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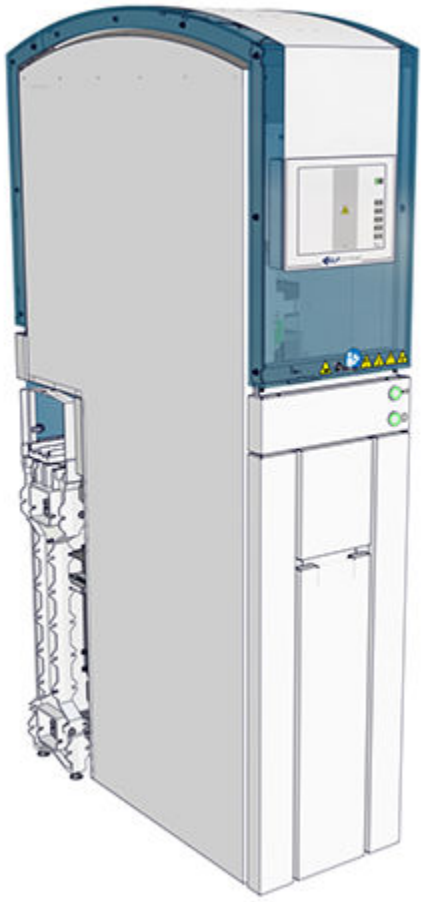

Decapper Module

Supplemental Manual

For use with the GLP systems Track Laboratory Automation System and the Decapper Module

80004209-101

Table of contents

Read me first.....5
General safety information.....7
Proprietary statement.....8

Section 1: Use or function.....9
Decapper Module overview.....10
Design and function.....10
Descriptions of module statuses.....15

Section 2: Installation procedures and special requirements.....17
Decapper Module installation requirements.....18
Main menu screen.....20
Login screen.....21
Information screen.....22
Configuration screen.....24

Section 3: Principles of operation.....27

Section 4: Performance characteristics and specifications.....29
Technical data.....30
Sample processing specifications.....30

Section 5: Operating instructions.....33
Decapper Module operation.....34
Open and close the front and rear module covers.....34
Cycle power to the module.....36
Power on the module.....38
Power off the module.....39
Place the module online.....39
Place the module offline.....40
Pause the module.....40
Deactivate pause mode.....41
Empty and reset the waste bin.....42

Section 6: Operational precautions and limitations.....43

Section 7: Hazards.....45
Safety icons.....46

Section 8: Service, maintenance, and diagnostics.....49
Cleaning and maintenance checks.....50
Cleaning.....51
Weekly cleaning procedures.....51
As-needed cleaning procedures.....52
Maintenance.....56
As-needed maintenance procedures.....56

Section 9: Troubleshooting.....61
Message codes.....62

Message code screen..... 64
Decapper Module observed problems..... 84

Foreword

This supplemental manual is intended for the relevant laboratory staff operating the Decapper Module.

Ensure that this supplemental manual is read and understood before startup is performed.

This supplemental manual contains information on the Decapper Module properties and handling, and instructions and measures for maintaining its operational readiness.

The GLP systems Track laboratory automation system is a modular, customer-specific design. This supplemental manual refers only to the Decapper Module. Ensure that the manuals relating to each single component are observed. In addition, observe the manuals for the connected analyzers.

The features in this supplemental manual were introduced in software 2.2.X.

Original instructions of this manual are written in English. Other languages are translations of the original instructions.

For an electronic copy of this manual, go to corelaboratory.abbott/ifu.

For laboratory professional use only.

Refer to the GLP systems Track Operations Manual for the following information:

- System security
- Customer service
- Intended use
- Disclaimers
- GLP systems Track warranty statement for USA customers only
- GLP systems Track agency approvals
- Intellectual Property statement
- Key to symbols
- Manufacturer and distributor
- Covers, hoods, and sensors
- Requirements for handling the specimens
- Operator responsibility
- Biological hazards
- Precautions
- Spill cleanup
- Requirements for decontamination
- Glossary

Related information...

General safety information, page 7
Proprietary statement, page 8

General safety information

Before operating the Decapper Module, read and understand the safety information in this manual.

For information about actions or conditions that can affect system performance, carefully review the operational precautions and limitations in the GLP systems Track Operations Manual.

To become familiar with safety icons on the module and in this manual that indicate potentially hazardous situations, review the hazards in the GLP systems Track Operations Manual. Comply with the hazard and safety information to minimize the potential for harm to personnel and damage to the laboratory environment.

The sections for operational precautions and limitations and for hazards in the GLP systems Track Operations Manual contain supplemental information. Do not use the supplemental information to supersede workplace safety requirements. Review any significant differences between the supplemental information and the workplace safety requirements with management or a workplace safety representative.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause unwanted operation.

This device complies with Industry Canada license-exempt RSS standards. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause unwanted operation of the device.

The Decapper Module is state-of-the-art. However, residual dangers exist. The safety instructions must be read and observed. The manufacturer accepts no liability for failure to observe the safety instructions.

Refer to the GLP systems Track Operations Manual for the complete listing of all safety information.

Related information...

Read me first, page 5

Proprietary statement

The Decapper Module system documentation (© 2023 Abbott. All rights reserved.) and software programs are protected by copyright.

The software and manual were developed solely for use with the laboratory automation system as specified in the operating instructions.

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Related information...

Read me first, page 5

Introduction

The GLP systems Track is a modular laboratory automation system (LAS) designed to automate pre-analytical and post-analytical processing, including sample handling, in order to automate sample processing in clinical laboratories. The system consolidates multiple analytical instruments into a unified workflow. Each module includes a built-in touchscreen, a user interface that functions as a central operating and display element. The Decapper Module is a module of the GLP systems Track that may be included in an LAS configuration.

Related information...

Decapper Module overview, page 10

Decapper Module overview

The Decapper Module removes caps from sample tubes sealed with commercially available ScrewCaps or safety caps before the samples are processed.

A distinction is made between a Decapper Module and Decapper Module Double. The Decapper Module has one Decapper unit that consists of a robot, robot gripper, AccessPoint, waste shaft, and funnel. The Decapper Module Double is equipped with two inline Decapper units. Each unit includes a robot, robot gripper, AccessPoint, waste shaft, and funnel.

Related information...

Use or function, page 9

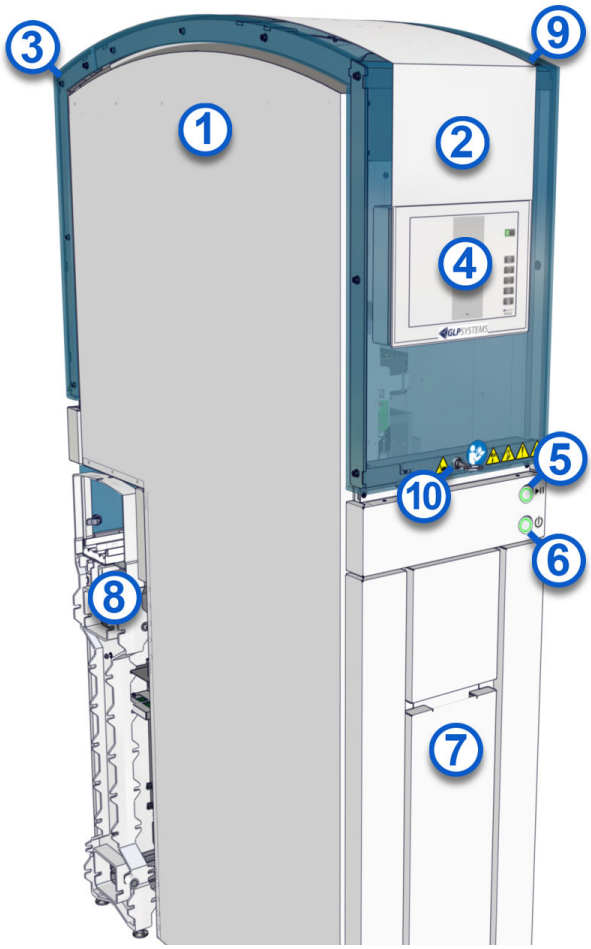
Design and function, page 10

Descriptions of module statuses, page 15

Design and function

The Decapper Module consists of the following components.

Figure 1: Exterior front view of the Decapper Module



Legend:

1. Housing: Contains the track lane elements, AccessPoints, robots, waste shafts, and funnels. Sample tubes are decapped in the interior of the housing.
2. Front module cover: Protects the operator from injury and keeps the loading area free from dust. The module cover can be opened from the front.

   CAUTION: Mind or watch your hands. The front and rear module covers can be opened **only** with the key and **only** by a trained operator. Before opening the module cover and reaching into the module, place the module offline. This action prevents the robot from moving after its initiated movement is completed. If the module is online when the module cover is opened, the robot slows down but does not stop. **Keep away from the moving robot and close the module covers as soon as possible.**
3. Rear module cover: Protects the operator from injury and keeps the loading area free from dust. The module cover can be opened from the rear.

   CAUTION: Mind or watch your hands. The front and rear module covers can be opened **only** with the key and **only** by a trained operator. Before opening the module cover and reaching into the module, place the module offline. This action prevents the robot from moving after its initiated movement is completed. If the module is online when the module

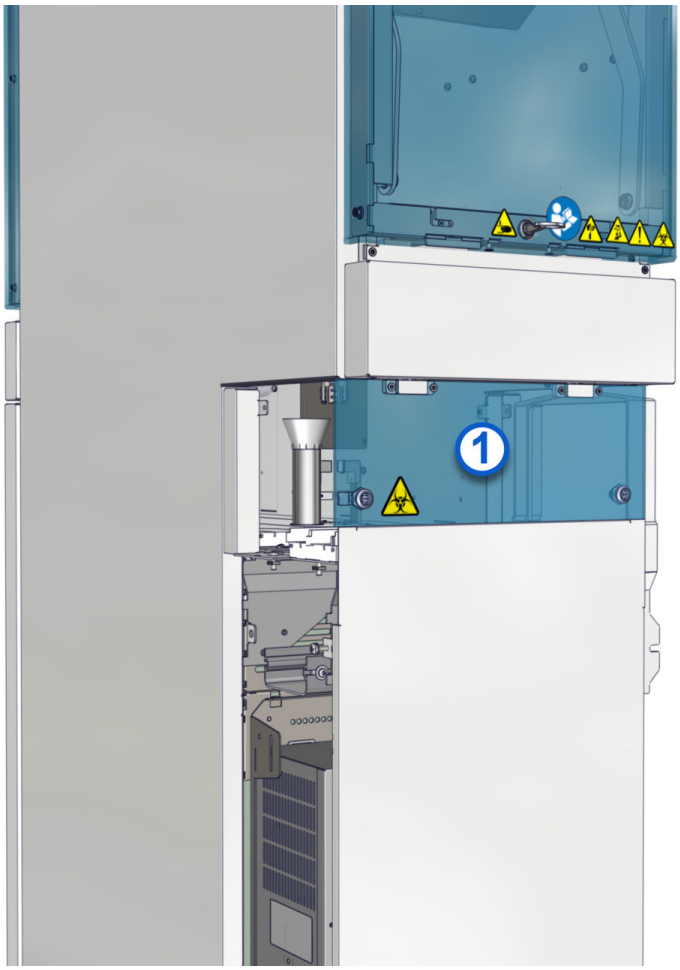
cover is opened, the robot slows down but does not stop. **Keep away from the moving robot and close the module covers as soon as possible.**

4. Monitor: Functions as the central operating and display element. The monitor is located on the front module cover.

   CAUTION: Damage from sharp and hard objects. Sharp and hard objects can damage the surface of the monitor.

5. Online/Offline push button with pause function: Transitions the module status to Online, Offline, or Pause. The Online/Offline push button is located on the front of the module.
6. On/Off push button: Powers on and powers off the module. The On/Off push button is located on the front of the module.
7. Pullout compartment: Provides access to the waste bin.
8. Track: Serves as the structure along which CARs move to transport samples to modules.
9. Module serial number label: Located in the interior of the module.
10. Lock: Secures the front and rear module covers and the module flap. A key unlocks any module cover.

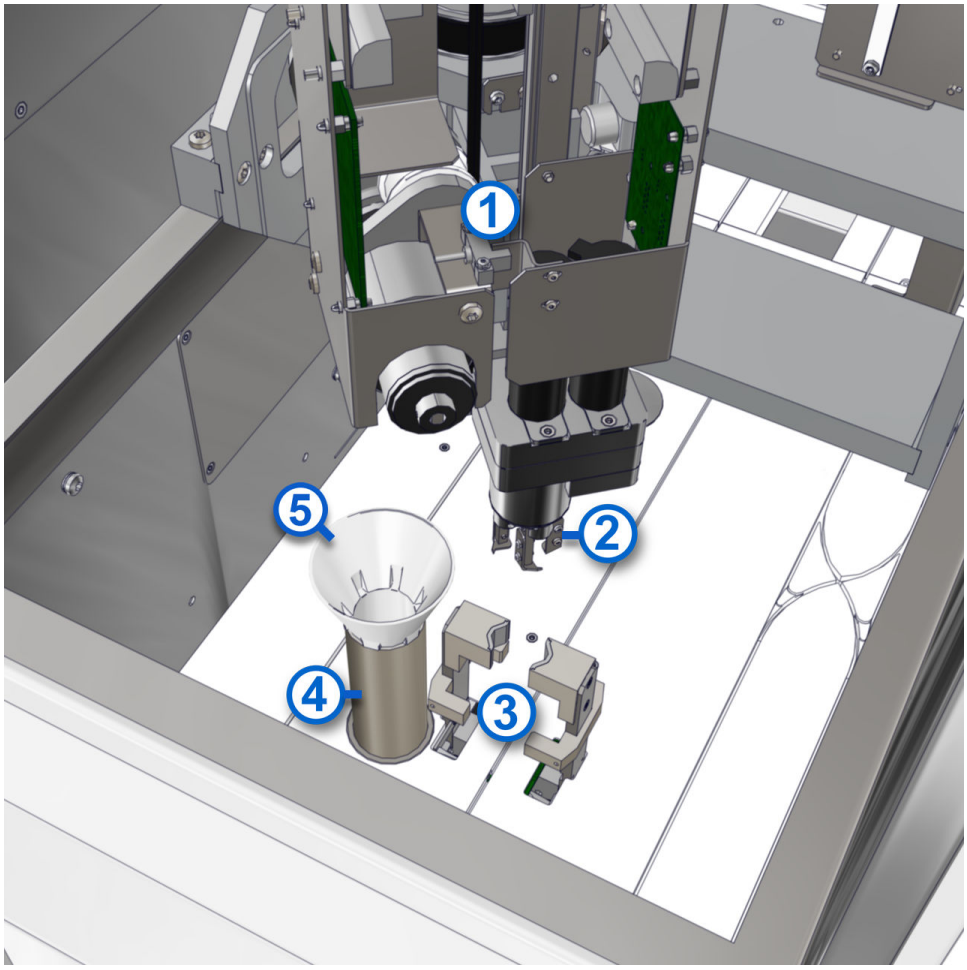
Figure 2: Exterior rear view of the Decapper Module



Legend:

1. Module flap: Used to access the track inside the module.

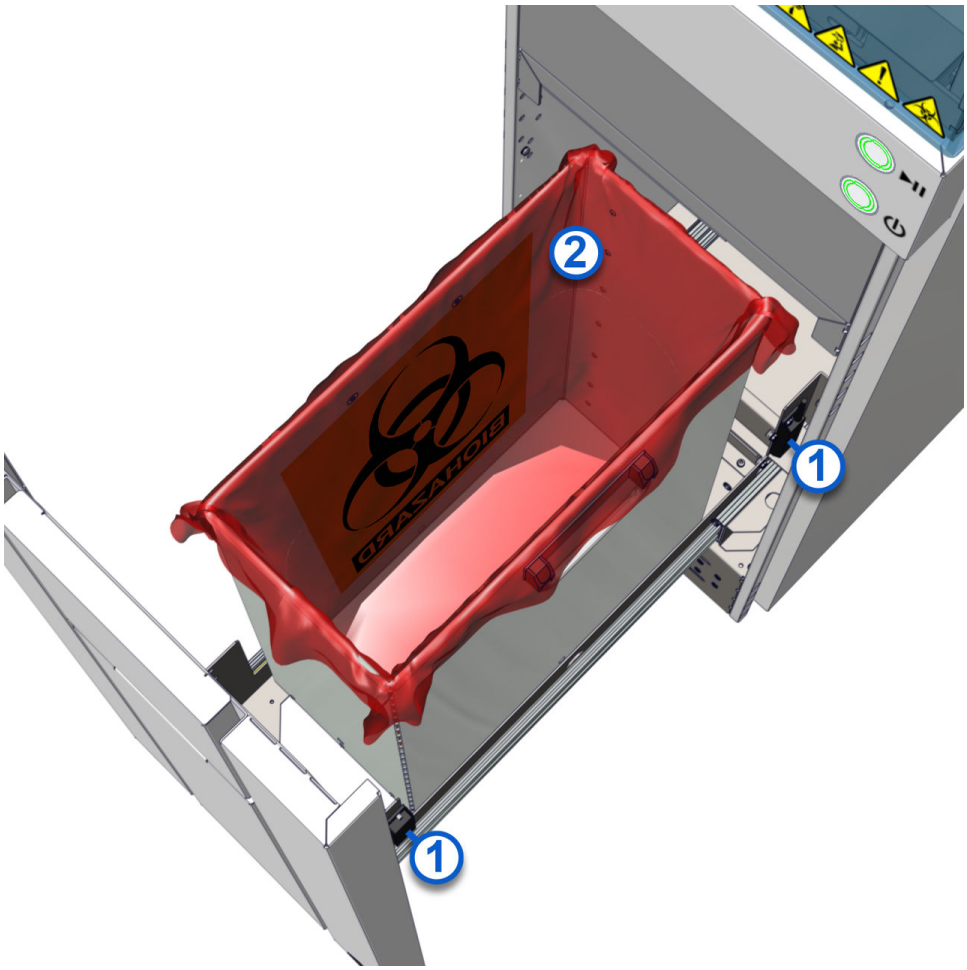
Figure 3: Interior view of the Decapper Module housing



Legend:

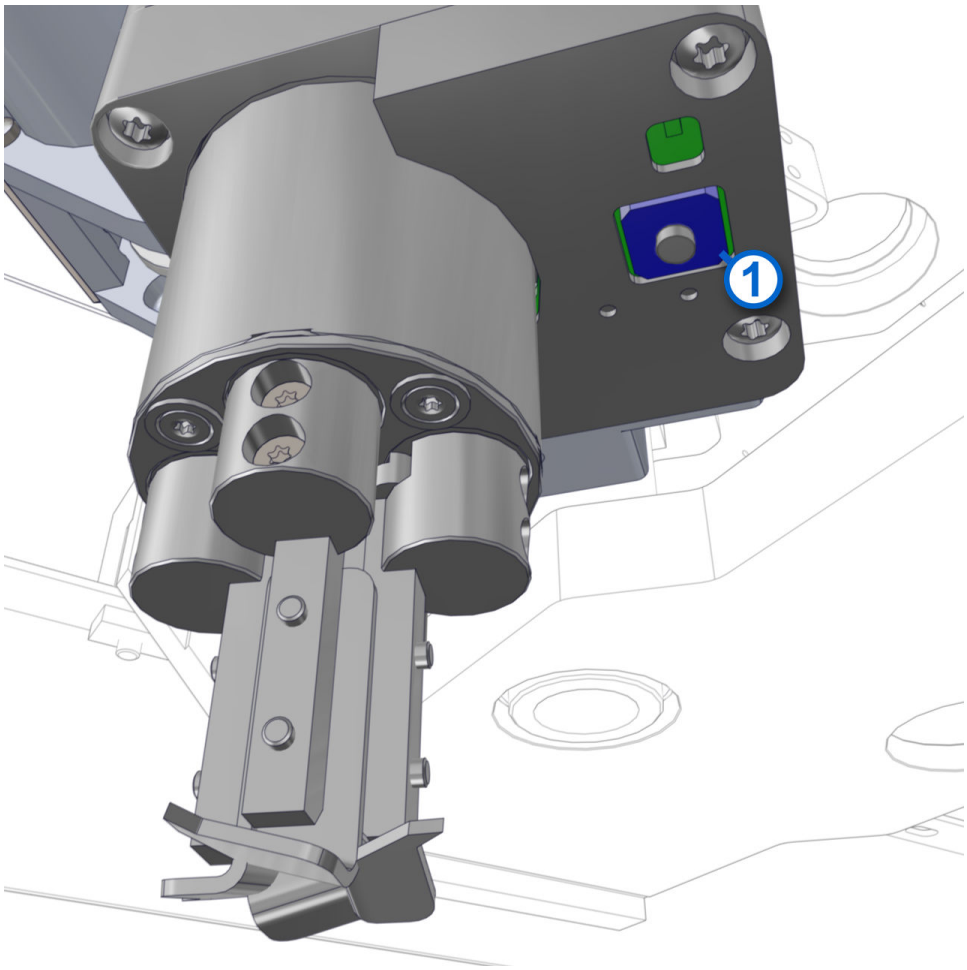
1. Robot: Uses the robot gripper to remove the cap from the sample tube and transfer the cap to the funnel.
2. Robot gripper: Used with the robot to remove the cap from the sample tube and transfer the cap to the funnel.
3. AccessPoint with clamping jaws: Holds the sample tube with clamping jaws while the sample tube is decapped.
4. Waste shaft: Transfers caps to the waste bin.
5. Funnel: Sends caps to the waste shaft.

Figure 4: Interior view of the Decapper Module pullout compartment



1. Interior sensors: Detect if the pullout compartment is open or closed.
2. Waste bin: Holds discarded caps. The waste bin fill level is displayed on the touchscreen user interface.

Figure 5: Release button



Legend:

1. Release button: Used to open the robot gripper manually. The release button is located on the bottom of the robot gripper.

Related information...

Decapper Module overview, page 10

Descriptions of module statuses

Module status refers to the operational modes of the module. The module has the following statuses:

On	The On/Off push button is illuminated steady green.
Off	The On/Off push button is illuminated blinking green.

Online	The module is in automatic mode. The Online/Offline push button is illuminated steady green and the arrow area of the **Online/Offline** button is green.
Offline	The module is in standby mode. The Online/Offline push button is illuminated steady yellow and the arrow area of the **Online/Offline** button is gray.
Pause	The module is briefly inactive. The Online/Offline push button is illuminated blinking green and the arrow area of the **Online/Offline** button is blinking green.
Error	An error has occurred on the module. The Online/Offline push button is illuminated steady red.

Related information...

Decapper Module overview, page 10

Introduction

For optimal system performance, the Decapper Module must be correctly installed. After the system has been installed, it must be configured to meet individual laboratory requirements.

Related information...

Decapper Module installation requirements, page 18

Main menu screen, page 20

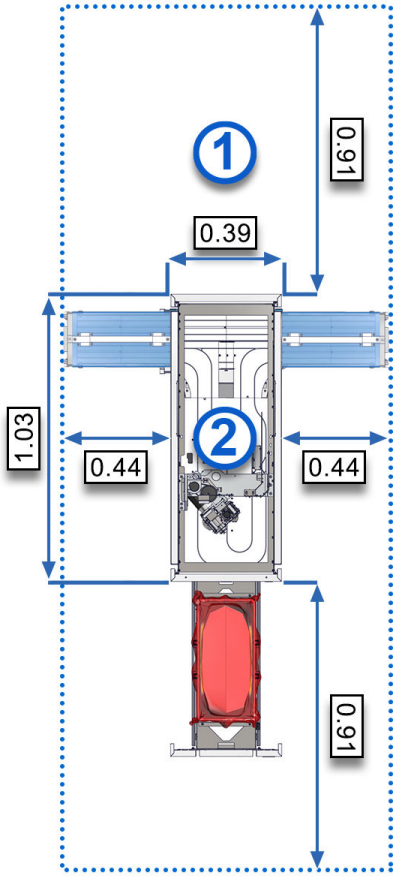
Decapper Module installation requirements

The Decapper Module may only be installed indoors. Water connections are not required. Contact an Abbott Laboratories representative or an authorized service representative for more information about service requirements. Facilities must fulfill the floor area and height requirements.

Table 1: Floor area specifications

Evenness tolerance requirement	Permissible deviation: ± 5 mm over 15 m
Compensation with adjustable feet	Maximum of 10 mm
Material requirement	Incompressible material such as concrete

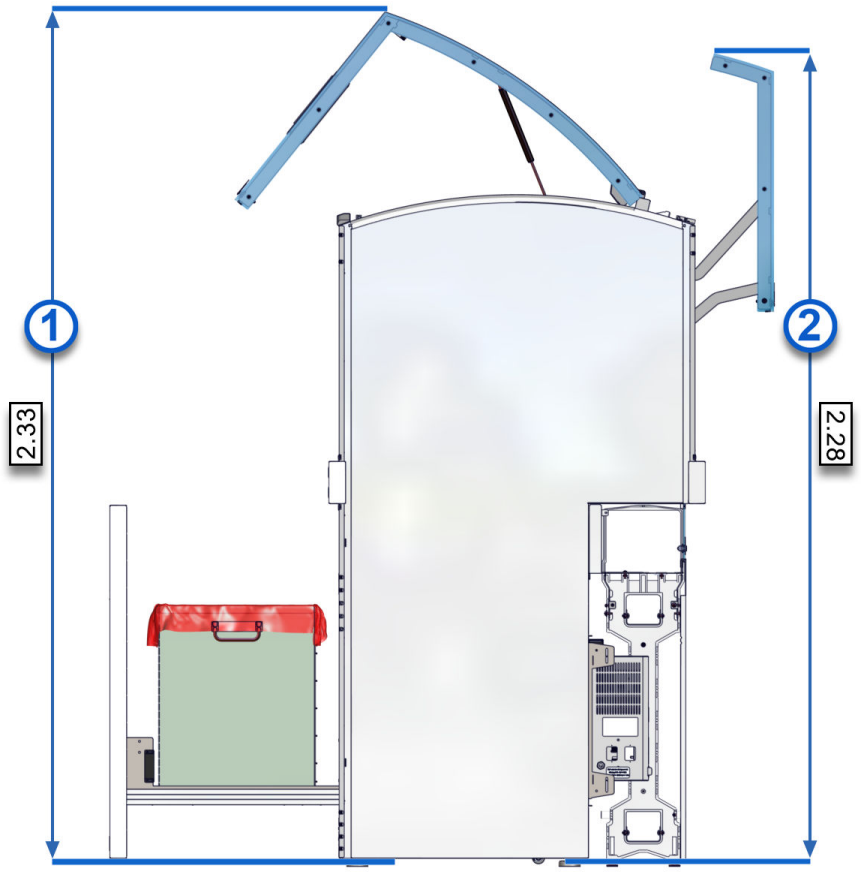
Figure 6: Floor area measurements in meters



Legend:

1. Work and service area
2. Decapper Module

Figure 7: Height measurements in meters



Legend:

1. Front module cover opened
2. Rear module cover opened

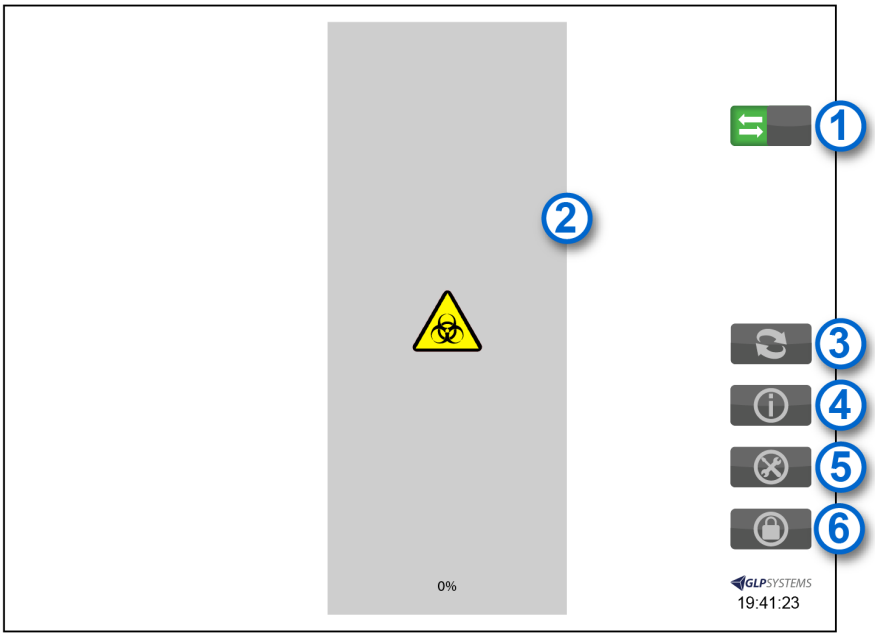
Related information...

Installation procedures and special requirements, page 17
Technical data, page 30

Main menu screen

After successful initialization of the Decapper Module, the Main menu screen is displayed with the following screen elements.

Figure 8: Main menu screen



Legend:

1. **Online/Offline** button with pause function: Places the module online and offline and pauses the module.
2. Waste bin level indicator: Displays the level of contents in the waste bin.
3. **Waste bin emptying confirmation** button: Confirms that the waste bin is empty.
4. **Information** button: Navigates to the Information screen.
5. **Configuration** button: Navigates to the Configuration screen.
6. **Login** button: Navigates to the Login screen.

Related information...

Installation procedures and special requirements, page 17

Login screen, page 21

Information screen, page 22

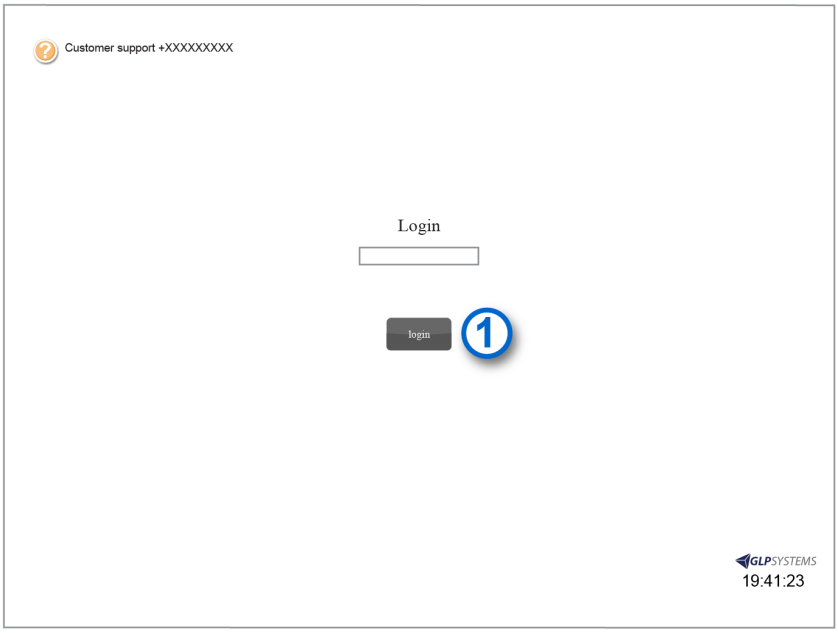
Configuration screen, page 24

Login screen

The Login screen for the configuration manager is displayed if a login and password have been defined during installation.

NOTE: Configuration of the operator login is performed by an Abbott Laboratories representative or an authorized service representative.

Figure 9: Login screen



Legend:

1. **Login** button

Related information...

Main menu screen, page 20
Access the Login screen, page 21

Access the Login screen

Prerequisite	A password was defined during installation. **NOTE:** The **Login** button is available only to an Abbott Laboratories representative or an authorized service representative.
Required module status	Online or Offline

Perform this procedure to access the Login screen on the module.

NOTE: Configuration of the operator login is performed by an Abbott Laboratories representative or an authorized service representative.

1. On the Main menu screen, tap the **Login** button .
2. On the Login screen, enter a user name and password.
3. To return to the Main menu screen, tap **Login**.

Related information...

Login screen, page 21
Place the module online, page 39
Place the module offline, page 40

Information screen

The Information screen on the module displays the following module status information:

Display ID	The name of the display component.
Display IP address	The IP address of the display component.
Display MAC address	The MAC address of the display component Ethernet port.
Display sms4display build	The firmware version of the display component.
Display libsms4json build	The version of the JSON library of the display component.
Display Qt version executable/ environment	The version of the Qt framework library used by the display component.
Display OS/Kernel	The operating system version of the display component.
CAN available	The indicator for whether the display has a CAN connection.
Display memory total/ free MB	The free memory of the display component.
Module build	The firmware version of the module controller.
Module MAC	The MAC address of the module controller Ethernet port.
Module IP	The IP address of the module controller.

ControllerId	The ID of the module controller.
ControllerName	The name of the module controller.
Module up - time in minutes	The time elapsed since the start.
Module samples managed	The current number of samples being managed by the module.
Module input operations	The number of samples placed on the track since the start.
Module output operations	The number of samples moved from the track since the start.
Module controller status	The current internal status of the module controller.
Active Error	The message code of the currently active error.
Last active error	The message code of the last active error.
Barcode read enabled	The indicator for whether a bar code reader has been activated.
Robot 1 script version	The script version for the robot controller.
Robot 1 operations	The number of movements the robot has performed since the start after the latest software was installed.
Robot 1 lost grips	The number of robot grips that have failed since the start after the latest software was installed.
Module total operation time	The time elapsed since the start in seconds.
Robot 2 operations	For the Decapper Module Double only. The number of movements the second robot has performed since the start after the latest software was installed.
Robot 2 lost grips	For the Decapper Module Double only. The number of robot grips that have failed since the start after the latest software was installed.
Exit button	Navigates to the Main menu screen.

Related information...

Main menu screen, page 20

Access the Information screen, page 24

Access the Information screen

Required module status	Online or Offline

Perform this procedure to access the Information screen on the module.

1. On the Main menu screen, tap the **Information** button .
2. On the Information screen, tap the **Exit** button to return to the Main menu screen.

Related information...

Information screen, page 22

Place the module online, page 39

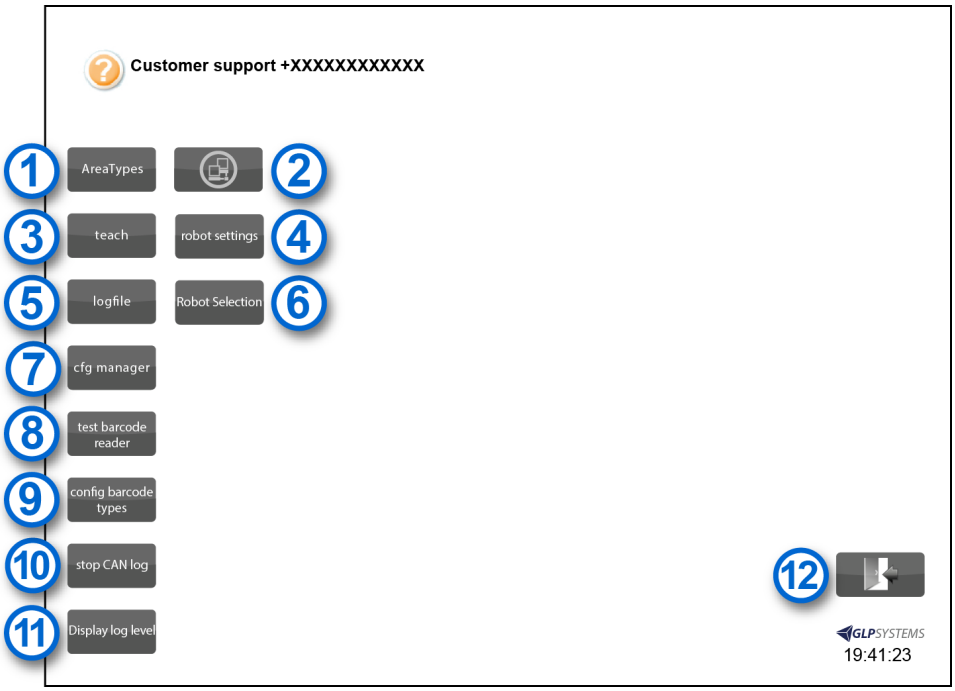
Place the module offline, page 40

Configuration screen

The Configuration screen on the module displays the following screen elements.

NOTE: Only the **AreaTypes** button is available to the operator. The other buttons are available only to an Abbott Laboratories representative or an authorized service representative.

Figure 10: Configuration screen



Legend:

1. **AreaTypes** button: Navigates to the Create AreaTypes screen.
2. **Network** button: Navigates to the Network setting screen.
3. **teach** button: Navigates to the Teaching screen.
4. **robot settings** button: Sets the performance properties of the robot.
5. **logfile** button: Navigates to the log files.
6. **Robot Selection** button: Navigates to the robot selection. For the Decapper Module Double, one of the two robots can be selected.
7. **cfg manager** button: Navigates to the Configuration settings screen.
8. **test barcode reader** button: No functionality is available.
9. **config barcode types** button: No functionality is available.
10. **stop CAN log** button: Stops or starts the recording of one or more log files. The button toggles between **stop CAN log** and **start CAN log**.
11. **Display log level** button: Navigates to the Display logfiles level settings screen.
12. **Exit** button: Navigates to the Main menu screen.

Related information...

Main menu screen, page 20
Access the Configuration screen, page 25

Access the Configuration screen

Required module status	Online or Offline

Perform this procedure to access the Configuration screen on the module.

1. On the Main menu screen, tap the **Configuration** button .
2. On the Configuration screen, tap the **Exit** button to return to the Main menu screen.

Related information...

Configuration screen, page 24
Place the module online, page 39
Place the module offline, page 40

NOTES

Introduction

The Decapper Module decaps incoming sample tubes before processing or analysis.

Various tube types with safety caps and ScrewCaps can be processed.

NOTES

Introduction

Before operating the Decapper Module, become familiar with system performance characteristics.

Related information...

Technical data, page 30

Technical data

Table 2: Decapper Module technical data

Throughput	• Safety caps: Maximum of 1200 sample tubes per hour • ScrewCaps: Maximum of 1000 sample tubes per hour **NOTE:** The specified performance of the module is based on measurements taken in a given test environment. The actual performance may vary significantly depending on the use scenario of the laboratory automation system.
Waste capacity	Minimum of 2000 caps per waste bag
Dimensions	40 cm (width) x 103 cm (depth) x 188 cm (height)
Weight	Decapper Module: 210 kg Decapper Module Double: 217 kg
Altitude	30.8 m (100 ft) below sea level to 2000 m (6561 ft) above sea level
Ambient temperature	During operation: 15°C to 30°C
Relative humidity	During operation: 30% to 80%, noncondensing
Waste heat	Average at full capacity: 306 kJ/h
Sound pressure level	Maximum of 65 dBA
Supply voltage	220 VAC to 230 VAC, ± 10%
Supply frequency	50 Hz/60 Hz
Power	• Nominal: 84 W • Peak: 175 W • 245 VA Max
Electrical safety parameters **NOTE:** Electrical safety parameters have no bearing on performance.	• Installation category: II (overvoltage category) • Pollution degree: 2

Related information...

Performance characteristics and specifications, page 29
Sample processing specifications, page 30
Decapper Module installation requirements, page 18

Sample processing specifications

Due to specific sample processing possibilities on the modules of the GLP systems Track and due to manufacturer specifications of the connected analyzers, there are deviations and restrictions for sample processing.

Decapping is only allowed if the tube height without cap does not fall below the specified lower boundary for tube height without cap.

Table 3: Sample tube technical data

Tube type	Capped sample tubes only
Cap type	Manufacturer caps and Greiner ScrewCaps

For more information regarding sample tube technical data, refer to the GLP systems Track Operations Manual.

Related information...

Technical data, page 30

NOTES

Introduction

This section provides instructions on how to perform normal operating procedures on the Decapper Module. Before operating the system, become familiar with hardware components of the system.

Related information...

Decapper Module operation, page 34

Decapper Module operation

The module-specific function selection for the Decapper Module is displayed on the Main menu screen. The operator selects the corresponding function and follows the instructions. Ensure that the module covers are closed and locked before operating the module.

Related information...

Operating instructions, page 33
Open and close the front and rear module covers, page 34
Cycle power to the module, page 36
Power on the module, page 38
Power off the module, page 39
Place the module online, page 39
Place the module offline, page 40
Pause the module, page 40
Deactivate pause mode, page 41
Empty and reset the waste bin, page 42

Open and close the front and rear module covers

Required materials	Key
Required module status	Offline

Perform this procedure to open and close the front and rear module covers.

CAUTION: Overhead obstruction. Operators may hit their heads on open module covers.

- Be aware that injury can occur when module covers are opened and closed.
- Protect the head when working on modules with open module covers.
- Frequently observe the functionality of the opening mechanism. Regular visual inspection of the covers is necessary during maintenance to ensure proper operation.

CAUTION: Mind or watch your hands. The front and rear module covers can be opened and closed **only** by a trained operator. Finger pinches can occur between two adjacent modules if module covers are closed by holding their sides. Use caution when opening and closing the front and rear module covers.

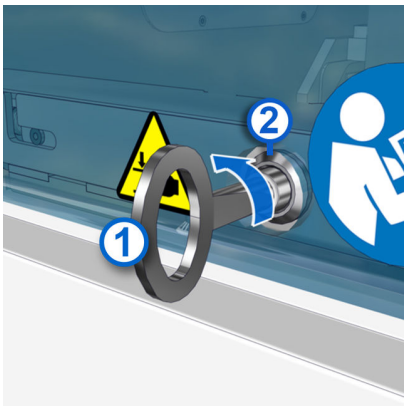
1. At the lower end of the front or rear module cover, insert the key [1] into the lock [2].

   NOTE: Images of the rear module cover and the module flap cover are not shown.

Figure 11: Front module cover lock

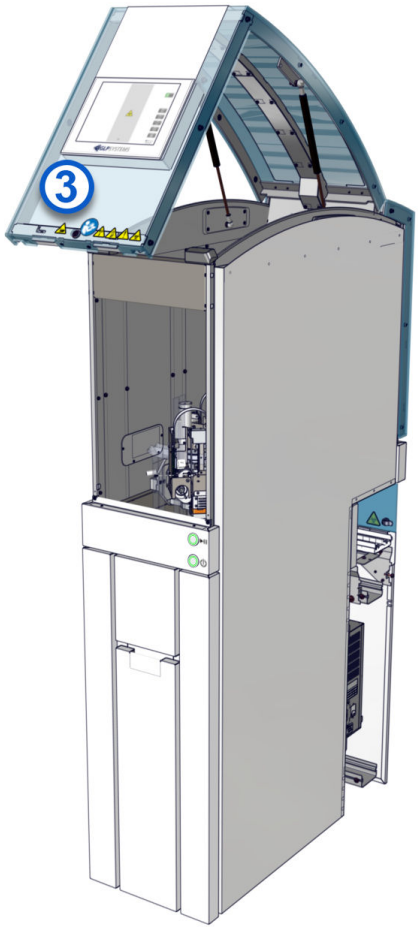
2. While turning the key [1] counterclockwise a quarter turn, begin lifting the front module cover [3] or rear module cover.

Figure 12: Key



3. Remove the key [1] from the lock [2].
4. Fully lift open the front module cover [3] or rear module cover.

Figure 13: Front module cover opened



5. To close the front module cover [3] or rear module cover, carefully pull down the cover.
6. Press lightly on the cover until it is secured.
7. Place the module online.

Related information...

Decapper Module operation, page 34
Place the module offline, page 40

Cycle power to the module

Prerequisite	The module has completed all processing and no samples are present on the module.

Perform this procedure to cycle power to the module to reestablish communication among the system components or to troubleshoot the module.

1. To power off the module, press the On/Off push button for a minimum of 3 seconds.

   NOTE: If the power button turns orange, press and hold the On/Off push button again for 3 seconds.

2. Wait for the module to power off.
3. After the module is powered off, wait for a minimum of 1 minute.
4. To power on the module, press the On/Off push button for a minimum of 3 seconds.

   The On/Off push button blinks green at a higher rate and the module starts.

   The Start screen is displayed. The **Start** button [1] turns from gray to green when the module is ready for initialization.

   Figure 14: Start screen

5. Tap the **Start** button [1] to initialize the module.

   A screen with a rotating animation is displayed. After the module is initialized, the Main menu screen is displayed.

Related information...

Decapper Module operation, page 34
Open and close the front and rear module covers, page 34
Power on the module, page 38
Power off the module, page 39

Power on the module

Prerequisite

- The module is connected to the power supply.
- The On/Off push button is illuminated blinking green.
- Front and rear module covers must be closed and locked.

Required module status Off for more than 1 minute

Perform this procedure to power on the module.

1. Press the On/Off push button for a minimum of 3 seconds.

   The On/Off push button blinks green at a higher rate and the module starts.

   The Start screen is displayed. The **Start** button [1] turns from gray to green when the module is ready for initialization.

   Figure 15: Start screen

2. Tap the **Start** button [1] to initialize the module.

   A screen with a rotating animation is displayed. After the module is initialized, the Main menu screen is displayed.

The On/Off push button is illuminated steady green.

Related information...

Decapper Module operation, page 34

Open and close the front and rear module covers, page 34
Design and function, page 10
Power off the module, page 39

Power off the module

Prerequisite	• The On/Off push button is illuminated steady green. • The module has completed all processing and no samples are present on the module.
Required module status	On

Perform this procedure to power off the module.

1. Press the On/Off push button for a minimum of 3 seconds.

   NOTE: If the power button turns orange, press and hold the On/Off push button again for 3 seconds.

2. Wait for the module to power off.

The On/Off push button is illuminated blinking green.

Related information...

Decapper Module operation, page 34
Design and function, page 10
Power on the module, page 38

Place the module online

Prerequisite	The Online/Offline push button is illuminated steady yellow and the arrow area of the **Online/Offline** button is gray.
Required module status	Offline

Perform this procedure to place the module online.

NOTE: Samples may be present in the module if the module was placed offline during processing.

1. Briefly press the Online/Offline push button or tap the gray arrow area of the **Online/Offline** button on the touchscreen user interface.
2. Wait for the module to transition to a status of Online.

The Online/Offline push button is illuminated steady green and the arrow area of the **Online/Offline** button is green.

Related information...

Decapper Module operation, page 34

Design and function, page 10

Place the module offline, page 40

Place the module offline

Prerequisite	The Online/Offline push button is illuminated steady green and the arrow area of the **Online/Offline** button is green.
Required module status	Online

Perform this procedure to place the module offline. All processes running in the module stop. CARs are no longer routed to the module.

NOTE: Samples in the module are not processed until the module is transitioned back to a status of Online.

1. Press the Online/Offline push button for a minimum of 3 seconds or tap the green arrow area of the **Online/Offline** button on the touchscreen user interface.
2. Wait for the module to transition to a status of Offline.

The Online/Offline push button is illuminated steady yellow and the arrow area of the **Online/Offline** button is gray.

Related information...

Decapper Module operation, page 34

Design and function, page 10

Place the module online, page 39

Pause the module

Prerequisite	The Online/Offline push button is illuminated steady green and the arrow area of the **Online/Offline** button is green.
Required module status	Online

Perform this procedure to pause the module. When the module is paused, all processing of new samples stop. No new samples in CARs route to the module. The Track Sample Manager indicates that the module status is Online.

1. Briefly press the Online/Offline push button or tap the gray area of the **Online/Offline** button on the touchscreen user interface.
2. Wait for the module to transition to a status of Pause.

The Online/Offline push button is illuminated blinking green and the arrow area of the **Online/Offline** button is blinking green.

NOTE: If the module is paused for longer than 5 minutes, the module automatically transitions to a status of Offline.

Related information...

Decapper Module operation, page 34
Design and function, page 10
Place the module online, page 39
Deactivate pause mode, page 41
Empty and reset the waste bin, page 42
Deactivate pause mode, page 41

Deactivate pause mode

Prerequisite	The Online/Offline push button is illuminated blinking green and the arrow area of the **Online/Offline** button is blinking green.
Required module status	Pause

Perform this procedure to deactivate pause mode on the module.

1. Briefly press the Online/Offline push button or tap the gray area of the **Online/Offline** button on the touchscreen user interface.
2. Wait for the module to transition to a status of Online.

The Online/Offline push button is illuminated steady green and the arrow area of the **Online/Offline** button is green.

Related information...

Decapper Module operation, page 34
Design and function, page 10
Pause the module, page 40

Empty and reset the waste bin

Required module status Offline

Perform this procedure to empty and reset the waste bin.

CAUTION: Only open the waste bin while the module status is Offline.

CAUTION: Risk of infection. Pulling the waste bag out over the edge of the waste bin can cause the waste bag to tear, and the operator can come into contact with infectious sample matter.

- Wear personal protective equipment.
- Always lift waste bags out vertically. Do not drag the waste bag over the edge of the waste bin.

1. Fully open the pullout compartment that contains the waste bin.
2. Carefully lift the waste bag out of the waste bin with both hands and dispose of it according to local regulations.

   NOTE: The waste bin weight should not exceed 11 kg.
3. Insert a new waste bag in the waste bin.

   NOTE: Do not place the new waste bag over the interior sensor.

   NOTE: Ensure that the waste bag is open and caps can fall to the bottom of the waste bin. The top of the waste bag should be flush with the waste bin so the pullout compartment can open and close freely.
4. Close the pullout compartment.
5. On the touchscreen user interface, tap **Waste bin emptying confirmation** to reset the waste bin level indicator.

Related information...

Decapper Module operation, page 34
Design and function, page 10
Place the module online, page 39
Pause the module, page 40
Place the module offline, page 40
Deactivate pause mode, page 41

Introduction

For optimal operator safety and accurate test results, comply with operational requirements, precautions, and limitations. Operators must be trained before they are allowed to operate the system. Failure to comply can affect system performance, and may cause damage to the system or may adversely affect test results.

For more information regarding operational precautions and limitations, refer to the GLP systems Track Operations Manual.

NOTES

Introduction

To minimize the potential for harm to personnel and damage to the laboratory environment, comply with the hazard and safety information.

This section contains supplemental information. Do not use the supplemental information to supersede workplace safety requirements. Review any significant differences between the supplemental information and the workplace safety requirements with management or a workplace safety representative.

For more information regarding hazards, refer to the GLP systems Track Operations Manual.

Related information...

Safety icons, page 46

Safety icons

Safety icons are used on the system and in the system documentation to identify potentially dangerous conditions. Become familiar with these icons to know the type of potential hazard.

CAUTION: Radio-frequency identification (RFID) devices. The operator should not change or modify RFID devices without approval by the party responsible for compliance. This action could void the operator's authority to operate the equipment.

CAUTION: Radio frequency exposure. The operator should be at least 20 cm from all RFID devices.

Table 4: Safety icons and descriptions

Icon	Description
	CAUTION: Biological RISKS Identifies an activity or an area where the operator may be exposed to potentially infectious material.
	CAUTION: Mind or watch your hands Identifies an activity or an area where the operator may be exposed to hand injuries.
	CAUTION: Overhead obstruction Identifies an activity or an area where the operator may be exposed to overhead obstructions.
	CAUTION: Sharp Element Identifies an activity or an area where the operator may be exposed to sharp elements.
	CAUTION: Possibility of electric shock Indicates the possibility of electric shock if procedural controls or engineering controls are not observed.
	CAUTION When used in this manual, this icon is accompanied by a description of the hazard and a related-information reference to safety content in this section. Examples include the following condition: **CAUTION: Moving Parts** Identifies an activity or an area where the operator may be exposed to moving parts.
	CAUTION: Power off mains disconnect switch from electrical supply Indicates that the mains disconnect switch must be powered off from the electrical supply for the maintenance of electrical equipment when a malfunction occurs or when left unattended. If more than one disconnect switch is provided, power off all switches to disconnect from electrical supply.

Icon	Description
	CAUTION: Protective conductor terminal Identifies an area where a terminal is connected to an external conductor or the terminal of a ground electrode.
	Observe operations manual Indicates that the operations manual must be read.
	WEEE: Waste Electrical and Electronic Equipment Indicates that the item needs to be disposed of in a separate waste collection for electrical and electronic equipment and must not be disposed of in the general waste or trash.

Related information...

Hazards, page 45

NOTES

Introduction

The appropriate service, maintenance, and diagnostics of the system are some of the most important aspects of a complete quality assurance program. A thorough service, maintenance, and diagnostic program:

- Minimizes downtime.
- Maintains records for inspection and accreditation.
- Maintains system performance to provide optimal test results.

NOTE: Only approved customer-replaceable components are permitted to be used.

Related information...

Cleaning and maintenance checks, page 50

Cleaning, page 51

Maintenance, page 56

Cleaning and maintenance checks

Dust can cause system malfunctions. The following checks are required on the Decapper Module to maintain optimal system performance.

Table 5: Cleaning and maintenance checks

Check	Activity	Interval
Inspect the module for dust.	Carefully remove any dust. If necessary, perform the following procedures: • *Clean the monitor*, page 51 • *Clean the module covers*, page 52 • *Clean the interior*, page 53 • *Clean the AccessPoint*, page 53 • *Clean the robot gripper*, page 54 • *Clean the waste shaft and funnel*, page 54	Daily
Verify that there are no observed problems.	Resolve any observed problems as needed. See *Decapper Module observed problems*.	Daily
Inspect the AccessPoints for contamination.	Perform *Clean the AccessPoint*, page 53 if necessary.	Daily
Verify that the robot gripper fingers are not worn, damaged, or dirty.	Perform *Clean the robot gripper*, page 54 or *Replace the robot gripper fingers*, page 57 if necessary.	Daily
Verify that no foreign objects are present on the module.	Remove any foreign objects.	Daily
Verify that the module covers are closed and locked.	Perform *Open and close the front and rear module covers*, page 34 to close the module covers if necessary.	Daily

Related information...

Service, maintenance, and diagnostics, page 49

Cleaning

Some system components may need to be cleaned because of normal use from daily system operations or because of spills.

IMPORTANT: Incorrect cleaning procedures may cause sample contamination. Inappropriate cleaning agents may cause damage to the Decapper Module. Only allow trained personnel to clean the Decapper Module. Only use the recommended cleaning agents.

CAUTION: Wear personal protective equipment while operating the laboratory automation system.

CAUTION: Biological RISKS. This activity or area may expose the operator to potentially infectious material.

NOTE: Ensure that all samples have completed processing on the module to prevent contamination of samples.

Related information...

Service, maintenance, and diagnostics, page 49

Weekly cleaning procedures, page 51

As-needed cleaning procedures, page 52

Weekly cleaning procedures

Weekly cleaning procedures are required on the Decapper Module.

Related information...

Cleaning, page 51

Clean the monitor, page 51

Clean the module covers, page 52

Clean the monitor

Required materials	• Laboratory-grade surface disinfectant • Lint-free cloth
Required module status	Off

Perform this weekly procedure to clean the monitor.

1. Ensure that the module covers are closed and locked before the monitor is cleaned.
2. Dampen a lint-free cloth with a surface disinfectant.
3. Carefully wipe the entire surface area of the monitor to remove any dust.

4. Wait until the monitor is dry to power on the module.

Related information...

Weekly cleaning procedures, page 51
Open and close the front and rear module covers, page 34
Power on the module, page 38
Power off the module, page 39

Clean the module covers

Required materials

- Antistatic plastic cleaner
- Lint-free cloth

Required module status Offline

Perform this weekly procedure to clean the module covers.

1. Ensure that the module covers are closed and locked before the module covers are cleaned.
2. Dampen a lint-free cloth with an antistatic plastic cleaner.
3. Wipe the entire surface area of the module cover.
4. Let the module cover air-dry to allow an antistatic film to form.

Related information...

Weekly cleaning procedures, page 51
Open and close the front and rear module covers, page 34
Place the module offline, page 40

As-needed cleaning procedures

As-needed cleaning procedures are required on the Decapper Module.

CAUTION: Risk of contamination and injury. During operation of the laboratory automation system (LAS), sample tubes and components may be damaged due to failure to comply with safe-use instructions. Spilled sample matter may cause infections due to contact with non-intact skin and mucous membranes.

- Wear personal protective equipment while operating the LAS. Avoid direct contact with the sample matter.
- Follow all hygiene regulations applicable to laboratory work.
- Only allow trained personnel to operate the LAS.

Related information...

Cleaning, page 51

Clean the interior, page 53
Clean the AccessPoint, page 53
Clean the robot gripper, page 54
Clean the waste shaft and funnel, page 54

Clean the interior

Required materials

- Handheld vacuum cleaner (recommended)
- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status Offline

Perform this as-needed procedure to clean the interior.

1. Open the module cover.
2. Vacuum the surface of the lane elements.
3. Vacuum the guiding slot.
4. Dampen a lint-free cloth with a surface disinfectant.
5. Carefully wipe the surfaces of the interior to remove any dust.
6. Close the module cover.

Related information...

As-needed cleaning procedures, page 52
Open and close the front and rear module covers, page 34
Place the module offline, page 40

Clean the AccessPoint

Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status Offline

Perform this as-needed procedure to clean each AccessPoint on the module.

1. Open the module cover.
2. Dampen a lint-free cloth with a surface disinfectant.
3. Carefully wipe each AccessPoint to remove any dust.
4. Close the module cover.

Related information...

As-needed cleaning procedures, page 52

Open and close the front and rear module covers, page 34

Place the module offline, page 40

Clean the robot gripper

Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status Offline

Perform this as-needed procedure to clean the robot gripper.

1. Open the module cover.
2. Dampen a lint-free cloth with a surface disinfectant.
3. Carefully wipe the robot gripper to remove any dust.
4. Close the module cover.

Related information...

As-needed cleaning procedures, page 52

Open and close the front and rear module covers, page 34

Place the module offline, page 40

Clean the waste shaft and funnel

Required materials

- Laboratory-grade surface disinfectant
- Lint-free cloth

Required module status Offline

Perform this procedure to clean the waste shaft and funnel.

1. Open the module cover.
2. Dampen a lint-free cloth with a surface disinfectant.
3. Carefully wipe the exterior surfaces of the waste shaft and funnel to remove any dust.
4. Close the module cover.

Related information...

As-needed cleaning procedures, page 52

Open and close the front and rear module covers, page 34

Place the module offline, page 40

Maintenance

The laboratory staff may perform procedures that are included in this manual. Procedures not included in this manual may only be performed by an Abbott Laboratories representative or an authorized service representative.

CAUTION: Risk of infection. The operator may be exposed to potentially infectious materials, such as patient samples, through contact with non-intact skin or mucous membranes. Wear personal protective equipment while operating the laboratory automation system.

NOTE: Ensure that all samples have completed processing on the module to prevent contamination of samples.

Related information...

Service, maintenance, and diagnostics, page 49

As-needed maintenance procedures, page 56

As-needed maintenance procedures

As-needed maintenance procedures are required on the Decapper Module.

Related information...

Maintenance, page 56

Replace the funnel, page 56

Replace the robot gripper fingers, page 57

Replace the clamping jaws on the AccessPoint, page 59

Replace the funnel

Required module status	Offline

CAUTION: Risk of infection. Pulling out the funnel can lead to contact with infectious sample matter. Wear personal protective equipment.

Perform this as-needed procedure to replace the funnel on the module.

1. Open the module cover.
2. Pull up the old funnel to remove it from the waste shaft.
3. Place a new funnel on the waste shaft.
4. Close the module cover.
5. Place the module online.

Related information...

As-needed maintenance procedures, page 56

Open and close the front and rear module covers, page 34

Place the module online, page 39

Place the module offline, page 40

Replace the robot gripper fingers

Prerequisite	Remove all samples from the module to prevent sample contamination.
Required materials	Tx6 Torx screwdriver
Required module status	Off

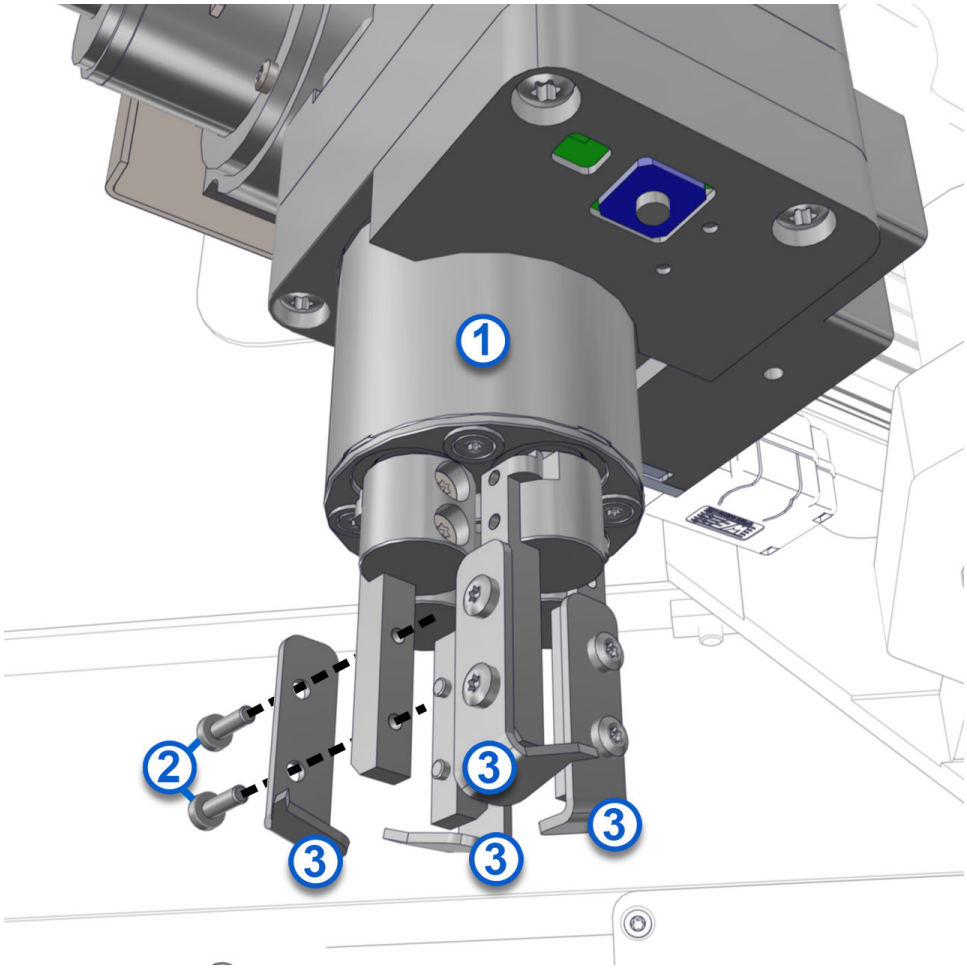
Perform this as-needed procedure to replace the robot gripper fingers on the module. Replace all four robot fingers at the same time.

CAUTION: Overhead obstruction. Operators may hit their heads on open module covers.

- Be aware that injury can occur when module covers are opened and closed.
- Protect the head when working on modules with open module covers.
- Frequently observe the functionality of the opening mechanism. Regular visual inspection of the covers is necessary during maintenance to ensure proper operation.

NOTE: Inspect all four robot gripper fingers and replace any defective robot gripper fingers and their screws. The robot gripper fingers can only be installed in one position by design. The procedure for replacing the robot gripper fingers is identical for all four fingers.

Figure 16: Robot gripper head, robot gripper fingers, and screws



1. Open the module cover.
2. Rotate the robot gripper head [1] to position the robot gripper finger [3].
3. Loosen both screws [2] on the robot gripper finger [3] with the Tx6 Torx screwdriver.
4. Remove the screws [2].
5. Remove the robot gripper finger [3] from the bracket.

   NOTE: Ensure that the orientation of a new robot gripper finger [3] in the bracket is the same as the robot gripper finger that was removed.
6. Position a new robot gripper finger [3] in the bracket and secure the new robot gripper finger with new screws [2].
7. Tighten the screws [2] with the Tx6 Torx screwdriver.
8. Close the module cover.
9. Power on the module.

Related information...

As-needed maintenance procedures, page 56

Open and close the front and rear module covers, page 34

Power on the module, page 38

Power off the module, page 39

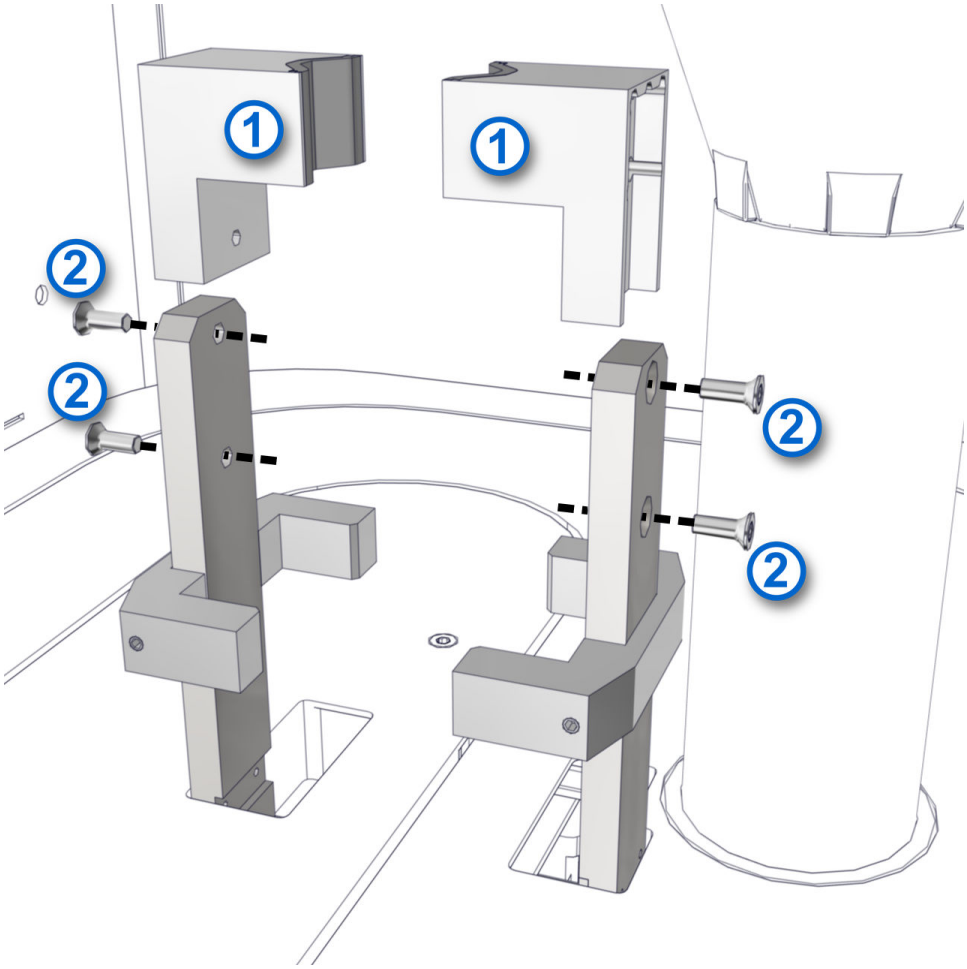
Replace the clamping jaws on the AccessPoint

Required materials	Tx10 Torx screwdriver
Required module status	Off

Perform this as-needed procedure to replace the clamping jaws on the AccessPoint.

IMPORTANT: Both clamping jaws and screws must always be replaced at the same time.

Figure 17: Clamping jaws and screws



1. Open the module cover.

2. Loosen the screws [2] on the clamping jaws [1] with the Tx10 Torx screwdriver.
3. Remove the screws [2].
4. Remove the clamping jaws [1] from the mounts.
5. Insert a new clamping jaw [1] onto each mount.
6. Insert new screws [2] into each mount and clamping jaw [1].
7. Tighten the screws [2] with the Tx10 Torx screwdriver.
8. Close the module cover.
9. Power on the module.

Related information...

As-needed maintenance procedures, page 56
Open and close the front and rear module covers, page 34
Power on the module, page 38
Power off the module, page 39

Introduction

Problems with the Decapper Module are characterized by symptoms. Troubleshooting tools, references, and suggested techniques help to trace the symptom to one or more root causes.

After determining the root cause, perform the corrective actions to resolve the problem.

Before troubleshooting is performed for system errors, the module status must be Offline.

The laboratory staff may perform procedures that are included in this manual. Procedures not included in this manual may be performed only by an Abbott Laboratories representative or an authorized service representative.

CAUTION: Do not remove samples from a CAR or the track. If samples are removed from the track, they must be deleted from the Track Sample Manager before they are placed back in the Input/Output Module for appropriate routing.

Related information...

Message codes, page 62

Decapper Module observed problems, page 84

Message codes

Message codes are displayed on the touchscreen user interface when errors occur. Message codes provide information about conditions or errors of system operation.

If a message code cannot be resolved, contact an Abbott Laboratories representative or an authorized service representative.

NOTE: Corrective actions may involve hazardous activity. Use caution to minimize operator exposure and to prevent personal injury or system damage.

Related information...

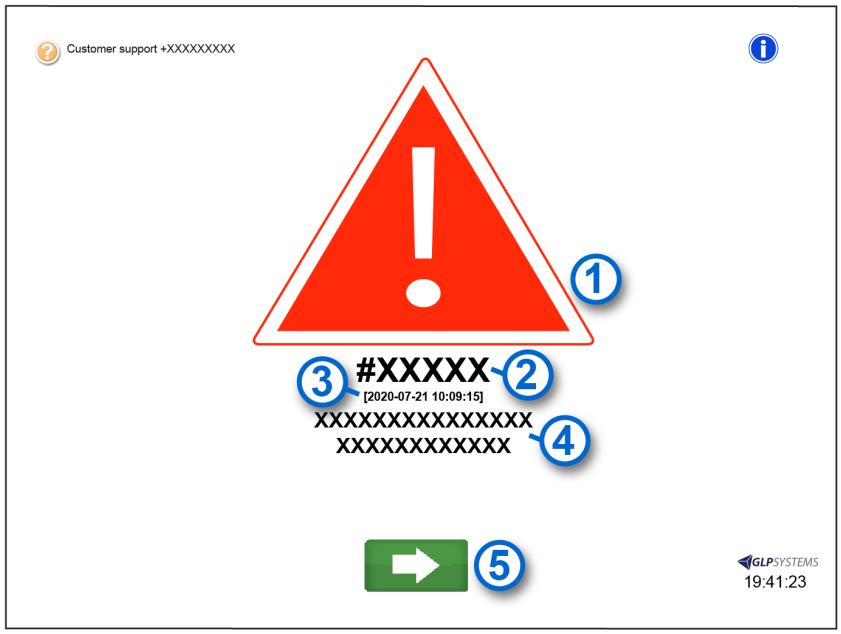
Troubleshooting, page 61
Message code screen, page 64
100, page 65
101, page 65
105, page 65
106, page 65
107, page 66
108, page 66
109, page 66
15004, page 67
15010, page 67
15015, page 67
20105, page 68
20150, page 68
20151, page 68
20200, page 68
20201, page 69
20202, page 69
20203, page 69
20204, page 70
20205, page 70
20206, page 70
20207, page 71
20209, page 71
20210, page 71
20211, page 72
20300, page 72
20901, page 72

20902, page 73
20906, page 73
20910, page 73
20911, page 74
20912, page 74
21000, page 74
21001, page 74
21002, page 75
21003, page 75
21004, page 75
21005, page 75
21006, page 76
21008, page 76
21009, page 76
21010, page 77
21013, page 77
21014, page 77
21015, page 77
21016, page 78
21017, page 78
21018, page 78
21019, page 79
21021, page 79
21022, page 79
21023, page 79
21034, page 80
21036, page 80
21037, page 80
21040, page 81
21050, page 81
23000, page 81
23001, page 81
23002, page 82
23003, page 82
23004, page 82
25150, page 83

Message code screen

The Message code screen on the module displays the following screen elements.

Figure 18: Message code screen



Legend:

1. Warning symbol: Indicates that an error has occurred.
2. Message code: Displays the message code number.
3. Date and time: Displays the date and time that the message code was generated.
4. Information text: Displays the message code description.
5. **Next** button: Navigates to the Solutions screen.

Related information...

Message codes, page 62
Acknowledge a message code, page 64

Acknowledge a message code

Perform this procedure to acknowledge an error message on the module.

1. On the Message code screen, tap the **Next** button .
2. On the Solutions screen, select the appropriate option by tapping it.
3. Tap the **Next** button to confirm the selection.

Related information...

Message code screen, page 64

Message code: 100

System error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Ignore error message.

Related information...

Message codes, page 62

Message code: 101

Invalid product code.
Product code invalid or not supported by display.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 105

Module Controller is out of memory.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 106

Invalid data structure.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Ignore error message. • Error cannot be repaired. Stop module and call service. • Switch module to offline status.

Related information...

Message codes, page 62

Message code: 107

Unknown message type received.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Ignore error message. • Switch module to offline status. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 108

Data protocol version is not matching.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Ignore error message. • Switch module to offline status. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 109

Checksum error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Ignore error message. • Error cannot be repaired. Stop module and call service.

Details	Solutions
	• Switch module to offline status.

Related information...

Message codes, page 62

Message code: 15004

AccessPoint: number of clamp failures exceeds threshold.

Probable cause	Corrective action
An error has occurred.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 15010

AccessPoint motor driver / hardware error.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 15015

AccessPoint might require reconfiguration.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20105

No solution file found.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20150

Invalid robot operation requested.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20151

Invalid robot (0) target position.

0 = Robot type

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 20200

AccessPoint connection problem.

Details	Solutions
AccessPoint heartbeat lost.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20201

AccessPoint does not respond.

Details	Solutions
AccessPoint did not confirm release of CAR (0). 0 = CAR ID	Please select one of the offered solutions below. • The CAR (0) is gone or has been removed. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20202

AccessPoint fault.
The AccessPoint has reported a problem while handling CAR (0).
0 = CAR ID

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20203

AccessPoint hardware failure.

Details	Solutions
The AccessPoint has reported a hardware problem.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20204

The AccessPoint restarted unexpectedly.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Please check if module operation is safe and confirm. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20205

AccessPoint initialization timeout.

Details	Solutions
The AccessPoint did not complete initialization in the expected time.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20206

RFID read problems.

Details	Solutions
The AccessPoint reported RFID read problems.	Please select one of the offered solutions below. • Reset and initialize the component again.

Details	Solutions
	• Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20207

CARs could not be caught.

Details	Solutions
The AccessPoint was not able to catch some CARs. Check the catch position.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20209

AccessPoint catch position too tight.

Details	Solutions
The AccessPoint reports that the catch position is too tight. Please adjust it.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Continue operation and ignore the error until the next restart. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20210

The AccessPoint lost too many CARs.

Details	Solutions
Check the AccessPoint settings or replace the AccessPoint.	Please select one of the offered solutions below. • Reset and initialize the component again. • Disable component until next restart.

Details	Solutions
	• Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 20211

AccessPoint did not respond.

Details	Solutions
The AccessPoint did not respond to a CAR ID request.	Please select one of the offered solutions below. • Reset and initialize the component again. • Error cannot be repaired. Stop module and call service. • Disable component until next restart.

Related information...

Message codes, page 62

Message code: 20300

CAR lost during sample transport.

Details	Solutions
The CAR used for sample transport left unexpectedly from AccessPoint. CAR with ID: (0). 0 = CAR ID	Please select one of the offered solutions below. • The tube was removed from gripper by pressing the grippers release button.

Related information...

Message codes, page 62

Message code: 20901

Teach positions not valid.

Details	Solutions
Robot (0). 0 = Robot type	Please select one of the offered solutions below. • Check the teach-in positions.

Related information...

Message codes, page 62

Message code: 20902

Invalid reference positions.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20906

Invalid grip position specified.

Details	Solutions
Lowest possible gripHeight for this module is (0). Chosen gripHeight is (1) and gripHeightHigh is (2). 0 = Lowest possible grip height 1 = Selected grip height 2 = High grip height	Please select one of the offered solutions below. • Ignore error message.
Lowest possible gripHeight for this module is (0). Chosen gripHeight is (1). 0 = Lowest possible grip height 1 = Selected grip height	

Related information...

Message codes, page 62

Message code: 20910

Configuration data checksum error.
The checksum of the configuration data is invalid.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 20911

Unexpected position detected.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Check the orientation of the robot axes.

Related information...

Message codes, page 62

Message code: 20912

Wrong firmware detected for a component.

Details	Solutions
FW version (0) is detected. FW version (1) is needed. 0 = Current FW version 1 = Supported FW version	Please select one of the offered solutions below. • Component was updated. Please reinitialize. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 21000

Robot initialization error.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 21001

Robot invalid parameter detected.

Details	Solutions
Parameter: (1). 1 = Parameter name	Please select one of the offered solutions below. • Ignore error message.

Related information...

Message codes, page 62

Message code: 21002

Robot invalid position detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Remove error status flag from Robot.

Related information...

Message codes, page 62

Message code: 21003

Invalid robot PICCOLA controller CAN ID.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21004

Robot crash detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Reset and initialize the component again. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21005

Robot hardware error.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Remove error status flag from Robot.

Related information...

Message codes, page 62

Message code: 21006

Robot is unresponsive.
Axis: (0).
0 = Robot axis

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21008

Missing sensor signal at robot.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 21009

Invalid robot PICCOLA controller hardware version.
Hardware: (1)
1 = PICCOLA controller hardware version

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21010

Unexpected obstacles detected.
Axis: (0)
0 = Robot axis

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21013

Unknown robot command.

Details	Solutions
Command: (1). 1 = Robot command	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21014

Robot PICCOLA communication error.

Details	Solutions
Program: (1). 1 = Program version	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 21015

Hardware CAN ID does not match Software CAN ID.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21016

Invalid firmware version for PICCOLA controller.

Details	Solutions
Firmware: (1). 1 = Firmware version	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21017

Invalid PICCOLA chipset.

Details	Solutions
Chipset: (1). 1 = Chipset number	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21018

Invalid PICCOLA extension ID.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21019

Robot end position not detected.

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 21021

The robot has reported the loss of a sample.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • As necessary, remove tube from the gripper. Please confirm that the tube is removed by pressing the gripper release button.

Related information...

Message codes, page 62

Message code: 21022

No cap found. Please check gripper for contamination.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • As necessary, remove tube from the gripper. Please confirm that the tube is removed by pressing the gripper release button.

Related information...

Message codes, page 62

Message code: 21023

Robot axis length out of tolerance.

Details	Solutions
Check the axis length and belt tension. Axis: (0).	Please select one of the offered solutions below.

Details	Solutions
0 = Robot axis	• Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21034

Robot temperature out of range.

Details	Solutions
Temperature: (1). 1 = Temperature value	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21036

Robot power error.

Details	Solutions
Status: (1). 1 = Robot status	Please select one of the offered solutions below. • Change robot status to defect.

Related information...

Message codes, page 62

Message code: 21037

Unexpected gripper operation detected.

Probable cause	Corrective action
An error has occurred.	1. Correct the error by following the instructions on the touchscreen user interface. 2. If the error cannot be corrected, contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Message codes, page 62

Message code: 21040

Threshold for decap error reached.

Details	Solutions
Gripper maintenance should take place.	Please select one of the offered solutions below. • Ignore error message.

Related information...

Message codes, page 62

Message code: 21050

Unknown error (1).

1 = Error code

Details	Solutions
Axis: (0). 0 = Robot axis	Please select one of the offered solutions below. • Reset and initialize the component again.

Related information...

Message codes, page 62

Message code: 23000

Requested dialog file for ID (0) could not be found.

0 = Dialog ID number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 23001

No dialog options found.

Details	Solutions
Could not find dialog options for dialog (0). 0 = Dialog ID number	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 23002

Unknown dialog type for dialog ID (0) received by the display.

0 = Dialog ID number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 23003

Invalid dialog ID (0) received by the display.

0 = Dialog ID number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 23004

Unknown display dialog error for dialog ID (0) occurred.

0 = Dialog ID number

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Message code: 25150

Lock not configured.

Details	Solutions
Not applicable.	Please select one of the offered solutions below. • Error cannot be repaired. Stop module and call service.

Related information...

Message codes, page 62

Decapper Module observed problems

Observed problems provide information about problems that may occur on the Decapper Module and provide corrective actions that help to resolve the problems.

If the corrective actions for an observed problem do not resolve the problem, contact the local representative or find country-specific contact information at corelaboratory.abbott.

Related information...

Troubleshooting, page 61
Cap does not release from robot gripper, page 84
CAR moves through the AccessPoint without stopping, page 84
CAR stops at the AccessPoint and then will not move, page 85
CAR with sample does not move to the module, page 85
Robot does not respond, page 85
Sample is not decapped but is routed to the Buffer Module, page 86
Sample tubes are not decapped, page 86

Cap does not release from robot gripper

Probable cause	Corrective action
The cap does not release from the robot gripper after the sample tube has been decapped.	1. Open the module cover. Perform *Open and close the front and rear module covers*, page 34. 2. To remove the cap from the robot gripper, secure the cap with one hand and press the release button with the other hand. 3. Close the module cover. Perform *Open and close the front and rear module covers*, page 34. 4. Follow the error dialog on the touchscreen user interface.

Related information...

Decapper Module observed problems, page 84
Open and close the front and rear module covers, page 34

CAR moves through the AccessPoint without stopping

Probable cause	Corrective action
An error occurred at the AccessPoint.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Decapper Module observed problems, page 84

CAR stops at the AccessPoint and then will not move

Probable cause	Corrective action
An error occurred at the AccessPoint.	1. *Cycle power to the module*, page 36. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

Decapper Module observed problems, page 84

CAR with sample does not move to the module

Probable cause	Corrective action
A module error occurred.	Follow the error dialog on the touchscreen user interface.
Errors with the Track Sample Manager (TSM) or Track Workflow Manager (TWM) occurred.	1. Verify the TSM or TWM connection. 2. Contact an Abbott Laboratories representative or an authorized service representative if necessary.
An error or defect occurred involving the switch.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Decapper Module observed problems, page 84

Robot does not respond

Probable cause	Corrective action
A robot error or mechanical problem occurred.	1. Follow the error dialog on the touchscreen user interface. 2. *Cycle power to the module*, page 36. 3. Contact an Abbott Laboratories representative or an authorized service representative if necessary.

Related information...

Decapper Module observed problems, page 84

Sample is not decapped but is routed to the Buffer Module

Probable cause	Corrective action
The sample is not decapped but is routed to the Buffer Module.	1. Verify that the waste bin is not full. Perform *Empty and reset the waste bin*, page 42 if necessary. 2. Verify that the waste bin pullout compartment is closed correctly. Close the waste bin pullout compartment if necessary. 3. Follow the error dialog on the touchscreen user interface.

Related information...

Decapper Module observed problems, page 84

Sample tubes are not decapped

Probable cause	Corrective action
The robot gripper fingers are damaged.	*Replace the robot gripper fingers*, page 57.
The robot gripper grips sample tubes too high or low.	Contact an Abbott Laboratories representative or an authorized service representative.

Related information...

Decapper Module observed problems, page 84

Revision history

Document control number	Revision date	Content revised
80004209-101	2023-06-28	Original release

NOTES

Index

A

accessing
  Configuration screen, 25
  Information screen, 24
  Login screen, 21
AccessPoint clamping jaws
  replacing, 59
acknowledging
  message code, 64
as-needed cleaning procedures
  clean the AccessPoint, 53
  clean the interior, 53
  clean the robot gripper, 54

C

cleaning
  AccessPoint, 53
  description of, 51
  interior, 53
  module covers, 52
  monitor, 51
  robot gripper, 54
  waste shaft and funnel, 54
cleaning and maintenance checks
  Decapper Module, 50
closing
  module covers, 34
Configuration screen
  accessing, 25
  description of, 24
cycling
  power, 36

D

deactivating
  pause mode, 41
Decapper Module
  cleaning and maintenance checks, 50
  installation requirements, 18

E

emptying and resetting
  waste bin, 42

F

funnel
  replacing, 56

G

general safety information
  overview, 7

H

hazards
  overview, 45

I

Information screen
  accessing, 24
  description of, 22
installation procedures and special requirements
  overview, 17

L

Login screen
  accessing, 21
  description of, 21

M

Main menu screen
  illustration of, 20
maintenance
  description of, 56
message code
  acknowledging, 64
Message code screen
  description of, 64
message codes
  description of, 62
module
  cycling power, 36
  description of, 10
  illustration of, 10
  opening and closing front and rear module covers, 34
  operation, 34

overview, 10
pausing, 40
placing offline, 40
placing online, 39
powering off, 39
powering on, 38
technical data, 30

O

observed problems
description of, 84
opening
module covers, 34
operating instructions
description of, 33
operational precautions and limitations
impact of failure to comply, 43

P

pause mode
deactivating, 41
pausing
module, 40
performance characteristics and specifications
overview, 29
placing offline
module, 40
placing online
module, 39
powering off
module, 39
powering on
module, 38
principles of operation
overview, 27
proprietary statement
description of, 8

R

read me first
overview, 5
replacing
AccessPoint clamping jaws, 59
funnel, 56
robot gripper fingers, 57
robot gripper fingers
replacing, 57

S

safety icons
description of, 46
sample processing specifications
description of, 30
statuses
descriptions of module statuses, 15

T

technical data
module, 30
troubleshooting
overview, 61

U

use or function
description of, 9

W

waste bin
emptying and resetting, 42
waste shaft and funnel
cleaning, 54
weekly cleaning procedures
clean the module covers, 52
clean the monitor, 51

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