



**OREGON  
DEPARTMENT OF  
AGRICULTURE**

**FOOD SAFETY PROGRAM  
Vat Pasteurizer Operator  
Study Manual**

**2022 Version**

## Table of Contents

I. ACKNOWLEDGMENTS .....	3
II. PURPOSE .....	3
III. ABBREVIATIONS .....	3
IV. DEFINITIONS .....	4
V. RULES AND REGULATIONS .....	6
VI. LICENSE AND FEES .....	6
VII. INTRODUCTION .....	7
VIII. GRADE “A” RAW MILK STANDARDS .....	8
IX. VAT/BATCH PASTEURIZATION .....	9
X. VAT PATEURIZER EQUIPMENT AND CONSTRUCTION STANDARDS .....	11
XI. INLET AND OUTLET VALVES AND CONNECTIONS.....	14
XII. CLEANING AND SANITIZING .....	15
XIII. TESTING OF PASTEURIZATION EQUIPMENT & FREQUENCY .....	17
XIV. BROKEN SEAL NOTICES.....	19
XV. VAT IMAGES .....	21

### ADDITIONAL RESOURCES:

PMO SECTION 16P. PASTEURIZATION, ASEPTIC PROCESSING AND PACKAGING, AND  
RETORT PROCESSED AFTER PACKAGING (Pg. 90)

PMO APPENDIX I. PASTEURIZATION EQUIPMENT AND CONTROLS – TESTS (Pg. 284)

## I. ACKNOWLEDGMENTS

The development, preparation, and publication of this manual was done with supplemental information and images from:

1. Wisconsin Division of Food Safety in Partnership with Wisconsin Association for Food Protection: Pasteurizer Operator Certification Training
2. Department of Health and Human Services, Public Health Service/Food and Drug Administration, Division of Human Resource Development State Training: Milk Branch Pasteurization Controls and Tests Course# 302.

## II. PURPOSE

The purpose of this manual is for the operator to review and understand the basic design, function and operation of a batch type or vat pasteurization systems and to understand the principles and many public health reasons for the pasteurization of milk.

## III. ABBREVIATIONS

3-A SSI (3-A Sanitary Standards, Inc.)

°C (Degrees Celsius)

°F (Degrees Fahrenheit)

+ (Positive)

- (Negative)

+/- (Plus or Minus)

AS: Air Space

CFR: Code of Federal Regulations

CIP: Clean in Place

DRT: Digital Reference Thermometer

FDA: Food and Drug Administration

FSP: Food Safety Program

IT: Indicating Thermometer

MIG: Mercury in Glass Thermometer

NCIMS: National Conference on Interstate Milk Shipments

OAR: Oregon Administrative Rules

ODA: Oregon Department of Agriculture

ORS: Oregon Revised Statutes

PMO: Pasteurized Milk Ordinance

RT: Recording thermometer

## IV. DEFINITIONS

The following definitions are from the Oregon Revised Statutes (ORS) Chapter 621, the Oregon Administrative Rules (OAR) Division 24, and the Pasteurized Milk Ordinance (PMO).

**Acid:** a substance that, when added to water, increases the concentration of H<sup>+</sup> (hydrogen) ions in the water.

**Alkalinity:** refers to the capability of water to neutralize acid.

**Condemned Container:** Container deemed by Department as unfit for use because of dirt, rust, open seams, or other conditions that would or may contaminate fluid milk, milk or dairy products, or would otherwise render them unfit for consumption by humans.

**Container:** Milk and cream cans, farm milk tanks, milk tank trucks, milk storage tanks, pasteurizing vats, cheese vats, butter churns, butter tubs, cheese hoops and any other receptacle designed for use or used to hold fluid milk, milk or dairy products.

**Cream:** Portion of milk consisting of milk fat.

**Dairy Operator:** Person licensed by the Department to conduct one or more of the following activities related to the operation of a milk distributor or dairy products plant. A separate license is required for each of these activities conducted by an individual:

- **Sampler-Grader:** Person responsible for the grading of milk received by a milk distributor or dairy products plant, and collecting regulatory samples of raw for pasteurization milk being received.
- **HTST Pasteurizer Operator:** Person responsible for the legal pasteurization of milk and/or dairy products utilizing "high temperature short time" (HTST) pasteurization equipment. This includes HHST and UHT pasteurization equipment.
- **Vat Pasteurizer Operator:** Person responsible for the legal pasteurization of milk and/or dairy products utilizing vat or batch pasteurization equipment.

**Dairy products:**

- Butter
- All varieties of cheese, frozen desserts and frozen dessert mixes containing milk, cream or nonfat milk solids
- Evaporated, condensed, concentrated, powdered, dried or fermented milk, whey, cream and skimmed milk

**Dairy products plant:**

- An establishment where milk is received, processed or used in manufacturing dairy products for human consumption
- A place or premises where milk is received or collected
- A bulk tank truck or other mobile equipment used by a milk hauler or other person in the transportation of milk, fluid milk or milk products
- A location operated by a non-processing cooperative, corporation, association or person serving as a marketing agent for producers

**Fluid milk:** Milk and any other product made by the addition of a substance to milk or to a liquid form of milk product if the milk or other product is produced, processed, distributed, sold or offered or exposed for sale for human consumption. Fluid milk includes sterilized fluid milk products and the fluid milk products for which a standard of identity has been established by the department.

**Milk:** Lacteal secretion of cows, sheep, and goats.

**Pasteurization:** Process of heating every particle of milk and milk products to the minimum required temperature (for that specific milk or milk product), and holding it continuously for the minimum required TIME in equipment that is properly designed and operated.

**pH:** pH is a scale from 0 to 14. It measures acidic or alkaline a substance is. More acidic solutions have a lower pH. More alkaline solutions have a higher pH.

**Producer:** A person who engages in the production of unpasteurized milk on a dairy farm and does not bottle the milk on the premises where production occurs, in pasteurized or unpasteurized form and for human consumption.

**Producer-distributor:**

- A person who bottles milk on the premises where production occurs, in pasteurized or unpasteurized form and for human consumption.
- A person who purchases milk from a producer, pasteurizes that milk, then bottles it for distribution.

**Water Activity ( $a_w$ ):** Water in food which is not bound to food molecules can support the growth of bacteria, yeasts and molds (fungi). The term water activity ( $a_w$ ) refers to this unbound water. Higher  $a_w$  substances tend to support more microorganisms.

## V. RULES AND REGULATIONS

The following are from the Oregon Revised Statutes (ORS) Chapter 621, the Oregon Administrative Rules (OAR) Division 24, and the Pasteurized Milk Ordinance (PMO).

### OAR 603-024-0490 Qualifications

- Applicants for dairy operators' licenses shall be:
  - Able to read and write legibly
  - At least 18 years of age
  - Free of communicable diseases
  - Pass written and practical examinations
  - Pay required fees

### OAR 603-024-0492 Examination of Applicant

- Written examination shall include questions relating to:
  - Knowledge of laws and regulations relating to activity for which the license is desired
  - Theory and practice involved in the performance of the licensed activity
- Practical examination shall include demonstration of ability to:
  - Make required quality control tests
  - Operate required equipment
  - Manufacture, grade, test, or pasteurize milk and milk products, as the case may be
  - Care, cleaning, and maintenance of equipment and utensils involved in the licensed activity

## VI. LICENSE AND FEES

- License:
  - Expires on June 30 of each even-numbered year
  - Renewed by the licensee
  - May be suspended, revoked, or limited
  - May be subject to retraining
  - Belongs to the individual, NOT the employer or equipment
- Fees:
  - Established by ODA in accordance with ORS chapter 183 and shall not exceed \$50.
  - Non-refundable
  - Late fees applied if renewal fee is past due

## VII. INTRODUCTION

The purpose of Pasteurization is to:

- Destroy pathogenic/harmful bacteria
- Reduce total bacterial numbers
- Extend shelf-life of product (when refrigerated)

### **Types of Microorganisms**

- Molds
- Yeasts
- Bacteria
- Viruses

### **Sources of Microorganisms in milk**

- Cow, sheep, goat
- Dirty air
- Dirty water
- Soil
- Manure
- Bedding & feed
- Dirty equipment
- Personnel

## VIII. GRADE “A” RAW MILK STANDARDS

### Federal Limits:

- Bacteria
  - Non-Commingled (single producer): Not to exceed 100,000/mL
  - Commingled: Not to exceed 300,000/mL
- Somatic Cell Count
  - Non-Commingled (single producer): Not to exceed 750,000/mL

### Oregon Limits:

- Bacteria
  - Non-Commingled (single producer): Not to exceed 80,000/mL
  - Commingled: Not to exceed 300,000/mL
- Somatic Cell Count
  - Non-Commingled (single producer): Not to exceed 500,000/mL

### Grade “A” Raw Goat Milk Standards

- Bacteria: Not to exceed 80,000/mL
- Somatic Cell Count: Not to exceed 1.5mil/mL
- Coliform: Not to exceed 10/mL

### Grade “A” Pasteurized Milk Standards

- Bacteria: Not to exceed 20,000/mL
- Coliform: Not to exceed 10/mL

### Antibiotic Residue (Appendix N):

- Test result must be NEGATIVE for milk to be used in processing

**NOTE:** It is not allowed to test frozen raw milk samples for bacteria or somatic cells.



## IX. VAT/BATCH PASTEURIZATION

Batch or vat pasteurization is the process of heating every particle of milk product in properly designed and operated equipment to meet the PMO requirements (Item 16p. & App. H), to one of the temperatures specified below and held continuously at or above that temperature for at least the time specified.

The product is heated in a jacketed stainless-steel vat which has been fitted with water and steam to the jacket liner, thermometers to monitor and record product and air space temperatures, and some means of agitation to assure uniformity in temperature distribution.

### Operating a Vat/Batch Pasteurizer

- The 30-minute holding time only starts once both the product and air space temperature has met the minimum requirement specified temperature AND:
  - All raw milk fill lines are disconnected
  - All product components have been added to the batch. This includes any liquid sugar and sweeteners, water, milk powders and all other dairy products, flavorings, stabilizers, cocoa products, emulsifiers, and vitamins.
  - Ports, covers, and opening are closed or protected
  - The outlet valve is fully closed
  - Air space temperature must be kept at least 5°F above the minimum legal pasteurization temperature for the product being processed.
    - May be accomplished with or without the use of an air space heater
  - Both the product AND air space temperature must be maintained for 30 consecutive minutes to achieve proper pasteurization.
  - If either temperature drops below the minimum required temperature or if the cover to the vat is opened at any time, then the 30-minute hold time must start over.

Batch (Vat) Pasteurization			
Product	Product Temperature	Air Space Temperature	Time
Milk*	145°F*	150°F*	30 minutes
Chocolate Milk	150°F	155°F	30 minutes
Eggnog	155°F	160°F	30 minutes
Ice Cream	155°F	160°F	30 minutes
Cream (for butter)	165°F**	170°F**	30 minutes

\*If the fat content of the milk product is ten percent (10%) or greater, or total solids of 18% or greater, or if it contains added sweeteners, the specified temperature shall be increased by 5°F (3°C).

**\*\*USDA requirement for butter made under their inspection program, ODA follows PMO requirements**

**Additions/Inclusions**

All milk and milk products, i.e., milk solids, whey, nonfat dry milk, condensed milk, cream, skim milk, etc., eggs, egg products, cocoa, cocoa products, emulsifiers, stabilizers, vitamins and liquid sweeteners shall be added prior to pasteurization. Ingredients, which may be added after pasteurization are those flavoring ingredients and other ingredients which have been found to be safe and suitable such as:

- Ingredients permitted by the Code of Federal Regulations (CFR) “Standards of Identity” when considering a standardized milk or milk product;
- Fresh fruits and vegetables added to cultured milk and milk products provided the resulting equilibrium pH level [4.6 or below when measured at 24°C (75°F)] of the finished product is reached without undue delay and is maintained during the shelf life of the product.
- Ingredients subjected to prior heating or other technology, which has been demonstrated to be sufficient to destroy or remove pathogenic microorganisms;
- Ingredients having a Water Activity ( $a_w$ ) of 0.85 or less;
- Ingredients having a high acid content [pH level of 4.6 or below when measured at 24°C (75°F)] or high alkalinity [pH level greater than 11 when measured at 24°C (75°F)];
- Roasted nuts;
- Dry sugars and salts;
- Flavor extracts having a high alcohol content;
- Safe and suitable bacterial cultures and enzymes; and
- Ingredients, which have been found to be safe and suitable by FDA.

All such additions shall be made in a sanitary manner, which prevents the contamination of the added ingredient or the milk or milk product.

## X. VAT PATEURIZER EQUIPMENT AND CONSTRUCTION STANDARDS

All vat pasteurizers must comply with Item 16p(A) of the PMO, including all operational and construction requirements.

### Vat Design

- Constructed of approved material
  - Stainless steel
  - Smooth finish
- CIP required is vat is over 96” in height
- No threads
- Sturdy construction
- Free draining toward the outlet valve (except for tilt vats without an outlet valve)
- Designed with adequate means off continuous agitation

### Cover Design

- Ability to open and remain open
- Rigid
- Self-draining
- Sanitary handle
- Overlapping “shoe-box” type (Image 1)
- Close fitting
- Openings with raised edges
- Drip shields on agitator shaft (Image 1)
- NO piano hinges

### Leak Detect Outlet Valves for Vats

- Solid stainless steel to permit adequate heat transfer to inner portions of valve
- Leak detector type to prevent leakage of raw milk past the valve body
- Designed to prevent the accumulation of unpasteurized milk in the grooves or passages of the valve when it is in a closed position
- Positioning pin with stops
- Close coupled (Image 2, Image 3)
- Outlet valves closed during fill, heat, and hold
- Some vats may not have an outlet valve (i.e. tilt vat)
- Outlet valves which are mounted vertically, as on cone bottom vats, must have a leak detector groove arrangement which will allow free drainage of any product past the

plug while in the closed position. Grooves must be curved or placed at such an angle to accomplish proper draining

### Recording Thermometer Charts

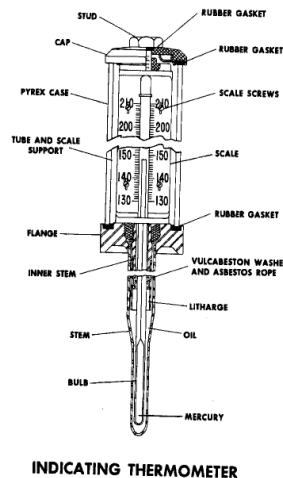
All charts used for the pasteurization of milk must contain all the following information for each production batch:

1. Date
  2. Plant name and location
  3. Identification of pasteurizer (if more than one)
  4. Name or initials of operator
  5. Record of holding time including empty and fill times
  6. Reading of air space thermometer at the beginning of the hold time and the end of the hold time
  7. Reading of indicating thermometer at the beginning of the hold time at an indicated point
  8. Amount and name of product represented by each batch
  9. Record of any unusual occurrences
- This chart is your legal record to show proper and complete pasteurization
  - Chart must be graduated in time scale divisions of not more than 10 minutes for a maximum record of 12 hours
  - Must be specifically designed (and so identified) for the type of recorder being used
  - On vats used only for pasteurizing above 160°F, chart may be graduated in 1°C (2°F) increments in the 150°F to 170°F range
  - Charts must be neat and legible and contain NO overlapping information
  - Charts must be retained onsite for at least 3 months from the last regulatory inspection and retained for at least two (2) years after the date they were created.
  - Temperatures recorded on the charts shall verify that the higher minimum required temperatures for products containing added sugars or higher fats have been met.

### Air Space, Indicating, and Recording Thermometers

- Air Space Thermometer
  - Bottom of the bulb must be between 2 inches and 3.5 inches below underside of the top of the vat
  - Bottom of the bulb cannot be less than 1 inch from the top surface of the product
  - May be graduated in 2° maximum increments
  - Accuracy +/- 1°F

- Indicating Thermometer
  - Official thermometer
  - Span of no less than 25°F
  - Includes pasteurization temperature +/- 5°F
  - Accuracy +/- 0.5°F
  - Scale 1.0°F divisions
  - Sensing bulb must be designed to extend fully into product
  - Probe length should reach product when vat is 20% full
  - If processing temperature is ABOVE 160°F



- Mercury in Glass (MIG)-type may be graduated in 2°F divisions
    - MIG-type and digital thermometer may be accurate within 1°F
- Recording Thermometer
  - Shall not read higher than the indicating thermometer
  - Reading on chart must be within 1°F below indicating thermometer
  - Must be graduated in 1°F increments between 140°F and 155°F

**Air Space Heater**

- Air space heaters may be necessary to maintain minimum air space temperatures
- Device must be of sanitary design, meet all 3-A Sanitary requirements, including installation and culinary steam requirements
- Air space heater must be easily demountable for cleaning
- See Appendix H of the PMO for culinary steam requirements

Note: When air space temperature can be maintained for the duration of pasteurization without a heating element then an air space heater is NOT required.

**Agitator**

- Required in order to push milk across the hot sides and bottom surfaces of the vat
- Must achieve <1°F in product temperature variance throughout the vat during pasteurization
- Sanitary construction for easy cleaning
- Drip shield at cover opening
- Ability to service and clean all openings

## XI. INLET AND OUTLET VALVES AND CONNECTIONS

The following definitions shall apply to inlet and outlet valves and connections:

- **Valve Stop:** a guide which permits turning the valve plug to, but not beyond, the fully closed position (Image 5)
- **Fully Open Position:** position of the valve seat that permits the maximum flow into or out of the pasteurizer (Image 5)
- **Closed Position:** any position of the valve seat that stops the flow of milk into or out of the pasteurizer (Image 5)
- **Fully Closed Position:** closed position of the valve seat which requires the maximum movement of the valve to reach the fully open position (Image 5)
- **Just-Closed Position:** closed position of a plug-type valve in which the flow into or out of the holder is barely stopped, or any position within 2 millimeters (0.078 of an inch) thereof as measured along the maximum circumference of the valve seat (Image 5)
- **Leakage:** the entrance of unpasteurized milk or milk product into a batch pasteurizer during the holding or emptying period, or the entrance of unpasteurized milk or milk products into any pasteurized milk or milk product line at any time.
- **Leak-Protector Valve:** a valve provided with a leak-diverting device, which when the valve is in any closed position, shall prevent leakage of milk or milk product past the valve. (Image 2, 3, 4, 5)
- **Close-Coupled Valve:** a valve, the seat of which is either flush with the inner wall of the pasteurizer or so closely coupled that no milk or milk product in the valve is more than 0.5°C (1°F) colder than the milk or milk product at the center of the pasteurizer at any time during the holding period. (Image 2, 3, 5)

A close-coupled valve, which is not truly flush, shall be considered as satisfying this requirement when:

- The vat outlet is so flared that the smallest diameter of the large end of the flare is not less than the diameter of the outlet line, plus the depth of the flare; and
- The greatest distance from the valve seat to the small end of the flare is not greater than the diameter of the outlet line; and
- In the case of batch pasteurizers, the outlet and the agitator are so placed as to ensure that milk or milk products currents will be swept into the outlet.

## XII. CLEANING AND SANITIZING

Cleaning of equipment does not remove or destroy all disease-causing organisms that may have been present. Even very small numbers remaining may grow to dangerous proportions since many grow rapidly in milk. All milk equipment must be treated with a sanitizing agent just prior to usage. Cleaning must be thorough before sanitation can be effective since the presence of organic material such as milkstone and soil can inactivate the sanitizer.

Milkstone is a hard deposit or encrustation that is a combination of milk solids and washing powder that may build on milk equipment. The minerals contained in hard water also contribute to its formation. It is a chemical reaction that is accelerated by heat causing more deposits on heating surfaces than elsewhere. Aside from these contributing factors the primary cause of milkstone is improper cleaning.

Cleaners are designed to remove soils such as:

- Fat
  - Recommend temperature – 10°F over production temperature
  - Alkaline cleaner (caustic) – concentration designed for your system
- Protein
  - Alkaline or Acid cleaners
  - Oxidizing agents (chlorine) – typically not used on HTST units
- Carbohydrates
  - Alkaline cleaners
  - Acid cleaners
- Minerals
  - Acid cleaners
  - Specifically, designed cleaners

NEVER mix any acid products with chlorine or products containing chlorine. It produces deadly chlorine gas!

Factors which affect cleaning:

- Time - depends on:
  - Time of production run
  - Type of product run (soils)
- Temperature
  - Usually 10°F above process
  - Caustic wash is more temperature dependent for thorough cleaning

- If wash solutions cool the soil may drop out and redeposit on the equipment
- Mechanical action – flow
  - Try to attain 1.5 times production flow
  - Install CIP pump

## **Sanitizing Methods**

### **1. Steam**

This method can be used successfully only in confined areas. All parts of equipment must be exposed to a temperature of at least 170°F for at least 5 minutes.

### **2. Hot Water**

This method is difficult to use on assembled equipment, particularly where hot water flows over a surface cooler. The temperature and exposure time is the same as steam.

### **3. Chemical**

An approved chemical sanitizing solution, such as chlorine, peroxyacetic, or quaternary ammonia is circulated or pumped through assembled equipment. Equipment may also be dipped in a solution to expose all the surfaces to the sanitizer.

The number and type of bacteria present in raw milk, faulty equipment, or soiled, un-sanitized contact surfaces of equipment may influence efficiency of pasteurization. Therefore, sanitation process protects product quality and safety.



### XIII. TESTING OF PASTEURIZATION EQUIPMENT & FREQUENCY

#### **Purpose of Testing**

- To determine if controls are operating according to standards
- To satisfy regulatory requirements
- To help ensure safe product to the public

#### **ODA inspectors conduct equipment check inspections according to PMO appendix I**

Equipment checks are conducted:

- Initially upon installation
- At least once each three (3) months thereafter
- Whenever any alteration or replacement is made which may affect the proper operation of the instrument or device
- \*In most cases when a regulatory seal has been broken

\*Please check the “**Broken Seal Notices**” section of this manual for more information on when and how to notify the ODA of a broken seal.

#### **What is tested**

- Thermometers, temperature monitoring devices
- Leakage past the valve when in fully closed position
- Time accuracy of the recording chart

Table 4. Equipment Tests – Batch Pasteurizers and HTST and HHST Pasteurization Systems (Refer to Appendix I. of PMO)		
1.	Vat, HTST, and HHST indicating and airspace thermometers	Temperature accuracy
2.	Vat, HTST, and HHST recording thermometer	Temperature accuracy
3.	Vat, HTST, and HHST recording thermometer	Time accuracy
4.	Vat, HTST, and HHST indicating and recording thermometers	Recording v. Indicating therm.
5.1	HTST and HHST FDD	Leakage pass FDD
5.3&4	HTST and HHST FDD	Device assembly (single/dual stem)
5.5	HTST FDD	Manual diversion
5.6&2	HTST and HHST FDD	Response time & Operation of Stem
5.7	HTST and HHST FDD	Time delay (inspect)
5.8	HTST and HHST FDD	Time delay (CIP)
5.9	HTST FDD	Time delay (leak-detect flush)
6.	Vat leak-protector valve(s)	Leakage
7.	HTST indicating thermometers	Response time
8.	HTST recording thermometers	Response time
9.1	HTST pressure switches	Regenerator pressures
9.2.1	HTST and HHST differential pressure controllers	Calibration
9.2.2	HTST differential pressure controllers	Regenerator pressure
9.2.3	HTST* and HHST differential pressure controllers	Regenerator pressure
9.3.1	HTST booster pump/FDD	Inter-wiring check
9.3.2	HTST booster pump/timing pump	Inter-wiring check
10	HTST FDD	Temperature cut-in/cut-out
11.1	HTST holding tubes/timing pumps (except MFMBTS)	Holding time
11.2.a	HTST holding tubes/MFMBTS	Holding time
11.2.b	HTST and HHST MFMBTS	Flow alarm
11.2.c	HTST and HHST MFMBTS	Loss of signal/low flow
11.2.d	HTST MFMBTS	Flow rate cut-in/cut-out
11.2.e	HTST MFMBTS	Time delay
11.2.f	All MFMBTS	High flow alarm response time
11.3	HHST holding tubes indirect heat	Holding time
11.4	HHST holding tubes direct injection heat	Holding time
11.5	HHST holding tubes direct infusion heat	Holding time
12.1&2	HTST* and HHST indirect heating	Sequence logic
12.	HTST* and HHST direct heating	Sequence logic
13.	HHST	Pressure in the holding tube
14.	HTST* and HHST using direct injection heating	Pressure differential across injector
15.	HTST and HHST (all electronic controls)	Electro-Magnetic Interference

\*For HTST systems with the FDD located downstream of the regenerator and/or cooling section

## XIV. BROKEN SEAL NOTICES

Dairy plants shall notify the Oregon Department of Agriculture Food Safety Program by email and/ or Fax within 24 hours of when a regulatory seal has been broken. ODA inspectors will conduct equipment check inspections ASAP and re-seal the affected instrument or device on the pasteurizer.

### **What is sealed**

- Temperature recorder controllers
  - STLR/Recording Chart
- Temperature sensors
  - Air space thermometer
  - Recording chart thermometer
  - Indicating thermometer

### **Why break a seal?**

- When a pasteurizing system malfunctions to the possible detriment of the public's health and safety and needs immediate fixing
- Easy to identify issues include
  - Thermometers reading incorrectly
  - Recording pen reading above indicating thermometer
- Pay attention to
  - Recording pen malfunction



Food Safety Program  
 635 Capitol St, NE, Salem, OR 97301-2532  
 503.986.4720 | Oregon.gov/ODA

## Pasteurizer Broken Seal Notice

PLANT INFORMATION		
PLANT NAME:		TODAY'S DATE:
CONTACT NAME:	PHONE:	CITY:
PASTEURIZER ID:	PLANT NUMBER: 41-	SEAL LOCATION(S):
DATE SEAL BROKEN:	TIME SEAL BROKEN:	
REASON FOR BROKEN SEAL(S):		

ODA NOTIFICATION INFORMATION		
NAME OF ODA INSPECTOR CONTACTED:	DATE CONTACT MADE:	TIME CONTACT MADE:
HAS RESEAL BEEN SCHEDULED? <input type="checkbox"/> YES <input type="checkbox"/> NO	DATE SCHEDULED:	IS IT READY FOR TESTING? <input type="checkbox"/> YES <input type="checkbox"/> NO

After the dairy plant operator breaks a regulatory seal which has been applied by an assigned ODA Food Safety Specialist or after the pasteurization system malfunctions to the possible detriment of public health or safety, the dairy plant operator shall:

- Contact your assigned Food Safety Specialist to schedule an appointment for resealing the pasteurization system.
- Notify ODA Food Safety office by email or FAX with this Broken Seal Notice form within 24 hours of the broken seal. Send to [foodsafety@oda.oregon.gov](mailto:foodsafety@oda.oregon.gov) & [sabrina.martinez@oda.oregon.gov](mailto:sabrina.martinez@oda.oregon.gov)

ODA FOOD SAFETY SPECIALIST CONTACT:					
Bestul, Zarina	Zarina.bestul@oda.oregon.gov	503-580-7302	Jensen, Neil	Neil.jensen@oda.oregon.gov	541-290-2397
Birdsall, Jeff	Jeffrey.birdsall@oda.oregon.gov	541-206-7059	Smith, Naaman	Naaman.smith@oda.oregon.gov	503-508-0470
Gieber, Chris	Christopher.gieber@oda.oregon.gov	503-784-6213	Wilson, Robert	Robert.wilson@oda.oregon.gov	541-660-9956
Jones, Lauren	Lauren.jones@oda.oregon.gov	541-969-2989	Leone, Julie	Julie.leone@oda.oregon.gov	971-209-5658
Ney, Melissa	Melissa.ney@oda.oregon.gov	541-969-8088	Harrang, Jon	Jon.harrang@oda.oregon.gov	541-480-8046

Revised 1/2022

### XV. VAT IMAGES

Image 1

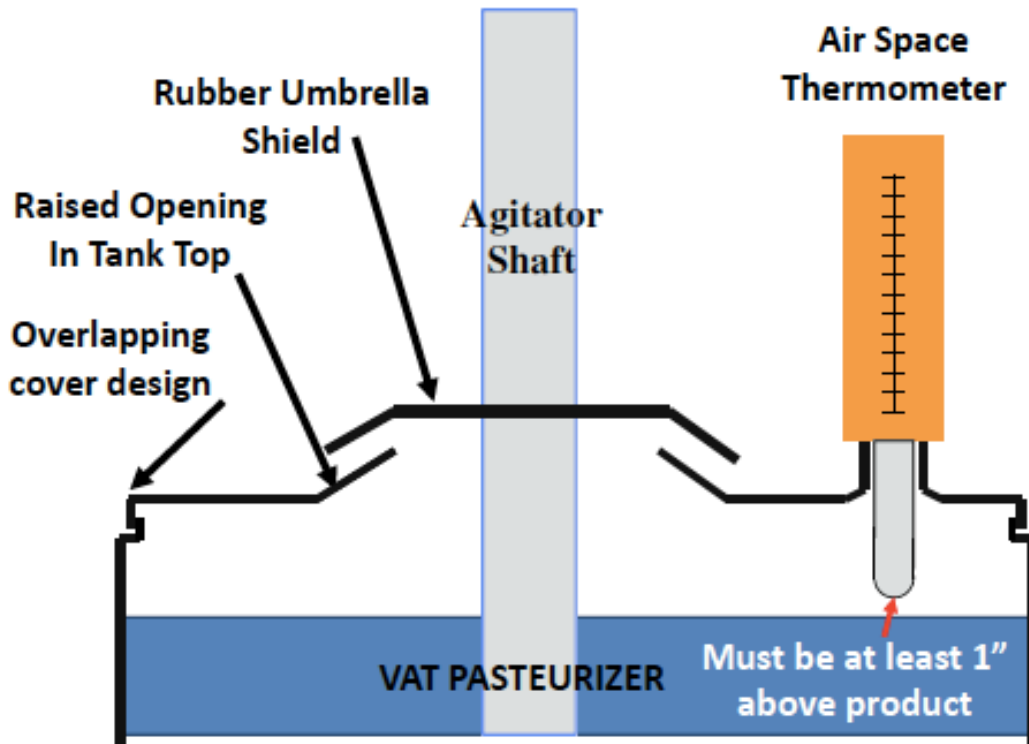


Image 2

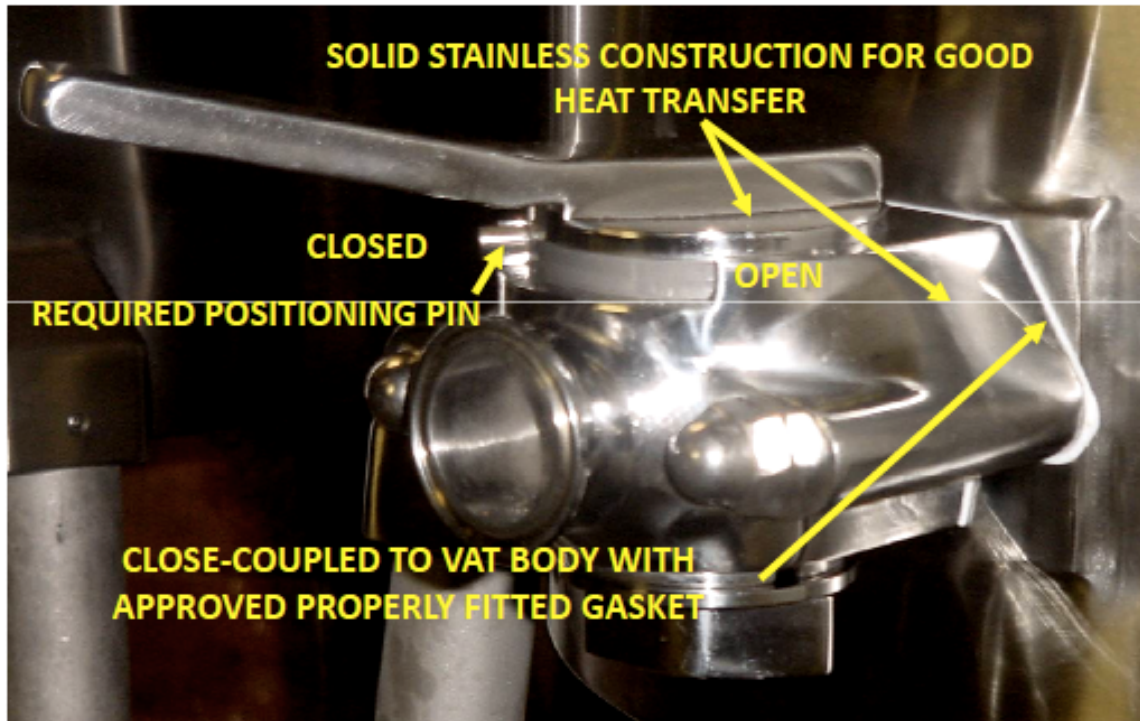


Image 3

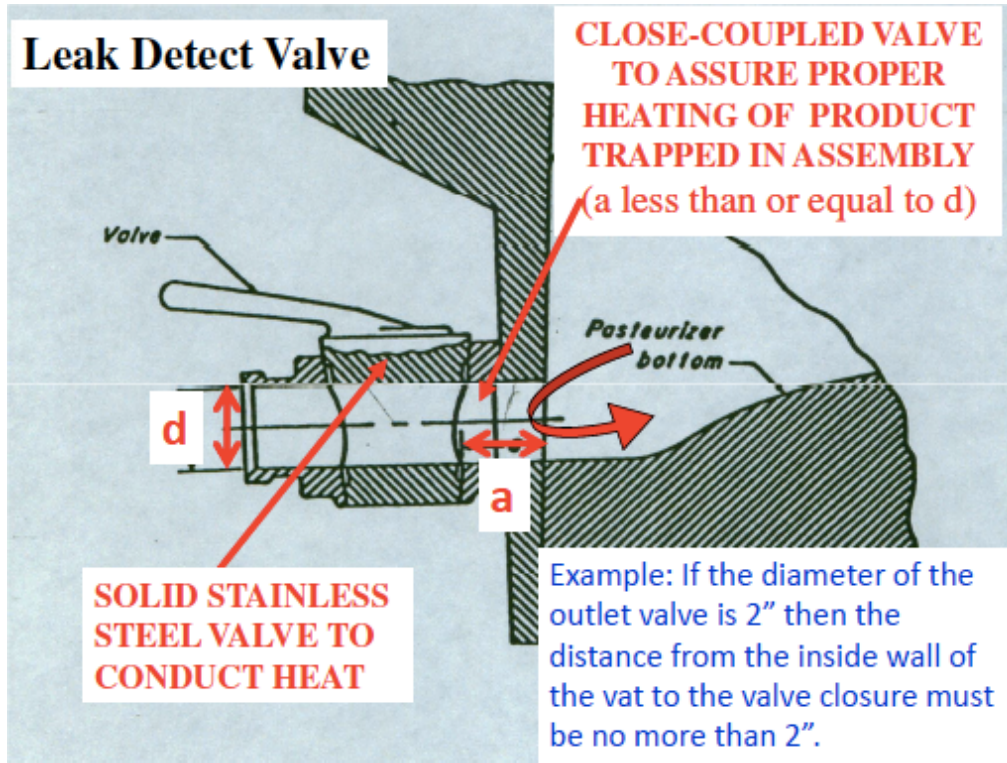
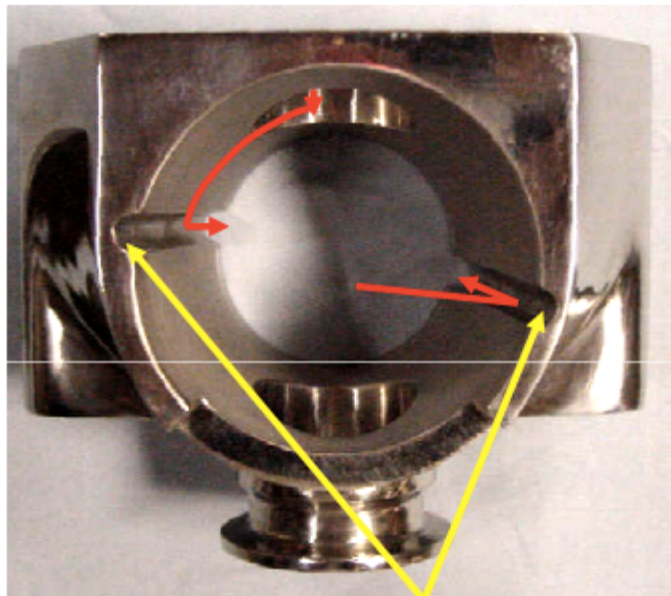


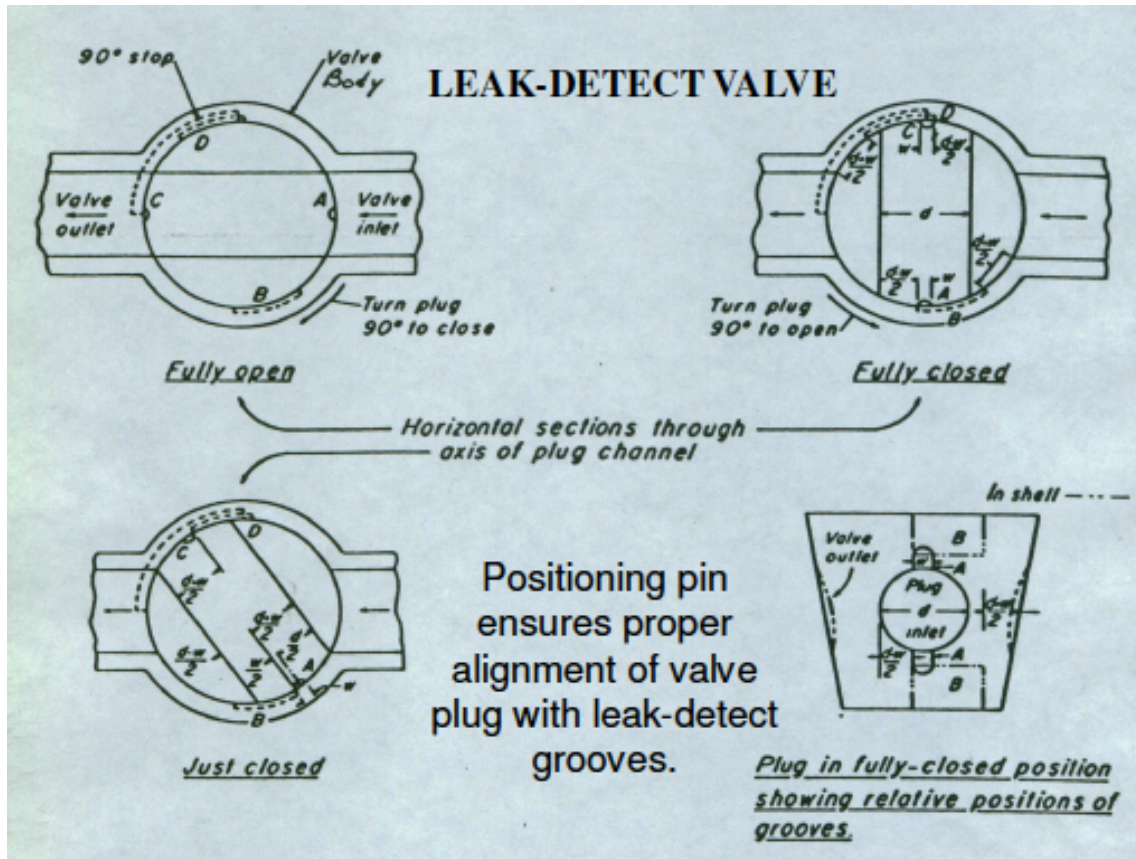
Image 4



- LEAK DETECT GROOVES MUST NOT BE BLOCKED WITH LUBRICANTS**
- To detect leakage past the closed valve seat.
  - To drain out the valve cavity so all product is fully pasteurized.



Image 5



**Note:** The use of trade names or equipment photographs is for training and educational purposes only and does not constitute endorsement by the Oregon Department of Agriculture.<sup>i</sup>