



Abate Basilio & C

moulds for packaging

High performances & best technology for packaging products & fast cycle parts

Story

ABATE BASILIO & C. Snc was established in 1973 as a mechanical precision shop.

Located between Brescia and Garda Lake, inside one among Italian most important districts for moulding technologies, our Company specialized in time in the manufacture of high performances injection moulds for plastic mostly in the packaging and in fast cycle parts fields.

Our production makes use of technologies, developed straight by us, specifically aimed at the optimization of the injection and cooling cycles as well as the ejection of the shot part and thanks to which we may ensure our customers a considerable increase of the production rate. Exclusively worldwide patents enable our customer to take enormous advantages against the competitors.

In particular we are specialized in the manufacture of moulds for the packaging field and in this respect particular regard deserves our production of high performances flat and sandwich moulds suitable for the production of thin wall containers - for food or not - (T.W.P.P. Thin Walled Packaging Products) with I.M.L. (In Mold Labelling). We are furthermore greatly present into the technical fields with exclusively unscrewing systems and 2K moulds application.

Since April 2003 our Company is ISO 9001 (ICIM Cert. 1054) certified, as further guarantee and growth of reliability and quality - both in terms of products and services - which always distinguished our Company.



Abate's philosophy

Abate is specialised in most of packaging containers and in thin walled container (TWC) and IML technology:

- Thin wall containers for food industry: margarine, ice-cream, yogurt's container, with and without TE feature with IML decoration
- Flower pots
- Drinking cups
- Buckets for various industries, including food and paint industry
- Crates and foldable crates for beverages, agriculture and various industries

Abate is among the leader mould makers in Europe in these fields and is highly specialised in the followings executions:

- Multi-cavities flat moulds
- Multi-cavities stack moulds
- Family moulds (base and lids)
- Multi-cavities mould with exclusively In mould Assembly (see our IMA) feature also in bi-component execution.
- Multi-cavities unscrewing moulds for technical pieces (caps, lids etc).

Abate has more than 35 year experience in the high performances plastic moulding industry.

In association with the most advanced manufacturers of IMM and Automation, Abate is in the position to design, supply and assist COMPLETE MANUFACTURING LINE FOR IML PACKAGING and compete in terms of performances, reliability and cost , with the established world wide suppliers.

During the last 10 years Abate increased the export quota from 10 to 90 % of its turnover, as an evident result of a process where - management, quality, and technology achievements - brought the company to be a reference for quality and technology as well as for competitiveness among the leading mould makers in the plastic industry.

The way of conceiving, designing and manufacturing allows us to assure the whole interchangeability of all components of the mould on drawing at any time.

It's a real, distinguishing feature among our competitors, letting the starting investment become profitable for a long while. According to such a general criterion, both quality and accuracy of each product is not something to be checked with hindsight, but rather a real nature, being born beforehand and soon into everyone's hands. That's why our operators and toolmakers work in self-check, certifying what we deliver.

Our Company, even though small, may offer its customers all those advantages coming from a restricted but agile and functional structure where the direct touch, either on the phone or personal, never fails.

Moulds for crates

ABATE has over 35 years' experience and specialization in the manufacture of injection moulds for bottle crates and other large containers, we can say that we are one of the leader in this sector.

OUR PRODUCTION:

One of our competence is the development of injection moulds for the production of "box-shaped" plastic parts of any size and description we can offer High performance moulds for crates, boxes, containers.

We not only manufacture moulds to order but also offer our services as product development partners – including rapid prototyping.

We are also deeply specialised in the construction of the special moulds for foldable crates.

We have experience with application as :

- multi-component injection moulding of multicoloured bottle crates and two-component soft-touch screwdriver handles.
- gas and water injection technologies for the reduction of material consumption.
- IML on the side of the crates.



IML containers

IML TECHNOLOGY AND IML CONTAINERS

ABATE has acquired an excellent reputation with moulds for thin wall technology. In the last 20 years' experience in the design of hundreds of moulds for the packaging industry means we have the capability to meet your product requirements, and also gives you the reassurance of having a reliable supplier who is familiar with these special needs.

In the last few years we have built up specific know-how of various applications in the IML (In Mould Labelling) sector.

In the packaging business most of our customers are experts who have specialised in the injection moulding of thin-walled packaging or closures. In this highly competitive market innovation and efficiency really count.

The flexibility of the injection production lines for IML packaging became a must!

Abate has developed a new system of modular mould called "FlexoMould®".

The high utilisation, durability and easy operation of our moulds makes a positive contribution to the success of such clients:

Product examples:

- Beakers
- Dishes
- Drink cups
- Containers
- Buckets
- Lids
- Screw-caps
- Closures
- Tubes
- Cartridges



Moulds for buckets and flowerpots

In this field Abate's leadership touch the maximum, Abate is worldwide know as one of the leaders for high performances moulds of round containers and pots.

The mould for bucket requires:

- Long-life moulds for continuous production
- Perfect centring and easy maintenance of the cavities (see our "Square the circle®" technology)
- Specialist in thin-walled and special product forms
- Highly heat conducting metal; produces intensive cooling and shorter cycle times.
- Short cycle times thanks to optimum mould design and intensive cooling system (see our "Inner core extra cooling system®" technology)
- Possibilities to join the handles to the containers in one only mould and get enormous advantages. (see our "In mould assembly®" technology)

- Single and multiple cavities

The mould for flowerpot requires:

- Cemented carbide insert opposite to the point of injection; for reduction of wear in recycling material and for high injection pressures.
- Special Alloy with high heat conducting properties that produces intensive cooling and faster cycle times.
- Abate's exclusive construction of Azoto-cylinders-bottom pins that compensates thermal and mechanical variations and guarantees open and flashes-free bottom holes.

Philosophy of Abate for high productivity and maximum operational reliability.

These are the most important things for Abate moulds.

For moulds used in continuous production, 7 days a week, 24 hours a day, several year out, the cycle time is of paramount importance. A few tenths of a second saved per shot are enough to make the difference between loss or profit.

We are very much aware of this. But there is more. Also the total downtime of a mould must be restricted to an absolute minimum downtime costs money, which is why supply reliable moulds covered by



Technical moulds

Our customers often need precision parts for critical-function applications. The quality of the products and the efficiency of their manufacturing process are crucial to these customers.

ABATE develops specific mould solutions for these customers:

- Mould with unscrewing systems
- Mould for bi-component pieces
- Mould with In mould Assembly operation (with our worldwide patents)

Product examples:

- Lids
- Caps
- 2K closures
- Showers
- Treated pieces





Square the circle

EXCLUSIVE ABATE TECH: CENTRING SYSTEM "SQUARE THE CIRCLE®"

Mould Centring device made by Removable conical centring with centring nitride elements.

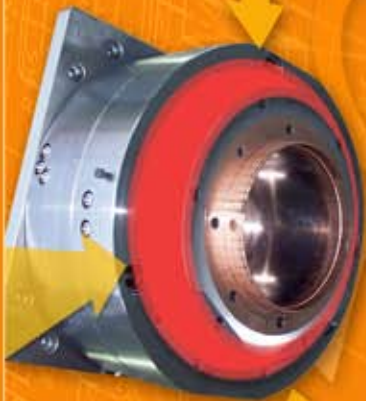
Abate has also developed a system (let's say: to "Square the circle") which allow for similar centring features and performances of a square frame mould in a round shape mould.

In fact the centring system in the round shape mould of Abate is provided with centring independent conical plates which simulate the square type mould and can give a big advantage during the life of the mould as you can adjust the centring of each cavities with a very simple operation.

You can make the **maintenance of the mould (onto the machine)** in the same manner as you make for the square type mould but with much easier operations. **And the customer can save up to 20% on the price** of the square type mould.

This system let you to avoid the heavy costs of the scheduled maintenance that the others well know mould maker are applying for re-centring the cavities that can be till the 20% of the value of the mould each year!

The possibility to centre every cavities independently let you to erase the bad deformation and opening of the Injection Machine's platen during the injection phase and get always perfectly centred pieces.



Innercore Extracooling System

EXCLUSIVE ABATE TECH: "INNER-CORE EXTRA COOLING SYSTEM®" PATENT REGISTERED

which has been developed and is currently applied mostly to moulds for buckets, pails and round containers from 3 to 33 lt.

Abate cooling system is able to:

- * stratify the control of the temperature and the effect of the cooling system inside and all along the punch.
- * optimise all the cooling conditions and also save resources.
- * It also reduce the mass of the punch, thus improving the operation of the machine.

The major effects of this technology, together with the application of qualified materials, are :

- * a gain in the cycle time of approximate 20%
- * a better melting of the material
- * longer life for the mould and the IMM.
- * save of resources.

Abate is able to offer better cooling features and cycle time than most of mould makers, due to our special technology in this field.

Just some examples for your evaluation (moulds for pails/buckets/ round containers) :

our 30 lt top mould is designed for up to 5 million shots (*), with a cycle of 14 sec.(*)
Detailed information on request.

our 20 lt top mould is designed for up to 5 million shots (*), with a cycle of 12 sec.(*)
Detailed information on request.

our 10 lt top mould is designed for up to 5 million shots (*), with a cycle of 8 sec.(*)
Detailed information on request.

our 1 lt top mould is designed for up to 10million shots (*), with a cycle of 4.5 sec.(*)
Detailed information on request.

(*) - Top mould specification, top-fast IMM line-system specification and defined condition for wall thickness and MFI PP.





In Mould Assembly

Exclusive Worldwide Patented IMA Technology for containers with handles

*Multi-Cavities-Mould for Containers and Handles (with IML technology
wall side)*

Containers with Handles co-injected and auto assembly

*Fully automated in-mould handle to bucket assembly with multiple co-
injection*

1 shot - 1 pail + 1 handle - 1 cycle

*No additional external automation (robot) - No ("0") cycle time wait for
the assembly operation*

How it works:

1. We have chosen to link the handle to the container trough one ring that clamp the pin of the container (this concept is opposite at the standard one). In this way our link became stronger and more sure in order to assure the resistance till capacity of 30 litres or more. This solution has the advantages to have a large spectrum of esthetical shape and dimensions in order to by-pass all the limit of the other existing solution. This let us to have resistant and elegant shape handles that solve all the problems of the previous systems.

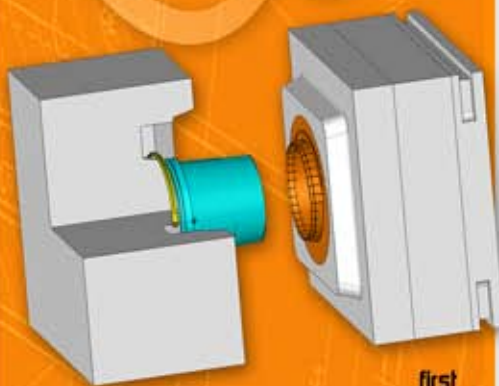
2. We have chosen to use two separate injection gates: one for the containers and one for the handle in order to improve the control of the filling of the plastic material and, more important, to eliminate all problems in the handle consequently to the use of one only injection point only in the container. In fact with one only injection point in the bucket you will face problem of fulfil the pieces, gas burning and marks, handle fragility, very bad cycle time. Alls these matters have suggested us to use 2 separate cavities with separate control of the 2 injection points.

3. We have choose to keep completely separate the 2 cavities in order to safe the possibility to use 2 different colours, for particular aesthetic reasons, or 2 different material for particular technical issues.

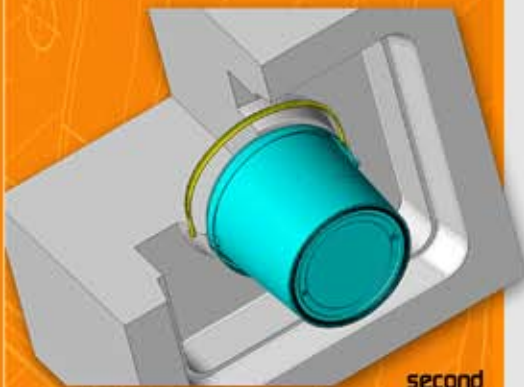
4. The moulds is suitable for IML use, but if you need "offset printing" after moulding the handle has the possibility to stay at the border level of the bucket in order to avoid interference with the printing machine.

5. We have already installed this technology in some of the worldwide leader of the market. (Italy, Spain, Greece, Turkey, Russia, Romania ...)

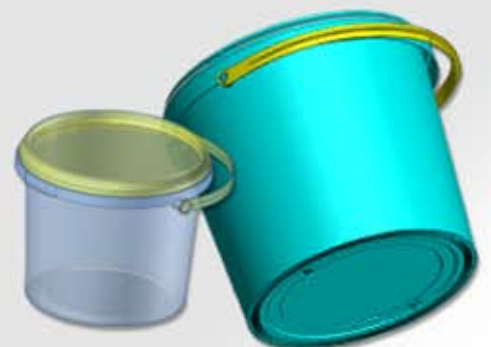
6. The worldwide PCT patents that protect this technology is absolute property of Abate Basilio & Co.



first



second





third

Advantages:

Our IMA Mould is:

- Strong
- Simple
- Fast cycle
- Easy maintenance
- Flexible

The Moulded Container gets the followings advantages:

- Less production cost:
 - 1 only station of production with 1 IMM and 1 tool
- Simple logistik system
 - 1 only station with palletizer of final product for direct delivery to the customer.
- Higher resistance of the plastic handles
 - With this mould you can choose to obtain the container in PP and the handle in HDPE. Or you can choose an well dimensioned shape of the handle that can guarantee the load till 40 kg.
- Large possibility to choose the morphology of the Handle and the container.
 - This technology doesn't limit the morphology of the products, so you can take advantage from all the shape of the containers: round, oval, square, rectangular and add the handle.
- Bi-colour and Bi-material possibilities
 - This technology gives the possibility to make the container and the handle with different colour or different material that can achieve with 2 screw's IMM.
- Healthy and hygienic
 - No body will touch the container till the container reaches the final customer.
- Flexibility of the complete line
 - The customer could also use the same equipment for other projects, in fact he can keep the same IMM and the same standard robots and change only the mould for other shape or dimensions. This advantage is easy to appreciate against expensive and customized robots that link the handles to the buckets without any flexibility concerning shape or dimensions.



fourth





FlexoMould

The ultimate patented technology Abate Basilio & C for the modular mould.

Now days the market of packaging containers for food and others purposes get more difficult and difficult: different dimensions, wider range of customised shapes with less quantities for each shapes and each customers etc. etc.

The flexibility of the injection production lines for IML packaging became a must!

Abate has developed a new system of modular mould called "FLEXOMOULD®" that has the following advantages:

1. Modularity of the cavities in order to change the dimensions and the shapes of the products that the same mould can produce.
2. Very fast change and setup of the another shapes/dimensions directly on the IMM without unfit the mould from the platens of the machine.
3. Setup time to change product (Production/Production) for 2-cav-FlexoMould® <15 min. Setup time for 4-cav- FlexoMould® < 25 min..
4. Safe change/setup operations obtained through the IMM's platens movement without any danger for the moulds and the operators.
5. There isn't any necessity to assembly and disassembly the mould in a tool shop, because all the operations will be made on the IMM.
6. Our customer can invest in the top of the art material and normalized for the hot half and the framework (for instance in stainless steel) because this parts will work all the time with several shapes/dimensions and their pay back will be faster. This strategy guarantees the best results in term of quality for the products and the maximum reliability of the moulds with the minimum investment.
7. Furthermore the FlexoMould® let the customers to pay-back faster also the automation for IML because this mould allows to exploit to the best the flexibility of the robot. The FlexoMould® it maintains in fact always the same number of cavities the same distance between them, it also maintains the same type of extraction.

