# CARUGIL

## **Complete Production Lines**

for Lollipops, Chewy Candies, Toffees, Gums and Fruit Pastes











Complete solutions for your processing and packaging needs

carugil.com

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Over 50 years at the service of our customers

## The Company

We provide to the Confectionery and Food industries the most advanced technological equipment in the market, contributing to the improvement of well-being and quality of people's life.

#### A brief history

CARUGIL was established in 1971 to provide service to the local confectionery companies which spread around the city of Murcia in the late 70's.

Early In the 80's, CARUGIL began to develop its own designs and commercialize machinery for the Confectionery and Food Industries. CARUGIL is now firmly established as one of the world's leading specialists in high-quality machines for the Confectionery and Food Industries.

With the market showing rapid growth in both size and diversity, we continue to consolidate our position with machines that integrate excellence in technology with new, cutting-edge software applications. Such integration inevitably transcends the traditional boundaries of development, design and production, and is taking CARUGIL forward into exciting and challenging new areas of business.

#### **Research & Development**

Research and development plays an essential role within the Carugil's corporate philosophy (a high percentage of our turnover is dedicated annually to I+D+i). Our R&D team thoroughly studies each new project in order to design and develop mechanical systems which answer our customers' needs.

The work in Research & Innovation would not be possible without testing new ideas and process technologies. To this aim, CARUGIL has its own PLANT for performing all kinds of tests simulating the most diverse conditions and providing our customers the possibility of testing the performance of the machines with their own recipes.

#### Small details, big difference!

Quality and reliability are part of our DNA: Carugil supplies machines that have been developed to perfection and really add value to the products of our customers.

Operational reliability and a long service life are also important distinctive values. And last but not least: we are principally guided by market development and our customers' wishes and needs.



## **Project Life Cycle**

#### Design & Engineering

A team of engineers, designers and software programmers are responsible for putting together all the ingredients that will give life to our new designs and applications.

#### 2 R&D Project Development

Research and development plays an essential role within the Carugil's corporate philosophy. A high percentage of our turnover is dedicated annually to I+D+i. Our R&D team thoroughly studies each new project in order to design and develop mechanical systems which answer our customers' needs.

#### Manufacturing & Quality Control

Our facilities include CNC machines and high precision tools which allow for accurate manufacturing the parts of our machines. Our integrated QC System ensures that all the parts manufactured accomplish with the most demanding quality standards.

#### **A** Assembling

All of our machines and systems are assembled on site as we provide all fixtures and fittings ourselves. We carry out the entire assembly procedure in order to maintain high standards of quality, accuracy, durability and finish.









### How we work

#### **5** Testing & Commissioning

A special group of engineers designated to carry out tests on all installed machines and applications. These engineers ensure that all machines and components are correctly installed, tested, operated and commissioned according to the specifications and customer's requirements.



### **6** Customer Support, parts and maintenance

Our service increases the service life and minimises failure of your machines, and improves the quality of your products. To guarantee this, the highest quality parts are available. Carugil can advise you on this based on your daily needs.





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# **CORE COMPETENCES**Food & Confectionery

### Complete processing lines

Carugil is one of the World's leading suppliers of high innovative process and packaging solutions for Confectionery and Food sectors.

Whatever requirements, Carugil continously strives to develop new standarised and custom systems solutions.



#### **Machinery INDEX**

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### Our Turn-key lines guarantee your success

For over half a century, Carugil has been the leading specialist in developing and manufacturing machines and complete processing lines from A to Z for the Confectionery and Food industry. We have a wealth of knowledge and experience in both mechanical and electronic engineering and technology related to such sectors. This is one of the reasons why Carugil is one of the world's leading companies in Confectionery and Food-processing equipment.

#### Lollipop lines

For solid and center-filled lollipops in Bunch, Twist wrap, 4-Side Seal, Flow-pack and Stickpack styles.











#### Ball forming lines

For bubble-gum, soft candy, toffee and fruit pastes.







#### Cut & Wrap lines

For bubble-gum, soft candy, toffee and fruit pastes.









# Lollipop Lines

Turnkey lines. We take care of everything







## **CARUGIL Iollipop lines**

Lollipop machinery design has evolved considerably over the last few decades. Driven by ongoing changes in consumer behaviours and preferences, lollipop manufacturers need machines that are able to adapt quickly to industry changes, while delivering the speeds they need to maintain a profitable operation. By partnering with an equipment manufacturer, who is able to deliver integrated turnkey systems that are designed with flexibility in mind, lollipop manufacturers are able to ensure they have the technology they need to meet both their current as well as their future needs.

#### Our production lines

Production line	Wrapping Style	Capacity
Standard capacity line	Bunch, Twist Wrap, 4-Sides Seal, Flow-pack and Stickpack	Up to 750 Kilos per hour
High capacity line	Bunch, Twist Wrap, 4-Sides Seal, Flow-pack and Stickpack	Up to 1500 Kilos per hour

As a result of constant research and years of development, CARUGIL offers complete lines with the most modern machinery for the production of lollipops.

With capacities up to 1500 Kg/h, our complete lines comprise compact machines whose main characteristics are reliability and performance. To develop our own technology for the manufacturing process has been one of the most important keys in our success.





**CARUGIL Iollipop lines** 



#### **Pop formers**

The Carugil continuous die pop forming machines model CTC are engineered specifically for the production for solid and centrefilled high quality ball and 3D ball lollipops, delivering high-capacity forming performance, along with durability and reliability.



#### Pop Wrappers

No matter how you want your lollipops to look like, we can wrap them!

Available wrapping styles:

- Bunch
- Twist Wrap
- 4 Sides Seal
- Flow-pack
- Stickpack

#### **?** Cookers

Batch vacuum and continuous cookers for the production of hard candy.

Capacities:

- Up to 750 Kg/h
- Up to 1500 Kg/h



Batch-wise, automatic Kneading Machines designed to knead, homogenize and evenly cool down high boiled sugar masses. Up to 70 Kg per batch.

#### • Rope forming

Production and sizing of a great variety of ropes of both solid or center filled masses.

- Chewing gum
- Chewy and soft candies
- Semi-liquids



#### Pop Coolers

Designed for high performance precision cooling while preserving the shape and quality of the original lollipop.

CEV-5C

Capacity:

- Up to 750 Kg/h
- Up to 1500 Kg/h

## **CARUGIL Iollipop lines**

## It's all in the Packaging

The world of lollipop production has become increasingly competitive, with companies constantly developing new concepts to help place their products above their competitors.

Choosing the right packaging style for the market is a key to succeed. Nowadays, packaging is also increasingly used to encourage consumer interaction and deepenengagement in order to maintain brand loyalty well beyond the point of purchase. Well aware of this fact, Carugil has become the only company in the World offering the most popular wrapping styles for your lollipops. No matter what style you like the most, we have it!









Flow-pack

Stickpack

## **CARUGIL Pre-forming line**

## Production and sizing of a great variety of ropes

The CARUGIL pre-forming line has been conceived to deliver a continuous and consistent rope, either solid or center-filled, to the down-stream lollipop Forming Machine.

It is composed by the following machines:

- Extruder model CSTR.
- Filling devices for powder and semi-liquids.
- Batch roller model CBC-120.
- Rope sizer model CRC-4.
- Main control cabinet for all the machines above.

#### **Extruders CSTR**

CARUGIL

- Up to 450 Kg/h (depending on the model).
- Heavy duty construction. Easy and safe operation.
- All areas in contact with the product made in Stainless Steel
- Twin-screw infeed section with counter-rotating screws to provide a stable infeed.
- Water jacketed extrusion barrel with electronic temperature control, which allows for an accurate and even temperature of the whole extrusion area.

#### Batch roller CBC-120

- Max. loading capacity: 120 Kg.
- All parts in contact with the product completely made of stainless steel.
- Four powered conical rollers. Stainless steel made.
- Left-right alternate move of conical rollers.
- · Automatic lowering and lifting movement by push button.
- Hand-wheel driving a spacer to choose the final position of the cones according to the final diameter of the sugar rope.
- Electrical heating and temperature adjustment.

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#### Rope sizer CRC-4

- Cluster with 4 pairs of rollers
- 4 pairs of horizontal sizing rollers made of Stainless Steel.
- Electrical heating system by heaters.
- Automatic rope control: speed synchronization with the downstream equipment
- Safety protection placed onto the sizing stage.
- Rope cross-section adjustment by means of gravity indicators located under each pair of sizing
- Self-lubricated bearings on all moving parts.
- Thermostat for temperature adjustment.

## CARUGIL Pop Formers Models CTC



#### High performance die forming

The Carugil continuous die lollipop forming machines models CTC are engineered specifically for the production of **solid** and center-filled high quality ball and 3D lollipops, delivering high-capacity forming performance, along with durability and reliability. It's precisely these uncompromised qualities that have earned Carugil their reputation for high performance forming and problem-free operation.

The Carugil Pop Formers have been designed to withstand the rigors of high-output confectionery production. Since the Pop Former is at the heart of the lollipop processing line, our models have therefore been engineered with strength and durability as their main assets.

#### Technical Specifications

	CTC-1000	CTC-2000	CTC-XHS
Output (max.)	980 ppm	1800 ppm	2700 ppm
Diameter of the lollipop	18 - 35 mm	18 - 35 mm	18 - 35 mm
Length of the lollipop (max.)	45 mm	45 mm	45 mm
Diameter of the stick	3,3 - 6,0 mm	3,3 - 6,0 mm	3,3 - 6,0 mm
Power consumption	2,6 kW	2,8 kW	4,5 kW

#### Highlights









- /1/ Efficient stick feeding atuomatic system that guarantees a "no candy-no stick" synchronization.
- 2/ Automatic cleaning and greasing systems.
- 3/ High resistance forming die set with special heat treatment for long service lifetime.
- /4/ Both the insertion of the stick and the length of the candy are easily adjustable during operations.

## High quality ball and 3D ball lollipops

Now it is possible to produce attractive **3D** shaped ball **Iollipops** by simply replacing the forming punches in the die (less than one hour). Thus, with a quite low investment, you will be able to produce attractive 3D shapes such orange, strawberry, football ball, etc.



## CARUGIL Pop Coolers Models CEV





#### High precision cooling for your lollipops

The Carugil pop coolers are designed for high-performance precision cooling of a wide range of ball, 3D ball and cylindrical lollipops, while retaining the original lollipop's shape and quality. Their extra-large product tiers are designed to keep the lollipops rolling continuously, thus avoiding deformation.

The optimized cooling air flow system allows for a high capacity of up to 1.500 Kg/h. It provides an even and gentle cooling and circulates cool air to quickly cool large quantities of die-formed, filled and solid lollipops, from forming temperature down to packaging temperature.

#### Highlights

- Cooling capacity, up to 1.500 Kg/h.
- Suitable for ball, 3D ball and cylindrical lollipops.
- High quality lollipops. Original shape of the lollipops is retained during the cooling process.
- Total capacity can be easily extended (depending on the model).
- Higienic design.
- Remote troubleshooting (depending on the model).





#### High precision cooling for your lollipops

Because not every producer has the same needs, our equipment can be configured with different options to meet the required capacity. Besides, our cooling tunnels can be easily upgraded to high capacity to give a cost-effective solution to your increasing production needs.

Ambient or closed version, entry level or High Capacity configuration, gas cooling or chilling water system, inverter or on/off technology. Just select the configuration that meets your needs best.

#### Technical Specifications

	CEV-3 (Upgradable)	CEV-5	CEV-5C
Output (max.)	1000 Kg/h	1200 Kg/h	1.500 Kg/h
Number of trays	3	5	5
Dimesions (WxDxH) (mm)	3930 x 2380 x 2230	3930 x 2380 x 2230	5800 x 2380 x 2230
Cooling system	Ambient air	Ambient air	up to 45 kW
Power consumption	2,6 kW	2,8 kW	3,5 kW

## CARUGIL Sugar sander Models BAC



## Adding extra appel to your lollipops

You may be satisfied with your existing equipment for lollipop which produces your product to your standard quality. However, this will not make your product stand out in the marketplace.

The finishing touch in appearance is carried out by the product finishing equipment such as Sugar Sander. This is where Carugil can help you to achieve the highest and distinctive tinge in product appearance and taste with its Sugar Sanders.

#### Different covers

- Chilly powder
- Sugar / citric acid
- Vemicelly
- Chia and other seeds
- Sugar grains

Give your lollipops a distintive tinge



## **CARUGIL Bunch Wrappers**

**Models CWLB** 



## The best choice in its class for quality bunch wrapping

Reliability, flexibility, high performance, efficiency..., these are characteristics that any lollipop producer hopes a Bunch Wrapper can offer. The Carugil Bunch Wrappers not only achieve these goals, but look into the future providing extra features to bolster your lollipops with added value that makes them stand out in the market place.

Due to its compact and innovative design, the Carugil Bunch Wappers make professional, efficient and precise single twist wrapping accesible to the entry level producers. For medium and large producers, the CWLB-800 model offers high-tech components and strong performance combined with state-of-the-art control technology at high speed.

#### Technical Specifications

	CWLB-400	CWLB-600	CWLB-800
Output (Iollipops/min)	400	600	800
Lollipop diameter	18 - 35 mm	18 - 35 mm	18 - 35 mm
Stick diameter	3,2 - 6,0 mm	3,2 - 6,0 mm	3,2 - 6,0 mm
Power consumption	5,0 kW	9,0 kW	14,0 kW

#### Highlights

- Up to 400, 600 and 800 pieces per minute. Just choose the model that matches your necessities the best.
- High-quality wrapping of ball and 3D ball lollipops.
- The servo-driven feeding system allows wrapping of different sizes of lollipops within a wide range with the same feeding dial plate.
- Available labeling solutions for "flag on stick" and stickers or tattoos on the wrapping film.
- Hygienic and compact design.

#### Extra features





High flexibility continuous printer to print best before dates, expiry, batch number or other alphanumeric text.

PLC controlled device for counting & filling lollipops into containers.

#### **Labelling Solutions**

Our labelling solutions can be quickly and easily attached to our Bunch Wrappers. The label applicators accurately, efficiently and reliably apply self-adhesive stickers or tattoos to the continuous wrapping film as well as self-adhesive flag stickers around the lollipop's stick.

Servo matching speed control allows the speed of the labellers to precisely match the speed of the Buch Wrapper even if the speed varies or there is any missing lollipop on the transport chain.







## **CARUGIL 4-Sides seal wrappers**

**Models CWL-4S** 



#### Your lollipops packed in 4-Sides Seal style

The Carugil CWL-4S 600 Wapper for lollipop makes professional, efficient and precise wrapping in 4-Side Seal style accesible to the entry level producers. For medium and large producers, the CWL-4S 800 model offers high-tech components and strong performance combined with state-ofthe-art control technology at high speed.

#### Technical Specifications

	CWLS-4S 600	CWL-4S 800
Output (lollipops/min)	600	800
Lollipop diameter	18 - 35 mm	18 - 35 mm
Stick diameter	3,2 - 6,0 mm	3,2 - 6,0 mm
Power consumption	8,5 kW	9,0 kW

#### **Highlights**

- The wrapper is not mechanically linked to the cooling tunnel, therefore the wrapper can work independently from the equipment upstream.
- Perfect shaped lollipop. The lollipops are transfered to the wrapper after being cooled down in the cooling tunnel.
- Ball and 3D lollipops can be wrapped on the CWL-4S wrappers.

## CARUGIL Flow-wrappers Models CWFL

#### Reliable and accurate Flow-wrapping

Reliable and accurate flow-wrapping at High Speed up to 600 pieces per minute. The Carugil CWFL-1000 is a continuous -motion horizontal form, fill and seal (HFFS) machine for the flow-wrapping of ball and 3D lollipops at speeds up to 600 pieces per minute.

The machine is designed to have minimal maintenance requirementes. Besides, a new design transport system is utilized, replacing the traditional chain feeding systems, therefore avoiding the need for greasing the chain and contamining the product.

All the movements of the machine are driven by brushless servomotors and monitored by the latest generation electronic controls that guarantee the optimum synchronization of the wrapping material at high speed.





## **CARUGIL Stickpack multilane** Wrappers Models CWLS

#### The best choice to stand out in the market place

Wrap your lollipops in a nice stickpack sytle while saving wrapping material compared to the traditional flow-pack style. Furthemore, give your product a distintive tinge and let the children get fun by dipping the lollipop into fizzy powder or pop rocks.

With a simple and compact design, the CWSL series offers a free access without tools to main components. allows a fast and easy changeover and it is built up with high resistance and long durability components. All this helps to reduce downtimes and drives to an OEE over 95%.



#### **Highlights**

- 4 10 lanes.
- High output, up to 480 lollipops per minute.
- 100% efficiency. NO Product NO Pouch (servo-motor)
- Quick format change with few tools.
- The sachet can contain powder/granulates for dipping the lollipop.
- Systems for transfer to secondary packaging equipment.



#### DIP & SUCK: Volumetric filler to dose powder/granulates inside the sachet.

A special dosing volumetric filler can be optionally fitted in the machine to allow dosing powder or granulates into the sachet for dipping the lollipops. This system has no friction and keeps the product properties intact.



#### String system for stickpack machine.

By adding a second piston for the horizontal cut, this solution allows to produce strings with perforations between each stick/sachet to ease its separation. Units per string are set through the digital counter of the HMI.

#### Tear notch device for stickpack machine.

By adding independent blades for each lane inside the horizontal jaw, the easy opening/tear notch is die cut while





# **Ball Forming Lines**

The cutting edge of ball forming







### bubble-gum



toffee



### **A World Of Possibilites**

Our forming lines allow for processing a huge range of different masses into fancy and attractive shapes, hollow, solid or center-filled, in multiple colours with different flavours.

## soft candy



hard candy



### **Endless opportunities**

Widen your portfolio as you never imagined before!







### nutraceuticals



marzipan



**CARUGIL** 33

## in the Confectionery Industry

### Bubble-gum

In the world of chewing and bubble gum, one of the most popular shapes are gum dragées. The dragées articles produced on our formers can be solid, hollow or filled with powder or liquid. The working principle remains the same as years ago, but production has been improved in many ways. Presently, it is now possible to obtain shapes of a constant weight and higher filling rate than previously, working at higher speeds and reducing wastage.



### **Toffees**

Carugil has been producing toffee equipment for more than 30 years. Toffees are quite a widely spread products worldwide.

Experience combined with continuous and ongoing efforts in R&D have made Carugil one of the reference companies in this field.



### Hard candies

Our ball formers can easily and effectively produce hard candies, either striped candies out of a candy rope candy coming from a hard candy extruder or the typical hard candies out of a rope from a batch roller and rope sizer.

Powder or semi-liquid center fillings are possible as well, as they are for chewy and soft candies and gums.



### **Soft Candies**

What's so great about chewy and soft candies? Is it all the fresh fruit flavors? The smooth, chewy texture? There's a reason why children and adults love chewy sweets. Bright in flavor, with a yielding, chewy softness and the mouth-coating heft, chewy and soft candies are a uniquely satisfying confection. If you'd like to bring home a soft treat that everyone can enjoy, chewy and soft candies are the right choice.

Our ball forming lines allow to produce fancy and attractive chewy and soft candies, in ball and cylindrical shapes, either solid or center-filled.



## in the Food Industry

### Marzipan

Products made with finely ground almond or other different nuts can be formed into balls, ovals or cylindrical pieces. Co-extrusion with different colours or textures, or chocolate center-filling, followed by a chocolate coating process will spread the range of options for such a delicious but still seasonal products.



### Halwa

There is really quite a spread of different masses under the denominations "halva, halawa, halava, helava, etc.". Any of them can be processed on our forming lines, as long as the ingredients bind together while remaining fairly dry to touch.

Center-fillings such as sesame, chia or sunflower seeds, cereal flakes, etc., can make these sweet confections even more attractive.



### Fruit pastes

One way of providing your children with both nutritious and delicious snacks is by feeding them natural, healthy fruit snacks that contain natural ingredients, such as natural fruit.

Latest market trends are increasingly demanding such healthy snacks. Our ball forming lines have been updated to allow gently handling a wide range of masses products, including natural fruit pulps (mango, tamarind, papaya, etc.) and with no artificial flavors and colours.



### **Nutraceuticals**

Are you a producer of high protein bars, or intend to be? Have you though about offering bite pieces that can be comsumed at will at any time, and be easily carried in your pocket or sport bag hardly occupying a small space?

Natural bite snacks based on dates, coconut, fig or hazelnut pastes are suitable to be processed by our forming lines, thus offering new ways to eat natural products. Hollow center-filled or solid pieces; just a quick and easy nozzle changeover in the extruder will make the difference.



## The cutting edge of ball forming technology

Our forming lines have been designed to reach high production rates (up to 80 cycles per minute and 400.000 pieces/hour) with high levels of reliability and automation while gently handling liquid and powder center filled ropes. Smaller configurations are also available for medium and entry level producers as well. We offer turnkey lines to guarantee fast start-up and efficient performance of your complete system.

### High production, top quality

Regardless the chosen configuration, our Ball Forming lines stand as one of the most profitable lines in the Food and Confectionery Industries. The low investment required compared to other lines, the reduced labor space requirements and their efficiency, allow for an incredibly **quick Return On Investment**.

Ball forming line		Number of forming sets		Capacity
Standard capacity line	1	1	40	Up to <b>175.000</b> pieces per hour
High capacity line	2	2	80	Up to <b>350.000</b> pieces per hour



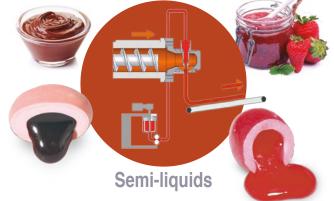
### Center-filled pieces

Let's fill it!. extend your portfolio with a minimum investment.

A lot of center-filing products can be used on our lines: liquids, sugar grains, sour or fizzy powder, nuts, cereal flakes, chocolate, jam, sesame or chia seeds, etc.

Our forming lines not only allow for the usual solid pieces, but for hollow or center filled pieces as well. The possibility of producing perfectly formed hollow products will definitively increase the rentability of your business, while the possibility of filling your products with a vast variety of center-fillings will extend your portfolio with a minimum investment.





### Shape it the way you want

#### Amazing and fancy shapes are now at your hand reach

Coca-cola bottle, mushroom, lentil, barrel, tennis ball... the limit is your imagination. Take advantage of the real flexibility of our ball forming lines. In just 15 minutes, you can start producing a completely new product.





### **Eye-catching coatings**

Smooth or ribbed surfaces, shiny coatings, colourful surfaces, vermicelly, cocoa-powder, chocolate, etc.











#### **♂** Sigma-blade Mixer

- High-capacity mixing performance.
- Discharge by tilting of the kenading bowl or by means of a discharge screw.

#### **♂** Center-filling

- Powder and granulates.
- Seeds and cereal flakes.
- Semi-liquids.





#### **◆** Extruder

- Twin-screw infeed section with counter-rotating screws.
- Different capacities.

#### **♂** Ball former

- High-quality forming of hollow, solid and center-filled balls and cylindrical products.
- Up to 350.000 pieces per hour.
- Totally customizable forming cycle.



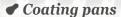
#### **♂** Cooling tunnel

- High quality pieces. Original shape of the product is retained during the cooling process.
- Cooling capacity up to 1000 Kg/h.
- Suitable for ball, cylindrical and flat pieces.

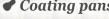
#### **✔** Flow-wrapper

- Reliable and accurate flow-wrapping at High Speed.
- Special profile based cross-sealing jaws to enhance sealing quality.





- Optimal result in minimum time.
- No time-consuming installation.





## CARUGIL Kneaders Models Super Strong



#### Mixing machines with sigma kneading blades

Our Double Sigma Arm Mixers have been engineered to deliver high-capacity mixing performance, along with the user-friendliness, reliability and durability world-class customers demand.

The mixing is carried out by two sigma arms placed at the bowl's bottom, which rotate in opposite directions and at different speeds, resulting in continuous movement of the product from the sidewalls to the center of the kneading bowl or the reverse, depending on the direction of rotation.

Discharge of the mixed product can be achieved either by tilting of the kenading bowl or by means of a discharge screw located horizontally below and paralell to the sigma arms.

#### Technical Specifications

Model	Super Strong 240	Super Strong 400 / AH-400	Super Strong 600 / AH-600	Super Strong 2000
Total Capacity	240 Ltrs.	400 Ltrs.	600 Ltrs.	2000 Ltrs.
Useful Capacity	150 Ltrs.	300 Ltrs.	450 Ltrs.	1300 Ltrs.
Discharge	Tilting	Tilting / Screw	Tilting / Screw	Tilting

#### Highlights

- Intensive kneading of viscosity products.
- Shorter processing times with high product quality.
- Front and rear bowl seals prevent leaking and helps to maintain product quality. Seals made of high quality material.
- Minimum processing capacity of the total container volume.
- All machines in the Super Strong series have double -jacketed bowl for heating/cooling.
- Discharge either by tilting of the bowl or by extruding screw.

#### **Available options**

- Jacketed mixing bowl. Heavy duty stainless steel jackets for efficient dough temperature control lessens needs for maintenance and guarantees product is kept at the ideal temperature ensuring it's quality.
- Thermal insulation of the bowl, protected by stainless steel hermetically closed panels.
- The Carugil Sigma Mixers can also be supplied with a Variable Frequency Drive (VFD) as an option.
- Specialized die heads / special extrusion spouts.
- Automated operation of cover via hydraulic piston.



Double Sigma arms made in Stainless Steel and



The mixing bowl can be tilted up and forward through the use of a hydraulic system.



Extrusion screw to discharge the product in a form or shape, or directly to the next phase of processing.

## CARUGIL Extruders Models CSTR



#### The perfect partner to CARUGIL lines

Counter-rotating twin-screw extruders for processing food, confectionery and pet food masses. Reliability, flexibility and high throughput are the most important demands placed on a solution for the extrusion processes. The extruders CSTR not only achieve these goals but are the perferct partner to the Caruqil ballformers and cut & wrap machines. The comprehensive twin-screw extruder CARUGIL portfolio guarantees the solution that best feeds your processing needs.

#### **Highlights**

- Heavy duty construction. Easy and safe operation.
- All the areas in contact with the product made in Stainless Steel
- Twin-screw infeed section with counter-rotating screws to provide a stable infeed, thus resulting in a constant massflow for the extruder.
- Water jacketed extrusion barrel with electronic temperaturecontrol, which allows for an accurate and even temperature of the whole extrusion area.
- Inverter controlled variable speed drive for the extrusion screws.

#### **Center-filling**

#### **Powders**

Gravimetric filling device for fillings in powder or granulate form.

#### Semi-liquids

Filling device for viscous fillings such as syrup, chocolate, jam, gelatin and other similar products.

#### Seeds and flakes

Transportation screw system for such fillings as seeds (chia, sesame), inclusions of nuts, cereal flakes and

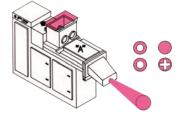


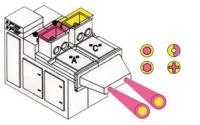




#### Multi-Extrusion with different colours

Two or more CSTR extruders can be easily combined to produce co-extruded products. A wide range of extruding heads and nozzles are available, thus allowing for a great variety of different combinations of colors, flavours and shapes. Besides, co-extruded products can be also center-filled.





## CARUGIL Ball formers Models CBF



## High Production with Quick Return of Investment

Our continuous Ball Formers have been designed for the production of cylindrical hollow, solid and center-filled products. The optimized design along with the strong performance lead to maximum efficiency combined with increased precision. Due to excellent user-friendliness and the ability to work with a wide range of different masses, the Carugil Ball Formers meet the highest production and quality demands.

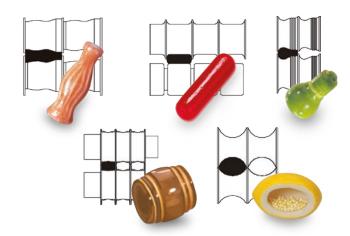
With throughputs up to 350.000 pieces per hour, our Ball Formers stand as the most profitable machines ever in the Confectionery and Food Industries, allowing for an incredibly quick Return On Investment.

#### **Technical Specifications**

Model	CBF-3000	CBF-4500	CBF-6000
Cycles per minute (max.)	40	60	80
Number of ropes / Set of forming rollers	1 / 1	1/2	2/2
Diameter of the piece (min max.)	9 - 38 mm	9 - 38 mm	9 - 38 mm
Power	3,9 kW	4,2 kW	4,8 kW

#### Wide variety of shapes

Changing the forming rollers takes less than five minutes, meaning that flexibility is really an actual fact in this line.



#### Highlights

- High-quality forming of hollow, solid and center-filled balls and cylindrical products.
- One or two sets of 1.000 mm long forming rollers (depending on the model).
- Servo-driven movements. Completely customizable forming cycle.
- Cutting system specially designed to avoid leakage when working with semi-liquid center-filled ropes.
- Rotary servo-driven knife for a gentle and precise cut matching the speed of the rope.
- Quick and easy change-over (less than 10 mins).

#### **Customizable cycle**

All the movements of the machine are driven by independent servo-motors, thus allowing all the parameters to be independently selected through the touch screen.

Both the spinning and the translation speeds of the rollers are wholly configurable throughout the forming process, thus guaranteeing the best conditions for each type of product, shape, size and center-filling percentage. The parameters can be stored/loaded in memory as recipes through the easy-to-handle touch screen.



## **CARUGIL Cooling tunnels**

for preformed pieces

**Models CTM** 



#### Highlights

- Cooling capacity up to 1000 Kg/h.
- Suitable for ball and cylindrical pieces.
- High quality pieces. Original shape of the product is retained during the cooling process.
- Total capacity can be extended.
- Remote troubleshooting available (depending on the model).

### High performance precission cooling

The Carugil cooling tunnels are designed for high-performance precision cooling of a wide range of **ball and cylindrical pieces**, while retaining the original pieces' shape and quality.

Their extra-large product tiers are designed to keep the pieces rolling continuously, thus avoiding deformation, while the optimized cooling air flow system allows for a **high capacity of up to 1.000 Kg/h**. It provides an even and gentle cooling and circulates cool air to quickly cool large quantities of ball formed hollow, filled and solid pieces, from forming temperature down to packaging temperature.

# CARUGIL O O O O O O O

Control panel for monitoring the cooling process (humidity and temperature inside the cooling tunnel).



Hygienic desing. Scraps are collected onto three easiliy removable trays.

## CARUGIL Coating pans Models CTG

## Superior coating for perfect shaped pieces

The Carugil conventional rotary coating pans Models CTG can be used in a wide range of coating and polishing processes. Their versatility and flexibility make them specially suitable for confectionery and pharmaceutical industries.

Carugil's coating pans are functional, easy to maintain, adaptable and built to quality specifications to ensure years of trouble free operation.

Our models let you produce batches of 50 and 100 Kg in a highly efficient way, either for ribbed or smooth surfaces.

#### Technical Specifications

Model	CTG-50	CTG-100
Capacity	50 litres	100 litres
Hygiene	SS grade 304 or 316	SS grade 304 or 316
Outer diameter	500 mm	1000 mm
Inner diameter	250 mm	500 mm
Pan r.p.m.	0 - 35	0 - 35
Discharge	Manual	Manual
Power	0,75 kW	1,5 kW



## **CARUGIL Flow-wrappers**

#### **Models CWFB**



pieces

#### Reliable and accurate Flow-wrapping

The Carugil CWFB flow-wrappers are continuous-motion horizontal form, fill and seal (HFFS) machines for the flowwrapping of preformed pieces at speeds up to 1.800 pieces per minute.

The machine is designed to have minimal maintenance requirementes. Besides, a new design transport system is utilized, replacing the traditional chain feeding systems, therefore avoiding the need for greasing the chain and contamining the product.

All the movements of the machine are driven by brushless servomotors and monitored by the latest generation electronic controls that guarantee the optimum synchronization of the wrapping material at high speed.

#### Technical Specifications

Model	CWFB-1000	CWFB-2000
Applications	Preformed pieces	Preformed pieces
Feeding system	Feeding dial plate	Feeding dial plate
Maximum speed	1000 pieces/min	1800 pieces/min
Min. size of the piece (WxDxH)	8 x 12 x 5 mm	8 x 12 x 5 mm
Max. size of the piece (WxDxH)	30 x 30 x 30 mm	30 x 30 x 30 mm



- To achieve a perfect wrapping, the CWF machines are equipped with an automatic longitudinal correction system by means of photoelectric cell and a continuous tension control system of the wrapping material.
  - System for accurate guiding of the film Compact electro-mechanical Offset Pivot Guide (OPG) for accurate guiding the film to the form & film station.
- Automatic system to splice a new reel of wrapping material without standstill of the machine.
- An additional inkjet printer system is available for marking/printing the best before dates, lot or date coding.
- Label applicator for accurately, efficiently and reliably applying self-adhesive stickers or tattoos to the continuous wrapping film. Servo matching speed control allows the speed of the labeller to precisely match the speed of the Flow Wrapper.







# Cut & Wrap Lines

Fold wrap, flow-pack and 4-Side seal styles







your key to success

The Carugil Cut & Wrap lines allow for processing a huge range of different masses into fancy and attractive shapes, solid or center-filled, in multiple colours with different flavours and wrapped in different styles.

CARUGIL is one of the world's leading process and packaging solutions provider for Cut & Wrap lines. We supply complete Cut & Wrap lines for chewing gum, toffee, fruit pastes and similar masses.

Choosing the right packaging style for the market is a key to succeed. Well aware of this fact, Carugil offers turnkey Cut & Wrap lines with throughputs up to a maximum of 1200 Kg/h and with three different packaging styles: **fold wrap, flow-pack and 4-Side Seal**. Whatever your requirement, we would be pleased to offer you the most suitable solution to your requirements.

#### Our production lines

Cut & Wrap line	Wrapping Style	Capacity
Low capacity line	fold wrap, double-point end fold, flow-pack and 4-Side seal	Up to 300 Kilos per hour
Medium capacity line	fold wrap, double-point end fold, flow-pack and 4-Side seal	Up to 600 Kilos per hour
High capacity line	fold wrap, double-point end fold, flow-pack and 4-Side seal	Up to 1200 Kilos per hour

Huge range of masses can be processed into fancy shapes

Toffee



Fruit paste



Soft candy



Chewing-gum



Fold wrap



Flow pack



4-Sides seal



## in the Confectionery Industry

## **Chewing-gum**

In developed confectionery markets, added-value chewing gum products are emerging as leading further development of the gum category. Be it delivering an extra strong breathfreshener flavor or including active ingredients to enhance whitening or promote oral care, functional, nutraceutical or even medicated chewing gums have stimulated growth within the segment.



### **Soft Candy**

What's so great about chewy and soft candies? Is it all the fresh fruit flavors? The smooth, chewy texture? There's a reason why children and adults love chewy sweets.

Bright in flavor, with a yielding, chewy softness and the mouth-coating heft, chewy and soft candies are a uniquely satisfying confection. If you'd like to bring home a soft treat that everyone can enjoy, chewy and soft candies are the right choice.

Our Cut & Wrap lines allow to produce fancy and attractive chewy and soft candies pieces either solid or center-filled.



### Toffee

Carugil has been producing toffee equipment for more than 30 years. Toffees are quite a widely spread products worldwide.

Experience combined with continuous and ongoing efforts in R&D have made Carugil one of the reference companies in this field.



### Fruit paste

One way of providing your children with both nutritious and delicious snacks is by feeding them natural, healthy fruit snacks that contain natural ingredients, such as natural fruit.

Latest market trends are increasingly demanding such healthy snacks. Our Cut & Wrap lines have been updated to allow gently handling a wide range of masses products, including natural fruit pulps (mango, tamarind, etc.) and with no artificial flavors and colours.



## to produce pieces in flow packs



The Carugil Cut & Wrap lines allow for processing masses into fancy and attractive shapes, solid or center-filled, in multiple colours with different flavours and wrapped in flow packs.



The Carugil CWFC-1000 is a continuous-motion horizontal form, fill and seal (HFFS) machine for the **flow-wrapping of cylindrical** and rectangular pieces at speeds up to 500 pieces per minute.



CARUGIL

to produce pieces in fold wrap style



The Carugil Cut & Wrap lines allow for processing masses into fancy and attractive shapes, solid or center-filled, in multiple colours with different flavours and wrapped in **fold wrap and double-point end fold styles.** 



Continuous high-speed forming, cutting and wrapping machine for products in **fold wrap and double-point end fold styles.** 





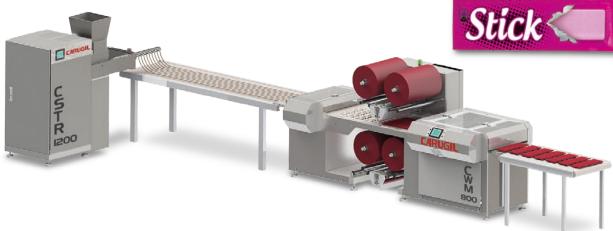
## to produce pieces in 4-Side Seal sachets



The Carugil Cut & Wrap lines allow for processing masses into fancy and attractive shapes, solid or centerfilled, in multiple colours with different flavours and wrapped in 4-Sides Seal sachets.

#### Benefits

- High production. Up to 4.000 pieces/min
- Up to 40 lanes in parallel.
- · Air-tight pouches. Perfect and even isolation of the product all along the 4 seals.



#### **Multilane Wrappers** models CWM-4S

The Caruqil Horizonal Form, Fill, Seal machines CWM-4S offer multilane packaging productivity, producing "4-Side Seal" style packs. Standard versions are available from 4 lanes up to 40

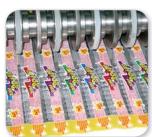
Stick

Stick <









CARUGIL



## CARUGIL Kneaders Models SUPER STRONG



#### Mixing machines with sigma kneading blades

Our Double Sigma Arm Mixers have been engineered to deliver high-capacity mixing performance, along with the user-friendliness, reliability and durability world-class customers demand.

The mixing is carried out by two sigma arms placed at the bowl's bottom, which rotate in opposite directions and at different speeds, resulting in continuous movement of the product from the sidewalls to the center of the kneading bowl or the reverse, depending on the direction of rotation.

Discharge of the mixed product can be achieved either by tilting of the kenading bowl or by means of a discharge screw located horizontally below and paralell to the sigma arms.

#### Technical Specifications

Model	Capacity Ltrs. (total)	Capacity Ltrs. (useful)	Discharge
Super Strong 240	240	150	Tilting
Super Strong 400 / AH-400	400	300	Tilting / Screw
Super Strong 600 / AH-600	600	450	Tilting / Screw
Super Strong 2000	2000	1300	Tilting

#### Highlights

- Intensive kneading of viscosity products.
- Shorter processing times with high product quality.
- Front and rear bowl seals prevent leaking and helps to maintain product quality. Seals made of high quality
- Minimum processing capacity of the total container
- All machines in the Super Strong series have double -jacketed bowl for heating/cooling.
- Discharge either by tilting of the bowl or by extruding screw.

#### **Available options**

- Jacketed mixing bowl. Heavy duty stainless steel jackets for efficient dough temperature control lessens needs for maintenance and guarantees product is kept at the ideal temperature ensuring it's quality.
- Thermal insulation of the bowl, protected by stainless steel hermetically closed panels.
- The Carugil Sigma Mixers can also be supplied with a Variable Frequency Drive (VFD) as an option.
- Specialized die heads / special extrusion spouts.
- Automated operation of cover via hydraulic piston.



Double Sigma arms made in Stainless Steel and



The mixing bowl can be tilted up and forward through the use of a hydraulic system.



Extrusion screw to discharge the product in a form or shape, or directly to the next phase of processing.

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## CARUGIL Extruders Models CSTR

The perfect partner to



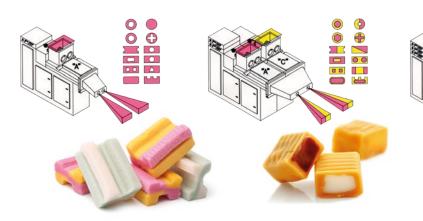
#### Highlights

- Heavy duty construction. Easy and safe operation.
- All areas in contact with the product made in Stainless Steel.
- Twin-screw infeed section with counter-rotating screws to provide a stable infeed, thus resulting in a constant massflow for the extruder.
- Water jacketed extrusion barrel with electronic temperature control, which allows for an accurate and even temperature of the whole extrusion area.
- Inverter controlled variable speed drive for the extrusion screws.



#### Multi-Extrusion with different colours

Two or more CSTR extruders can be easily combined to produce co-extruded products. A wide range of extruding heads and nozzles are available, thus allowing for a great variety of different combinations of colors, flavours and shapes. Besides, co-extruded products can also be center-filled.





## **CARUGIL Cooling Tunnels**

For extruded ropes

**Models CCT** 



#### High precision cooling

The Carugil Cooling Tunnels are designed for highperformance precision cooling of chewing gum, chewys and low-boiled sugar masses while retaining the shape and quality.

The cooling tunnel works across belts in tiers above each other. The conveyor belt system ensures that the product dwells in the tunnel the optimum time to reach the packaging temperature. Speed of each belt can be easily configurated.

#### Technical Specifications

Model	Ropes	With of the belt	Tiers	Cooling capacity	Kg/h
CCT-9-200	2	200 mm	9	up to 20.000 Frig	up to 325 Kg/h
CCT-9-350	4	350 mm	9	up to 40.000 Frig	up to 450 Kg/h
CCT-11-200	2	200 mm	11	up to 40.000 Frig	up to 600 Kg/h
CCT-11-350	4	350 mm	11	up to 54.000 Frig	up to 1200 Kg/h

#### Performance and efficiency

The Carugil Cooling Tunnels provide an even and gentle cooling and circulate cool air to quickly cool large quantities of product from extruding temperature down to packaging temperature.

#### Highlights

- Cooling capacity up to 1200 Kg/h.
- Suitable for different rope profiles: round, square or rectangular.
- Original shape of the rope is retained during the cooling process.
- Total capacity can be extended (depending) on the model).
- Remote troubleshooting available (depending on the model).
- Several wrapping machines can be combined with one tunnel.

#### **Flexibility**

The Carugil Cooling Tunnels are suitable for different rope profiles: round, square, rectangular and









Several wrapping machines can be combined with one tunnel through synchronization trays.

## **CARUGIL Flow-wrappers**

Model CWFC-1000



#### Reliable and accurate Flow-wrapping

The Carugil CWFC-1000 is a continuous-motion horizontal form, fill and seal (HFFS) machine for the flow-wrapping of cylindrical and rectangular pieces at speeds up to 500 pieces per minute.

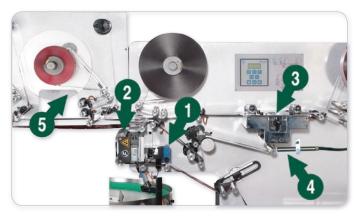
The machine is designed to have minimal maintenance requirementes. Besides, a new design transport system is utilized, replacing the traditional chain feeding systems, therefore avoiding the need for greasing the hain and contamining the product.

All the movements of the machine are driven by brushless servomotors and monitored by the latest generation electronic controls that guarantee the optimum synchronization of the wrapping material at high speed.

#### Technical Specifications

Model	CWFC-1000		
Applications	Continuous ropes		
Maximum speed	500 pieces/min		
Min. size of the piece (WxDxH)	10 x 55 x 5 mm		
Max. size of the piece (WxDxH)	35 x 200 x 10 mm		

#### **Highlights**



- To achieve a perfect wrapping, the CWF machines are equipped with an automatic longitudinal correction system by means of photoelectric cell and a continuous tension control system of the wrapping material.
- System for accurate guiding of the film. Accurately and automatically corrects the lateral displacements of the film before the cutting stage.
- Automatic system to splice a new reel of wrapping material without standstill of the machine.
- An additional inkiet printer system is available for marking/printing the best before dates, lot or date coding.
- Label applicator for accurately, efficiently and reliably applying self-adhesive stickers or tattoos to the continuous wrapping film. Servo matching speed control allows the speed of the labeller to precisely match the speed of the Flow Wrapper.



## **CARUGIL Cut & Wrap machine**

Model CWCS-1000



#### Continuous high-speed forming, cutting and wrapping machine for products in fold wrap, double-point end fold and pillow-pack styles

The Carugil CWCS-1000 sizes, shapes, cuts to length and wraps individual pieces of chewing gum, bubble-gum, soft caramels, toffees and chewy candies at speeds of up to 1000 pieces per minute. The CWCS-1000 is equipped with the very latest motion control technology. All movements in the machine are driven by separate servomotors, thus allowing for easy adjustment of all parameters through the touch screen.

Stickers or tattoos are also possible. The inner wrapper includes the stickers/tattoos and is registered to ensure that the cut is in the correct place.

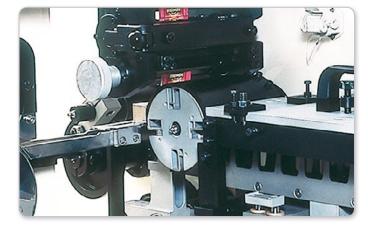
### Technical Specifications

Model	CWCS-1000		
Maximum speed 1000 pieces per minu			
Dimensions	1500 x 1380 x 1530 mm		
Weight	2800 Kg		
Power	9 kW		

#### **Excellence** in automation

The CWCS-1000 is the best-in-class example of CARUGIL's focus on excellence in automation, through state of the art electronic components, like servomotors and integrated controllers, and of CARUGIL's commitment to providecustomers mechanical simplicity, high reliability, efficiency and high production rate.

Focused on reduction in mechanical parts subject to wear and tear in mind, CARUGIL has produced a compact, simple yet reliable machine able to offer maximum reliability at high



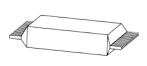
The low inertia wrapping head allows for variations of +/- 1mm in the size of the piece.

#### Three different styles

The innovative and revolutionary design of the CWCS-1000 allows the possibility of wrapping in fold-wrap, dobuble point end fold and pillow-pack styles on the same machine.







Pillow-pack

#### Reel holders

The machine can be equipped with 2,3 or 4 reels with automatic splicer for both the outer and inner reels to splice the wrapping material reels without standstill of the machine.



## **CARUGIL Multilane wrappers**

Models CWM-4S



#### Multilane packaging productivity

The Carugil Horizonal Form, Fill, Seal machines CWM-4S offer multilane packaging productivity, producing "4-Side Seal" style packs. Standard versions are available from 4 lanes up to 40 lanes. The CWM 4-S wrapping machines have been specially designed to wrap all kinds of products advancing in parallel along continuous production lines.

The multilane principle combines high capacity with gentle handling of the product, offering maximum reliability because of the low operation speed of the lane. Thus, the multi-lane concept is the ideal solution for wrapping such products as gums, toffees, chewy candies, licorice, etc.

#### Technical Specifications

	CWM-4S 150	CWM-4S 300	CWM-4S 600	CWM-4S 1200
Useful cross cutting width	150 mm	300 mm	600 mm	1200 mm
Speed (max.) (meters of film/min)	12	12	12	12
Power consumption	5 kW	8,0 kW	12 kW	21 kW

#### **Highlights**

- Products advancing in parallel such chewing gum, soft candy and fruit masses.
- High production. Up to 4.000 pieces/min. Up to 40 lanes.
- Air-tight pouches. Perfect and even isolation of the product all along the 4 seals.
- Portable. The machine is fitted with wheels, allowing for easy positioning to other end-line equipment.
- The machine can be optionally equipped with a rotary knife for continuous products such licorice, fruit paste, etc.
- Easy automatic cartoning after the sealing stage.







Printing system to print best before dates, alpahnumeric texts, etc.



Rotary knife for continuous products.





### **CUSTOMER SUPPORT**

### **Customer satisfaction is** the central focus for us

#### When time makes the difference

When time is of essence. There is not much to act when there is a failure that forces production to stop. We provide remote diagnostic and on-call repairs to address any technical incident as quickly as possible.

#### Remote troubleshooting and on-call repairs

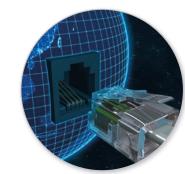
#### Remote Diagnosis Service

**RDS enables condition monitoring.** The installation of RDS also enables condition monitoring and condition-based maintenance, which detects potential issues before they scalate, compromise performance or cause system failure.

Benefits. Through Remote Diagnostic Services (RDS) and Global Technical Support, Carugil reduces the repair time, improving the availability and safety of operations. The system reduces the need for on-site visits by providing assistance from a global technical center.

#### On call repair

In any place you need it. In the case of more complex trouble-shooting situations, we are able to dispatch a service engineer anywhere in the world.





### Parts and maintenance

Our service increases the service life and minimises failure of your machines, and improves the quality of your products. To guarantee this, the highest quality parts are available. Carugil can advise you on this based on your daily needs. Timely preventive maintenance by Carugil's specialists guarantees the highest possible usability of your machines and reduces the risk of unforeseen situations

To minimise time lost by failure, our field service engineers, equipped with up-to-date technical information, are capable of solving any problem.



### Sales Network

Within the Carugil sales network, the presence of local agents and sales partners plays an extremely important role. In such a complex and segmented markets as the Confectionery and Food sectors, their work is indispensable to quarantee in-depth knowledge of local markets, complete coverage of the territory and a high level of service, with the ability to provide a rapid response to the various needs of customers.

Local agents and sales partners are therefore an important asset for the group, a human and professional capital of which Carugil is proud and which has accompanied the history of the companies, sharing their successes and challenges down the years through a relationship of consolidated partnership.



## CARUGIL



carugil.com

Polígono Industrial El Tiro, C/ Antonio Belmonte Abellán, 6, 30100 Murcia, Spain Tel: +34 968 858 032 / E-mail: sales@carugil.com