



Bogh Industries LLC

18608 95th Ave Ct E Puyallup, WA 98375

Tel: 253-732-8476, Fax 253-875-6943. e-mail: nbogh1@ix.netcom.com

Quench Recovery Equipment
Furnace & Oven Installation,
Startup, Modifications Consulting
Project Management, Service

Heat Separation of Poly Alkylene Glycol (PAG) commissioned. April 20, 2009

Bogh Industries has commissioned our latest heat separation skid. The skid is installed and separating PAG from process solution from two drop bottom furnaces that heat treats Aluminum parts for the aerospace industry. The heat separator separates PAG from rinse water or quench solution and makes it ready for use back in the process.

The skid is 4' wide x 10' long by 7' tall. It is self contained with hook up points for process water, cooling water, PAG line to storage and water line to storage. Power is 480W that powers the two pumps and the two heaters that runs the process.

The unit made PAG solutions of 50-60% concentration in one pass starting both at 17% and 4% incoming concentrations. The unit adjusts the flow rate to the PAG storage tank automatically based on the incoming concentration being processed.

The unit separates 10 gallons per minute of process solution into two streams. One is the 50-60% PAG solution and the other is water with traces of PAG.



The picture shows the new heat separator installed at the customer site.

With heat recovery from the outgoing streams the unit is using only half the energy to separate the PAG compared to RO systems or conventional batch heat separation. The systems can be supplied with filtration to remove contaminants from the incoming stream. The machines do not have any membranes similar to the RO systems and will work with very little maintenance.

It is calculated that by processing 4% rinse water through the system the machine will recover \$470 worth of PAG per hour while it is running. The price per gallon of new replacement PAG is estimated at \$14.00



The picture shows the easy to read LED process temperature indicators and the pressure gauges monitoring system pressures.

The system can be used as an on line system or a batch system separating to storage tanks. For your specific needs please contact us by phone or e-mail. You can also use the contact feature on our web site www.boghindustries.com.

Sincerely

A handwritten signature in black ink, appearing to read 'Neil Bogh'.

Owner

Phone: 253-732-8476

E-mail: nbogh1@ix.netcom.com