

# EQUIPMENT TEST BY SEAL BROKEN

TEST #'s correspond with "EQUIPMENT TEST REPORT" sheet

PAGE #'s correspond with "EQUIPMENT TEST TO BE PREFORMED WHEN SEALS ARE BROKEN" explanation sheet

## RECORDER CONTROLLER SEAL

- TEST #2 Recording thermometers: Temperature accuracy (p. 1)
- TEST #3 Recording thermometers: Time accuracy (p. 2)
- TEST #4 Recording thermometers: Checked against indicating thermometer (p.1)
- TEST #8 Thermometric response (p. 1-2)
- TEST #10 Cut-in & Cut-out temperatures (p. 2)

## INDICATING THERMOMETER (When replaced or if seal broken on digital box)

- TEST #1 Indicating thermometer: Temperature accuracy (p.1)
- TEST #7 Thermometric response (p. 1)

## FLOW DIVERSION DEVICE CONTROL BOX

- TEST#5 Flow Diversion Device: (P. 4)
  - 5.1 Leakage past valve seat(s)
  - 5.2 Operation of valve stem(s)
  - 5.4 Device assembly (micro-switches) dual stem
  - 5.5 Manual diversion - Parts A, B, & C
  - 5.6 Response Time
  - 5.7 Time delay interlock (dual stem devices) Inspect
  - 5.8 Time delay interlock (dual stem devices) CIP 10+ min. delay
  - 5.9 Leak Detect flush time delay (dual stem devices)
- TEST #9.3.1 Booster pump inter-wired with FDD (p. 2-3)

## TIMING DEVICE (METERING PUMP - HOMO)

- TEST#11.1 HTST: Holding Time (p. 4-5)
- TEST #9.3.2 Booster pump inter-wired with metering pump (p. 2-3)

## ADDITIONAL TESTS FOR MAGNETIC FLOW SYSTEMS

- 11.2a Magnetic Flow Meters
- 11.2b Flow alarm
- 11.2c Loss of signal alarm
- 11.2d Flow cut-in/cut-out
- 11.2e Time delay 1 (after divert)
- 5.8 Time delay 2 (CIP mode)

## DIFFERENTIAL PRESSURE CONTROLLER

- TEST #5.5 Manual diversion - Parts A, B, & C (p. 4) Check that pressures are maintained in all phases of divert - Manual, Inspect, CIP, & Temperature divert.
- TEST #9.2.1 Calibration (p. 3)
- TEST #9.2.2 Interwiring of the Pressure Differential Controller with the Booster pump(p. 2-3)

TEXAS DEPARTMENT OF HEALTH  
MILK AND DAIRY PRODUCTS DIVISION

EQUIPMENT TESTS TO BE PERFORMED WHEN SEALS ARE BROKEN

**THERMOMETERS**

Indicating & Recording

Will need a 10 gallon can of water to be maintained within a 3°F range of pasteurization temperature of the system being tested.

A container of water to be maintained at 212°F for 5 minutes.

A container of ice and water.

Always agitate water while checking temperatures.

1. Compare test thermometer to indicating therm. Must be within .5° F. Adjust if necessary & note on test sheet.
2. After recording thermometer has been in the water for 5 minutes (2 min. for electronic recording thermometers), compare indicating & recording thermometers. Note temperatures & make adjustments if necessary.
3. Place recording therm. in boiling water, 212 °F, for 5 minutes (2 min. for electronic recording thermometers).
4. Return recording therm. to water at pasteurization temp. for 5 minutes (2 min. for electronic recording thermometers). Leave indicating therm. in water or always return it to water 2-3 minutes before checks to allow it to stabilize.
5. Compare indicating & recording therm. Document temperatures.
6. Place recording therm. in ice water for 5 minutes.
7. Return recording therm. to water at pasteurization temp. for 5 minutes (2 min. for electronic recording thermometers).
8. Compare indicating & recording therm. Must be within 1° F. Make adjustments if necessary. Document results.

**THERMOMETRIC RESPONSES**

Indicating therm. Take pasteurization temp.	175	(OF THE SYSTEM BEING TESTED)
Add 7°	+7	
-----		
Gives water temperature	182	
Subtract 19 °	-19	
-----		
Gives temp. to start time	163	
12° range of rise	+12	
-----		
Gives temp. to stop time	175	

The indicating thermometer must rise the 12° range (in this case 163 to 175), in less than 4 seconds. Range must include pasteurization temp.

Recording therm.	Take cut in temp.	171	(OF THE SYSTEM BEING TESTED)
	Add 7°	+7	
		<hr/>	
	Gives water temp.	178	
	Subtract 19°	-19	
		<hr/>	
	Gives temp to start time	159	
	12° range of rise	+12	
		<hr/>	
	Gives temp. valve should cut in at (stop time)	171	

Start time at 159° (from recording chart). Stop time when divert valve moves into forward flow. The recording thermometer must travel the 12° range (in this case 159 to 171), in less than 5 seconds.

It is very important to have the water at the exact temperature needed, & rapidly agitate the water during these tests.

### RECORDER/CONTROLLER

CUT IN - Bring system into forward flow slowly (letting temp. rise 1° every 30 seconds). Read cut in temp. on INDICATING THERM. when divert valve moves into forward flow.

CUT OUT - Bring temp. down slowly. Read cut out temp. on INDICATING THERM. when divert valve moves into divert.

30 MINUTE CHECK ON CLOCK ON RECORDER - Time 30 minutes on stop watch compared to clock on recorder.

BOOSTER PUMP - PROPER WIRING - SHOULD BE DONE WHEN SEAL ON PRESSURE BOX OR CONTROL BOX IS BROKEN.

A. INTER-WIRED WITH FLOW DIVERSION DEVICE - Connect pasteurized pressure sensor to testing tee with the other end of the test tee capped. Turn on the air supply to provide adequate pressure differential. Place the recorder controller probe (recording therm.) in hot water, which is above the cut in temp. & turn on the metering pump. CAUTION: IF THERE IS WATER IN THE HTST SYSTEM, ENSURE THAT THE RECORDING THERM. AND PASTEURIZED PRESSURE SENSOR PORTS ARE CAPPED BEFORE THE METERING PUMP IS ENGAGED. At this time, the booster pump should start to run.

Remove the recording therm. probe from the hot water. When the flow diversion device moves into the diverted flow position, the booster pump must stop. Ensure that the pressure differential remains adequate & the metering pump continues to operate.

B. INTERWIRED WITH PRESSURE DIFFERENTIAL CONTROLLER - Put the recording therm. back into the hot water. Once the flow diversion device goes back into forward flow, the booster pump will operate. Decrease the air supply to the testing tee until the pressure is less

that 2 psi of the pressure on the raw milk pressure sensor. The booster pump must stop. Ensure that the flow diversion device remains in the forward flow position & the metering pump continues to operate.

**C. INTERWIRED WITH METERING PUMP** - Apply air pressure to the testing tee so that the pressure exceeds by at least 2 psi, the pressure on the raw milk pressure sensor. The booster pump should start running.

Turn off the metering pump. The booster pump should stop. Ensure that the pressure differential remains adequate & the flow diversion device remains in forward flow position.

### DIFFERENTIAL PRESSURE CONTROLLER

Loosen pressure sensors (let all water drain) while on press. Check to make sure raw & past. pressures are at zero. Attach sensors to test gage tee, check zero again. Compare pressure sensors to test gage at 0, 10, 20, 30, 40, & 50 psi. Digital display (or needles) must be within .5 psi of 0 psi, and be accurate within 1 psi of each other all the way upscale. Put back on press, check zero again.

**ANDERSON DIGITAL**--Checking Differential Switch Closure (Test High), Checking Differential Accuracy (Set Point), and Checking Differential Switch Opening (Test Low). Refer to separate instructions for testing digital differential pressures.

**TAYLOR CONTROLLER**--Set raw pressure needle at normal operating pressure while holding down test button, move past. needle up the scale until the light comes on (will hear click), note number of lbs. above the set raw needle, this is the booster cut in pressure. Let the past. needle down the scale (still holding down test button) until the light goes out, this is the booster cut out pressure. The booster pump should cut out at least 2 psi above the raw pressure (the white needle) and at least 2 psi below the cut in pressure.

**RESPONSE** -- Set pressure about normal operating pressure (both sensors are still on the test device), quickly exhaust the air supply to the test device, while watching the needles to assure they fall down the scale together. They **MUST** stay within 2 psi of each.

### MANUAL DIVERT

While the system is in forward flow, put system in manual divert. Valves must both divert within 1 second and booster pump should stop.

Digital display (or needles) on pressure box must fall without past. pressure getting any closer than 1 lb. to the raw pressure needle. PRESSURES MUST NOT CROSS. At least 1 lb. or more pressure must be maintained on the past. side than on the raw side.

Increase the pressure on the past. side of the regenerator, being careful not to damage the system, put the system into manual divert. Both valves should divert within 1 second and stay in the divert position. This is to test the springs in the valves.

## FLOW DIVERSION DEVICE CONTROL BOX

### INSPECT - Must be done below cut in temperature.

Put system in inspect. Valves will shift into forward flow position. Pull pins (or separate stem, depending on valve type) on divert valve, to simulate a valve not seated. Put system back into "run". Turn on the timing device to make sure it does not run. Put system back into inspect and put pin back in (or reassemble valve stem). Repeat test for leak detect valve. After both valves are reassembled turn on timing device, it should run.

MANUAL DIVERT - While the system is in forward flow, put system in manual divert. Valves must both divert within 1 second and booster pump should stop. Digital display (or needles) on pressure box must fall without past. pressure getting any closer than 1 lb. to the raw pressure needle. PRESSURES MUST NOT CROSS. At least 1 lb. or more pressure must be maintained on the past. side than on the raw side.

Increase the pressure on the past. side of the regenerator, being careful not to damage the system, put the system into manual divert. Both valves should divert within 1 second and stay in the divert position. This is to test the springs in the valves.

INSPECT - WIND DOWN TIME - While system is in forward flow, put into INSPECT. Valves should both divert within 1 second, timing pump must wind down to a COMPLETE STOP (all flow promoting devices stop) before the valves resume the forward flow position.

CIP DELAY - Check 10 minutes CIP time delay.

### HOLDING TIME

1. Saline Solution Mix - approximately 20 ounces of salt into 2 gallons of HOT water (Min. 160 F). Mix well.
2. Salt Injector - Check 'O' rings and valves on injector for leaking. (Recommend prior to every testing).
3. Test in diverted flow with system cold. BREAK the divert line so water will drain to the floor. Let the system run 3 - 5 minutes before equalizing timing device box.
4. Test in forward flow with system at a constant temperature. Let system run 3 - 5 minutes before equalizing. IT IS VERY IMPORTANT THAT TEMPERATURE REMAIN CONSTANT DURING TESTING (EXAMPLE 180-182 F). WATER must go to the drain. Air supply pressure must be greater than pasteurized pressure.
5. THERE SHOULD BE NO PRESSURE ON THE HOMOGENIZER.
6. Follow operating instructions for Model MTC-2000 Microprocessor Based Milk Pasteurization Testing System.

NOTE: WHEN EQUALIZING THE START AND STOP SANITRODES, TURN THE CORRESPONDING DIGITAL COUNTER CLOCKWISE UNTIL THE "START" LIGHT AND "STOP" LIGHT GO OUT. DEPRESS EACH BUTTON THREE OR FOUR TIMES. IF THE START LIGHT BLINKS ON, ROTATE THE START COUNTER CLOCKWISE A QUARTER TURN. DO THE SAME IF THE STOP LIGHT BLINKS WHEN YOU PRESS THE STOP PUSH BUTTON. AT THE POINT WHERE NEITHER BLINKS ON WHEN THE CORRESPONDING BUTTON IS DEPRESSED, PROPER EQUALIZATION IS ACHIEVED.

If the water temperature does not change between tests, you should not have to repeat the equalization procedure. Merely re-inject the salt. The unit should only require re-equalization when going from diverted flow to forward flow. Remember to always print each individual test.

**NOTE:** This is a condensed help guide for testing the different equipment under the sanitary seals of the state regulatory agents, it is not intended to replace the testing procedures in the PMO.

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# Broken Seal on Recorder Controller

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION			MILK PLANT EQUIPMENT TEST REPORT		
TEST	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)	
1.	Indicating thermometers (including air space): Temperature accuracy	3 months			
2.	Recording thermometers: Temperature accuracy	3 months	X	Shock test - OK *see remarks	
3.	Recording thermometers: Time accuracy	3 months	X	30 min. - OK	
4.	Recording thermometers: Checked against indicating thermometer	3 months	X	Daily by operator Ind - 175 Rec - 75	
5.	Flow diversion device: Proper assembly and function (HTST and HHST)			(List Product running on Ind/Rec check)	
5.1	Leakage past valve seat(s)	3 months			
5.2	Operation of valve stem(s)	3 months			
5.3	Device assembly (micro-switch) single stem	3 months			
5.4	Device assembly (micro-switch) dual stem	3 months			
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months			
5.6	Response time	3 months			
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months			
5.8	Time delay interlock (dual stem devices) (CIP)	3 months			
5.9	Leak Detect flush time delay (HTST only)	3 months			
6.	Leak-protect valves: Leakage (Vats only)	3 months			
7.	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months			
8.	Recorder-Controller: Thermometric response (HTST only)	3 months	X	3.1 sec., 158-170@177 (<5 sec)	
9.	Regenerator Pressure Controls				
9.1	Pressure Switches (HTST only)	3 months			
9.2	Differential pressure controllers				
9.2.1	Calibration	3 months			
9.2.2	Interwiring Booster Pump (HTST only)	3 months			
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months			
9.3	Additional Booster Pump Interwiring (HTST only)				
9.3.1	With FDD	3 months			
9.3.2	With Metering Pump	3 months			
10.	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, ir 10.3)	3 months	X	Daily by operator (HTST) Cut-in 170 Cut-out 169	
11.	Timing System Controls				
11.1	Holding time (HTST except magnetic flow meters)	6 months			
11.2.a	Magnetic Flow Meters (HTST only)	6 months			
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months			
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months			
11.2.d	Flow cut-in/cut out (HTST only)	6 months			
11.2.e	Time delay (after divert) (HTST only)	6 months			
11.3	HHST Indirect heating	6 months			
11.4	HHST Direct injection heating	6 months			
11.5	HHST Direct Infusion heating	6 months			
12.	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months			
13.	Production pressure-control switch setting (HHST and Aseptic)	3 months			
14.	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months			
Remarks			*Ind - 173 Iqd - 172 after boil - Ind - 173 after tee - Ind - 170	Test - 173 Rec - 172 Rec - 172 1/2 Rec - 170 1/2	
PLANT	IDENTITY OF EQUIPMENT	LOCATION	DATE	SANITARIAN	
48-XXXX Name of Plant	HTST #	City	00/00/00	Your Name	
NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix 1, Grade A Pasteurized Milk Ordinance.					

# Broken Seal on FDV Controller Box

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION			MILK PLANT EQUIPMENT TEST REPORT		
TEST	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)	
1.	Indicating thermometers (including air space): Temperature accuracy	3 months			
2.	Recording thermometers: Temperature accuracy	3 months			
3.	Recording thermometers: Time accuracy	3 months			
4.	Recording thermometers: Checked against indicating thermometer	3 months		Daily by operator	
5.	Flow diversion device: Proper assembly and function (HTST and HHST)				
5.1	Leakage past valve seat(s)	3 months	X	None - on water (Or product used)	
5.2	Operation of valve stem(s)	3 months	X	OK - Free Movement	
5.3	Device assembly (micro-switch) single stem	3 months		(Use only for Single Stem Valve)	
5.4	Device assembly (micro-switch) dual stem	3 months	X	OK - Both Valves (disassemble)	
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months	X	A, B, C, - OK	
5.6	Response time	3 months	X	≤ 1 sec. (Valves divert)	
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months	X	Inspect - OK (Homo run down time)	
5.8	Time delay interlock (dual stem devices) (CIP)	3 months	X	CIP Delay ≥ 10:00 min	
5.9	Leak Detect flush time delay (HTST only)	3 months	X	>1 sec. (Less than 5 sec. if restriction in line)	
6.	Leak-protect valves: Leakage (Vals only)	3 months			
7.	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months			
8.	Recorder-Controller: Thermometric response (HTST only)	3 months			
9.	Regenerator Pressure Controls				
9.1	Pressure Switches (HTST only)	3 months			
9.2	Differential pressure controllers				
9.2.1	Calibration	3 months			
9.2.2	Interwiring Booster Pump (HTST only)	3 months			
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months			
9.3	Additional Booster Pump Interwiring (HTST only)				
9.3.1	With FDD	3 months	X	OK - Booster stops when temperature is	
9.3.2	With Metering Pump	3 months			
10.	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, or 10.3)	3 months		Daily by operator (HTST)	
11.	Timing System Controls				
11.1	Holding time (HTST except magnetic flow meters)	6 months			
11.2.a	Magnetic Flow Meters (HTST only)	6 months			
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months			
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months			
11.2.d	Flow cut-in/cut out (HTST only)	6 months			
11.2.e	Time delay (after divert) (HTST only)	6 months			
11.3	HHST Indirect heating	6 months			
11.4	HHST Direct injection heating	6 months			
11.5	HHST Direct Infusion heating	6 months			
12.	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months			
13.	Production pressure-control switch setting (HHST and Aseptic)	3 months			
14.	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months			
Remarks					
PLANT	IDENTITY OF EQUIPMENT	LOCATION	DATE	SANITARIAN	
48-XXXX Name of Plant	HTST #	City	00/00/00	Your Name	

NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix I, Grade A Pasteurized Milk Ordinance.



# Broken Seal on Timing Pump

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION			MILK PLANT EQUIPMENT TEST REPORT		
TEST NO.	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)	
1	Indicating thermometers (including air space): Temperature accuracy	3 months			
2	Recording thermometers: Temperature accuracy	3 months			
3	Recording thermometers: Time accuracy	3 months			
4	Recording thermometers: Checked against indicating thermometer	3 months		Daily by operator	
5	Flow diversion device: Proper assembly and function (HTST and HHST)				
5.1	Leakage past valve seat(s)	3 months			
5.2	Operation of valve stem(s)	3 months			
5.3	Device assembly (micro-switch) single stem	3 months			
5.4	Device assembly (micro-switch) dual stem	3 months			
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months			
5.6	Response time	3 months			
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months			
5.8	Time delay interlock (dual stem devices) (CIP)	3 months			
5.9	Leak Detect flush time delay (HTST only)	3 months			
6	Leak-protect valves: Leakage (Vals only)	3 months			
7	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months			
8	Recorder-Controller: Thermometric response (HTST only)	3 months			
9	Regenerator Pressure Controls				
9.1	Pressure Switches (HTST only)	3 months			
9.2	Differential pressure controllers				
9.2.1	Calibration	3 months			
9.2.2	Interwiring Booster Pump (HTST only)	3 months			
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months			
9.3	Additional Booster Pump Interwiring (HTST only)				
9.3.1	With FDD	3 months			
9.3.2	With Metering Pump	3 months	X	OK - booster stops when timing pump stops.	
10	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, or 10.3)	3 months		Daily by operator (HTST)	
11	Timing System Controls				
11.1	Holding time (HTST except magnetic flow meters)	6 months	X	6 forward flow average/6 divert flow average	
11.2.a	Magnetic Flow Meters (HTST only)	6 months		List all 6 test for each type of flow	
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months			
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months		NOTES: Disconnect lines so salt doesn't	
11.2.d	Flow cut-in/cut out (HTST only)	6 months		go into balance tank.	
11.2.e	Time delay (after divert) (HTST only)	6 months		Maintain constant temperature.	
11.3	HHST Indirect heating	6 months		NO pressure on Homo.	
11.4	HHST Direct injection heating	6 months		Operate at maximum capacity	
11.5	HHST Direct Infusion heating	6 months			
12	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months			
13	Production pressure-control switch setting (HHST and Aseptic)	3 months			
14	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months			

Remarks

If salt times are <120% of the minimum required holding time you must do can fill in **FORWARD FLOW** on Milk & Water - show all calculations. You must use most viscose product for can fills.

Average times if not more than .5 sec. difference - if more than .5 Sec. - use fastest time

PLANT	IDENTITY OF EQUIPMENT	LOCATION	DATE	SANITARIAN
48-XXXX Name of Plant	HTST #	City	00/00/00	Your Name

NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix 1, Grade A Pasteurized Milk Ordinance.

# Broken Seal on a Meter Based Timing System

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION			MILK PLANT EQUIPMENT TEST REPORT		
TEST NO.	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)	
1	Indicating thermometers (including air space): Temperature accuracy	3 months			
2	Recording thermometers: Temperature accuracy	3 months			
3	Recording thermometers: Time accuracy	3 months			
4	Recording thermometers: Checked against indicating thermometer	3 months		Daily by operator	
5	Flow diversion device: Proper assembly and function (HTST and HHST)				
5.1	Leakage past valve seat(s)	3 months			
5.2	Operation of valve stem(s)	3 months			
5.3	Device assembly (micro-switch) single stem	3 months			
5.4	Device assembly (micro-switch) dual stem	3 months			
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months			
5.6	Response time	3 months			
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months			
5.8	Time delay interlock (dual stem devices) (CIP)	3 months			
5.9	Leak Detect flush time delay (HTST only)	3 months			
6	Leak-protect valves: Leakage (Vals only)	3 months			
7	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months			
8	Recorder-Controller: Thermometric response (HTST only)	3 months			
9	Regenerator Pressure Controls				
9.1	Pressure Switches (HTST only)	3 months			
9.2	Differential pressure controllers				
9.2.1	Calibration	3 months			
9.2.2	Interwiring Booster Pump (HTST only)	3 months			
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months			
9.3	Additional Booster Pump Interwiring (HTST only)				
9.3.1	With FDD	3 months			
9.3.2	With Metering Pump	3 months	X	OK	
10	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, or 10.3)	3 months		Daily by operator (HTST)	
11	Timing System Controls				
11.1	Holding time (HTST except magnetic flow meters)	6 months	X	6 Forward Flow (average)	
11.2.a	Magnetic Flow Meters (HTST only)	6 months		(List all times for forward)	
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months	X	Alarm 125 Flow 120 Diverted 175F	
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months	X	Decrease flow below loss of signal set point or disrupt power to meter. Valves - STL/R/Flow Controller frequency parts must divert	
11.2.d	Flow cut-in/cut out (HTST only)	6 months	X	Alarm 120 Flow 115 Cut-out 120/Cut-in 117' (no delay between valves and controller)	
11.2.e	Time delay (after divert) (HTST only)	6 months	X	>or = required holding time - list time	
11.3	HHST Indirect heating	6 months			
11.4	HHST Direct injection heating	6 months		LIST TYPE OF METER:	
11.5	HHST Direct infusion heating	6 months			
12	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months			
13	Production pressure-control switch setting (HHST and Aseptic)	3 months		LIST TYPE OF FLOW CONTROLLER:	
14	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months			
Remarks					
<p>1. Variable Free Drive - Positive shut-off valve must close when timing pump is not running.</p> <p>2. Centrifugal pump with flow control valve - must close when timing pump is not running.</p>					
PLANT	IDENTITY OF EQUIPMENT	LOCATION	DATE	SANITARIAN	
48-XXXX Name of Plant	HTST #	City	00/00/00	Your Name	

NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix 1, Grade A Pasteurized Milk Ordinance.

FORM FDA 2359 (2/99) PREVIOUS EDITIONS ARE OBSOLETE. Created by Electronic Document Services/USDHHS (301) 443-2454

# Broken Seal on MAG Flow Meter ERC Taylor Flow Controller (HELP GUIDE ONLY)

DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION			MILK PLANT EQUIPMENT TEST REPORT	
TEST NO.	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)
1	Indicating thermometers (including air space): Temperature accuracy	3 months		
2	Recording thermometers: Temperature accuracy	3 months		
3	Recording thermometers: Time accuracy	3 months		
4	Recording thermometers: Checked against indicating thermometer	3 months		Daily by operator
5	Flow diversion device: Proper assembly and function (HTST and HHST)			
5.1	Leakage past valve seat(s)	3 months		Level 1: Display
5.2	Operation of valve stem(s)	3 months		
5.3	Device assembly (micro-switch) single stem	3 months		Level 2: Pen 1 - flow rate input
5.4	Device assembly (micro-switch) dual stem	3 months		- In out - high signal 20 ma
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months		- In put - low signal 4 ma
5.6	Response time	3 months		- Sci - no function
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months		- Eng - no function
5.8	Time delay interlock (dual stem devices) (CIP)	3 months		Pen 2 - Not used
5.9	Leak Detect flush time delay (HTST only)	3 months		Pen 3 - Event pen
6	Leak-protect valves: Leakage (Vats only)	3 months		
7	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months		Level 3: Pen 1 - chart low 0
8	Recorder-Controller: Thermometric response (HTST only)	3 months		- chart high 150
9	Regenerator Pressure Controls			- Filter - No
9.1	Pressure Switches (HTST only)	3 months		Pen 2 - Not Used
9.2	Differential pressure controllers			Pen 3 - Chart speed
9.2.1	Calibration	3 months		Retransmission - Not Used
9.2.2	Interwiring Booster Pump (HTST only)	3 months		Pen 1 - Alarms - High 135
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months		- Low/loss of signal 10
9.3	Additional Booster Pump Interwiring (HTST only)			- Hysteresis 3
9.3.1	With FDD	3 months		- Acknowledge alarms - no
9.3.2	With Metering Pump	3 months		
10	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, 10.3)	3 months		Daily by operator (HTST)
11	Timing System Controls			
11.1	Holding time (HTST except magnetic flow meters)	6 months		Level 4: Pen Calibration - Pen 1 - High 2849
11.2.a	Magnetic Flow Meters (HTST only)	6 months		-Low 1070
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months		-Pen 2 - Not used
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months		-Pen 3 - High 2971
11.2.d	Flow cut-in/cut out (HTST only)	6 months		-Low 1161
11.2.e	Time delay (after divert) (HTST only)	6 months		
11.3	HHST Indirect heating	6 months		
11.4	HHST Direct injection heating	6 months		
11.5	HHST Direct Infusion heating	6 months		Level 5: Flow calibration - no controls adj.
12	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months		
13	Production pressure-control switch setting (HHST and Aseptic)	3 months		Level 6: Non existent
14	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months		

Remarks: **These are notes for doing the test, not in proper spaces.**  
 1. Dip switches - CR #3  
 2. Switch 1 - to lock ERC setting

F 48-XXXX Name of Plant	IDENTITY OF EQUIPMENT HTST #	LOCATION City	DATE 00/00/00	SANITARIAN Your Name
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NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix 1, Grade A Pasteurized Milk Ordinance.

# Broken Seal on Pressure Controller

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
PUBLIC HEALTH SERVICE - FOOD AND DRUG ADMINISTRATION

MILK PLANT EQUIPMENT TEST REPORT

TEST	TEST	Test Frequency	Test (X or NA)	RESULTS OF TEST (See Reverse for Working Notes)
1.	Indicating thermometers (including air space): Temperature accuracy	3 months		
2.	Recording thermometers: Temperature accuracy	3 months		
3.	Recording thermometers: Time accuracy	3 months		
4.	Recording thermometers: Checked against indicating thermometer	3 months		Daily by operator
5.	Flow diversion device: Proper assembly and function (HTST and HHST)			
5.1	Leakage past valve seat(s)	3 months		
5.2	Operation of valve stem(s)	3 months		
5.3	Device assembly (micro-switch) single stem	3 months		
5.4	Device assembly (micro-switch) dual stem	3 months		
5.5	Manual diversion - Parts (A, B, and C) (HTST only)	3 months	X	A, B, C, - OK
5.6	Response time	3 months		
5.7	Time delay interlock (dual stem devices) (Inspect)	3 months		
5.8	Time delay interlock (dual stem devices) (CIP)	3 months		
5.9	Leak Detect flush time delay (HTST only)	3 months		
6.	Leak-protect valves: Leakage (Vals only)	3 months		
7.	Indicating thermometers in pipelines: Thermometric response (HTST only)	3 months		
8.	Recorder-Controller: Thermometric response (HTST only)	3 months		
9.	Regenerator Pressure Controls			
9.1	Pressure Switches (HTST only)	3 months		
9.2	Differential pressure controllers			Anderson /Taylor (which type)
9.2.1	Calibration	3 months	X	Zero 00,00 (See below)
9.2.2	Interwiring Booster Pump (HTST only)	3 months	X	Ok - Booster cuts off (if pressure not
9.2.3	Interwiring FDD (HHST and Aseptic)	3 months		Maintained)
9.3	Additional Booster Pump Interwiring (HTST only)			
9.3.1	With FDD	3 months		
9.3.2	With Metering Pump	3 months		
10.	Milk-flow controls: Cut-in and cut out temperatures (10.1, 10.2, or 10.3)	3 months		Daily by operator (HTST)
11.	Timing System Controls			
11.1	Holding time (HTST except magnetic flow meters)	6 months		
11.2.a	Magnetic Flow Meters (HTST only)	6 months		
11.2.b	Flow Alarm (HTST, HHST, and Aseptic)	6 months		
11.2.c	Loss of signal alarm (HTST, HHST, and Aseptic)	6 months		
11.2.d	Flow cut-in/cut out (HTST only)	6 months		
11.2.e	Time delay (after divert) (HTST only)	6 months		
11.3	HHST Indirect heating	6 months		
11.4	HHST Direct injection heating	6 months		
11.5	HHST Direct Infusion heating	6 months		
12.	Controller: Sequence logic (HHST and Aseptic) (12.1 or 12.2)	3 months		
13.	Production pressure-control switch setting (HHST and Aseptic)	3 months		
14.	Injector differential pressure (HHST and Aseptic) (Injection heating)	3 months		

Remarks On press - OK 00 00 Test High - OK Test Low - OK Set Point \_\_\_\_\_  
On T - OK 00 00 (If Taylor list Booster cut in / cut out)

0-60 psi - OK 00 00 10 10 20 20 30 30 40 40 50 50 60 60

PLANT	IDENTITY OF EQUIPMENT	LOCATION	DATE	SANITARIAN
48-XXXX Name of Plant	HTST #	City	00/00/00	Your Name

NOTE: This form is a supplement to the Milk Plant Inspection Report FDA 2359, and these tests are in addition to the equipment requirements for which compliance is determined by inspection. See Appendix 1, Grade A Pasteurized Milk Ordinance.