



# Vapor Compression Watermakers

Aqua-Chem's vapor compression distillation watermakers provide reliable, proven solutions for offshore desalination of seawater, killing bacteria and removing suspended solids, dissolved minerals and organic contaminants. These units are designed to operate in the challenging conditions encountered in offshore operations, and are backed by decades of successful operating history. Our vapor compression distillation watermakers consistently produce purified water with less than 5 ppm of total dissolved solids.

## Design Features

**Evaporator** – The evaporator features a horizontal design using the patented Spray-Film® process. In use for over 40 years now, this technology continues to be the design of choice in conditions that demand maximum reliability, lowest operating costs and maximum production.

**Heat Source** – The vapor compression process uses its own compressed steam as its primary heat source, resulting in vastly improved efficiency.

**Materials of Construction** – We use corrosion-resistant titanium and copper-nickel tubes, titanium compressor impellers and heat exchangers, plus copper-nickel evaporator shells.

**Automation** – Watermakers are designed to operate automatically with a pushbutton start. A programmable logic controller (PLC) and human machine interface (HMI) are standard.

**Insulation** – The evaporator is insulated with fiberglass and covered with aluminum cladding.

## Benefits

- From the North Sea to Southeast Asia, you can count on crystal-clear water at the rated capacity, confident that performance, capacity and water quality are not affected by feedwater characteristics.



*SR600 Offshore Watermaker*

- Custom engineering is available to meet international electrical codes, rig specifications and unique operating conditions.
- Patented Spray-Film evaporator design provides improved wetting of the tube bundle which minimizes scaling. This means less downtime for cleaning and less chemical use.
- Spray-Film design also includes built-in, on-line cleaning for removing any scale, reducing maintenance costs and increasing operating life.
- The most reliable steam compressor design incorporates a unique journal bearing with thin film technology for long-lasting performance, which is superior to ball bearings.
- Simple layout improves safety and ease of maintenance to extend operating life. All major components are accessible from floor level, with the compressor and pumps located at the edge of the skid for easy serviceability.
- Easy, low-cost installation, with only five piping connections and one electrical connection.
- Reliable and durable materials with proven performance after more than four decades of offshore use by Aqua-Chem.
- Factory tested to ensure trouble-free startup.
- Efficiency is 0.05-0.07 kw per gallon of purified water produced.



*SR400 Offshore Watermaker*

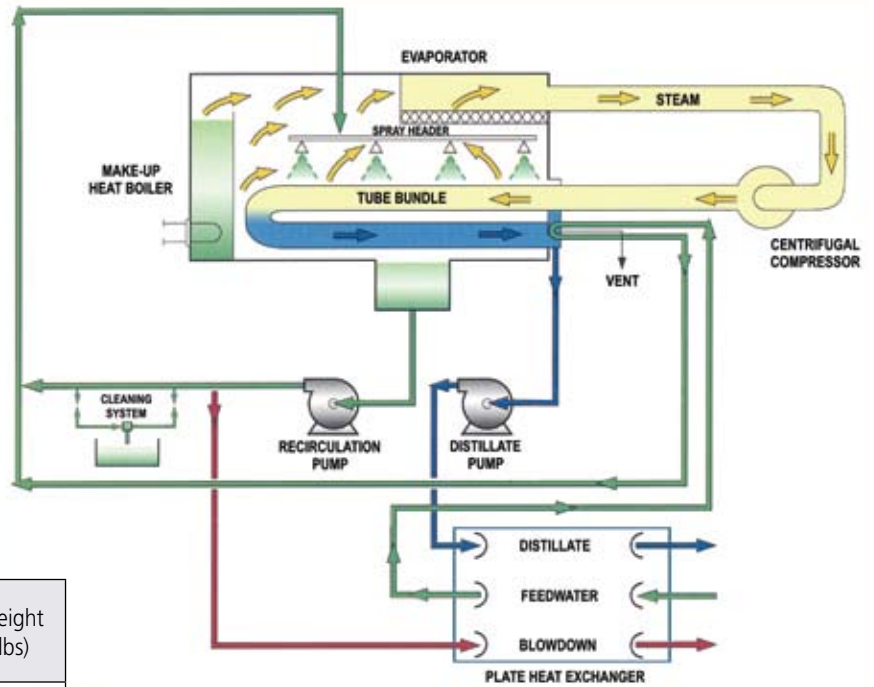
A Q U A  C H E M

Making Water Better.

## How Aqua-Chem Spray-Film® Vapor Compression Works

Incoming feedwater is preheated by the outgoing blowdown and distillate. Feedwater is sprayed over the evaporator tube bundle. A portion of the spray is evaporated as steam, and the remainder is collected in the sump to be recirculated.

Steam generated inside the evaporator is drawn through demisters by the centrifugal compressor, and is superheated to 250° F in the compression process. The steam condenses inside the evaporator tube bundle and is collected as pure distillate. The distillate is pumped through the heat exchanger and into storage.



## Equipment Characteristics

Model	Capacity (gph)	Dimensions (ft)			Weight (lbs)
		Length	Width	Height	
SR200	200	11.5	6.0	6.0	5,300
SR300	300	11.5	6.0	6.0	5,400
SR400	400	12.0	7.1	7.1	8,200
SR600	600	15.8	7.1	7.1	10,400
SR700	700	15.8	7.1	7.1	10,700

## Service

We provide service and support for our equipment, even decades after installation. We continue to support units that were installed in the 1970s and 1980s. Our factory-trained service technicians are available to support our customers worldwide, and we keep key repair parts in stock.