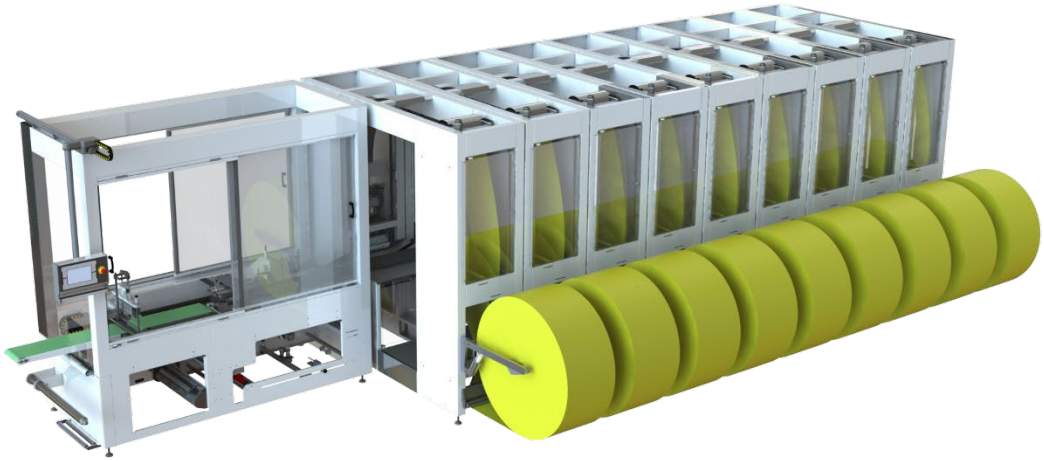
Jofesa Imagine Systems
the art of technology

IRIS 9-M Cleaning Cloth Machine



“IRIS 9-M”

www.jofesa.com

C/ Dels Telers 63, Ontinyent (Valencia)

AUTOMATED NON-WOVEN CLOTH PRODUCTION LINE

This is a fully automated production line for manufacturing non-woven cloths.

With all processes automated, starting from a fabric roll, the material is fed, folded longitudinally, cut, and then folded transversally. This process is multiplied by nine units of various colors, which are subsequently packed in biaxially oriented polypropylene film.
This results in high-quality cloths with a large production capacity.
The machine can produce the equivalent of the work of 10-15 people in all its operational sectors.

TECHNICAL SPECIFICATIONS

- STRUCTURE
  The structure is made of formed steel. Currently, all Jofesa machines are manufactured with an electro-galvanized and lacquered paint finish, oven-dried.

- LIGHTING
  The machine is equipped with LED 5050 light strips with RGB color-changing capability (green, blue, and red), improving communication between the operator and the machine. This ensures energy savings and environmental protection.

- CONTROL SYSTEM
  The machine operates on the new OMRON SYSMAC automation platform. Currently, all Jofesa machines are equipped with this platform, from the smallest to the largest, using the same controller. This provides the speed, flexibility, and scalability required in modern industries.
  This system allows for future expansion without changing the entire installation. The controller, based on new INTEL CPUs, integrates motion, logic, safety, and vision functionalities, all programmed from a single software with 128-axis cycles / 250 µs.

Our machines feature two communication buses:

- Ethercat (Ethernet-based CAN): The fastest industrial machine network available, allowing connection to all machine components without complex wiring installations.
- Ethernet-IP: A robust and fast industrial Ethernet bus that connects the machine's touch terminals. These terminals allow for control, programming, and parameter adjustments, and can also be linked to our clients' networks to collect necessary data (Industry 4.0).

Each module of the machine has its own control panel. A single Ethercat cable connects with the CPU. Servomotors, input/output systems, safety, machine vision, and pneumatics are all managed via this network.

Additionally, the Sysmac platform integrates security solutions. Both the safety controller (dedicated CPU for safety) and the safety input/output are freely distributed throughout the machine, simplifying installation and monitoring safety states via touch terminals.

- MOTORIZATION

The Accurax G5 servo systems are the core of our machines, ensuring optimal control and mechanical performance.

- Movement control is mainly executed using servomotors.
- All servo motor drivers include Ethercat communication and a safety input, complying with ISO13849-1 Performance Level D.
- The Motilon Control CPU manages motion control, enabling interpolation, CAM tables, and electronic axis synchronization, making complex tasks easier.

For operations where a servomotor is not necessary, simple motors are controlled using MX2 series inverters, featuring open-loop torque control. These allow control from speed 0, with built-in safety inputs that disable motors when safety conditions require it.

- DETECTION & VISION SYSTEM

  The Leuze detection system includes color and contrast sensors integrated into the Sysmac platform, connected via the Ethercat network. This allows remote programming, configuration, and monitoring of any photocell from the touch terminals, ensuring ultra-fast response speeds.

- PNEUMATICS

  Pneumatic movement control is fully integrated, based on FESTO-MPAL terminals that are configurable and scalable, connected through Ethercat.

  - Electro-valves can be manually activated via touch terminals.
  - Actuation times can be adjusted from the terminal interface.
  - Approximately 90% of pneumatic actuators are custom-manufactured for specific applications.
  - The patented COMPAC SYSTEMS technology optimizes space and system efficiency, facilitating part replacement and maintenance.

- SOFTWARE MAINTENANCE

  A single software manages the entire system, allowing remote access via the internet for monitoring, programming modifications, and maintenance tasks.

MANUALS & REGULATIONS

The system complies with CE regulations.
Includes a USB drive with 3D models of all machine components, enabling maintenance and part replacements without disassembling the machine.

PROCESSES

- Automatic fabric feeding
- Pre-aligners
- Primary fabric folding (electronically adjustable)
- Secondary fabric folding (electronically adjustable)
- Fabric compensation
- Programmable cutting by measurements
- Cutting using pneumatic blades
- Folded cloth extraction
- Stacking of cloths
- Transfer of cut modules to the bagging unit
- Cloth packaging in polypropylene film

PRODUCTION & CONSUMPTION

- Estimated production for 400 x 360 mm cloths: 3200 packages/hour (27,000 cloths/hour)
- Maximum fabric input: 500 x 500 mm (250 x 250 mm)
- Minimum fabric input: 300 x 300 mm (150 x 150 mm)
- Voltage: 220/380 VAC 50Hz
- Pneumatic consumption: 1850 L/min ±10%

PLANS & DIMENSIONS