

# APPLICATIONS

## THE GEFRAN SOLUTION FOR BLOW MOLDING MACHINES

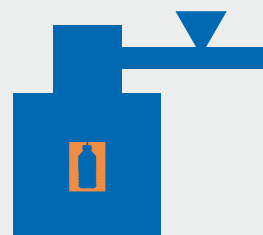
# GEFRAN



## ACCUMULATOR HEAD BLOW MOLDING

### DISTRIBUTED SOLUTION

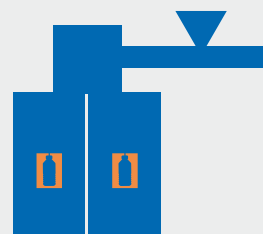
- Linear contactless transducers for highly accurate displacement measurements.  
Robust and reliable potentiometers with a long and successful history, IMPACT fluid-free melt-pressure transmitters offer:
  - long durability thanks to a thicker contact diaphragm
  - safety at all round safety with PL 'c' third-party certification and comprehensive self-diagnostics.
- Proposal based on GF\_VEDO EV and remote I/O.
- Zone temperature distributed control architecture reduces wiring and installation time.
- Ready-to-use advanced integrated parison control, open and closed loop.
- New blow template: easy and smart page layout.
- Integrated operator panel with dedicated machine function keys.



## CONTINUOUS EXTRUSION BLOW MOLDING

### TOTAL INTEGRATION, REDUCED COST

- Linear magnetostrictive sensors: accurate measurement of displacement over time, as well as simple installation.
- Linear potentiometric transducers: always precise controls.
- Proposal based on GF\_VEDO EV and remote I/O because of very large number of I/O typically demanded. This relates to the number of options that the machine can have (leak tester, take out unit ...).
- Flexible and scalable architecture based on remote I/O.
- Ready to use advanced integrated parison control, open and closed loop.
- New blow template: easy and smart page layout.
- Integrated operator panel with dedicated machine function keys.
- Parison stand-alone solution.

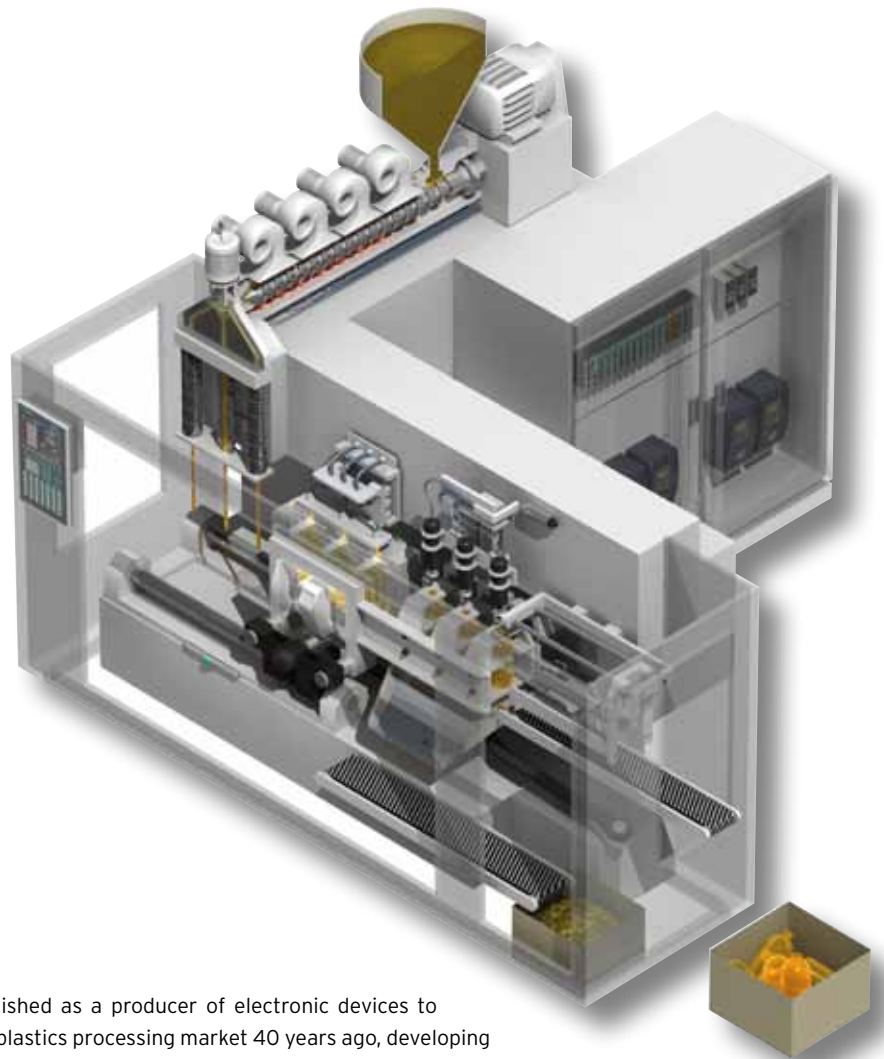


## INJECTION BLOW MOLDING

### ACCURACY

- Linear magnetostrictive transducers: simplicity in installation and accurate measurements over time.
- Industrial pressure transducers: state-of-the-art products to guarantee superior safety standards. KS transmitters have SIL2 third-party certification.
- Proposal based on GF\_VEDO EV and remote I/O because fixed-configuration I/O is not possible for this type of machine
- High accuracy process control thanks to one-stop supplier ensures highly accurate process control
- High flexibility based on compact and remote I/O solution





## GEFRAN. YOU KNOW WE ARE THERE

### WE ARE THERE ... IN PLASTICS

**For Gefran, plastics is a passion.** We were established as a producer of electronic devices to control industrial process variables, and entered the plastics processing market 40 years ago, developing and delivering technological solutions for related industrial processes. This experience has given Gefran comprehensive knowledge of the market's needs, making us a reliable and effective partner for plastics OEMs and end users.

### WE ARE THERE ... IN PRODUCTS

Every Gefran product is conceived and built in-house by our own technical personnel, who **design and produce the devices we ship all over the world every day.**

**Total knowledge of our products** and how they are made guarantees their reliability and, above all, ensures the flexibility with which we immediately respond to our customers' needs and to market demands.

### WE ARE THERE ... IN MEASUREMENT AND CONTROL SOLUTIONS

Gefran **solutions range from systems for measuring of physical variables to products for machine, heat, and movement control.** We make sensors for position, pressure, force, and temperature, hardware and software automation platforms, inverters, and drives - and they are all produced with passion.

### WE ARE THERE ... IN CUSTOMER RELATIONS

Our customers are consistently supported by **highly qualified** staff in choosing the right product - each with special and unique features - for their application.

In addition, Gefran's after-sales support delivers reliable and dynamic service to resolve any issue with our products and their application.

### WE ARE THERE ... ALL OVER THE WORLD

Gefran has **nine production plants** (in Italy, Germany, Switzerland, United States, Brazil, China, and South Africa) and **seventeen branches all over the world.** A network of about **80 distributors** completes a worldwide presence that guarantees truly global customer service.

## MACHINE CONTROL

### GCube Modula platform

Enables the construction of high-performance, multi-protocol applications that are easily integrated into company networks.

Solution based on integrated control (PLC and HMI) and remote I/O modules connected via a real-time Ethernet fieldbus.

- > ETHERNET REAL-TIME
- > SCALABLE
- > MULTI-PROTOCOL



### GF\_Project VX programming platform

GF\_Project VX is an integrated development environment (IDE) for real-time control applications including Gefran Automation, Power control, Drive and Sensor product ranges. GF\_Project VX is a complete suite offering all the necessary tools and libraries for configuring a wide range of automation projects. GF\_Project VX also includes all the features for commissioning, software maintenance, service and remote control.



- |                         |                      |
|-------------------------|----------------------|
| » Project manager       | » Operator Interface |
| » Hardware architecture | » Diagnostic         |
| » Control               | » Connectivity       |
| » Code Library          |                      |

- > One tool for many different automation projects.
- > Short learning-curve thanks to graphics and standardised configuration.
- > Less development time = cost saving.
- > Efficient project reusability = durable investment.

## MEASUREMENT

### Industrial pressure transducers

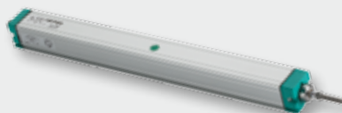
Compact design, suitable for hydraulic and pneumatic pressure measurements, wide choice of ranges up to 0-1000 bar, voltage or current output, high accuracy, SIL2 certified version available for safety applications.



### Linear potentiometric transducers

A proven technology over the years for measuring displacement of moving mechanical parts.

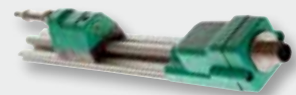
Sturdy and versatile, ideal for the majority of industrial applications, even under very harsh conditions.



### Linear magnetostrictive transducers

A development of linear potentiometers, Gefran magnetostrictive sensors utilise new ONDA technology.

A complete range of sensors is available for position measurement: from ONPI-A, offering simplicity of installation, to the MK4-A, with its high level of accuracy



### Thermocouples and Thermoresistances

A wide range of simple and reliable temperature sensors to suit different applications, ambient conditions, work, temperature range and precision.



### Melt pressure transducers

High temperature pressure transducers and transmitters are available with mercury filling, FDA approved fluids (e.g. NaK) and fluid-free versions, i.e. IMPACT series. A comprehensive range of Performance Level 'c' melt pressure transducers means reduced risks to operators, improved safety for machines, and respect for the environment.



## HEATING CONTROL

### Solid State Relay

The Solid State Relay GQ series, for loads up to 600V AC, offers control solutions for heating resistances with current up to 90A, in standard compact sizes.

The "zero crossing" firing mode eliminates EMC noise, and a red LED at the front shows the relay status. Models are available with DC and AC commands, and universal models are also available.

The wide range of input signal connectors, embedded or plug-in, offers the best wiring flexibility.



### Solid-state Contactors

The GTS and GTD series of solid-state contactors provides correct thermal dissipation to ensure heat resistance with currents of up to 120 Amps. It is available in a range of compact, space-saving sizes.

The alarm options such as "over-temperature" and "partial/total load break" allow continuous monitoring of heating systems to enable effective preventative maintenance.



### Solid State Power Controller

GFX4 series multi-zone power controllers allow remote temperature control close to the heated zones.

This offers major savings on wiring, connections, and cabinet space requirements.

Temperature inputs, heat/cool PID control, fan-cooled solid state relay, and current transformers are all embedded in each of the four zones.

Dedicated models for infrared heating controls meet the technology requirements for these applications, and ensure longer lamp life.



## MOTION CONTROL

### Inverters

With a wide range of technological variants, the ADV200 inverter series meets the demands of systems integrators and machine builders, for solutions at the forefront of technology featuring high-level configurations.

The modular and compact mechanics integrates accessories such as EMC filters and input chokes. This means that the system takes up significantly less space and wiring costs are optimised.

The man/machine interface is totally intuitive and "open", thanks to the powerful programming platform. Customised menus, dedicated application software or specific functions for any machine management, are available at all levels in IEC61131-3 programming environment.

The ADV series offers a power ratings up to 1.2mW, making it suitable for asynchronous and synchronous motor control. It is compatible with all AC mains supplies including 230V, 400V, 460V and 690V.





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