

Don't Replace It!

CONSEQUENCES: Almost replaced good pumps



[Are you replacing perfectly good tires?] You just might be, and it might be costing you thousands. Look to one of the experts at ITT Goulds Pumps to help you find out.

Have you ever had a “Why did I do that?” moment?”

We've all had them – it just happens. But what if it cost you \$500K in new purchases, and another \$260K in annual labor & energy costs? That just hurts. Well, the good news is sometimes you can prevent it – just by looking to your expert partner at ITT Goulds Pumps.

This is a real story of a similar scenario.

A large South Eastern, USA paper manufacturer was struggling with poor performance of two of their older, four-stage pumps (not Goulds). The issue was a recurring headache; rebuild expense, downtime and replacement parts being paid for every couple of months. It wasn't supposed to be this way, and the customer knew it. These pumps should be running 24/7, 365, with only scheduled preventative maintenance occurring annually. Instead, running these two pumps felt like rock climbing without a safety rope – a bad idea.

Here was the situation.

The two existing pumps had been dedicated to serving a high-pressure shower service, supporting their paper production line. Both pumps were constantly in use, so when one pump went down, the other would have to “pick up the slack” for both. Unfortunately, the system (designed as it was) could not sustain the overflow for more than a couple of days. Getting a downed pump running again required an expensive rebuild, and took two weeks. Fairly quick, but not even close to quick enough. When relying on only one pump, the paper machine clothing quickly got clogged by pitch, and would remain that way until the rebuilt pump was returned to the line. Worse, clogged pitch meant production quality declined and the paper product was unacceptable. This was a bad situation, and it appeared expensive to correct.

The customer needed it fixed, so they contacted ITT Goulds Pumps.

An ITT Goulds Pumps senior sales engineer, had been supporting the customer's parts and pumps needs for over seventeen years. Still, this particular situation was new to him. The customer asked him to quote on: two new pump casings (to retrofit to the old non-Goulds pumps), and, (the more likely purchase) 3 new Goulds pumps – to replace the existing two failing pumps.

A 20+ year industry expert, he did the right thing. In addition to providing what he was asked for (pricing) he offered to assess the situation, and offer up ideas.

He contacted the customer's reliability engineer and asked to meet with the people involved. The engineers and paper makers were first, then the machine clothing suppliers. It was a good call. The meetings uncovered the root causes of the customer's problems, and yielded information that led to solutions. bore was not concentric.

So what was wrong?

Pump pressure too high – 2x what it should be. At 800 PSI the existing pumps were wasting double the energy required, and damage was occurring: bearing failures, damaging mechanical seals, and ruining impellers.

Flow rate insufficient. At 400 GPM for each pump, the flow rate was only half of what it should have been. Poor configuration was to blame.

Motors poorly used & applied. To deliver the thrust required to drive 800 PSI for two pumps, two 400 horsepower motors were needed and constantly in use. When one pump went down, these motors became double-tasked to cover both pumps, and quickly failed to support demand.

The meeting provided data needed to provide an optimal solution. After thorough review and discussion with everyone involved, ITT Goulds Pumps engineer had what he needed to outline the results of the old/existing pump configuration, and compare it to the new ITT Goulds Pumps solution he intended to present.

ITT Goulds Pumps solution, included:

Existing pumps were sufficient. The customer had assumed that three new pumps were needed, and requested pricing for them. Based upon data analysis, he correctly concluded that the old configuration was to blame – not the pumps themselves. With simple adjustments, the existing pumps could remain in use.

Only 1 pump was needed, with one backup. The customer had assumed that 2 pumps were required to provide the 800 GPM needed (400 each) – “plus” a spare, for a total of 3 pumps. Reconfigured as recommended by ITT Goulds Pumps only 1 pump was needed to achieve 800 GPM – an existing pump – with the second existing pump now playing the role of a spare.

Trim the impellers. Trimming the impellers, from a 10.5” diameter to 9 3/8”, not only reduced the unnecessarily high pressure, it also doubled the flow rate, to an optimal 800 GPM per pump.

HOW WE FIXED IT:

A large South Eastern paper manufacturer was struggling with poor performance of two of their older, four-stage pumps. The recurrence of rebuilds, downtime and replacement parts every couple of months was becoming frustrating and costly - they wanted to replace the unreliable pumps, and possibly add a third, as backup. They contacted ITT Goulds Pumps senior sales engineer, a 20+ year industry expert who knew what to do. Some investigation led to an assessment and solution. No new pumps were needed, and the customer saved over \$760K.

The solution was implemented, and succeeded.

After implementing the ITT Goulds Pumps’ solution, the customer emailed the engineer, stating that not only had he saved \$500K in new purchases, but by his own calculations he’d saved an additional \$260K in annual labor & energy costs.

Lessons Learned.

Every problem can benefit from some expert perspective. Challenge your ITT Goulds Pumps representative to see what they can do for your operation.

Changing tires during too early means valuable time is lost, and potentially the race ... an expert pit crew knows when, and when not to change the tires. Let ITT Goulds Pumps be your expert pit crew – we’ll help you win the race.