

Modul **BLOCK**

*Compact, versatile
and energy saving!!!*

FRAMAX

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ModulBlock range of machines feature the possibility to supply tailor-made solutions, enabling to combine rinsing, filling and closing technologies in one machine.

The virtually unlimited combinations allows the possibility to deliver to our customers a solution that will cater specifically for their bottling needs, enabling to process various types of containers and closures under one roof.

Perfect synchronism is obtained from one single machine drive having gear transmission or as an option through the use of brushless servo drives controlled electronically by the machine's PLC.

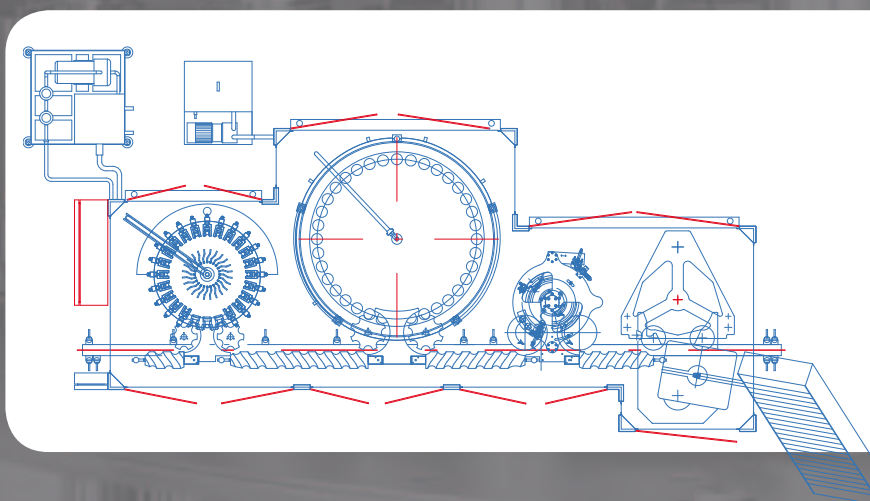
The machine's quality and long life is guaranteed by the use of a strongly built structure and choice of high quality parts and components, such as AISI 304 stainless steel as well as food grade self lubricating plastic materials. On request and depending on the characteristics of the products to be processed the machine can be built using other types of stainless steel such as AISI 316, AISI 316L.

The typical configuration of the ModulBlock is composed of the 3 basic turrets for rinsing, filling and capping, however, the machine can be integrated with other functionalities through dedicated turrets for air evacuation and inert gas saturation of the bottles prior to filling, other capping units for processing different closures, wire-hood application modules, labeling stations, capsule application groups and more.

The machine's basement design is available in either the standard flat surface or the optional inclined washable or baseless type for easy cleaning and access.

The ModulBlock is available to suit the packaging of a wide range of products such as mineral water, carbonated soft drinks, wine, beer, edible oils, mixed alcoholic beverages, liqueurs, fruit juices, sauces etc, into traditional or modern packaging such as bottles made of PET, Pen, Glass, HDPE, Aluminum.

Our primary objective is in fact to care about "THE PRODUCT" making sure that its original characteristics are not altered through the filling and packaging process.

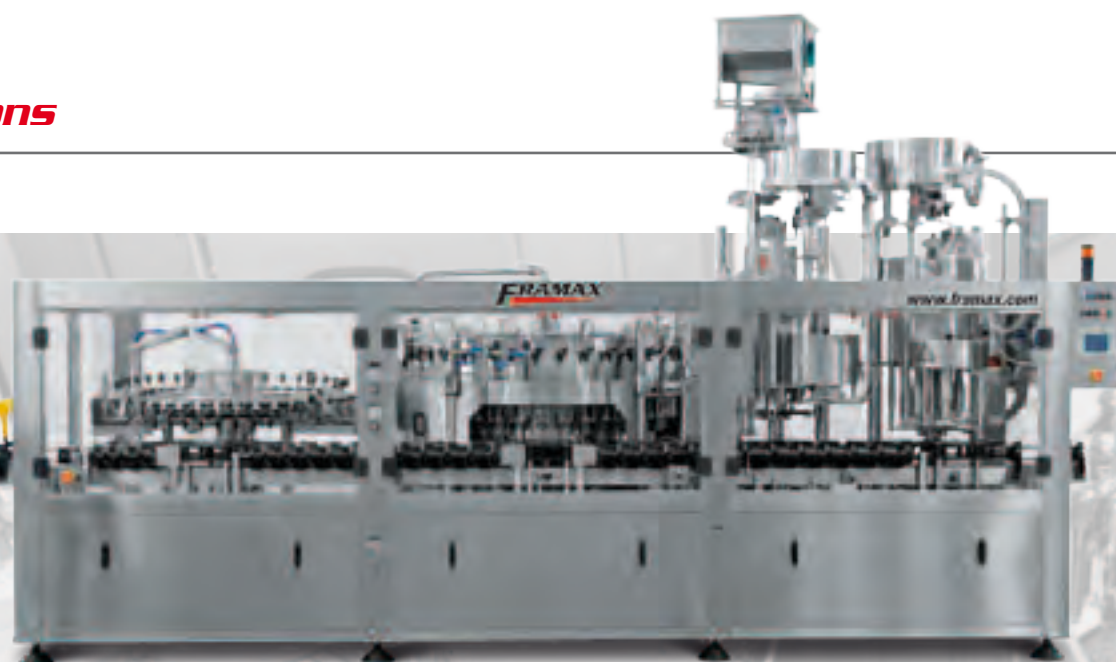


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Versions



Bottle Transfer System



Neck Handling

Suitable for PET bottles: the neck handling bottle transfer system receives the bottles directly from the blowmoulding machine or unscrambler, through the air transport conveyor. This system allows a very smooth and safe transfer between the rinsing, filling and capping units, as the bottle is constantly held by the neck and is released only when already filled and closed. The format change for bottles with the same neck diameter is quick and simple.



Endless screw and starwheel transfer

Suitable primarily for glass bottles: the bottles which are being fed from a tabletop conveyor system are suitably spaced by the inlet endless screw and transferred to the rinsing turret. A series of star-wheels and guides ensure a smooth transfer between each component of the ModulBlock. Depending on the required configuration and speed of the line, the transfer between turrets may be done by endless screws.

Transmission Systems



Gear transmission

Synchronization of all turrets is obtained with the use of one main machine drive and a series of self lubricating gear elements made of special materials that guarantee long life, reduced wear and noise levels.



Brushless motorization

Each turret is independently powered through a separate motor, operating through indexed shafts. This allows each turret to be synchronised, both in terms of speed and phase, with the bottle filling turret. The speed of each motor is controlled through an independent inverter to ensure the correct running speed. PLC operation allows constant monitoring of each turret with diagnostic reports.

Basement

STANDARD: The ModulBlocks are available in their standard version with a stainless steel basement frame supporting the machine's turrets, drives, gear transmission and main support surface, which is completely clad in stainless steel with drip channels to collect liquids.

INCLINED SURFACE: Completely made of stainless steel and with a strongly inclined surface to allow total draining of liquids and to allow easy cleaning. This type of construction avoids any product or washing solution stagnating and therefore highly washable.

BASELESS: Available only in the neck handling version for PET bottles, features total absence of moving parts under the bottles, thus ensuring a high level of hygiene, reduced maintenance and easy operator access. The motorization is in the top part of the machine, separate from the product filling area, therefore safe from spillages of product and cleaning agents.

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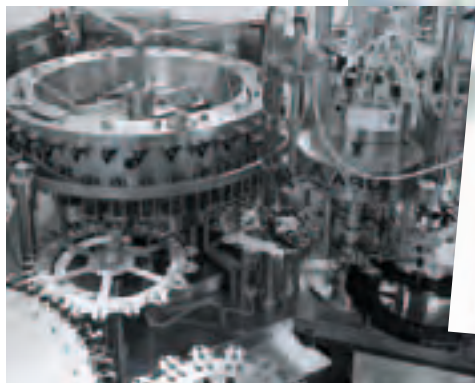
Filling

The heart of the ModulBlock is the filling section.

The choice of filling system depends primarily on the type of product to be filled, filling temperature requirements, density and Co2 content.

Counter Pressure

Counter pressure filling systems suitable for filling all kinds of carbonated and still products such as carbonated water, soft drinks, beer, etc., featuring various different types of filling valve designs, from the traditional mechanical counter-pressure valve which enables to carry out several phases such as pressurization, CO₂ injection, multiple pre-evacuation, leveling and sniffling, to the most sophisticated electro-pneumatic valve where all those same functions are completely controlled and programmable from the operator panel, allowing the most up-to date technology and flexibility which is necessary to obtain high quality results and reduced risk of contamination.



Low Vacuum-Gravity

Low vacuum-gravity filling systems are recommended for still, non-dense products such as for example still water, wine, alcoholic beverages (vodka, whiskey, brandy, etc), chemical products and generically any kind of flat non viscous liquids. In this case the opening of the filling valves is given by the neck finish of the containers, lifted by the mechanical plates of the filler. Various models of filling valves are available within this category, specifically designed to cater for the filling level requirements, bottle shape, neck shape and product. Several optional features are available such as the "millimetric adjustment of the filling level" controlled directly from the user interface panel, air return outside the filling tank (to avoid the air from the bottles contaminating the product in the filler bowl), centralized level regulation and more.



Electronic Flow Meter

Electronic mass flow meter filling system can supply a proportional signal directly in weight measurement units. These systems assure maximum dosing precision and do not require any maintenance. Thanks to the extremely small number of functional elements, the filling machine can be sanitized very easily and the Electronic Volumetric filling allows optimized bottling under a microbiological profile. The system works without pressure in the bottle and with a light positive pressure inside the filler bowl, allowing to process both high density and liquid products in containers of different materials.

The filling is controlled by the PLC that gives the go-ahead to start the filling



when the sensor detects the presence of the bottles. The electronic dosing devices with mass or magnetic flow meters show that the preset filling volume has been reached and control the closing of



the valve, allowing a dosing precision of 0,2%. The main advantages are precise volumetric filling and microbiological safety.

Volumetric (or piston)

Volumetric (or piston) filling system guarantees that the container is filled with an exact quantity of product, having a maximum tolerance of +/- 1,5 cc using 1 litre cylinders, regardless of the product's thickness and of the differences in actual capacity between containers of the same type and size. Therefore piston filling is the correct choice for applications where accuracy of actual volume contained in the bottles is important, or in case of filling dense products into plastic containers. The filling system consists in two steps: during suction, the product passes from the tank to the metering chamber through a three-way valve which measures the product thanks to its piston-based



operating principle, according to a preset quantity. To empty the chamber, the three-way valves activates a pneumatic valve controlling the piston: the product is pushed out of the cylinder into the container. It is possible to adjust



the filling speed in the top portion of the container, where the neck must be filled slowly to prevent foaming or spillage.

Net Weight

Net weight filling system is used for various types of still products including thick and viscous liquids, such as vegetable oils, detergents, liquid soaps, etc into containers of any kind including soft plastic material such as PET or HDPE bottles. The advantage of this system is that is very gentle on the product and allows extremely precise net weight measurement, regardless of the empty container weight variation.



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Filling

High Vacuum

High Vacuum filling is used for thick and viscous liquids, such as vegetable oils, syrups, sauces, etc into containers which are resistant to vacuum, such as glass bottles. As opposed to the gravity or low vacuum system, the filling takes place by creating a vacuum inside the bottle through a separate channel, allowing the product to flow from the filling tank more easily. At the end of the filling process, once the desired level has been reached, any excess product is collected into a dedicated reservoir on the ground and sent back to the main tank or managed according to the customer's requirement. The intensity of the vacuum is adjustable to suit the product density and the production speed.



Positive Pressure

Positive Pressure filling system is used for thick and viscous liquids, such as vegetable oils, syrups, sauces, etc into containers of any kind including soft plastic material such as PET bottles. As opposed to the gravity or low vacuum system, the filling takes place by creating a positive pressure inside the filler bowl, allowing the product to flow from the filling tank to the containers more easily.



Hot Fill

Hot filling system suitable for juices and isotonic beverages. The principle of operation is similar to the gravity-low vacuum system, however the machine and its filling valves are designed to allow product recirculation in the tank and in the filling valves themselves in order to keep the constant filling temperature even in the eventuality of a machine stop. With the hot fill technology it is possible to fill at 90°C, guaranteeing a constant filling temperature, filling level accuracy and total product recycling.



Deaeration and saturation with inert gas



The deaeration turret has the task of eliminating most of the air contained in the bottles through the use of a vacuum pump, followed by saturation of inert gas such as CO₂ or Nitrogen, allowing to considerably reduce the risk of oxidation of the products.

The deaeration station is available in single or multi head version depending on the filling speed requirements and bottle size.

CIP



Although our machines are designed to avoid as much as possible product stagnation points leading to possible bacterial proliferation, careful attention is paid to the washing and sanitation circuits design, featuring various solutions which are tailor made depending on the product filled and specific customer requirements.

Depending on the machine models, we offer CIP predisposition composed of sprayball systems, semiautomatic and automatic dummy bottles, automatic turret washing systems and dedicated automatic or semiautomatic CIP plants.

Detail of semiautomatic dummy bottles on board filling machine.

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Rinsing

The rinsing turrets are manufactured with materials and technical solutions to the state of the art.

The rinsing machine typically mounted on the ModulBlocks is a rotary type.

The grippers pick up the bottles from the neck as they are fed from the inlet star-wheel and are overturned by 180° thanks to a suitably shaped tubular cam, placing the bottle in an upside down vertical position with the mouth downwards and in correspondence to an injection nozzle. After rinsing, the dripping phase starts, it ends when the gripper rotates downwards again positioning the bottle in the exit star-wheel.

The grippers are equipped with suitably shaped pads to seize the bottles tightly in the zone of the neck. The pads are interchangeable, which enables using the same machine with bottles with different necks and rings.

The injection system of the machine is manufactured in such a way that the spraying will not occur in case of no bottle.

Various solutions are available depending on the specific requirements, such as double treatment rising, mobile nozzle rinsing, sterile air or inert gas blowing, rinsing with recycled and filtered products etc.

Mechanical Version



The basic model is supplied with single treatment and fixed nozzle, but is also available with double treatment and mobile nozzle.

The machine is suitable to rinse using liquid sterilizing solutions or water, sterile air or inert gas, combined in such a way to suit the requirements.

As an option also this standard version is capable of high

temperature rinsing, processing heavy weight bottles, recycling the rinsing solution and external rinsing. Laminar flow and suction hoods are also available options that may be required.

Electronic Version



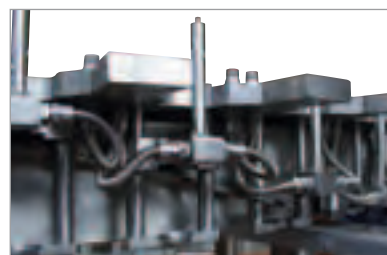
This is a new generation machine, an evolution of the traditional rinser types. This range of rinsers is completely programmable with electronic control of times and phases of injection allowing flexibility to the production cycle by means of customized treatments suitable for any kind of bottle. It can make up to three treatments and can be predisposed for teleservice assistance.

The injection time can be changed on the touch screen operator panel, even during running of the machine. The electronic control allows keeping a constant rinsing time in case of variations of the speed of the line. The electronic rinser can operate in double mode, i.e. classic – keeping the treatment angle constant while the speed varies – or dynamic – where the preset treatment time will remain constant even if speed varies.



Fumes extraction hood

Closed hood for the suction of fumes created by the rinsing solution.



Mobile Nozzle

Option for moving the rinsing/blowing nozzle up inside the bottle.



Recycling System

For rinsing with the filling product or other recyclable solution.

Closing



Numerous closing solutions are available to enable processing virtually any kind of traditional and modern type of closures, keeping up-to-date with the latest packaging trends which are developed by new product designs. The ModulBlocks can be equipped with one or more capping turrets, allowing to be able to process multiple closures with the same machine, thus increasing its versatility.

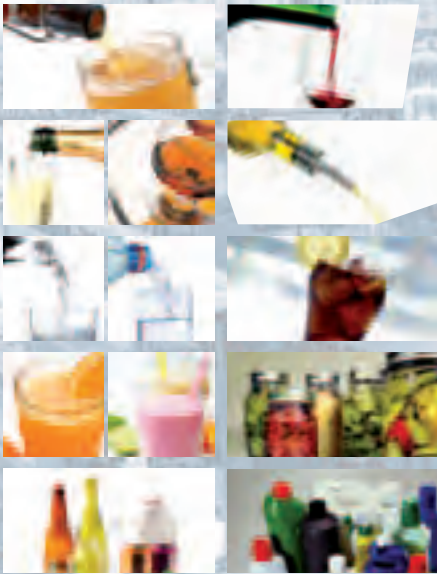
Constructed of AISI 304 stainless steel which includes the supports positioned on the machine base as well as the central column. All of the materials and the techniques used in the construction of the turret are guaranteed to provide the most reliable and durable piece of equipment.

Wirehooder

Application of wire-hoods on sparkling wine bottles with mushroom corks



Caps are supplied by means of a centrifugal, mechanical or vibratory cap sorting unit depending upon the type of closure and the speed required for the particular application at hand. The sorting units are also constructed of AISI 304 stainless steel. Several optional features are also available, such as for example U.V. cap sterilization systems, totally washable execution, double chute and other which are specific to each type of closure or application.



your Partner in the world

Who we are

FRAMAX specializes in the supply of machinery and complete "Turn Key" production lines for the bottling and packaging industry, covering primarily the beverage field but also catering for special needs in the food and chemical sectors.



Our main objective is to provide Customers promptly with a custom-made solution, specifically designed to protect and guarantee the quality of the finished product with the use of the highest and most up-to date technology.

Framax can supply filling lines to suit a wide range of products such as mineral water, carbonated soft drinks, wine, beer, edible oils, mixed alcoholic beverages, liqueurs, fruit juices, sauces etc., into traditional or modern packaging, such as bottles made of Pet, Pen, Glass, HDPE, cans, bag-in box-etc.

The key to our success is the "know how" gained in over 30 years of experience in this industry and the ability to supply equipment performance, competitive pricing and efficiency of after sale service and support.

Project planning & engineering

The main key to our success is the capability to offer customers a complete tailor-made solution according to specific technical requirements, starting from the initial budgetary proposal to the final project plan designed to fit within the space availability but also to the required budget, always keeping in mind the importance of looking after the product to be packaged.

Primary objective is in fact to care about "THE PRODUCT", making sure that its original characteristics are not altered throughout the bottling & packaging process.



Beverage Filling Technology



Beverage Production & Process Technologies



Food Packaging Technologies



Conveying, Handling, Packaging & Automation



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