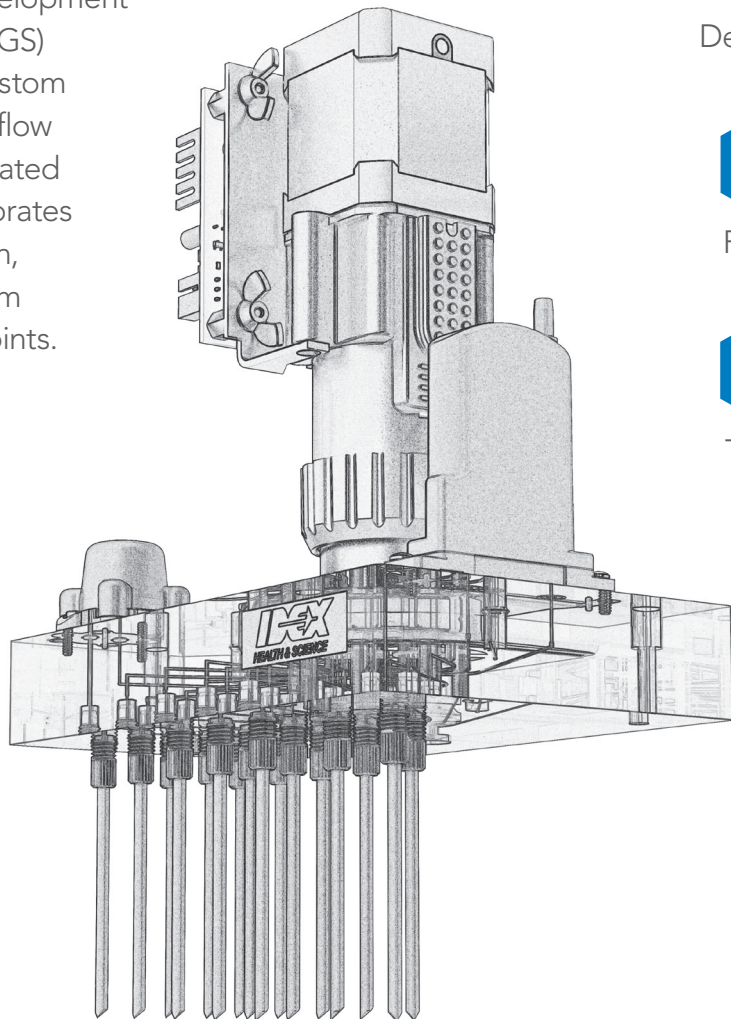


Next-Generation Sequencing Fluidics

Strengthen Your Instrument with IDEX Health & Science Fluidic Components

Precise, repeated cycling of reagents can be a challenge for conventional fluid handling instruments. Partnering with IDEX Health & Science on the development of your next-generation sequencing (NGS) platform ensures you have a reliable custom solution that delivers accurate reagent flow with consistent valve timing. Our integrated approach to fluidic architecture incorporates a valve-on-manifold for compact design, reduced reagent waste, and easy system integration with minimal connection points. Complete subsystems offer piercing probes for reagent sampling and dispensing, degassers to ensure stable optical detection, and pressure sensors to provide diagnostic system information.

Our 60 years of fluidic engineering expertise, computational modeling, and performance testing tools ensure that your NGS system generates high-quality sequencing data with maximum uptime and system-to-system reproducibility.



Valves



Manifolds



Sensors



Degassers



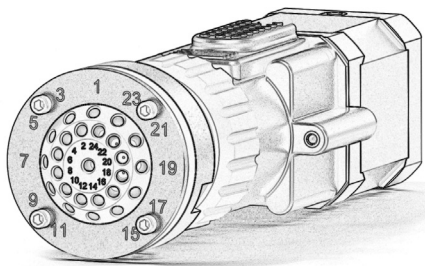
Probes



Tubing

IDEX Health & Science specializes in taking complex concepts to reality. We partner with you to remove the risks in controlling reagents, optimizing samples, and designing unique fluidic pathways, turning your theory into working solutions that advance science.

- › We are experts in manipulating fluids, controlling dynamic flow performance, and optimizing the overall user experience for instrument consistency
- › Achieve predictability and minimize project risk through advanced modeling, computational simulation, and testing
- › Reliably solve challenges before they disrupt your instrument schedule



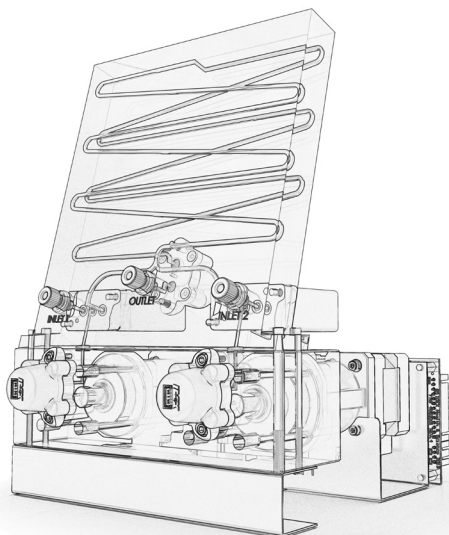
VALVES

Reagent Selection with Certainty

Elevate your complex flow path with a valve customized to your needs. A single rotary valve can control up to 24 reagents with ease and negligible reagent crossover concerns. Valves are fully biocompatible and can be offered as standalone components or integrated onto a manifold assembly to meet the specific needs of your unique design.

Learn More

idex-hs.com/rotary-shear-valves



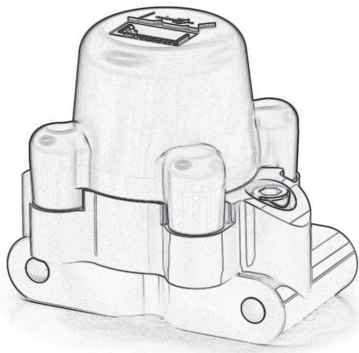
MANIFOLDS & SUBSYSTEMS

Streamline Your Complex Fluidics

Our design team works with you to develop an optimized manifold for your unique fluidic system. IDEX Health & Science manifolds provide a reliable, easily serviceable, consolidated fluid path. With multi-layer manifolds and multiple material options, design possibilities are endless. Integration can include tubing and fittings, probes, valves (rotary and solenoid), pumps, degassers, and sensors.

Learn More

idex-hs.com/manifolds-subsystems



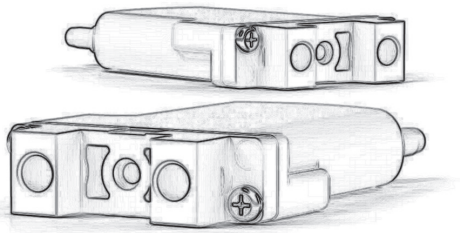
SENSORS

Gain Confidence Under Pressure

Inline pressure sensors monitor system performance, providing real-time diagnostic feedback to flow anomalies. The extremely low internal volume and a fully encapsulated MEMS sensor can be integrated standalone or mounted to a fluidic manifold for front-end or back-end flow monitoring inside your NGS system.

[Learn More](#)

idex-hs.com/sensors



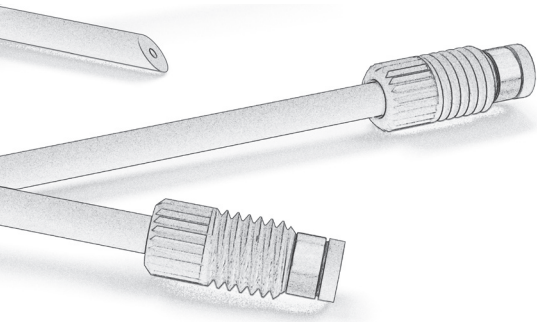
DEGASSERS

Maintain Clear Consistency

The presence of bubbles in a fluidic line can disrupt the precision and accuracy of your NGS system. Incorporating a degasser into the stream provides trouble-free operation, ensuring the fluidic system is free of air bubbles by actively removing dissolved gases that interfere with optical detection and hamper flow precision. Options are manifold mountable or standalone with a vacuum pump assembly.

[Learn More](#)

idex-hs.com/degassing



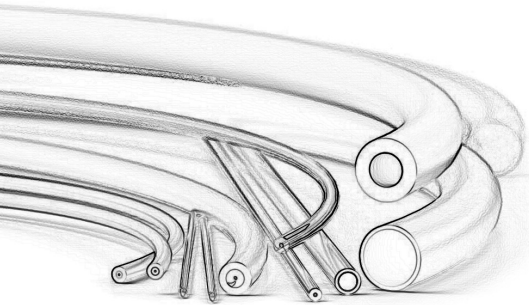
PROBE ASSEMBLIES

Get Peak Performance and Superior Precision

PEEK probes provide both the strength required for repetitive use and the biocompatibility you desire for your system. With several tip geometries available, your sampling and dispensing needs will be fully met with our probes at an economical price point.

[Learn More](#)

idex-hs.com/probes



TUBING ASSEMBLIES

Reduce Complexity in Changing Conditions

We offer a comprehensive line of biocompatible tubing and connection options that meet the demanding requirements of today's high-performance NGS systems. As a manufacturer of tubing and connections, IDEX Health & Science is uniquely positioned to help you integrate your tubing into kits and assemblies for the simplified installation and serviceability of your platform. We cut, form, produce, test, and label every piece, so you receive a single assembly that's ready to integrate directly into your system.

Learn More

idex-hs.com/tubing-assemblies

FAQs

When Configuring Fluidics for a Next-Generation Sequencer

1. How small can you make your fluidic pathways?

We commonly precision manufacture internal diameters of our components, including valves and manifolds, to $500\mu\text{m} \pm 125\mu\text{m}$ ($0.020'' \pm 0.005''$). Should you need smaller channel IDs we are happy to work with you on your custom needs.

2. What is the advantage of using IDEX Health & Science versus obtaining separate materials and assembling them myself or at a CM?

Accurate tolerancing of all components along the fluidic path is critical to a robust, reproducible instrument design. At IDEX Health & Science, we not only work with you to design a robust fluidic subsystem, but we can also simulate your design before manufacture and assembly to show you potential fluidic issues. We work with you to identify and correct problems before they arise, saving you valuable time in your early stages. Additionally, an integrated subsystem from IDEX helps you consolidate the number of SKUs you must manage.

3. Do your solutions include a PCB?

Our valve and vacuum degassing products can include a PCB. We also offer you complimentary access to our **IDEX Health & Science Library** — powered by Python™ — for easy startup of your breadboard solution.

4. Do your fluidics work in positive (push through) or negative (pull through) mode?

Our fluidics can be customized and adapted for either case, depending on whichever solution is best suited for your sequencing needs.

5. What functional testing is available to ensure instrument performance?

IDEX Health & Science offers a range of testing to provide confidence in your fluidic architecture. Typical testing includes pressure decay to guarantee leak-free components and subsystems, flow occlusion to test for passage blockages, system pressure to ensure the fluidics function, as well as fluid volumes as specified per your application.

6. What materials are available for manifolds?

IDEX Health & Science typically utilizes PMMA (Acrylic) and PEI (Ultem 1000) for complex bonded manifolds. We recommend PMMA for systems with inert reagents; PEI is better suited for applications utilizing more aggressive reagents (i.e., solvents). IDEX Health & Science also offers a wide variety of polymers (e.g., PEEK, PVC) for simple, cross-drilled manifolds.



Avant™ Filter Set Family to Complement Your Fluidics

Amplify Your Fluorescence Performance with Popular Probes

Our Avant Filter Set Family delivers improved fluorescence signal and signal-to-noise ratio to NGS systems that prioritize efficiency, speed, and performance in single-band filter sets.

AVANT SETS AVAILABLE NOW

- YFP / Venus
- Cy3™ / Alexa Fluor 555
- TxRed / Alexa Fluor™ 594
- Cy5.5™ / Alexa Fluor™ 680
- Alexa Fluor® 700
- Cy7™ / Alexa Fluor™ 750
- Alexa Fluor™ 546
- Cy5™ / Alexa Fluor™ 647

LEARN MORE ABOUT OUR AVANT™ FILTER SET FAMILY

idex-hs.com/avant



Partner with IDEX Health & Science

If you're ready to make your visions a reality, contact us and we'll show you how to take your company to the next level.

www.idex-hs.com/partner



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