

1958

## CC88 Revised 1958 How to Build a Gauge Tester.

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Revised 8-59.

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by Arnold Baragar and Mrs. Clara N. Leopold

# STACKS

Scientific studies show that non-acid vegetables and meats must be processed at a temperature above 212° F to destroy certain strains of bacteria almost universally present in these products. But new USDA timetables should be followed in processing by pressure. These timetables give (1) a perfected raw-pack method for fruits and vegetables; (2) safer processing times--some longer, some shorter. The timetables are based on the assumption that the gauge indicates correct pressure.

Pressure cooker gauges are the means of indicating proper cooking temperatures. Satisfactory processing is dependent on accurate time and temperature, so it is important that the gauge register accurately. In too low a temperature there is danger of insufficient processing and spoilage. If temperature is too high, quality of the product will be poor because of over-processing.

Gauges should be checked periodically to determine their accuracy. An inaccurate gauge can be calibrated and can then still be used if a certain correction factor is used.

County agents should have the gauge on their testing equipment checked at least once a year against the master gauge at the College of Agriculture in Lincoln. Send gauge only.

If your county does not have testing equipment, directions are given below for a gauge tester that the agent can build without much expense. With this type of tester the homemaker's pressure cooker gauge can be tested without removing it from the cooker lid. The tester uses air pressure and will greatly reduce the time spent in testing gauges and completely eliminate the possibility of damaging the lid or gauge in taking them apart. Accuracy of testing by this method is sufficient for practical purposes.

## HOW TO BUILD A GAUGE TESTER

Figures 1 and 2 give the construction details of a tank type tester built on an old gasoline lamp fount. Usually when a lamp fount is obtained the handle or covering over the stem is still on the lamp. Disconnect the valve and remove this covering. The fount or base will then look like the one shown in Figure 3. If the lamp fount is in good condition all joints will be tight and the 1/8 inch pipe shown in Figure 3 will be securely connected to the tank. First of all, replace the valve and using a pump made for gasoline lamps pump air into the tank to about 35 or 40 psi pressure and submerge in a pail of water to locate any leaks. If there are leaks, have the holes soldered. A tinsmith or plumber can do this. Note whether the valve leaks, and if it does, refer to the section on alternate construction details.

Cut the lamp fount stem (Figure 3) to a length of 1 3/8 inch to 1 1/2 inches and rethread with 1/8 inch pipe threads. Next assemble the parts shown in Figure 2, painting all connections. Either a globe steam valve or the lamp valve which has been soldered into a 1/4 inch to 1/8 inch reducing coupling may be used to regulate the air. Though the reducer coupling and valve do not have the same threads on the 1/4 inch opening, the brass valve can be screwed into the steel coupling. To make certain the joint is tight it would be best to solder around the joint although paint may be sufficient to seal the joint. For best results a new globe valve or an 1/8 inch needle valve is preferred. Connect the master gauge to the assembled parts and then connect the entire assembly to the lamp fount. Push the assembly down so that the bottom elbows touch the tank and if necessary tilt the gauge back against the valve.

Use the piece of brass pipe that was cut off the fount to make the gauge testing stem. Drill a 9/32 inch hole

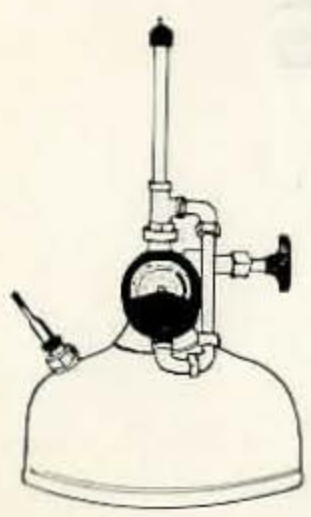


Fig. 1

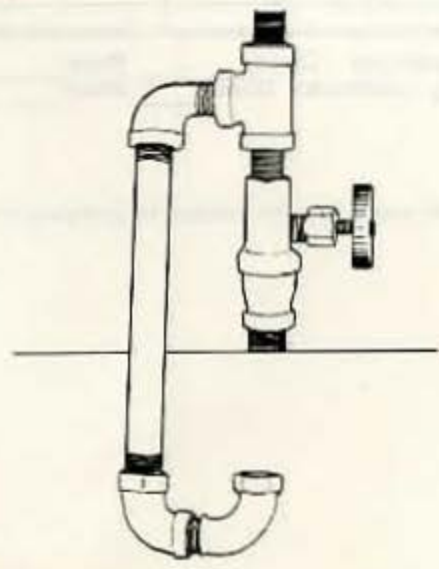


Fig. 2

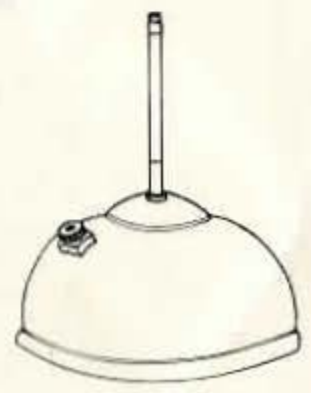


Fig. 3



about 3/8 inch deep in the unthreaded end. Clean the thick end of the football inflator stem, insert in the drilled hole and solder the connection. Ordinarily the filler plug can be painted tight into the fount, but if a leak should develop, the connection can be made tight by soldering.

1/8 inch pipe or a large needle valve for 1/4 inch pipe bushed down to 1/8 inch pipe in place of the lamp valve. Of course, these valves may add to the cost of the tester by about \$2.00, but it is believed that the convenience obtained more than justifies the added cost.

**ALTERNATE CONSTRUCTION DETAILS**

On the completed gauge tester shown in Figure 1 an automobile tire valve is shown in place of the regular lamp cap valve. The hole in the filler plug was drilled to fit the tire valve and after inserting the valve the connection was made tight with solder. Caution! When soldering a valve stem always remove the core so that the rubber on the valve will not be damaged. The tire valve was used because the tank could then be filled quickly by using a tire pump or by getting air at a filling station. This advantage of the tire valve is worth the time and effort of installing it.

In the laboratory it was found that better control of air could be obtained by using a globe steam valve for

**MATERIALS NEEDED**

- 1 - old gasoline fount with valve
- 1 - 1/8 inch Tee
- 1 - 1/8 inch close nipple
- 1 - 1/4 or 5 inch nipple (1/8 inch pipe)
- 1 - 90° elbow
- 2 - street elbows
- 1 - air regulating valve
- 1 - master gauge
- 1 - football inflator stem or its equivalent
- 1 - size O rubber stopper
- 1 - valve stem from an old inner tube

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W. V. LAMBERT, DIRECTOR

County Extension Service \_\_\_\_\_, Nebraska

\_\_\_\_\_, 19\_\_  
Date

Name \_\_\_\_\_ Address \_\_\_\_\_

When your gauge reads	The actual pressure is	For correct processing pressure use
0		
5		
10		
15		
20		

Gasket condition: Good \_\_\_\_\_ Poor \_\_\_\_\_ Replace  
Safety plug condition: Good \_\_\_\_\_ Poor \_\_\_\_\_ Replace  
Remarks:

(Suggested card to give owner of pressure cooker.)