



Desalt JWP-16-C Series

Titanium plate type fresh water generator

Application

Conversion of seawater into freshwater by vacuum distillation for the supply of high quality freshwater for domestic and process utilization. For installation on ships and rigs, and remote onshore locations.

The JWP-16-C is designed for automatic operation with continuous control of freshwater quality.

Features

- Simple, compact design.
- Titanium heat exchanger plates and other seawater resistant materials (non-coated).
- Combined condenser cooling, ejector water and feed water system.
- Freshwater pump and control system.

Benefits

- High quality freshwater. The low content of dissolved solids (salinity) ensures the supply of pure water which can be used directly as make-up for steam boilers.
- Long lifespan. High grade, corrosion resistant materials, such as titanium plates, ensure a long lifetime for the equipment.
- Low operation and maintenance costs. Start-and-forget operation, combined with easy access to the interior, reduces man-hours required for operation and maintenance to a minimum.
- Simple installation due to compact design, low weight and the possibility to assemble on the spot.



Alfa Laval fresh water generator, type JWP-16-C40.

Capacity range

The JWP-16-C series covers a capacity range from 0.5 to 10 m³/24h, depending on the heating medium and cooling water temperatures.

The capacities shown in fig. 1 are maximum capacities at a cooling water temperature of 32°C.

The fresh water generator can be dimensioned to suit any jacket water temperature from 55–91°C and any cooling water temperature required.

The quantity of freshwater produced can be altered within each size by varying the number of plates in the heat exchanger assemblies.

Working principle

See fig. 2.

The feed-water to be distilled is taken from the cooling water outlet of the condenser (1). It enters the evaporator (10) where it evaporates at about 40–60°C as it passes between the plates heated by the heating medium.

The evaporating temperature corresponds to a vacuum of 85–95%, maintained by the brine air ejector (not shown in fig. 2). The vapours generated

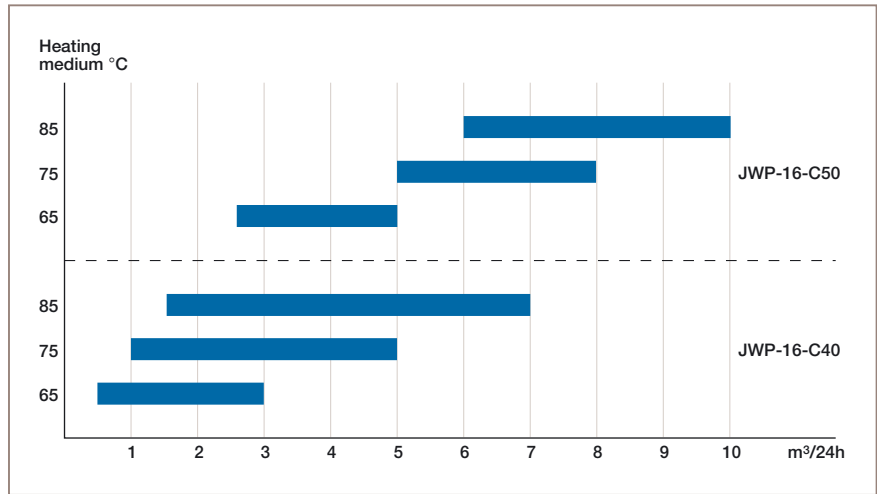


Fig.1. Capacity range for fresh water generator types JWP-16-C40/C50.

pass through a demister where any drops of seawater entrained are removed and fall due to gravity to the brine sump in the bottom of the generator chamber. The clean freshwater vapours continue to the condenser (9), where they condense into freshwater as they pass between the cold plates cooled by the cooling water.

Installation

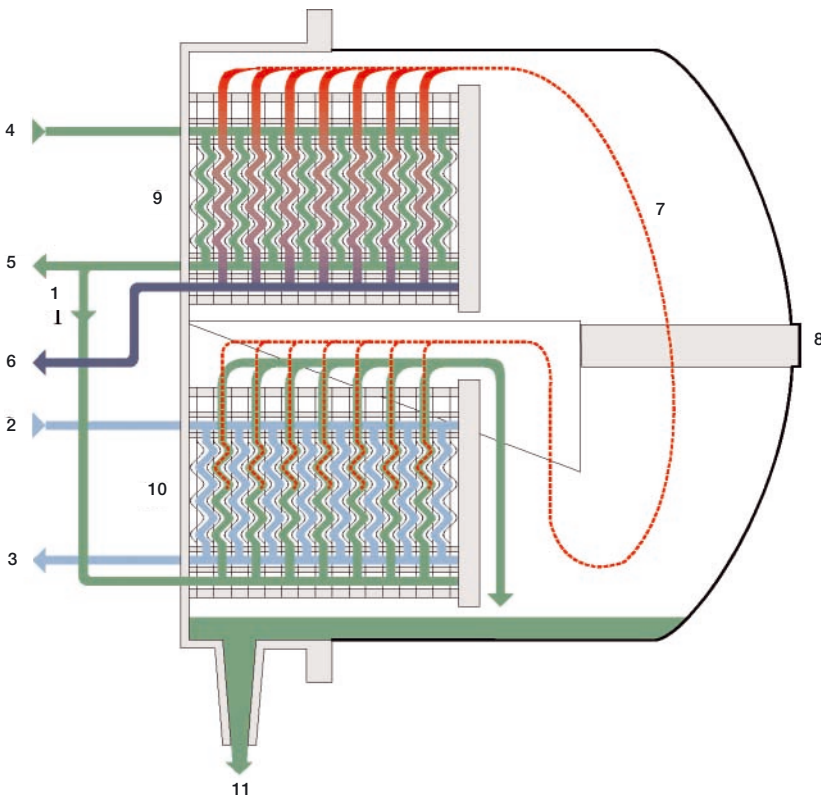
The JWP-16-C fresh water generator is designed for automatic operation in periodically unmanned engine rooms and other automated operations.

The heating medium (see fig. 3) is either engine jacket cooling water or a closed circuit heated by steam.

The ejector pump is separately installed and has separate suction from the sea. This unit supplies coolant in the form of seawater to the condenser, feed-water for evaporation and water for the combined brine/air ejector.

The freshwater produced is pumped to the tank by the built-in freshwater pump.

The separately installed manual starter box, with motor starters and salinometer, supplies electrical power to the ejector and freshwater pumps and control voltage to the salinometer and dump valve.



- 1. Seawater feed
- 2. Heating medium in
- 3. Heating medium out
- 4. Seawater cooling in
- 5. Seawater cooling out
- 6. Freshwater out
- 7. Evaporated steam
- 8. Demister
- 9. Condenser
- 10. Evaporator
- 11. Brine out

Fig. 2. Cross-section through the Alfa Laval fresh water generator chamber.

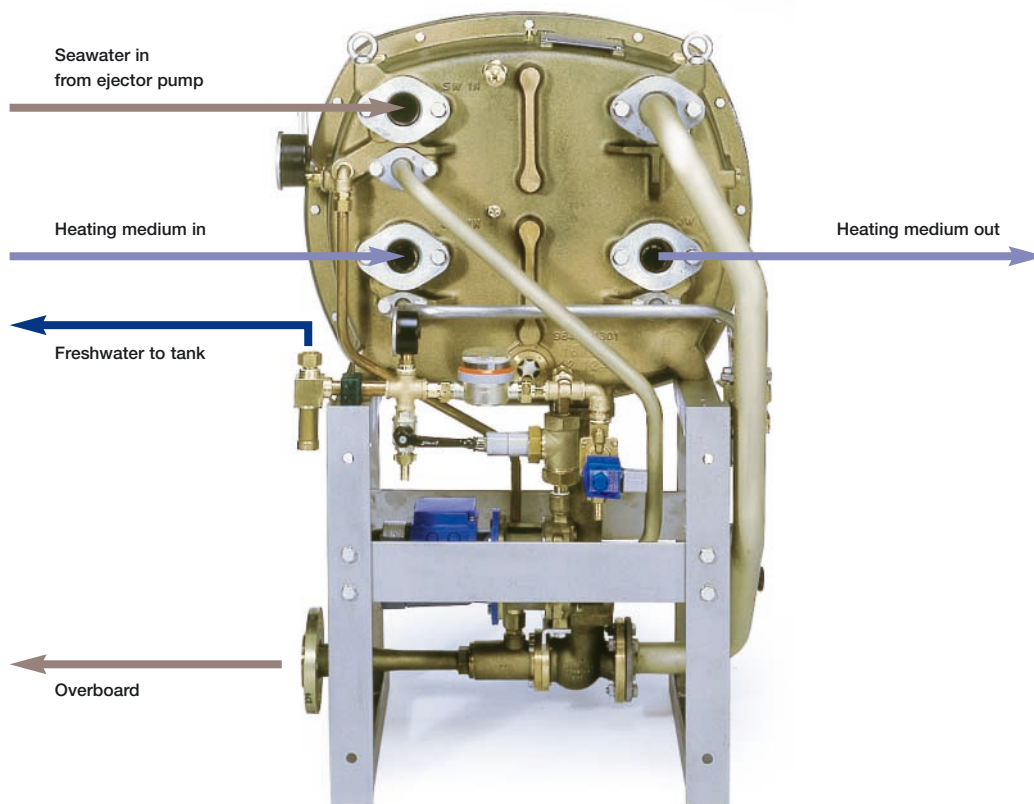


Fig. 3. Installation layout of the Alfa Laval fresh water generator.

Basic equipment

Fresh water generator unit, including titanium plate heat exchangers for evaporator and condenser, generator shell, two-stage brine/air ejector, fresh-water pump, freshwater control sensor and frame.

Additional equipment necessary for operation

- Combined cooling and ejector water pump with electric motor.
- Manual starter box with motor starters and salinometer.
- Feed-water anti-scale chemical dosing unit (necessary at heating medium temperatures above 75°C).

Optional equipment

- Hot water loop module for steam boosting of jacket water.
- Freshwater pH adjustment (rehardening) filter.
- Freshwater disinfection equipment.

Technical documentation

Complete information and documentation accompany each fresh water generator.

The installation manual provides all information necessary for correct installation:

- Plant description
- Installation
- Technical data and drawings.

The instruction manual provides all information necessary for operation and maintenance:

- Plant description
- Operating instructions
- Chemical dosing of anti-scale chemicals
- Trouble shooting

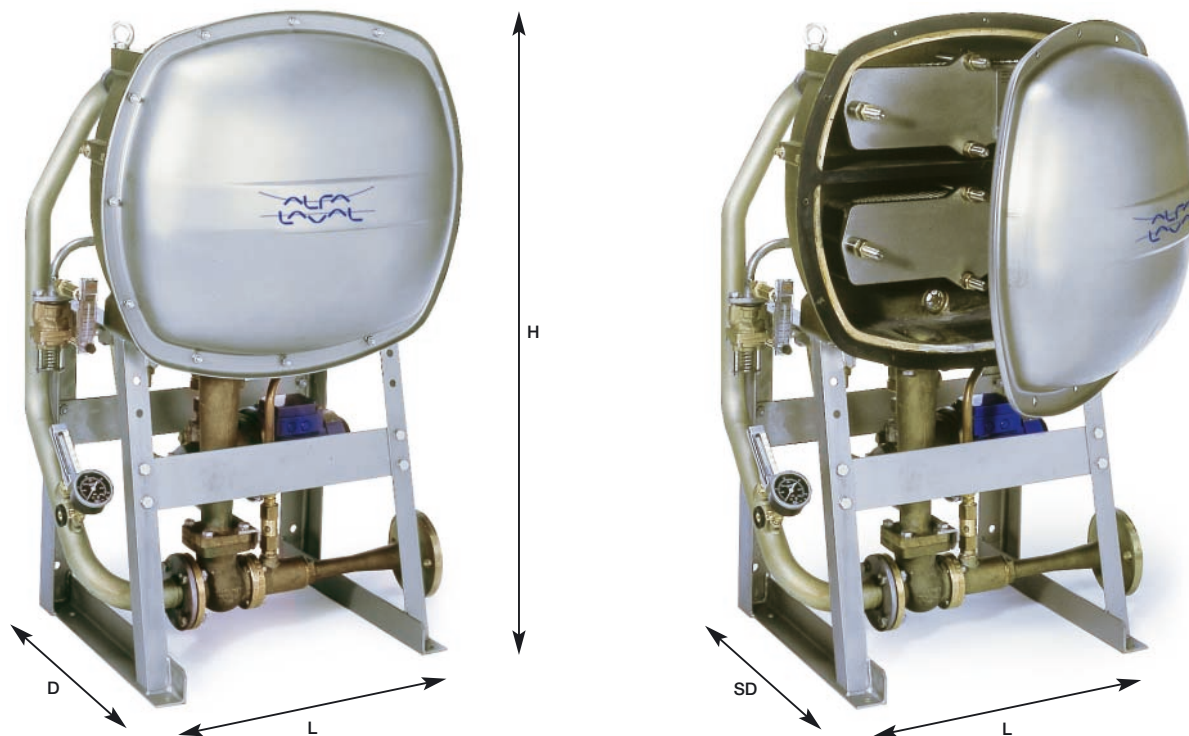
- Maintenance of major components
- Spare parts drawings
- Technical data and drawings.

Service support

An international network of Alfa Laval service centres provides the security of spares and service wherever you are.

Our service engineers will be pleased to assist you with any level of maintenance and will train your operation and maintenance personnel, if desired. Further information can be obtained from your local Alfa Laval representative.

JWP-16-C series
Main dimensions and service area



Size	L		D		H		SD		Weight	
	mm	inches	mm	inches	mm	inches	mm	inches	kg	lbs
JWP-16-C40	706	27.8	665	26.2	1052	41.4	1040	40.9	200	–
JWP-16-C50	720	28.4	990	39	1052	41.4	1300	51	250	–

The designation, 40/50, in the type designation indicates the diameter of inlet and outlet flanges for jacket water.

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Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval
 Up-to-date Alfa Laval contact details
 for all countries are always available on
 our website at www.alfalaval.com