

FILLING SYSTEMS  
FOR VISCOUS  
LIQUIDS



**ocme**

*Moving Ideas*

# FILLING SYSTEMS

High-performance solutions  
for the viscous liquids industry

# OUR VALUES: INNOVATION

OCME was established in 1954 and is known all over the world as one of the most reliable and innovative leaders in the automated packaging machinery and solutions sector. The headquarters are situated in Parma, Italy and operations are worldwide.

It has provided its customers top-quality consumable packaging solutions, based on ongoing innovative research for 64 years. OCME solutions are devised and produced in packaging valley, the Italian packaging machinery production hub, just like our red, the symbol of successful Italian industry across the globe.

In 2017, OCME signed an agreement with Robopac, joining forces and pooling together their experience and expertise, to reinforce its offering of outstanding technological solutions, with high added value for end-of-line systems. After half a century of business, we have tracked our red line to outline an uninterrupted journey towards our sole objective: excellence.



**125 M€**  
Sales across the globe



**610 employees**  
(75% in Italy,  
25% rest of the world)



**+11,000**  
Machines sold



**8 locations**  
worldwide



**2 plants**  
Production in Italy  
and China (Jiaying)



**+ 60 Centres**  
World-wide after-sales  
support

# OUR SOLUTIONS



Moving Ideas



## DEPALLETISERS



**Antares**  
Crate depalletisers



**Dorado**  
Depalletiser for loose  
containers



**Pegasus D**  
Robot Depalletisers



## FILLER MACHINES



**Libra R**  
Rotary filler



**Libra LT**  
In-line filler



**Virgo**  
Rotary filler for edible oil



## PACKERS



**Altair**  
Boxing machine



**Vega**  
Shrink-wrap packer



**Gemini**  
Combined solution



## PALLETISERS



**Perseus**  
Traditional palletiser with  
90° infeed



**Orion**  
Traditional in-line  
palletiser



**Pegasus**  
Palletiser Robot



**Mizar**  
Layer forming system



## WRAP-AROUND PACKING MACHINES



**Helix**  
Wrap-around packing machines with  
rotary arm



**Genesis**  
Wrap-around packing  
machines with rotary ring



**Rotoplat**  
Wrap-around packing  
machines with turn-table



## INTRALOGISTICS



**Auriga PS**  
Powered Stacker



**Auriga CT**  
Counterbalanced Truck



**Auriga Z**  
Stabilizer



**Auriga C**  
Conveyor



**Auriga 14RT-H**  
Vehicle with retractable forks

# OCME SYSTEMS FOR FILLING VISCOUS LIQUIDS

OCME started gaining a footing in the 1960s in the sector of filling systems for viscous liquids, ranging from lubricating oils to greases and oils of vegetable origin.

The global market, which is highly fragmented and heterogeneous in terms of the typology of manufacturers, implies needs for operators of all sizes, geographical areas and distribution channels. From multinationals to smaller local businesses, the need for flexibility in terms of speed in production exchanges and adaptability to new scenarios is possibly the demand that providers of filling technology are all the more often called upon to meet.

Evaluating viscous liquid filling solutions require specific experience that takes into account the nature of the liquids, their economic value and many aspects related to safety of staff and the environment.

Therefore, filling accuracy is essential to avoid waste, in addition to saving energy and making an active contribution to the environment.

Innovative solutions have been implemented from the beginning, such as the patent for the spill stop nozzle that contributed to securing technological superiority over competitors. As time passed by, the OCME experience increased by establishing continuous exchanges with other companies in the sector.

/ 1960

/ TODAY



# THE DRIVING FACTOR OF A FILLING SYSTEM

A process of continuous improvement has led OCME to a develop highly advanced control quality to ensure extreme accuracy in filling.

The goal of OCME is not only to supply reliable and highly technological machines, but also to find the best solution that responds precisely to the real needs of customers.

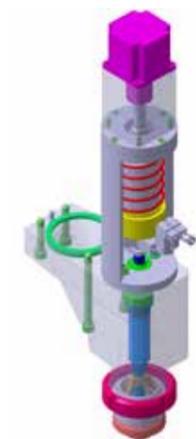
OCME has always been the benchmark in weight filling technology and is present with its products in many areas with a particular focus on the world of lubricants and edible oil.

The high-level technology level is applied to electronic machines for PET, HDPE, GLASS and METAL containers (from cans to drums).



## MOTORIZED NOZZLE

One of the latest innovations offered by OCME is a fully automatic filling nozzle with opening/closing controlled by a motor and dedicated drive: the shutter positions, speed, acceleration and deceleration can be configured on the HMI according to the handled product/size. This solution offers many advantages such as:



A DEDICATED FILLING PROFILE CAN BE SET FOR EACH PRODUCT/SIZE



ALL SET-UP PARAMETERS ARE MANAGED FROM THE OPERATOR INTERFACE



MAXIMUM FLEXIBILITY IN TERMS OF SHUTTER POSITION, SPEED AND ACCELERATION



POSSIBILITY OF REMOTE SET-UP



SIMPLIFIED PNEUMATIC CIRCUIT OF THE ROTATING PART

# THE FILLING MACHINE RANGE

For viscous liquid manufacturers, OCME has developed a wide range of solutions for filling virtually all the container types required by distribution and the industry.

The combination of a great number of variables determining the choice of a filler, i.e. products to process, containers and productivity rates, only to mention the main variables, define the wide OCME offer for this type of application. From phials of a

few decilitres to 220-litre drums, OCME fillers are designed as the heart of the packaging line and are thus the backbone of the productive section of the companies of the sector. The range of filling machines is listed below:

## LIBRA S300 - LT300

Modular in-line weight dosers for the filling of containers, made of plastic or metal.

*/ Productive speeds between 20 and 50 containers per hour (for semi-automatic versions) or between 50 and 150 containers per hour (for automatic versions).*

*/ Volumes from 60 to 220 litres*



## VIRGO

Rotary weight dosers dedicated to filling food-grade oil in PET containers (neck handling version) or glass and metal containers (body handling version) with volumes from 50 ml to 5 litres.

*/ Speeds of up to 40,000 containers per hour*

*/ Volumes from 50 ml to 5 litres*



## LIBRA R5

Rotary weight dosers for filling containers, made of plastic or metal, with volumes between 50 ml and 5 litres.

*/ Productive speeds between 2,000 and 40,000 containers per hour*

*/ Volumes from 50 ml to 5 litres*



## LIBRA R30

Rotary weight dosers for the filling of containers, made of plastic or metal, with volumes from 10 ml and 30 litres.

*/ Productive speeds between 450 and 1,500 containers per hour*

*/ Volumes from 10 to 30 litres*



## CERTIFICATIONS

Libra filling machines are among the few in the world that can boast the possibility of being certified as MID-OIML (International Organization of Legal Metrology) automatic weight control systems.

By adopting metric certification, manufacturers is exempted from the obligation to implement weight control systems at the machine outfeed.



# LIBRA R5-R30

The range of Libra weight filling machines covers a wide spectrum of applications for the filling of petrochemical products. The different models that are available for production rates up to 40,000 containers per hour can process a wide variety of containers made of plastic (normally HDPE or PET), glass or metal.



## 1. Load cells and filling electronics

- All electronic components are located in the upper zone of the rotating part and easy to access for maintenance operations. The use of "off-centre" load cells manufactured by suppliers selected by OCME enables us to obtain:
  - / No parallelogram structure
  - / Elimination of NON VERTICAL vector components (vertical reading is the reading that determines the correct weight)
  - / Accurate design of the load cell that enables easy cleaning (protection IP67)
  - / Protected against general and induced electromagnetic fields
  - / Electronic compensation of centrifugal force

## 2. Container infeed

Containers can be fed with a single or double worm screw according to container shape and line speed. In both cases, a "skip station" function can be implemented in case of malfunction of one or more filling stations.

## 3. Size change parts

- / Rapid size change without any tools
- / Automatic height adjustment of filling and capping heads
- / Quick-fit type connections of size tooling
- / Identification of size change parts with colour code
- / Possibility of tool carriage

## 4. Filling tank

- / Parts in contact with steel fluid AISI 304 or AISI 316 (optional)
- / Finish 1.2 µm
- / Possibility of pressurization (optional)
- / Shape studied to reduce the inner volume and avoid the formation of foam or air bubbles during product infeed

## 5. Filling nozzles with motorized actuator

Filling nozzles designed with modern fluid dynamics simulation systems with a particular focus on avoiding turbulence and allowing optimal draining and washing of the nozzle. The motorized actuator can be used to customize the correct filling profile using a special recipe on the operator panel according to the treated liquid and the container to be filled.

## 6. Washing system

- / Automatic washing cycle and draining with collection tank
- / Washing system with spray balls (optional)

## 7. Pressurization

- / A very useful solution for handling high viscosity products because it allows filling times comparable to those of medium-low viscosity products.
- / It can also reduce the drainage times during the product changeover even further.

## 8. Cappers

- In addition to the OCME capping machines, we offer solutions made by subcontractors (i.e. Zalkin, Arol, etc.) according to customer requirements. Various applications available for:
  - / Screw caps
  - / Pressure caps
  - / Special caps

## 9. Waste system

- The in-line waste system transfers waste containers onto a separate conveyor without interfering with the speed of the filler or on the production cycle. Waste is produced in case of:
  - / Not capped containers
  - / Incorrect tare
  - / Weight of the content does not meet requirements
  - / Container to be used for quality control
  - / Manually via operator panel for specific cases

## 10. Operator Interface (HMI)

Developed on a Zenon platform and modular according to the OMAC-PackML standard.

By using a new graphic design, it is possible to manage all the functions of the machine in simple and user-friendly way. In addition to making available complete diagnostic and performance information, the HMI also stores all filling/weighing data.

# LIBRA LT

Filling of drums  
with capacity from 50 - 220 litres

The Libra series includes a category of modular in-line filling machines for plastic or metal containers of large dimensions. OCME with its Libra LT series dedicated to drums supplies turn-key systems ranging from the feeding of containers to filling, palletization and storage.

Automatic and semi-automatic solutions are available according to the customer's needs and required performance.



**1. Infeed, selection and orientation**

Infeed and selection occur in automatic mode thanks to a pneumatic system. Orientation may occur by means of photocells for drums without a cap or a mechanical feeler for capped drums.

**2. Unscrewing caps**

Automatic and manual unscrewing stations, the latter using a specific device, are available according to model and required speed.

**3. Filling**

Each filling station is made up of a nozzle and an electronic load cell performing tare control of the container as first operation. From one to three stations may be installed according to the type of production needed. Machines are also available in versions with filling from the bottom to maintain high production speed in case of foaming products.

**4. Capping/screwing down**

Manual or entirely automatic versions are available. On the latter versions, the cap unscrewed from the drum is automatically placed on a conveyor belt and picked by the screwing device which will screw it down on the drum from which it was picked. A cover placing device with respective magazine can be provided for buckets in addition to traditional capping solutions.

**5. Sealing**

Automatic or manual device for the application of metal or plastic seals on the cap.

**6. Bucket feeder magazine**

The filler is coupled with a bucket magazine on bucket filling lines. The buckets are fed automatically or filled with an open mouth and the cover is applied afterwards.



# VIRGO

The range of Virgo weight filling machines covers a wide spectrum of applications for the filling of edible oil products. With two versions, neck and body handling, various models that are available

for production rates up to 40,000 containers per hour capable of processing a wide variety of containers made of plastic (normally HDPE or PET), glass or metal.



## 1. Load cells and filling electronics

- All electronic components are located in the upper zone of the rotating part and easy to access for maintenance operations. The machine is equipped with HBM off-centre load cells with the following features:
  - / No parallelogram structure
  - / Elimination of NON VERTICAL vector components (vertical reading is the reading that determines the correct weight)
  - / Accurate design of the load cell that enables easy cleaning (protection IP67)
  - / Protected against general and induced electromagnetic fields
  - / Electronic compensation of centrifugal force

## 2. Container infeed

In case of neck handling machines, containers are fed by means of a tear-off star with pneumatic bottle block. On body handling machines, the containers can be fed with a single or double worm screw according to the shape of the container and the speed of the line. In both cases, a "skip station" function can be implemented in case of malfunction of one or more filling stations.

## 3. Size change parts

- / Rapid size change without any tools
- / Automatic height adjustment of filling and capping heads (body handling)
- / Quick-fit type connections of size tooling
- / Identification of size change parts with colour code

## 4. Filling tank

- / Parts in contact with steel fluid AISI 304 or AISI 316 (optional)
- / Finish 1.2 µm
- / Shape studied to reduce the inner volume and avoid the formation of foam or air bubbles during product infeed

## 5. Filling nozzles

Filling nozzles designed with modern fluid dynamics simulation systems with a particular focus on avoiding turbulence and allowing optimal draining and washing of the nozzle. It has a double opening control for fast filling and fine filling to guarantee maximum performance in terms of speed and precision for all operating situations.

## 6. Washing system

- / Automatic washing cycle and draining with collection tank
- / Washing system with spray balls (optional)

## 7. Cappers

- In addition to the OCME capping machines, we offer solutions made by subcontractors (i.e. Zalkin, Arol, etc.) according to customer requirements. Various applications available for:
  - / Screw caps
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# COMPLEMENTARY DEVICES OF THE FILLING LINE

Strong of long experience in the petrochemical sector, OCME can provide complete support for turn-key lines.

The main machinery of the line is designed and produced by OCME offering additional warranty of high-quality standards and fewer integration problems. Entire teams of specialized engineers are at the service of OCME customers to develop solutions that meet specific filling, packaging, palletizing and handling demands. All machines produced by OCME and all integrated device made by third parties are the result of careful study and rigorous selection, which exclusively aim at guaranteeing all customers the performance they expect.

The various auxiliary components that OCME commonly integrates into its own filling lines for small, medium sized and large containers include:

## Cappers

Capping turrets are standalone or integrated in the machine monoblock supplied by sector experts and configured according to the characteristics of the line. Linear or rotary cappers with production up to 56,000 caps per hour.

## Empty drum magazine

Storage systems of empty drums in small areas consisting of a structure housing lying drums, a one-column warehousing carrier and a conveyor for preparing and handling products.

## Bottle unscrambler

Bottle unscrambling systems for containers of different shapes and sizes, which may also be silk-screen printed. They do not damage the container. They provide high performance and are designed for a facilitated size change without tools. The unscramblers are coupled with bottle orienting systems that send bottles with the mouth in the right position. Different models are available depending on the speed of the filling line.

## Markers

Markers can be integrated on OCME filling lines. They may be standalone devices or mounted over the conveyor lines according to the speed of the line and the type of container. Ink-jet markers, code printing systems and barcode readers complete the wide range of products offered for the identification of bottles, cartons, drums and pallets.

## Induction sealer

Devices for the application of aluminium seals with an induction system for tamper-proof sealing. Easy size change in case of variations of mouth diameter and container height.

## FILLING RECIPE SPECIALIZED TRAINING COURSES

This supplementary training course is designed to show customers how to create new recipes and/or edit existing ones achieving a better understanding of all machine parameters and of the principles behind recipe creation. Part of the time dedicated to this specialized training course will be in the classroom and part will be on the machine to allow the customer's technicians to verify the consequences of changes to the key machine setting parameters in a practical way.



The OCME R&D department has a reserved area where filling experts work continuously to innovate and experiment with new technologies.

## LIS - LINE INFORMATION SYSTEM

For instance, one of the most important characteristics of a product is its viscosity. By using a viscometer, our experts measure this feature to determine product behaviour in production conditions at varying temperatures.

The acquired data, together with tests conducted on the filling head, are used to predict product behaviour and filling time for the various sizes with extreme precision, in order to optimize sizing of the filling machine according to the required performances.

### PRODUCT VISCOSITY TESTS

Relationship between viscosity and temperature



### PRODUCT-SPECIFIC TESTS



### PRODUCT FOAMING PROPERTY TESTS



The line supervisor can be customized according to line features and customer needs. It was developed on a ZenOn platform (COPA-DATA) and runs on a dedicated Windows10-based server.

It may be installed in the office or directly in the production area, so as to monitor all the machines of one or more production lines.

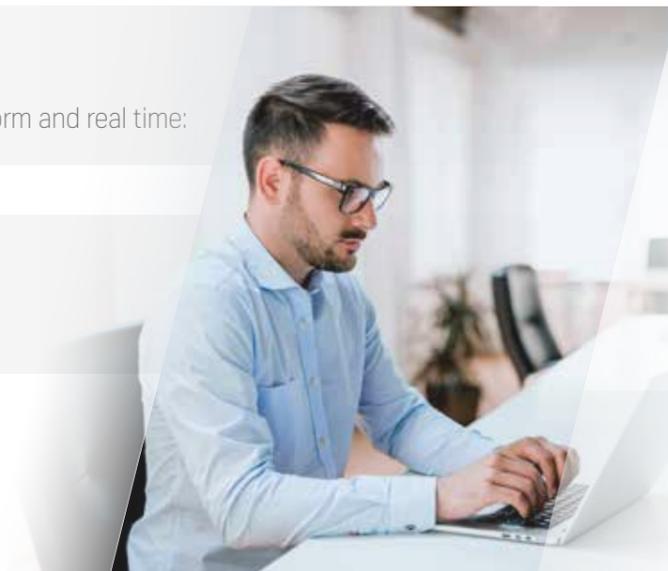
The supervisor is designed to communicate with all the machines on the line using the most common Ethernet-based protocols (PVI, ethernetIP, etc.). Acquired data are formatted according to the international OMAC - PackML standard and are all easily accessible using a simple and user-friendly operator interface.

The many features offered by the LIS offers include:

- / Viewing the operating status of the entire line
- / Monitoring production status
- / Managing production shifts
- / Managing user authentication

The system provides the following information in historical form and real time:

- / operational status (OMAC status, speed, stops, etc.)
- / Performance and production data
- / Alarm events
- / Production reports



# CUSTOMER SERVICE



With OCME's service solutions, an investment is made in long-term performance. OCME offers an extensive range of customer-focused services, based on assistance and after-sales support for the machine.

We provide several services, such as local or remote technical support through the use of the most modern technologies, the supply of spare parts, the installation of updates, maintenance contracts and more. Everything is devised with the aim of meeting the needs of our customers and building a lasting relationship, based on mutual trust and cooperation. Reactivity, proactiveness and proximity are some of the values we believe in, some of the principles we follow to accomplish our mission to the best of our abilities and reach our objectives.



## FIELD SUPPORT

OCME can rely on a network of technicians situated across the world, ensuring your machines continue to work, and that production is optimal at all times. Field support includes several activities, such as diagnostics visits and reports, scheduled maintenance, servicing, installing updates and emergency intervention for problem-solving. Through the direct analysis of the machine, the OCME technician will also be able to recommend the most appropriate upgrades and services for your plant. As soon as we receive a request from a customer, we select the most appropriate technician, taking into consideration the machine family and the activity to be performed on site.



## SOPHISTICATED IT SOLUTIONS

We have devised a series of technologically advanced systems and services to put at your disposal, which envisage cooperation between customers and OCME technicians. Thanks to our 24/7 service and with the aid of wearable devices for remote visual support you will have the opportunity to link up directly with our expert technicians, who are available 24/7, in the event of a problem during production (paid service).



## TRAINING

OCME offers consultancy programmes aimed at transferring and sharing our experience and technical expertise. This way, you'll be able to get the most out of your machine, achieve safe production and optimise machine performance long-term. Each training course can be customized according to your needs. The aim of the course is to train your personnel on the method of intervention to guarantee machine operation with outstanding quality standards, taking into account the efficiency of production and basic compliance with prevention and safety procedures. This coaching phase helps maintain a high level of efficiency and productivity for your machine. These courses are designed to enable your staff to solve problems independently, improve results and achieve the success your company expects.



## UPGRADES AND SPARE PARTS

As an original equipment manufacturer, we know exactly what your production line needs to deliver optimal and consistent results. Our specialised technicians analyse and test each and every part before delivery on time. Once the request has been received from a customer, a feasibility study is opened on the machine involved. The engineering department develops the request and offers the best solution, making use of cutting-edge materials and technologies.



## MAINTENANCE CONTRACT

The maintenance contract is another great feature for your peace of mind! Rely on our experience to anticipate any possible problems, as well as on our prompt response times for impeccable service. The services we offer are designed according to a strategy that aims to provide added value to our customers' machines and plants over the years (TCO), to keep a trust-based cooperative relationship with our Customers, to prevent causes for malfunctioning and quickly solve any critical issues that may arise. The maintenance contracts are offered to Customers in a modular and flexible form, in order to put together an effective offering that is capable of accommodating the specific requirements of the Customer.

One of our IT solutions is the "MyOCME" App. This new App will grant you access to OCME services quickly and in a revolutionary manner, simply using your smartphone. The App will allow you to open Emergency Tickets relating to machines covered by a contract by means of an interactive channel that will further improve communication with our technicians and with the remote support service. "My OCME" allows us to digitize several existing procedures and also to include new features, such as routing and improving information on OCME services to our customers, speeding up requests for technical support in case of problems with our systems, providing any useful information on the services included in the Service Contract (SLA, list of machines, emergency ticket management, etc.).





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