

# 30 years of press and blow machines

Renowned for its engineering, manufacturing, installation and commissioning of hollow glass plants, systems and machines, Olivotto Glass Technologies Group recently celebrated the 30th anniversary of its O.90 press and blow machine. Massimo Pucci delves into the company's history.



Massimo Pucci, Olivotto's Sales Area Manager has worked with the company since 1998.

In 1980, Olivotto introduced the first proprietary electronic control systems on automatic forming machines (dedicated to the production of glass bulbs for lighting). Until then, almost all automatic machines had mechanical cam handling systems, with limited operating and production flexibility.

Olivotto decided to invest in the research and development of electronic control systems that could be used on its machines. The systems developed allowed greater production flexibility and a significant reduction



Two O.90 28 section TR28 models, recently installed.

in operating costs, with important streamlining of machine management, as well as an increase in production line output. The doors were opened to a technological development that would never stop and that strongly contributed, after a few years, to the

creation of the first fully electronic press and blow machine.

In the second half of the 1980s, knowledge acquired through the development of proprietary electronic control systems and based on contingent market needs led ▶



The first O.90 press and blow machine – still going strong 30 years on.



The O.90 18 section enlarge model in production.



Development and evolution of the Olivotto press and blow

**1990 Standard model**

Designed to increase the dimensional range produced by existing press and blow machines. First press and blow automatic machine fully electronically controlled with full servo substitution mechanisms.

**1993 Compact model (12 and 18 working sections)**

Designed for the production of small to medium size glassware at high production speed.

**1995 Enlarge model (18 working sections)**

Designed for the production of big glassware. Total machine weight of 34 tons, mould centre diameter of 3800mm. The largest press and blow process automatic machine ever made.

**1996 TR28 model (double gob; 28 working sections)**

Designed for the production of small glassware at very high production speed. The only double gob press and blow process automatic machines existing in the world. Production speed up to 210 pieces per minute.

**1999 PSL model (in line section machine; two working sections)**

Designed for the production of medium/large glassware at low production speed. The first press and blow automatic machine designed with independent fully servo (brushless motor actuated) blank mould and plunger mechanisms.

**2003 Electronic control system upgrade aimed to increase the machine's performance**

Scaleable electronic control architecture consisting of worldwide brand components: Multitasking PLC with motion axes integrated system, HMI interface and high speed deterministic field networks for major improvements on the machine process control repeatability. The control system upgrade was an important milestone of the O.90 machine technological development. Some of the features introduced with the control system were:

- Independent neck ring electric speed control including special rotation cycles specifically designed for the improvement of the glass distribution and glassware forming.
- Individual automatic temperature controls (closed loop) for blank moulds and plungers.
- High accuracy full servo tracking gob delivery system with independent gob loading timing adjustment for each working section.
- Independent electronic servo substitution; brushless motors actuated for the bottom forming improving and parison elongation control.
- High accuracy camera system for the parison elongation closed loop control.

**2007 HQS type (12 and 18 working sections)**

Specifically designed for the production of high quality stemware.

**2016 OGT 4.0 approach**

Applied to all OGT group products and technologies – an innovative global approach centred around engineering, manufacturing, sales and after sales.

The OGT 4.0 approach applied to the press and blow process combines the best existing and well proven technical solutions with innovative functionalities.



The O.90 12 section compact model in production.

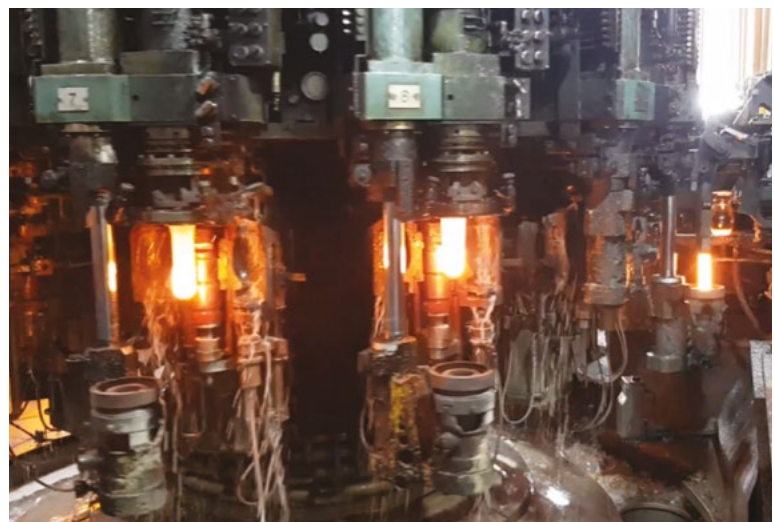
Olivotto to focus on the development of an automatic machine suitable for the press and blow process.

The company's engineering team concentrated on the design of a fully electronically controlled machine that would be able to overcome production limitations at the time. Small changes were made to the technological process and thanks to the application of proprietary electronics, control of the process was substantially improved.

**30 years of operation**

Olivotto made its first fully electronic automatic 'O.90' press and blow machine in 1990. It was a modular rotary machine consisting of 12 working sections, each equipped with independent electronic control of the movement, electric motors for the neck rings rotation and electric servo substitution for the parison elongation control.

The O.90 was installed and put into production by an Italian customer



An O.90 press and blow in production.



Olivotto's OGT 4.0 approach applied to a press and blow automatic forming line.

who agreed to start a pioneering technical collaboration with Olivotto. Objectives were set during the development phase and customer expectations were completely satisfied.

That machine was the first of a long series of press and blow machines that Olivotto would go on to produce. The fact that after 30 years, the first installed O.90 machine is still fully functional and still in production at the same customer's site is testament to its workmanship and design.

### Reliable high performer

Well-established knowhow of the electronic control systems, together with experience derived from the production of many machines over the years, ensure that the Olivotto O.90 is a high performance and extremely reliable machine. Thanks to hundreds of successful installations the press and blow system has effectively completed a technological 'self-learning upgrade'.

In 2020, the O.90 stands as an innovative machine with high technological content, performing in a reliable and user-friendly manner, with minimal maintenance requirements.

### A tailored approach

The O.90 is a versatile machine which, thanks to the different models available, is capable of producing a wide range of products according to customer-specific needs, such as: Tumblers, large vases, one-piece and two-piece stemware. Accordingly, the company is able to offer different consolidated technologies in terms of equipment and services.

As well as electronic equipment, Olivotto Glass Technologies can design and manufacture moulds according to customer requirements. The company has a 'production expert team' for each production process. Each team is composed of a production supervisor and senior operators with proven experience in the field. Customer after-sales service is available at any time. ●

#### About the author:

Massimo Pucci is Sales Area Manager for Olivotto Glass Technologies

#### Further information:

Olivotto Glass Technologies, Avigliana, Italy  
tel: +39 011 9343 511  
email: info@olivotto.it  
web: www.olivotto.it