IMA at ITMA 2023 in Milan, Italy Solutions that cover the entire production process

IMA SpA is a technology partner that works alongside and supports customers with high-tech solutions often customized and tailored to their production needs.

IMA's strengths are experience, vision, innovation, flexibility and a deep knowledge of the cutting room. It offers an extensive and specialized range of spreaders, cloth roll handling and management systems, and software programs for organizing the cutting room.

The company covers the entire production process; from the development and creation of the model – with the CAD system – to the final stage of automatic cutting of parts, with multiple hardware and software solutions.

Target and services

Collaboration with customers is strategic for IMA and its R&D department: that's why it pays great attention to after-sales service, with an excellent network of agents and dealers all over the world guaranteeing prompt and fast on-site service.

In addition, all IMA machinery is controlled by digital technology and meets the Industry 4.0 features of automation and interconnection: therefore, the company is able to connect to them remotely.

Products and Technologies at ITMA

At ITMA, the IMA company present several new products that can also be viewed at its Palazzolo sull'Oglio headquarters.

On display at the fair was a new line for large productions of rigid materials and in particular jeans.

Then, at the Headquarters visitors found another line for large knitwear productions and, above all, a complete line for medium-low productions, suitable for today's Italian and European market (with productions characterized by very low plies or even single ply, with very frequent cloth roll changes, irregular steps with short and jagged spreading).

The technologies that make up the complete line are:

- the 812 Chronos automatic robot: an absolute novelty, it features a modular structure that can be adapted to the customer's needs in terms of quantity, size, and weight of rolls to be handled. It uses a chain-driven carousel system for cloth roll handling and management;
- the 890 Phoenix Dual spreader, which can work both as spreader and unwinder, combining spreading functions with unwinding capabilities;
- the recently renovated 908 Polaris labelling system





The demonstrations of new products at headquarters of IMA SpA during the ITMA in Milan, Italy

totally controlled by on-board PC;

• the 921 - Tempest Plus2 automatic cutting machine for layers up to 3 cm compressed fabric. Structurally designed to achieve top-level performance and reduce downtime during processing, with high dynamic performance.



812 - Chronos

The details of Chronos, Mithos, TypoohnHD are as follows:

812 - Chronos

Technical features

The automatic warehouse Chronos 812 has been designed for handling any kind of fabric rolls. The maximum dimensions of the fabric rolls are:

- Diameter = 400mm
- Fabric height 1800mm
- Roll weight 35 kg
- The machine is made by three stations:
- Preloading / unloading station: it takes care of managing the rolls entering the warehouse (positioned on the lower belt) through a FIFO type queue, up to a maximum of 9 pieces, which will be stored inside the warehouse itself; it also guarantees the unloading of the pieces leaving the warehouse. Both stations are made with PVC belts, directly controlled by the warehouse software.
- 2. Management warehouse: it is the actual warehouse, where fabric rolls are allocated in cradles, handled using a chain guided revolver system. The handling phase both in and out of this station is managed by the warehouse software.
- 3. Interfacing station with spreader / unroller: this station automatically picks up the pieces returned by the spreading (with a special roll rewinding cycle) and gives the next one to the spreading to continue the process.

The warehouse structure can be customized, according to the number of rolls to manage, both in height and in length. The modularity of the machine also allows to manage rolls of different diameters. The strength of the 812 Chronos machine consists in making the next roll immediately available before the unloading operation of the previous one is completed. In this way, the dead times of processing are reduced, increasing the productivity of the spreading line and the related cutting connected to it. Chronos



Circle # 00 on Reader Service Card

can manually manage the work queue (taking charge of a sequence of fabric rolls to be processed) or it can



acquire the work queue to be created using the planning & management software. Included within IMA lines, the 812 Chronos warehouse meets the requirements of industry 4.0. It is also interfaceable with other external systems (to be estimated case by case).

IMA MITHOS 892 - FULLY DIGITAL SPREADER 4 x 4

Full use of Mitsubishi technology.

PLC and motors grant communication protocol with inverters of latest generation.

Main advantages of digital system:

- 1. Machine information, commands and diagnostic totally controlled
- in digital, in real time
- 2. Fabric feeding and tension free system are also electronically
- controlled in real time by DIGITAL SIGNAL which grants:
- high precision of machine positioning,
- perfect edges alignment,
- Achievable using an high pulses encoder that allows the machine to work in mm instead of cm., with big saving of fabric and time.
- 3. Possibility to set, store and load in real time unlimited spreading
- profiles in according to the kind of fabric
- 4. Low consumption thanks to eco-power technology (Mitsubishi
- inverter of latest generation) and low running costs
- 5. High speed of data transfer
- 6. Possibility of remote connection when connected to internet
- 7. Possibility to interface the machine with company managements
- systems
- 8. Easy remote support service by IMA team.

MACHINE DETAILS:

1. Movement by means of an electric axis controlled

by high efficiency brushless motors

- 2. 4 driven wheels by syncronous belt
- 3. Interactive touch-screen with flexible performances to control

spreading functions

- 4. Possibility to display and update fabric usage
- 5. Automatic braking system
- 6. Be-directional cutting device with adjustable speed and accelerations
- and programmable lifting
- 7. Lowered fixed cradle turret for easy loading and unloading of the

cloth roll, consisting of a double full width PVC belt.

- 8. Rear belt moved by air pistons
- 9. Management of flat spreading

TECHNICAL SERIES SPECIFICATIONS:

- Capacity: 130 kg
- Spreading speed: up to 100 M/min
- Lay thickness: 22 cm
- Available fabric width: H 160-180-200-220 on request 240
 - Roll diameter: 40 cm
 - Voltage: 400-220 3F+N 50 HZ

Different specifications might be available on request



920 Typhoon HD

Automatic cutting for layers up to 70 mm compressed according to the type of fabric to be cut. Structurally designed specifically for hard materials, to achieve top-level performance and reduce downtime during processing using the optional of continuous cutting.

The single control software, simple and intuitive, is installed on the on-board PC that governs the cutting machine, increasing its efficiency and productivity. The AMI software manages the acquisition of cutting files, their modification (available in a package with the main cad functions such as moving copy, modification, etc.) and the execution of the cutting. AMI allows the real-time modification of the file being processed, adapting not only the cutting parameters but also the types of processing or the choice of the pattern to be processed. It is possible to store an unlimited number of machining profiles to be recalled if necessary. Prepared for Industry 4.0 and the Syncro Cutting Room System.

The innovative management of the vacuum system and the dynamic management of the cutting window guarantees a reduction in consumption with the same performance. The digital technology totally based on the ETHERCAT communication protocol allows you to check the status of the machinery in real time, with self-diagnosis functions and automatic performance adjustment options based on the type of processing in progress. The presence of blade force sensors as an option allows to obtain high quality levels even on high layers. The movement of the bridge is managed by an electric axis (gantry axis); the management of the air pressure of the functions most involved in the cutting process is electronically differentiated; there is a touchscreen control panel located on the bridge to allow the operator greater ease of intervention. Being equipped with inverters on all functions, eco-friendly management of each motorization is ensured.

TECHNICAL DETAILS

- useful length of the cutting window: 175 cm.
- cutting height: from single ply up to 70 mm of compressed fabric.
- installed power: 45 kw
- energy consumption: 10 12 kwh
- ambient temperature from 10 \cdot to 60 ".
- humidity from 30% to 80% without condensation.
- -voltage 400 V 3 PH 50/60 Hz.
- weight: -4000 / 4500 kg

SOFTWARE SPECIFICATIONS

The control software of the machine AMI (Advance Machine Interface) has a simple and intuitive interface, the main features:

- Possibility of adapting the polygonal system to the Cartesian geometric system, for greater fluidity of movement thanks to the optimization of the ISO file.
- Adjustment of the machine movement according to curves or critical angles, so as to allow a clean cut between the pattern in a marker
- Possibility to manage the symmetries of all pattern
- Possibility to recognize and manage common lines
- Automatic search for the optimal cutting start point
- Possibility of varying the direction of execution of the pattern
- Optimized speed management based on the geometric profile of the shape
- Zero buffer cut
- Different cutting strategies based on the types of graphic and fabric with the optimization of the head path.

- Ability to manage, convert and modify all types of notches (normal, V and on the fly) even during the execution of the machining.
- Possibility to merge markers, to eliminate pattern within a marker and to manually move the pieces with a collision control to optimize the work
- Possibility of processing markers with graphical and statistical reports
- waste cutting for an orderly management of fabric waste

HARDWARE SPECIFICATIONS

- The AMI software is preinstalled on the PC supplied as standard. Windows operating system
- Auction controlled by PID, optimizing energy consumption
- Totally digital functions control technology on ETHER-CAT bus
- Synchronized loading and unloading conveyor with automatic cutting
- Blade speed up to 6000 rpm.
- Gantry axis for moving the bridge,
- -Possibility to have continuous cutting, avoiding cutting windows' change cycles
- Touch screen on the side of the bridge to easily control the machine even away from the PC.

Circle # 00 on Reader Service Card

VAN NANG BANOK Made in Viet Nam with Japanese Standard

Van Nang Banok Co., Ltd is specializing in supplying garment accessories such as string fasteners, Tag Pin, Tag Cun, Package Hook and Hangers, and Shirt Clips with a variety of materials and models which reach sustainable trends globally.



We are committed to the quality as well as the accompanying criteria with the aim of providing customers with the best products in the garment accessories market. The quality of products and customer service are the two key foundations for the success of a company. And we, Van Nang Banok, operated as production facilities and sales agents of Toska-Bano'k - the world's leading brand of garment accessories with over 50 years of experience - now continue gaining the trust of customers all around the world with the policy "Made in Viet Nam with Japanese Standard ".

VAN NANG-BANOK CO.,LTD 2nd Floor, 1/15 & 1/17 Tran Binh Trong St., Ward S, Binh Thanh District, Ho Chi Minh City, Vietnam Website: https://vannang-banok.com



Circle # 00 on Reader Service Card