



# STEAM SAVER SOOTBLOWING

## Advanced Boiler Cleaning Technology for Energy Savings and Cost Reduction

As elevated energy prices affect the profitability of paper mills every day, the cost of high pressure steam has become one of the most valuable assets. The ability to conserve high pressure steam energy for mill process equates to millions of dollars each year. The need for non-process steam is required in substantial quantities for cleaning of the recovery boiler. The steam revenue-earning potential has not been available to the industry due to the lack of necessary technology – until now.

Clyde Bergemann, long known for innovation in every aspect of boiler cleaning technologies, has introduced its Steam Saver Sootblowing engineering solution which improves sootblower cleaning using lower cost, lower pressure steam, while increasing the available high pressure steam for energy generation process.

### **Making Doing More With Less Now A Reality**

Effective sootblower cleaning with lower pressure steam sources seems “too good to be true” at first, however; Clyde Bergemann’s approach does not rely on high pressure steam sources, but instead focuses on total delivered resultant force at the surface to be cleaned. RSP-H is Clyde Bergemann’s new generation sootblower designed to produce cleaning force equivalent to that of a higher-pressure sootblower. This technology enables the mill to direct all high-pressure boiler steam to a steam turbine generating additional 1-3 MW power, while the extraction steam from the turbine is used for sootblowing.

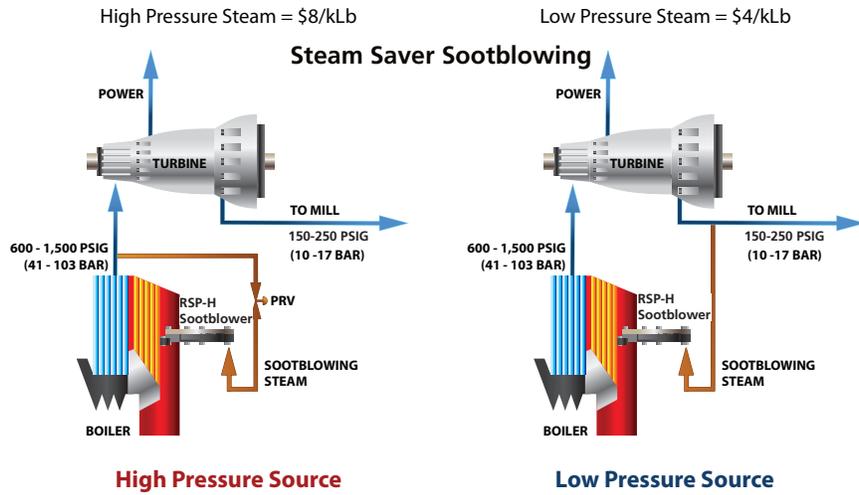
The patented nozzle technology found only in the Steam Saver system is what has transformed the entire concept of sootblower cleaning.

Standard cleaning nozzles, using higher pressure steam, lack the ability to convert the cleaning power into cleaning force as a high efficiency CFEIII nozzle. Using the well established CFEIII nozzle technology for more than a decade, Clyde Bergemann evolved the CFEIII into a further more efficient nozzle called CFEIII Steam Saver which converts more than 95% of the useful energy into cleaning power.

### **Taking the Pressure off Your Energy Costs**

The typical mill steam generation process siphons steam directly from the boiler output before it reaches the turbine for the purpose of cleaning the boiler. The natural result is that this high pressure steam cannot be fully used to generate power resulting in an inefficient power generation scenario.





The Steam Saver approach, by contrast, siphons steam off at a lower pressure (150-250 psig) turbine extraction line leaving the full volume of high pressure steam to drive the turbine thus using steam at a dramatically reduced cost, typically half, for required boiler cleaning. This is all done without any plugging, without compromising from run time, as well as at a much lower cost.

Overall savings realized by implementing the Steam Saver system average \$900,000 per year when compared to a traditional high pressure steam cleaning system. The Steam Saver solution is also environmentally friendly, generating 1-3 MW additional energy with a zero carbon footprint.

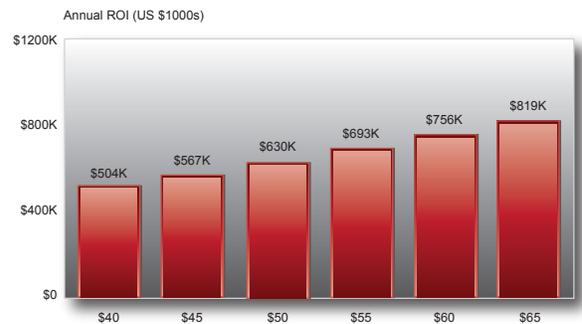
#### Giving Your Savings A Full Head of Steam

Mills cannot afford any unnecessary downtime which is why Clyde Bergemann has partnered with its customers to retrofit the necessary pipe installations for Steam Saver technology in highly effective ways such as running new pipe in parallel with existing pipe, ensuring downtime is kept to an absolute minimum. The decision to implement Steam Saver technology over any of the alternatives in new plants is far easier considering the comparable costs and immediate savings that can be realized.

However, many mills have found Steam Saver technology as the ideal enhancement for the complete SMART Clean™ System that Clyde Bergemann is known for. The operating profit further increases when SMART Clean™ is used with the Steam Saver solution as the steam consumption is reduced.

## Benefits

- Generates more electricity (1-3 MW)
- Typical ROI is over \$650,000 annually
- Additional power generation with zero greenhouse emissions and CO<sub>2</sub> release
- Highest nozzle efficiency on the market, delivers the right cleaning power with lower steam pressure
- Less wear and tear on sootblower packing and moving parts, reducing operating cost
- The highest energy savings possible
- Benefits mills with capacity limitations



Return On Investment based on 350 days of annual operation and 1.5 MWhr additional green energy generation



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