

3M Science.
Applied to Life.™

3M Industrial Water Solutions

Meeting the
challenges of
industrial water
management.



When it comes to managing industrial water filtration and separation, you need a partner with the expertise, processes and products to help you get it right.

Water is a critical, limited resource and we all share the responsibility to ensure it's available for future generations. Filtration and separation products from 3M help provide high-quality, cost-effective solutions for sustainable water management throughout your industrial operation.



Solutions for virtually every industry.

Every industry has its own unique water filtration and separation challenges. That's why 3M has a robust portfolio of industrial water solutions to help meet the environmental concerns, regulatory requirements and filtration needs of virtually every industry.

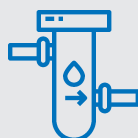
**Power Generation | Automotive Assembly | Metalworking and Machining | Oil and Gas
Food and Beverage | Micro-electronics | Refining and Petrochem | Paints, Coatings and Inks**

Common Applications

Pre- and Post-treatment for Incoming Water

This ubiquitous application requires filtration to protect downstream membranes and equipment from premature fouling. 3M offers industrial filter and gas management solutions to meet your incoming water treatment needs.

- ▶ 3M™ High Flow Series Filters
- ▶ 3M™ Micro-Klean™ RT Series Filters
- ▶ 3M™ Liqui-Cel™ Membrane Contractors (Dissolved O₂ & CO₂ removal)



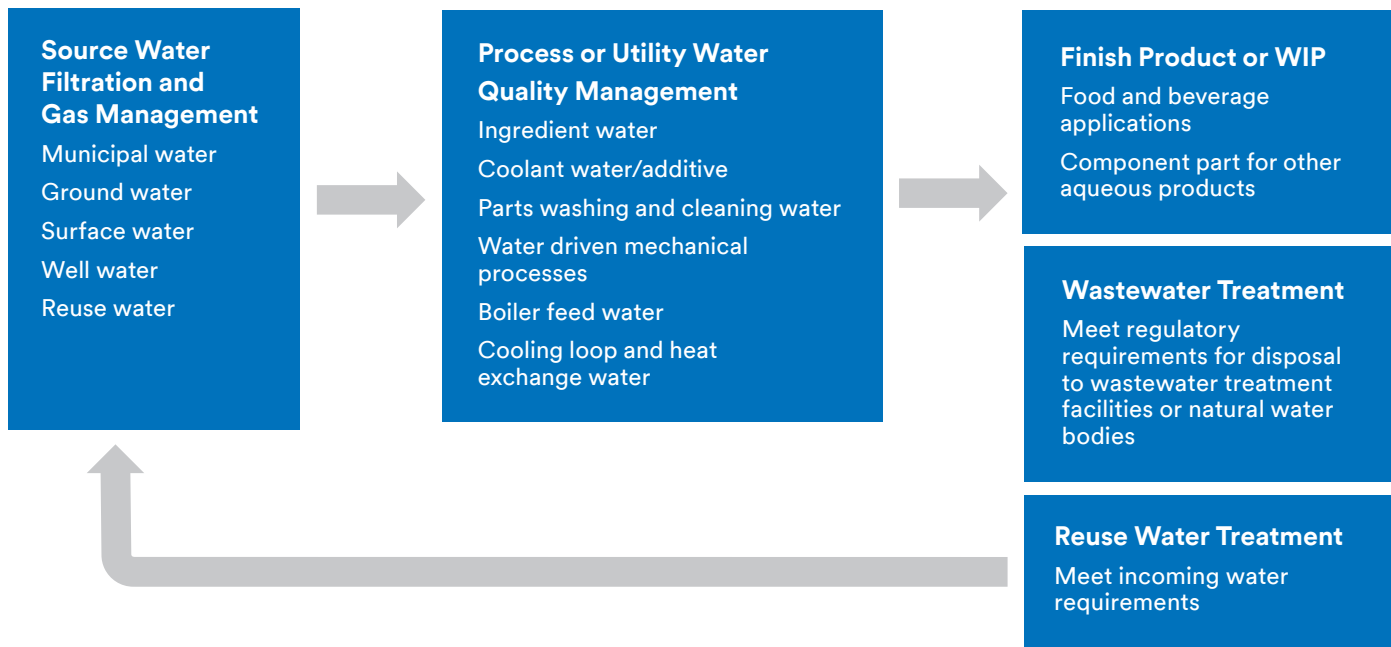
Boilers and Other Equipment

For equipment susceptible to corrosion, fouling and scaling, 3M has filtration solutions designed to treat boiler feedwater to help reduce maintenance and equipment downtime.

- ▶ 3M™ High Flow Series Filters
- ▶ 3M™ Micro-Klean™ RT Series Filters
- ▶ 3M™ Liqui-Cel™ Membrane Contractors (Dissolved O₂ & CO₂ removal)
- ▶ 3M™ HFR Series Filters



3M Industrial Water Solutions



Quality

Designed with high-quality components, industrial water solutions from 3M provide excellent filtration and separation performance.

Cost-effective

Help improve efficiency—and your bottom line—with high performance and long-lasting 3M industrial solutions.

Sustainability

Water scarcity, corporate stewardship and regulatory requirements are impacting industrial operations. 3M offers a solution to meet your sustainability targets by helping use less and re-use more.

Filtration for Rinsing and Part Washing

Reusing water for applications like rinsing and washing can help reduce overall water usage in your facility. 3M provides many different solutions to match your specific rinsing and washing needs.

- ▶ 3M™ High Flow Series Filters
- ▶ 3M™ DF Series Filter Bags
- ▶ 3M™ 100/500/NB Series Filter Bags
- ▶ 3M™ Micro-Klean™ RT/D Series Filter Cartridges



Wastewater and Reuse

Make the most of your water with filtration products designed to process water to meet regulatory disposal requirements or make your wastewater a renewable incoming water source.

- ▶ 3M™ High Flow Series Filters
- ▶ 3M™ 100/500/NB Series Filter Bags
- ▶ 3M™ DF Series Filter Bags
- ▶ 3M™ Liqui-Cel™ Membrane Contactors (ammonia removal)





Applications

Particle Control in Feed Water, Condensate Water and Blow Down Water

► 3M™ High Flow Series Filters

Provides higher flow rates, longer life, better ergonomics and faster change-out times for a lower total cost of filtration. 3M High Flow Filter Systems require as few as one-tenth the number of conventional 2.5" filter cartridges.

► 3M™ Micro-Klean™ RT and D Series Filters

Rigid structure reduces potential for unloading as pressure drop increases compared to compressible filters. They are an excellent retrofit solution. Consider 3M Micro-Klean D Series Filters with cotton media for applications where polypropylene is not appropriate.

O₂ Reduction in Boiler Feed Water and City Heating Systems and CO₂ Reduction in Make-up Water

► 3M™ Liqui-Cel™ Membrane Contactors

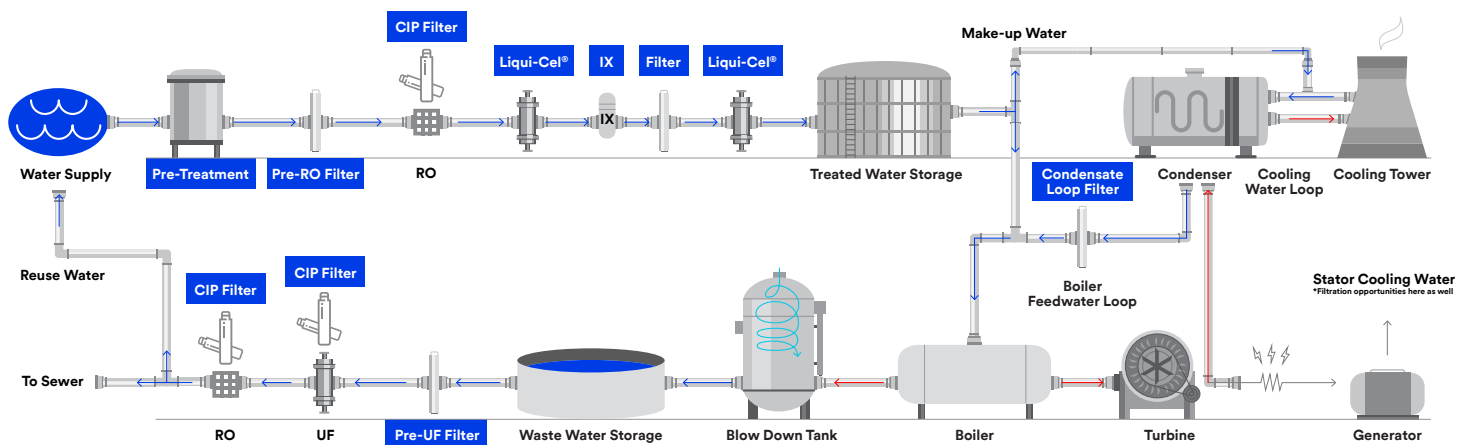
Reduces frequency of anion-exchange bed regeneration and chemicals. Easier capacity upgrading, increased operation flexibility (ramp up/down timing) and reduces or displaces chemical methods.

Solutions for Steam and Power Generation

More power to your process.

Save on chemical treatment alternatives. Reduce corrosion. Get water and energy savings. 3M filtration and separation solutions can help you improve your power generation process and reap the benefits.

Process Map





Applications

Particle Control and Oil Absorption

▶ 3M™ NB Bags and DF Filters

High-quality, nominal bag filters or DF series filters provide added surface area, longer life and lower total cost of filtration versus standard bag filters.

▶ 3M™ 100 Series and 500 Series Bag Filters

Depth filtration, providing high dirt and oil holding capacity.

Particle classification

▶ 3M™ Betapure™ AU Filters

Often used in the paint kitchen—more limited in E-coat. May be OEM-specific.

Particle Control in Water Treatment and Particle Removal Water Reuse

▶ 3M™ High Flow Series Filters

Provides higher flow rates, longer life, better ergonomics and faster change-out times for a lower total cost of filtration. 3M High Flow Filter Systems require as few as one-tenth the number of conventional 2.5" filter cartridges.

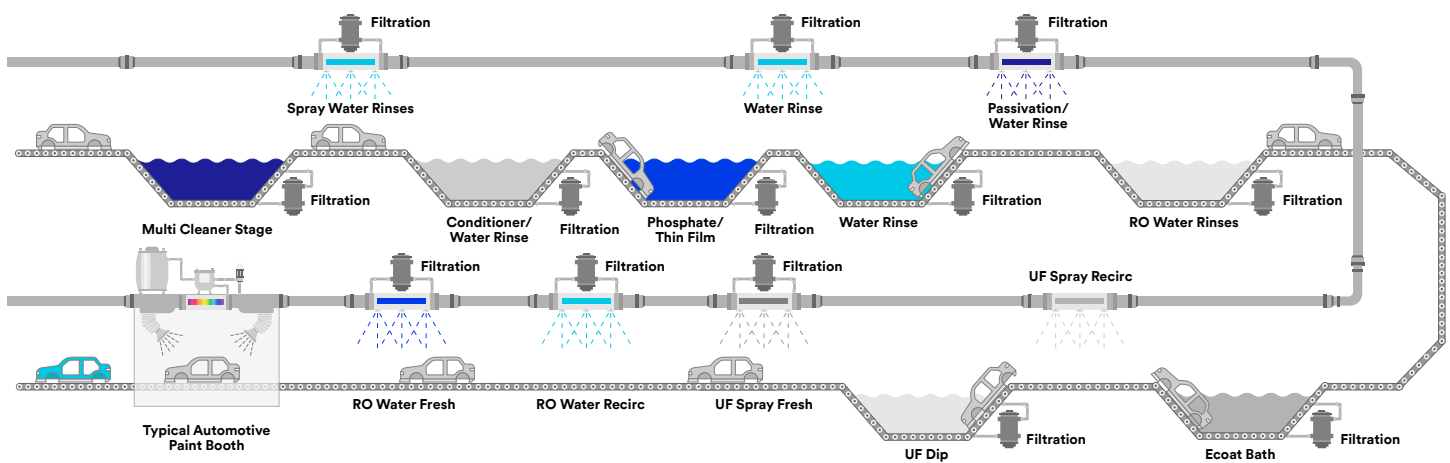


Solutions for Automotive Assembly

Remove unwanted particles.

Rev up your assembly process with 3M industrial water solutions. From pretreatment to electrodeposition, we have the filtration products you need to streamline your operation and reduce rework. Filtration is used through out the automotive washing and painting process.

Process Map





Applications

Particle Control

- ▶ **3M™ High Flow Series Filters**
 Provides higher flow rates, longer life, better ergonomics and faster change-out times for a lower total cost of coolant water filtration. 3M High Flow Filter Systems require as few as one-tenth the number of conventional 2.5" filter cartridges.
- ▶ **3M™ NB Bag and DF Series Filter**
 High-quality, 3M NB Series Filter Bags and 3M DF Series Filter Cartridges provide added surface area, longer life and lower total cost of filtration versus standard bag filters.
- ▶ **3M™ Micro-Klean™ RT and D Series Filters**
 Features consistent particle capture, large surface area and rigid design. 3M Micro-Klean D Series Filters with cotton media provide a higher temperature range.

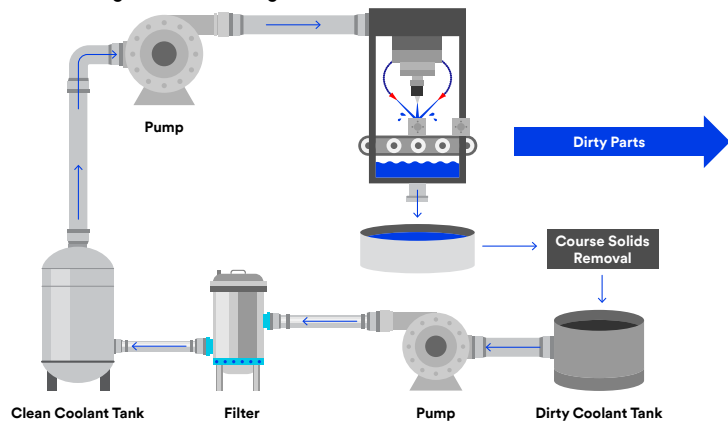
Solutions for Metalworking and Parts Washing

Quality water for every part of your process.

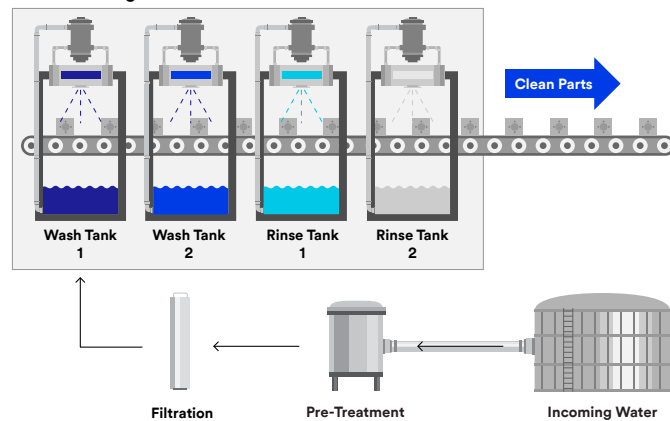
Whether you need a cooling filtration solution for cutting, stamping or molding parts, or an efficient solution to filter water for parts washing, there's a 3M industrial water solution for your circular system. Removing debris that can cause process issues and keeping washing water reusable longer can help reduce waste and add efficiency.

Process Map

Metal Working Machine Cooling Process



Parts Washing





Solutions for Oil and Gas

Reinject confidence into your operation.

Are you treating and recycling upstream and midstream-produced water in your drilling and fracking operations to reduce the need for “fresh” water sources? Are you relying on offshore filtration and gas management to downstream amine and end product? For many of these complex oil and gas applications, 3M has the right filtration solution for you.

Applications

Particle Control

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▶ 3M™ NB Bag and DF Series Filters

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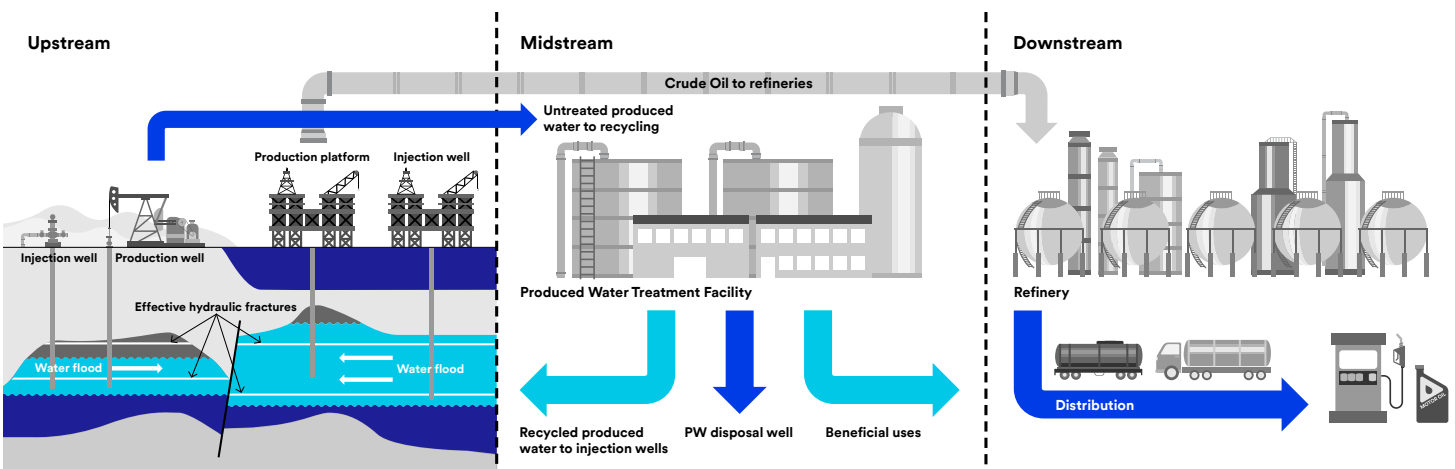
▶ 3M™ 700 Series Bag Filters

Paint, high efficiency, dirt hold capacity and oil absorption.

▶ 3M™ Liqui-Cel™ Membrane Contactors

Ideal water management tools for the oil and gas industry. They precisely calibrate dissolved gases in water for efficient water pumping at onshore and offshore extraction sites.

Process Map



Product Selection and Use:

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

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