ADAPTA

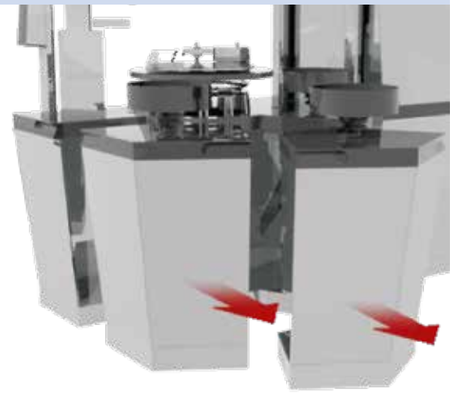
THE EVOLVING CAPSULE FILLER

IMA ACTIVE
Solid Dose Solutions

ADAPTA

ADAPTA's DNA has its roots in IMA's 60 years of experience and more than 6,000 capsule filling installations worldwide.
This knowledge and experience has allowed IMA capsule fillers to evolve and adapt to the ever-changing requirements of the market.
Multi-product dosing at high speed, extremely flexible configuration, 100% control of gross and/or net weight are the hallmarks of a machine which is unique on the market.

REMOVABLE DOSING UNITS



TOTAL IN-PROCESS CONTROL

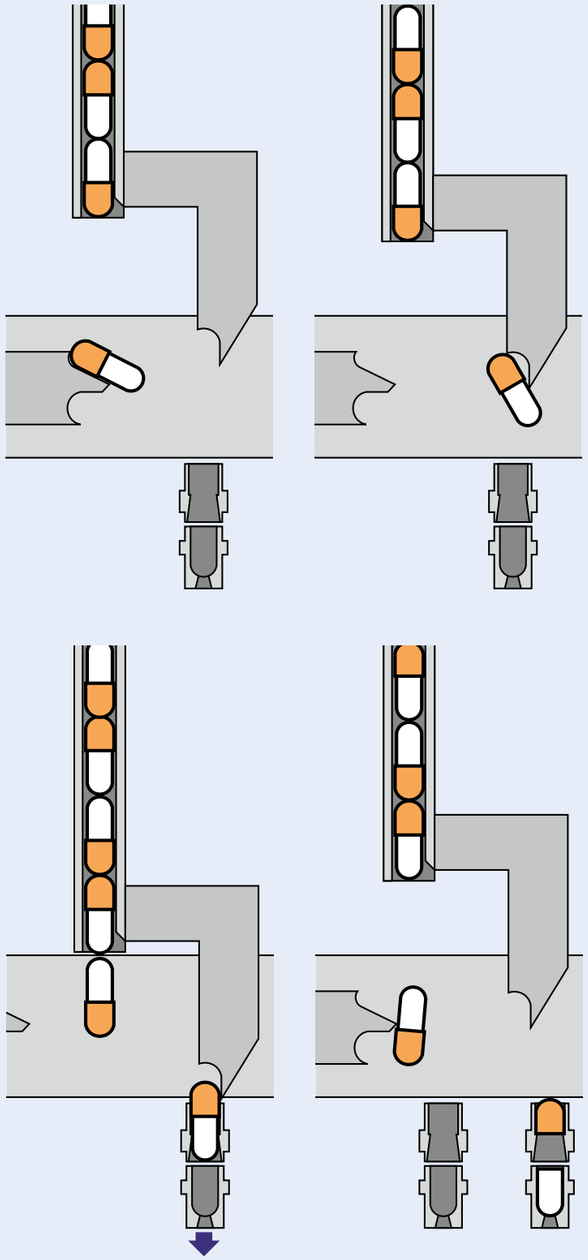
Total production control can be achieved with any product dosage.

- Camera for 100% control of minitablets quantity. Rejection of out-of-limit capsules.
- Statistical weighing unit for statistic gross weight check. Automatic feedback on machine parameters.
- Weighing unit at machine outlet for 100% gross weight check. Rejection of out-of-limit capsules and automatic feedback on machine parameters.
- Weighing unit at machine inlet and outlet for 100% net weight check. Rejection of out-of-limit capsules and automatic feedback on machine parameters.

EXCEPTIONAL DESIGN FLEXIBILITY

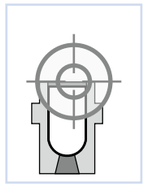
ADAPTA is designed to dose up to 3 products in the same capsule. Its dosing units can be easily removed and are reversible/interchangeable, giving the possibility of a plug-and-play shift between different machine configurations and filling combinations. Upon request the machine can be configured to fill up to 5 different products in the same capsule.

ADAPTA WORKFLOW

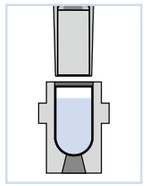


1 CAPSULE INFEED AND OPENING

The capsule arriving from the infeed hopper is accurately positioned and inserted into the bushings, where the cap is removed from the body by means of a vacuum. An empty capsule weighing system can be fitted, if the machine is fitted with 100% net weight check by scale.

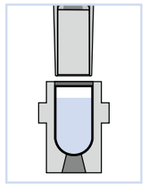


2 CAPSULE PRESENCE CONTROL (OPTIONAL)



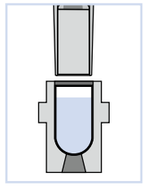
3 DOSING STATION (REMOVABLE)

This station is available to fit a removable dosing unit (powder, pellets, tablets, minitablets, liquids).



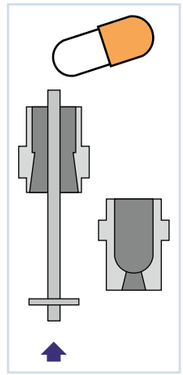
4 DOSING STATION (REMOVABLE)

This station is available to fit a removable dosing unit (powder, pellets, tablets, minitablets, liquids).



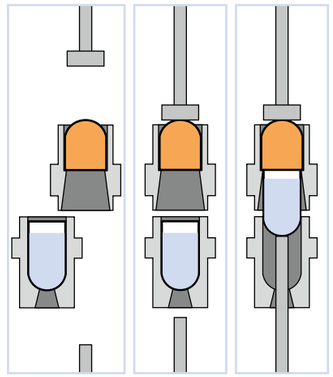
5 DOSING STATION (FIX OR REMOVABLE)

This station is available to fit a removable dosing unit (powder, pellets, tablets, minitablets, liquids) or a fixed one (powder, pellets).



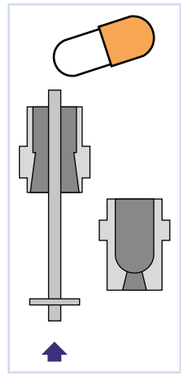
6 UNOPENED CAPSULE SELECTION AND REMOVAL

Any unopened capsules are rejected by means of appropriate pushers.



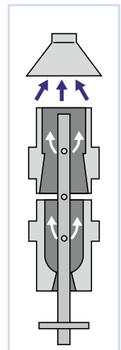
7 CAPSULE CLOSING

The bushings containing the capsule bodies realign themselves with the corresponding caps; the capsule is then closed by appropriate pushers.



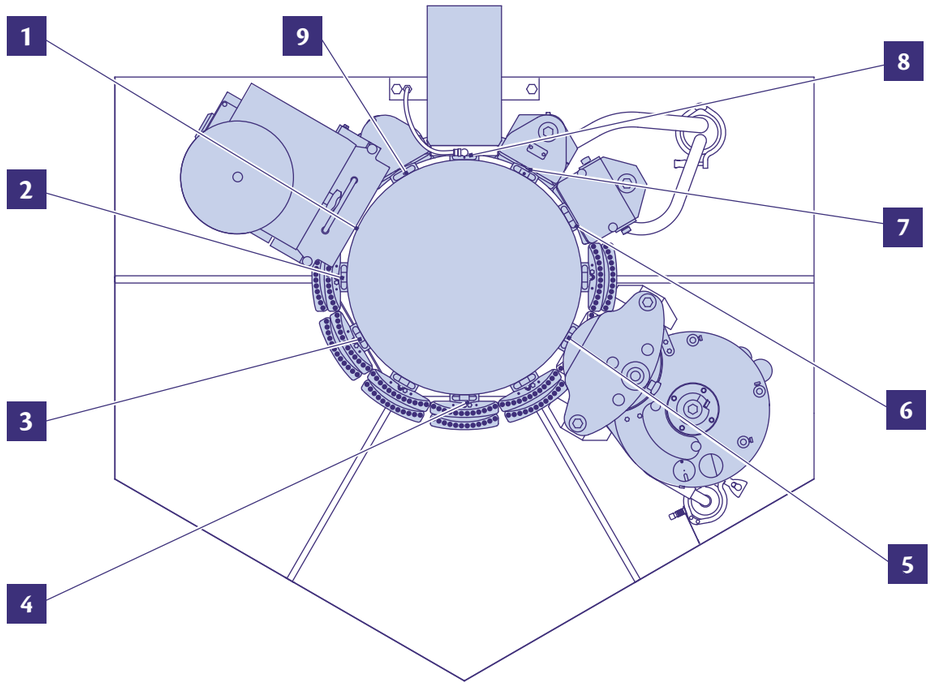
8 CAPSULE DISCHARGE

Closed capsules are discharged by the combined action of pushers and compressed air. A convey or chute transports the capsules towards the finished product container.
A statistical or 100% weighing unit can be installed at capsule exit for gross weight control, or for total net weight control, in combination with the empty capsule weighing system placed in Station 1.



9 BUSHING CLEANING

Upper and lower bushings are cleaned of any residual dust by means of compressed air and suction nozzles.



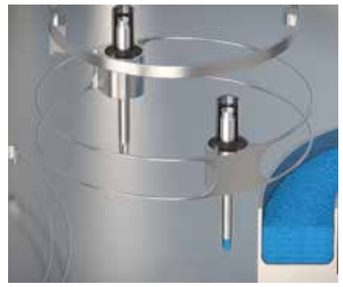
ADAPTA DOSING UNITS

POWDER DOSING UNIT

Dosators are mounted on one block and are sited in two opposite segments.

1. The block moves down and the dosators on the first segment penetrate the powder layer inside the product bowl, while the opposite ones are positioned above the capsule bodies.
2. The pistons of the first segment compress the powder forming slugs; the opposite ones eject the powder slugs into the capsule bodies.
3. The block moves up and turns; dosators with slugs are positioned over the next capsule bodies, while the empty ones are positioned over the product bowl and the cycle begins once more.

In addition to the rotary bowl fitted on standard machines, the IMA-patented vacuum bowl can be supplied for powder pre-compacting if very fine powders have to be dosed.
Additional solution for powder dosing can be customised upon request.



PELLET/MINITABLET DOSING UNIT

Dosators are mounted on one block and are sited in two opposite segments.

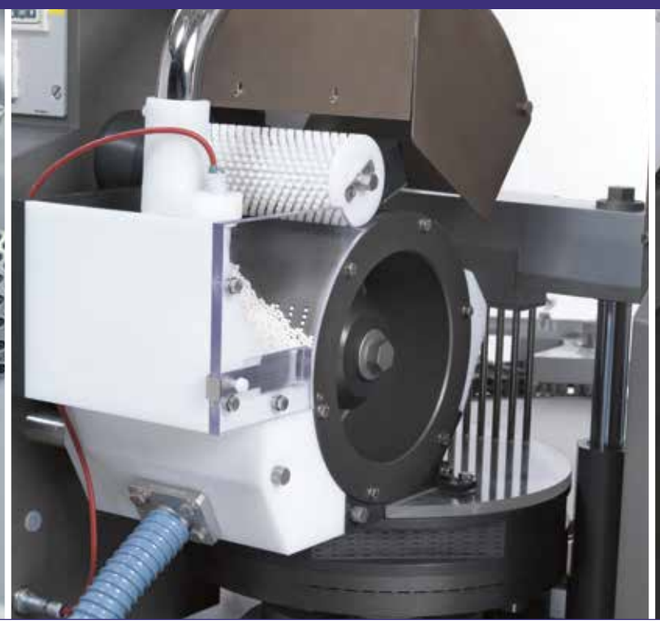
1. The block moves down and the dosators on the first segment penetrate the pellet layer inside the product bowl, while the opposite ones are positioned above the capsule bodies.
2. The pistons of the first segment create the dosing volume and vacuum-force pellets to fill it; the opposite ones eject the pellets into the capsule bodies, and the vacuum is released.
3. The block moves up and turns; the dosators filled with pellets are positioned over the next capsule bodies, while the empty dosators are positioned over the product bowl and the cycle begins once more.

Excess pellets are removed by a soft system particularly suitable for minitablets and delicate coating.

ADAPTA DOSING UNITS

Tablet dosing unit

Tablet feeding hopper

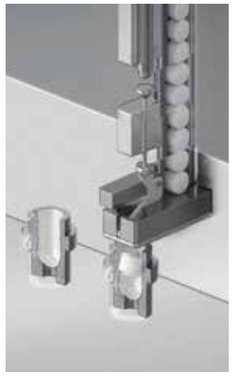


Minitablet dosing unit

Camera for minitablet presence checking

TABLET/CAPSULE DOSING UNIT

The unit can introduce one or more tablets into the capsule body in one stroke, using a blade and suitably-shaped feeding tubes.
The filling phase is electronically monitored by a sensor which checks the tablet/capsule presence while dosing and the tablet/capsule absence upon blade return.



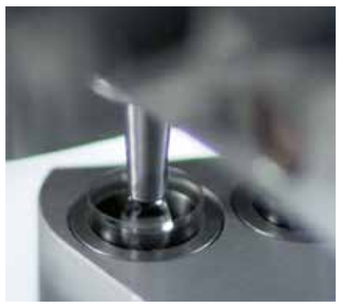
Sensor to check tablet/capsule presence

MINITABLET DOSING UNIT WITH EXACT COUNTING AND CHECK

The unit is composed of:

- One wheel with a predefined number of holes, the dimensions of which are dictated by the size of the minitablets.
- A drum with pushers to transfer the minitablets inside the capsule bodies.

The minitablets enter the wheel holes by means of a vacuum and a brush eliminates the excess minitablets. The wheel rotates, the vacuum is cut off and the mini tablets gently fall down into the drum. The product is then dosed into the capsules by gravity fall with the help of pushers which are particularly helpful in case of electrostaticity. This system allows the exact number/count of minitablets to be filled into each capsule. An optional camera can even be installed over the wheel to double check the presence of the minitablets.



Liquid dosing

LIQUID DOSING UNIT

The group uses an extremely precise volumetric dosing system composed of a series of syringes, drawing liquid from the container and pushing it into the capsule bodies.
The syringes are rotating 180° to alternatively pull out the liquid from the container and then push it to the outlet tubes.
The liquid container can be fitted with a mixer and a heating and temperature control system, so that thixotropic or heat sensitive products can be dosed as well as oily substances.
Thanks to ADAPTA flexibility the liquid can be dosed before or after other products to avoid spillage.

ADAPTA

ACCESSIBILITY AND CLEANABILITY

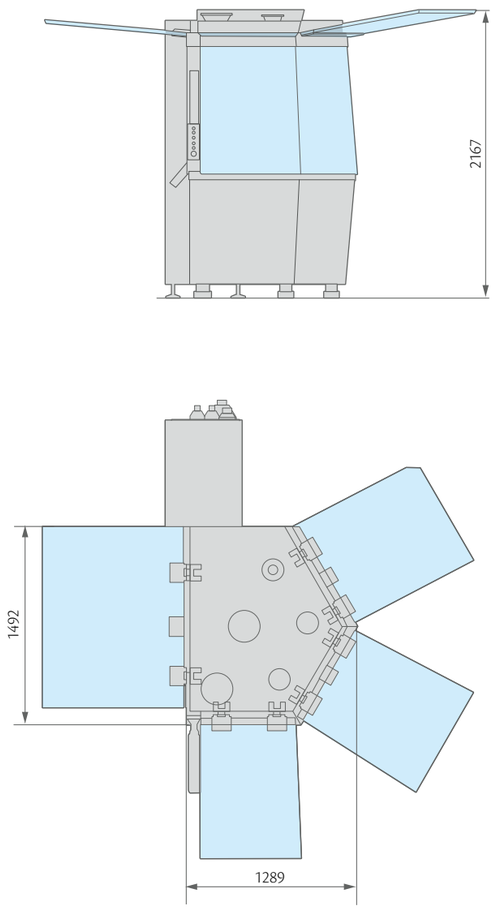
Once the machine windows are opened, the working area is completely accessible, also making cleaning operations very easy.

CONTROL SYSTEM

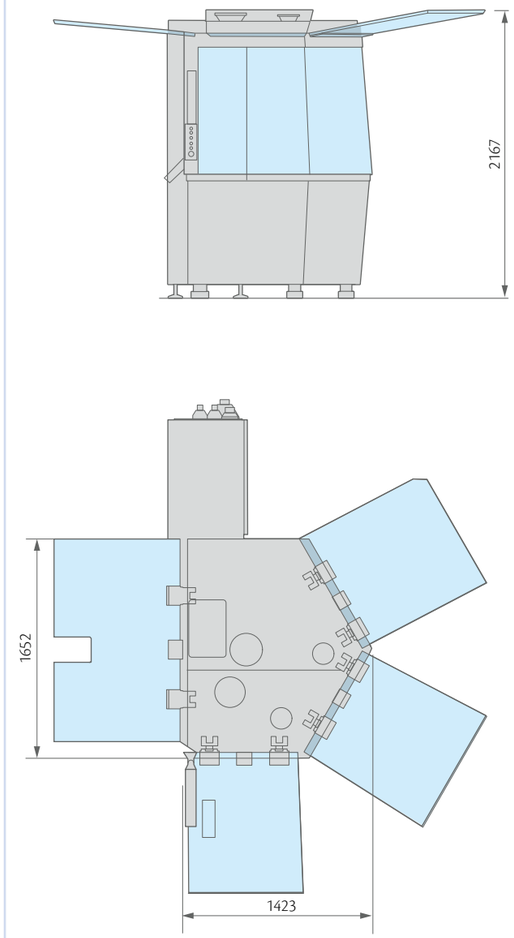
ADAPTA IS FITTED WITH MAX, THE NEW CORPORATE HMI. THE NEW UX DESIGN PLAYS A STRATEGIC ROLE IN IMPROVING OPERATOR EFFICIENCY, WHILE ENSURING PROMPT RESPONSIVENSS, ENHANCED PREDICTABILITY AND EASY LEARNING. THE RESULT IS AN HMI THAT TRULY MEETS THE OPERATORS' NEEDS. THE UNDERNEATH KORTEX, AN IFIX-BASED SCADA, IS DESIGNED TO BE IOT READY, FOR AN EASIER AND DEEPER CONNECTION WITH A SUPERIOR LAYER, INTRA- OR INTER-PLANT.

TECHNICAL DATA

ADAPTA 100



ADAPTA 200



	ADAPTA 100	ADAPTA 200
Maximum output (capsules/hour)	100,000	200,000
Number of capsules per cycle	12	24
Capsule size	5-00, DB, DB.A	5-00, DB, DB.A
Maximum installed power (kW)	17	18
Aspiration	9,500 l/min – 3,200 mm H_2O	9,500 l/min – 3,200 mm H_2O
Compressed air	115 l/min – 6 bar	115 l/min – 6 bar
Vacuum	100 m^3/h – 3 mbar (abs.)	165 m^3/h – 3 mbar (abs.)
Standard voltage	400 V – 50 Hz	400 V – 50 Hz
Weight (kg)	2,150	2,500

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