



Products that can be cooked on a stovetop can be done faster, better, and using less energy and labor with steam equipment.

Natural gas steam equipment provides a healthy way to cook a variety of products. They also offer:

- One of the fastest ways to cook commercially.
- Consistent heat source with excellent heat transfer capabilities.
- Food retains color, texture, moisture and nutrients.
- Great for cooking a wide variety of foods including meat, seafood, frozen and fresh vegetables, and reconstituting.

Fast, consistent heat source

There are two main types of steamers: compartment and steam jacketed kettle. In compartment steamers food is cooked in steam pans, which are either solid or perforated. In a kettle, the food is cooked directly in the kettle or in prepared food pouches.

Compartment steamers

There are four types of compartment steamers: pressureless, pressurized, boilerless and connectionless boilerless. Some compartment steamers offer a dual-mode allowing the operator to select either pressureless or pressurized use.

Pressureless

With this type of steamer, the steam is provided by a boiler/generator that can be a self-contained steam unit, shared with other equipment, or from a central boiler, which is usually located in a maintenance room. Because it provides a constant exchange of fresh steam, there is no flavor transfer, so dissimilar foods such as seafood and rice, can be cooked

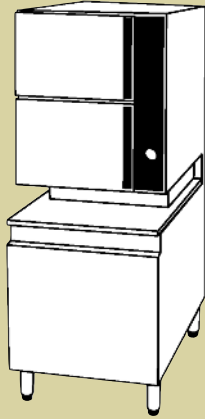
simultaneously. Circulating fans are used in many steamers to move steam through the cooking compartment, significantly reducing cooking times.

These steamers are ideal for frozen products and on-line cooking. Cooking is done at zero pressure allowing frozen products to evenly thaw before the actual cooking begins. The zero pressure also allows the door to be opened at any time during the cooking cycle.

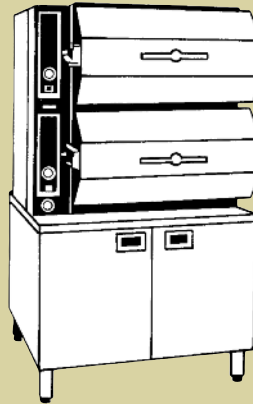
Pressurized

Pressurized steamers are available in five to 15 pounds per square inch (psi). The most common pressurized steamer is a five psi steamer which does an excellent job with protein products because of the lower temperatures. Also available are 15 psi steamers with some models offered as connectionless (see description on next page). For every pound of pressure added, the cavity temperature will rise 3 F above 212 F, speeding up cooking times. Once the doors are locked, the unit must be depressurized and the steam allowed to escape before opening again.

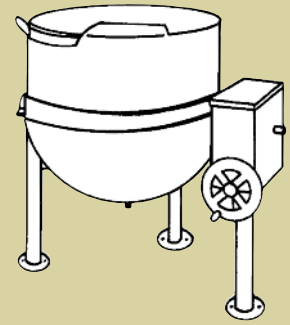
Compartment steamer
pressureless



Compartment steamer
pressurized



Steam jacketed kettle



These steamers are ideal for large production facilities such as commissaries, schools, health care or prep lines, but are not recommended for use with frozen products.

Boilerless

Compartment steamers are also available in boilerless models. These types produce steam when water comes in contact with heat from infrared burners or exchanger tubes. Some models also use natural gas-heated steam generating reservoirs. The advantage of the boilerless models is there is no boiler to maintain, so there is no need for de-liming. They come with circulating fans for even cooking. A boilerless unit can have automatic water fill to make operating easy. If there is no water hook-up it is called connectionless.

Connectionless boilerless

Connectionless units are boilerless and do not have water connected directly to the unit. This type is ideal for locations where water hookup is unavailable, or costly. They provide lower maintenance and lower costs. There is no need for water treatment, daily blow-downs or de-liming. These units also come with circulating fans.

When using the connectionless steamers, water is poured into the bottom of the cooking compartment, and must be kept up to the proper level during the cooking process. At the end of cooking, a drain valve is opened to allow the remaining water to drain from the compartment.

Steam jacketed kettle

Steam kettles are basically a steam filled jacket around a stainless steel steam vessel, much like a pot within a pot. When the outer jacket covers only one-half to two-thirds the inner vessel, it is referred to a partially jacketed kettle. A fully jacketed kettle is all the way to the rim.

Steam jacketed kettles are ideal for soups, sauces, pie fillings, poultry, vegetables, meat fillings, stews, gravies, boiling bagels, pastas, rice, reheating pouch prepared food and cook-chill casings. Anything that is normally cooked on the stovetop can be done faster, better, and using less energy and labor with a steam jacketed kettle. This is because the kettle provides a greater amount of cooking surface, and the steam is under pressure, creating the option of higher temperatures.

They may be floor-, wall- or counter-mounted. If the kettle tilts it's called a trunnion. The trunnion allows for quick and easy unloading and cleaning. Steam can be supplied by a self-contained boiler, or from a shared or remote source. Kettles are sized in quarts and gallons and come in standard or low profile heights. A major benefit of the steam jacketed kettle is that it cooks extremely fast without scorching or hot spots.

Many kettle accessories are available, including:

- covers, either separate or attached hinged lids
- larger valves for draining
- tilting mechanisms, either manual or automatic
- mixer attachments
- steam basket inserts
- measuring sticks
- water fill faucets
- floor drain or floor sinks
- disc strainers

Tips for best results

- Preheat boiler to recommended pressure. This usually takes 7 to 10 minutes.
- Check that the boiler pressure has reached manufacturer's specifications before preheating compartments.
- Use 1", 2" or 4" perforated pans for most foods.
- Cook full loads whenever possible.
- Use pressureless steamers for frozen and fresh products as well as for defrosting.
- For easier cleaning, use the pressureless compartment steamer to loosen food stuck on pans. Simply place pans in the compartment and turn on for two to three minutes and then wash as usual.
- For steam systems, water quality should be tested. Water filtration systems are available and generally recommended. Some steamers have water filtration units self-contained in the steamer. Filtration is important for maintaining the life of the equipment and may be a warranty requirement.
- When loading products on perforated pans consider how food drippings from the pan above will affect the pan below, e.g., cooking fish above and vegetables below.



Care of a steamer

- Follow manufacturer's recommendations.
- Keep compartments and kettle valves free of food particles.
- Clean and wipe out all compartments daily. Remove shelves, supports and screens and wash in a dish machine.
- Clean and wipe gaskets regularly; keep a spare gasket for a quick replacement.
- Check sight gauge for proper water level.
- Follow manufacturer's instructions to blow down the boiler under steam pressure every day for approximately five minutes. This removes sediment, scale and lime buildup. Many models include automatic blow-down features.
- Use water treatment, if necessary, to prevent mineral deposits in boilers. De-scale boiler every six months or as needed, according to use and hardness of water.
- To clean a steam jacketed kettle, close the drain and fill above the soil level with hot water and detergent. Turn on unit and use brush for cleaning. Drain, rinse and wipe kettle dry.
- Leave compartment doors slightly ajar when steamer is not in use.
- Compartment steamers must be de-limed regularly. Frequency depends on use and water quality. Here are some suggested de-liming procedures:
 1. Pour 1 cup of de-liming solution into drain within the compartment cavity. Let it set for 15 minutes.
 2. Mix 1 tablespoon baking soda with 1 cup water and pour the mixture into the drain within the compartment cavity to neutralize the de-liming solution.
 3. Pour 1 gallon clean water into the drain. Steamer is then ready to use.
 4. Repeat the process once a week or according to the use of your steamer.



Rebates lower start-up costs

Rebates make the purchase of efficient, natural gas equipment even more affordable. Call us at the phone number listed below for details.

For more information

To receive additional information or to schedule free training on steamers and other natural gas equipment, call **612-321-5470 (1-800-234-5800, ext. 5470)**. For your convenience, training sessions can be held in our Foodservice Learning Center or your facility.

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