



Making life better

**Solutions for  
Water &  
Wastewater  
Treatment**

[www.irco.com/water](http://www.irco.com/water)

LEAN ON US TO HELP YOU MAKE LIFE BETTER



DELIVERING THE RIGHT PRODUCT FOR YOUR  
APPLICATION - TO MAKE LIFE BETTER



# COMMON CHALLENGES

## WE SUPPORT YOUR INDUSTRY WITH...

### Population growth

Population growth and climate change will continue to put pressure on areas where water resources are scarce. As average incomes increase and customer expectations change, there is likely to be greater demand from customers for environmental improvements.

### Environmental footprint

Treatment plants are costly to construct and rely upon substantial land area for settling tanks and aeration basins. As demand increases, treatment plants need to expand to increase their capabilities. Business owners must meet demand while maintaining a small and low impact footprint.

### Legislative compliance

From primary sedimentation through to sludge treatment, quality must be ensured to meet increasingly stringent environmental regulations.

### Investing in the future

Investing in the right technologies will provide a speedy return on investment, increasing productivity, reliability, and supporting the drive for efficiency.

### Energy consumption

Energy consumption is one of the largest expenses in wastewater treatment. It's estimated that between 3 and 15 percent of a nation's electrical power is used for wastewater treatment per year. Improved efficiency is essential.

### Skill loss & staffing shortages

Like many other industries, wastewater treatment plants face the problem of a staffing shortage. Efficient and productive workers that are skilled in the business are necessary to properly treat wastewater. Without workers, maintenance opportunities and other irregularities may be missed.

### Sludge management

Sludge is the residue generated during physical, chemical and biological treatment. A major environmental challenge for wastewater treatment is the sustainable disposal of excess sludge produced during the process.



# WATER & WASTEWATER FROM ANY TYPE OF BLOWER TO PUMP WE'VE GOT YOU COVERED

## All from one

Collaborating with a single-source supplier can help reduce costs, streamline administrative processes, and improve operational efficiencies – even helping to drive innovation and growth.

The benefits of working with Ingersoll Rand as a single-source supplier for all your wastewater needs can be broken down into four key areas:

## Freedom to choose

Ingersoll Rand provides innovative and mission-critical industrial solutions for the water and wastewater sector, offering a range of compressors, blowers, pumps, and vacuum products across multiple respected brands.

Our portfolio of air products and solutions are designed to enhance efficiency and productivity objectives, even in the most complex conditions.

Wastewater treatment plants supply clean water to millions of people worldwide. Our products play an essential

part in this, driving wastewater treatment processes that remove many harmful particles, providing the highest quality water possible.

We offer a wide portfolio of innovative products, services, and solutions that enhance energy efficiency and productivity at every stage of the treatment process.

Aeration systems are the largest energy user in treatment plants (more than 50% of the total electricity cost), so efficiency improvements can significantly reduce energy costs. Up to 75% of your costs will be spent on energy, so state-of-the-art aeration equipment can make the difference, not only to reduce your carbon footprint, but by substantially lowering life cycle costs.

The spectrum and process complexity of the environmental industry make it indispensable to choose a well-established, knowledgeable supplier for every application.



## COLLABORATIVE APPROACH

Understanding our customers' businesses and developing solutions that make them successful



## CONTINUOUS IMPROVEMENT

Our innovation and continuous improvement allows our customers to continually meet new height of achievement

# ALL FROM ONE



[www.irco.com/water](http://www.irco.com/water)

## NO LIMITS

Choice of a wide range of high-performance products without limitation or bias combined with a total system approach that maximizes efficiency

## GUARANTEED PERFORMANCE

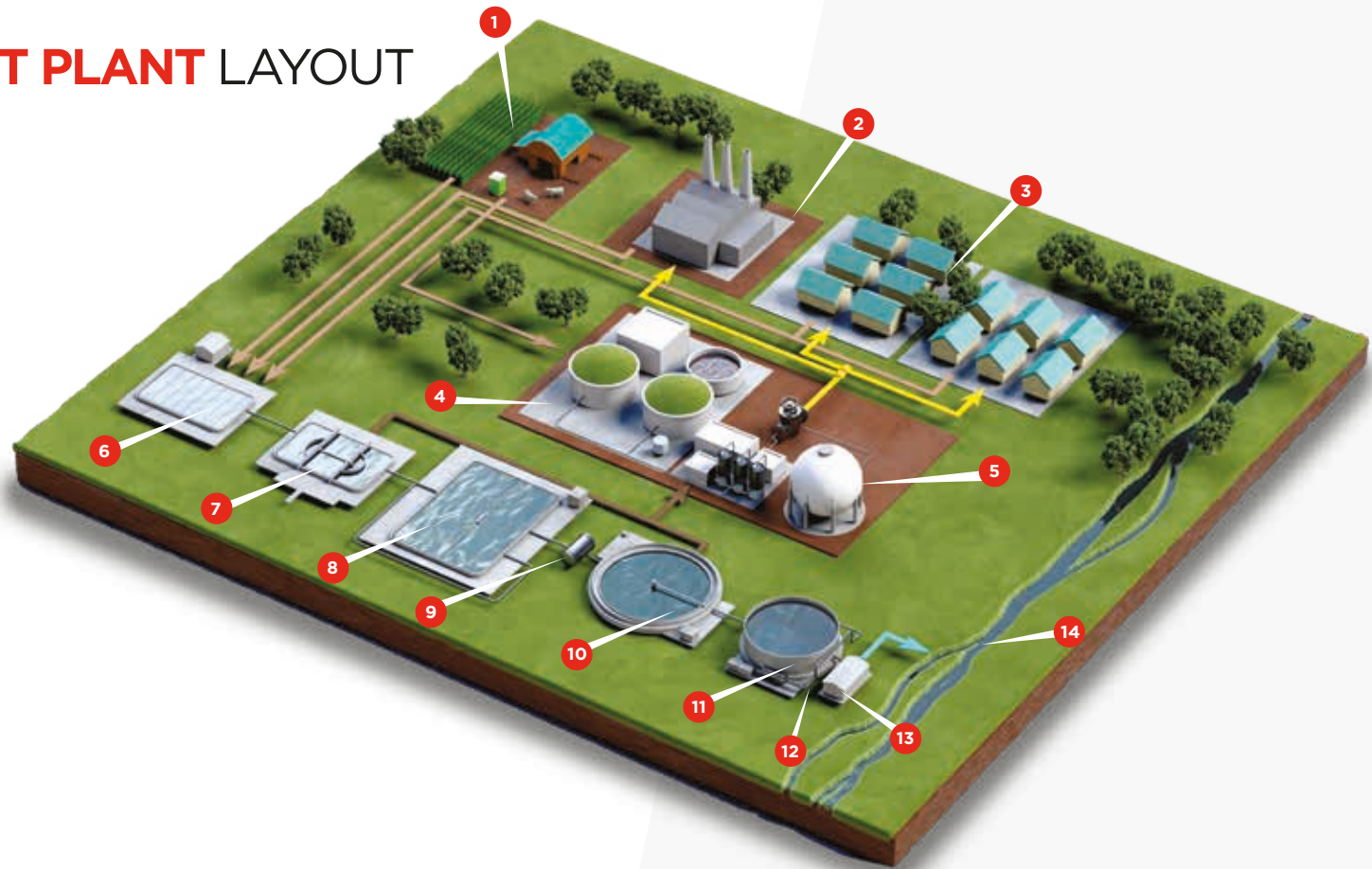
Reliable products backed by an industry-leading warranty and global aftermarket support



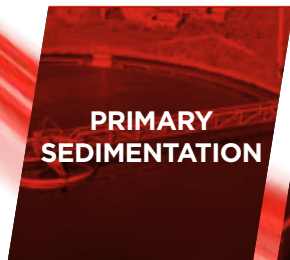
# OUR SOLUTION RANGE: COM

## WASTEWATER TREATMENT PLANT LAYOUT

- 1 Agricultural waste
- 2 Industrial waste
- 3 Urban waste
- 4 Biogas plant
- 5 Natural gas grid
- 6 Screening pre-treatment
- 7 Primary sedimentation
- 8 Biological processes (aerobic process)
- 9 Chemical mixing
- 10 Secondary sedimentation
- 11 Sand filter backwash system
- 12 Dechlorination
- 13 Outlet pumping station
- 14 River



## KEY APPLICATIONS FOR WASTEWATER TREATMENT



PRIMARY  
SEDIMENTATION



AERATION  
PROCESSES



BACK WASHING  
SAND FILTRATION



SLURRY LIQUID  
PUMPING



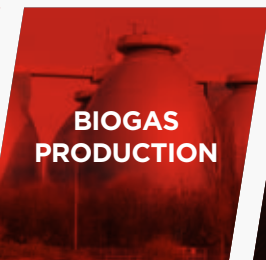
SLUDGE  
TREATMENT



DEWATERING



MEMBRANE  
BIOREACTORS

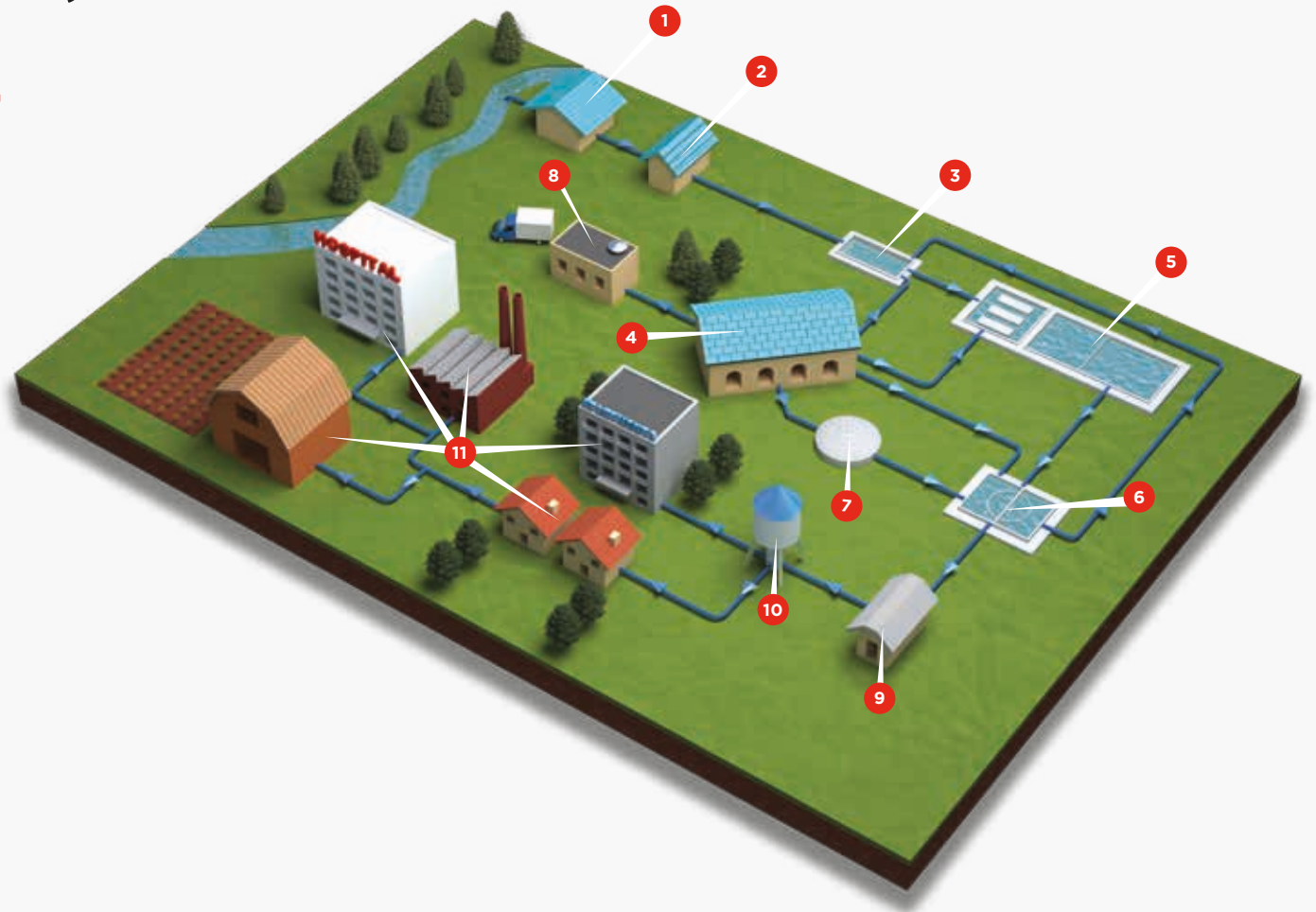


BIOGAS  
PRODUCTION

# PRESSORS, BLOWERS, PUMPS

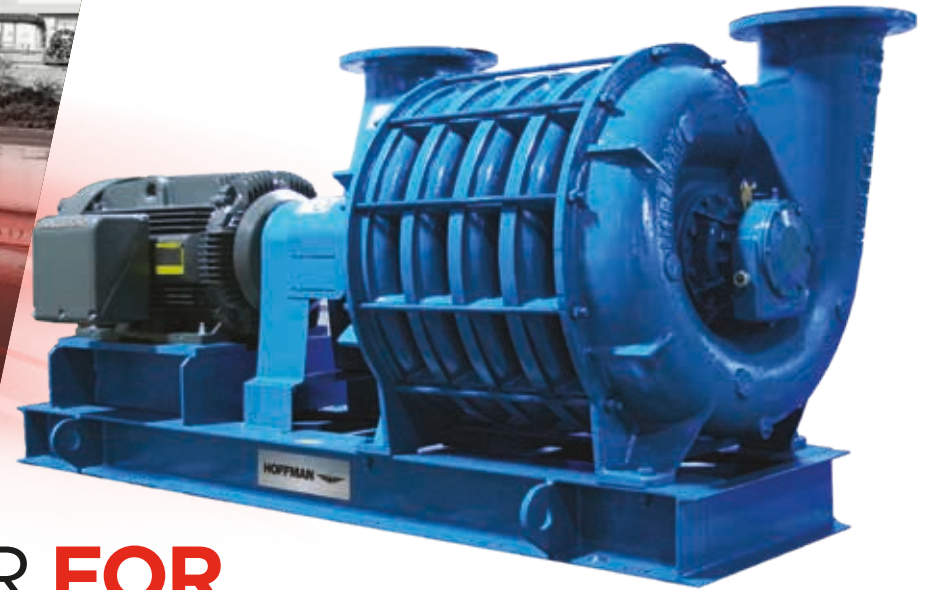
## CLEAN WATER TREATMENT PLANT LAYOUT

- 1 Pump Intake
- 2 Hypochlorite House
- 3 Rapid Mix Coagulation
- 4 Chemical Feed House
- 5 Flocculation & Sedimentation Stage
- 6 Filter Basin
- 7 Backwash Storage
- 8 Dewatering - Filter Press
- 9 Fluoridation & Disinfection
- 10 Finished Storage
- 11 Distribution



## KEY APPLICATIONS FOR CLEAN WATER TREATMENT





# TOTAL SOLUTIONS PROVIDER **FOR** **WATER & WASTEWATER TREATMENT**

Whether you're treating water for a clean water supply or treating wastewater, with several hundred thousand installations worldwide, Hoffman & Lamson offers the widest and most comprehensive range of Multistage Centrifugal, High-Speed Turbo, Positive Displacement Blowers and Engineered Packaged Solutions.

## Multistage Centrifugal Blowers

HOFFMAN & LAMSON multistage centrifugals are the proven standard for water & wastewater treatment applications requiring continuous low-noise operation with minimal maintenance requirements. Primarily used for aeration and aerobic digestion, HOFFMAN & LAMSON centrifugals can be throttled via an inlet butterfly valve making them an excellent choice for controlling dissolved oxygen concentrations (DO) in wastewater. The blowers can also be used in sludge digestion to exhaust the digester gases, for chemical aeration and in filter backwash applications.

We offer a wide range of blowers, each having its own unique performance characteristics and design features to match your application requirements. HOFFMAN & LAMSON blowers are available in complete engineered solution packages featuring electric, steam turbine or VFD drives.

- Uniform pressure
- Pulse-free flow
- Oil-free operation
- Designs optimized for 60 and 50 Hz markets





## High-Speed Turbo Blowers

HOFFMAN's REVOLUTION<sup>PLUS</sup> combines an advanced blower management system with a significantly smaller physical footprint than traditional blowers set to a new standard for blower design, performance, and efficiency.

The REVOLUTION<sup>PLUS</sup> uses innovation and advanced technology to deliver energy savings of up to 40%; increased reliability with little to no maintenance, and comes factory pre-wired and tested in an ergonomically designed sound enclosure for plug-and-play operation.

- High-efficiency
- Low noise
- Simple maintenance
- Innovative, compact design
- Extensive power range



## Positive Displacement Blowers

More and more aeration processes demand high turndown capability along with intermittent operation and energy efficient solutions, the HOFFMAN DEFENDER™ Lobe and DEFENDER Screw packages perfectly fit this requirement.

The DEFENDER positive displacement blower unit concept, is a cutting-edge solution that can accommodate rotary lobe and screw technologies to provide users with a greater choice than ever before.

In addition, both blower packages can be provided with a controller, allowing users to manage, optimize and run their operations more efficiently.

- Robust design
- Small footprint
- Industry leading monitoring system
- Low maintenance requirements
- Wide turndown capability



## Engineered Packaged Solutions

Hoffman & Lamson specializes in designing and manufacturing systems that adapt to your applications and specifications. For over 100 years, we have produced engineered systems for water & wastewater treatment.

Our custom engineered centrifugal blower systems can include controls for saving energy and Variable Frequency Drives (VFDs), in addition to a wide range of accessories and materials.

All HOFFMAN & LAMSON systems are backed by a complete system warranty and global aftermarket support and service, to ensure your operations run smoother, longer and more reliably. From engineering and manufacturing to services and support; Hoffman & Lamson is your complete solution for custom engineered systems.

The Single Source Solution for:

- Engineering & design
- Aftermarket support
- Manufacture & testing
- Quality



# WE BRING CLARITY TO WATER TREATMENT

## Metering Pumps

Milton Roy's metering pumps are positive-displacement chemical dosing devices with the ability to vary capacity manually or automatically as process conditions require. They feature a high level of repetitive accuracy and are capable of pumping a wide range of chemicals, including acids, bases, corrosive or viscous slurries. For water treatment, metering pumps are the preferred pump for disinfection, pH control and flocculation applications, where accuracy is critical.

- Hydraulically actuated diaphragm design
- Mechanically actuated diaphragm design
- Modular designs
- Multiplex configurations
- High-pressure and low pressure pumps



## Mixers

Milton Roy Mixing is a global leader in mixing and agitator equipment for water and wastewater applications. We ensure quality and reliability through every stage in the process: from selection, design and planning to testing, installation and maintenance. Our highly trained, experienced global team is ready to take on as size mixing challenge.

- Tank applications from 10 to 100,000 gallons (50 L to 400 m<sup>3</sup>)
- Viscosities up to 1,000 mPas (cP)
- Reduced energy consumption
- Dewatering / Sludge reduction by 20%



## Monitoring and Sensors

Milton Roy's Streaming Current Detectors (SCD) monitor and control coagulants by constantly analysing the surface charge (on a slip stream of treated water) to track the treatment process then automatically maintaining optimum dosage.

- Maintains coagulant dosing without overdosing
- Assures regulatory compliance
- Best available technology for water quality
- Continuous online operation



## Polypack Polymer Preparation Units

The Polypack polymer system improves the separation process between the solid / liquid phases in water and wastewater / sludge treatment. This automated system allows the circulation of polymer through a series of compartments thereby ensuring optimum reaction time and concentration to the application.

- High efficiency mixers
- Optimized process
- Reliable and robust
- Compact design
- Dual process of power and liquid polymers

Milton Roy is a global provider of precision-engineered, process-critical and technologically advanced flow control systems. Our global network of water treatment professionals brings over 85 years of real-world application experience and an extensive equipment portfolio to get results.





# PERISTALTIC HOSE PUMPS FOR WATER AND WASTEWATER TREATMENT

ALH high pressure hose pump and ALP low pressure peristaltic dosing pumps:

The simple, glandless, “straight through” construction without valves, vanes or impellers, has clear advantages in handling viscous sludge liable to contain rag type or other solids which may cause blockages. This as well as having the ability to impart minimal shear, combined with the high levels of volumetric accuracy makes the Albin Pump perfect for these difficult applications.

Albin Pump extensive array of highly engineered, fluid-handling devices offers sustained trouble free operations that maintains uptime and keeps your water and waste water treatment processes running at maximum efficiency.

- As few components as possible in contact with the pumped material
- Minimum routine maintenance



## ARO<sup>®</sup>

Because wastewater can be highly abrasive and chemically aggressive, ARO pumps are designed to out perform the competition.

The EVO Electric Diaphragm pump:

- Delivers superior energy efficiency without requiring compressed air
- Easy to install, operate and maintain
- Is process ready to support automation for high transfer volume, control and dosing





# THE RELIABILITY TO EMPOWER WASTEWATER TREATMENT

Ingersoll Rand offers a variety of air compressors and system components ideally suited to the demands of wastewater treatment processes - key to efficient operation. Choosing the right air compressor will have a tremendous impact on maintenance budgets and energy costs.

## Air Compressor Range

- **Portable Reciprocating Air Compressors (1-30hp):** For fleet and field service applications, our two-stage, gas-powered air compressors are ideal for remote pneumatic applications, great option for general tank cleaning and plant maintenance where air tools are needed
- **Oil-less Reciprocating Air Compressors (1-15hp):** Designed to meet your precise standards in air purity, these oil-less reciprocating air compressors combine 100% oil-less operation with the quality and reliability you expect from Ingersoll Rand. It can be used for desalination, digestion tank cleaning and maintenance, suction pressure, wastewater purification
- **Oil-flooded Rotary Screw Air Compressors (4-50hp):** We work to keep you ahead of your competition with Next Generation R-Series air compressors that lower total cost of ownership through industry leading energy efficiency. Commonly used for door/gate maneuver; back washing sand filtration, desalination, wastewater disposal, slurry liquid pumping, suction pressure, wastewater purification, aeration and agitation. VSD (variable-speed drive) models are a great option for fluctuating demand as they automatically adjust output to achieve the highest efficiency for your operation, minimising energy use at any load.

At Ingersoll Rand, keeping your compressed air system running at peak performance is a high priority and we offer many services to support you on that: OEM Parts and Maintenance Kits, Preventive Maintenance Services, Performance Services, CARE® Service Programs & Expert Service and Support.





# TRUSTED BY **WATER TREATMENT PROFESSIONALS**

LMI manufactures an extensive line of chemical metering pumps, including both electronic and motor driven pumps, available for flow proportional applications with liquid handling configurations to handle slurries and high viscosity chemicals used in water and wastewater applications.



## Intelligent Control of the Water Treatment Process

LMI continues its commitment to innovation and technological advances with the expansion of the EXCEL XR Metering Pump. Designed to meet the most challenging application needs in water treatment, the EXCEL XR pump brings a new level of accessibility and performance to the field.



## Standard Electronic Pumps Add Convenience and Value

Designed specifically for water treatment applications, the PD Series metering pumps add advanced technology to one of LMI's most popular pumps. The PD pump fits seamlessly into the water treatment process while adding convenience and value to the application.



## Motor-Driven Metering Pumps for Higher Output and Pressures

The Series G pump features rugged aluminium construction specifically engineered to handle higher output and higher pressure in harsh environments. Certified NSF / ANSI 61 and 372 for municipal compliance and safety assurance make this the right choice for water treatment.



# WATER-POWERED CHEMICAL INJECTOR PUMPS

## Metering Pumps

Volumetric and proportional, Dosatron metering pumps powered by hydraulic energy available in the network provide accurate and repeatable dosing of additives where they are implemented. It uses water pressure as a driving force. Thus activated, it sucks the additives dose at the selected percentage and homogenises it with the water in its mixing chamber. Additives are dosed continuously, strictly proportional to the volume of water flowing through the doser, regardless of variations in pressure and network flow.

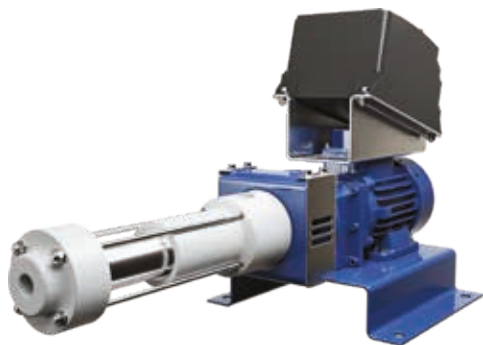
Dosatron offer a real alternative for any water treatment application.



# SEEPEX.

## CLEAN. SAFE. **RELIABLE.**

SEEPEX progressive cavity (PC) pumps support the purification and clarification of water and wastewater with their state-of-the-art pump technology. The pumps can be used in chemical metering, sludge transfer, sludge dewatering, sludge drying and incineration, sludge treatment and mixing, and in optimized digestion processes. Our pumps contribute to more efficient, cost-reduced, and simplified processes.



### Metering

SEEPEX metering and dosing pumps are a range of precision pumps that have a metering accuracy of +/- 1%. The pumps are especially suited for low pulsation delivery of low to viscous media as well as chemically aggressive media and media containing solids.

- Low pulsation and shear
- High metering accuracy (deviation +/-1%)
- Constant flow, independent of pressure



### Sludge Handling

SEEPEX PC pumps are particularly economical conveying solutions for transporting many sludge applications including: primary, secondary, FOG, RAS, WAS, and TWAS, as there are virtually no restrictions on viscosities or abrasive materials.

- Strong suction forces for easy transport of viscous media
- Steady, even flow delivery



### Sludge Cake Transfer

SEEPEX open hopper pumps convey viscous to semi-solid products with low or no flowability. They are equipped with a feed hopper and screw conveyor in order to optimally feed the product to the conveying elements.

- Open intake hopper and screw conveyor handles cake solids up to 45%
- Easy maintenance
- Laser level options

## Grinder/Macerator

Solid or fibrous components in pumped media can quickly represent a hazard to pumps, downstream plant components or piping. SEEPEX macerators effectively shred coarse materials and ensure pump-friendly pumping media.

- Easy maintenance with cartridge design cutting unit
- Variable degree of maceration dependent on flow rate, drive speed and shear plate design

## Maintenance Friendly Design

Smart Conveying Technology (SCT) is the SEEPEX revolutionary maintain-in-place design for PC pumps. Pumps equipped with SCT allow the pump to be maintained without the removal of suction or discharge pipework or the use of special tools.

- 85% reduction in maintenance times
- Integrated re-tensioning device increases rotor and stator life by up to 200%
- Lighter components allow safer and faster assembly/disassembly with minimal manpower



# EXPERT ADVICE AND CUSTOMER CARE

## Let us be your experts

With more than 300 years of experience and expertise, Ingersoll Rand is the expert, so you don't have to be.

Your needs drive us, not our products. We are guided by an entrepreneurial spirit, taking on the most challenging problems, tailoring our solutions to our customers' needs. Our innovation is directly intended to deliver the results that matter to you.

We are your partner, not just your equipment supplier.

## How we support you

Our focus on creating meaningful partnerships delivers real advantages for our customers in the water and wastewater industry:

- Data supported insights
- Results aligned with your key performance indicators
- Continuous commissioning
- Service solutions designed for improved reliability / uptime

## Optimizing your installation

Our customers rely on us day after day to keep their systems running cost-effectively and at optimum performance. Inefficiencies can occur in every facet of the manufacturing process from generation to transmission and delivery and point of use. Our performance services are designed to address current inefficiencies in your system and identify problems before they arise. By tracking system performance, we can focus on increasing system efficiency, providing big picture insights for improved return on investment.

## LEAN ON US TO HELP YOU **MAKE LIFE BETTER**



### **FEASIBILITY STUDY / SYSTEM SCORECARD**

At no cost, determine which assessment is right for you before committing funds



### **DETAILED ANALYSIS**

Receive detailed data, leak diagnostics and system reports that show financial impact



### **ACTIONABLE**

Recommendations and real insights into your system providing a real ROI and the RESULTS you need



### **SUSTAINABLE**

Implementation plan and customized solutions optimized for today and verified over the life of your system

## Eliminate the guesswork

Our performance services eliminate the guesswork and help you improve productivity while lowering your operating costs by understanding where and how to fix your system's inefficiencies.

Our portfolio of assessment tools will provide you with detailed diagnostics that give you the proper insights to help lower your total cost of ownership (TCO).



### TRUSTED PARTNERSHIP

Our experience, global expertise, and proactive care provide a true partnership for your systems



# SERVICE & SUPPORT

FOR **WHERE AND WHEN** YOU NEED IT MOST

## Global support

Ingersoll Rand is comprised of many industry-leading brands with strong reputations backed by knowledge and expertise, providing the parts, service and support you need to keep your business running. Known for global excellence, we stand behind our products and services and beside our customers during planning, installation, and maintenance. We offer a variety of extended warranties and preventative maintenance programs designed to suit you and your needs.

## AUDITS

### Measure, manage, improve

Identify inefficiencies in your blower or pump installation with professional energy audits. Whatever your goal, we can partner with you to create the best solution for your business.

- Efficiency monitoring
- Leak management
- Cost allocation
- Point of use measurement
- Pressure loss
- Consumption auditing

## PREVENTATIVE MAINTENANCE

### Proactive, not reactive

Backed by certified service professionals, Ingersoll Rand can help you implement a regular service routine improving efficiency and reliability while reducing downtime.

- System diagnostics
- Equipment assessment
- Maintenance on identified components
- Consumables replacement

## DIGITALLY ENABLED SERVICES

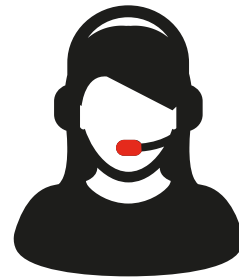


Digitally connected

## PLANNED MAINTENANCE



Scheduling and executing required services



# SERVICE CARE

## ADVANCED SERVICES



Risk sharing on capital equipment

## GENUINE OEM PARTS



Increased life, lower power consumption, less risk

# WATER & WASTEWATER TREATMENT

## CUSTOMER STORIES



TRUSTED BY GLOBAL CUSTOMER BASE... **“USING MILTON ROY, A PREMIUM BRAND IN THE INDUSTRY, HAS PROVEN THAT PRODUCT QUALITY AND PERFORMANCE ARE ONE OF OUR IMPORTANT SUCCESSES OF WATER PRODUCTION TO SERVE OUR NATION.”**

### Keppel Marina East Desalination plant in Singapore

Application: Scale control, polymer, water disinfection, chlorination, strainer backwash, shock chlorination, de-chlorination, fluoridation, neutralization, ph adjustment

Customer goal: To build Singapore’s first dual-flow mode desalination plant capable of treating sea water or reservoir water to produce 30 million gallons of drinking water per day.

Achievements: Milton Roy provided a tailor-engineered solution for the chemical side of this high-profile project. Operators at the Singapore plant were highly appreciative having Milton Roy as a partner of this successful project

### Customer benefits

- High quality and reliable product and solution
- Accurate engineering and aftermarket supports



## LISTENING TO OUR CUSTOMERS, SHARING IN THEIR SUCCESS

### Brivadois Water Management Syndicate (France)

Product: Dosatron D3WL3000 AF

Application: Potabilisation with Chlorine dosing pump  
Customer goal: To comply with safety water regulation for drinkable water and minimize project budget

Achievements: Improved chlorine concentration at tap without investment in costly power supply network

### Customer benefits

- The numerous reservoirs to be controlled do not all have electricity
- Chlorination, placed upstream of the reservoirs, provides effective protection against the development of bacteria
- Essential contact time with chlorine to achieve disinfection is respected until tap water
- Reduced power supply consumption and power supply network installation

### Further Advantages:

- Simple “plug & play” installation



# TRUSTED APPLICATION KNOW-HOW

## DRIVEN BY INNOVATION

### Standing the test of time

With over 300+ years of experience and history, and over 40+ brands that offer market-leading solutions and services to help make life better, we are the ultimate partner for vacuum, blower and compressed air solutions. Customers rely on our proven products in the wastewater treatment industry across the globe.

### Continuous improvement

The reason for our brand's longevity is our commitment to continuous innovation and improvement, allowing our customers to continually tackle new challenges and reach optimal performance in their business. Our customers lean on us for groundbreaking technologies that predict solutions before they know they need them, delivering unrivaled reliability, and maximum performance.

### Partnering with industry experts

We have the confidence to take on the most difficult challenges, partnering with industry professionals to design solutions that excel in even the most complex conditions, where downtime is exceptionally costly.

We connect with our customers for life by delivering proven expertise, productivity, and efficiency improvements that provide real value to them and their business.

- Steadfast integrity
- Customer focus
- Global teamwork
- Bias for action
- Creative thinking
- Ownership mindset







**Lean on us**  
to help you **make life better**



[www.irco.com/water](http://www.irco.com/water)