

IMATIC

HIGH SPEED CAPSULE FILLING MACHINE



IMATIC

The continuous movement capsule filling machines of the IMATIC series make use of the unique tower system which has been an exclusive feature to IMA since 1978: over the years this system has proven to be the best way to combine reliability and dosing precision even at very high speed. Machine kinematics has been designed to allow the machine to reach a very high speed, while at the same time leaving more time for the most delicate phases of the filling process, such as capsule positioning and product dosing. The various dosing systems available provide extremely high dosing precision with a wide variety of products, while still assuring maximum care of the product.



THE NEW DESIGN, DEVELOPED FOR A COMPLETE SEPARATION BETWEEN MECHANICAL AND PRODUCTION AREA, GUARANTEES GOOD ACCESSIBILITY FOR THE OPERATORS TO ALL WORKING PARTS AND MAKES THE IMATIC SERIES OF CAPSULE FILLERS THE FIRST MACHINES FOR THE FILLING OF HARD GELATINE CAPSULES TO BE FITTED WITH A COMPLETELY AUTOMATIC CLEANING IN PLACE SYSTEM.

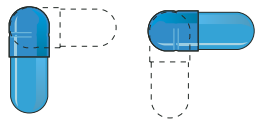
OPERATING CYCLE



1

EMPTY CAPSULE FEEDING

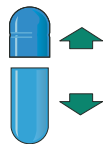
Empty capsules are contained in a top hopper. Feed tubes gently penetrate the layer of capsules and transfer them to the orientation bushings.



2

EMPTY CAPSULE POSITIONING

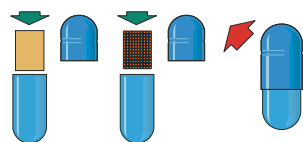
The capsules are orientated first horizontally, and then vertically, so that the bottom points downwards.



3

EMPTY CAPSULE OPENING

The orientation bushings move outwards, and the capsules are transferred to the transport bushings. The pushers move upwards and open the capsules by means of vacuum.

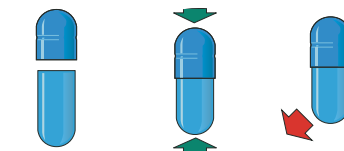
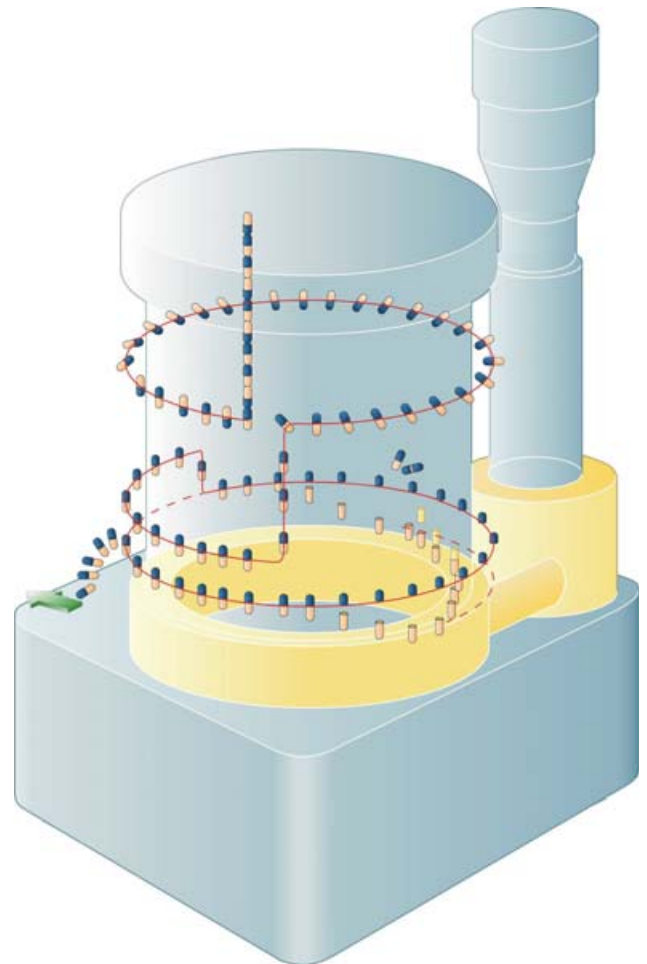


4

PRODUCT DOSING AND UNOPENED CAPSULE SELECTION

The capsule body transport bushing moves toward the inside to perform product dosing, and a pusher eliminates any un-opened capsule from the cover bushings.

IMATIC operating system is based on a single turret concept where a rotary motion over 810 degrees guides the capsules through all processing phases: feeding, orientation, opening, filling, closing and ejection. The capsules are always mechanically guided, guaranteeing maximum reliability even at high speed.

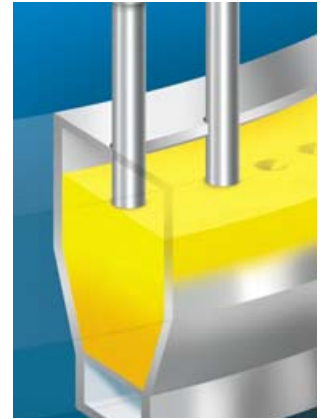
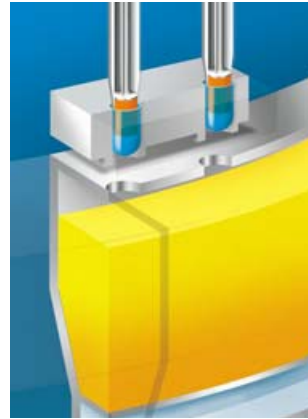
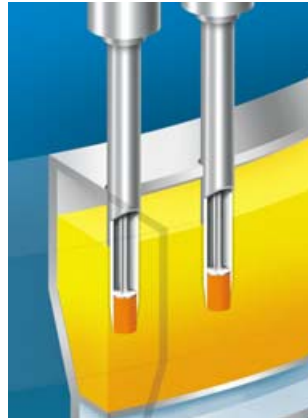
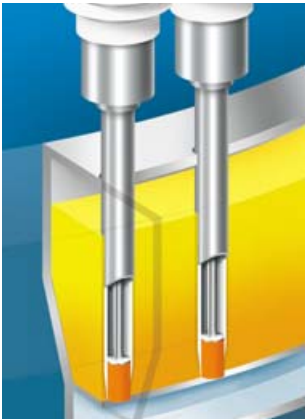


5

FILLED CAPSULE CLOSING AND EJECTION

The capsule body transport bushing moves toward the outside and realigns with the cap bushing. The pushers move upwards to close the capsules, then the capsules are pushed toward the discharge chute.

PRODUCT DOSING

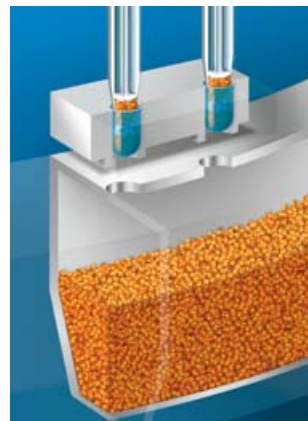
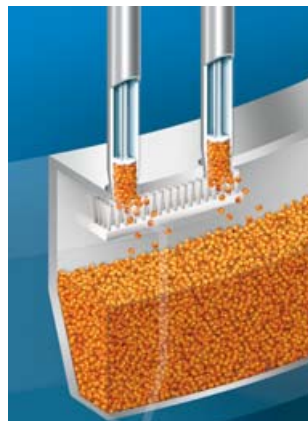
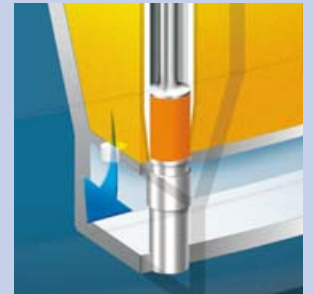


POWDER DOSING

The dosator penetrates the powder bed within the powder bowl, the piston compresses the powder thus forming a slug, which is then introduced into the capsule body.

With the rotary bowl supplied as standard, the dosator picks up the powder from a different point compared with the previous cycle, thus allowing the powder layer to be restored and guaranteeing maximum precision. As an option each dosator can be fitted with strain gauges for indirect 100% in-line weight control by measuring the compression force.

As an alternative to the rotary bowl an aspirating bowl can be supplied, where the vacuum applied on the bottom of the bowl restores the powder layer, guaranteeing maximum precision even with very light or aerated powders.

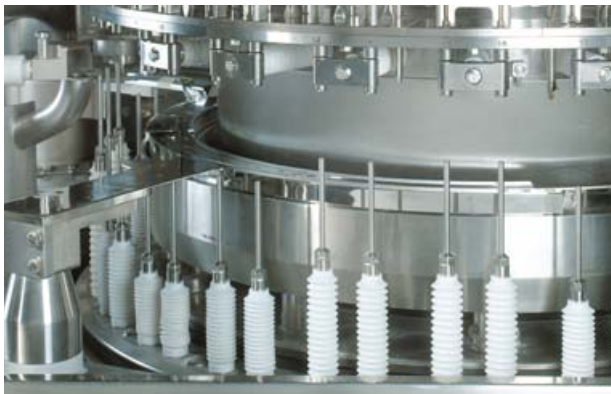


PELLET DOSING

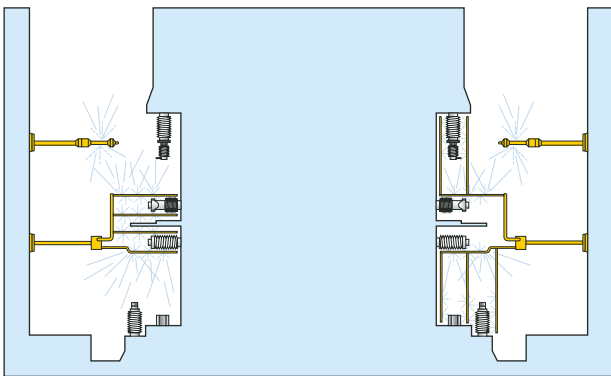
Pellet dosing is also carried out by means of dosators: this system guarantees maximum precision and maximum protection of the product at the same time. The dosator penetrates the pellets layer within the bowl, and the pellets are picked up by applying aspiration. Excess product is eliminated by a brush, and the product is then dosed into the capsule body by reducing the vacuum and lowering the piston. For pellets with a delicate coating, the pellet dosing unit can be equipped with an air-jet system to eliminate excess product.

SIZE CHANGE AND CLEANING

THE IMATIC RANGE HAS BEEN DESIGNED FOR TWO STATIONS TO BE CHANGED CONCURRENTLY THUS HIGHLY REDUCING THE NUMBER OF PARTS TO BE CHANGED. SIZE CHANGE OPERATIONS CAN BE CARRIED OUT WITH ONLY ONE WRENCH, AND ARE EXTREMELY SIMPLE AND RAPID.



The production area has been completely isolated from the mechanical area, through the use of special seals and silicon gaskets. This prevents the powder from passing in the mechanical area, thus avoiding product cross contamination and reducing maintenance operations.



The separation between the mechanical and production areas makes it possible to fit the machine with a completely automatic Cleaning In Place System. The cleaning cycle includes different phases: pre-washing, washing with detergents, rinsing with demineralised water and drying with hot air. The standard parameters for each phase can be adjusted according to the product, and different cleaning cycles can be stored in the machine computer and recalled by the operator.



IMATIC AND CONTAINMENT

THE CAPSULE FILLERS OF THE IMATIC SERIES ARE PARTICULARLY SUITABLE TO BE FITTED WITH ISOLATION TECHNOLOGY DUE TO THE FOLLOWING FEATURES:

- MINIMISATION OF CONTAMINATED PARTS, DUE TO THE ISOLATION OF THE COMPRESSION AREA
- SAFE ACCESS TO THE PRODUCTION AREA BY MEANS OF THE GLOVE PORTS FITTED ON THE MACHINE WINDOWS
- CLEAN IN PLACE SYSTEM FOR A COMPLETELY AUTOMATIC AND VALIDATABLE CLEANING

PROCESS AUTOMATION

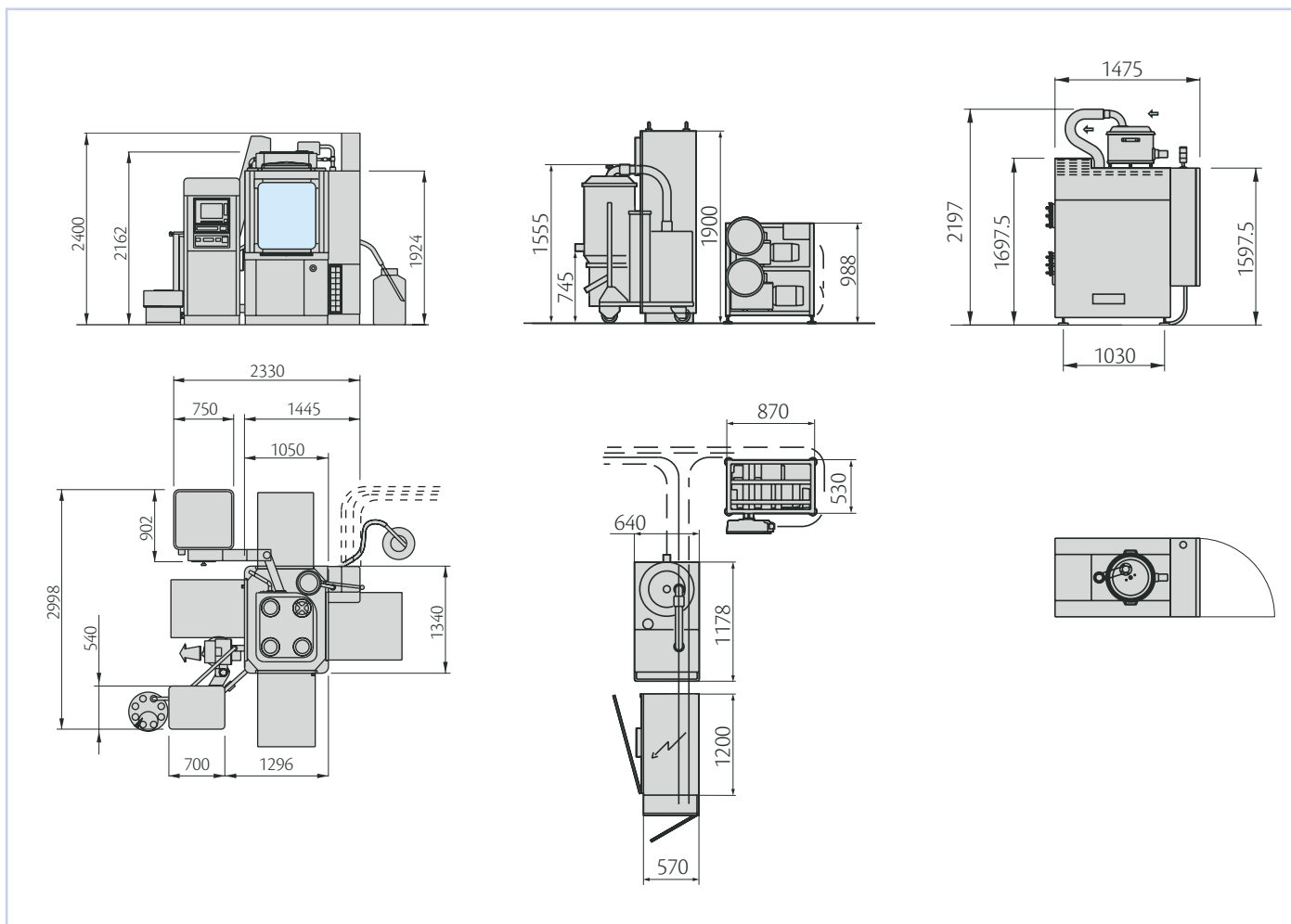
IMATIC SERIES CAPSULE FILLING MACHINES ARE DESIGNED TO GUARANTEE MAXIMUM OUTPUT. THIS IS ACHIEVED NOT ONLY BY MECHANICAL RELIABILITY, BUT ALSO BY A SERIES OF OPTIONAL DEVICES THAT KEEP THE MACHINE RUNNING EVEN WITHOUT THE PRESENCE OF AN OPERATOR.

- AUTOMATIC POWDER FEED FROM A CONTAINER LOCATED ON THE SAME FLOOR AS THE MACHINE OR ON AN UPPER TECHNICAL FLOOR.
- AUTOMATIC SELECTION OF EMPTY CAPSULES: THE SELECTION OF DEFORMED CAPSULES AND OF SINGLE UPPER AND LOWER SHELLS ELIMINATES THE MOST FREQUENT CAUSES OF MACHINE STOP.
- AUTOMATIC FEEDING OF EMPTY CAPSULES FROM THE SAME FLOOR AS THE MACHINE OR FROM AN UPPER TECHNICAL FLOOR.
- AUTOMATIC CLEARING OF FEED TUBES BY MEANS OF VACUUM.
- SELECTION AND EJECTION OF UNOPENED CAPSULES.
- STATISTICAL WEIGHT CONTROL SYSTEM. THE UNIT TESTS ALL THE DOSATORS IN ORDER, AND AUTOMATICALLY SELF-ADJUSTS THE WORKING PARAMETERS OF THE MACHINE.
- AUTOMATIC SELECTION OF FILLED CAPSULES.
- AUTOMATIC SAMPLING AT TINED INTERVALS SET BY THE OPERATOR.

IN ADDITION, THE IMATIC CAPSULE FILLERS CAN BE CONNECTED TO THE PRECISA WEIGHT CHECKING MACHINE FOR INTEGRAL CONTROL OF THE PRODUCT AND SELF ADJUSTMENT OF WORKING PARAMETERS.



IMATIC TECHNICAL DATA



	IMATIC 100	IMATIC 150
Number of stations	24	36
Maximum speed (capsules/hour)	100,000	150,000
Sizes processed	000-5 - Supro A-E,DB,DB.AA, Vegicaps: vegetable capsules	
Maximum installed power (kW)	37	
C.I.P. Skid power (kW)	6	
Standard voltage	230-400 V • 3F • 50-60Hz	
Aspiration	9,500 lt/minute 3,200 mm H ₂ O	
Compressed air	30 m ³ /hr 6 bar	
Vacuum (m ³ /hr)	100+65	
Weight (kg)	3,000	

www.ima-pharma.com



IMA S.p.A.
IMA ACTIVE division
Via l° Maggio 14 - 40064 Ozzano Emilia (Bologna) - Italy
Tel. +39 051 6514111 - Fax +39 051 6514287
mktg.soliddose@ima.it - www.ima.it



Certificate
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