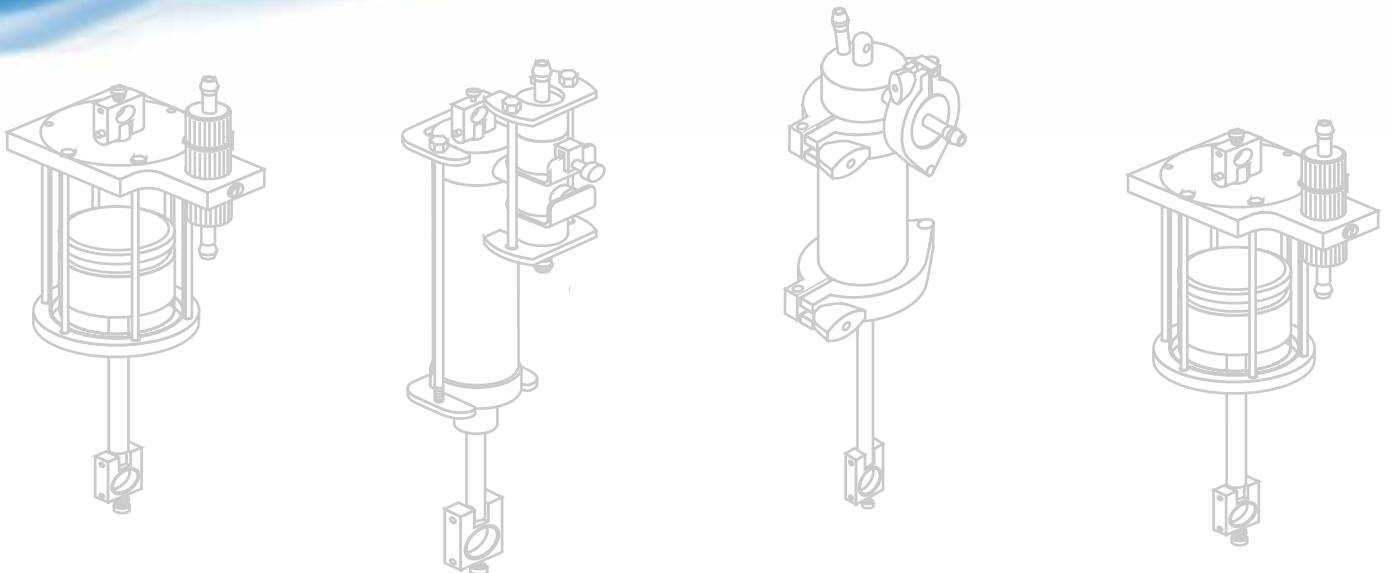


Piston Filling Units



Filamatic Piston Pumps

The Heart of the Filling System

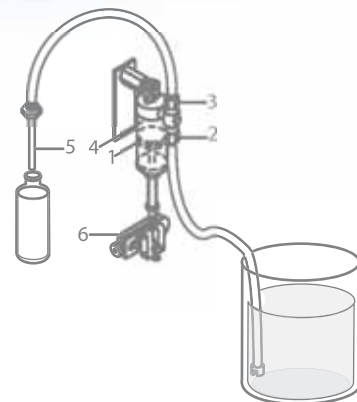
Filamatic's positive displacement piston pumps are designed to repetitively dispense preset volumes of fluids with a high degree of accuracy. The pumps are interchangeable up to the rated capacity of the filler and are available in a variety of models. Some features include:

- 💧 Fills liquids including molten products, suspensions, corrosive chemicals, and shear sensitive products
- 💧 Accuracy to $\pm 1/2\%$ or better
- 💧 Self-priming
- 💧 Easy to disassemble and clean; fully autoclavable
- 💧 Fills from floor level drum, overhead supply, or pressurized reservoir
- 💧 Sanitary pumps are available that meet pharmaceutical and cosmetic good manufacturing practices
- 💧 All metal product contacting parts are fabricated of type 316 or 316 L stainless steel

How It Works

A Closer Look at the Piston Pump

Product is supplied to the Filling Unit from a floor level reservoir, an overhead supply or a pressurized source. Downward motion of the piston (1) creates a vacuum in the pump chamber (4), thus opening the intake valve (2). A preset volume of liquid then flows from the supply source into the pump chamber. Upward motion of the piston (1) closes the intake valve (2) and opens the discharge valve (3). Liquid is then discharged from the nozzle. (5) A graduated micrometer control (6) adjusts the piston travel, and thus the volume of liquid dispensed per stroke.

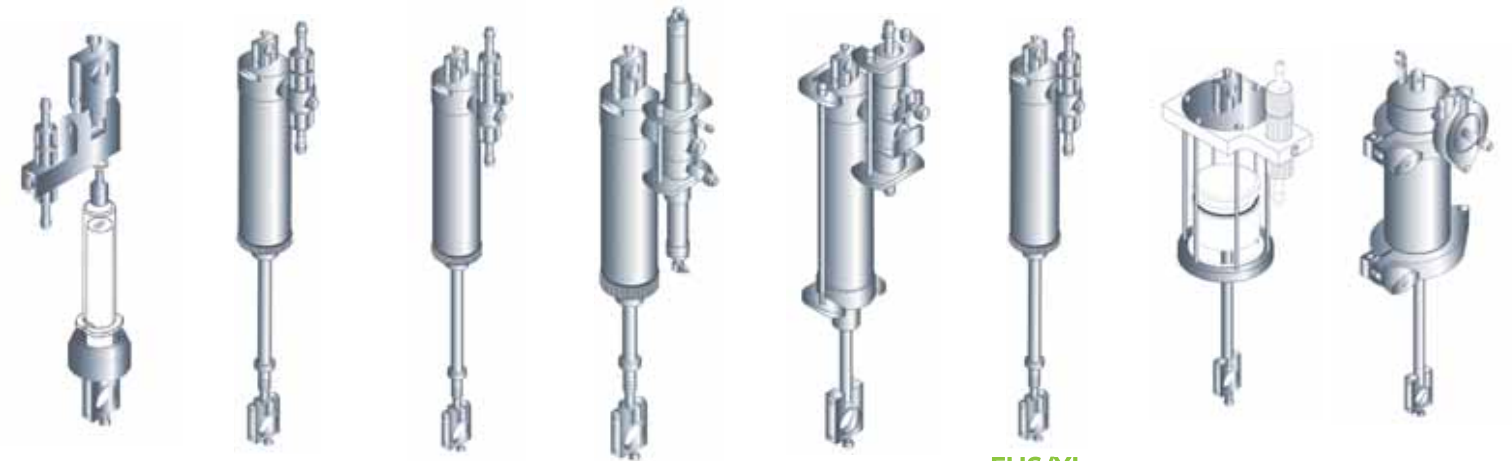


Sanitary Filling Units

Ideal for Pharmaceutical & Cosmetic Applications

For applications requiring frequent cleaning and product changeover, non-threaded type SAN/TP Filling Units or Series DUS Filling Units offer the advantage of quick and easy disassembly and assembly.

| Filling Unit | Applications |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FU-50 FUS | Free-flowing liquids (water, alcohol, solvents, etc.) |
| FUS/TP | Free-flowing liquids (water, alcohol, solvents, etc.) Tie-rod design minimizes assembly and disassembly time; eliminates sharp corners in the flow path and crevices. |
| FKS | Semi-viscous and viscous liquids (creams, lotions, oils, etc.) |
| FKS/TP | Semi-viscous and viscous liquids (creams, lotions, oils, etc.) Tie-rod design minimizes assembly and disassembly time; eliminates sharp corners in the flow path and crevices. |
| FUS/XL FKS/XL FSV/XL | Similar to the FUS, FKS, and FSV models, but with twice the filling range and only available to use on high frame machines. |
| FSV | Spool valve type for use with clear liquids, product with particulates, and viscous products that must be fed under pressure. |
| DUS-HP | Used for sterile filling, pharmaceutical and cosmetic products, and where clean-in-place capabilities are required. Hand polished for injectable grade or pharmaceutical grade. |
| SAN/TP | Used for Pharmaceutical products--highly polished with tie-rod design that minimizes assembly and disassembly time. |
| KYU | Corrosive and metal sensitive liquids (acids, chemicals, etc.) Plastic contact parts are fabricated of Kynar. |



FU-50 Piston Pump .3ml to 50ml

Recommended for dispensing free-flowing, non-sticky liquids, the FU-50 provides quick installation and uses a glass syringe and 316 stainless steel valving. The syringe sizes are also interchangeable. Accuracy to $\pm 1/2\%$ or better.

FUS Piston Pump .05ml to 1100ml

Recommended for dispensing free-flowing liquids (perfumes, alcohol, solvents, suspensions and saturated solutions), the FUS Piston Pump's adjustable Teflon piston rings take all the wear. Optional elastomer piston seals are available and the entire mechanism is easily disassembled for cleaning. Furnished complete with plastic tubing and nozzle. Elastomer "O" ring seals suggested when filling water-based products. Accuracy to $\pm 1/2\%$ or better.

FKS Piston Pump 0.3ml to 1100ml

Recommended for dispensing medium viscosity liquids including shampoos, creams and oils, the adjustable suck-back provides sharp, clean cut-off even with stringy material. The adjustable Teflon piston rings take all the wear and the entire mechanism is easily disassembled for cleaning. Optional elastomer piston seals are available and the FKS is furnished complete with tubing and nozzle. Accuracy to $\pm 1/2\%$ or better.

FSV Piston Pump 0.3ml to 1100ml

The FSV is a multi-purpose filling unit used for handling a wide variety of free-flowing, semi-viscous and viscous materials such as perfumes, petroleum jelly, sauces, mascara, etc. It can handle liquids and semi-liquids containing particle matter that is $1/8"$ and smaller. The FSV Piston Pump will operate with intake pressures up to 75 p.s.i. and is equipped with a positive acting, air-operated spool valve. Accuracy to $\pm 1/2\%$ or better.

FUS/TP & FKS/TP Piston Pump 0.1ml to 1100ml

FUS/TP is for dispensing perfumes, alcohol, solvents, etc. The FKS/TP is for dispensing more viscous products such as shampoo, creams, oils, etc. These pumps are recommended for applications requiring frequent disassembly. The non-threaded tie-rod construction makes it easy to clean—eliminating cracks and crevices. By loosening a pair of clamps, you can disassemble the entire pump. Furnished complete with plastic tubing and nozzle. Comes standard with "O" ring piston seals. SAN/TP with polished surfaces for cleaner operation is also available. Accuracy to $\pm 1/2\%$ or better.

FUS/XL, FKS/XL & FSV/XL Piston Pump 1ml to 1100ml

XL Piston Pumps have an extended range to use with free-flowing, semi-viscous or viscous liquids. Longer stroke and smaller cylinder size permit more pumps to be installed on Filamatic multiple station fillers; expanding the production capabilities of some Filamatic machines by as much as 66%. They provide a 20 to 1 volumetric adjustment—twice the fill range of FUS, FKS and FSV Filling Units. Fill accuracies to $\pm 1/2\%$.

KYU Piston Pump 0.1ml to 1100ml

Ideal for corrosive chemicals and metal sensitive liquids such as acids and reagents, the KYU pump has a heavy wall, precision bore glass cylinder with Kynar piston and valve housings. Optional Viton or Silicone duckbill valving provides greater filling accuracy and ceramic ball check valves are available. Piston head, cylinder head and valve casings are fabricated from Kynar for type KYU Piston Pump. Accuracy to $\pm 1/2\%$ or better.

DUS-HP Piston Pump 0.01ml to 1100ml

Ideal for the pharmaceutical industry, the DUS Piston Pump has no frictional wear parts in the liquid stream, and greatly reduces particle generation. Liquid is contained in a platinum cured silicone diaphragm and the DUS-HP is hand polished injectable grade or pharmaceutical grade both with 316 stainless steel construction. Accuracy to $\pm 1/4\%$ or better.

Built To Order, Built To Last



Proudly built in the U.S.A.

Filamatic

Your Specialist in Liquid Filling

Filamatic, a division of National Instrument, LLC, has been serving the pharmaceutical, biotech, healthcare, contract packaging, cosmetic, chemical specialty and food industries since 1950. We provide a wide range of equipment that can be customized to suit your unique application and budget.

We meet the ever changing demands of our customers by providing high performance, reliable liquid filling systems that deliver value, accuracy, faster changeover, and low total cost of ownership year after year. Today as always, the heart of our business lies in the strong and lasting relationships we enjoy with our customers.



Specialists in Liquid Filling Systems

4119 Fordleigh Road
Baltimore, Maryland 21215 USA
Phone 866-258-1914 or 410-764-0900

sales@filamatic.com
www.filamatic.com