SACMI IMOLA, founded in 1919, is the Italian parent company of an international Group that is the world-leading designer, builder and marketer of machines and complete plants for the ceramic, plastic, beverage & packaging and food processing industries.

The SACMI Group consists of over 70 companies and has reached an international leadership position, thanks to the development and application of innovative new technologies, secure positioning on world markets and constant research to raise product quality and improve customer service. It has production plants and support companies in 24 countries.

Thousands of Sacmi machine are in use all over the world and exports account for around 85% of total business.

The hub of Sacmi’s overall strategy is the so-called Global Network: a group of companies located on different continents, within their outlet markets, capable of supplying customers with fast, efficient assistance service – a must for all leading international enterprises. That service network also provides Sacmi customers with on-line spare parts ordering and special Internet access to customized technical documentation.
Benco Pack History

The industrial experience of Benco Pack begins in 1961, when the company is founded in the town of Piacenza (50 km south of Milan) and is directed towards horizontal Form-Fill-Seal packaging and aseptic filling technology. Benco Pack designs, manufacture and markets horizontal thermo-forming machines, to package any kind of pumpable products such as mineral water, butter, chocolate, tomato sauce, preserves, dairy products (cheese, milk cream, yoghurt with and without fruit pieces), mayonnaise, jam, honey, edible oil, UHT long shelf life dairy based products and many others, in single-serve packages. The high technological standard of Benco Pack machines reaches its worldwide dimension after placing its fully aseptic installations for dairy products certified by the US Food & Drug Administration in 1986. In 1991 Benco Pack becomes part of SACMI Group – whose headquarters are based in Imola (near Bologna) - which facilitates the consolidation of its core business and technology on the global market. Benco Pack is now the Form-Fill-Seal Division of SACMI FILLING, based in Parma. Its peculiar attention to international customers has shaped a customer-oriented Division, particularly focused on technical assistance and after-sale backing, to grant customers continuous support and cooperation, also thanks to the synergies with the after-sale network of SACMI Group.
BENCO PACK Form-Fill-Seal Machine

01. CUP MATERIALS AND HEATING
02. FORMING
03a. MEMBRANE FILLING
06. PRESEALING AND CUP CENTERING
07a. SLEEVE LABELLING
07b. CONVENTIONAL INMOULD LABELLING
BENCO PACK machines: designed for working 24/7

The Form-Fill-Seal technology – starting from two reels of material, one of thermoformable plastic film that can be mono- or multi-layer (e.g. PS, PET, PP, PS/EVOH/PE, but not only) for the container, and one of lid film sealable on the plastic web, - allows producing finished packages that are formed, filled with product and sealed in a unique process. Different cutting configurations are applicable according to marketing requirements. Compared to the fill and seal technology such process entails responsibility for the complete production cycle, and makes it possible to reduce packaging storage costs and at the same time ensure more reliable hygienic conditions. The technical staff of Benco Pack is focused on the greatest possible savings in terms of packaging material consumption through accurate study and development of optimized cup shapes. The high-quality of the package is ensured through a skilful thermoforming technique obtained by the combined action of special heating electrodes used to heat the film, shaped forming plugs and air pressure in the mould that grant the best thermoforming performance even with critical plastic materials.

The diversity of characteristics between the different products to be packaged has prompted Benco Pack to develop a range of filling units for different kinds of pumpable products and capable to modulate their filling speed so as to prevent splashes or allow the passage of solid parts and to guarantee repeatable performance and precision dosing.
For increased product shelf life the standard Benco Pack machine can be upgraded to the following versions for more hygienic packaging conditions:

**A) HYGIENIC**
The machine is equipped with a closed tunnel with overpressure of ultra-filtered air to protect the container as well as the product from the external environment. Also the lid material is sanitized using infra-red or UV lamps that kill the bacteria present, thus reducing contamination.

**B) ESL (Extended Shelf Life)**
For even better results, sterile air is used inside the tunnel instead of filtered air. Total hygiene is guaranteed by steam treatment of the absolute filters. Also, UV rays are used instead of infrared rays for more effective sterilization.

**C) FULLY ASEPTIC**
To guarantee the extended shelf-life of products with high and low acidity, distributed without refrigeration, Benco Pack FFS machines is equipped with a patented sterile system that prevents bacterial contamination of the products during packaging through sterilization of the machine with steam and hydrogen peroxide, also sterilizing packaging materials with $\text{H}_2\text{O}_2$, and continuous overpressure of sterile air during packaging.
BENCO PACK Product Range

PACKLINE from 6,000 to 48,000 cups/h available in standard, hygienic and ESL versions.
ASEPACK from 6,000 to 48,000 cups/h available in fully aseptic version.

MINIPACK from 12,000 to 72,000 cups/h available in standard and ESL versions.
MINIASEPACK from 18,000 to 108,000 cups/h available in fully aseptic version.
Benco Pack sterilization system is the outcome of the experience set up in more than 100 fully aseptic installations around the world and offers the highest microbiological safety standard. It consists of 3 different actions: machine pre-sterilization, production in aseptic conditions and end of production cleaning (CIP).

Machine pre-sterilization is carried out in 2 different phases, programmed in sequence: the first is the steam sterilization phase consisting of a water steam sterilization cycle at a minimum temperature of 121°C which will take less than 60 minutes for product tank, filling unit, product pipelines and filling nozzles. The second phase is the H2O2 sterilization cycle which takes approximately one hour and 40 minutes and it consists in spraying machine tunnel, forming plugs, bell and counter mould, sterilization baths and sterile air pipelines (blowers and diffusers) with hydrogen peroxide fog followed by a drying phase obtained through mechanical dryers and sterile hot air.

Consequently machine is ready for aseptic packaging for continuous production up to 48 hours (depending on the product to be packaged) before machine will be cleaned in place.

Machine sterile conditions are permanently controlled and maintained during the packaging phase by overpressure of sterile air in the feeding tank and all along the closed aseptic tunnel where the filling nozzles are placed. All mechanical drives inside the machine aseptic tunnel are protected by steam barrier whose temperature is continuously monitored while packaging materials (cup and lid material) are continuously sterilized during machine production cycle before entering in the sterile tunnel while H2O2 vapour exhaust system prevents the packaging ambient from contamination by conveying the vapour coming from the sterilization system outside the filling room through a discharge.
ASEPTIC UNIT

Such unit is placed on the side of the machine and is an integral part of the packaging line. It is composed of valves, filters, special circuits and devices and runs the sequences and the cycles of presterilisation of the machine before machine production and of the functioning during operation. Steam sterilization circuit and hydrogen peroxide vapour circuit are completely separated in order to avoid any contamination of the parts in contact with the product.

H₂O₂ BATHS

- H₂O₂ tanks studied for the continuous sterilization, by immersion of the forming and lidding materials
- Measured according to film width, to ensure the contact with all surfaces, they are equipped with heating and thermoregulation devices and level control. H₂O₂ is continuously recirculated by a pump and filtered by stainless steel filters.
- Filling and discharging of H₂O₂ from one single, easily accessible location, simplifies cleaning and maintenance operations.
- H₂O₂ residue is removed by mechanical squeezers, aseptic air blowers and infrared lamps (for the lidding material only).

ASEPTIC FILLING UNITS

Benco Pack offers different aseptic filling models (Ministedo, Fluxa, Stedo, Rotary) suitable for different products with low electric conductivity or those with variable-size solid pieces in suspension and its sterility is granted through steam barriers with number of parts in contact with the product reduced to a minimum, thus making the hygienic packaging process easier and minimising machine component wear so to simplify maintenance procedures and ensure accurate dosing.
Sacmi sinergies for Innovative Technology
ISA Integrated Sleeve Applicator

Since the beginning Sacmi welcomed with great interest the idea of a Sleeve Applicator (ISA) developed recently by Sacmi Labelling to be integrated with Benco Pack FFS machines and after numerous laboratory tests what seemed to be just a dream was transformed into reality so that it is now possible to adapt to labelling a wide range of containers of different shapes directly thermoformed by a FFS machine.

In a unique structure, the filled and sealed container is individually treated in a series of closed chambers, where a jet of steam, with variable duration, but always less than 0.6 seconds, causes the “sleeve” label shrinking onto the container.

An innovative technique allows reducing steam consumption up to 10 times versus the traditional heat-shrinkage tunnels thanks to the elimination of the pre-heating phase and also steam is not pointlessly consumed when the machine is in standby.

As far as material is concerned, ISA uses “sleeve” labels made of different types of material: OPS, PET and PVC manufactured by a wide-range of suppliers on the international and local markets, among which customers can choose the most suitable and convenient for their needs.

ISA ADVANTAGES
• Packaging appeal: brighter printing and transparent colours and higher graphic resolution
• Cup shapes: suitable for a wide range of body shape
• System integrated in the FFS machine
• Steam consumptions: up to 10 times lower than the traditional shrinking tunnel
• Suitable for hot filling and for fully aseptic machine (isotonic drinks, juices, UHT dairy desserts)
• Decoration on multipacks without format change
• Machine output from 6,000 to 36,000 cup/h
Sleeve label is cut from the roll and applied onto a transport system.

Sleeve label is mechanically lifted into position and fit onto the cups.

Sleeve label is shrunk onto the cups.
A range of tailor-made customer services
The Sacmi network provides after-sales service through both its production plants in Imola and its worldwide service centres.