



Better filling by design

Innovation with your
business needs in mind

- **Modular**
- **Efficient**
- **Hygienic**
- **Scalable**



THE SYSTEM F-600 FILLING MACHINE



F-600 AT A GLANCE



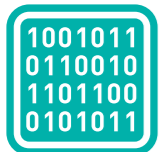
Machine frame:

Designed with simplicity and scalability in mind, the F-600 frame offers a cost-effective upgrade path



Product dosing:

Able to accept a wide variety of dosing technologies, with standard options being flowmeters or servo-driven volumetric pumps



Control system:

Omron PLC control with a full colour touch screen HMI is recommended as standard, but other approved systems can be specified



Safety Guarding:

High level guarding to protect the operator from unintended product contact



Product supply:

Easily interchangeable manifolds and tanks can be specified



Nozzle carrier:

Servo-driven vertical axis for complex RWF profiles, and in-to-trough priming and purging



Filling nozzles:

Quick strip to facilitate superior hygiene levels



Machine enhancements:

Can cost effectively grow to meet changing production demands, culminating in a fully automated 8 head configuration



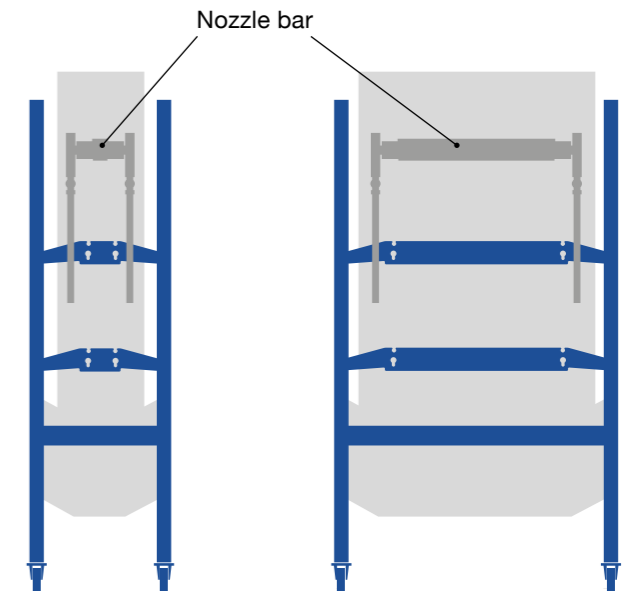
Transport caddy:

For transporting volumetric pump blocks and other wetted components for off-site cleaning



User Interfaces:

Ergonomically designed with operator comfort, safety and efficiency in mind



F-600 frame

F-1200 frame

Flexible options

A semi-automatic **System F-600** can be cost effectively upgraded with additional filling heads, and automated by fitting a conveyor and additional safety guarding.

If an increase in production demand is anticipated, the machine can be configured from the outset on the wider **System F-1200** frame, with twice the potential capacity of the **System F-600**.

Upgrading from the **System F-600** to the **System F-1200** is possible. A large number of components are directly transferable, and the majority of wetted components can also be re-used if you choose to upgrade further within the System range.

The System F range – a step change in filling equipment design

All elements of the design have been questioned, and many deep-rooted industry norms have been challenged through the innovative integration of proven technologies.

The result is a robust, modular filling system that delivers outstanding production flexibility and output, as well as cost-saving efficiency and future-proof scalability.

System F-600 is exactly what a modern liquid-filling machine should be.

System F-600



Machine Frame

- Robust yet simple modular design
- Welded box frame construction with asymmetrical surfaces and a clear view of floor area
- Standard mounting points accommodate a variety of modules
- Cost effectively upgraded to **System F-1200** specification as production demand increases



Product Supply

Manifold

- Designed to deliver consistent flow rates across all filling heads
- Can be quickly removed for convenient cleaning
- Pit and crevice-free interior for exceptional hygiene standards

Tank

- Pit and crevice-free, with open internal angles to eliminate bug traps and ensure hygiene standards
- Mounted directly to valve blocks to eliminate unhygienic connection points and avoid increased machine footprint and trip hazards
- Can be quickly removed for convenient cleaning



Product Dosing

System F-600 can accommodate different product dosing technologies according to customer need. Usually volumetric or flowmeter options are selected.

Volumetric Dosing

Adelphi has developed four key enhancements to this proven dosing technology:

- **Hygiene:** The quick-strip design permits:
 - a twin-head filler to be stripped of all wetted assemblies and fitted with a pre-cleaned set in less than 5 minutes
 - full strip of removed assemblies to component level within 5 minutes
 - Component cleaning away from the production area

- **Versatility:** Product cylinders ranging from 100 ml to 5 litres offer the ability to fill volumes from 20 ml to in excess of 5 litres on one machine. Servo-driven product pistons deliver accuracy of up to +/-0.05%, and Disk Valve technology (patent pending) permits, without modification, the accurate filling of:
 - low viscosity liquids
 - pastes with viscosity in excess of 500,000 cPs and challenging rheology characteristics
 - soft particulates of up to 12mm diameter
 - extremely abrasive products, without causing damage to high-value components
- **Scalability:** Future upgrades do not need to be considered at the point of purchase:
 - Up to 4 volumetric cylinders can be mounted on an **F-600** frame.
 - Additional filling heads can be retrofitted at any time, at minimum cost, and with minimum downtime.
 - A large number of **System F-600** components can be re-used when upgrading to an **F-1200** frame, offering the potential for an 8-head fully automated volumetric filler
 - The majority of wetted assemblies are compatible with the rest of the **System F** range, offering the potential for further upgrade without writing off existing capital equipment
- **Efficiency:** Superior levels of output, accuracy, and energy efficiency due to servo drive technology:
 - Accurate profiling of pump speed helps to optimise product flow when constrained by complex container shapes
 - Servo feedback ensures that viscous products are filled as quickly as possible, while working within the performance parameters of the servo drives
 - Individual filling head output of up to 1.3 litres per second with accuracy of up to ±0.05% (dependent on product and container characteristics)
 - Significant energy savings by comparison with pneumatically driven machines

Flowmeter Dosing

System F-600 can accept either mass or mag flowmeters – the benefits and limitations of each option can be explained by a member of our sales team. Flowmeters introduce no moving components to the product flow area, so are considered easy to flush clean.



Nozzle Carrier

The servo driven nozzle carrier is fast, precise, and almost silent in operation. A vertical stroke of 550mm means the **System F-600** nozzle carrier permits:

- rise-while-fill filling of large hand-held containers, accepting complex RWF profiles to optimise accuracy, dependent on container and product characteristics
- programming of complex RWF profiles to optimise filling speed
- maintenance of a clean filling zone by diving the nozzles into the trough for priming and purging



Filling Nozzles

Non-drip nozzles are designed to individual requirements, with inward or outward opening shut-off valves.

- Nozzle pitch either fixed at 250mm, or with the option of quick and easy pitch adjustment to a minimum of 40mm.
- Nozzle bodies are designed to ensure a smooth product flow path and maximum hygiene
- Remove an individual nozzle assembly and replace with a pre-cleaned assembly in under 20 seconds, and strip to component level in under 1 minute. This results in reduced production downtime, as well as a less pressured cleaning routine
- Nozzle body slider (patent-pending) eliminates the risk of injury or mechanical damage in case of an obstruction during the nozzle dive sequence



Safety Guarding

Static high level guarding protects the operator from unintended product contact. This static guarding is easily opened to offer unhindered access to the filling nozzles during product changeover routines.



Control System

Omron has been selected as Adelphi's preferred control system supplier. Their systems are cost effective, compact, and backed by worldwide support and next-day delivery. **System F-600** can also be specified with Siemens, Allen-Bradley, or Mitsubishi systems.



User Interfaces

A stressed machine operator generally results in reduced production output, so **System F-600** has been designed with operator comfort, safety, and efficiency in mind.

- Mechanical touchpoints are user friendly and require only moderate effort to operate
- Heavy containers can be presented at a comfortable height for strain free removal after filling
- Entirely tool-less machine adjustment, and largely tool-less component level strip-down
- Front-mounted full colour, 7-inch touch-screen HMI offering intuitive navigation of the operating menu
- Configurable security settings to restrict access to critical machine settings
- USB connectivity for convenient recipe back-up



Transport Caddy

A trolley for safely transporting all wetted components for off-site strip-down, cleaning and storage



Machine Enhancements

System F-600 can cost effectively grow with your production requirements, negating the need to write off existing equipment.

- **Wetted Parts:** An extra set of wetted parts to facilitate fast changeovers and thorough off-site cleaning
- **Capping station:** Add a hand capping station to ensure consistent cap application torque, and reduce the likelihood of repetitive strain injuries
- **Service Contract:** Regular preventative maintenance ensures continued machine efficiency, and reduced machine downtime. Special servicing and spares rates are offered with Service Contracts
- **Pitch adjustment:** Upgraded nozzle carrier and nozzle bodies to enable quick and easy pitch adjustment down to 40mm
- **Conveyor:** Conveyor and associated container handling systems to enable automation of the filling process.
- **Neck Location:** The **System H** neck location module enables automation of the filling process when filling bottles rather than tubs and pots.
- **Full guarding:** Additional guarding as required when automating a semi-automatic **System F-600** or upgrading to a **System F-1200**.



The Adelphi System Range

With our **System** range, we are developing an entirely new set of packaging machines that are not only excellently engineered, but thoroughly designed. A clear focus on innovation that serves business needs, with radical improvements that often surpass current industry norms, results in a harmony of function and form.

MODULAR

Tailored to your needs at a favourable price

Individual machines can quickly be specified to your requirements thanks to **System's** modular designs. Every module is a standard item that can be held in stock, so there is little need for time-consuming engineering input, and our fast delivery times will help you get your production up and running quickly.

EFFICIENT

Maximum output with minimum input

Innovative design and use of the latest technology ensure that our **System** machines deliver superior levels of accuracy and speed, and extremely efficient product and container changeover routines, while using less energy. That means increased output at less cost and with less down-time.

HYGIENIC

Inherently clean design with easy access

Every element of our **System** range is designed with hygiene in mind, with quick-strip product contact parts manufactured in 316L-grade stainless steel, and no horizontal surfaces where fluids can pool. The area under our machines is also visible and easily accessible to aide the maintenance of a clean production environment.

SCALABLE

Buy for today, save for tomorrow

With our **System** range, you no longer have to pay now for capacity that you hope you will need in the future. Instead you can quickly and cost-effectively grow your filling line, simply by adding or upgrading modules only when you need to.



Liquid-filling
equipment



Container capping and
closing equipment



Primary packaging
handling equipment