

PACKING MACHINES



Air **PAC**



CKERS



The fluidisation process allows the filling of a wide range of fine-grain products, powder or a mixture of both in valve bags.

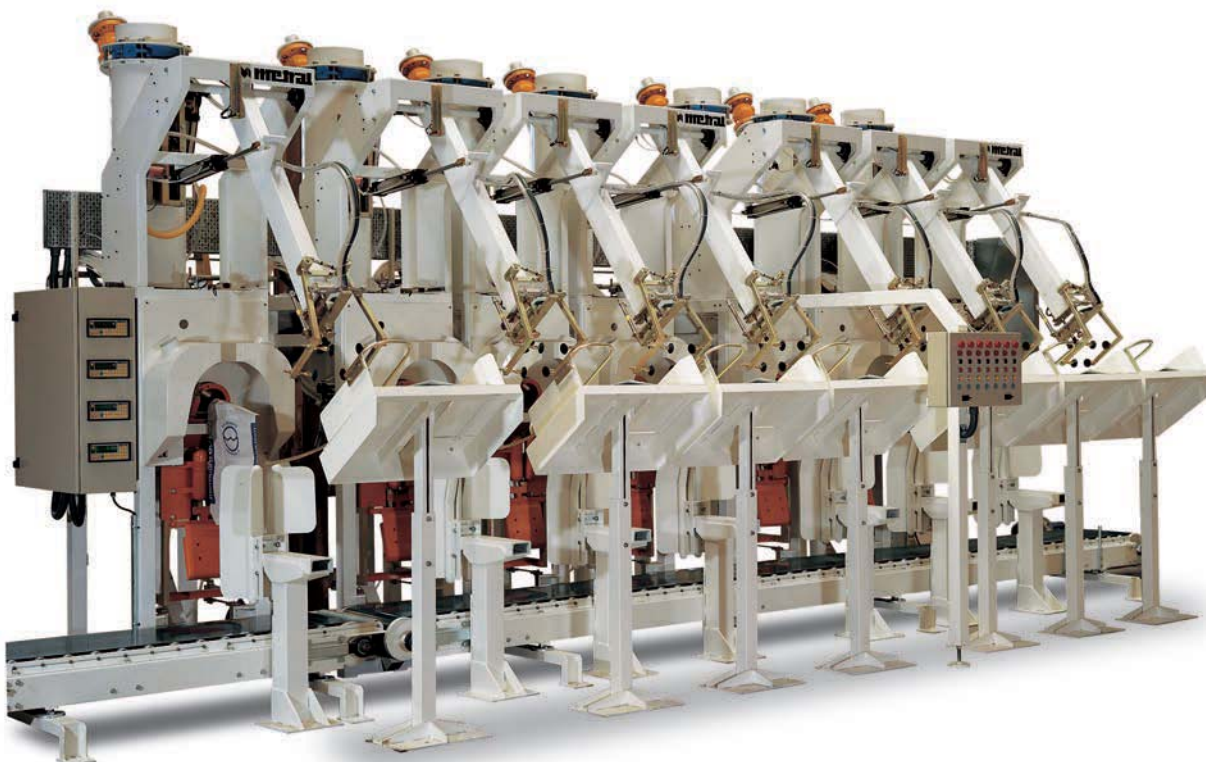
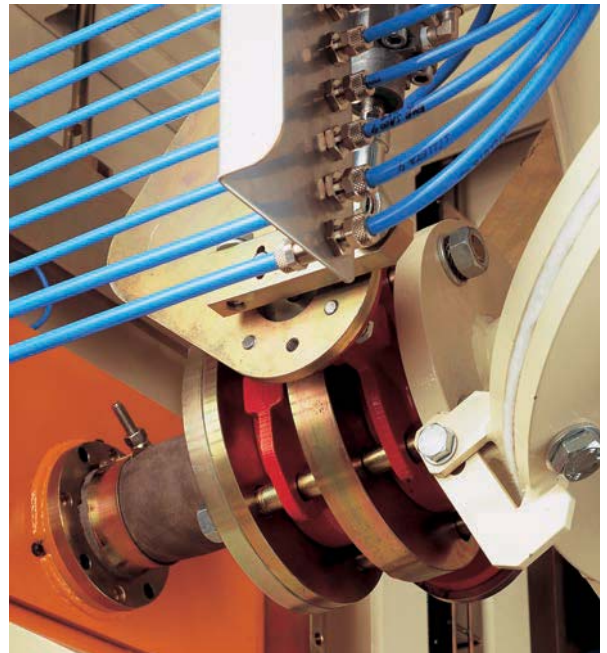
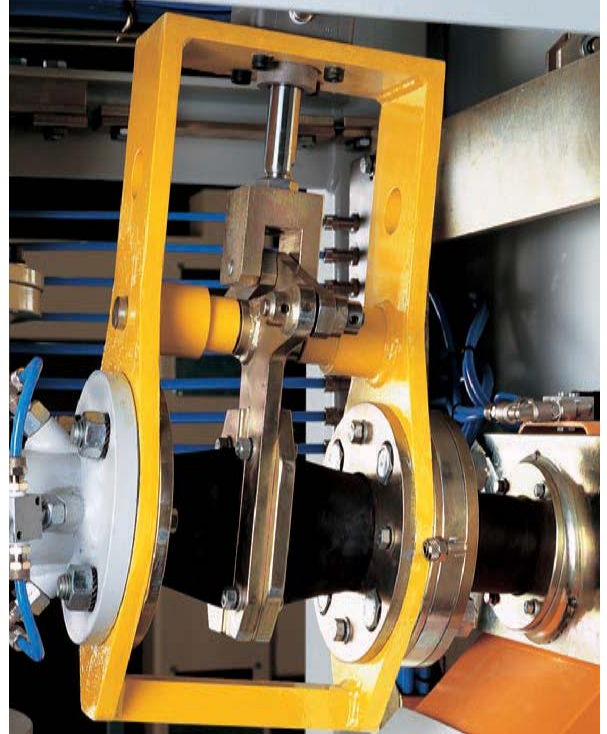
The modular design enables us to comply with our customers' requirements, which also provides the opportunity to select the number of nozzles according to the required capacity.

By combining a low-pressure feed system that fluidises the lower section of the chamber with a second upper inlet will accelerate the product output, thus increasing installation performance.

This range of bagging equipment comes complete with a maintenance-free, electronic weighing machine that automatically controls the cycle and includes the possibility of data transmission over a computer network. It is also equipped with a control panel on the head of the bag feeders providing simple operator access, together with clear data display.

Air packers *Characteristics*

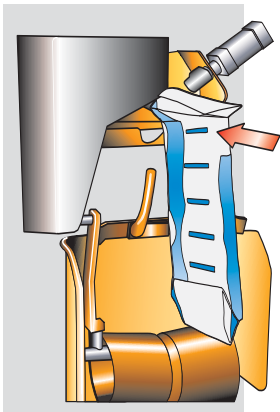
- Air packers are used for low-fluidity products with either a fine or coarse structure and also for products that have a tendency to become agglomerated.
- The type of construction employed facilitates the discharge of material because of the use of a vertical chamber and the inclined fluidised base makes for easy output flow as well as final cleaning.
- The equipment does not include any rotating parts and therefore, there is virtually no wear and tear.
- The products to be bagged are not crushed, separated, filtered or segregated.
- Bags with interior or exterior valves can be used.
- **Metral®** offers several different types of automatic bag placers with a swinging arm or a linear placer. You can also choose from between static or dynamic empty bag magazines with multiple cells.
- The air packers use low pressure blowers that do not damage the material in any way and also guarantee that the product is correctly fed into the bag.
- The packers allow the height of the saddle to be adjusted in order to accommodate the various bag sizes.
- The stainless steel nozzles are of the quick-fastening type and are also interchangeable so that a range of valve sizes can be adapted for use.
- They are equipped with different types of saddles: rotating or vertical ejection.



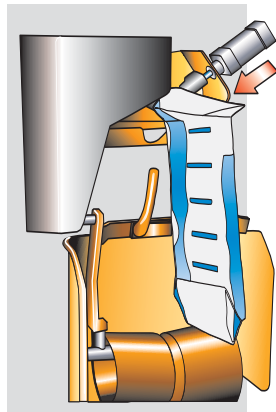


- An ultrasonic sealing system can be optionally installed and with this system, the bags emerge clean and without any product loss during transport. They are easily arranged on the pallet with a good quality layout finish, together with optimum pallet appearance. This type of sealing operation guarantees that the valve is watertight.
- An optional inflatable sleeve can be installed on the nozzle in order to prevent the product from escaping through the bag valve during the filling operation, thus preventing seepage and dirty bags. This system option will drastically reduce the amount of dust released into the environment.
- Packers can incorporate more air diffusers for poor flow rate products in order to guarantee a low-pressure output flow rate.

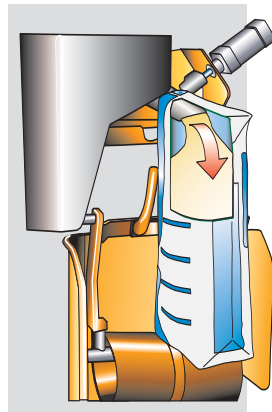
Bag support seating.



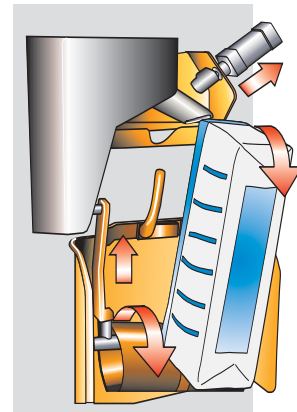
Bag positioning at the spout.



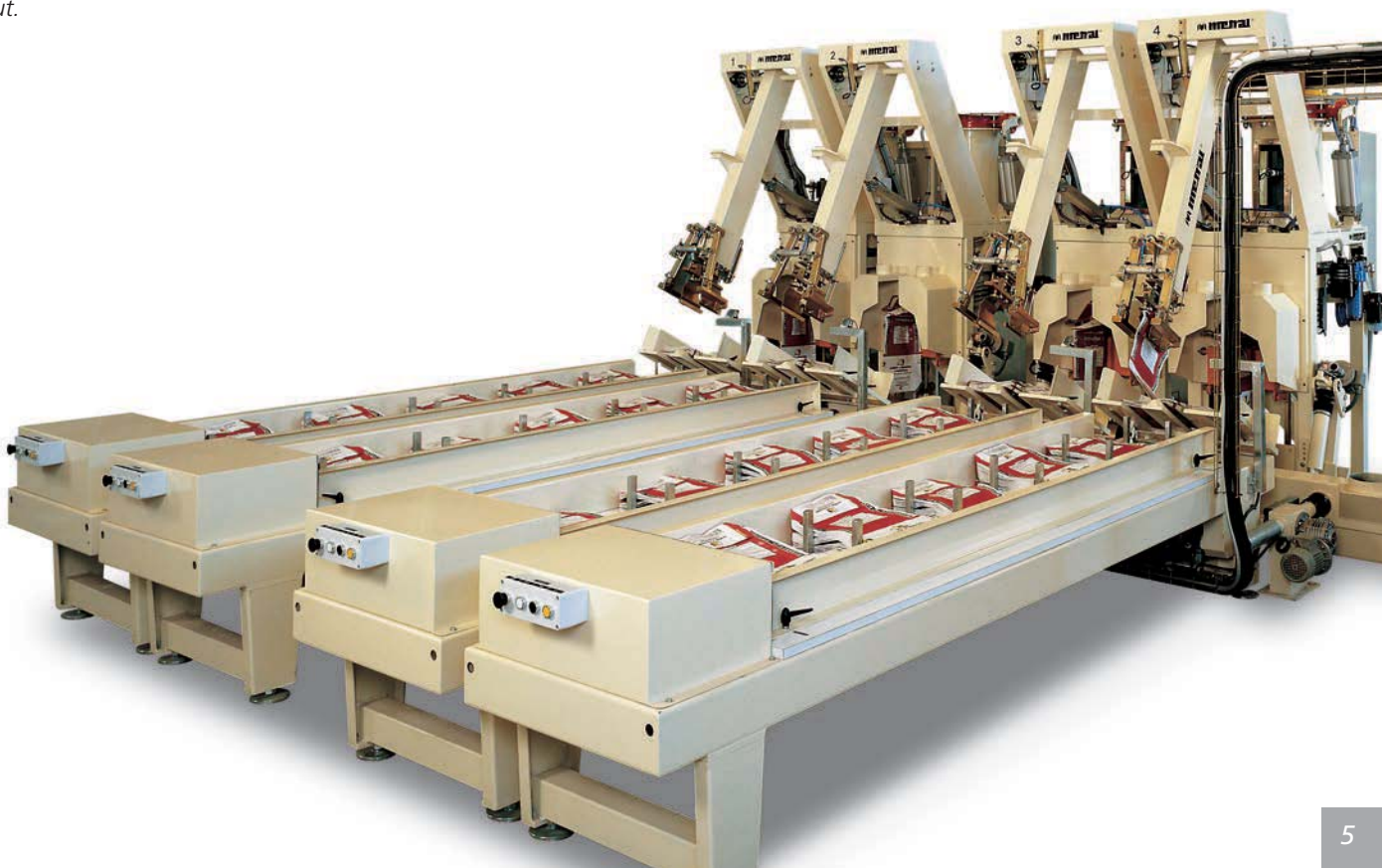
Bag fixing at the spout.



Filling process.



Bag expulsion.

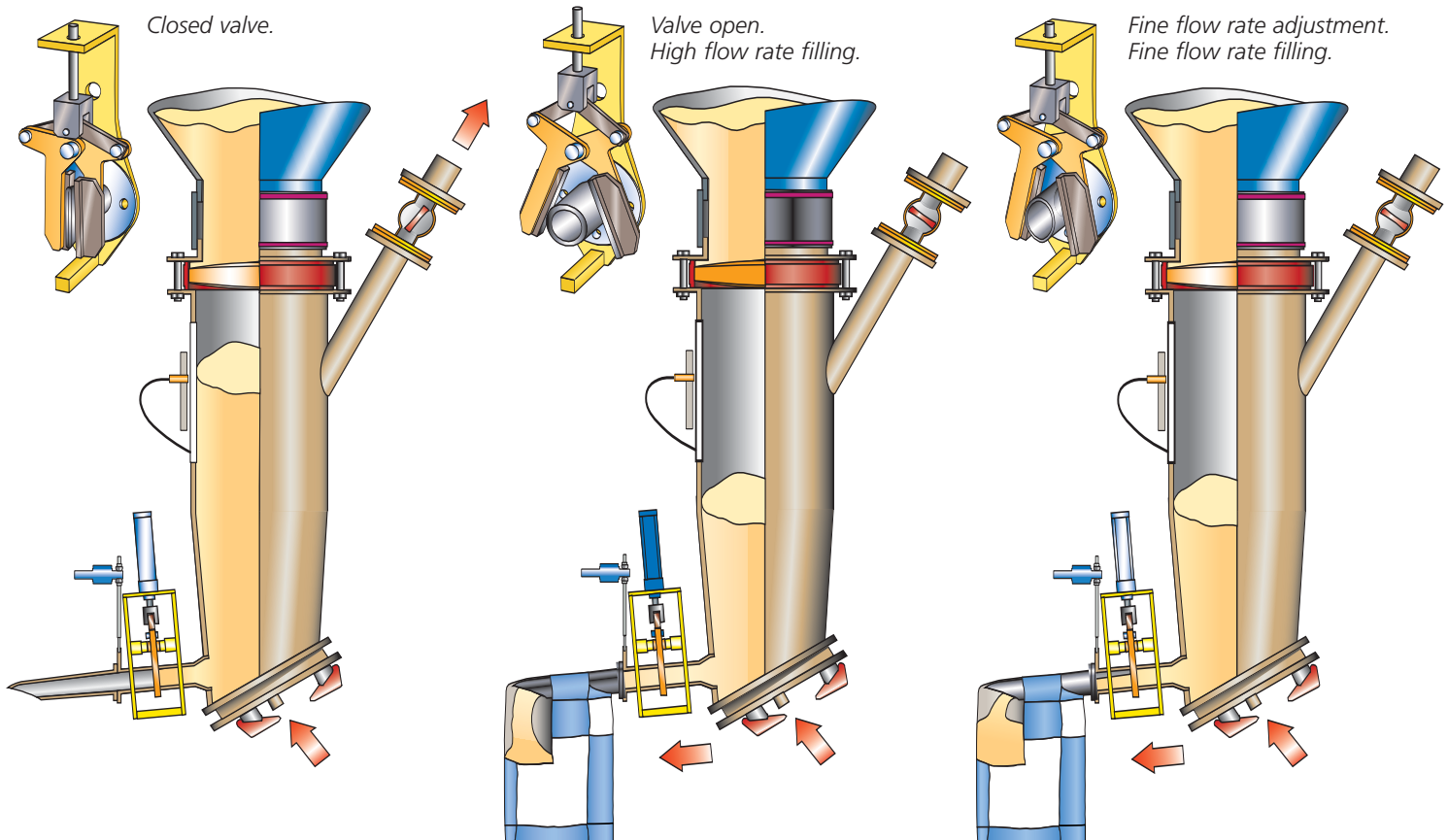


The machine is installed underneath a feed hopper equipped with level sensors. The product is fed into the fluidisation chamber through a large diameter butterfly valve, which will remain open until the necessary material level within the chamber has been reached.

Once the intake valve closes, the bag-filling process commences, which is accomplished by producing over-pressure in the chamber, together with the fluidisation of the product.

During the filling process, the equipment monitors the flow rate and automatically corrects the final weight when necessary.

Once the bag filling operation has been completed, it is released so that it can be removed from the nozzle. This operation can be carried out either automatically or manually.





Additional fluidisation system at the filling pipe for difficult-to-handle products.

Filler nozzle with inflatable sleeve.

Air blowing system for cleaning the nozzle.

Surface treatment using sand-blasting and epoxy paint, etc.

Flame-proof construction.

Protective cover for reducing noise from blower.

Parts that come into contact with the product are made from:

- Stainless steel.
- Wear-resistant steel.

The fluidisation chamber is made from:

- Rubber for products that tend to bind together.
- Stainless steel with a mirror-like finish.

Automatic adjustment of:

- Bag saddle height.
- Rotating stopper.
- Front stopper on the conveyor.

Automatic bag placer:

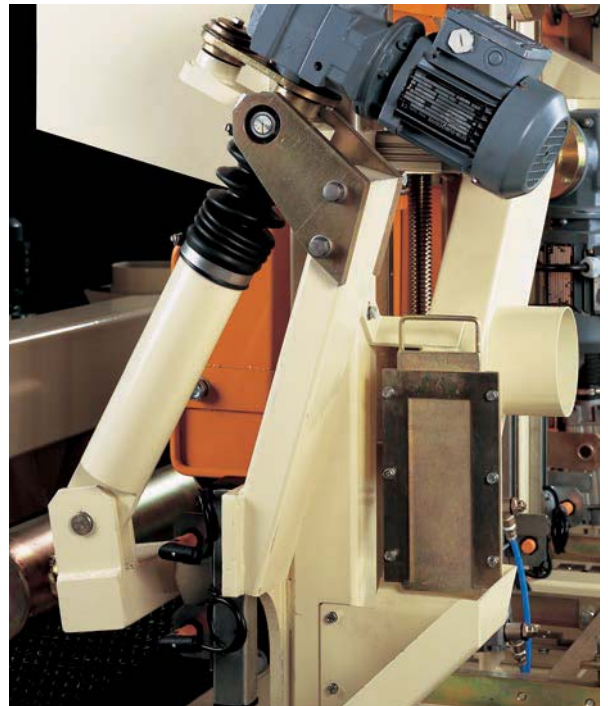
- Using a swinging arm.
- Linear.

Empty bags magazine:

- Static.
- Dynamic.



Close-up of tilting-arm bag applicator.

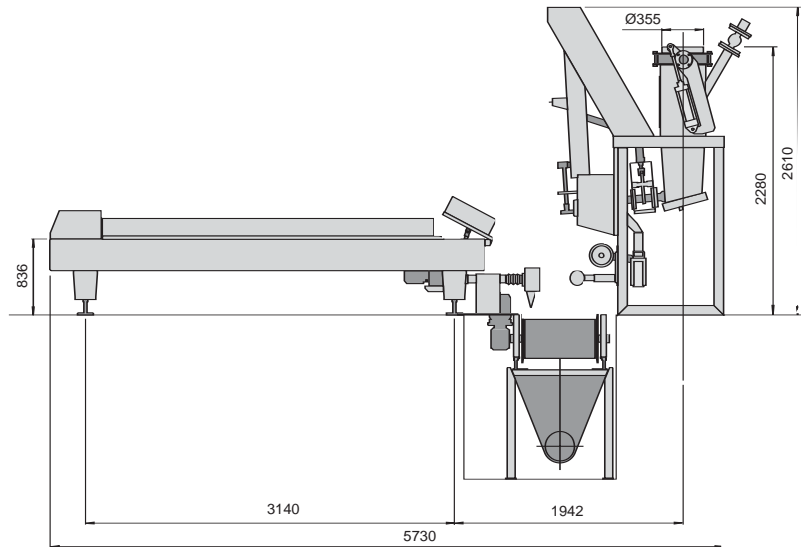


Automatic bag drop limit adjustment system.

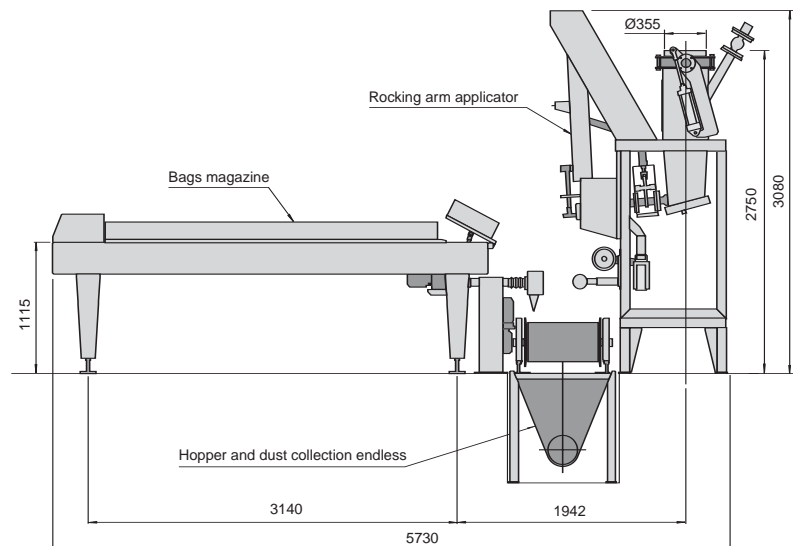
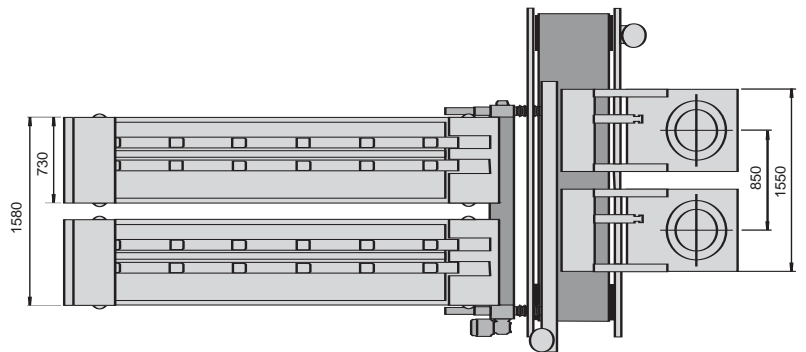
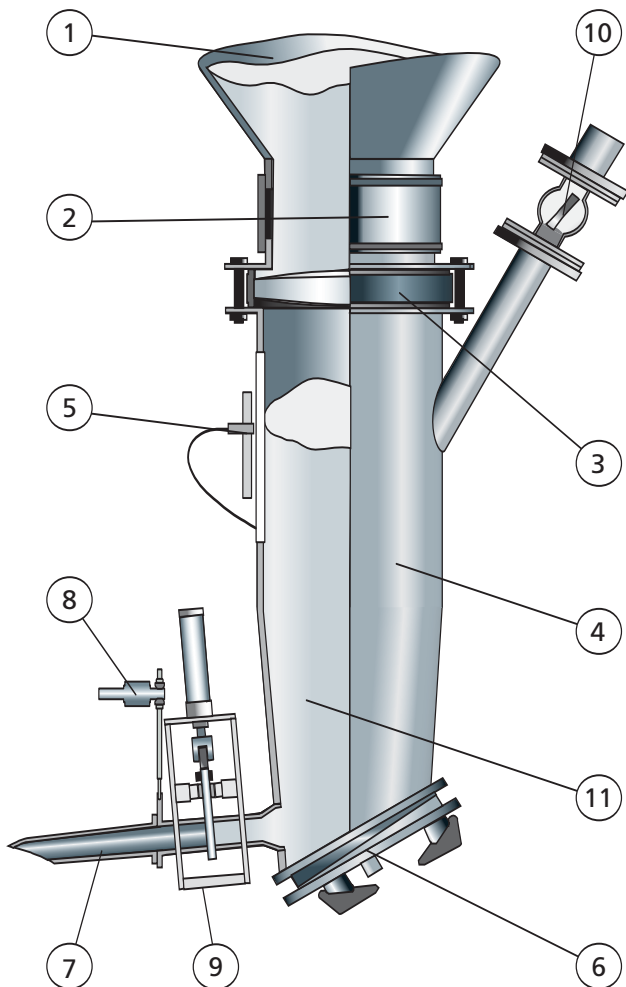


Linear automatic bag applicator.

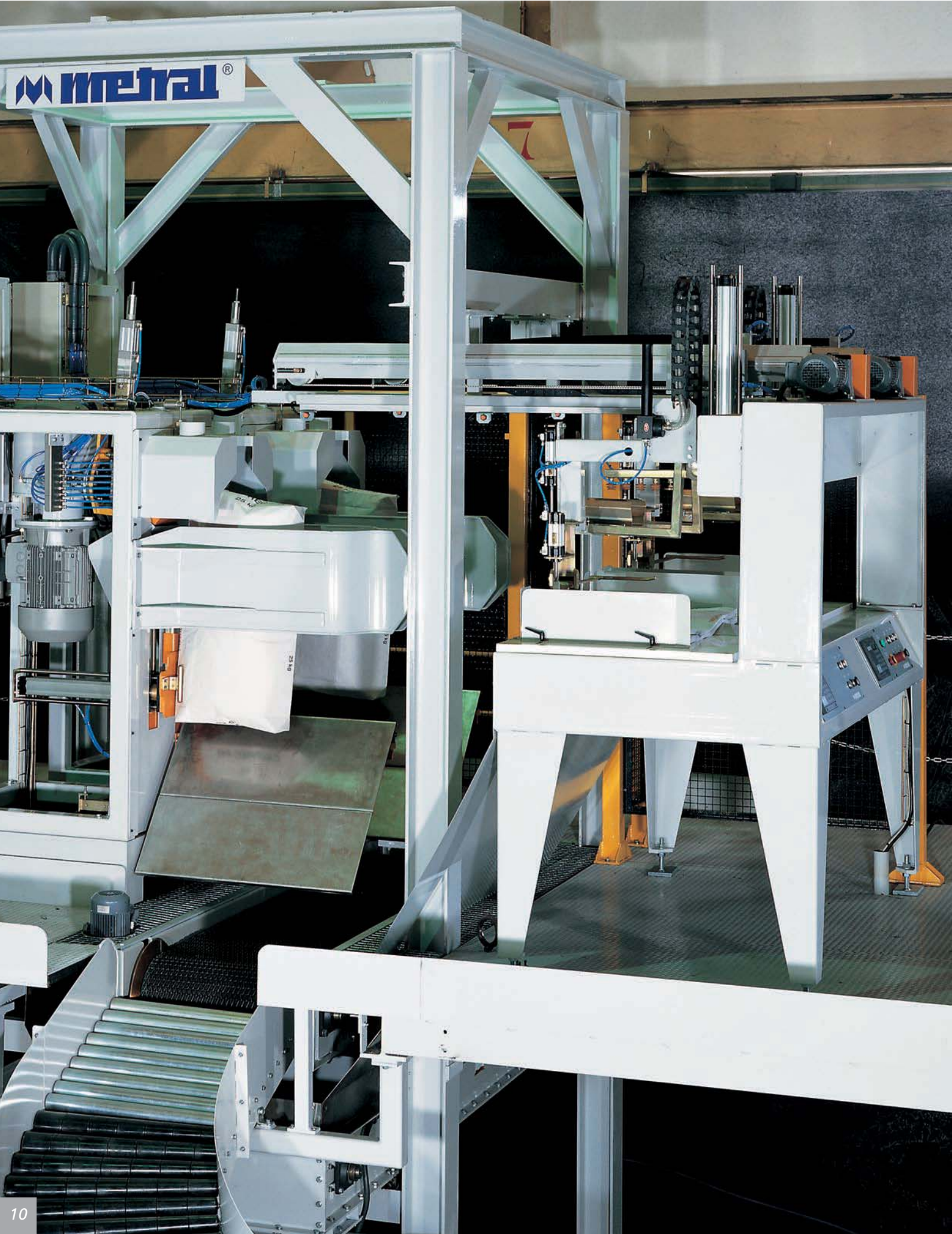
- 1 - Product accumulation hopper
- 2 - Sleeve
- 3 - Butterfly valve
- 4 - Packing machine body
- 5 - Level switch
- 6 - Lower cover
- 7 - Spout
- 8 - Loading cell
- 9 - Dosing valve
- 10 - Decompression valve
- 11 - Product



General measurements made with belt conveyor below ground level



General measurements made with belt conveyor above ground level





Linear automatic bag applicator

All **Metral®** packing equipment comes with officially-approved electronic weighing devices.

These are connected to load cells that are produced by top quality manufacturers.

Following functions are available:

- Automatic tare and zeroing operations.
- Empty weighing machine detection.
- Coarse flow control.
- Flow rate monitoring.
- Coarse to fine flow changeover point optimization.
- Queue monitoring and optimization.
- Tolerance evaluation.
- Filling time monitoring and optimization.
- Furthermore, the system can also optionally include the following functions:
- Broken or misplaced bags monitoring with automatic output flow shutdown.
- Weighing parameters can be adjusted over a computer network.
- Automatic saddle height adjustment according to the type of bag.
- Final emptying and cleaning by depressurising the chamber.



Metal detection and weight control.



Linear bag placer



Horizontal impeller



Bag types: with valves.

Bag material:
Paper, raffia or plastic.

Valve dimensions:
90 to 180 mm.

Bag dimensions:
Width 250 to 700 mm.
Length 400 to 1100 mm.
Other sizes are available upon request.

Production:
Up to 800 bags per hour per nozzle depending on the product and bag specifications.

Power consumption:
6 kW per spout.

Voltage:
400 V, 3-phase. Others are available upon request.

Protection:
IP 65 for the electric board.

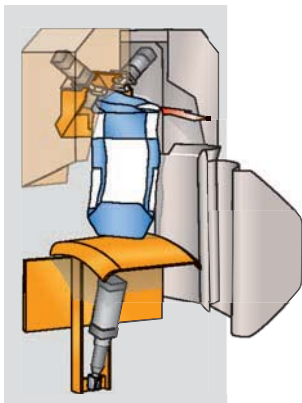
Dust extraction:
Approx. 2000 m³ per hour at 100 mm c.d.a. per opening.

Compressed air:
Filtered and dry.

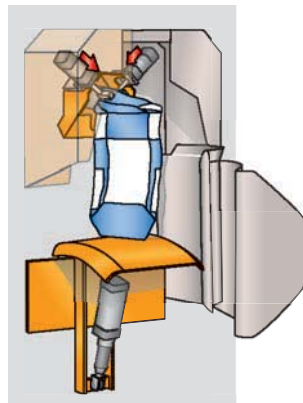
Working pressure: 6 bars.

Noise level: <75 dB (blower installed in a separate room).

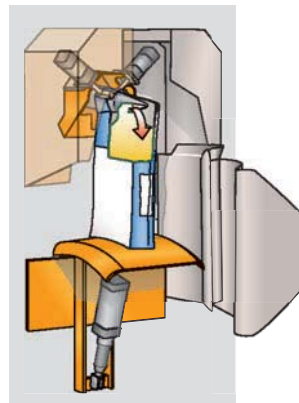
Vertical turbine packer.



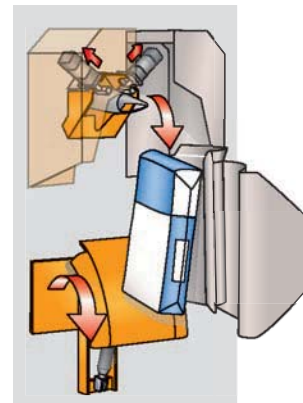
Insertion of empty bag.



Bag presence detection.



Filling process.



Evacuation of full bag.

Metral® impeller packers have a modular design. Designed for packing fine products with a grain size of up to 2 mm.

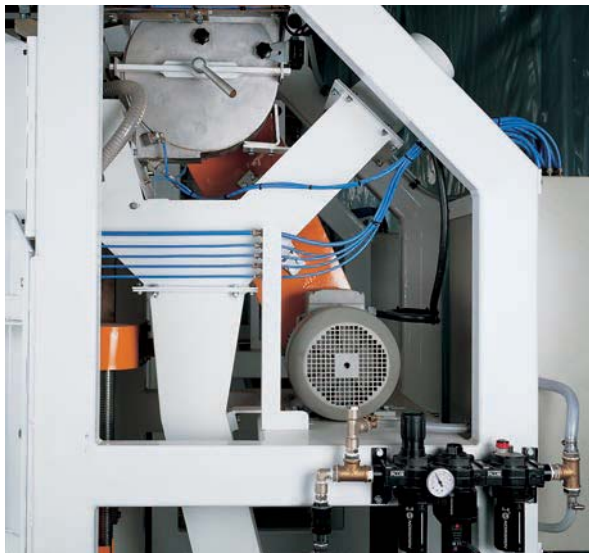
The machines are quipped with wear-resistant materials and easily replaceable parts that guarantee the long-term reliability.

There are various standard impeller sizes depending on the material that is to be packed.

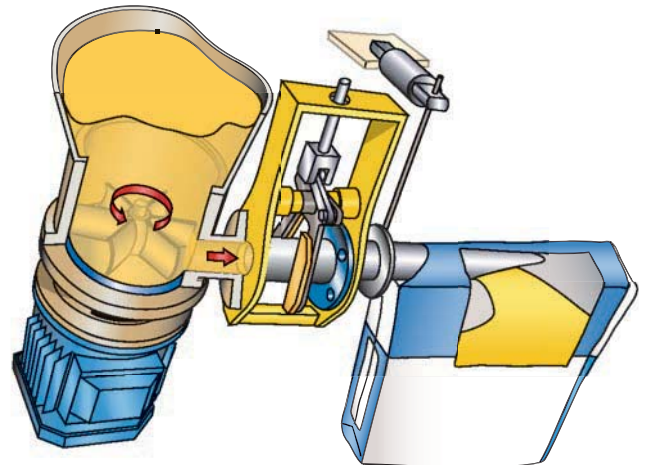
Various types of dispensing valves are available: guillotine, pinch, scissors, butterfly valve.

The most appropriate system will depend on the actual product to be bagged. All systems are equipped with a double flow rate.

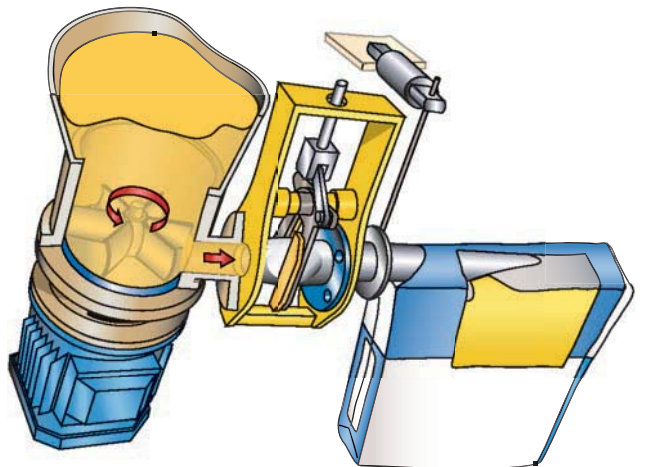
*Special vertical turbine for food products.
Manufactured from stainless steel.*



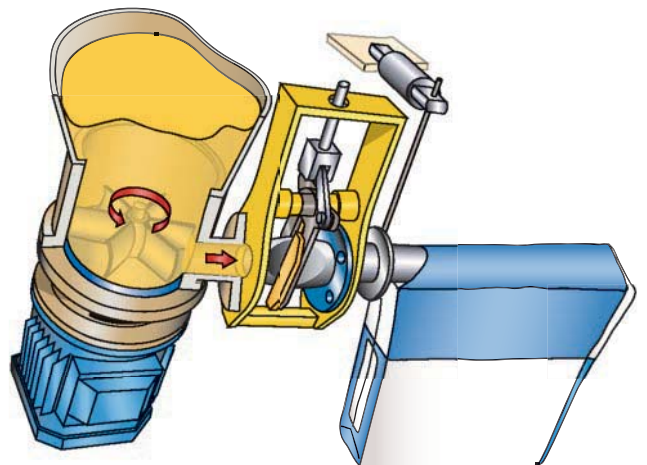
Horizontal turbine cycle



Valve open - high flow rate.



Valve half-closed - low flow rate.



Valve closed – end of filling.

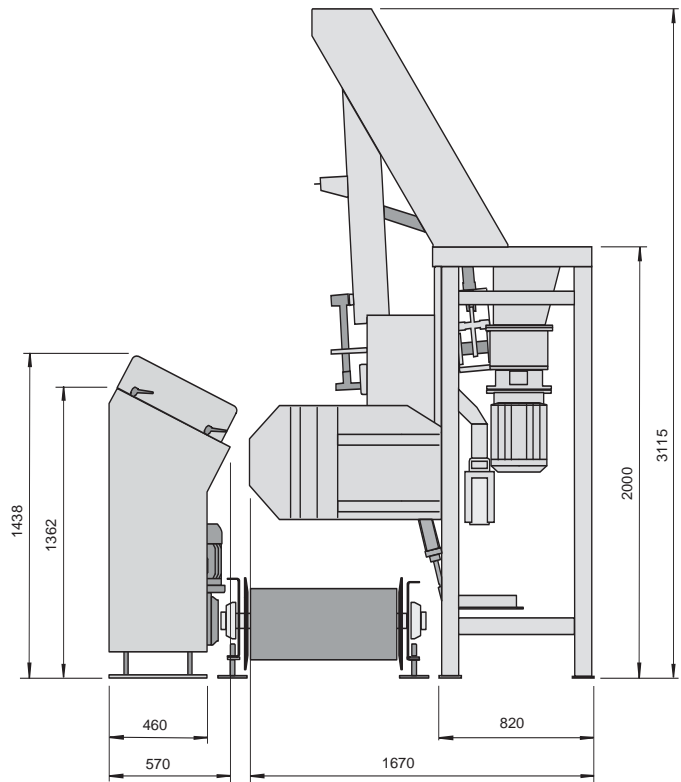
Impeller packers are installed underneath an upper, constant-level hopper.

The cycle is initiated by zeroing the weighing machine scale. Then, after verifying that a bag is present at the filling spout, the dispensing valve is opened at the coarse flow rate and the impeller is activated.

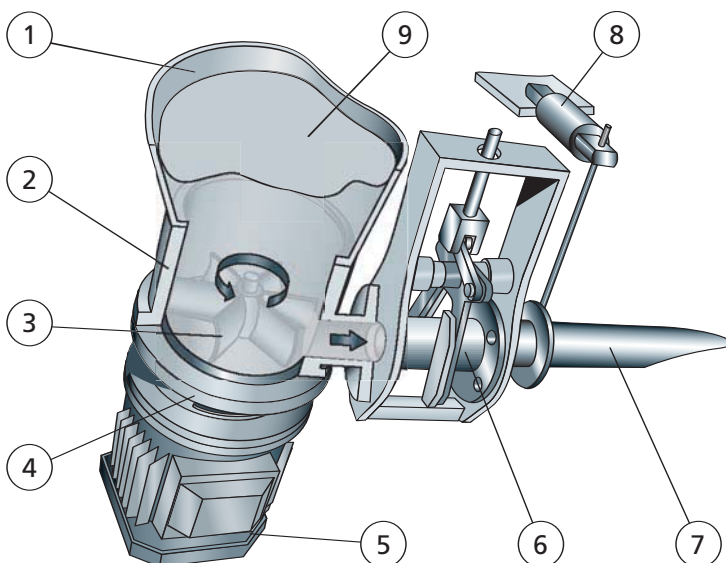
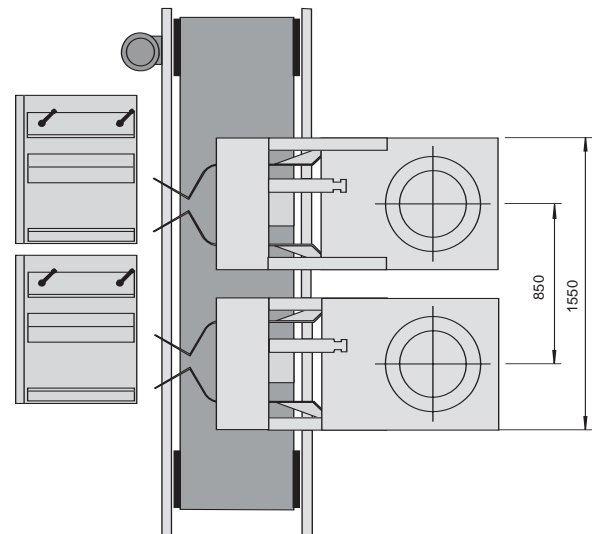
When the final target weight value is approached, the flow is switched over to fine flow until the exact desired weight is achieved.

The weight controller automatically monitors the cycle in order to guarantee correct filling operations together with compliance of all tolerance regulations.

We have different bag ejection systems available: rotating or vertical drops.



- 1 - Product accumulation hopper
- 2 - Turbine casing
- 3 - Wicket turbine
- 4 - Lower casing
- 5 - Motor
- 6 - Shear valve
- 7 - Spout
- 8 - Loading cell
- 9 - Product







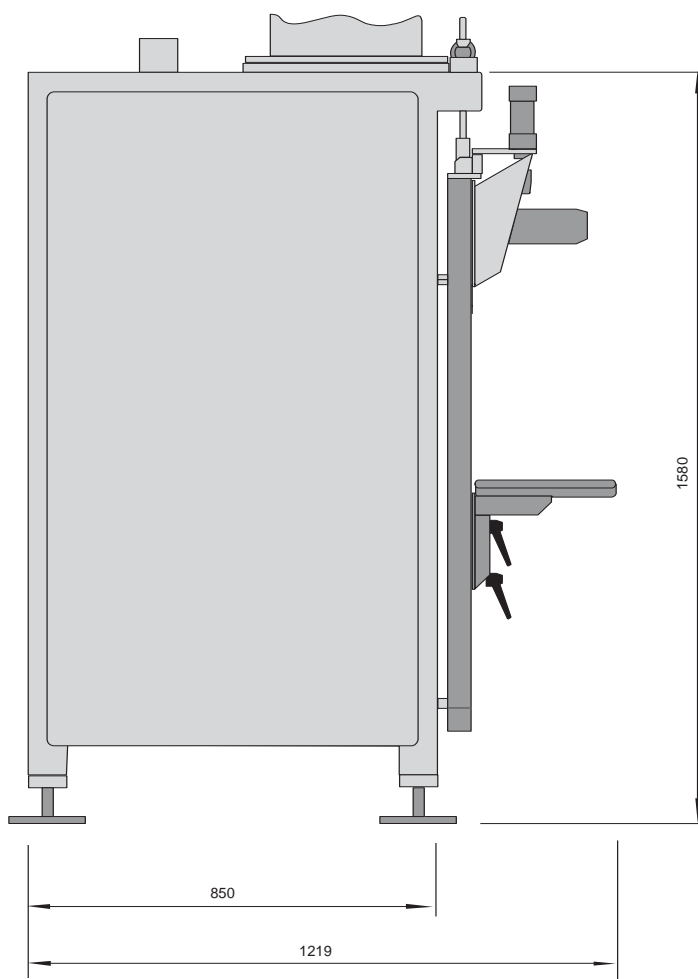
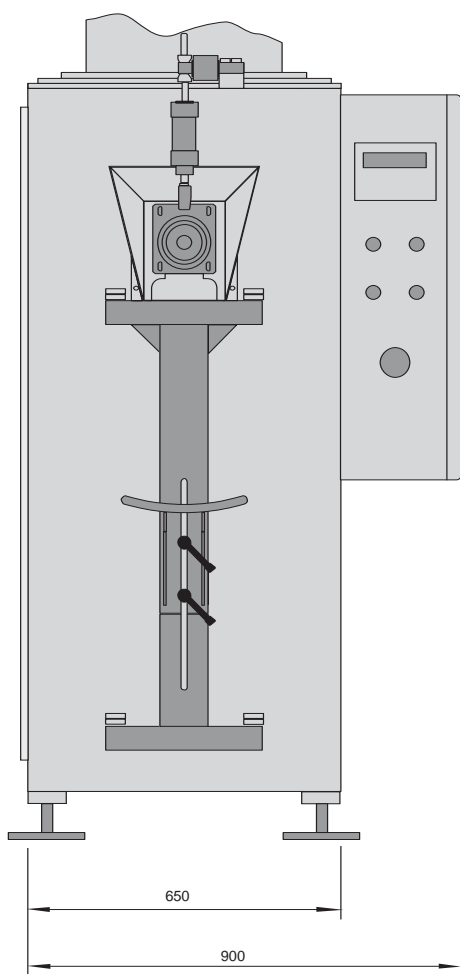
The **Metral**®'s screw packing equipment is an economical solution for filling rates from one to five bags per minute.

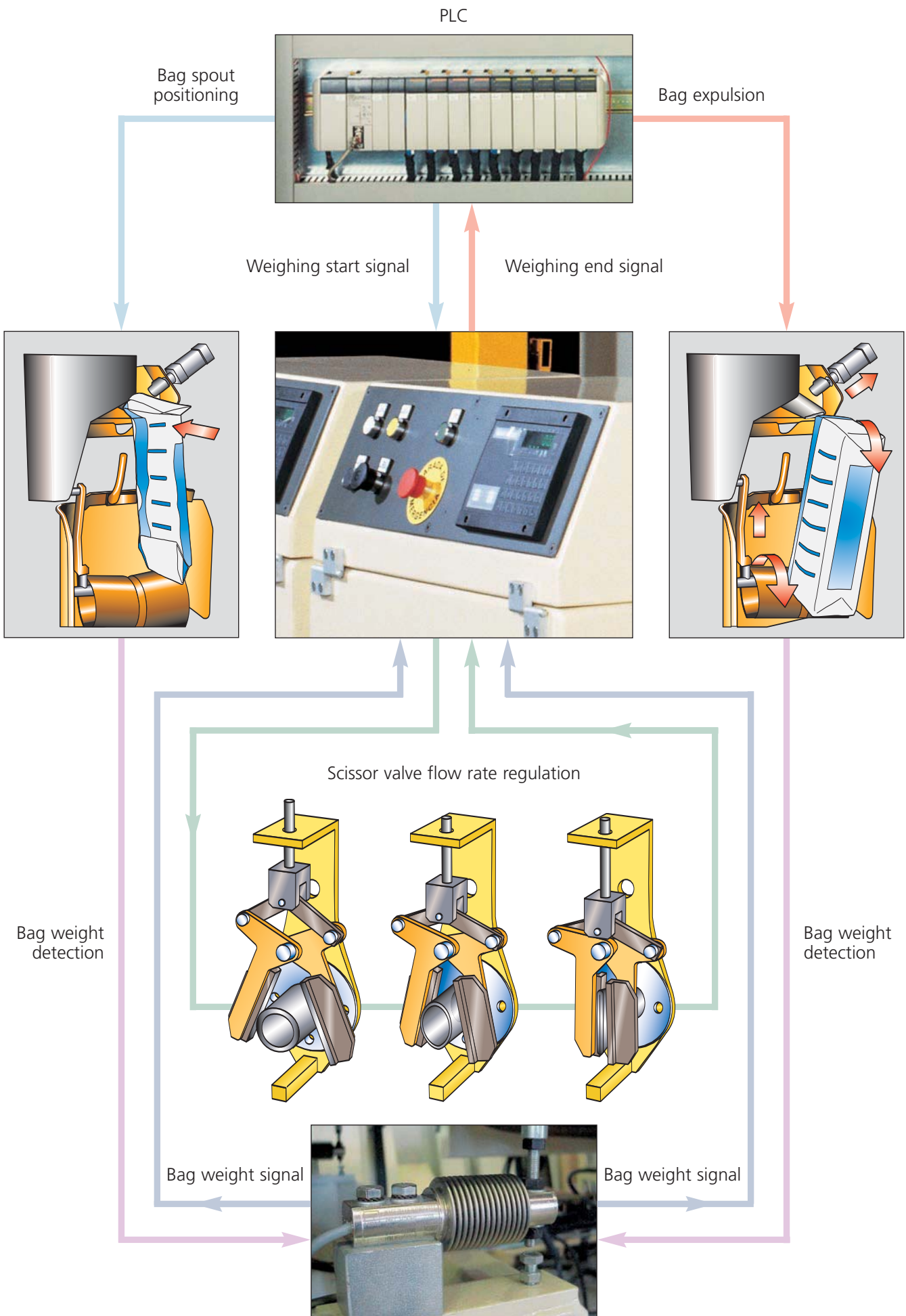
The packer is designed as a compact block that contains all the necessary components.

The packer is equipped with a coupling hopper, an optional lump breaker and an endless screw dispensing system. This is driven by a motor and belt transmission.

Electronic weighing system isolated from the motor drive area and completely sealed.

Manual bag insertion, with versions incorporating automatic placing and ejection functions.







All **Metral**® systems include the possibility of communications with a computer network in order to employ a suitable program for the acquisition of production, graphic, stoppage and alarm record data etc.

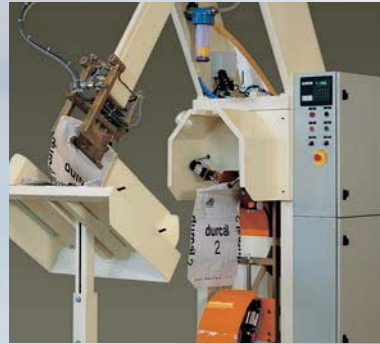
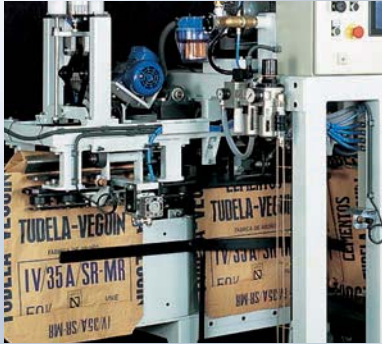
Our machines can be equipped with an ultrasonic sealing system installed on the external valve.

This process will guarantee that all bags are perfectly sealed. This is suitable for presenting clean bags and is specially well-suited for food products.

These machines are suitable for everyday applications involving food products that must be perfectly sealed in order to prevent the entry of contaminating microorganisms.

Metral® places all its human and technical resources at the service of its customers that are necessary for the investigation of a specific problem in order to establish the very best economic and technical solution to meet the customers' needs.

Our knowledge and experience are backed by 30 years of intensive work in this specific area.



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