

# SOLID DOSE SOLUTIONS





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# SOLID DOSE SOLUTIONS

IMA Active is the ideal partner for each solid dose processing phase: Granulation, Tableting, Capsule Filling, Coating, Handling and Washing.

The IMA Active solutions are based on dedicated experience and technology, and take advantage of the know-how of experts specialised in individual product lines, but also capable of using this knowledge to work together with others as part of a team. This is why IMA Active is your partner for excellence, not just for integrated equipment but also for specific installations.

## 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 processing equipment.

## TABLETING

Centrifugal and force feed tablet press machines.

## CAPSULE FILLING AND BANDING

Intermittent and continuous motion capsule filling machines, banding machines.

## WEIGHT CHECKING

Machines for 100% weight check of capsules and tablets.

## COATING

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

## WASHING

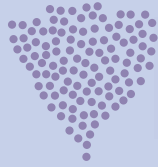
C.I.P. groups, fast-rooms, manual or automatic bin washing stations, components washers.

IMA OFFERS A WIDE RANGE OF PRODUCTS AND TECHNICAL SOLUTIONS FOR SOLID DOSE REQUIREMENTS.



# PRODUCTION DIAGRAM

DISPENSING

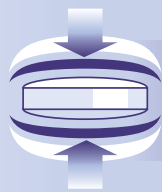


PROCESS



DRYING

COMPRESSION



PROCESS &  
PACKAGING



TABLETS/CAPSULES COATING



This diagram shows the most common production steps.

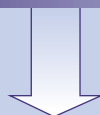
POWDER DISPENSING



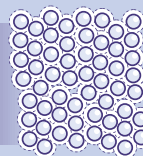
MIXING



GRANULATION/PELLETIZATION



PELLETS COATING



CAPSULE FILLING



WEIGHT CHECKING



CAPSULE BANDING



# ENGINEERING AND CONTAINMENT







OUR SPECIALISTS ARE AVAILABLE TO DEVELOP AND IMPLEMENT PAT SYSTEMS AND TO ALSO OFFER FULLY CUSTOMISED SOLUTIONS FOR PLANTS WHERE A MAXIMUM LEVEL OF CONTAINMENT IS REQUIRED, TAKING IN CONSIDERATION THE WHOLE PROCESS FLOW AND NOT ONLY ISOLATED MACHINES:

- ISOLATION OF PROCESSING AREAS, MINIMISATION OF CONTAMINATED PARTS
- GLOVE PORTS AND RTP FOR SAFE ACCESS TO PROCESSING AREAS
- DUST TIGHT DOCKING SYSTEMS FOR FEEDING/DISCHARGING
- CONTAINMENT MEASURES ON PERIPHERAL EQUIPMENT (E.G. EXIT CHUTES, DEDUSTERS, METAL DETECTORS, SAMPLE COLLECTORS, IPC TESTERS, RECEIVING CONTAINERS)
- CLEAN IN PLACE INSTALLATIONS

IMA ACTIVE CAN SUPPLY TECHNICAL SUPPORT REGARDING INSTALLATION DESIGN, INCLUDING LAYOUTS AND P&I DIAGRAMS FOR SINGLE MACHINES AND FOR THE DEVELOPMENT OF COMPLETE SOLID DOSE PRODUCTION DEPARTMENTS.

# HANDLING

IMA HANDLING SYSTEMS ARE DESIGNED AND PRODUCED WITH THE MAXIMUM CARE TO MEET THE MOST DEMANDING REQUIREMENTS.



Pharma



Max Capacity  
2,000 litres



Cleaning in  
Washing  
Cabin



Pharma



Max. Load  
1,500 kg

## PH-BIN AND PH-DRUM

The PH-Bin and PH-Drum are product containers designed for handling powders and granulates. Both are manufactured in stainless steel with pharma finish complying with the most restrictive GMP rules. T-Bins are also available to handle tablets and capsules. They are cylindrical in shape and the loading lid is decentralized 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 granulates, feature the innovative Trigon System, a universal bin blocking system with a unique pharma GMP design simplifying the loading and unloading operation of bins. A "through the wall" installation is possible to minimise space requirements in the production area.



Pharma



Wash In Place

## BAG/DRUM DUMPING STATIONS FOR DISPENSING

The bag/drum dumping station is designed for the handling of powders and granules. This unit automates the handling of raw materials used in limited quantities during the production process. The product is directly introduced into pneumatic conveying lines, vacuum or pressure systems or other equipment ensuring a clean and dust-controlled environment while unloading bagged materials.



Pharma



Max. Load  
2,000 kg

### CANGURO

Canguro is a bin tumbler designed for blending and homogenising powders and granulates. The machine rotates containers (bins) by means of a standard blocking system. A “through the wall” installation is possible to minimise space requirements in the production area.



Pharma



Max. Load  
2,000 kg

### 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 case of emergency. Different Hercules models are available according to lifting capacity; the bigger versions can be additionally fitted with the Mix feature for bin/drum blending (up to 1,000 kg).



Pharma



Clean In  
Place

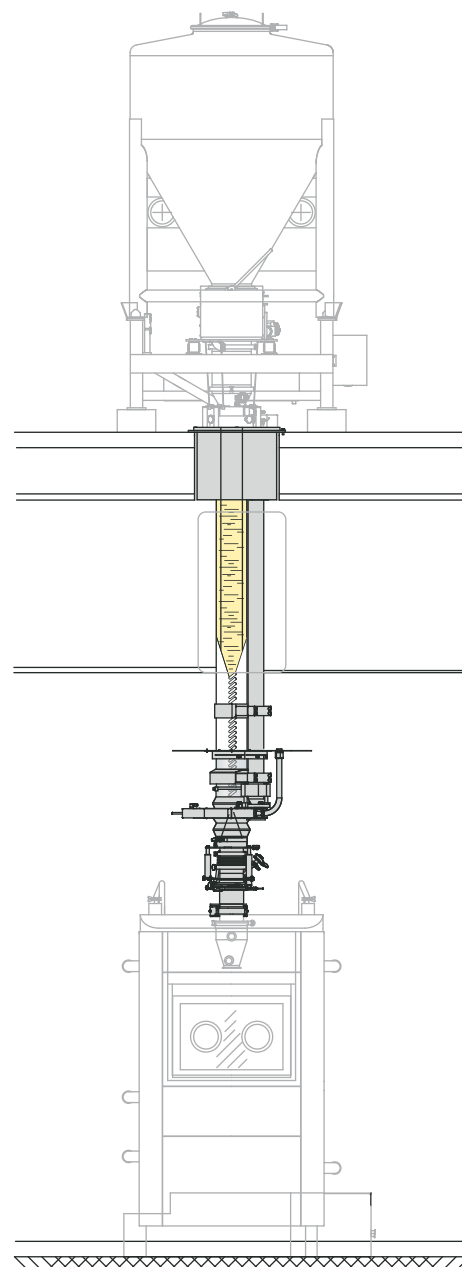


Wash In  
Place

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## TWINVALVE

The highly innovative TwinValve connection system is designed for maximum efficiency for both standard and high potent products. The possibility to use compressed air and/or water/solvent cleaning and drying on the same connection makes the installation suitable for working a wide range of active products. TwinValve can be easily retrofitted on existing installations.



Pharma



Wash In Place



Pharma

## VPC

The pneumatic pharma conveyor VPC is designed for gentle transport of pharmaceutical bulk products and can be used to transfer products 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.

## TWISTER

The Twister is a gravity transfer system designed to transfer powders, granulates, tablets and capsules from an existing bin docking station to a processing or packaging machine in dust-tight conditions. The equipment ensures a slow product descent minimizing as much as possible problems such as powders/granules de-mixing or tablets/capsules damaging.

# GRANULATION

IMA CAN OFFER A WIDE RANGE OF EQUIPMENT FOR WET GRANULATION, INCLUDING HIGH SHEAR MIXER GRANULATORS, FLUID BED PROCESSING EQUIPMENT FOR TOP SPRAY GRANULATION AND DRYING, AS WELL AS THE WELL KNOWN ROTO CUBE, THE FIRST SINGLE POT HIGH SHEAR MIXER GRANULATOR AND DRYER LAUNCHED ON THE MARKET.



Pharma



Capacity  
3-3,000  
litres



Clean In  
Place



Gravity/  
vacuum  
loading



Bottom  
impeller



Vertical/  
telescopic  
chopper



Vacuum  
drying



Pharma



Capacity  
60-1,500  
litres



Wash In  
Place



Gravity/  
vacuum  
loading



Bottom  
impeller



Horizontal  
chopper

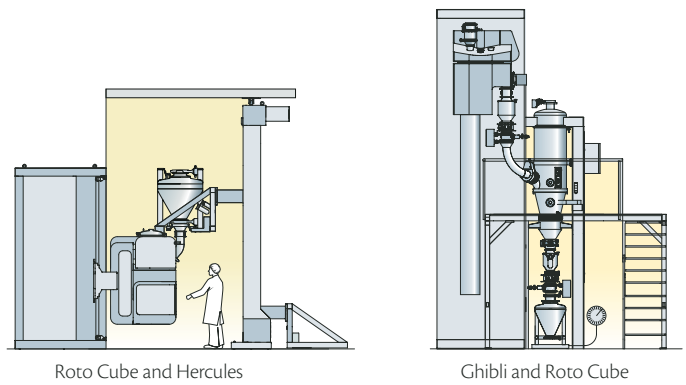
## ROTO CUBE

The Roto Cube is suitable for wet granulation and vacuum drying in one-pot. The design is suitable for the loading of raw materials and discharging in total containment, thus recommended for HAPI. The product bowl can be lifted at different heights according to the task (granulation phase, discharge by gravity, maintenance operations) and tilted for a gentle treatment of granules during drying phase. Other features for drying such as the GA.ST. system, tilting bowl and microwaves reduce drying time. The machine is also suitable for granulation in-line with Ghibli fluid bed dryer.

## ROTO MIX

Roto Mix high shear mixers for wet granulation are designed to carry out wet granulation process with the highest performance. The very simple design allows easy operations, cleaning and maintenance.

Roto Mix can be supplied together with an in-line IMILL calibrating mill and Ghibli fluid bed dryer for a complete granulation line.



## LAYOUT FLEXIBILITY

IMA's granulation equipment can be integrated with material handling systems based on the customer's requirement. Granulation lines are very flexible and can be easily installed from very simple to more complex configurations, suitable for containment and/or CIP purposes, and all types of production requirements.



-   
Pharma
-   
Capacity  
6-1,400  
litres
-   
Clean In  
Place
-   
Gravity/  
vacuum  
loading

### GHIBLI

The Ghibli fluid bed can be fitted with both fabric and metallic filters that can be easily maintained without the need of an operator access platform thanks to the tilting of the expansion and filters chamber.

The Ghibli fluid bed processor can be configured with different product bowls or air distributors to manufacture granules, coated small cores or pellets.



-   
Pharma
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Capacity  
90-1,500  
litres
-   
Wash In  
Place
-   
Gravity/  
vacuum  
loading

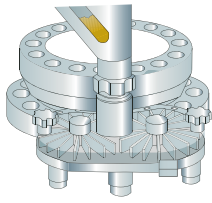
### ARIA

The Aria is a very flexible fluid bed processor allowing different types of processes: drying, granulation, coating. The machine guarantees a large flexibility of batch size processing in the same equipment and is designed for through the wall installations, simplifying the integration with other processing equipment such as wet calibrators, calibration mills, product conveyors, thus reducing space requirements in the production room.

# TABLETING

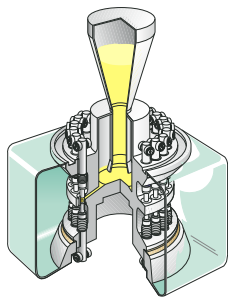






## POWDER DOSING SYSTEMS

**Force feed die feeding:** the powder is fed from an upper loading hopper to a force feed fillshoe 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 an accurate feeding of the dies through specially shaped radial channels.

## SIZE CHANGEOVER

On PressimaTHC the die table can be easily removed for changing the tooling type. On the Comprima tablet press compression tools are made up of two parts and a semiautomatic size change can be achieved in a very short time.

## 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 be also applied.

# TABLETING



Pharma



Clean In Place



1 layer



300,000 tablets/hour



Centrifugal feed

## COMPRIMA

Comprima guarantees yields of up to 99.5%, allowing maximum production speeds even with shaped tablets or difficult to handle products. The long compression time improves tablet quality even at high speeds, while the complete separation between processing and mechanical parts reduces size change time and makes it possible to fit the machine with an automatic cleaning system.



R&D



Clean in place



Inter-changeable turret



1 layer



79,800 tablets/hour



Force feed

## PRESSIMA THC

The Pressima 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, additionally the most up to date software for R&D is available as an option. Good accessibility facilitates cleaning and maintenance. The Pressima THC has been designed to also allow the testing of HAPI.

# CAPSULE FILLING

Our expertise in this sector goes back to the first automatic capsule filling machine in the world produced in the 1950's. This tradition combined over the years with a constant commitment to innovation has resulted in our being a world leader, with over 5,000 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 the hallmark of our proposals, together with an unrivalled experience in high containment.

## PRODUCT DOSING

### POWDER AND PELLETS

Are fed into the product bowl from an upper hopper and dosed into the capsules by means of dosators.

### MICROTABLETS

Are counted and dosed by a group which uses a wheels with a predefined number of holes.

### TABLETS

Are dosed by a unit that can introduce one or more tablets into the capsule body in one stroke, using a blade and suitably shaped feeding tubes.

### LIQUIDS

Are dosed by a group which uses an extremely precise volumetric dosing system composed of a series of syringes and sliding valves.

## CLEANING

DEPENDING ON MACHINE MODEL DIFFERENT CLEANING SYSTEMS ARE AVAILABLE:

- MANUAL CLEANING
- WASH IN PLACE
- COMPLETELY AUTOMATIC AND VALIDATABLE CLEAN IN PLACE SYSTEM

## CONTROLS

DEPENDING ON MACHINE MODELS, DIFFERENT CONTROL SYSTEMS CAN BE FITTED:

- STATISTICAL WEIGHING UNIT FOR STATISTIC GROSS WEIGHT CHECK
- STRAIN GAUGES FOR 100% IN-LINE CONTROL OF POWDER DOSAGE
- LVDT FOR 100% IN-LINE CONTROL OF PELLETS DOSAGE
- CAMERA FOR 100% CONTROL OF MICROTABLETS QUANTITY
- WEIGHING UNIT AT OUTLET FOR 100% GROSS WEIGHT CONTROL OF ALL PRODUCTS
- WEIGHING UNIT AT INLET AND OUTLET FOR 100% NET WEIGHT CONTROL OF ALL PRODUCTS



# CAPSULE FILLING



- 70,000 capsules/hour
- Manual cleaning
- Wash In Place
- Multi product dosing

## ZANASI AND ZANASI PLUS

Zanasi machines are designed to satisfy low and medium speed production requirements. They can run with a minimum quantity of product and are suitable for multi product dosing: powder, pellets, liquids, tablets, microtablets. They are easy to operate and maintain, with very short size changeover and cleaning times. Different controls are available. Zanasi THC is available when a high containment configuration is requested.




- Pharma
- 100,000 capsules/hour
- Manual cleaning
- Single product dosing

## PRACTICA

The Practica capsule filling machine covers low, medium and high-speed production requirements and performs single product dosing (powder/granulate or pellet) with very high accuracy. The machine is highly reliable thanks to its engineered simplicity and ensures extremely easy operation and low maintenance. User friendliness is a hallmark of this machine.



-   
 Pharma
-   
 200,000 capsules/hour
-   
 Manual cleaning
-   
 Multi product dosing

## ADAPTA

The Adapta capsule filling machine covers low, medium and high speed requirements and features exceptional design flexibility: two of its dosing units are reversible/interchangeable giving the possibility of a plug and play shift between different machine configurations and filling combinations. With the appropriate options, total production control can be achieved with any product dose giving an indisputable efficiency. The machine is suitable for multiproduct dosing: powder, pellets, liquids, tablets, microtablets.



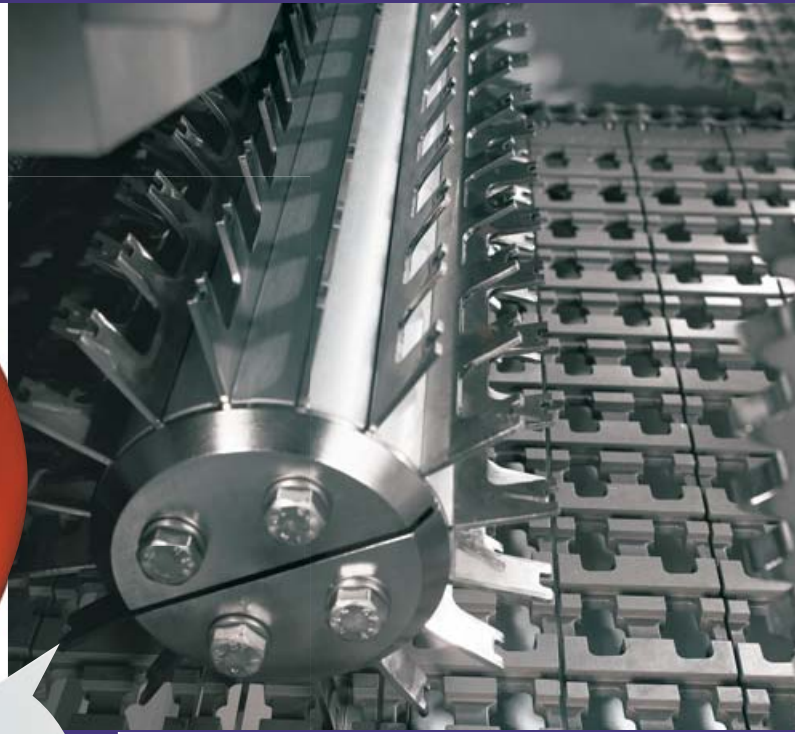
-   
 Pharma
-   
 150,000 capsules/hour
-   
 Clean In Place
-   
 Single product dosing

## IMATIC

The Imatic capsule filling machines cover medium and high speed requirements and are able to 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 pared, reducing the number of parts to be changed, thus minimizing downtimes.

# CAPSULE BANDING

The Hermetica was born from experience that began in the seventies to comply with present needs of tamper evident capsule sealing.



Pharma



100,000  
capsules/  
hour



Manual  
cleaning

TWO INDEPENDENT GELATINE BOWLS  
AND TWO GELATINE APPLICATION  
ROLLERS FOR A PERFECT TAMPER EVIDENT  
SEALING.

## HERMETICA

Hermetica is a highly automated capsule banding machine for tamper evident sealing of capsules filled with liquids, powder or other products. The machine features easy operation and automatic handling of gelatine working parameters.



# WEIGHT CHECKING



THE GUARANTEE OF 100% WEIGHT CONTROL.



Pharma



230,000  
units/hour



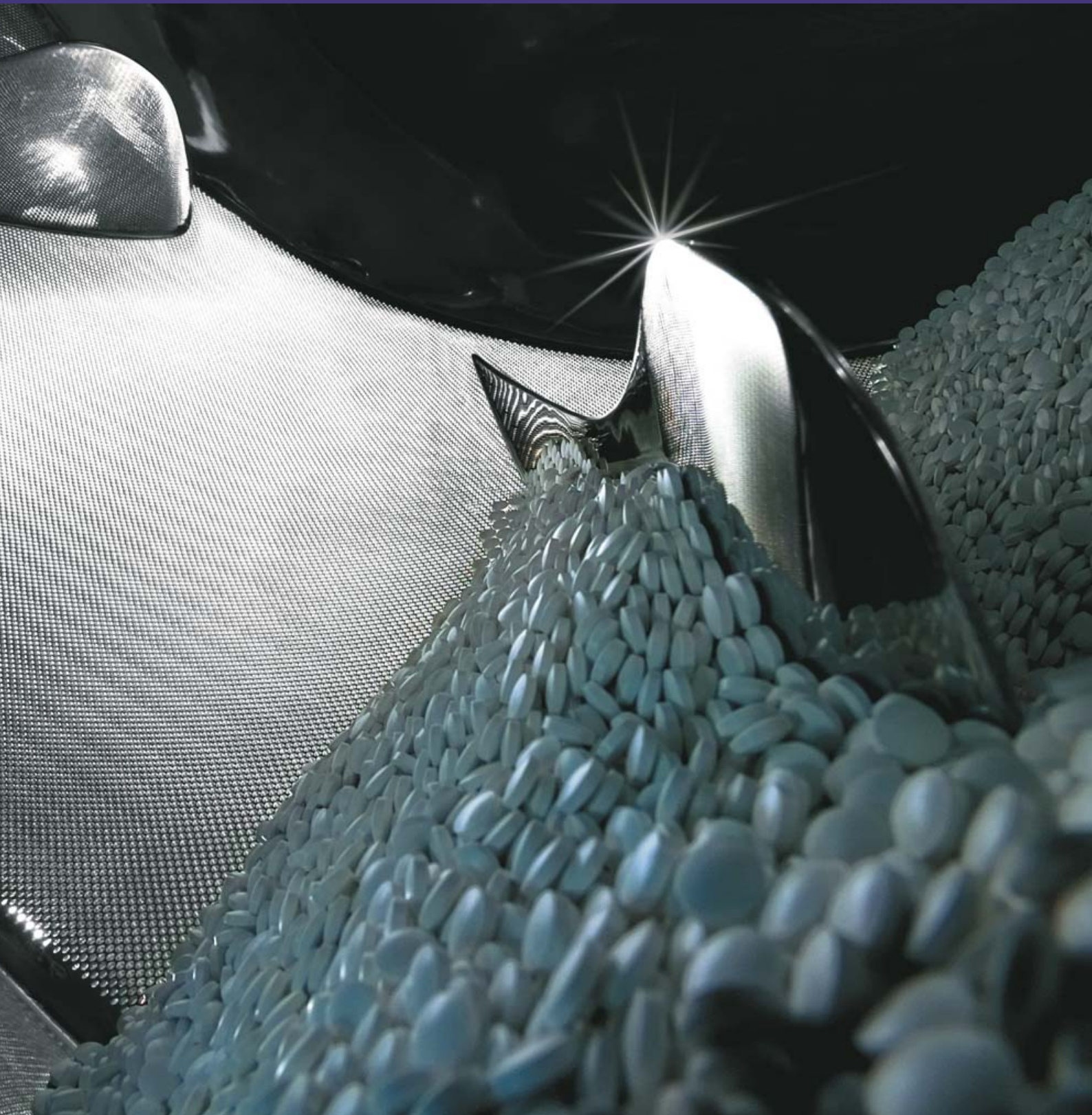
Manual  
cleaning



## PRECISA

The Precisa series of weight checking machines are 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. The machine work area is easily accessible and the continuous motion system used for placing the product on the weighing cells eliminates vibration and ensures maximum accuracy even at high speeds.

# COATING



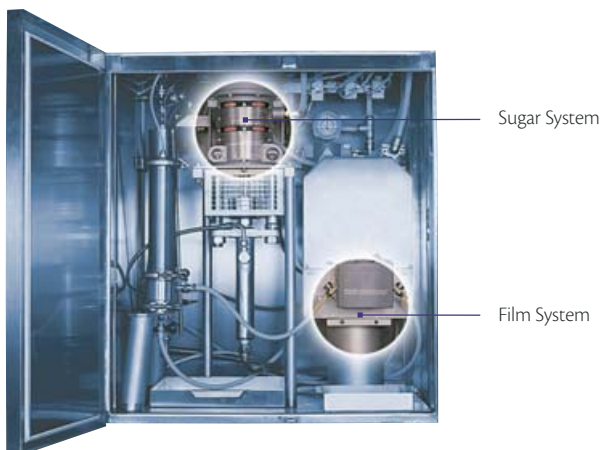
The quality and the process technology offered by the IMA coating equipment are the results of over 30 years of experience and over 1500 successful installations throughout the world. This know-how, together with constant research, close collaboration with raw material producers and universities allows the development of high quality equipment for an optimal production process.



## PAN TYPE AND MIXING BAFFLES

IMA IS THE ONLY MANUFACTURER ABLE TO SUPPLY BOTH SOLID WALL AND PERFORATED PANS WITH THE MIXING BAFFLES POSITIONED IN THE CENTRAL SECTOR. THIS ENSURES PERFECT MIXING, UNIFORM COATING MATERIAL DISTRIBUTION AND THE HIGHEST FLEXIBILITY, ALLOWING A WIDE RANGE OF BATCHES TO BE PROCESSED IN THE SAME DRUM.

TWO PAN TYPES, BOTH WITH WELDED MIXING BAFFLES.



## 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 avoiding clogging of the guns 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



POWDER DOSING SYSTEM AVAILABLE WITH WEIGHT CONTROL.



Pharma



Non  
Pharma



Solid wall  
pan



Max.  
Capacity  
1,200 litres



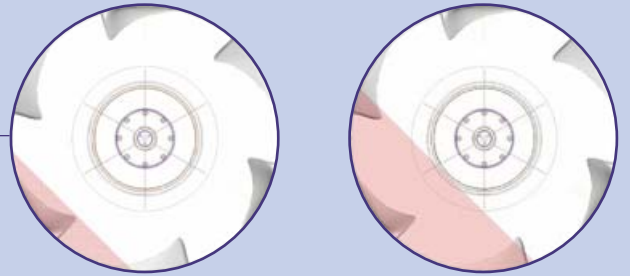
Clean In  
Place

## GS HT-HE-HP

The GS Coating Equipment are designed in different sizes and are 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 and is also available in the economic version GS HE. 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 HIGHEST FLEXIBILITY IN TERMS OF WORKABLE BATCHES: FROM 25% TO 100% OF PAN CAPACITY.



## GS EVOLUTION

The 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. It is 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 also available with a spiralled pan for automatic product discharge. Additionally the front door can be prearranged for automatic product loading and discharge ports.

WASHING





Pharma



Max. flow rate  
40 l/min HP  
70 or 120 l/min LP

## HYDROWASH

HydroWash is a self-regulating C.I.P. pressurisation group used as a feeding group for a W.I.P. system or to obtain the internal and external cleaning of a container or coupled with a washing/drying cabin to create a washing system (C.I.P.). The machine is available in both LP (Low Pressure) and HP (High Pressure) versions.



Pharma



Max. flow rate  
400 l/min

## VENUS

Venus is a component washer designed for washing small tools, glass, hoppers, small 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 doors version is available for "through the wall" installation and/or to separate dirty and clean working areas. The Venus washing principle is based on water recirculation. An ultrasound system can be also available.



Pharma

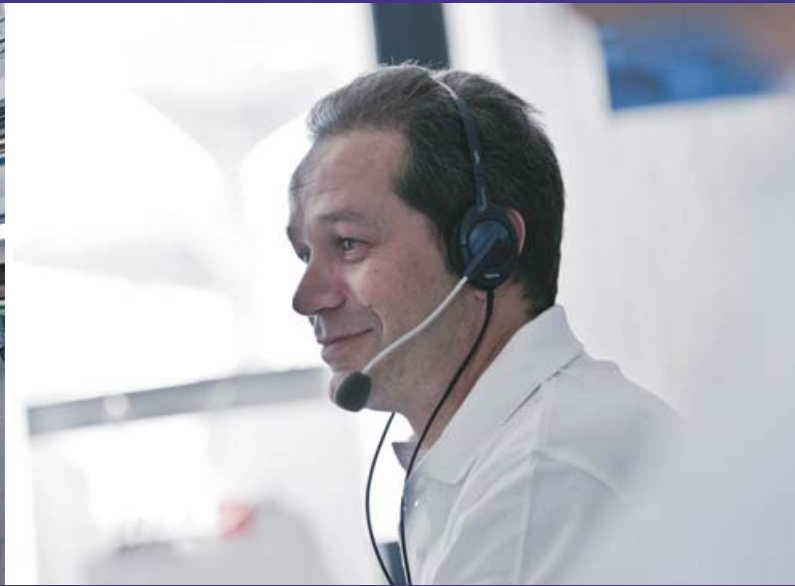


Max. flow rate  
50 l/min (single pump)  
50 or 100 l/min (double pump)

## ATLANTIS/OCEAN

The Atlantis is a washing and drying cabin designed for washing containers (bins, tanks), drums, pallets, tooling or components of all shapes and dimensions. The cabin can be supplied in different configurations and dimensions and can be completely automatic by connection to the HydroWash pumping group, etc. The basic configuration has a stainless steel cabin with square section and includes a single door with inflatable seal. The machine can be installed through the wall and, as an option, supplied with two doors for "pass through" installations. Increased throughput is possible with the high efficiency version: up to 3 bins/hour.

# SERVICES



## PROCESS AND DEVELOPMENT LABORATORY

The laboratory includes 10 test rooms with controlled environment, staffed by qualified pharmacists with the assistance of IMA specialist engineers. Dedicated rooms for customer trials are also available in Germany and USA.

### MAIN ACTIVITIES:

- Tests at the IMA Laboratory or at the Customer's plant to set-up working parameters and optimise machine performances.
- Formulation development/definition on a wide range of machines, to test the complete production process.
- Assistance for process start-up or scale-up.
- 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.

A WIDE RANGE OF SERVICES TO SATISFY CUSTOMER NEEDS DURING THE ENTIRE LIFE CYCLE OF A MACHINE.

## INTEGRATED MAINTENANCE

This service aims to improve machine performance and to obtain the best results during production. Activities are planned according to customer's schedule, thereby minimising intervention time and optimising budgets.

## AFTER SALES

In addition to the highly qualified staff operating out of IMA head offices, skilled engineers trained in our plants are available at our subsidiaries and agents for a quicker response to customer needs. Our after sales team is available not only to solve any technical problems, but also to advise on how to improve machine performance.





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## **SPARE PARTS**

A list of recommended spare parts for 2 years operation can be supplied with the machine and, in case of emergency, they can be supplied within 24 hours in Europe and 48 hours elsewhere.

MyIMA Spare Parts on-line service is also available for customers 24 hours a day, 7 days a week giving the possibility to quickly navigate the spares catalogues, easily identify parts, check their availability and price, and place orders.

## **DOCUMENTATION AND VALIDATION**

Upon request, IMA will provide customers with a comprehensive package of documentation to support on-site validation procedures. Different packages are available according to individual requirements.

# IMA ACTIVE



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[WWW.IMA-PHARMA.COM](http://WWW.IMA-PHARMA.COM) (CONTACTS SECTION)



[www.ima-pharma.com](http://www.ima-pharma.com)



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Certificate  
N. IT00/0415