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1. DataStream™ Interface

1.1. Overview

1.1.1. Logging In

The login page is displayed when the tool starts up. By default there are four built-in usernames (shown below). The default username is “admin” and the default password is “admin2”.
1.1.2. Default Users

<table>
<thead>
<tr>
<th>Username</th>
<th>Password</th>
<th>Access Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>admin2</td>
<td>Full access to all advanced tool features</td>
</tr>
<tr>
<td>eng</td>
<td>eng0</td>
<td>Advanced &amp; basic recipe editors</td>
</tr>
<tr>
<td>tech</td>
<td>tech1</td>
<td>Basic recipe editor</td>
</tr>
<tr>
<td>op</td>
<td>op6</td>
<td>View recipes</td>
</tr>
</tbody>
</table>

1.2. **Navigation Bar**

```
Spin Coater   Process   Recipes   About   Tools -   tech
```
2. DataStream™ Process Page

The process page is used to run recipes and to view tool operation in real time. Within the page, multiple views of the system are accessible via the carousel-style control. The user must be logged in and have local control to run recipes. See the Local Presence section for more information.

1. Current user
2. Active recipe name
3. Rotate carousel to the graph view
4. Rotate carousel to the recipe progress view
5. Process view window
6. How much of the process has been completed
7. State of the system parameters (Critical High, Warning High, In Range, Warning Low, and Critical Low)
8. Omni-button that changes depending on the state of the tool
2.1. Process View Window - Table View

The Table View displays the real-time system parameters in table form. Parameters vary depending on the tool type.

Every parameter has an actual current value. Most of the parameters have a set point that is set via recipes or manual commands. Some parameters, such as temperature controllers, can be manually disabled; when disabled, “–” is displayed as the set point.

All parameters have an associated Status; this Status column will match the process alerts in both color and warning level. The Status ranges are pre-defined for all basic recipes and can be edited in advanced recipes.
2.2. Process View Window - Recipe Progress View

The Recipe Progress view lists the steps of the active recipe displayed in the advanced recipe format.

1. Completed step rendered green and checked
2. Step being executed rendered yellow and unchecked
3. Step to be completed rendered unchecked
4. Recipe progress, in steps and iterations, displayed graphically
2.3. Process View Window - Graph View

The Graph View shows the previous 30 seconds of the selected parameter. Parameters are selected by clicking on a parameter’s row in the Table View. The graph auto-scales based on the data being displayed.
2.4. Process View Window - Process Summary View

The Process Summary View displays a summary of the most recent process, including active processes.

1. Process Alert UI holds the most critical statuses seen during a process
2. Most recent diagnostic message
3. Seconds spent in the Critically Low and Warning Low status
4. Seconds spent in the Critically High and Warning High status
5. Process Alert UI that shows the current status of the parameters (may differ from #1)
2.5. Apogee™ Spin Coater - System Parameters

The Apogee™ Spin Coater controls and monitors a number of system parameters. The following section explains what system parameters are and how they are controlled.

**Spin Speed**: Spin Speed is the measured rotational speed of the spin chuck in rotations per minute (rpm).

**Spin Acceleration**: Spin Acceleration defines how fast the spin chuck accelerates in rpm / second. *This cannot be set without also setting a Spin Speed*

**Percent Exhaust**: Percent Exhaust is the current position, in percent, of the optionally equipped programmable exhaust module.

**Active Dispenses**: Active Dispenses is a list that indicates what dispenses are turned on.

**Dispense Source Empty**: Dispense Source Empty is a list of all of the source empty sensors that are currently indicating a bottle is low or empty.

**Chuck Vac**: Chuck Vac is the measured vacuum level holding the wafer against the spin chuck in kPA.

**Waste Bottle Full**: Waste Bottle Full indicates whether or not the waste bottle full sensor is detecting a full waste bottle.

**Ambient Temperature**: Ambient temperature is measured with a custom sensor board mounted inside of the tool next to a ventilation inlet.

**Humidity**: Ambient relative humidity is measured with a custom sensor board mounted inside of the tool next to a ventilation inlet.

**Vibration**: Vibration is unitless measurement taken by measuring g-forces at the spindle block. It can be used to detect off-centered wafers at high speeds.
## 2.6. Apogee™ Bake Plate – System Parameters

The Apogee™ Bake Plate controls and monitors a number of system parameters. The following section will explain what system parameters are and how they are controlled.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Actual</th>
<th>Set Point</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plate Temperature</td>
<td>160.0 °C</td>
<td>160.0 °C</td>
<td>In Range</td>
</tr>
<tr>
<td>Lift Pin Height</td>
<td>13.0 mm</td>
<td>13.0 mm</td>
<td>In Range</td>
</tr>
<tr>
<td>Bake Method</td>
<td>Contact</td>
<td>Contact</td>
<td>In Range</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>21.1 °C</td>
<td></td>
<td>In Range</td>
</tr>
<tr>
<td>Humidity</td>
<td>47.9 %</td>
<td></td>
<td>In Range</td>
</tr>
</tbody>
</table>

**Plate Temperature:** The bake plate chuck temperature is set in both basic and advanced recipes.

Due to the inherent time to heat up a chuck, the process does not wait to achieve the target temperature before continuing to the next step. The chuck should be close to temperature prior to running a recipe. Using Preconditions will ensure the platens are in range before a process continues. The tool will attempt to bring the chuck temperature in range at the start of a recipe if preconditions are defined, otherwise the temperature can be set via Manual Controls.

**Lift Pin Height:** Lift Pin Height is the height of the exposed lift pins in relation to the chuck surface in millimeters. The Lift Pin Height can be set between 0.0 mm and 13.0 mm in basic recipes, advanced recipes, and manual commands.

**Bake Method:** The Bake Method describes how a wafer is heated by the hot surface.

**Proximity:** In this method, substrates float on a pillow of gas (typically nitrogen) supplied through orifices in the plate surface. The combination of heated gas and radiant heat from the chuck heats the substrate. This slower heating of the substrate reduces blistering and cracking of films incorporating fast-drying solvents.

**Lift Pins:** Uses electronic lift pins to precisely control the distance between chuck surface and the wafer between 0.0 mm and 13.0 mm.

**Vacuum:** Vacuum (hard-contact) bake, represents the most accurate baking method for bake plates. Vacuum ports in the chuck hold the substrate securely in place. This method ensures bake uniformity and minimizes bowing and warping of the substrate. A quicker warm-up and more efficient heating produces faster throughput in shorter bake times. Selecting the “VAC” (vacuum bake) method initiates the hard-contact bake cycle.
Contact: In this method, gravity alone holds the substrate against the surface of the chuck. This method finds some use as an intermediate style, between the hard-contact and the proximity bakes, as a multiple step warm-up.

Ambient Temperature: Ambient temperature is measured with a custom sensor board mounted inside of the tool next to a ventilation inlet.

Humidity: Ambient relative humidity is measured with a custom sensor board mounted inside of the tool next to a ventilation inlet.

2.7. Apogee™ Bonder - System Parameters

The Apogee™ Bonder controls and monitors a number of system parameters. The following section will explain what system parameters are and how they are controlled.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Actual</th>
<th>Set Point</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Platen Temp</td>
<td>25.0 °C</td>
<td>25.0 °C</td>
<td>In Range</td>
</tr>
<tr>
<td>Upper Platen Temp</td>
<td>25.0 °C</td>
<td>25.0 °C</td>
<td>In Range</td>
</tr>
<tr>
<td>Chamber Pressure</td>
<td>97.5 kPa</td>
<td>97.5 kPa</td>
<td>In Range</td>
</tr>
<tr>
<td>Bond Force</td>
<td>0.0 N</td>
<td>0.0 N</td>
<td>In Range</td>
</tr>
<tr>
<td>Position</td>
<td>Load Top</td>
<td>Load Top</td>
<td>In Range</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>32.7 °C</td>
<td></td>
<td>In Range</td>
</tr>
<tr>
<td>Humidity</td>
<td>73.9 %</td>
<td></td>
<td>In Range</td>
</tr>
</tbody>
</table>

Platen Temperature: Lower and upper platen temperatures are set in both basic and advanced recipes.

Due to the inherent time to heat up a platen, the process does not wait to achieve the target temperature before continuing to the next step. The platens should be close to temperature prior to running a recipe. Using Preconditions will ensure the platens are in range before a process continues.

The tool will attempt to bring the platen temperature in range at the start of a recipe if preconditions are defined, otherwise the temperatures can be set via Manual Controls.

Chamber Pressure: Chamber Pressure is the absolute pressure measured inside the bond chamber in kPa.
The tool will continuously evacuate the bond chamber to the lowest possible level (~ 0.5 kPa) during a bond process. The process will continue to the next step when the bonder reaches the commanded Chamber Pressure and continue to evacuate the chamber until the process is complete.

*The pressure cannot be set directly.*

*The tool cannot bond without evacuating the bond chamber.*

**Bond Force:** Bond Force is the calculated force, in Newtons, between the two bond surfaces (platens).

Bond Force can be set in basic recipes, advanced recipes, and manual commands.

Note that the process does not wait to achieve the target bond force before continuing. A delay must be inserted after setting the Bond Force to control total bond time.

**Bond Force does not take into account wafer sizes.**

*It is not recommended to apply a bond force without wafers in the bond chamber.*

**Position:** Position refers to physical location and the state of the lower bond assembly.

- **Load Bottom:** The lower platen assembly is fully exposed and loading arms are positioned to load the bottom wafer.
- **Load Top:** The lower platen assembly is fully exposed and loading arms are positioned to load the top wafer.
- **Process:** The lower platen assembly is closed and sealed to the upper platen assembly and is ready to bond the wafers.
- **Unload:** The lower platen assembly is fully exposed and loading arms are positioned to unload the bonded pair.
- **Ambient Temperature:** Ambient temperature is measured with a custom sensor board mounted at the rear of the tool.
- **Humidity:** Ambient relative humidity is measured with a custom sensor board mounted at the rear of the tool.
2.8. Apogee™ Spin Coater - Running Recipes

1. Select Recipes Page

2. Load Recipe

3. Search For / Select Recipe

4. Select Recipe to Run

5. Start Running Recipe

6. Recipe Running

Users may be required to follow prompts on screen during recipe execution.
Wafer Centering Step

1. Spin the chuck at a slow speed with vacuum turned on
2. Toggle the chuck vacuum ON
3. Toggle the chuck vacuum OFF
4. Resume recipe
2.9. Apogee™ Bake Plate – Running Recipes

1. Select Recipes Page

2. Load Recipe

3. Search For / Select Recipe

4. Select Recipe to Run

5. Start Running Recipe

6. Recipe Running

Users may be required to follow prompts on screen during recipe execution.
2.10. **Apogee™ Bonder – Running Recipes**

1. **Select Recipes Page**

2. **Load Recipe**

3. **Search For / Select Recipe**

4. **Select Recipe to Run**

5. **Start Running Recipe**

6. **Recipe Running**

Users may be required to follow prompts on screen during recipe execution.
3. **DataStream™ Recipes Page**

Recipes can easily be created, edited or viewed for the DataStream interface. Recipes can also be remotely downloaded or uploaded when using the DataStream ™ Networking feature explained in Section 6 of this document.

### 3.1. Recipe Management

1. Load a pre-existing recipe to view, edit, or run.

2. Creating a new recipe is controlled by user access level, and the New button is not visible if the current user does not have sufficient privileges.
3.2. Loading

By default, when loading a recipe, the recipe list contains all available recipes. A user can refine the list by entering a “name contains” query in the search box and clicking the search button.

To load a recipe, simply click on the desired recipe name.
3.3. Viewing

Once a recipe is loaded, a user can perform different actions on the recipe based on user access level and whether the user has control over the tool. The Recipe View varies depending on what type of recipe has been loaded.

1. Selecting Run can only be done if the user has control of the tool (see Local Presence). Once a recipe is selected, the user is directed to the process page where it is then available to start.

2. Editing a recipe is controlled by user access level, and the Edit button is not present if the current user does not have sufficient privileges.

3. Deleting a recipe is controlled by user access level, and the Delete button is not present if the current user does not have sufficient privileges. Deleting cannot be undone, so it requires an action confirmation (explained below).
3.4. Editing

All DataStream™ system-equipped tools share the same recipe-editing platform. When creating a process recipe on the tool, the default type of recipe is a basic recipe. When the recipe is run, it is converted into an advanced recipe (explained below) and executed.

1. Basic recipe editors will vary based on tool type. More information can be found in the tool-specific quick start guides listed below.

2. Save all changes to the recipe, overwriting any existing recipe with the same name.

3. Discard all changes to the recipe.

4. Action confirmation is required for any action that can result in the loss of data. To confirm the action, you must click on the button a second time while the confirmation indication is still visible (roughly 3 seconds).

5. Like its parent menu, the Editor Controls context menu varies based on what type of recipe has been loaded and what is currently selected in the editor.

6. Clicking the Advanced button will convert the basic recipe into an advanced recipe. Once a basic recipe is converted to an advanced recipe and saved, the conversion cannot be undone. The Advanced button requires an action confirmation to activate and is not present if the current user does not have sufficient privileges.
3.4.1. Editing Spin Coater Recipes

1. A spin coater recipe can have an unlimited number of steps. Each step can set the spin speed, acceleration, spin time, exhaust opening, and dispense triggers.

2. The step context menu allows a user to insert a new step after the selected step, move the selected step up or down, and delete the selected step.

   **Name:** The name will be used in log files and as search criteria when searching for recipes. *The name cannot contain spaces. Recipes with the same name will be overwritten.*

   **Enable Chuck Vac:** Enable Chuck Vac indicates that the substrate requires vacuum to remain on the spin chuck and requires the user to center the substrate prior to spinning.

   **Step Velocity:** The speed, in rpm, the spin chuck will be commanded to reach on a given step. Preconditions will automatically be set to ± 5% of the target speed.

   **Step Ramp:** The rate, in rpm/sec, the spin chuck will ramp at on a given step.

   **Step Time:** The amount of time in seconds to wait on a given step. This time should be long enough to ensure the spin chuck reaches the commanded speed.

   **Exhaust:** How much exhaust flow, in percent, should be allowed to be pulled from the spin bowl. This field will not be present if the optional programmable exhaust is not enabled.

   **Dispense:** What dispenses should be ON for a given step.
Editing Dispense Selection: Dispenses that are to be turned ON are rendered green and checked.
3.4.2. Editing Bake Plate Recipes

1. A bake plate recipe can have an unlimited number of steps. Each step can set a bake time and bake method.
2. The step context menu allows a user to insert a new step after the selected step, move the selected step up or down, and delete the selected step.

**Name:** The name will be used in log files and as search criteria when searching for recipes. *The name cannot contain spaces. Recipes with the same name will be overwritten.*

**Temperature:** The temperature the bake plate chuck will be set to at the start of the process. The standard maximum temperature is 300 °C. Higher temperatures are available. Preconditions will automatically be set to ± 5% of the target temperature.

**Step Time:** The amount of time in seconds to wait on a given step.

**Step Bake Method:** Bake method to use on a given step. See Bake Method under System Parameters for a detailed explanation of the methods.

**Step Pin Height:** Height to set the electronic lift pins on a given step. *Only applies to Lift Pins bake method.*
3.4.3. Editing Bonder Recipes

1. A bake plate recipe can have an unlimited number of steps. Each step can set a bake time and bake method.
2. The step context menu allows a user to insert a new step after the selected step, move the selected step up or down, and delete the selected step.

**Name:** The name will be used in log files and as search criteria when searching for recipes.

*The name cannot contain spaces.*

*Recipes with the same name will be overwritten.*

**Temperature:** The target platen temperatures for the process.

Preconditions will automatically be set to ± 5% of the target temperature.

**Force:** The target bond force used to bond the wafers in Newtons.

**Time:** The amount of time to apply the bond force in seconds with a precision of 0.1 seconds.

**Evacuate Chamber To:** The minimum Chamber Pressure required before continuing with the bond process.

**Pre-bond Delay:** A delay after the bottom wafer is placed to allow the wafer to thermally stabilize prior to placing the top wafer.
3.5. Advanced Recipe Editor

Advanced recipes allow more detailed control over the process and are typically reserved for expert users.

To create an advanced recipe, a user must first create a basic recipe then convert it to an advanced recipe.

1. The recipe name is used to identify the recipe in log files as well as future searches.

2. The notes field can be used to store additional process information. This field is not required.

3. Process steps are selected by clicking on the desired row. Clicking the row a second time will open the recipe step editor.

4. Save all changes to the recipe, overwriting any existing recipe with the same name.

5. Discard all changes to the recipe.

6. Display the Precondition editor. See Preconditions for more information.

7. Display the Runtime Tolerance editor. See Runtime Tolerances for more information.

8. Insert a new step below the selected step.

9. Shift the selected step up.

10. Shift the selected step down.

11. Permanently delete the recipe.
3.5.1. Recipe Step Editor

1. Save the current values of the step and return to the recipe view.

2. Discard all modifications to the step and return to the recipe view.

3. The Control field is a drop-down menu of all of the possible things a user can control in a recipe, which includes commands, delays, and user prompts. The tool-specific controls are listed in the corresponding quick start guide.

4. Actions are a further refinement of the Control field which specifies what action the selected Control should perform.

5. The Parameters are a list of required parameters for a given Control and Action combination.

6. The Description will be displayed in log files and during recipe execution.

Examples:

**User Notifications** -> **Prompt User** -> Shows the title and body used for a given user prompt.

**Plate Temperature** -> **Set** -> Shows value to set the plate temperature.

**Plate Temperature** -> **Enable** -> Shows value that enables / disables the temperature controller.

**Bond Force** -> **Set** -> Shows value to set the Bond Force.

**Position** -> **Move To** -> Shows possible positions / states the tool can be placed.
3.6. Preconditions

Preconditions are parameter / condition verification tests run prior to starting a recipe. If all of the preconditions are acceptable, the recipe runs normally. If any of the preconditions are outside of specification, the user will have to wait for acceptable conditions prior to starting the recipe. The tool will attempt to bring parameters under its control in range at the start of the process.

1. Save all of the required preconditions.

2. Discard all modifications to the preconditions.

3. The selected precondition shows the system parameter being verified as well as an English description of the parameters.

4. The Enabled button toggles whether or not the precondition should be evaluated. When not enabled, the description will display “Disabled.”

5. The precondition parameters vary depending on what system parameter is selected.
3.7. Example Precondition Check

1. A list of all of the required preconditions.

2. Abort the process.
3.8. Runtime Tolerances

Runtime Tolerances are parameter / condition verification tests run during recipe execution and after recipe completion. The Runtime Tolerances are used to drive the process alerts on the Process and Manual Control pages.

1. Save all of the monitored tolerances.

2. Discard all modifications to the monitored tolerances.

3. The selected tolerance shows the system parameter being monitored as well as an English description of the parameters.

4. The Enabled button toggles whether or not the tolerance should be evaluated. When not enabled, the description will display “Disabled” and the process alerts will always show “In Range.”

5. The tolerance parameters vary depending on what system parameter is selected. For system parameters that have an associated Set Point, the Runtime Parameters are considered relative to the current Set Point. Other parameters are absolute values.
3.9. Process Alert UI

The process alert element allows the user to see, at a glance, the current state or states of a system via a symmetrical grid. The design utilizes human beings’ natural pattern recognition abilities to quickly identify non-conforming data points. In addition to leveraging pattern recognition, the design uses both position and color variations to indicate state, making it unambiguous to colorblind users.

1. The Critically High segment is rendered when a system parameter exceeds the allowable upper limit.

2. The Warning High segment is rendered when a system parameter is above the target range but is still within allowable limits.

3. The In Range segment is rendered when the system parameter is within the target range.

4. The Warning Low segment is rendered when a system parameter is below the target range but is still within allowable limits.

5. The Critically Low segment is rendered when a system parameter is below the allowable lower limit.

A complete green circle will be rendered when all process parameters are within range.
3.10. Iterations

When more than one iteration is defined, the recipe will repeat all of the steps between the start and end iteration steps. Recipe iterations are controlled by selecting where the iteration loop starts, ends, and how many times it should repeat.

The Recipe Progress View on the Process page indicates how many iterations have been completed during a process.

1. The start iteration step can only be moved within the recipe.

2. The end iteration step can be moved and edited.

*Only advanced recipes support recipe iterations.*

*Iteration steps cannot be added or deleted.*

*Iterations are not available on all tool configurations.*
3.10.1. Changing Iteration Count

The end iteration step, similar to a standard step, can be edited by selecting then clicking the step a second time.
4. About Page

4.1. Tool Info

**Tool Name:** The tool's name (configured in Settings).

**Serial Number:** Unique Cee-assigned tool serial number

**Local Time:** Current time as defined by the local time zone offset

**System Time:** The current Coordinated Universal Time based on the tool's system clock

**External Address:** The DHCP IP address given to the tool when connected to a network

**MAC Address:** Hardware MAC address of for the external ethernet port
4.2. **DataStream™ System Applications**

The list of applications, their release date and version number can be used to determine exactly what versions of software are running on the tool.

**Firmware:** Responsible for real-time process controls and executing recipes

**Web UI:** Responsible for managing all user interactions

**Diego:** Responsible for displaying the user interface on tool

**Manny:** Responsible for user management activities

**Postal:** Responsible for sending emails to a configured SMTP server

4.3. **Tool Usage**

**Processes Run:** Total number of processes completed on the tool

**Manual Operations:** Total number of manual operations run by users on tool

**User Aborts:** Total number of processes / commands aborted by the user

**System Aborts:** Total number of processes / commands aborted by the control system

**Uptime:** How long the tool has been running since the last reboot

**Last Downtime:** How long tool was turned off before powering back on

4.4. **Client Info**

The client information contains browser-specific information to be used for trouble shooting purposes.
4.5. Software Updates

The Software Update Utility can be accessed by tool administrators by clicking the Software Update button found on the About page.

1. CEE-supplied software patches (.bsi files) are transferred to the tool by either uploading the file through a remote computer (requires network connection) or by placing the file on the root of a FAT-32-formatted USB flash drive. The USB port on the tool is located on the rear utility panel.

2. Patch files discovered by the tool will show up in the Available Patch Files section.

3. To apply a software patch, the user must select a file from the Available Patch Files section and click Apply.

4. The status and detailed output of the installation process is available at the bottom of the page.

5. The Home button takes a user back to the main application.

   **The tool must be restarted for changes to take effect.**
5. Tools Page

5.1. Manual Tool Operation

The Manual Control page is an advanced feature that allows users to run many tool operating processes individually, outside of a recipe. This mode can be used for tasks such as prototyping processes, verifying tool operation, and recovering from aborted processes. If the user has sufficient privileges, the Manual Control selection is available under the Tools menu.

If using remote feature, the user must have confirmed their local presence in order to execute manual commands.

5.1.1. Local Presence Verified

1. The Control field is a drop-down menu of all of the possible things a user can control in manual operation. The tool-specific controls are listed in the corresponding quick start guide.

2. Actions are a further refinement of the Control field which specifies what action the selected Control should perform.

3. The Parameters are a list of required parameters for a given Control and Action combination.

4. The description of what the manual command is going to perform in plain English.

5. Pressing Apply will execute the command; while running a command, the button will display Abort.
5.1.2. Local Presence Not Verified

5.2. Log Browser

The Log Browser is an advanced feature that allows users to download process logs formatted as .XLSX or .JSON.

If the user has sufficient privileges, the Log Browser selection is available under the Tools menu.
5.2.1. Search

1. The tool’s configured local time and date will be used as the reference point for all searches.

2. The user can enter the date or simply click the desired date in the user interface.

3. Pressing Search will query the tool for all records run on the specified date above.

4. Search results for the selected date will appear in a list format.
5.2.2. **Download**

1. Clicking on a search result selects it for download.
2. Download the selected process record.
3. Save the selected process record to an installed USB media drive.

   *USB media must be formatted as FAT32 and must contain a folder at on the drive’s root called “DATASTREAM”*
5.3. Settings

5.3.1. Tool Settings

1. The Tool Settings are found under the Tools > Settings menu by selecting the gears icon.

2. Tool Name is what uniquely identifies the tool in the top left corner of the display. If a Tool Name is not provided, it defaults to the tool type (Bonder, Debonder, Hot Plate, Spin Coater, etc).

3. Local Time Zone Offset is used to set the local time on the tool. It should be the standard offset compared the UTC (Coordinated Universal Time).

4. Enabling SSL will allow HTTPS access to the tool. A self-signed certificate will have to be accepted in order to access the tool. When enabled, the tool can be accessed from both HTTP and HTTPS.

5. Tool-specific settings are defined below.

6. Pressing Update will save all of the tool settings.

   The tool must be restarted for changes to take effect.
5.3.2. **Apogee™ Spin Coater Specific Settings**

**Vac Threshold (kPa):** Minimum vacuum threshold that must be reached before spinning a wafer.

**Centering Speed (rpm):** How fast the wafer spins during a centering routine.

**Centering Time (milliseconds):** How long the wafer spins during a centering routine.

**Idle Exhaust ( % ):** Default exhaust level when not running a process. *Idle Exhaust does not apply to tools not equipped with Programmable Exhaust.*

5.3.3. **Apogee™ Bake Plate**

**Temperature Calibration Offset (°C):** Offset used by the temperature controller to calibrate the reported chuck temperature.

5.3.4. **Apogee™ Bonder**

**Temperature Calibration Offset (°C):** Offset used by the temperature controller to calibrate the reported chuck temperature.
### 5.3.5. Mail Settings

1. The SMTP Mail settings are found under the Tools > Settings menu by selecting the mail icon.

2. The Host should be the SMTP server that will be used to send mail from.

3. The Port to use will be defined by the server. The default port for SMTP is 587 and 465 when using SSL.

4. The Username will be defined by the mail server’s administrator.

5. The password will be sent to the mail server with the username during mail submission.

6. Pressing Update will save all of the mail settings.

**Cost Effective Equipment does not provide an SMTP server or access to a server for individual tools.**

**The tool must be restarted for changes to take effect.**
5.3.6. User Management

User Profiles

Users that are setup as non-shared accounts can edit their personal profiles. See Access Controls below for more information on shared accounts.

Updating Personal Information

1. The User Profile is found under the Tools > Settings menu by selecting the profile icon.

2. Leaving the password field blank while updating the tool will ensure the user password is not changed. Entering a new password will trigger password validation shown below.

3. The user's email address is used throughout the system to send user defined notifications.

4. User notes are controlled by user administrators.

5. Pressing Update will save the changes.

Changes take effect on the next user login.
Updating Personal Password

1. Entering a new password triggers several validation fields.
2. The user must re-enter the new password to ensure they match.
3. The user must confirm the original password.
4. Pressing Update will verify the current password and save all of the changes to the user profile.

Changes take effect on the next user login.
User Administration

User administration is, and should be, a limited access permission that allows a logged-in user to manage all user accounts on the tool.

1. The User Administration view is found under the Tools > Settings menu by selecting the users icon.

2. All known users in the system will be listed in the Active Users window.

3. Actions include: creating new users, updating existing users, and deleting users.

4. Similar to the user profile view, the user administrator can update any user’s information.

5. User permissions, or access controls, define what actions the selected user can perform on a given tool. The access controls are defined in detail below.
## Access Controls

<table>
<thead>
<tr>
<th>Permission</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Account</td>
<td>Limit the user’s ability to update profile information.</td>
</tr>
<tr>
<td>Basic Recipe Editing</td>
<td>Ability to create basic recipes and edit all existing recipes.</td>
</tr>
<tr>
<td>Advanced Recipe Editing</td>
<td>Ability to create / edit basic and advanced recipes.</td>
</tr>
<tr>
<td>Export Log Files</td>
<td>Ability to export process and system log files.</td>
</tr>
<tr>
<td>Manual Tool Control</td>
<td>Ability to execute manual tool operations.</td>
</tr>
<tr>
<td>Remote Recipe Preparation</td>
<td>Allows user to prepare / preheat a tool without local control.</td>
</tr>
<tr>
<td>Tool Administrator</td>
<td>Allows full access to the tool’s configuration settings.</td>
</tr>
<tr>
<td>User Administrator</td>
<td>Ability to add, update, and delete users. This includes shared accounts.</td>
</tr>
</tbody>
</table>

By default, every user has the ability to view and run any recipe.
Adding Users

1. Clicking New will clear all of the user information.

2. A valid username must be provided. Usernames must be at least one character and may not contain spaces.

3. The user administrator must provide and verify a password.

4. All fields must be valid prior to saving the new user.
Updating Permissions

1. Select the desired user to update by clicking on a user in the Active Users list.
2. Update the user information as desired.
3. Save changes to the selected user.

**Usernames cannot be updated.**
Blank password fields will leave the original password in place.
Changes take effect on the next user login.
Deleting Users

1. Select the desired user to delete by clicking on a user in the Active Users list.

2. Click Delete to permanently remove the user from the system.

Users cannot delete their own user account. It is not possible to delete other User Administrators; that permission must be removed first.
5.3.7. **Diagnostic Interface**

A read-only diagnostic interface is available to tool administrators to help troubleshoot possible tool malfunctions.

**Navigation**

The diagnostic interface can be found under the Tools menu.

As indicated by the icon next to the menu item, navigating to this page will result in loss of all unsaved changes.
It is normal for some of the fields to indicate null or undefined.
6. **DataStream™ Networking**

A key feature of the DataStream™ system is the ability to remotely view and control the equipment. Remotely connected users with valid credentials, can view real-time parameters, create / edit recipes, view tool information, and download log files. Every function that is available from the user console of the equipment is available via remote network connection. There are several functions, listed in the following sections, not available from the console that are only available remotely.

6.1. **Connecting to DataStream™**

Connecting DataStream™ to a network is very similar to connecting any other hardware to a network. If you do not feel comfortable setting up network assets or do not have permission, consult your local system administrator.

To utilize the DataStream™ networking feature, the equipment must first be connected to an active network via the ethernet port located on the rear of the equipment. For this discussion the equipment is the host and the remote device is the client. The host and the client must be on the same subnet. From the factory the equipment is configured as DHCP meaning the network will assign the equipment an IP address once connected. The IP address is located from the user console under the About Tab in the Tool Info section.

Once the equipment is connected to the network, the DataStream™ interface can be view by opening any browser window and entering the IP address (shown on the about screen of the user console) into the address bar.

**Note:** If the network that the equipment is being connected to has a firewall, a port must be opened on the to allow the host and client to communicate.
6.2. Remote Recipe Editing

6.2.1. Upload and Download Recipes

For remotely connected users with sufficient privileges, it is possible to upload and download recipes.

1. Basic and Advanced recipes can be uploaded by either clicking Upload and navigating to the desired recipe or by dragging and dropping a recipe into the Recipe Controls area.

2. Loaded recipes can be downloaded in JSON format, allowing users to transfer recipes from one tool to another. To download, Load the desired recipe and select download in the left column.
6.2.2. Remote Preparation

Remote recipe preparation allows users with sufficient privileges to remotely prepare a tool to run a loaded recipe. Remote preparation focuses on things that take a significant amount of time before a recipe can be run, such as chuck / platen temperatures.

1. The Prepare button initiates a recipe preparation request and is only available to authorized users.
6.2.3. Local Display

When a user attempts to prepare a recipe, the user / device that has verified local presence will be alerted. The prompt shown to the local user indicates who is requesting the preparation and what recipe they wish to run. The local user has the ability to accept the request by pressing OK or reject the request by pressing Abort.

*The local user will have two minutes to respond before the tool automatically accepts the request.*
6.2.4. Preparation

During recipe preparation, the tool’s Process page indicates the parameters the tool is attempting to bring into range.

6.2.5. Preparation Complete

When the tool has brought all the parameters in range, the local user is alerted stating that the recipe is ready to run.
6.3. Remotely Running a Recipe

For safety reasons, users must verify their presence locally before running recipes or executing manual commands. Only one device can have control of the tool at a given time.

6.3.1. Not Verified

When using the tool’s interface without verified local presence, the omni-button will be locked. All actions that can affect the surrounding environment are disabled. Blocked actions include running recipes, aborting recipes, and executing manual commands.
6.3.2. Verifying

When the user wishes to verify local presence, the Process view will instruct the user to press the local presence button on the front of the tool. The local presence button is a small silver button with a flashing blue ring.

Pressing the local presence button while it is flashing transfers control to the last user to request control. The previous device that had control will enter the locked state.
When the user has verified their local presence, the omni-button will allow the user to run recipes, abort recipes, and execute manual commands. Recipe prompts are only displayed on the device that has control.