



**Desalination Product and
Applications Catalog 2013**

Advanced Technologies for Seawater Reverse
Osmosis and Brackish Water Applications

**FLUID
INNOVATORS.™**

HIGH-QUALITY ENGINEERING AT AN AFFORDABLE PRICE

TurboCharger Energy Recovery Devices

Our family of TurboChargers has the highest-in-its-class efficiency with state-of-the-art engineering and manufacturing capabilities. Designed for reliability and optimum efficiency, they're suitable for both high-pressure seawater and low-pressure brackish reverse osmosis systems. They offer substantial savings for lower investment solutions—especially in locations where power costs are heavily subsidized or there's a need to mitigate upfront capital (or equipment) costs. Simple to maintain, our TurboChargers are supported by highly qualified and seasoned technical field services professionals around the clock.



HIGH PERFORMANCE. LOW COST. The AT (Advanced Turbo) TurboCharger



AT TurboCharger at a Glance

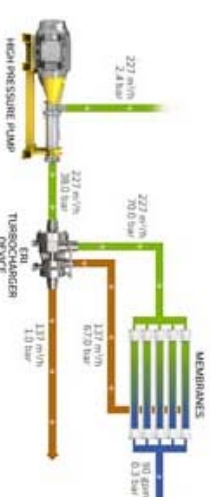
- Optimized efficiency with 3D geometry/impellers
- Volute insert technology for field flexibility
- Custom hydraulics
- Reduces energy consumption
- Lowest installation cost
- Simple field retrofits
- Product lubricated bearings
- Smallest footprint
- MOC: Duplex (2205) & Super Duplex (2507) Stainless Steel

Models

- AT-70
- AT-95
- AT-125
- AT-250
- AT-350
- AT-425
- AT-550
- AT-875
- AT-1100
- AT-1500
- AT-2150
- AT-3250
- AT-4150
- AT-6000
- AT-7800
- AT-11000

A fully customized, high-performance, low-cost energy recovery solution for high-pressure systems reduces the required boost to high-pressure pumps thereby minimizing energy consumption. Previously known as Halo, our Advanced Turbo (AT) is a flexible solution that simplifies the SWRO system while maintaining its operational reliability. Easy to install, with a compact footprint, it's a turnkey solution that requires minimal installation time, operator training, and plant design; it can be installed in any direction and needs no instrumentation or ancillary equipment.

Ideal for small-to-medium, skid-mounted seawater reverse osmosis systems, this device handles flows from 50 to 10,000+ gallons per minute (1.1 to 2,272 m³/h) and pressures from 600 up to 1,200 psi (45 up to 80 bar). For a centrifugal solution, the innovative (patent pending) volute insert technology allows unparalleled field flexibility for changing operating conditions by enabling the operator to optimize the hydraulic pathways to achieve highest efficiency.



Seawater Reverse Osmosis with Energy Recovery's Advanced TurboCharger





EXCEPTIONAL ENGINEERING.
QUALITY MANUFACTURING.

The Aquabold High Pressure Pump

The Aquabold at a Glance

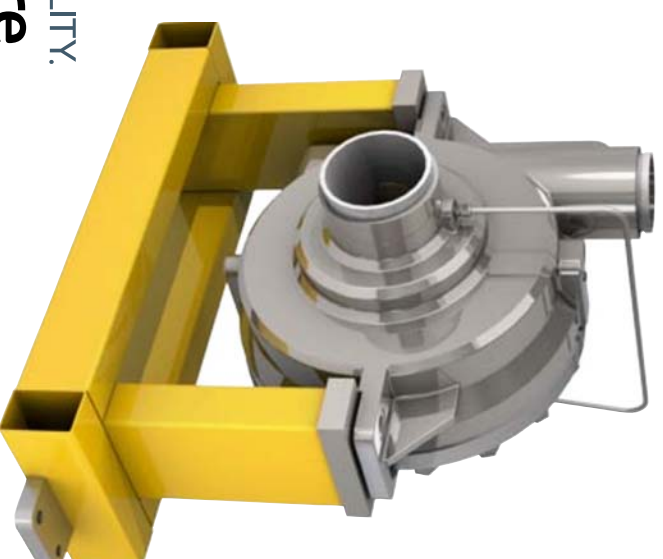
- Optimized performance
 - Longer bearing life and wear cycle
 - Enhanced corrosion resistance
 - Less maintenance
 - High availability, simple to maintain
 - Low lifecycle cost
 - State-of-the-art materials and manufacturing
 - Improved debris durability
 - Product lubricated bearings
 - Adaptable to changing requirements
 - Operational flexibility
- In systems that use PX technology with a single- or two-stage membrane array*
 - In systems that use a TurboCharger device with a single stage membrane array**
 - In systems that use a TurboCharger device with a two-stage membrane array***

*Can be sized for reduced system flow at full-system pressure.

**Must be sized for full-system flow with less pressure.

***Must be sized for full-system flow with less pressure. Here, the TurboCharger is used as an interstage boost to increase the pressure to the second stage, improving membrane productivity.

Models
Aquabold
2X3X5
Aquabold
3K4X7
Aquabold
4X6X9



HIGHEST EFFICIENCY.
OPERATIONAL FLEXIBILITY.

The AquaSpire High Pressure Pump

The AquaSpire at a Glance

- Single-stage design
 - Product lubricated bearings
 - Adaptable to changing requirements
 - No scheduled maintenance
 - Simple field retrofits
 - Custom designed for optimum efficiencies
 - Simple field retrofits
 - Achievable efficiencies at up to 90%
 - Optimization with removable volute inserts
- The AquaSpire™ is a single-stage, high-pressure pump that's ideal for medium-to-large-scale seawater and brackish water reverse osmosis systems. It handles flows from 250 to 12,000 gallons per minute (57 to 2,725 m³/hr) and pressures up to 600 psi (45 bar).
- It's designed to complement our AT TurboCharger energy recovery device for maximum efficiency and hydraulic flexibility.

Models
AquaSpire™300
AquaSpire™450
AquaSpire™500
AquaSpire™900
AquaSpire™1200
AquaSpire™1800
AquaSpire™3600
AquaSpire™4800
AquaSpire™7200
AquaSpire™9600

GLOBAL INSTALLATIONS MASSIVE ENERGY SAVINGS

With over 14,000 devices installed worldwide, Energy Recovery sets the standard for engineering excellence, cost savings, and technical services to clients across the world. We are both economically and environmentally vital to a broad mix of markets, plants, and installations. The map below shows a sampling of our global picture. Visit our website to view an interactive version of this map at energyrecovery.com/global-installations.

Energy Recovery is committed to innovation and collaboration within the water, oil & gas and chemical industries. We work to ensure that their industrial processes are increasingly more profitable and environmentally cleaner. Year after year, the company's clean technologies continue to save clients over \$1 billion (USD) in energy costs.

"ERT's PX energy-saving technology makes it possible for us to receive clean, reliable water at a much more competitive cost."

Natarajan Ganesan

Joint General Manager,
Chemical Water Desalination Company

"We use ERT's PX technology in many of our plants due to its competitive and economic advantages."

Carlos Cosin

International Director,
Befesa

"The Perth plant utilizes highly efficient, simple-to-operate and low-maintenance Isobaric ERTs from Energy Recovery. The plant design is unmatched and will no doubt be the world's model desalination plant."

Gary Crisp

Principal Engineer,
Desalination Water Corporation
of Western Australia

Meet Team 360

When You Invest In Energy Recovery Technology, You Don't Just Get A Product, You Get Partners.

Every day we support our clients across the globe in making energy recovery economically profitable and environmentally sustainable. With over 120 years of combined industry experience, our visionary service and support team has all-around technical expertise in energy recovery systems. Both our products and our relationships stand the test of time. Wherever you are in the world, whatever size your project, we will be there to support you every step of the way. From grassroots planning, to system design and implementation, through ongoing maintenance, we are always available for you. That's why we call ourselves Team 360.

Installation and Service Support

Team 360 can supervise installation and system commissioning whenever you request it. We've got experts in most regions of the world, including the Middle East, Europe, Asia, India, Latin America and Australia to provide responsive, local assistance and support in your language of choice. Once your project is up and running, we guarantee we'll go above and beyond to meet any maintenance requirements.

Spares and Repairs

Looking for a spare part or can't figure out what's wrong? Team 360 maintains an inventory of complete PX devices, pumps, parts, kits and tools at our headquarters in California; shipments can be expedited to any part of the world. We also maintain inventories of spares and parts in many regions including Algeria, Australia, the Caribbean, China, Spain and the United Arab Emirates.



360 TEAM

Training

Team 360 is available worldwide to provide customized on-site product and operations training that meets your needs and time constraints. We also provide dynamic, hands-on training here at our headquarters to help accelerate your understanding of how our energy recovery technology works.

Online Tools and Resources

Visit our website to view a wealth of technical information, including operations and service manuals, technical guidance documents, and the Power Model™ and SWRO process simulator, developed to support you in your design process.

Companies don't innovate – people do

At the end of the day, our technology is so popular because of the unsurpassed R&D and technical knowledge we bring to the table. Team 360 is diverse, but we share one unifying characteristic—a desire to create and support smart, elegantly simple solutions to complex problems. Our primary measure of success is your satisfaction.

CORPORATE HEADQUARTERS

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FLUID INNOVATORS.™

At Energy Recovery, we develop award-winning, industry-leading energy recovery systems that offer innovative solutions to global industries. Our systems and solutions transform industrial fluid flows and pressure cycles into reusable energy, using advanced technologies that adapt to the water, oil & gas, and chemical industries, making it possible to harness energy from almost any high-pressure fluid process.

Our corporate headquarters is located in California, in the United States. This facility houses our administrative, engineering, manufacturing and sales departments.



**energy
recovery™**