



Since 1957
The technology in the
investment casting

G ULTIMATE series



GALLONI...there's no better way to cast!

**ASEG
GALLONI**

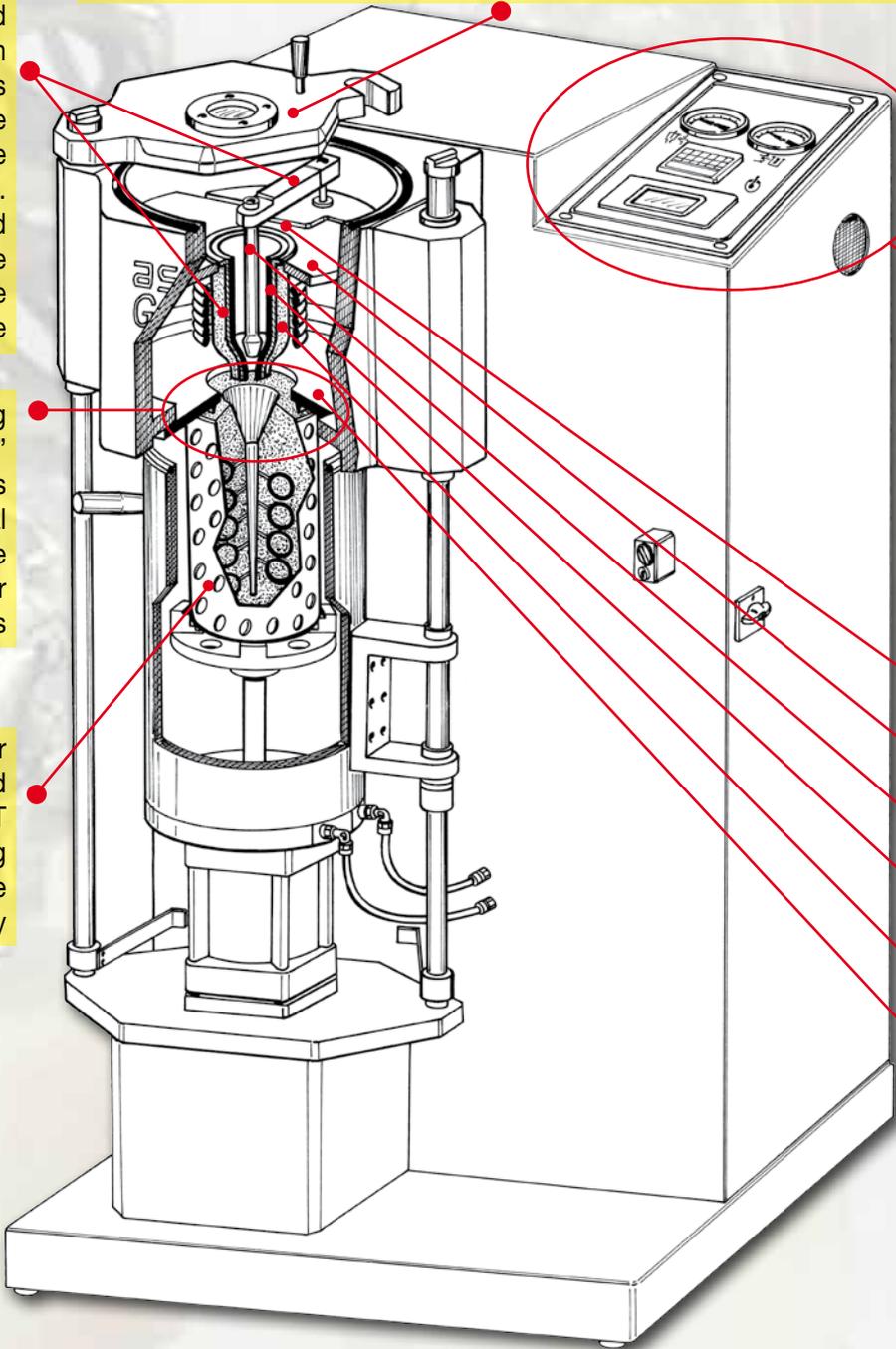
Made in Italy

A very important advantage of the G series is the sliding crucible chamber cover, which is easily opened and closed with gentle hand pressure. Other machines have tilting covers which have to be lifted for every single cast; this rapidly provides operator fatigue.

Redesigned metal rod (plunger) holder enables rod changeover in seconds and does not involve expendable components. Redesigned smooth discharge pure graphite crucible

“Sealing Blade System” (SBS) guarantees perfect flask seal without the use of silicone rubber gaskets

Perforated or unperforated flasks WITHOUT FLANGE enabling greater furnace flask capacity



User-friendly touch screen automatically controls all functions

CONSUMABLES:

- CRUCIBLE HOLDING PLATE
- METAL CONVEYOR
- STOPPER
- GRAPHITE CRUCIBLE
- CERAMIC CONTAINER
- CERAMIC INSULATING DISK

"G" SERIES VACUUM "OVER PRESSURE" CASTING MACHINES

The Galloni "G" range casting machines are the latest and most technically advanced induction heated vacuum "over pressure" machines currently available worldwide, featuring low frequency generators and fully proportional computer-controlled power output.

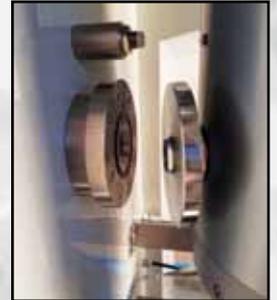
The operator has simply to charge the crucible, place the casting flask in position and press one button!

The **G SERIES** are equipped with a 5.7" (128 mm) TFT colour touch-screen.

All machines lead the operator logically step-by-step through the casting sequence, irrespective of the type and quantity of the alloy. Frequency and power output are automatically and continuously adjusted and, just ahead of attaining the preset casting temperature, the computerized control starts modulation of the heating current by delivering low frequency impulses, thus inductively stirring the melt. Then, when all parameters are achieved and the temperature "spread" is no more that 4°C either side of the set point, pouring starts automatically followed by strong pressurization of the molten metal by inert gas. The complete cycle can be performed in minutes and crucible lasts for hundreds of casting if properly used.

G1 ULTIMATE

Entry Level to Medium Manufacturing

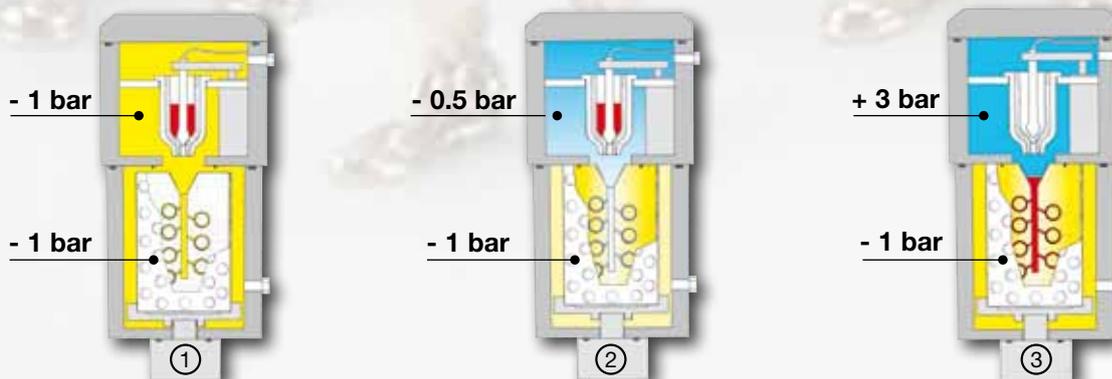


The system used in our "G" series casting machines is a vacuum over-pressure under inert atmosphere. The casting pieces have a very smooth surface, a very dense molecular structure and no defects such as improper filling, porosity and shrinkage.

In our system both the flask and crucible are located in a common chamber which is first fully evacuated by vacuum, before melting, followed by helium gas supply to create an inert atmosphere. Helium gas presents excellent gas fluidity which provides a cleaning effect of the molten metal and flask and guarantees a smooth filling of metal even with the most intricate filigree patterns. **FIG. 1**

The casting temperature is attained and low frequency pulses are given to vibrate and mix the molten metal by keeping it homogeneous. At this stage the flask is pushed against a long lasting special metal sealing blade system, or SBS, which, like a knife, cuts the investment by sealing the vacuum underneath the flask. This "long lasting" system avoids the use of silicon gaskets or flasks with flange with an important reduction in casting costs. **FIG. 2**

The metal, once completely poured into the flask, is pressurized by argon up to 3 bars. This pressure being applied to the molten metal, forces it into the flask while the vacuum pulls it. This results in a very smooth surface due to the effect of the vacuum and a dense well compacted casting due to the over-pressure which benefits both thin and thick sections. **FIG. 3**



G3 ULTIMATE - G5

Medium to Large Manufacturing



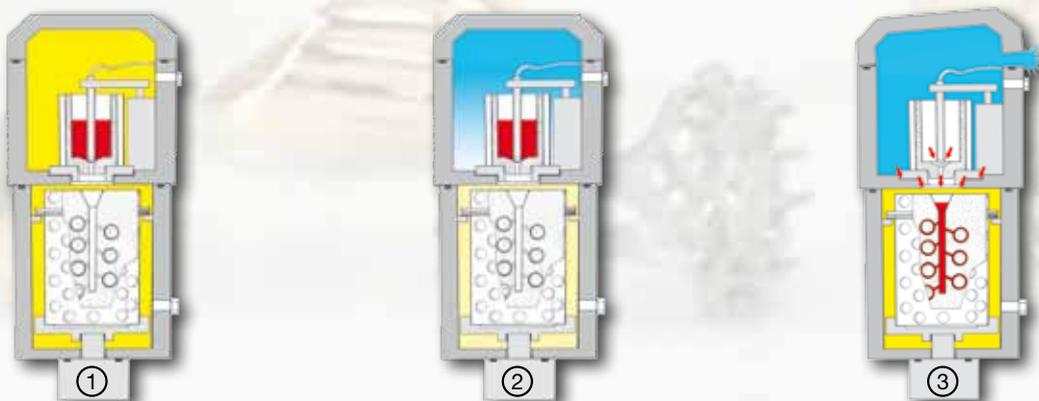
COMPETITORS

The drawing below depicts the internal layout of most our competitor's machines where the crucible and flasks are located in separate chambers divided by an aluminium base-plate. In this type of system, the crucible sits in the upper section and the flask is sealed beneath with a silicon gasket around its top edge. **FIG. 1**

The effect of this “useless” pressure is drastically reduced by “drag” of the crucible holder etc.; in fact, application of gas “over-pressure” by this method shows no significant advantage over a simple gravity/vacuum traditional and obsolete system. **FIG. 2**

The metal cannot be effectively pressurized up to 3 bars because gas pressure applied above the crucible can only act on the metal, once the mould is occupied, by jetting through the crucible feed hole to the underside. Furthermore, at this high pressure these weak structures will not withstand and the cover will blow out.

A further disadvantage of these machines is that there is usually a gap of 4-5 cm between the crucible feed hole and the flask entry, which frequently leads to splashing and gas absorption problems (our “G” series have the crucible almost attached to the flask). **FIG. 3**



G10

Large Parts for Industry



Other machines have tilting covers which have to be lifted for every single cast; this rapidly provokes operator fatigue.



Our “G” series range is currently accepted as the world’s best casting machines and we have now introduced the “G10 Heavy - Duty” machine, principally for the production of aluminium castings in the automotive industry, rapid prototyping and various new technologies. It is also capable of producing excellent results in metals such as bronze, brass, silver and gold, etc.

A unique feature of the “G10” is the crucible chamber, which is produced by machining from a solid (800 kg) block of aluminium, thus avoiding porosity which is inevitable with other machines having chambers manufactured from sandcastings. A very high level of vacuum and, importantly, a strong pressurization can thus be achieved without the slightest leakage. The cover and crucible chamber are water cooled.

This robust construction permits pressurization of up to 3 bar (in a second or less) of the metal after admission to the mould flask. This is necessary in order to propel the very light aluminium into the mould cavity and to be maintained during solidification, in order to obtain the smoothest possible surface on the castings. The relatively lightweight construction of other machines on the market does not permit such high and rapid pressurization after pouring and any attempt to employ this, can result in the casting chamber cover being explosively blown off. Generally, these machines can only handle a pressure of 1 bar, applied very slowly (too slowly).

We do not recommend vibration of the flask during pouring since hot investment is extremely fragile and, in our experience, the metal should remain undisturbed during solidification. Also in our experience, double chamber systems work well for the first two or three castings but when the inter-chamber seal is lost, the pressure differential disappears.

Please use this link <http://www.galloni-aseg.com/it/prodotto/g-10/> to learn more about the advantages of our “Heavy Duty G series” machine over others.

A further advantage is the flask chamber, which is manufactured from drawn stainless steel. In the event of metal breakthrough this is easily removed, thus, unlike such events with sandcast chambers where metal spillage is extremely difficult to remove and most likely will damage the chamber.

The powerful 40 kW low frequency generator and all electronic functions are located entirely within the very robust body of the machine. The G10 is fully automatic and features touch-screen controls. It uses flangeless flasks. The G10 can use two inert gases: Helium for creating the inert atmosphere and Argon to pressurize the metal after pouring.

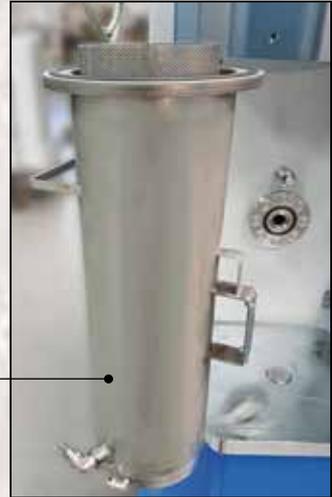


WATER REFRIGERATOR

The use of water for industrial cooling purposes becomes more and more difficult each day and it becomes impossible when water is not available.

The main advantages of water refrigerator are:

- complete elimination of water consumption
- permanent cleanliness of circulating water with maximum performance of equipment.



GRAINING UNIT

Fitted on the left bar produces high quality casting grain in gold and silver alloys under vacuum. Comes with stainless steel basket grain recover and graphite crucible.

TECHNICAL SPECIFICATIONS FOR "G" ULTIMATE SERIES

COOLING WATER:	G1 ULTIMATE, G3 ULTIMATE, G5: 3 lt./min. - G10: 12 lt./min.
COMPRESSED AIR SUPPLY:	6-7 bar
INERT GAS SUPPLY:	multiple gas: Helium, Argon, Nitrogen
GUARANTEE:	12 months

G1 ULTIMATE

MAX. CRUCIBLE CAPACITY:	240 cc (1400 gr Au 18 kt, 1200 gr Ag 925)
FLANGELESS FLASK:	max. mm 150 diam. x 250 h max.
EXTERNAL VACUUM PUMP:	60 m3/h
ELECTRICAL:	Threephase 230 V – 50/60 Hz – 6 kW (separated transformer for tension 400/415 V)
OVERALL DIMENSIONS AND WEIGHT:	base mm 750 x 650 x 1200 h - kg 210

G3 ULTIMATE

MAX. CRUCIBLE CAPACITY:	240 cc (2200 gr Au 18 kt, 2000 gr Ag 925)
FLANGELESS FLASK:	max. mm 150 diam. x 300 h max.
EXTERNAL VACUUM PUMP:	60 m3/h
ELECTRICAL:	Threephase 230 V – 50/60 Hz – 10 kW (separated transformer for tension 400/415 V)
OVERALL DIMENSIONS AND WEIGHT:	base mm 750 x 650 x 1200 h - kg 222

G5

MAX. CRUCIBLE CAPACITY:	470 cc (4000 gr Au 18 kt, 3500 gr Ag 925) *larger crucible 1000 cc available for bronze, brass, aluminium
FLANGELESS FLASK:	max. 200 mm diam. x 400 mm h max.
EXTERNAL VACUUM PUMP:	60 m3/h
ELECTRICAL:	Threephase 230/400/415 V – 50/60 Hz – 10 kW
OVERALL DIMENSIONS AND WEIGHT:	base mm 780 x 750 x 1300 h - kg 375

G10

MAX. CRUCIBLE CAPACITY:	12000 cc – 30 kg Aluminium
FLANGELESS FLASK:	max. mm 600 diam. x 750 h max.
EXTERNAL VACUUM PUMP:	100 m3/h
ELECTRICAL:	Threephase 400 V – 50/60 Hz – 40 kW
OVERALL DIMENSIONS AND WEIGHT:	base mm 1350 x 1200 x 3000 h - kg 1200

The machine is standard equipped with a flask holder for 100 mm diameter flask - Different diameters on request.

IN COMPLIANCE WITH CE REGULATIONS
we reserve the right to modify technical specifications without notice

ASEG GALLONI SPA

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