LaBour Taber

PUMPS THAT EXPERTS SELECT.

Molten Caustic Pumps

Sodium hydroxide (caustic soda) is a co product of chlorine manufactured by electrolysis of a sodium chloride solution in diaphragm, membrane, or mercury electrolytic cells. The most widely used and available alkali, caustic soda ranks third in tonnage production among the heavy chemicals. It is normally produced, stored, and transported as 50% liquid, as 73% liquid, and as the anhydrous flake or solid.

The evaporators are usually nickel cladded. The life of nickel may be limited by high chlorate concentrations (e.g. 100 ppm or more)

Pump Model

The Taber Series 1000 is the pump of choice. The preferred speed is 1800 rpm. We can supply a Series 8000, which has the added feature of a triple throat casing for reduced radial loads.

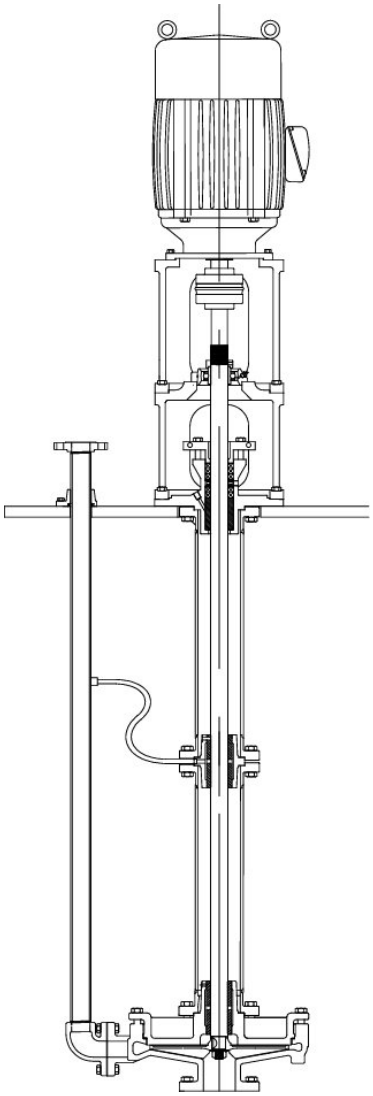
Pump Selection and Application

- **Materials of Construction:** All wetted parts should be Nickel. The support plate should be Nickel cladded. Some NAOH applications can use DI/316SS construction, contact the factory for specific material selection**.**
- **Bearing Materials**: All metallic bearings of Ni-Resist #2, of Hastalloy D should be used. Also, you can use Graphitar material. These bearings required special clearances to allow for expansion due to high temperatures.
- **Support Column and Discharge Pipe**: Standard support column and discharge pipe can be used. No jacketing is required.
- **Stuffing Box and Sealing:** We require the use of a single stuffing box as a minimum to contain the fumes and vapors and due to high temperature. High temperature packing, good up to 1000 deg F, is used. Contact the factory for specific sleeve bearing material selection**.** A double stuffing box is also an option. Please note that this is a hazardous material as defined by the E.P.A. and that the fumes are toxic.
- **Couplings:** Flexible all metal non-spacer couplings, such as Falk Steelflex T20 or Thomas DBZ are preferred because of the relatively high service temperature.
- **Motors:** Standard TEFC or TEFC Chem Duty motors are generally used. Any enclosure can be considered. Make sure that the motor insulation is sufficient for heat resistance. We recommend ”H” insulation. Make sure that you account for the high specific gravity. The S.G. used for horsepower calculations is 2.1 max. We would recommend a motor service factor of 1.15.

Application Considerations

- ✓ Most Molten Caustic applications are between 700-880 degF.
- ✓ The S.G. can range from 1.7 to 2.1. You should have the customer confirm the S.G. so that we can correctly size the motor.
- ✓ Caustic is a strong irritant to the eyes, skin, etc. It is highly toxic by ingestion.
- ✓ Flexible all metal non-spacer couplings, such as Falk Steelflex T20 or Thomas DBZ are preferred because of the relatively high service temperature.

- ✓ Due to the high temperature, special impeller settings must be made to allow for the “growth” of the shaft/impeller assembly. As standard procedure, the pump is placed in the pit and allowed to reach the application temperature, before setting the impeller clearance. Contact the factory for your specific pump application.



Reference List and Installation List

The following are the companies that have successfully applied these pumps

Dow Chemical	Anheuser Busch
Allied Chemical	Nabisco Brands
Koppers Co	Rohm & Haas
Buffalo Color Corp.	Atlantic Industries
Merck & Co	Sofix
Detroit Edison	Arkansas Kraft
N.I. Industries	Zeneca Inc
BASF	Raytheon Engineers
Olin Chemicals	Sunkyong America
Pennwalt	E.I. Dupont
Lederele Labs	Atochem
Gulf Power Company	Philedelphia Electric
Stauffer Chemical	Entergy Operations

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