff, Shift, Day and selected period.

## 1.3 Pneumafil control system

Control unit – 1 / machine

Pneumafil control system is controlled by MCU according to the end breaks. The frequency of the inverter is adjusted according to the current end break (Ring frame pneumafil motor to be fitted with inverter drive).

## 1.4 Temperature & Relative Humidity %

Sensor – 1 / machine

Temperature & RH% sensors (Thermistor and capacitive humidity sensor) installed in machine in different spindle location(s) for monitoring the machine-wise readings round the clock – Doff, Shift, Day and selected period.

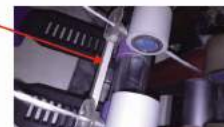
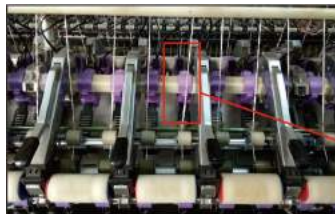
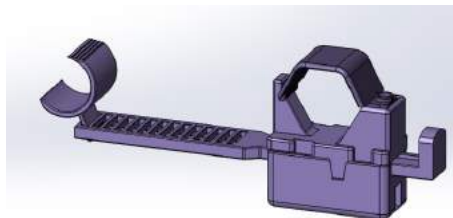
## 1.5 Air Monitoring

Control Unit – 1 / Machine

Air flow meter is installed in the air input of the machine for continuously monitoring the air consumption in CFM round the clock. Separate data available for running, doffing and stop time. (Customer to provide flow meter)



## 1.6 Roving Stop Motion



RSM is installed to stop the flow of roving immediately after an end break. When an end break occurs, the signal from SPinFO spindle sensor is given to MCU and transferred to RSM control unit with corresponding spindle number. The coil inside the individual RSM unit is activated which triggers the shoe. The shoe moves in between the back bottom roller and top roller. The shoe stops the flow of roving thereby stopping the roving feed. Following are supplied meant for RSM.

- RSM device – 1 / spindle
- RSM Section Unit – 1 / Section
- RSM communication cable
- RSM device cable (RJ45 connectors)
- RSM switch cable – 2 per machine
- RSM control unit – 1 / machine (Inbuilt with ISM control unit)

## 1.7 Server

Suitable configuration server and operating system will be provided based on spindle capacity of mills for better working, storage and faster data retrieval.



## Pre-requisites to be kept ready by customer<sup>#</sup>

(# should be kept ready before start of installation)

### Cables & Others

- Power cables 3 x 1.0 sq.mm
- PVC pipes – ½” (for laying power & LAN cables separately)
- Switch boxes (for server, hub, TV, Virtual desktop, Wireless access points)
- Drilling machine and bits
- Required manpower for installation (Maintenance - 4, Electrical - 2)

Note: Exact quantity of cable and switches will be informed at pre-installation stage

### Client PCs

- Basic configuration: Windows 7/8/10 with printer

### Air-conditioned room for server

### Internet access

- Internet connectivity with Static IP for mail communication and SMS application

### Power Supply

- Single Phase 220vAC @ 50Hz through step down transformer 440v-220v, 600VA
- UPS - 2KVa Online sine-wave UPS with external battery connectivity of capacity 150 AH

### Safety

- Sensor & section must not be disturbed by manual pressing, applying load/weights or by other means
- Changes/re-location/modification must be done only by MAG
- Controlled access of server is mandatory to avoid any loss of data
- UPS backup time to be ensured to avoid power interruption and loss of data

### 6 Tier information system



#### (1) Spindle level



#### (2) Section level



#### (3) Machine level



#### (4) Block level



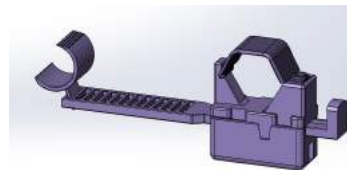
#### (5) Plant level



#### (6) Mobile App, SMS & Mail



### Roving Stop Motion



MAG is always on the path of continual improvement of products. Changes in accessories / parts / spares will take place without any prior intimation.

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