



PX-30S

PX Pressure Exchanger® Energy Recovery Device

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The PX-30S Pressure Exchanger is part of ERI®'s 4S series energy recovery device product line. The PX-30S device is ideal for small SWRO applications and pilot plants. These single-rotor units are designed to handle brine flows from 4.5 to 6.8 m³/hr (20 to 30 gpm), corresponding to permeate flows of 3.7 to 5.6 m³/day (16.3 to 24.7 gpm) when operating at 45% recovery. Similar to other PX technology product lines, the PX-30S device has built-in redundancy with flexible array configurations which may be used in parallel to service larger systems.

The PX-30S Pressure Exchanger was developed to meet the needs of smaller application environments including pilot plants, brackish water and mobile marine units. The PX-30S device incorporates relaxed flow control requirements with constant high efficiencies – up to 96%. It is designed to provide low energy consumption for smaller applications, reducing a plant's carbon footprint.

PREMIUM QUALITY AND ADVANCED TECHNOLOGY OVER ANY OTHER ERD

Based on a rotary positive displacement pump principle, the PX-30S device recovers energy from the high-pressure waste stream of SWRO desalination systems at up to 96% efficiency. This technology greatly reduces water production costs by up to 60%.

Industry experts have designed and tested the PX-30S Pressure Exchanger for long life cycles in seawater and brine environments. The PX unit is housed in industry standard 4" diameter pressure vessel proven to provide extended field service life in SWRO applications.

PX units installed since 1997 have proven the endurance of the ceramic construction by requiring no routine maintenance when operated for tens of thousands of hours in tough seawater environments.

CERAMIC COMPONENTS

At the core of the PX device is a cartridge made of tough, engineered corundum (aluminum oxide). This ceramic material is unaffected by chemicals and will not corrode. Its properties are similar to that of sapphire and its hardness exceeds that of many stainless steels by a factor of three. In fact, most PX units taken apart for inspection after years of service exhibit no evidence of wear or deterioration whatsoever.

QUALITY DESIGN & CONSTRUCTION

Due to harsh conditions and continuous service requirements in SWRO plants, material specification, fabrication and assembly are critical to ensuring ERI's products perform consistently and reliably. Precise machining, inspection and 100% performance testing are conducted. ERI's Engineering and Manufacturing departments work closely to maintain tight control and assure quality. Because of proven reliability and maintenance free performance, the ERI PX Pressure Exchanger is one of the few rotating devices in the world that is backed by a standard **five year warranty**.





PROVEN RELIABILITY AND EXPERIENCE

PX technology has emerged as the industry standard for projects of all sizes; primarily due to the PX device's consistent delivery of energy and maintenance savings – with no excuses about changes in original design envelopes. Over 80 OEMs worldwide have standardized on PX technology with installations from small to medium (in practically every part of the world), to the world's largest desalination plants in Algeria, Australia, China, India, Mexico, Spain, along the Mediterranean Sea and the Middle East.



LOWEST LIFECYCLE COSTS

ERI's global install base saves real money compared to older energy recovery technologies such as Pelton wheels, Francis turbines and turbo chargers.

- Over \$352 Million per year in energy saved
- Up to 96% efficient
- Proven SWRO power consumption as low as 1.6 kWh/m³*
- Real power savings of over 500 MW worldwide



WORLD-WIDE REFERENCES

ERI has 10 times more operating experience than the next manufacturer of isobaric energy recovery devices.

- Millions of unit hours of proven reliability
- Over 80 OEM's using PX devices with over 6,000 units sold or contracted worldwide
- More than 5,200,000 m³/day of capacity installed or under construction
- Standard 5 year warranty
- Trains from 500 to 25,000 m³/day



SIMPLE DESIGN & EASE OF USE

PX technology offers the simplest approach to isobaric energy recovery available today; only one moving part and no scheduled maintenance. Its ease of use with no artificial intelligence or adaptive control schemes as well as fail-safe design features makes the PX device easy at startup and shutdown.

- Constant high efficiency over entire operating range
- One moving part
- Zero scheduled maintenance
- Smallest installed footprint when compared to other isobaric ERDs
- No pulsation, valves, pistons or timers



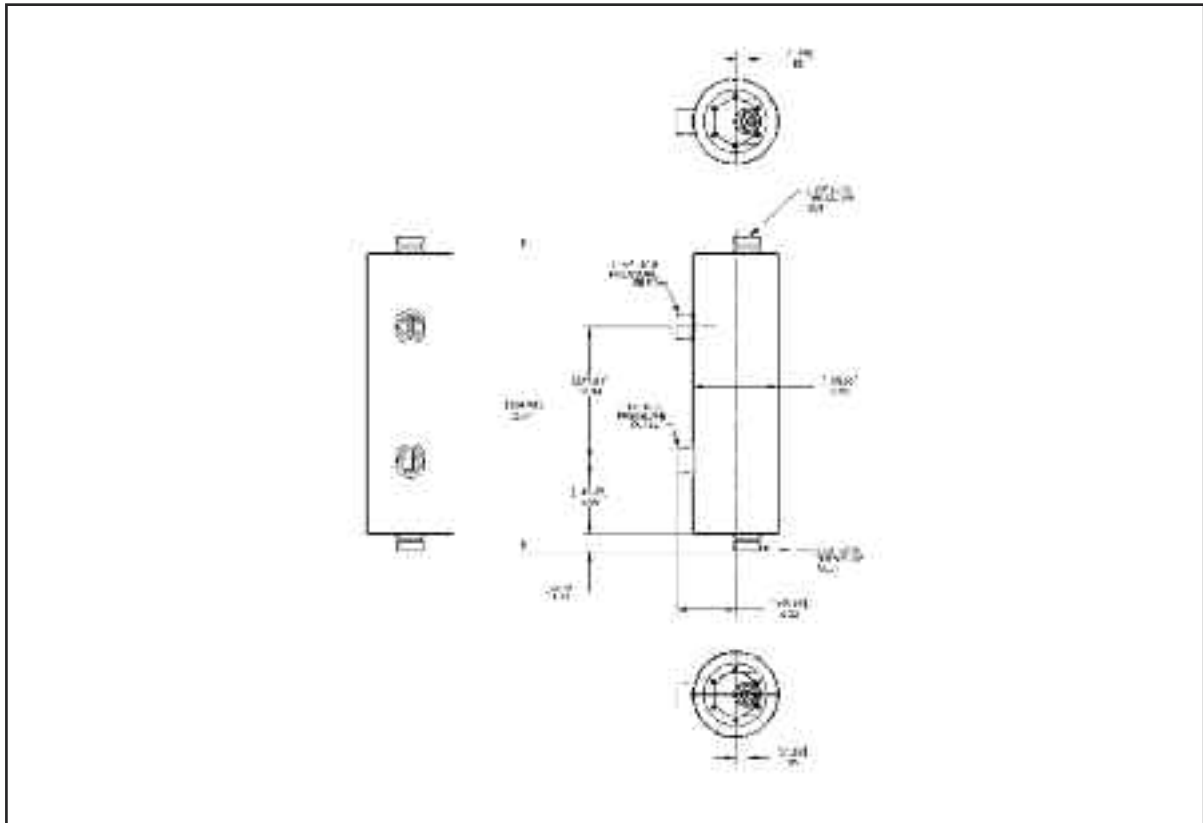
MATERIALS

- Alumina Ceramic
- Fiberglass Reinforced Polymer (FRP) internal components
- Industry Standard FRP
- 254 SMO[®], AL-6XN[®] or equivalent high-pressure fittings
- Flexible coupling connections for easy installation

*ADC

AL-6XN[®] is a registered trademark of Allegheny Ludlum Corp.
254 SMO[®] is a registered trademark of Avesta Sheffield AB.

External Dimensions and Piping Details



Model	Capacity m ³ /hr (gpm)	Connections (4) inches	Shipping Dimensions mm (inches)	Shipping Weight kg (lbs)
PX-30S	4.5 – 6.8 (20 – 30)	1.5	762 x 330 x 279 (30 x 13 x 11)	24 (52)

See ERI Document Number 40022 current revision for assembly dimensions and component bill of materials.

PROPRIETARY AND CONFIDENTIAL

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Energy Recovery, Inc.
 1908 Doolittle Drive
 San Leandro, CA 94577
 TEL +1 (510) 483-7370
 FAX +1 (510) 483-7371
 EMAIL info@energyrecovery.com
 WEB www.energyrecovery.com



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