



LEE INDUSTRIES
Processing Perfection™

New or Used Kettle?

How to Make the Right Choice for Your Food Processing Operation



Whether purchased new or used, a processing kettle or tank, along with its agitator unit and drive assembly, is a major equipment expense for any food processing operation.



This guide will help you decide whether a new or used kettle is the right choice for your food processing business.





While there are many advantages to buying a new kettle — for example, custom configurations to properly meet your processing requirements, factory O.E.M. service, O.E.M. factory supported warranties and “no surprises” regarding the kettle’s repair history or prior use (i.e. contamination)—buyers may consider purchasing pre-owned equipment from a reputable, food processing equipment reseller.

The two main reasons for buying used are:

Faster availability:

Purchasing a new kettle is a build-to-order process, often requiring lead times. For this reason, buyers seeking faster availability for their production may go to the used market, where equipment may be available for immediate delivery, but often have to settle for a design that is not optimal for their process.

Lower prices:

As with other used equipment, prices on used kettles are usually lower than new ones. However, some used kettle models, particularly those from established, highly reputable manufacturers, hold their value so well that the cost difference between new and used may be minimal. Additionally, the buyer pays a premium for a vessel that does not carry a warranty, or a guarantee it will be in good operating condition.

Five Key Factors When Considering a Used Kettle or Tank

Aside from the basic choices required when looking for a kettle or tank, such as shape (dished or hemispherical bottom), capacity and agitator type, these other factors are important to consider when deciding whether or not to buy a specific used vessel:



1 Prior use:

Determining what ingredients were processed in the used kettle under consideration is an important risk, safety and liability issue. For example, a kettle that was previously used to mix or process hazardous, reactive chemicals or pharmaceutical products may pose too high a risk for use in food processing due to possible cross-contamination from trace chemical ingredients lodged in bushing spaces and other areas. While the used kettle's original manufacturer may be able to provide general information on the first buyer's industry, this information may not be available for that kettle's subsequent owners. So, unless you can establish a clear chain of ownership on a used kettle under consideration, you can never be sure of its prior use history.

2 Safety and potential liability issues due to wear, defects or unauthorized repairs:

Processing kettles with steam and water jackets are classified as “unfired pressure vessels” per section VIII of the A.S.M.E. code. A.S.M.E. code guidelines must be followed and documented for any repairs or alterations made to the unit. Any repairs to a kettle can only be performed by a state-certified A.S.M.E. boiler technician, and all such repairs must also be inspected and receive an “R stamp” by a state-certified A.S.M.E. boiler inspector. Therefore, as in the case of prior use above, it is critically important to obtain a documented record of all inspections and any certified repairs made to the used kettle under consideration. Due to the significant safety and liability risk involved you should absolutely avoid any kettle where an undocumented, uncertified repair has been made.

3 Your custom requirements:

Because most kettles on the used market were custom-built for their original owners, the specific features and operating characteristics of the used kettle you are considering may or may not meet your production and safety requirements. The cost of major modifications — such as rebuilding the agitator drive, replacing wear parts, adding a larger discharge port and general modifications to adequately meet your process can put the total cost and time of buying a used kettle in-line with those of a new kettle custom-designed for your needs.

4 New service and parts for preventive maintenance:

Most used equipment dealers do not take on the responsibility of performing maintenance on the kettles in their inventory. Therefore, to prevent costly downtime once that kettle is on your production floor, it is essential to have this preventive maintenance done before the kettle is put into operation (**see Must Do #1 and Must Do #2 sections on pages 8-9**).

5 Warranties:

While new kettles usually carry a performance warranty (e.g., Lee provides a two-year limited warranty), used kettles are most often sold without any warranties, or on an “as is, where is” basis. In some instances, kettles that have been reconditioned by dealers may be sold with limited-time unsupported warranties. Generally, the best you can expect on a used kettle is a short-term warranty, which makes a thorough inspection and preventive maintenance (**see Must Do #1 and Must Do #2 sections on pages 8-9**) vital to keep production downtime to a minimum.

It is essential to **identify the ingredients** that were previously processed in the kettle you are considering.

For example, a kettle that has been used to **mix or heat chemicals** or pharmaceutical products may pose **unnecessary safety and liability risks** if used to process food products.

New Vs. Used: Resale Value and Annual Operating Costs

As with any asset, understanding the future value of your kettle can factor into your decision on whether to buy new or used. Well-made, well-maintained kettles from leading manufacturers can have a service life of 25 years or more. Many kettles manufactured by Lee Industries remain in full production 40 years after being built.

Resale value on such kettles can be high. And when factoring in the cost of preventive service required before installing a used kettle **(see Must Do #1 and Must Do #2 sections on pages 8-9)**, it may be possible to custom-build a new kettle for about the same as it would cost to acquire and update a used kettle with comparable features. For this reason, it is usually smart to quote the cost of a new kettle in parallel to your used kettle search.



Kettle Rental Options

Short-term kettle rentals can be a workable option for companies with immediate production needs. Rentals are available either through certain used food processing equipment dealers or kettle manufacturers.

A kettle rented from Lee Industries carries a full warranty, has complete chain-of-custody and prior use documentation, and undergoes thorough preventive maintenance checks and service before installation in your facility.

In some cases, a portion of the cost for the kettle rental can be applied to the purchase of a new kettle, making rental a viable option for those who want to purchase a new kettle, but need immediate production.*

*Lee Industries will apply a portion of rental payments to the purchase of a new kettle, with certain guidelines.

Must Do #1: Pre-Purchase Inspection

Since a kettle is the most important piece of equipment in your food processing operation, you will be well served to order a thorough inspection to ensure reliable and safe operation before buying a used kettle. This inspection should only be conducted by a knowledgeable technician experienced in food processing kettle operations and should include these elements:

Internal and jacket pressure test:

For kettles equipped with a steam and water jacket, a pressure test should be conducted. Just as important, the test should be conducted with steam at pressures no higher than the vessel's rated design pressure to detect jacket leaks when the kettle is under steam or water pressure. To prevent liability issues, these tests should be performed by an A.S.M.E. certified boiler technician.

Agitator drive inspection:

Operate the kettle's agitation unit under load (such as by filling the kettle with water) and check for excessive vibration or kettle motion that may indicate a major problem, such as a bent agitator drive shaft or defective drive gear unit. Also, check for sounds or unusual vibration around areas where bearings are present. Lee recommends replacing all bearings and seals prior to use. Sounds or vibrations may require replacing the entire shaft or agitator assembly.

Safety feature review:

Does the used kettle have the necessary features required for safe and sanitary operation? Confirm worker safety features like cover grates, automatic motor cutoff switches for cover lid operation, pressure relief valves and other features designed to prevent worker injury. Check food safety features, such as sanitary ball valves, easily drainable cross-members and support legs, and clean-in-place (CIP) support. Modifying a kettle to update these safety and sanitary features may prove cost-prohibitive, so it's important to review this during your pre-purchase inspection.

Used Kettle Checklist

Initial Inspection

- Determine kettle's prior use (ingredients and products)
- Request original drawings from manufacturer

Pre-Purchase Kettle Inspection

- Conduct an in-person visual inspection
- Conduct an internal pressure test (if applicable)
- Conduct a steam or water jacket pressure test
- Perform an inspection while operating

Preventive Maintenance

- Inspect and repair drive unit and agitator shaft as needed
- Inspect and repair/replace all bearings, bushings, seals, etc.
- Order key spare components for spare parts inventory

Original drawing request:

By providing the serial number to the original manufacturer for the used kettle under consideration, most manufacturers can provide an original engineering drawing for that kettle for a small fee. (Please note: confidentiality agreements may prevent the manufacturer from providing information without permission from the original owner.) This representation of the kettle's original configuration — including drive unit, jacket specifications, and safety features — may reveal any modifications that have been made to the kettle since it was purchased. Examining original drawings is especially useful to determine if any illegal boiler modifications were made to the kettle jacket in the field that could pose a pressure safety or liability risk to your business.

Must Do #2: Repairs and Preventive Maintenance

Prior to placing a used kettle into service, it is important to address a range of repairs and parts replacements to reduce the risk of production downtime. Again, the critical and specialized nature of your food processing kettle requires a qualified boiler and kettle service technician to make any necessary repairs.

Repairs will include any issues identified in the pre-purchase inspection. These will be necessary before the kettle can be approved for safe use in your facility. The most common parts that wear and need service on used kettles include scraper blades, agitator or drive bushings, bearings, and seals.

Maintaining on-site spare parts inventory:

It is also important to know that many major components, such as agitator mixing shafts and blade assemblies, are custom-made parts that have been specially fabricated for use on the kettle you are purchasing. Since custom parts for a kettle often require several weeks or more for fabrication, it is a good idea to have these and other parts made ahead of time and stored at your facility. That way, these custom parts will be available immediately on-site if a breakdown occurs, and can also be swapped in to replace an existing assembly when performing regularly scheduled preventive maintenance (e.g., when rebuilding an agitator shaft or drive unit). This advice applies equally to purchases of both new or used kettles.



Is a Used Kettle the Right Choice for Your Business?

As you can see, several important factors affect your decision to buy a used kettle, beyond its purchase price: the kettle's prior use, its repair or modification history and the cost of preventive maintenance service and parts to ensure trouble-free operation. Each of these issues must be carefully examined to determine the true cost of used kettle ownership, and to guarantee reliable, long-term operation for the used kettle placed in service in your food processing operation.



About Lee Industries

The mission of Lee Industries is to assure our customers are successful by focusing on their custom processing needs and providing them with the highest quality, most durable products and services available.

Lee Industries is committed to the success of your company by providing you with world-class, high-quality stainless alloy process equipment and service. We design and manufacture the most technologically advanced equipment in the industry. Our customer service team, backed by over 90 years of innovation and experience, provides Lee clients with a single source for all their processing system needs.



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