



SuperSystems
incorporated

LOAD ENTRY 3 OPERATIONS MANUAL

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Standard Load Entry 3 Operations Manual

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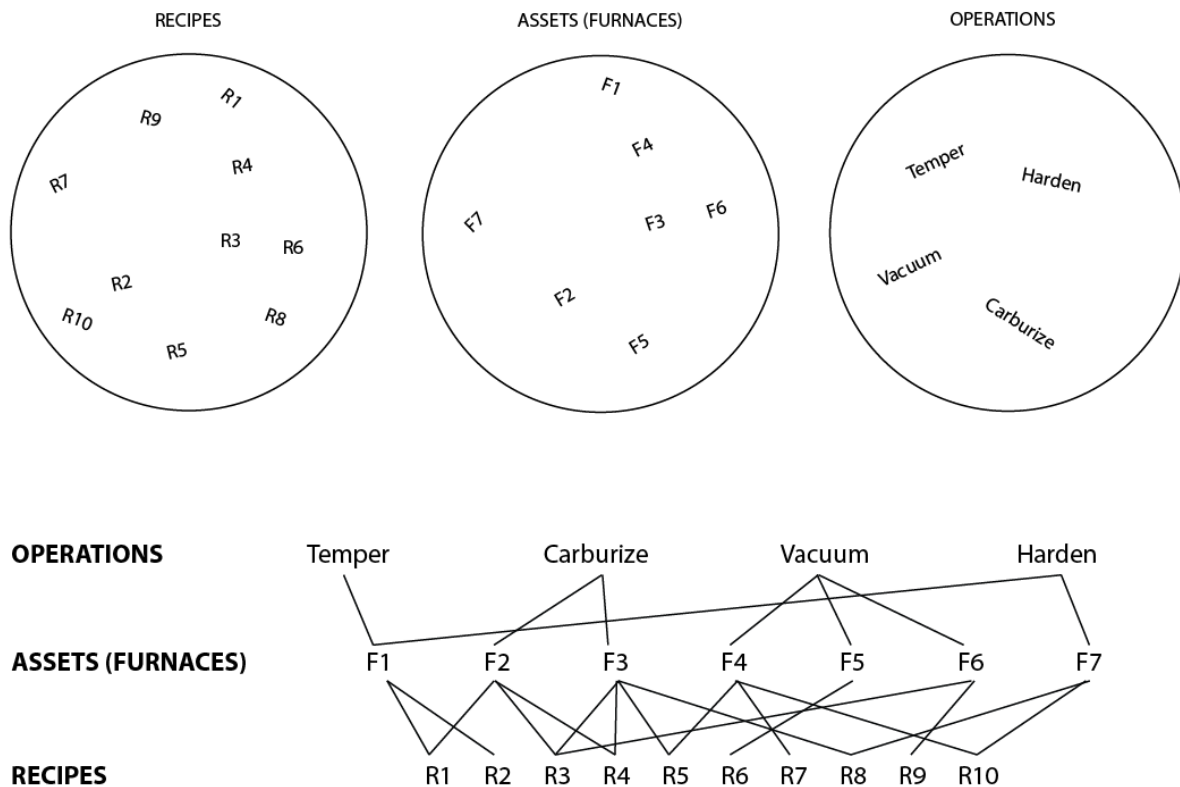
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Introduction

SSI's Load Entry 3 software is part of the SSI SuperDATA suite of programs. Load Entry assists with recipe management and tracking by providing a single, PC-based interface to control all activities for a heat treat facility. Load Entry is accessible from any computer setup as a SuperDATA workstation, allowing multiple access terminals throughout a facility. Load Entry seamlessly integrates with existing SSI and Honeywell HC900 controllers for creating recipes and starting and stopping recipes. Load Entry works with the SSI Configurator program to import recipes that have already been created.

Load Entry allows you to enter various operations, furnaces, recipes, parts, and users, but also enables you to "apply" these items to one another as required by your facility. This allows for easy tracking, management, and information retrieval, saving you time and money.

Put another way, Load Entry manages the often complicated relationships and connections between your facility's recipes, furnaces, and operations:



With this complex web under control, you are free to more efficiently manage your resources using the other tools included in LE3 software.

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If required, Load Entry allows controllers to extend past the previous limit of 300 recipes since all recipes are stored in a database as part of the system.

Load Entry's built-in Recipe Management features allow administrators to "lock" specific recipes, preventing operators from making temporary changes, while providing flexibility by allowing other recipes to remain "unlocked." Recipe revisions are tracked, providing complete visibility for actual recipes run in the equipment.

Load Entry also maintains historical data marking the beginning time, end time, and Operator ID for each charged load. This data helps improve load traceability and increase operator accountability. Historical data can be quickly accessed to generate reports and trend charts (using SDRRecorder II). Each report can store detailed part information (part number, quantity, material, etc.) as well associate part images for a specific load.

We are constantly improving and updating this software. If you have questions about a feature or functionality not covered in this manual, please contact SSI at 513-772-0060 for technical support.

IMPORTANT!

Standard Load Entry will serve as a recipe manager as well as a load management system. It is intended to replace your existing recipe management software. Attempting to use another recipe manager in addition to Standard Load Entry on the same equipment is likely to result in operational errors and should be avoided.

Prerequisites

► .NET Framework 4.6.2+

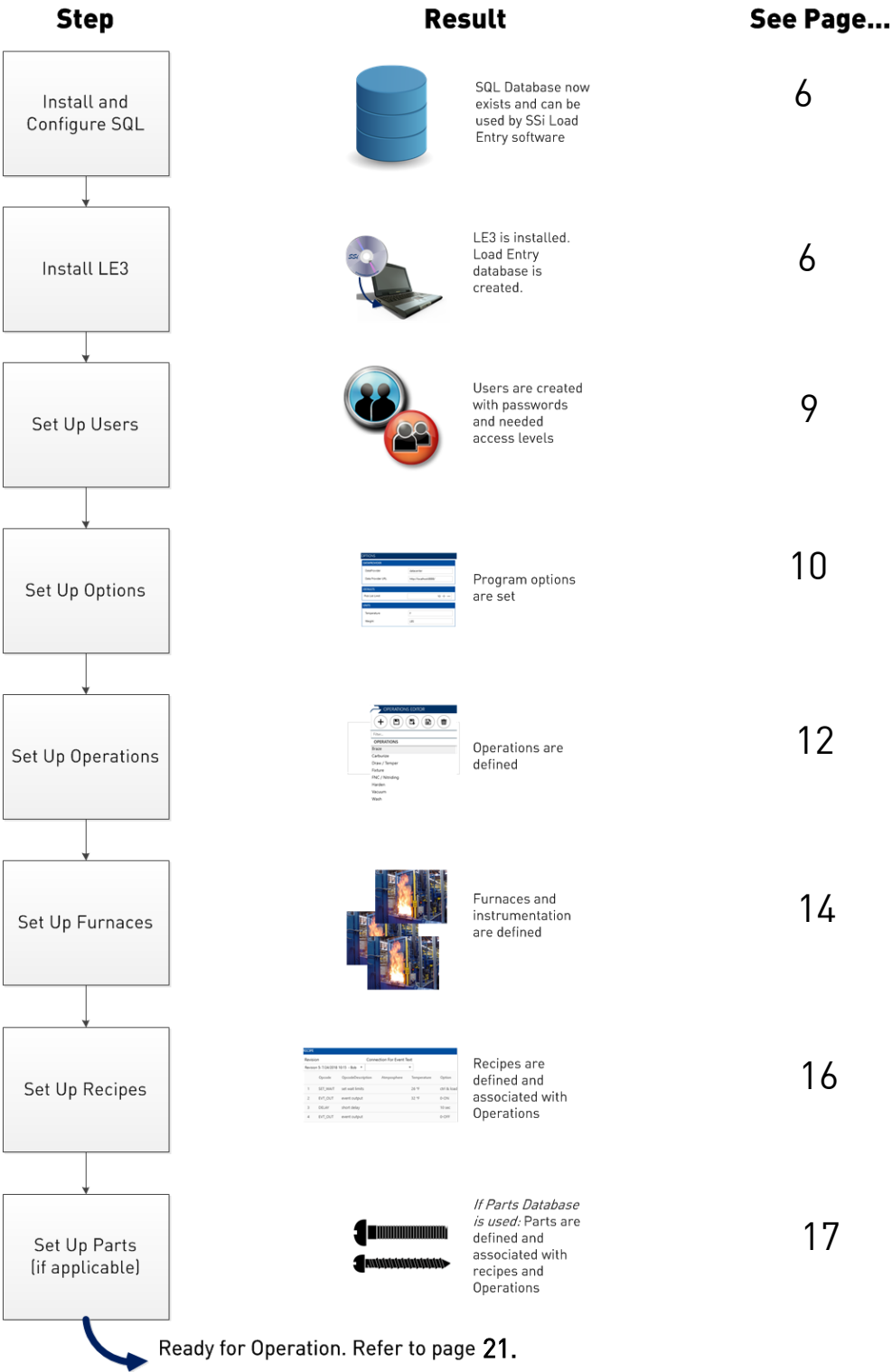
Standard Load Entry requires **Microsoft .NET Framework 4.6.2 or higher**.

► Super Systems API

Standard Load Entry requires access to the Super Systems Application Program Interface (API) running on the server, which communicates to either SDIO or DataCenter (the SuperDATA Communications engines), as well as SQL Server.

The Setup Flowchart below illustrates the recommended steps to follow when setting up and installing Standard Load Entry, especially for the first time. These features will be used after the initial setup as new loads are added, process requirements change, etc.

Setup Flowchart



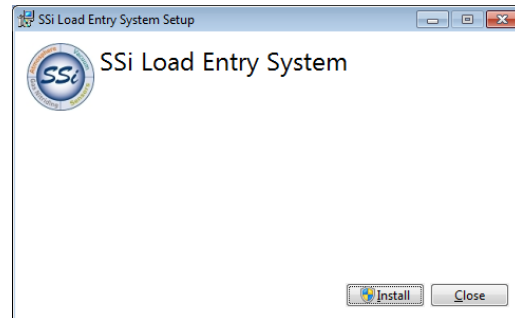
SQL Setup

Please refer to the *SQL Server Setup Guidelines for SSI Software Installations Reference Guide* found on the Manuals page of the Super Systems website: www.supersystems.com. In addition, prior to installation, the Super Systems API must be installed and set up for SDIO or DataCenter. If you have questions about your specific installation, please consult your IT administrator or contact SSI at (513) 772-0060.

Installation

To install Standard Load Entry, first double-click on the *03_LoadEntry3_Client.msi* file provided with the installation disc or installation files you received. A screen similar to the one at right will be shown.

Click the **Install** button to proceed.



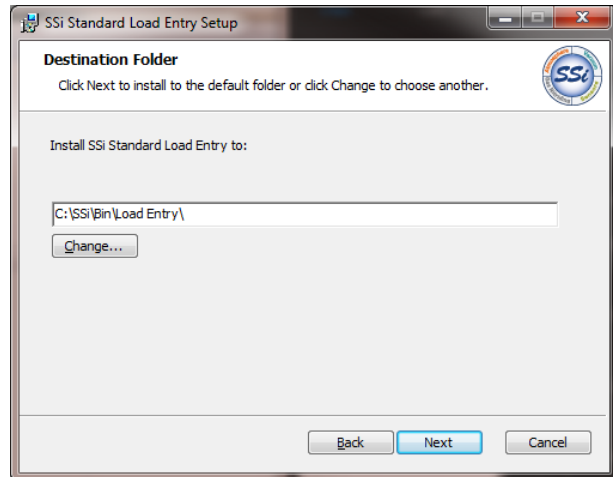
When the Setup welcome screen appears, click **Next** when ready to proceed.



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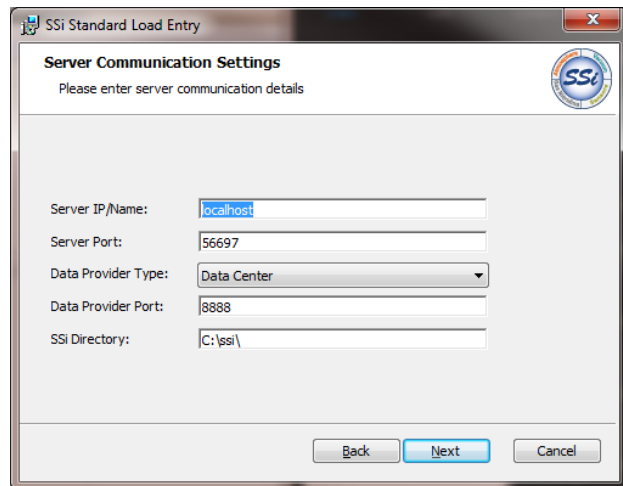
In the next window that appears, enter the name of the folder where Load Entry should be installed. The default will typically be "C:\SSi\Bin\SSi Load Entry\". If you want to change the default, click the **Change** button.

When ready to proceed, click **Next**.

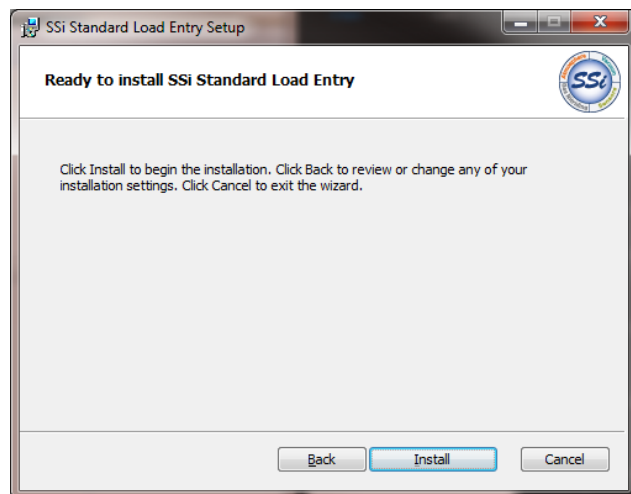


Load Entry will then ask for Server Communication Settings.

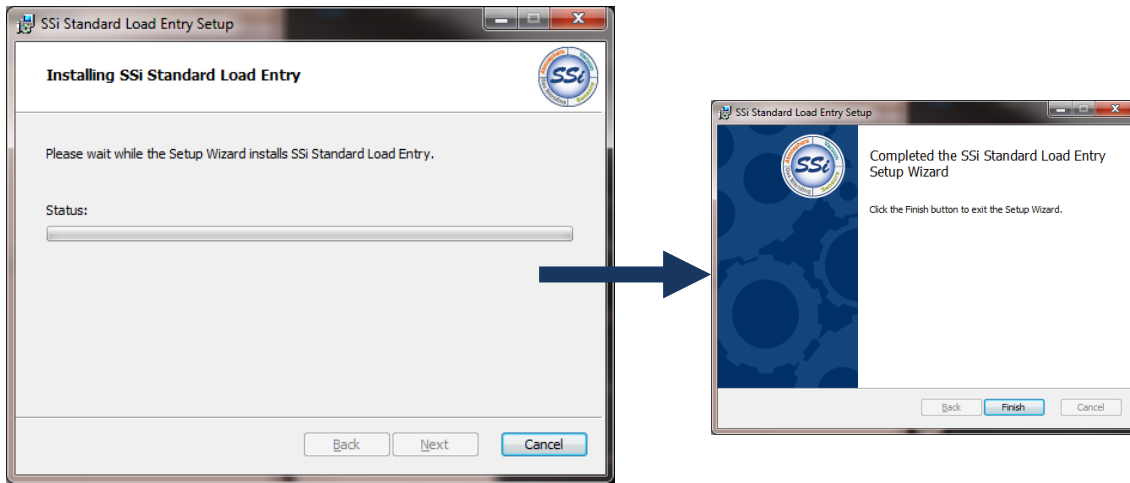
If you are unsure of the correct settings and information, please consult your IT professional or contact SSi for assistance.



Click the **Install** button to proceed.



The software will install. The remaining screens will confirm the installation.



Setup

When run for the first time, Load Entry users, furnaces, operations, recipes, and parts (if applicable) must be created.

This manual is written with a suggested order of setting up items. SSI suggests this order based on the most logical progression of steps for configuring LE3. The sections below detail setup of the following components, in this order: users, options, operations, furnaces, recipes, and parts.


To start Load Entry, open the **LoadEntry.Windows** program from the Start Menu. By default, this program shortcut is located in the **SuperSystems** program group.

When first opened, the Overview screen will be displayed:



This screen will be explained in more detail on Page 21. Once logged in with administrator access (by using the Login button at top right), you may continue with the setup.

Management Window

Clicking the SSI button  will bring up the Management Window which includes the following options:

- Operations
- Furnaces
- Recipes
- Sequences
- Parts
- Fields
- Users
- Gaps
- Shifts
- Options
- About

These options will allow you to input the information that Load Entry will use to control the activity in your facility. Think of this as setting up the background processes that will allow you to manage day-to-day operations elsewhere in the application. This manual is written with a suggested order of setting up items. SSI suggests this order based on the most logical progression of steps for configuring LE3. The sections below detail setup of the following components, in this order: users, options, operations, furnaces, recipes, and parts.


User Editor

The User Editor allows you to add user information and set passwords and “Claims” for each user. If any users have been created, you can click on the user’s name to view and change their assigned claims. You can also use the “Filter” box to search for specific users.

“Claims” are simply permissions and determine what options the user will be able to access. To change claims for an existing user, simply check or uncheck the desired boxes.

You can also change the User Name, Name, and update the user’s password information.

Click “Apply” to save the changes. To leave without saving changes, click “Cancel.”

To add a new user, click the “New”  button. Enter the desired information in the boxes for “User Name” and “Name” and then select desired Claims. Use the “Update Password” button to enter password information for this user.

Available Claims are:

Admin	Run Loads	Manage Work Orders
Manage Parts	Manage Recipe	Manage Furnace

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Manage Users	Manage Sequences	Override Sequences
Override Work Order	Manage Options	Manage Operations
Manage Gaps	Approve Work	Edit Track
Edit Gap	Manage Shift	Overwrite Gaps
Add Historical Loads	Check for Updates	Delete Load Tracks
Force Load Out	Add Rework	

NOTE: The “Admin” Claim gives a user access to all options.

You will note that your new user appears in *italics* in the user list. This means that the user has not been saved.

When completed, click “Apply” to save the User information. This user will now be added to your list.

By right-clicking on a user name in the list, you can “Copy” and “Paste” a user (useful in creating a new user with identical claims to an existing one). You can also “Delete” a user. The option to set password information is also available via the right-click menu.

Click  to close the User Editor.

Options Editor

The Options Editor window allows you to view and edit information about Language, Data Provider, Defaults, Units, Logins, Visual Shop, Work Orders, and other optional features. This will allow you to set up LE3 in the way that best fits the needs of your facility.

LANGUAGE:

Language: Select the language for LE3.

DATAPROVIDER:

DataProvider Hostname : Enter the hostname name of the Data Provider.

DEFAULTS:

Pick List Limit: Defines how far back the Pick List feature will go when creating a load

UNITS:

Temperature: Enter the desired temperature display unit.

Weight: Enter the desired weight display unit.

LOGINS:

Login Limit Enabled: When checked, LE3 will log out users after a period of inactivity.

Login Limit Minutes: How long a user can remain inactive before being logged out by LE3.

VISUAL SHOP:

Connection String: This information is required to pull data from your Visual Shop database. This feature can be set up from the Furnace Editor (see p. 14)

Custom Field: A label for a single piece of data that can be tracked with a Visual load.

WORK ORDERS:

Generate Work Order Names: Select whether LE3 will generate work order names

Use Part Serial Numbers: Select whether LE3 will use Part Serial Numbers for identification.

OPTIONAL FEATURES:

Use Parts Database: When checked, the Parts database options will be available.

Use Gap Time: When checked, the Gap options will be available.

Use Work Order Approval: When checked, LE3 will require approval of work orders.

Apply Default Offset to Trend: When checked, the report default offset will be applied to load end and start after clicking "View Trend."

Use Register Definitions: When checked, Register and Definition options will be available for furnaces and recipes that use an HC900 controller.

Disable Weight: When checked, Weight options will *not* be available.

Display Furnace Run ID: When checked, a furnace ID will be displayed, based on the prefix defined in the furnace and the number of loads that have been run in that furnace

Display Work Order Completed Steps: Displays the time in and time out of each completed step on the Work Order Editor

Use External Database Mapping: When checked, allows you to connect to an external database to pull data for custom fields. Use the "Edit Mappings" button to enter the desired settings.

Display status color: When checked, furnace status will be displayed by color in the Overview screen. Use the "Edit Status Colors" button to customize the colors used for each status.

REPORT DEFAULTS:

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Start Offset: Enter a starting offset value. This defines the amount of time to wait before a load begins when opening SDRRecorder and running load reports.

End Offset: Enter an ending offset value. This defines the amount of time to wait after a load ends when opening SDRRecorder and running load reports.

Export to XML:

Custom Logo: Use to add your own custom logo to a Load Report. Click the “...” button to browse your computer for the desired file.


Click “Save” to save your Option settings.

Operations Editor:

The Operations Editor Window allows you to enter information about the operations in your facility that Load Entry will control. Specifically, you can choose to “Apply” an operation to any Recipes, Furnaces, or Parts that you have already inputted into the software or imported from a database.

On the left of the window you will see a list of Operations (empty if you have not yet created any) and a “Filter...” input box which will allow you to filter/search the displayed Operations.

The main view area of the Operation Editor Window is where you will enter your Operations information.

To begin, click the “Create New”  button. Enter a name for your new Operation. You will note that your new operation appears in *italics* in the operation list. This means that the operation has not been saved.

If you have not yet created any Recipes, Furnaces, or Parts in the system, naming the Operation will be your only option. If you *have* created any of this additional information, you will have the option to apply your new operation to those items:


NAME		
Operation 1		
APPLIED TO		
RECIPES	FURNACES	PARTS
<input checked="" type="checkbox"/> Recipe 1	<input checked="" type="checkbox"/> Furnace 1	<input checked="" type="checkbox"/> Part 1

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Click “Apply” to save the current Operation. It will now be displayed on the list to the left without italics.

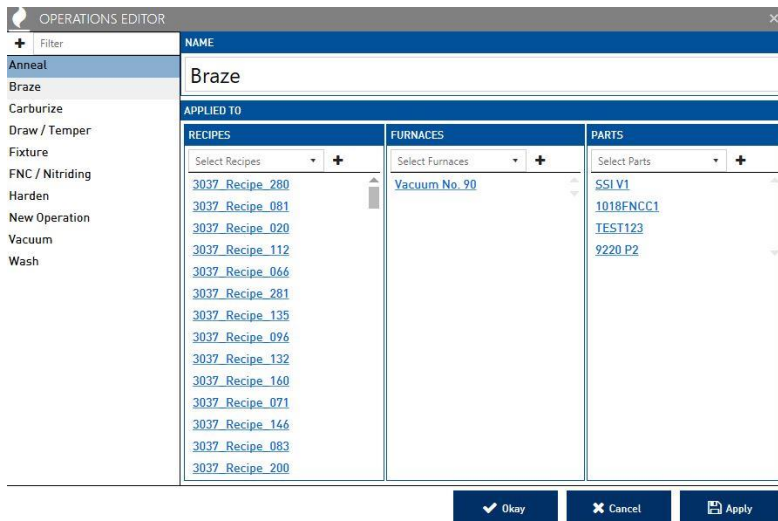
To edit an existing Operation, simply select it in the list on the left and its information will appear in the main view area.

By right-clicking on an operation in the list, you can “Copy” and “Paste” an operation (useful in creating a new operation with applications to an existing one). You can also “Delete” an operation.

Click  to close the User Editor.

Click “Apply” to save the changes. To leave without saving changes, click “Cancel.”


After entering information for numerous Operations, as well as Recipes, Furnaces, and Parts (all described later), your Operations Editor may look something like this:



Assets (Furnace) Editor

The Assets Editor Window allows you to enter information about the Furnaces and other equipment in your facility that Load Entry will control or keep track of. You can then assign the furnace to the desired Operations, Groups , and set Report Options.

Operations Tab

To assign a furnace to an existing operation, select the desired operation from the dropdown menu, and then click  .

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The operation will now be added to the operations list below the dropdown menu. The operations list is clickable – clicking on an item in the list will bring up that operation's information.

To delete an operation from the list, right-click on it and select "Delete."

Clicking the "Groups" tab will bring up options for Overview Groups Assignments. This will allow you to assign your furnaces to various groups for easy viewing in your overview screen [see p. 21]

The functionality of the Groups menu is identical to that of the "Operations" tab (see p. 13). In addition, clicking "Manage Groups" will allow you to make changes to the groups seen in the overview


Furnace Details Panel


The Details Panel allows you to choose a Name, Load Prefix, Connection, Model, SDRecorder trend chart, set Min and Max Weights, enter a Programmer Number, and assign settings for Visual Shop integration.

DETAILS			
Name	Load Prefix	Connection	Model
<input type="text" value="Batch No. 97"/>	<input type="text"/>	<input type="text" value="Select a Connection"/>	<input type="text" value="SSI9205"/>
Programmer Number	Trend	Minimum Weight	Maximum Weight
<input type="text" value="1"/> <input type="button" value="+"/> <input type="button" value="-"/>	<input type="text" value="C:\SuperSystems\SDC\Trend"/>	<input type="text" value="0"/> <input type="button" value="+"/> <input type="button" value="-"/>	<input type="text" value="0"/> <input type="button" value="+"/> <input type="button" value="-"/>
Visual Shop Equipment Id			
<input type="text" value="0"/> <input type="button" value="+"/> <input type="button" value="-"/>	<input type="checkbox"/> Manual <input type="checkbox"/> Visual Shop		

NOTE: If the furnace is Visual Shop integrated, the Visual Shop Equipment Id must match the asset's id in Visual Shop in order to use the tracking feature.

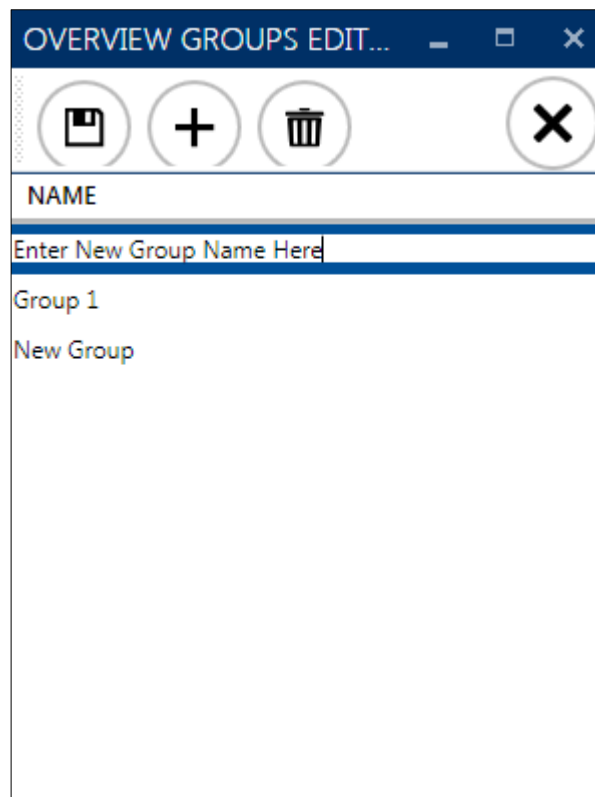
Overview Group Assignments

The “Manage Overview Groups”  button allows you to organize the Furnaces displayed on the Overview window into groups.

On the Overview Groups Editor window, simply click the New  button and enter a group name in order to create a new group

When completed, click “Save.” You will now have the option to assign furnaces to your new group by using the “Overview Group Assignments” panel on the Furnace Editor Window. (You will first need to click Save on the main Furnace Editor, then close it and restart.)

When you are finished assigning furnaces to groups, the Overview Window will display your Furnaces by groups. (NOTE: You may need to restart the application for the new group to appear in the Overview screen.)



NOTE: If an Overview Group is displayed *in italics* within the list view, this indicates that it contains unsaved changes.

Recipe Editor

The Recipe Editor Window allows you to enter information about the Recipes in your facility that Load Entry will control. The basic functionality of the Recipe Editor is the same as the Operations Editor (see p.12), but with the following additional options:

Recipe Details Panel

The Details Panel allows you to select the Controller Model, Recipe Number and, if desired, to lock that selection or enable the current recipe to be used as a subroutine for the GOSUB and JUMP opcodes. Depending on the selected recipe, you can also enter additional parameters such as MaxTemp1 or Setpoint2.

Recipe Panel

The Recipe Panel allows you to select Opcodes to build a recipe.

NOTE: For explanations of Opcodes, refer to the manual for your controller.

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The “Revision” dropdown menu allows you to view and select all the previous revisions of the currently selected recipe. Each time a change is saved to the recipe, a new revision is created along with a date and time stamp.

To edit a recipe, double-click on an Opcode to bring up the step editor.

Use the Selected Opcode dropdown menu to select an Opcode for this step and set all necessary parameters. (Selecting the “Alphabetical” checkbox will display available Opcodes alphabetically.) When finished, click “OK.” Your new recipe step will be displayed in the recipe editor (depending on the Opcode you entered, you may need to scroll up and down or use the sorting tabs in order to view the newly-entered step).

RECIPE				
Revision		Connection For Event Text		
Revision 1: 10/3/2018 11:48 - Jim				
Opcode	OpcodeDescription	Atmosphere	Temperature	Option
1	SETPT	set point	1200 °F	
2	SOAK	soak		0:05
3	RAMP	ramp setpoints	1830 °F	0:15
4	SOAK	soak		0:05
5	RAMP	ramp setpoints	1500 °F	0:15
6	SOAK	soak		0:05
7	NO-OP	no opcode		
8	NO-OP	no opcode		
9	NO-OP	no opcode		
10	NO-OP	no opcode		
11	NO-OP	no opcode		
12	NO-OP	no opcode		
13	NO-OP	no opcode		
14	NO-OP	no opcode		
15	NO-OP	no opcode		
16	NO-OP	no opcode		
17	NO-OP	no opcode		
18	NO-OP	no opcode		
19	NO-OP	no opcode		
20	NO-OP	no opcode		


NOTE: If a Recipe is displayed *in italics* within the list view, this indicates that it contains unsaved changes.

Parts Editor (optional feature)

In the Parts Editor, you can associate parts with the sequences and recipes that Load Entry will control, allowing for quick selection of processes later. If you do not assign a part to a recipe in the Parts Editor, it can only be run on manual loads or will require an override. The basic functionality of the Parts Editor is the same as the Operations Editor (see p.12), but with the following additional option:

Details Panel

The Details Panel allows you to enter the weight of a part, along with information for any custom fields that have been created.

In addition, an image of the part can be assigned by clicking the  button next to the part Name and selecting a file from your computer.

NOTE: If a Part is displayed *in italics* within the list view, this indicates that it contains unsaved changes.


Fields Editor

The Fields Editor allows you to add additional field input options to the Details Panels of Furnaces, Parts, Recipes, and Work Orders. The basic functionality of the Fields Editor is the same as the Operations Editor (see p.12).

Fields Details Panel

The Details Panel will allow you to set a standard format for entries into the new Fields you will create.

If “Normalized List” is checked, you may create a custom set of list items based on your own needs. This can be useful to assign specific customers, priority levels, or other existing terminology specific to your facility.

To add selections to your normalized list, click the Add  button and enter the name of a list selection. Repeat this process until you have created all the desired items in your list. These items will appear as a dropdown menu for every Furnace, Part, Recipe, etc. that you apply it to.

If “Normalized List” is unchecked, you will see options that allow you to assign specific formatting to fields. This is useful when using this feature for standard codes and numbering systems in your facility.

The “Format” box allows you to set this format, as follows:

- A = any alphabetical character
- 1 = any numerical character
- Any other characters represent themselves literally.

Example 1:

You are creating a “Customer” field and your company uses a code of three numbers and three letters to identify each customer (e.g. “FES027” or “MPS019”).

You would enter “AAA111” into the “Format” box to indicate three letters and three numbers.

Example 2:

You are creating a “Customer” field and your company uses a five-digit code followed by the letter C to identify each customer (e.g. “45230C” or “18235C”).

You would enter “11111C” into the “Format” box to indicate five numbers followed by a “C.”

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Example 3:

You are creating a “Part Code” field and your company numbers parts using a numerical prefix “007,” and a four-number numerical code, separated by a hyphen (e.g. “007-4129” or “007-8173”).

You would enter “007-1111” into the “Format” box to indicate the numerals “007,” a hyphen, and a four-digit number.

If a specific format is not required for the current field, simply leave the “Format” box blank. If the “Format” box is not used, you can instead set a required length for entries into this field. For example, if you have no standard format, but all entries must be exactly seven characters long, you would enter “7” into the “Required Length” box.

NOTE: If using the “Format” box, you must enter “0” into the “Required Length” box.

Clicking the “Required” box will force all future users to match the indicated format before saving entered information:

Customer	54433	The format is invalid, and must match the following format : 11111C
----------	-------	---


Clicking the “Export” box will cause this field to be included when using the export feature on the History Tab (see p. 27).

Under the “Applied To” bar, select which Furnace, Part, Recipe, and Work Order you would like to apply the selected Field to.

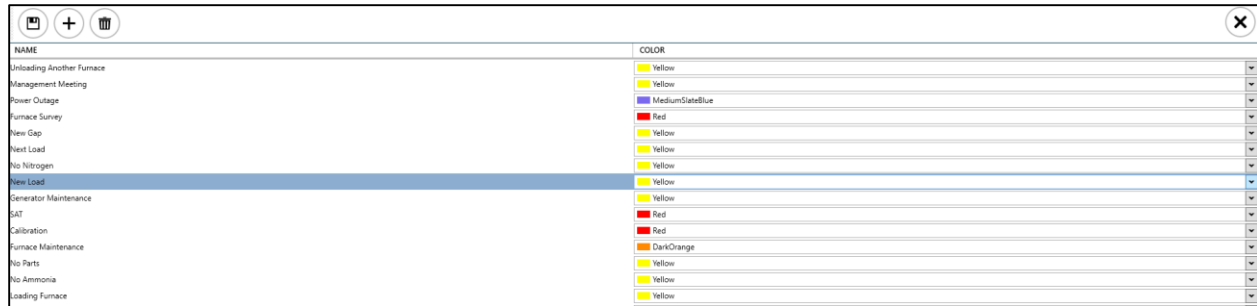
NOTE: If a Field is displayed *in italics* within the list view, this indicates that it contains unsaved changes.

Gap Editor (Optional Feature)

The Gap Editor allows you to create names for gaps that exist in your facility’s processes. This can be very useful in tracking downtime and improving efficiency in your facility.

On the Gap Editor window, simply click the New  button and enter a Gap name in order to create a new Gap. You can then assign a color to the selected gap if desired.


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NAME	COLOR
Unloading Another Furnace	Yellow
Management Meeting	Yellow
Power Outage	MediumSlateBlue
Furnace Survey	Red
New Gap	Yellow
New Load	Yellow
No Nitrogen	Yellow
New Load	Yellow
Generator Maintenance	Yellow
SAT	Red
Calibration	Red
Furnace Maintenance	DarkOrange
No Parts	Yellow
No Ammonia	Yellow
Loading Furnace	Yellow

When completed, click “Save.”

Shift Editor


The Shift Editor allows you to create and name shifts and set shift begin and end times. The basic functionality of the Shift Editor is the same as the Operations Editor (see p.12). To set shift start and shift end, either enter the time in the input box, or click the clock icon  to set a time using dropdowns.

NOTE: All shifts combined must add up to 24 hours with no overlap.

NOTE: If a Shift is displayed *in italics* within the list view, this indicates that it contains unsaved changes.

Sequence Editor

The Sequence Editor window allows you to create a series of steps (called a Sequence) that can control how a part or work order is processed through multiple operations, furnaces and recipes. The basic functionality of the Sequence Editor is the same as the Operations Editor (see p.12). The purpose of the sequence is to create consistency on the flow of a work order or part through the heat treat operations. The interface makes it very easy to apply the steps to achieve all operations. For example, if part xyz will always go through a wash, harden and temper process, it would be beneficial to create a sequence that would follow these steps. This does not have to be part specific, it can just be a consistent process used for a work order.

Once a new Sequence is created and named, use the New  button to add steps to the Sequence. Steps consist of Operation, Furnace, and Recipe assignments. Click “Save” to add the step to the sequence.

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Filter

SEQUENCES

1018 FNC CL1

1920

8620 .005

8620 .010

9310 .002

9310 .005

GE 64.01 Braze

Harden

Quench/Temper


NAME

1018 FNC CL1

STEPS

STEP	OPERATION	FURNACE	RECIPE
1	Draw / Temper		Ramp 500 Soak 15
2	FNC / Nitriding		Nitriding_Recipe_001

In the example above, the 1018 FNC CL1 sequence can be applied to a part or a work order to ensure that these 2 steps are completed. The sequence can optionally assign the furnace and recipe.

To edit a step, click the Edit  button or double-click on the step in the Steps display area.

NOTE: If a Sequence is displayed *in italics* within the list view, this indicates that it contains unsaved changes.

About

The About panel displays release notes and allows you to check for automatic updates.

Overview Screen

The Overview Screen displays all current furnace information in groups as assigned by the user. This is also where you will assign gaps (if enabled), begin new loads and, if necessary, enter historical loads.

NOTE: Instructions below assume that Gaps are enabled. If you are not using Gap options, some functionality will differ slightly.

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Overview Active History

Overview Vacuum Nitriding FNC Temper IQ Line

Batch No. 96	Batch No. 97	Belt1	Draw No. 91	Draw No. 97	Pit No. 90
Calibration	Disconnected	Load Id: 10101811103361 Start Time: 10/10/2018 11:12:23 AM Work: FNA2018F1 Step: 0 Manual	Time In: 10/25/2018 9:00:59 AM Recipe: Ramp 500 Soak 15 Work: L97799 Step: 3	Calibration	Management Meeting
Temp Setpoint: 1350.00 % Carbon: 0.01	Temp SP: 1350.00 %C SP: 0.00	Temp: 5.00	Temp: 604.00 Temp SP: 681.00		Temp SP: 1064.00 Temp Act: 1091.00
Vacuum No. 90	VacuumTemper No. 89	Wash	你好		
Racking	Furnace Survey	Running	Furnace Survey		
Temperature: 2023.00 Soak Timer: 0.00	Temp Act: 2023.00 Temp SP: 1654.00	Temperature: 604.00 Setpoint: 681.00			

Click on a group to display the furnaces in that group. “Overview” will display all furnaces regardless of group.

Click on a furnace to display information on its current status. In addition, if a furnace is listed as disconnected, you may have the option to add a manual load to the furnace.

Draw No. 91

WORK ORDERS					RECIPE	
WORK ORDER	CUSTOMER	SALES	CASE DEPTH	MATERIAL TYPE	DUE DATE	
L97799	GKN	NA				
PARTS						
WORK ORDER	PART	QUANTITY				
L97799	9130 P1 19					
DETAILS						
Id	1025189022V					
Recipe	Ramp 500 Soak 15					
Operation	Draw / Temper					
Time In	10/25/2018 9:00					
Time At Heat						
Est. Completion	9:05					
PICTURE			NOTES			

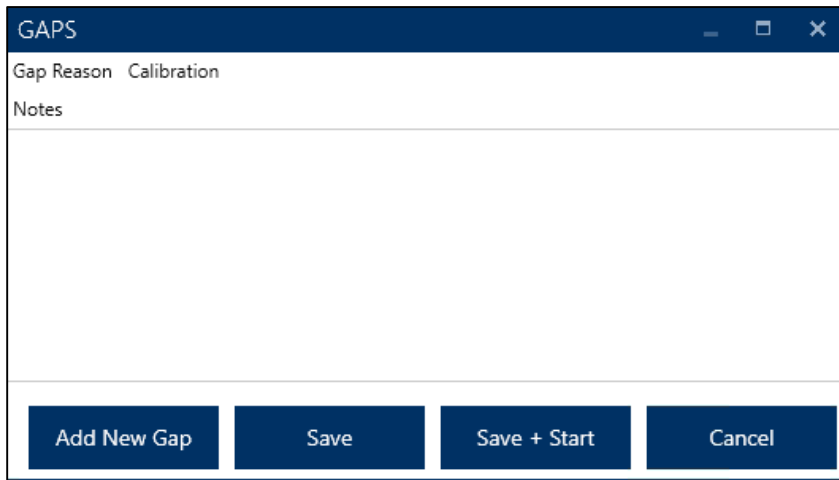
Hold	Cont	Stop	Adv	Ack
1 RAMP		500 °F		0:10
2 SOAK				0:05
3 RAMP		700 °F		0:05
4 SOAK				0:05
5 BRANCH	1		1	
6 NO-OP				
7 NO-OP				
8 NO-OP				
9 NO-OP				
10 NO-OP				
11 NO-OP				
12 NO-OP				
13 NO-OP				
14 NO-OP				
15 NO-OP				
16 NO-OP				
17 NO-OP				
18 NO-OP				
19 NO-OP				
20 NO-OP				
21 NO-OP				
22 NO-OP				
23 NO-OP				
24 NO-OP				

Recipe 1 Running at step 4, 0:01 remaining
Run time: 120:04 Remaining time: 0:01 (9:05 AM)

Within active loads, you will have the ability to add Notes, access Work Order Details, and mark times for “At Heat” and “Load End.”

In addition, Recipe information will be displayed. Depending on the recipe and its current status, you will be able to control the steps in the recipe if you have the right user privileges (see user claims setup) using the “Hold,” “Cont,” “Stop,” “Adv,” and “Ack” buttons. For more detailed information on recipes, see your controller manual.

Clicking on a furnace which is in a Gap state (assigned and defined in the Gap Editor) will bring up a screen like this:



From this screen, you can add notes to explain any changes in status. The purpose of the Gap screen is to provide an interface for the user to assign a reason code of why the furnace was not running a load. The Gap Reasons are user defined in the Gap Editor in the setup. If the furnace is in the READY state, the time of the gap is from the time the gap went to ready to the current time. If the Gap Reason is already assigned, then the time associated to this Gap continues until another load is run or a new Gap is added using the Add New Gap button.

Click “Add New Gap” to begin a new gap if desired. Use the dropdown menu to assign a Gap type from those created in the Gap Editor.

Click “Save” to close the current gap without assigning a new one.

Click “Save + Start” to close the gap and begin a new load for the furnace (See “Load Creation” below.)

Right-clicking on furnaces brings up additional functionality:

Right-click on a furnace in a Gap state to bring up the following options:




Click “Add Historical Load” to open the NEW LOAD window. See “Load Creation” below for an explanation of this window’s features.

Click “View Current Gaps” to view the gaps that are currently in effect for the furnace.

Clicking “View Trend” will bring up trend information from SDCrecorder/SDRecorder Pro. See the associated manual for additional information on this functionality.

Standard Load Entry 3 Operations Manual

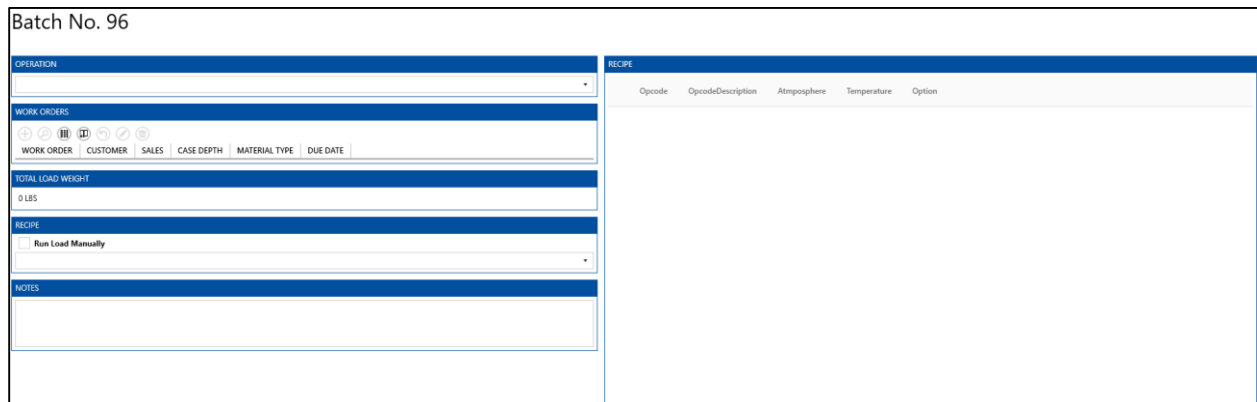
Right-clicking on an active furnace will also provide the option to “Force Load Out.” Doing so will return the furnace to a Gap state.

Clicking the  button in the top right corner of each furnace is identical to clicking “View Trend.” This will bring up trend information from SDRRecorder Pro. See the SDRRecorder Pro manual for additional information on this functionality.

Load Creation

The Load Creation Editor can be accessed in several ways:

- By clicking on a furnace in a gap state, then clicking “Save + Start.”
- By right-clicking on a furnace, then clicking “Add Historical Load.”
- By clicking on a furnace (if Gap options are turned off).





Use the “Operation” dropdown menu to select from the available Operations for this furnace.

Under “Work Orders” are the following buttons:





Clicking  will bring up the Work Order Editor (see details on pg. 26).

Clicking  will bring up the Pick List. This allows you to search for previous work orders.


Clicking  will allow you to add an existing work order, either by scanning a barcode from a traveler, or by entering the information manually. If entering manually, use the dropdown menu to select the desired Work Order, then click “Add” to add it to the list to be added. When finished, click “Add” at the bottom of the window to add to the Load Creation Editor.

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Clicking  will allow you to select a traveler to assign to the current load. Functionality is identical to the “Existing Work Order” window (see above).

Clicking  will allow you to rework an existing work order selected from the Pick List.

Clicking  will allow you to edit a selected Work Order (see details on pg. 26).


To Delete a Work Order, click it in the list to highlight, then click Delete .

Under the “Recipe” bar, use the dropdown menu to select from the recipes currently associated with this Load. You can also choose to run the load manually using the corresponding checkbox.













Notes can be added to the load as well.


Click “Start Load” to begin the load, and “Cancel” to exit without saving.


Active Screen


There is ways to create data in the Active Screen. 1) creating a load in the furnace from the overview screen, 2) creating future work using the  button.

The Active Screen displays all active Work Orders along with their associated Furnace, Current Operation, Next Operation, and Estimated Completion. A color box is also displayed to indicate if the Work Order is Ready, In Sequence, or In Process

Overview Active History							
   							
STATUS	WORK ORDER	CREATE DATE	CURRENT FURNACE	CURRENT OPERATION	NEXT OPERATION	NEXT FURNACE	PART
	JPO05052018	5/14/2018 12:10			Wash		9205 P1
	W23423	6/26/2018 15:02			Wash		9205G12
	V23423424	10/4/2018 12:03			Wash		9205G12
	W098823	10/5/2018 12:02			Wash		9205G12
	Rotor12	10/9/2018 10:30			Braze		9220 P2
	M99829	10/10/2018 10:03			Carburize		9205 P1
	W23423	10/10/2018 10:07					9205G12
	FNA2018F1	10/10/2018 10:11	Belt1	Carburize (1 of 1)			9205 P2 9:07
wd_1 10/24/2018 7:23							

To create a new Work Order in the Work Order Editor, click Add . (See Work Order Editor on p.26 for explanation of this feature.)

To Edit a Work Order in the Work Order Editor, click it in the list to highlight, then click Edit . (See Work Order Editor on p.26 for explanation of this feature.)

To Delete a Work Order, click it in the list to highlight, then click Delete .

To Refresh the display, click Refresh .

The various display columns are clickable to sort the list by that column.

Work Order Editor

WORK ORDER EDITOR

WORK ORDER

sd_1

DETAILS

Weight In LBS: 250 Case Depth: .06 Customer: acme

Due Date: 10/25/2018 Material Type: 1040 Sales:


OPERATIONS


PARTS


PART	QUANTITY
9205 P1	50

Print Save Cancel


The Work Order Editor allows you to create and edit new work orders and assign the appropriate details, operations, and parts. Other fields can be added for capture with the work orders. This would be setup in the Fields setup screen and those fields would be assigned to WorkOrder. In the above screen, Case Depth, Customer, Due Date, Material Type and Sales are examples of this.


To assign Operations to a work order, click Add  and select the desired Operation from the dropdown menu. Once selected, available options (Furnace, Recipe, etc.) will auto-populate. Click "Save" to add the Operation to the work order.


You can also assign entire Sequences directly, using the Sequence Template  button.

To edit an existing Step, click on that row and click the Edit  button (or, double click on the Step in the list).

Standard Load Entry 3 Operations Manual

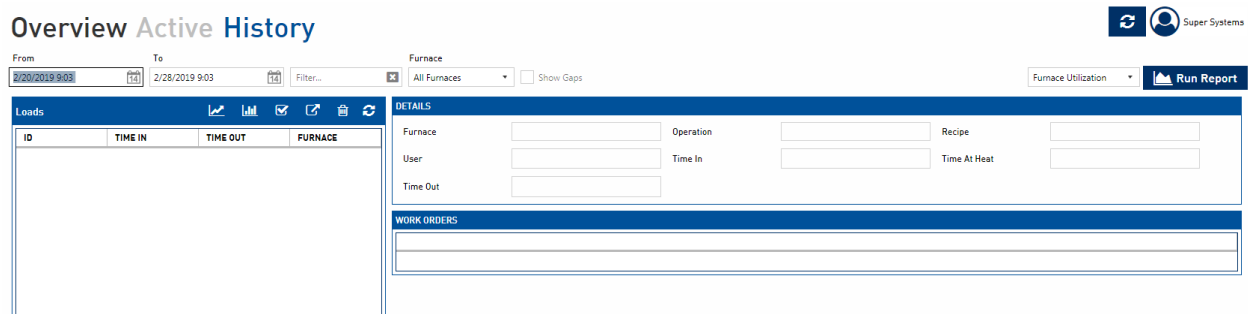
To delete a Step, click on that row and click the Delete  button.

To assign Parts to a work order, click Add  and select the desired Part from the dropdown menu. Once selected, available options will auto-populate. Click “Save” to add the Part to the work order.

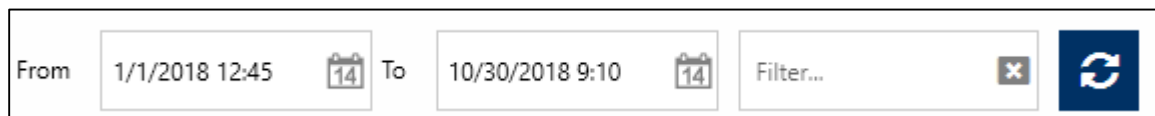
You can also access the Parts Database from this screen by using the Manage Parts  button.

History Screen

The History Screen displays all completed loads, searchable by various timeframes and other parameters.



Use the From/To Boxes and the filter input box to select a time range and/or text to search for in the completed loads database.



The Filter field is a dynamic filter and will search all fields associated to the work orders. Between the From and To date.

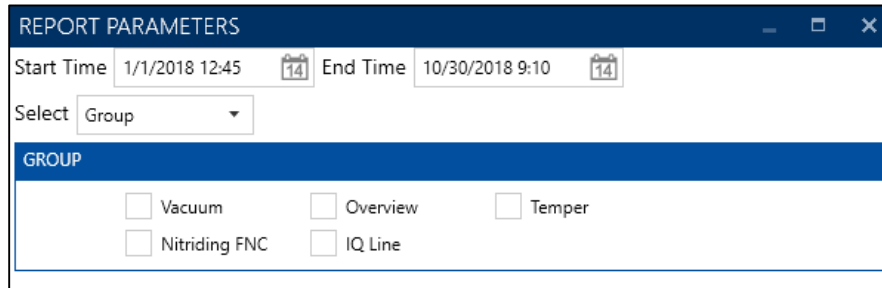
Use the Furnace dropdown menu to select which furnaces are currently visible.

Use the “Run Report” button to generate reports based on desired parameters.



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Use the report drop down menu to select a report on Furnace Utilization, Gap Time, Load Tracking, or Work Order Tracking, then click “Run Report” to set parameters for the report.



REPORT PARAMETERS

Start Time 1/1/2018 12:45 End Time 10/30/2018 9:10

Select Group

GROUP

☐ Vacuum ☐ Overview ☐ Temper

☐ Nitriding FNC ☐ IQ Line

NOTE: Depending on the type of report being run, the above screen may look different.

Click “OK” to generate the report.

To delete a Load, highlight the load and then click “Delete Load.”

The lower half of the History screen displays Work Orders associated with the highlighted load.

Clicking “View Trend” will bring up trend information from SDRecorder Pro. See the manual for SDRecorder Pro for additional information on this functionality.

Clicking “Load Report” will generate a Load Report based on desired parameters and information.

Clicking “Approval” allows you to add notes and attachments, then approve or reject the information.

Clicking “Export” allows you to export information in various file formats to the desired location.

Standard Load Entry 3 Operations Manual

Load Tracking Editor

Double click on a highlighted load to open the Load Tracking Editor for that load.

LOAD IDENTIFIER
1024181102520

DETAILS

Furnace	Batch No. 96	Operation	Carburize
Recipe	AllicasesRecipe_001	User	Bob
Time In	10/24/2018 11:01	Time At Heat	Select a date
Time Out	10/28/2018 20:38	Attached	

WORK ORDERS

WORK ORDER	WEIGHT	CUSTOMER	SALES	CASE DEPTH	MATERIAL TYPE	DUE DATE
W23423	322	Acme	NA	8620	8620	12/1/2018

RECIPE

1	SET_AUX	180		2
2	EVT_OUT		0.00 %C	2-ON
3	SETPT	1425 °F		wait
4	EVT_OUT			2-OFF
5	SOAK			1:00
6	SETPT	1350 °F		wait
7	EVT_IN			15-ON
8	NO-OP			
9	NO-OP			
10	NO-OP			
11	NO-OP			
12	NO-OP			
13	NO-OP			
14	NO-OP			
15	NO-OP			
16	NO-OP			
17	NO-OP			
18	NO-OP			
19	NO-OP			
20	NO-OP			
21	NO-OP			
22	NO-OP			
23	NO-OP			
24	NO-OP			

NOTES

Recipe 0 Stopped

Edit View Trend Load Report Approval Close

The Load Tracking Editor will display a unique load identifier, along with details about the completed load; including Furnace, Operation, Recipe, User, Time In/Out, Time at Heat, and any attachments. Any Work Orders associated with the load will be displayed as well, along with the recipe used during the load. Notes can be added if desired.

Clicking “Edit” will make the information editable. Make any necessary changes, then click “Save” to save those changes.

Clicking “View Trend” will bring up trend information from SDRRecorder Pro. See the manual for SDRRecorder Pro for additional information on this functionality.

Clicking “Load Report” will generate a Load Report based on desired parameters and information.



Clicking “Approval” allows you to add notes and attachments, then approve or reject the information in the Load Tracking Editor.

Clicking “Close” returns you to the History screen.

Bulk Load Reports

You can also generate multiple Load Reports at once from Load Entry 3. Multi-select load histories (using Shift-click and Ctrl-click to select as you would in Windows) and click the Load Report button to launch a process to produce Load Reports directly to PDF format.

Overview Active History

From  To 

Loads					
ID	RUN IDENTIF	TIME IN	TIME OUT	Load Report	CE
01312082059AM	35	1/31/2020 8:21:2	1/31/2020 8:22:4	Wash	
01312081747EP	34	1/31/2020 8:18:2	1/31/2020 8:19:3	Wash	
013020165228N	33	1/30/2020 16:05:	1/30/2020 16:07:	Wash	
013020155432G	32	1/30/2020 15:55:	1/30/2020 15:56:	Wash	
017209857DQ	175	1/7/2020 9:10:32	1/7/2020 9:12:39	Batch No. 96	
017209739Y3	174	1/7/2020 9:08:08	1/7/2020 9:08:35	Batch No. 96	
0172090031	173	1/7/2020 9:00:38	1/7/2020 9:01:20	Batch No. 96	
0162010956OE	172	1/6/2020 10:10:1	1/7/2020 8:57:33	Batch No. 96	
0132014524871	171	1/3/2020 14:53:4	1/6/2020 8:11:41	Batch No. 96	
01320134536WJ	71	1/3/2020 13:45:4	1/3/2020 13:45:5	HC900#5	
0122012261175	160	1/2/2020 12:26:2	1/2/2020 12:28:4	Batch No. 96	

Alternately, multi-select the desired load histories and click the Run Report button after selecting Load Tracking from the accompanying dropdown.

 Run Report

The Bulk Report Parameters screen will then appear. Here you can choose for the reports to include the trend image, the tabular data, or both. (This can be changed per report on a later screen.)








BULK REPORT PARAMETE... — □ ×

Options

☒ Trend
 ☐ Data
 ☐ Both

✓ Okay
✕ Cancel

Next, on the Selected Historical Load Tracking screen, you will see the loads you selected, the Run ID of that load, how many work orders that are associated with the load (and are auto selected to run with the report) and an option to edit the load reports.

SELECTED HISTORICAL LOAD TRACKING ×			
LOADS	RUN ID	WORK ORDERS	EDIT
02272083411FQ	327	2	
01312082059AM	35	1	
01312081747EP	34	1	
013020165228N	33	1	
013020155432G1	32	1	
01320134536WJ	71	1	
		 Export	✕ Cancel

The Edit buttons will bring up the Report Parameters screen which allows you to deselect Work Orders. Also, here you can set Trend, Data, or Both for each specific report.

Once everything is set as desired, click Export to begin the report generation process.

Standard Load Entry 3 Operations Manual

REPORT PARAMETERS

Start Time

2/27/2020 8:35:14

End Time

2/27/2020 8:36:28

WORK ORDERS

<input checked="" type="checkbox"/>	WORK ORDER	ALLOMANCY	ALLOY	CUSTOMER	WORK ORDER CF	WC
<input checked="" type="checkbox"/>	WO2	Test Custom Field				
<input checked="" type="checkbox"/>	WO1	Test Custom Field				

ONE TIME READS

New One Time Read

☐ Start

☐ End

TREND

Start Offset

0

End Offset

10

Options

☐ Trend

☐ Data

☒ Both

Points

☒ Program Number/Step

☒ Program Run Time

☒ Program Soak Time Remaining

☒ Programmer Alarm #

☒ Program Number

☒ Step Number

☒ Temperature

☒ %Carbon Actual

☒ Temperature %Output

☒ Dummy

TIME STAMPS

Temp Actual

GreaterThan

0

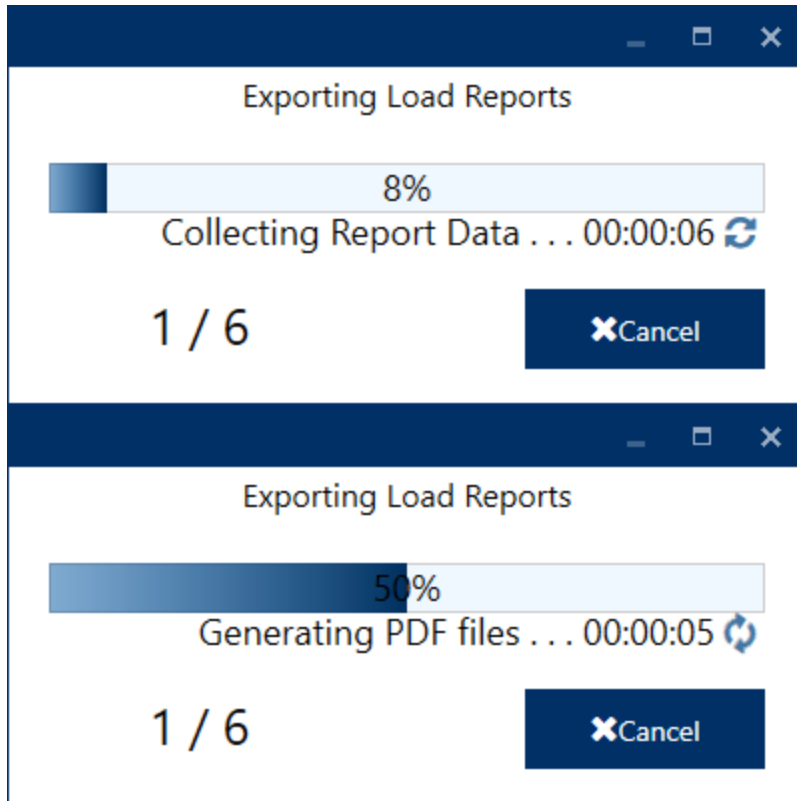
Test timestamp

LessThan

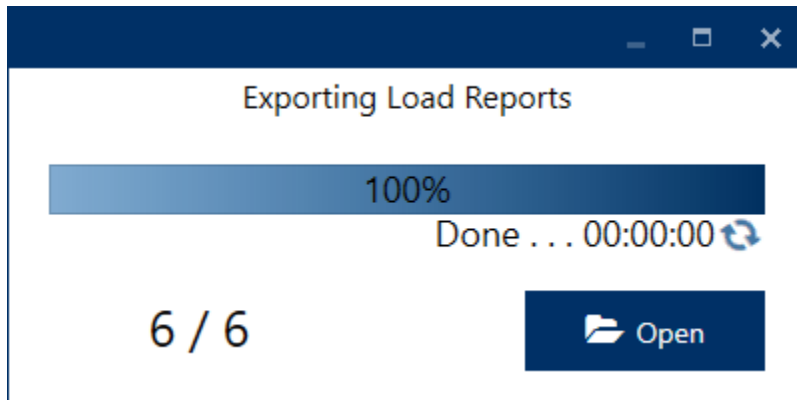
8

✓ Okay

The generation process goes through two main phases: Collecting Report Data and Generating PDF Files.

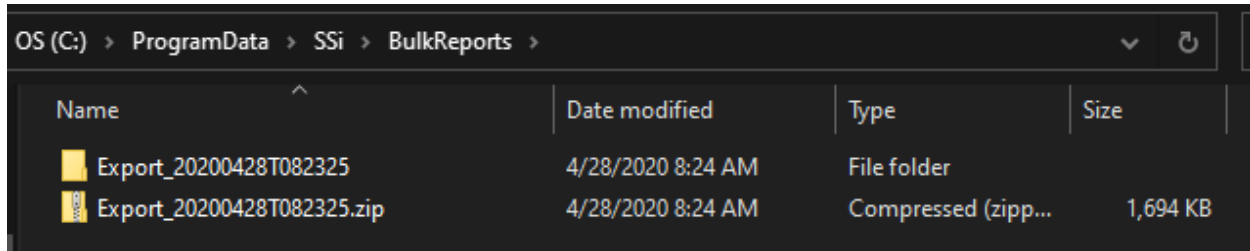


Once complete, you can click Open to view the file location of the reports.



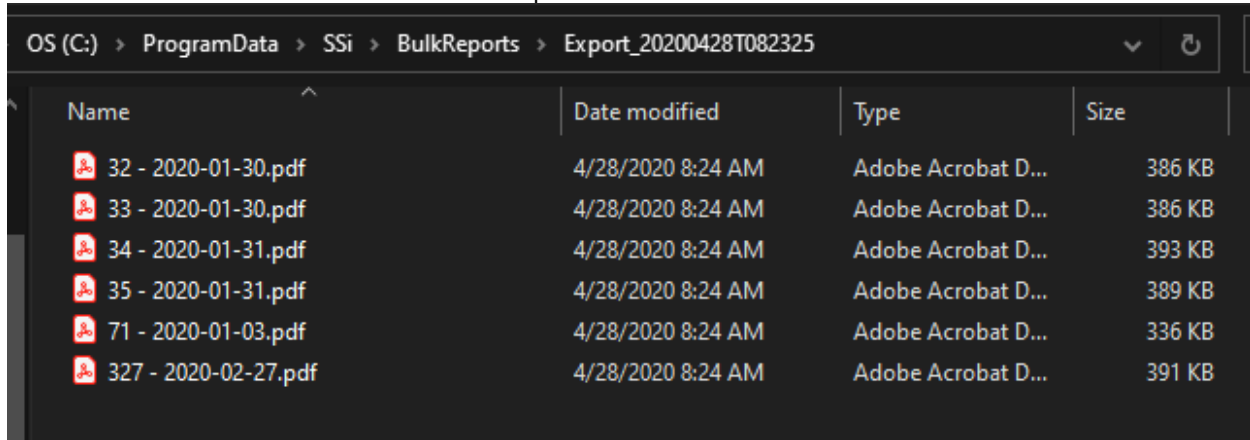
Standard Load Entry 3 Operations Manual

Windows Explorer will open to the BulkReports directory where you can find the export folder and also a zip of that folder. The export folder is named with the full data and time of when the reports were generated.



Name	Date modified	Type	Size
Export_20200428T082325	4/28/2020 8:24 AM	File folder	
Export_20200428T082325.zip	4/28/2020 8:24 AM	Compressed (zipp...	1,694 KB

Within the folder the user will find the report PDFs.



Name	Date modified	Type	Size
32 - 2020-01-30.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	386 KB
33 - 2020-01-30.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	386 KB
34 - 2020-01-31.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	393 KB
35 - 2020-01-31.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	389 KB
71 - 2020-01-03.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	336 KB
327 - 2020-02-27.pdf	4/28/2020 8:24 AM	Adobe Acrobat D...	391 KB

Revision History

Rev.	Description	Date	MCO #
-	Initial Release	2/28/2019	2259
A	Various interface and feature updates	11/23/2020	2303