SOLID DOSE
SOLUTIONS

IMA ACTIVE
Solid Dose Solutions

IMA ACTIVE
Solid Dose Solutions

SOLID DOSE SOLUTIONS

YOUR PARTNER FOR EXCELLENCE IN SOLID DOSE PROCESSING

IMA ACTIVE IS THE IDEAL PARTNER FOR ALL SOLID DOSE PROCESSING PHASES.

HANDLING
Dispensing and transfer systems, bin docking stations, bins, drums, tumblers, lifting columns, containment valves.

GRANULATION
High shear mixer wet granulators, high shear granulator dryers and fluid bed processors.

TABLETING
Centrifugal and force feed tablet presses.

CAPSULE FILLING
Intermittent and continuous motion capsule fillers.

BANDING AND WEIGHT CHECKING
Banding machines and machines for 100% weight check of capsules and tablets.

COATING
Sugar and film coating equipment with solid wall and perforated pans.

WASHING
C.I.P. groups, fast-rooms, manual or automatic bin washing stations, component washers.

An in-depth knowledge of the process and of the product used, combined with an entire team of engineers, each one skilled in individual product lines, are the fundamental basis in the design and manufacture of integrated processing system for turn-key plants.

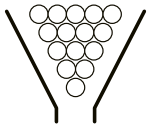
A close partnership is established between the customer and IMA Active team of experts to carefully analyze your requirements with the objective of finding the best solution to meet your needs and then supply all the necessary technical support regarding installation design, including layouts and P&I diagrams: a tailor made solution.

IMA Active ability to supply single machines, as well as integrated lines to process and manufacture solid dose products, gives the advantage of a single reference supplier.

In this scenario, also containment is to be approached as a global engineering issue in a manufacturing plant. With many different installations for dispensing, handling, granulation, tableting, capsule filling and coating for 3 to 5 OEB products, both for production and R&D applications, IMA has a wide and constant knowledge of processing highly potent products.

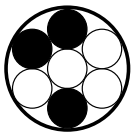
Containment installations must be designed on a risk based approach. A preliminary analysis has to be carried out to identify criticalities and potential risks, considering both the pharmaceutical requirements of the process to be performed and the plant conditions in terms of regulations, layout and industrial target.

ICON LEGEND



POWDER DISPENSING

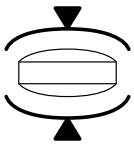
MIXING



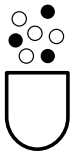
GRANULATION/PELLETIZATION

DRYING

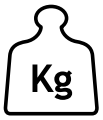
PELLET COATING



COMPRESSION

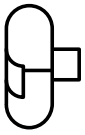


CAPSULE FILLING



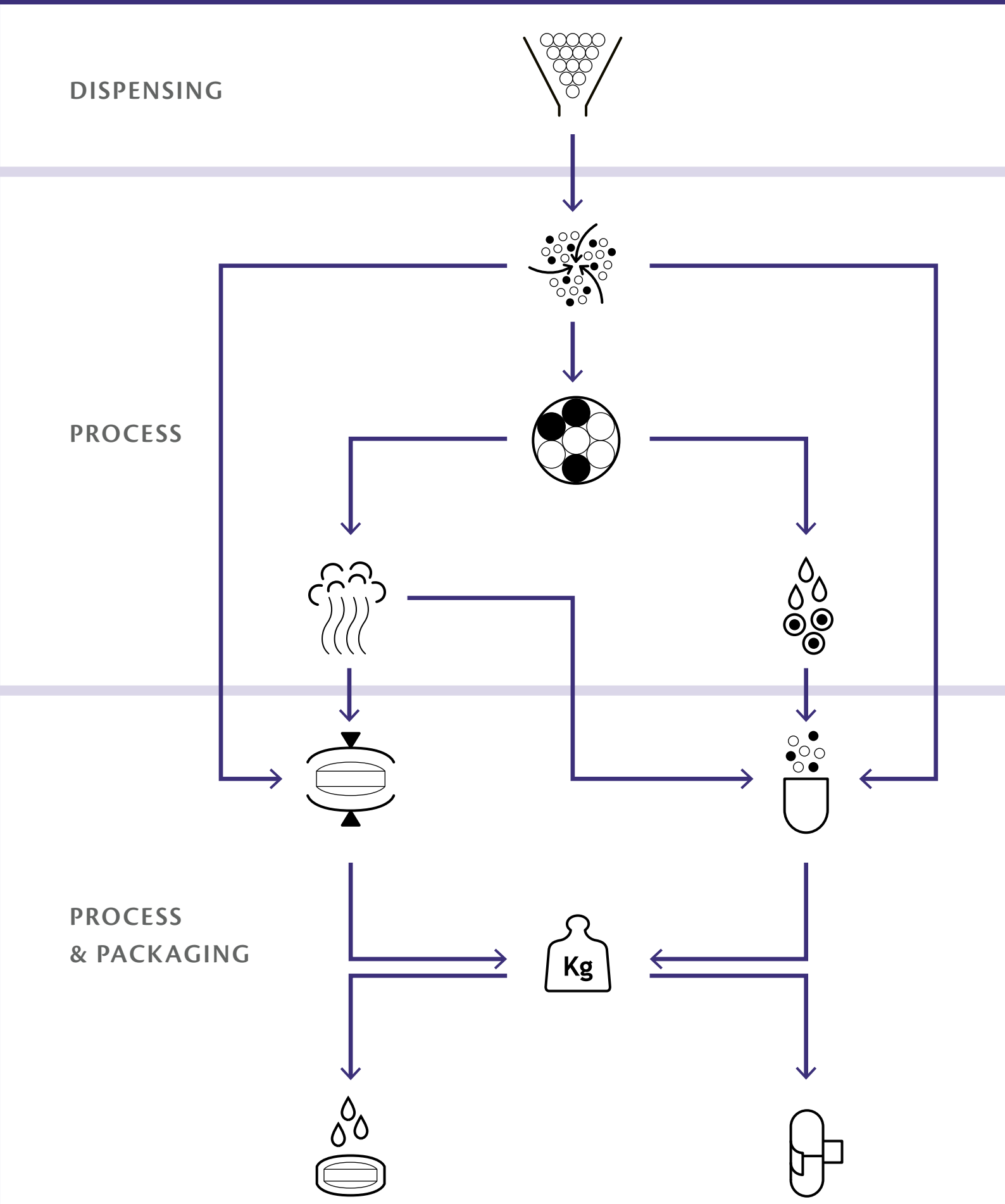
WEIGHT CHECKING

TABLET/CAPSULE COATING



CAPSULE BANDING

PRODUCTION DIAGRAM

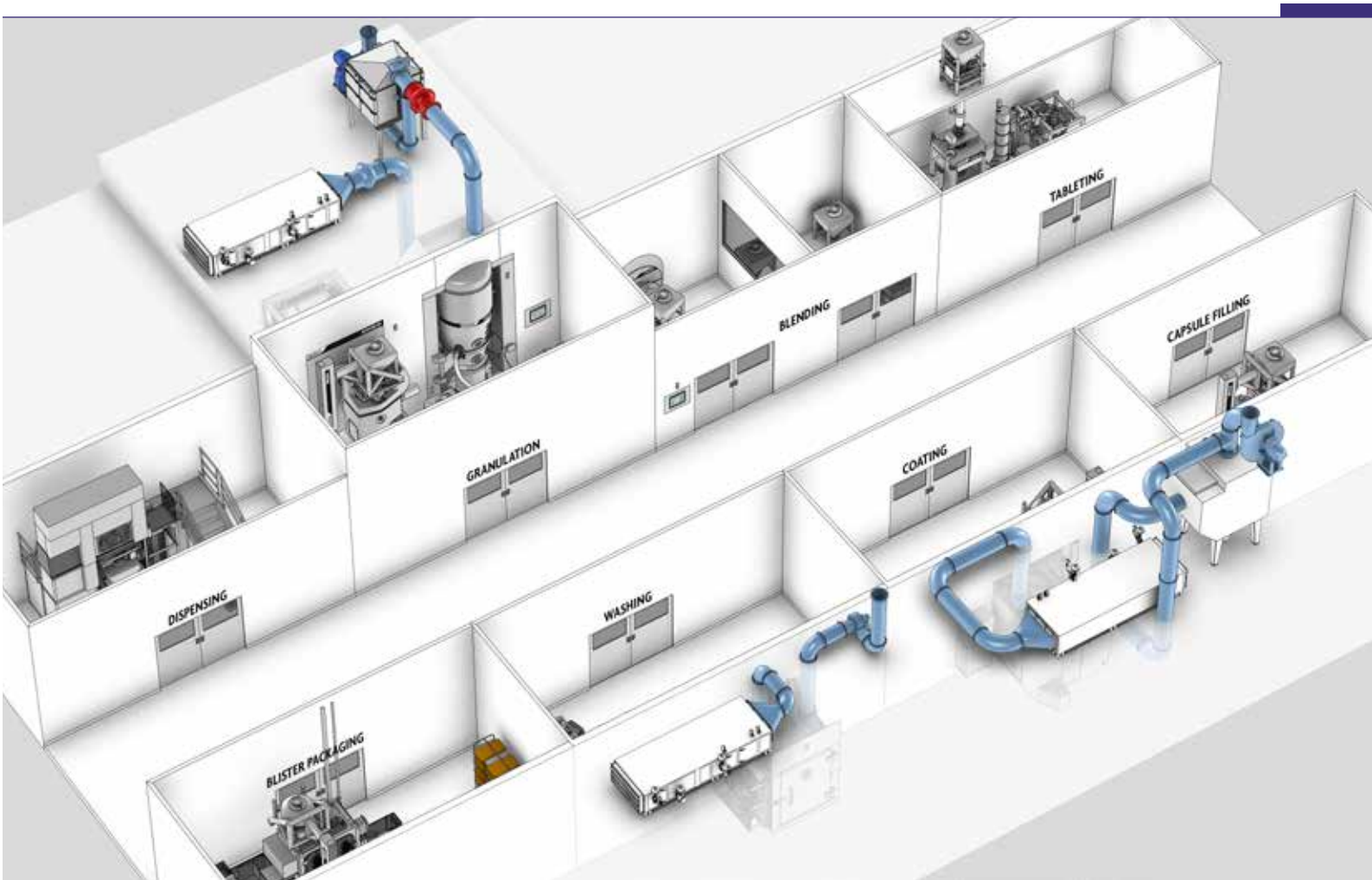


HANDLING

SMART DESIGN, COMPACT DIMENSIONS,
ACCURATE FINISHING.
IMA HANDLING SYSTEMS ENSURE
OPTIMAL PERFORMANCE
WITH MAXIMUM RESISTANCE.

IMA Active's handling systems include a wide range of equipment and technical solutions: dispensing and feeding systems, bins and drums, tumblers, lifting columns and high containment valves. Thanks to its engineering know-how, IMA can integrate different equipment seamlessly into complete solid dose processing lines.

FLEXIBILITY IS THE HALLMARK OF IMA HANDLING EQUIPMENT: THE SMART SOLUTIONS FOR ENHANCING THE QUALITY OF YOUR PRODUCTS.



HANDLING

BIN AND DRUM

BIN and DRUM are product containers designed to handle powders and granules. Both are manufactured in stainless steel with pharma finish complying with the most restrictive GMP rules.
TABLET BIN are also available to handle tablets and capsules. They are cylindrical in shape and the loading lid is decentralised on the upper part to simplify product loading from a tablet press or a capsule filler.

CYCLOPS

The CYCLOPS series of bin tumblers for blending and homogenising powders and granules features the innovative Trigon System, a universal bin docking system with a unique pharma GMP design to simplify loading and unloading operations.
Through-the-wall installation is possible to minimise space requirements in the production area.

CANGURO

CANGURO is a bin tumbler designed for blending and homogenising powder and granules. The machine rotates containers by means of a standard blocking system.
Through-the-wall installation is possible to minimise space requirements in the production area.

HERCULES

HERCULES lifting columns are designed to lift bins, drums, small containers or small machines such as pneumatic conveyors or mills. These machines feature a unique Self Brake System to maintain the load in the case of an emergency. Different models are available according to lift capacity; the bigger versions can be additionally fitted with the Mix feature for bin/drum blending (up to 1,000 kg).

HANDLING

BDS BAG DUMPING STATION

BDS Bag Dumping Station is designed to handle powders and granules. This unit automates the handling of raw materials used in limited quantities during the production process. The product is introduced directly into pneumatic conveying lines, vacuum or pressure systems or other equipment ensuring a clean and dust-controlled environment while unloading bagged materials.

TWINVALVE

The highly innovative TWINVALVE connection system is designed to ensure maximum efficiency for both standard and high-potency products. As cleaning can be accomplished using compressed air and/or water/solvent as well as drying via the same connection, the installation is suitable for processing a wide range of active products. TWINVALVE can be easily retrofitted on existing installations.

VTS

VTS pneumatic pharma conveyor is designed for the gentle transport of bulk pharmaceutical products and can be used directly from/into mixers, reactors, bins, containers, bulk-bags, tablet presses, capsule fillers, filling machines, etc. The bulk transportation is carried out by air stream aspiration under vacuum through hoses or pipes, with the use of compressed air only.
As an option, electric vacuum pump is available.

TWISTER

TWISTER is a gravity transfer system designed to transfer powders, granules, tablets and capsules from an existing bin docking station to a processing or packaging machine in dust-tight conditions. The equipment ensures the product descends slowly in order to minimise potential powder/granule de-mixing or damage to tablets and capsules.

GRANULATION

PRIME TECHNOLOGY, INTELLIGENT DESIGN, ENDURING RELIABILITY.
IMA GRANULATION TECHNOLOGIES MAKE PROCESSING LEAN AND HIGHLY EFFICIENT.
OUTSTANDING RESULTS WITH LITTLE MAINTENANCE.

IMA supplies a complete range of granulation equipment: from small laboratory scale equipment for R&D purposes to industrial equipment for the production of granules. IMA Active provides customised solutions to comply with current health, environmental and safety regulations to protect the operators, the plant and to preserve the products.

IMA IS YOUR ONE-STOP SUPPLIER FOR GRANULATION SOLUTIONS.

GRANULATION

ROTO CUBE

ROTO CUBE is suitable for wet granulation and vacuum drying in one pot. Built to enable loading of raw materials and discharging in total containment, ROTO CUBE is recommended for HAPI. The product bowl can be lifted to different heights according to the task ensuring gentle treatment of granules during the drying phase. Other features for drying such as the GA.ST. system, tilting bowl and microwaves reduce drying time.

ROTO MIX

ROTO MIX high shear mixers are high-performance wet granulation solutions and ensure easy operation, cleaning and maintenance thanks to a very simple design.
ROTO MIX can be supplied together with an in-line Imill calibrating mill and a Ghibli fluid bed dryer for a complete granulation line.

GHIBLI

GHIBLI fluid bed can be fitted with both fabric and metallic filters, easy to maintain and without the need for an operator access platform thanks to the tilting of the expansion and filter chamber.
GHIBLI fluid bed processor can be configured with different product bowls or air distributors to manufacture granules, small coated cores or pellets.

ARIA

ARIA is an extremely flexible fluid bed processor allowing drying, granulation and coating. Flexibility in terms of batch size processing is a hallmark of this machine, designed for through-the-wall installation, simplifying integration with other processing equipment such as wet calibrators, calibration mills and product conveyors, thus reducing space requirements in the production area.

TABLETING

POWDER DOSING SYSTEMS

Force-feed die feeding: the powder is fed from an upper loading hopper to a force-feed die feeder containing two paddle wheels, distributing the powder on the die plate, so that die feeding occurs by gravity.

Centrifugal die feeding: the powder is fed from an upper loading hopper into the central rotor area. The centrifugal force generated by the turret rotation allows accurate feeding of the dies through specially shaped radial channels.

SIZE CHANGEOVER

On PREXIMA THC the die table can be easily removed to change the tooling type.
On COMPRIMA compression tools are made up of two parts and a semiautomatic size change is achieved in a very short space of time.
On PREXIMA the extraction of the turret is quick and easy thanks to a rotating arm positioned in the upper mechanical compartment. The HMI guides the operator step by step during each phase.
On DOMINA the automation plays the role of performing several tasks instead of the operator, thus short changeover is possible with the operator intervention reduced to the minimal or close to nothing.

IPC UNITS

All tablet presses can be connected to an IPC unit to check weight, hardness and thickness: the unit can be fitted with a Wash In Place system. NIR systems can also be applied.

TABLETING

COMPRIMA

COMPRIMA guarantees yields of up to 99.5%, allowing maximum production speeds even with shaped tablets or awkward products. The long compression time improves tablet quality even at high speeds, while the complete separation between processing and mechanical areas reduces size-change times and enables the machine to be fitted with an automatic cleaning system.

PREXIMA

PREXIMA is the best solution to handle all production volumes. Based on the Comprima concept, PREXIMA ensures complete separation between processing and mechanical areas thanks to the use of specially designed seals and protections. Maximum reliability with pre-compression and main compression forces up to 100 kN is possible thanks to the exceptionally sturdy structure. Clever design also enables excellent accessibility.

PREXIMA THC

PREXIMA THC tablet press is for R&D applications and small scale production and can be equipped with B and D type tooling on the same turret. Its compression rollers are designed to work with a force similar to production machines and the latest software for R&D is available as an option. Good accessibility facilitates cleaning and maintenance. PREXIMA THC has been designed to also allow the testing of HAPI.

DOMINA

All the strenghts of Prexima series have been channeled into DOMINA highly automated tablet press. Following the lead of Industry 4.0 digital transformation, the control system is one of the hallmark of DOMINA, in order to enable better control of the process. In DOMINA both the die feeder and the compression axis are fully motorized and adjustable via HMI. In addition, DOMINA features MAX, the new corporate HMI, which improves operator efficency and prompt responsiveness, enhanced predictability and easy learning.

CAPSULE FILLING

IMA Active expertise in this sector goes back to the first automatic capsule filling machine in the world produced in the 1950's. Combined with our constant commitment to innovation, today IMA is world leader and boasts over 6,000 installations worldwide.

A wide range of filling systems giving excellent results with all kinds of products, in-and off-line production control technology and high automation are IMA Active key strengths, together with an unrivalled experience in high containment.

PRODUCT DOSING

- Powder and pellets
- Minitablets
- Tablets
- Liquids

CLEANING

- Manual cleaning
- Wash in Place
- Completely automatic and validatable Clean In Place system

CONTROLS

- Statistical weighing unit for statistic gross weight check
- Camera for 100% control of minitablet quantity
- Weighing unit at outlet for 100% gross weight control of all products
- Weighing u nit at inlet and outlet for 100% net weight control of all products

CAPSULE FILLING

ZANASI

ZANASI machines are designed to satisfy low and medium-speed production requirements. Able to run with a minimum quantity of product, they are suitable for multi-product dosing: powder, pellets, liquids, tablets and minitablets. Easy to operate and maintain, they also feature different controls and size changeover, with minimal cleaning times. For high containment configurations, ZANASI THC is available.

PRACTICA

PRACTICA capsule filling machine covers low - medium - and high-speed production requirements and performs single-product dosing (powder/granule or pellet) with very high accuracy.
Highly reliable thanks to its engineered simplicity, PRACTICA is user-friendly and ensures extremely easy operations and low maintenance.

IMATIC

IMATIC capsule filling machines cover medium and high-speed requirements and dose powder or pellets into the capsules. The single turret operating system ensures maximum dosing precision and reliability even at very high speeds and allows the machine to be fully automated. All size parts have been paired, reducing the number of parts to be changed, thus minimising downtime.

ADAPTA

ADAPTA capsule filling machine covers low, medium and high-speed requirements and feature exceptional design flexibility: two of its dosing units are interchangeable allowing plug and play shift between different machine configurations and filling combinations. With the appropriate options, total production control and efficiency are achieved with any product dose. The machine is suitable for multi-product dosing: powder, pellets, liquids, tablets and minitablets.

CAPSULE BANDING

HERMETICA

HERMETICA is a highly automated capsule-banding machine for tamper-evident sealing of capsules filled with liquids, powder or other products. Easy to operate, the machine features automatic handling of gelatine working parameters.

WEIGHT CHECKING

PRECISA

The PRECISA series of weight checking machines is designed for 100% weight control of tablets or filled capsules and can be installed in line with all tablet presses and capsule fillers currently on the market.
Easy to access, PRECISA features the continuous motion system used for placing the product on the weighing cells, which eliminates vibration and ensures maximum accuracy even at high speeds.

COATING

OVER 40 YEARS OF EXPERIENCE AND MORE THAN 2,000 SUCCESSFUL INSTALLATIONS WORLDWIDE ARE PROOF OF THE PROCESS TECHNOLOGY AND QUALITY OF IMA COATING EQUIPMENT.

IMA Active know-how, together with constant research, close collaboration with raw material suppliers and universities, is a foundation to develop high quality equipment for an optimal production process.

PAN TYPE AND MIXING BAFFLES

IMA's unique mixing baffles positioning for both solid wall and perforated pans ensures perfect mixing, uniform coating material distribution and the highest flexibility.
Just one drum for a wide range of batches.

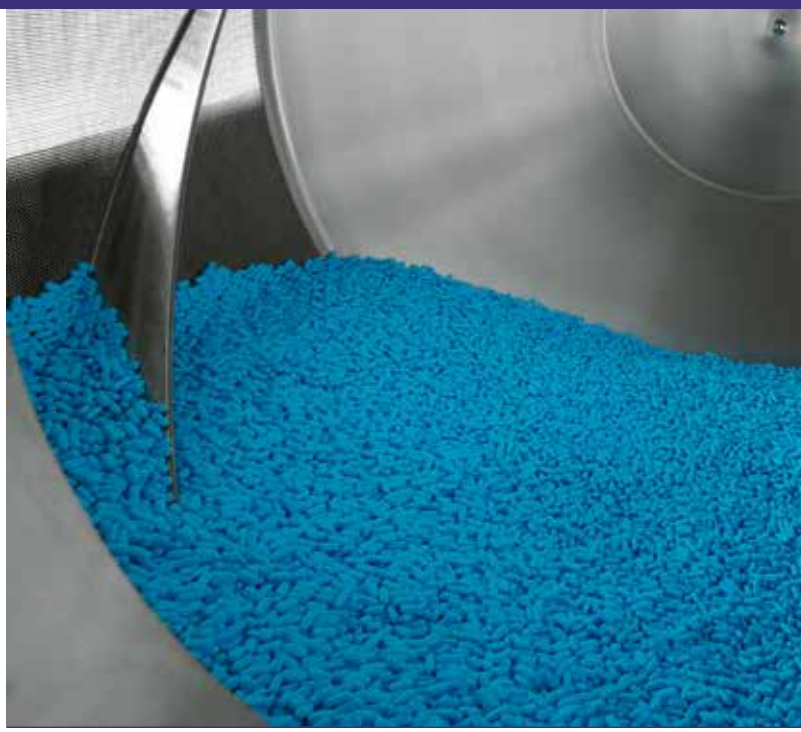
DOSING UNIT

The spray system includes two spray units (air for sugar coating and airless for film coating) complete with the relevant surge chambers to guarantee constant flow rate.

SPRAY GUNS

All IMA coating pans are fitted with spray guns featuring an Anti-Bearding-Cap (ABC) system to avoid the gun clogging while the machine is working. The spray guns are fitted on a sliding support arm and are positioned and adjusted during the process from the outside, by using the relevant device.

COATING



GS

GS Coating Equipment is designed in different sizes and fitted with a patented core drying system. Different models are available upon request: GS HT is equipped with exhausting paddles for tablet film and sugar coating.
GS HP can be equipped alternatively with exhausting or blowing paddles to perform tablet film and sugar coating as well as to process pellets and microgranules.
The machine is equipped with automatic cleaning system (W.I.P.) and is also suitable for nutraceutical applications.

GS EVOLUTION

GS Evolution is a highly automated installation designed for film and sugar coating and the production of pellets and microgranules. The machine features complete isolation of the processing area to satisfy containment requirements.
Available in two different versions: standard or spiralled pan for automatic product and water discharge.

PERFIMA

PERFIMA is a coating pan for tablet film and sugar coating. The pan maintains the same shape and position of mixing baffles as the IMA GS pans: this shape has proven over the years to guarantee the best mixing results. The unidirectional air flow ensures perfect drying of the cores avoiding turbulence inside the pan. The machine is fitted with automatic product loading and discharging systems.

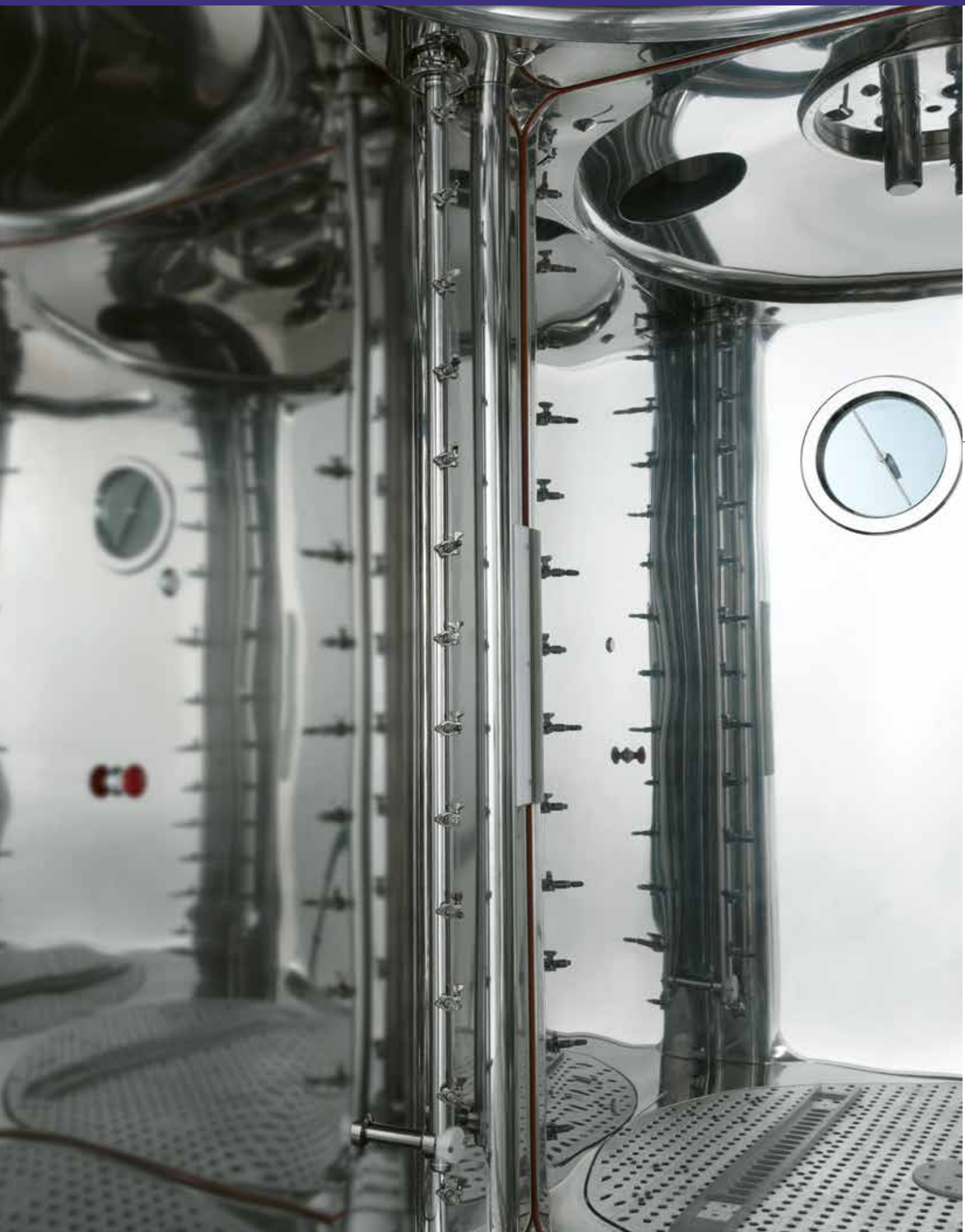
- Max capacity: 950 litres.

EFFECTA

EFFECTA is the effective answer for everyday coating processes. The functionally shaped perforated drum and the specially conceived baffles positioned in the central sector of the drum guarantee effective mixing of the cores and uniform distribution of the sprayed coating dispersion. The machine can be supplied with switchable spray guns for tablet film and sugar coating and is complete with a peristaltic pump and a volumetric dosing system depending on the process performed. EFFECTA is equipped with automatic cleaning system (W.I.P.) and is also suitable for nutraceutical applications.

- Max capacity: 750 litres.

WASHING



IN THE LAST FEW DECADES, CLEANING PROCEDURES HAVE BECOME MORE AND MORE IMPORTANT IN THE PHARMACEUTICAL AND NUTRACEUTICAL INDUSTRY. AN EFFICIENT CLEANING PROCESS AS AN ESSENTIAL IMPACT ON TIME, COST EFFECTIVENESS AND FINAL PRODUCT QUALITY.

IMA Active washing systems include a wide range of equipment and technical solutions with smart design, compact dimensions and accurate finishing. Proper engineering, together with years of experience and a solid knowledge and understanding of the cleaning dynamics, ensure optimal performance while minimizing consumption.

WASHING

VENUS

VENUS is a component washer designed to wash machine parts, tools, glass, hoppers, containers, cams, trays and small bins. The machine can be fitted with a hot air drying system and different platforms, baskets and racks to wash specific components. A two-door version is available for through-the-wall installation and/or to separate dirty and clean working areas. Its washing principle is based on water recirculation.

- Max flow rate: 250 l/min in recirculation.
- Max flow rate: 50 l/m "once through".

ATLANTIS

ATLANTIS is a washing and drying cabin designed for washing IBCs, drums, pallets, machine parts, components of all shapes and sizes. The basic machine configuration as a square-section, stainless steel cabin including a single door with an inflatable seal. The machine can be installed through-the-wall and, as option, supplied with two doors for pass-through installations.

- Max flow rate: 50l/min "once through".

HYDROWASH

HYDROWASH is a self-regulating C.I.P. pressurization group used as a feeding group for a W.I.P. system or to obtain the internal and external cleaning of a container (IBC).

- Max flow rate: 70-120 l/min LP.

PROCESS DEVELOPMENT

PROCESS AND DEVELOPMENT LABORATORY

IMA Laboratory includes 10 test rooms with a controlled environment, staffed by qualified pharmacists assisted by specialist engineers. Dedicated rooms for customer trials are also available in USA.

MAIN ACTIVITIES:

- Tests at the IMA Laboratory or at the customer's plant to set-up working parameters and optimise machine performance.
- Formulation development/definition on a wide range of machine to test the complete batch and continuous production process.
- Assistance for process startup or scale-up.
- Implementation of PAT systems.
- Experimentation and development of new technology in collaboration with universities, raw material suppliers and IMA R&D Department.
- Training courses.

The appropriate instrumentation is available to carry out different technological tests: moisture content (Loss On Drying), hardness, disintegration, friability, stereomicroscope, flowability and particle size control.

PREMIUM SERVICES TO SUPPORT CUSTOMERS THROUGHOUT THE ENTIRE MACHINE LIFE CYCLE

- INTEGRATED MAINTENANCE
- ENGINEERING
- AFTER SALES AND SPARE PARTS
- DOCUMENTATION AND VALIDATION

PROCESS DEVELOPMENT

ROTO CUBE 12

ROTOLAB and ROTO CUBE 12 are the laboratory scale single-pot processor for R&D purposes, such as formulation and scale-up studies to support technology transfer and easily meet production requirements.

MYLAB

MYLAB is a compact and modular R&D unit for the granulation and coating process. It consists of a Main Technical Unit with a fully integrated air-handling unit, spray system and control panel. Designed to process small batches, accurate scale-up is assured from this easy-to-use laboratory suite. MYLAB design is compliant to the most restrictive GMP rules, highly ergonomic and allows for very quick and easy product change.

PROCESS DEVELOPMENT

MINIMA

MINIMA is a table-top capsule filler designed to dose DPIs or solid products in hard capsules. Extremely precise, equipped with a single dosator and a powder bowl with adjustable height, it can work with all capsule sizes and any dosage, being directly scalable to production machines. Portable and with minimal user requirements, MINIMA is completely mechanical and only requires compressed air to function.

PREXIMA 80

PREXIMA 80 tablet press is designed for R&D applications and small scale production. In R&D configuration the machine offers wide range of tools to characterize the tablet; it furthermore offers flexibility on any tablet dimension, as the MIX turret fits foru stations B and four stations D. Mating this machine with IMAGO R&D software, available as an option, makes the idea choice for R&D departments.

PERFIMA LAB

PERFIMA LAB can be considered not only as a laboratory coater but also for small production batches. The laboratory coating equipment uses the same highly advanced technology as those developed for the production range. Thanks to its interchangeable drum it is possible to work a wide range of capacities providing maximum flexibility and easy scale-up.


IMA ACTIVE

CONTINUOUS MANUFACTURING

IMA ACTIVE PROPOSES CONTINUOUS MANUFACTURING LINES FOR COMPRESSION, COATING AND ENCAPSULATION OF ORAL SOLID DOSAGE FORMS AS A SINGLE PARTNER OF INTEGRATED SOLUTIONS BASED ON FLEXIBILITY AND MODULARITY.

CONTINUOUS MANUFACTURING in the pharmaceutical industry undoubtedly has great potential

QUALITY

- QbD (Quality by Design) approach bringing reduced time for quality control and test release.
- Reduced risk of human errors due to a high level of automation.

FLEXIBILITY

- Batch size and production volumes are defined by runtime. No more constraints due to equipment size.
- Flexibility in process flow thanks to modularity of the CM operations.
- CM unit operations are compact, designed with standard connections and minimum utilities, conceived for easy and quick installation to replicate in any manufacturing site worldwide with a short startup time.

SUSTAINABILITY

- Reduced plant footprint which means smaller equipment, no more need of work-in-process inventory, less personnel, with consequent space and energy savings.
- Lower environmental impact through reduced utility consumption.
- Reduced process surface to clean: less water consumption.
- Less risk of drug shortage thanks to reduced time to market.

COSTS

- Important contribution for reducing costs includes smaller equipment and fewer manufacturing steps, with consequent saving for installation, validation and maintenance.
  In addition, rapid development, improved yields, less personnel achieve overall estimated cost reduction range from 30% to 50%, with impact on drugs affordability as well.

SAFETY

- Patient safety is ensured by adoption of QbD and PAT (Process Analytical Technologies). Minimum risk to fall OOS (Out of Specifications).
- Operator safety provided by lower risk of exposure means reduction of PPE.
- Operators are better protected since product handling, process space and air displacement are significantly reduced.

EFFICIENCY

- Shorter time to market due to quicker product and process development, minimization of process scale-up.
- Significant increase in productivity and improvement of OEE generated by:
  - Faster production time, also by minimizing product handling.
  - Reduction of waste and losses.
  - Quicker changeover due to minimum downtime.

CONTINUOUS MANUFACTURING

CONTINUOUS DIRECT COMPRESSION LINE AND CONTINUOUS DIRECT ENCAPSULATION

IMA Active can supply either fully integrated lines or unit operations to combine with each other offering maximum flexibility in new or existing plants. This initiative quickly provide Continuous Manufacturing solutions that can be integrated with conventional technologies, even in existing plants, capable to manufacture existing drugs with higher performance. The tablet press or the capsule filler are fed continuously with consistent mixture of product, from a feeding blending unit installed upstream them. The whole system is managed by MAESTRO, IMA Active modular orchestration layer. The flexibility of MAESTRO makes it easy to integrate any kind of unit operation so the entire Continuous Manufacturing line can be managed as a single system.

CROMA

CROMA continuous tablet coating equipment, is sized to work downstream of a medium-speed tablet press. CROMA is a modular unit operation that can be configured as single module or in combination of more modules either in series or in parallel and the product flows continuously throughout the modules, with no steps. Such combinations allow to process all kind of tablets at different throughput and coating weight gain. The machine is fitted with highly innovative technologies for process monitoring and control, like PAT tools and sources of process analytical data that can facilitate decision-making and follow-up action.

AUTOMATION

The Automation Architecture is based on two separate objects:

- The machine control (PC or PLC based), managing all control tasks both for machine and process functionalities, and
- T he HMI station, typically PC based, or with Touch Panel for the simplest equipment.

IoT READY

- Communication relies on well established and wide used protocols (OPC UA, MQTT, ODBC/SQL).
- Multiple connection points for external communication are possible: Machine control Level, HMI/SCADA level.
- Segregation between different hierarchy levels: machine, supervision, ERP, etc.
- Flexible network architecture to fit different requirements in terms of addressing and traffic segregation.
- Scalable data acquisition architecture, capable to handle more data and sources.

HMI STATION

The PC based solution features the new MAX, IMA corporate graphic UX and navigation system. In the main screen, a synoptic reproduces the machine workflow, ensuring an intuitive control of the manufacturing process.

- Easy learning
- Prompt responsiveness
- Enhanced predictivity

The underneath KORTEX engine, an iFix based SCADA, has a modular structure and is designed to be IoT ready, for an easier and deeper connection with a superior layer, intra- or inter-plant.

- IoT Ready
- Clear segregation between machine internal network and Customer's IT network
- Possible integration in a customer Domain via Active Directory
- Different levels of recipe lifecycles available
- Configurable alarms categories and reports
- Storage system based on Microsoft SQL Database and Historical Archive for real time process values and set points. Databases can be local and/or remote (enterprise-level)

REMOTE SERVICE ASSISTANCE (RSA)

Every machine can be equipped with a Remote Assistance device that allows IMA to connect for service and troubleshooting.
Although cabling is permanent, connection is completely under customer's control: an hardware key switch disables any connection from external entities.
On customer's request, other different strategies for remote support can be evaluated.

ima.it

July 2022 - 990SDD2002

IMA S.p.A. Unipersonale
IMA ACTIVE division
Via I° Maggio 14 - 40064 Ozzano Emilia (Bologna) - Italy
Tel. +39 051 6514111 - Fax +39 051 6514287
marketing.active.it@ima.it