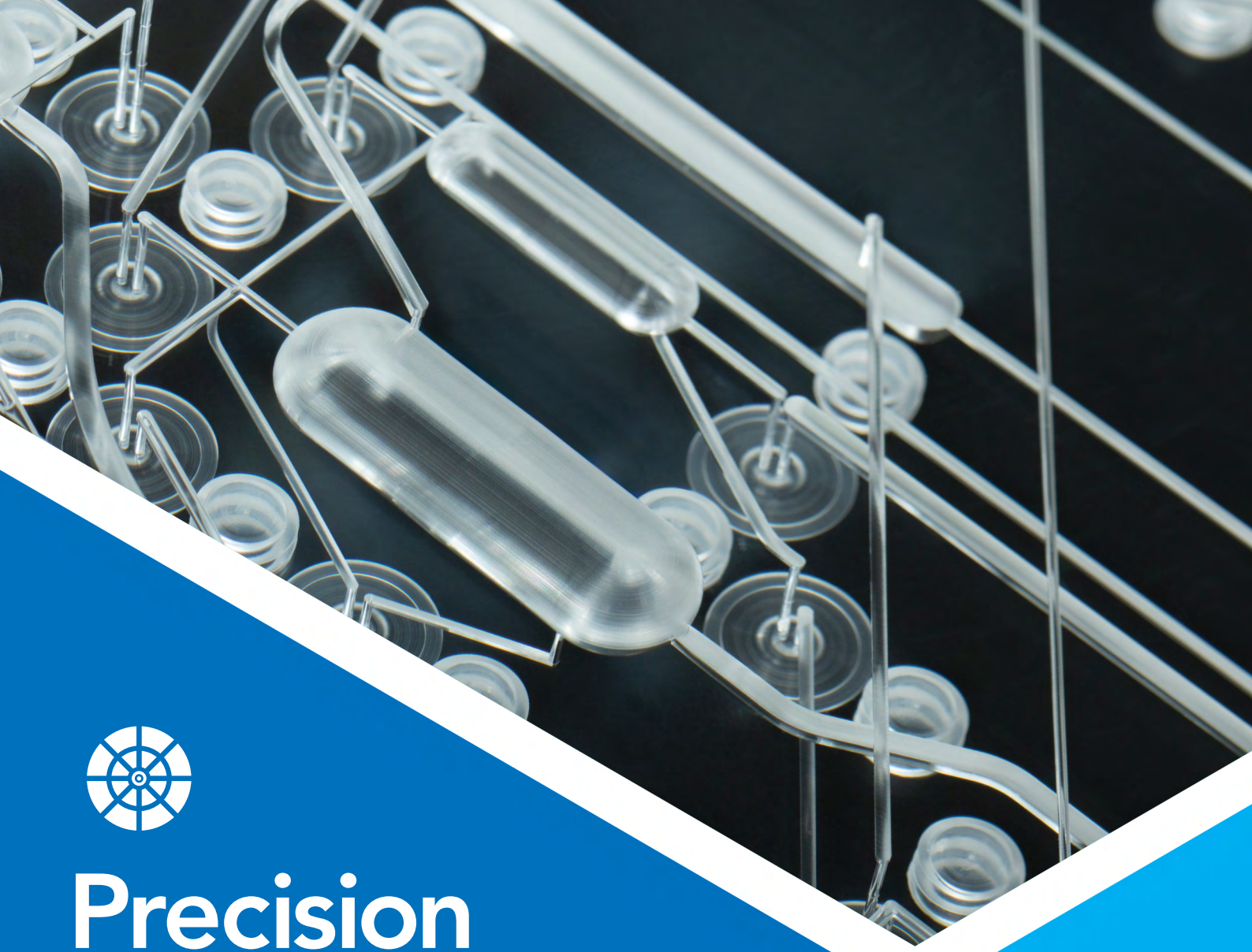


Precision Machined Manifolds

IDEX HEALTH & SCIENCE

Intelligent Solutions for Life®

Fluidics | Optics | Consumables | Assemblies

EXPERTISE

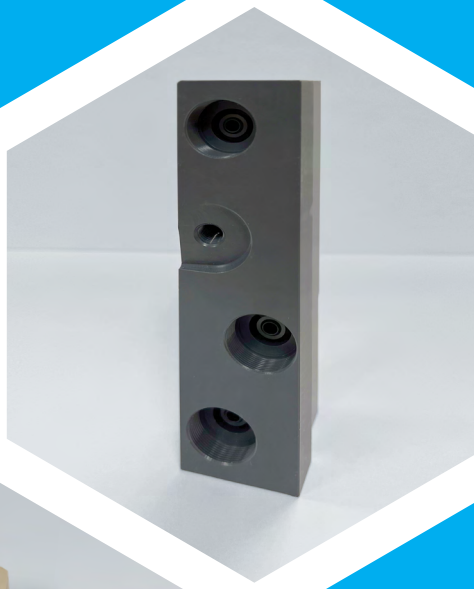
Precision Machined Plastics and Manifolds

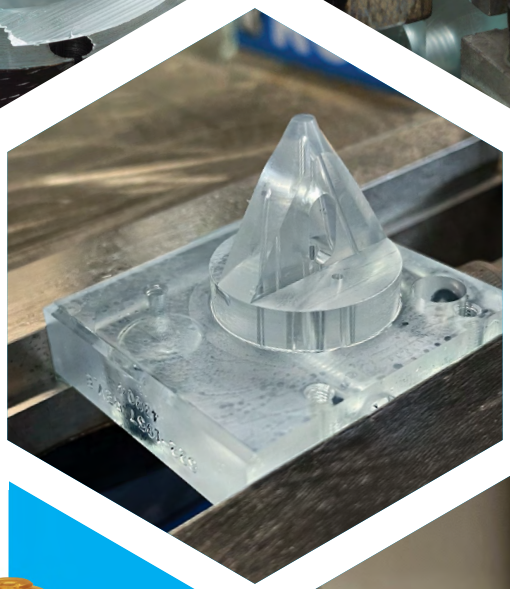
Consolidating multiple flow paths into one cohesive unit, a manifold is an integral part of reliable instrument performance. Whether your instrument requires a flow cell interface, microtiter plate dispense head, or a wash cup, IDEX Health & Science has the design and manufacturing expertise to meet your custom specifications.

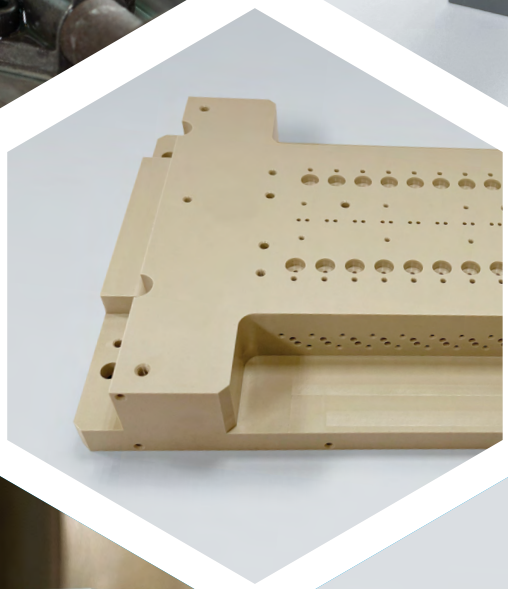
Machining Capabilities

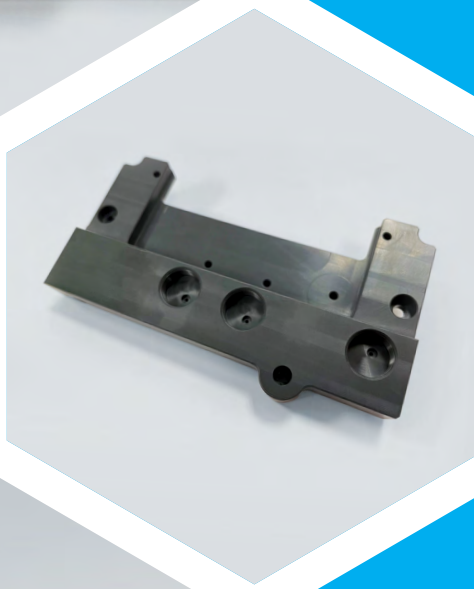
- 5th axis machining for holding tight tolerances on complex manifolds
- Turning for precision cylindrical geometries
- High-speed milling, drilling, and threading
- Meticulous deburring process ensuring fully cleared pathways
- Vapor, flame, and diamond fly-cut material finishing for optical clarity and sealing surfaces

Features	Specifications
Materials	All Machinable Plastics (Acrylic, Ultem, PEEK, PSU, PP, PVC)
Example Components	Wash cups, flow cell interface manifolds, microtiter plate dispense heads, pump heads, aspirate, and dispense probe unions
Minimum Feature Size	>0.005" (0.125 mm)
Feature Tolerance	±0.0002" (0.005 mm)
Surface Finish	> 2 µin Ra
Machined Geometries	Square or round









Connect with a Manifold Expert

idex-hs.com/machined-manifolds

PRECISION

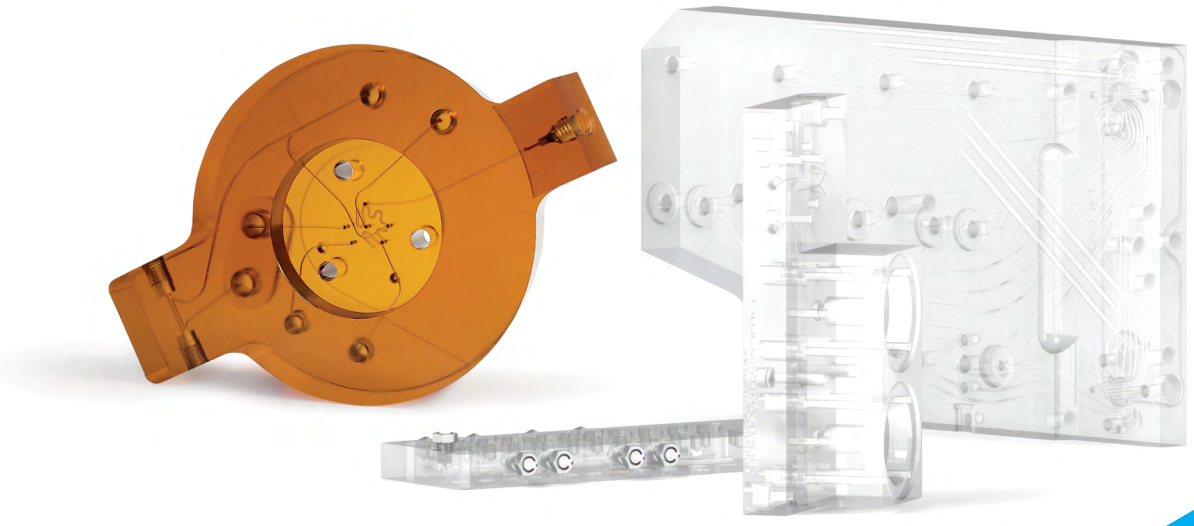
Diffusion Bonded Manifolds

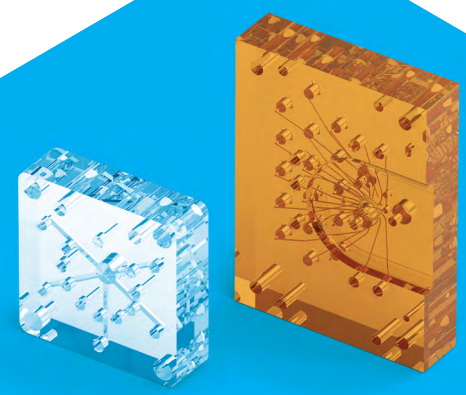
Bonded manifolds are the most effective solution to consolidate multiple flow channels into a small, uniform footprint. IDEX Health & Science has perfected the bonding process, guaranteeing minimal variability manifold-to-manifold, instrument-to-instrument. Our design team partners with you to ensure the manufacturability and fluidic reliability of your customized bonded manifold solution.

Bonding Capabilities

- Providing the best fluid flow performance, with the lowest carryover, unswept volumes, and dead volume
- Complex reagent distribution systems, large reagent count dispensing systems, fluidic component integration
- Our diffusion-bonded manifolds are entirely transparent, offering high thermal and material strength, providing significant relative design advantages
- Allows for mounting a wide range of fluidic devices and accommodates complex fluidic paths, including 3D curved designs

Features	Specifications
Materials	Acrylic (PMMA) and Ultem (PEI)
Example Manifolds	Reagent distribution, Mixing chambers, Multiplexed fluidic routing
Minimum Channel Diameter	>0.020" (0.500 mm)
Channel Tolerance	±0.005" (0.125 mm)
Channel Geometries	Square, round or "D" shaped
Channel Surface Finish	Vapor polished fluidic channels for optimal performance





Connect with a Manifold Expert

idex-hs.com/bonded-manifolds

INTEGRATION

Manifold Assembly & Testing Expertise

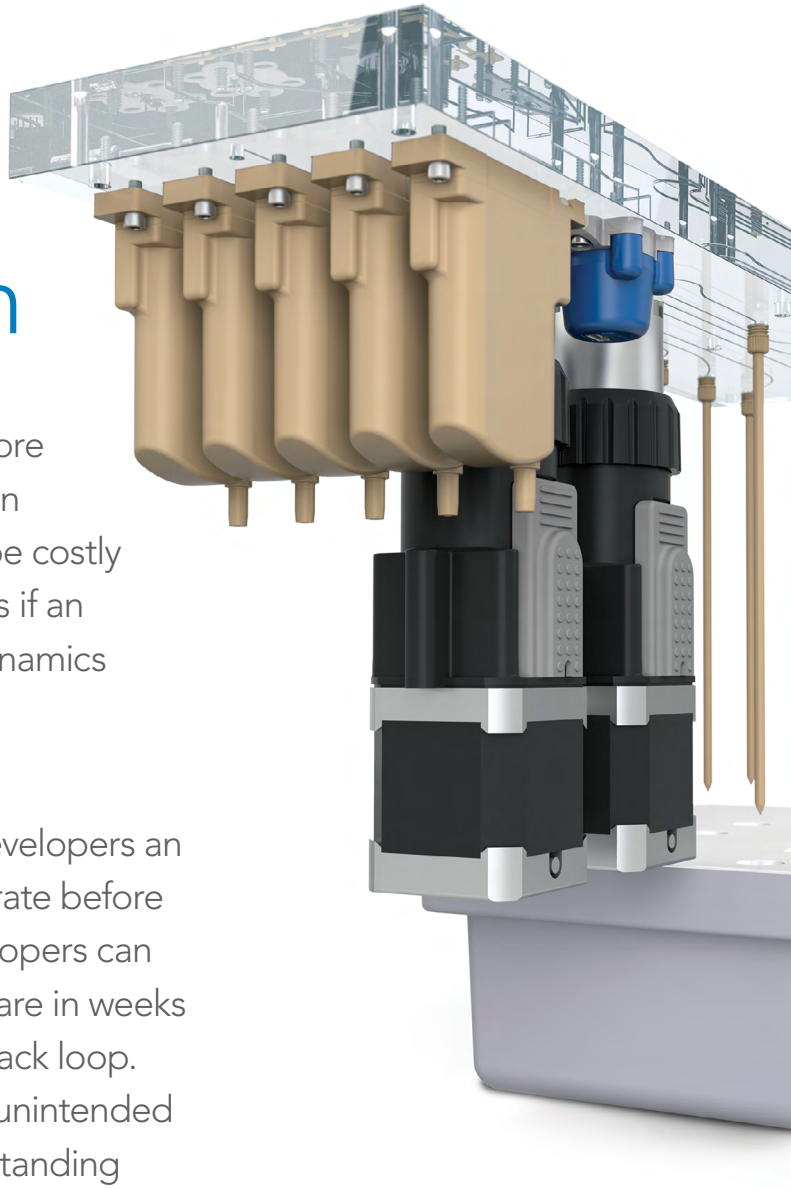
Integrating multiple fluidic components into a manifold assembly optimizes instrument performance. Subsystem assembly and testing guarantees fully functional fluidics, while vertical integration at IDEX Health & Science enables tight control over manufacturing tolerances, maximizing cost efficiency.

Components Available for Manifold Integration Include:

- **VALVES** Rotary or Solenoid
- **PUMPS**
- **SENSORS** Pressure, Flow, Temperature, and Conductivity
- **IN-LINE DEGASSERS**
- **CONNECTIONS** Probes, Tubing, and Fittings

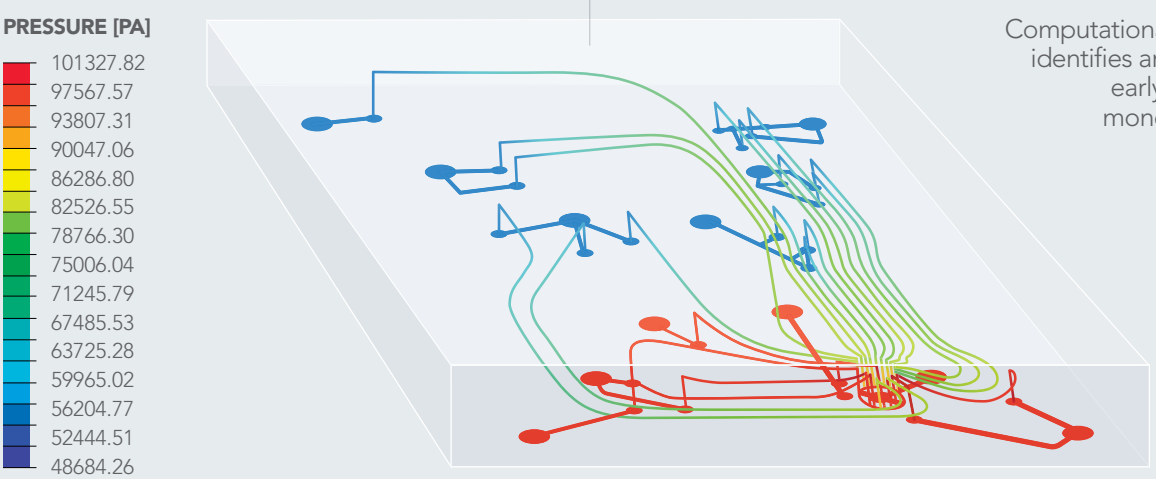
Consolidate Multiple Flowpaths

Fluidic Simulation



Many risk factors should be considered before manufacturing your design. Relying solely on physical testing to validate the design can be costly and will likely extend development timelines if an issue is uncovered. Computational Fluid Dynamics simulates how fluids will behave inside your instrument before manufacturing.

IDEX Health & Science offers instrument developers an option to analyze how their fluidics will operate before committing to expensive prototypes. Developers can characterize the functionality of their hardware in weeks instead of months in the prototyping feedback loop. Catching unexpected interactions, such as unintended pinch points, unswept volumes, and understanding boundary conditions of flow rates and backpressure can save months of manufacturing time and thousands of dollars.



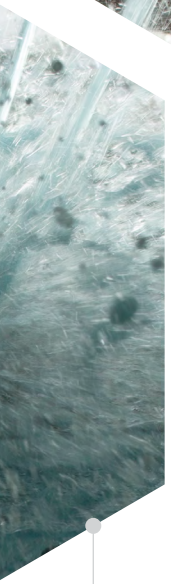
OPTIMIZE YOUR FLUIDICS DESIGN

Computational Fluid Dynamics identifies and resolves issues early, saving time and money on prototypes.

EXCELLENCE

Manifold Machining Center: Bristol, Connecticut

Our Bristol, CT, Manifold Center of Excellence has core competencies in machining, bonding, and component integration onto fluidic manifolds and machined plastics. With over six decades of experience, we lead the industry in manifold manufacturing and have a vast wealth of knowledge in Design for Manufacturing (DFM) and Design for Cost (DFC). We are committed to ensuring your custom manifolds are delivered on time, with the highest quality.



CNC MACHINING EXCELLENCE

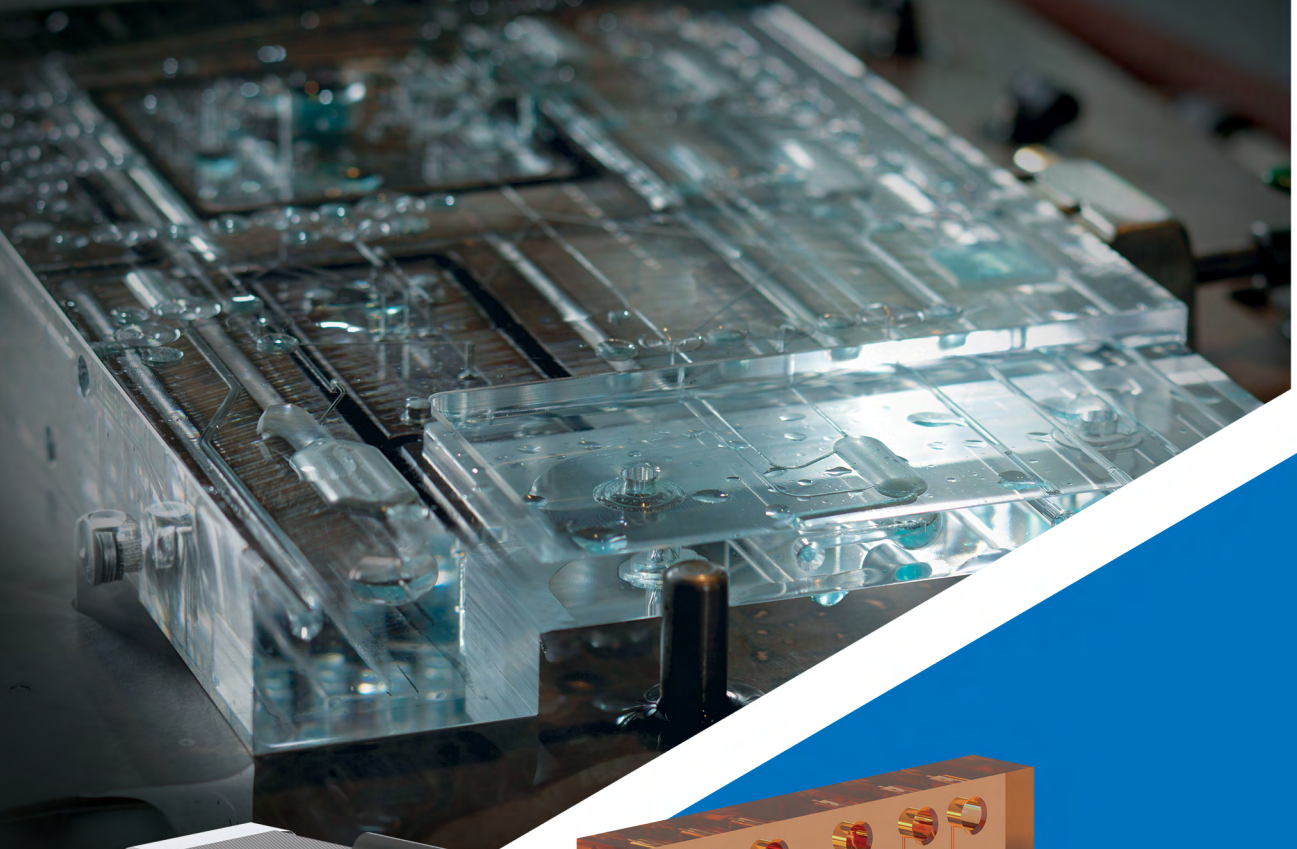
60+ years of CNC machining know-how has elevated IDEX Health & Science to a market-leading position. From simple to complex, prototype to production, we are your preferred machined plastics and manifolds partner.

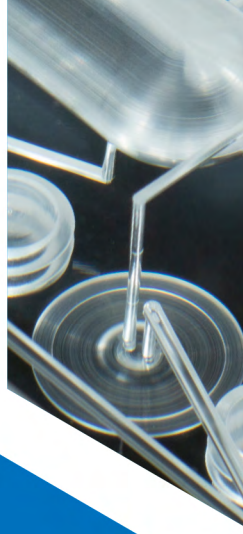
QUALITY ASSURANCE

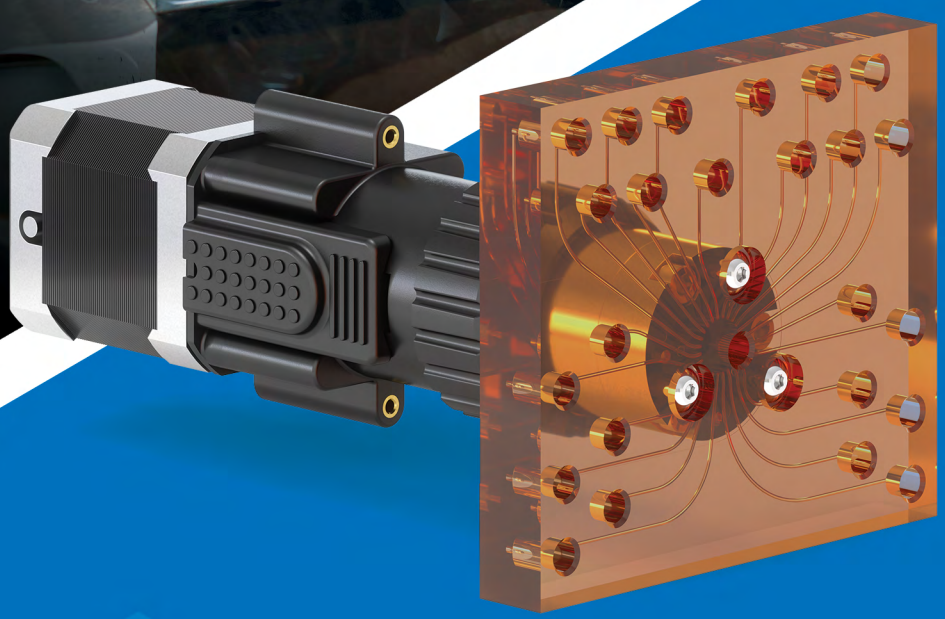
IDEX Health & Science implements rigorous quality inspection and documentation, ensuring that each part manufactured meets and exceeds the ISO 9001:2015 standards.

VETERAN EXPERTISE

The quality and precision of machined plastics are only as good as the operator manufacturing them. IDEX Health & Science employs a fleet of veteran machinists with decades of experience producing high-quality machined plastics and manifolds.







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For ordering, technical support, and contact information
please visit www.idex-hs.com/manifolds