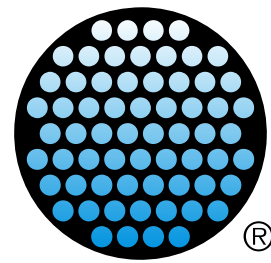
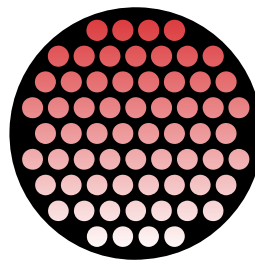


Safe - Professional - Innovative



**GRAHAM HART
PROCESS TECHNOLOGY**

CASE STUDY

Chemical Industry

Brief

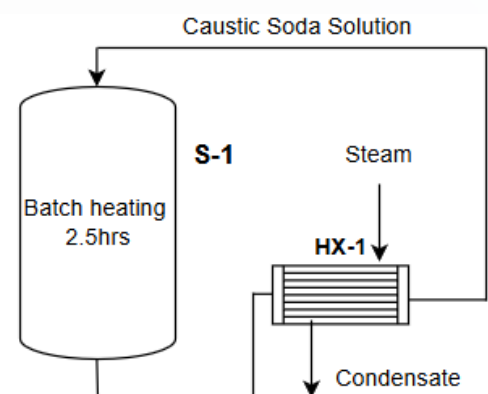
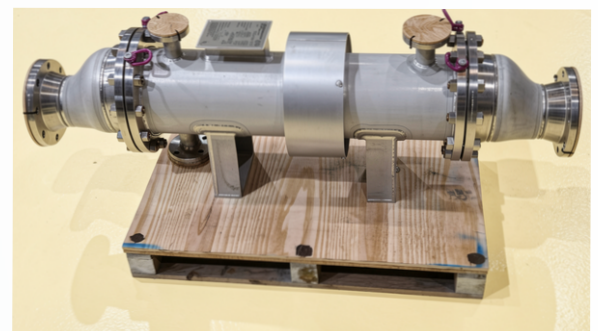
A client in the chemical manufacturing industry was looking to replace a unit that had been in service for over 20 years. The process involved heating a caustic soda solution using steam in a batch process, with each batch required to be completed within four hours. The client was looking to increase process throughput while working within tight space constraints. The solution needed to maximise capacity while minimising modifications to the existing pipework layout.

Materials & Spec

- Stainless Steel 316/316L material throughout
- ASME Sec VIII Div 1, PE(S)R 2016,
- UKCA marked
- CAT II Module A2
- Batch heating Process

Outcome & Results

- A bespoke heat exchanger was designed to allow for the added throughput and fit within their space constraints.
- The mechanical integrity of the unit was assessed, with an expansion bellows incorporated into the design to accommodate thermal expansion and mitigate associated stresses.
- Batch heating time was calculated to be able to be done in under 2.5hrs
- The unit performance and energy efficiency was far above the client's expectations, saving a considerable amount of steam usage and overall operating costs of the unit.
- Delivered the unit on time and in full.



WE ARE VERY HAPPY WITH THE NEW HEAT EXCHANGER. THE STEAM VALVE IS CURRENTLY OPERATING BETWEEN 0-30%, WHEREAS PREVIOUSLY IT WAS REGULARLY OPENING TO 100%.

Design/Development Engineer