Parker Momentus

A Clean Water Solution Using Mechanical Separation Technology

Parker

ENGINEERING YOUR SUCCESS.

Why Parker Momentus?

Parker Momentus features membrane vibration technology to quickly and efficiently meet your clean water needs. Compared to alternative technologies, it offers a unique solution in terms of system performance and membrane flexibility.

Reliability and Performance
Improve reliability and optimize performance with durable construction and operation-enhancing features, including:

- Unique shearing effect to eliminate buildup
- Ability to manage high solids
- High permeate flux (processed flow)
- Rugged 2" steel frame with fiberglass reinforced plastic (FRP) casing for membrane filter pack
- Resistance to fouling and scaling

Simplified Operation
Parker Momentus increases uptime by streamlining your operations, through:

- Fully automated system that reduces or eliminates additional processing
- Very little operator labor necessary
- Minimal or no pretreatment

Ease of Service
Reduce maintenance costs with services-oriented features, such as:

- Improved reliability due to limited moving parts
- Automated cleaning cycles

Design Efficiency
Parker Momentus is engineered to deliver the most efficient solution available with its:

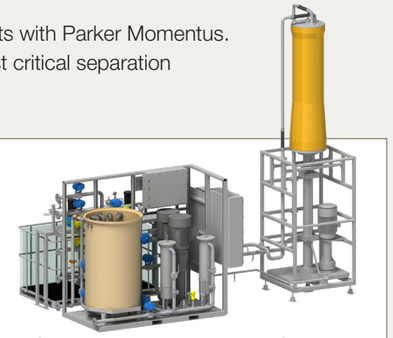
- Small, compact footprint
- Modular, skid-based design for efficient setup and commissioning
- Low energy consumption

Parker Momentus System Offering

Meet your specific application's flow rates and operational requirements with Parker Momentus. This complete system provides the options you need to solve the most critical separation issues – yours.

Series i

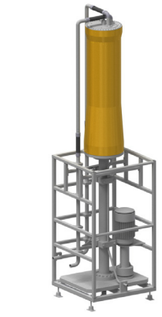
All Series i units can be modularly scaled and organized in parallel to meet any flow rate requirement. Systems are completely automated and require limited operator interface.



Single Module i84 Momentus System

i18: The smallest Series i unit, the i18 is well-matched for small flows. Its membrane filter pack is 18" tall and the membrane area ranges from 170 ft² to 240 ft².

i36: This unit is ideal for moderate flow rates in high-solids applications. Its membrane filter pack is 36" tall and the membrane area ranges from 380 ft² to 550 ft².



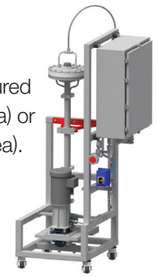
i84: The most commonly requested unit with an 84" tall membrane filter pack and a membrane area ranging from 1,000 ft² to 1,400 ft², the i84 is perfect for processes with high flow rates. This unit features multiple configurations.

Series P50

The P50 was designed to fill the flow volume gap between the Series i and Series LP. This unit is ideal for high value/low flow applications as it can process a few gallons per minute. Its membrane area is approximately 50 ft².

Series LP

In this series, LP stands for "lab" and "pilot." This unit can be configured for lab mode (0.5 ft² membrane area) or for pilot mode (16 ft² membrane area). This dual capability makes it the perfect choice for gathering data during feasibility studies and onsite pilot testing.



Cleaner. Simpler. Better.

Parker Momentus Redefines Separation Technology.

All water is not created equal. Of course, if you've been battling what to do with your process water and the cost and worry that accompany mechanical separation, you already know this. But what if you could **treat your process water onsite** with an **antifouling industrial-scale system**? With Parker Momentus, you can stop asking "what if" and start improving your bottom line with a smarter water treatment system. This proven solution features a unique vibrating antifouling membrane technology to separate feed streams and ensure cleaner water faster and more cost efficiently than ever before.

Parker Momentus serves a variety of markets where suspended and dissolved solids are a concern, providing **greater throughput and better fouling resistance than alternative separation solutions**. It can replace existing technology or be used to enhance current separation processes, such as biological processes, centrifuges, clarifiers, evaporators or pressure filters. Parker Momentus performs well in a wide range of applications, including:

- **Renewable resources**
  - Algae dewatering
  - Biogas effluent
- **Manure management**
  - Hog and dairy manure wastewater
  - Pen washdown
- **Food and beverage**
  - Dairy processing
  - Beverage making (beer, wine, bottled water)
- **Landfill leachate**
- **Industrial/manufacturing wastewater**
  - Metal plating solution effluent
  - Industrial water recycling, produced water treatment, reverse osmosis reject
- **Wastewater**
  - Reverse osmosis reject
  - Municipal wastewater side streams
- **Oil processing**
  - Frack water treatment
  - Produced water
  - Desalter effluent

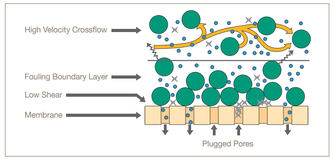
How It Works

The Parker Momentus system utilizes an innovative vibrating membrane system to separate the feed stream into two products: a concentrate stream and a permeate stream. The concentrate stream is what is rejected by the membrane and contains a higher solids concentration than the initial feed stream. The permeate stream is the clean water that passes through the membrane and contains little to no solids. Although membrane technologies have been in use for decades, the Parker Momentus system offers new benefits with:

Vibration – Vibration applied to the membrane filter pack increases flux (membrane throughput), allowing for higher fouling resistance and promoting membrane cleanliness.

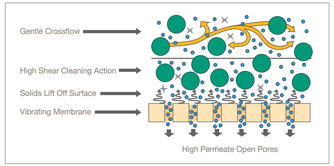
Shear – Created by a rapid change in direction when the membrane filter pack oscillates 50 to 60 times per second at an amplitude of up to 3/4 inch, shearing prevents material buildup on the membranes.

Traditional Crossflow Membrane



This traditional crossflow membrane as illustrated above provides strong crossflow which can help alleviate fouling. However, it is largely ineffective with waste streams that are difficult to process.

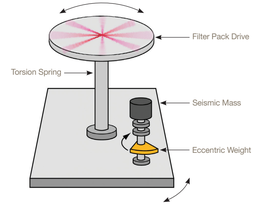
Parker Momentus – Shear Enhanced, Antifouling Membrane



The shearing action in the Parker Momentus system keeps membrane pores open and forces solids to the outside of the boundary layer where they are carried away in the crossflow.

Where Does the Vibration Come From?

Parker Momentus is a durable system constructed from three major components: a resonating drive system with a membrane filter pack, a feed pump skid and a clean in place skid. The vibration is created by the one moving part – the eccentric weight bearing located in the drive system. The weight introduces a vibratory action that energizes the seismic mass, which sends it through the torsion spring and onto the filter pack.



Parker Momentus Resonating Drive System

What Membrane Classifications Apply?

Membranes have been used in separation technology since the 1950s, but today's membranes increase performance with **greater throughput and chemical resistance**. Based on your feed characteristics, Parker Momentus is customizable with four different membrane classifications:

Reverse Osmosis
Reverse osmosis (RO) is the "tightest" of all the membrane types. RO membranes are often used to remove salts, as well as dissolved organics, trace oil and metals. They are rated by their ability to reject salts.

Nanofiltration
Nanofiltration (NF) membranes are relatively newer membranes used to remove organics and some dissolved materials. They are often used in wastewater treatment applications to reduce both biological oxygen demand (BOD) and chemical oxygen demand (COD), as well as dissolved metals. The permeate (clean water) from an NF membrane is "soft" water.

Ultrafiltration
Ultrafiltration (UF) membranes are used in applications where suspended solid removal is critical. UF membranes can remove proteins and bacteria. These membranes come in sizes from 0.008µ through 0.1µ.

Microfiltration
Microfiltration (MF) membranes are the most porous type of membrane and range in size from 0.1µ - 2.0µ. MF membranes are most often used for removal of large suspended solids, as well as for the dewatering of slurry type feeds.

Turn the wastewater you have into the water you want. Contact a Parker Tube Fittings Division (TFD) Renewable Resource team member at 614-279-7070 or email ParkerMomentus@parker.com.

Get Started!

Ready to put Parker Momentus into action in your operation? Our **customized procurement process** ensures you get exactly what you need.

STEP 1: Application Evaluation

Fill out our form with detailed information on your application/feed stream. This information helps us better understand your feed stream, begin the membranes selection process and determine next steps.

STEP 2: Lab Testing

Submit a feed stream sample for Parker to test for membrane compatibility with our LP unit. This ensures that the Momentus technology works with your feed stream.

STEP 3: Onsite Pilot Testing

Once we determine that we can process your feed stream, Parker engineers bring the LP unit to your site to gather data in large volumes. This helps us develop a full-scale system design.

STEP 4: Engineering Design and Build

Our detailed design phase is a collaborative process where Parker will guide you to ensure that every need, preference and option is designed into the ultimate separation system for you.

STEP 5: Commissioning

Ready for a worry-free start-up? A Parker engineer will be onsite to ensure a problem-free startup, as well as train your team.

Parker Fluid Connectors Group
North American Divisions & Distribution Service Centers

Your complete source for quality tube fittings, hose & hose fittings, brass & composite fittings, quick-disconnect couplings, valves and assembly tools, locally available from a worldwide network of authorized distributors.

Fittings:
Available in inch and metric sizes covering SAE, BSP, DIN, GAZ, JIS and ISO thread configurations, manufactured from steel, stainless steel, brass, aluminum, nylon and thermoplastic.

Hose, Tubing and Bundles:
Available in a wide variety of sizes and materials including rubber, wire-reinforced, thermoplastic, hybrid and custom compounds.

Worldwide Availability:
Parker operates Fluid Connectors manufacturing locations and sales offices throughout North America, South America, Europe and Asia-Pacific.

For information, call toll free at
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