

YOUR SPECS.
OUR EXPERTISE.
**GREAT
SOLUTIONS.**

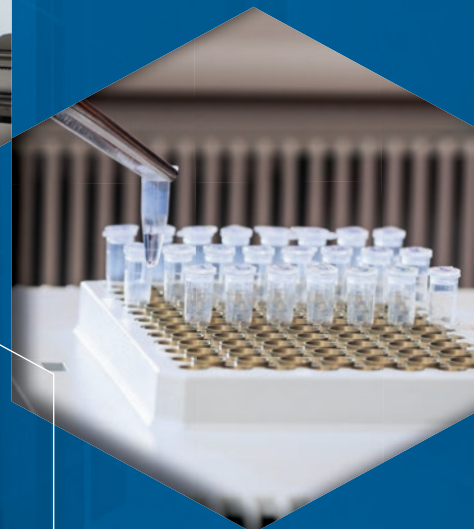
FOR
**MOLECULAR
DIAGNOSTICS**
APPLICATIONS



**SAMPLE
PREPARATION**



AMPLIFICATION



SEQUENCING

MOLECULAR DIAGNOSTICS

Molecular diagnostics is revolutionizing the way we approach healthcare.

The revolution of personalized medicine.

Molecular diagnostics can detect health risks and diseases early to improve treatment, enhance disease management, and diminish subsequent health problems. With this same technology, pharmaceutical companies are improving drug development efficiency and patient response rates to medications. And now, healthcare providers can prescribe targeted therapies based on the genetic makeup of their patients, increasing the probability of improved outcomes.

Molecular diagnostic instruments are the driving force behind this revolution, and high-precision fluid control components are what drives these instruments.

Your fluid control engineer and partner.

For decades, The Lee Company has been a leading innovator and supplier of fluid control pumps and valves with unmatched reliability and performance. We offer solutions that provide precise fluidic or pneumatic control at every step of the molecular diagnostic process—from

sample preparation to amplification and sequencing—which includes solenoid valves for pneumatic control and chemically inert applications, as well as precision dispense pumps, check valves and precision calibrated orifices.

Whatever your application requires, we can help. Let our international network of Lee sales engineers solve your toughest fluid control challenge.

FEATURED PRODUCTS



Control Solenoid Valves

- 2-Way & 3-Way Designs
- Compact & Lightweight
- Conventional, Latching & Quiet Operation Models
- Low Power Consumption & Low Leakage
- Long Cycle Life



Isolation Solenoid Valves

- 2-Way & 3-Way Designs
- Chemically Inert
- Diaphragm & Pinch Tube Models
- Low Internal Volume
- Multiple Seal Materials Available



Dispense Solenoid Valves

- 2-Way Axial Flow Design
- Low Internal Volume
- Fast Response Time
- Multiple Seal Materials Available
- Long Cycle Life



Precision Dispense Pumps

- Self-Priming
- Maintenance Free
- Wide Range of Dispense Volumes
- High Dispense Accuracy & Repeatability
- Long Cycle Life



Check Valves, Relief Valves, Precision Orifices & Safety Screens

- Consistent Performance
- Valves & Orifices 100% Tested
- Screen Micron Rating: 4 to 500µm
- Installation into Plastics or Metals



Manifold Assembly Technology

- Design Flexibility
- Wide Variety of Material Options & Techniques
- Integrated Components
- Reduced Assembly & Installation Costs
- Value Added Solution; 100% Tested

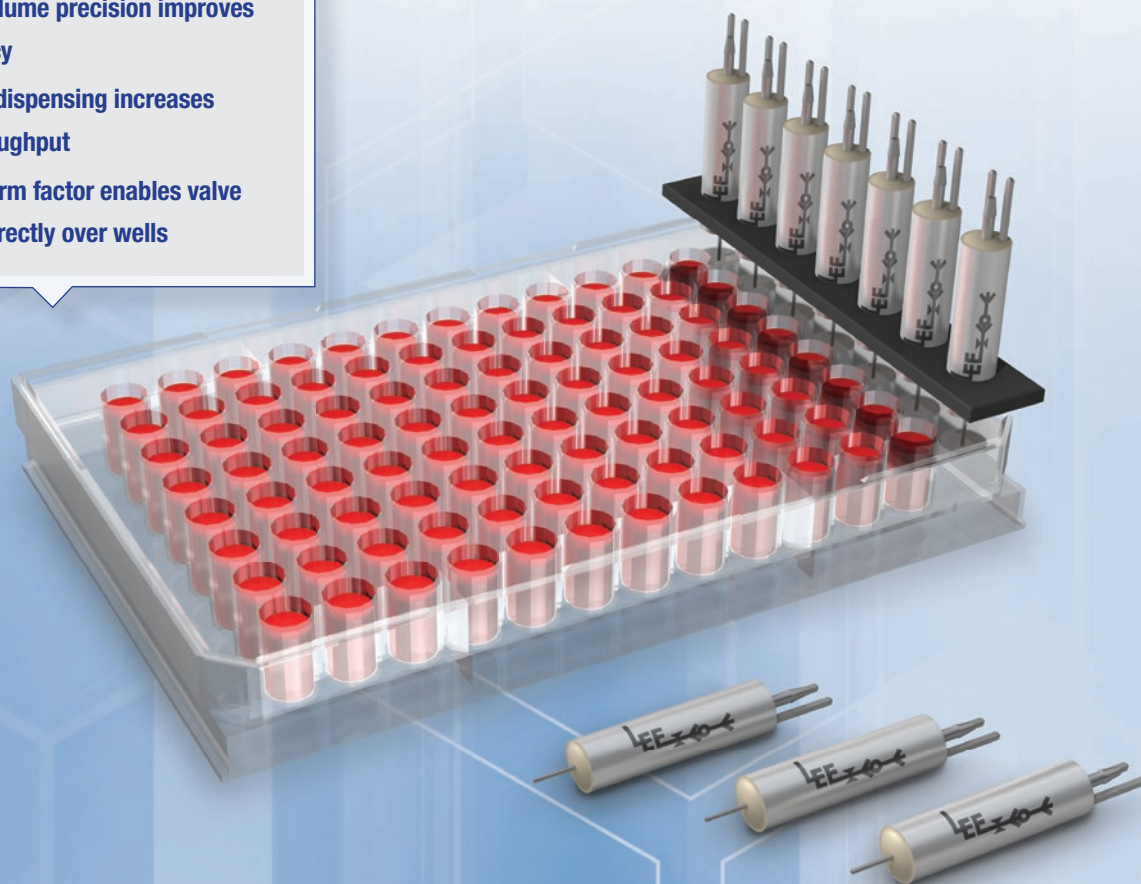
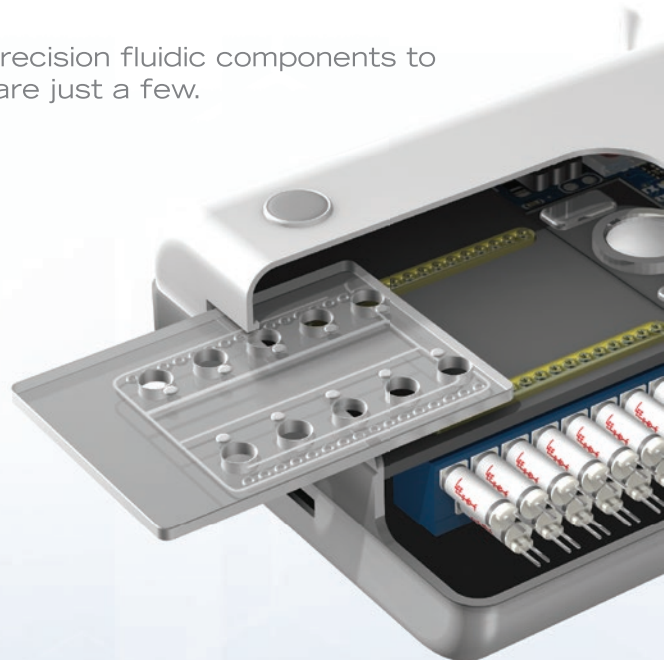
The evolution of molecular diagnostics is escalating the demand for ever-increasing device automation to create faster sample throughput without compromising reliability. And the trend extends well beyond diagnostic laboratories. In point-of-care settings, instruments need to be small, lightweight, fully integrated and user-friendly to provide rapid diagnosis of infectious diseases.

The Lee Company offers a wide variety of miniature precision fluidic components to meet these design and performance challenges. Here are just a few.

REAGENT INJECTION

Sample preparation requires precise volumes of reagents to be dispensed repeatedly into well plates or injected directly into flow streams. Industry trends are moving towards higher throughput and smaller sample size, which require faster solenoid valves capable of dispensing nanoliter volumes. When dispensing critical reagents, the benefits of Lee solenoid valves include:

- **Spherical droplets without satellites to reduce cross contamination**
- **Dispense volume precision improves test accuracy**
- **High speed dispensing increases sample throughput**
- **Miniature form factor enables valve mounting directly over wells**



AMPLIFICATION

SEQUENCING



PNEUMATIC MICROFLUIDIC CONTROL

Piloting air through a microfluidic card typically requires mounting multiple solenoid valves closely together due to small sample volumes and tight channels that lead to the mating interfaces of disposable microfluidic cards. When piloting delicate samples, the benefits of using Lee solenoid valves include:

- Low power reduces thermal concerns
- Fast response time accelerates sample processing
- Low leakage reduces compressor demand
- Compact size is ideal for mounting multiple valves

SAMPLE TRANSPORT AND FLUID DISPENSING

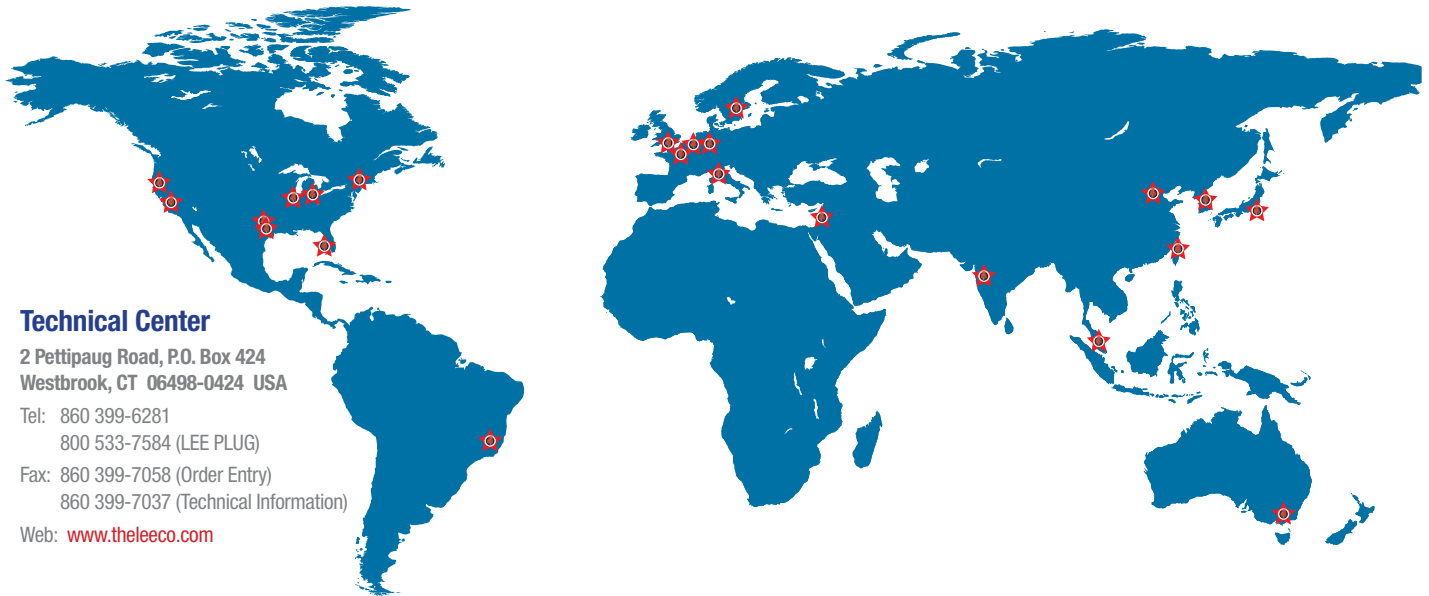
Precise fluid control is critical throughout the process, from preparing and transporting delicate samples to ensuring reliable detection, and also during rapid wash cycles. The demand for multifunctional, integrated systems requires flexible pumping options and reliable solenoid valves. Stable flow with low pulsation is also critical to achieve accurate detection. When moving fluid through the system, the benefits of using Lee precision dispense pumps and solenoid valves include:

- Low pulsation allows for stable flow and optimal detection
- Chemically inert materials increase compatibility with a wide range of reagents
- Low internal volume limits reagent use and reduces wash cycle time
- High reliability minimizes system maintenance and downtime



GLOBAL ENGINEERING SUPPORT

The Lee Company is committed to providing full, professional service to our customers through a worldwide sales network of graduate engineers. If you have a fluid control problem and would like to talk to an engineer, or would like product information, please contact the Technical Center or your local sales office.



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