

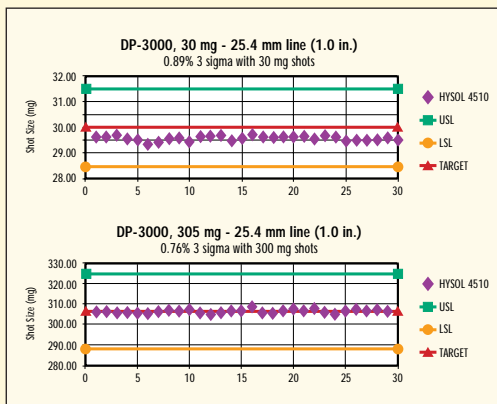
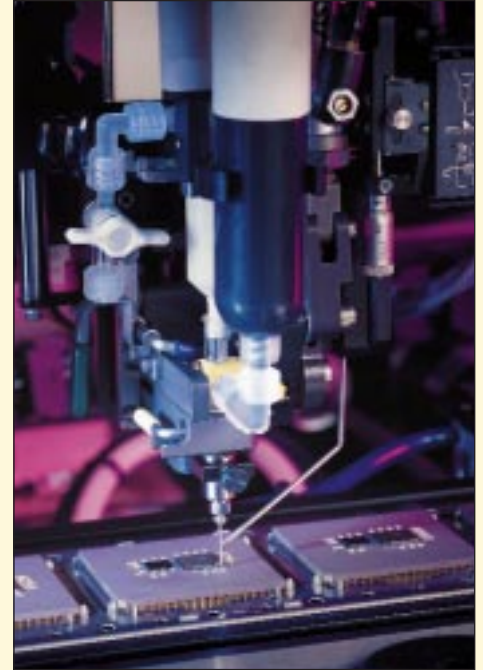
SPECIFICATIONS: DP-3000 SERIES LINEAR PUMP

DP-3000 SERIES: LINEAR PUMP TECHNOLOGY FOR HIGH-VOLUME PRODUCTION

The DP-3000 Series linear pump is the third-generation linear pump designed and manufactured exclusively by Asymtek to meet today's requirements for high-volume production, 24 hours a day, 7 days a week. This third-generation pump has redefined the industry standard for speed and accuracy, providing flow rates to 500 mg/sec with accuracy of ± 1 percent at 3-sigma repeatability.

Performance accuracy and speed of volume deposition is precisely maintained for applications ranging from very large BGA to very small flip chip die. The pump is ideal for dispensing a wide range of filled and unfilled fluids such as encapsulants, adhesives and thermal compounds for applications such as flip chip underfill, CSP underfill, and BGA cavity fill encapsulation.

The DP-3000 linear pump is a servo-controlled, volume displacement pump compatible with Asymtek's automated dispensing systems. It is a true positive displacement linear pump that is not affected by production variations in fluid viscosity, supply pressure or fluid/pump temperature. Whether dispensing lines, spiral fills, dots or patterns, the linear pump's servo drive mechanism and Fluidmove® for Windows NT® software allow multiple shot sizes in the same program. High flow rates not possible with auger pumps are now a reality with Asymtek's linear pump technology.



DP-3000 PERFORMANCE

The DP-3000 linear pump establishes a new, higher performance plateau. This figure shows the excellent repeatability and tight tolerances achieved in typical underfill and cavity fill for 30-305 mg shot sizes. These results are typical. Depending on fluid and other conditions, results may vary. Call us with questions about your specific application.

FEATURES

- Rapid refill speed for optimal underfill dispensing
- Quick-release mechanisms of wetted parts for easy setup and removal from the system
- Tool-free disassembly and assembly for quick and easy cleaning
- Better than 1%, 3-sigma accuracy for consistent dispensing with multiple programmable shot sizes
- Fast, efficient priming with minimal material waste
- High flow rate for high throughput
- True positive displacement dispensing, independent of viscosity
- Outperforms rotary positive displacement pumps with regard to accuracy, speed, and wear

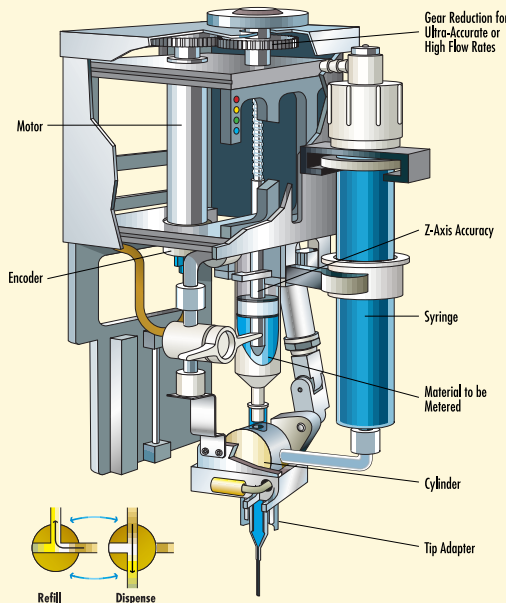
HOW IT WORKS

The pump design uses volumetric displacement technology and a DC servo motor with encoder to control true piston motion. The piston changes the volume of a reservoir that is fed from the main syringe. The displacement of the piston in the reservoir results in an equivalent positive displacement of fluid through the pump.

A pneumatically actuated disposable valve controls the refill of the reservoir and provides integrated, no-drip performance.

The pump's flow rate is a function of the piston's speed and diameter. Changes in viscosity, needle size, and supply pressure have no effect on the flow rate.

The pump has quick-release mechanisms for tool-free removal of the syringe, stopcock, and pump chamber.



DP-3000 SPECIFICATIONS:

| | |
|-------------|--|
| Drip: | No drip with 1 cps fluid |
| Flow rate: | 0.006 ml/s to 1 ml/s |
| Shot size: | 0.002 to 2 ml |
| Resolution: | 0.00025 ml |
| Accuracy: | <1.5%, 3 sigma for 30 mg shots <1.0%, 3 sigma for 300 mg shots |
| Dimensions: | Length: 203.2 mm (8.00 in.) Width: 83.8 mm (3.3 in.) Depth: 88.9 mm (3.50 in.) |

The above specifications are independent of fluid viscosity within the range specified below. Due to the large number of available fluids and needle sizes, dispensing conditions may vary. Contact Asymtek to discuss your specific application.

FLUID SPECIFICATIONS:

Viscosity: 1 cps to 1 Mcps

OPTION:

Tool-free Quick Release Bracket for fast removal of the pump

CHOOSING THE RIGHT MODEL

| PUMP* | WETTED PARTS | APPLICATION |
|----------------|------------------------------------|--|
| DP-3120 | Polycarbonate with encoder control | Up to 1 cc shots of material compatible with polycarbonate |
| DP-3140 | Polycarbonate with encoder control | Up to 2 cc shots of most encapsulants for applications compatible with polycarbonate |
| DP-3320 | Nylon with encoder control | Up to 1 cc shots of material, ideal for applications where nylon is preferred for chemical compatibility |
| DP-3340 | Nylon with encoder control | Up to 2 cc shots of material, ideal for applications where nylon is preferred for chemical compatibility |

The last three digits of the part number, DP-3XYZ, indicate the pump configuration (X = stopcock type, Y = chamber size, and Z = motor type).

- * 1. Conversion kits are available for changing from one model to another.
- 2. Direct replacement models (non-encoder versions) are available for current users of the DP-2000 linear pump. Contact Asymtek for upgrade information.

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Windows NT® is a registered trademark of Microsoft, Inc.

Asymtek reserves the right to make design changes to products to improve their function. These changes may occur between printings.
Contact Asymtek for your specific application requirements.

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