

Piloting & Testing

Collaborative Innovation for Best-Fit Solutions

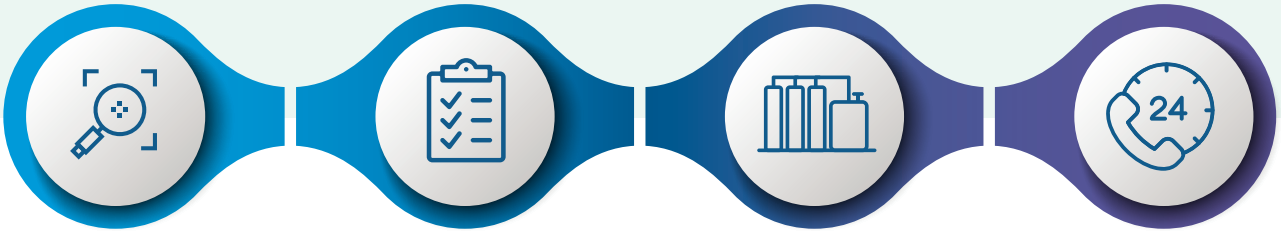


 **KOVALUS**
Separation Solutions™

The KSS Advantage

KOVALUS SEPARATION SOLUTIONS™ (KSS) is transforming the landscape of separations by leveraging a synergistic approach using technologies such as membrane filtration, ion exchange, evaporation, and drying. Our solutions are tailored to improving product quality, increasing process efficiency, and driving down costs in dairy, food, beverage, life science, and industrial markets around the world.

Our Approach to Collaborative Innovation



EARLY-STAGE DEVELOPMENT

- Understand challenge & identify desired outcomes
- Evaluation of separation properties & bench testing
- Access to Process and R&D experts

FIELD TESTING

- Pilot testing
- Process optimization
- Full scale costing and design recommendation

FULL-SCALE EXECUTION

- Project management & execution of capital projects
- Construction and installation
- Commissioning and operator training

LONG-TERM SUPPORT

- Complete after-sales services
- System troubleshooting
- Performance optimization through remote digital monitoring program

Bench-Top Testing

Determining the best-fit solution for our customers' separation challenges begins with testing. We offer in-house lab testing on feed samples, as well as rental test units and optional site visits from one of our process engineers to assist with start-up training and reporting.

- **Laboratory Cell CF-2:** This test unit uses small sample feed volumes to simulate process conditions and test the performance of various flat sheet membrane products for a quick feasibility evaluation of separation properties. It is compatible with microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO) configurations and tests membranes with a diameter of 3 inches (75 mm) in a simulated crossflow operation.

- **Demofilter:** A portable, compact UF and MF test and demonstration unit that instantaneously produces permeate samples. It is ideal for small-scale production or the concentration of small process volumes, featuring a membrane that is 1 inch in diameter and 18 inches long. The unit is compatible with our ROMICON® hollow fiber membrane and our SUPER-COR® test cartridges.
- **Multi-Purpose Test Unit:** This compact, self-contained test unit provides excellent simulation of separation characteristics under real processing conditions for spiral, hollow fiber, tubular, and ceramic membranes using small sample volume testing.

On-Site Process Demonstration

For customers looking to pilot their operation prior to full-scale implementation, or those requiring small-scale processing, KSS offers a variety of customizable membrane pilot systems and modules. Our membranes are available in diameters of 3, 4, 6, and 8 inches. Our team of engineers has successfully commissioned a number of pilots for sanitary food, beverage, and dairy applications as well as industrial applications, testing our MF/UF and NF/RO capabilities in low-flow rate operations.

Piloting & Testing

Ion Exchange Sample Testing

We offer complete sample testing capabilities for our Eco-Tec ion exchange technologies for new applications or feed streams for which we do not have existing data. For international customers, our team can provide a proof of principle test using synthetic solutions before requesting a real sample be shipped to our laboratory. Similarly, we use synthetic solutions for screening tests to find the best-fit system configuration.

Laboratory Cell CF-2



Multi-Purpose Test Unit

RELCO Parvus Pilot Dryer

RELCO Pilot Dryer Units

For drying operations, we provide RELCO® Parvus™ pilot dryer systems for a range of applications. These pilot dryers are available to rent or can be purchased as the basis for future expansion. Our team of dedicated experts will advise on the most suitable system capacity based off of specific process parameters and customer requirements. Our pilot dryer offering consists of a single-stage, small-scale dryer for 2 – 10 kg of water evaporation or a larger single-scale dryer with a multi-stage drying option and baghouse option for 25 – 50 kg of water evaporation.

Our team also offers piloting capabilities for evaporator technology, which can be integrated with the Parvus dryer unit, to test a variety of processes.

Global Facilities

The KSS team is ready and available to assist customers around the world with testing and piloting capabilities. Along with our own offices, KSS partners with local test centers to provide greater flexibility and broader testing and piloting options. Our global reach spans across multiple continents with laboratories and demo/piloting sites located in:

- Wilmington, Massachusetts, USA
- Willmar, Minnesota, USA
- Stratford, Wisconsin, USA
- Pickering, Ontario, Canada
- Aachen, Germany
- Drachten, Netherlands
- São Paulo, Brazil



KOVALUS SEPARATION SOLUTIONS

KOVALUS SEPARATION SOLUTIONS™ (KSS) is a global leader in separation technologies.

With best-in-class domain expertise, technologies and systems, KSS is uniquely positioned to help customers purify and recover valuable process streams and achieve sustainability goals across food and beverage, life science, and general industrial markets.

Services & Support

After-Sales Services & Maintenance Programs • SepTrac™ Smart System



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KOVALUS
Separation Solutions™

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