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... pressure canners

use and care



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Pressure canners

... use and care

In canning meats and vegetables, except tomatoes, it takes higher-than-boiling temperatures to make sure of killing bacteria that cause dangerous spoilage. The only way to obtain these temperatures is to use utensils that keep steam confined until it builds up pressure. For the safety of your family, always process such foods under pressure. To use pressure equipment successfully and safely you must understand how it operates and use it correctly and carefully.

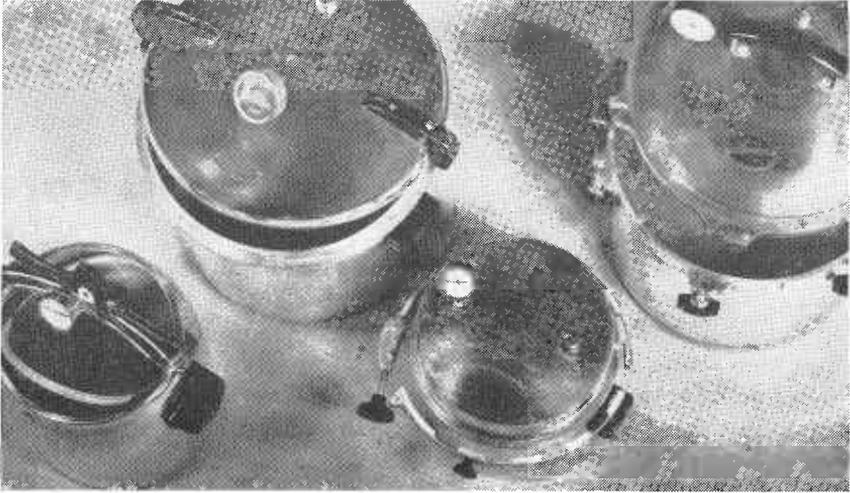
Canners and cookers

The first pressure utensils for the home were the large canners. Because they were heavy and cumbersome, the smaller cookers—sometimes known as pressure saucepans—were developed for general cooking. A cooker is also usable for food processing if it is deep enough to hold jars standing on a rack with room at the top to put the cooker lid on, and if it can be operated at 10 pounds pressure. However, because cookers usually hold 3 or 4 pint jars, they are practical for canning only when the amount of food to be done at a time is small. By contrast, canners commonly hold 7 quart jars.

The fully loaded canner takes a long time for heating and cooking, and this is taken into account in determining processing times as given in tables. The smaller cooker, with less metal and a smaller load, heats and cools more quickly—a big advantage in regular cooking but not in canning, because shortening the process may prevent destruction of spoilage organisms. To can safely in a cooker, use directions given specifically for pressure cookers or saucepans.

Materials

Pressure canners and cookers are made of materials strong enough to withstand pressure. Aluminum, either cast or heavy-gage sheet, is most common. In hard-water areas the inside of an aluminum canner will darken but this does not impair its usefulness. Stainless steel is sometimes used for cookers and for canner lids, a special type of enameled steel for canner kettles. In the past, especially in times of metal shortage, some canner kettles were made of enameledware or tinned steel, both of which should be handled with care to avoid damage; too much heat above the water line of such kettles may cause tin to melt, enamel to crack.

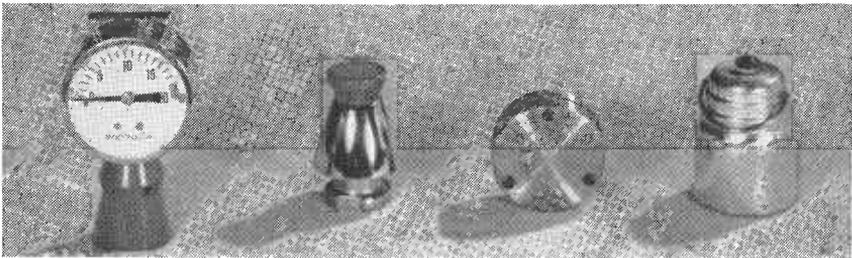


Four types of closures. Left to right: Flexible cover; slide-type cover; encircling-band closure; closure with thumb screws that fit into lugs.

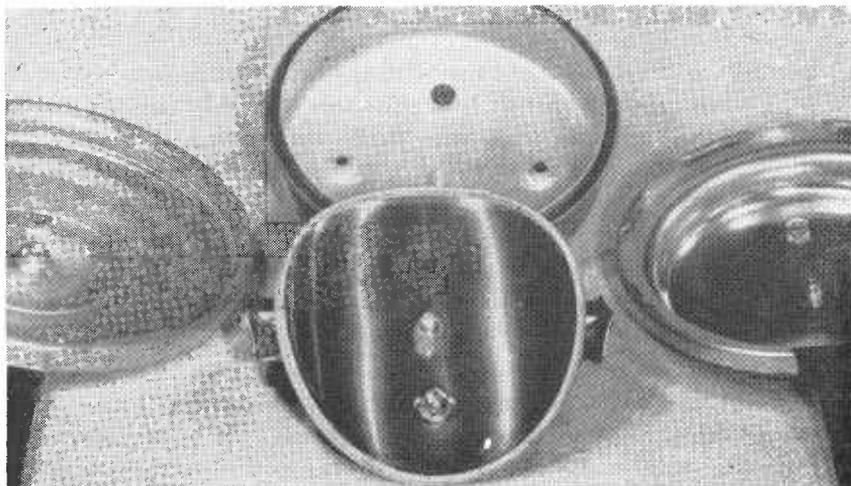
Essential parts

Closures. Covers of pressure utensils are locked in place so that they cannot be lifted by steam. The thumb-screw type closure shown above is used on canners and large cookers; the others on canners and cookers of all sizes. Covers that slide into locked position and flexible ones are common on cookers.

Pressure gages. A gage, whether a dial or a weight, is essential to control pressure. The dial type is used mostly on canners and is usually attached to the cover, though the one pictured below is removable. Either the dial or the weight with sliding core shows the pressure within the utensil; you must adjust heat to keep the pressure steady. The weight type, commonly used on cookers, permits pressure to rise to a definite point and then releases excess steam to keep pressure from going higher.



Four types of pressure gages. Left to right: Dial; weight for a single pressure; weight for 5, 10, or 15 pounds pressure; weight with sliding core.

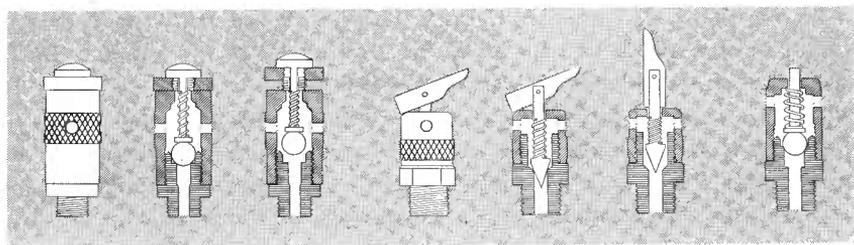


Gaskets. Left, narrow one within rim of cover; top, gasket seated in groove; bottom, one that fits over rim; right, wide V-shaped one within rim.

Gaskets. Gaskets of rubber or rubberlike compound keep steam from leaking out around cover. Most gaskets are removable for replacement as needed; some can be turned after a period of use to insure a tighter seal.

Safety plugs. Safety plugs go into action only if pressure or temperature becomes dangerously high. Metal alloy plugs (upper spot in cover at right above) melt when pressure gets too high or utensil boils dry. Composition-type plugs (upper spots in other covers shown) are blown out by excessive pressure. Both types are replaceable.

Vents. Vents are provided to allow air to be exhausted from the utensils and to permit the release of steam as needed. A petcock, safety valve, or weight on the vent is used to control the escape of air or steam. Canners with dial gages may have one of the types shown below, or there may be a weight which is lifted by excess steam. Weight gages both control pressure and release excess steam.



Combined petcock and safety valves of ball-and-socket type and needle type closed and open. Right: Ball-and-socket safety valve, cross section.

Tips for use of pressure equipment

Reread the directions that came with the canner or cooker—especially if you do not use it frequently enough to be thoroughly familiar with it. If the directions have been lost, write the manufacturer for a new set. In writing, give the model number and any other information you can find on the utensil, or, lacking such information, describe it and give the approximate age.

Before the canning season, put water in the canner and bring it up to pressure in the usual way to see that it is in good working order. Allow time for any repairs that might be needed.

Use enough water in a canner or cooker to heat and cool jars at a steady rate, and to insure against boiling dry. Water 2 or 3 inches deep is usually enough, although more may be needed for a long processing period in a canner or cooker with weight-type gage, because the weight permits a little steam to escape regularly throughout cooking.

At the beginning of the heating-up period, leave petcock open or weight gage off until steam is issuing in a steady stream—about 10 minutes after the first steam appears. This permits air to be expelled and thus insures that pressure obtained will be true steam pressure.

Heat the loaded canner rapidly. When a dial gage registers the desired number of pounds or when a weight gage signals that pressure has been reached, adjust heat to keep the needle steady or the weight exhausting steam at a slow but steady rate.

When processing time is up, turn off heat or remove canner from range. If glass jars or No. 3 tin cans are used, let canner cool until pressure is zero and then wait 1 minute more. Open petcock or remove weight slowly to prevent a sudden change of pressure that might cause liquid to be lost from jars or cans to buckle. Never try to hurry the cooling of any canner or cooker used for canning by putting it in cold water or by wrapping wet cloths around it. When tin cans of sizes up through No. 2½ are used, start to open the petcock or lift the weight as soon as processing time is up—but do it very slowly, to prevent a rush of steam.

As soon as steam stops flowing freely from the vent, loosen the cover. Loosening it before the steam stops flowing can cause damage to jars and injury to you. If you failed to open the petcock or remove the weight it might be impossible to take off the cover because of the vacuum which forms in the utensil after pressure reaches zero.

For your own safety always use dry pot holders or heavy towels in handling a canner or cooker. A long-handled fork can sometimes be used to lift a weight or open a petcock, keeping your hand out of range of the steam. In removing the cover, always tilt the back edge up first so that escaping steam will be directed away from your face.

Care of pressure equipment

Wash pressure cooker or canner thoroughly after each use, but don't put cover in water because doing so will damage a dial gage and may cause vents to become clogged. Instead, wipe cover with a soapy cloth and then with a clean damp one.

Clean the openings in the cover by drawing a string or pipe cleaner through. Be sure that all grease is washed from the gasket. Take off removable petcocks and safety valves, wash and dry thoroughly; occasionally soak these parts in vinegar, wash, and dry. Clean a ball and the socket into which it fits with silver polish. Put all parts back together carefully and correctly.

Watch for steam leaks. Escape of a little steam around a weight-type gage is normal, but none should escape elsewhere. If steam escapes around the cover, examine the sealing edges of utensil and cover; if they are not smooth, clean them with fine cleansing powder. If the gasket is reversible, turning it over may improve the seal. A gasket that is worn, stretched, or hardened should be replaced with a new one—obtained from the dealer or manufacturer. Leakage makes it difficult to obtain the right pressure and may cause the cooker or canner to boil dry.

If at all possible, have a dial gage checked for accuracy at the beginning of each season. Your home demonstration agent or the home service department of the electric or gas company may be able to tell you where the checking can be done locally. If it cannot be done nearby, write the manufacturer to learn if he can do it for you. Ask him for shipping instructions if the gage is to be sent to him. You may be directed to return the whole cover or only the gage. In either case, pack it like fine glass and label it "Fragile."

If you remove the gage from the cover, replace it carefully. Coating the threads with plumber's paste will prevent steam leakage. A paste with an oil or graphite base is a good choice—it will stand up under pressure and not harden so the gage cannot be removed again.

If you are told that the gage does not register accurately, note the amount and direction of the error on a tag and tie it to the cooker so you will always know what the gage should read to obtain the pressure you want. For instance, a gage might read 11 pounds when the pressure is actually 10. A gage that is badly in error should be replaced.

Be careful not to nick or chip sealing edges of pressure utensils.

Store a canner carefully. Make sure that it is clean and dry before you put it away at the end of a season. Coat threads of thumb screws with a thin film of petroleum jelly or salt-free cooking oil to prevent rust. Crumple newspapers inside the kettle to absorb moisture and odors. Wrap cover in paper and invert it on the kettle.

The pressure canner and your range

A few pressure canners (water-bath canners and large preserving kettles as well) have bottoms so deeply recessed that the outer edge of the bottom may rest on the range top. When this happens, air is cut off from a gas burner and heat from either a gas burner or electric unit is trapped. As a result of the trapped heat the enamel of the range top may be so overheated that it is cracked or crazed.

To test a large utensil set it on the range, and if there is less than three-eighths of an inch clearance between utensil and range devise a way to hold the kettle higher. Several small blocks made of sheet asbestos (obtainable at hardware stores) may do the trick. Or your home demonstration agent or utility company home economist may be able to suggest a better solution for your particular range.

Because canners take up so much room on a range, other utensils to be used at the same time must be chosen to fit. Before buying or borrowing a kettle, measure to see what size you can use.

Additional publications

When you can or freeze food at home, the publications listed below may be helpful. They can be obtained from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Home canning of fruits and vegetables. Home and Garden Bulletin No. 8.

Home canning of meat. Home and Garden Bulletin No. 6.

Home freezing of fruits and vegetables. Home and Garden Bulletin No. 10.

Freezing meat and poultry products for home use. Home and Garden Bulletin No. 15.

Chicken in the freezer. Leaflet No. 279.