



Operation/Service Manual

DH-100 Waste Dehydration System





To better serve your needs in the future, please record your equipments information below.

Model Number: DH-100	Serial Number:
Service Company:	Service Phone Number:
Rep/ Dealer:	Rep/Dealer Phone Number:
Somat Service Dept: 800-237-6628	
Somat Parts Dept: 800-237-6628	parts@somatcompany.com

To expedite service or parts, please have the above information available before you call. The serial number of your machine is located inside of the main electrical control panel for your Somat equipment.



SOMAT COMPANY LIMITED WARRANTY

SOMAT COMPANY warrants each new product manufactured by it to be free from defects in material and workmanship under normal use and service, which does not include normal wear of parts, ("normal use and service", with respect to Pulpers, Presses, water Hydra-Extractors, Waste Handling and Processing Systems, shall mean the handling only of waste items of the types listed in the SOMAT® Quotation or Sales Order therefore and within the **LIMITATIONS THEREIN** set forth), its obligation under this warranty being limited to repairing or replacing any part or parts thereof, free of charge **INCLUSIVE** of labor to remove and replace, f.o.b. factory from which shipped, which shall, within one year from initial start-up of the SOMAT® System or from date of original installation of the product if not a system be returned to SOMAT® at the factory from which shipped, with transportation charges prepaid, and which SOMAT's examination shall disclose to its satisfaction to have been thus defective. This warranty shall not apply to any product or part which shall have been repaired or altered by any person not employed or retained by SOMAT®, so as in the judgment of SOMAT® to affect its operation and reliability, nor which has been installed, operated, or maintained contrary to SOMAT® OPERATION or PREVENTIVE MAINTENANCE INSTRUCTION MANUALS or to other written instructions or drawings approved by SOMAT®, nor which has been subject to misuse, negligence, or accident. This warranty shall not apply should the SOMAT® System be initially started up without a duly authorized SOMAT® representative present.

EXCEPT AS HEREIN EXPRESSLY STATED, NO WARRANTY, EXPRESS, IMPLIED OR BY LAW, (INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), IS MADE BY SOMAT; AND IN ANY EVENT SOMAT'S LIABILITY, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR UNDER ANY WARRANTY, OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE RECEIVED BY IT AND SHALL IN NO EVENT INCLUDE ANY CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR OTHER SPECIAL DAMAGES.

NO CHANGE IN THIS WARRANTY AND LIMITATION OF LIABILITY AND NO SUBSTITUTE THEREFORE (WHETHER INCORPORATED IN A PURCHASE ORDER OR OTHERWISE) SHALL BE EFFECTIVE UNLESS SPECIFICALLY SET FORTH IN A WRITTEN INSTRUMENT SIGNED BY AN OFFICER OF SOMAT®.

!WARNING!

Customer action required!

All DH products **require** quarterly bearing maintenance. Failure to properly inspect the bearings and automatic greaser may result in premature failure and costly downtime.

!WARNING!

Table of Contents:

DH-100

Introduction.....

Safety Instructions

General Description & Definitions

Installation.....

Quick Guide

Start-up.....

Forms & Lists

Warranty Validation

Operation.....

Cleaning & Maintenance.....

Maintenance

Troubleshooting

Replacement Parts.....

Electrical Panel

Safety Precautions and Warnings



READ THE MANUAL COMPLETELY BEFORE ATTEMPTING TO OPERATE THE UNIT.

HIGH VOLTAGE! DO NOT PERFORM ANY REPAIRS TO MOTORS OR CONTROL SYSTEMS WITHOUT TURNING OFF THE MAIN POWER.

ALWAYS **TURN THE MAIN POWER OFF** AND LET ALL MOTORS COME TO A STANDSTILL BEFORE DOING ANY MAINTENANCE ADJUSTMENTS OR CLEANING OF THE UNIT.

BEFORE STARTING, BE SURE **ALL PERSONNEL ARE CLEAR** OF MOVING PARTS. KNOW LOCATION AND FUNCTIONS OF ALL **START/STOP BUTTONS** AND SAFETY SWITCHES.

DURING PERIODIC MAINTENANCE, **CHECK ALL SAFETY SWITCHES** TO BE SURE THEY ARE OPERATING PROPERLY.

DO NOT REMOVE OR ALTER GUARDS.

DO NOT REMOVE SAFETY LABELS. IF LABELS ARE MISSING OR DESTROYED, CONTACT FACTORY FOR REPLACEMENT.

DO NOT OBSTRUCT ELECTRICAL PANELS OR PUSH BUTTONS.

GOOD HOUSEKEEPING IS THE MOST IMPORTANT SAFETY PROCEDURE.

The unit shall be installed in accordance with national and local wiring regulations and all applicable codes.

*The unit **MUST** be placed at least 8" from the wall*

DO NOT pull or alter power cord. Pulling and misuse of the power supply cord can result in damage to the unit and cause electrical shock.

Ensure the electrical cord is properly grounded.

DO NOT place any materials on top of unit

DO NOT use water to clean the unit, use an approved stainless equivalent.

DO NOT alter the pre-programmed settings or disassemble the unit without first contacting Somat Company. Failure to do so may result in a voided warranty.

Turn off incoming power to unit and lockout breaker to perform any kind of maintenance or cleaning.

DO NOT open the input door during operation, it can cause odor issues and errors in the automated control and operation.

Ensure the unit and the area around the unit is clean. Proper maintenance of the unit is also highly recommended.

Please have ALL operators read this manual to ensure proper understanding of the unit and its operation.

Safety Precautions and Warnings

This equipment has locations which are hazardous and cause severe injury or death if warnings are not followed. Always turn off power before reaching into any unit! Maintenance to be performed by trained and authorized personnel.



This equipment has moveable lids protecting you from moving parts. Do not alter safety devices or guards. Do not reach into any part of the unit with the power turned on.



This equipment uses High Voltage! Only trained and authorized personnel should perform maintenance on the electrical components of this machine.



This equipment has moving parts that can crush and cut. Do not alter safety devices or guards. Do not reach into any part of the unit with the power turned on.

Caution: Damage will occur to this equipment if unsafe objects are fed into the machine(s). Keep these items out of the machine(s) to avoid component failure and unwanted downtime. When in doubt, keep it out of the machine(s)!



Always turn the power off before servicing the pulper!

GENERAL DESCRIPTION

The DH-100 is an automated on-site compostable waste dehydration system that dehydrates compostable waste using an energy-efficient and automated control process. The system requires no enzyme, additives or fresh water during the entirety of the dehydration process. The system is equipped with water recycling technology that uses the condensate runoff to control the humidity in the processing chamber during the process. The system also recycles the heat energy reducing overall energy consumption. The dehydration processing time will vary depending on the waste input but will be no longer than 24 hours. The system is equipped with an odor management device to control odors associated with the dehydration process. The one-touch control is fully automatic, sensing the status and providing feedback and control of the operation without pre-setting the timer.

Installation

UNPACKING

The crate containing your SOMAT® DH-100 will contain the following items:

DH-100

Condensate Hose

10' of 10/4 SO Power Cord

ELECTRICAL INSTALLATION

SUPPLYING THE SOM-A-TROL® WITH POWER

Use the supplied power cord to attach your own 3 phase plug or hardwire to a location of your choice.

Improper connection of the equipment grounding conductor can result in a risk of electrical shock. An equipment grounding conductor must be run with the circuit conductors and connected to the pulper/extractor grounding terminal.



DH QUICKLIST

CHECK SHAFT ROTATION:

Looking at side electrical panel



Counter-clockwise rotation for **NORMAL** operation



Clockwise rotation for **EMPTY**

CHECK DRAIN LINE:

Make sure drain line is not kinked, damaged, or obstructed in any way. Condensate is pumped out of the system, if line is blocked backups will occur.

CHECK ELECTRICS:

Use the touch screen for all controls. Pushbuttons are for emergency backup. All set-points are preset at the factory. Call Somat if these set-points need to be adjusted.

CHECK CLEARANCE:

Make sure unit is placed **NO CLOSER** than 8" from a wall. Proper air circulation is required.

CLEAN AIR FILTER:

EVERY CYCLE!!

CLEAN GASKET AREA:

EVERY CYCLE!!

Start Up

After installation is complete, your equipment will be started up by a qualified Somat service representative. This start up will get your unit running in accordance with Somat guidelines. The equipment may be demonstrated to you by the service company or the equipment rep themselves.

The Somat equipment carries a 1 year warranty from date of start up. To accurately track this information, we ask that you fill out the Warranty Registration Sheet below and fax back to us. This will ensure your equipment is registered with Somat's Service Department and will allow Somat's Service Department to efficiently process a warranty claim if one should arise.

You will also find copies of instructions for the equipment operators if the originally packaged laminated sheets are lost or damaged.



WARRANTY REGISTRATION FORM

Serial # :	Model # :	DH-100
------------	-----------	--------

Date of Start Up: ____/____/____

Customer Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Name: _____

Contact Number: _____ Fax: _____

Service Company: _____

City: _____ State: _____ Zip: _____

Please fax to:

Somat Company Service Department

717-291-0878

OR send with startup paperwork.

WARRANTY REGISTRATION FORM

Operation

OPERATING INSTRUCTIONS

After the unit has been connected to the proper power source, the proper rotation of the augers has been verified and the drain line has been routed its desired drain location, you are ready to process.

- Please use the touch screen for all operation commands described below. The push buttons should only be used if the touch screen becomes inoperable.
- Open the top lid, clean the screen filter and make sure the front discharge door is closed. Load the product to be processed into the dehydrator. The maximum fill level would be to the top of the paddles attached to the auger.
- Close the top lid.
- On the touch screen you will have access to the Batch Control screen. Simply press the Batch Start button, confirm that you have cleaned the filter and the unit will run until the cycle is complete. The green light on the start button will show a steady green light.
- Other miscellaneous monitoring information is displayed on this screen and is not necessary for daily operation. These are explained in further detail in the Screens section of the manual.
- When the unit has completed the batch it will automatically enter the cooling mode. The green light on the start button will begin to blink and the timer on the touch screen will begin to count down the time left for the cooling cycle.
- When the cooling cycle is complete a suitable container should be placed under the discharge door on the front of the unit and the discharge door opened. Press the End of Batch Discharge button to begin the discharge process. This process will shut off automatically. Close the discharge door.
- You are now ready to start a new batch.
- If any troubles occur during the processing of a batch, the unit will shut down and an alarm banner will be displayed on the touch screen indicating the issue and the probable cause. Please refer to the Screens section of the manual for further details.

DH-100 OPERATION INSTRUCTIONS

The DH-100 is designed to be operated by use of the touch screen panel. Use of the pushbuttons is only if the touch screen becomes inoperable.

To Start a New Batch:

- ✓ Close discharge door.
- ✓ Open top lid, clean screen filter, Load product into the DH-100. Maximum fill level the top of the paddles attached to center shaft.
- ✓ Close top lid.
- ✓ Press BATCH START on the touch screen



is at

Cooling Cycle:

- ✓ When batch is complete, unit will automatically enter cooling mode. The green pushbutton will blink and the timer on the touch screen will begin to countdown to cycle completion.

End of Batch Discharge:

- ✓ After the cooling cycle is complete, place a suitable container under the discharge door.
- ✓ Open discharge door.
- ✓ Press End of Batch Discharge button on the touch screen.
- ✓ Unit will shut off automatically.



Process a New Batch...



MAINTENANCE

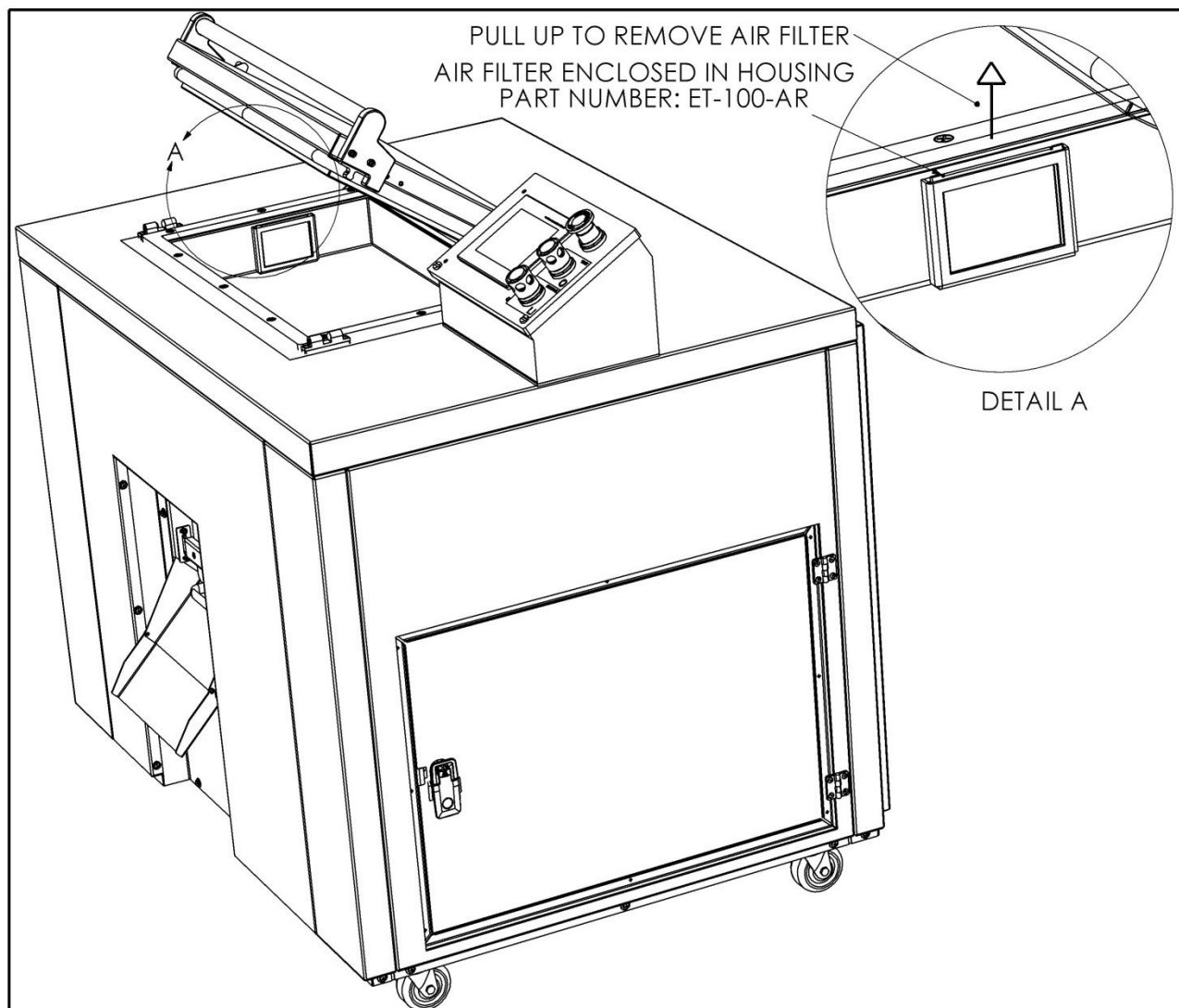
PERIODIC MAINTENANCE AND INSPECTION

These procedures consist primarily of regularly scheduled cleaning and inspections. The time intervals cited are based on normal use of the SOMAT® unit; approximately **one cycle per day**, five days per week. Equipment operating more than this or in severe service will require more frequent inspection/maintenance.

Continued adherence to these inspections will provide adequate lead time when ordering spare parts, thereby minimizing unnecessary and costly equipment downtime.

PREVENTIVE MAINTENANCE INSPECTION SCHEDULE

DH-100	DAILY	WEEKLY	MONTHLY	QUARTERLY
1. GENERAL				
a. Check shell and chamber for wear.			X	
b. Check exterior finish for corrosion.			X	
2. Drive				
a. Check seals for leakage			X	
b. Check bearings for noise & wear.			X	
c. Check chain tension.			X	
d. Check auto-greaser capacity				X
e. Check all door seals			X	X



STEPS TO CLEAN AIR FILTER BEFORE A NEW BATCH:

1. OPEN INPUT DOOR ON DH-100W
2. LOCATE THE AIR FILTER, WHICH IS SHOWN ON DETAIL A ON THE LEFT SIDE UNDER THE INPUT DOOR.
3. PULL THE AIR FILTER STRAIGHT UP OUT OF THE HOUSING WHERE IT IS LOCATED UNDER NORMAL OPERATION.
4. TO CLEAN AIR FILTER WASH WITH SOAP AND WATER AND DRY BEFORE PLACING BACK IN MACHINE.
5. PLACE FILTER BACK IN THE HOUSING.
6. START NORMAL BATCH OPERATION AND REPEAT PROCESS AND THE START OF EACH NEW BATCH TO INSURE FITER WORKS PROPERLY.

removal and replacement of major components, assemblies, or piece parts necessary for corrective action.

*Use exploded view diagrams located in the exploded view sections of this manual.



DRIVE MOTOR REMOVAL / CHAIN TENSION -

- After turning the circuit breaker off, remove cover on drive motor junction box and disconnect motor leads.
- Remove conduit from motor junction box.
- Remove the drive motor () from the tension plate by removing four machine screws from motor carriage.
- Adjust chain tension by loosening the four machine screws from the underside of the tension plate and adjust to ½" of chain travel.

SEAL REMOVAL – SPROCKET SIDE

- Turn power off
- Loosen drive motor & remove drive chain
- Remove sprocket.
- Remove bearing assembly
- Remove lip seals.

SEAL REMOVAL – ELECTRICAL PANEL SIDE

- Turn power off.
- Remove four ¼-20 screws holding electrical panel to the DH frame.
- Remove bearing assembly.
- Remove lip seals.

SEAL INSTALLATION –

- Install two lip seals per side.
- Lip side of seals must face each other in a [] fashion.
- Tap seals into position with a block of wood. Ensure seals are seated properly to avoid grease/waste leakage.

TROUBLESHOOTING



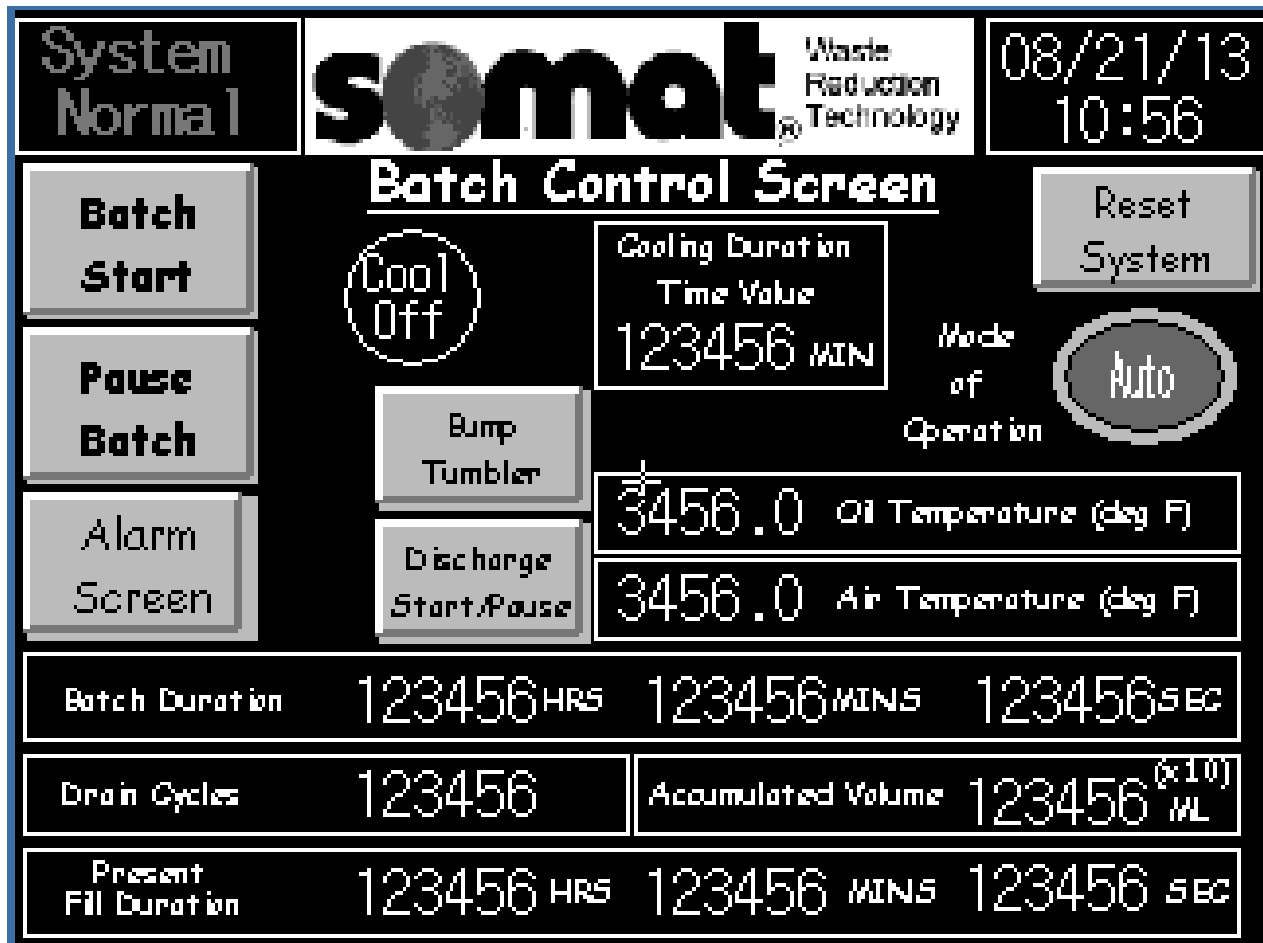
DeHydrator H.M.I. Screen Manual

Screen Name

Batch Control Screen
Batch Control Screen (cont.)
Auto & Time Only Feature
Events & Alarms
Main Menu
Discharge Setpoints
DeHydrator Temperatures
Runtime Archives
Heat Cycle Time Values
Automatic/Delay Control
Water Volume Track
Lubrication Service
Manual Control – 1
Manual Control -2
Service Screen – 1
Service Screen – 2

Banner Name

Condensate Level Control Alarm
Emergency Stop Alarm
Operational Reminder
Open Discharge Alarm
Open Top Lid Alarm
Tumbler Motor Overload
VAC Fuse Blown Alarm
VDC Fuse Blown Alarm
Blower Motor/Condensate Fan Alarm
No Condensate
Condensate Sump High



Batch Control Screen

Button Function:

Batch Start – Starts a new batch after the last batch has been discharged or resumes the current batch after a paused batch or an alarmed event.

Batch Pause – Pauses the current batch – will be restarted at current settings when the Batch Start button is pressed.

Discharge Start/Pause – After opening the discharge chute, pressing this button starts the discharge of a completed batch and resets the controls to begin a new batch. The discharge will run for a preprogrammed period of time or the button can be pressed again to pause the discharge.

Alarm Screen – Brings up the alarm screen where the time and type of alarm has been logged

Reset System – To abort a cycle or to reset an interrupted cycle when the unit has cooled down, the controls can be reset with the following steps. With the unit in a non-running state (pause batch if it is running), press and hold this button for 5 seconds. When released, you will be prompted to confirm that you want to reset the batch. Confirming will reset the batch to the beginning.

Auto & Time Only – This feature is used to override the condensation system in the event of a condensate pump failure or a condensate level sensor failure. See next page for procedure.

Cooling indicator and duration timer- Shows the state of cooling and if in the cooling mode the countdown timer shows the duration of time left till cooling is complete.

Batch Control Screen (continued)

Informational Sections:

Current Date and Time – This is used to log batch information into memory for various control functions. This appears on all screens.

Tank, Oil and air temperature are actual temperatures displayed in deg F.

Batch Duration – Displays how long the current batch has been running or has run prior to completing the cooling cycle.

Drain Cycles – Displays how many times the condensate collection tank has drained during the current batch.

Accumulated Volume – Displays the current volume of water removed from the current batch shown in ml x 10.

Present fill duration – Displays the live time that it is taking to fill the condensate collection tank.

Auto & Time Only Feature

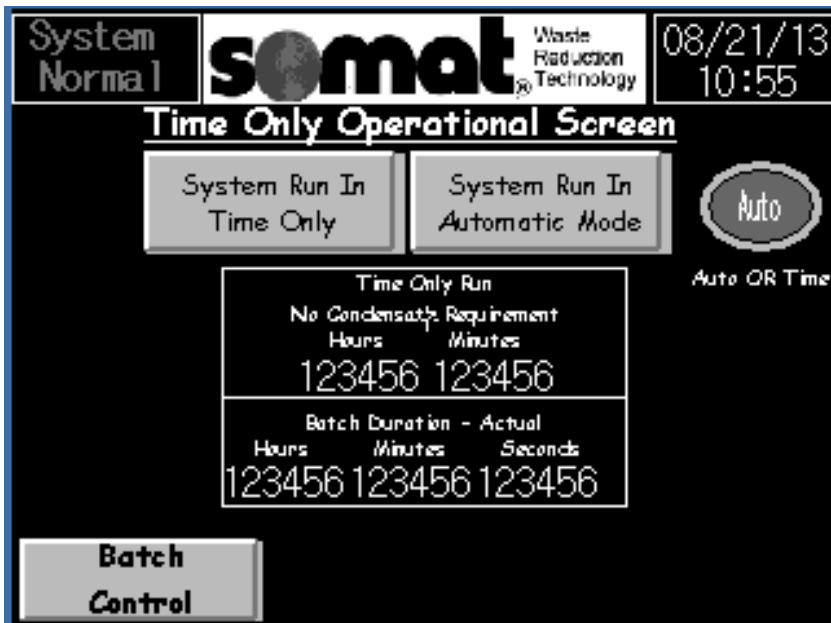
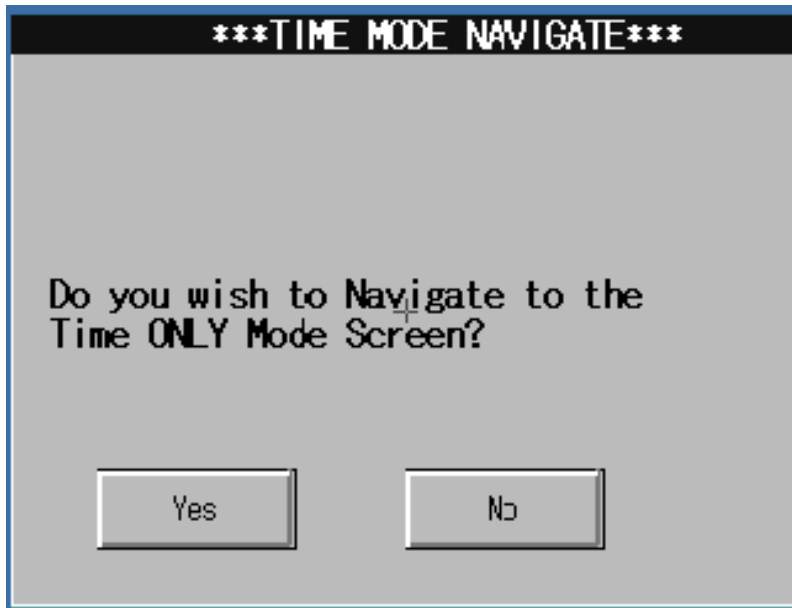
This feature is only used when there is a condensate pump or condensate system failure and the dehydrator is in the process of running a batch. To properly finish a batch this feature will continue the batch and bypass the condensate system until the fix is made. But, before any changes are made on the batch control screen some hoses need to be reoriented in the back of the dehydrator. First, remove rear panel which has holes in the stainless panel for the fans. There will be a hose connected to the panel for condensate drain. See Picture A as how the hoses should be hooked up under normal operation. Adjust the rear panel so that the top of the panel can rest on the DH-100W tank. Then, locate on the condensate tank two elbow fittings welded to the tank. Remove the hose the top fitting. Then, locate the plastic tee that is just above those fittings. Remove the hose from the left side of the tee connection. Then, place that lose end in the top fitting on the condensate tank which, should have no hose connected to. Then, the lose hose from the bottom fitting connect to the rear panel. See pictures to represent.



PICTURE A



Auto & Time Only Feature (Cont.)



Please follow steps and diagram above for the time only mode to work properly. After those steps are followed go to the batch control menu on the touch screen on the dehydrator. Locate the Auto button on the screen. Press and hold this button for 5 seconds. Then, this screen shown below will appear and then, hit the yes key. Then, you will see the next screen called Time Only Operational Screen. Then, after this screen appears hit the System Run In Time Only. Then, it will prompt you to enter time in minutes and hours. If the operator is unaware of how long the unit will not be functioning properly then, enter 15 hours. Otherwise the operator can set the time in hours first and minutes next. Press Batch Control Button and run as normal. After, the condensation error or malfunction is fixed and running properly. **Then, the hoses need to be**

switched back to their original location for the machine to function and run a batch properly. This is a very important step.

Then, after this step is complete go back to the batch control screen. This time we want to switch back to Auto Run. So, on the batch control screen the button will read time instead of Auto. To revert back to Auto Run, press and hold this button for 5 seconds. Then, the Time Only Operational Screen will appear. After, this screen appears hit the System Run in Automatic Mode button and it will revert back to Auto Run. Then, Press the Batch Control Button, and run batch as normal.

System
Normal

somat[®] Waste
Reduction
Technology

09/06/11
11:43

Dehydrator
Main Menu

Discharge Setpoints	Heat Cycle Time	Manual Control One	
Temperatures Dur. Setpts	Automatic or Delay Control	Manual Control Two	
Batch Control	Water Volume Tracking	Events/Alarms	
Run Times	Lubrication Service	Service 1	Service 2

Each button when pressed will take you to a screen with options to control that particular function.

System Normal	somat [®] Waste Reduction Technology	09/06/11 11:50
<u>Discharge Setpoints</u>		
End Of Batch Discharge	Discharge Duration Automatic Shutoff Setpoint (Minutes)	
	123456	
	Discharge Accumulated Value (Minutes)	
	123456 123456 SEC	
Main	Manual Control1	Manual Control2
	Water Volume	DeHyd Temps
		H.Cycle

Discharge Setpoints:

Shutoff Setpoint – Sets the duration that the discharge mode runs before shutting off automatically.

Accumulated Value – This is a live timer showing the actual time of current discharge.

System Normal	somat Waste Reduction Technology		09/06/11 11:49		
DeHydrator Temperatures					
3456.0 Tank Temperature (deg F)					
3456.0 Oil Temperature (deg F)			Oil Setpoint (deg F) 3456.0		
3456.0 Air Temperature (deg F)			Air Setpoint (deg F) 3456.0		
Actual Value 123456 MINS		Cooling Time Duration (Minutes) 123456 MIN			
Condensate Fill Duration Batch Complete Time Value					
Fill Setpoint 123456 MINS		Cooling Time Actual 123456 123456			
Main	Manual Control1	Water Volume	DeHyd Temps	H.Cycle Time	Dischrge

DeHydrator Temperatures:

Tank Temperature – Displays the current tank temperature

Oil Temperature – Displays the current Oil temperature and the setpoint is adjustable in deg F.
The recommended factory setpoint is 300 degree F.

Air Temperature - Displays the current Air temperature and the setpoint is adjustable in deg F.
The recommended factory setpoint is 320 degree F.

Condensate Fill Duration Batch Complete Time Value –

Actual Value – Duration of the current fill

Fill Set point – Adjustable time value in minutes that when this time is met the unit will begin the cooling cycle

Cooling Time Duration – Time that the cooling cycle will run before indicating that the batch is ready for discharge.

Cooling Time Actual – Live cooling duration counter.

System Normal	somat Waste Reduction Technology	01/17/12 08:32			
Run Time Archives					
<i>Most Recent Batch Duration</i>	123456 HRS	123456 MINS	123456 SEC		
<i>1st Most Recent Batch Duration</i>	123456 HRS	123456 MINS	123456 SEC		
<i>2nd Most Recent Batch Duration</i>	123456 HRS	123456 MINS	123456 SEC		
<i>3rd Most Recent Batch Duration</i>	123456 HRS	123456 MINS	123456 SEC		
Main	Manual Control1	Manual Control2	Water Volume	DeHyd Temps	Dischrge

Run Time Archives:

Most Recent Batch Duration – This is a live timer showing the present batch duration.

1st, 2nd and 3rd Most Recent Batch Duration – This is a record of how long the last three most recent batches took to process.

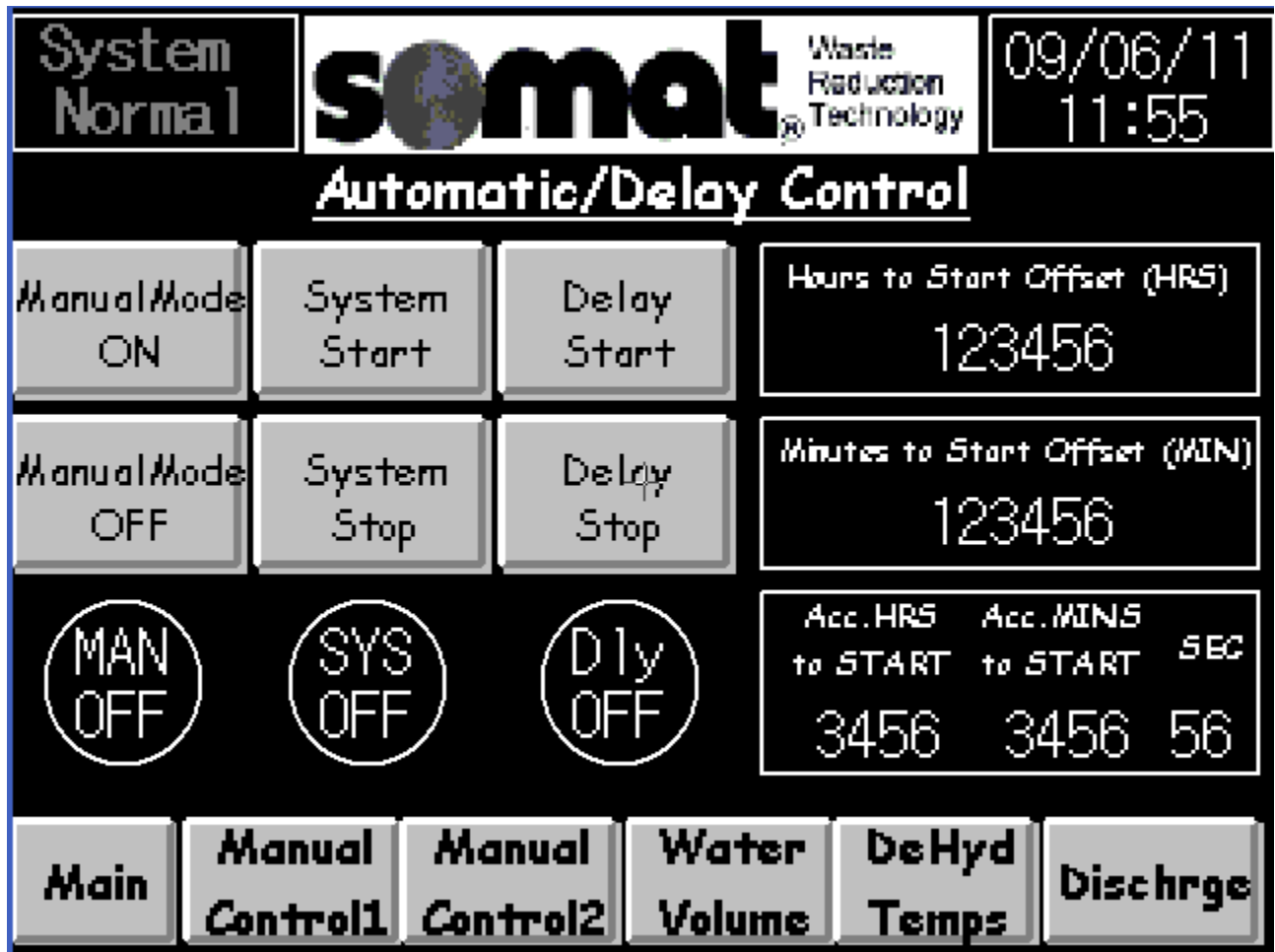
System Normal	somat [®] Waste Reduction Technology		09/06/11 11:49		
<u>Heat Cycle Time Values</u>					
Air Heat Duration	123456 HRS	123456 MINS	123456 SEC		
Air Heat Cycles	123456	+			
Oil Heat Duration	123456 HRS	123456 MINS	123456 SEC		
Oil Heat Cycles	123456				
Main	Manual Control1	Manual Control2	Water Volume	DeHyd Temps	Dischrge

Air Heat Duration – Indicates the total time that the air heater has been running during the current batch.

Air Heat Cycles – Indicates how many times the air heater has cycled during the current batch

Oil Heat Duration - Indicates the total time that the oil heaters have been running during the current batch.

Oil Heat Cycles - Indicates how many times the oil heaters have cycled during the current batch



Automatic/Delay Control:

This is an option designed for use at the SOMAT factory.

System Normal		somat Waste Reduction Technology		06/28/13 11:05	
Cycles Setpoint		123456		Water Volume Track	
Drain Cycles		123456		Accumulated Volume 123456 (ml x 10)	
Present Fill Duration		123456 MINS		123456 SEC	
1st Fill Duration		123456 MINS		123456 SEC	
2nd Fill Duration		123456 MINS		123456 SEC	
3rd Fill Duration		123456 MINS		123456 SEC	
4th Fill Duration		123456 MINS		123456 SEC	
5th Fill Duration		123456 MINS		123456 SEC	
Main	Manual Control1	Manual Control2	Heat Cycle	DeHyd Temps	Next Vol

Water Volume Track:

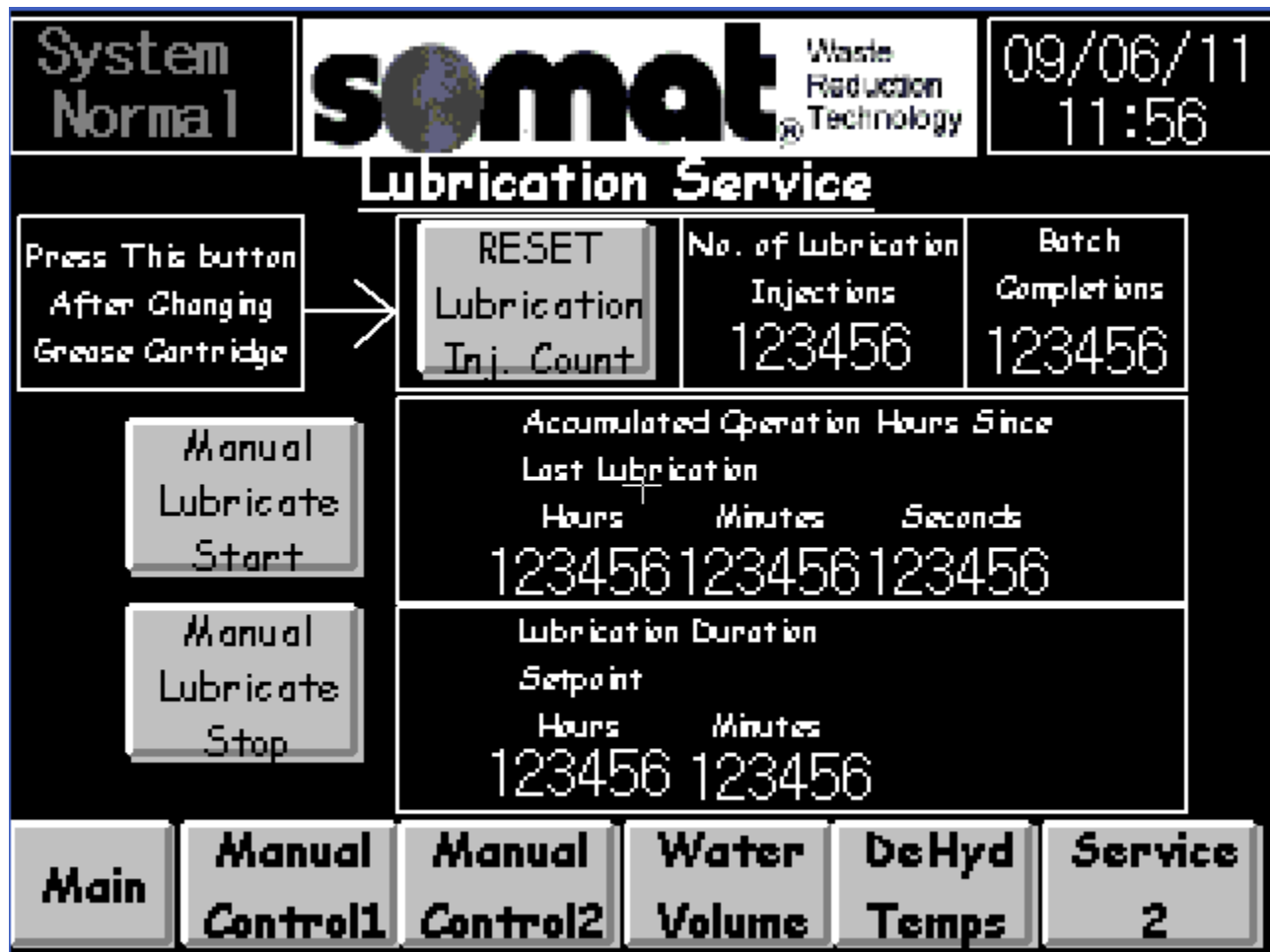
Cycles Set point – This is a button for use only in a maintenance situation where a live end of cycle situation has to be simulated. This allows for bypass of the initial 10 cycles that are not used for data in the PLC.

Drain Cycles – This is a current total of drain cycles that have occurred in the current batch.

Accumulated Volume – This is a current total of the volume of water removed from the current batch. The number is displayed in ml x 10.

Present Fill Duration – This is a live timer showing the time since the condensate tank was last drained.

1st – 5th Fill Duration – each time the condensate tank drains that time is put into the 1st fill duration slot and the rest all drop one position. Memory is created each time a batch is completed. The *Next Volume* key can scan more recent batches.



Reset Lubrication Injector Count – This button should be pressed when the grease cartridge has been changed. This will restart the counter that tracks the greaser and displays a warning when the cartridge needs to be replaced.

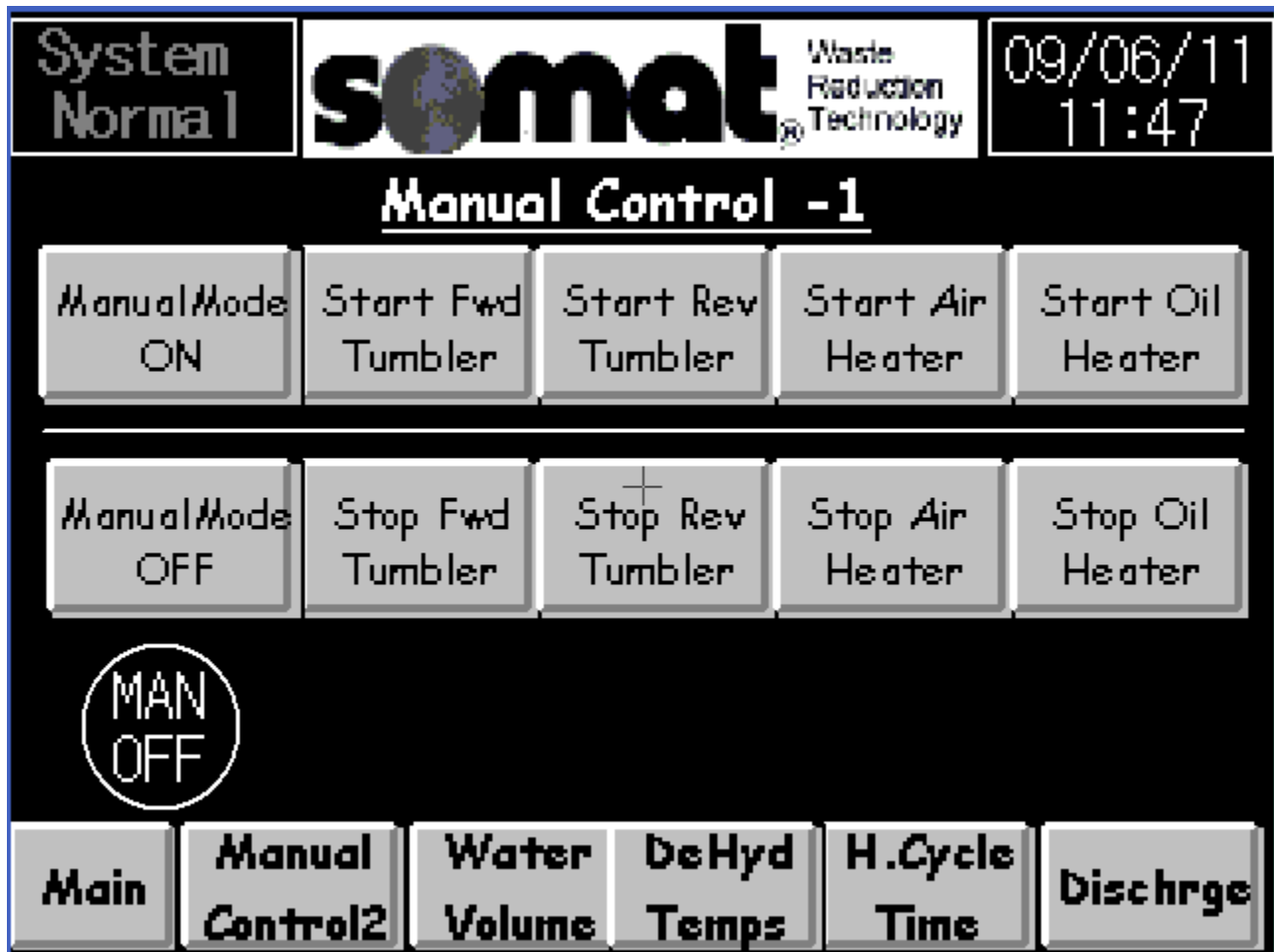
Number of Lubrication Injections – Live count of how many times the greaser has dispensed a shot of grease from the current cartridge.

Batch Completions – Total number of batches completed.

Accumulated Hours Since Last Lubrication – Live counter of running hours since the last time the greaser was activated.

Lubrication Duration Setpoint – Adjustable setpoint that, when this time is reached, calls for the greaser to lubricate the bearings.

Manual Lubricate Start/Stop – These buttons can be used to manually operate the greaser.



Manual Control – 1:

Manual Mode ON – Changes operations from automatic to manual control

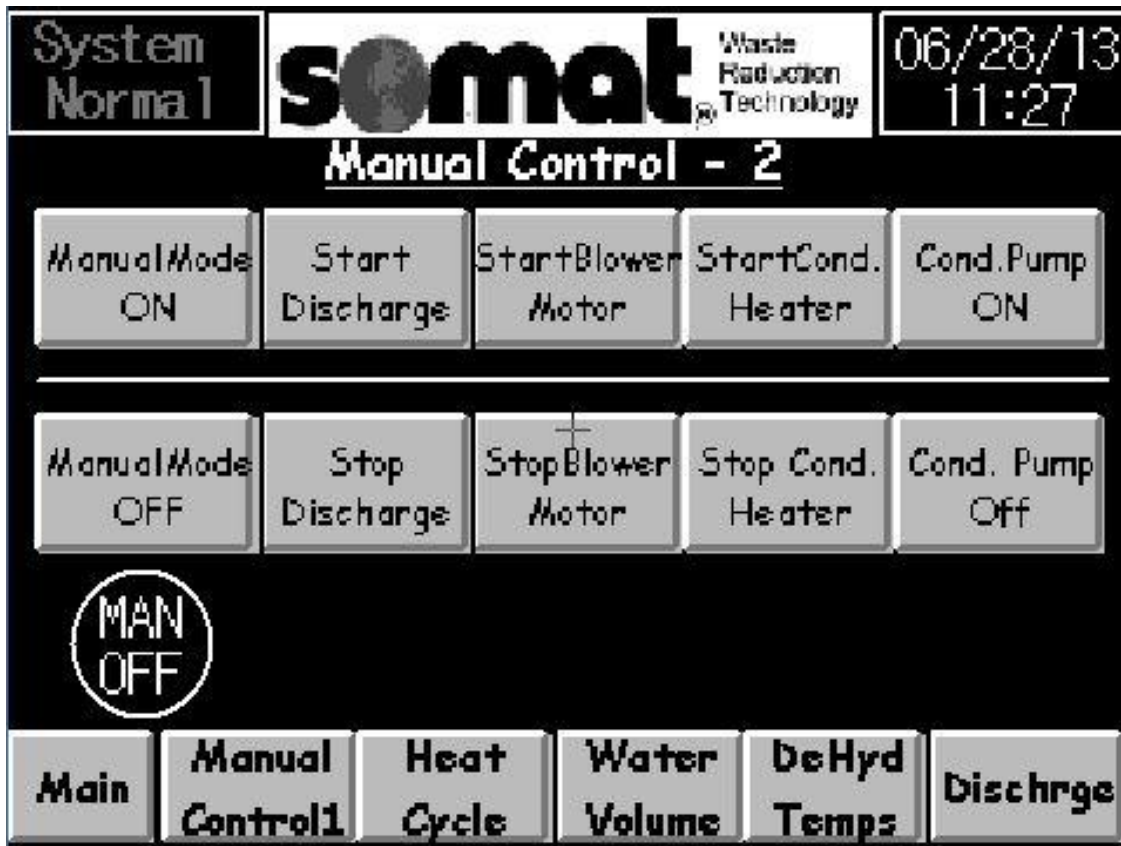
Manual Mode OFF – Changes operations back to automatic. It is important to remember to do this when finished in the manual mode as the operator only has access to the automatic controls.

Start/Stop Fwd Tumbler – These buttons operate the forward tumbler independently.

Start/Stop Rev Tumbler – These buttons operate the reverse tumbler independently.

Start/Stop Air Heater – These buttons operate the air heater independently.

Start/Stop Oil Heater – These buttons operate the oil heater independently.



Manual Control – 2:

Manual Mode ON – Changes operations from automatic to manual control

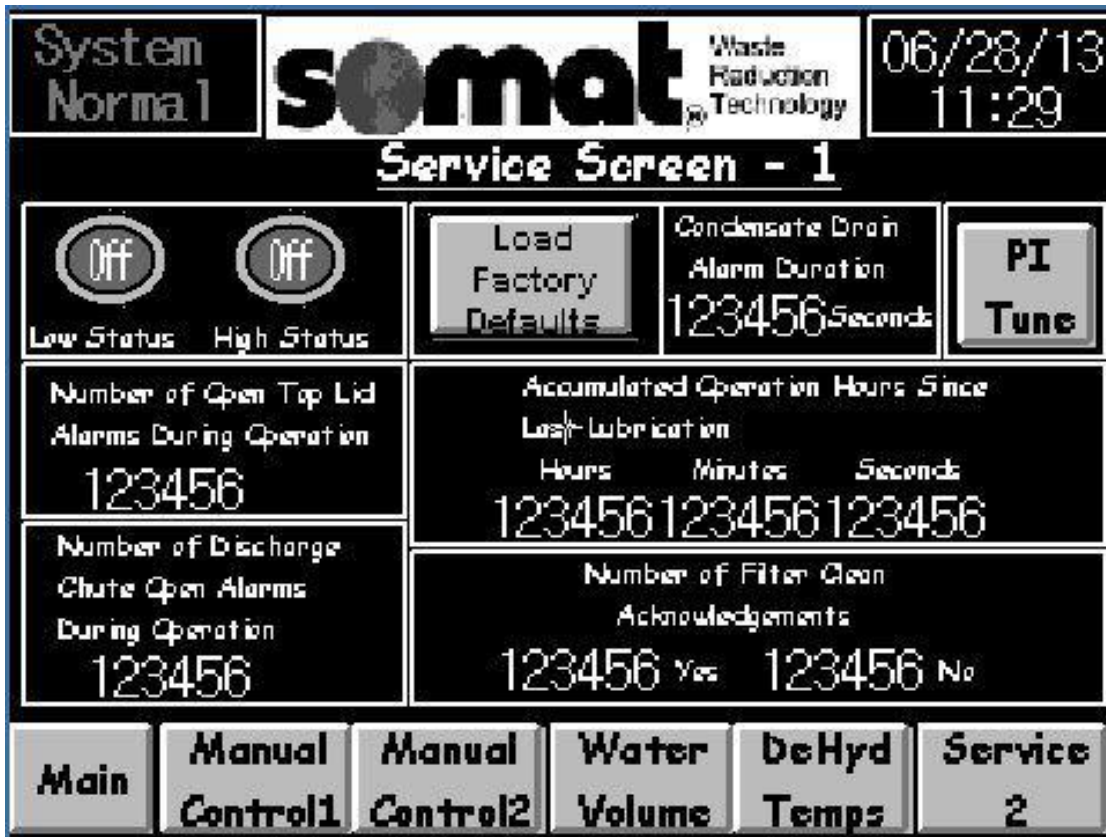
Manual Mode OFF – Changes operations back to automatic. It is important to remember to do this when finished in the manual mode as the operator only has access to the automatic controls.

Start/Stop Discharge – These buttons operate the discharge mode independently.

Start/Stop Blower Motor – These buttons operate the blower motor independently.

Start/Stop Cond. Heater – These buttons operate the condensate heater independently. (If equipped on unit)

Condensate Pump ON/OFF – These buttons allow for independent control of the condensate pump.



Service Screen – 1:

Duration of Condensate Valve Open per Drain Cycle – This is an adjustable setting that controls how long the solenoid stays open to drain the condensate tank.

Number of Condensate Top Lid Alarms During Operation – Indicates the number of times that the top lid has been opened during a batch run. It does not indicate lid openings while a batch is not running. This is an accumulating value that can be reset on Service Screen 2.

Number of Discharge Chute Open Alarms During Operation - Indicates the number of times that the discharge chute door has been opened during a batch run. It does not indicate door openings while a batch is not running. This is an accumulating value that can be reset on Service Screen 2.

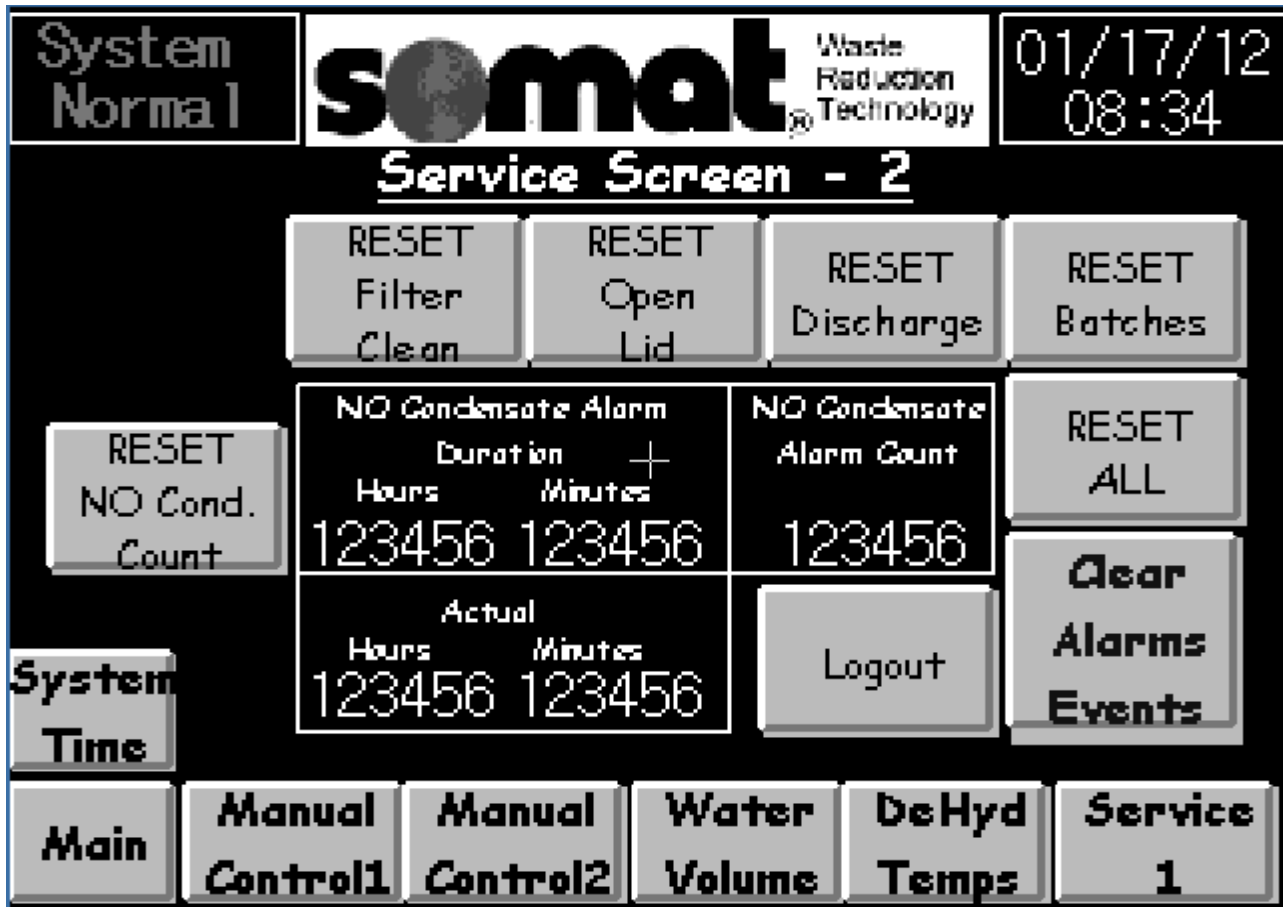
Load Factory Defaults – Sets or returns all setpoints to the standard factory settings.

Accumulated Operating Hours Since Last Lubrication – This live timer displays the real operating time since the last claimed lubrication. This can be reset in Service Screen 2.

Batch Completions – Running count of completed batches. This can be reset in Service Screen 2.

Number of Filter Clean Acknowledgements – Tracks the number of times the operator responded to the filter cleaning screen.

PI Tune- Used at the factory to set desired settings.



Service Screen 2:

Each of the individual buttons clears the indicated counter or timer.

Reset All – This button clears all of the counters and timers at once.

Clear Alarms/Events – This button clears all of the alarms and events in the Alarm screen.

No Condensate Alarm Duration – The adjustable time that is entered here will be a trigger to shut the batch down because there is no water being removed. This is in place to prevent an empty unit or a very dry load from running without reason.

Actual Timer – Shows the real time since the last condensate drain.

No Condensate Alarm Count – Running count of the no condensate alarm.

Logout – Used to exit password protected areas of the control screens.

System Time – This button is used to change the time and date on the system.

SYSTEM RESET

System Reset has been Selected.
Selecting this function bypasses
the Cooling Cycle and the
Discharge Cycle.

+

Do you wish to Continue?

Yes

No

System Reset – This banner appears when the RESET SYSTEM button is pressed and held for 5 seconds

CONDENSATE LEVEL CONTROL ERROR

The Condensate High Level Sensor is ON and the Low Level Sensor is OFF. This is an Abnormal Condition for the Condensate Level Control.

Check the operation of the Condensate Low and High Level Sensors.

Input 11 is ON when the level is above LOW.

Input 13 is ON when the level is above HIGH.

Acknowledge

This banner appears when the sensor indicates that the condensate tank is full and has been called to empty but the water level does not change. The batch will pause until the situation is addressed. After the problem has been fixed the button on the banner can be pressed and the system will restart and continue from the point at which it stopped.

*****EMERGENCY STOP ALARM*****

The EMERGENCY STOP BUTTON
Has Been Pressed!

If you wish to continue the batch,
Pull the ESTOP OUT and Select "YES"
Below.

If you wish to cancel the batch, Select
"NO" Below.

Continue
Batch?

Yes

No

This banner appears if the emergency stop button is pressed.

OPERATIONAL REMINDER

04/15/11
13:17

NEW BATCH START.
Has the FILTER BEEN CLEANED?

Please CONFIRM that the Condensate Pump
has POWER and the Water Line is not
KINKED.

(The Filter Should be Checked and
Cleaned after EACH BATCH RUN)

YES

No

This banner appears whenever the start button is pushed. These steps are key procedures in the proper operation of this machine. The response to this reminder is kept in a log on Service Screen 1. When an affirmative answer is given, the batch will start or resume.

*****OPEN DISCHARGE ALARM*****

The Discharge Door has been opened
during Batch Operation!
The Batch in Process is Interrrupted!

If you wish to continue the batch,CLOSE
the Discharge and Select "YES" Below.
If you wish to cancel the batch, Select
"NO" Below.

Continue
Batch?

Yes

No

This banner appears when the discharge door is opened during normal operation. The unit will shut down with this alarm. The door must be shut and then the batch can resume by pressing the yes button.

*****OPEN TOP LID ALARM*****

The Top Lid has been opened
during Batch Operation!

The Batch in Process is Interrrupted!

If you wish to continue the batch,
CLOSE the Lid and Select "YES" Below.
If you wish to cancel the batch, Select
"NO" Below.

Continue
Batch?

Yes

No

This banner appears when the top lid is opened during normal operation. The unit will shut down with this alarm. The lid must be shut and then the batch can resume by pressing the yes button.

*****TUMBLER MOTOR OVERLOAD*****

The TUMBLER Motor has OVERLOADED!

If you wish to continue the batch,
Clear the Overload, RESET the Motor
OVERLOAD and Select "YES"
Below.

If you wish to cancel the batch, Select
"NO" Below.

Continue
Batch?

Yes

No

This banner appears if the overload on the tumbler motor has tripped. Once the issue has been cleared and the overload reset, the batch can then be restarted with the yes button.

*****VAC FUSE BLOWN ALARM*****

The VAC FUSE has been detected as no longer Functioning.

(The VAC Fuse is located to the right of the Controller with a RED Wire into the TERMINAL.)

+

Acknowledge

This banner appears if the VAC fuse has no signal. This indicates a blown fuse. Replace the fuse and restart with the acknowledge button. If the situation reoccurs, contact a qualified electrician.

*****VDC FUSE BLOWN ALARM*****

The VDC FUSE has been detected as no longer Functioning.

(The VDC Fuse is located to the right of the Controller with a BLUE Wire into the TERMINAL.)

+

Acknowledge

This banner appears if the VDC fuse has no signal. This indicates a blown fuse. Replace the fuse and restart with the acknowledge button. If the situation reoccurs, contact a qualified electrician.

*****BLOWER MOTOR/CONDENSATE FAN ALARM*****

The Circuit Breaker (CB4) for the Blower Motor and Condensate Fans has TRIPPED. This could indicate that either the Blower Motor or one of the Condensate Fans have FAILED!

Acknowledge

This banner indicates a tripped breaker in the control panel for the fans. Reset once and if the problem reoccurs contact a qualified electrician.

NO CONDENSATE ALARM

A NEW Batch Has Started, BUT
there has been NO Condensate
DETECTED!

This may be CAUSED by the Following:

- 1) The Unit is not HEATING Properly.
- 2) A Material similar to SANDUST
has been placed in the machine.

Acknowledge

This banner appears when a new batch has been started but no condensate is being detected in the condensate tank. The alarm occurs after a predetermined waiting period. This time is set at 3 hours from the factory. This can be caused by dry product in the unit, improper heating of the unit or failure of the level sensor.

CONDENSATE SUMP HIGH ALARM

The Condensate Sump High Sensor Has Been Triggered. This Alarm is Triggered by a Clogged Condensate Line OR a FAILED Condensate Pump.

Check and clean the condensate line And confirm pump operation before continuing operation.

Acknowledge

This banner appears when the condensate pump fails to pump and the sump fills up causing the back-up alarm to trigger. This will occur if the pump fails, or the pump power supply is lost, or the discharge line from the pump is blocked or kinked.

*****THERMOCOUPLE ALARM/OPEN CIRCUIT*****

The Air Temperature Thermocouple
Circuit Has An Open Circuit or a High
Temperature Alarm

Check the Thermocouple Connections
For The Air Temperature. These
Connections are in the Orange
Terminal Blocks, Numbers 107 and 108

Acknowledge

Air Temperature Thermocouple – This banner appears when the thermocouple connection is lost for the air temperature.

*****THERMOCOUPLE ALARM/OPEN CIRCUIT*****

The Oil Temperature Thermocouple
Circuit Has An Open Circuit or a High
Temperature Alarm

Check the Thermocouple Connections
For The Oil Temperature. These
Connections are in the Orange
Terminal Blocks, Numbers 105 and 106

Acknowledge

Oil Temperature Thermocouple – This banner appears when the thermocouple connection is lost for the oil temperature.

*****THERMOCOUPLE ALARM/OPEN CIRCUIT*****

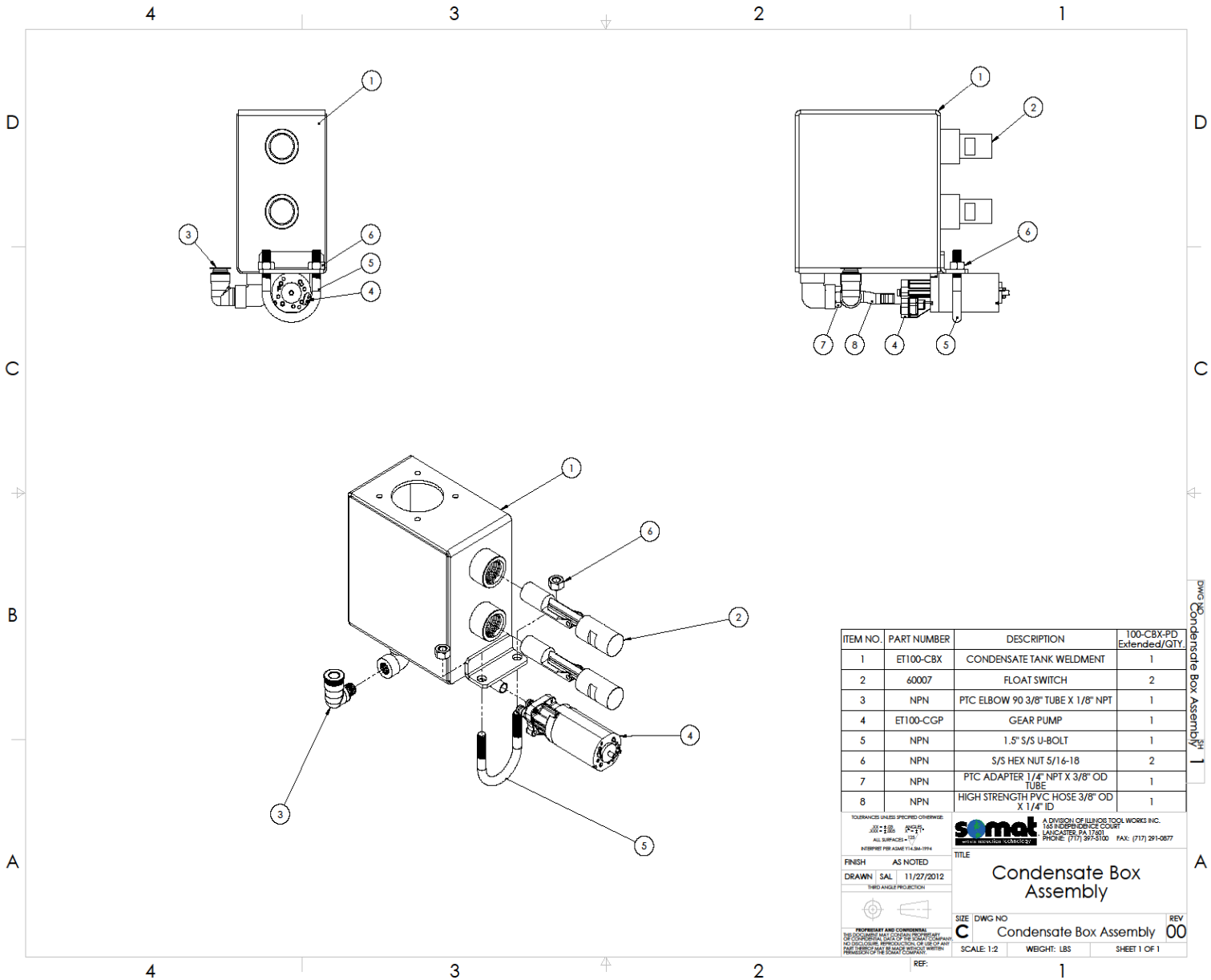
The Tank Temperature Thermocouple
Circuit Has An Open Circuit or a High
Temperature Alarm

Check the Thermocouple Connections
For The Tank Temperature. These
Connections are in the Orange
Terminal Blocks, Numbers 103 and 104

Acknowledge

Tank Temperature Thermocouple – This banner appears when the thermocouple connection is lost for the tank temperature.

REPLACEMENT PARTS & EXPLODED VIEWS



ITEM NO.	PART NUMBER	DESCRIPTION	100-CBX-PD Extended/QTY
1	ET100-CBX	CONDENSATE TANK WELDMENT	1
2	60007	FLOAT SWITCH	2
3	NPN	PTC ELBOW 90 3/8" TUBE X 1/8" NPT	1
4	ET100-CGP	GEAR PUMP	1
5	NPN	1.5" S/S U-BOLT	1
6	NPN	S/S HEX NUT 5/16-18	2
7	NPN	PTC ADAPTER 1/4" NPT X 3/8" OD TUBE	1
8	NPN	HIGH STRENGTH PVC HOSE 3/8" OD X 1/4" ID	1

TOLERANCES UNLESS SPECIFIED OTHERWISE:
 .0015" .0015" .0015"
 ALL SURFACES .015"
 INTERPRET PER ASME Y14.3M-1994

somet A DIVISION OF ILLINOIS TOOL WORKS INC.
 143 WINDY RIDGE COURT
 LANCASTER, PA 17601
 PHONE: (717) 297-8100 FAX: (717) 291-0877

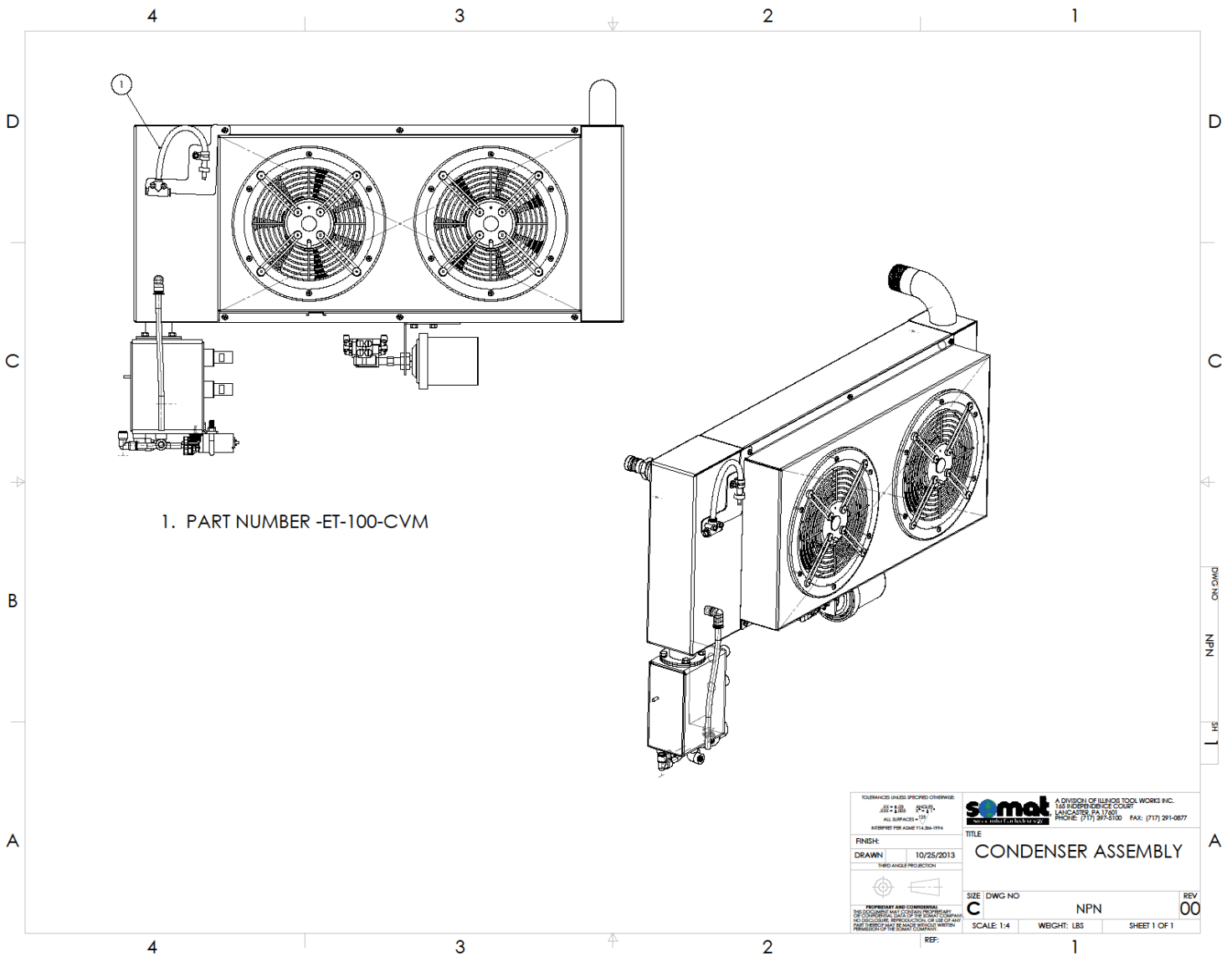
FINISH AS NOTED
 DRAWN SAL 11/27/2012
 THIRD ANGLE PROJECTION

REF: 1

SIZE DWG NO. REV
C Condensate Box Assembly 00

SCALE: 1:2 WEIGHT: LBS SHEET 1 OF 1

dwg Condensate Box Assembly 1



TOLERANCES UNLESS SPECIFIED OTHERWISE:
 .0001 .0002 .0005
 ALL SURFACES +.01
 INTERFERE FOR ASSEMBLY UNLESS NOTED

somet A DIVISION OF ILLINOIS TOOL WORKS INC.
 145 ANDERSON COURT
 LANCASTER, PA 17601
 PHONE: (717) 397-5100 FAX: (717) 391-0877

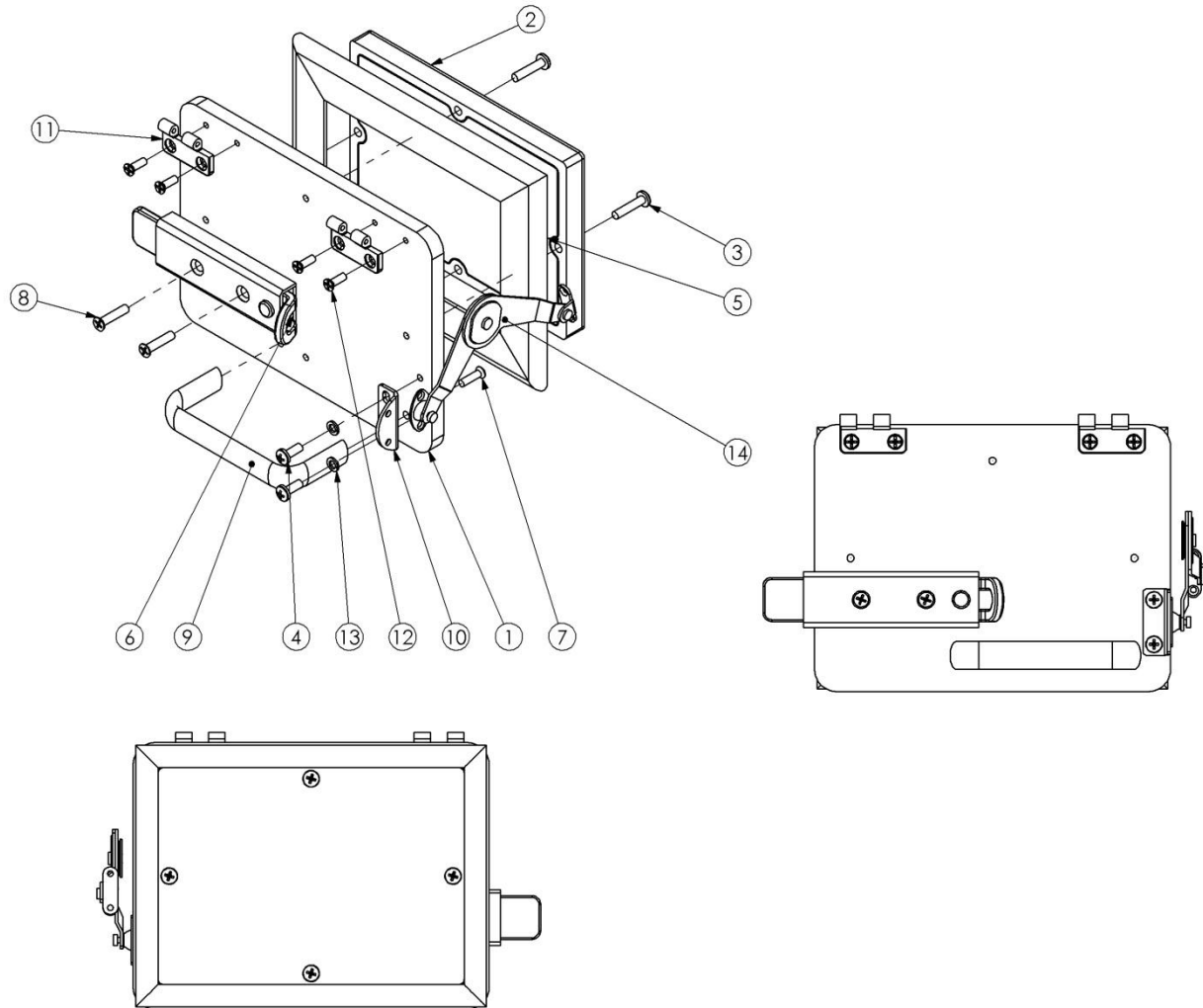
FINISH: _____
 DRAWN: 10/25/2013
 THIRD ANGLE PROJECTION

PROPERTY AND COMMERCIAL INFORMATION IS PROTECTED BY PATENT AND TRADE SECRET LAWS. ALL INFORMATION, INCLUDING THIS ONE, IS THE PROPERTY OF SOMERTECH, INC. AND IS TO BE KEPT CONFIDENTIAL. ANY UNAUTHORIZED DISCLOSURE OR REPRODUCTION OF THIS INFORMATION IS STRICTLY PROHIBITED.

TITLE	CONDENSER ASSEMBLY	REV	00
SIZE	DWG NO	NPN	
SCALE	1:4	WEIGHT	LBS
REF:			SHEET 1 OF 1

DISCHARGE DOOR ASSEMBLY

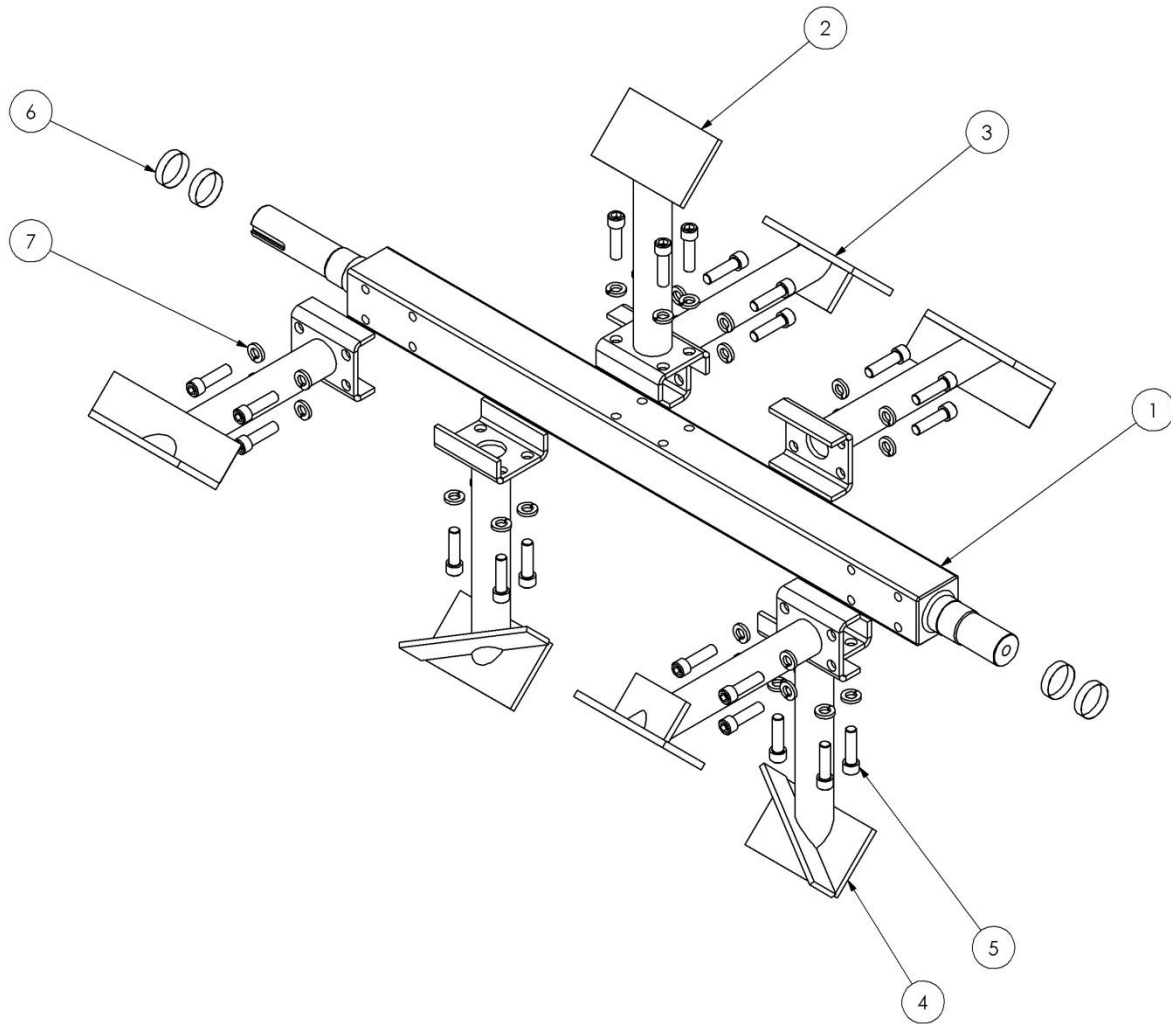
5-12



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	Discharge Door Front		1
2	Discharge Door Offset		1
3	NPN #10-32 SSPHMS X 7/8"	#10-32 X 7/8" S/S PAN HEAD PHILLIPS	4
4	NPN #10-32 SSPHMS X 1/2"	#10-32 X 1/2" S/S PAN HEAD PHILLIPS	2
5	Discharge Door Seal		1
6	-m5-60-206-8		1
7	NPN #8	#8-32 X 5/8" LG S/S FLAT HEAD PHILLIPS	2
8	NPN #10	#10-32 X 7/8" LG S/S FLAT HEAD PHILLIPS	2
9	35220	Anodized Aluminum Pull Handle	1
10	ET100-DDSB		1
11	NPN	Southco Hinge EH-4A-4V4-24	2
12	NPN #8	#8-32 X 1/2" LG S/S FLAT HEAD PHILLIPS	4
13	NPN #10 SS-LW	#10 S/S LOCK WASHER	2
14	S-21L		1

MIXER SHAFT ASSEMBLY

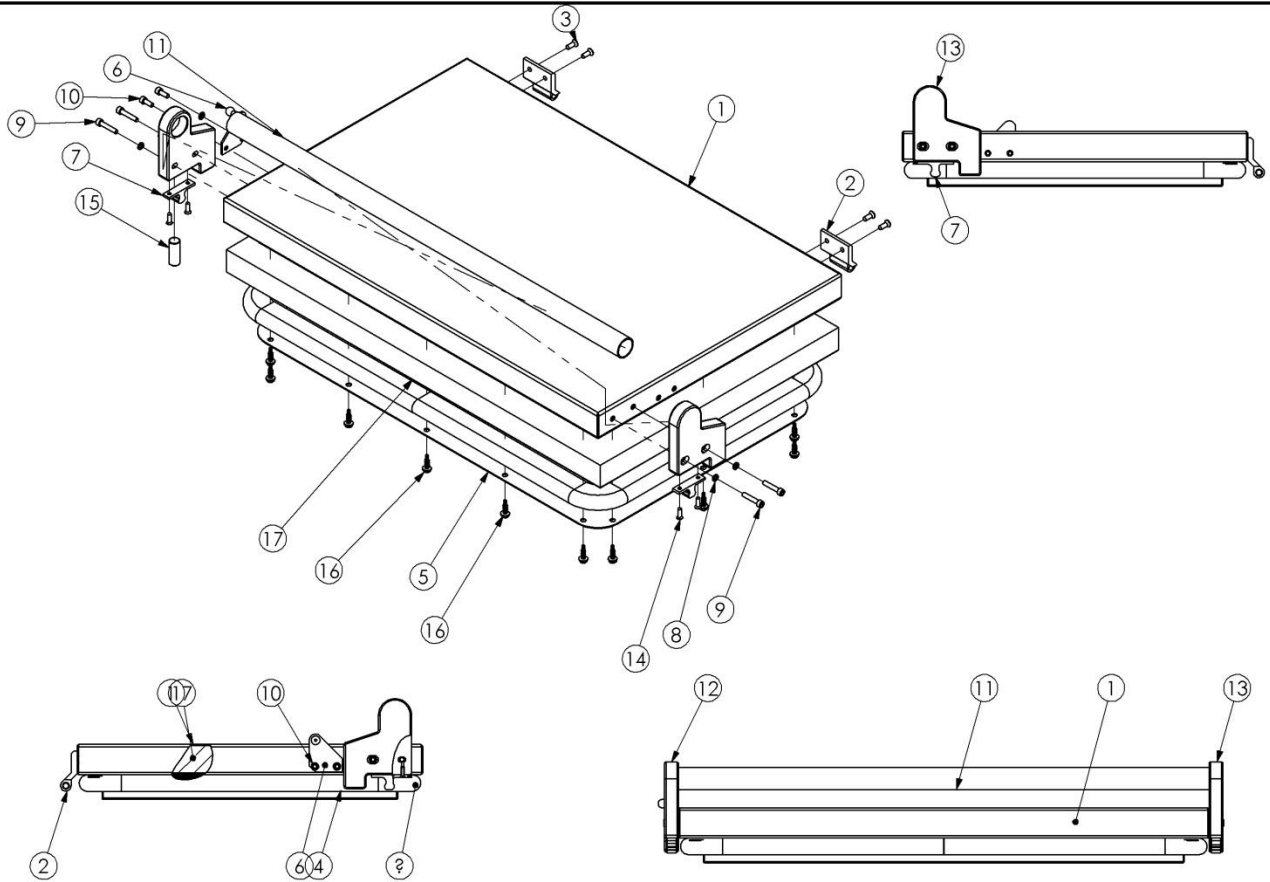
5-7



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	ET100-MS	MIXER SHAFT	1
2	ET100-PADM	MIDDLE PADDLE	1
3	ET100-PADL	LEFT SIDE PADDLE	3
4	ET100-PADR	RIGHT SIDE PADDLE	3
5	NPN 3/8-24X1.375 SS-SHCS	3/8"-24 X 1 3/8" S/S SOCKET HEAD CAP SCREW	28
6	NPN	SHAFT WEAR/REPAIR SLEEVE	4
7	NPN 3/8 SS-LW	3/8" S/S SPRING LOCK WASHER	28

INPUT DOOR ASSEMBLY

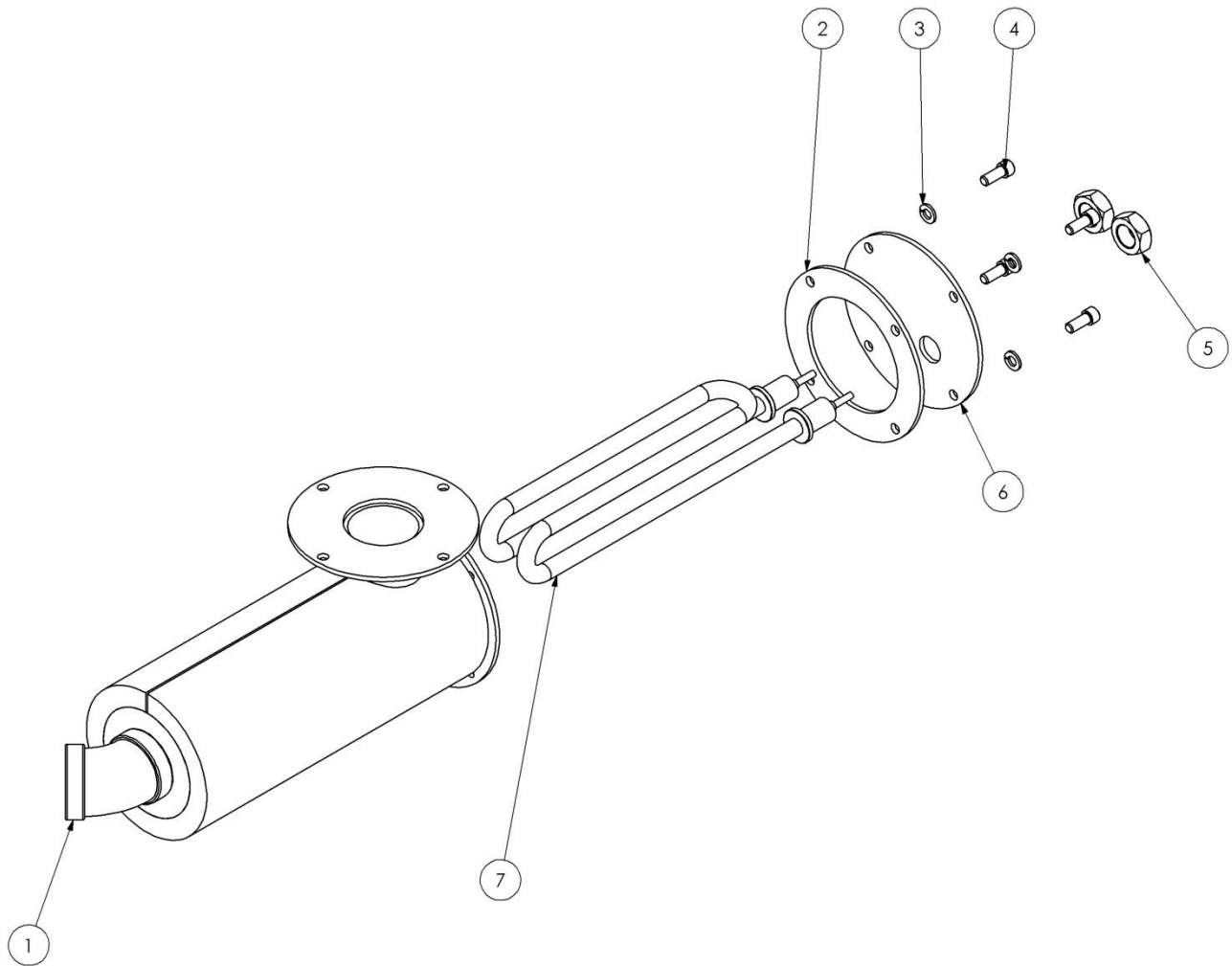
5-8



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	ET100-ID	INPUT DOOR TOP FORMED	1
2	NPN	SOUTHCO HINGE EH-6C-5V4-38	2
3	NPN #10-32X1/2 SS-FHMS	#10-32 X 1/2" S/S FLAT HEAD PHILLIPS	4
4	ET100-ILG	INPUT LID GASKET CLOSED CELL	1
5	ET100-IDGP	DOOR SEAL PLATE	1
6	NPN	GAS SPRING MOUNT TOP	1
7	NPN	LATCH SUGATSUNE BCTS-70-1	2
8	NPN #10 SS-LW	#10 S/S LOCK WASHER	6
9	NPN #10-32X1 SS-SHCS	#10-32 X 1" S/S SOCKET HEAD CAP SCREW	4
10	NPN #10-32X1/2 SS-SHCS	#10-32 X 1/2" S/S SOCKET HEAD CAP SCREW	2
11	ET100-IH	INPUT HANDLE 1" SEAMLESS PIPE	1
12	ET100-IHM-L	INPUT HANDLE MOUNT LEFT	1
13	ET100-IHM-R	INPUT HANDLE MOUNT RIGHT	1
14	NPN #8-32X1/2 SS-FHMS	#8-32 X 1/2" S/S FLAT HEAD PHILLIPS	4
15	ET100-LSM	Alnico Magnet 1/2" OD X 1 1/4" LG	1
16	NPN	#10-16 X 3/4" LG S/S TEK HEAD SELF DRILLING	16
17	NPN	1 1/4" FOIL BACKED FIBERGLASS INSULATION	1
18	ET100-IDR-2		1
19	ET100-IDPH		1

RETURN AIR HEATER ASSEMBLY

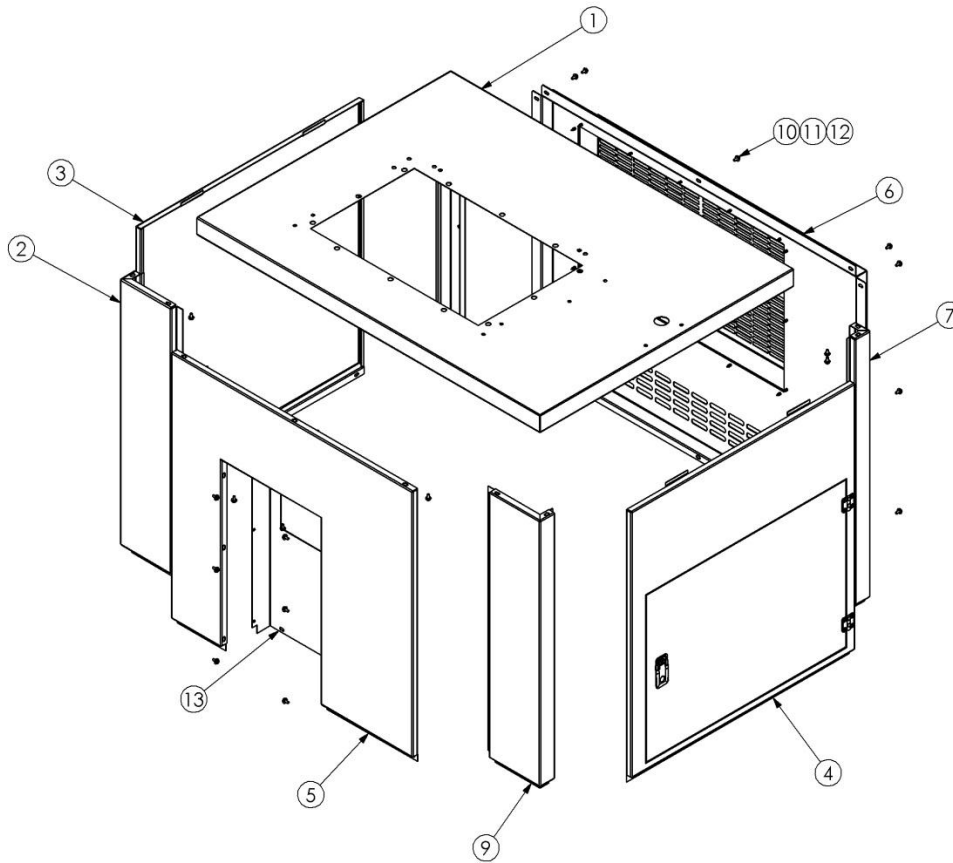
5-5



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	ET100-RAH	Return Air Manifold	1
2	ET100-ARG	Return Air Flange Gasket	1
3	NPN 1/4" SS-LW	1/4" S/S SPRING LOCK WASHER	4
4	NPN 1/4-20X5/8 SS-SHCS	1/4-20 X 5/8LG S/S SOCKET HEAD CAP SCREW	4
5	HJNUT 0.6250-18-D-N	Configuration	2
6	ET100-RAH-1	Return Air Heater Flange	1
7	ET100-AH	Return Air Heater 1.5 KW Incoloy	1

SHEETMETAL ASSEMBLY

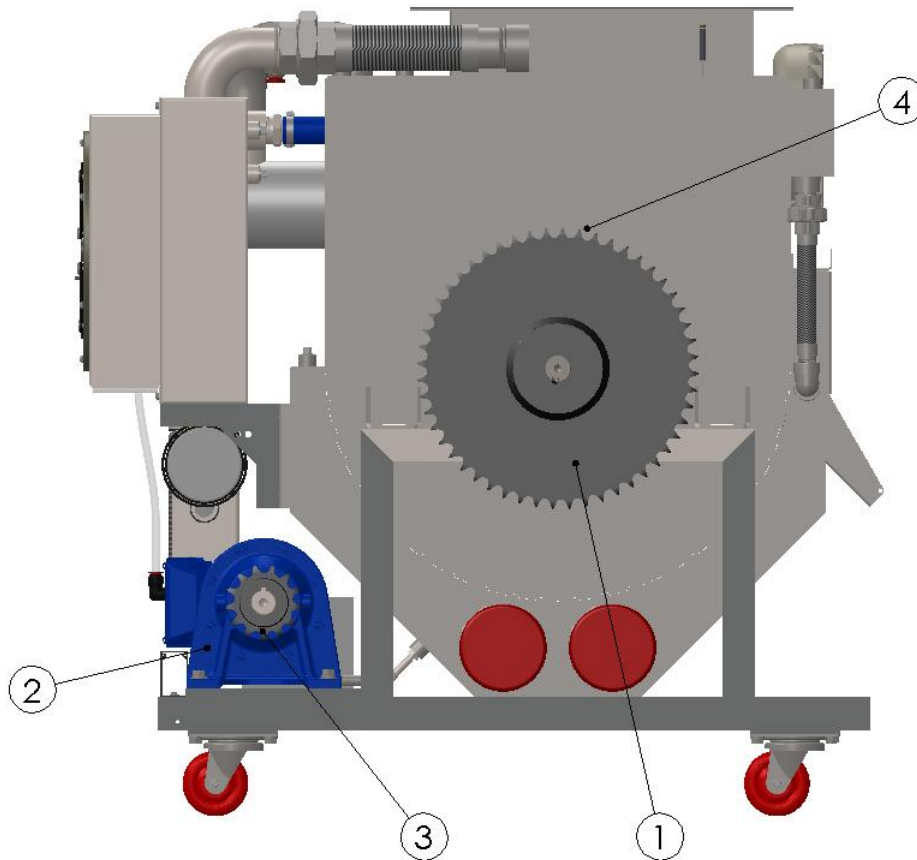
5-4



ITEM	PART NUMBER/ SUB ASSEMBLY	DESCRIPTION	QTY.
1	ET100-TP	TOP PANEL	1
2	ET100-FRTP-L	LEFT SIDE FRONT PANEL	1
3	ET100-DSP	DRIVE SIDE PANEL	1
4	ET100-ESP	ELECTRICAL SIDE PANEL ASSEMBLED	1
5	ET100-FRTP-C	CENTER FRONT PANEL	1
6	ET100-CDP	CONDENSER PANEL	1
7	ET100-BCRN-R	BACK CORNER RIGHT	1
8	ET100-BCRN-L	ET100-BCRN-L	1
9	ET100-FRTP-R	RIGHT SIDE FRONT PANEL	1
10	NPN #10-32 SSPHMS X 1/2"	#10-32 X 1/2" S/S PAN HEAD PHILLIPS	28
11	NPN #10 SS-LW	#10 S/S LOCK WASHER	28
12	NPN #10 SSFW	#10 S/S REGULAR FLAT WASHER	28
13	ET100-DFC	DISCHARGE FLANGE COWLING	1

DRIVE ASSEMBLY

5-13



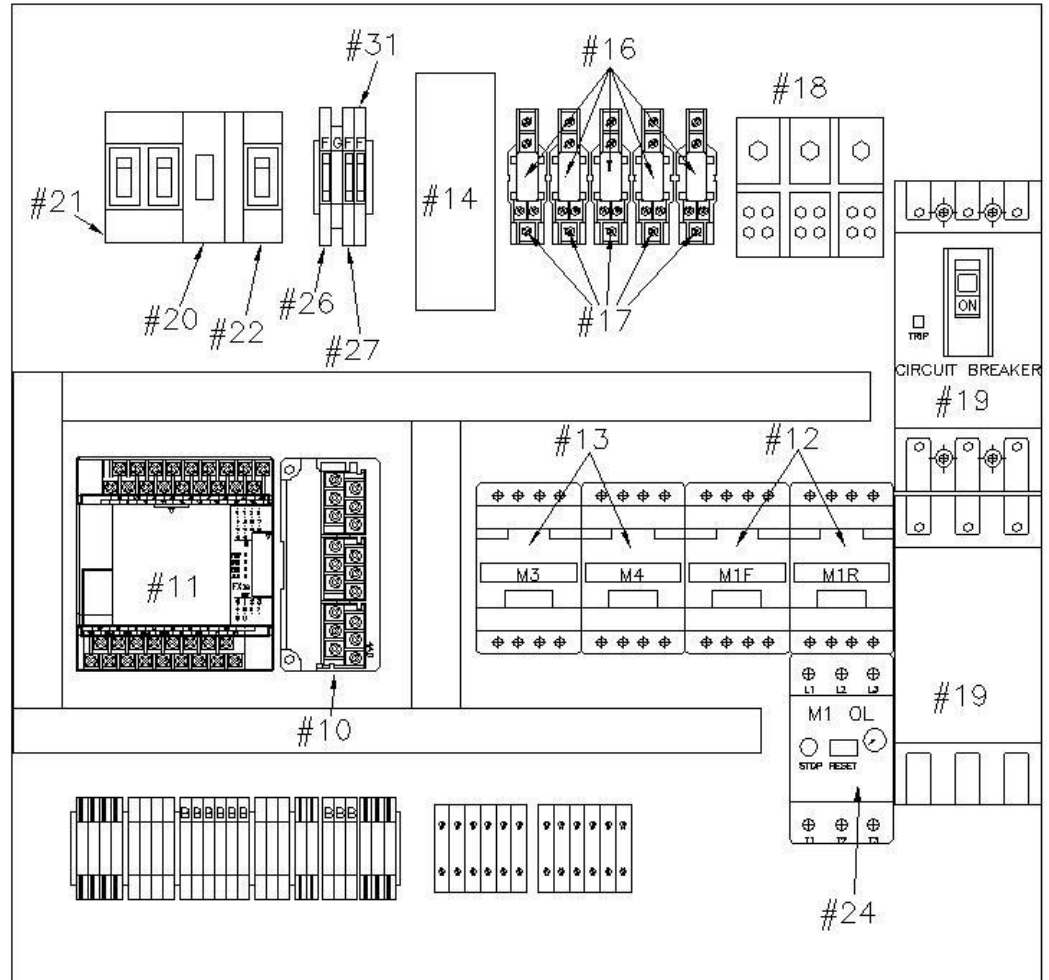
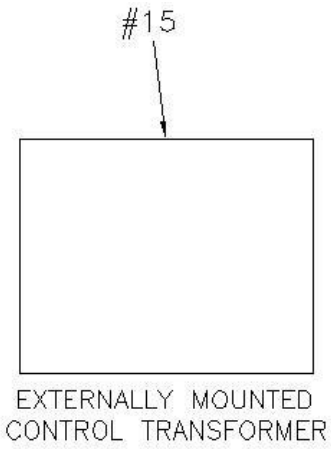
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ET100-SP1	TUMBLER DRIVE SPROCKET #60X52T	1
2	ET100-MO-MO9	TUMBLER MOTOR 1/2 HP	1
3	ET100-SP2	PINION SPROCKET #60X13T	1
4	ET-100-CH	DRIVE CHAIN #60 39 LINKS	1

DH-100 MECHANICAL PARTS LIST

Description	Part Number	Required
Chain, roller	ET100-CHML	1
Pump, condensate	ET100-CP	1
Grease Cup, Auto greaser	ET100-GR-PLC	1
Replacement cartridge, grease cup	ET100-GRCART-PLC	1
Motor Mount	ET100-MM	1
Step Key	ET100-SK	1
Flush mount guard	ET100-FMG	1
Tank, Weldment	ET100-TWBF	1
Bottom Frame	ET100-BTMF	1
Casters	ET100-CAST	4

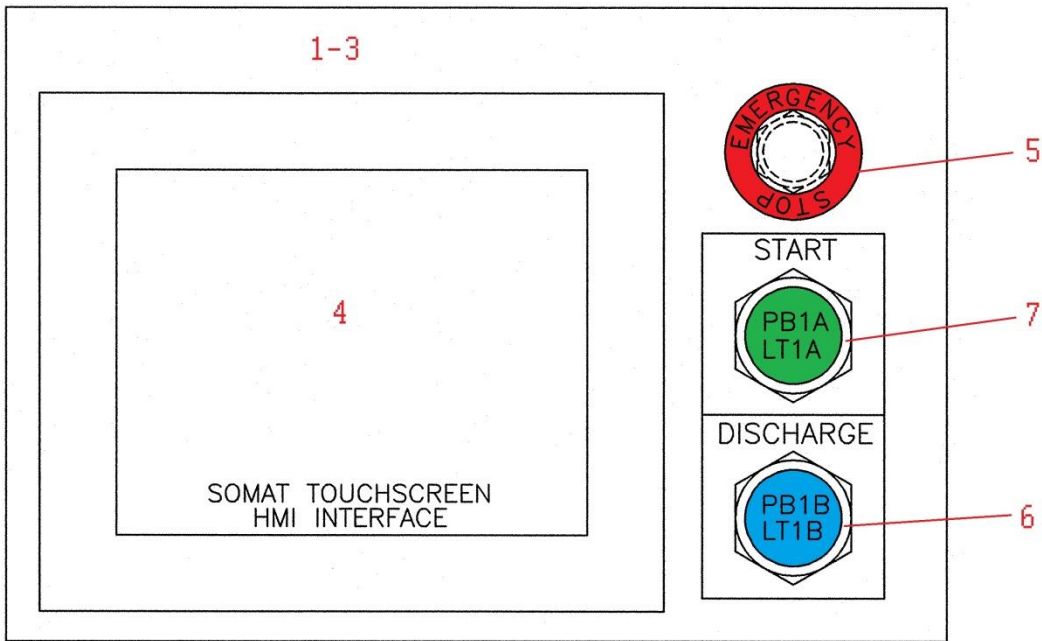
Items not shown in exploded views.

SOMAT ELECTRICAL PANEL



BACKPLATE DETAIL

Typical DH-100 Panel



CONSOLE DETAIL

Typical DH-100 Consolet

Figure & Item #	Description	Part Number	Required
1	Enclosure, Consolet	28361	1
2	Enclosure, Window	28362	1

3	Enclosure, w/ panel cover	ET-100-ENCL	1
4	Touch Screen	65215	1
6	Pushbutton, Blue	51014-24	1
7	Pushbutton, Green	51011-24	1
8	Pushbutton Guard	51012	2
9	Pushbutton, Emergency Stop	51017	1
10	Mitsubishi FXZN Thermocouple card	57620	1
11	PLC, 24MR	57569	1
12	Contactora, Reversing 25Amp	22271-CHR	1
13	Contactora, 25Amp	22271-CH	2
14	DC Power Supply	62340	1
15	Control Transformer 208V/230V To 120V	62287	1
16	Relay, 1p	51900	5
17	Relay Socket, 1p	51901	2
18	Power Distribution Block	60919	1
19	Breaker, 30Amp Earth Leakage	15530-1ELM	1
20	Breaker, 1p 6Amp	15597-CH	1
21	Breaker, 2p 6Amp	15597-2CH	1
22	Breaker, 2p 4Amp	15600-Ch	1
23	Auxiliary Contact	15022-CH	1
24	Overload , 1-5Amp	51894-CH	1
25	Terminal Block	60606	12
26	Fuse, mini 1Amp	62230-1A	2
27	Fuse, mini 1/4Amp	62230-2	2
28	Immersion Heater	ET100-IH	2
29	Air Heater	ET100-AH	1
30	Fan, Condenser	ET100-CF	2
31	Fuse, mini 1Amp Slow	62330-1B	2

DH-100 ELECTRICAL PARTS LIST

Due to the inherently involved and potentially dangerous nature of all electrical control equipment, Somat Company recommends maintenance and repair of the Som-A-Trol be performed by qualified personnel only. Qualified personnel should find the electrical drawings supplied to be sufficient guidance for troubleshooting.