

SR SERIES

CAPSULE FILLING AND SEALING MACHINES



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The SR Series is a range of versatile and flexible last generation machines, equipped for the filling and sealing of capsules on 4 and 6 lanes.

The machines 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 240 to 360 capsules per minute. The ergonomic design assures great accessibility for maintenance, service and cleaning, reducing line downtimes.

Accurate product dosing is made possible thanks to precise and extremely gentle product handling to suit a wide range of products to be filled - coffee with different densities, tea and soluble powders. Liquid flavor dosing is also possible.

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



VERSATILITY

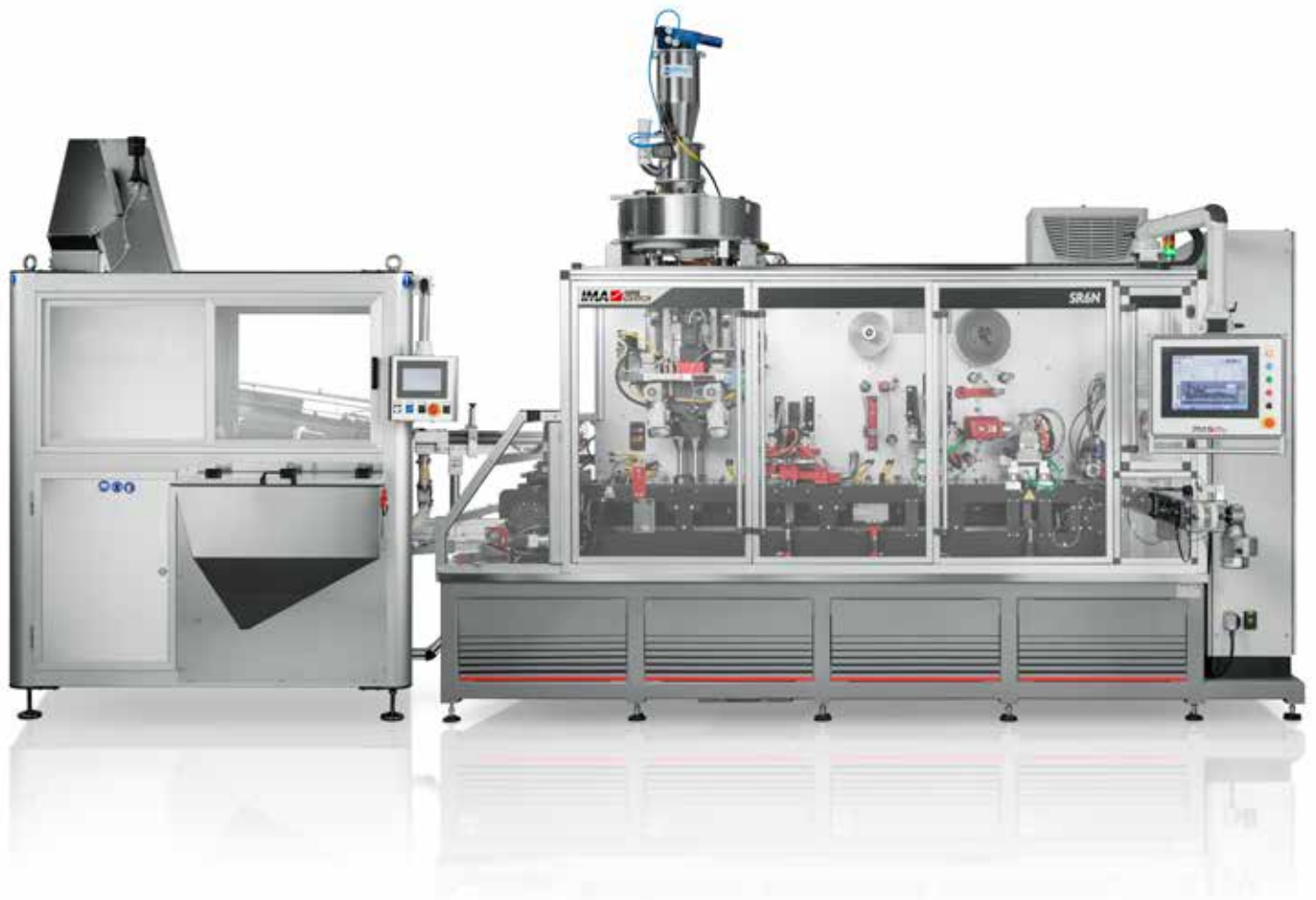
Both SR4 and SR6 can handle any capsule type available on the market.

FLEXIBILITY

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

- Machines can be adapted to handle capsules materials with different technical specifications: aluminum, plastic or 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.
- SR machines can be equipped with dedicated dosers to handle coffee, tea leaves and soluble powders.

- MEDIUM/HIGH SPEED MACHINE WITH A COMPACT FOOTPRINT
- GREAT ACCESSIBILITY
- FAST CHANGEOVER IN LESS THAN 30 MINUTES
- AROMA DOSER TO DROP LIQUID FLAVOURS INTO CAPSULE BEFORE OR AFTER THE DOSING UNIT
- 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



STEP BY STEP



MAIN FEATURES

1. CAPSULE VERTICAL FEEDING SYSTEM
2. DENESTER UNIT
3. TRANSFER SYSTEM
4. FLAVOUR DOSING UNIT
5. PAN-FEEDER
6. PRODUCT DOSING UNIT
7. NITROGEN FLUSHING UNIT
8. PRESSING AND CLEANING UNIT
9. SINGLE CAPSULE CHECK-WEIGHING SYSTEM
10. REEL UNWINDING UNIT
11. TOP LID CUTTING AND SEALING UNIT
12. FILM WASTE COLLECTING REEL
13. PAPER INFEED ROLLERS
14. ADDITIONAL SEALING UNIT
15. PICK & PLACE EXIT
16. EXIT BELT CONVEYOR
17. WASTE MATERIAL COLLECTING UNIT
18. FAULTY CAPSULES REJECT UNIT

(A) SR WITH CAPSULE DENESTER

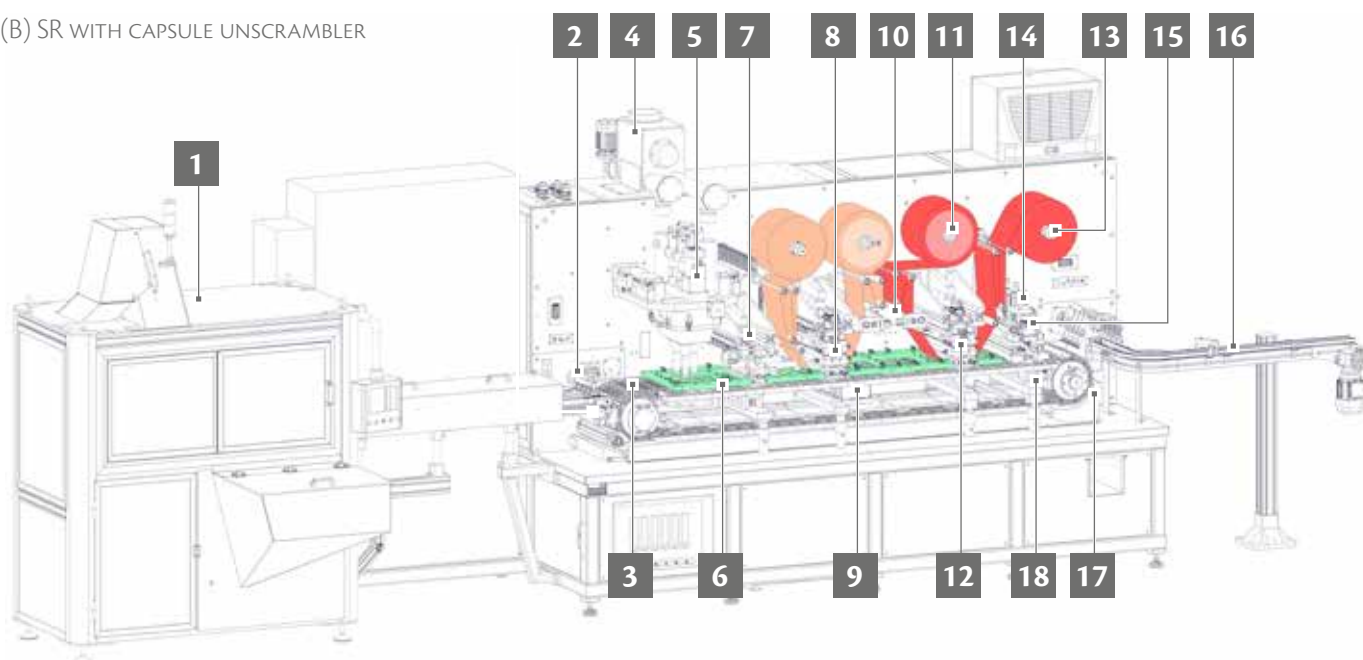




MAIN FEATURES

1. UNSCRAMBLER
2. INFEEED PICK & PLACE
3. TRANSFER SYSTEM
4. AUGER
5. PRODUCT DOSING UNIT
6. NITROGEN FLUSHING UNIT
7. PRESSING AND CLEANING UNIT
8. INNER CUTTING AND SEALING UNIT
9. SINGLE CAPSULE CHECK-WEIGHING SYSTEM
10. PAPER INFEEED ROLLERS
11. REEL UNWINDING UNIT
12. TOP LID CUTTING AND SEALING UNIT
13. FILM WASTE COLLECTING REEL
14. ADDITIONAL SEALING UNIT
15. EXIT PICK & PLACE
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18. FAULTY CAPSULES REJECT UNIT

(B) SR WITH CAPSULE UNSCRAMBLER



SR SERIES CAPSULE FEEDING AND DOSING



FEEDING SYSTEM

SR Series machines are able to handle both injected and thermoformed capsules of different dimensions 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.

- DENESTER
- UNSCRAMBLER

CAPSULE INNER COMPONENTS ASSEMBLY

The SR4 and SR6 construction concept allows high flexibility in achieving custom-made solutions for almost any kind of product and packaging material. Able to handle 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 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.

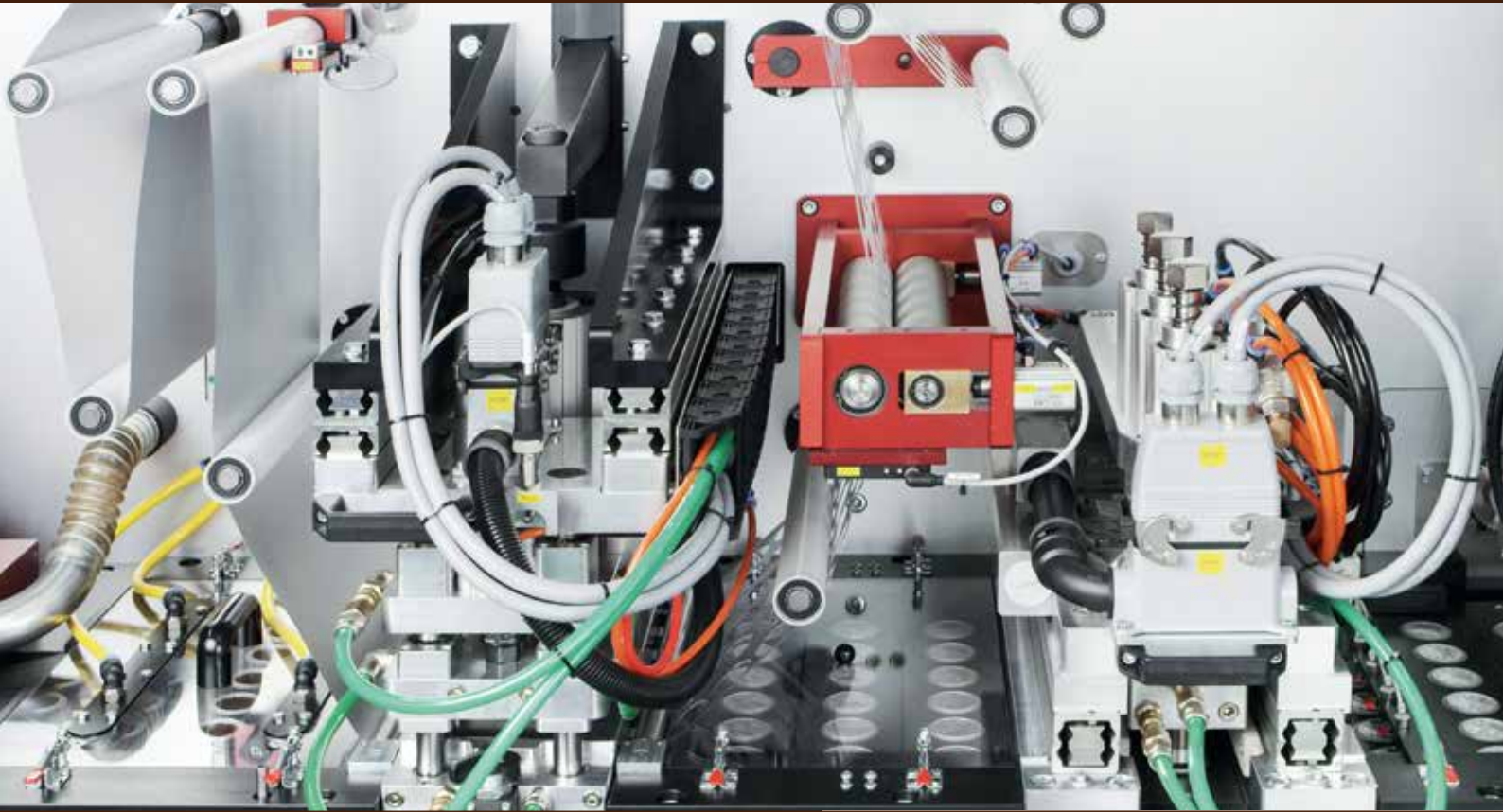
- TOLERANCE $\pm 0,2$ G
- DOUBLE DOSER
- FLAVOUR SYSTEM

SR4 AND SR6 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.



SR SERIES CAPSULE SEALING



SEALING SYSTEM

The SR4 and SR6 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.

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.

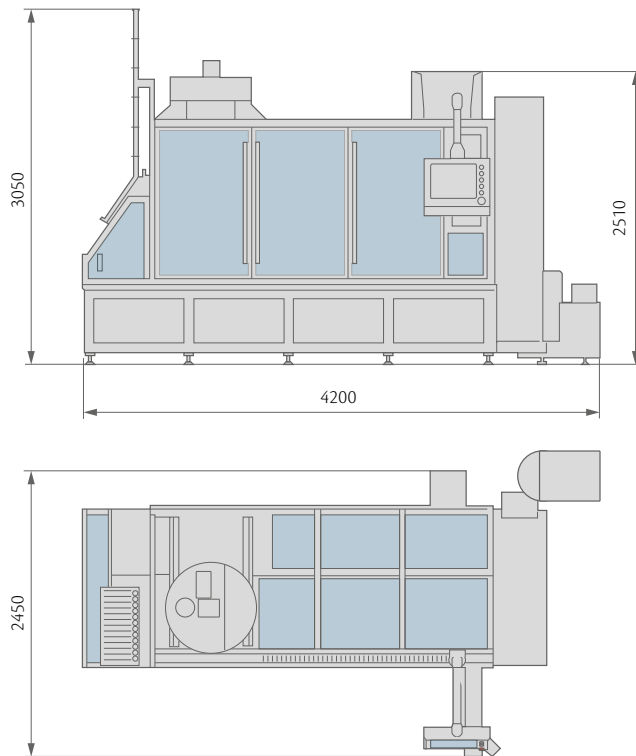
NITROGEN FLUSH

The SR4 and SR6 filling and sealing machine works in modified atmosphere (nitrogen). Thanks to the compact footprint of the machine and to the strategic position of the nitrogen flushing units, the 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.

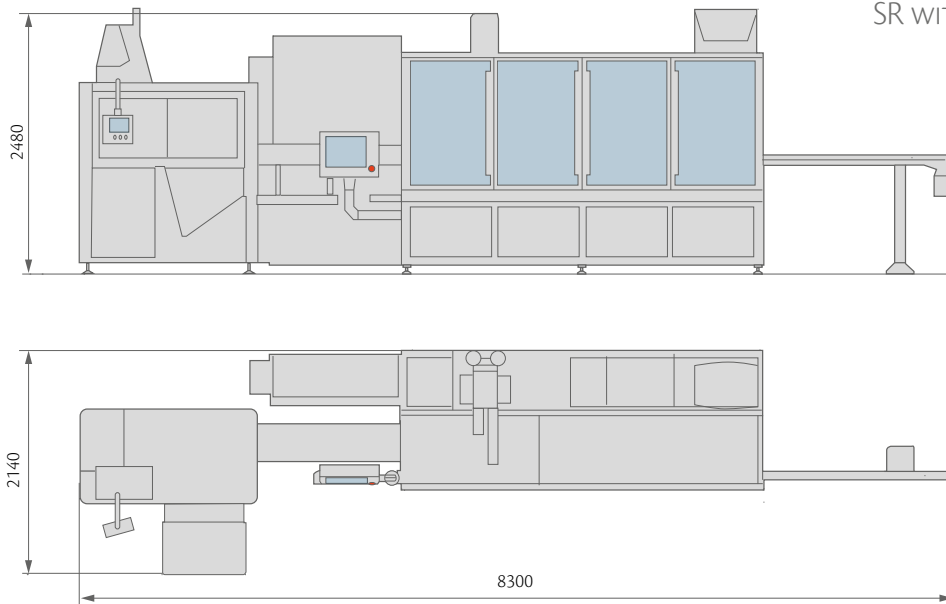


SR SERIES TECHNICAL DATA

SR WITH CAPSULE DENESTER



SR WITH CAPSULE UNSCRAMBLER



	SR4	SR6
Production speed (capsules/min)	Up to 240	Up to 360
Power consumption (kW)	13.8 - 14.5	18 - 23
Machine weight (kg)	3000 - 3500	3500 - 4800
Nitrogen consumption (Nm ³ /h)	57.6 - 61.2	64.8 - 93.6
Compressed air consumption (Nm ³ /h)	36	55
Compressed air pressure (bar)	5,5 ÷ 7	5,5 ÷ 7

Data subjected to possible technical modifications and not necessarily definitive.

SC SERIES CAPSULE PREPARATION MACHINES

CAPSULE PREPARATION MACHINES

Working close to capsule producers, IMA has implemented a wide range of technology to assemble/prepare all capsules according to customer/market needs. The capsule preparation machines can be fitted to work with all kinds of capsules, self-sealing or non self-sealing, with different thermoplastic, compostable or biodegradable materials. The utmost flexibility is achieved by the possibility to manufacture units for the insertion of plastic filters or for the cutting and sealing of paper/aluminum filters, alternatively on the bottom or on the outside of the capsule. Up to 50 strokes per minute.





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