



OFFSHORE OIL & GAS



VACUUM VAPOR COMPRESSION DISTILLERS

Aqua-Chem supplies an innovative vacuum vapor compression desalination system. Vacuum evaporation improves the performance of the distillation process by lowering the evaporation operating temperature. The lower operating temperature retards the formation of scale, improves the heat transfer and reduces maintenance and chemical cleaning cycles.

DESIGN FEATURES

COMPRESSORS – Our compressors use high-speed journal bearings to ensure maximum life. In addition, thin film oil technology protects the bearings and shaft from wear. Materials of construction include titanium impellers and 90/10 CuNi or stainless steel housing.

EVAPORATOR – The evaporator features a horizontal shell and tube design that uses our patented Spray-Film® process.

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

VACUUM EVAPORATION TECHNOLOGY – Vacuum evaporation technology reduces the boiling point of the water to less than 150°F / 65°C, which helps to retard the formation of scale while concurrently increasing the running time between maintenance and cleaning.

CUSTOM DESIGN – Our units can be easily customized to comply with standards established by CE, ABS, DNV and others. The flexibility to make modifications to meet your specific requirements helps set us apart in the industry.

MATERIALS OF CONSTRUCTION – Our components are made of the strongest, most durable materials available to extend system life. Evaporation shells include 90/10 copper nickel or stainless steel, while our evaporator tubes are made with titanium and copper nickel, or duplex stainless steel and aluminum brass. All the piping in our vacuum vapor compression distillers consists of copper nickel, stainless steel or bronze.

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. We maintain inventories of key components and consumables – and ensure that our service advisors are readily available for technical support via phone or e-mail.

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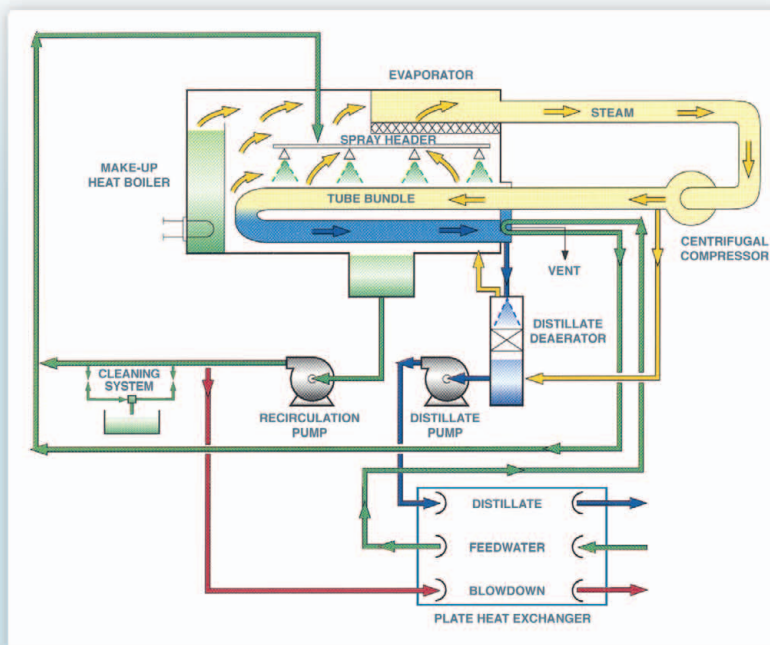
Model SV50 Vacuum Vapor Compression Distiller

BENEFITS

- Aqua-Chem distillers supply high-quality potable and process water to meet critical customer specifications.
- Distillation can be used in any seawater condition, regardless of salinity, temperature or silt. Distillation produces the most consistent, high-quality water, with less than 5 ppm total dissolved solids (TDS).
- Aqua-Chem distillers have set the standard for innovations that reduce maintenance costs and downtime, while increasing operating life. We have units that continue to provide excellent service after more than 30 years of operation. Over the years, continual improvements have solidified our reputation as the most innovative designer of offshore desalination equipment.
- All Aqua-Chem vacuum vapor compression distillers use our patented Spray-Film evaporator design, which provides improved wetting of the tube bundle and reduced scaling compared to rising film or plate-type designs. This results in less downtime for cleaning. The Spray-Film design also includes built-in on-line cleaning for removing scale, thus avoiding any disassembly or manual cleaning.
- Aqua-Chem distillers offer improved safety and ease of maintenance with all major components readily accessible from the deck level. The compressor and pumps are specifically located at the edge of the skid for easy serviceability, encouraging regular maintenance and ensuring a long operating life.

HOW AQUA-CHEM SPRAY-FILM® VACUUM VAPOR COMPRESSION DISTILLERS WORKS

Incoming feedwater is preheated by the outgoing blowdown and distillate. Feedwater and recirculation water are combined and sprayed over the evaporator tube bundle. Start-up/makeup steam is produced in the evaporator boiler. A portion of the spray is evaporated as pure steam and the remainder is collected in the sump to be further recirculated. Some of the collected water is discharged as blowdown to maintain the desired brine concentration. Steam generated inside the evaporator is drawn through the demisters by the centrifugal compressor, and compressed to a higher temperature. 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. Vapor compression is significantly more energy efficient than other distillation methods because energy is recycled back into the process.



Vacuum Vapor Compression Distillers

EQUIPMENT CHARACTERISTICS

MODEL	CAPACITY TONS / DAY	DIMENSIONS (FEET / METERS)			WEIGHT
		WIDTH	LENGTH	HEIGHT	LBS & KGS
SV30	30	7.2 / 2.2	9.7 / 3.0	9.6 / 2.9	10,000 / 4,540
SV50	50	7.2 / 2.2	9.7 / 3.0	9.6 / 2.9	15,000 / 6,800
SV70	70	7.2 / 2.2	11.7 / 3.6	9.6 / 2.9	18,000 / 8,170



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