

APPLICATIONS PUMPS



REVERSE OSMOSIS WATER DESALINATION

File No. 109

Section 8

PROBLEM:

To find a more feasible method to remove salts from water.

SOLUTION:

Install a high pressure CAT PUMP in a reverse osmosis system.

OPERATION:

As an alternative to the conventional distillation method (boiling water to remove salts and collecting the condensate), reverse osmosis pressurizes the salt water, forcing it through membranes which cause the salt ions to break away from the water molecules and expel clear water. Reverse osmosis provides a lightweight, convenient system to supply potable water aboard ships or yachts, for communities or many industrial needs.

The significance of reverse osmosis over other methods for separation problems is a low energy requirement. The only energy needed is the pressure to force the fluid through the semi-permeable membrane. This is provided by a high pressure pump driven by electric motor or gas engine.

In this system the CAT PUMP circulates the water twice, leaving extremely pure water (40 PPM) which is ideal potable water aboard yachts and ships. (The World Health Organization and the U.S. Public Health Department recommend 500 PPM total dissolved salts as a standard for drinking water).

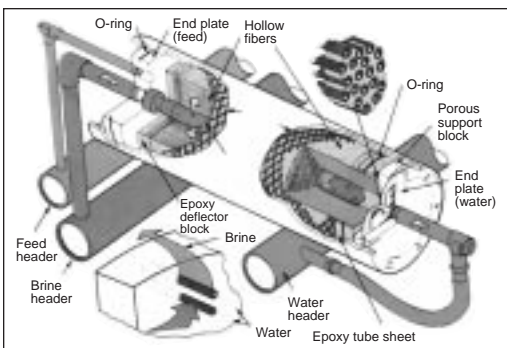
SPECIFICATIONS:

CAT PUMPS Model	*826
Pressure	1000 PSI
Flow	3 GPM
Temperature	Ambient
Fluid	Salt Water
Duty Cycle	Continuous
Drive	3 H.P. Electric

*Alternate CAT PUMP model 3CP1121, 3CP1141 or 5CP6121.

BENEFITS:

- Significant weight and savings over distillation method permits placement anywhere aboard ship.
- Easy, simple operation greatly reduces mechanical downtime.
- Energy efficient reverse osmosis requires only 30% of the energy required to boil the water in distillation.
- Convenient installation eliminates any connection to the ship's motor or propulsion system or proximity to the boiler.
- Reverse osmosis provides fresh water at 1°C above the temperature of the salt water entering system which eliminates the cooling necessary in distillation.



Typical
membrane

“Customer confidence is our greatest asset”

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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