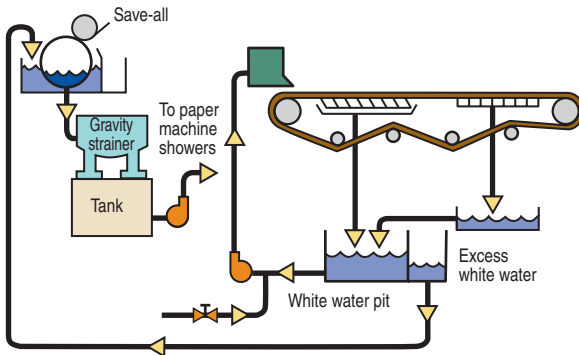


## Gravity Strainers help mills save energy and money

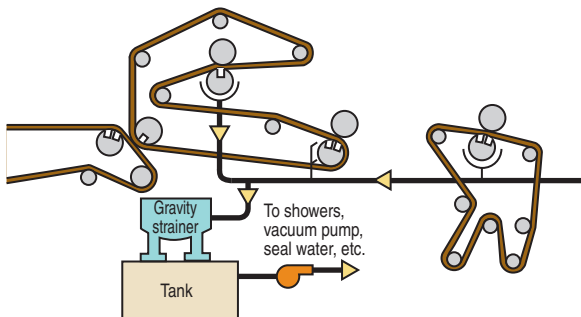
Kadant AES Gravity Strainers are being used with success in mills throughout the world polishing white water for showers, removing felt hairs from recycled press water, on pulp mill applications, on deckers, stock washers, save-alls, and mill influent systems. The savings of energy and water they have affected has returned the investment in a few months.

## Save-all applications



Occasional save-all upsets prevent the effective use of white water for showers. The Kadant AES strainer is designed to handle upsets, enabling dependable use of white water in the showers.

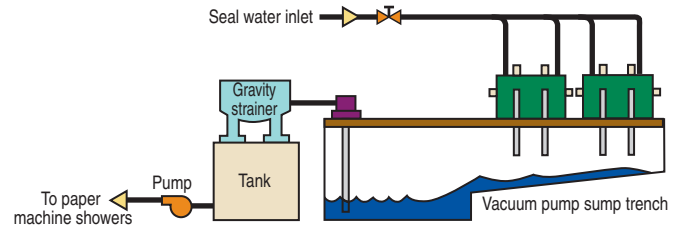
## Press section applications



Effluent from press save-all pans, guard board trays, and felt cleaning equipment is heavily contaminated with felt hairs. The Kadant AES strainer is specifically designed to capture felt hairs for efficient reuse of press section water.

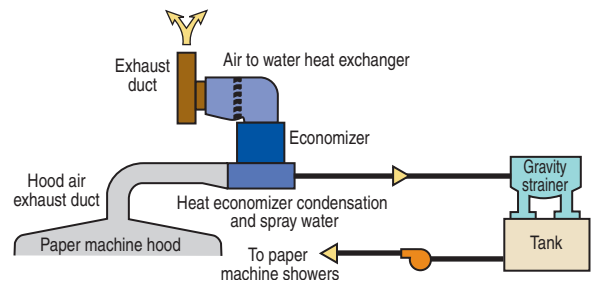


## Vacuum pump seal water



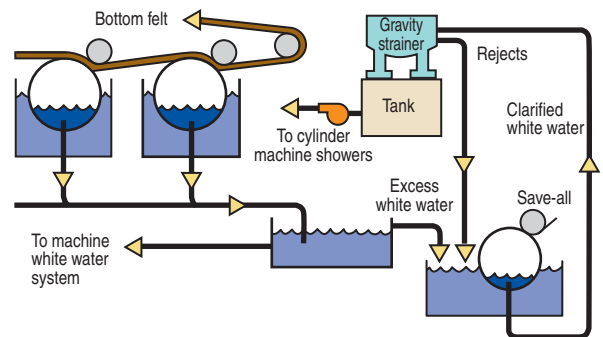
Water heated by a liquid ring vacuum pump and discharged can be reused economically in various paper machine showers after polishing by a Kadant AES gravity strainer. This greatly reduces the energy required to heat the shower water to white water temperature.

## Heat economizer condensate



Heat economizers recover heat from the dryer hood air exhaust. In the process, they release a considerable amount of condensation in addition to the cold water that has been sprayed into the air stream to drop the humid air temperature below the dew point. Paper dust and scale contaminate this water. A Kadant AES strainer will easily remove these contaminants permitting this preheated water to be used in the paper machine showers.

## Cylinder machine vat overflow



Clarified white water from a cylinder machine save-all generally can not be reused without additional treatment. A Kadant AES strainer will polish this water removing suspended solids that would otherwise blind the coarse bottom felts and plug shower nozzles.

# ENERGY SAVINGS ROI

## Energy savings and white water reuse, the key to increased profitability

The high cost of energy has become an important factor effecting the profitability of papermaking. Extended reuse of white water offers most paper mills a means of achieving energy savings. The following is a typical example of energy savings.

A mill survey established that the use of approximately 3,000 gallons of fresh river water per minute could be eliminated if existing white water discharges could be reused. To determine the dollar savings potential, the following procedure was used:

Required operating temperature of white water . . . . .115°F  
 Average river water temperature - Summer . . . . .65°F  
 Average river water temperature - Winter . . . . .45°F  
 Cost of energy for the mill \$7.00 per million BTU\*

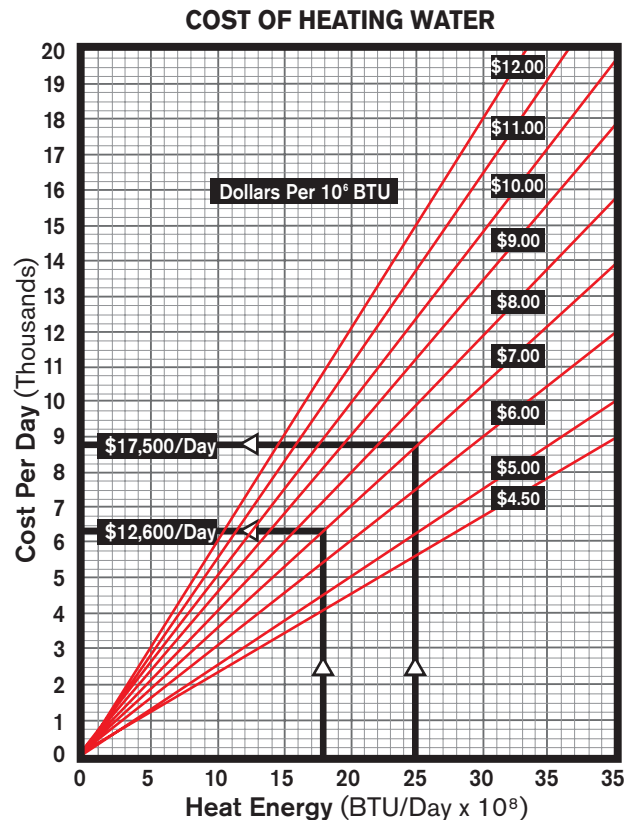
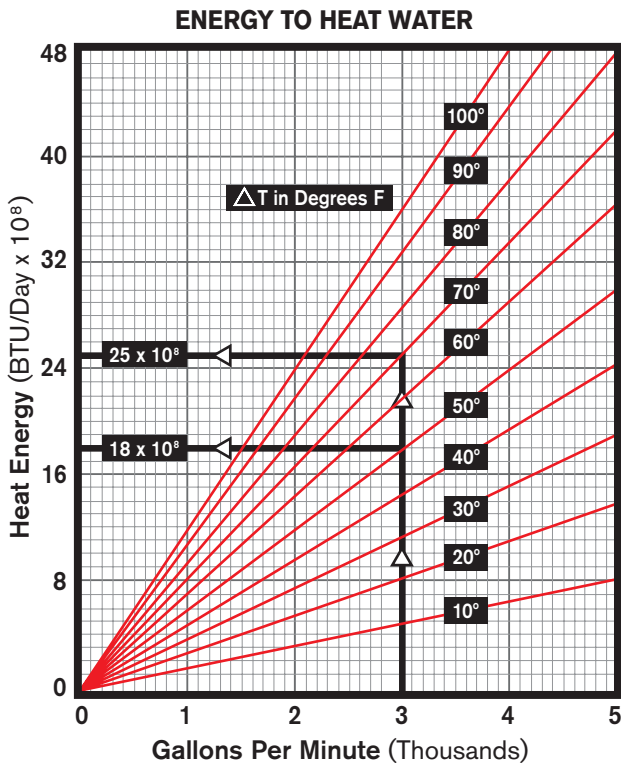
\*Minimum baseline data

The differential temperature ( $\Delta T$ ) for the summer months was 50° (115°-65°). For the winter months, the  $\Delta T$  was 70° (115°-45°).

Using the "Energy to Heat Water" graph below, the GPM of 3,000 was located and projected up to the 50°  $\Delta T$  line intersection fixing the heat energy required in summer to be approximately 18 x 10<sup>8</sup> BTU/day. In the same manner, the 70°  $\Delta T$  determined the winter requirement to be approximately 25 x 10<sup>8</sup> BTU/day.

To translate these requirements into dollars, the "Cost of Heating Water" graph below was used. The heat energy requirements were identified and projected up to the intersection of the applicable "Cost of Energy" line, in this case the \$7.00 per 10<sup>8</sup> BTU\* line. The intersection points were then projected to the "Cost per Day" line at the left. The energy costs of heating river water to operating temperature were shown to be:

Summer months . . . . . \$12,600 \* per day  
 Winter months . . . . . \$17,500 \* per day



For more information, visit [www.kadant.com](http://www.kadant.com).

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