

Rebuild/upgrade your belt press and save 30-40% the cost of buying new **USA**

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Introduction

If your water or wastewater treatment plant is like thousands of others in the U.S., you are operating a gravity belt thickener and/or belt filter press to thicken or dewater residuals and biosolids. For many, these machines may have originally been purchased 20, 30 or even 40 years ago (and probably from Ashbrook Simon-Hartley). In this article we are going to take the guesswork out of how you can breathe life back into these machines, what improvements can be made, and how the process works so that you can decide if it's the right choice for your process.



Key takeaways:

- Over time, wear and tear and changing process conditions can reduce belt press/thickener performance
- There are many options to address this including refurbishing or upgrading your machine
- Savings on a rebuild can be 30-40% vs buying a new machine while delivering process improvements
- Choosing the right partner can greatly impact your outcome
- Visit www.alfalaval.us/rebuilds to learn more

Wear and tear is inevitable

While built for a long service life, wear and tear happens, and technologies evolve. This means that what was once a brand-new cutting-edge piece of equipment, may now be a bit worse for the wear and lacking some of the features of more modern machines.

Belts may not track or stay centered like they used to because of worn hydraulics or struvite (mineral) build up on the rolls, causing alarms to trigger and premature wear of the belts. Your operators (or maybe you) are required to watch it all of the

time to make sure it runs correctly. Hydraulics may be worn or leaking, causing belt shifters to not work properly or resulting in reduced power in the tensioning cylinders. That can mean that the cake dryness will be lower than desired.

More water to haul away means more cost for your plant. Between operator time, shutdowns, and increased hauling costs, it can add up to a lot of money in the operating and maintenance budgets.



Belt press before rebuild by Alfa Laval

Conditions change

Capacity needs in many municipalities have increased, regulations grow, and process conditions change for a variety of reasons. Perhaps a new treatment process or change in the content of the sludge coming into the plant. The process that your belt thickener or press was designed for may look very different from what it does today. The existing equipment may not even be able to optimally handle the process flows it's seeing any more.

It is common that this happens. When many of the machines in the field were originally designed and installed, the future population growth was a best guess. What they also couldn't predict was the changing nature of wastewater treatment including new methods of treatment (such as a membrane bioreactor) that alter the very physical properties of the sludge being treated.



You do have options that can potentially save you 30-40% of the cost of new equipment

So you can just go buy the newest latest and greatest technology, right? It's not that easy, we know.

The challenge is that new equipment can be very expensive. Add up the engineering, construction and installation costs, and the machine itself, and the numbers could be staggering and just not feasible for your budget.

Luckily, there are options. More and more plants are choosing to rebuild and/or retrofit their existing belt filter presses and gravity belt thickeners. This can completely rejuvenate their

performance to like-new standards. It also may be possible to retrofit your existing equipment so that it can handle more capacity, increase performance, reduce maintenance and be easier to work on.

What makes this option even more attractive is that it can cost 30-40% less than the total cost of buying and installing new equipment, while delivering potential performance improvements of 2-3% dry solids for upgraded machines (even more if your existing equipment wasn't performing to specification to start with).



Rebuilding a machine can take many avenues

Standard rebuilds will often include some of the items shown below and could involve repairing the existing components or replacement if necessary.

However, many plants will take advantage of the need to do this work to also evaluate the options for improvement of the equipment. It is in these situations where there can be many choices to consider. Each of these improvements comes at a cost, but the return on investment can be significant in both direct operating/maintenance cost as well as opportunity cost from where your team could be completing other work needed at the plant.

If capacity constraints are the issue, then upgrades can often buy your facility some more breathing room to handle the

growth. Some of the common upgrades that Alfa Laval sees request for on both their own machines as well as other manufacturers' equipment include:

- Increasing throughput by extending the gravity deck or adding a 3rd belt independent gravity deck
- Upping the cake dryness by adding more rollers to the pressure section of the machine
- Reducing maintenance requirements by upgrading bearing enclosures, hydraulic systems, and wash boxes
- Replacing outdated control panels with enhanced ones that allow more precise control and automation of the equipment

Standard rebuild parts

There are some key parts of a belt press that will typically be the focus of a refurbishment including:

Frame corrosion



Roller wear



Hydraulic seals, cylinders, and pumps



Control panel upgrades



There are also options on how the rebuild or upgrade can be performed. For many projects, the work can be performed right on site. This involves the parts required being shipped to the facility and then a field service team arriving to perform the work. The length of time required can vary greatly based on the scope, but projects are often in the 1-3 week range.

Sometimes, for a major end-to-end overhaul, the machine may be removed and sent to a facility to be refurbished. This is more complex as it involves removing, shipping and reinstalling the equipment so it can require a bit more logistical planning.

A control panel upgrade can be a great way to increase production uptime as older controls can be outdated and over

time fail to function as originally specified, creating issues with performance. Newer control technologies also provide greater levels of control precision of the equipment so are a common upgrade that customers request.

Working closely with your service partner and understanding the scope of the project is critical so that things go smoothly and according to plan. In general, the scope of your rebuild or upgrade will depend completely on your needs, your budget, and what is possible with your machine and space. There is one important factor, however, that is critical in determining the level of success you achieve – who you work with.



Choosing the right rebuild / upgrade partner



Trusting someone with a rebuild or retrofit is a big decision. Your belt filter/thickener is a critical piece of equipment to your process and the company you choose to partner with needs to be reliable, knowledgeable, and understand the intricacies of your equipment.

Experience with the manufacturing of belt equipment is critical. Knowing how they are designed, and having a long history of experiencing the various issues that can arise, will make it more likely that your rebuild partner will be able to diagnose and provide the best advice and capabilities to ensure that the work is done properly. This is even more critical for upgrades or retrofits. Upgrades that require the addition of pressure rolls or extension of a gravity deck should be carefully reviewed by an engineer familiar with the designs, stress points, and capabilities of the machine.

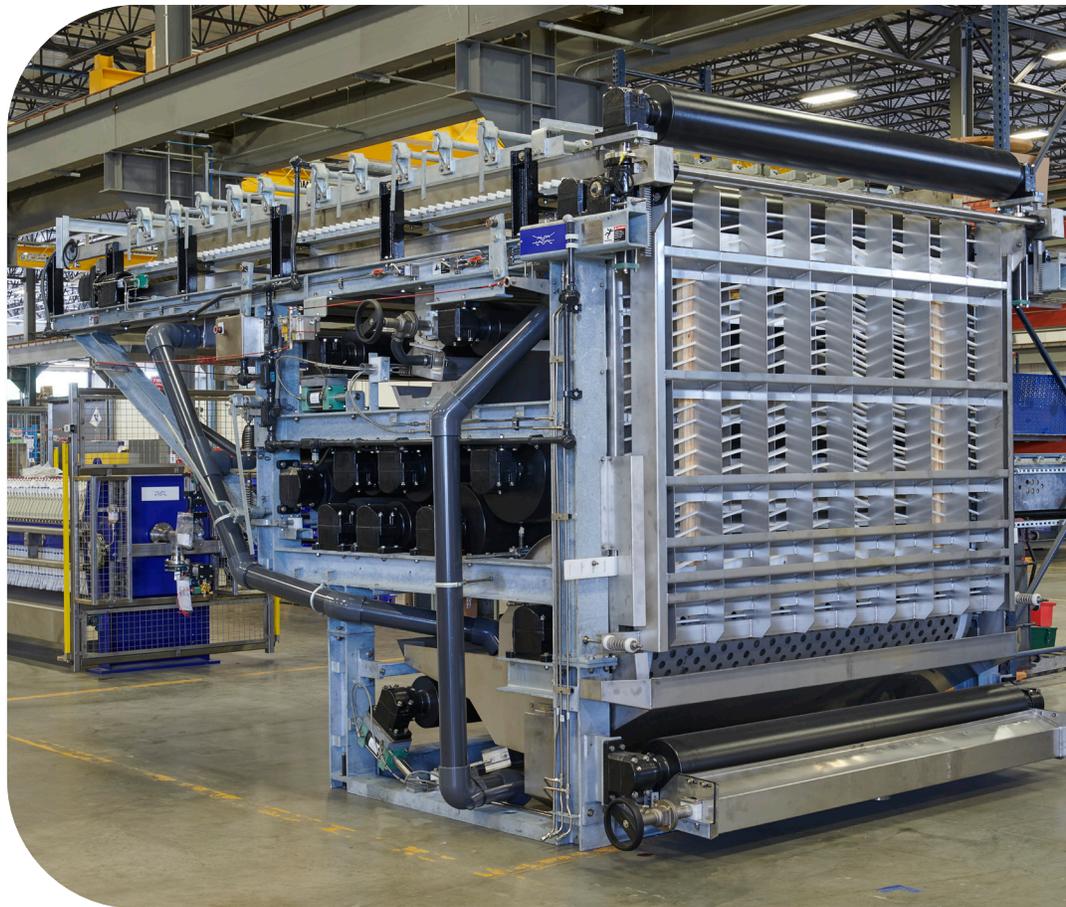
For example, Alfa Laval has a team of engineers and designers intimately familiar with belt press and thickener design. With over 5,000 machines installed worldwide (between legacy Ashbrook Simon-Hartley and Alfa Laval since they acquired Ashbrook in 2014), they have designed and upgraded machines spanning several decades and have seen almost any scenario that exists in water and wastewater.

Be sure to understand the capabilities and approach of anyone that you are considering working with on your rebuild or upgrade. Asking some questions about what benefits their upgrades can offer as well as the type of warranty and performance guarantee they will provide can help determine if you are getting a “repair person” or a “rebuild/upgrade partner”. The difference is while a “repair person” may be cheaper initially, there could be thousands and thousands of dollars in impact from reduced performance and/or quality problems if they can’t offer the same level of experience or equipment.

What you will notice with the strongest partners, is that they will have a customer first approach in key areas, including:

- Taking the time to completely examine your machine from end-to-end giving a thorough and honest assessment
- Access to the most up-to-date features, technology, and designs
- Presenting several options and allowing you to choose what is best for your personal situation
- Deep technical support and field service engineers to perform the work needed
- The ability to test your sludge and recommend performance enhancing machine upgrades
- A strong warranty and/or process guarantee with a reputation to back up their work

How can you get started?



Belt press after rebuild by Alfa Laval

Now that you have a better understanding of the options available to you and your facility to address an aging belt filter press or gravity belt thickener, you're ready to get started! You understand the options available to you, the potential savings and impact, and how to think about selecting the right partner for your individual needs.

Armed with this information, you're ready to take the next step and speak to professional companies that can take your ailing equipment and revitalize it. Alfa Laval has teams dedicated to rebuilding and upgrading equipment including an extensive

service center, field service engineers throughout the country, and an engineering team supported by a nationwide representative network and regional managers.

Learn more by visiting www.alfalaval.us/rebuilds or calling the 24-hour Alfa Laval service hotline at 866-253-2528.

Whatever you choose for your path, we hope this information has prepared you better to make the best decision possible and that your facility is running at record performance in the future!

About the author: Ken Medlin is the Managing Director for Ashbrook within Alfa Laval. He has worked with Alfa Laval (including Ashbrook Simon-Hartley) for 12 years. He has been in the Water and Wastewater industry for 18 years. He sits in the heart of the action at Alfa Laval's AS-H facility in Houston, TX.



This is Alfa Laval

Alfa Laval is active in the areas of Energy, Marine, and Food & Water, offering its expertise, products, and service to a wide range of industries in some 100 countries. The company is committed to optimizing processes, creating responsible growth, and driving progress – always going the extra mile to support customers in achieving their business goals and sustainability targets.

Alfa Laval's innovative technologies are dedicated to purifying, refining, and reusing materials, promoting more responsible use of natural resources. They contribute to improved energy efficiency and heat recovery, better water treatment, and reduced emissions. Thereby, Alfa Laval is not only accelerating success for its customers, but also for people and the planet. Making the world better, every day. It's all about Advancing better™.

How to contact Alfa Laval

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