# *Application Profile: Paper Machine Boil-Out*

Whitewater, the fine particle slurry used throughout papermaking, travels through pipes and tanks in a paper mill. The whitewater system requires periodic **boil-out cleaning** to kill bacteria that grows over time. The boil out is accomplished by heating the whitewater to high temperatures, ideally **180–190°F** (82-88°C). If these temperatures cannot be reached, mills rely more on caustics, spend more time offline, and lose production hours.

## The Problem with Spargers

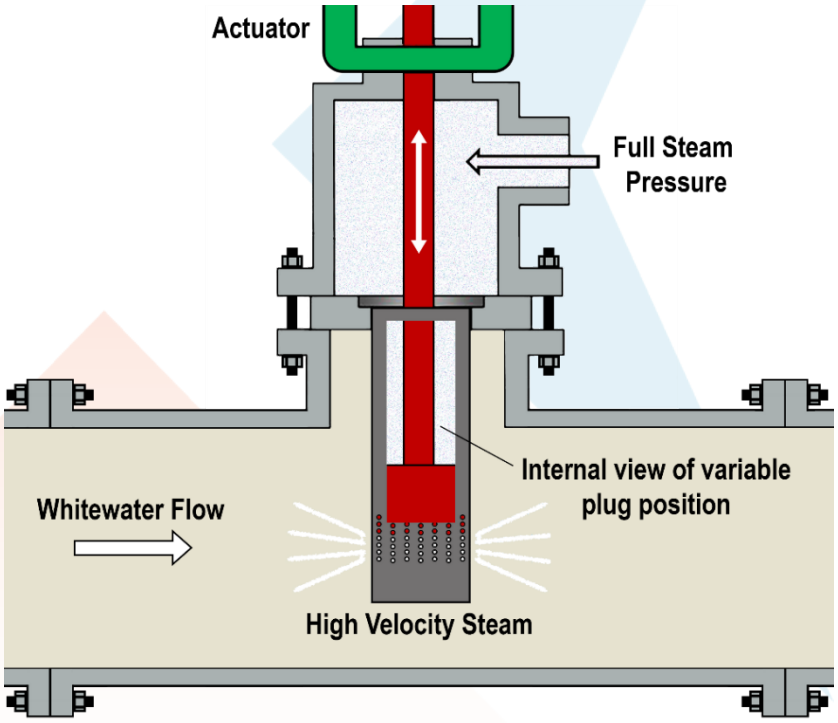
Traditional sparger or perforated pipe systems make boil-outs inefficient and risky:

- **Lower whitewater temperatures**– Spargers often cannot quickly or fully reach required temperatures, which **lengthens boil-out cycles** and reduces production time.
- **Chemical Dependency** – Because spargers struggle to hold desired temperatures, mills often add excess caustics, raising chemical costs.
- **Poor Steam Mixing** – Steam collapses unevenly, creating **hammer effects that can damage tanks, nozzles, or piping.**
- **High Steam Loss** – Large volumes of steam vent to atmosphere, wasting energy and driving up operating costs.

## ProSonix PSX Heater Solution

The **PSX Heater delivers hotter, faster, smoother heating—without steam hammer.** Installed directly in the whitewater line, it modulates steam injection for precise, efficient mixing and complete condensation.

- **Hotter** – Achieve and hold desired bacteria-kill temperatures, reducing reliance on chemicals.
- **Faster** – Heat up to **6–8 times faster** than sparging, shortening boil-outs and returning time to production.
- **Smoother** – Temperature control is stable and consistent, while **hammer is eliminated**, protecting tanks and piping.
- **More Reliable** – Self-cleaning design reduces maintenance and ensures dependable operation.




## Key Benefits for Mills

- Shorter boil-out cycles = **more paper produced**
- Lower chemical use and energy costs
- **Safer, quieter, operation without hammer**

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