

# **PlateLoc Thermal Microplate Sealer**

## **Quick Start**

Original Instructions

# Notices

© Agilent Technologies, Inc. 2013

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Agilent Technologies, Inc. as governed by United States and international copyright laws.

## User Guide Part Number

G5402-90014

## Edition

Revision A, October 2013

## Contact Information

Agilent Technologies Inc.  
Automation Solutions  
5301 Stevens Creek Blvd.  
Santa Clara, CA 95051  
USA

Technical Support: 1.800.979.4811 (US only)  
or +1.408.345.8011 (rest of the world)  
[service.automation@agilent.com](mailto:service.automation@agilent.com)

Customer Service: 1.866.428.9811  
or +1.408.345.8356  
[orders.automation@agilent.com](mailto:orders.automation@agilent.com)

European Service: +44 (0)8457125292  
[euroservice.automation@agilent.com](mailto:euroservice.automation@agilent.com)

Documentation feedback:  
[documentation.automation@agilent.com](mailto:documentation.automation@agilent.com)

Web:  
[www.agilent.com/lifesciences/automation](http://www.agilent.com/lifesciences/automation)

## Acknowledgements

Microsoft® and Windows® are either registered trademarks or trademarks of the Microsoft Corporation in the United States and other countries.

## Warranty

**The material contained in this document is provided “as is,” and is subject to being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Agilent disclaims all warranties, either express or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Agilent shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Agilent and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.**

## Technology Licenses


The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

## Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or sub-contract, Software is delivered and licensed as “Commercial computer software” as defined in DFAR 252.227-7014 (June 1995), or as a “commercial item” as defined in FAR 2.101(a) or as “Restricted computer software” as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause. Use, duplication or disclosure of Software is subject to Agilent Technologies’ standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14

(June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

## Safety Notices

 **A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.**

**A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.**

## PlateLoc Thermal Microplate Sealer Quick Start

This quick start document summarizes the operator instructions in the *PlateLoc Thermal Microplate Sealer User Guide*.

This guide contains the following topics:

- “Safety information” on page 2
- “Getting started” on page 5
- “Sealing microplates” on page 13
- “Touch screen menus and commands” on page 19

For user information about related products, you can search the product knowledge base or download the latest version of a PDF file from the Agilent Technologies website at:

[www.agilent.com/lifesciences/automation](http://www.agilent.com/lifesciences/automation).

## Safety information

### Before using the PlateLoc Sealer

Before using the PlateLoc Sealer, your organization should make sure that you are properly trained in:

- General laboratory safety
- The correct and safe operation of the PlateLoc Sealer
- The correct and safe operation of lab automation systems or components used in combination with the PlateLoc Sealer

If you are the person in your organization responsible for training others on the PlateLoc Sealer and you have a safety question, contact Automation Solutions Technical Support.

### Safety standards

The PlateLoc Sealer is CE certified and complies with the following CE safety directive: EN 61010-1:1993, safety requirements for electrical equipment for measurement, control, and laboratory use, including amendments 1 and 2.

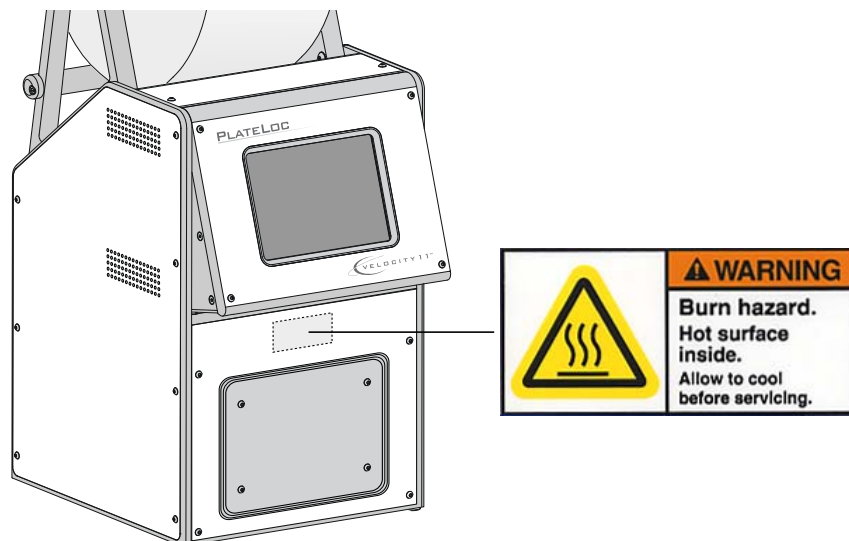
The PlateLoc Sealer is designed to meet UL specifications.

For the latest compliance information, contact Automation Solutions Technical Support.

### Safety labels

Pay attention to safety labels on the PlateLoc Sealer. A safety label consists of a warning symbol, a description of the warning, and information that helps you to avoid the safety hazard.

The following diagram shows the safety label that is placed on the front of the PlateLoc Sealer to warn you of high-temperature hazards.



## General precautions



**WARNING** Do not attempt to remove the PlateLoc Sealer covers and disassemble the device. Doing so can cause injuries and damage the device.



**WARNING** Using controls, making adjustments, or performing procedures other than those specified in this user guide can expose you to hot surfaces, high pressure gases, and moving parts. Exposure to these hazards can cause severe injury.

The PlateLoc Sealer is designed for safe operation. Under normal operating conditions, you are protected from high temperature, high pressure, and moving parts. However, you should be aware of these hazards and understand how to avoid being exposed to them.

## Chemical hazards



**WARNING** Chemicals that have low flash points (such as reagents that are used in radioactive scintillation proximity assays (SPAs) and solvents, including alcohols) must not be used in the PlateLoc Sealer.

Some chemicals used when working with the PlateLoc Sealer can be hazardous. Make sure you follow your local, state, and federal safety regulations when using and disposing of the chemicals.

Read the recommendations in the MSDS (Material Safety Data Sheet) for every chemical that you plan to use. The manufacturer of the chemical should provide you with the MSDS.

## Gas cylinders and pressure regulators

Follow the local, state, and federal safety codes for the placement and mounting of gas cylinders. For example, you might have to attach a standard cylinder bracket to a solid permanent structure to meet or exceed all local seismic and safety requirements.

Always use good lab practices when handling high-pressure cylinders. Make sure you follow any instructions provided with the cylinders.

## High-temperature hazards



**WARNING** Do not touch the PlateLoc Sealer or pry open the door while it is in operation. The hot surface can cause burn injury.

Use caution when removing a microplate after it is sealed. The microplate might still be hot from the sealing process.

Do not reach into the PlateLoc Sealer when it is at warmed up to a high temperature. When cleaning the metal plate (hot plate) inside the device, make sure the temperature setting does not exceed 40 °C. For details, see the cleaning instructions in the *PlateLoc Thermal Microplate Sealer User Guide*.

## Moving-parts hazards

The PlateLoc Sealer contains moving parts that can cause injury. Under normal operating conditions, the PlateLoc Sealer is designed to protect you from the moving parts. The door sensor is designed so that the seal cycle cannot start unless the door is closed.



**WARNING** Do not disable the door sensor or attempt to access the interior of the device through any other openings. Exposure to the moving parts, such as the heated metal plate (hot plate) or the seal-cutting blade can cause severe injuries.

In an emergency, turn off the PlateLoc Sealer. The on/off switch is located on the lower back side of the device.

## Fuses

Contact Automation Solutions Customer Service to replace the PlateLoc Sealer fuses. Do not attempt to replace the fuses yourself.

## Product use

Agilent Technologies products must only be used in the manner described in the user guides. Any other use can damage the product or injure you. Agilent Technologies is not responsible for damages caused, in whole or part, by unauthorized modifications, or by procedures that are not explicitly described in the product user guides. Any modifications or changes to products not expressly described in Agilent Technologies user guides are not covered under the warranty.

The PlateLoc Sealer is not intended or approved for diagnosis of disease in humans or animals.

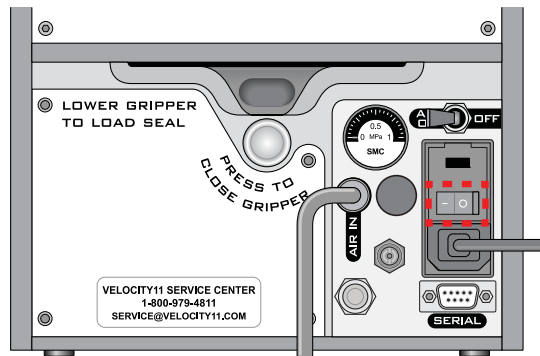
## Getting started

### Turning on and turning off the power

Before turning on the PlateLoc Sealer, make sure:

- The lab requirements are met.
- You have properly installed the PlateLoc Sealer.
- You are trained in the proper operation of the PlateLoc Sealer.

The on/off switch is on the back of the PlateLoc Sealer.



#### **To turn on the PlateLoc Sealer:**

Press the on/off switch to the on position (I).

If you have not yet turned on the air, the touch screen displays the Insufficient Air Pressure error message. See [“Turning on and turning off the air” on page 5](#). If you have not yet connected the air supply to the PlateLoc Sealer, see the [PlateLoc Thermal Microplate Sealer User Guide](#).

#### **To turn off the PlateLoc Sealer:**

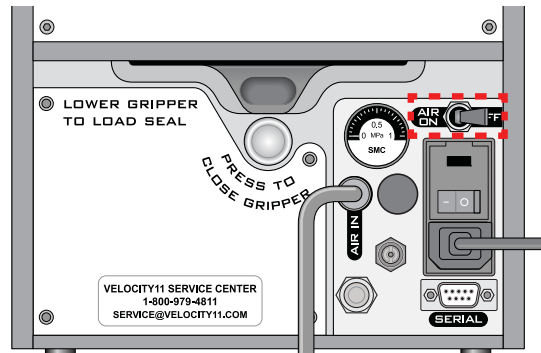
Press the on/off switch to the off position (O). The touch screen turns off.

### Turning on and turning off the air

Before turning on the air, make sure:

- You have properly installed the PlateLoc Sealer.
- The air is turned on at the source (house, cylinder, or pump) and the air pressure and flow rate meet the PlateLoc Sealer requirements.
- The PlateLoc Sealer is turned on.

The AIR ON/OFF switch is on the back of the PlateLoc Sealer.



**To turn on the air:**

Push the **AIR ON/OFF** switch to the **ON** position.

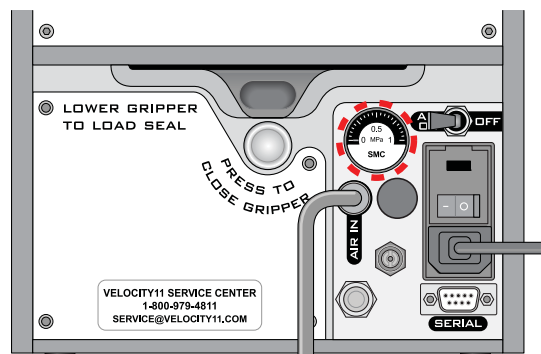
When you turn on the air, the PlateLoc Sealer door opens. If this is the first time you are turning on the air, you must remove the packing foam inside the sealing chamber before you can use the device.

**To check that air is flowing into the PlateLoc Sealer:**

Check the pressure gauge on the back of the PlateLoc Sealer. If air is flowing into the device, the gauge should show a non-zero pressure value.

If the gauge shows 0 psi, check the air tubing connections and the connections at the source (house, cylinder, or pump).

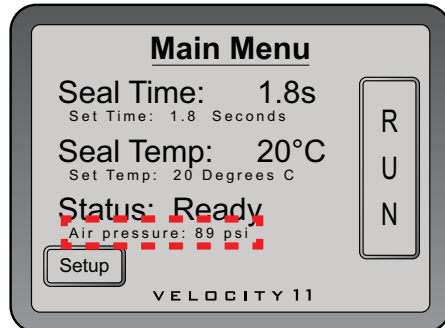
**IMPORTANT** The pressure reading on the back of the PlateLoc Sealer might be different from the value shown on the touch screen. The pressure gauge on the back of the PlateLoc Sealer should be used to determine the presence of air flow only. To check the air pressure inside of the device, view the air pressure information displayed on the touch screen.





**To check the internal air pressure:**

Check the touch screen **Main Menu**. The air pressure is displayed below **Status**. The air pressure should be approximately 87–90 psi inside the sealing chamber.



**To turn off the air:**

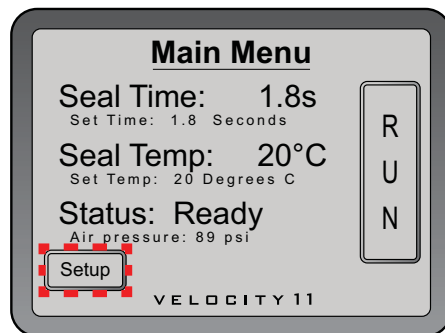
Push the **AIR ON/OFF** switch to the **OFF** position.

**Loading and unloading a roll of seal**

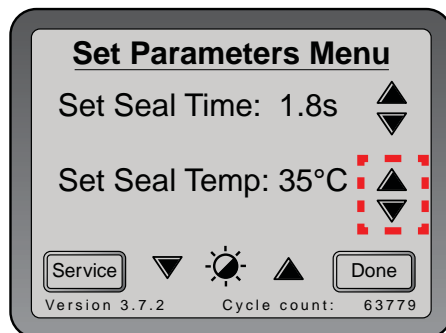
Make sure you have the supplied seal-loading card.

**To warm up or cool down the PlateLoc Sealer:**

- 1 From the touch screen **Main Menu**, press **Setup**.



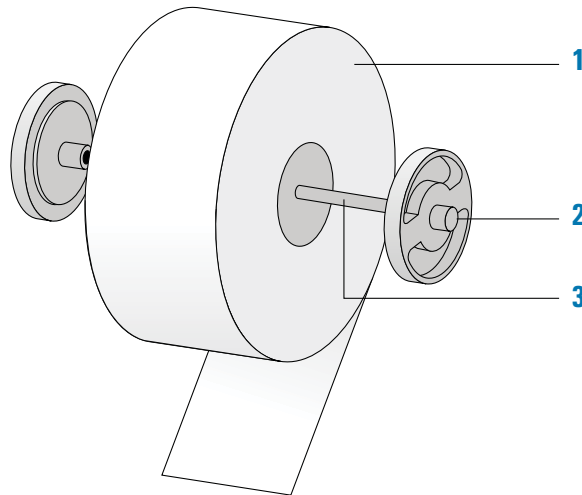
- 2 In the **Set Parameters Menu** that appears, set the **Seal Temp** at 30–40 °C.



- 3 Press **Done** to save the new temperature setting and return to the Main Menu.
- 4 Wait for the PlateLoc Sealer to warm up or cool down to 30–40 °C.

***To assemble a roll of seal on the axle and hubs:***

- 1 Remove the seal roll (1), seal-roll hubs (2), and axle (3) from their packaging.
- 2 Screw one of the hubs onto the axle.
- 3 Place the axle through the hole at the center of the seal roll. Make sure the hub fits snugly against the roll.
- 4 Screw the second hub onto the axle so that the roll is firmly secured between both hubs.



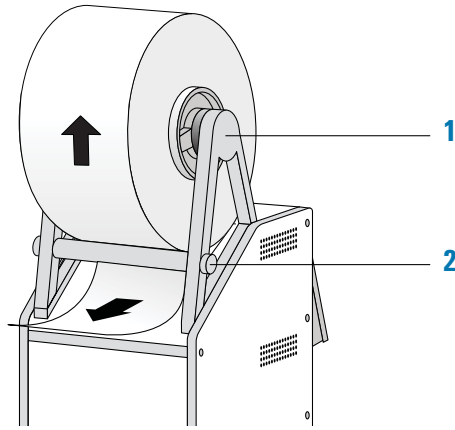
- 5 With scissors, cut off any wrinkled or torn material from the end of the seal so that the end of the seal has a clean, straight edge.

**CAUTION** The PlateLoc Sealer will not seal microplates properly if the seal is wrinkled or torn.

***To mount the seal roll on the seal-roll supports:***

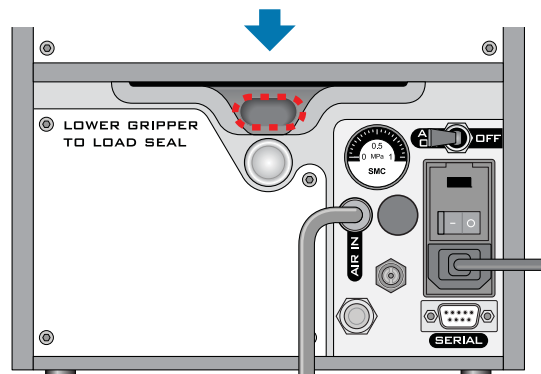
- 1 Orient the roll, and set the assembled seal roll onto the seal-roll supports (1) as shown in the following diagram. Notice that the end of the seal material rolls out from under the roll.

- 2 Pull the seal from under the cross-beam (2), as the following diagram shows.



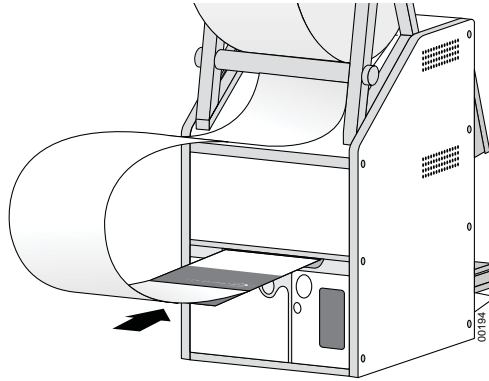
**To insert the seal into the PlateLoc Sealer:**

- 1 On the back of the PlateLoc Sealer, push down the red recessed open-gripper button until it clicks.  
Pressing the button opens the seal gripper inside the device.

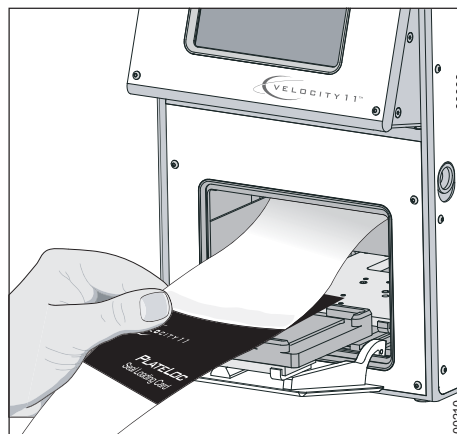
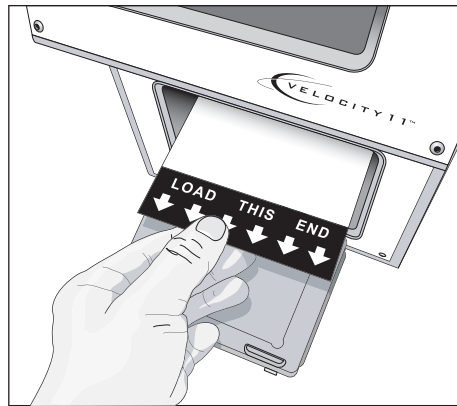


- 2 Remove the strip of paper that covers the adhesive on the end of the seal-loading card.
- 3 Follow the instructions on the card to:
  - a Attach the end of the seal to the card.
  - b Insert the card into the seal entry slot on the back of the PlateLoc Sealer.

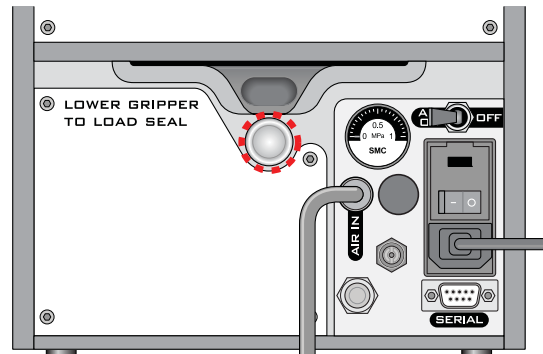
- c** Push the card into the PlateLoc Sealer until it protrudes beyond the chamber doorway at the front of the device.



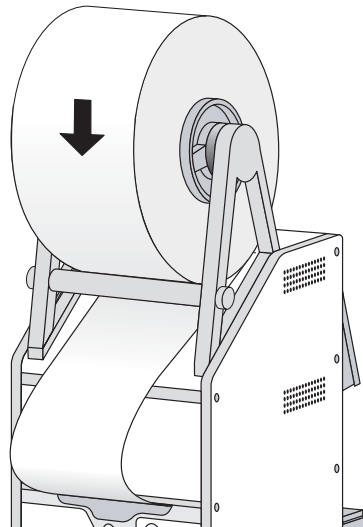
- d** Pull the card through the PlateLoc Sealer so that the end of the seal is past the plate stage.



- 4 Press the silver close-gripper button on the back of the PlateLoc Sealer until it clicks. The red open-gripper button pops back up.  
Pressing the silver button closes the gripper and holds the seal in place inside the device.



- 5 Turn the seal roll to remove excess slack in the seal.

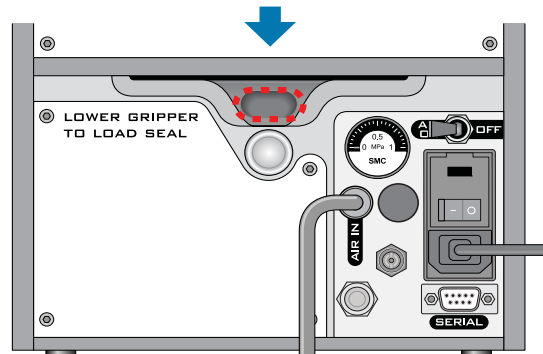


- 6 Load a plate stage on the plate-stage support.
- 7 Load a spare microplate on the plate stage.
- 8 Hold the seal-loading card at the touch screen level, keeping the tension on the card.
- 9 From the touch screen **Main Menu**, press **RUN**. Continue to keep the tension on the card as the seal feeds through the PlateLoc Sealer.  
The purpose of this seal cycle is to cut the seal and prepare it for use. The seal is not applied to the spare microplate.  
If an error displays on the touch screen, press **Clear** to clear the error before using the device.

## Unloading procedure

### *To unload a roll of seal:*

- 1** Power cycle the PlateLoc Sealer by turning off and turning on the device.  
Power cycling resets the components inside the device and removes the hold on the seal.
- 2** On the back of the PlateLoc Sealer, push down the red recessed gripper-release button until it clicks.  
Pressing the button opens the seal gripper inside the device.



- 3** Pull the seal out of the slot.
- 4** Lift the seal roll off of the seal-roll supports.
- 5** Unscrew one hub from the axle.
- 6** Remove the roll from the axle.

# Sealing microplates

## Loading an insert and a microplate

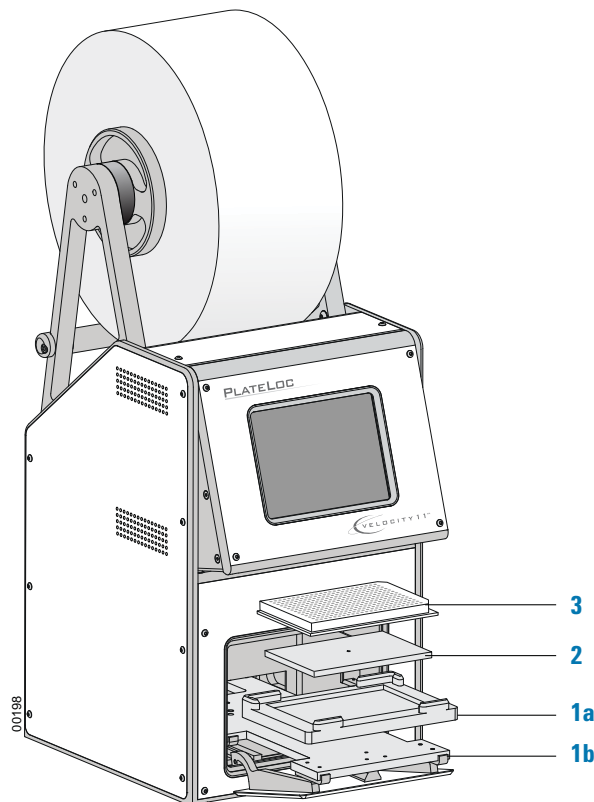
Before you load an insert or microplate, make sure:

- The PlateLoc Sealer is turned on.
- The air is turned on and the door is open.
- The seal is properly loaded.
- *Lab automation systems only.* Communication between the controlling computer and the PlateLoc Sealer is established.
- The sealing parameters are set correctly.
- The PlateLoc Sealer is warmed up or cooled down to the sealing temperature.

### Standalone device procedure

**To load a microplate and an insert in the standalone device:**

- 1** Place the removable plate stage (**1a**) on the plate-stage support (**1b**).
- 2** *Optional.* Place the insert (**2**) on the plate stage.
- 3** Place the microplate (**3**) on the insert or plate stage. Make sure the microplate is level and the microplate skirt is within the raised tabs on the plate stage.



### Lab automation system procedure

If the PlateLoc Sealer is installed in a lab automation system, you need to load the insert before you start the protocol run. During the run, the robot loads the microplates automatically. You do not need to manually load each microplate.

### Setting the sealing parameters

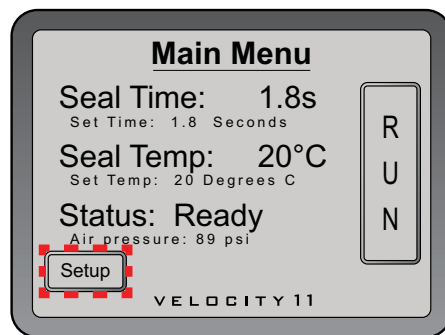
Before you set the sealing parameters, make sure:

- The PlateLoc Sealer is turned on.
- The air is turned on.
- The seal is properly loaded.
- *Lab automation systems only.* Communication between the controlling computer and the PlateLoc Sealer is established.

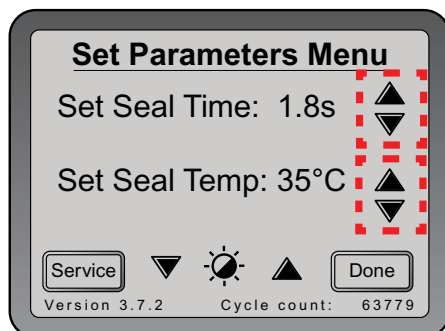
### Standalone device procedure

**To set the sealing parameters for the standalone device:**

- 1 From the touch screen **Main Menu**, press **Setup**.



- 2 In the **Set Parameters Menu** that appears, set the following:
  - **Seal Time** (in seconds). Seal Time is the amount of time the hot plate is in contact with the seal material and the microplate.
  - **Seal Temp** (in degrees Celsius). Seal Temp is the temperature of the hot plate when the seal cycle starts.





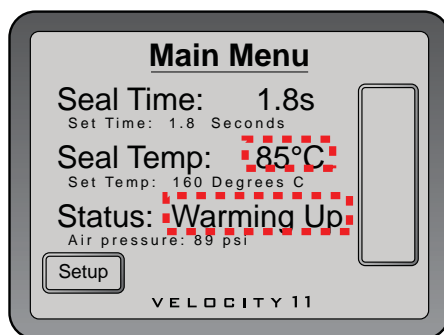
The seal time and temperature you specify depends on the type of microplate and the type of seal you are using. The following table shows the settings you can use as a starting point. For the most up-to-date starting point settings, see the *PlateLoc Thermal Plate Sealer Seal Selection Guide*. You can locate the guide on the Agilent Technologies website at [www.agilent.com/lifesciences/automation](http://www.agilent.com/lifesciences/automation).

Agilent Technologies recommends that you perform seal optimization tests to determine the optimal seal time and temperature. For general optimization guidelines, see the *PlateLoc Thermal Microplate Sealer User Guide*.

Seal name (part no.)	Polycarbonate microplate	Polyethylene microplate	Polypropylene microplate	Polystyrene microplate
Clear Seal (11452.001)	160 °C 1.5 s	160 °C 1.5 s	160 °C 1.5 s	160 °C 1.5 s
Clear Pierceable Seal (14414.001)	130 °C 1.5 s	130 °C 1.5 s	130 °C 1.5 s	130 °C 1.5 s
Clear Peelable Seal (16985.001)	—	—	130–150 °C 1.0–1.7 s	—
Clear Pierceable Thin Seal (17318.001)	—	—	130 °C 1.0–1.7 s	—
Peelable Aluminum (6643.001)	170 °C 1.2 s	170 °C 1.2 s	170 °C 1.2 s	170 °C 1.2 s
Pierceable Aluminum (6644.001)	170 °C 1.2 s	170 °C 1.2 s	170 °C 1.2 s	170 °C 1.2 s

- 3** Press **Done** to save the new settings and return to the **Main Menu**.
- 4** Wait for the temperature to reach within 2 °C of the specified value. To monitor the current temperature and status, on the **Main Menu**:
  - Check **Seal Temp** for the current temperature.
  - Check **Status** to see if the PlateLoc Sealer is warming up or cooling down.

*Note:* The **RUN** button on the touch screen is unavailable until the hot plate temperature is within 2 °C of the specified value.



## Lab automation system procedure

In the Agilent Technologies lab automation system software, you set the sealing parameters when you are setting the PlateLoc Sealer task parameters. For detailed instructions, see the lab automation system software user guide, such as the *VWorks Automation Control User Guide*.

The seal time and temperature you specify depends on the type of microplate and the type of seal you are using. The table in “[Standalone device procedure](#)” on page 14 shows the settings you can use as a starting point. For the most up-to-date startup settings, see the *PlateLoc Thermal Plate Sealer Seal Selection Guide*. You can locate the guide on the Agilent Technologies website at [www.agilent.com/lifesciences/automation](http://www.agilent.com/lifesciences/automation).

Agilent Technologies recommends that you perform seal optimization tests to determine the optimal seal time and temperature. For general optimization guidelines, see the *PlateLoc Thermal Microplate Sealer User Guide*.

## Setting the seal cycle

Before you set the seal cycle, make sure:

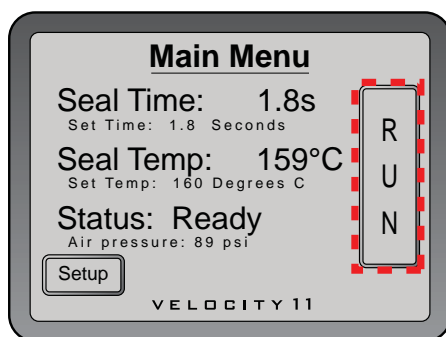
- The PlateLoc Sealer is turned on.
- The air is turned on and the internal air pressure is 87–90 psi.
- The seal is properly loaded.
- *Lab automation systems only.* Communication between the controlling computer and the PlateLoc Sealer is established.
- You have set the correct sealing parameters.
- *Standalone PlateLoc Sealer only.* The microplate is loaded.

### Standalone device procedure

#### **To start the seal cycle:**

From the touch screen **Main Menu**, press **RUN**. The microplate moves into the sealing chamber and the door closes. The seal cycle begins.

If the **RUN** button is blank, the PlateLoc Sealer is warming up or cooling down. You cannot start the seal cycle until the PlateLoc Sealer is within 2 °C of specified sealing temperature.



**To monitor the seal cycle progress:**

- 1 On the touch screen **Main Menu**, check the **Status** message.

The following table lists the possible Status messages.

Status	Description
In Progress	The seal cycle is currently in progress.
Warming Up	The PlateLoc Sealer is warming up to within 2 °C of specified temperature for sealing. On the <b>Main Menu</b> , check <b>Seal Temp</b> for the current temperature. The PlateLoc Sealer does not allow you to start the run until the device has reached the specified temperature.
Cooling Down	The PlateLoc Sealer is cooling down to within 2 °C of the specified temperature for sealing. On the <b>Main Menu</b> , check <b>Seal Temp</b> for the current temperature. The PlateLoc Sealer does not allow you to start the run until the device has reached the specified temperature.
Error	An error was encountered during the seal cycle. The cycle is aborted.
Ready	The PlateLoc Sealer is ready for a seal cycle.

**After the seal cycle is finished:**

When the seal cycle is finished, the Status message changes to Ready. The door opens. The microplate moves out of the sealing chamber.



**WARNING** Do not handle the microplate immediately after the seal cycle is finished. The sealed microplate and the insert might be hot.

Wait a few seconds, and then remove the sealed microplate and insert from the plate stage.

**If you have finished using the PlateLoc Sealer:**

- 1 Turn off the PlateLoc Sealer.
- 2 Turn off the air at the back of the PlateLoc Sealer or at the source (house, cylinder, or pump).

**Lab automation system procedure**

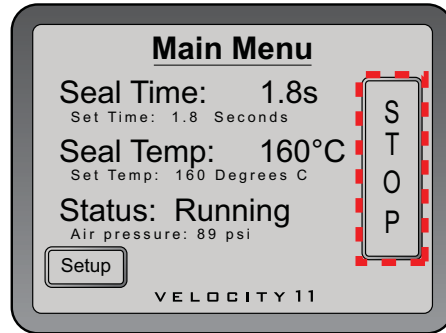
You can start one or more seal cycles when you start the protocol run in the Agilent Technologies lab automation system software. For detailed instructions, see the Agilent Technologies lab automation system software user guide.

## Stopping a seal cycle in progress

### Standalone device procedure

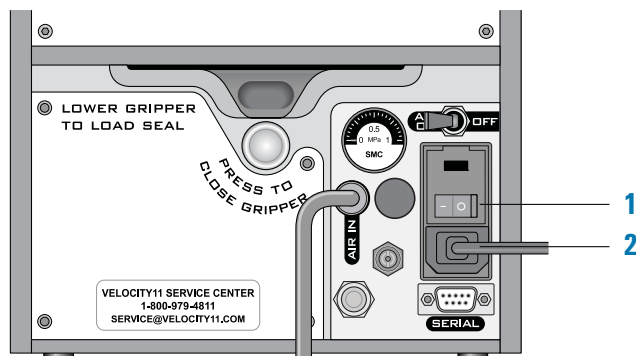
**To stop a seal cycle that is in progress:**

On the **Main Menu**, press **STOP**.



**To stop a seal cycle in an emergency:**

In case the STOP button on the touch screen does not work or is not responding fast enough, turn off the PlateLoc Sealer (1). The on/off switch is on the back of the device. Alternatively, you can disconnect the power to the PlateLoc Sealer (2).



### Lab automation system procedure



You can stop a seal cycle from the Agilent Technologies lab automation system software. For detailed instructions, see the Agilent Technologies lab automation system software user guide.

## Touch screen menus and commands

### Main menu

Indicator or command	Description
Seal Time (s)	<p>Displays the amount of time, in seconds, that the hot plate will be in contact with the seal material and the microplate.</p> <p>The seal time counts down when the seal cycle starts.</p>
Seal Temp (°C)	<p>Displays the current temperature, in Celsius, of the hot plate.</p>
Status	<p>Indicates the status of the PlateLoc Sealer. Possible values are:</p> <ul style="list-style-type: none"> <li>• <b>Ready.</b> The PlateLoc Sealer is within 2 °C of the specified sealing temperature and is ready for a run.</li> <li>• <b>Warming Up.</b> The PlateLoc Sealer is in the process of warming up to the specified sealing temperature.</li> <li>• <b>Cooling Down.</b> The PlateLoc Sealer is in the process of cooling down to the specified sealing temperature.</li> <li>• <b>In progress.</b> The PlateLoc Sealer is in the process of sealing a microplate.</li> <li>• <b>Error.</b> The PlateLoc Sealer has encountered an error during the seal cycle.</li> </ul>
Setup	<p>Displays the Set Parameters Menu in the touch screen.</p>
RUN/STOP	<p>Starts the seal cycle or stops the seal cycle in progress.</p> <p><i>Note:</i> When you press RUN, the button changes to STOP.</p>

## Set Parameters menu

Parameter	Description
Set Seal Time (s)	The amount of time, in seconds, the hot plate will be in contact with the sealing material and the microplate. To set the time, press the up or down arrow.
Set Seal Temp (°C)	The temperature, in Celsius, the temperature of the hot plate when the seal cycle starts. To set the temperature, press the up or down arrow.
Contrast (  )	The touch screen light and dark adjustment. As you reduce the contrast, the text in the touch screen dims. To adjust the contrast, press the up or down arrow on either side of the contrast symbol (  ).
Service	For Agilent Technologies service personnel only.





**Quick Start**

**G5402-90014**

Revision A, October 2013