Desalt JWP-26-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, rigs, and remote onshore locations.

The JWP-26-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 of 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-26-C80.

Capacity range

The JWP-26-C series covers a capacity range from 4 to 35 m³/24h, depending on the heating medium and cooling water temperatures.

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

The fresh water generator can be dimensioned to suit any jacket water temperature from 55–95°C at 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.

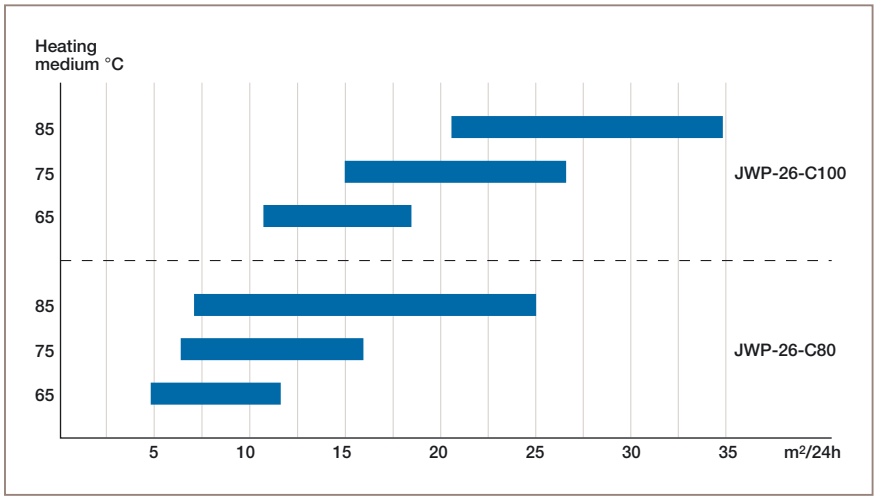


Fig. 1. Capacity range for fresh water generator types JWP-26-C80/100.

Working principle

See fig. 2.

The feed-water to be distilled is taken from the sea 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 pass through a demister where any drops of seawater entrained are removed and fall due to gravity to the brine sump at 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 sea cooling water.

Installation

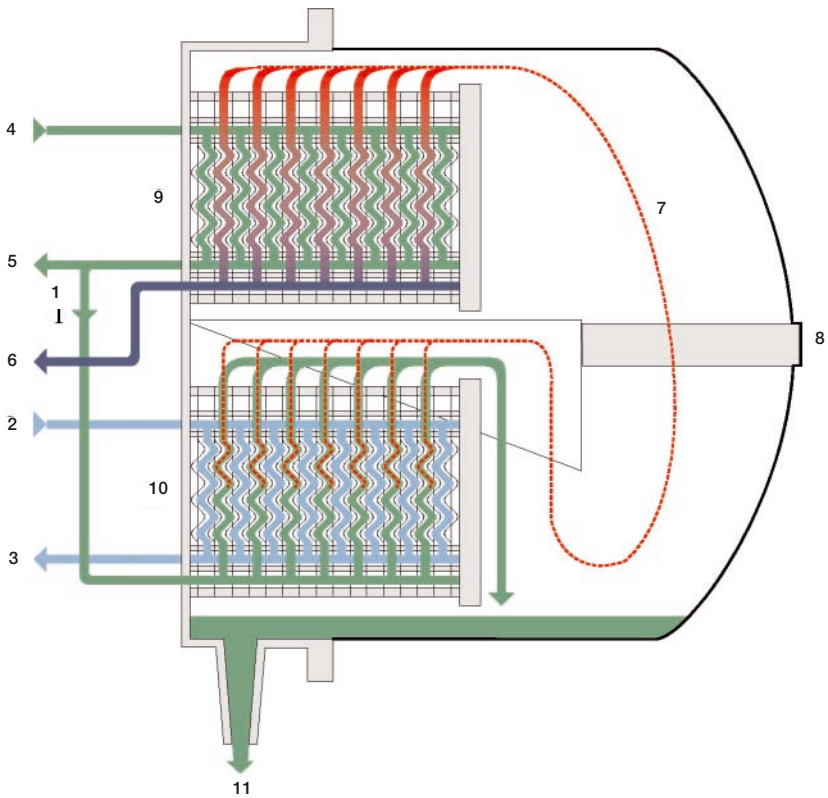
The JWP-26-C fresh water generator is designed for automatic operation in periodically unmanned engine rooms and other automated operations.

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 pump 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-on freshwater pump.

The separately installed control panel, 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.

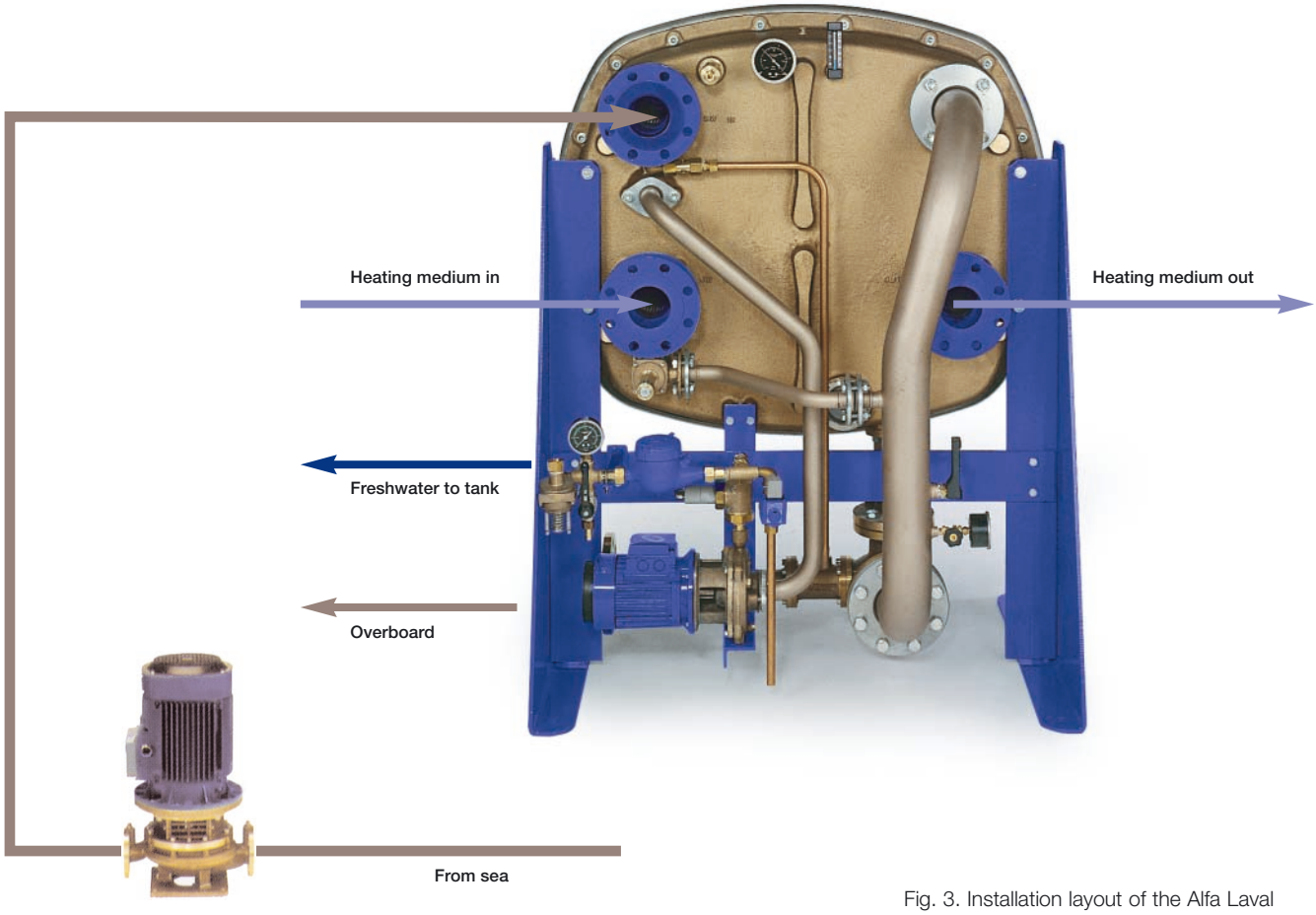


Fig. 3. Installation layout of the Alfa Laval fresh water generator.

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 and freshwater control sensor and frame.

Additional equipment necessary for operation
- Combined cooling and ejector water pump with electric motor.
- Control panel 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.
- Extended control panel with motor starters and salinometer.
- Individual single motor starters and salinometer.
- Freshwater pH adjustment (rehardening) filter.
- Freshwater disinfection equipment.

Technical documentation
Complete information and documentation accompany each freshwater 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-26 Series
Main dimensions and service area

Size	L		D		H		SD		Weight*		Pump	
	mm	inches	mm	inches	mm	inches	mm	inches	kg	lbs	mm	inches
JWP-26-C80	1010	39.8	970	38.2	1300	51.2	1470	57.9	600	1323	400	1575
JWSP-26-C80	1010	39.8	1220	48	1300	51.2	1720	67.7	710	1566	x	x
SP-26-C80	1010	39.8	1220	48	1300	51.2	1720	67.7	700	1544	635	25
JWP-26-C100	1175	46.3	1495	58.9	1425	56.1	1995	78.5	820	1808	450	17.7
JWSP-26-C100	1300	51.2	1725	67.9	1425	56.1	2225	87.6	955	2106	x	x
SP-26-C100	1300	51.2	1725	67.9	1425	56.1	2225	87.6	945	2084	820	32.3

The designation, 80/100, in the type designation indicates the diameter of inlet and outlet flanges for jacket water and seawater connections.

* Empty, in operation add 55 kg.