

case study

Separator Removes Metal Scale and Reduces Heat Exchanger Maintenance Costs

Payback Period 5 1/2 Months For Heavy Equipment Manufacturing Plant in Midwest

System:	Heat exchanger installed downstream of descaling process
Solids:	Large metal scale
Liquid:	Water
Problem/Challenge:	Scale fouling heat exchangers
Solution:	Complete LAKOS PRX System with Abrasion Resistant Liner

Problem: A large heavy equipment manufacturer in the Midwest was having a difficult time filtering large metal scale from a stamping line in their facility. Scale from the quench and descaling process was clogging the plate and frame heat exchanger used to maintain a working temperature in the quench water. They tried a series of bag housing filters, but this did not work due to the abrasiveness of the scale and the volume of solids.



LAKOS PRX 0285 Separator

The manufacturer pulled out the bag filter housings but was not able to find an effective alternate filtration method, mostly due to the limited space. The manufacturer continued to produce products using no filtration prior to the heat exchangers, which quickly became clogged and had to be thoroughly serviced every five weeks. The cost for each of the maintenance cleanings was approximately \$8000 each time, and led to an annual cost of more than \$83,000. This did not include the lost production time incurred to shut down the line while the service was performed. In March of 2007, the manufacturer first learned about LAKOS and contacted the company about a possible solution to the problem.

Solution: LAKOS filtration specialists and their local representative (Mullarkey Associates Inc.) visited the site and examined the entire system. The space requirements, the 325 GPM flow rate, the abrasiveness of the solids, and the amount of load, all suggested that a LAKOS PRX System would be the best solution. A PRX 0285 Separator with Abrasive Resistant Liner was selected. This system includes a heavy duty collections

(Continued on reverse)



The LAKOS Separator purges into a special hopper that allows for water to rise and overflow going back to the original tank. This allows for the removal of only the scale, which sinks in the tank.

hopper. The unit cost was \$32,000 and it was installed for about \$6400 in November 2007. The improvement was drastic and immediate, and after two years online, the heat exchangers still required no cleaning! The payback period for entire investment was less than 6 months, which does NOT include the savings due to zero downtime during that period due to no cleaning.



Savings and ROI

Annual Cost to Clean Heat Exchanger BEFORE Installing LAKOS Separator	Cost of LAKOS Separator and Installation	Annual Cost to Clean Heat Exchanger AFTER Installing LAKOS Separator*	Estimated Savings From Zero Cleaning Downtime*	Payback Period
\$83,200	\$38,400	\$0	?	5.5 Months

* For first two years after installation

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