

# SR SMART SERIES

CAPSULE FILLING AND SEALING MACHINES



# SR SMART SERIES STEP BY STEP

The SR SMART Series is a range of versatile and flexible latest-generation machines, equipped for the filling and sealing of capsules on 1 and 2 lanes.

The unique ergonomic cantilever design assures great accessibility for maintenance, service and easy cleaning; further more the pull-out operating system significantly reduces line downtimes resulting in a great efficiency increase. Lid and waste reels are placed outside the machine, reducing downtime.

Thanks to a very fast size changeover and to an integrated double feeding system, for bulk and stacked capsules, the SR SMART Series can handle any type of capsule in plastic, aluminum and compostable material. Capsules can be closed at the top with aluminum film, micro perforated, filter paper, triplex coupled, PP and compostable lid. Filters and diaphragms can be inserted into capsules and on their bottom. According to the machine configuration, speed can vary from 60 to 120 capsules per minute.

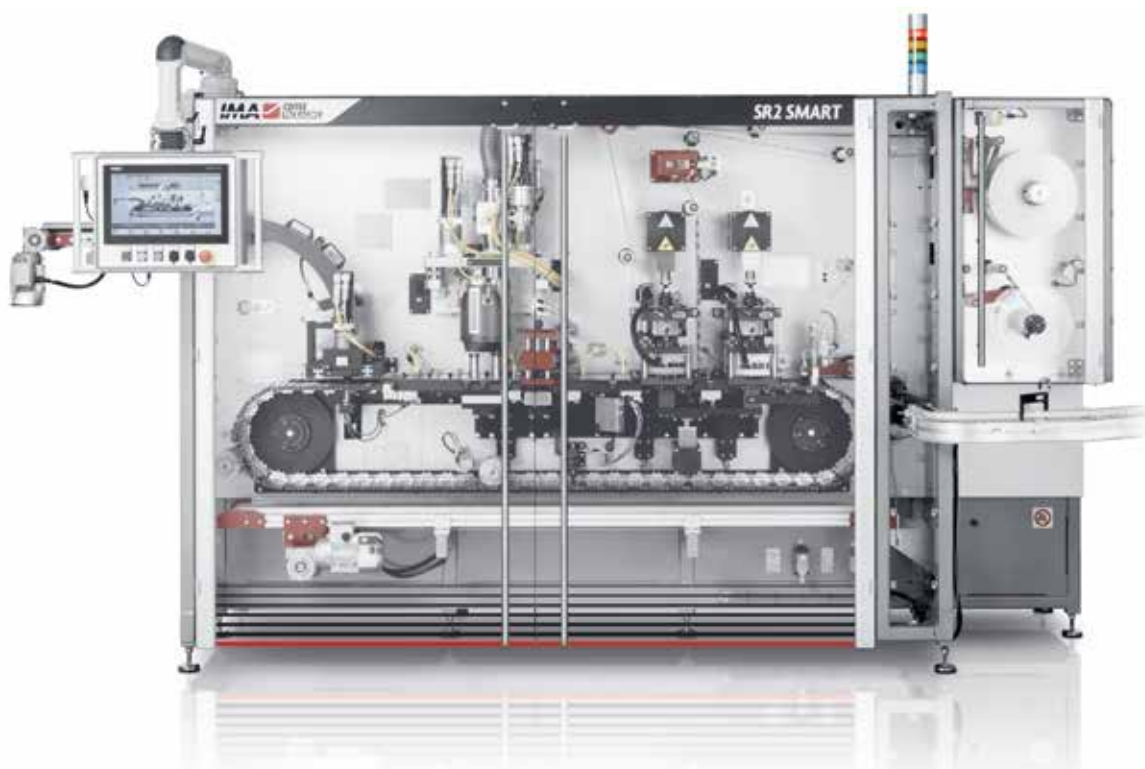
- COMPACT DESIGN
- ERGONOMIC CANTILEVER DESIGN FOR A GREAT ACCESSIBILITY
- FAST CHANGEOVER
- DOUBLE FEEDING SYSTEM
- AROMA DOSER TO DROP LIQUID FLAVOURS INTO CAPSULE

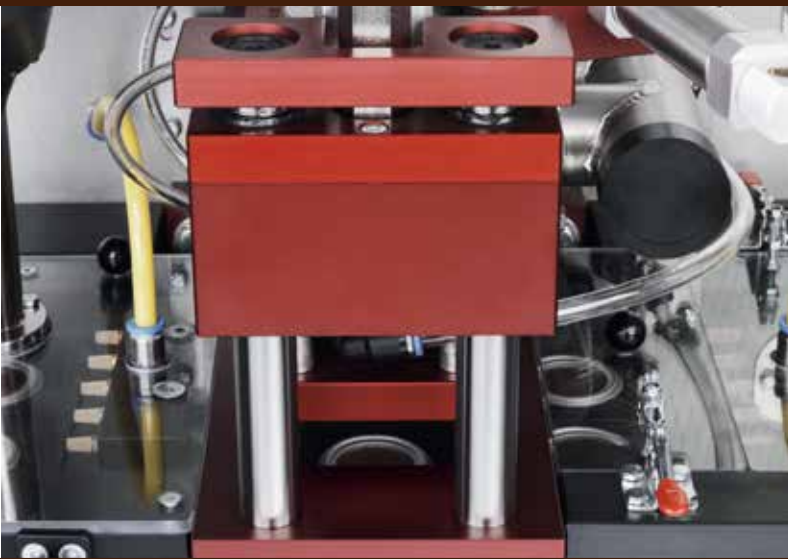
## FLEXIBILITY

Key attributes of the solutions developed by IMA ensure significant flexibility enabling a fast response to diverse market requirements.

- All SR SMART Series models can handle any capsule type available on the market, whatever material it is made of:
  - Aluminum - Plastic - Compostable
- Capsules can be fed in bulk by means of an unscrambler or stacked through a denester, guaranteeing a delicate handling for aluminum capsules for example.
- The SR SMART Series can be equipped with dedicated dosers to handle coffee, tea leaves and soluble powders.

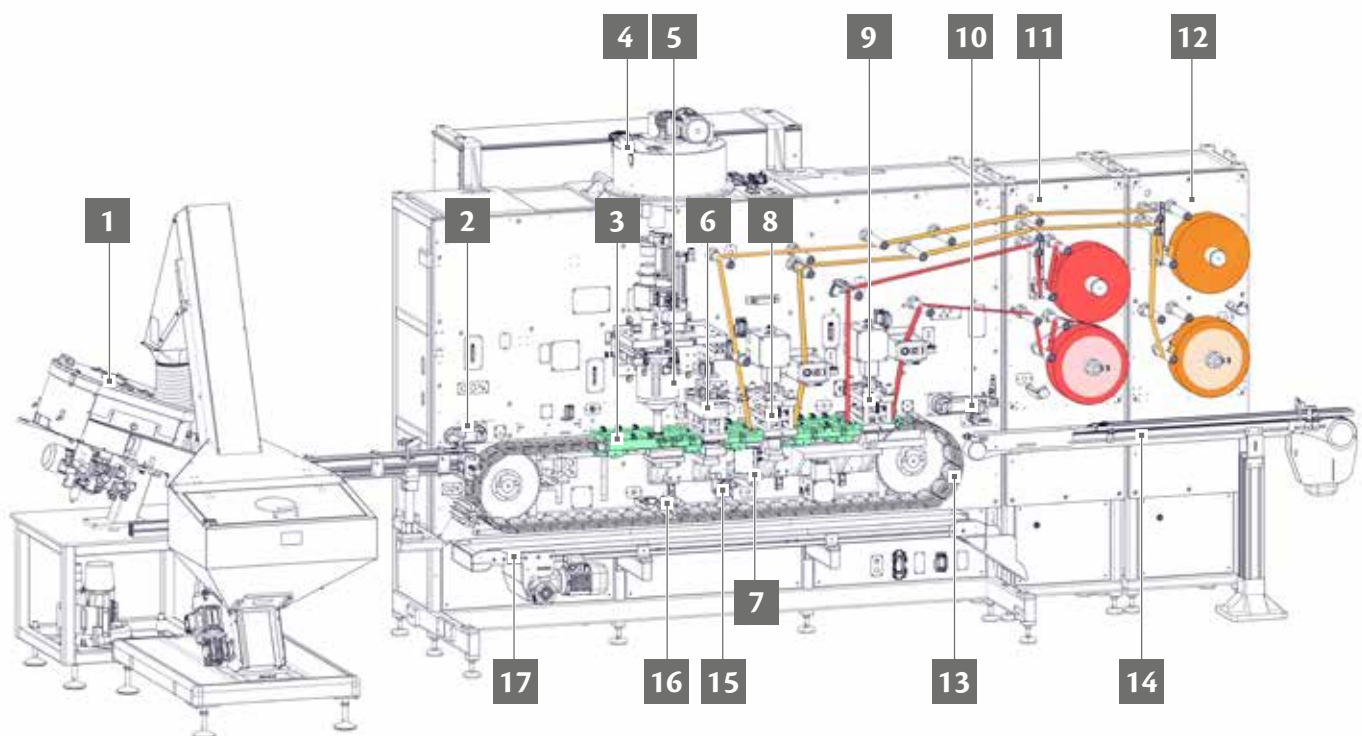
- EXTREMELY PRECISE DOSING SYSTEM
- PRODUCTION IN MODIFIED ATMOSPHERE THROUGH NITROGEN FLUSHING UNIT
- SPECIAL SEALING TECHNOLOGIES FOR INNER COMPONENTS AND LID
- SINGLE CAPSULE REJECTION
- MINIMAL MAINTENANCE REQUIREMENTS





## MAIN FEATURES

1. UNSCRAMBLER
2. INFEEED PICK & PLACE AND DENESTER
3. NITROGEN FLUSHING UNIT
4. PAN FEEDER
5. PRODUCT DOSING UNIT
6. PRESSING AND CLEANING UNIT
7. SINGLE CAPSULE CHECK-WEIGHING SYSTEM
8. FILTER CUTTING AND SEALING STATION
9. TOP LID CUTTING AND SEALING UNIT
10. PICK & PLACE EXIT
11. TOP LID REELS MODULE
12. FILTER REELS MODULE
13. TRANSFER SYSTEM
14. EXIT BELT CONVEYOR



# SR SMART SERIES CAPSULE FILLING



## FEEDING SYSTEMS

SR SMART Series machines can handle any capsule type of any dimension either fed in bulk or stacked. The denester is a space-saving cost-effective solution to feed stackable capsules. The centrifugal unscrambler allows handling of all capsule types, stackable and non-stackable, granting high autonomy.

The integrated double feeding system guarantees an extremely fast changeover.

- DENESTER
- UNSCRAMBLER

## H.M.I. (HUMAN MACHINE INTERFACE)

SR SMART machines respond to the demand for production monitoring with a functionality PC based H.M.I. to supply the following data:

- Machine alarms with historical and statistical data
- Daily production and efficiency reports with historical data
- Constantly updated efficiency data
- Scheduled maintenance messages
- IMA Sentinel App
- DNA map as an overview on productivity data either on a web page or on a smartphone app

## CAPSULE INNER COMPONENTS ASSEMBLY

The SR SMART Series machines construction concept allows high flexibility in achieving custom-made solutions, as well as the handling of inner components to be placed and sealed inside the capsule before dosing, such as plastic filters, paper filters, bottom lids, etc.

In the drip coffee configuration, the SR SMART Series machines are equipped with a filter paper feeding, cutting, punching, deep-draw pleating and sealing unit to place a pleated paper filter into the capsule.

- PLASTIC FILTER
- PAPER FILTER
- DEEP DRAWING FILTER UNIT



## DOSING UNIT

Precise and accurate product dosing into the capsule is performed by a set of servo-controlled augers combined with innovative gating systems. Extremely gentle product handling suits a wide range of products to be filled such as coffee with different densities, tea and powders.

The SR SMART can be equipped with a flavor dosing unit which dispenses drops of liquid flavours inside the capsules either before or after coffee dosing.

A capacitive sensor inside the doser allows to keep the coffee level constant for a uniform dosage.

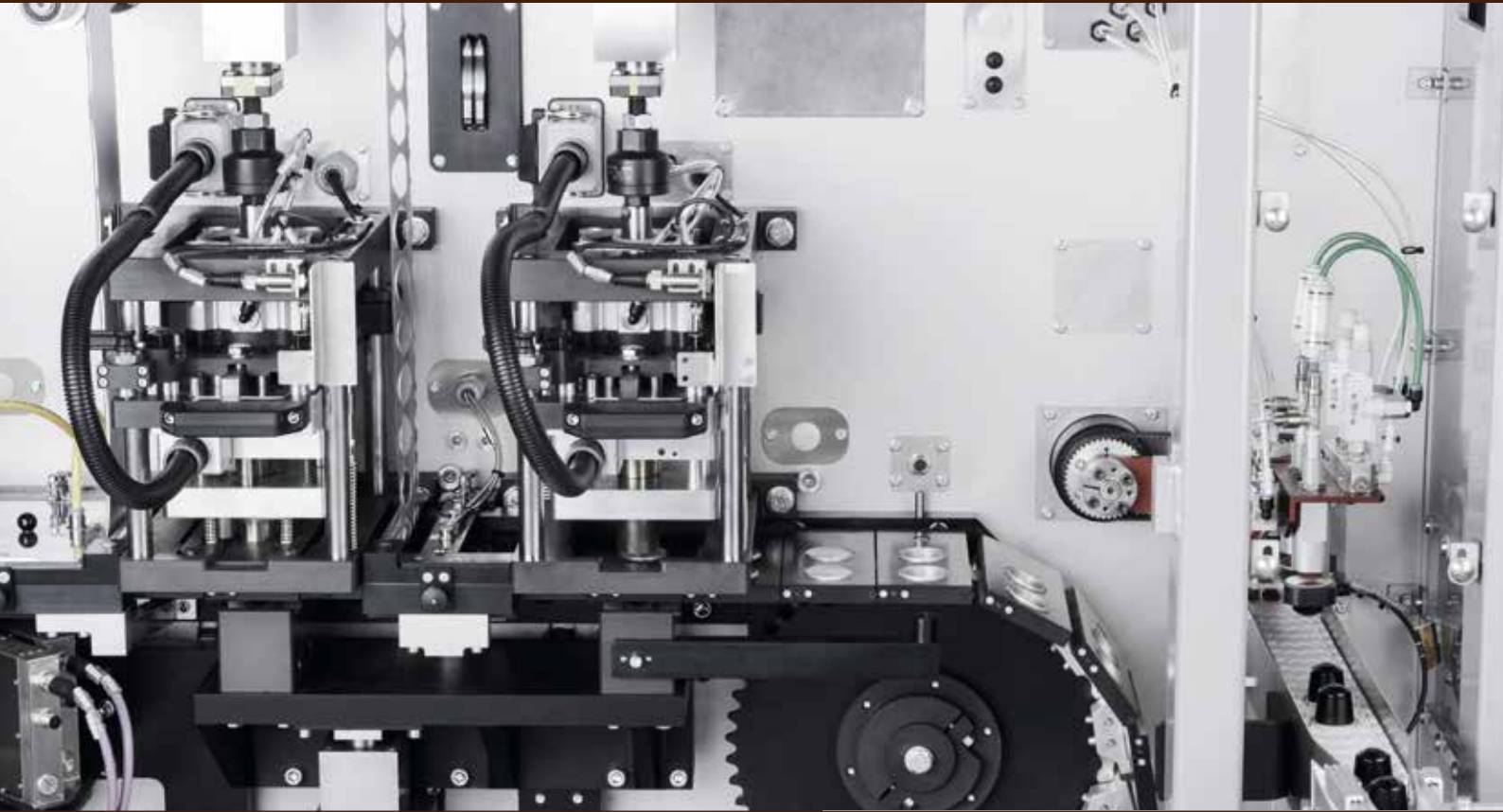
- TOLERANCE  $\pm 0,2$  g
- CAPACITIVE SENSOR INSIDE THE DOSER
- FLAVOUR SYSTEM

## IN LINE WEIGHING SYSTEM

Excellent product quality is assured by an in line weighing system for each filled capsule and a rejection system for single faulty capsule identified by the check-weigher.



# SR SMART SERIES CAPSULE SEALING



## SEALING SYSTEM

The SR SMART can be equipped with a cut & seal system in a single station. Compact, accessible and robust unit, easy to remove for cleaning and maintenance.

- The lid is cut and thermo-sealed on the capsules;
- Sealing temperatures are constantly controlled by a thermo-couple system located inside the sealers and adjusted by means of a dedicated HMI. As a result, sealing uniformity is constantly guaranteed.
- Additional sealing unit to ensure an optimal closing.

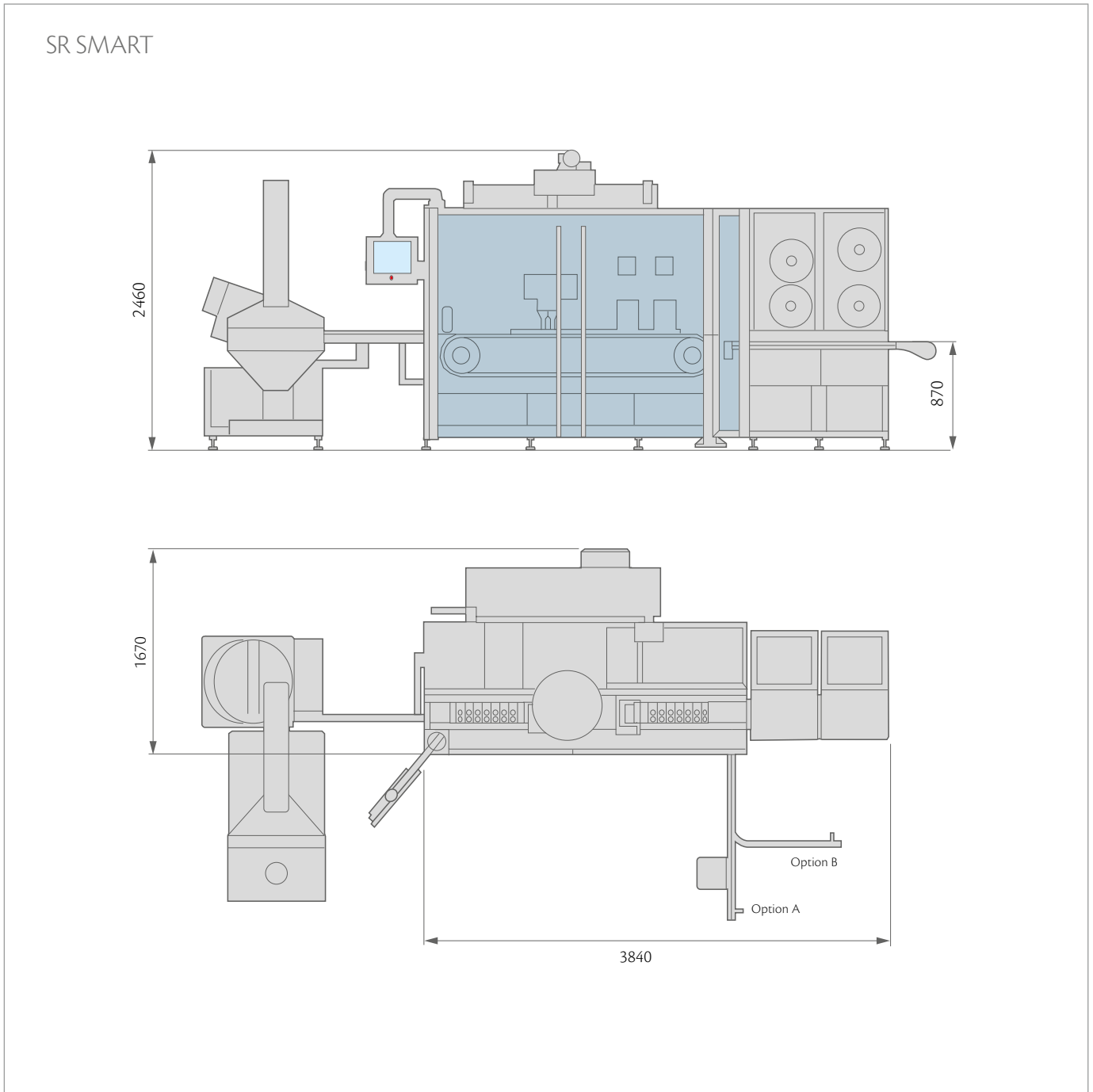
The lid material is fed by roll-stock ensuring the best placement and sealing on the capsule. The compactness of the machine slat transfer allows a minimal lid material waste.

## NITROGEN FLUSH

The SR SMART filling and sealing machines work in modified atmosphere (nitrogen). Thanks to the compact footprint of the machine and to the strategic position of the nitrogen flushing units, the SR SMART nitrogen chamber is able to achieve very low residual oxygen levels (< 1%) with nitrogen consumption considerably low. **The nitrogen chamber covers production areas from filling to sealing station.**



# SR SMART SERIES TECHNICAL DATA



	SR1 SMART	SR2 SMART
Production speed (capsules/min)	up to 60	up to 120
Power consumption (kW)	27	27
Machine weight (kg)	3280	3335
Nitrogen consumption (Nm <sup>3</sup> /h)	28	28
Compressed air consumption (Nm <sup>3</sup> /h)	28	38
Compressed air pressure (bar)	6	6

Data subjected to possible technical modifications and not necessarily definitive.



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